MASSACHUSETTS
HEALTH POLICY COMMISSION

# Preliminary Report on the Cost and Market Impact Review of the Proposed Clinical Affiliation between Dana-Farber Cancer Institute, Beth Israel Deaconess Medical Center, Harvard Medical Faculty Physicians Transaction

February 27, 2025

# Presentation Outline

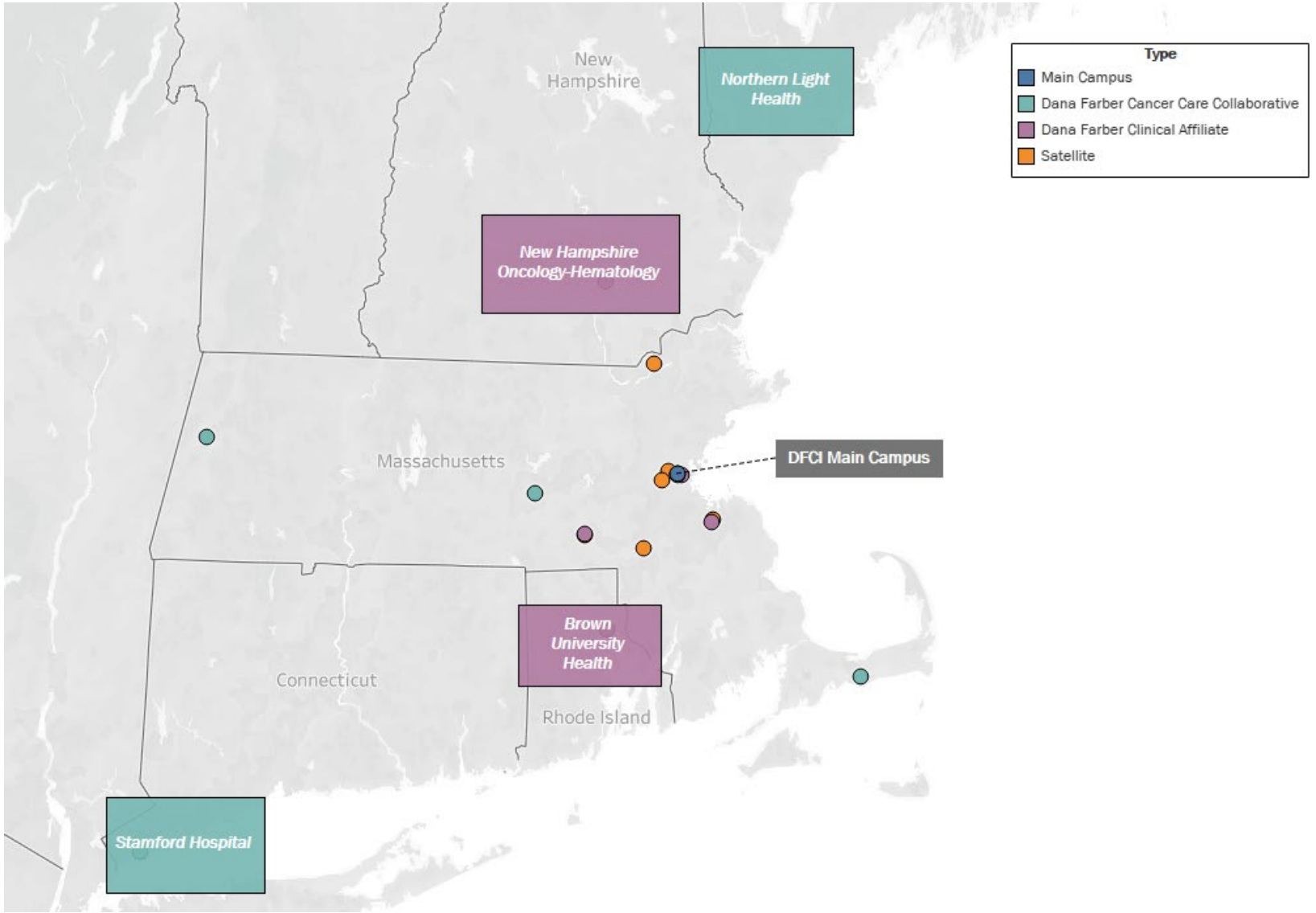
1. **Background on the Parties**
2. Background on the Transaction
3. Cost and Market
4. Quality of Care
5. Access and Equity
6. Summary and Status
7. Vote

# Background: About Dana-Farber Cancer Institute

- DFCI is an independent, nonprofit, acute care cancer hospital and research institute, the only National Cancer Institute-designated Comprehensive Cancer Center in the Commonwealth.
- DFCI provides outpatient care at its hospital main campus and licensed hospital satellites, with 97% of the hospital's care being provided on an outpatient basis.[1]
- DFCI has provided inpatient care through a clinical affiliation with Brigham and Women's Hospital (BWH) since 1997. DFCI has 30 licensed beds that it leases from BWH, and its physicians serve as attending medical oncologists for BWH patients in BWH beds (approximately 180 beds per day on average).
- DFCI provides oncology services in community settings with multiple other provider systems, including Milford Regional Medical Center, South Shore Hospital, St. Elizabeth's Medical Center, and Whittier Street Health Center. Through the Dana-Farber Cancer Care Collaborative, DFCI provides consulting services, educational services, and clinical support services (e.g., second opinion services, tumor board conferences, lectures) to multiple additional provider organizations, including Berkshire Health Center, UMass Memorial Health Care, and Cape Cod Healthcare.[2]
- DFCI has the largest number of oncologists in its physician network of all Massachusetts provider organizations, while Mass General Brigham (MGB), its current clinical affiliate, has the second largest.[3]

1. Ctr. for Health Info. & Analysis, Dana-Farber Cancer Institute HFY21 Hospital Profile, *available at* https://www.chiamass.gov/assets/docs/r/hospital-profiles/2021/dana-far.pdf.
2. Mass. Health Policy Comm'n. , Massachusetts Registration of Provider Organizations 2023 Filing: Dana-Farber Cancer Institute.
3. HPC analysis of Massachusetts Registration of Provider Organizations 2022 physician rosters.

# Background: DFCI Locations and Affiliates



# Background: About Beth Israel Deaconess Medical Center and Harvard Medical Faculty Physicians

- BIDMC is an 809-bed nonprofit academic medical center (AMC), the third-largest hospital in Massachusetts.
- BIDMC is owned by Beth Israel Lahey Health (BILH), the second-largest hospital-based system in the Commonwealth with ten owned hospitals and one hospital contracting affiliate.
- Harvard Medical Faculty Physicians at BIDMC (HMFP) is a nonprofit BILH contracting affiliate physician group that employs physicians that staff BIDMC and other BILH facilities and community hospitals.
- BIDMC and HMFP currently provide adult cancer care services, with BILH having the third-largest number of oncologists in its physician network.[1]

Beth Israel Lahey Health
Beth Israel Deaconess Medical Center

Harvard Medical Faculty Physicians
at Beth Israel Deaconess Medical Center

1. HPC analysis of Massachusetts Registration of Provider Organizations 2022 physician rosters.

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# Background: DFCI-BIDMC-HMFP Affiliation Proposal

- The current clinical affiliation between DFCI and BWH will run until at least 2028. At its conclusion, DFCI, BIDMC, and HMFP have proposed an alternative clinical affiliation.
- In connection with the clinical affiliation, the parties would collaborate on construction of a new cancer hospital adjacent to BIDMC at 1 Joslin Place, Boston. The proposed cancer hospital would be owned and operated by DFCI. This proposal is undergoing concurrent review by the Department of Public Health (DPH) Determination of Need (DoN) program.
- The parties would collaborate to provide adult cancer services in the new facility and the greater Longwood Medical Area.
  - BIDMC and HMFP would serve as DFCI's preferred providers of surgical oncology services.
  - DFCI would serve as the preferred provider of medical oncology and infusion services, with BIDMC discontinuing medical oncology in Longwood and HMFP medical oncologists shifting to employment by DFCI.
  - The parties would coordinate to provide clinical cancer pathology, clinical cancer radiology, and certain other physician services.
  - BIDMC and DFCI would form a joint venture to provide the technical component of radiation oncology, and BIDMC, HMFP, and DFCI would jointly form a physician organization to provide the professional component of radiation oncology.
  - BILH would provide DFCI access to its electronic health record system
- Each organization would remain corporately independent and the individual governing bodies of each of the parties would maintain ultimate oversight of their respective organizations, including all clinical operations.
- DFCI would continue to contract with payers independently from BIDMC, HMFP, and BILH.

