

CENTER FOR HEALTH INFORMATION AND ANALYSIS

**MASSACHUSETTS
HOSPITAL
PROFILES**

TECHNICAL APPENDIX

DATA THROUGH
FISCAL YEAR 2014

NOVEMBER 2015



center
for health
information
and analysis

Technical Appendix Overview

Acute and non-acute hospitals included in *Massachusetts Hospital Profiles- Data through Fiscal Year 2014* were profiled on service, payer mix, quality, utilization, revenue, and financial performance. Multi-acute hospital systems were profiled based on financial performance and utilization metrics. Details for each of these metrics are included in this technical appendix.

The Center for Health Information and Analysis (CHIA) relied on the following primary data sources to present financial information: the DHC403 Annual Hospital Cost Report (403 Cost Report), the Hospital Discharge Database (HDD), the Hospital Standardized Financial Statement Database, and Audited Financial Statements.

Unless otherwise noted, metrics included in this report are based on financial data reported by acute and non-acute hospitals from Fiscal Year (FY) 2010 to FY14. Discharge data from FY14 included in the acute hospital analysis was reported by acute hospitals in the Hospital Discharge Database, unless otherwise noted. Descriptive acute and non-acute hospital information is from FY14.

Hospital 403 Cost Report:

The 403 Cost Report is submitted each year by acute and non-acute hospitals and it contains data on costs, revenues, and utilization statistics. Acute hospitals are required to complete the 403 Cost Report based on a fiscal year end of September 30 regardless of their actual fiscal year end. Non-acute hospitals complete the 403 Cost Report based on their actual year end.

Hospital Discharge Database (HDD):

HDD data is submitted quarterly by acute hospitals and it contains patient-level data identifying charges, days, and diagnostic information for all acute inpatient discharges. CHIA used FY14 HDD data for the service metrics, which includes discharges between October 1, 2013 and September 30, 2014 for all acute hospitals.

Hospital Standardized Financial Statements:

The Hospital Standardized Financial Statements are submitted quarterly and annually by acute hospitals. They contain information on the hospital's assets, liabilities, revenues, expenses, and profits or losses. They reflect only the hospital's financial information; they do not reflect financial information for any larger health system with which a hospital may be affiliated.

Audited Financial Statements:

Audited Financial Statements are submitted annually by hospitals (or their parent organizations, if applicable). In addition to the financial figures that are found in the Hospital Standardized Financial Statements, the Audited Financial Statements contain an opinion from an independent auditor as well as notes from hospital or system management that elaborate on the financial performance and standing of the hospital or system during the fiscal year. Audited Financial Statements were used as a source primarily for the multi-acute hospital system profiles.

Quality Data Sources:

To compile the hospital quality measures, CHIA relied on the following primary data sources: HDD, the Centers for Medicare & Medicaid Services (CMS) Hospital Compare database, and The Leapfrog Group.

Data Verification:

CHIA surveyed payer representatives, acute and non-acute provider representatives, and other state agencies, to refine profile metrics and overall products for this year's publication.

Each year's Hospital 403 Cost Reports, hospital and multi-acute hospital system financial statements, Relative Price, and quality data reports were verified in accordance with respective reporting regulation requirements. Additional data verification forms that included each hospital's reported financial data were sent to each acute and non-acute hospital for FY10-FY14.

Acute Hospitals

An **acute hospital** is a hospital that is licensed by the Massachusetts Department of Public Health and contains a majority of medical-surgical, pediatric, obstetric, and maternity beds.

Multi-Acute Hospital System Affiliation and Location

Massachusetts hospitals are generally affiliated with a larger health system. Health systems may include multiple hospitals and/or provider organizations while others may have only one hospital with associated providers or provider organizations. Multi-acute hospital system membership identifies those health systems with more than one acute hospital. This information was derived from Audited Financial Statements.

Below is a list of Massachusetts multi-acute hospital systems and their acute hospital members as of the end of each system's fiscal year 2014:

Multi-Acute Hospital System	Acute Hospital Member
Baystate Health	Baystate Franklin Medical Center Baystate Mary Lane Hospital Baystate Medical Center Baystate Wing Hospital ¹
Berkshire Health Systems	Berkshire Medical Center Fairview Hospital
Cape Cod Healthcare	Cape Cod Hospital Falmouth Hospital
CareGroup	Beth Israel Deaconess Hospital – Milton Beth Israel Deaconess Hospital – Needham Beth Israel Deaconess Hospital – Plymouth Beth Israel Deaconess Medical Center Mount Auburn Hospital New England Baptist Hospital
Heywood Healthcare	Athol Hospital Heywood Hospital
Kindred Healthcare[^]	Kindred Hospital – Boston Kindred Hospital – Boston North Shore
Lahey Health System	Lahey Hospital & Medical Center Northeast Hospital Winchester Hospital
Partners HealthCare System	Brigham and Women's Hospital Brigham and Women's Faulkner Hospital Cooley Dickinson Hospital Martha's Vineyard Hospital Massachusetts General Hospital Nantucket Cottage Hospital Newton-Wellesley Hospital North Shore Medical Center
Shriners Hospitals for Children[^]	Shriners Hospitals for Children – Boston Shriners Hospitals for Children – Springfield
Steward Health Care System²	Merrimack Valley Hospital ³ Morton Hospital

¹ Baystate Wing Hospital (formerly Wing Memorial Hospital) joined Baystate Health effective September 1, 2014. For the preceding October 1, 2013 through August 30, 2014 of FY14, Wing Memorial Hospital was a member of UMass Memorial Health Care.

² Steward Health Care System information is based on its FY13 Audited Financial Statements.

³ Merrimack Valley Hospital merged with Steward Holy Family in August 2014.

Acute Hospitals

	Nashoba Valley Medical Center Quincy Medical Center ⁴ Steward Carney Hospital Steward Good Samaritan Medical Center Steward Holy Family Hospital Steward Norwood Hospital Steward Saint Anne's Hospital Steward St. Elizabeth's Medical Center
UMass Memorial Health Care	Clinton Hospital HealthAlliance Hospital Marlborough Hospital UMass Memorial Medical Center
Tenet Healthcare[^]	MetroWest Medical Center Saint Vincent Hospital

[^] Kindred Healthcare, Inc., Tenet Healthcare Corporation, and Shriners Hospitals for Children are multi-state health systems with a large presence outside of Massachusetts. Each owns two acute hospitals in Massachusetts (Kindred owns Kindred Hospital – Boston and Kindred Hospital – Boston North Shore; Tenet owns MetroWest Medical Center and Saint Vincent Hospital; Shriners owns Shriners Hospitals for Children – Boston and Shriners Hospitals for Children - Springfield). Due to their broad presence outside of Massachusetts, CHIA did not include Kindred, Tenet, or Shriners in the multi-acute hospital system profiles chapter.

Regional Definitions

The location for each acute hospital in this report was obtained, where possible, from hospital licensing information collected by the Massachusetts Department of Public Health (DPH). The hospital license includes information on a hospital's campuses and satellite offices.

The geographic regions presented in this report are derived from the Health Policy Commission (HPC) static geographic regions.⁵ The HPC regions were rolled up into larger regions for this publication to facilitate better comparison within each geographic area. The acute hospitals and the regions to which they were assigned are:

Massachusetts Region	Acute Hospital Assigned to Region
Metro Boston	Beth Israel Deaconess Hospital – Milton Beth Israel Deaconess Hospital – Needham Beth Israel Deaconess Medical Center Boston Children's Hospital Boston Medical Center Brigham and Women's Faulkner Hospital Brigham and Women's Hospital Cambridge Health Alliance Dana-Farber Cancer Institute Hallmark Health Kindred Hospital- Boston Massachusetts Eye and Ear Infirmary Massachusetts General Hospital Mount Auburn Hospital New England Baptist Hospital Newton-Wellesley Hospital Shriners Hospitals for Children – Boston Steward Carney Hospital Steward St. Elizabeth's Medical Center Tufts Medical Center

⁴ Quincy Medical Center closed in December 2014.

⁵ For descriptions of the regions, see <http://www.mass.gov/anf/docs/hpc/2013-cost-trends-report-technical-appendix-b3-regions-of-massachusetts.pdf> (last accessed October 28, 2015).

Acute Hospitals

Northeastern Massachusetts	<p>Anna Jaques Hospital Emerson Hospital Kindred Hospital- Boston North Shore Lahey Hospital & Medical Center Lawrence General Hospital Lowell General Hospital Merrimack Valley Hospital⁶ Nashoba Valley Medical Center North Shore Medical Center Northeast Hospital Steward Holy Family Hospital Winchester Hospital</p>
Central Massachusetts	<p>Athol Hospital Clinton Hospital Harrington Memorial Hospital HealthAlliance Hospital Heywood Hospital Saint Vincent Hospital UMass Memorial Medical Center</p>
Cape and Islands	<p>Cape Cod Hospital Falmouth Hospital Martha's Vineyard Hospital Nantucket Cottage Hospital</p>
Metro West	<p>Marlborough Hospital MetroWest Medical Center Milford Regional Medical Center Steward Norwood Hospital Sturdy Memorial Hospital</p>
Western Massachusetts	<p>Baystate Franklin Medical Center Baystate Mary Lane Hospital Baystate Medical Center Baystate Noble Hospital Baystate Wing Hospital Berkshire Medical Center Cooley Dickinson Hospital Fairview Hospital Holyoke Medical Center Mercy Medical Center Shriners Hospitals for Children – Springfield</p>
Metro South	<p>Beth Israel Deaconess Hospital – Plymouth Morton Hospital Quincy Medical Center⁷ Signature Healthcare Brockton Hospital South Shore Hospital Steward Good Samaritan Medical Center</p>
Southcoast	<p>Steward Saint Anne's Hospital Southcoast Hospitals Group</p>

⁶ Merrimack Valley Hospital merged with Steward Holy Family in August 2014.

⁷ Quincy Medical Center closed in December 2014.

Acute Hospitals

Public Payer Designations

Certain acute hospitals in Massachusetts have a special status among public payers due to their rural or relatively isolated locations:

Critical Access Hospital is a state designation given to hospitals that have no more than 25 acute beds, are located in a rural area, and are more than a 35-mile drive from the nearest hospital or more than a 15-mile drive in areas with mountainous terrains or secondary roads.⁸ Critical Access Hospitals receive cost-based payments from Medicare and MassHealth.

Sole Community Hospital is a Medicare designation given to hospitals that are located in rural areas or are located in areas where it is difficult to access another hospital quickly. These hospitals are eligible to receive higher inpatient payments from Medicare than other hospitals.⁹

⁸ In addition, Critical Access Hospitals include hospitals that were, prior to January 1, 2006, designated by the State as a "necessary provider" of health care services to residents in the area. There are additional requirements to be designated as a Critical Access Hospital, including length of stay requirements, staffing requirements, and other provisions. See 42 CFR 485.601-647.

⁹ 42 CFR 412.92.

