**Independent Cost Analysis for**

**Dana-Farber Cancer Institute Determination of Need**

**DoN Application #: DFCI-23040915-HE**

**Appendix**

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**Appendix Table of Contents**

[I. Data Sources Used in the ICA Report 4](#_Toc187401818)

[A. Utilization and Cost Data 4](#_Toc187401819)

[B. Demographic Data and Population Data 6](#_Toc187401820)

[C. Data and Information Obtained from DFCI 7](#_Toc187401821)

[II. Service Line Definitions 8](#_Toc187401822)

[A. Inpatient Imaging Revenue and Procedure Codes 8](#_Toc187401823)

[B. Outpatient Procedure Codes 8](#_Toc187401824)

[C. Payor Type Categorization 9](#_Toc187401825)

[III. Supplemental Tables to the ICA Report 10](#_Toc187401826)

[A. Inpatient Cancer Care 10](#_Toc187401827)

[B. Outpatient Diagnostic Imaging 18](#_Toc187401828)

[C. Radiation Therapy Services 24](#_Toc187401829)

**Table of Tables**

[Table A1: Projected Inpatient Cancer Care Discharges by Patient Origin, 2025 10](#_Toc187401830)

[Table A2: Projected Demographic Characteristics of Inpatient Cancer Care Patients by Health System, 2025 11](#_Toc187401831)

[Table A3: Projected DFCI Payor Mix, 2025-2040 12](#_Toc187401832)

[Table A4: Projected Massachusetts Inpatient Cancer Care Discharges and Shares by Hospital, 2025 13](#_Toc187401833)

[Table A5: Projected Massachusetts Inpatient Cancer Care Commercial Discharges and Shares by Hospital, 2025 14](#_Toc187401834)

[Table A6: Estimated Changes in Inpatient Cancer Care Costs for Commercial Patients 15](#_Toc187401835)

[Table A7: Estimated Changes in Inpatient Cancer Care Costs for Medicare Patients 15](#_Toc187401836)

[Table A8: Estimated Changes in Inpatient Cancer Care Costs for Medicaid Patients 15](#_Toc187401837)

[Table A9: Estimated Changes in Inpatient Care Costs with Supply-Induced Demand for Commercial Patients, GAC Backfill 16](#_Toc187401838)

[Table A10: Estimated Changes in Inpatient Care Costs with Supply-Induced Demand for Medicare Patients, GAC Backfill 16](#_Toc187401839)

[Table A11: Estimated Changes in Inpatient Care Costs with Supply-Induced Demand for Medicaid Patients, GAC Backfill 16](#_Toc187401840)

[Table A12: Estimated Changes in Inpatient Care Costs with Supply-Induced Demand for Commercial Patients, Cancer Care Backfill 17](#_Toc187401841)

[Table A13: Estimated Changes in Inpatient Care Costs with Supply-Induced Demand for Medicare Patients, Cancer Care Backfill 17](#_Toc187401842)

[Table A14: Estimated Changes in Inpatient Care Costs with Supply-Induced Demand for Medicaid Patients, Cancer Care Backfill 17](#_Toc187401843)

[Table A15: Projected Demographic Characteristics of DFCI Outpatient Imaging Patient Panel, 2025 18](#_Toc187401844)

[Table A16: Projected Statewide Outpatient CT Imaging Shares by Hospital, 2025 19](#_Toc187401845)

[Table A17: Projected Statewide Outpatient PET-CT Imaging Shares by Hospital, 2025 20](#_Toc187401846)

[Table A18: Projected Changes in Outpatient CT Imaging Shares by Hospital, 2025 21](#_Toc187401847)

[Table A19: Projected Changes in Outpatient PET-CT Imaging Shares by Hospital, 2025 21](#_Toc187401848)

[Table A20: Estimated Changes in Outpatient Imaging Costs for Commercial Patients, 2025-2040 22](#_Toc187401849)

[Table A21: Estimated Changes in Outpatient Imaging Costs for Medicare Patients, 2025-2040 22](#_Toc187401850)

[Table A22: Estimated Changes in Outpatient Imaging Costs for Medicaid Patients, 2025-2040 23](#_Toc187401851)

[Table A23: Projected Demographic Characteristics of DFCI Radiation Therapy Patient Panel, 2025 24](#_Toc187401852)

[Table A24: Projected Boston Area LINAC Shares by Hospital, 2025 25](#_Toc187401853)

[Table A25: Projected Boston Area CT Simulator Shares by Hospital, 2025 26](#_Toc187401854)

[Table A26: Projected Changes in Boston Area LINAC Shares by Hospital, 2025 27](#_Toc187401855)

[Table A27: Projected Changes in Boston Area CT Simulator Shares by Hospital, 2025 27](#_Toc187401856)

[Table A28: Estimated Changes in Radiation Therapy Services Costs for Commercial Patients, 2025-2040 28](#_Toc187401857)

[Table A29: Estimated Changes in Radiation Therapy Services Costs for Medicare Patients, 2025-2040 28](#_Toc187401858)

[Table A30: Estimated Changes in Radiation Therapy Services Costs for Medicaid Patients, 2025-2040 29](#_Toc187401859)

# Data Sources Used in the ICA Report

1. The ICA requirements and DPH’s request for the FTI ICA Report involved use of several datasets and data sources for empirical analyses to address specific questions and issues. These include claims data as well as demographic, health, capacity, pricing, and cost trend data. For convenience, this section summarizes the key data sources and information used; the FTI ICA Report includes references or citations to specific data sources in each of the sections or analyses.

## Utilization and Cost Data

### CHIA Massachusetts All-Payer Claims Database (APCD)

1. Massachusetts’s Center for Health Information and Analysis (CHIA) collects, manages, and provides a detailed set of claims data for Massachusetts residents and employees covered by Massachusetts companies. The purpose of the dataset is to allow researchers and policymakers to analyze utilization, costs, and quality to improve the provision of healthcare in the Commonwealth of Massachusetts.[[1]](#footnote-1) The APCD comprises dental, medical, and pharmacy claims data for both public and private insurance members. Private plans include all fully insured Massachusetts commercial plans and self-insured commercial plans that choose to report to CHIA.[[2]](#footnote-2) Public plans, for purposes of this ICA analysis, include Medicare and Medicaid.[[3]](#footnote-3)
2. The ICA analysis in this report uses APCD data which includes claims from 2018-2022. As the Proposed Project relates specifically to inpatient and outpatient services, FTI used the Medical Claims (MC) and Member Eligibility (ME) files. For the Medical Claims file, years covered are based on *Date of Service To*. The file contains dates of service and payments, amount of payment, diagnosis and procedure codes associated with claim, provider of service, and facility type. The Member Eligibility file contains information on demographic information and patient location.[[4]](#footnote-4)

### CHIA Case Mix Data

1. CHIA collects, manages, and provides a detailed set of hospital inpatient discharge data for all patients treated at Massachusetts hospitals. The dataset allows researchers and policymakers to analyze utilization, costs, and quality.[[5]](#footnote-5) The CHIA Case Mix Data comprises emergency department, hospital outpatient observation, and hospital inpatient discharge data.
2. The ICA analysis in this report uses hospital inpatient discharge data from 2015-2022, including Diagnostic Groupers files, Diagnosis Code files, Organization files, Procedure Code files, Service files, and full Discharge files. Diagnosis Grouper files contain the CMS and APR DRGs for all discharges. The highest versioned Diagnostic Grouper file for each year was used. Diagnosis Code files contain all diagnoses associated with a given discharge.[[6]](#footnote-6) Organization files identify hospitals providing care in Massachusetts each given year with linkages to discharges. Procedure Code files contain HCPCS codes for procedures associated with each discharge. Service files contains details on revenue codes and procedure quantities for inpatient services. The full Discharge files contain details on length of stay, patient demographics, attending physicians.[[7]](#footnote-7)

