CENTER FOR HEALTH
INFORMATION AND ANALYSIS

MASSACHUSETTS HOSPITAL PROFILES

TECHNICAL APPENDIX

DATA THROUGH FISCAL YEAR 2012

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Technical Appendix Overview

Acute and non-acute hospitals included in *Massachusetts Hospital Profiles- Data through Fiscal Year 2012* were profiled on service, payer mix, utilization, cost, and financial performance metrics. Details for each of these metrics are included in this Appendix.

Unless otherwise noted, metrics included in this report are based on financial data from Fiscal Year (FY) 2008 to FY2012 reported by acute hospitals and from FY2009 to FY2012 reported by non-acute hospitals. Discharge data from FY2012 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 FY12.

To compile the profiles, the Center relied on the following primary data sources: the DHCFP-403 Annual Cost Report (403 Cost Report), the Hospital Discharge Database (HDD), the Hospital Standardized Financial Statement Database, and hospital audited financial statements.

403 Cost Report:
The 403 Cost Report is submitted each year by acute and non-acute hospitals, and 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.

HDD:
The HDD data is submitted quarterly by acute hospitals, and contains patient-level data identifying charges, days, and diagnostic information for all acute inpatient discharges. The Center used FY2012 HDD data for the service metrics, which includes discharges between October 1, 2011 and September 30, 2012 for all acute hospitals.

Financial Statements (standardized):
The Financial Statements (standardized) are submitted quarterly and annually by acute hospitals. They contain information on the hospital's assets, liabilities, revenues, expenses, and profit 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.

Data Verification:
The Center for Health Information and Analysis (Center) held a series of stakeholder engagement sessions with payer representatives, acute and non-acute provider representatives, and other state agencies, to develop and refine proposed profile metrics.

Verification reports including each hospital's reported data were sent to each acute hospital for FY2008-FY2012 and each non-acute hospital for FY2009-FY2012. Each fiscal year's reports had previously been verified in accordance with the annual hospital financial reporting regulation requirements under 114.1 CMR 42.00.

Over the course of the development of the report, the Center adjusted some of the metrics based on feedback from hospitals and their representative groups. In some instances, metrics were deleted or revised and in other instances additional data elements from the 403 Cost Reports were added to the metrics. Among these changes, the source of discharges for the inpatient cost per CMAD calculation changed from the HDD to the 403 Cost Report. Additionally, some of the outpatient metric data included in this report was not included in the data verification reports; however the outpatient data was sourced from the 403 Cost Reports submitted and previously verified by hospitals.

Acute Hospitals

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

Acute Hospital Multi-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-hospital system membership identifies those health systems with more than one hospital with which the subject hospital is a member. This information was derived from the hospital's Financial Statements (standardized).

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

Multi-Hospital System	Acute Hospital Member
Baystate Health	Baystate Franklin Medical Center Baystate Mary Lane Hospital Baystate Medical Center
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 Medical Center Mount Auburn Hospital New England Baptist Hospital
Lahey Health System	Lahey Clinic Northeast Hospital
Partners HealthCare System	Brigham and Women's Hospital Brigham and Women's Faulkner Hospital Martha's Vineyard Hospital Massachusetts General Hospital Nantucket Cottage Hospital Newton-Wellesley Hospital North Shore Medical Center
Steward Health Care System	Steward Carney Hospital Steward Good Samaritan Medical Center Steward Holy Family Hospital Merrimack Valley Hospital Morton Hospital Nashoba Valley Medical Center Steward Norwood Hospital Quincy Medical Center 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 Wing Memorial Hospital
Vanguard Health Systems	MetroWest Medical Center Saint Vincent Hospital

Acute Hospitals

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.

