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| **STAFF REPORT TO THE PUBLIC HEALTH COUNCIL****FOR A DETERMINATION OF NEED** |
| Applicant Name  | Mass General Brigham Incorporated |
| Applicant Address  | 800 Boylston Street, Suite 1150, Boston, MA 02199 |
| Filing Date | February 12, 2020 |
| Type of DoN Application | Substantial Capital ExpenditureSubstantial Change in Service |
| Total Value | $ 150,098,582.00 |
| Project Number | MGB-20121716-HE |
| Ten Taxpayer Groups (TTG) | Yes |
| Community Health Initiative (CHI)  | $ 7,504,929.10 |
| Staff Recommendation | Approval with conditions |
| Public Health Council | May 4, 2022 |
|  |
| **Project Summary and Regulatory Review**Mass General Brigham Incorporated (Applicant) submitted an Application for a Proposed Project at the Brigham and Women’s Faulkner Hospital (BWFH) that consists of two overarching components: (A) construction of a five-story addition to the existing BWFH facility that will contain: 78 medical/surgical inpatient beds; an 8-bed observation unit; relocated and expanded endoscopy services and one additional procedure room; a 3T magnetic resonance imaging (MRI) unit and certain relocated radiology services; and shell space for future build out and (B) other renovation projects at BWFH main campus. The Proposed Project’s total capital expenditure is $150,098,582.00; the Community Health Initiatives (CHI) contribution is $7,504,929.10. This Proposed Project consists of both a Substantial Capital Expenditure and a Substantial Change in Services, which are 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.The Department received written comments and held a virtual public hearing on March 30, 2021. Seven Ten Tax Payer Groups (TTGs) were formed. Summaries of the comments can be found in Appendix A.The Department required an independent cost-analysis (ICA) for the Proposed Project. Summary and analysis of the ICA findings can be found in Factors 2 and 4. The Department received written comments on the ICA from Parties of Record. |

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# Background: Mass General Brigham Incorporated (Applicant) and Application Overview

The Applicant, Mass General Brigham Incorporated (MGB), is a Massachusetts not-for-profit corporation, located at 800 Boylston Street, Suite 1150, Boston, Massachusetts 02199. MGB had 19.7% of all acute care hospital discharges in Massachusetts in FY19, the highest share of discharges among multihospital systems.

The Applicant is currently comprised of the following acute and non-acute care facilities in Massachusetts by type:

|  |  |
| --- | --- |
| **Acute Hospital** | **Type (Per CHIA Category)[[1]](#footnote-1)** |
| 1. Brigham and Women’s Hospital | Academic Medical Center |
| 2. Massachusetts General Hospital  | Academic Medical Center |
| 3. Massachusetts Eye and Ear Infirmary | Specialty Hospital |
| 4. Brigham and Women’s Faulkner Hospital | Community Hospital |
| 5. Newton-Wellesley Hospital | Community Hospital |
| 6. Cooley Dickinson Hospital | Community Hospital |
| 7. Martha’s Vineyard Hospital | Community Hospital |
| 8. Nantucket Cottage Hospital | Community Hospital |
| 9. North Shore Medical Center | Community - High Public Payer Hospital |
| **Non-Acute care facility and clinical service** |   |
| 1. McLean Hospital | Psychiatric Hospital |
| 2. Spaulding Rehabilitation | Rehabilitation Hospital |

It also operates a home health agency, Mass General Brigham Home Care.

Its hospitals are principal teaching affiliates of the medical and dental schools of Harvard University; and it operates a graduate level program for health sciences.

Its physician network comprises approximately 7,500 employed and affiliated primary care and specialty care physicians that include:

1. Brigham and Women’s Physicians Organization,
2. Massachusetts General Physicians Organization,
3. Newton-Wellesley Medical Group,
4. North Shore Physicians Group,
5. Cooley Dickinson Physician Hospital Organization (PHO), and
6. Mass General Brigham Community Physicians.

It operates both a for-profit insurance company, and a non-profit managed care organization that provide health insurance, and administrative services products to commercial populations and the MassHealth Program (Medicaid), and ConnectorCare. Mass General Brigham Inc. is a Health Policy Commission-certified ACO, under the name Mass General Brigham Incorporated, inclusive of Mass General Brigham ACO, LLC.[[2]](#footnote-2),[[3]](#footnote-3)

In addition, it maintains the Mass General Research Institute, and the Brigham Research Institute; both are private, non-profit medical research enterprises.

The Applicant states its four-part mission is to provide patient care, research, education, and community service, and that as discussed herein, this project will contribute to this goal.

**Proposed Project**

The site of the Proposed Project is Brigham and Women’s Faulkner Hospital (BWFH), an acute care community hospital that provides comprehensive medical, surgical, and psychiatric care as well as emergency, ambulatory and diagnostic services. BWFH is part of Brigham Health, which also includes Brigham and Women’s Hospital (BWH), and Brigham and Women’s Physician Organization.

MGB proposes to construct a five-story addition to the existing BWFH facility located at 1153 Centre Street, Boston, MA 02130. The Proposed Project seeks to enhance access to health care services across Brigham Health with the goal of ensuring that patients have access to care in the appropriate setting, and at BWFH to address its capacity constraints and improve throughput.

The new building will include:

1. 78 additional medical/surgical inpatient beds,
2. An 8-bed observation unit,
3. Relocated and expanded endoscopy services, including one additional procedure room for advanced endoscopic procedures with capability for fluoroscopy (e.g., endoscopic retrograde cholangiopancreatography (ERCP) and endoscopic ultrasound (EUS) procedures),
4. Expanded magnetic resonance imaging (MRI) capacity with a 3T MRI unit and renovated and expanded Radiology Department by adding an angiographic interventional radiology program, additional pre- and post-procedure recovery space, and additional support space,
5. Shell space for future build-out for anticipated expanded clinical services.

MGB also proposes other renovation projects to improve existing services and facilities at the BWFH main campus that includes work to facilitate the Proposed Project (listed in Appendix A). As the building is an addition to an existing building, there will be access points on each floor that will disrupt a pre-existing function (e.g., Staff Lactation room relocation, Infectious Disease physician office replication, conference room and clinical support staff offices). The other renovation projects entail relocation of the Patient Experience Department, straightening a corridor that will take part of the cafeteria dining room, and addition of a dining room (as a result of taking part of it for the corridor). Staff acknowledges a need for these projects, and they will not be discussed further in this report.

The Applicant asserts the Proposed Project will help relieve pressure in the BWFH and BWH Emergency Departments (ED), increase access to inpatient care, ensure that patients are treated in the appropriate areas of the hospital, which will free up nursing resources in areas such as phase one recovery spaces in the PACU and interventional radiology recovery rooms, and accommodate advanced endoscopy care and imaging services. The Applicant asserts this project will be instrumental in meeting its goal to appropriately shift some care from its Academic Medical Center facility (BWH) to a community hospital setting (BWFH).

# Patient Panel[[4]](#footnote-4)

The MGB Patient Panel consisted of 1,611,095 patients in fiscal year 2020. As shown in Table 1, the number of patients utilizing MGB’s services increased by 7% between FY18 and FY20.

**Table 1: MGB Patient Panel**

|  |  |  |  |
| --- | --- | --- | --- |
| **FY18** | **FY19** | **FY20** | **% Change FY18-FY20** |
| 1,504,625 | 1,528,359 | 1,611,095 | 7.1% |

# Patient Panel Information (FY19)

Tables 2 and 3 present patient information for MGB and BWFH patients. Staff notes the following observations about these data below:

* **Age:** Patients ages 65 and over represent ~26% and 36% of the MGB and BWFH patient populations, respectively.
* **Race/Ethnicity:** A majority (just over ~70%) of MGB and BWFH patients identify as white.
* **Patient Origin:** Of the six health service areas (HSAs), a plurality of MGB’s and BWFH’s patients originate from HSA 4 (44.6%and 72.9%, respectively).[[5]](#footnote-5)
* **Payer Mix:** There is a higher percentage of MassHealth, Managed Medicaid (MassHealth ACO), Commercial Medicare, and Medicare fee-for-service (FFS) at BWFH than at the MGB overall. The percent of commercial payers is higher at MGB than within BWFH patients (58.8% vs. 51.1%).
* **ACO and Alternative Payment Method (APM) Contracts:** In FY19, 57.9% of the MGB primary care lives were covered in risk contracts. The Applicant notes that this percentage is derived from the number of primary care lives within the patient panels of the MGB primary care physicians (PCPs) that are covered under risk contracts (in which MGB bears the risk).[[6]](#footnote-6) These data were not provided for BWFH.

Due to the small numbers in some of the categories at BWFH, the Applicant aggregated with larger categories for privacy. This was not done for MGB.

Please note, Patient Panel refers to the patients in the MGB system. As this report focuses primarily on Brigham Health, a subsidiary of MGB, discussion of patients seen at either or both BWH and BWFH may refer to that group of patients at the “patient population.”

**Table 2: Overview of Patients for Applicant (MGB) and BWFH, FY19**

|  |  |  |
| --- | --- | --- |
|  | **MGB** | **BWFH** |
| **Total Unique Patients** | **1,528,359** | **34,522** |
| **Gender**FemaleMaleMale/Other/Unknown\* | 57.8%42.2% | 65.8%34.2% |
| **Age**0-1718-6465+/Unknown\* | 11.7%62.1%26.2% | 1.4%62.7%36.0% |
| **Race**American Indian or Alaska NativeAsianBlack or African AmericanHispanic/LatinoOther/Unknown/Native Hawaiian or Other Pacific Islander\*Native Hawaiian or Other Pacific IslanderWhiteOther/Unknown | 0.1%4.4%5.6%1.3%--0.1%73.4%15.2% | 0.2%2.5%11.5%4.8%11.0%--70.1%-- |
| **Patient Origin**HSA 1HSA 2HSA 3HSA 4HSA 5HSA 6Outside of MAUnknown/In MA but not HSA 1-6\* | 6.6%3.4%6.7%44.6%11.4%16.0%11.0%0.4% | 0.8%3.1%2.0%72.9%12.7%3.0%5.2%0.2% |

\*Categories with less than 11 are aggregated and included with larger categories to maintain the confidentiality of patients within those categories at BWFH

**Table 3: Payer Mix for Applicant (MGB) and BWFH, FY19**

|  |  |  |
| --- | --- | --- |
|  | **MGB** | **BWFH** |
| **Payer Mix**CommercialPPO/IndemnityHMO/POS | 58.8%37.4%21.3% | 51.1%30.8%20.3% |
| MassHealth | 1.6% | 2.5% |
| Managed Medicaid | 6.3% | 6.9% |
| Commercial Medicare | 5.1% | 6.5% |
| Medicare (FFS) | 22.7% | 30.0% |
| Free Care/Health Safety Net | 0.1% | 0.1% |
| All Other | 5.3% | 2.9% |
| **APM Contract Percentages**ACO and APM Contracts | 57.9% | -- |

Table 4 below presents patient information for each project component of this DoN Application. Some highlights from the data include:

* **Race/Ethnicity:** There is a higher proportion of patients identifying as white for each service than compared to other race/ethnicity categories, except for Medical/Surgical Inpatient Beds, where over half of the patients identified as Other/Unavailable/Declined.
* **Payer Mix:** The percentage of commercial payers is relatively higher for Endoscopy and MRI patients than for Medical/Surgical Inpatient Beds and Observation services. Medicare FFS is higher for Medical/Surgical Inpatient Beds and Observation.

**Table 4: Overview of Patients for Services by Project Component, FY19**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **BWFH Medical/Surgical Inpatient Beds** | **BWFH Observation** | **BWFH Endoscopy** | **BWFH MRI** |
| **Total Unique Patients** | **8,873** | **1,340** | **6,792** | **5,509** |
| **Gender**FemaleMale/Other/Unknown\* | 57.1%42.9% | 56.7%43.3% | 57.5%42.5% | 63.9%36.1% |
| **Age**0-1718-5455-6465-7474-8485+Unknown | 0.0%31.8%20.4%20.2%15.7%11.8%0.0% | 5.1%28.7%20.0%28.7%14.3%3.1%0.0% | 9.6%28.7%25.6%23.7%10.7%1.6%0.0% | 0.2%40.0%22.8%21.1%11.1%4.8%0.0% |
| **Race**AsianBlack or African AmericanHispanic/LatinoOther/Unavailable/Declined\*White | 1.6%14.1%4.9%67.6%11.8% | 1.9%13.8%3.3%10.6%70.4% | 2.3%8.8%4.5%8.3%76.0% | 1.9%13.2%6.2%11.6%67.1% |
|  | **BWFH Medical-Surgical IP Beds** | **BWFH Observation** | **BWFH Endoscopy** | **BWFH MRI** |
| **Patient Origin**West Roxbury (02132)Roslindale (02131)Hyde Park (02136)Jamaica Plain (02130)Dedham (02026)Dorchester (02124, 02121)Mattapan (02126)Roxbury (02119)Norwood (02062)Chestnut Hill (02467)Stoughton (02072)/Braintree (02184)WalpoleFoxboroMansfieldCantonAll Other | 9.6%8.6%7.8%5.7%4.5%4.2%2.2%1.9%1.7%1.2%----------52.7% | 2.3%3.5%2.4%2.2%1.8%4.1%1.9%1.3%----2.3%--------78.2% | 7.8%6.5%5.3%4.8%5.3%------4.1%----3.0%2.7%2.6%2.5%55.3% | 8.7%9.3%8.1%6.9%5.1%3.9%2.0%1.7%1.7%1.7%----------50.9% |
| **Payer Mix**Commercial\*\*Medicaid^Managed MedicaidCommercial MedicareMedicare FFSAll Other‡ | 29.3%11.5%5.6%11.0%40.0%2.6% | 35.0%8.5%1.2%8.0%43.7%3.6% | 56.5%6.6%0.7%6.0%29.4%0.7% | 57.4%10.2%†--29.9%#--2.6% |

\*Categorized accordingly to maintain the confidentiality of patient identities.