### Medicare Claims Data

1. FTI obtained Medicare claims data for 2015-2021 through CHIA. These data are comprised of inpatient and outpatient claims data for Fee-for-Service Medicare. Base Claims files contain demographic and cost information associated with claims and Revenue Center files contain procedure and payment information.[[8]](#footnote-8)

### Methodology for Identifying Facilities

1. Provider facility identification is not standardized in the Massachusetts APCD. To assess utilization, costs, and prices on a facility basis, FTI developed standardized names for DFCI and other hospitals resulting in a crosswalk among unique facilities, addresses, affiliated health systems, and all associated NPIs. This crosswalk was developed through the following procedure.
2. **Step 1**: Identify unique facilities for DFCI, MGB, Beth Israel Lahey, and other major health systems. Using CHIA hospital profiles[[9]](#footnote-9) and independent research, FTI identified 74 unique Massachusetts hospital facilities reporting to CHIA.
3. **Step 2**: Identify all possible names associated with each facility in the Massachusetts APCD. FTI used various search terms to identify potential provider names associated with each facility in the Massachusetts APCD, restricting to providers in Massachusetts.
4. **Step 3**: Finalize list of relevant information to create a standardized facility name. From the list of potential associated names, FTI conducted a manual review of each name and NPI to determine if it was a relevant facility and to assign standardized facility name to it. FTI also relied on other fields and source of information to correctly identify hospital satellite facilities. These data fields included billing provider identifiers and service ZIP codes. Where claims could be attributed to a system but not a particular facility, they were tagged as “Other” for that system.

### Medical and Surgical Procedures

1. The Center for Medicare & Medicaid Services (CMS)’s Oncology Care Model program outlines ICD-10 codes used to define procedures types in the context of oncology in order to align incentives for care. In the OCM Prediction Model Code Lists for Performance Periods, 3,936 ICD-10 procedure codes are categorized as “Cancer-Related Surgery.”[[10]](#footnote-10) Claims with a “Cancer-Related Surgery” procedure were allocated to the surgical inpatient cancer care service line. All other inpatient cancer care claims were allocated to the medical inpatient cancer care service line.

### Diagnostic Related Group (DRG) Weights

1. DRG weights from CMS were used to construct a case mix index, a measure of inpatient discharge acuity levels.[[11]](#footnote-11)

## Demographic Data and Population Data

### University of Massachusetts Donahue Institute Population Projections

1. The University of Massachusetts Donahue Institute (UMDI) produces population projections for Massachusetts at the city level. These projections were initially created with 2010 Census data and updated in 2024 with new inputs from 2020. These data are disaggregated to the city level, with projections made by age (in five-year bins) and sex. There are 351 municipalities included in the data set with eighteen age brackets and two sex categories for each town. These projections start with the 2020 census estimates as baseline and are projected for every five year increment through 2040.

### Health Service Area (HSA) Definitions

1. The Massachusetts’ Department of Public Health’s Bureau of Environmental Health’s Executive Office of Health and Human Services (EOHHS) defines six health service regions (HSAs) using municipal boundaries. These six regions are designated as Western (102 municipalities), Central (65), Northeast (50), Metro West (60), Southeast (69), and Boston (5).[[12]](#footnote-12) Using these definitions, FTI created a crosswalk to enable mapping claims data to HSAs.

### ZIP Code Tabulation Areas (ZCTAs) and Massachusetts Municipalities

1. The U.S. Department of Housing and Urban Development’s Office of Policy Development and Research (PD&R) maintains a crosswalk between county subdivisions (municipalities in the case of Massachusetts) and ZIP code tabulation areas (ZCTAs).[[13]](#footnote-13) Using these definitions, FTI mapped population projections from UMDI to ZCTAs and from ZCTAs to HSAs.

## Data and Information Obtained from DFCI

### DFCI DoN Application

1. The ICA analysis made reference to several sources of demographic and population data and information from DFCI’s Application materials, including the Project Description & Narrative and DFCI Responses to DoN Questions.[[14]](#footnote-14) The DFCI Application included data on utilization and capacity. These data sources are primarily from DFCI internal data for DFCI locations or patients. Data and information sources used are referenced and sourced in the report and include several tables and analyses specific to the Proposed Project, including DFCI responses to questions. Unless otherwise noted, FTI had access only to tables as presented in the DFCI public submissions.

### Additional Information from DFCI

1. DFCI provided a roster of 1,764 physicians with privileges at DFCI.[[15]](#footnote-15) The roster “includes physicians with privileges at Dana-Farber, defined as active staff who see patients.” The dataset excludes active staff with no privileges and “Distinguished Staff.” It contains the first and last name of each physician and their Massachusetts license number. FTI used this roster in its methodology for identifying DFCI inpatient patients.
2. FTI also requested additional information from DFCI regarding its imaging referrals to other facilities. In response, DFCI provided additional data an information that is referenced in the report.[[16]](#footnote-16)

# Service Line Definitions

## Inpatient Imaging Revenue and Procedure Codes

1. The following National Uniform Billing Committee (NUBC) revenue center codes were used to identify inpatient imaging.
2. **CT Scans**: 0350, 0351, 0352, 0359
3. **MRI Scans**: 0610, 0611, 0612, 0614, 0615, 0616
4. **PET-CT Scans**: 0404
5. Additionally, inpatient PET-CT scans were identified by any discharge with an ICD-10 procedure code with the first character “C” and the third character “3”.

## Outpatient Procedure Codes

1. The following procedure codes comprising the outpatient service lines definitions used in the ICA analysis.
2. **Outpatient CT**:CPT codes were identified from the AAPC code list. Codes were augmented through manual inspection of CPT codes to ensure all CT CPT codes were included: 70450, 70460, 70470, 70480, 70481, 70482, 70486, 70487, 70490, 70491, 70496, 70498, 71250, 71270, 71275, 72125, 72126, 72128, 72129, 72131, 72132, 72192, 72193, 72194, 73200, 73201, 73700, 73701, 74150, 74160, 74170, 74174, 74175, 74176, 74178, 75571, 75572, 75574, 76377, 76380, 71260, 74177, 78608, 78815, 78816.
3. **Outpatient PET-CT**: CPT codes were identified from the AAPC code list. Codes were augmented through manual inspection of CPT codes to ensure all PET-CT CPT codes were included: 78429, 78430, 78431, 78433, 78814, 78815, 78816.
4. **LINAC**: CPT and HCPCS codes were identified from Medicare Local Coverage Determination (LCD) for Radiation Therapies reference articles and other regulatory references.[[17]](#footnote-17) Codes were augmented through manual inspection of CPT and HCPCS codes to ensure all LINAC CPT and HCPCS codes were included: 77401, 77402, 77403, 77404, 77406, 77407, 77408, 77409, 77411, 77412, 77413, 77414, 77416, 77418, 77385, 77386, 61796, 61797, 61798, 61799, 77371, 77372, 77373, 77435, G0339, G0340, G6003, G6004, G6005, G6006, G6007, G6008, G6009, G6010, G6011, G6012, G6013, G6014, G6015, G6016.
5. **CT Simulator**: CPT and HCPCS codes were identified from Medicare Local Coverage Determination (LCD) for Radiation Therapies reference articles and other regulatory references.[[18]](#footnote-18) Codes were augmented through manual inspection of CPT and HCPCS codes to ensure all LINAC CPT and HCPCS codes were included: 77280, 77285, 77290, 77293.