Regional Definitions

The geographic regions presented in this report are the Health Policy Commission (HPC) static geographic regions.[1] In cases where a hospital had campuses in more than one region, the Center assigned the hospital to a single region. 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 - Needham Beth Israel Deaconess Medical Center Boston Children's Hospital Boston Medical Center Brigham and Women's Hospital Cambridge Health Alliance Dana-Farber Cancer Institute Brigham and Women's Faulkner Hospital Hallmark Health Massachusetts Eye and Ear Infirmary Massachusetts General Hospital Beth Israel Deaconess - Milton Hospital Mount Auburn Hospital New England Baptist Hospital Newton-Wellesley Hospital Steward Carney Hospital Steward St. Elizabeth's Medical Center Tufts Medical Center
Pioneer Valley / Franklin	Baystate Franklin Medical Center Baystate Mary Lane Hospital Baystate Medical Center Cooley Dickinson Hospital Holyoke Medical Center Mercy Medical Center Noble Hospital Wing Memorial Hospital
Central Massachusetts	Athol Hospital Clinton Hospital Harrington Memorial Hospital HealthAlliance Hospital Heywood Hospital Saint Vincent Hospital UMass Memorial Medical Center
West Merrimack / Middlesex	Emerson Hospital Lahey Clinic Lowell General Hospital Saints Medical Center[2] Nashoba Valley Medical Center Winchester Hospital

[1] 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 March 5, 2014).

[2] Saints Medical Center merged with Lowell General Hospital in FY12. It was a campus of Lowell General Hospital in part of FY12.

Cape and Islands	Cape Cod Hospital Falmouth Hospital Martha's Vineyard Hospital Nantucket Cottage Hospital
Metro West	Marlborough Hospital MetroWest Medical Center Milford Regional Medical Center
Berkshires	Berkshire Medical Center Fairview Hospital North Adams Regional Hospital
East Merrimack	Lawrence General Hospital Steward Holy Family Hospital Merrimack Valley Hospital
Metro South	Signature Healthcare Brockton Hospital Steward Good Samaritan Medical Center[3] Morton Hospital
South Shore	Jordan Hospital South Shore Hospital Quincy Medical Center
Lower North Shore	North Shore Medical Center Northeast Hospital
Norwood / Attleboro	Steward Norwood Hospital Sturdy Memorial Hospital
Fall River	Steward Saint Anne's Hospital
New Bedford	Southcoast Hospitals Group[4]
Upper North Shore	Anna Jaques Hospital

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.[5] 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.[6]

Medicare Dependent Hospital is a Medicare designation given to rural hospitals that have less than 100 beds, have 60% of their inpatient days or discharges attributable to Medicare, and are not otherwise eligible to be designated as a Sole Community Hospital. These hospitals are eligible to receive higher inpatient payments from Medicare than other hospitals.[7]

[3] Note: One of the Steward Good Samaritan Medical Center campuses is located in the Norwood/Attleboro region.
[4] Note: One of the Southcoast Hospitals Group campuses is located in the Fall River region.
[5] 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.
[6] 42 CFR 412.92.
[7] 42 CFR 412.108.

Acute Hospital Cohorts

In order to develop comparative analytics, the Center 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 which 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 (DSH)[8] **Hospitals** are community hospitals that are disproportionately reliant upon 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:

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 Cambridge Health Alliance Brigham and Women's Faulkner Hospital Lahey Clinic Mount Auburn Hospital Saint Vincent Hospital Steward Carney Hospital Steward St. Elizabeth's Medical Center

[8] 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.

Community	Anna Jaques Hospital Baystate Mary Lane Hospital Beth Israel Deaconess Hospital - Needham Cooley Dickinson Hospital Emerson Hospital Hallmark Health Harrington Memorial Hospital Jordan Hospital Lowell General Hospital Marlborough Hospital Martha's Vineyard Hospital MetroWest Medical Center Milford Regional Medical Center Beth Israel Deaconess Hospital - Milton Nantucket Cottage Hospital Newton-Wellesley Hospital Northeast Hospital South Shore Hospital Nashoba Valley Medical Center Steward Norwood Hospital Sturdy Memorial Hospital Winchester Hospital
Community-DSH	Athol Hospital Baystate Franklin Medical Center Cape Cod Hospital Clinton Hospital Fairview Hospital Falmouth Hospital HealthAlliance Hospital Heywood Hospital Holyoke Medical Center Lawrence General Hospital Mercy Medical Center Noble Hospital North Adams Regional Hospital North Shore Medical Center Saints Medical Center[9] Signature Healthcare Brockton Hospital Southcoast Hospitals Group Steward Good Samaritan Medical Center Steward Holy Family Hospital Merrimack Valley Hospital Morton Hospital Quincy Medical Center Steward Saint Anne's Hospital Wing Memorial Hospital