Acute Hospital Cohorts

In order to develop comparative analytics, CHIA assigned hospitals to peer cohorts. The acute hospitals were assigned to one of the following cohorts according to the criteria below:

Academic medical centers (AMCs) are a subset of teaching hospitals. AMCs are characterized by (1) extensive research and teaching programs and (2) extensive resources for tertiary and quaternary care, and are (3) principal teaching hospitals for their respective medical schools and (4) full service hospitals with case mix intensity greater than 5% above the statewide average.

Teaching hospitals are those hospitals that report at least 25 full-time equivalent medical school residents per one hundred inpatient beds in accordance with Medicare Payment Advisory Commission (MedPAC) and do not meet the criteria to be classified as AMCs.

Community hospitals are hospitals that are not teaching hospitals and have a public payer mix of less than 63%.

Community-Disproportionate Share Hospitals (DSH)¹⁰ are community hospitals that are disproportionately reliant on public revenues by virtue of a public payer mix of 63% or greater. Public payers include Medicare, MassHealth and other government payers, including Commonwealth Care and the Health Safety Net.

Specialty hospitals were not included in any cohort comparison analysis due the unique patient populations they serve and/or the unique sets of services they provide.

Below is a list of acute hospital cohorts and the hospitals assigned to each, based on FY14 data:

Cohort Designation	Acute Hospital
AMC	Beth Israel Deaconess Medical Center Boston Medical Center Brigham and Women’s Hospital Massachusetts General Hospital Tufts Medical Center UMass Memorial Medical Center
Teaching	Baystate Medical Center Berkshire Medical Center Brigham and Women’s Faulkner Hospital Cambridge Health Alliance Lahey Hospital & Medical Center Mount Auburn Hospital Saint Vincent Hospital Steward Carney Hospital Steward St. Elizabeth’s Medical Center
Community	Anna Jaques Hospital Baystate Mary Lane Hospital Beth Israel Deaconess Hospital – Milton Beth Israel Deaconess Hospital – Needham Cooley Dickinson Hospital Emerson Hospital Hallmark Health MetroWest Medical Center Milford Regional Medical Center

¹⁰ M.G.L. c. 6D, Section 1 defines a Disproportionate Share Hospital (DSH) as a hospital with a minimum of 63% of patient charges attributed to Medicare, Medicaid, and other government payers, including Commonwealth Care and the Health Safety Net.

Acute Hospital Cohorts

	Nantucket Cottage Hospital Newton-Wellesley Hospital Northeast Hospital South Shore Hospital Winchester Hospital
Community-DSH	Athol Hospital Baystate Franklin Medical Center Baystate Noble Hospital Baystate Wing Hospital Beth Israel Deaconess Hospital – Plymouth^ Cape Cod Hospital Clinton Hospital Fairview Hospital Falmouth Hospital Harrington Memorial Hospital HealthAlliance Hospital Heywood Hospital Holyoke Medical Center Lawrence General Hospital Lowell General Hospital^ Marlborough Hospital Martha's Vineyard Hospital Mercy Medical Center Merrimack Valley Hospital ¹¹ Morton Hospital Nashoba Valley Medical Center^ North Shore Medical Center Quincy Medical Center ¹² Signature Healthcare Brockton Hospital Southcoast Hospitals Group Steward Good Samaritan Medical Center Steward Holy Family Hospital Steward Norwood Hospital^ Sturdy Memorial Hospital Steward Saint Anne's Hospital
Specialty	Boston Children's Hospital Dana-Farber Cancer Institute Kindred Hospital – Boston Kindred Hospital – Boston North Shore Massachusetts Eye and Ear Infirmary New England Baptist Hospital Shriners Hospitals for Children – Boston Shriners Hospitals for Children – Springfield

^These hospitals were in different cohorts in FY13.

¹¹ Merrimack Valley Hospital merged with Steward Holy Family in August 2014.

¹² Quincy Medical Center closed in December 2014.

Acute Hospital Profiles: At a Glance

Hospital system affiliation notes with which parent company, if any, the hospital is affiliated.

Change in ownership notes change in ownership during the period of the analysis. In some cases, changes in ownership may have occurred subsequent to FY14.

Total staffed beds are the average number of beds during the fiscal year that were in service and staffed for patient use.

Inpatient occupancy rate is the average percent of staffed inpatient beds occupied during the reporting period. Percentage of occupancy is calculated as follows: Inpatient Days divided by Weighted Average Staffed Beds times 365 (or the number of days in the reporting period).

Special public funding indicates whether the hospital received Delivery System Transformation Initiative (DSTI), Infrastructure and Capacity Building (ICB) or Community Hospitals Acceleration, Revitalization and Transformation (CHART) grants. Special public funding is grant money given to hospitals by the state or federal government. The amounts listed may be total grant allocations that will be disbursed over a period of time, or a portion of a grant that was disbursed in FY14. For more information please see the Special Public Funding notes contained in Exhibit C of this appendix.

Trauma Center designation is determined by the Massachusetts Department of Public Health and the American College of Surgeons, with Level 1 being the highest designation given to tertiary care facilities. Facilities can be designated as Adult and/or Pediatric Trauma Centers.¹³ While there are five levels of trauma center designations recognized nationally, Massachusetts hospitals only fall under Levels 1, 2, and 3 for Adult and/or Levels 1 and 2 for Pediatric.

Level 1 Trauma Center is a comprehensive regional resource that is a tertiary care facility central to the trauma system. A Level 1 Trauma Center is capable of providing total care for every aspect of injury, from prevention through rehabilitation.

Level 2 Trauma Center is able to initiate definitive care for all injured patients, and provide 24-hour immediate coverage by general surgeons, as well as coverage by the specialties of orthopedic surgery, neurosurgery, anesthesiology, emergency medicine, radiology and critical care.

Level 3 Trauma Center has demonstrated an ability to provide prompt assessment, resuscitation, surgery, intensive care and stabilization of injured patients and emergency operations, including the ability to provide 24-hour immediate coverage by emergency medicine physicians and prompt availability of general surgeons and anesthesiologists.

Case mix index (CMI) is a relative value assigned to the hospital's mix of inpatients to determine the overall acuity of the hospital's patients and is compared with the CMI of peer hospitals and the statewide average CMI. CHIA calculated each hospital's CMI by applying the 3M™ All Patient Refined (APR) grouper, version 30 with Massachusetts-specific baseline cost weights to each hospital's HDD data. Hospitals validate their HDD data submissions annually with CHIA.

The APR grouper and Massachusetts-specific baseline cost weights used in this year's publication are consistent with those used in last year's publication. All case mix information included in this report has been grouped under APR grouper, version 30.

(Case Mix) Adjusted Cost per Discharge measures the hospital's adjusted inpatient costs divided by the product of the number of the hospital's discharges and its case mix index. Hospital costs were

¹³ American Trauma Society, Trauma Center Levels Explained. Available at: <http://www.amtrauma.org/?page=TraumaLevels> (last accessed October 28, 2015).

Acute Hospital Profiles: At a Glance

adjusted to remove direct medical education and physician compensation from the calculation. This measure compares the hospital's inpatient cost growth on a patient volume and severity adjusted basis. See Exhibit D of this appendix for more information about this calculation.

Inpatient Net Patient Service Revenue (NPSR) per Case Mix Adjusted Discharge (CMAD) measures the hospital's NPSR divided by the product of the hospital's discharges and its case mix index. NPSR includes both net inpatient revenue and inpatient premium revenue.

Inpatient Net Revenue per CMAD growth rate for each hospital was calculated by dividing the hospital's Net Patient Service Revenue (NPSR) by the total CMADs for FY13 and FY14 and determining the percent change.

Inpatient – outpatient revenue is derived from the amount of GPSR reported for inpatient and outpatient services in the hospital's 403 Cost Report.

Outpatient revenue is the hospital's reported net revenue for outpatient services. Net outpatient service revenue includes both net outpatient revenue and outpatient premium revenue.

Outpatient Revenue growth rate for each hospital represents the percent change in a hospital's reported net revenue for outpatient services between FY13 and FY14. Note that this measure examines the growth in total outpatient revenue and is not adjusted for patient volume, severity or service mix.

Total revenue is the hospital's total unrestricted revenue in FY14.

Total surplus (loss) is the hospital's reported profit/loss in FY14.

Public payer mix is determined based upon the hospital's reported Gross Patient Service Revenue (GPSR). See Payer Mix metric description in this appendix for more information.

Commercial payer price level represents the hospital's calendar year 2014 commercial composite relative price percentile. This percentile was derived by taking the simple average of the hospital's blended (inpatient and outpatient) relative price percentiles across all payers. The composite percentile gives a sense of the rank of a provider's relative price compared to other hospitals across all commercial payers. The relative price composite percentile is calculated from data submitted by the following commercial payers: Aetna, Blue Cross Blue Shield of MA, CeliCare, Cigna – East, Cigna – West, Fallon Health, Harvard Pilgrim Health Care, Health New England, Minuteman Health, Network Health, Tufts Health Plan, UniCare, and United HealthCare. Data from Neighborhood Health Plan was excluded due to data quality issues.

Top three commercial payers represent those with the largest percentage share of total commercial payments at that hospital.

Inpatient discharges data was sourced from the 403 Cost Report. See the Inpatient Discharge metric for more information.

Inpatient discharges growth rate for each hospital measures the percent change in discharges for inpatient admissions between FY13 and FY14.

Emergency department visits include any visit by a patient to an emergency department that results in registration at the Emergency Department but does not result in an outpatient observation stay or the inpatient admission of the patient at the reporting facility. An Emergency Department visit occurs even if the only service provided to a registered patient is triage or screening.

Emergency department visits growth rate for each hospital measures the percent change in emergency department visits between FY13 and FY14.

Acute Hospital Profiles: At a Glance

Outpatient visits are the total outpatient visits reported by the hospital. Note that outpatient visits may not be uniformly reported across hospitals.

Outpatient visits growth rate for each hospital measures the percent change in total outpatient visits to a hospital between FY13 and FY14.

Readmission rate is calculated using the Hospital-Wide All-Cause Unplanned 30-day Readmission Measure developed by CMS and the Yale Center for Outcomes Research, and applied to the Massachusetts adult all-payer population. Readmissions are defined as an admission for any reason to the same or a different hospital within 30 days of a previous discharge. Obstetric, primary behavioral health, cancer, and rehabilitation discharges are excluded from the calculations. The raw readmissions rate is reported, which is the number of readmissions within 30 days divided by the total number of eligible discharges.

Early elective deliveries rate measures the proportion of deliveries that were completed between 37 to 39 weeks gestation without medical necessity, following an induction or cesarean section. Thirty-two acute hospitals reported data for this indicator. All data were received from The Leapfrog Group as pre-calculated percentages. The patient population represents all payers and all ages, and the data period was 2014-2015. Participation in the Leapfrog survey is voluntary; where a hospital does not complete the survey or report on certain items in the survey, the measure is also not included in the profiles.

Acute Hospital Profiles: Metric Descriptions

Acute Hospital Profiles: Services

Most common inpatient diagnosis related groups (DRGs) and the percentage of those DRGs treated at that hospital for the region.