## Payor Type Categorization

1. The Massachusetts APCD contains data from both public and private payors. To segment the claims into payor categories (commercial, Medicare, and Medicaid), FTI split claims by insurance type codes as listed below.

| **Insurance Type Code** | **Payer Type** |
| --- | --- |
| 12 | Commercial |
| 13 | Commercial |
| 14 | Commercial |
| HM | Commercial |
| MC | Medicaid |
| 30 | Medicaid |
| MO | Medicaid |
| 16 | Medicare |
| 20 | Medicare |
| HN | Medicare |
| MS | Medicare |
| SC | Medicare |
| MA | Medicare |
| MB | Medicare |

# Supplemental Tables to the ICA Report

## Inpatient Cancer Care

Table A: Projected Inpatient Cancer Care Discharges by Patient Origin, 2025[[19]](#footnote-19)

| **County** | **Statewide** | **DFCI** |
| --- | --- | --- |
| Middlesex County | 20.1% | 20.3% |
| Essex County | 12.1% | 8.3% |
| Worcester County | 11.3% | 6.1% |
| Norfolk County | 11.1% | 19.2% |
| Suffolk County | 10.6% | 17.7% |
| Plymouth County | 9.5% | 10.9% |
| Bristol County | 7.9% | 7.1% |
| Hampden County | 6.2% | 1.8% |
| Barnstable County | 4.4% | 4.3% |
| Berkshire County | 2.0% | 0.7% |
| Hampshire County | 1.9% | 0.6% |
| Franklin County | 1.0% | 0.3% |
| Dukes County | 0.3% | 0.1% |
| Nantucket County | \* | \* |
| Windham County | \* | \* |
| Unknown County | 1.3% | 2.6% |

Table A: Projected Demographic Characteristics of Inpatient Cancer Care Patients by Health System, 2025[[20]](#footnote-20)

|  |  | **State** | **DFCI** | **BWH** | **BIDMC** | **MGH** |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **%** | **%** | **%** | **%** | **%** |
| **Age** | 18-34 | 2% | 4% | 3% | 2% | 4% |
| 35-54 | 10% | 15% | 11% | 15% | 13% |
| 55-64 | 18% | 22% | 21% | 23% | 20% |
| 65-74 | 30% | 32% | 31% | 33% | 30% |
| 75+ | 35% | 25% | 31% | 26% | 30% |
| Other | 5% | 2% | 4% | 2% | 3% |
| **Sex** | Female | 45% | 49% | 48% | 49% | 44% |
| Male | 50% | 49% | 49% | 49% | 53% |
| **Payor Type** | Medicare | 65% | 56% | 62% | 56% | 59% |
| Commercial | 20% | 30% | 26% | 31% | 28% |
| Medicaid/MassHealth | 9% | 10% | 8% | 9% | 10% |
| Other Government | 3% | 2% | 1% | 3% | 2% |
| Self-Pay/Other | 3% | 2% | 3% | 2% | 3% |
| **Race** | White | 83% | 76% | 79% | 75% | 83% |
| Black/African American | 7% | 11% | 11% | 10% | 5% |
| Asian | 3% | 5% | 3% | 5% | 4% |
| Other | 4% | 4% | 5% | 3% | 6% |
| **Ethnicity** | Non-Hispanic | 94% | 94% | 94% | 95% | 93% |
| Hispanic | 6% | 6% | 6% | 5% | 7% |
| **DRG Weight** | 0-1 | 16% | 14% | 18% | 7% | 13% |
| 1-2 | 57% | 52% | 48% | 43% | 51% |
| 2+ | 27% | 34% | 33% | 51% | 36% |
|  | Case Mix Index | 2.1 | 2.5 | 2.7 | 2.5 | 2.5 |
|  | Average Length of Stay | 7.0 | 8.6 | 8.2 | 8.2 | 7.9 |
|  | Average Daily Census | 1,500 | 251 | 68 | 161 | 182 |
| **Total** | Total | 100% | 100% | 100% | 100% | 100% |

Table A: Projected DFCI Payor Mix, 2025-2040[[21]](#footnote-21)

|  | **Actual** | **Status Quo** | **Projected** | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Payer** | **2022** | **2025** | *2025* | *2030* | *2035* | *2040* |
| Medicare/Managed Medicare | 49% | 51% | 56% | 60% | 62% | 63% |
| Commercial/HMO/PPO | 38% | 35% | 30% | 27% | 25% | 24% |
| Medicaid/Managed Medicaid | 10% | 10% | 10% | 9% | 9% | 9% |
| Self-Pay/Other | 2% | 2% | 2% | 2% | 2% | 2% |
| Other Gov | 2% | 2% | 2% | 2% | 2% | 2% |

Table A: Projected Massachusetts Inpatient Cancer Care Discharges and Shares by Hospital, 2025[[22]](#footnote-22)

| **System** | **Hospital Name** | **Discharges** | **Share of Discharges** | **Medical Discharges** | **Share of Medical Discharges** | **Surgical Discharges** | **Share of Surgical Discharges** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Total** |  | **78,122** | **100%** | **68,047** | **100%** | **10,076** | **100%** |
| **Mass General Brigham** | **Total** | **17,800** | **22.8%** | **15,395** | **22.6%** | **2,405** | **23.9%** |
| Mass General Brigham | Massachusetts General Hospital | 8,989 | 11.5% | 7,631 | 11.2% | 1,359 | 13.5% |
| Mass General Brigham | Brigham and Women's Hospital | 3,220 | 4.1% | 3,020 | 4.4% | 199 | 2.0% |
| Mass General Brigham | North Shore Medical Center - Salem Campus | 1,875 | 2.4% | 1,698 | 2.5% | 178 | 1.8% |
| Mass General Brigham | Newton-Wellesley Hospital | 1,679 | 2.1% | 1,476 | 2.2% | 203 | 2.0% |
| **Beth Israel Lahey Health** | **Total** | **13,077** | **16.7%** | **9,548** | **14.0%** | **3,529** | **35.0%** |
| Beth Israel Lahey Health | Beth Israel Deaconess Medical Center - East Campus | 4,271 | 5.5% | 1,741 | 2.6% | 2,530 | 25.1% |
| Beth Israel Lahey Health | Lahey Hospital & Medical Center - Burlington | 2,912 | 3.7% | 2,349 | 3.5% | 562 | 5.6% |
| **Dana-Farber Cancer Institute** | **Dana-Farber Cancer Institute** | **9,529** | **12.2%** | **9,529** | **14.0%** |  |  |
| Dana-Farber Cancer Institute | Dana-Farber Cancer Institute | 9,529 | 12.2% | 9,529 | 14.0% |  |  |
| **UMass Memorial Health Care** | **Total** | **5,424** | **6.9%** | **4,698** | **6.9%** | **726** | **7.2%** |
| UMass Memorial Health Care | UMass Memorial Medical Center - University Campus | 2,684 | 3.4% | 2,568 | 3.8% | 116 | 1.2% |
| **Steward Health Care System** | **Total** | **4,579** | **5.9%** | **4,029** | **5.9%** | **550** | **5.5%** |
| **Baystate Health** | **Total** | **4,080** | **5.2%** | **3,648** | **5.4%** | **431** | **4.3%** |
| Baystate Health | Baystate Medical Center | 3,324 | 4.3% | 2,907 | 4.3% | 416 | 4.1% |
| **Tufts Medicine** | **Total** | **3,971** | **5.1%** | **3,479** | **5.1%** | **492** | **4.9%** |
| Tufts Medicine | Tufts Medical Center | 1,811 | 2.3% | 1,501 | 2.2% | 310 | 3.1% |
| **South Shore Health System** | **Total** | **3,304** | **4.2%** | **3,032** | **4.5%** | **271** | **2.7%** |
| South Shore Health System | South Shore Hospital | 3,304 | 4.2% | 3,032 | 4.5% | 271 | 2.7% |
| **Boston Medical Center** | **Total** | **2,376** | **3.0%** | **2,059** | **3.0%** | **317** | **3.1%** |
| Boston Medical Center | Boston Medical Center - Menino Pavilion Campus | 2,376 | 3.0% | 2,059 | 3.0% | 317 | 3.1% |
| **Southcoast Health System** | **Total** | **2,375** | **3.0%** | **2,139** | **3.1%** | **236** | **2.3%** |
| Southcoast Health System | St. Luke's Campus | 1,201 | 1.5% | 1,099 | 1.6% | 102 | 1.0% |
| Southcoast Health System | Charlton Memorial Campus | 928 | 1.2% | 804 | 1.2% | 124 | 1.2% |
| **Cape Cod Healthcare** | **Total** | **2,141** | **2.7%** | **1,976** | **2.9%** | **164** | **1.6%** |
| Cape Cod Healthcare | Cape Cod Hospital | 1,550 | 2.0% | 1,418 | 2.1% | 131 | 1.3% |
| **Tenet Healthcare** | **Total** | **1,895** | **2.4%** | **1,650** | **2.4%** | **245** | **2.4%** |
| **Other Health Systems** | **Total** | **7,573** | **9.7%** | **6,865** | **10.1%** | **708** | **7.0%** |