# Background: DFCI-BIDMC-HMFP Affiliation Summary

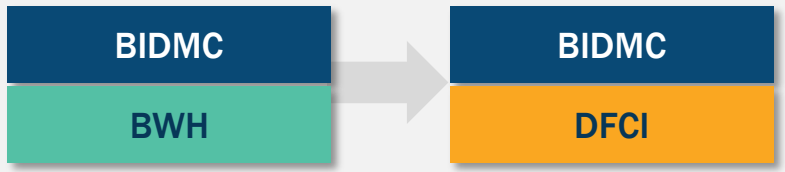
## COLLABORATION ON CONSTRUCTION OF NEW CANCER HOSPITAL

- **$1.67B** in construction cost
- **30 relocated** adult inpatient beds
- **270 new** adult inpatient beds
- **20 new** observation beds
- **2 new** MRI units (currently 2)
- **2 new** CT units (currently 3)
- **1 new** PET-CT unit (currently 2)
- **2 new** CT simulators (currently 0)
- **3 new** linear accelerators (LINACs) (currently 3)

## CLINICAL AFFILIATIONS AND JOINT VENTURE

- Medical Oncology/Infusion provided by DFCI
- Surgical Oncology provided by BIDMC/HMFP
- Radiation Oncology (professional services) provided by new DFCI/BIDMC/HMFP joint physician org
- Radiation Therapy (technical services) provided by new DFCI/BIDMC joint venture

# Background: Expected Clinical Shifts

| | |
|---|---|
| Medical Oncology | BIDMC patients would receive medical oncology care from DFCI as opposed to BIDMC/HMFP.<br>  |
| | Some BWH patients would likely follow DFCI oncologists, while others will likely stay with MGB.<br>  |
| Surgical Oncology | Some DFCI patients would likely receive surgical oncology care at BIDMC, as opposed to BWH.<br>  |
| Radiation Oncology | DFCI and BIDMC patients would receive radiation oncology services from the DFCI/BIDMC joint venture as opposed to BIDMC; some BWH radiation oncology patients would likely also shift.<br>  |

# Key Transaction Claims

The parties claim that this affiliation will positively impact health care spending, quality, and access to care. Their statements include:

- The collaboration would increase access to high-quality tertiary and quaternary adult oncology services for the highest acuity patients with the most complex diagnoses. Specifically, DFCI anticipates a growing need for more sophisticated cancer care and claims that the proposed new facility would ensure it is able to meet that anticipated need in a setting in which its full clinical control would improve care processes and patient satisfaction.
- The affiliation would not have a material impact on reimbursement rates as BIDMC and HMFP will continue to contract with payors independently from Dana-Farber. However, they expect that some cancer care would shift from higher-priced health systems and providers, particularly MGB, to relatively lower-priced providers.
- The collaboration would increase the quality and efficiency of oncology services provided on the Longwood medical campus by combining the parties' respective cancer expertise in interconnected facilities, as well as through measures such as integrated clinical protocols and electronic health records and required adherence to certain performance and quality standards.

# Concurrent Determination of Need Review

- The proposed construction of the new DFCI cancer hospital is subject to review by the Department of Public (DPH) Health Determination of Need (DoN) program. DFCI submitted its application for a DoN concurrently with filing its MCN.
- The DoN program required an Independent Cost Analysis (ICA) of the project, conducted by a third-party consultant. The ICA was accepted on January 10, 2025.
- DoN staff reviewed the ICA findings and comments in the context of the application, other submissions by DFCI, and comments from parties of record, and developed a staff report and recommendations to the Public Health Council. The staff report was published on February 18, 2025, recommending approval with conditions.
- Parties of record, including the HPC, may submit comments on the staff report by February 28th for consideration by DPH.
- The DFCI project will likely be voted on at a Public Health Council meeting on March 20, 2025.
- Any DoN may not go into effect until the HPC completes its CMIR review and issues its final report. The Public Health Council may choose to reopen its review of the DoN based on findings in the HPC's final report.

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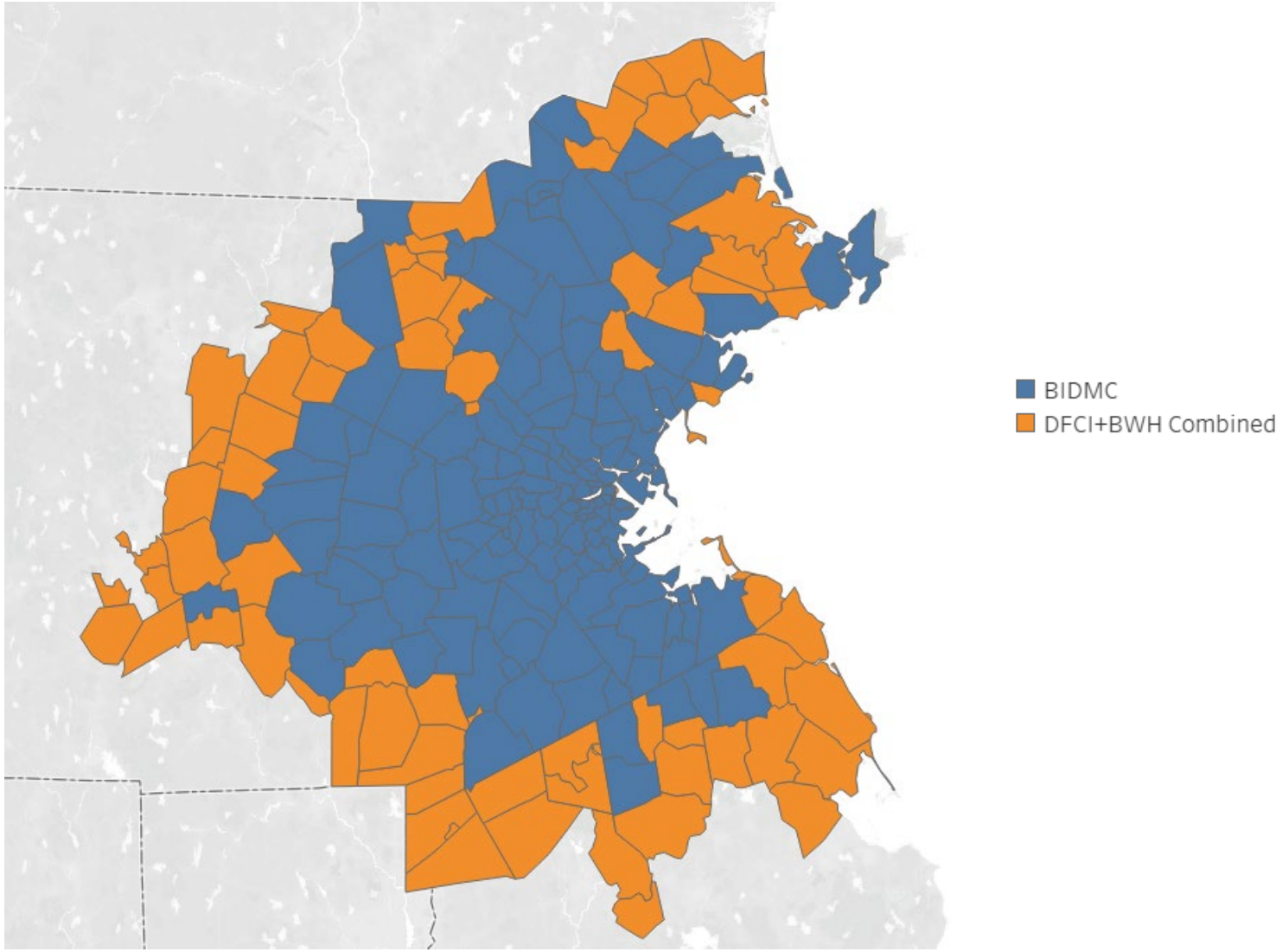
# Cost and Market: Factors Examined

1. Cost and Market Baseline Performance
2. Inpatient and Outpatient Spending Impacts
3. Future Pricing and Broader Market Impacts

# Background: Inpatient Oncology Primary Service Areas

*Commercial Inpatient Oncology Primary Service Areas*




Source: HPC analysis of 2022 CHIA hospital discharge data
Notes: PSAs include ZIP codes from which the hospitals drew 75% of adult oncology discharges for Massachusetts residents. DFCI+BWH's combined PSA includes all zip codes in BIDMC's PSA except 01922 and 01969.

# Market Share: For commercial inpatient oncology, DFCI has a small share of medical oncology discharges but manages medical oncology patients at BWH. BIDMC has the third-largest share.

| Hospital/System | Shares of medical oncology discharges | | | Shares of surgical oncology discharges | | |
|---|---|---|---|---|---|---|
| | Statewide | BIDMC PSA | DFCI/ BWH PSA | Statewide | BIDMC PSA | DFCI/ BWH PSA |
| Dana-Farber Cancer Institute | 3.8% | 4.3% | 3.9% | 0.4% | 0.4% | 0.5% |
| Mass General Brigham | 39.6% | 48.4% | 45.8% | 47.6% | 55.8% | 53.9% |
| Brigham and Women's Hospital | 19.4% | 21.5% | 21.0% | 22.3% | 23.1% | 24.1% |
| Massachusetts General Hospital | 14.1% | 19.1% | 17.6% | 17.4% | 22.7% | 20.6% |
| Beth Israel Lahey Health | 17.3% | 24.1% | 21.4% | 18.5% | 25.8% | 22.7% |
| Beth Israel Deaconess Medical Center | 8.8% | 13.1% | 11.0% | 9.9% | 14.1% | 11.8% |
| UMass Memorial Health Care | 8.1% | 2.0% | 5.1% | 7.6% | 1.4% | 4.7% |
| Tufts Medicine | 5.8% | 7.4% | 7.6% | 5.4% | 6.8% | 7.0% |
| Boston Medical Center Health System | 3.4% | 5.2% | 4.6% | 4.2% | 4.6% | 4.5% |
| Other Provider Organizations | 22.1% | 8.7% | 11.7% | 16.3% | 5.2% | 6.7% |

Source: HPC analysis of 2022 CHIA hospital discharge data
Notes: Includes discharges for oncology care for MA residents, excluding patients under 18 years of age.