[9] Saints Medical Center merged with Lowell General Hospital in FY12. It was a campus of Lowell General Hospital in part of FY12.

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 Hospital for Children – Boston Shriners Hospital for Children – Springfield

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).

Total Revenue was sourced from the hospital's standardized financial statements and includes revenue for patient care services and all other sources including investment income.

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

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 FY12. For more information please see the Special Public Funding notes contained in Exhibit C of the Appendix.

Tax status denotes whether a hospital is a non-profit or for-profit entity to allow for a more objective comparison of financial information between hospitals. Hospital tax status was derived from the hospital's audited financial statements. Note that some non-acute hospitals are organized as sub-chapter S corporations where the owners, rather than the hospital entity, bear the income tax liability.

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.[10] 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.

Commercial payer price level represents the hospital's calendar year 2012 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. For more information on relative prices, see the metric description in this Appendix.

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

[10] American Trauma Society, Trauma Categorization Explained. Available at: http://www.amtrauma.org/resources/trauma-categorization/index.aspx (accessed on March 26, 2014).

average CMI. The Center calculated each hospital's CMI by applying the 3M™ All Patient Refined (APR) grouper, version 26.1 with Massachusetts-specific baseline cost weights to each hospital's HDD data. Hospitals validate their HDD data submissions annually through a separate process.

As the data for FY08 was grouped using a different version of the grouper, only FY09- FY12 case mix information is included in this report. All of the case mix data presented in this report was grouped using the 3M™ All Patient Refined (APR) grouper, version 26.1.

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

Total margin represents the hospital's overall surplus or loss expressed as a percent of the hospital's total revenue. This information is sourced from the hospital's standardized financial statements.

Change in ownership notes change in ownership during the period of the analysis. In some cases, changes in ownership may have occurred subsequent to FY2012.

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**: FY12 HDD data and the 3M™ APR-DRG 26.1 All Patient Refined Grouper
- **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 the Appendix.

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

- **Data Source**: FY12 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 FY12 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 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: Payer Mix

Payer Mix measures the distribution of total GPSR for the hospital's most recent fiscal year 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 3-14
- **Hospital Calculation**: State Programs = Medicaid Managed + Medicaid Non-Managed + Comm Care + HSN Federal Programs = Medicare Managed + Medicare Non-Managed + Other Government Commercial & Other = Managed Care + Non-Managed Care + Self Pay + Workers

Comp + Other. Divide each of the above by Total GPSR to get percentages for each of the three categories.

- **Average Hospital calculation**: Displays the mean of each hospital's percentage in each of the payer categories to arrive at a payer mix distribution for the average hospital.
    - For example, the Average Hospital's State Programs component = Mean of the proportion of each peer cohort hospital's State Programs funding. Note: "Average Hospital" group excludes specialty hospitals.

- DSH status applies when a hospital has a minimum of 63% of GPSR, measured by gross patient charges, attributed to Medicare, Medicaid, and other government payers, including Commonwealth Care and the Health Safety Net. This is a Massachusetts-specific designation. It should be noted that the Centers for Medicare and Medicaid Services (CMS) determines a hospital's DSH status according to different criteria.

Relative price is a calculated measure that compares different provider prices within a payer's network for a standard mix of insurance products (e.g. HMO, PPO, and Indemnity) to the average of all providers' prices in that network. The relative price method standardizes the calculation of provider prices and neutralizes the effect of differences in the services providers deliver to patients, and the different product types that payers offer to their members.