- **Data Source:** FY14 HDD data and the 3M™ APR-DRG 30 All Patient Refined Groupers
- **Hospital Calculation:** Each discharge was grouped and ranked by DRG code. The subject hospital's 10 most frequently occurring DRGs were identified and those DRGs were then summed for all hospitals in the region in order to calculate the percent of regional discharges that were treated at the subject hospital. The total number of the subject hospital's discharges was compared to the sum of all hospital discharges in the region to determine the overall proportion of regional discharges.

For more information on DRGs, please see Exhibit B of this Appendix.

Most common communities from where the hospital's inpatient discharges originated, and the total percent of all discharges (from Massachusetts hospitals) from that community that went to that hospital.

- **Data Source:** FY14 HDD data for discharge information; patient origin was determined by the zip codes from where the patients resided. In larger cities, the top communities may reflect postal code neighborhoods.
- **Hospital Calculation:** The zip code for each patient discharge was matched with the USPS community name, and then grouped and ranked. The most frequently occurring communities were then summed for all hospitals in the region to calculate the percent of community discharges that went to the subject hospital.

A hospital's top communities by inpatient origin were determined using a hospital's FY14 discharge data from the HDD. Patient origin was determined by the reported zip code for each patient's residence. In larger cities, communities may include multiple zip codes. These zip codes were rolled up to reflect postal code neighborhoods based on the United States Postal Service Database. For more information on the zip codes included within each region, please see the databook.

For example, Boston zip codes were rolled up to the following designations: Boston (Downtown) includes: Back Bay, Beacon Hill, Downtown Boston, the Financial District, East Boston, Fenway/Kenmore, South Boston and South End. The remaining Boston communities with multiple zip codes were rolled up to these designations: Allston, Brighton, Charlestown, Dorchester, Dorchester Center, Hyde Park, Jamaica Plain, Mattapan, Mission Hill, Roslindale, Roxbury, and West Roxbury.

Acute Hospital Profiles: Quality Measures

To compile provider quality performance information, CHIA relied on the following primary data sources: CHIA's Hospital Discharge Database (HDD), the Centers for Medicare and Medicaid Services (CMS) Hospital Compare database, and The Leapfrog Group. Metrics are based on varied data periods due to differences in reporting time frames across the data sources. For each metric, the associated reporting time period is listed.

Health Care-Associated Infections of three different types are reported:

1. Central Line-Associated Blood Stream Infections (CLABSI): This measure captures the observed rate of health care-associated central line-associated bloodstream infections among patients in an inpatient acute hospital, compared to the expected number of infections based on the hospital's characteristics and case mix.

Acute Hospital Profiles: Metric Descriptions

2. Catheter-Related Urinary Tract Infections (CAUTI): This measure captures the observed rate of health care-associated catheter-related urinary tract infections among patients in an inpatient acute hospital (excluding patients in Level II or III neonatal ICUs), compared to the expected number of infections based on the hospital's characteristics and case mix.
3. Surgical Site Infections (SSI): Colon Surgery: This measure captures the observed rate of deep incisional primary or organ/space surgical site infections during the 30-day postoperative period following inpatient colon surgery, compared to the expected number of infections based on the hospital's characteristics and case mix.

- **Data source:** CMS Hospital Compare
- **Data Period:** 2013
- **Hospital Calculation:** These health care-associated infections are reported using the Standard Infection Ratio (SIR), which is the number of infections in a hospital compared to the number of expected infections. The SIR for CLABSI and CAUTI is risk adjusted for type of patient care locations, hospital affiliation with a medical school, and bed size. The SIR for SSI: Colon Surgery is risk adjusted for procedure-related factors, such as: duration of surgery, surgical wound class, use of endoscope, re-operation status, patient age, and patient assessment at time of anesthesiology.

All SIRs for Health Care-Associated Infections are retrieved from CMS Hospital Compare as pre-calculated SIRs.

- **Cohort Calculation:** Not applicable
- **National Comparative:** CMS Hospital Compare
- **Patient Population:** All payers, Age 18+

Hospital Readmission rates are calculated using the Hospital-Wide All-Cause Unplanned 30-day Readmission Measure developed by CMS and the Yale Center for Outcomes Research, and applied to the Massachusetts adult all-payer population. Readmissions are defined as an admission for any reason to the same or a different hospital within 30 days of a previous discharge. Obstetric, primary behavioral health, cancer, and rehabilitation discharges are excluded from the calculations. The raw readmission rate is reported, which is the number of readmissions within 30 days divided by the total number of eligible discharges.

- **Data source:** CHIA's Hospital Discharge Database
- **Data Period:** FY 2011, FY 2013
- **Hospital Calculation:** The raw readmission rate reflects the number of unplanned readmissions within 30 days divided by the total number of eligible discharges during the designated time period.
- **Cohort Calculation:** Not applicable
- **State Comparative:** The method yields a statewide readmission rate across all the Commonwealth's acute-care hospitals for the designated time period.
- **Patient Population:** All payers, age 18+, excluding obstetric, primary psychiatric, cancer, and rehabilitation discharges.

Acute Hospital Profiles: Metric Descriptions

Acute Hospital Profiles: Utilization Trends

Change in volume of inpatient discharges measures discharges for inpatient admissions.

- **Data Source:** 403 Cost Report: Schedule 3, Row 22, Column 12
- **Hospital index calculation:** Displays the percent change in the number of inpatient discharges for each year, using FY10 as the base year. FY11: $(FY11 - FY10)/FY10$, FY12: $(FY12 - FY10)/FY10$, FY13: $(FY13 - FY10)/FY10$, FY14: $(FY14 - FY10)/FY10$.
- **Cohort calculation:** Represents the median of the percent change across all hospitals in the cohort for each year. For example: Cohort for FY10 = median of (% change for hospital A, % change for hospital B, % change for hospital C...)

Change in volume of outpatient visits measures total outpatient visits to a hospital. Note that outpatient visits may not be uniformly reported across hospitals.

- **Data Source:** 403 Cost Report: Schedule 5a, Row 39, Column 2
- **Hospital index calculation:** Calculate the percent change between each year, using FY10 as the base year. FY10: $(FY11 - FY10)/FY10$, FY12: $(FY12 - FY10)/FY10$, FY13: $(FY13 - FY10)/FY10$, FY14: $(FY14 - FY10)/FY10$.
- **Cohort calculation:** Represents the median of the percent change across all hospitals in the cohort for each year. For example: Cohort for FY10 = median of (% change for hospital A, % change for hospital B, % change for hospital C...)

Acute Hospital Profiles: Patient Revenue Trends

Net inpatient service revenue per case mix adjusted discharge (CMAD) measures the hospital's net inpatient service revenue (NPSR) divided by the product of the number of the hospital's discharges and its case mix index. NPSR includes both net inpatient revenue and inpatient premium revenue.

- **Data Source:** NPSR and discharges were sourced from the 403 Cost Report; Case Mix Index (CMI) is sourced from HDD.
- **Hospital calculation:** The hospital's inpatient net revenue per CMAD was calculated by dividing NPSR by the total CMAD for each year.
- **Cohort calculation:** The range of all revenue/CMAD values for cohort hospitals are represented by the vertical black line. The cohort value denotes the median revenue per CMAD for all cohort hospitals.

Variation in inpatient discharge counts:

Hospitals may report different numbers of discharges on the 403 Cost Report and the HDD. Hospitals have explained that this is due to:

- *Timing* – while HDD is accurate when submitted (75 days after the close of a quarter), a case may be reclassified as outpatient, usually due to a change in payer designation. Payers may have different clinical criteria for defining an inpatient and outpatient stay.
- *HDD edits* – discharges reported by the hospital that did not pass HDD edits may have been excluded from the HDD but included in the 403 Cost Report;
- Payer classification/status differences between the 403 Cost Report and HDD;

Acute Hospital Profiles: Metric Descriptions

Since a hospital's case mix index is calculated using the HDD, which often includes a lower number of discharges than reported by the hospital on the 403 Cost Report, the calculation of a hospital's total case mix adjusted discharges equals the number of discharges reported on the 403 Cost Report, multiplied by the case mix index.

Change in total outpatient revenue measures a hospital's reported net revenue for outpatient services. Net outpatient service revenue includes both net outpatient revenue and outpatient premium revenue. Note that this measure examines the growth in total outpatient revenue and is not adjusted for patient volume, severity or service mix.

- **Data Source:** 403 Cost Report: Schedule 5a, Rows 78.01 (net outpatient revenue) + 78.02 (outpatient premium revenue), Column 2
- **Hospital index calculation:** Displays the percent change between each year, using FY10 as the base year. FY11: $(FY11-FY10)/FY10$, FY12: $(FY12-FY10)/FY10$, FY13: $(FY13-FY10)/FY10$, FY14: $(FY14-FY10)/FY10$.
- **Cohort calculation:** Represents the median of the percent change across all hospitals in the cohort for each year. For example: Cohort for FY10 = median of (% change for hospital A, % change for hospital B, % change for hospital C...)

Acute Hospital Profiles: Financial Performance

Total Revenue, Total Costs and Profit / Loss measure the amount of the subject hospital's Total Revenue, Total Costs, and Total Profit or Loss for each year from 2010 through 2014.

- **Data Sources:** Financial Statements: The line numbers for each data point are as follows: Total Unrestricted Revenue (row 65), Operating Revenue (row 57.2), Non-Operating Revenue (row 64.1), Total Expenses (row 73), and Profit / Loss (row 74).

Total Margin measures the subject hospital's overall financial performance compared to the median total margin of the hospitals in its peer cohort.

- **Data Source:** Financial Statements: Excess of Revenue, Gains, & Other Support (row 74) divided by Total Unrestricted Revenue (row 65)
- **Cohort Calculation:** Calculated median for the cohort group.

Operating Margin measures the subject hospital's financial performance of its primary, patient care activities compared to the median operating margin of the hospitals in its peer cohort.

- **Data Source:** Financial Statements: Operating Revenue (row 57.2) minus Total Expenses (row 73) divided by Total Unrestricted Revenue (row 65)
- **Cohort Calculation:** Calculated median for the cohort group.

Note: Hospitals may have been assigned to different cohorts in previous years due to payer mix in that given year or other factors. To remain consistent in comparisons between cohorts across multiple years, hospitals were retroactively assigned to their FY14 cohort designations for all years examined. The number of hospitals included in a given cohort may vary from year to year due to hospital closures.

Acute Hospital Cohort Profile: Metric Descriptions

The acute hospital cohort profile measures the acute hospital cohorts as composites of the individual hospitals assigned to each cohort. In general, metrics were determined by aggregating the values of all hospitals assigned to the cohort. For comparison purposes, the individual cohorts are compared to one another and all hospitals statewide, including specialties.¹⁴ The analytic metrics are largely the same as the metrics used for the individual hospital profiles, except as noted below. Please see the descriptions and calculation methods described in the Acute Hospital Metric Description section for more information.

Inpatient Severity Distribution measures the percentage of a cohort's discharges that falls into each statewide severity quintile. This metric provides a way to compare the severity levels of the cohort's patients to those of other acute hospitals in Massachusetts.