# Market Share: DFCI is the largest provider of outpatient medical oncology and has the second-highest share of radiation oncology and mammography services. BILH has the third-largest commercial share of these outpatient services.

| Hospital/System | Infusion administration | Oncologic drugs | Radiation oncology | Mammography |
|---|---|---|---|---|
| **Dana-Farber Cancer Institute** | **38.7%** | **34.7%** | **15.1%** | **25.2%** |
| **MGB** | **21.2%** | **20.3%** | **48.8%** | **42.8%** |
| *Massachusetts General Hospital* | 15.4% | 12.6% | 35.8% | 25.5% |
| *Brigham and Women's Hospital* | 0.2% | 1.5% | 10.1% | 2.8% |
| **BILH** | **15.7%** | **16.8%** | **12.0%** | **20.0%** |
| *Beth Israel Deaconess Medical Center* | 10.4% | 8.7% | 2.3% | 4.5% |
| Baystate Health | 6.4% | 9.1% | 4.4% | 2.8% |
| UMass Memorial Health Care | 4.7% | 4.5% | 1.6% | 3.5% |
| Tufts Medicine | 2.6% | 2.8% | 3.0% | 2.3% |
| Boston Medical Center Health System | 1.0% | 1.4% | 0.7% | 0.6% |
| **Other provider organizations** | **9.7%** | **10.4%** | **14.4%** | **2.8%** |

Source: HPC analysis of 2022 CHIA APCD data
Notes: All claims from a given provider on the same day for a single patient were counted as a single visit so long as they included a facility or non-person professional claim with a CPT within the relevant cluster. Limited to OP visits with a cancer diagnosis code on the claim. Hospitals/systems with at least a 1% share of visits in any service line are shown in the table.

# Prices: DFCI's commercial prices for inpatient medical oncology are generally lower than BIDMC and BWH, although higher than those of some other hospitals.

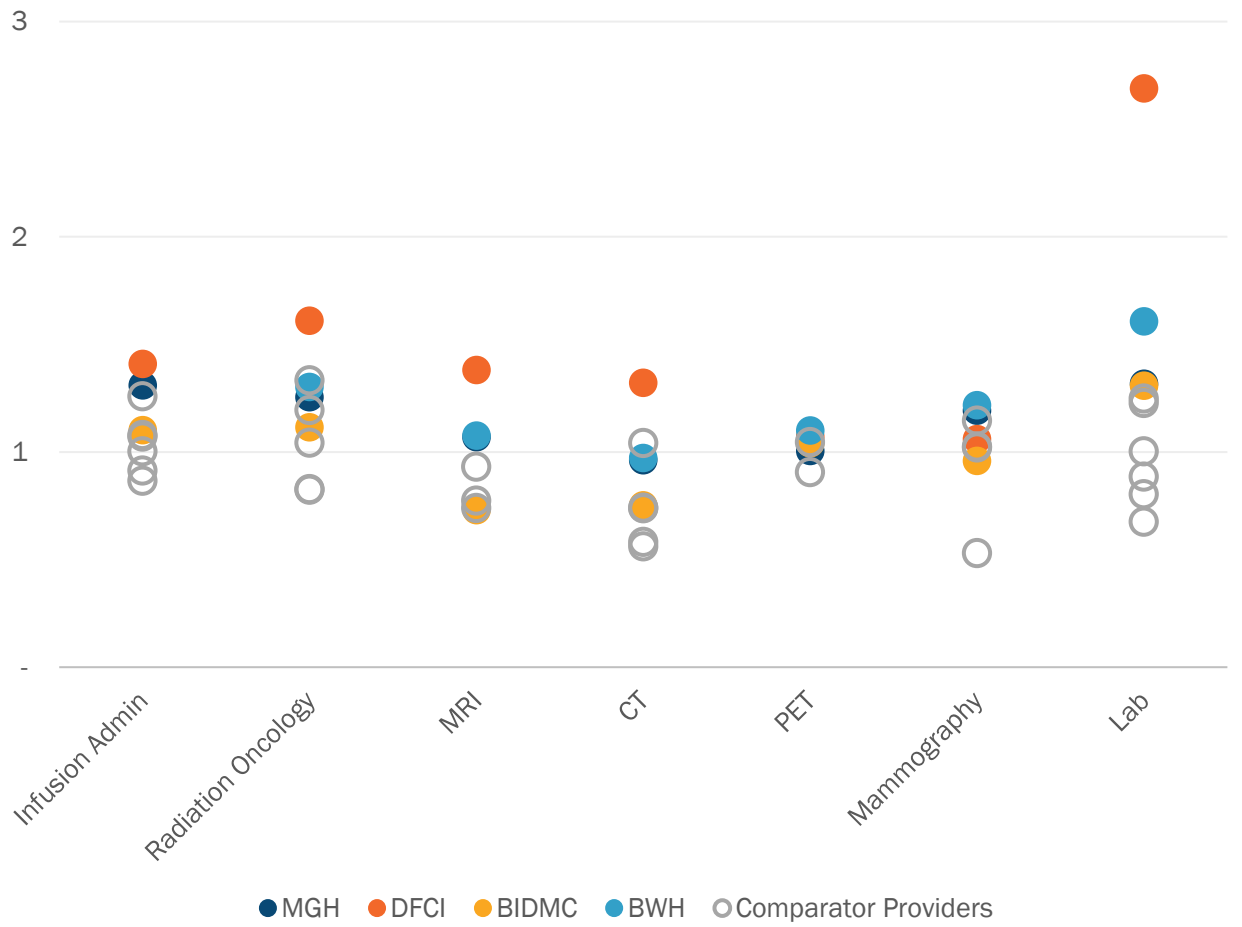
| Hospital | Commercial Price Relative to Average Hospital | |
|---|---|---|
| | Medical Oncology | Surgical Oncology |
| Tufts Medical Center | 1.34 | 1.04 |
| UMass Memorial Medical Center | 1.32 | 1.15 |
| Lahey Hospital and Medical Center | 1.30 | 1.29 |
| Brigham and Women's Hospital | 1.29 | 1.31 |
| Beth Israel Deaconess Medical Center | 1.26 | 1.11 |
| North Shore Medical Center | 1.23 | 0.78 |
| Massachusetts General Hospital | 1.15 | 1.31 |
| Steward St. Elizabeth's Medical Center | 1.13 | 1.16 |
| Baystate Medical Center | 1.12 | 0.90 |
| Dana-Farber Cancer Institute | 1.01 | 1.35 |
| South Shore Hospital | 0.98 | 0.93 |
| Newton-Wellesley Hospital | 0.94 | 0.97 |
| Cape Cod Hospital | 0.88 | 0.91 |
| Milford Regional Medical Center | 0.87 | 0.90 |

Source: HPC analysis of 2022 CHIA All-Payer Claims Database and 2022 CHIA Hospital Discharge Data
Notes: Average allowed amount per oncology discharge, adjusted for average MS-DRG case weight, divided by the service line average case-mix adjusted price across all hospitals.

# Prices: DFCI's commercial prices for outpatient oncology service lines are substantially higher than other providers' prices.

- The HPC compared commercial prices for select relevant outpatient service lines.
- In most cases, DFCI's outpatient prices are significantly higher than the hospitals from which outpatient services may shift. DFCI prices for oncologist E&M visits and oncologic drugs (not shown) are also substantially higher than those of other providers.
- BIDMC's prices for these service lines are usually, but not always, lower than BWH's prices.
- When calculating spending impacts, we weighted source hospital prices by payer and service mix to reflect different hospital patient characteristics.

*Commercial Outpatient Price Relativities by Service Line*




Source: HPC analysis of CHIA v2022 All-Payer Claims Database
Notes: Prices based on claims with a cancer diagnosis code. Price calculations exclude payer/provider combinations with fewer than 10 claims.

# Cost and Market Baseline Summary

- DFCI (in conjunction with BWH) and BIDMC both serve patients from across the Commonwealth, with DFCI/BWH having a larger geographic reach. Although both DFCI and BIDMC serve some out-of-state patients, most of their patients come from eastern and central Massachusetts.
- MGB (in conjunction with DFCI) and BILH are currently the two largest providers of oncology services in the Commonwealth.
- DFCI and BIDMC prices for inpatient medical and surgical oncology services, respectively, are generally lower than prices for the same services at BWH, but higher than some other hospitals.
- DFCI commercial outpatient prices are generally higher than outpatient oncology prices of other hospitals, while BIDMC's are generally moderate.

# Spending: The inpatient spending impacts of the proposed transaction depend in part on which patients would fill new DFCI capacity and backfill capacity at BIDMC and BWH.

- The HPC estimates that inpatient care shifting to DFCI at current prices would reduce annual inpatient commercial spending by **$18.5M to $23.0M.**
- We modeled two scenarios for **medical oncology discharges shifting to DFCI:**

| | Commercial discharges to DFCI | Spending impact |
|---|---|---|
| **Scenario 1 ("party scenario")** | 2,339 | ($23 million) |
| **Scenario 2 ("model-driven scenario")** | 2,477 | ($18.5 million) |

1. **"Party" scenario – all medical oncology discharges from both BIDMC and BWH divert to DFCI**, and remaining DFCI capacity is filled with patients from other providers based on the results of a patient choice model. This is an extreme scenario – MGB has stated its intention to continue offering oncology services at BWH.
2. **"Model-driven" scenario –** all medical oncology discharges from BIDMC divert to DFCI, and remaining DFCI beds are filled with patients from other providers (including BWH) **based on the results of a patient choice model**.

