
CHART Phase 2 Evaluation: Baseline Summary Report

Community Hospital Acceleration,
Revitalization and Transformation (CHART)
Investment Program

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Established through Massachusetts' cost containment law, Chapter 224 of the Acts of 2012, the HPC is an independent state agency that monitors reform in health care delivery and payment systems and develops policies to reduce overall cost growth while improving the quality of patient care. With a mission to advance a more transparent, accountable, and innovative health care system through independent policy leadership and programs, the HPC's aim is better health and better care at a lower cost across Massachusetts.

To that end, Chapter 224 authorized the HPC to administer the Distressed Hospital Trust Fund (DHTF), totaling \$119.08 million funded by an assessment on large health systems and commercial insurers. The mandate of the DHTF is to support investments to assist in the transformation of community hospitals. To accomplish this, the HPC developed the CHART investment program, which makes phased investments in eligible Massachusetts community hospitals¹ to enhance the delivery of efficient, effective care. CHART Phase 2 – a nearly \$60 million investment across 27 community hospitals (25 investment programs) – is approximately two-thirds through its 24 month performance period.

This report was prepared by the Boston University School of Public Health, which has been engaged by the Massachusetts Health Policy Commission to evaluate the CHART Phase 2 Investment Program. The evaluation team was led by Professor Chris Louis, Department of Health Law, Policy, and Management.

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¹ CHART hospital eligibility, as determined by Chapter 224 of the Acts of 2012, excludes acute care hospitals or health systems with for-profit status, excludes major acute care teaching hospitals, and excludes hospitals whose relative prices are determined to be above the statewide median relative price. A weighted average of relative prices (by payer mix) was calculated using data from the Center for Health Information and Analysis for all commercial payers, Medicare Advantage, and all MMCOs.

Contents

This report issues the findings of the baseline summary data analysis from the multi-year period prior to the launch of CHART Phase 2.

2	Introduction
3	CHART Phase 2 Awards
4	Re-Utilization by Hospital: 30-day readmission rates, 30-day ED revisit rates, 30-day returns
11	Behavioral Health: 30-day readmission rates, 30-day ED revisit rates, 30-day returns
18	Patients with High Utilization: 30-day readmission rates, 30-day ED revisit rates, 30-day returns
25	Average Utilization: 30-day readmission rates, 30-day ED revisit rates, 30-day returns
26	Reutilization to Other Hospitals ("Leakage")
39	Patients with High Utilization: Heterogeneity over time
52	Appendix

Introduction

The Health Policy Commission's (HPC) Community Hospital Acceleration, Revitalization and Transformation (CHART) Investment Program is a \$120M phased investment program that invests in certain Massachusetts community hospitals.² In early 2014, the HPC launched Phase 1 of CHART, a six month program that made investments in short-term, high-need projects across 28 hospitals. These projects included smaller-scale pilots, capability and capacity building activities, and strategic planning efforts. During this period, the HPC aimed to build a foundation for health care system transformation.

The HPC is approximately two-thirds of the way through CHART Phase 2, launched in late 2015, beginning a two year investment program that supports the transformation of community hospitals by more effectively aligning their services and capabilities to address the physical, behavioral, and social needs of the communities they serve. In CHART Phase 2, the 25 investments that span 27 community hospitals (some investments include two or more hospitals) are designed to promote system transformation and Accountable Care Organization (ACO) readiness. In combination, investments in health information technology, hospital-community partnerships, and care delivery redesign are expected to contribute to high value healthcare and hospital transformation. Thus, a goal of CHART Phase 2 is not only to promote quality care at CHART hospitals, but to transform their role within the community and the healthcare system.

CHART Phase 2 Awardees and the HPC collaboratively developed implementation plans that define how each hospital will enhance its capacities for integrated, patient-centered care. In addition to improving hospital leadership and management capacity, data analytics and performance monitoring, care delivery, and community partnerships, each Awardee's implementation plan specifies concrete utilization reduction aims. In most cases, Awardees intend to reduce avoidable hospital utilization for a specific subpopulation defined by clinical, behavioral health, or social risk factors and/or frequent hospital utilization.