- **Data Source:** Hospital Discharge Database (HDD).
- **Data Period:** FY14
- **Cohort Calculation:** Every discharge in the state has a Diagnosis Related Group (DRG) code associated with it. Severity quintiles were determined by ranking all possible DRG outputs by case-weight. The cohort calculation shows the percentage of a cohort's aggregate discharges that falls into each quintile. These proportions were then compared with the proportions of aggregated discharges by severity quintile for all hospitals assigned to other cohorts.

In cases where metrics were similar to the acute hospital profile metrics, data was aggregated to determine cohort measures. For example:

The most common inpatient DRGs for each subject cohort were determined by categorizing all of the hospitals' discharges by cohort using the All Patient Refined Grouper (3M™ APR-DRG 30), which were then summed and ranked. Each of the subject cohort's ten most frequently occurring DRGs were then divided by the statewide count per DRG to obtain the percent of discharges to the statewide total.

*The cohort comparison metric for **payer mix** is different from comparisons among acute hospitals:*

Payer mix was calculated differently from other measures due to the fact that the underlying charges that comprise GPSR differ across hospitals. For this measure, the cohort payer mix was first calculated for each hospital assigned to the cohort in the manner described in the Acute Hospital Profiles section of this Appendix. The mean of the individual cohort hospital's experience was determined and is displayed here. The same method was used to determine the trend in outpatient visits for comparison to all other cohort hospitals.

¹⁴ Note that specialty hospitals are not assigned to any cohort due to their unique service mix and/or populations served.

Non-Acute Hospitals

Non-acute hospitals in Massachusetts are typically identified as psychiatric, rehabilitation, and chronic care facilities. CHIA has defined non-acute hospitals in this publication using the Massachusetts Department of Public Health (DPH) and Department of Mental Health (DMH) license criteria.

Non-Acute Hospital Location and Multi-Hospital System Affiliations

The location for each non-acute hospital in this report was obtained, where possible, from hospital licensing information collected by DPH. The hospital license includes information on a hospital's campuses and satellite offices.

Multi-hospital system membership identifies the health system with which the subject acute hospital is a member. This information was derived from the hospital's Audited Financial Statements.

Below is a list of Massachusetts multi-hospital systems and their non-acute hospital members:

Multi-Hospital System	Non-Acute Hospital Member
Arbour Health System	Arbour Hospital Arbour-Fuller Memorial Arbour-HRI Hospital Westwood Pembroke Hospital
HealthSouth	HealthSouth Rehabilitation of Western Massachusetts
Kindred Health Care	Kindred Hospital Northeast
Partners HealthCare System	McLean Hospital Spaulding Rehabilitation Hospital of Cape Cod Spaulding North Shore ¹⁵ Spaulding Rehabilitation Hospital Spaulding Hospital Cambridge
Steward Health Care System	New England Sinai Hospital
Whittier Health System	Whittier Pavilion Whittier Rehabilitation Hospital Bradford Whittier Rehabilitation Hospital Westborough

Non-Acute Hospital Cohorts

Non-acute hospitals were assigned to peer cohorts based upon MassHealth regulatory designations, defined by the criteria below¹⁶:

Psychiatric hospitals are licensed by the DMH for psychiatric services, and by DPH for substance abuse services.

Rehabilitation hospitals provide intensive post-acute rehabilitation services, such as physical, occupational, and speech therapy services. For Medicare payment purposes, the federal government classifies hospitals as rehabilitation hospitals if they provide more than 60% of their inpatient services to patients with one or more of 13 diagnoses listed in federal regulations.¹⁷

Chronic care hospitals are hospitals with an average length of stay greater than 25 days. These hospitals typically provide longer-term care, such as ventilator-dependent care. Medicare classifies chronic hospitals as Long-Term Care Hospitals, using the same 25-day threshold.

¹⁵ Spaulding North Shore closed on July 31, 2015.

¹⁶ State-owned non-acute hospitals are not included in this publication.

¹⁷ 42 CFR 412.29(b)(2)

Non-Acute Hospitals

Non-acute specialty hospitals were not included in any cohort comparison analysis due the unique patient populations they serve and/or the unique sets of services they provide. Non-acute hospitals that were considered specialty hospitals include:

- AdCare Hospital of Worcester - provides substance abuse services
- Franciscan Hospital for Children - provides specialized children's services
- Hebrew Rehabilitation Hospital - specializes in providing longer term care than other chronic hospitals

Below is a list of non-acute hospital cohorts and the hospitals assigned to each:

Cohort Designation	Non-Acute Hospital
Psychiatric Hospitals	Arbour Hospital Arbour-Fuller Memorial Arbour-HRI Hospital Baldpate Hospital Bournewood Hospital McLean Hospital Walden Behavioral Care Westwood Pembroke Hospital Whittier Pavilion
Rehabilitation Hospitals	Braintree Rehabilitation Hospital HealthSouth Fairlawn Rehabilitation Hospital HealthSouth Rehabilitation Hospital of Western Massachusetts New Bedford Rehabilitation Hospital New England Rehabilitation Hospital Spaulding Rehabilitation Hospital of Cape Cod Spaulding Rehabilitation Hospital Whittier Rehabilitation Hospital Bradford Whittier Rehabilitation Hospital Westborough
Chronic Care Hospitals	Kindred Hospital Northeast New England Sinai Hospital Radius Specialty Hospital ¹⁸ Spaulding Hospital Cambridge Spaulding North Shore ¹⁹ Vibra Hospital of Western Mass
Specialty Non-Acute Hospitals	AdCare Hospital of Worcester Franciscan Hospital for Children Hebrew Rehabilitation Hospital

¹⁸ Radius Specialty Hospital closed in September 2014.

¹⁹ Spaulding North Shore closed on July 31, 2015.

Non-Acute Hospital Profiles: At a Glance

Total staffed beds are the average number of beds during the fiscal year that were in service and staffed for patient use. Beds ordinarily occupied for less than 24 hours are usually not included.

Percent occupancy rate is the median percent of staffed inpatient beds occupied during the reporting period. Percentage of occupancy is calculated as follows: Inpatient Days divided by Weighted Average Staffed Beds times 365 (or the number of days in the reporting period).

Total inpatient days include all days of care for all patients admitted to each unit. Measure includes the day of admission but not the day of discharge or death. If both admission and discharge or death occur on the same day, the day is considered a day of admission and is counted as one patient day.

Total inpatient discharge information was sourced from Schedule 3 of the 403 Cost Report.

Public payer mix was determined based upon the hospital's reported GPSR. See Payer Mix metric description for more information.

Total revenue was sourced from the hospital's 403 Cost Report.

Inpatient – outpatient revenue is derived from the amount of GPSR reported for inpatient and outpatient services in the hospital's 403 Cost Report.

Adjusted cost per inpatient day measures the hospital's adjusted inpatient costs divided by the hospital's total patient days. Hospital costs were adjusted to remove direct medical education and physician compensation from the calculation. See Exhibit E for an example of the Inpatient Cost per Day calculation.

Non-Acute Hospital Profiles: Metric Descriptions

Non-Acute Hospital Profiles: Services

Types of inpatient services are defined by Discharges.

- **Data Sources:** 403 Cost Report; Schedule 3, Column 12, Rows 1 through 21.
- **Hospital calculation:** Hospital's absolute count by weighted average bed type.
- **Cohort calculation:** Hospital's absolute bed type count divided by cohort's total discharges by that specific bed type.
- Note: Psychiatric discharges do not include substance abuse discharges.

Payer Mix measures the distribution of total GPSR for FY14 across the major payer categories. This provides information regarding the proportion of services, as measured by gross charges, which a hospital provides to patients from each category of payer.

- **Data Source:** 403 Cost Report: Schedule 5a, Row 44, Columns 3 through 14
- **Payer Category Definitions:** State Programs = Medicaid Managed + Medicaid Non-Managed + Commonwealth Care + Health Safety Net (HSN); Federal Programs = Medicare Managed + Medicare Non-Managed + Other Government; Commercial & Other = Managed Care + Non-Managed Care + Self Pay + Workers Comp + Other. Dividing each of the above by Total GPSR results in the percentages displayed for each of the three categories.
- **Cohort Calculation:** Displays the mean of the percentages in each of the above payer categories across all hospitals in the cohort.
- **Average Hospital Calculation:** Displays the mean of the percentages in each of the payer categories to get each of the component percentages for the average non-acute hospital.
 - Note: "Average Hospital" group includes specialty hospitals.

Change in Volume of Inpatient Days includes all days of care for all patients admitted to each unit. Measure includes the day of admission but not the day of discharge or death. If both admission and discharge or death occur on the same day, the day is considered a day of admission and is counted as one patient day.

- **Data Sources:** 403 Cost Report, Schedule 3, Column 6, Row 22
- **Hospital Index calculation:** Calculated percent change in Inpatient Days for each year, using FY10 as the base year. FY11: $(FY11-FY10)/FY10$, FY12: $(FY12-FY10)/FY10$, FY13: $(FY13-FY10)/FY10$, FY14: $(FY14-FY10)/FY10$.
- **Cohort calculation:** Represents the median of the percent change across all hospitals in the cohort for each year. For example Cohort for FY10 = median of (% change for hospital A, % change for hospital B, % change for hospital C...)

Median Average Length of Stay (ALOS) measures the average duration of an inpatient admission.

- **Data Sources:** 403 Cost Report, Schedule 3, Column 13, Row 22
- **Cohort calculation:** The growth in median ALOS for each cohort is calculated relative to FY10. FY11: $(FY11-FY10)/FY10$, FY12: $(FY12-FY10)/FY10$, FY13: $(FY13-FY10)/FY10$; FY14: $(FY14-FY10)/FY10$. This is plotted against the growth in median ALOS among all non-acute hospitals, including specialties, relative to FY10.

Non-Acute Hospital Profiles: Metric Descriptions

Non-Acute Hospital Profiles: Utilization

Volume of Inpatient Days includes all days of care for all patients admitted to each unit. Measure includes the day of admission but not the day of discharge or death. If both admission and discharge or death occur on the same day, the day is considered a day of admission and is counted as one patient day.

- **Data Sources:** 403 Cost Report, Schedule 3, Column 6, Row 22

Average Length of Stay (ALOS) measures the average duration of an inpatient admission.

- **Data Sources:** 403 Cost Report, Schedule 3, Column 13, Row 22

Volume of Outpatient Visits measures the total outpatient visits to a hospital.

- **Data Source:** 403 Cost Report; Schedule 5a, Column 2, Row 39

Non-Acute Hospital Profiles: Patient Revenue Trends

Inpatient Revenue per Day is the hospital's net inpatient service revenue (NPSR) divided by its total inpatient days.

- **Data Source:** NPSR was sourced from schedule 5a, column 2, rows 65.01 (net inpatient revenue) and 65.02 (inpatient premium revenue) of the 403 Cost Report. Inpatient days were sourced from Schedule 3, column 6, row 22 of the 403 Cost Report.

Total Outpatient Revenue measures a hospital's reported net revenue for outpatient services. Note that this measure examines the growth in total outpatient revenue and is not adjusted for patient volume. In addition, several non-acute hospitals do not provide outpatient services.