- These scenarios estimate the spending impact of adding capacity at DFCI, assuming patients otherwise would have received care at other hospitals. Assuming net new volume would generate spending increases – filling DFCI (or backfilling other hospitals) with all new volume would increase annual Medicare and commercial spending by approximately $190 million.
- Each scenario assumes DFCI's mix of out of state patients and commercial and Medicare payer mix would remain similar to recent years and that length of stay will increase slightly over time; the HPC adopted DFCI's assumptions of future occupancy provided in its DoN application.

# Spending: Inpatient backfill at BWH would likely increase commercial spending, while backfill at BIDMC would likely reduce spending, primarily due to expected shifts from MGB AMCs.

- The HPC estimates that backfill of capacity at BWH would likely increase annual commercial spending by between $4.2M (if backfilled discharges are medical oncology discharges) and $15.9M (if backfilled discharges are general acute care discharges).

*Estimated Backfill Spending Impact (Model-Driven)*

| | BIDMC | BWH |
|---|---|---|
| General Acute Care | ($5.3 M) | $15.9 M |
| Oncology Services | ($3.5 M) | $4.2 M |

- Backfill of newly available inpatient capacity at **BIDMC** would **reduce** annual commercial spending by between **$3.5M** (if backfilled discharges are surgical oncology discharges) and **$5.3M** (if backfilled discharges are general acute care discharges). If BIDMC were to backfill its capacity solely with surgical oncology discharges from BWH, this would reduce annual commercial spending by up to $7.4M.
- Because BIDMC and the MGB AMCs will be competing to backfill patients, econometric modeling alone cannot predict the ultimate balance of patient shifts.

Source: HPC analysis of 2022 CHIA All-Payer Claims Database and 2022 CHIA Hospital Discharge Data, and 2022 CHIA Relative Price Data
Notes: Assumes that BWH and BIDMC would not take volume from other MGB and BILH hospitals, respectively.

# Spending: Outpatient oncology shifting from BIDMC and potentially other providers to DFCI would likely increase commercial spending.

- We quantified spending impacts for certain service lines where we can make reasonable assumptions about the direction and scale of shifts within the service line:

| Description of Shift | Spending Impact Estimate |
|---|---|
| 100% of BIDMC infusion to DFCI | $1.5 million |
| 100% of BIDMC oncologic drugs to DFCI | $26.5 million |
| BIDMC oncologist office visits to DFCI | $3.6 million |
| 100% of BIDMC radiation oncology to JV; JV receives DFCI rates | $4.6 million |
| 75% of BWH radiation oncology to JV; JV receives DFCI rates | $4.7 million |
| 75% of BWH oncology-related radiology to BIDMC/DFCI (50% to DFCI; 50% to BIDMC) | $0.1 million |
| 75% of BWH oncology-related lab and pathology to BIDMC/DFCI (50% to DFCI; 50% to BIDMC) | $0.4 million |
| 75% of BWH outpatient endoscopy and excision surgery to BIDMC | ($2.4 million) |
| **Total** | **$39.0 million** |

- Shifts of outpatient care to DFCI from providers other than those quantified here would likely further increase spending due to DFCI's high relative prices for outpatient services. Shifts of additional outpatient care to BIDMC from MGB AMCs would further reduce spending.

- To the extent the affiliation impacts patient choice of providers outside of Longwood, additional care provided at DFCI-licensed sites would likely further increase spending, while patients shifting to BILH for non-oncology care may reduce spending due to BILH providers' moderate hospital prices and total medical expenses (TME) compared to other major hospital-based systems.

Source: HPC analysis of CHIA All-Payer Claims Database. Includes facility and professional allowed amounts for encounters involving at least one facility claim made up of claims with the same patient, procedure code, and date of service.

# Spending: At current Medicare rates, inpatient care shifting to DFCI would reduce Medicare spending, but changes to DFCI's Medicare reimbursement would impact these savings. Shifts of outpatient Medicare volume to DFCI may increase annual Medicare spending.

- **At current prices,** differences in Medicare payments per discharge **would result in savings in the range of $5.7M to $9.1M** as Medicare inpatients shift to DFCI.
  - These estimates are based on DFCI's current Medicare rates. Given DFCI's cost-based Medicare inpatient reimbursement structure, **these savings would be reduced, or spending may increase, if DFCI's costs per patient increase in its new hospital**.
- Outpatient care shifting to DFCI **may also increase Medicare spending**.
  - Dedicated cancer hospitals receive supplemental payments from Medicare for outpatient care to offset their higher costs of care. CMS estimates that in 2025 DFCI's total outpatient payments will be 46.6% higher than a hospital paid under the standard Medicare reimbursement system would receive for the same services.
  - While the HPC cannot fully adjust for service mix, if DFCI were to receive a similar supplemental payment rate for outpatient oncologic drug infusion services currently provided by BIDMC, this would increase Medicare spending by over $17M per year.

Inpatient Source: HPC analysis of 2022 CHIA All-Payer Claims Database, 2022 CHIA Hospital Discharge Data, 2022 CHIA cost report data, and CMS 2022 Medicare final rule factors.
Inpatient Notes: Based on the HPC's inclusive definition of oncology services. Price calculations exclude pediatric discharges and discharges with prices that are either greater than 5 times or less than 20% of the median allowed amount for that MS-DRG. Commercial spending impact includes both facility and professional services. Medicare spending impact is based on facility services only.
Outpatient Source: HPC analysis of U.S CENTERS FOR MEDICARE AND MEDICAID SERVICES, HOSPITAL OUTPATIENT PROSPECTIVE PAYMENT-NOTICE OF FINAL RULEMAKING § II.F at 93977-93979 and Table 12 at 93980, available at https://www.govinfo.gov/content/pkg/FR-2024-11-27/pdf/2024-25521.pdf.

# Spending: Any increases in the parties' prices as a result of the proposed transaction would reduce savings or increase spending.

- DFCI's share of inpatient oncology services would substantially increase as it fills beds in the new facility and BIDMC exits the medical oncology market. DFCI would have to compete on price with other providers to fill its new beds, and competition with DFCI could theoretically also constrain price growth for DFCI's competitors. However, **DFCI prices could grow substantially, increasing spending, while remaining lower than its largest competitors**, the MGB AMCs.
- Other oncology providers may also be challenged by loss of revenue. Hospitals other than BIDMC, BWH, and MGH would **lose $60M - $64M in commercial inpatient revenue per year** based on the patient flows estimated by our models. These providers would also face greater competition and labor costs for oncology-trained workers.
- The spending impact analyses in the Independent Cost Analysis conducted for the DoN program illustrate the potential for changes in DFCI prices to result in increased spending, modeling a **$10M annual spending increase** on inpatient care if DFCI were to obtain commercial rates more similar to BWH and Medicare reimbursement more similar to other dedicated cancer hospitals, rather than a spending decrease at current price differentials.
- Commitments to limit future inpatient and outpatient rate increases and address DFCI's already high outpatient prices may help to mitigate these concerns.

# Cost and Market Impact Summary

- The proposed transaction and the construction of the new DFCI facility would likely shift a large volume of services from BIDMC, BWH, and other oncology providers to DFCI. BIDMC would also likely gain surgical oncology volume primarily at the expense of MGB. BIDMC and BWH are also likely to backfill any volume that shifts to DFCI. **Each of these volume shifts would impact health care spending**.
- Inpatient care shifting to DFCI would likely **reduce annual commercial spending by $18.5M to $23.0M** based on current prices. Backfill of newly available inpatient capacity at BIDMC **would likely reduce annual commercial spending by $3.5M to $5.3M, while backfill of capacity at BWH would likely increase spending by $4.2M to $15.9M**.
- Hospital outpatient care would also shift, especially as DFCI takes over outpatient medical oncology formerly provided by BIDMC. Most shifts would likely increase commercial spending due to DFCI's high commercial outpatient prices, especially for hospital-administered oncologic drugs. In total, shifts in outpatient oncology services that the HPC could quantify would likely **increase annual commercial spending by approximately $39 million**; $26.5 million of this spending increase would be due to higher commercial prices for oncologic drugs at DFCI.
- **At current Medicare rates**, inpatient care shifting to DFCI would **reduce annual Medicare spending by $5.7 to $9.1 million**. However, DFCI's inpatient Medicare reimbursement is based on its costs per patient, and to the extent its costs per patient increase in the newly constructed hospital its Medicare reimbursement rate would also increase, **reducing any savings or potentially increasing spending**. Shifts of **outpatient Medicare volume to DFCI would likely increase Medicare spending, likely in excess of $10 million**.
- Any increases in the parties' prices as a result of the proposed transaction would reduce savings or increase spending. **Commitments to limit future inpatient and outpatient rate increases and address DFCI's already high outpatient prices may help to mitigate these concerns**.