- **Data Source**: Payer Data Reports submitted pursuant to 957 CMR 2.00

- CY12 Payer Specific Relative Price Levels: Shows the subject hospital's blended (inpatient and outpatient) relative price levels, expressed as a percentile, compared to the average blended relative price percentiles of the hospitals in its peer cohort for the subject hospital's three largest commercial payers. Note that relative price levels are specific to each payer's network and cannot be compared directly across payer networks.

Acute Hospital Profiles: Utilization Trends

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

- **Data Source**: 403 Cost Report: Schedule 5a, Row 25, Column 2

- **Hospital index calculation**: Calculate the percent change in the number of inpatient discharges for each year, using FY08 as the base year. FY09: (FY09-FY08)/FY08, FY10: (FY10-FY08)/FY08, FY11: (FY11-FY08)/FY08, FY12: (FY12-FY08)/FY08.

- **Cohort calculation**: Represents the mean of the percent change across all hospitals in the cohort for each year. For example: Cohort for FY09 = mean 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 FY08 as the base year. FY09: (FY09-FY08)/FY08, FY10: (FY10-FY08)/FY08, FY11: (FY11-FY08)/FY08, FY12: (FY12-FY08)/FY08.

- **Cohort calculation**: Represents the mean of the percent change across all hospitals in the cohort for each year. For example: Cohort for FY09 = mean of (% change for Hospital A, % change for hospital B, % change for hospital C...)

Acute Hospital Profiles: Cost Trends

Change in inpatient cost per case mix adjusted 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 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.

- **Data Source**: Discharges and costs from 403 Cost Report, Case Mix Index (CMI) from HDD. See the calculation below for the determination of the adjusted inpatient cost per case mix adjusted discharge.

- **Hospital index calculation**: Calculate the percent change between each year, using FY09 as the base year. FY10: (FY10-FY9)/FY09, FY11: (FY11-FY09)/FY09, FY12: (FY12-FY09)/FY09.

- **Cohort calculation**: Represents the mean of the percent change across all hospitals in the cohort for each year. For example: Cohort for FY09 = mean of (% change for Hospital A, % change for hospital B, % change for hospital C...)

Variation in inpatient discharge counts:

During the data verification process, hospitals commented that some of the discharges reported on the 403 Cost Report may not be reported in the HDD. The reasons stated were: (1) timing – while HDD is accurate at the time it is submitted (75 days after the close of a quarter), after submission, cases may change between inpatient and outpatient designation for a variety of reasons, of which the most common reason noted was payer changes; (2) classification/status differences between the 403 and HDD; and (3) discharges that did not pass HDD edits may be excluded from the HDD but are included in the 403.

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 was revised to use the number of discharges reported on the 403 Cost Report multiplied by the case mix index.

Acute Hospital Profiles: Metric Descriptions

Inpatient cost per (Case Mix) Adjusted Discharge

	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		$ -	A										
Med Staff - Teaching	9,32,12	$ -											
Med Staff - Teaching	25,32,3	$ -		Less Physician Costs included above in Col 3 so they are not double counted;									
Total Med Staff - Teaching		$ -	B										
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		$ -	C										
Total Med Staff (B+C)		$ -	D										
Determination of Total GME O/H attributed to I/P													
Stats - Post Grad - hours of service		Stat		%	Allocation of GME O/H		A						
Total Ancillary	13,56,18	-		0.0000	$ -		E						
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		E						
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		D						
Total Ancillary	13,56,17	-		0.0000	$ -		F						
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		F						
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											$ -	
Sum Non - Comparaple Cost Adjustment												$ -	
Total Comparable Costs												$ -	
CMAD=403 Discharges X Case Mix Index													
Inpatient cost per (Case Mix) Adjusted Discharge												$ -	

Change in total outpatient costs measures a hospital's reported costs for outpatient services. Note that this measure examines the growth in total outpatient costs is not adjusted for patient volume, severity or service mix.

