

**Dana-Farber Cancer Institute, Inc.**

**DON# DFCI-23040915**

**APPLICANT QUESTIONS**

*Responses should be sent to DoN staff at [DPH.DON@State.MA.US](mailto:DPH.DON@State.MA.US)*

While you may submit each answer as available, please

- List question number and question for each answer you provide
- Submit responses as a separate word document, using the above application title and number as a running header and page numbers in the footer
- We accept answers on a rolling basis however, when providing the final answers, submit all questions and answers in order in one final document.
- Submit responses in an accessible format in WORD or EXCEL. **Include a table in data format (NOT pdf or picture) with the response. For HIPAA compliance Do not include numbers <11.**

Capitalized terms used and not otherwise defined in these responses have the meanings given in Determination of Need Application #DFCI-23040915 (the “Application”).

- 1. In order to better understand the proposed project, explain whether Table 1 comprises all of DFCI patients at all sites (Patient Panel) or just the DFCI inpatients. If it does not describe all, then please provide that information on the entire patient panel.**

Table 1 in the Application included inpatients and outpatients, but only on the Longwood Medical Campus. The following revised version of that Table 1, inclusive of all of the Applicant’s inpatients and outpatients at all sites, is below.

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**Table 1<sup>1</sup>**  
**Total Unique Patients, Demographics, and Geography**

	2020		2021		2022	
	Count	%	Count	%	Count	%
Total (unique patients)	79,341		90,760		96,950	
<b>Gender</b>						
Female	49,364	62.2 %	56,712	62.5 %	60,484	62.4 %
Male	29,959	37.8	33,992	37.5	36,441	37.6
Unknown	18	0.0	56	0.1	25	0.0
<b>Race &amp; Ethnicity</b>						
Asian Non-Hispanic or Latino	2,106	2.7	2,495	2.7	2,857	2.9
Black or African American	2,874	3.6	3,369	3.7	3,789	3.9
Hispanic or Latino	3,943	5.0	4,900	5.4	5,552	5.7
Multiracial, non-Hispanic	595	0.7	774	0.9	1,114	1.1
Unknown & Other	9,841	12.4	10,484	11.6	10,758	11.1
White or Caucasian Non-Hispanic or Latino	59,982	75.6	68,738	75.7	72,880	75.2
<b>Age<sup>2</sup></b>						
0-18 <sup>3</sup>	83	0.1	130	0.1	86	0.1
19-35	4,754	6.0	5,749	6.3	6,193	6.4
36-55	19,441	24.5	21,775	24.0	23,228	24.0
56-75	43,188	54.4	48,789	53.8	51,774	53.4
>75	13,152	16.6	15,744	17.3	17,319	17.9
<b>Geography<sup>4</sup></b>						
Massachusetts	57,563	72.6	67,185	74.0	73,571	75.9
New York	2,248	2.8	2,482	2.7	2,262	2.3
Outside MA (New England) <sup>5</sup>	14,350	18.1	15,548	17.1	16,097	16.6
Outside MA (United States) <sup>6</sup>	21,128	26.6	22,919	25.3	22,545	23.3
Outside MA (International) <sup>7</sup>	694	0.9	707	0.8	892	0.9

<sup>1</sup> This table includes all patients seen at all locations on the Applicant's license. For inpatients only, this table is based on utilization data for the Applicant's current licensed beds, as well as an estimate of utilization for patients admitted to Brigham and Women's Hospital ("BWH")-licensed beds under the care of the Applicant's oncologists derived from the Applicant's professional claim data. While precise utilization data for all such patients is available to the Applicant as part of its existing collaboration, portions of that data are proprietary to BWH, and the Applicant is restricted from disclosing it in this Application due to confidentiality restrictions.

<sup>2</sup> Age categories may sum to more than 100%, as patients age into different categories during a fiscal year.

<sup>3</sup> Includes only patients 18 or younger seen in adult clinical departments. Excludes patients seen in pediatrics departments.

<sup>4</sup> Given overlapping geographies, percentages will sum to be over 100%.

<sup>5</sup> As used herein, "New England" means Connecticut, Maine, New Hampshire, Rhode Island, Vermont, and unless otherwise noted, Massachusetts.

<sup>6</sup> These patients include those from New England states, excluding Massachusetts.

<sup>7</sup> These patients include those with a permanent country of residence outside the United States.