The HPC has engaged the Boston University School of Public Health (BUSPH) to conduct an independent mixed-methods evaluation of CHART Phase 2. One component of the evaluation is an analysis of hospital utilization patterns based on Case Mix Data (CMD) collected by the Center for Health Information and Analysis (CHIA). This analysis will investigate the impact of the CHART Phase 2 initiatives on hospital utilization among the targeted populations.

This report includes the findings of the analysis of the multi-year period prior to the launch of CHART Phase 2, conducted by the evaluation team in order to generate a baseline for comparison. CHART Phase 2 launched on a rolling basis beginning in September 2015 with the final hospitals commencing their implementation periods in February 2016. The baseline analysis used CMD provided by CHIA for the time period of October 2012 through September 2015. The CMD used in this report included two distinct data sets: (1) hospital inpatient discharge claims data, and (2) emergency department (ED) claims data that included information about all CHART and non-CHART hospitals. These data were combined into a single dataset to examine a number of metrics related to hospital utilization, including 30-day readmission rates, 30-day ED revisit rates, and 30-day returns (inpatient or ED).

This report includes the rates of 30-day readmissions, 30-day ED revisits and 30-day returns by hospital for three patient populations: (1) all patients, (2) patients with a behavioral health (BH) diagnosis, and (3) patients with high utilization (HU) of health care services. The evaluation team also performed specific analyses examining reutilization to other hospitals, trends in high utilization, and a comparison of CMD measures to CHART Awardee self-reported data. Collectively, these analyses provide an understanding of hospital performance prior to the launch of CHART Phase 2 which will be used for comparison when data covering the CHART Phase 2 performance period become available from CHIA. At that time, utilization trends will be analyzed and interpreted in combination with qualitative data by the independent evaluation team. The goal of the evaluation is to understand the impacts that the CHART program may have on hospital performance and health care utilization.

2 CHART-eligible hospitals are non-profit, non-teaching, and have low relative price.

CHART Phase 2 Awards

INDIVIDUAL AWARDS

Addison Gilbert and Beverly Hospitals
Anna Jaques Hospital
Baystate Franklin Medical Center
Baystate Noble Hospital
Baystate Wing Hospital
Berkshire Medical Center
Beth Israel Deaconess Hospital – Milton
Beth Israel Deaconess Hospital – Plymouth
Emerson Hospital
Harrington Memorial Hospital
HealthAlliance Hospital
Holyoke Medical Center
Lawrence General Hospital
Lowell General Hospital
Mercy Medical Center
Milford Regional Medical Center
Signature Healthcare Brockton Hospital
UMass Marlborough Hospital
Winchester Hospital

JOINT AWARDS

Addison Gilbert, Beverly, Winchester, and Lowell General Hospitals
Baystate Franklin Medical Center, Baystate Noble & Baystate Wing Hospitals
Hallmark Health System
Heywood and Athol Memorial Hospitals
Southcoast Hospitals Group

Re-Utilization by Hospital

30-day readmission rates, 30-day ED revisit rates, 30-day returns

Tables 1-3 exhibit the hospital overall reutilization rates for 30-day readmissions, 30-day ED revisits, and 30-day returns (to the same hospital). Quarter 1 is defined as the quarter beginning 24 months prior to each hospital's CHART Phase 2 launch date. Regional rates were determined based on an October 1, 2015 launch date. Table 1 lists hospital overall 30-day readmission rates. These remained generally steady for CHART hospitals during the 24-month period preceding October 1, 2015 starting at 11.1% in the 1st quarter and ending with 11.3% in the last (7th) quarter (most recent quarter with complete data available). This contrasts slightly with non-CHART hospitals that had a 30-day readmission rate of 11.3% increasing to 11.8% over the same period. However, variation is observed among CHART hospitals during this period; readmission rates showed an overall increase in 10 hospitals, an overall decrease in 12 hospitals, and no change from 1st to 7th quarter in 3 hospitals. Central Region had the largest drop between the 1st and 7th quarters. Western Region had the largest increase. The majority of individual hospital increases/decreases were moderate; for 13 CHART hospitals the final rate was within 10% of the 1st quarter rate. However, there were exceptions: the readmission rate increased 37% at Harrington Memorial Hospital (6.5% to 8.9%) and decreased 26% at Addison Gilbert Hospital (11.9% to 8.8%), and 25% (11.9% to 8.9%) in Anna Jaques Hospital.