\*\* Commercial includes: Allways Health Partners Commercial, Blue Cross Blue Shield, Commercial National Carriers, Commercial Other, Connector Care Plans, Harvard Pilgrim Health Plan, Tufts Health Plan.

^BWFH is not able to easily isolate MassHealth at project-specific level as it falls under various payers; to offer complete payer mix for the patient panel associated with the medical/surgical inpatient bed component, ‘Medicaid’ provided as an alternative payer mix category.

‡All Other includes: Free Care, Government Other, International, Other Payer, Qualified Health Plans, Self-Pay, Unknown Summary Payer, Workers Comp.

†Medicaid includes both Medicaid and Managed Medicaid.

#Medicare includes both Commercial Medicare and Medicare FFS

# Factor 1a: Patient Panel Need

In this section, we assess if the Applicant has sufficiently demonstrated need for the Proposed Project components by the Applicant’s Patient Panel.

There are several elements to this application, and each will be discussed separately, with analysis immediately following. The elements addressed in this section are:

* Medical/Surgical Inpatient Beds
* Observation Unit
* Endoscopy Services
* 3T MRI

**Medical/Surgical Inpatient Beds**

The new building will house 78 new Medical/Surgical (M/S) inpatient beds. BWFH currently operates 133 licensed M/S inpatient beds. BWFH has high occupancy rates, with BWFH’s M/S inpatient beds operating at a weekday occupancy rate of 87.2% in FY19, above the industry standard of 85%. As shown in Table 5, while unique patient numbers and medical/surgical inpatient data reflect a decrease from FY17 to FY19, the average length of stay (ALOS) has increased, as reflected in elevated number of inpatient days. From FY17-19, BWFH’s total medical/surgical inpatient days increased by 9.1%, from 36,524 days to 39,856 days, with a corresponding increase in ALOS from 3.03 days to 3.53 days (16.5%). These increases have contributed to BWFH’s high inpatient occupancy rates.

**Table 5: BWFH’s Historical Trend for Unique Patient, Inpatient Visits, Days, Average Length of Stay (ALOS), and Occupancy Rates**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **FY17** | **FY19** | **Difference** |
| **Unique patients** | 9,668 | 8,873 | -8.2% |
| **Inpatient visits** | 12,045 | 11,295 | -6.2% |
| **Inpatient days** | 36,524 | 39,856 | +9.1% |
| **ALOS (days)** | 3.03 | 3.53 | +16.5% |
| **Occupancy Rate** | 82.5% | 87.2% | +5.7% |

The Applicant notes the need for the 78 inpatient M/S beds for the following reasons:

1. Capacity constraints at BWFH as a result of high inpatient occupancy: The high occupancy rate in the inpatient units impacts throughput from the emergency department (ED), contributing to an increase in the amount of time patients await a medical/surgical or psychiatric bed. Total ED boarder hours went from 2,380 hours in FY17 to 2,574 hours in FY19 (an 8.2% increase) with average boarder hours increasing from 1.17 hours in FY17 to 1.47 hours in FY19 (25.6% increase).
2. Address the impact on Brigham and Women’s Hospital (BWH): The insufficient inpatient M/S beds at BWFH impacts BWH’s ability to transfer secondary care patients as appropriate to BWFH in an effort to preserve BWH capacity for more acutely ill patients who cannot be treated in a community hospital.[[7]](#footnote-7) The Applicant notes that BWH M/S inpatient units have high occupancy rates, up to 108% during the weekdays, and in FY19 Brigham Health had an overall medical/surgical occupancy rate of 93%, well above the 85% industry standard.

The volume of patient transfers requiring secondary care, and thus eligible to go to BWFH, increased by 38% from FY18 to FY19. While transfers increased from FY18 to FY19, there were still more than 1,200 patients eligible to transfer from BWH in FY19 who could not be accommodated at BWFH due to lack of M/S capacity. This leads to patients waiting for longer periods at BWH. Table 6 shows ED boarder hours (patients awaiting inpatient beds), average admission time, and average time to discharge at BWH. The data show a 41% increase in boarder hours and a 53% increase in the number of people who had to wait over 12 hours in the BWH ED for a bed. If BWFH is at capacity and is unable to accept these patients, they must remain at BWH, increasing the demand on BWH and making them unable to accept tertiary care transfers from other hospitals.

**Table 6: ED Boarding at BWH**

|  |  |  |
| --- | --- | --- |
|  | **FY18** | **FY19** |
| **ED Boarder Hours** | 46,570 | 65,777 |
| **# Of Boarders in the ED > 12 hours** | 1,181 | 1,809 |
| **Average time to Admission for inpatients (in hours)** | 6.73 | 7.68 |
| **Average time to Discharge for all other patients (in hours)** | 4.33 | 4.38 |

1. Meet the needs of the aging Patient Panel: BWFH’s patient data show that of the patients using medical/surgical inpatient services between FY17-19, almost half were 65 years or older. In Massachusetts the 65+ population is expected to grow at a higher rate compared to other age cohorts between 2015 and 2035 such that the 65+ population group will make up about 25% of the state’s population by 2035.[[8]](#footnote-8) The Applicant states that this will lead to increased demand for M/S inpatient services. The Applicant also asserts that BWFH will mirror the national trend that patients 65 years or older comprise an increasing share of hospital discharges.[[9]](#footnote-9) Older adults will need inpatient services to treat age-related chronic diseases and conditions. Many of the most prevalent diagnoses associated with medical/surgical services based on patient visits[[10]](#footnote-10) are linked with aging and affect older adults at higher rates than other age cohorts.

Table 7 shows the Applicant’s projected M/S inpatient volume, comparing FY19 to the first four years of operation once the Proposed Project is completed. The Applicant’s projections show an expected overall increase in inpatient volume of 17.6% in the first year of operation (FY24) to 63% by year 4 of operation (FY27) for all ages, with a 68% increase for those ages 65 and over. As a percentage of total discharges, those for patients ages 65+ are expected to grow from 48% to nearly 50%.

**Table 7: Projected M/S Inpatient Volume**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Age Group** | **FY19** | **FY24** | **FY25** | **FY26** | **FY27** | **Change (FY19-FY27)** | **% Change (FY19-FY27)** |
| **0-17** | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| **18-44** | 1,959 | 3,298 | 3,703 | 4,087 | 4,466 | 2,507 | 128% |
| **45-64** | 3,909 | 3,610 | 4,041 | 4,440 | 4,826 | 917 | 23% |
| **65 and over** | 5,427 | 6,379 | 7,312 | 8,216 | 9,133 | 3,706 | 68% |
| **Total** | **11,295** | **13,286** | **15,056** | **16,743** | **18,425** | **7,130** | **63%** |

The Applicant determined 78 beds are needed to accommodate the anticipated volume, shown in Table 8. The table focuses on bed days, reflects both the number of patients and days spent in a bed, and shows the incremental volume growth after the baseline (2019). Any currently shifted services or transfers from BWH to BWFH are included within the 11,295 baseline figure (FY19) under patient growth. The table was intended to show any incremental volume growth after the baseline period, to demonstrate the need for the 78 requested beds, so baseline for transfers for FY19 is listed as zero. Per the Applicant, the table intends to show the growth resulting from shifting services and transfer volume, all after 2019. The Applicant anticipates that volume, patient days, and average daily census will increase as a result of patient growth at BWFH.

**Table 8: Bed Need Analysis: Projected Increase in Volume, Patient Days, and Average Daily Census**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Volume** | **Patient Days** | **Average Daily Census** | **Incremental Bed Need** |
|  | **Baseline (FY19)** | **FY27** | **Increase** | **Baseline (FY19)** | **FY27** | **Increase** | **Baseline (FY19)** | **FY27** | **Increase** | **Adjusted for 85% Occupancy** |
| BWFH Patient Growth | 11,295  | 12,751  | 13% | 33,544  | 37,105  | 11% | 92  | 102  | 11% | 12 |
| Shifting Services from BWH to BWFH  | 0  | 4,235  | - | 0  | 14,993  | - | 0  | 41  | - | 49 |
| BWH to BWFH Transfer Program | 0  | 1,439  | - | 0  | 5,093  | - | 0  | 14  | - | 17 |
| **Total** | **11,295** | **18,425** | **63%** | **33,544** | **57,191** | **70%** | **92** | **157** | **70%** | **78** |

***Analysis***

Staff finds that overall, the Applicant has demonstrated sufficient need for additional M/S inpatient beds at BWFH to improve patient throughput and support MGB efforts to ensure patients receive care in the appropriate setting. The Applicant maintains that in line with the Department’s goals, the additional capacity will likely alleviate the capacity constraints across BWFH, particularly in the ED, providing more timely access to inpatient care and it will also help to address BWH’s capacity constraints. The Applicant asserts that this will help improve efficiencies at Brigham Health and leverage its system capacity. To ensure that the Proposed Project is accomplishing this stated goal, a condition of approval will require that upon implementation of the new beds, the Applicant demonstrate that it has relieved ED boarding at BWH and BWFH, is shifting appropriate patients to BWFH to receive the right care in the right settings, and that the patients who remain at BWH are of higher acuity. This condition is further detailed in the conditions section of the report.

**Observation Unit**

The Proposed Project includes a new 8-bed observation unit planned primarily to meet the recovery needs of patients after surgery and interventional nephrology and radiology procedures, which can require four-to-six-hour lengths of stay post-procedure to ensure successful voiding trials and no bleeding complications from the procedures. The unit will also be used for patients recovering from gynecological and endocrine (thyroidectomy) day surgery and from kidney, liver and lung biopsies.[[11]](#footnote-11) The Applicant reported that it provided observation-like services to 1,340 patients in FY2019 in other areas of the hospital, including inpatient beds and the post-anesthesia care unit (PACU). Historically there has been an increased demand for observation services (Table 9), and BWFH anticipates that the upward trend of observation cases will continue. The Applicant provided projected demand for the observation unit, as shown in Table 10.

**Table 9: Historical Trend for Observation Cases**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **FY17** | **FY18** | **FY19** |
| **Unique patients (visits)** | 744 (898 visits) | 805 (997 visits) | 1,340 (1,607 visits) |

**Table 10: Projected Observation Visits**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Age Group** | **FY19** | **FY24** | **FY25** | **FY26** | **FY27** |
| **0-17** | 88 | 88 | 88 | 88 | 88 |
| **18-44** | 233 | 278 | 278 | 278 | 277 |
| **45-64** | 538 | 514 | 517 | 520 | 522 |
| **65 and over** | 748 | 851 | 875 | 899 | 922 |
| **Total** | **1,607** | **1,731** | **1,758** | **1,785** | **1,809** |

The Applicant attributes the need for the 8-bed observation unit to three factors:

1. Need for a dedicated unit to mitigate capacity constraints and improve throughput and patient experience at BWFH: Currently, BWFH does not have a dedicated observation unit. Post-procedural recovery patients, interventional nephrology and radiology patients, and surgical Admit to Observe (ATO) patients receive observation-like services in other areas of the hospital. The Applicant reports that providing observation-like care in higher-acuity level of care areas such as the PACU and interventional radiology recovery rooms creates capacity constraints throughout the hospital by consuming unnecessary nursing resources and slowing throughput for patients who do require this level of care. Currently, an average of 22% of patients in such phase one recovery areas could have received care in an observation unit. Additionally, placing observation-level patients in inpatient beds prevents patients waiting to be admitted from accessing those beds. This impacts both those boarding in the BWFH ED and those awaiting transfer admission from BWH.

The Applicant states that the observation unit will also be used to provide pre-discharge services for post-procedure mastectomy, prostatectomy and gynecological patients. These patients have extensive educational needs following surgery of a particularly sensitive nature requiring privacy and emotional support. The Applicant reports that the acute recovery area of the PACU where this care currently occurs is small, noisy, and busy, which makes it very difficult to accommodate patient caregivers, provide emotional support, and coordinate and complete multidisciplinary education.

1. Address the ripple effect on BWH: Similar to the need described in the above Medical/Surgical Beds section, patients who need observation level care occupying inpatient beds can impact BWFH’s ability to directly admit transfers from BWH. The Applicant states the observation unit is not intended for ED patients but will be used for post-procedural patients, thus opening the inpatient beds those patients currently occupy..
2. Meet the needs of the aging Patient Panel: While rates of observation visits have remained steady or even decreased across the different age groups among the under 65 population, the Applicant states there has been an increase across the 65+ age cohort. The utilization rate for observation-like services at BWFH among the 65+ cohort has increased from 288 unique patients (38.7% of the total patients utilizing observation in FY17) to 618 unique patients (46.1% of the total patients utilizing observation in FY19). Observation units are an appropriate care option for an aging population and are beneficial because they allow for timely diagnosis and short-term treatment, as well as provide an appropriate place to conduct geriatric assessments. The Applicant asserts the projected increase of the aging population will contribute to further increases in observation cases.

***Analysis***

Staff finds that the Applicant has demonstrated sufficient need for a dedicated observation unit to meet the patient population need and alleviate capacity constraints at BWFH and BWH. The unit will enable BWFH to serve patients needing observation in the appropriate space while also reducing the impact on inpatient beds and allowing for BWFH to accept more admits from BWH. Staff also recommends that, as a condition of approval, the Applicant provide data to the Department to demonstrate that the observation beds are being used as presented in this Application.