2. **You state that three LINACs will be moved from Francis street, at BWH, to the new facility. Please explain further whether those are on DFCI's or BWH's license and the status/location of all DFCI licensed LINACs.**

The Applicant no longer intends to relocate any of its existing LINACs. That portion of the project description can be disregarded. The Applicant currently has three licensed LINACs, all of which are located—and are expected to continue to be located—at 44 Binney Street, Boston, Massachusetts.

3. **Under Patient Panel need, you state that there is an increase in the prevalence of cancers in young adults. Please describe how that increase would impact the bed need.**

Colorectal cancer is now the leading cause of cancer-related death in men younger than 50, and will surpass breast cancer to become the leading cause of cancer death in young adults by 2030. Out of all the organ systems, gastrointestinal cancers are rising the most rapidly among young people, and these patients are typically diagnosed with metastatic disease, meaning that the cancer has spread from its origin site to other parts of the body. Incidences are also increasing in other cancers, including 2.3% per year for cancers of the tongue, tonsil, and oropharynx; 2% per year for liver cancer in women; 1.5% per year for renal cancer; 1.1% per year for breast cancer; 1% per year for uterine cancer for white women and greater than 2% per year for Black, Hispanic and AAPI women; and, 1% per year for pancreatic cancer. These increasing incidences of cancer necessarily mean that the population of cancer patients requiring treatment, some of which requires inpatient hospitalization, is increasing. These increases, as was noted in the Application, are expected to result in a 49% increased incidence of cancer by 2050.

Young adults diagnosed with cancer are more likely to have aggressive types of cancers and are more likely to be diagnosed at an advanced stage. As such, there is an increased need for more aggressive therapy among younger patients. Advanced life-saving therapies are often associated with increased risk of complications for which hospitalization may be necessary. An example of this is the increased use of immunotherapy in triple negative breast cancer for curative intent, or with the goal of achieving remission, which has dramatically improved the event-free survival in this population, but has also led to increased risk of serious complications.

Further, young patients receive more surgical interventions—which require more inpatient beds—and may have more complications requiring hospitalizations. Young patients are more likely to enroll on clinical trials such as immunotherapy trials and cell therapy trials, which also require inpatient beds. As patients with metastatic cancer are living longer, they also often require more hospitalizations.

Additionally, forecasts indicate increased inpatient use rates for inpatient medical oncology, correlated with an increase in both incidence and prevalence (below does not take population growth into account):

<b>Young Adult (20-39) Patients in New England (MA, RI, ME, NH, CT, VT)<sup>8</sup></b>	<b>10-Year Growth Rate</b>
Inpatient Oncology Forecasted Use Rate per 1000 population	
Inpatient Medical Oncology / Hematology DRGs	4.64%
Disease Prevalence Impact to Inpatient Discharges	
Forecasted disease prevalence impact to Inpatient Medical Oncology / Hematology DRGs	4.39%

**4. Please elaborate on the increased prevalence of Cancers in the 75+ age cohort and how that links to the need for inpatient beds.**

The population is aging, and the strongest determinant of cancer risk is age; therefore, the Applicant anticipates a growing incidence and prevalence of cancer patients in the 75+ age cohort. The Advisory Board projects that there will be a 28% growth in inpatient oncology patients in this age cohort.<sup>9</sup> The Applicant's admissions since 2018, based on data from the Center for Health Information and Analysis ("CHIA"), demonstrates an increase in admissions for patients who are 80 and older, increasing from 1,138 discharges in fiscal year ("FY") 2018 to 1,286 in FY2022 (*i.e.*, 13%)

In addition, as patients age their comorbidities increase, decreasing their tolerance to the physical impact of both their cancer and its treatments, and increasing the frequency of hospitalizations to manage these complications. As discussed above in #3, as cancer treatment evolves, patients with metastatic cancer are living longer and may require intermittent hospitalizations that occur during the course of their illness.

Additionally, forecasts indicate increased inpatient use rates for inpatient medical oncology, correlated with an increase in both incidence and prevalence (below does not take population growth into account):

<b>Aged 75+ Patients in New England (MA, RI, ME, NH, CT, VT)<sup>10</sup></b>	<b>10-Year Growth Rate</b>
Inpatient Oncology Forecasted Use Rate per 1000 population	
Inpatient Medical Oncology / Hematology DRGs	7.96%
Disease Prevalence Impact to Inpatient Discharges	
Forecasted disease prevalence impact to Inpatient Medical Oncology / Hematology DRGs	11.47%

<sup>8</sup> Based on the Advisory Board Company data.