Table A: Projected Massachusetts Inpatient Cancer Care Commercial Discharges and Shares by Hospital, 2025[[23]](#footnote-23)

| **System** | **Hospital Name** | **Discharges** | **Share of Discharges** | **Medical Discharges** | **Share of Medical Discharges** | **Surgical Discharges** | **Share of Surgical Discharges** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Total** |  | **15,697** | **100%** | **12,463** | **100%** | **3,234** | **100%** |
| **Mass General Brigham** | **Total** | **4,296** | **27.4%** | **3,428** | **27.5%** | **868** | **26.8%** |
| Mass General Brigham | Massachusetts General Hospital | 2,473 | 15.8% | 1,995 | 16.0% | 478 | 14.8% |
| Mass General Brigham | Brigham and Women's Hospital | 831 | 5.3% | 761 | 6.1% | 70 | 2.2% |
| Mass General Brigham | Newton-Wellesley Hospital | 348 | 2.2% | 261 | 2.1% | 87 | 2.7% |
| Mass General Brigham | North Shore Medical Center - Salem Campus | 267 | 1.7% | 212 | 1.7% | 56 | 1.7% |
| **Dana-Farber Cancer Institute** | **Dana-Farber Cancer Institute** | **2,847** | **18.1%** | **2,847** | **22.8%** |  |  |
| Dana-Farber Cancer Institute | Dana-Farber Cancer Institute | 2,847 | 18.1% | 2,847 | 22.8% |  |  |
| **Beth Israel Lahey Health** | **Total** | **2,682** | **17.1%** | **1,418** | **11.4%** | **1,264** | **39.1%** |
| Beth Israel Lahey Health | Beth Israel Deaconess Medical Center - East Campus | 1,314 | 8.4% | 377 | 3.0% | 937 | 29.0% |
| Beth Israel Lahey Health | Lahey Hospital & Medical Center - Burlington | 580 | 3.7% | 395 | 3.2% | 185 | 5.7% |
| **Tufts Medicine** | **Total** | **901** | **5.7%** | **735** | **5.9%** | **165** | **5.1%** |
| Tufts Medicine | Tufts Medical Center | 536 | 3.4% | 424 | 3.4% | 112 | 3.5% |
| **UMass Memorial Health Care** | **Total** | **739** | **4.7%** | **558** | **4.5%** | **181** | **5.6%** |
| UMass Memorial Health Care | UMass Memorial Medical Center - University Campus | 348 | 2.2% | 321 | 2.6% | 27 | 0.8% |
| **Steward Health Care System** | **Total** | **723** | **4.6%** | **579** | **4.6%** | **144** | **4.5%** |
| **Baystate Health** | **Total** | **629** | **4.0%** | **517** | **4.1%** | **113** | **3.5%** |
| Baystate Health | Baystate Medical Center | 541 | 3.4% | 431 | 3.5% | 110 | 3.4% |
| **South Shore Health System** | **Total** | **503** | **3.2%** | **416** | **3.3%** | **87** | **2.7%** |
| South Shore Health System | South Shore Hospital | 503 | 3.2% | 416 | 3.3% | 87 | 2.7% |
| **Tenet Healthcare** | **Total** | **300** | **1.9%** | **231** | **1.9%** | **69** | **2.1%** |
| **Milford Regional Medical Center** | **Total** | **278** | **1.8%** | **247** | **2.0%** | **31** | **1.0%** |
| **Southcoast Health System** | **Total** | **272** | **1.7%** | **219** | **1.8%** | **53** | **1.6%** |
| Southcoast Health System | St. Luke's Campus | 135 | 0.9% | 114 | 0.9% | 21 | 0.7% |
| Southcoast Health System | Charlton Memorial Campus | 125 | 0.8% | 95 | 0.8% | 30 | 0.9% |
| **Berkshire Health Systems** | **Total** | **264** | **1.7%** | **213** | **1.7%** | **50** | **1.6%** |
| Berkshire Health Systems | Berkshire Medical Center - Berkshire Campus | 254 | 1.6% | 203 | 1.6% | 50 | 1.6% |
| **Boston Medical Center** | **Total** | **252** | **1.6%** | **205** | **1.6%** | **47** | **1.4%** |
| Boston Medical Center | Boston Medical Center - Menino Pavilion Campus | 252 | 1.6% | 205 | 1.6% | 47 | 1.4% |
| **Cape Cod Healthcare** | **Total** | **202** | **1.3%** | **169** | **1.4%** | **33** | **1.0%** |
| Cape Cod Healthcare | Cape Cod Hospital | 154 | 1.0% | 125 | 1.0% | 29 | 0.9% |
| **Other Health Systems** | **Total** | **809** | **5.2%** | **681** | **5.5%** | **128** | **4.0%** |

Table A: Estimated Changes in Inpatient Cancer Care Costs for Commercial Patients

|  | **DFCI Pricing Scenario** | | | | **DFCI Pricing Scenario** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Forecast Year** | *(1)* | *(2)* | *(3)* | *(4)* | *(1)* | *(2)* | *(3)* | *(4)* |
| 2025 | -4.5% | 0.3% | -0.1% | -0.1% | -$25,868,148 | $1,479,968 | -$807,758 | -$807,758 |
| 2030 | -4.5% | 0.2% | -0.2% | -0.2% | -$25,078,086 | $1,355,227 | -$855,974 | -$855,974 |
| 2035 | -4.5% | 0.2% | -0.2% | -0.2% | -$24,602,501 | $1,314,375 | -$853,625 | -$853,625 |
| 2040 | -4.4% | 0.2% | -0.2% | -0.2% | -$24,853,882 | $1,312,239 | -$876,611 | -$876,611 |

Table A: Estimated Changes in Inpatient Cancer Care Costs for Medicare Patients

|  | **DFCI Pricing Scenario** | | | | **DFCI Pricing Scenario** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Forecast Year** | *(1)* | *(2)* | *(3)* | *(4)* | *(1)* | *(2)* | *(3)* | *(4)* |
| 2025 | -0.5% | -0.6% | 0.2% | 1.2% | -$5,136,233 | -$5,936,585 | $1,428,313 | $10,797,024 |
| 2030 | -0.5% | -0.6% | 0.1% | 1.1% | -$5,878,856 | -$6,793,255 | $1,621,112 | $12,324,829 |
| 2035 | -0.5% | -0.6% | 0.1% | 1.1% | -$6,383,385 | -$7,376,166 | $1,759,476 | $13,380,709 |
| 2040 | -0.5% | -0.6% | 0.1% | 1.1% | -$6,606,271 | -$7,637,508 | $1,852,018 | $13,923,418 |

Table A: Estimated Changes in Inpatient Cancer Care Costs for Medicaid Patients

|  | **DFCI Pricing Scenario** | | | | **DFCI Pricing Scenario** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Forecast Year** | *(1)* | *(2)* | *(3)* | *(4)* | *(1)* | *(2)* | *(3)* | *(4)* |
| 2025 | 2.3% | -3.8% | 0.8% | 0.8% | $2,577,403 | -$4,160,492 | $910,506 | $910,506 |
| 2030 | 2.4% | -3.7% | 0.9% | 0.9% | $2,570,517 | -$4,020,379 | $939,986 | $939,986 |
| 2035 | 2.4% | -3.6% | 0.9% | 0.9% | $2,629,129 | -$3,973,779 | $995,627 | $995,627 |
| 2040 | 2.4% | -3.5% | 1.0% | 1.0% | $2,765,317 | -$4,013,344 | $1,088,335 | $1,088,335 |