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# Quality:
# Factors Examined

1. Current Care Delivery Initiatives and Certifications
2. Hospital Oncology Quality Measures
3. Future Plans to Improve Care Quality and Coordinate Care

# DFCI and BIDMC are internationally recognized for their high-quality cancer care.

- **Both DFCI and BIDMC are engaged in a variety of care delivery initiatives that are designed to foster high quality care and positive patient outcomes, including:**
  - Programs to reduce unplanned admissions, such as the DFCI outpatient acute care clinic
  - Integration of care with clinical trial access and best practices; both DFCI and BIDMC (along with Boston Children's Hospital, BWH, and MGH) are members of the Dana-Farber/Harvard Cancer Center, an NCI designated cancer center with over $13 million of annual NIH funding
  - Survivorship care planning and related governance committees to support long term patient survival outcomes
  - Patient experience reporting tools and input from patient family advisory councils
  - Patient navigator assignments intended to reduce care disparities for underserved populations
- **The care delivered by DFCI and BIDMC has been endorsed by several nationally recognized certification boards, including Magnet, FACT, the Joint Commission, and Commission on Cancer.**
  - Certifications from each of these boards demonstrates adherence to evidence-based care standards and robust policies and procedures required for the delivery of high-quality oncology care

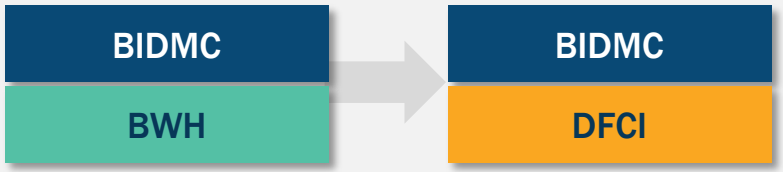
# There are few publicly available hospital oncology quality measures, but the parties have generally performed comparably to statewide average performance on available metrics.

- DFCI and BIDMC performance was mixed on **CMS measures specific to oncology care** for unplanned readmissions and ED utilization after discharge to home health, although this variation may be due in part to the lack of risk adjustment for these measures.
- On a metric of one year survival rates for oncology patients with allogeneic stem cell transplants, **DFCI, in partnership with BWH and Boston Children's Hospital, outperformed survival rate expectations for its patient panel**. BIDMC and other Massachusetts hospitals providing these transplants performed similarly to expected survival rates for its their patient panels.
- DFCI and BIDMC performed **comparably to statewide average performance** for the two outpatient medical oncology metrics analyzed: Rate of Admissions for Patients Receiving Outpatient Chemotherapy and Rate of Emergency Department Visits for Patients Receiving Outpatient Chemotherapy.
- BIDMC and BWH both generally performed **at or above statewide average performance on available surgical oncology care metrics**.
- National research has found patients receiving oncology care at PPS-exempt cancer hospitals **experience superior survival rates and other quality benefits** relative to patients treated at other types of hospitals, examined at the cohort level, although literature alone cannot indicate that other hospitals with high-volume, specialized oncology programs in the Commonwealth should be assumed to have poorer patient outcomes than DFCI or that expanded capacity at DFCI would improve patient outcomes **solely due to DFCI's status as a PPS-exempt cancer hospital**.

# The parties have identified several early-stage plans that have the potential to improve care quality, but these plans are not yet sufficiently developed to assess the likelihood of any specific impacts.

- BILH and Dana-Farber have stated an **intention to expand several existing programs**, including the DFCI acute care clinic, coordination with satellite locations and community health centers, patient navigator assignments, and access to clinical trials, and to **collaborate on new quality improvement initiatives**. These expansions would have the potential to promote clinical quality, although parties' plans are **not yet sufficiently developed** to allow the HPC to assess to what extent they might result in specific improvements.
- DFCI has identified several **quality related benefits it expects to achieve from the creation of its new inpatient facility**, including greater control over infection control protocols specific to cancer patients, nursing staff being certified in oncology care, diversion of admissions to newly created observation beds, improved wait times, and improved patient experience in space designed specifically for oncology care. **These features appear likely to promote high-quality care**.
- Annual reporting on the quality and patient experience measures recommended in the DoN Staff Report would allow assessment of the extent to which DFCI's quality improves in the years following the opening of the new hospital.

# Changes in care team affiliations would require substantial coordination amongst providers to avoid disruptions to patient care.

| | |
|---|---|
| Medical Oncology | BIDMC patients would receive medical oncology care from DFCI as opposed to BIDMC/HMFP.<br>  |
| | Some BWH patients will likely follow DFCI oncologists, while others will likely stay with MGB.<br>  |
| Surgical Oncology | DFCI patients would generally receive surgical oncology care at BIDMC, as opposed to BWH.<br>  |
| Radiation Oncology | DFCI and BIDMC patients would receive radiation oncology services from the DFCI/BIDMC joint venture, as opposed to BWH or BIDMC.<br>  |

To facilitate care coordination and avoid disruptions to care continuity, the parties and other oncology providers with whom they collaborate will **need to develop robust plans for care coordination and management**.

# Quality Summary

- DFCI and BIDMC are internationally recognized for their high-quality cancer care.
- The parties have generally historically performed comparably to statewide average performance on available oncology quality metrics.
- Research suggests that hospitals with specialized oncology care offerings achieve superior outcomes for their patients, although these findings do not necessarily indicate the transaction would result in higher quality care than that currently provided by the parties.
- The parties have identified several early-stage plans that have the potential to improve care quality, but these plans are not yet sufficiently developed to assess the likelihood of any specific impacts.
- Changes in care team affiliations would require substantial coordination amongst providers to avoid disruptions to patient care.
- The proposed clinical affiliation may result in more patients using BILH providers for non-oncology care, on which BILH providers generally perform comparably to statewide average across most metrics.

# Presentation Outline

1. Background on the Parties
2. Background on the Transaction
3. Cost and Market
4. Quality of Care
5. **Access and Equity**
6. Summary and Status
7. Vote

# Access and Equity: Factors Examined

1. Inpatient Oncology Utilization Trends and Access
2. Payer Mix and Patient Demographics
3. Current and Proposed Patient Access and Equity Efforts

# Utilization Trends and Complicating Factors: Inpatient oncology admissions have increased due to Massachusetts' aging population, but many factors will impact future oncology utilization.

- Statewide from 2016- 2023, adult medical and surgical **oncology discharges increased by 1.3%**, with discharges for adults over 64 years of age *increasing* by 14.6% and discharges for patients ages 20-64 *decreasing* by 18%.

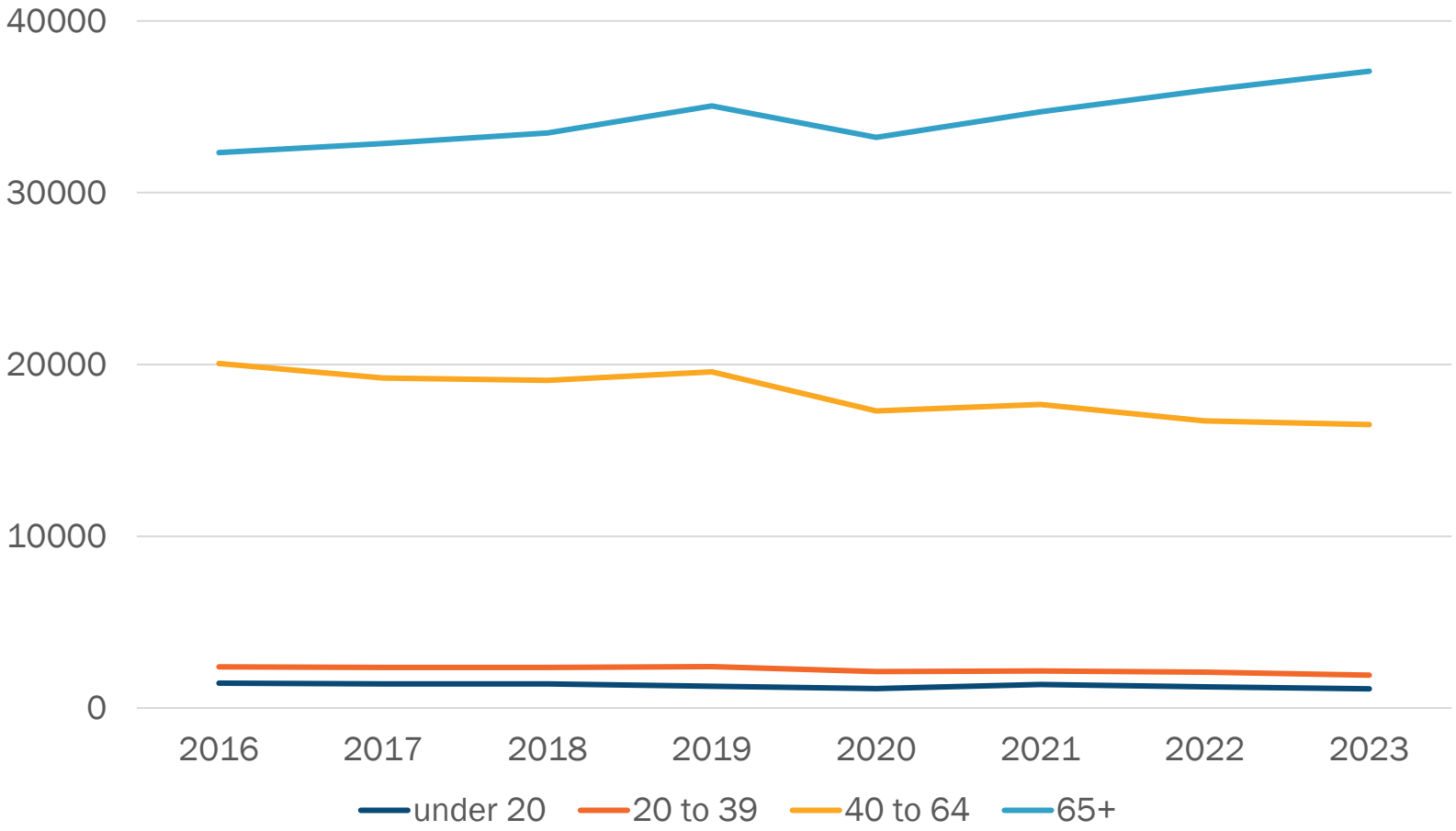
- **DFCI states additional inpatient oncology capacity is needed** due to factors including Massachusetts's aging population, an increase in young adult cancers, the development of innovative cancer treatments such as CAR-T therapy that currently require inpatient stays, increasing utilization of certain therapies and imaging, present capacity constraints (including in post-acute care settings), and increases in patient acuity.