<sup>9</sup> The Advisory Board Company, adjusted for certain factors included in The Advisory Board Company growth rates applicable only to community hospital providers.

<sup>10</sup> Based on the Advisory Board Company data.

**5. You state that there are seven patients per day that you cannot accept. Is that due to the lack of beds, or also for other reasons?**

Yes, this stems from the Applicant's lack of beds. These are patients who have been clinically accepted by the Applicant's oncologists and are awaiting a bed for transfer to one of the Applicant's beds or one the beds managed by the Applicant's oncologists at BWH. For context, all patients awaiting admission are triaged daily by a clinical team given the current bed constraints.

**6. Please explain further the nature of the "specialized equipment, tools, and support services" and facility requirements in order to perform your "subspecialized" services and whether these are currently available now or feasible to add at your current site. Does the current facility meet the requirements for the newest cancer treatments?**

While the current facility is capable, it is five decades old and would require extensive renovations to keep pace with the rapid advances in cancer technologies and services. Importantly, the Applicant is unable to undertake those renovations within the current facility, which it does not control. The growing need for renovations is reflected in recent patient satisfaction scores from Press-Ganey. While those scores are consistently exemplary for the overall care provided by the Applicant's staff, facility scores have been consistently lower. For example, for the last quarter of 2023, while the overall rating for the Applicant's inpatient care was in the 94<sup>th</sup> percentile, the "hospital environment" scored in the 38<sup>th</sup> percentile and the quietness of environment only scored in the 13<sup>th</sup> percentile.

This reflects in part that the current facility lacks adequate space for the storage, transportation, and efficient use of the newest technologies and patient mobility equipment which are vital to standard cancer treatment. As an example, the acuity of the Applicant's inpatients has increased such that many patients are simultaneously tethered via IV poles (including large-based IV poles), catheters, and drainage tubes. These make navigating a crowded patient space difficult and treacherous. The Applicant also anticipates needing to implement new communication and response technologies that cannot easily be accommodated by the current physical plant.

Not all allocated oncology beds are in private rooms, and as mentioned in the Application, the oncology census was 116% of allotted oncology beds in FY23. Many overflow patients are being cared for in emergency department beds (at times, in the hallways) and in other medical-surgical beds. Those oncology patients are being located in two separate buildings, distributed among eight separate floors and multiple areas on each floor. In addition, because the inpatient census virtually always exceeds the number of oncology beds, this means that generally 15-25% of inpatient cancer patients are located in beds that are not staffed by oncology-trained nurses.

The Applicant anticipates that the new facility will focus on a patient-centric inpatient experience with advanced telemedicine capabilities, spaces and technology for family

meetings (including private rooms), ICU-level capabilities to reduce the number of needed patient transfers, virtual reality systems for patient education and treatment, clinical trial units with collaborative research space to foster interdisciplinary work, adaptable room designs for changing technology and treatment needs, and improved accessibility to patient rooms and bathrooms. The Applicant will have the opportunity to work with technology partners to design and implement cutting edge solutions focused on the oncology experience and provide more accessible equitable care using technology solutions to support multilingual patient needs and address disparities in care. These types of investments would not be feasible to address in the Applicant's 30 licensed beds and would not be cost effective.

The Applicant, through the Proposed Project, would also be able to fully integrate data and analytics across the continuum of care, including inpatient, outpatient, surgical, pathology, radiology, and genomic data, in order to provide more comprehensive and coordinated cancer care, benchmark safety and quality metrics, and facilitate continuous learning. In a piecemeal care model, optimization and continuity across services is difficult. Without a holistic view of all data relevant to a patient's care journey, the Applicant's ability to streamline processes and make them more patient-centric and cost-effective is inherently limited. This challenge would be addressed at a freestanding comprehensive cancer hospital.

- 7. In developing your utilization model, clarify the affiliation of the physicians that you are drawing the patient data from; is it DFCI and BIDMC physicians only? Do the DFCI oncologists have dual privileges at BWH? Is the assumption that all of the DFCI oncologists will follow you to the new facility, or is there a subset who might migrate to/remain at BWH?**

Yes, the utilization model uses data for patients seen by the Applicant and BIDMC only. Yes, all of the Applicant's medical oncologists are employed by the Applicant, have privileges at BWH, and manage their patients' care at BWH. The utilization model includes all of the Applicant's medical oncology patients, outpatient and inpatient, including those who are admitted to a bed at BWH. Yes, the Applicant anticipates that all of its oncologists will migrate to the new facility and will continue to be employed by the Applicant.