Table A: Estimated Changes in Inpatient Care Costs with Supply-Induced Demand for Commercial Patients, GAC Backfill

|  | **DFCI Pricing Scenario** | | | | **DFCI Pricing Scenario** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Forecast Year** | *(1)* | *(2)* | *(3)* | *(4)* | *(1)* | *(2)* | *(3)* | *(4)* |
| 2025 | 3.6% | 4.6% | 4.5% | 4.5% | $100,439,732 | $127,787,848 | $125,500,120 | $125,500,120 |
| 2030 | 3.8% | 4.7% | 4.7% | 4.7% | $102,845,961 | $129,279,272 | $127,068,072 | $127,068,072 |
| 2035 | 3.9% | 4.8% | 4.8% | 4.8% | $104,796,701 | $130,713,576 | $128,545,576 | $128,545,576 |
| 2040 | 4.0% | 4.9% | 4.8% | 4.8% | $106,873,190 | $133,039,312 | $130,850,464 | $130,850,464 |

Table A: Estimated Changes in Inpatient Care Costs with Supply-Induced Demand for Medicare Patients, GAC Backfill

|  | **DFCI Pricing Scenario** | | | | **DFCI Pricing Scenario** | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Forecast Year** | *(1)* | *(2)* | *(3)* | *(4)* | | *(1)* | *(2)* | *(3)* | *(4)* |
| 2025 | 2.2% | 2.2% | 2.3% | 2.5% | | $113,058,546 | $112,258,200 | $119,623,096 | $128,991,808 |
| 2030 | 2.3% | 2.3% | 2.4% | 2.6% | | $130,380,184 | $129,465,784 | $137,880,160 | $148,583,872 |
| 2035 | 2.4% | 2.3% | 2.5% | 2.7% | | $143,412,274 | $142,419,504 | $151,555,136 | $163,176,368 |
| 2040 | 2.4% | 2.4% | 2.5% | 2.7% | | $151,521,233 | $150,490,000 | $159,979,520 | $172,050,928 |

Table A: Estimated Changes in Inpatient Care Costs with Supply-Induced Demand for Medicaid Patients, GAC Backfill

|  | **DFCI Pricing Scenario** | | | | | **DFCI Pricing Scenario** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Forecast Year** | *(1)* | *(2)* | *(3)* | *(4)* | *(1)* | | *(2)* | *(3)* | *(4)* |
| 2025 | 2.5% | 1.8% | 2.3% | 2.3% | $25,766,153 | | $19,028,258 | $24,099,256 | $24,099,256 |
| 2030 | 2.5% | 1.9% | 2.4% | 2.4% | $26,291,689 | | $19,700,794 | $24,661,158 | $24,661,158 |
| 2035 | 2.6% | 2.0% | 2.4% | 2.4% | $26,938,963 | | $20,336,054 | $25,305,460 | $25,305,460 |
| 2040 | 2.7% | 2.0% | 2.5% | 2.5% | $27,926,346 | | $21,147,686 | $26,249,364 | $26,249,364 |

Table A: Estimated Changes in Inpatient Care Costs with Supply-Induced Demand for Commercial Patients, Cancer Care Backfill

|  | **DFCI Pricing Scenario** | | | | | **DFCI Pricing Scenario** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Forecast Year** | *(1)* | *(2)* | *(3)* | *(4)* | *(1)* | | *(2)* | *(3)* | *(4)* |
| 2025 | 4.0% | 5.0% | 4.9% | 4.9% | $110,282,977 | | $137,631,093 | $135,343,367 | $135,343,367 |
| 2030 | 3.9% | 4.9% | 4.8% | 4.8% | $107,249,790 | | $133,683,103 | $131,471,902 | $131,471,902 |
| 2035 | 3.9% | 4.9% | 4.8% | 4.8% | $105,584,074 | | $131,500,950 | $129,332,950 | $129,332,950 |
| 2040 | 4.0% | 4.9% | 4.8% | 4.8% | $107,053,571 | | $133,219,691 | $131,030,842 | $131,030,842 |

Table A: Estimated Changes in Inpatient Care Costs with Supply-Induced Demand for Medicare Patients, Cancer Care Backfill

|  | **DFCI Pricing Scenario** | | | | **DFCI Pricing Scenario** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Forecast Year** | *(1)* | *(2)* | *(3)* | *(4)* | *(1)* | *(2)* | *(3)* | *(4)* |
| 2025 | 2.4% | 2.4% | 2.5% | 2.5% | $122,809,518 | $122,009,166 | $129,374,063 | $129,374,063 |
| 2030 | 2.5% | 2.5% | 2.6% | 2.6% | $141,858,034 | $140,943,635 | $149,358,002 | $149,358,002 |
| 2035 | 2.5% | 2.5% | 2.7% | 2.7% | $155,189,202 | $154,196,421 | $163,332,063 | $163,332,063 |
| 2040 | 2.6% | 2.6% | 2.7% | 2.7% | $162,006,617 | $160,975,380 | $170,464,906 | $170,464,906 |

Table A: Estimated Changes in Inpatient Care Costs with Supply-Induced Demand for Medicaid Patients, Cancer Care Backfill

|  | **DFCI Pricing Scenario** | | | | **DFCI Pricing Scenario** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Forecast Year** | *(1)* | *(2)* | *(3)* | *(4)* | *(1)* | *(2)* | *(3)* | *(4)* |
| 2025 | 1.7% | 1.0% | 1.5% | 1.5% | $17,434,973 | $10,697,078 | $15,768,077 | $15,768,077 |
| 2030 | 1.6% | 1.0% | 1.5% | 1.5% | $17,134,015 | $10,543,120 | $15,503,485 | $15,503,485 |
| 2035 | 1.7% | 1.0% | 1.5% | 1.5% | $17,204,818 | $10,601,910 | $15,571,316 | $15,571,316 |
| 2040 | 1.7% | 1.0% | 1.5% | 1.5% | $17,741,513 | $10,962,853 | $16,064,532 | $16,064,532 |

## Outpatient Diagnostic Imaging

Table A: Projected Demographic Characteristics of DFCI Outpatient Imaging Patient Panel, 2025[[24]](#footnote-24)

|  |  | **CT** | **CT** | | **PET-CT** | **PET-CT** | | **Combined** | **Combined** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | *Total* | | *%* | *Total* | | *%* | *Total* | *%* |
| **Age** | 18-34 | 781 | | 2% | 111 | | 2% | 892 | 2% |
| 35-54 | 3,898 | | 10% | 426 | | 7% | 4,324 | 10% |
| 55-64 | 6,134 | | 16% | 727 | | 13% | 6,861 | 15% |
| 65-74 | 15,352 | | 40% | 2,160 | | 38% | 17,512 | 40% |
| 75+ | 12,246 | | 32% | 2,263 | | 40% | 14,509 | 33% |
| **Gender** | Female | 21,278 | | 55% | 2,807 | | 49% | 24,086 | 54% |
| Male | 17,130 | | 44% | 2,879 | | 50% | 20,009 | 45% |
| **Payor Type** | Medicare | 22,648 | | 59% | 3,594 | | 63% | 26,243 | 59% |
| Commercial | 7,411 | | 19% | 955 | | 17% | 8,366 | 19% |
| Other | 4,284 | | 11% | 685 | | 12% | 4,969 | 11% |
| Medicaid | 4,252 | | 11% | 466 | | 8% | 4,718 | 11% |
| **Total** | Total | 38,594 | | 100% | 5,701 | | 100% | 44,295 | 100% |

