

## **APPENDIX 2**

### **NARRATIVE**

## 2. Project Description

Almost four years after the start of the COVID-19 pandemic, Massachusetts General Hospital (“MGH” or “Hospital”) continues to struggle daily with unprecedented overcrowding, particularly in its Emergency Department (“ED”). For the past 16 months, the MGH ED has operated nearly every day in Code Help<sup>1</sup> or Capacity Disaster<sup>2</sup> status, which represent critical levels of ED crowding. To help address this crisis and reduce capacity constraints at the Hospital, Mass General Brigham Incorporated (“Holder”) requests approval for a change to the previously issued Determination of Need (“DoN”) DoN #MGB-20121612-HE. The proposed change will allow the Hospital to add 94 inpatient beds instead of relocating existing beds to the new building under the previously approved DoN. Specific to inpatient services, the original request was for the construction of 482 private beds through a combination of relocating 388 beds from its existing main campus facilities and the incremental addition of 94 beds to the Hospital’s license. The Department of Public Health (“Department”) approved the construction of a new building with 482 replacement beds but did not approve the request for an incremental 94-bed increase, requiring the entire construction project to be based on the closure and relocation of 482 existing beds at the Hospital (“Approved Project”). The Hospital now requests approval to use 94 inpatient beds in existing rooms when the new building opens, resulting in a net increase of 94 licensed beds (“Proposed Change”) for the patients who are currently being cared for at MGH, but in stretchers and chairs instead of beds, in hallways instead of rooms, and waiting for days instead of hours. The Proposed Change does not involve any expenditure. Accordingly, the Approved Project’s maximum capital expenditure (“MCE”) of \$1,875,274,238.00 will remain unchanged.

### 10. Amendment

#### 10.5.a Describe the proposed change.

MGH is unique because it serves as an internationally renowned academic medical center that accepts some of the most medically complex patients in the state and simultaneously operates as the community hospital of choice for surrounding communities like Boston, Chelsea, Revere and Winthrop. High historical, current, and projected demand, as demonstrated by unprecedented ED boarding, has forced the Hospital to care for admitted patients in the ED and other settings due to inadequate inpatient bed capacity. Under the Approved Project, the 482 replacement beds in the new building are to be relocated from existing units on the Hospital’s campus without any net increase in the number of licensed beds. The Proposed Change will add 94 beds to the Hospital’s license without any renovation or capital cost by maintaining beds in their existing space instead of relocating them to the new building. This incremental increase in the Hospital’s inpatient capacity will provide needed capacity in the appropriate setting for the existing patients who continue to overcrowd the MGH ED on a daily basis.

While data provided throughout this request demonstrates clear need for the Proposed Change, insufficient access to inpatient beds has an immediate and detrimental impact on patients across the Hospital. A snapshot of a recent mid-weekday at MGH shows the magnitude of the Hospital’s capacity issues. At 7AM on Wednesday, January 17, 2024, before the day’s influx of new patients, the Hospital’s operational capacity was 96.5%, with 156 patients already in the ED, including 95 boarders and 32 additional patients in other areas of the hospital or approved transfer patients at community hospitals waiting for a bed to open. A patient “boarding” in the ED is a patient who is sick enough to be admitted to the hospital but must remain in the ED because there are no available hospital beds. These patients are often waiting in stretchers or chairs in hallways or in other temporary spaces. When the Hospital is already in this state before the day even begins, new patients presenting to the ED wait longer to be treated as patients boarding in the ED occupy ED beds. Every day, between 50 and 80 patients spend the first night of their hospitalization in the

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<sup>1</sup> Code Help: All ED patient rooms are full and all of the hallway stretcher spaces with cardiac monitoring capacity are also full.

<sup>2</sup> Capacity Disaster: There are  $\geq 45$  boarders in the MGH ED.

ED, which is not an appropriate or therapeutic environment and contributes significantly to clinician burnout and frustration. Accordingly, inadequate bed capacity negatively impacts patients across the Hospital in addition to staff who are required to work under these increasingly stressful conditions. The Hospital has improved inpatient throughput and efficiency and developed innovative care models yet still faces overwhelming and increasing ED crowding with no end in sight. Adding more beds to the Hospital will greatly help alleviate this capacity crisis, enhance access for patients, and substantially improve the overall working conditions for clinicians and staff.

#### **10.5.b Describe the associated cost implications to the Holder.**

The Proposed Change does not require any renovation or further construction and can be achieved without any additional expenditures.