**Endoscopy Services**

As part of the Proposed Project, the Applicant seeks to relocate and expand its endoscopy services in the new building.

The Applicant outlines several factors for its need to relocate and expand endoscopy services:

1. Relocate and expand to address physical plant constraints: The current limited space does not accommodate the latest technological devices for certain endoscopic procedures and the existing location cannot be expanded because of the footprint of other essential services, such as the ED and Pre-Operating Department. The relocation will also enable the Applicant to increase the number of procedure rooms from five to six; one for advanced procedures and five for general procedures. The new capacity will allow BWFH to offer a broader range of services, in the same unit, both routine and interventional services, including advanced procedures that require fluoroscopy... Additionally, the redesign of the space will allow for more efficiencies in the care process and improved patient experience.
2. Need for one advanced procedural room to reduce inter-facility transfers and timely access to services: Currently, advanced endoscopy procedures are performed in the hospital’s operating rooms one half-day per week, or patients are transferred via ambulance to another hospital (typically BWH) that can perform advanced endoscopy procedures. Transfer of patients for these advanced procedures can lead to delay in care, increased costs, and safety risks. The expansion will reduce the need to transfer patients and allow for more timely access to co-located services in a cost-effective, community hospital setting for patients not requiring high-acuity services. Further, by reducing demand on BWH, the proposed change can help mitigate capacity constraints at BWH so that the hospital can focus on serving high-acuity patients and enable patients to be managed in appropriate settings.
3. Meet the needs of the aging Patient Panel: As populations age, demand for endoscopy services increases because of the higher prevalence of an array of gastrointestinal (GI) diseases among the 65+ age cohort (such as GI cancers including pancreatic, liver, and colorectal cancers). In FY19, about 36.0% of 65+ age patients received endoscopy services, representing an overall 3.2% increase over the last three fiscal years. It is also anticipated that as more older adults, who tend to have more endoscopy needs, occupy the increased number of medical/surgical inpatient beds, the demand for endoscopy services at BWFH will rise.

Table 11 shows that the Applicant anticipates that compared to FY19, the demand for endoscopy services will increase by 9.6% by FY24 when the Proposed Project will open, and by 19% when services will be fully operational in FY27. Table 11 shows the projected demand that is based on the conditions and diseases of the aging population.

**Table 11: Projected Endoscopy Visits\***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Age Group** | **FY19** | **FY24** | **FY25** | **FY26** | **FY27** | **Change****(FY19-FY27)** | **% Change (FY19-FY27)** |
| **0-17** | 700  | 700  | 700  | 700  | 700  | 0 | 0% |
| **18-44** | 690  | 1,271  | 1,296  | 1,320  | 1,346  | 656 | 95% |
| **45-64** | 3,218  | 3,126  | 3,192  | 3,253  | 3,321  | 103 | 3% |
| **65 and over** | 2,636  | 2,841  | 2,970  | 3,098  | 3,233  | 597 | 23% |
| **Total** | **7,244**  | **7,938**  | **8,158**  | **8,371** | **8,600**  |  **1,356** | **19%** |

\*The projections do not take into consideration the new clinical guidelines on colonoscopy screenings as the expansion plans predates these guidelines.

***Analysis***

Staff finds that the Applicant has shown sufficient need for relocating and expanding endoscopy services at BWFH to meet the needs of the patient population. The redesign of the space will allow for additional procedure rooms for more timely access to care, and result in all endoscopy services co-located, creating efficiencies. Additionally, the US Preventive Services Task Force currently recommends beginning colonoscopy screenings at age 45, recently reduced from age 50,[[12]](#footnote-12) which will further increase the demand for endoscopy services. Staff also recommends that, as a condition of approval, the Applicant provide data to the Department to demonstrate that advanced endoscopy procedures are occurring at BWFH, and patients are not being inappropriately transferred from BWFH to BWH.

**3T MRI**

As part of the Proposed Project, the Radiology Department will be renovated and expanded to include a new 3T MRI, an angiographic interventional radiology program, additional pre- and post-procedure recovery space, and additional support space. The new MRI unit will be co-located with the existing 1.5T MRI unit. The Applicant states BWFH has experienced growth in the number of unique patients receiving MRI services over the last three fiscal years as shown in Table 12, which is consistent with trends nationwide. MRI scan volume at BWFH increased by 27% from FY17-FY19, partially attributed to clinical demand and partially to the replacement of the existing 1.5T MRI in

FY17 with a unit that takes less time per scan and thus has an increased scanner capacity.

**Table 12: Historical Trend for Unique Patients Receiving MRI and Scan Volume**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **FY17** | **FY19** | **% Change** |
| **Unique patients** | 4,381 | 5,509 | 26% |
| **Scan volume** | 4,793 | 6,096 | 27% |

Table 13 provides the projected MRI scan volume at BWFH. BWFH anticipates that MRI scans will increase overall and across all age groups except the 0-17 age group.

**Table 13: Projected MRI Scans**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Age Group** | **FY19** | **FY24** | **FY25** | **FY26** | **FY27** | **% Change (FY19-FY27)** |
| **0-17** | 10 | 10 | 10 | 10 | 10 | 0% |
| **18-44** | 1,347 | 1,472 | 1,520 | 1,567 | 1,614 | 20% |
| **45-64** | 2,466 | 2,753 | 2,854 | 2,955 | 3,057 | 24% |
| **65 and over** | 2,273 | 2,411 | 2,558 | 2,710 | 2,866 | 26% |
| **Total** | **6,096** | **6,646** |  **6,942** |  **7,242** |  **7,547** |  **24%** |

The Applicant cites the following factors for expanding and renovating imaging services:

1. Limited MRI capacity at BWFH to meet Patient Panel needs resulting in increased wait times: BWFH currently has one 1.5T MRI unit that is utilized for the ED, inpatients and outpatients. High utilization and demand for imaging has led to long wait times. In FY19, the MRI operated at 93% capacity overall and 96% during prime-time business hours. That same year, average wait times for imaging at BWFH were 3.5 hours for inpatients, 9.2 hours for ED patients, and 22 days for outpatients. Though BWFH has extended hours of operation for its MRI unit (Monday-Sunday 6:30am-11:00pm), access issues persist. An additional MRI unit can help mitigate wait times for all patients, especially inpatients and ED patients, and can also ensure access to MRI if the current MRI unit has scheduled maintenance or there is unexpected downtime.
2. Need for advanced imaging for better diagnostics and care efficiencies with on-campus access: For certain clinical indications, 3T MRI provides better diagnostic imaging exams than 1.5T MRI. Currently, BWFH depends on a 1.5T MRI which in some instances provides insufficient images for diagnosis and treatment of the patient’s condition. When additional imaging is needed due to an insufficient image, further costs are incurred to get a second scan. Patients at BWFH who require 3T imaging must be transported via ambulance off-site, within the MGB system, which is costly, inefficient, introduces increased risk and/or delay for patients, and generally impacts both patient care and experience. With the availability of the 3T MRI, clinicians will be able to consider clinical appropriateness and availability when determining the MRI scanner type that will best meet the needs of the patient. BWFH projects that 59% of ED MRI volume and 54% of inpatient MRI volume will be performed on the current 1.5T scanner, and 41% of ED MRI volume and 46% of inpatient MRI volume will be performed on the new 3T scanner.
3. Meet the needs of the aging Patient Panel: Slightly over a third of BWFH’s MRI Patient Population is age 65+, and the projected rate of increase in scans among this age group is higher compared to other age groups. The Applicant references the literature stating that imaging rates are higher among older adults. Additionally, MRI is a beneficial tool for a variety of conditions that have higher incidence rates related to aging.[[13]](#footnote-13)
4. Increased demand with expansion of inpatient beds: About 24% of all MRIs ordered at BWFH are from inpatient units. With the expansion of inpatient beds, the Applicant expects the number of scans to increase, thus warranting the inclusion of additional imaging capacity in the Proposed Project.
5. Need for renovation to modernize and facilitate efficient care: The addition of M/S inpatient beds discussed above will displace several imaging modalities, support spaces, and hallways, necessitating renovations and relocation of these modalities and support spaces. Further, the renovation will create a modern, comfortable, and efficient setting to support optimal patient care.

***Analysis***

Staff finds that the Patient Panel information provided demonstrates sufficient need for the renovation and expansion of imaging services at BWFH. An advanced MRI machine will allow for timely and better diagnosis and address capacity constraints, improving efficiencies in care. Upgrading the Radiology Department will also help to provide better patient care. Staff agrees that this Proposed Project will address issues on capacity and meeting the demand of aging population and expansion of inpatient beds.

# Factor 1: b) Public Health Value, Improved Health Outcomes and Quality of Life; Assurances of Health Equity

In this section staff will assess whether 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.

**Public Health Value, Health Outcomes, and Quality of Life**

The Applicant utilizes several Population Health Management (PHM) approaches encompassing a broad array of care coordination and care delivery alternatives aimed at improving patient experience and outcomes.[[14]](#footnote-14) These strategies include care models rooted in collaboration, including patient-centered medical homes, care integration, team-based care and other care initiatives specifically designed by MGB clinicians. Further, the Applicant states that the Proposed Project adheres to the Institute for Healthcare Improvement’s “Triple Aim".[[15]](#footnote-15)

The Applicant states that the Proposed Project will help improve health outcomes and quality of life for the Patient Panel in several ways. The Applicant asserts that the additional M/S beds will improve patient throughput, convenience, and satisfaction for BWHF and BWH by reducing delays at both hospitals, averting transfers to other facilities for care, and assuring patients receive timely care in appropriate settings based on acuity level and condition.

The new observation unit will provide a larger, calmer space for observation patients that will allow for patient privacy, family presence/active engagement, multidisciplinary intervention, and education to improve patient outcomes. Also, appropriate utilization of observation units reduces the duration and potential risks of hospitalization in elderly patients (e.g., delirium, falls, hospital acquired infections, medication errors), which may lead to better quality outcomes.[[16]](#footnote-16)

The availability of comprehensive, integrated endoscopy services in one location at the hospital will address care fragmentation and improve patient care experience and ensure access with less disruption for patients. Regarding patient safety, having additional endoscopy capacity at BWFH will decrease the need for ambulance transports, which will reduce the safety risks associated with the transport process.

Similarly, expanded MRI services will improve satisfaction, outcomes, and patient safety. Patients will be able to access required MRI services in the same location as their other care, thus decreasing need for transport and care fragmentation, and improving patient convenience and satisfaction as a result of increased access and efficiency. Keeping the patient onsite for the appropriate scan shortens the time for clinicians to receive imaging information and allows for earlier response, including start of treatment, thus improving health outcomes.

***Analysis***

The Proposed Project demonstrates potential to improve health outcomes and quality of life for patients at BWFH and potential to improve BWH patient outcomes as well. The components of the Proposed Project allow for patients to experience appropriately located services (e.g., access to 3T MRI imaging, advanced endoscopy procedures), less fragmented care, and increased access to care. They also enable optimal use of the building’s space, which leads to efficiencies, patient satisfaction and improved health outcomes. Additionally, the patient-focused PHM strategies at MGB allow for better care, which can translate to better patient experiences and outcomes.

**Health Equity and Social Determinants of Health (SDoH)**

The Applicant described health equity and SDoH efforts both MGB systemwide and at BWFH.

The Applicant affirms that it ensures health equity for all patients and the Proposed Project will not impact accessibility of BWFH’s services for “poor, medically indigent, and/or Medicaid eligible individuals.” Hospitals in the MGB system, including BWFH, participate in the American Hospital Association’s #123Equity Pledge Campaign[[17]](#footnote-17), which strives “to eliminate health and health care disparities that exist for racially, ethnically and culturally diverse individuals and identifies area for leaders to focus on to ensure high-quality, equitable care for everyone.” Through the Campaign, BWFH will assure patients have equal access to benefits resulting from the Proposed Project. In 2020, the Applicant also began to participate in the United Against Racism initiative[[18]](#footnote-18) as part of itsership’s commitment to eliminate impact of racism on MGB’s patients and employees.

The Applicant states that BWFH is dedicated to providing access to interpreter and translation services via several modalities at no additional cost to patients at all points of clinical contact, and to ensuring all limited English proficiency (LEP) and deaf and hard of hearing (DHH) patients have access to appropriate services required for receiving health care. For LEP patients, certified in-person full-time Spanish and Russian interpreters are available during business hours. With advance notice, per diem interpreters are available for 12 languages, as are contracted interpreters covering 40 languages. Additionally, sign language interpreters for DHH patients are available through in-house staff, the Hospital’s list of per-diem sign interpreters, contracted agencies, and the MGB Bulfinch Temporary Services Department. When sign interpreters are not available in-person or upon patient request, access is provided through iPad screens. Additionally, patients have access to qualified interpreters skilled in 50+ languages via iPad Video Remote Units (iPads on Wheels) or via phone (LanguageLine Solutions). The Applicant notes that in addition to interpreters who are trained and certified in interpretation and BWFH policies, patient information documents are also available in multiple languages.

Additionally, the Applicant states that they have adopted the Culturally and Linguistically Appropriate Service (CLAS) standards for all practice sites, including BWFH. The Applicant has committed to adopting these standards in six areas, as per DPH’s guide to CLAS, many of which are connected with the #123Equity Pledge Campaign. These include Foster Cultural Competence, Build Community Partnerships, Collect and Share Diversity Data, Benchmark: Plan & Evaluate, Reflect and Respect Diversity, and Ensure Language Access.