- **Data Source**: 403 Cost Report: Schedule 2, Row 114, Col 10
- **Hospital index calculation**: Calculates the percent change between each year, using FY08 as the base year. FY09: (FY09-FY08)/FY08, FY10: (FY10-FY08)/FY08, FY11: (FY11-FY08)/FY08, FY12: (FY12-FY08)/FY08.
- **Cohort calculation**: Represents the mean of the percent change across all hospitals in the cohort for each year. For example: Cohort for FY09 = mean 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 2008 through 2012.

- **Data Sources**: Financial Statements: The line numbers for each data point are as follows: Total Unrestricted Revenue (row 65), Total Expenses (row 73), and Profit / Loss: (row 74).
- The annual growth rate of total hospital costs and total hospital revenues in the Financial Performance section of the Summary Report was derived from a Compound Annual Growth Rate (CAGR) calculation. This calculation is used to find a constant or smoothed growth rate over a period of time, and is often used to compare growth rates of different data sets.
    - The CAGR was calculated by dividing the final value of total hospital costs by the initial value of total hospital costs, and then raising the product by a factor of ¼ to reflect the applicable time period. The result was converted to a decimal by subtracting 1, to allow for conversion to the final smoothed percent growth. The same process was done with the total hospital revenues data.

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.

Acute Hospital Cohort Profiles: Metric Descriptions

The acute hospital cohort profiles measure 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 hospitals assigned to all other cohorts[11], which excludes specialty hospitals. The analytic metrics are largely the same as the metrics used for the individual hospital profiles. Please see the descriptions and the calculation methods described in the Acute Hospital Metric Description section for more information.

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 26.1), 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.

Some differences in the analytic metrics for cohort comparisons are as follows:

Rather than present "Discharges by Community", the cohort profiles present the **inpatient severity distribution** across case mix quintiles for the subject cohort compared to hospitals assigned to all other cohorts.

The severity quintiles were determined by ranking all possible DRG outputs of the 3M™ All Patient Refined grouper, version 26.1 using Massachusetts specific cost weights, by case-weight into the following segments 1-20th percentile, >20 to 40th percentile, >40 to 60th percentile, >60 to 80th percentile and >80 to 100th percentile of case-weights.

To compare a cohort's FY12 severity levels to non-cohort hospitals' severity levels, the total number of discharges for all subject cohort hospitals was aggregated to determine proportions of discharges within each severity quintile for the subject cohort. These proportions were then compared with the proportions of aggregated discharges by severity quintile for all hospitals assigned to other cohorts.

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.

The measure of the **change in outpatient visits** was calculated differently from the other utilization measures due to the fact that outpatient visits are not uniformly reported across hospitals. For this measure, the change in outpatient visits trend 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.

[11] 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. The Center 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
Franciscan Health System	Franciscan Hospital for Children
HealthSouth	Braintree Rehabilitation Hospital New England Rehabilitation Hospital HealthSouth Rehabilitation Hospital of Western Massachusetts
Kindred Health Care	Kindred Hospital Northeast Kindred Hospital Park View
Partners HealthCare System	McLean Hospital Spaulding Rehabilitation Hospital of Cape Cod Spaulding North Shore 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 below[12]:

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 than 13 diagnoses listed in federal regulations.[13]

Chronic 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.

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 Kindred Hospital Park View New England Sinai Hospital

[12] State-owned non-acute hospitals are not included in this report.
[13] 42 CFR 412.29(b)(2)

	Radius Specialty Hospital Spaulding North Shore Spaulding Hospital Cambridge
Specialty Non-Acute Hospitals	AdCare Hospital of Worcester Franciscan Hospital for Children Hebrew Rehabilitation Hospital

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 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).

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 Reports.

Tax status denotes whether a hospital is a non-profit or for-profit entity to allow for a more objective comparison of financial information between hospitals. Hospital tax status was derived from the hospital's audited financial statements.