Table A: Projected Statewide Outpatient CT Imaging Shares by Hospital, 2025[[25]](#footnote-25)

|  |  |  |
| --- | --- | --- |
|  | **Projected 2025** | |
| **System** | **Procedures** | **Share** |
| Beth Israel Lahey Health | 39,591 | 18.2% |
| Mass General Brigham | 36,980 | 17.0% |
| Other | 34,728 | 16.0% |
| Steward Health Care System | 12,423 | 5.7% |
| UMass Memorial Health Care | 12,374 | 5.7% |
| Tufts Medicine | 9,430 | 4.3% |
| Baystate Health | 9,423 | 4.3% |
| Dana-Farber Cancer Institute | 9,055 | 4.2% |
| Southcoast Health System | 6,302 | 2.9% |
| Cape Cod Healthcare | 6,279 | 2.9% |
| South Shore Health System | 5,703 | 2.6% |
| Milford Regional Medical Center | 4,783 | 2.2% |
| Tenet Healthcare | 4,248 | 2.0% |
| Berkshire Health Systems | 3,528 | 1.6% |
| Boston Medical Center | 3,488 | 1.6% |
| Emerson Hospital Health System | 3,435 | 1.6% |
| Signature Healthcare | 2,485 | 1.1% |
| Cambridge Health Alliance | 2,350 | 1.1% |
| Sturdy Health | 2,330 | 1.1% |
| Lawrence General Hospital | 2,256 | 1.0% |
| Trinity Health | 2,196 | 1.0% |
| Heywood Healthcare | 1,968 | 0.9% |
| Valley Health Systems | 1,323 | 0.6% |
| Boston Children's Hospital | 577 | 0.3% |

Table A: Projected Statewide Outpatient PET-CT Imaging Shares by Hospital, 2025[[26]](#footnote-26)

|  | **Projected 2025** | |
| --- | --- | --- |
| **System** | **Procedures** | **Share** |
| Beth Israel Lahey Health | 1,040 | 27.2% |
| Dana-Farber Cancer Institute | 1,304 | 34.2% |
| Mass General Brigham | 413 | 10.8% |
| Other | 621 | 16.3% |
| Milford Regional Medical Center | 183 | 4.8% |
| Boston Medical Center | 153 | 4.0% |
| Southcoast Health System | 85 | 2.2% |
| Emerson Hospital Health System | 17 | 0.5% |
| Boston Children's Hospital | \* | \* |
| Trinity Health | \* | \* |
| Steward Health Care System | \* | \* |

Table A: Projected Changes in Outpatient CT Imaging Shares by Hospital, 2025[[27]](#footnote-27)

| **System** | **Status Quo 2025 Share** | **Projected 2025 Share** | **Change** | **Projected 2025 Share (SID)** | **Change** |
| --- | --- | --- | --- | --- | --- |
| Dana-Farber Cancer Institute | 3.4% | 4.2% | 0.8% | 4.1% | 0.7% |
| Mass General Brigham | 17.8% | 17.0% | -0.8% | 17.6% | -0.1% |
| *Herfindahl-Hirschman Index* | *1,065* | *1,045* | *-21* | *1,055* | *-10* |

Table A: Projected Changes in Outpatient PET-CT Imaging Shares by Hospital, 2025[[28]](#footnote-28)

| **System** | **Status Quo 2025 Share** | **Projected 2025 Share** | **Change** | **Projected 2025 Share (SID)** | **Change** |
| --- | --- | --- | --- | --- | --- |
| Dana-Farber Cancer Institute | 25.0% | 34.1% | 9.1% | 31.2% | 6.3% |
| Mass General Brigham | 19.9% | 10.8% | -9.1% | 18.2% | -1.7% |
| *Herfindahl-Hirschman Index* | *2,064* | *2,322* | *258* | *2, 186* | *121* |

Table A: Estimated Changes in Outpatient Imaging Costs for Commercial Patients, 2025-2040

|  | **CT** | **CT** | **PET-CT** | **PET-CT** |
| --- | --- | --- | --- | --- |
| **Year** | *Baseline  Projection* | *With Supply-Induced Demand* | *Baseline  Projection* | *With Supply-Induced Demand* |
| 2025 | 0.1% | 0.9% | 1.3% | 9.2% |
| 2030 | 0.1% | 1.0% | 1.3% | 9.1% |
| 2035 | 0.1% | 1.0% | 1.3% | 9.0% |
| 2040 | 0.1% | 1.0% | 1.2% | 8.8% |

| **Year** | **CT** | **CT** | **PET-CT** | **PET-CT** |
| --- | --- | --- | --- | --- |
| *Baseline  Projection* | *With Supply-Induced Demand* | *Baseline  Projection* | *With Supply-Induced Demand* |
| 2025 | $259,983 | $1,746,699 | $192,240 | $1,368,509 |
| 2030 | $257,453 | $1,729,703 | $187,853 | $1,337,274 |
| 2035 | $253,455 | $1,702,846 | $181,810 | $1,294,261 |
| 2040 | $252,568 | $1,696,880 | $178,917 | $1,273,661 |

Table A: Estimated Changes in Outpatient Imaging Costs for Medicare Patients, 2025-2040

|  | **CT** | **CT** | **PET-CT** | **PET-CT** |
| --- | --- | --- | --- | --- |
| **Year** | *Baseline  Projection* | *With Supply-Induced Demand* | *Baseline  Projection* | *With Supply-Induced Demand* |
| 2025 | 0.4% | 1.4% | -1.4% | 8.4% |
| 2030 | 0.4% | 1.4% | -1.4% | 8.3% |
| 2035 | 0.4% | 1.3% | -1.3% | 8.1% |
| 2040 | 0.3% | 1.3% | -1.3% | 7.9% |

|  | **CT** | **CT** | **PET-CT** | **PET-CT** |
| --- | --- | --- | --- | --- |
| **Year** | *Baseline  Projection* | *With Supply-Induced Demand* | *Baseline  Projection* | *With Supply-Induced Demand* |
| 2025 | $929,359 | $3,449,259 | -$314,352 | $1,893,607 |
| 2030 | $1,038,542 | $3,854,487 | -$349,090 | $2,102,866 |
| 2035 | $1,094,444 | $4,061,963 | -$367,534 | $2,213,973 |
| 2040 | $1,091,549 | $4,051,218 | -$367,902 | $2,216,186 |

Table A: Estimated Changes in Outpatient Imaging Costs for Medicaid Patients, 2025-2040

|  | **CT** | **CT** | **PET-CT** | **PET-CT** |
| --- | --- | --- | --- | --- |
| **Year** | *Baseline  Projection* | *With Supply-Induced Demand* | *Baseline  Projection* | *With Supply-Induced Demand* |
| 2025 | 0.5% | 1.1% | 2.7% | 7.8% |
| 2030 | 0.5% | 1.1% | 2.7% | 7.8% |
| 2035 | 0.5% | 1.1% | 2.7% | 7.8% |
| 2040 | 0.5% | 1.1% | 2.7% | 7.8% |

| **Year** | **CT** | **CT** | **PET-CT** | **PET-CT** |
| --- | --- | --- | --- | --- |
|  | *Baseline  Projection* | *With Supply-Induced Demand* | *Baseline  Projection* | *With Supply-Induced Demand* |
| 2025 | $520,445 | $1,056,913 | $150,149 | $435,179 |
| 2030 | $526,231 | $1,068,662 | $153,359 | $444,481 |
| 2035 | $530,258 | $1,076,841 | $155,436 | $450,502 |
| 2040 | $537,498 | $1,091,545 | $156,986 | $454,994 |

## Radiation Therapy Services

Table A: Projected Demographic Characteristics of DFCI Radiation Therapy Patient Panel, 2025[[29]](#footnote-29)

|  |  | **LINAC** | | **CT Simulator** | |
| --- | --- | --- | --- | --- | --- |
|  |  | *Total* | *%* | *Total* | *%* |
| **Age** | 18-34 | 553 | 1% | 12 | 1% |
| 35-54 | 3,778 | 9% | 123 | 12% |
| 55-64 | 5,863 | 14% | 158 | 15% |
| 65-74 | 16,095 | 39% | 435 | 42% |
| 75+ | 14,747 | 36% | 299 | 29% |
| **Gender** | Female | 20,661 | 50% | 833 | 81% |
| Male | 20,375 | 49% | 195 | 19% |
| **Payor Type** | Medicare | 24,810 | 60% | 576 | 56% |
| Commercial | 7,390 | 18% | 209 | 20% |
| Other | 4,984 | 12% | 130 | 13% |
| Medicaid | 4,065 | 10% | 117 | 11% |
| **Total** | Total | 41,249 | 100% | 1,032 | 100% |