As a standard condition of approval of the Proposed Project, as set out in DoN regulation 105 CMR 100.310, all Determination of Need Holders must provide a plan for approval by the Office of Health Equity for the development and improvement of language access and assistive services provided to individuals with disabilities, non-English speaking, Limited English Proficiency (LEP), and American Sign Language (ASL) patients.

The Applicant and BWFH have a long-term goal to implement a universal SDoH needs screening program for all patients. BWFH already screens certain patients for SDoH needs as a part of the MassHealth ACO model of care. Patients are asked about needed assistance and receive follow-up on SDoH resources, with patients who would like immediate help prioritized. Screenings are conducted via iPads, and the screening tool is available in multiple languages[[19]](#footnote-19) with staff available for technological assistance. BWFH is integrated into MGB’s electronic health record (EHR) system, which enables specialty care staff and PCPs to have access to screening information.

BWFH has also implemented Social Work and Case Management in the ED to connect more patients to community resources. Recognizing limited community resources, social workers and community health workers will continue to work with patients to access needed services and patients’ PCPs will be informed when follow-up is needed.

The Applicant is a member of the Boston Area Hospital Collaboration (“Boston Collaboration”) which has fostered discussions among Boston health care institutions on SDoH and engaged Health Resources in Action (HRiA) in 2017 to facilitate new SDoH processes. The Boston Collaboration assessed options and best practices to thoughtfully implement a universal SDoH screening program and BWFH is subsequently implementing a staggered approach to link patients to community-based organizations for services. Facilities serving communities with highest needs will be first to roll out universal screening programs. MGB’s screening and referral program is currently only for MGB PCP patients. Those without an MGB PCP may be connected to care and coverage by a Certified Application Counselor. Subsequently, an SDoH assessment will be conducted, and these patients may receive SDoH need assistance through MGB’s community benefit programs.

***Analysis***

DoN staff assessed the Proposed Project’s impact on equitable access to care. The Interpreter Services, SDoH screening, and campaigns/initiatives demonstrate BWFH’s commitment to promoting health equity. The integrated EHR system and social work and case management enable appropriate follow-up on and linkages to social service needs. Staff finds that the Applicant has sufficiently outlined a case for improved health outcomes and health equity at a high level.

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

To ensure continuity of care, the Applicant plans to maintain its existing formal processes for linking patients with their primary care physicians and community providers for follow-up care. BWFH has several PHM strategies around continuity of care and coordination of care. Further, all patients, particularly the most vulnerable (including older adults), are assessed for home safety, and care coordination RNs and social workers ensure there are sufficient support services within the home to implement post-discharge care plans.

**Medical/Surgical Inpatient Beds**

The Applicant asserts that the expanded bed capacity will help address capacity issues at BWFH and have a ripple effect on BWH and Brigham Health overall. Internally at BWFH, there will be increases in efficiencies by reducing waits and ED boarding times. The Applicant cited that increasing availability of inpatient beds will improve patient throughput and overall, ED performance will increase[[20]](#footnote-20) which will enable patients to receive care in appropriate settings, creating operating efficiencies and leveraging capacity within the Brigham Health system. This will allow BWFH to see patients needing secondary care in a timelier manner and in a cost-effective community setting, while high-acuity patients will have better access to care at the academic medical center, BWH. Further, the BWFH Transfer Program allows ED clinicians at BWH to directly admit qualifying patients to BWFH inpatient units.

**Observation Unit**

The Applicant states that the addition of the observation unit will alleviate capacity constraints in other areas of the hospital where patients receive observation-like service[[21]](#footnote-21) and allow for better overall patient throughput, including expedited admission of ED patients to an inpatient bed. Having a dedicated space for observation will improve patient management efforts and provide patient-centered care, particularly for certain post-surgical patient populations (in particular, patients receiving pre-discharge services, a majority of whom are post-procedure mastectomy, prostatectomy and gynecological patients). These patients have extensive educational, psychological and emotional support needs following surgeries. The observation unit provides appropriate space and privacy for necessary support, the presence of family/caregivers, and education prior to discharge.

The Applicant also discusses provision of care in an efficient, protocol-driven observation unit and implementation of a PHM strategy, Enhanced Recovery After Surgery (ERAS) protocols, which is a patient-centered, evidence-based approach to perioperative care for planned surgeries that benefits elderly patients and has been shown to reduce length of stay.

**Endoscopy Services**

The Applicant notes that the relocation and expansion will allow BWFH to provide cost-effective and efficiently operated endoscopy procedures in a community-based hospital setting. Relocation will enable the expansion of both pre- and post-procedural space in the endoscopy unit and permit the redesign of care processes to increase efficiencies. The new endoscopy suite will allow all endoscopy services to be performed within the unit, maximizing staff and resources in one location of the hospital. Clinicians will be able to perform both routine and interventional endoscopy procedures, including advanced procedures, which currently are done in the operating room. Expanding capacity will enable BWFH to offer a broader range of services to BWFH patients and timely access to co-located services, reducing the need for BWFH to transfer patients to other locations.

**3T MRI**

The Applicant affirms that renovating and expanding imaging capacity, including the addition with the 3T MRI, will lead to increased access to timely, co-located and efficiently operated imaging services for BWFH patients. It will facilitate efficient coordination of services among staff, including board-certified and fellowship-trained radiologists who are available on-site for consultations in subspecialty imaging. Further, increasing imaging capacity will no longer require transport of inpatients and ED patients to BWH for 3T imaging and eliminate barriers for secondary case transfers from BWH to BWFH. Co-locating and integrating 1.5T and 3T MRI services will increase access and efficiency.

Physicians at BWH use the American College of Radiology’s (ACR) ACR Select tool, a comprehensive, national standards-based, clinical decision support database that uses evidence-based decision support for the appropriate utilization of all medical imaging procedures. Physicians order MRI tests through electronic Radiology Order Entry forms in the EHR, and this tool can guide physicians to the appropriate exam that may improve performance and efficiencies in patient care.

***Analysis***

Staff finds that the Applicant’s care coordination and discharge processes will contribute positively to efficiency, continuity and coordination of care. The co-location and expansion of services will make them more efficient, which will contribute to increased patient satisfaction and support continuity and coordination of care. Several of the PHM strategies, such as the Stay Connected Program (SCP), support pre-discharge planning and care coordination post-discharge. Patient-centered care facilitates improved health outcomes and patient satisfaction. Family involvement is an important aspect of patient-centered care and is a practice for which the observation unit will provide space.

# 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.

# **Factor 1: e) Evidence of Sound Community Engagement through the Patient Panel**

The Department’s Guideline 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.” The Applicant community and Patient Panel focuses broadly across neighborhood and community stakeholders of the service area. They held focus group meetings with these community organizations:

1. Sophia Snow Place
2. Springhouse Senior Living Community
3. Jamaica Plain Neighborhood Council Zoning Committee
4. Jamaica Hills Association
5. Rogerson Communities
6. Boston Planning and Development Agency (BPDA)
7. Boston Civic Design Commission
8. Massachusetts Environmental Policy Act Office (MEPA)
9. Community Engagement Advisory Committee (CEAC)
10. Faulkner Patient and Family Action Council (PFAC)

The Applicant’s meetings with the above organizations largely consisted of BWFH representatives presenting an overview of the Proposed Project and resulted in broad support from participants. Three of the above organizations are focused on the senior living community in the vicinity of BWFH.

The BWFH’s CEAC and PFAC were presented with mock-ups of the Proposed Project and engaged appropriately to provide feedback and ask questions about the timing of project implementation and details of the make-up of medical and surgical inpatient rooms.

Boston Planning and Development Agency and BWFH hosted one meeting open to the public for questions and comments.

***Analysis***

Staff reviewed the information on the Applicant’s community engagement and finds that the Applicant has met the required community engagement standard for Consult in the planning phase of the Proposed Project. Attendees expressed general support for the Proposed Project at these presentation meetings.

# Factor 1: f) Competition on Price, Total Medical Expenses (TME), Costs and Other Measures of Health Care Spending

The Applicant notes that the Proposed Project will compete based on price, total medical expenses (TME), provider costs, and other recognized measures of health care spending. The Applicant states that they monitor and control costs, outcomes, and appropriate access to services in an effort to meet the state’s cost growth benchmark[[22]](#footnote-22) and reduce the overall cost of care. Recent examples of efforts implemented to reduce costs of care delivery have included standardization of EHRs and related IT systems across MGB, reduction of third-party reference laboratory test send outs by utilizing expertise and technology across campus, standardization or elimination of contracted services as appropriate across campuses, and aggressive supply chain work to standardize of products across service lines and institutions.

The Applicant states that through its PHM strategies that strive to eliminate unnecessary hospitalizations, emergency department visits, and specialty visits, the Applicant is anticipating reducing care costs.[[23]](#footnote-23) The Applicant cites that MGH researchers found that initial e-consults can make subsequent in-person visits more efficient for the physician or referring provider and in some cases may eliminate the need for an in-person follow up, which they suggest can reduce costs.[[24]](#footnote-24) Also, MGB’s Integrated Care Management Program (iCMP) has achieved a significant reduction in TME compared to similar patients not enrolled in iCMP over a 12 month period; for commercially insured and Medicaid patients enrolled for 7-12 months there was a 45% and 21% reduction in TME, respectively, and 27% reduction for Medicare patients enrolled over 13 months. BWFH plans to participate in the PHM strategies to the extent they are applicable in the hospital setting. In addition to PHM strategies, BWFH established programs to contain cost such as the same day discharge program for select surgeries. BWFH and BWH also regularly assess availability of secondary services at BWFH to offer lower cost options to patients.

Applying the Triple Aim framework, the Applicant asserts the Proposed Project is “designed to address the cost of care by promoting the Applicant’s system-wide population health efforts around providing care in the appropriate setting based on acuity level.” With the Proposed Project, increasing capacity will enable Brigham Health to leverage its capacity to offer lower-cost care options for appropriate patients and allow for more care in appropriate settings. It will increase access to care for secondary cases in lower-cost, community-based hospital setting (BWFH) and shift appropriate cases from an academic medical center (BWH), which is expected to decrease overall costs of care.

***Analysis***

As mentioned previously, it has been shown that care in community settings is typically provided at lower prices than in academic medical centers. The Proposed Project has the potential to reduce costs of care through infrastructural process efforts (e.g., standardizing EHR) and PHM strategies, some of which have shown to decrease costs. Staff finds that the overall Proposed Project will likely compete on the basis of price, TME provider costs, and other measures of health care spending.

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

For Factor 2, the Applicant must demonstrate that the Proposed Project will meaningfully contribute to the Commonwealth’s goals for cost containment, improved public health outcomes, and delivery system transformation beyond the Patient Panel.

**Cost Containment**

Within the Determination of Need regulation 105 CMR 100.000, two factors, in part, require the Department to consider cost containment as it pertains to the Proposed Project: Factor 2 which requires a project meaningfully contribute to the Commonwealth’s cost containment goals and Factor 4 as relates to any independent cost analysis required for a given project to demonstrate whether the project is consistent with the Commonwealth’s cost containment goals. Because both factors require the Department to analyze the Proposed Project’s impact on health care cost containment in the Commonwealth, the Department has considered the cost containment-specific portions of both Factor 2 and Factor 4 in this section.

Discussion in the Application

In response to this factor, the Applicant highlights MGB’s system-wide strategic planning efforts, part of which works to ensure patients in need of tertiary and quaternary care are treated in AMCs, such as BWH, while less acute patients receive treatment in community hospitals, like BWFH, and indicates this will generate efficiencies and reduce costs. In support of this effort, MGB notes the BWFH Transfer Program which allows BWH ED clinicians to directly admit appropriate patients to BWFH inpatient units, as well as efficiencies generated through their population health management efforts to help ensure that lower cost care alternatives are available to patients.

Independent Cost Analysis (ICA) and Comments in Response to the ICA

Pursuant to G.L. c. 111 § 25C(h), and to support the Department’s understanding of the Proposed Project’s impact on the Commonwealth’s cost containment goals, an independent cost-analysis (ICA) was required.

The ICA was prepared by Charles River Associates (CRA) who concluded that the Proposed Project is consistent with the Commonwealth’s cost containment goals because, despite increased inpatient demand and demand for MRI services, the project will result in a 0.02% spending decrease across the service lines impacted by the Proposed Project, adding that the “economics literature predicts that allowing capacity-constrained providers such as MGH to expand puts downward pressure on health care prices.”

In its comment submitted in response to the ICA, the Health Policy Commission (HPC) reviews its analysis of the Proposed Project and notes that it is likely to increase yearly commercial health insurance spending in Massachusetts by between $2.9 million to $3.8 million through new inpatient capacity. In the HPC comment and a report filed by the Office of the Attorney General (AGO), they note additional costs as a result of MGB’s proposed ambulatory expansion. While the Applicant indicates the ambulatory expansion is designed to move MGB ambulatory patients into lower cost community settings, the HPC points out the Applicant has not proposed reducing inpatient or outpatient services at any of its existing facilities. Indeed, this Proposed Project will result in increased inpatient and outpatient capacity. HPC estimates that between the completion of MGB’s proposed ambulatory expansion and the addition of beds at BWFH there will be an annual increase in commercial insurance spending between $6.4 M to 7.9M. While the ICA predicts most patients would transfer from BWH, the HPC expects that most of the patients who receive care in the new inpatient beds at BWFH would have otherwise received care at a non-MGB hospital.