Table 2 shows that overall, 30-day ED revisit rates also showed little change over the 24-month period for CHART or for non-CHART hospitals. The former moved only 3.2%, falling from 15.4% to 14.9% between the 1st and 7th quarters; the latter fell 4.9% (from 14.2% to 13.5%). Among CHART hospitals, 15 had falling ED revisit rates and 7 had rising rates. There was much less variation among hospital ED revisit rates compared to readmission rates. The largest increase was for Athol and Heywood Hospitals (17%); the largest decrease (17%) was for the Lahey-Lowell joint program, which includes Addison Gilbert Hospital, Beverly Hospital, Lowell General Hospital, and Winchester Hospital.

Table 3 provides 30-day return rates. Returns are either new admissions or ED visits within 30 days of an eligible index admission or ED visit. CHART hospital returns changed very little overall (16.4% to 16.3%). The path of returns was nearly parallel in non-CHART hospitals, declining from 15.5% to 15.2%. While the majority (14) of CHART hospitals saw falling return rates, 9 had rising return rates. Variation among hospitals in return rates was similar to that of ED revisit rates, and smaller than among readmission rates. Metro Boston Region hospitals all had declining or steady return rates.

Assumptions used to develop Tables 1-10 are included in the Appendix.

TABLE 1. 30-day Readmission Rate by CHART Hospital and Region – All Patients

Hospital	2 YEARS PRIOR TO CHART LAUNCH				YEAR PRIOR TO CHART LAUNCH			
	Readmission Rate (%) Quarter 1	Readmission Rate (%) Quarter 2	Readmission Rate (%) Quarter 3	Readmission Rate (%) Quarter 4	Readmission Rate (%) Quarter 5	Readmission Rate (%) Quarter 6	Readmission Rate (%) Quarter 7	CHART Launch Date
CENTRAL REGION	10.8 (462/4,267)	9.4 (429/4,580)	10.1 (473/4,704)	10.5 (470/4,484)	9.8 (450/4,583)	10.1 (476/4,733)	10.4 (451/4,346)	Oct'15
Baystate Joint Award	10.2 (123/1,205)	11.9 (144/1,215)	9.4 (110/1,167)	8.9 (102/1,144)	9.8 (120/1,228)	11.2 (129/1,147)	Data Not Available Due to Start Date	Feb'16
Baystate Wing Hospital	10.0 (45/449)	8.2 (46/564)	10.5 (57/541)	7.8 (39/498)	5.7 (27/474)	7.8 (37/477)	9.3 (42/454)	Nov'15
Harrington Memorial Hospital	6.5 (38/583)	8.4 (53/628)	7.7 (48/621)	9.3 (56/602)	9.5 (57/600)	9.2 (56/612)	8.9 (54/607)	Oct'15
HealthAlliance Hospital	11.8 (102/863)	11.6 (103/890)	8.8 (75/853)	12.2 (105/858)	10.2 (90/884)	12.0 (114/950)	12.8 (118/925)	Nov'15
Heywood and Athol Memorial Hospitals	9.4 (68/723)	7.6 (55/722)	8.2 (61/741)	8.6 (61/708)	9.2 (68/741)	9.1 (71/782)	9.2 (70/758)	Oct'15
Marlborough Hospital	9.4 (58/618)	9.5 (62/654)	10.8 (76/703)	11.7 (83/709)	10.0 (70/697)	10.3 (64/624)	7.3 (23/317)	Oct'15
Milford Regional Medical Center	13.3 (145/1,089)	11.0 (125/1,139)	12.6 (149/1,183)	11.7 (132/1,128)	10.7 (130/1,213)	11.8 (152/1,288)	11.2 (138/1,233)	Oct'15
METROBOSTON REGION	9.7 (497/5,109)	9.4 (497/5,266)	9.1 (477/5,225)	8.7 (418/4,786)	8.7 (424/4,851)	9.8 (534/5,447)	9.5 (506/5,303)	Oct'15
Beth Israel Deaconess Hospital – Milton	8.8 (79/898)	9.8 (81/826)	9.0 (73/814)	10.2 (71/693)	8.6 (58/678)	8.0 (64/799)	9.5 (80/846)	Oct'15
Emerson Hospital	7.8 (77/982)	8.9 (94/1,057)	7.9 (77/973)	6.9 (62/901)	8.7 (86/990)	8.0 (83/1,037)	7.8 (79/1,017)	Oct'15
Hallmark Joint Award	8.9 (155/1,745)	9.7 (179/1,850)	9.6 (165/1,722)	7.5 (123/1,634)	9.4 (166/1,762)	11.1 (196/1,768)	8.4 (138/1,634)	Dec'15
Winchester Hospital	10.7 (160/1,500)	9.9 (162/1,641)	9.3 (142/1,534)	8.4 (124/1,482)	11.0 (184/1,669)	10.8 (193/1,791)	9.3 (143/1,544)	Nov'15