- 8. Under Competition, explain further if, and by how much, the proposed project will impact prices, costs, and competition. Please explain the basis under which you base the assertion that the DFCI facility will be a lower cost provider than at your current location, under your current arrangement.**

The Applicant's pricing per the CHIA inpatient relative price data is lower than both MGH and BWH. Further, based on CHIA data, the Applicant's inpatient pricing is less costly than MGH, BWH, and BIDMC for the three largest local payers (*i.e.*, Blue Cross Blue

Shield of Massachusetts, Harvard Pilgrim Health Care and Tufts Health Plan).<sup>11</sup> Relative price is a calculated, aggregate measure used to evaluate variation in health care provider prices in a given calendar year.<sup>12</sup>

### **Hospital Inpatient Relative Price Comparison by Payer**

<b><u>Hospital</u></b>	<b><u>Blue Cross Blue Shield of Massachusetts</u></b>	<b><u>Harvard Pilgrim Health Care</u></b>	<b><u>Tufts Health Plan</u></b>
MGH	1.32	1.26	1.5
BWH	1.32	1.24	1.47
BIDMC	1.2	1.22	1.31
<b>Applicant</b>	<b>1.13</b>	<b>1.15</b>	<b>0.82</b>

Additionally, according to an analysis conducted by the Health Policy Commission of 49 acute care hospitals, among the Applicant, BWH, and MGH, the Applicant had the lowest acuity-adjusted average commercial prices for non-maternity inpatient stays.<sup>13</sup>

While the Applicant is exempt from the Inpatient Prospective Payment System (“IPPS”), it nonetheless receives lower reimbursement than BWH from the Medicare program. Based on data from the American Hospital Directory for 2022, the Applicant’s average Medicare payment for oncology (*i.e.*, \$20,061) is lower than the average oncology payment made to BWH (*i.e.*, \$63,303), not adjusted for acuity. In 2022, the Applicant’s Medicare reimbursement was \$10.1 million with 479 discharges from its 30 licensed beds (*i.e.*, \$21,000 per discharge, on average). The IPPS reimbursement for those same discharges would have been approximately \$15.1 million (*i.e.*, \$31,582 per discharge, on average). To get a sense of the estimated total savings, the calculation below assumes that all unique Medicare inpatients under the care of one of the Applicant’s oncologist in 2022 had a single discharge from one of the Applicant’s beds. Based on those assumptions, estimated total savings would have been at least \$22.4 million, as shown in the following table:<sup>14</sup>

<sup>11</sup> CHIA, *Relative Price and Provider Price Variation in the Massachusetts Commercial Market Databook* (2022), <https://www.chiamass.gov/assets/docs/r/pubs/2022/Relative-Price-Databook-2020.xlsx>.

<sup>12</sup> For inpatient services, relative price compares prices paid to different providers within a payer’s network, while accounting for differences in the intensity of services. See CHIA, *Relative Price and Provider Price Variation in the Massachusetts Commercial Market Technical Appendix* (August 2022), <https://www.chiamass.gov/assets/docs/r/pubs/2022/Relative-Price-Technical-Appendix-2020.pdf>.

<sup>13</sup> See Health Policy Commission, *Acuity-Adjusted Average Commercial Prices for Material and Non-Material Inpatient Stays, 2021* (Sept. 2023), <https://www.mass.gov/doc/2023-health-care-cost-trends-report-chartpack/download>.

<sup>14</sup> Based on the Applicant’s 4,887 unique patients in 2022, as set forth in Table 2 of the Application, that 43.4% of those patients were Medicare beneficiaries (or approximately 2,121 unique patients), and average savings per discharge of \$10,582.

	<b>2022</b>
<b>A. Unique Inpatients</b> (as shown in Table 2 of the Application)	4,877
<b>B. Medicare Payor Mix</b> (as shown in Table 10 of the Application)	43.4%
<b>C. Estimated Number of Medicare Patients</b> (A x B)	2,121
<b>D. Average Medicare Savings (vs. IPPS)</b>	\$10,582
<b>E. Estimated Savings</b> (D x C)	\$22.4 million

While additional Medicare funding for capital expenditures may be available, such additional funding would consist entirely of federal funds and will not increase out-of-pocket expenditures (*i.e.*, co-insurance) by Massachusetts residents.