CRA describes the Herfindahl-Hirschman Index (HHI), which is a relied upon measure of hospital market concentration and was used to analyze shifts in market share for the ICA. The ICA indicates the Federal Trade Commission and Department of Justice guidelines (“Guidelines”) define unconcentrated markets as those with an HHI below 1,500, moderately concentrated market as those between 1,500 and 2,500, and highly concentrated markets as those above 2,500. CRA also notes that the Guidelines indicate changes of less than 100 HHI points in concentrated markets are unlikely to lead to adverse competitive effects.

In its analysis, CRA assigned an HHI score qualifying as “highly concentrated” for inpatient services in the area surrounding BWFH both prior to and after implementation of the Proposed Project. ICA used two scenarios to evaluate market share shifts, and in the scenario that assumes BWFH draws its incremental patients from any hospital, the ICA estimates the HHI score would increase by 412 points after implementation. CRA estimates the additional inpatient capacity proposed at BWFH (which represents a 45.6% increase in beds) will result in an 18% increase in discharges by 2030 and increase BWFH’s market share in the area surrounding BWFH by 7% to 8.1%. CRA predicts that upon project implementation, there would be an overall increase in MGB’s market share and a loss of market share experienced by the system with the next highest share. This would further solidify MGB as the highest market shareholder.

However, the ICA does estimate inpatient cost decreases for each patient transferring to BWFH across all payors except for MassHealth non-managed care which is estimated to experience an increase between 0.2% to 0.6%. Looking only at patients transferring from BWH, CRA estimates inpatient spending would decrease between -8.7% to -31.7%. When considering patients transferring from facilities outside of the MGB system, CRA estimates a reduction between -0.4% to -16.7%. Changes across insurance type are shown in Table 14.

**Table 14: Predicted Changes in Inpatient Spending by Insurance Category**

|  |  |  |
| --- | --- | --- |
|  | BWH Transfers Only[[25]](#footnote-25) | Transfers from All Hospitals |
| Insurance Category | Expected Change per Patient | Expected Change Across All Enrollees | Expected Change per Patient | Expected Change Across All Enrollees |
| Commercial  | -20.3%  | -0.23%  | -0.4%  | 0.00%  |
| Medicare Health Plans  | -31.7%  | -0.23%  | -16.7%  | -0.12%  |
| MassHealth Managed Care  | -30.3%  | -0.16%  | -13.3%  | -0.08%  |
| MassHealth Non-Managed Care  | 0.2%  | 0.00%  | 0.6%  | 0.00%  |
| Original Medicare  | -8.7%  | -0.07%  | -2.8%  | -0.02%  |
| Overall  | -11.3%  | -0.10%  | -2.8%  | -0.02%  |

Conversely, the HPC indicates the Proposed Project will contribute 0.36% to 0.4% to a system wide increase in MGB’s inpatient bed prices.

CRA also analyzed the Proposed Project’s impact on outpatient MRI volume and spending, as well as its impact on MGB’s MRI market share in the area surrounding BWFH. In its analysis, CRA assigned an HHI score qualifying as “moderately concentrated” for MRI services in the area surrounding BWFH both prior to and after implementation of the Proposed Project. The ICA estimates the HHI score would increase by just 25 points after implementation. While it estimates MRI scans at BWFH will increase 15% by 2030 and will result in between 0.5% and 22.8% increase in insurer spending per patient switching to BWFH, CRA’s analysis shows only a 0.4% increase in MGB’s MRI market share with essentially no impact on other provider systems. HPC’s analysis of the cost impact of the MRI estimates commercial spending would decrease $91,000 annually as a result of the Proposed Project’s MRI component.

***Analysis***

MGB asserts the Proposed Project will shift appropriate care from BWH to BWFH and generate efficiencies and reduce costs in support of its system-wide efforts to ensure patients in need of tertiary and quaternary care are treated in AMCs, while less acute patients receive treatment in community hospitals. The ICA’s findings support this, projecting a spending reduction for inpatient care for four out of five insurance types analyzed. For the fifth category (MassHealth non-managed care), the ICA finds less than a 1% change in spending per patient switching to BWFH and no change when taking into account all enrollees in that insurance category. CRA’s analysis concludes that serving the need of BWH patients, as well as the volume of patients it estimates would switch from BWH, would result in modest cost decrease of 0.02%.

However, as noted by the HPC, neither MGB nor the ICA has accounted for backfill of previously filled capacity at BWFH prior to implementation of MGB’s ambulatory expansion. In the AGO’s report for the HPC’s annual cost trends hearings, the Office notes that despite the shift of patients from MGB hospitals to its proposed ambulatory sites, the margin increase gained due to patients referring to MGB hospitals (which would include BWFH) outweigh the projected losses. HPC estimates the expanded BWFH capacity and backfilling (including the impact on price due to increased market share) would add $6.4M to $7.9M to commercial insurance costs annually which offsets the slight decrease in spending the HPC found related to BWFH’s MRI expansion. If MGB’s ambulatory expansion does not occur, this cost increase will be somewhat diminished.

MGB’s planned inpatient expansion at both MGH and BWFH represents approximately a 7% increase in MGB’s inpatient capacity. According to the AGO report that is based, in part, on MGB internal documents, MGB projected it would gain an additional 1-2% of all secondary inpatient admissions in Eastern Massachusetts and an additional 3-4% of all tertiary inpatient admissions in Eastern Massachusetts. In its analysis, the HPC notes that while BWFH’s expansion will contribute to increased capacity, it will have a minimal impact on MGB inpatient prices overall (0.36% to 0.4%).

Staff notes DoN’s ability to require the Applicant to limit the project to the need described, and in this context has considered projections included in the HPC’s comment on the ICA about backfill and other issues about what might happen throughout the Applicant system. Conditions recommended in the report are geared accordingly, focused on MGB serving its existing Patient Panel need in these geographies, to which their projected cost savings are tied.

Two of the Applicant’s stated goals for MGB’s system-wide strategy, of which the Proposed Project is part, include “reducing the total cost of health care by developing delivery models that focus on value” and “improving health outcomes across the full continuum of care with an emphasis on the development by Mass General Brigham’s academic medical centers of multidisciplinary centers of excellence for tertiary and quaternary care.” Together, these two goals support patients accessing care in the most cost-effective, appropriate setting. To address concerns that the Proposed Project will enable backfill of newly available capacity either at BWH or BWFH, or with patients who would have otherwise been seen by another provider, the Department recommends a condition that monitors patient transfers to and from BWH, as well as the portion of patients transferring to BWFH from a non-MGB facility, and the percent of patients receiving the services approved in this DoN at BWFH who were not previously part of the MGB Patient Panel.

As noted above, conditions will be in effect to monitor the impact of the Proposed Project and to ensure that MGB is efficiently serving its existing Patient Panel at BWFH. These conditions will mitigate against the concerns articulated by commenters around both backfill at BWFH and impacts of further increase in MGB market share. It is also worth noting that the HPC is requiring MGB to develop a performance improvement plan (PIP) that must include strategies, action steps, and measurable expected outcomes to improve their spending performance. This is the first PIP the HPC has required and speaks to the significant concerns of the HPC regarding MGB’s costs to the health care system. The standard condition set forth at 105 CMR 100.310(A)(18) indicates that should the HPC find that a Holder of a Determination of Need who is required to develop and file a PIP is not fully complying with the PIP, the Holder must report to the Department as to why the Holder should still be deemed in compliance with the terms and conditions of the Determination of Need approval.

Thus, the cost containment components of Factor 2 and Factor 4 are met with conditions.

**Improved Public Health Outcomes**

The applicant states that improved access to timely and necessary services in appropriate settings will improve public health outcomes. The expansion of M/S inpatient beds at BWFH will allow ED boarders and transfer patients who need secondary care to receive care timely at BWFH that will lead to better patient experience and quality outcomes. The relocation and expansion of endoscopy services will improve care delivery and flow as well as provide patients access to more efficient and more advanced care on-site, in a community setting, eliminating the need to transport patients to BWH. Similarly, the addition of 3T MRI imaging will enhance access to a critical diagnostic and treatment tool and reduce the need for transfers to BWH. Lastly, establishing a dedicated observation unit will improve throughput in care spaces, which will ensure patients receive timely care. The Applicant expects that each element of the Proposed Project will not only improve outcomes for BWFH patients, but for those at BWH as well, as increased capacity and services at BWFH is anticipated to reduce demand at BWH, with subsequent improvement to access and flow there as well, particularly in the ED.

In addition to the Proposed Project, to prevent inpatient admissions, BWFH, in partnership with BWH, offers services focused on reducing morbidity of several chronic conditions that are included in the top 10 diseases for BWFH medical/surgical inpatient admissions. These services focus on issues such as addiction medicine, an intensive in-home care and monitoring program for congestive heart failure (CHF) patients (Integrated Care Management Program, iCMP), and the Emergency Department Diabetes Rapid-referral Program. BWFH also implements innovative strategies to reduce morbidity from poorly treated chronic diseases, such as using BWH CHF specialist and BWFH pharmacists to identify inpatients at BWFH with a heart failure diagnosis and assure they receive the best evidenced-based CHF treatment regimen.

**Delivery System Transformation**

The Applicant notes that Delivery System Transformation will be addressed through linking patients with social determinant of health needs to necessary services through its SDoH screening and referral and case management/social work support, both described above in Factor 1b under “Health Equity and Social Determinants of Health (SDoH).”

***Analysis***

Improvement in health outcomes will result from patients receiving timely access to diagnostic tools, and the necessary care and treatment in an appropriate setting. Further, programs and other implemented strategies addressing morbidity of chronic diseases will reduce morbidity and facilitate improvement in public health outcomes.

Central to the goal of Delivery System Transformation is the integration of social services and community-based expertise. The Applicant provided an overview of how patients are assessed and linked to internal support services (e.g., social worker/community health worker) and community-based organizations for social services. BWFH’s integration into MGB’s electronic record system will support its efforts to ensure there is appropriate patient follow-up regarding their social service needs. Further, as an MassHealth ACO, the Applicant is subject to requirements regarding SDoH and patient population needs.

**Summary, FACTOR 2**

Staff notes the disparity between the ICA’s conclusions and those of the HPC and the AGO report, particularly regarding potential impact on cost and market share. Conditions are recommended to mitigate potential increase in either. Additionally, Staff note that while there may be some increased costs with the Proposed Project, its potential to improve public health outcomes and improve delivery system transformation is found to meet the Factor. Therefore, with the recommended conditions, staff finds that Factor 2 is met.

# 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 will not be addressed further in this report.

# Factor 4: Demonstration of Sufficient Funds as Supported by an Independent CPA Analysis and Independent Cost-Analysis

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 scope of the analysis included review of the ten-year consolidated financial projections prepared by Mass General Brigham, the actual operating results for Mass General Brigham for the fiscal years ended 2019 and 2020, the relevant background information, and supporting documents.[[26]](#footnote-26) It performed an analysis of the financial projections prepared by Mass General Brigham Incorporated detailing the projected operations of MGB impact of capital projects involving and ancillary to the Brigham and Women’s Faulkner Hospital in Boston, MA. The review included analysis of key metrics that fall into three categories: liquidity, operating and solvency.[[27]](#footnote-27) The CPA states that in its opinion, the analysis of key financial metrics is reasonable in relation to the company's past performance and peer group based on comparison to market information.

**Revenues**

The revenue category on which the proposed capital projects would have an impact is net patient service revenue (NPSR). The CPA reports the first year in which revenue is present for the proposed capital projects is FY 2024, and that beginning in that year the proposed capital projects would represent approximately0.135% (less than 2 tenths of 1%)of total operating revenues and increase to 0.29% (Less than 3 tenths of 1%)in FY 2025. As a result of its review, based primarily upon the Applicant’s historical operations before taking into account the financial impact of the COVID-19 pandemic in Fiscal Year 2020, the CPA concluded that the revenue growth projected by Management is a reasonable estimation.

**Operating Expenses**

The CPA analyzed each category of historical (FY 2019 and 2020) and projected operating expenses to determine the impact of the proposed capital projects on the consolidated entity and to determine the reasonableness of the Projections for the fiscal years 2021 through 2025. The analysis of the projected results from Fiscal Year 2021 through Fiscal Year 2025 indicated that in FY 2024, the proposed capital projects would represent approximately 0.178% (less than 2 tenths of 1%) of Mass General Brigham operating expenses and increase to 0.270% (less than 3 tenths of 1%)in FY 2025. Accordingly, in the CPA’s opinion, the growth in operating expenses projected by Management reflects a reasonable estimation.

**Non-operating Gains/Expenses and Other Changes in Net Assets**

The various non-operating gains/expenses and other changes in net assets items[[28]](#footnote-28) were analyzed in aggregate, as they are non-operating activity. The analysis showed there were no non-operating expenses projected for the proposed capital projects. Accordingly, the CPA found that the pro-forma non-operating gains/expenses and other changes in net assets are reasonable.

**Capital Expenditures and Cash Flows**

The CPA then reviewed the Applicant’s capital expenditures and cash flows to determine whether as a result of this Proposed Project, the cash flow would be able to support reinvesting sufficient funds for necessary technological upgrades and reinvestment in property, plant and equipment. The CPA considered the current and projected capital projects and loan financing obligations included within the Projections and the impact of those projected expenditures on the Applicant’s cash flow and concluded that the resulting impact of pro-forma capital expenditures on Mass General Brigham cash flows are reasonable.