- **Data Source:** 403 Cost Report; Schedule 5a, Column 2, Rows 78.01 (net outpatient revenue) and 78.02 (outpatient premium revenue)

Non-Acute Hospital Profiles: Financial Performance

Operating Revenue, Total Revenue, Total Costs and Profit / Loss displays the amount of each hospital's Total Revenue, Operating Revenue, Total Costs, and Total Profit or Loss for FY14.

- **Data Sources:** 403 Cost Report, Schedule 23. The line numbers for each data point are as follows: Total Unrestricted Revenue (row 65), Operating Revenue (row 55 + row 56 + row 57 + row 60 + row 64), Total Expenses (row 73), and Profit / Loss: (row 74).

Total Margin measures the subject hospital's overall financial performance.

- **Data Source:** 403 Cost Report; Schedule 23, Column 2, Row 173

Note: Some for-profit hospitals are organized as S corporations. For-profit entities that are organized as S corporations, in accordance with Internal Revenue Code, do not pay federal income tax on their taxable income. Instead, the shareholders are liable for individual federal income taxes on their portion of the hospital's taxable income. Therefore, these hospitals may have income that appears higher than hospitals organized as a C corporation, which are taxed separately from their owners.

Multi-Acute Hospital Systems

The Health System Profiles chapter consists of two sections: (1) a comparative graphic showing the nine multi-acute hospital systems in Massachusetts²⁰ drawn to scale based on operating revenue, and (2) individual pages for each system detailing the organizations that comprise the system.

The **Comparative Overview** is a proportional representation of the size of each system using operating revenue from the smallest system (Heywood Healthcare) as the base.

- For example: in FY14, Berkshire Health Systems had approximately \$472 million in operating revenue, which is 3.6 times greater than Heywood Healthcare's approximately \$132 million in operating revenue. Accordingly, Berkshire Health System's circle is presented with an area 3.6 times larger than Heywood Healthcare's circle.

Organizations within each system profile are grouped into the following categories:

- **Acute Hospitals:** a hospital that is licensed by the Massachusetts Department of Public Health, which contains a majority of medical-surgical, pediatric, obstetric, and maternity beds.
- **Non-Acute Hospitals:** typically identified as psychiatric, rehabilitation, and chronic care facilities. CHIA has defined non-acute hospitals in this publication using the Massachusetts Department of Public Health (DPH) and Department of Mental Health (DMH) license criteria.
- **Physician Organizations:** A medical practice comprised of two or more physicians organized to provide patient care services.
- **Health Plans:** An organization that contracts or offers to provide, deliver, arrange for, pay for, or reimburse any of the costs of health care services.
- **Other Health Care Providers:** any organization within a system that is engaged in providing health care services and is not categorized as an acute hospital, a non-acute hospital, a physician organization, or a health plan.
- **Other Organizations:** all organizations that are not hospitals, physician organizations, health plans, or other health care providers. Operating revenue and net asset values were derived by adding up values for any organization in the financial statements not already categorized in the profile as a health care-related organization.

Some system financial statements reported to CHIA included the names and descriptions of organizations but did not include financial information for them. These organizations are presented in the profiles in text format, rather than being displayed within a circle like the other organizations.

Unless otherwise noted, metrics and descriptive information included in these profiles are based on financial data from FY14 reported by the systems.

To compile the profiles, CHIA relied on the following primary data sources: consolidated system-level Audited Financial Statements, hospital Audited Financial Statements, and the 403 Cost Report.

²⁰ These multi-acute system profiles exclude Kindred Healthcare, Inc., Tenet Healthcare Corporation, and Shriners Hospitals for Children which are multi-state health systems with a large presence outside of Massachusetts. Each owns two acute hospitals in Massachusetts (Kindred owns Kindred Hospital – Boston and Kindred Hospital – Boston North Shore; Tenet owns MetroWest Medical Center and Saint Vincent Hospital; Shriners owns Shriners Hospitals for Children – Boston and Shriners Hospitals for Children - Springfield). Due to their broad presence outside of Massachusetts, CHIA did not include Kindred, Tenet, or Shriners system profiles.

Multi-Acute Hospital Systems

All revenue and net asset information is sourced from each system's parent organization and affiliates' FY14 consolidated Audited Financial Statements.²¹

Unless otherwise noted, each system's total **Operating Revenue** and **Net Assets** equal the sum of the components displayed in the individual system profiles, less any intercompany eliminations.

Consolidating Eliminations are intercompany transactions that are eliminated during the financial consolidation process. Eliminations were totaled from operating revenue and net asset information in the Audited Financial Statement from each system. The total of the operating revenue and net assets after accounting for eliminations may not sum to the overall system operating revenue and net asset values displayed on each profile due to rounding.²²

Data Verification:

Data verification reports including each system's reported data were sent to each system. Changes made as a result of the data verification process include revisions to the descriptions of some organizations and additional financial information details for certain organizations.

²¹ Steward Health Care System's revenue and net asset information is sourced from its FY13 consolidated Audited Financial Statements, which is the most recent consolidated-level data available to CHIA.

²² Data used in Steward Health Care System's organizational breakout only includes financial information from the hospital entities and does not include consolidation eliminations.

Multi-Acute Hospital Systems: At a Glance

Operating revenue is revenue earned from services associated with patient care, including academic research. It excludes revenue earned from non-operating activities, such as gains associated with the sale of property or income from investments.

Net assets reflect the difference between total assets and total liabilities. It is the not-for-profit equivalent of Owner's Equity.

Total profit/loss (often presented in hospital financial statements as "Excess of revenues over expenses") and **total margin** are measures of the system's overall financial performance, the former being in dollars and the latter a percentage. CHIA standardized the calculation of total margins to account for the varied presentation of financial statement reporting among health systems.

- **Total profit/loss** was derived from "Excess of revenues over expenses" or "Net profit/loss" figures reported in each system's consolidated Audited Financial Statements.
- **System calculation:** $\text{Total Margin} = \text{Total Profit/Loss} \div (\text{Operating Revenue} + \text{Non-Operating Gains/Losses})$

Employee statistics show the approximate number of employees in the system.

Multi-Acute Hospital Systems: Metric Descriptions

The **Percentage of Massachusetts Acute Hospitals** section shows the proportion of total discharges and inpatient/outpatient revenue at each system in relation to all acute hospitals in Massachusetts. Specialty hospitals were included when preparing these calculations. This information was calculated using data from annual 403 Cost Reports.

Percent of Discharges is the number of inpatient discharges.

- **Data Source:** 403 Cost Report: Schedule 3, Column 12, Row 22
- **System Calculation:** Discharge Percent = Total discharges across all acute hospitals in a system divided by total statewide acute hospitals' discharges multiplied by 100

Percent of Inpatient Revenue²³ reflects each system's inpatient net patient service revenue (NPSR) as a percentage of total inpatient NPSR reported by Massachusetts acute hospitals in FY14.

- **Data Source:** 403 Cost Report: Schedule 5a, Column 2, Rows 65.01
- **System Calculation:** Inpatient NPSR Percent = Total inpatient NPSR across all acute hospitals in system divided by total statewide acute hospitals' inpatient NPSR multiplied by 100

Percent of Outpatient Revenue reflects each system's outpatient net patient service revenue (NPSR) as a percentage of total outpatient NPSR reported by Massachusetts acute hospitals in 2014.

- **Data Source:** 403 Cost Report: Schedule 5a, Column 2, Rows 78.01
- **System Calculation:** Outpatient NPSR Percent = Total outpatient NPSR across all acute hospitals in system divided by total statewide acute hospitals' outpatient NPSR multiplied by 100

²³ Inpatient and outpatient premium revenue were considered in calculating the system percentages of inpatient and outpatient revenue, but no difference was found in the rounded percentages when premium revenue was included compared to when premium revenue was not included.

Multi-Acute Hospital Systems: Other Organizations

Financial information for **Other Organizations** includes revenue and net assets from organizations that did not appear to fit into the other categories (acute hospital, non-acute hospital, health plan, etc.). It includes parent-level entities as well as the organizations listed below within each system. Descriptions for these organizations were sourced directly from Audited Financial Statements.

Baystate Health, Inc.

- Baystate Administrative Services, Inc., a management support entity
- Baystate Total Home Care, Inc., a not-for-profit entity that holds, leases, and manages real estate on behalf of Baystate Medical Center
- Baystate Health Foundation, Inc., a charitable organization
- Baystate Health Insurance Company, Ltd., a captive insurance company
- Ingraham Corporation, a holding company for Baystate Health Ambulance

Berkshire Health Systems, Inc.

- BHS Management Services, Inc., a corporation that provides management services to Berkshire's affiliates
- Berkshire Indemnity Company SPC, LTD., a segregated portfolio within Berkshire Insurance Company SPC, LTD., a captive insurance entity
- Tri-State Medical Management Corporation, a corporation that manages a physician office location for the benefit of Fairview Hospital

Cape Cod Healthcare, Inc.

- Cape Cod Hospital Medical Office Building, a for-profit provider of leased and subleased space to Cape Cod Hospital and related affiliations
- Cape Cod Healthcare Foundation, Inc., a not-for-profit corporation organized to provide development and fundraising support to Cape Cod Healthcare
- Cape Health Insurance Company, a captive insurance company

CareGroup, Inc.

- Jordan Health Systems, Inc., a not-for-profit management corporation
- Atlantic Medical Management, Inc., a for-profit management corporation that existed through December 31, 2013
- Milton Hospital Foundation, Inc., is the parent organization of Beth Israel Deaconess Hospital – Milton and Community Physician Associates
- Jordan Community Accountable Care Organization, Inc., a for-profit accountable care organization

Heywood Healthcare, Inc.

- Heywood Hospital Realty Corporation, a corporation that owns medical office buildings

Lahey Health System, Inc.

- Lahey Health Shared Services, Inc., a supporting corporation with the purpose of providing administrative support to the System and its affiliates
- Lahey Clinic Foundation, Inc., a corporation organized to hold capital assets, investments, debt, and infrastructure costs
- Winchester Community Accountable Care Organization, Inc. (WCACO), an accountable care organization
- Northeast Health System, Inc., a corporation that functioned as the holding company for Northeast Hospital Corp. and the Northeast affiliates until July 1, 2014
- Lahey Clinic Insurance Company, Ltd., a captive reinsurance company
- Winchester Healthcare Enterprises, Inc., is an organization that owns and manages enterprises that complement and enhance the financial viability of the Winchester Healthcare system. Enterprise owns 50 percent of Winchester Highland Management LLC, which provides managed care information to Winchester Hospital, Highland Healthcare Associates IPA, Inc., and other

Multi-Acute Hospital Systems: Other Organizations

clients. Lahey Clinical Performance Network, LLC, a corporation organized to contract with payers on behalf of participating providers and/or care units that are part of the System

- Lahey Clinical Performance Accountable Care Organization, LLC, a corporation organized to operate an accountable care organization and participate in the Federal Medicare Shared Savings Program
- Lahey Clinic Canadian Foundation, a Canadian foundation that performs fundraising activities directed at citizens and residents of Canada
- Addison Gilbert Society, Inc., a charitable organization
- Lahey Physician Community Organization, Inc., a physician organization
- Reading Nominee Trust, a company organized for the purposes of ownership and management of medical office condominiums
- Winchester Hospital Foundation, Inc., a company organized for the purpose of fundraising and philanthropic activities
- Winchester Healthcare Management, Inc., is the parent corporation of an integrated health care delivery system in Winchester, Massachusetts
- Winchester Healthcare Indemnification LTD, a Winchester Hospital captive insurance company, which in FY15 is part of Lahey Clinic Insurance Company, Ltd.