Further, the Hospital expects that operating expenses associated with approval of the Proposed Change will be neutral or net positive because staffing needs will not change. Patients who will be cared for in the 94 beds represent those who are currently seeking care at the Hospital today but spend significant time boarding in the ED or alternate care spaces while waiting for an inpatient bed, receiving care in suboptimal spaces such as hallways. These are not conditions of care that patients expect or deserve, nor are they optimal conditions for clinicians and staff to be delivering care. While the Hospital has taken several steps to help address this crisis and reduce capacity constraints that are within its control, the current practice of caring for admitted patients in the ED, PACU and other alternative spaces will continue without an increase in the number of inpatient beds at the Hospital, further resulting in inefficiency and duplication of resources associated with boarding.

#### **10.5.c Describe the associated cost implications to the Holder's existing Patient Panel**

The Hospital continues to deploy strategies to address capacity constraints including efforts to direct admissions to community hospitals, including a new affiliation with Cambridge Health Alliance. When clinically appropriate, acceptable to the patient, and the community hospitals have open bed capacity, these admission pathways can help to reduce the cost of healthcare. The Mass General Capacity Coordination Center collaborates with clinicians across the Hospital to verify that patients requesting transfers from other hospitals cannot receive the same level of care at their location; operates programs that reduce the length of stay for patients who were transferred from other hospitals and supports inpatient units facing barriers to discharge or care progression, including challenges with tests, imaging, procedures, or other necessary services. Through these initiatives, MGH has reduced community admissions while simultaneously increasing tertiary care admissions. However, the solution to the Hospital's capacity challenges requires a multifactorial response, including additional inpatient bed capacity.

To that end, MGH does not anticipate any cost implications to its Patient Panel due to the Proposed Change. The Hospital currently provides inpatient medical/surgical services, and the additional beds will not result in any change to price for the Holder's existing patient panel.

#### **10.5.d Provide a detailed narrative, comparing the approved project to the proposed Significant Change, and the rationale for such change.**

Under the Approved Project, MGH must relocate 482 beds upon opening the new building and concurrently close the existing space where those beds are located. The Proposed Change will add 94 beds to the Hospital's licensed by maintaining 94 of the 482 inpatient beds in existing facilities that provide critical access to inpatient services for the community. As detailed in the original DoN application, MGH has been challenged with capacity issues since before the pandemic and these issues have only intensified in recent years, escalating this challenge into a full-blown crisis. The Hospital continues to struggle daily with unprecedented overcrowding, with conditions only worsening with each passing year. On January 11, 2024, there were 103 patients boarding in the ED, marking one of the most crowded days the Hospital has experienced in its two centuries caring for Boston and its surrounding communities.

Having more patients in need of a bed than the number of beds available negatively impacts patients and staff every day with no relief in sight. Patients who have been admitted and spend their initial nights in the ED, PACU/recovery bay, or alternative spaces like stretchers or chairs in hallways experience greater dissatisfaction with the physical environment. These areas do not promote healing due to higher noise levels, less privacy and convenient access to food and bathrooms, and limited space for family/visitors. In addition, ED overcrowding/boarding is associated with longer lengths of stay and higher morbidity and mortality, increasing the risk to patients for poor outcomes.<sup>3</sup> Staff and clinicians feel a similar level of stress associated with the unpredictable, high volume of work in spaces that were not intended for inpatient level care, leading to higher rates of burnout. The requested 94 beds will improve throughput and care delivery through the timely movement of patients out of the ED to inpatient floors, in turn improving patient experience, staff satisfaction, and health outcomes.

The table below illustrates how MGH capacity challenges have grown since the original DoN application was filed. The table includes two views: one based on all licensed beds even if they are not usable and one based on available beds which accounts for closed headwalls attributable largely to challenges using double occupancy rooms. For example, double occupancy rooms cannot accommodate two patients in situations involving infectious disease, behavioral and mental health issues or end of life.

**Table 1: Historical Utilization**

<b>Metric</b>	<b>FY19 Licensed Beds<sup>4</sup></b>	<b>FY19 Available Beds<sup>5</sup></b>	<b>FY23 Licensed Beds</b>	<b>FY23 Available Beds</b>
Beds	900	836	900	836
Inpatient Days	280,843	280,843	292,078	292,078
Bedded Outpatient Days <sup>6</sup>	12,120	12,120	12,013	12,013
Total Days	292,963	292,963	304,091	304,091
Inpatient Occupancy	85.5%	92.0%	88.9%	95.7%
Bedded Outpatient Occupancy	3.7%	4.0%	3.7%	3.9%
Total Occupancy	89.2%	96.0%	92.6%	99.7%

The industry standard for a reasonable occupancy rate is around 85% for medical/surgical beds<sup>7</sup> and 75% for ICU beds. In contrast, MGH's available bed occupancy rate was 96% in FY19 and by FY23, the Hospital's occupancy rate was 99.7% when all patients occupying an inpatient bed are included and adjusting for blocked beds.<sup>8</sup> This adjusted occupancy rate reflects what capacity feels like for staff and patients; however, only considering an annual average does not accurately illustrate the occupancy challenges associated with surge or variation by day of the week and holidays. The reality of operating at close to 100% of available capacity is that patients are not being treated in the most appropriate setting for their need and there is increased risk that MGH would have even less flexibility to respond to patient surges from disease or disaster (man-made or weather related).