Table A: Projected Boston Area LINAC Shares by Hospital, 2025[[30]](#footnote-30)

|  | **Projected 2025** | |
| --- | --- | --- |
| **System** | **Procedures** | **Share** |
| Beth Israel Lahey Health | 1,737 | 32.2% |
| Dana-Farber Cancer Institute | 1,337 | 24.8% |
| Mass General Brigham | 1,023 | 19.0% |
| Boston Medical Center | 648 | 12.0% |
| Tufts Medicine | 324 | 6.0% |
| Steward Health Care System | 217 | 4.0% |
| Other | 111 | 2.1% |

Table A: Projected Boston Area CT Simulator Shares by Hospital, 2025[[31]](#footnote-31)

|  |  |  |
| --- | --- | --- |
|  | **Projected 2025** | |
| **System** | **Procedures** | **Share** |
| Beth Israel Lahey Health | 156 | 34.4% |
| Dana-Farber Cancer Institute | 88 | 19.5% |
| Boston Medical Center | 81 | 17.8% |
| Mass General Brigham | 74 | 16.4% |
| Tufts Medicine | 36 | 8.1% |
| Steward Health Care System | \* | \* |
| Other | \* | \* |

Table A: Projected Changes in Boston Area LINAC Shares by Hospital, 2025[[32]](#footnote-32)

| **System** | **Status Quo 2025 Share** | **Projected 2025 Share** | **Change** | **Projected 2025 Share (SID)** | **Change** |
| --- | --- | --- | --- | --- | --- |
| Dana-Farber Cancer Institute | 12.4% | 24.8% | 12.4% | 22.0% | 9.7% |
| Mass General Brigham | 31.4% | 19.0% | -12.4% | 27.9% | -3.5% |
| *Herfindahl-Hirschman Index* | *2,373* | *2,210* | *-163* | *2,243* | *-130* |

Table A: Projected Changes in Boston Area CT Simulator Shares by Hospital, 2025[[33]](#footnote-33)

| **System** | **Status Quo 2025 Share** | **Projected 2025 Share** | **Change** | **Projected 2025 Share (SID)** | **Change** |
| --- | --- | --- | --- | --- | --- |
| Dana-Farber Cancer Institute | 5.9% | 19.5% | 13.6% | 17.1% | 11.3% |
| Mass General Brigham | 30.0% | 16.4% | -13.6% | 26.4% | -3.6% |
| *Herfindahl-Hirschman Index* | *2,514* | *2,227* | *-287* | *2, 186* | *-328* |

Table A: Estimated Changes in Radiation Therapy Services Costs for Commercial Patients, 2025-2040

|  | **LINAC** | **LINAC** | **CT Simulator** | **CT Simulator** |
| --- | --- | --- | --- | --- |
| **Year** | *Baseline  Projection* | *With Supply-Induced Demand* | *Baseline  Projection* | *With Supply-Induced Demand* |
| 2025 | -5.6% | 10.3% | -10.6% | 10.1% |
| 2030 | -5.6% | 10.2% | -10.4% | 9.9% |
| 2035 | -5.4% | 10.1% | -10.3% | 9.8% |
| 2040 | -5.4% | 9.9% | -10.3% | 9.7% |

|  | **LINAC** | **LINAC** | **CT Simulator** | **CT Simulator** |
| --- | --- | --- | --- | --- |
| **Year** | *Baseline  Projection* | *With Supply-Induced Demand* | *Baseline  Projection* | *With Supply-Induced Demand* |
| 2025 | -$468,906 | $858,354 | -$38,745 | $36,766 |
| 2030 | -$464,863 | $851,950 | -$37,891 | $36,159 |
| 2035 | -$455,422 | $844,322 | -$37,868 | $36,035 |
| 2040 | -$457,927 | $847,137 | -$38,744 | $36,607 |

Table A: Estimated Changes in Radiation Therapy Services Costs for Medicare Patients, 2025-2040

|  | **LINAC** | **LINAC** | **CT Simulator** | **CT Simulator** |
| --- | --- | --- | --- | --- |
| **Year** | *Baseline  Projection* | *With Supply-Induced Demand* | *Baseline  Projection* | *With Supply-Induced Demand* |
| 2025 | -2.6% | 3.1% | -10.9% | 12.4% |
| 2030 | -2.5% | 3.0% | -10.6% | 12.2% |
| 2035 | -2.5% | 3.0% | -10.4% | 12.1% |
| 2040 | -2.5% | 3.0% | -10.2% | 11.9% |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **LINAC** | **LINAC** | **CT Simulator** | **CT Simulator** |
| **Year** | *Baseline  Projection* | *With Supply-Induced Demand* | *Baseline  Projection* | *With Supply-Induced Demand* |
| 2025 | -$334,546 | $400,044 | -$75,615 | $86,040 |
| 2030 | -$370,908 | $443,103 | -$83,699 | $96,153 |
| 2035 | -$389,056 | $464,671 | -$86,393 | $100,557 |
| 2040 | -$387,843 | $463,192 | -$85,398 | $100,053 |

Table A: Estimated Changes in Radiation Therapy Services Costs for Medicaid Patients, 2025-2040

|  | **LINAC** | **LINAC** | **CT Simulator** | **CT Simulator** |
| --- | --- | --- | --- | --- |
| **Year** | *Baseline  Projection* | *With Supply-Induced Demand* | *Baseline  Projection* | *With Supply-Induced Demand* |
| 2025 | 3.0% | 2.8% | -1.7% | -3.8% |
| 2030 | 3.0% | 2.8% | -1.8% | -3.8% |
| 2035 | 3.0% | 2.8% | -1.8% | -3.8% |
| 2040 | 3.0% | 2.7% | -1.8% | -3.8% |

|  | **LINAC** | **LINAC** | **CT Simulator** | **CT Simulator** |
| --- | --- | --- | --- | --- |
| **Year** | *Baseline  Projection* | *With Supply-Induced Demand* | *Baseline  Projection* | *With Supply-Induced Demand* |
| 2025 | $123,846 | $114,004 | -$10,139 | -$22,170 |
| 2030 | $128,276 | $117,638 | -$10,676 | -$22,707 |
| 2035 | $129,482 | $119,223 | -$11,189 | -$23,270 |
| 2040 | $129,396 | $119,801 | -$11,029 | -$23,301 |