Steward Health Care System, LLC

- Steward Health Care Network, Inc., an accountable care organization that also negotiates and monitors managed care contracts
- Tailored Risk Assurance Company, Ltd., a captive insurance company
- Steward has partnered with two Massachusetts health plans to create community hospital network insurance products:
 - Steward Community Care is a partnership with Fallon Community Health Plan
 - Steward Community Choice is a partnership with Tufts Health Plan

UMass Memorial Health Care, Inc.

- UMass Memorial Health Ventures, Inc., a joint venture interest holder that includes UMass's interest in Fairlawn Rehabilitation Hospital
- UMass Memorial Realty, Inc., a real estate company
- Marlborough Hospital's Affiliate: Controlled Entity
- HealthAlliance Realty, Inc., a company organized to manage and maintain real estate
- Central New England HealthAlliance, Inc., the parent organization of HealthAlliance Hospitals, Inc.
- UMass Memorial Hospitals, Inc., the sole corporate member of Central New England HealthAlliance, Inc., Clinton Hospital Association, and Marlborough Hospital

Technical Appendix:

Exhibit A. Hospital-Specific Information & Subsequent Events

Acute Hospitals

Athol Hospital responded to the FY10 to FY14 data verification process for FY12 through FY14 data only.

Beth Israel Deaconess Medical Center (BIDMC) reported Graduate Medical Education (GME) costs on more than one line in the 403 Cost Report, and the corresponding statistics for those GME costs in more than one column on Schedules IX and III, respectively, on the 403 Cost Report. To ensure inclusion of these additional reported fields, CHIA manually calculated total GME expenses for BIDMC.

Beth Israel Deaconess Hospital- Plymouth (formerly Jordan Hospital) affiliated with Beth Israel Deaconess Medical Center effective January 1, 2014. The CareGroup system profile includes data for Beth Israel Deaconess Hospital –Plymouth prior to the affiliation with BIDMC in FY14 (October 1, 2013 through December 31, 2013).

Boston Medical Center

Outpatient metrics for Boston Medical Center (BMC) include information for the following freestanding community health centers:

1. East Boston Neighborhood Health Center
2. Codman Square Health Center
3. Dorchester House Multi-Service Center
4. South Boston Community Health Center

Kindred Hospitals have limited acute hospital information included in this report, as they are considered long-term acute care hospitals. Kindred Hospital- Boston and Kindred Hospital- Boston North Shore are acute hospitals; however, as their data does not align with the other acute hospitals, they are not included in the cohort analysis.

Lowell General Hospital acquired Saints Medical Center effective July 1, 2012. For FY12, the Financial Statement data submitted by Lowell General Hospital includes 3 months of financial data for Saints Medical Center, in addition to 12 months of financial information for Lowell General Hospital. Saints Medical Center did not submit additional financial statement data for FY12. Each entity submitted a separate 403 Cost Report for FY09 through FY12. For FY14, both Financial Statement and 403 Cost Report data submitted by Lowell General Hospital includes Saints Medical Center data.

On October 20, 2014, Tufts Medical Center and Lowell General Hospital combined under a new parent company (Wellforce) and created a new multi-acute hospital system.

Mercy Hospital changed its fiscal year end date from December 31 to June 1 beginning July 1, 2013. Its 2013 Financial Statement filing reflects six months of data (January 1, 2013- June 30, 2013).

Merrimack Valley Hospital, owned by Steward Health Care System, merged with Steward Holy Family Hospital, and became a campus of Steward Holy Family Hospital effective August 2014.

North Adams Regional Hospital announced on March 25, 2014 a closure of the hospital and related health care businesses effective March 28, 2014. The hospital building is now operating as a satellite emergency department for Berkshire Medical Center.

Noble Hospital was acquired by Baystate Health in June 2015. Noble Hospital was renamed Baystate Noble Hospital.

Quincy Medical Center closed on December 26, 2014. The hospital building is now operating as a satellite emergency department for Steward Carney Hospital.

Technical Appendix:

Exhibit A. Hospital-Specific Information & Subsequent Events

Saints Medical Center submitted 403 Cost Report data for FY09 through FY14, but financial statements only for FY09 through FY11 due to a merger with Lowell General Hospital effective July 1, 2012.

Shriners Hospitals for Children (both Boston and Springfield locations) began submitting data to CHIA in FY11. Profiles for the Shriners hospitals are included for the first time in this year's publication.

Steward Good Samaritan Medical Center is located in the Metro South region; however, one of its campuses is located in Metro West region. Information for the campus located in Metro West is included in the Steward Good Samaritan Medical Center metrics.

Steward Health Care System: Fiscal year data for certain hospitals in the Steward Health Care System was annualized for comparison purposes.

Steward Health Care acquired six hospitals in FY10:

1. Steward St. Elizabeth's Medical Center
2. Steward Saint Anne's Hospital
3. Steward Carney Hospital
4. Steward Good Samaritan Medical Center
5. Steward Norwood Hospital
6. Steward Holy Family Hospital

FY11 403 Cost Report data for these hospitals reflects a period of 329 days, while FY10 403 Cost Report data reflects a period of 401 days. To account for these variances, 403-sourced data was annualized for these two fiscal years.

Winchester Hospital became a member of Lahey Health in July 2014.

Non-acute Hospitals

Spaulding Hospital Cambridge (formerly Youville Hospital) did not submit 403 Cost Report data for FY09 due to a purchase transaction by Spaulding Hospital effective November 15, 2009. The 403 Cost Report submitted for FY10 reflects a partial year of 10.5 months. No adjustments were made to annualize as this was the first year of operations, and CHIA determined that the report would not materially distort the trend analysis. As of FY14, Spaulding Hospital Cambridge no longer provides outpatient services.

Bournewood Hospital is a sub-chapter S corporation.

Radius Specialty Hospital closed its Roxbury and Quincy rehabilitation facilities in October 2014.

Whittier Pavilion began operations in FY09; therefore, FY09 data is not be comparable to its subsequent years. In addition, outpatient services began in FY14. FY14 outpatient data represents a partial year of operation for these services.

Spaulding North Shore discontinued inpatient operations as of July 31, 2015.

Multi-Acute Hospital Systems

Baystate Health, Inc.

- In September 2014, UMass Memorial Health Care transferred ownership of Wing Memorial Hospital to Baystate Health.
- In June 2015, Baystate Health acquired The Trustees of Noble Hospital, Inc. and Subsidiaries. Noble Hospital was renamed Baystate Noble Hospital.

Technical Appendix:

Exhibit A. Hospital-Specific Information & Subsequent Events

CareGroup, Inc.

- The financial figures on CareGroup's system profile were sourced separately from Audited Financial Statements for CareGroup, Inc. and Subsidiaries, Beth Israel Deaconess Medical Center, Inc. and Affiliates, Beth Israel Deaconess Hospital – Milton Foundation, Inc. and Affiliates, Beth Israel Deaconess Hospital – Plymouth, Inc. and Affiliates, Mount Auburn Hospital and Subsidiary, and New England Baptist Hospital and Affiliate. CareGroup notes that it operates under a "confederation model in which the affiliates jointly borrow and purchase common services such as information technology support, but otherwise operate on a largely autonomous basis."²⁴
- On January 1, 2014, Beth Israel Deaconess Medical Center became the sole corporate member of Jordan Health Systems, Inc. (Jordan). Jordan consists of Jordan Hospital, a local physicians' practice (Jordan Physician Associates), and management entities. Jordan Hospital was renamed Beth Israel Deaconess Hospital – Plymouth (BID-Plymouth). In order to display BID-Plymouth as a separate entity within the organization, the CareGroup system profile includes financial data for BID-Plymouth for the three months prior to its affiliation with BIDMC in FY14 (October 1, 2013 through December 31, 2013).

Lahey Health System, Inc.

- In October 2013, Winchester Healthcare Management, Inc. and Affiliates announced its intention to become a member of Lahey Health. The transaction went into effect in July 2014. Lahey's system profile does not include Winchester's financial information prior to the affiliation.
- In July 2014, Lahey announced its intention to become the sole corporate member of the Visiting Nurse Association of Middlesex-East, Inc. (VNAME) and the parent of VNAME's affiliate, Community Care, Inc. The transaction went into effect in October 2014.

Partners HealthCare System, Inc.

- Effective February 1, 2015, Partners Community HealthCare, Inc. (PCHI) became Partners Community Physicians Organization (PCPO), which functions primarily as a physician organization.

Steward Health Care System, LLC

- In March 2014, Steward announced its intention to make Merrimack Valley Hospital, which was already owned by Steward, a campus of Steward Holy Family Hospital. This event went into effect in August 2014.
- On November 6th, 2014, Steward announced an imminent closure of Quincy Medical Center, which occurred on December 26, 2014. The hospital building is now operating as a satellite emergency department for Steward Carney Hospital.

UMass Memorial Health Care, Inc.

- In September 2014, UMass Memorial Health Care transferred ownership of Wing Memorial Hospital to Baystate Health. In FY14, Wing recorded \$74.9 million in revenue and \$1.4 million in excess of revenue over expenses while still with UMass.
- In June 2014, UMass Memorial Health Ventures, Inc. sold a portion of its share in Fairlawn Rehabilitation Hospital to New England Rehabilitation Management Co., LLC, which is a subsidiary of HealthSouth Corporation. UMass now has a 20% share of Fairlawn. Previously, Fairlawn had been operated as a 50-50 joint venture between UMass and HealthSouth.

Additional information on changes to health systems can be found on the Health Policy Commission's website under Material Change Notices. Available at: www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/material-change-notices-cost-and-market-impact-reviews (last accessed October 28, 2015).

²⁴ See <http://www.caregroup.org/CGOverview.asp> (last accessed October 28, 2015).

Technical Appendix:

Exhibit B. Diagnosis Related Groups (DRGs)

Diagnosis Related Groups (DRGs) are used to classify the patient illnesses a hospital treats.

The 10 most common DRGs for each hospital were determined by categorizing all of a hospital's discharges into DRGs defined in the All Patient Refined Grouper (3M™ APR-DRG 30) and ranked by the total number of discharges. In most cases, it was necessary for CHIA to abbreviate the DRG name in order to fit the space available.

Below is a list of abbreviated DRG descriptions that appear in the report, and the full name and APR-DRG 30 code for each DRG.