The Approved Project did not permit the addition of 94 beds because, in theory, having more private beds should improve the Hospital's occupancy rate by reducing the number of blocked beds in multi-bed rooms. However, as Table 1 demonstrates, having more private rooms still does not bring the Hospital within the

<sup>3</sup> Benjamin A. White, MD et al., *Boarding Inpatients in the Emergency Department Increases Discharged Patient Length of Stay*, 44 J. EM. MED. 230, 230 (2013), available at [https://www.jem-journal.com/article/S0736-4679\(12\)00646-4/pdf](https://www.jem-journal.com/article/S0736-4679(12)00646-4/pdf).

<sup>4</sup> Inclusive of medical/surgical and intensive care unit beds.

<sup>5</sup> Adjusted for closed headwalls.

<sup>6</sup> Outpatient beds refer to outpatients occupying an inpatient bed (PPRs, Admit to Observation, including Short Stay Unit)

<sup>7</sup> Kelen GD, Richard W, D'Onofrio G, et al. Emergency department crowding: the canary in the health care system. NEJM Catal. Published online September 28, 2021. doi:10.1056/CAT.21.0217

<sup>8</sup> See Available Beds in Table 1.

range of an acceptable occupancy rate. If the hospital solely changed its bed complement to create more private rooms, the Hospital's occupancy rate would have been 89.2% in FY19 and 92.6% in FY23. Using FY23 data, with the Proposed Change to add 94 beds to the license, the Hospital's occupancy rate would have been just below 85% as shown in the following table.

**Table 2: FY23 with 94 Additional Beds**

<b>Metric</b>	<b>FY23 Modeled with 94 additional Licensed Beds<sup>9</sup></b>
Licensed Beds	994
Inpatient Days	280,843
Bedded Outpatient Days <sup>10</sup>	12,120
Total Days	292,963
Inpatient Occupancy	80.5%
Bedded Outpatient Occupancy	3.3%
Total Occupancy	83.8%

Increasing the Hospital's licensed bed count by 94 beds will bring the Hospital closer to the industry standard occupancy rate, which cannot be achieved solely through the creation of a higher percentage of private rooms. With the addition of 94 beds, the Hospital projects that it will operate at 86% of licensed bed capacity in FY28 and by FY32 the Hospital will be operating at 89.6%. This occupancy rate, while still above the industry standard, will allow MGH to move patients in a timelier manner from the ED to inpatient floors as well as provide some capacity for surge and expected future demand due to an aging population and increased incidence of disease.

**Table 3: Projected Utilization**

<b>Metric</b>	<b>FY28</b>	<b>FY29</b>	<b>FY30</b>	<b>FY31</b>	<b>FY32</b>
Licensed Beds	994	994	994	994	994
Inpatient Days	299,985	303,269	307,233	310,093	312,989
Bedded Outpatient Days <sup>11</sup>	12,013	12,013	12,013	12,013	12,013
Total Days	311,998	315,282	319,246	322,106	325,002
Inpatient Occupancy	82.7%	83.6%	84.7%	85.5%	86.3%
Bedded Outpatient Occupancy	3.3%	3.3%	3.3%	3.3%	3.3%
<b>Total Occupancy</b>	<b>86.0%</b>	<b>86.9%</b>	<b>88.0%</b>	<b>88.8%</b>	<b>89.6%</b>

An inadequate number of inpatient beds directly impacts patient access to emergency and urgent care. MGH operates one of the busiest EDs in the City of Boston, with 119,124 patients seeking emergency care in FY23. This is acutely felt by the communities closest to the Hospital who rely on MGH as their local community hospital. Patients from Boston, Chelsea, Revere and Winthrop account for 40.8% of all ED visits and 25% of admissions. Without adequate inpatient bed capacity, patients who live closest to MGH will continue to wait hours, if not days, for a bed to become available, more patients will leave before a bed becomes available, and some patients will avoid seeking care altogether.