- **It is unclear** to what extent the proposed transaction is necessary or sufficient to ensure future access to inpatient oncology services, given

  - Projections of future bed utilization based on demographic and utilization trends
  - Uncertainty in other factors likely to influence current and future inpatient oncology utilization
  - The availability of data on current inpatient oncology capacity

# Utilization Trends and Complicating Factors: Statewide, the number of oncology discharges has been increasing over time, driven by discharges for older adults.

*Massachusetts Oncology Discharges by Age-Cohort Over Time*

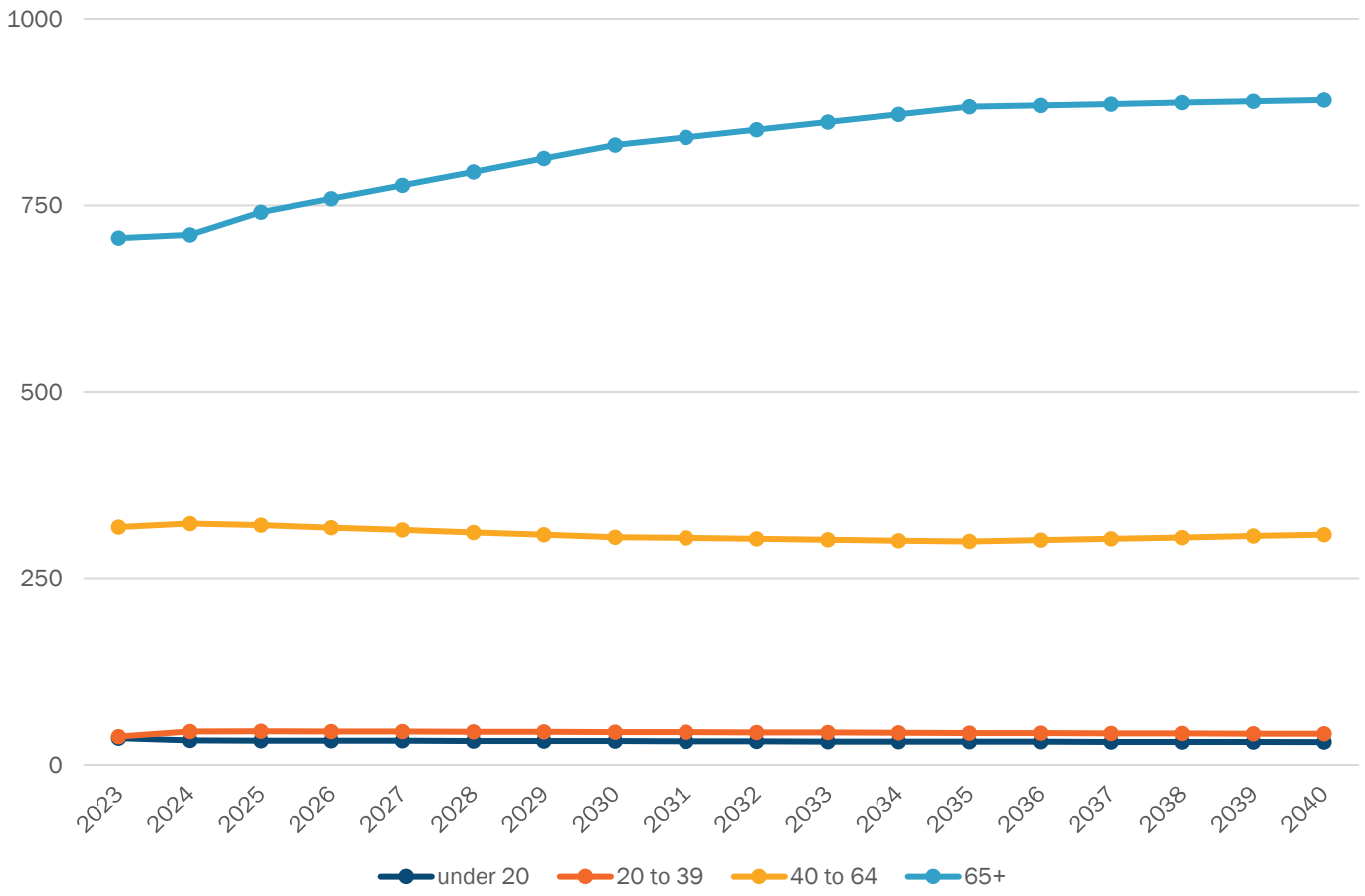



- From 2016 – 2023, the number of inpatient oncology discharges (medical and surgical discharges) for adults ages 65+ increased by 15%.
- Over the same time period discharges for patients ages 20-64 decreased by 18%.
- Total bed days for adult medical and surgical oncology patients grew at a much faster rate during this period, an increase of 20.2%.

Source: HPC analysis of CHIA Hospital Discharge Database. Analysis excludes non-MA residents and non-oncology discharges.

# Utilization Trends and Complicating Factors: HPC modeling identified significant variation in model outcomes depending on small changes to underlying assumptions.

*Estimated Inpatient Oncology Bed Utilization Using 2019 Utilization Levels and Population Projections by Age and Gender Cohort (2023 – 2040)*

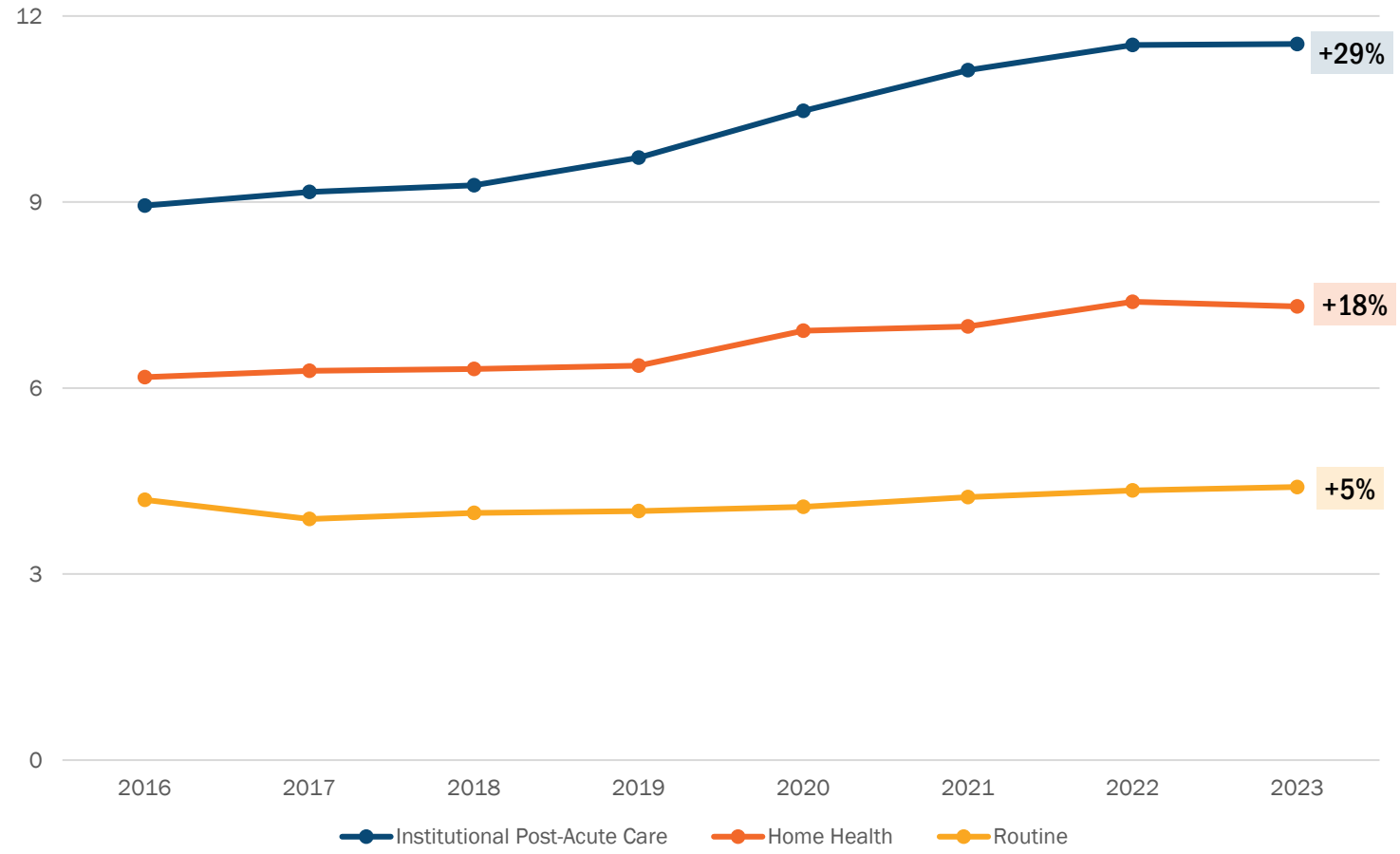



Source: HPC analysis of CDC WONDER incidence and population data, UMass Donahue Institute population projections, and CHIA HIDD data.
Note: 2023 figures are actuals. All other figures are projections.