Abbreviated Description	Description	APR DRG v.30
3rd Degree Brn w Skn Grft	Extensive 3rd Degree Burns w Skin Graft	841
Acute Leukemia	Acute Leukemia	690
Acute Myocardial Infarct.	Acute Myocardial Infarction	190
Adjust Dis/Neuroses exc DD	Adjustment Disorders & Neuroses Except Depressive Diagnoses	755
Alcohol & Drug w/ Rehab	Alcohol & Drug Dependence w Rehab Or Rehab/Detox Therapy	772
Alcohol Abuse & Dependence	Alcohol Abuse & Dependence	775
Angina Pectoris	Angina Pectoris & Coronary Atherosclerosis	198
Appendectomy	Appendectomy	225
Asthma	Asthma	141
Bacterial Skin Infections	Cellulitis & Other Bacterial Skin Infections	383
Bipolar Disorders	Bipolar Disorders	753
Bone Marrow Transplant	Bone Marrow Transplant	3
Bronchiolitis Pneumonia	Bronchiolitis & RSV Pneumonia	138
Burns w/ or w/o Skin Grft	Partial Thickness Burns w Or w/o Skin Graft	844
C. Spinal Fusion & Other Procs	Cervical Spinal Fusion & Other Back/Neck Proc Exc Disc Excis/Decomp	321
Card Cath - Heart Disease	Cardiac Catheterization For Ischemic Heart Disease	192
Cardiac Arrhythmia	Cardiac Arrhythmia & Conduction Disorders	201
Cardiac Valve w/o Cath	Cardiac Valve Procedures w/o Cardiac Catheterization	163
CC W Circ Disord Exc IHD	Cardiac Catheterization W Circ Disord Exc Ischemic Heart Disease	191
Cesarean Delivery	Cesarean Delivery	540
Chemotherapy	Chemotherapy	693
Chest Pain	Chest Pain	203
Cleft Lip & Palate Repair	Cleft Lip & Palate Repair	95
COPD	Chronic Obstructive Pulmonary Disease	140
Craniotomy; exc Trauma	Craniotomy Except For Trauma	21
CVA Occlusion w/ Infarct	CVA & Precerebral Occlusion W Infarct	45
D&L Fusion exc Curvature	Dorsal & Lumbar Fusion Proc Except For Curvature Of Back	304

Technical Appendix:

Exhibit B. Diagnosis Related Groups (DRGs)

D&L Fusion for Curvature	Dorsal & Lumbar Fusion Proc For Curvature Of Back	303
Degen Nrvs Syst exc MS	Degenerative Nervous System Disorders Exc Mult Sclerosis	42
Depression exc MDD	Depression Except Major Depressive Disorder	754
Digestive Malignancy	Digestive Malignancy	240
Diverticulitis/osis	Diverticulitis & Diverticulosis	244
Drug/Alcohol Abuse, LAMA	Drug & Alcohol Abuse Or Dependence, Left Against Medical Advice	770
Eye Procs except Orbit	Eye Procedures Except Orbit	73
Factors Infl Hlth Status	Signs, Symptoms & Other Factors Influencing Health Status	861
Foot & Toe Procedures	Foot & Toe Procedures	314
Full Burns w/ Skin Graft	Full Thickness Burns w Skin Graft	842
Hand & Wrist Procedures	Hand & Wrist Procedures	316
Heart Failure	Heart Failure	194
Hip & Femur; Non-Trauma	Hip & Femur Procedures For Non-Trauma Except Joint Replacement	309
Hip Joint Replacement	Hip Joint Replacement	301
Infects- Upper Resp Tract	Infections Of Upper Respiratory Tract	113
Intervertebral Disc Excis	Intervertebral Disc Excision & Decompression	310
Intestinal Obstruction	Intestinal Obstruction	247
Kidney & UT Infections	Kidney & Urinary Tract Infections	463
Knee & Lower Excpt Foot	Knee & Lower Leg Procedures Except Foot	313
Knee Joint Replacement	Knee Joint Replacement	302
Lymphoma & Non-Acute Leuk	Lymphoma, Myeloma & Non-Acute Leukemia	691
Maj Cranial/Facial Bone	Major Cranial/Facial Bone Procedures	89
Maj HEM/IG Dx exc SCD	Major Hematologic/Immunologic Diag Exc Sickle Cell Crisis & Coagul	660
Maj Larynx & Trachea Proc	Major Larynx & Trachea Procedures	90
Maj Male Pelvic Procs	Major Male Pelvic Procedures	480
Maj Resp & Chest Proc	Major Respiratory & Chest Procedures	120
Maj Resp Infect & Inflam	Major Respiratory Infections & Inflammations	137
Maj Sml & Lrg Bowel Procs	Major Small & Large Bowel Procedures	221
Maj. Depressive Disorders	Major Depressive Disorders & Other/Unspecified Psychoses	751
Malignancy- Hept/Pancreas	Malignancy Of Hepatobiliary System & Pancreas	281
Mastectomy Procedures	Mastectomy Procedures	362
Newborn	Neonate Birthwt>2499G, Normal Newborn or Neonate w Other Problem	640
Non-Bact Gastro, Nausea	Non-Bacterial Gastroenteritis, Nausea & Vomiting	249
O.R. Proc for Tx Comp	O.R. Procedure For Other Complications Of Treatment	791

Technical Appendix:

Exhibit B. Diagnosis Related Groups (DRGs)

Opioid Abuse & Dependence	Opioid Abuse & Dependence	773
Org Mental Hlth Disturb	Organic Mental Health Disturbances	757
Other Anemia and Blood Dis	Blood Other Anemia & Disorders of Blood & Blood-Forming Organs	663
Other Antepartum Dx	Other Antepartum Diagnoses	566
Other Digestive System Dx	Other Digestive System Diagnoses	254
Other ENT & Cranial Dx	Other Ear, Nose, Mouth, Throat & Cranial/Facial Diagnoses	115
Other ENT Procedures	Other Ear, Nose, Mouth & Throat Procedures	98
Other Nervous Syst Procs	Other Nervous System & Related Procedures	26
Other Pneumonia	Other Pneumonia	139
Other Resp & Chest Procs	Other Respiratory & Chest Procedures	121
Othr Back & Neck Disorder	Other Back & Neck Disorders, Fractures & Injuries	347
Othr Maj Head/Neck procs	Other Major Head & Neck Procedures	91
Othr Muscl Sys & Tis Proc	Other Musculoskeletal System & Connective Tissue Procedures	320
Othr Muscle-skel Syst Dx	Other Musculoskeletal System & Connective Tissue Diagnoses	351
Othr O.R. Procs for Lymph/HEM	Other O.R. Procedures For Lymphatic/Hematopoietic/Other Neoplasms	681
Othr Skin & Breast Dis	Other Skin, Subcutaneous Tissue & Breast Disorders	385
Othr Skin, Tis & Related	Other Skin, Subcutaneous Tissue & Related Procedures	364
Pancreas Dis exc Malig	Disorders Of Pancreas Except Malignancy	282
Per Cardio procs w/ AMI	Percutaneous Cardiovascular Procedures w AMI	174
Per Cardio procs w/o AMI	Percutaneous Cardiovascular Procedures w/o AMI	175
Post-Op, Oth Device Infect	Post-Operative, Post-Traumatic, Other Device Infections	721
Procedures for Obesity	Procedures For Obesity	403
Pulm Edema & Resp Failure	Pulmonary Edema & Respiratory Failure	133
Rehabilitation	Rehabilitation	860
Renal Failure	Renal Failure	460
Respiratory Malignancy	Respiratory Malignancy	136
Schizophrenia	Schizophrenia	750
Seizure	Seizure	53
Septicemia Infections	Septicemia & Disseminated Infections	720
Shoulder & Arm Procs	Shoulder, Upper Arm & Forearm Procedures	315
Sickle Cell Anemia Crisis	Sickle Cell Anemia Crisis	662
Skin Graft for Skin Dx	Skin Graft For Skin & Subcutaneous Tissue Diagnoses	361
Syncope & Collapse	Syncope & Collapse	204
Tendon, Muscle, Soft Tis	Tendon, Muscle & Other Soft Tissue Procedures	317

Technical Appendix:

Exhibit B. Diagnosis Related Groups (DRGs)

Thyroid & Other Procs	Thyroid, Parathyroid & Thyroglossal Procedures	404
Vaginal Delivery	Vaginal Delivery	560

Technical Appendix:

Exhibit C. Special Public Funding

Delivery System Transformation Initiatives (DSTI) is a federal-state partnership that provides incentive payments to support and reward seven safety net hospitals in Massachusetts for investing in integrated care, quality innovations, and infrastructure to support alternative payment models. The DSTI amounts listed in the table below are to be distributed over a three year period.

Infrastructure & Capacity Building (ICB) program is a federal and state-funded program administered by MassHealth to help hospitals transition to integrated delivery systems that provide more effective and cost-efficient care to patients in need. The ICB amounts listed below represent awards in FY14.

The **Community Hospital Acceleration, Revitalization, and Transformation Investment Program (CHART)** is a four-year, \$120M program funded by an industry assessment of select providers and insurers and administered by the Health Policy Commission that makes phased investments to promote efficient, effective care delivery in non-profit, non-teaching, lower cost community hospitals.

Hospital	DSTI	ICB (FY14)*	CHART (Phase I)	CHART (Phase II)**
Anna Jaques Hospital		\$1,080,000	\$333,500	\$1,200,000
Athol Hospital		\$302,000	\$484,128	Joint award. See below.
Baystate Franklin Medical Center			\$476,400	\$1,800,000
Baystate Mary Lane Hospital			\$499,600	
Baystate Medical Center		\$201,997	<i>Ineligible</i>	<i>Ineligible</i>
Baystate Wing Hospital			\$357,000	\$1,000,000
Berkshire Medical Center		\$620,000	<i>Ineligible</i>	\$3,000,000
Beth Israel Deaconess Hospital – Milton			\$261,200	\$2,000,000
Beth Israel Deaconess Hospital – Needham			\$300,000	
Beth Israel Deaconess Hospital – Plymouth		\$298,264	\$245,818	\$3,700,000
Beth Israel Deaconess Medical Center		\$809,302	<i>Ineligible</i>	<i>Ineligible</i>
Boston Children’s Hospital			<i>Ineligible</i>	<i>Ineligible</i>
Boston Medical Center	\$310,700,000		<i>Ineligible</i>	<i>Ineligible</i>
Brigham and Women’s Hospital			<i>Ineligible</i>	<i>Ineligible</i>
Cambridge Health Alliance	\$134,600,000		<i>Ineligible</i>	<i>Ineligible</i>
Cape Cod Hospital			<i>Ineligible</i>	<i>Ineligible</i>
Clinton Hospital			<i>Ineligible</i>	<i>Ineligible</i>
Cooley Dickinson Hospital		\$109,950	<i>Ineligible</i>	<i>Ineligible</i>
Dana-Farber Cancer Institute			<i>Ineligible</i>	<i>Ineligible</i>
Emerson Hospital		\$196,124	\$202,575	\$1,200,000
Fairview Hospital		\$584,402	<i>Ineligible</i>	<i>Ineligible</i>
Falmouth Hospital			<i>Ineligible</i>	<i>Ineligible</i>
Brigham and Women’s Faulkner Hospital			<i>Ineligible</i>	<i>Ineligible</i>
Hallmark Health			\$749,360	\$2,500,000
Harrington Memorial Hospital		\$442,303	\$491,600	\$3,500,000
HealthAlliance Hospital			\$410,000	\$3,800,000
Heywood Hospital		\$543,647	\$316,384	Joint award. See below.
Holyoke Medical Center	\$24,500,000		\$500,000	\$3,900,000
Kindred Hospital – Boston			<i>Ineligible</i>	<i>Ineligible</i>
Kindred Hospital – Boston North Shore			<i>Ineligible</i>	<i>Ineligible</i>
Lahey Hospital & Medical Center			<i>Ineligible</i>	<i>Ineligible</i>
Lawrence General Hospital	\$43,300,000		\$100,000	\$1,482,654
Lowell General Hospital			\$497,900	\$1,000,000