MGH's high inpatient occupancy rate does not allow ED patients who require an inpatient admission to quickly transition out of the ED. As a result, 24,388 patients in FY23 boarded in the ED waiting an average of 15.5 hours for an inpatient bed to become available. Of those patients, more than a quarter remained in

<sup>9</sup> Inclusive of medical/surgical and intensive care unit beds.

<sup>10</sup> Outpatient beds refer to outpatients occupying an inpatient bed (PPRs, Admit to Observation, including Short Stay Unit)

<sup>11</sup> Outpatient beds refer to outpatients occupying an inpatient bed (PPRs, Admit to Observation, including Short Stay Unit)

the ED for longer than 24 hours waiting for an inpatient bed. When the number of boarders is high, the Hospital must trigger specific protocols. The MGH ED was in a state of Code Help or Capacity Disaster for 93% of days in FY23, a 17% increase from the previous year. For the first three months of FY24, the ED was in Capacity Disaster 92.3% of days and in Code Help all other days (7.7%).

With high numbers of admitted patients boarding, the ED is not able to efficiently care for patients. In addition, many patients do not withstand the wait and leave the ED without being seen. In FY23, 5,446, or 3.7%, of all patients who presented at the Hospital's ED left without being seen. MGH estimates that approximately 10% of these patients would have been admitted, meaning more than 500 patients further delayed or avoided care altogether.<sup>13</sup> As overcrowding in the ED continues, people will be less likely to seek care, resulting in worsened health status by the time they finally receive care, increasing the potential need for an inpatient admission and the associated cost of care.

The Proposed Change is necessary to improve throughput and care delivery across the Hospital, including in the ED where boarding has increased significantly in recent years. Without adequate inpatient capacity, the timely movement of patients out of the ED to inpatient floors will continue to be impeded, negatively impacting patient experience, staff satisfaction, and health outcomes. By retaining access to the 94 inpatient beds, MGH will have sufficient capacity to move patients from the ED to an inpatient bed in a timelier manner, ensuring appropriate access to both emergency and inpatient care for the community it serves. In addition, the capacity created through the Proposed Change will allow MGH to accept more community hospital transfers who need a higher level of care, fulfilling its mission as a quaternary academic medical center. Accordingly, the Proposed Change represents a necessary step towards improving access to care at the Hospital.

## **Condition #2**

In compliance with the conditions of the Notice of Determination of Need, the Holder is submitting the following information in support of the Proposed Change.

### **a. Emergency Department (ED) boarders waiting for a medical/surgical (M/S) bed including:**

- i. Number of patients and length of stay:** 24,388 patients, with an average length of stay of 15.5 hours in FY23.
- ii. Location of bed (inpatient or observation):** By definition, a "boarder" has a written order for inpatient admission, meaning that all 24,388 patients are inpatients.

### **b. Post-Acute Care Unit (PACU) patient data including:**

- i. Number of patients and length of stay:** 4,799 patients with an average length of stay of 17.1 hours.
- ii. Location of bed (inpatient or observation):** By definition, a "boarder" has a written order for inpatient admission, meaning that all 4,799 patients are inpatients.

### **c. Average daily number of blocked M/S beds:** The average number of blocked beds is 40 beds, with a range of 32-75 beds. 134 days in FY23 had 50 or more blocked M/S beds.

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<sup>13</sup> According to the most recent data analyzed by the Centers for Disease Control and Prevention, 13.1% of all ED visits resulted in an inpatient admission. Therefore, MGH conservatively estimates 10% of ED visits would result in an inpatient admission.

- d. **Percentage (with numerator and denominator) of MGH inpatients who were part of MGB's Patient Panel before their admission to MGH.**

	FY22	FY23
Unique Inpatients	37,265	37,722
MGB Panel	23,157	23,786
Percent of MGH inpatients who were part of MGB's Patient Panel before their MGH admission	62%	63%

- e. **Operating capacity and occupancy rate:** Operating capacity was 836 beds (inclusive of ICU beds) and a 99.7% occupancy rate.
- f. **Acuity level by case mix index, and number of discharges for M/S patients at MGH by service line:**

Inpatient Type	FY22 Cases	FY22 CMI	FY23 Cases	FY23 CMI
Cancer	8,576	2.78	8,793	2.99
Cardiac	5,920	3.54	5,730	3.62
All other Med/Surg	22,694	2.46	23,148	2.52

- g. **Average monthly lost transfer number and rate (calculated as the number of transfers not accepted over the number of requests for transfers) from community hospitals**

**Number of transfers not accepted by Holder**  
**Number of requests for transfers to Holder**

The average monthly lost transfer rate was 49%. The monthly average volume of requests was 736, of which an average of 362 were declined. There were 8,834 requested transfers in FY23. Of those requests, MGH declined 4,344 cases.