- To test the models provided by DFCI and the ICA, the HPC also created a utilization model based on demographic projections.
- Based **solely on demographic trends** (i.e., aging population) and assuming 2019 utilization per capita, the HPC estimated that total oncology utilization in the Commonwealth would increase by approximately 113 beds (10%) from 2023 to 2030, and 172 beds (16%) by 2040.
- This model is based on **statewide** population and point-in-time utilization levels and **does account for changes in cancer care trends**.
- Demographic modeling alone is unreliable and **highly sensitive to assumptions**. Using 2023 utilization as the baseline year, with longer average lengths of stay, would predict a "need" for substantially more beds than the 2019 model (53 more beds by 2030 and 72 more beds by 2040).

# Utilization Trends and Complicating Factors: Average length of stay for oncology care appears to have increased in part due to challenges discharging to home health care and institutional post-acute care settings.

*Average Lengths of Stay for Oncology Discharges by Discharge Destination (2016 - 2023)*

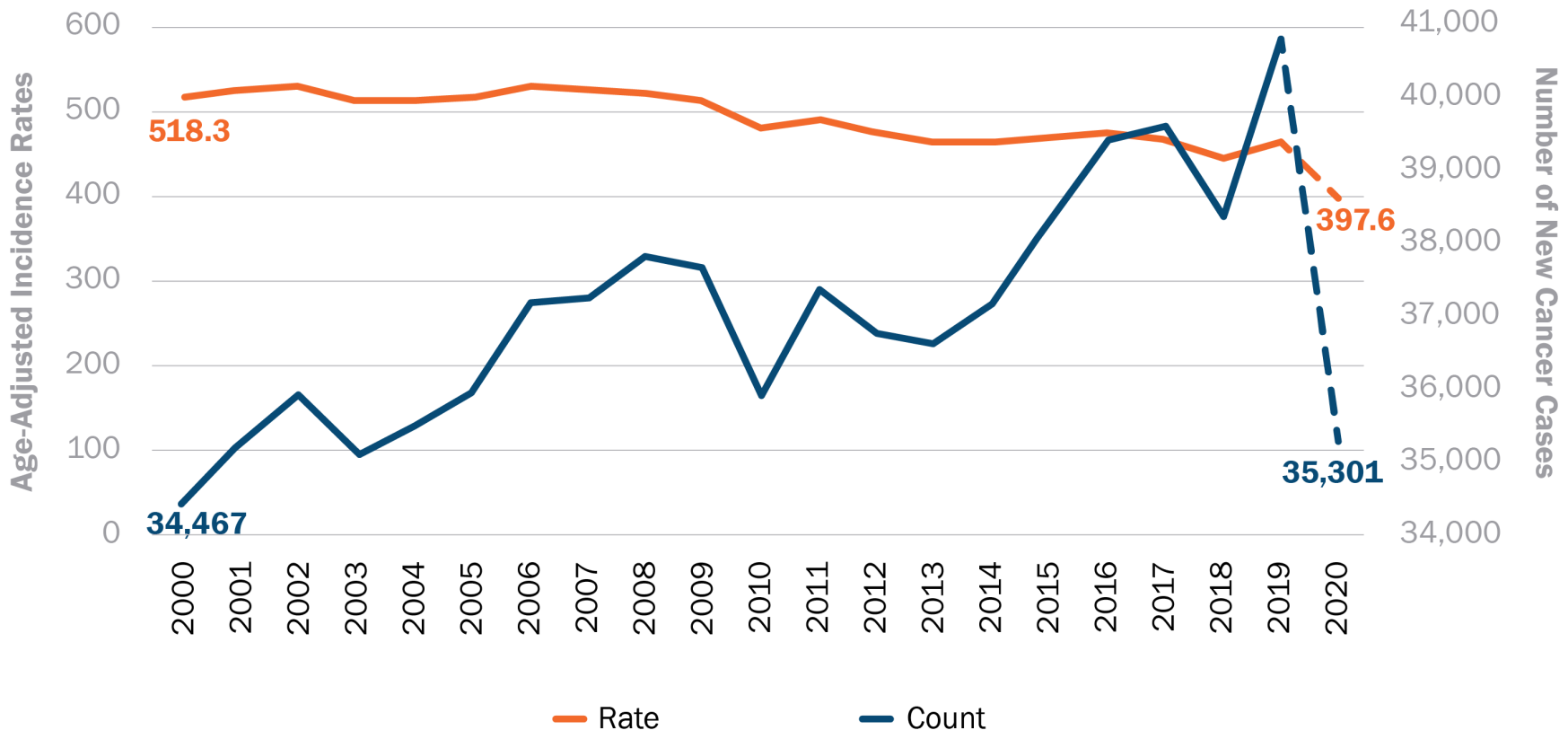



Note: Institutional post-acute care settings are defined as long-term care hospitals, rehabilitation facilities or hospitals, rehabilitation hospitals, skilled nursing facilities, and intermediate care facilities.

- As shown in prior HPC work, average length of stay for certain general acute care scheduled hospital stays and admissions from the emergency department increased by nearly a full day from 2017 – 2023, driven by discharges to SNFs and home health care.
- Trends were similar among oncology stays from 2016 – 2023:
  - For oncology discharges to home health care (comprising 35.7% of oncology bed days and 33.2% of oncology discharges in 2023), average length of stay increased by 1.1 day.
  - For oncology discharges to institutional post-acute care (comprising 25.3% of oncology bed days and 14.9% of oncology discharges in 2023), average length of stay increased by 2.6 days.

# Utilization Trends and Complicating Factors: The Massachusetts Cancer Registry found that age-adjusted cancer incidence rates decreased in Massachusetts between 2000 and 2020.

*Trends in Total Number of Massachusetts Cancer Cases and Incidence Rates (2000-2020)*




Source: Cancer Incidence and Mortality in Massachusetts 2016-2020. Available at: https://www.mass.gov/doc/cancer-incidence-and-mortality-in-massachusetts-2016-2020-statewide-report/download

- From 2000 to 2019, total cancer counts increased, mostly due to an aging and growing Massachusetts population.
- However, age-adjusted incidence has declined in Massachusetts.
- The relationship between cancer incidence and inpatient utilization is not necessarily linear.

# Utilization Trends and Complicating Factors: While continued care innovation and novel therapies may result in increased inpatient utilization, they may also reduce the need for inpatient utilization.

DFCI identified **changes in cancer care techniques and technology**, especially intensive complex treatments such as CAR-T and bi-specific antibody therapies that often require extended inpatient care, as likely drivers of future inpatient utilization.

However, advancements in care protocols, technology, and pharmaceuticals have also resulted in more oncology care being provided on an outpatient basis over the past two decades than previously possible. DFCI has often been at the forefront of these efforts and estimates it **saved the equivalent of five inpatient beds of capacity** in FY24 for certain types of advanced CAR-T and transplant therapies, double the rate of the prior year.

The introduction of innovative oncology drugs, advancements such as less invasive treatment options and genetic therapies, and the use of interventions like DFCI's acute care clinic also show promise for **treating and managing cancer and side effects in outpatient settings**. This suggests that care innovations will reduce as well as increase inpatient oncology utilization.

# Utilization Trends and Complicating Factors: Data are not currently available regarding the number of beds currently available in the Commonwealth suitable to care for oncology patients.

In addition to factors confounding utilization projections, **it is not possible to determine whether the facility proposed by DFCI is necessary to meet future utilization without an assessment of current capacity**. Data are not currently available regarding the number of beds available in the Commonwealth suitable to care for oncology patients, and none of the models discussed attempts to answer this question.

To the extent physical bed space limits access to oncology care, the HPC's findings regarding challenges in discharging patients to post-acute care suggests that **access might be most efficiently improved by increasing post-acute care capacity** and improving post-discharge care management.

In addition to existing capacity, **other Massachusetts providers are already constructing oncology beds** to meet projected utilization growth, including MGH's current construction of a clinical tower housing 210 beds dedicated for oncology care (an increase of 91 oncology-specific beds).

# Payer Mix, Demographics, and Equitable Access to Care

- Literature documents **disparities in access to oncology care, morbidity, and mortality** based on patient payer, race and ethnicity, geography, income, and other social determinants of health.
- **Payer Mix and Patient Demographics**
  - DFCI and BIDMC serve a higher proportion of commercially insured and Medicaid-insured oncology patients than the statewide average.
  - Based on certain indicia of social need, BIDMC's oncology patients reside in areas with greater burden of social determinants of health than DFCI's patients.
  - DFCI and BIDMC serve a greater proportion of BIPOC and Hispanic oncology patients than the statewide average, with BIDMC serving a particularly high proportion of Black patients.
  - DFCI has the largest proportion of oncology discharges from rural areas among major cancer providers in Boston.
- The patients served in the new DFCI hospital would, at baseline, likely resemble a mix of the patient populations currently served by BIDMC, BWH, and other oncology providers.
- DFCI's new facility would represent a significant expansion and **concentration of inpatient oncology services in downtown Boston**, creating a greater need for coordination with community oncology providers to ensure continued local access to care.