Technical Appendix:

Exhibit C. Special Public Funding

Marlborough Hospital	\$352,157		\$1,200,000
Martha's Vineyard Hospital		<i>Ineligible</i>	<i>Ineligible</i>
Massachusetts Eye and Ear Infirmary		<i>Ineligible</i>	<i>Ineligible</i>
Massachusetts General Hospital		<i>Ineligible</i>	<i>Ineligible</i>
Mercy Medical Center	\$45,600,000	\$233,134	\$1,300,000
MetroWest Medical Center		<i>Ineligible</i>	<i>Ineligible</i>
Milford Regional Medical Center	\$403,753	\$499,810	\$1,300,000
Mount Auburn Hospital		<i>Ineligible</i>	<i>Ineligible</i>
Nantucket Cottage Hospital		<i>Ineligible</i>	<i>Ineligible</i>
New England Baptist Hospital			
Newton-Wellesley Hospital		<i>Ineligible</i>	<i>Ineligible</i>
Noble Hospital	\$279,669	\$344,665	\$1,200,000
North Adams Regional Hospital		\$395,311	<i>Ineligible</i>
North Shore Medical Center		<i>Ineligible</i>	<i>Ineligible</i>
Northeast Hospital	\$620,000	\$359,000	\$3,769,057
Saint Vincent Hospital		<i>Ineligible</i>	
Shriners Hospital for Children – Boston			
Shriners Hospital for Children – Springfield		<i>Ineligible</i>	<i>Ineligible</i>
Signature Healthcare Brockton Hospital	\$50,100,000	\$438,400	\$3,500,000
South Shore Hospital		<i>Ineligible</i>	<i>Ineligible</i>
Southcoast Hospitals Group		\$1,183,357	Joint award. See below.
Steward Carney Hospital	\$19,200,000	<i>Ineligible</i>	<i>Ineligible</i>
Steward Holy Family Hospital	\$343,467	<i>Ineligible</i>	<i>Ineligible</i>
Steward Good Samaritan Medical Center	\$316,890	<i>Ineligible</i>	<i>Ineligible</i>
Merrimack Valley Hospital	\$312,841	<i>Ineligible</i>	<i>Ineligible</i>
Morton Hospital	\$357,666	<i>Ineligible</i>	<i>Ineligible</i>
Nashoba Valley Medical Center	\$318,240	<i>Ineligible</i>	<i>Ineligible</i>
Steward Norwood Hospital	\$318,358	<i>Ineligible</i>	<i>Ineligible</i>
Quincy Medical Center	\$318,240	<i>Ineligible</i>	<i>Ineligible</i>
Steward Saint Anne's Hospital	\$207,795	<i>Ineligible</i>	<i>Ineligible</i>
Steward St. Elizabeth's Medical Center	\$117,030	<i>Ineligible</i>	<i>Ineligible</i>
Sturdy Memorial Hospital	\$86,400	<i>Ineligible</i>	<i>Ineligible</i>
Tufts Medical Center	\$1,227,708	<i>Ineligible</i>	<i>Ineligible</i>
UMass Memorial Medical Center	\$3,025,357	<i>Ineligible</i>	<i>Ineligible</i>
Winchester Hospital		\$286,500	\$1,000,000
TOTAL	\$628,000,000	\$13,793,560	\$9,965,642
			\$43,351,711

*Franciscan Hospital for Children, a non-acute specialty hospital, received \$429,995 in ICB funding for FY14

**CHART Phase II Joint Proposals were awarded to:

Athol Memorial Hospital, Heywood Hospital, and HealthAlliance Hospital: \$2,900,000

Addison Gilbert Hospital, Beverly Hospital, Winchester Hospital, and Lowell General Hospital: \$4,800,000

Southcoast Hospitals Group - Charlton Memorial Hospital, Tobey Hospital, and St. Luke's Hospital: \$8,000,000

Hallmark Health - Melrose-Wakefield Hospital and Lawrence Memorial Hospital: \$2,500,000

Baystate Franklin Medical Center, Baystate Mary Lane Hospital and Baystate Wing Hospital: \$900,000

Technical Appendix:

Exhibit D. Acute Hospital Inpatient Cost per CMAD Calculation

Adjusted Cost per CMAD		Schedule, Line, Column	
IP Routine Costs	2,100.10		\$ -
GME Costs			
Post Grad Med Education	9,35.12	\$ -	
Post Grad Med Education	25,35.3	\$ -	Less Physician Costs included above in Col 3 so they are not double counted;
Total Post Grad Med Education		\$ -	
Med Staff - Teaching			
Med Staff - Teaching	9,32.12	\$ -	
Med Staff - Teaching	25,33.3	\$ -	Less Physician Costs included above in Col 3 so they are not double counted;
Total Med Staff - Teaching		\$ -	
Med Staff - Admin			
Med Staff - Admin	9,33.12	\$ -	
Med Staff - Admin	25,33.3	\$ -	Less Physician Costs included above in Col 3 so they are not double counted;
Med Staff - Admin		\$ -	
Total Med Staff (B+C)		\$ -	
Determination of Total GME O/H attributed to I/P			
<u>Stats - Post Grad - hours of service</u>			
		Stat	% Allocation of GME O/H
Total Ancillary	13,56.18	-	0.0000 \$ -
IP Routine	13,78.18	-	0.0000 \$ -
Total Patient and Non-Patient	13,100.18	-	\$ -
Allocation of GME Allocated to Total Ancillary Reallocated to I/P Ancillary			
<u>Stats - IP and OP costs</u>			
		Stat	% Allocation of GME Ancillary
IP Ancillary Costs	17,22.4	\$ -	0.0000 \$ -
Total Patient and Non-Patient	17,42.4	\$ -	\$ -
Determination of Total Med Staff O/H attributed to I/P			
<u>Stats - Med Staff - hours of service</u>			
		Stat	% Allocation of GME O/H
Total Ancillary	13,56.17	-	0.0000 \$ -
IP Routine	13,78.17	-	0.0000 \$ -
Total Patient and Non-Patient	13,100.17	-	\$ -
Allocation of Med Staff Allocated to Total Ancillary Reallocated to I/P Ancillary			
<u>Stats - IP and OP Costs</u>			
		Stat	% Allocation of GME Ancillary
IP Ancillary Costs	17,22.4	\$ -	0.0000 \$ -
Total Patient and Non-Patient	17,42.4	\$ -	\$ -
Physician Professional Fees O/H			
Physician Professional Fees O/H	25,43.3	-	
<u>Stats - Costs</u>			
		Stat	% Allocation of Physician O/H to IP
IP Ancillary	17,22.4	-	0.0000 \$ -
IP Routine	17,22.3	-	0.0000 \$ -
Total Patient and Non-Patient	17,42.2	-	\$ -
Physician Professional Fees Ancillary			
Physician Professional Fees Ancillary	25,78.3	\$ -	
<u>Stats - Costs</u>			
		Stat	% Allocation of Physician Ancillary to IP
IP costs	17,22.4	\$ -	0.0000 \$ -
Total Patient and Non-Patient	17,42.4	\$ -	\$ -
Physician Direct IP costs			
Physician Direct IP costs	25,100.3	\$ -	
less Non-Comparable Cost Adjustment			
Total Comparable Costs			
Divided by CMADS			
Comparable IP Costs per CMAD			

Technical Appendix:

Exhibit E. Non-Acute Hospital Inpatient Cost per Day

Inpatient Cost per Day		Schedule, Line, Column																			
IP Routine Costs		2,100,10																		\$ -	
GME Costs																					
Post Grad Med Education		9,35,12	\$ -																		
Post Grad Med Education		25,35,3	\$ -																		
Total Post Grad Med Education			\$ -																		
Less Physician Costs included above in Col 3 so they are not double counted;																					
Med Staff - Teaching																					
Med Staff - Teaching		9,32,12	\$ -																		
Med Staff - Teaching		25,32,3	\$ -																		
Total Med Staff - Teaching			\$ -																		
Less Physician Costs included above in Col 3 so they are not double counted;																					
Med Staff - Admin																					
Med Staff - Admin		9,33,12	\$ -																		
Med Staff - Admin		25,33,3	\$ -																		
Total Med Staff (B+C)			\$ -																		
Determination of Total GME O/H attributed to I/P																					
Stats - Post Grad - hours of service																					
				Stat		%		Allocation of GME O/H													
Total Ancillary		13,56,18	-			0.0000		\$ -													
IP Routine		13,78,18	-			0.0000		\$ -													\$ -
Total Patient and Non-Patient		13,100,18	-					\$ -													
Allocation of GME Allocated to Total Ancillary Reallocated to I/P Ancillary																					
Stats - IP and OP costs																					
				Stat		%		Allocation of GME Ancillary													
IP Ancillary Costs		17,22,4	\$ -			0.0000		\$ -													\$ -
Total Patient and Non-Patient		17,42,4	\$ -					\$ -													
Determination of Total Med Staff O/H attributed to I/P																					
Stats - Med Staff - hours of service																					
				Stat		%		Allocation of GME O/H													
Total Ancillary		13,56,17	-			0.0000		\$ -													
IP Routine		13,78,17	-			0.0000		\$ -													\$ -
Total Patient and Non-Patient		13,100,17	-					\$ -													
Allocation of Med Staff Allocated to Total Ancillary Reallocated to I/P Ancillary																					
Stats - IP and OP Costs																					
				Stat		%		Allocation of GME Ancillary													
IP Ancillary Costs		17,22,4	\$ -			0.0000		\$ -													\$ -
Total Patient and Non-Patient		17,42,4	\$ -					\$ -													
Physician Professional Fees O/H																					
		25,43,3	-																		
Stats - Costs																					
				Stat		%		Allocation of Physician O/H to IP													
IP Ancillary		17,22,4	-			0.0000		\$ -													\$ -
IP Routine		17,22,3	-			0.0000		\$ -													\$ -
Total Patient and Non-Patient		17,42,2	-					\$ -													
Physician Professional Fees Ancillary																					
		25,78,3	\$ -																		
Stats - Costs																					
				Stat		%		Allocation of Physician Ancillary to IP													
IP costs		17,22,4	\$ -			0.0000		\$ -													\$ -
Total Patient and Non-Patient		17,42,4	\$ -					\$ -													
Physician Direct IP costs																					
		25,100,3	\$ -																		\$ -
less Non-Comparable Cost Adjustment																					
																					\$ -
Total Comparable Costs																					
																					\$ -
Divided by Days																					
																					\$ -
Comparable IP Costs per Day																					