1. [Massachusetts All-Payer Claims Database (MA APCD) 2018-2022 Documentation Guide](https://www.chiamass.gov/assets/docs/p/apcd/MA-APCD-CY2022/MA-APCD-CY2022-Documentation-Guide.pdf). Center for Health Information and Analysis. 2022. <https://www.chiamass.gov/assets/docs/p/apcd/MA-APCD-CY2022/MA-APCD-CY2022-Documentation-Guide.pdf> [↑](#footnote-ref-1)
2. According to the Documentation Guide, by end of 2018, only 25% of members of self-insured plans were included. [↑](#footnote-ref-2)
3. Throughout the report and in all analyses, Medicaid refers to and includes MassHealth insurance coverage. Specific limitations on the CHIA data for MassHealth/Medicaid are addressed in the report. [↑](#footnote-ref-3)
4. See <https://www.chiamass.gov/assets/docs/p/apcd/MA-APCD-CY2022/MA-APCD-CY2022-Government-Request-Data-Specification-Workbook.xlsx> for a full listing of available data fields. [↑](#footnote-ref-4)
5. [Massachusetts Case Mix Hospital Inpatient Discharge 2023 Documentation Manual](https://www.chiamass.gov/assets/docs/r/hdd/FY23-Case-Mix-Hospital-Inpatient-Discharge-Documentation.pdf). Center for Health Information and Analysis. 2024. <https://www.chiamass.gov/assets/docs/r/hdd/FY23-Case-Mix-Hospital-Inpatient-Discharge-Documentation.pdf> . [↑](#footnote-ref-5)
6. See <https://www.chiamass.gov/assets/docs/p/apcd/MA-APCD-CY2020/MA-APCD-CY2020-Government-Request-Data-Specification-Workbook.xlsx> for a full listing of available data fields. [↑](#footnote-ref-6)
7. See <https://www.chiamass.gov/assets/docs/r/hdd/FY22-Case-Mix-Hospital-Inpatient-Discharge-Documentation-Guide.pdf> for a full listing of available [Case Mix Data fields](https://www.chiamass.gov/assets/docs/r/hdd/FY22-Case-Mix-Hospital-Inpatient-Discharge-Documentation-Guide.pdf). [↑](#footnote-ref-7)
8. See <https://resdac.org/cms-data/files/ip-ffs/data-documentation> for [inpatient data fields](https://resdac.org/cms-data/files/ip-ffs/data-documentation) and <https://resdac.org/cms-data/files/op-ffs/data-documentation> for [outpatient data fields](https://resdac.org/cms-data/files/op-ffs/data-documentation). [↑](#footnote-ref-8)
9. [CHIA Massachusetts Acute Hospital Profiles](https://www.chiamass.gov/massachusetts-acute-hospital-profiles/) at <https://www.chiamass.gov/massachusetts-acute-hospital-profiles/> (accessed July 30, 2024). [↑](#footnote-ref-9)
10. [Center for Medicare & Medicaid Services. Oncology Care Model](https://www.cms.gov/priorities/innovation/innovation-models/oncology-care) at <https://www.cms.gov/priorities/innovation/innovation-models/oncology-care> (accessed June 7, 2024). [↑](#footnote-ref-10)
11. Center for Medicare & Medicaid Services. [FY 2023 IPPS Final Rule Home Page](https://www.cms.gov/medicare/payment/prospective-payment-systems/acute-inpatient-pps/fy-2023-ipps-final-rule-home-page) at <https://www.cms.gov/medicare/payment/prospective-payment-systems/acute-inpatient-pps/fy-2023-ipps-final-rule-home-page> (accessed August 2, 2022). [↑](#footnote-ref-11)
12. <https://matracking.ehs.state.ma.us/eohhs_regions/eohhs_regions.html> [↑](#footnote-ref-12)
13. [HUD USPS Zip Code Cross Walk Files](https://www.huduser.gov/portal/datasets/usps_crosswalk.html). Department of Housing and Urban Development Office of Policy Development and Research (PD&R) <https://www.huduser.gov/portal/datasets/usps_crosswalk.html> [↑](#footnote-ref-13)
14. See [all DoN Application materials](https://www.mass.gov/info-details/dana-farber-cancer-institute-inc-hospitalclinic-substantial-capital-expenditure) located at <https://www.mass.gov/info-details/dana-farber-cancer-institute-inc-hospitalclinic-substantial-capital-expenditure> and the detailed files and documents located therein. [↑](#footnote-ref-14)
15. Letter from Caroline Powers to Lisa O’Connor, dated June 26, 2024. [↑](#footnote-ref-15)
16. Letter from Caroline Powers to Lisa O’Connor, dated August 14, 2024. [↑](#footnote-ref-16)
17. See, for example, [Center for Medicare and Medicaid Services. Billing and Coding: Radiation Therapies](https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleid=59350&ver=11&=). <https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleid=59350&ver=11&=> ; [Billing and Coding Guidelines for Radiation Oncology Including Intensity Modulated Radiation Therapy (IMRT](https://downloads.cms.gov/medicare-coverage-database/lcd_attachments/34652_13/L34652_RAD014_BCG.pdf)). <https://downloads.cms.gov/medicare-coverage-database/lcd_attachments/34652_13/L34652_RAD014_BCG.pdf> ; and [NC Department of Health and Human Services](https://info.ncdhhs.gov/dhsr/ncsmfp/2019/2019smfp.pdf). 2019 at <https://info.ncdhhs.gov/dhsr/ncsmfp/2019/2019smfp.pdf> . [↑](#footnote-ref-17)
18. See, for example, [Center for Medicare and Medicaid Services. Billing and Coding: Radiation Therapies](https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleid=59350&ver=11&=). <https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleid=59350&ver=11&=> ; [Billing and Coding Guidelines for Radiation Oncology Including Intensity Modulated Radiation Therapy (IMRT).](https://downloads.cms.gov/medicare-coverage-database/lcd_attachments/34652_13/L34652_RAD014_BCG.pdf) <https://downloads.cms.gov/medicare-coverage-database/lcd_attachments/34652_13/L34652_RAD014_BCG.pdf> ; and [NC Department of Health and Human Services](https://info.ncdhhs.gov/dhsr/ncsmfp/2019/2019smfp.pdf). 2019 at <https://info.ncdhhs.gov/dhsr/ncsmfp/2019/2019smfp.pdf> . [↑](#footnote-ref-18)
19. Note: 2025 projections do not include out-of-state discharges. A \* indicates the number of discharges is less than 11 and has been redacted to comply with data confidentiality requirements. [↑](#footnote-ref-19)
20. Note: 2025 projections do not include out-of-state discharges. [↑](#footnote-ref-20)
21. Note: 2025 projections do not include out-of-state discharges. [↑](#footnote-ref-21)
22. Note: 2025 projections do not include out-of-state discharges. [↑](#footnote-ref-22)
23. Note: 2025 projections do not include out-of-state discharges. [↑](#footnote-ref-23)
24. Note: 2025 projections do not include out-of-state discharges. [↑](#footnote-ref-24)
25. Note: 2025 projections do not include out-of-state discharges. [↑](#footnote-ref-25)
26. Note: 2025 projections do not include out-of-state discharges. A \* indicates the number of discharges is less than 11 and has been redacted to comply with data confidentiality requirements. [↑](#footnote-ref-26)
27. Note: Approximately 16% of CT procedures are projected to be performed by entities that were not grouped in the ICA analysis. Because affiliations of these entities were unknown, FTI grouped them into a single “other system” for purposes of calculating HHI. Alternatively, treating them as each distinct entities reduces initial HHI to 810, but it does not meaningfully impact the projected changes in HHI. [↑](#footnote-ref-27)
28. Note: Approximately 15% of PET-CT procedures are projected to be performed by entities that were not grouped in the ICA analysis. Because affiliations of these entities were unknown, FTI grouped them into a single “other system” for purposes of calculating HHI. Alternatively, treating them as each distinct entities reduces initial HHI to 1,803, but it does not meaningfully impact the projected changes in HHI. [↑](#footnote-ref-28)
29. Note: 2025 projections do not include out-of-state discharges. [↑](#footnote-ref-29)
30. Note: 2025 projections do not include out-of-state discharges. [↑](#footnote-ref-30)
31. A \* indicates the number of discharges is less than 11 and has been redacted to comply with data confidentiality requirements. [↑](#footnote-ref-31)
32. Note: Approximately 2% of LINAC procedures are projected to be performed by entities that were not grouped in the ICA analysis. Because affiliations of these entities were unknown, FTI grouped them into a single “other system” for purposes of calculating HHI. Alternatively, treating them as each distinct entities does not meaningfully impact the projected HHIs or changes in HHI. [↑](#footnote-ref-32)
33. Note: Approximately 3% of LINAC procedures are projected to be performed by entities that were not grouped in the ICA analysis. Because affiliations of these entities were unknown, FTI grouped them into a single “other system” for purposes of calculating HHI. Alternatively, treating them as each distinct entities does not meaningfully impact the projected HHIs or changes in HHI. [↑](#footnote-ref-33)