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

Total margin represents the hospital's overall surplus or loss expressed as a percent of the hospital's total revenue.

Non-Acute Hospital Profiles: Metric Descriptions

Non-Acute Hospital Profiles: Payer Mix

Payer Mix measures the distribution of total GPSR for FY12 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**: FY12-403 Cost Report, Schedule VA, Columns 3-14, Row 44

- **Hospital Calculation**:
  State Programs = Medicaid Managed + Medicaid Non-Managed + Comm Care + 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.

- **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 hospital.
  - For example, the Average Hospital's state programs component = Mean of the proportion of each peer cohort hospital's State Programs funding. Note: "Average Hospital" group excludes specialty hospitals.

Non-Acute Hospital Profiles: Services

Types of inpatient services as defined by Discharges

- **Data Sources**: FY12 403 Cost Report; Schedule III, Col 12, Row 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.

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

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

- **Hospital calculation**: Calculate the percent change in the ALOS for each year from FY09 as the base year. FY10: (FY10-FY09)/FY09, FY11: (FY11-FY09)/FY09, FY12: (FY12-FY09)/FY09.

- **Cohort calculation**: Represents the mean of the percent change across all hospitals in the cohort for each year. For example: Cohort for FY09 = mean of (% change for Hospital A, % change for hospital B, % change for hospital C...)

Non-Acute Hospital Profiles: Utilization

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 III, Column 6 , Row 22

- **Hospital Index calculation**: Calculate the percent change in the Inpatient Days for each year, using FY09 as the base year. FY10: (FY10-FY09)/FY09, FY11: (FY11-FY09)/FY09, FY12: (FY12-FY09)/FY09.

- **Cohort calculation**: Represents the mean of the percent change across all hospitals in the cohort for each year. For example Cohort for FY09 = mean of (% change for Hospital A, % change for hospital B, % change for hospital C…)

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

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

- **Hospital Index calculation**: Calculate the percent change in the Outpatient Visits for each year, using FY09 as the base year. FY10: (FY10-FY09)/FY09, FY11: (FY11-FY09)/FY09, FY12: (FY12-FY09)/FY09.

- **Cohort calculation**: Represents the mean of the percent change across all hospitals in the cohort for each year. For example Cohort for FY09 = mean of (% change for Hospital A, % change for hospital B, % change for hospital C…)

Non-Acute Hospital Profiles: Cost Trends

Change in Inpatient Cost per Day is the hospital's total inpatient costs divided by its total inpatient days. Note that this measure examines the growth in inpatient costs and is not adjusted for patient severity or service mix. Hospital costs were adjusted to remove direct medical education and physician compensation from the calculation.

- **Data Source**: 403 Cost Report. See the calculation below for the determination of the adjusted Inpatient Cost per Day.

- **Hospital Index calculation**: Calculate the percent change in the Inpatient Cost per Day for each year, using FY09 as the base year. FY10: (FY10-FY09)/FY09, FY11: (FY11-FY09)/FY09, FY12: (FY12-FY09)/FY09.

- **Cohort calculation**: Represents the mean of the percent change across all hospitals in the cohort for each year. For example Cohort for FY09 = mean of (% change for Hospital A, % change for hospital B, % change for hospital C…)

Non-Acute Hospital Profiles: Metric Descriptions

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	$ -		Less Physician Costs included above in Col 3 so they are not double counted;								
Total Post Grad Med Education		$ -	A									
Med Staff - Teaching	9,32,12	$ -										
Med Staff - Teaching	25,32,3	$ -		Less Physician Costs included above in Col 3 so they are not double counted;								
Total Med Staff - Teaching		$ -	B									
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		$ -	C									
Total Med Staff (B+C)		$ -	D									
Determination of Total GME O/H attributed to I/P												
Stats - Post Grad - hours of service		Stat		%	Allocation of GME O/H		A					
Total Ancillary	13,56,18	-		0.0000	$	-	E					
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		E					
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		D					
Total Ancillary	13,56,17	-		0.0000	$	-	F					
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		F					
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											$ -
Sum Non - Comparaple Cost Adjustment												$ -
Total Comparable Costs												$ -
Inpatient Days												
Inpatient cost per Day												$ -

Change in Total Outpatient Cost

Note: Several non-acute hospitals either do not provide outpatient services or did not report any distinct outpatient revenue.