After considering multiple sources of information including historical and projected financial information for the Applicant, the CPA concluded that “*Because the impact of the proposed capital projects at BWFH represents a relatively insignificant portion of the operations and financial position of Mass General Brigham, I determined that the Projections are not likely to result in insufficient funds available for capital and ongoing operating costs necessary to support the proposed projects*,” and that the Proposed Project is financially feasible. Accordingly, it determined that the Projections are reasonable and feasible, and not likely to have a negative impact on the patient panel or result in a liquidation of assets of MGB.

***Analysis***

Staff is satisfied with the CPA’s analysis of Applicant’s decision to proceed with the Proposed Project.

**Independent Cost-Analysis**

As noted in Factor 2, the Massachusetts Department of Public Health (DPH) required an Independent Cost-Analysis (ICA) for the Proposed Project to evaluate whether the Proposed Project would be consistent with the health care cost containment goals of Massachusetts. Please see the cost section of Factor 2 for discussion and analysis of the ICA.

**Factor 4 Analysis**

Staff finds that the CPA analysis to be acceptable and with conditions, the cost containment element of Factor 4 is met. Thus, with conditions, Factor 4 is met.

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

The Applicant considered and rejected two alternatives to the Proposed Project. The first option explored was maintaining the status quo and the second alternative was related to the renovation of existing or underutilized space. However, the quality, efficiency, and costs of those options were dismissed because they would not provide sufficient space to meet the Proposed Project’s needs.

Maintaining the status quo would not provide the needed services at the hospital, causing delays in care that may impact quality. The inefficiencies of the status quo would not address BWFH’s capacity constraints and throughput challenges, demand for secondary care in the community, patient wait time and need for patients to be transferred to other facilities for diagnosis and treatment of conditions. This option would also not allow the space needed for expanded services, new technologies or improved workflow and operations.

A second alternative examined was constructing a smaller North Wing Addition for the additional inpatient capacity. This option would not meet MGB’s Patient Panel clinical needs and would have resulted in fewer inpatient beds, which would not meet the current and future demand of the Patient Panel. This option would also not provide enough clinical space for the endoscopy, imaging or observation unit. Further, it would not address BWFH’s capacity constraints related to the PACU, endoscopy rooms, imaging and ED boarding, nor would it allow for appropriate patient transfers from BWH. While the capital ($116,331,000) and operating costs ($6,959,255) would be less than the Proposed Project, the second option does not allow for accommodation of the Proposed Project and would require future construction to build enough space for the Proposed Project’s components.

**Factor 5 Summary**

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

# Factor 6: Fulfillment of DPH Community-based Health Initiatives Guideline— Overall Application

Summary and relevant background and context for this application:

The Applicant engaged in a new collaborative process in fulfilling its CHI requirement. It participated in the Boston city-wide collaborative CHNA/CHIP process and supplemented with additional community-specific activities. In coordinating with the larger CHNA/CHIP processes for Boston, the Applicant utilized community-wide surveys, focus groups, and in-person convenings to obtain community input, and further analyzed data from institution-specific priority Boston communities – Hyde Park, Jamaica Plain, Roslindale, and West Roxbury. For this Proposed Project, the Applicant submitted a CHI Narrative, Self-Assessment with an addendum, Stakeholder Assessments, a Community Engagement Plan with an addendum, and the Community Health Needs Assessment and Community Health Improvement Plan from the regional collaborative.

* **In the Community Health Needs Assessment (CHNA) and Community Health Improvement Plan (CHIP)**, the Applicant provided a summary of socio-demographic data, community assets, and highlights of health outcome information related to these topics. Through a collaborative, city-wide process of data collection, analysis, gatherings, and strategic planning, the Applicant identified Housing Affordability and Access, Economic Mobility, Mental and Behavioral Health, and Accessing Services as key priorities. Multisectoral partnerships contributed to the CHIP, identifying efforts and action steps to address the four priorities. The reports and supporting documentation focused on the community health needs for Boston neighborhoods, and the Applicant worked with its Community Advisory Board (CAB) to conduct additional data collection and analysis in priority neighborhoods (Hyde Park, Jamaica Plain, Roslindale, and West Roxbury) to ensure a focus on population geographies prioritized by the Applicant.
* **The Self-Assessment and Addendum** provided a summary of community engagement processes and socio-demographic information, data and highlights related to topics and themes of community needs. Through data analysis, surveys, and key informant gatherings, the Applicant and other partners participating in the city-wide collaborative CHNA and CHIP identified the key priorities and strategies. Additionally, the Applicant worked with its CAB to conduct supplementary analysis in its priority neighborhoods.
* **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 was 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 advisory and allocation committees, 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.
* **The Community Engagement Plan and Addendum** provided background information for, and explanation of existing CHNA/CHIP planning processes. These elements focused on the 2019 Community Health Needs Assessment for Boston as well as the supplementary engagement in the priority neighborhoods and identified the level of engagement in all activity areas.

***Summary Analysis***

As a result of information provided by the Applicant and additional analysis, Staff finds that with the conditions outlined below, and with their ongoing commitment to meaningful community engagement and based on planning timeline, the Applicant has demonstrated that the Proposed Project has met Factor 6.

# Public Comments on the Application

Any person, and any Ten Taxpayer group, may provide written or oral comment at any time during the first 30 days following the Filing Date of an Application, or during the first ten days after a public hearing.

Public Hearing

The Department held a virtual public hearing in connection with the Proposed Project on March 30, 2021. A total of 50 people provided oral comments at the public hearing. None of the oral comments received were in opposition to the Proposed project. Oral comments provided at the public hearing for consideration in DoN’s review and analysis would be ones that address the Applicant’s ability to meet the requirements of each of the relevant factors. All of the oral comments at the public hearing were in support of the Proposed Project. The transcript of the public hearing is available online on the DoN website.

Written Comment

The Department received a total of 9 written comments: 8 written comments were in favor of the Proposed Project and one written comment submitted as part of their TTG was opposed to the Proposed Project. Comments for consideration in DoN’s review and analysis would be ones that address the Applicant’s ability to meet the requirements of each of the relevant factors. The names of those submitting written comments are listed in Appendix B and a summary of the written comments is provided in Appendix C. The comments are separated into two categories: comments that were in favor of the Proposed Project and comments that were opposed to the Proposed Project. The full text of written comments is available online on the DoN website.

Ten Taxpayer Groups (TTGs)

Per the DoN Regulation, any ten taxpayers, organized as a group, may participate in the review of an Application for Determination of Need or request to amend a previously issued Notice of Determination of Need. Said group must register with the Department at any time during the first 30 days following the Filing Date of an Application, or during the first ten days after a public hearing held pursuant to 105 CMR 100.445.

Seven ten taxpayer groups (TTGs) registered in connection with the Proposed Project. Registration information for each TTG is available on the DoN website. Table 15 below provides a brief overview of each registered TTG and their participation in the application review process.

**Table 15: TTGs Overview**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **TTG Name** | **Date Formed** | **Representative** | **Requested Public Hearing** | **Requested Independent Cost Analysis (ICA)** | **Oral Comments Provided at Public Hearing** | **Written Comments Provided** |
| Ten Taxpayers Alliance | March 29, 2021 | Elmer Freeman |   |   |   |  |
| Shields Health Care Group | February 25, 2021 | Kerry Whelan |  ✔ |  ✔ |   |  |
| Wellforce | March 12, 2021 | Rebecca Deusser |  ✔ |  ✔ |   |  |
| North Atlantic States Regional Council of Carpenters TTG  | March 9, 2021  | Joe O’Brien |  ✔ |   |  ✔ |  |
| 1199SEIU Ten Taxpayer Group | March 15, 2021 | Elisabeth Daley |  ✔ |  |   |  |
| Vincent Santosuosso | March 8, 2021 | Vincent Santosuosso | ✔ |  |   |  |
| Center Diagnostic Imaging | March 29, 2021  | Bethany Allen |  ✔ |  ✔ |   |  |

Summary of Public Comments on the ICA

Pursuant to 105 CMR 100.405(D), upon acceptance of the ICA, a 30-day comment period was opened and written comments from Parties of Record in response to the ICA report were accepted. Four comments were submitted by Parties of Record. A majority of the comments were in support of the Independent Cost Analysis (ICA) findings. Two TTGs reiterated that the ICA showed that the Proposed Project aligns with the state’s cost containment goals and “reaffirms the demands being placed on BWFH.” The President of BWFH, David O. McCready, responded to HPC’s analysis that the Proposed Project has met DoN factors and is necessary to meet the Patient Panel’s need, and states that the ICA supports this conclusion.

The Health Policy Commission (HPC) submitted a comment on the ICA for the Proposed Project which were discussed in Factor 2. This entity was the only Party of Record who commented to counter ICA findings.

**Findings and Recommendations**

Based upon a review of the materials submitted and with the addition of certain conditions, set out below and imposed pursuant to 105 CMR 100.360(A), the Department finds that the Applicant has met each DoN factor and recommends approval of this Application for Determination of Need.

**Conditions to the DoN**

Condition 1 – CHI Contribution

1. Of the total required CHI contribution of $7,504,929.10
	1. $1,838,707.63 will be directed to the CHI Statewide Initiative
	2. $5,516,122.89 will be dedicated to local approaches to the DoN Health Priorities
	3. $150,098.58 will be designated as the administrative allowance
2. To comply with the Holder’s obligation to contribute to the Statewide CHI Initiative, the Holder must submit a check for $1,838,707.63 to Health Resources in Action (the fiscal agent for the CHI Statewide Initiative).
	* 1. The Holder must submit the funds to HRiA within 30 days from the date of the Notice of Approval.
		2. The Holder must promptly notify DPH (CHI contact staff) when the payment has been made.

Condition 2 – The Holder shall, on an annual basis, commencing with the approval of this DoN, and continuing for a period of five years after the Proposed Project is complete, provide the following information as part of the annual report required by 105 CMR 100.310(A)(12):

1. Transfer of patients from BWH to BWFH inpatient care
2. The number of patients who transfer from BWH to BWFH.
3. The number and percent of patients clinically eligible to transfer from BWH who do transfer to BWFH (measured by # of patients who transfer from BWH to BWFH/total # of patients clinically eligible for transfer).
4. The acuity level by case mix index of the transferred patients.
5. The acuity level by case mix index for medical/surgical (M/S) patients at BWH.
6. The acuity level by case mix index for medical/surgical (M/S) patients at BWFH.
7. The number of patients transferred from BWFH to BWH including the acuity level of these patients.
8. Separately for the BWH and BFWH EDs:
	* 1. the number of ED boarders awaiting a med/surg bed (with boarding defined as 2 hours from the request for a bed).
		2. Total hours of med/surg boarding and the average hours of boarding per patient.
9. Percentage (with numerator and denominator) of BWFH inpatients who were part of MGB’s Patient Panel prior to the BWFH admission.

The number of BWFH inpatients who were part of MGB’s Patient Panel prior to the BWFH admission

Total patients admitted

1. Provide data included in this table MGB provided in responses to DoN questions (<https://www.mass.gov/doc/mass-general-brigham-incorporated-bwfh-responses-to-don-questions-1/download>) Question 5e.



1. Endoscopy
2. The total number of advanced endoscopy procedures performed at BWFH (advanced endoscopy procedures defined as Endoscopic Retrograde Cholangiopancreatography (ERCP) and Endoscopic ultrasound (EUS)).
3. The number of patients transferred to BWH from BWFH for advanced endoscopy procedures and top reasons for transfer.
4. Observation Units
5. The total of post-procedure patients receiving services in the observation unit.
6. The occupancy rates of these observation beds at BWFH (occupancy rates calculated as number of patients observed over a given period of time to the total number of beds available for that same period of time).
7. Imaging
8. Upon implementation of the MRI, provide baseline data on capacity (scan volume) and inpatient and outpatient wait times (for the proposed measures in Attachment 1).
9. The MRI utilization
	* 1. for ED
		2. inpatient
		3. outpatient
10. wait times (average and median)
	* 1. for ED
		2. inpatient
		3. outpatient

Any of the following will be Referral Indicators related to Condition 2:

1. A material increase in 1f, 1g, 2b, 4c
2. A material decrease in 1a, 1b, 1c, 1d, 1e, 1h, 2a, 3a, 3b

If the DoN Program finds any one or more of the Referral Indicators, the matter shall be referred to the Public Health Council (PHC) for review to determine whether MGB is in violation of one or more of the conditions and thus out of compliance with the terms of this Notice of DoN.

Upon referral to the PHC based upon any one or more of the Referral Indicators, MGB shall have an opportunity to show cause why the PHC shall not find one or more of the Referral

# Attachment 1: Measures for Annual Reporting

The following measures were suggested by the Applicant. These will be provided to DoN program staff in its annual report required by 105 CMR 100.310(A)(12) in addition to the program metrics related to conditions above. 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.

Expansion of Medical/Surgical Inpatient Beds

1. **ALOS in the ED:** This measure reviews the amount of time a patient has to wait in the ED for a medical/surgical inpatient bed prior to being admitted to BWFH. Due to increased inpatient bed capacity, ED ALOS will be reduced.

Measure: This measure will calculate the average length of stay time based on the difference between the Arrival Date/Time and the ED Departure Date/Time for all ED patients that were admitted to an inpatient medical/surgical unit.

1. **Bed Request from ED to Patient Departure from the ED:** This measure demonstrates when a patient has been identified by the provider and when the patient actually leaves the ED. This is an even more sensitive indicator than ALOS. Factors that affect this measure include the following: inpatient bed is still occupied; bed assigned to bed ready time (i.e., inpatient bed needs to be cleaned); and bed ready to ED departure time (i.e., work that occurs between ED to inpatient clinicians). With increased inpatient bed capacity, there will be additional ready, clean and available inpatient medical/surgical beds, and therefore bed request to patient departure time will be reduced.