Quarter 1 is defined as the quarter beginning 24 months prior to each hospital's CHART Phase 2 launch date.

NORTHEAST REGION	11.7 (978/8,362)	12.0 (1,052/8,766)	11.2 (974/8,728)	11.5 (943/8,204)	11.6 (927/8,025)	12.4 (1,082/8,737)	11.7 (996/8,533)	Oct'15
Addison Gilbert Hospital	11.9 (45/377)	8.8 (33/375)	11.6 (48/414)	7.7 (29/379)	9.5 (36/380)	11.7 (47/402)	8.8 (34/387)	Nov'15
Anna Jaques Hospital	11.9 (122/1,022)	12.4 (140/1,126)	9.8 (105/1,072)	11.9 (117/981)	10.1 (95/939)	10.2 (99/967)	8.9 (87/978)	Oct'15
Beverly Hospital	10.4 (249/2,396)	11.3 (288/2,551)	9.2 (224/2,424)	10.4 (252/2,423)	11.3 (272/2,404)	11.7 (301/2,576)	10.4 (250/2,408)	Nov'15
Lahey-Lowell Joint Award*	11.3 (865/7,641)	11.0 (821/7,447)	10.7 (770/7,187)	11.5 (819/7,094)	12.3 (974/7,951)	11.3 (865/7,626)	Data Not Available Due to Start Date	Jan'16
Lawrence General Hospital	11.6 (167/1,444)	12.3 (202/1,639)	11.3 (193/1,712)	11.7 (192/1,637)	11.1 (170/1,533)	12.9 (212/1,648)	13.1 (195/1,486)	Oct'15
Lowell General Hospital	13.1 (406/3,105)	12.8 (396/3,099)	12.5 (363/2,911)	12.3 (348/2,834)	14.5 (432/2,978)	12.8 (394/3,080)	12.6 (372/2,958)	Nov'15
SOUTHEAST REGION	12.1 (1,015/8,421)	12.1 (1,067/8,816)	12.5 (1,111/8,880)	12.8 (1,117/8,731)	12.4 (1,079/8,700)	12.1 (1,122/9,271)	12.3 (1,111/9,049)	Oct'15
Beth Israel Deaconess Hospital – Plymouth	9.6 (113/1,176)	9.5 (120/1,262)	11.1 (130/1,167)	9.3 (124/1,327)	9.9 (121/1,220)	9.4 (121/1,294)	11.2 (154/1,373)	Oct'15
Signature Healthcare Brockton Hospital	11.5 (193/1,675)	10.6 (186/1,753)	13.8 (247/1,787)	13.7 (239/1,740)	12.5 (223/1,791)	13.0 (247/1,895)	10.7 (184/1,722)	Oct'15
Southcoast Hospitals Group	13.1 (766/5,837)	12.4 (727/5,849)	13.3 (762/5,738)	13.0 (740/5,671)	12.3 (748/6,094)	13.0 (766/5,886)	Data Not Available Due to Start Date	Jan'16
WESTERN REGION	10.5 (597/5,707)	10.5 (639/6,060)	9.9 (618/6,230)	11.0 (649/5,883)	11.7 (676/5,777)	11.2 (697/6,201)	11.4 (718/6,312)	Oct'15
Baystate Franklin Medical Center	9.7 (53/545)	12.1 (77/634)	12.7 (87/685)	10.8 (71/659)	11.1 (74/668)	11.1 (84/755)	12.4 (87/701)	Nov'15
Berkshire Medical Center	12.7 (233/1,832)	12.7 (226/1,775)	12.6 (251/1,995)	12.7 (260/2,051)	13.6 (276/2,031)	12.6 (246/1,960)	13.2 (258/1,951)	Sep'15
Holyoke Medical Center	9.9 (83/836)	10.0 (84/838)	11.3 (91/808)	11.5 (89/776)	10.8 (87/809)	11.2 (100/892)	10.5 (86/817)	Dec'15
Mercy Medical Center	9.3 (192/2,058)	8.6 (182/2,114)	8.1 (165/2,035)	9.6 (178/1,863)	11.4 (218/1,913)	10.2 (211/2,073)	10.5 (229/2,188)	Oct'15
Noble Hospital	7.8 (47/601)	8.4 (54/642)	7.2 (39/540)	8.0 (44/547)	8.3 (41/493)	8.5 (49/579)	7.0 (37/529)	Nov'15
ALL CHART	11.1 (3,549/31,866)	11.0 (3,684/33,488)	10.8 (3,653/33,767)	11.2 (3,597/32,088)	11.1 (3,556/31,936)	11.4 (3,911/34,389)	11.3 (3,782/33,543)	Oct'15
ALL NON-CHART MA HOSPITALS	11.3 (4,567/40,301)	11.8 (5,069/42,883)	11.8 (5,211/43,983)	11.5 (4,857/42,351)	11.5 (4,825/41,922)	11.6 (5,216/44,830)	11.8 (5,216/44,303)	Oct'15