- **Data Source**: 403 Cost Report; Schedule 2, Column 10, Row 114
- **Hospital Index calculation**: Calculate the percent change in the Outpatient Cost for each year, using FY09 as the base year. FY10: (FY10-FY09)/FY09, FY11: (FY11-FY09)/FY09, FY12: (FY12-FY09)/FY09.
- Several non-acute hospitals do not report outpatient services.

Non-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 2008 through 2012.

- **Data Sources**: 403 Cost Report, Schedule 23. The line numbers for each data point are as follows: Total Unrestricted Revenue (row 65), 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**: 403 Cost Report; Schedule 23, Column 2, Row 173
- **Cohort Calculation**: Calculated median for the cohort group.

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, where they are taxed separately from their owners.

Acute Hospitals

Athol Hospital responded to the FY08 to FY12 data verification process for FY12 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, the Center manually calculated total GME expenses for BIDMC.

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 FY08 through FY12.

North Adams Regional Hospital announced on March 25, 2014 a closure of the hospital and related health care businesses effective March 28, 2014.

Saints Medical Center submitted 403 Cost Report data for FY08 through FY12, but financial statements only for FY08 through FY11 due to a merger with Lowell General Hospital effective July 1, 2012.

Shriners Hospitals for Children (both Boston and Springfield locations) are not included in this report due to insufficient data reported.

Southcoast Hospitals Group is assigned to the New Bedford region; however, one of its campuses is located in the Fall River region. Information for the campus located in Fall River is included in the Southcoast Hospitals Group metrics.

Steward Good Samaritan Medical Center is located in the Metro South region; however, one of its campuses is located in Norwood/Attleboro region. Information for the campus located in Norwood/Attleboro 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.

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 the Center determined that the report would not materially distort the trend analysis.

Bournewood Hospital is a sub-chapter S corporation.

Whittier Pavilion began operations in FY2009; therefore, FY2009 data may not be comparable to its subsequent years.

Technical Appendix:
Exhibit B. Diagnostic 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 26.1) and ranked by the total number of discharges. In most cases, it was necessary for the Center 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 26.1 code for each DRG.

Abbreviated Description	Description	APR DRG v. 26.1
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
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
Cervical Spinal Fusion	Cervical Spinal Fusion & Other Back/Neck Proc Exc Disc Excis/Decomp	321
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
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
Delivery DRGs	Comprised Of Three Individual DRGs That Were Condensed: Newborn Cesarean Delivery Vaginal Delivery	 640 540 560
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 Influ 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 Hematologic Dx exc SC	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
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
Opioid Abuse & Dependence	Opioid Abuse & Dependence	773
Org Mental Hlth Disturb	Organic Mental Health Disturbances	757
Other Antepartum Dxs	Other Antepartum Diagnoses	566
Other Digestive System Dx	Other Digestive System Diagnoses	254
Other ENT & Cranial Dxs	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	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 Dxs	Skin Graft For Skin & Subcutaneous Tissue Diagnoses	361
Syncope & Collapse	Syncope & Collapse	204
Tendon, Muscle, Soft Tis	Tendon, Muscle & Other Soft Tissue Procedures	317
Thyroid & Other Procs	Thyroid, Parathyroid & Thyroglossal Procedures	404

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. For more information on DSTI grants, see: http://www.mass.gov/governor/pressoffice/pressreleases/2012/2012522-administration-proposal-approved.html

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. For more information on ICB grants, see: http://www.mass.gov/eohhs/gov/newsroom/press-releases/eohhs/14-5m-to-hospitals-and-health-centers-announced.html