# The parties intend to collaborate on expanding equitable access to cancer care, although most of their plans are not yet sufficiently developed for the HPC to evaluate the potential for any specific impacts.

- DFCI and BIDMC currently engage in programs **designed to improve access and equitable care for oncology patients**.
  - DFCI's current access and equity efforts include its Cancer Care Equity Program, which offers patient navigation services, co-location of screening clinics at community health centers, and efforts to minority representation in clinical trials.
  - BIDMC's oncology-specific access and equity efforts include cancer screening and prevention programs run by BILH, a Multicultural Cancer Task Force, survivorship symposiums, and patient navigation programs, in addition to access-oriented programs available to all patients.
- The parties have stated that they intend to collaborate on expanding "access to and affordability of cancer care" and have established a **road map identifying priorities and short- and long-term goals for collaboration**. These planning efforts suggest that the collaboration has the **potential to improve equitable access to cancer care**. However, because the parties have not yet moved substantially beyond identifying these priorities and exchanging information on their current efforts, the HPC is unable to evaluate the likelihood that specific potential benefits would be realized.
  - DFCI has stated in responses to DoN inquiries that it will align its financial assistance policy with BIDMC's. Adhering to this commitment would improve affordability for patients with low incomes.
- Regular public reporting on the implementation and results of the parties' proposed access and equity initiatives would allow the Commonwealth to assess whether and to what extent the transaction enhanced equitable access to oncology care. Annual reporting relevant to these areas has been proposed as part of the conditions for approval of DFCI's DoN.

# Access and Equity Summary

**Inpatient Oncology Utilization Trends and Access:** DFCI asserts that the proposed new cancer hospital is necessary to meet projected changes in oncology utilization. However, given the many factors that may impact future inpatient oncology utilization, the limits of statistical modeling, and the inability to fully assess other inpatient oncology capacity, it is unclear to what extent the proposed transaction is necessary or sufficient to ensure future access to oncology care.

**Payer Mix and Patient Demographics:**

- DFCI and BIDMC serve a larger proportion of commercially insured and Medicaid-insured oncology patients than the statewide average, and DFCI's Medicare payer mix would likely increase somewhat as a result of the transaction.
- Based on certain indicia of social need, BIDMC's oncology patients reside in areas with greater SDoH burden than DFCI's patients.

# Access and Equity Summary (cont.)

**Payer Mix and Patient Demographics continued:**

- DFCI and BIDMC serve a greater proportion of BIPOC and Hispanic oncology patients than the statewide average, with BIDMC serving a particularly high proportion of Black individuals who would likely shift to the new facility.
- DFCI has the largest proportion of oncology discharges from rural areas among major cancer providers in Boston and would likely serve a greater share of patients from nearby urban areas in the new facility.

**Current and Proposed Access and Equity Efforts:** The parties currently engage in programs designed to improve access and equitable care for oncology patients and state that they intend to collaborate on expanding these efforts, although their plans are not yet sufficiently developed for the HPC to evaluate the likelihood of any specific impacts.

# Presentation Outline

1. Background on the Parties
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7. Vote

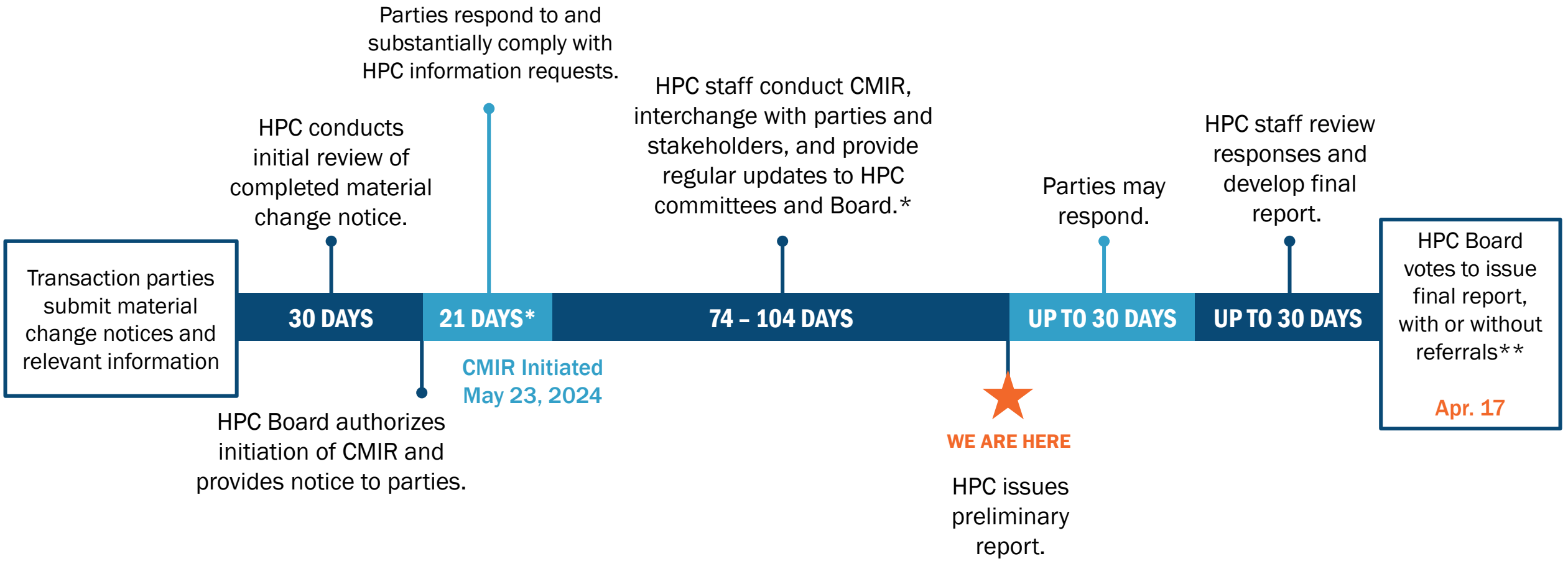
# Summary of Findings

- The proposed affiliation and the construction of the new facility is likely to result in DFCI providing much more oncology care.
- Shifts in inpatient oncology care from BIDMC, BWH, and other hospitals to DFCI may reduce annual commercial spending by $18.5M to $23M. Backfill of inpatient capacity at BIDMC would also reduce annual commercial spending by $3.5M to $5.3M, while backfill of capacity at BWH would increase commercial spending by $4.2M to $15.9M.
- Outpatient care shifting to DFCI and BIDMC would increase commercial spending on outpatient care by approximately $39M; $26.5 million of this spending increase would be due to higher commercial prices for oncologic drugs at DFCI.
- At current Medicare rates, inpatient care shifting to DFCI would reduce annual Medicare spending by $5.7 to $9.1 million, but to the extent its costs per patient increase in the newly constructed hospital, its Medicare reimbursement rate would also increase, reducing savings or resulting in increased spending. Shifts of outpatient Medicare volume to DFCI may increase annual Medicare spending.
- The ultimate spending impacts would depend on whether DFCI maintains its low relative prices for inpatient care and reduces its high relative prices for outpatient care. Commitments regarding rate increases and DFCI's future outpatient price structure may help mitigate concern about spending impacts in the short term.

# Summary of Findings cont'd.

- The HPC did not identify significant concerns regarding changes in the quality of care for oncology patients as a result of the proposed transaction based on the parties' current quality performance. The parties have emphasized aspects of their plans designed to improve care quality. While these plans have the potential to improve clinical quality, they are not yet sufficiently developed for the HPC to be able to assess the likelihood of any specific impacts. The parties have begun planning to limit disruptions to care coordination, and in the short-term it will be critical for the parties and other oncology providers to develop robust plans for care coordination and management to avoid disruptions in continuity of care as long-standing provider relationships shift.
- Although inpatient oncology utilization has increased in recent years, many factors may impact future inpatient oncology utilization. Given the uncertainty of these influences, the limits of statistical modeling, and the inability to fully assess inpatient oncology capacity, it is unclear whether the parties' specific proposal is necessary or sufficient to meet future access needs. The parties have begun planning to collaborate and expand on their existing access and equity initiatives, and continued attention to and investment in these collaborations will determine the extent to which the affiliation results in more equitable access to care for underserved populations.

# Timeline for CMIR Review




* The parties may request extensions to this timeline which may likewise affect the timing of the report
** The parties must wait 30 days following the issuance of the final report to close the transaction

# Presentation Outline

1. Background on the Parties
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7. **Vote**

# VOTE

## Approval of Cost and Market Impact Review Preliminary Report: Dana-Farber Cancer Institute, Beth Israel Deaconess Medical Center, Harvard Faculty Medical Physicians

### MOTION

That, pursuant to section 13 of chapter 6D of the Massachusetts General Laws, the Commission hereby authorizes the issuance of the preliminary report, as presented, on the cost and market impact review of the proposed clinical affiliation between Dana-Farber Cancer Institute, Beth Israel Lahey Health, Beth Israel Deaconess Medical Center, and Harvard Medical Faculty Physicians at BIDMC and the related construction of a freestanding, adult inpatient cancer facility; and the submission of the preliminary report to the Department of Public Health as a comment to the Determination of Need staff report.