Measure: This measure will calculate the average time based on the difference between the IP Bed Request Date/Time and ED Departure Date/Time for all ED patients that were admitted to an inpatient medical/surgical unit.

1. **Hospital Acquired Pressure Injuries (HAPI):** BWFH will review the incidence of HAPI across its medical/surgical patients. Due to increased medical/surgical inpatient beds, resulting in timelier care in the appropriate setting, patient outcomes will improve and the incidence of HAPI should decrease.

Measure: The Applicant will collect and provide data for BWFH using the NDNQI measure on pressure injuries as follows: percent of surveyed patients with HAPI Stage 2 and above. This measure is collected in a random surveillance survey, therefore census reflects the census on the surveillance day.Numerator = number HAPI; denominator = total med/surg census. This measure will be reported annually showing data by month.

Establishment of Observation Unit

1. **OR Holds:** The Proposed Project seeks to ensure timely patient movement across the peri-procedural areas to maximize patient flow for BWFH patients. Patients moving to the observation unit will allow a more rapid turnover of post anesthesia care unit (“PACU”) beds for patients leaving the operating room.

Measure: The Applicant will collect and provide data related to operating room hold times as follows: (a) Amount of time a patient waits after his/her procedure is completed in the OR until the patient arrives in the PACU; and (b) Any policy changes instituted as a result of the Applicant’s evaluation. The numerator for this metric is the total number of minutes from ‘ready to recovery’ to ‘out of room” for all cases within a period of time and the denominator for this metric is the total expected amount of hold hours based on volume (2.5 minutes/case) for all cases within a period of time.

1. **ALOS in the PACU:** This measure reviews the amount of time a patient is in the PACU prior to discharge. Day surgery patients with a longer recovery period before discharge will move to the observation unit, decreasing the amount of time a patient recovers in the higher intensity and cost PACU.

Measure: The Applicant will collect and provide data related to PACU ALOS as follows: (a) ALOS for patients in the PACU; and (b) Any policy changes instituted as a result of the Applicant’s evaluation. The measure will be the PACU LOS for day surgery patients discharged from the observation unit compared to a baseline of PACU LOS for day surgery patients discharged from PACU. This measure will not have a numerator/denominator.

Relocation and Expansion of Endoscopy

1. **Wait Times:** The Proposed Project seeks to ensure timely access to endoscopy services for BWFH patients.

Measure: Time interval from when colonoscopy was initiated for scheduling in EPIC to the date of the colonoscopy procedure. The measure will be the amount of time elapsed between when colonoscopy was initiated for scheduling in EPIC to the date of the colonoscopy procedure. This measure will not have a numerator/denominator.

1. **Facility 7-Day Risk-Standardized Hospital Visit Rate after Outpatient Colonoscopy:** BWFH will review the rate of risk-standardized, all-cause, unplanned hospital visits within 7 days of an outpatient colonoscopy among Medicare FFS patients aged 65 years and older, utilizing National Quality Forum (“NQF”) Measure # 2539.

Measure: The Applicant will collect and provide data related to NQF Measure # 2539 as follows: Numerator = Unplanned hospital visits within 7 days of a qualifying colonoscopy; and Denominator = Colonoscopies performed for Medicare FFS patients aged 65 years and older.

1. **Appropriate Follow-Up Interval for Normal Colonoscopy in Average Risk Patients:** BWFH will review the total number of patients receiving screening colonoscopy and the percentage with the appropriate follow-up interval as specified in NQF Measure # 0658.

Measure: The Applicant will collect and provide data related to NQF Measure # 0658 as follows: Numerator = Patients who had a recommended follow-up interval of at least 10 years for repeat colonoscopy documented in their colonoscopy report; and Denominator = All patients aged 50 years and older receiving screening colonoscopy without biopsy or polypectomy. To be reported by age and race/ethnicity.

Addition of 3T MRI Imaging

1. **Wait Times:** The Proposed Project seeks to ensure timely access to MRI services for outpatient, inpatient and ED requests, as well as timely reporting of results.
2. **Outpatient Wait Times:** Time interval (in days) from when the case was initiated for scheduling in EPIC to the next available outpatient appointment.

Measure: The Applicant will collect and provide the following: (a) Median number of days between ordering elective MRI and imaging test performed; (b) Median number of hours from the completion of a patient's MRI service to finalization of radiology report; and (c) Any policy changes instituted as a result of evaluation of increasing days or hours. This measure will not have a numerator/denominator.

1. **Inpatient/ED Wait Times:** Time interval (in minutes/hours) between the exam order generation to completion of the exam.

Measure: The Applicant will collect and provide the following: (a) Median time between

ordering inpatient/ED MRI (reported separately) and imaging test performed; (b) Median time from the completion of a patient's MRI service to finalization of radiology report; and (c) Any policy changes instituted as a result of evaluation of increasing time. This measure will not have a numerator/denominator.

1. **Important Finding Alert (“IFA”):** BWFH will review the percentage of MRI scans that triggered an IFA that the radiologist conducted a critical value report.

Measure: The Applicant will collect and provide the following data: (a) % of IFAs where a critical value report was indicated; (b) % of critical value reports radiologists performed over the total number of IFAs; and (c) Any policy changes instituted as a result of increasing critical value reporting. The Applicant will collect and submit data as follows: (1) Numerator = Number of IFA; Denominator = Number of MRI exams performed; (2) Numerator = Number of critical value reports conducted; Denominator = Number of IFAs.

1. **Imaging Efficiency Measures:** As is required for payment determinations, the Applicant will report on one Centers for Medicare and Medicaid (“CMS”) Outpatient Imaging Efficiency (“OIE”) measure that is publicly reported within the Hospital Outpatient Quality Reporting Program.

Measure: MRI Lumbar Spine for Low Back Pain (OP-8). This publicly reported OIE measure is calculated using data from hospital outpatient claims paid under Medicare’s Outpatient Prospective Payment System (“OPPS”). The Applicant will collect and provide the following: Numerator: = Number of patients who had MRI of Lumbar Spine with a diagnosis of low back pain without claims-based evidence of prior antecedent conservative therapy; Denominator = Number of patients who had MRI of Lumbar Spine with a diagnosis of low back pain on the imaging claim.

# Appendix A: Other Renovation Projects

Other renovation projects primarily entail work that must be done on campus to allow for the Proposed Project. These projects include:

* Relocation of the Patient Experience Department;
* Straightening of a corridor that will take part of the dining room of the cafeteria;
* Addition of a dining room (to compensate for the corridor mentioned in above bullet);
* Addressing disruptions of pre-existing function at access points on each floor: staff lactation room location, Infectious Disease physician office replication, conference room, and clinical support staff offices.

# Appendix B: Names of People Who Submitted Written Comments

|  |  |  |  |
| --- | --- | --- | --- |
| **First Name** | **Last Name**  | **Middle Initial**  | Title and Organization  |
| Courtney | Lemoine |   | Resident of Boston |
| David | Pilgrim | M | Chief of Clinical Neurology, Brigham and Women’s Faulkner Hospital |
| Margaret | Jolliffe |  | Executive Director, Brookside Community Health Center |
| Marty | Martinez |  | Chief of Health and Human Services,City of Boston, Mayor's Office of Health and Human Services |
| Francis | Callahan | X | President, Massachusetts Building Trades Council |
| Edward | Coppinger | F | State Representative, 10th Suffolk District, The General Court of Massachusetts |
| Mike  | Rush |   | State Senator, Norfolk and Suffolk District, The General Court of Massachusetts |
| Matt | O’Malley |   | City Council President, City of Boston Councilor, District 6 |
| Tracy | Sylven | M | Director of Community Health and Wellness, Brigham and Women’s Faulkner Hospital |

# Appendix C: Summary of Written Comments Submitted on the Proposed Project (Summarized by Factor)

**Factor 1a: Patient Panel Need**

* BWFH needs the additional five-story building to address:
	1. Overcrowding of ED,
	2. Limited bed capacity— high occupancy rates of inpatient beds that impacts transfers (such as from BWH),
	3. Long wait times and extended boarding,
	4. Medicine patients requiring longer stays,
	5. Capacity constraints (e.g., having one MRI),
	6. Needing to transfer patients or make referrals, and
	7. Increasing procedural volumes.
* Additionally, the Proposed Project helps to ensure BWH has the capacity to meet the needs of high acuity patients

**Factor 1b: Public Health Value**

The Proposed Project will improve health outcomes, quality of life, and promote health equity in the following ways:

* Current BWFH patients commented about the convenience and accessibility as well as excellent care they have received at the community hospital.
* Patients will be able to get care in their local community, and patients want to come to BWFH for its privacy and comfort including access to private rooms.
	1. BWFH provides specialty services in a friendly and welcoming environment.
* Patient care will be enhanced with increased treatment modalities.
	1. MRI is a “powerful instrument.”
* As a community hospital, BWFH does not have teaching and research responsibilities so they can focus on patient care.
* One medical staff described BWFH as a “physical plant is starting to burst at the seams.”

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

The Proposed Project will improve efficiency and care coordination in the following ways:

* It will enable timelier access to care for patients and create efficiencies and improve throughput.
* The additional MRI unit will allow for shorter waits for scans and ability to make earlier decisions about care.
* Patients access 3T MRI services at BWFH and not need to travel to another facility.

**Factor 1f: Competition on price, total medical expenses (TME), costs and other measures of health care spending**

* Provide high-quality care at lower costs and in appropriate settings (e.g., community hospital versus academic medical centers).

**Factor 6: Fulfillment of DPH Community-based Health Initiatives Guideline: Overall Application**

* Investments in community health initiatives from the Project (contribution of over $7 million) will be beneficial for the community such as addressing the social determinants of health.

**Summary of Written Comments in opposition to the Proposed Project**

**Factor 1f: Competition on price, total medical expenses (TME), costs and other measures of health care spending**

* The Ten Taxpayer Alliance – CCHERS, Inc. TTG stated that Proposed Project will increase health care costs and would preclude MassHealth members from accessing care at MGH. (comment submitted as a part of their TTG).

**Factor 2: Health Priorities** - **Public Health Outcomes:**

* The Project will crowd out other funding in the state budget for public good, such as, housing, education, and transportation. (comment submitted as a part of their TTG).

# Appendix D: Population Health Management (PHM) Strategies

* **Continuous Care Initiative:** The Continuous Care Initiative works to measure and improve patient experience of continuity during inpatient admissions and is a two-part program: Continuity Surveys and Continuity Visits. Using a validated survey instrument, continuity surveys involve patients being surveyed about their experience in the hospital at two time points, once in the inpatient unit and once post-discharge. Continuity visits are a brief “check-in” during an admission between a patient and his/her care team and his/her longitudinal physician(s).
* **eConsults and eVisits:** eConsults are an innovative way to deliver outpatient specialist care, helping to reduce unnecessary specialist utilization and improve access to care for the Applicant’s sickest patients. Primary Care Providers (“PCPs”) or other care providers initiate an eConsult order in Epic, and then receive structured guidance from a specialist within 3 business days. This provides rapid access to specialist expertise compared with waiting for a traditional office visit to implement the optimized course of treatment. eVisits are telemedicine modalities designed to avoid unnecessary in-person office visits and to save providers time in evaluating and managing patients. eVisits are condition-specific questionnaires addressing over 50 chronic conditions. eVisits are intended for routine follow-up with an established ambulatory patient.
* **Enhanced Recovery After Surgery (ERAS):** ERAS is a comprehensive, patient-centered, evidence-based approach to perioperative care for planned surgeries. Across a range of complex surgeries, ERAS has been shown to empower patients as partners in their own care, reduce complications, improve outcomes, decrease length of hospital stay, and reduce care costs.
* **Medicaid ACO:** BWFH is part of the Mass General Brigham MassHealth ACO. As part of the ACO, additional care management programming has been implemented, and established programming has been expanded to help meet the needs of patients, while simultaneously working towards reducing preventable hospitalizations and ED visits and improving care transitions.
* **Patient Reported Outcome Measures (PROMs):** PROMs use clinically validated questionnaires to collect patient-reported assessments of their own health status across various health domains. PROMs are collected through the Patient Portal or on an iPad. Responses are automatically saved in Epic and can be reviewed by providers as part of shared decision-making during the visit or before/after clinical intervention procedures to monitor longitudinal progress.
* **Mass General Brigham Mobile Observation Unit (MOU):** The MOU provides homebased

urgent care for patients experiencing at-risk medical events believed to be treatable with enhanced home care. The MOU is a high-quality alternative to emergency services and hospitalization. It is available for Mass General Brigham patients who would benefit from additional medical treatment and support in the safety and comfort of their home.

* **Skilled Nursing Facility (SNF) 3-Day Waiver:** The 3-Day Rule Waiver is a CMS program that provides Medicare ACO patients the opportunity to have a covered SNF stay without the 3-day inpatient stay normally required qualify for SNF benefits. This program promotes the right level of care at the right time and is instrumental in helping BWFH with ongoing inpatient capacity issues and cost savings.

* **Stay Connected Program (SCP):** SCP provides a bundle of interventions, pre- and

post-discharge, to improve care transitions of vulnerable patients at high risk of readmission

based on a high-risk indicator or clinical condition. SCP provides Social Work or Nurse-led

care coordination in the 30-day post-discharge period, assistance with scheduling follow-up

appointments prior to discharge, enhanced pharmacy services, and in-home nurse

practitioner visits as needed. SCP’s “opt-in” conditions include CHF, COPD, Cirrhosis and

Pneumonia.