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. For more information on CHART grants, see http://www.mass.gov/anf/docs/hpc/20140108-chart-phase-1-awardee.pdf

Hospital	DSTI	ICB	CHART (Phase I)
Anna Jaques Hospital		$285,779	$333,500
Athol Hospital		$500,000	$484,128
Baystate Franklin Medical Center			$476,400
Baystate Mary Lane Hospital			$499,600
Baystate Medical Center		$220,415	*Ineligible*
Berkshire Medical Center		$325,000	*Ineligible*
Beth Israel Deaconess Hospital - Needham			$300,000
Beth Israel Deaconess Medical Center		$377,215	*Ineligible*
Boston Children's Hospital			*Ineligible*
Boston Medical Center	$310,700,000		*Ineligible*
Brigham and Women's Hospital			*Ineligible*
Cambridge Health Alliance	$134,600,000		*Ineligible*
Cape Cod Hospital			*Ineligible*
Clinton Hospital			*Ineligible*
Cooley Dickinson Hospital			*Ineligible*
Dana-Farber Cancer Institute			*Ineligible*
Emerson Hospital			$202,575
Fairview Hospital		$500,000	*Ineligible*
Falmouth Hospital			*Ineligible*
Faulkner Hospital (Brigham and Women's Faulkner Hospital)			*Ineligible*
Hallmark Health			$749,360
Harrington Memorial Hospital			$491,600
HealthAlliance Hospital			$410,000
Heywood Hospital		$295,822	$316,384
Holyoke Medical Center	$24,500,000		$500,000
Jordan Hospital		$197,500	$245,818
Kindred Hospital - Boston			*Ineligible*
Kindred Hospital - Boston North Shore			*Ineligible*
Lahey Clinic			*Ineligible*
Lawrence General Hospital	$43,300,000		$100,000

Lowell General Hospital			$497,900
Marlborough Hospital			
Martha's Vineyard Hospital		$500,000	*Ineligible*
Massachusetts Eye and Ear Infirmary			*Ineligible*
Massachusetts General Hospital			*Ineligible*
Mercy Medical Center	$45,600,000		$233,134
MetroWest Medical Center			*Ineligible*
Milford Regional Medical Center		$243,100	$499,810
Milton Hospital (BID-Milton)			$261,200
Mount Auburn Hospital			*Ineligible*
Nantucket Cottage Hospital			*Ineligible*
New England Baptist Hospital			
Newton-Wellesley Hospital			*Ineligible*
Noble Hospital		$272,861	$344,665
North Adams Regional Hospital		$100,000	$395,311
North Shore Medical Center			*Ineligible*
Northeast Hospital		$100,000	$359,000
Saint Vincent Hospital			*Ineligible*
Saints Medical Center			*Ineligible*
Shriners Hospital for Children - Boston			
Shriners Hospital for Children - Springfield			*Ineligible*
Signature Healthcare Brockton Hospital	$50,100,000		$438,400
South Shore Hospital			*Ineligible*
Southcoast Hospitals Group			$1,183,357
Steward Carney Hospital	$19,200,000		*Ineligible*
Steward Holy Family Hospital		$299,566	*Ineligible*
Steward Good Samaritan Medical Center		$299,566	*Ineligible*
Merrimack Valley Hospital		$308,334	*Ineligible*
Morton Hospital		$308,334	*Ineligible*
Nashoba Valley Medical Center		$308,334	*Ineligible*
Steward Norwood Hospital		$308,334	*Ineligible*
Quincy Medical Center		$308,334	*Ineligible*
Steward Saint Anne's Hospital		$308,334	*Ineligible*
Steward St. Elizabeth's Medical Center		$308,334	*Ineligible*
Sturdy Memorial Hospital		$48,000	*Ineligible*
Tufts Medical Center			*Ineligible*
UMass Memorial Medical Center		$2,000,129	*Ineligible*
Winchester Hospital			$286,500
Wing Memorial Hospital		$506,767	$357,000
TOTAL	$628,000,000	$9,230,058	$9,965,642