* **Transition Care Management Program:** A program that utilizes the naviHealth tool to

manage episodes of care for Medicaid ACO patients admitted to one of the Applicant’s

Collaborative SNFs. When a Medicare ACO patient is admitted to a SNF, the Transition

Nurse Case Manager works closely with the SNF Care Team to manage their care via

weekly Medicare Team meetings, telerounds and bedside visits with patients. Patients are

managed closely for appropriate length of stay and readmission avoidance. When the

patient is ready for discharge, the Transition Case Manager works closely with Mass

General Brigham Home Care to ensure a smooth transition home. Once the patient is

discharged home, the case manager verifies the patient is receiving home care services

and confirms any follow-up appointments and transportation to those appointments.

* **Variation:** The Variation Team provides analytic and reporting resources to show clinicians

how they are performing compared to each other, and how they are performing over time,

in a variety of areas. Variation reporting is used as a medical management tool.

* **Virtual Visits:** This program provides a real time, synchronous telemedicine modality between a patient and provider, using secure, HIPAA compliant, video software.

# Appendix E: Summary of ICA Data Sources and Listing of Questions Addressed Through Literature Search

**Center for Health Information Analysis (CHIA) Data Sources**

**CHIA Hospital Inpatient Discharge Database** – Includes discharges from Massachusetts General Acute Care Hospitals.

* 2015 through 2019 Hospital Inpatient Discharge Databases were used to examine trends in inpatient utilization at MGH.

**Massachusetts All-Payer Claims Database (APCD)** – All fully insured commercial health plans with membership in Massachusetts (including Medicare, MassHealth, and commercial health plans) are required to submit medical claims, including claim line level data on each adjudicated claim.

**Inpatient Relative Price Data** – Published annual analysis of relative prices intended to evaluate variation in reimbursement across providers after controlling for patient acuity, service mix, and health plan product differences.

* Relative price measures used as a proxy for measuring relative differences in reimbursement across hospitals within the same health plan network.

**Centers for Medicare and Medicaid (CMS) Data Sources**

**Medicare Claims Data**

* APCD does not include data on care provided to beneficiaries enrolled in Original Medicare; Original Medicare reimburses providers directly.
* Relied on two Medicare Claim files:
	+ Medicare Outpatient File – includes facility claims submitted by institutional outpatient providers, including hospital outpatient departments, outpatient rehabilitation facilities, and renal dialysis facilities.
	+ Medicare Carrier File – includes claims submitted by professional providers and certain facility claims.

**Medicare Inpatient Prospective Payment System Tables**

* To determine the relative rates paid to hospitals for providing inpatient care to beneficiaries enrolled in Original Medicare,
* Annual Impact File for information on hospital-specific adjustments to the national payment rates.
* Base reimbursement rates for inpatient hospital stays separately for each GAC hospital in Massachusetts.

**Medicare Outpatient Prospective Payment System Tables**

* Rates paid to facilities for providing outpatient care relative to Medicare reimbursement rates.
* Prices paid by commercial plans, Medicare health plans, and MassHealth managed care plans relative to Original Medicare reimbursement rates when estimating the price-cost effects of potential shifts in outpatient facility utilization patterns.

**Medicare Physician Fee Schedule**

* Reflects original Medicare’s reimbursement rates for physician services.
* Accounts for differences in costs across services and across geographies.
* Relied on 2018 Medicare Fee Schedule files that are published by CMS.

**National Plan and Provider Enumeration System (NPPES)**

* Maintains an updated database of providers in which each record reflects a unique NPI.
* Relied on the NPPES database in determining the ownership of facilities and each facility’s ZIP Code.

**Additional Data Sources**

**UMass Donahue Institute Population Projections (UMDI)**

* Produces population projections for Massachusetts, with the most recently available estimates extending to the year 2040 in five-year increments.
* Modeling for demographic projections of patients residing in the service areas of the Proposed Project in 2025 and 2030.

**Literature Review**

CRA utilized existing literature to address several issues

* Competition Between Health Care Providers - In assessing the effect of the proposed project on MGB’s bargaining leverage, relied on a measure of hospital market concentration known as the Herfindahl-Hirschman Index (HHI).
* The Relationship Between Hospital Concentration and Inpatient Prices
* Effect of Entry and Expansion on Competition in the Provision of Health Care Services
* The Potential for Supply-Induced Demand
* The effect of additional imaging capacity on demand for surgery and inpatient care
* The effect of reduced boarding time in hospital Emergency Departments or Post-Anesthesia Care Units
* Who bears the burden of higher costs or benefits from cost savings?
1. Center for Health Information and Analysis. Massachusetts Hospital Profiles. Technical Appendix. https://www.chiamass.gov/assets/docs/r/hospital-profiles/2019/FY19-Massachusetts-Hospital-Profiles-Technical-Appendix.pdf [↑](#footnote-ref-1)
2. List of MassHealth Accountable Care Organizations and Managed Care Organizations

https://www.mass.gov/service-details/full-list-of-masshealth-acos-and-mcos [↑](#footnote-ref-2)
3. Massachusetts Health Policy Commission. Health Policy Commission ACO Certification Program Accountable Care Organizations In Massachusetts: Profiles of The 2019 and 2020 HPC-Certified ACOs. Available:

https://www.mass.gov/doc/accountable-care-organizations-in-massachusetts-profiles-of-the-2019-and-2020-hpc-certified-acos/download [↑](#footnote-ref-3)
4. 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. [↑](#footnote-ref-4)
5. HSA 4 includes the following cities/towns: Acton, Arlington, Ashland, Bedford, Belmont, Boston, Boxborough, Braintree, Brookline, Burlington, Cambridge, Canton, Carlisle, Chelsea, Cohasset, Concord, Dedham Dover, Foxborough, Framingham, Hingham, Holbrook, Holliston, Hopkinton, Hudson, Hull, Lexington, Lincoln, Littleton, Marlborough, Maynard, Medfield, Millis, Milton, Natick, Needham, Newton, Norfolk, Northborough, Norwell, Norwood, Quincy, Randolph, Revere, Scituate, Sharon, Sherborn, Somerville, Southborough, Stow, Sudbury, Walpole, Waltham, Watertown, Wayland, Wellesley, Westborough, Weston, Westwood, Weymouth, Wilmington, Winchester, Winthrop, Woburn, and Wrentham. [↑](#footnote-ref-5)
6. The Applicant explained that the data does not include referral patients because those patients are not managed by a MGB PCP and are not included in MGB’s risk contracts. [↑](#footnote-ref-6)
7. BWFH accepts only appropriate secondary cases. From FY17-19, approximately 96% of patients transferred from BWH to BWFH were for Medicine services. The remaining 4% of transfers were Addiction, Breast Surgery, General/Gastrointestinal Surgery, and Orthopedics patients. The most common diagnoses for transfer patients are Pneumonia, Diabetes, Addiction/Chemical Dependency, Congestive Heart Failure and Chronic Obstructive Pulmonary Disease. [↑](#footnote-ref-7)
8. According to the University of Massachusetts’ Donahue Institute’s (“UMDI”) Long-Term Population Projections for Massachusetts Regions and Municipalities. [↑](#footnote-ref-8)
9. Adults 65-74 account for double the proportion of all hospital discharges relative to their population size and adults 75-84 account for triple; Lauren Wier Et Al., Healthcare Cost And Utilization Project Statistical Brief #103: Hospital Utilization Among Oldest Adults, 2008 (Agency for Healthcare Research & Quality 2010), available at https://www.hcupus.ahrq.gov/reports/statbriefs/sb103.pdf. [↑](#footnote-ref-9)
10. Top disease groups: Addiction/Chemical Dependency, Osteoarthritis, Congestive Heart Failure, Septicemia, Urinary Tract Infection, Breast Cancer, Pneumonia Including Aspiration Pneumonia, Chronic Obstructive Pulmonary Disease, Degenerative Spine and Disc Injury, and Diabetes Mellitus. [↑](#footnote-ref-10)
11. These procedures require 75-minute or greater lengths of stay afterward to ensure that post-procedure complications do not occur. [↑](#footnote-ref-11)
12. Colorectal Cancer: Screening. https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/colorectal-cancer-screening. Accessed December 15, 2021. [↑](#footnote-ref-12)
13. Smith-Bindman, R., Miglioretti, D. L., & Larson, E. B. (2008).; Lang, K., Huang, H., Lee, D. W., Federico, V., & Menzin, J. (2013). National trends in advanced outpatient diagnostic imaging utilization: an analysis of the medical expenditure panel survey, 2000-2009. BMC medical imaging, 13(1), 1-10. [↑](#footnote-ref-13)
14. The PHM strategies can be found in Appendix C and page 35 in the Application. Also, it is to be noted that PHM strategies typically are implemented in the physician office setting and are not directly utilized by the hospital. [↑](#footnote-ref-14)
15. Dimensions of Triple Aim: 1) improving the health of populations; 2) enhancing the patient experience of care (including quality and satisfaction); and 3) reducing the per capita cost of health care. [↑](#footnote-ref-15)
16. Christopher Caspers, M.D., Observation Care for Elderly Patients, AM. COLLEGE OF EMERGENCY PHYSICIANS: ACEP OBSERVATION SECTION NEWSLETTER (Sep. 2018), available at https://www.acep.org/how-weserve/sections/observation-medicine/news/september-2018/observation-care-for-elderly-patients/. [↑](#footnote-ref-16)
17. The Campaign requires hospital leaders to accelerate progress in the following areas: (1) Increasing the collection and use of race, ethnicity, language preference and other socio-demographic data; (2) Increasing cultural competency training; (3) Increasing diversity in leadership and governance; and (4) Improving and strengthening community partnerships. [↑](#footnote-ref-17)
18. Initiative includes a roadmap for achieving equality within the Applicant’s system and eliminating racism and oppression faced by the Applicant’s patients, communities, and staff. Key elements of the United Against Racism plan focuses on addressing racism through the lens of patient care, leadership and culture across the Applicant’s system, and through partnerships with the communities, and organizations within the community, that Applicant serves. [↑](#footnote-ref-18)
19. Spanish, Portuguese, Chinese, Arabic, and Russian; most prevalent languages among MGB MassHealth patients [↑](#footnote-ref-19)
20. Boyle et al., Emergency Department Crowding: Time for Interventions and Policy Evaluations, EMERG. MED. INT. 838610 (2012), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3290817/; D.M. Fatovich, Access block causes emergency department overcrowding and ambulance diversion in Perth, Western Australia, 22 EMERG. MED. J. 351, 352-54 (2005), available at http://emj.bmj.com/content/emermed/22/5/351.full.pdf; D.M. Fatovich, Entry overload, emergency department overcrowding, and ambulance bypass, 20 EMERGENCY MED. J. 406, 408-09 (2003), available at http://emj.bmj.com/content/emermed/20/5/406.full.pdf; [↑](#footnote-ref-20)
21. Patients currently receive observation-like services in the hospital’s PACU, interventional radiology recovery rooms, and inpatient floors. [↑](#footnote-ref-21)
22. A statewide target for the rate of growth in total health care expenditures. [↑](#footnote-ref-22)
23. Some examples include: Mass General Brigham Mobile Observation Unit (“MOU”), an alternative to emergency services

and hospitalization, that provides home-based urgent care for patients experiencing at-risk medical events believed to be treatable with enhanced home care; eConsults and eVisits; and virtual visits. [↑](#footnote-ref-23)
24. https://news.harvard.edu/gazette/story/2019/06/mgh-e-consults-can-streamline-simplify-care-and-reduce-need-for-visits/ [↑](#footnote-ref-24)
25. The ICA simulation assumes that “whenever possible, BWFH admits patients that would have otherwise been admitted to Brigham and Women’s Hospital” (ICA p.45) [↑](#footnote-ref-25)
26. Five-Year Pro-Forma Statements (Projections) for the fiscal years ending 2021 through 2025, provided December 18, 2020 and updated on January 8, 2021; projected income statements for the BWFH Expansion Project, including detailed assumptions for the fiscal years 2024 through 2038, provided February 12, 2020; DoN projections (income statements, capital and debt service) for the fiscal years 2021 (budget) through 2030, provided December 15, 2020; Multi-Year Financial Framework of Mass General Brigham Incorporated for the fiscal years ending 2021 through 2025 prepared for Mass General Brigham Finance Committee as of December 3, 2020; Schedule of Estimated Total Capital Expenditure (Factor 4 Form F4a.ii) provided December 29, 2020; Consolidating Balance Sheet and Statements of Operations of BH and Affiliates, which includes BWFH, as of and for the years ended September 30, 2017, 2018, and 2019, provided March 2, 2020; Partners Finance Committee BWFH Building Update – prepared as of September 27, 2019; audited Financial Statements of Mass General Brigham Incorporated and Affiliates as of and for the years ended September 30, 2020 and 2019; company website – https://www.massgeneralbrigham.org; news publications and other public information about the Company; Determination of Need Application Instructions dated March 2017; and craft Determination of Need Factor 1, provided December 29, 2020 and updated on January 14, 2021. [↑](#footnote-ref-26)
27. Liquidity metrics, measure quality and adequacy of assets to meet current obligations as they come due. Operating metrics, such as earnings before interest, taxes, depreciation and amortization ("Adjusted EBITDA") are used to assist in the evaluation of management performance in how efficiently resources are utilized. Solvency metrics, such as Debt to Equity, measure the company's ability to service debt obligations. [↑](#footnote-ref-27)
28. Relate to investment account activity (realized and unrealized), philanthropic and academic gifts, benefit plan funded status, fair value adjustments and other items [↑](#footnote-ref-28)