TABLE 2. 30-day Emergency Department Revisit Rate by CHART Hospital and Region – All Patients

Hospital	2 YEARS PRIOR TO CHART LAUNCH				YEAR PRIOR TO CHART LAUNCH			CHART Launch Date
	ED Revisit Rate (%) Quarter 1	ED Revisit Rate (%) Quarter 2	ED Revisit Rate (%) Quarter 3	ED Revisit Rate (%) Quarter 4	ED Revisit Rate (%) Quarter 5	ED Revisit Rate (%) Quarter 6	ED Revisit Rate (%) Quarter 7	
CENTRAL REGION	13.4 (3,195/23,877)	13.1 (3,213/24,500)	13.5 (3,697/27,325)	13.9 (3,855/27,684)	13.9 (3,551/25,542)	12.5 (3,162/25,363)	13.4 (3,533/26,324)	Oct'15
Baystate Joint Award	16.3 (1,069/6,561)	16.3 (1,230/7,555)	16.9 (1,250/7,406)	14.7 (927/6,304)	14.1 (888/6,304)	14.6 (1,003/6,885)	Data Not Available Due to Start Date	Feb'16
Baystate Wing Hospital	9.4 (218/2,323)	8.4 (216/2,582)	9.7 (285/2,929)	9.7 (273/2,824)	9.1 (231/2,546)	9.3 (252/2,711)	9.2 (279/3,020)	Nov'15
Harrington Memorial Hospital	13.5 (495/3,664)	13.5 (527/3,911)	13.6 (576/4,224)	13.0 (552/4,251)	13.6 (527/3,869)	12.7 (527/4,141)	12.6 (591/4,704)	Oct'15
HealthAlliance Hospital	13.4 (548/4,087)	14.7 (660/4,501)	15.1 (754/4,984)	14.8 (735/4,958)	16.6 (793/4,779)	14.4 (653/4,545)	14.5 (676/4,669)	Nov'15
Heywood and Athol Memorial Hospitals	14.6 (678/4,648)	15.1 (691/4,585)	15.6 (830/5,330)	15.6 (839/5,371)	16.8 (852/5,077)	14.9 (737/4,937)	17.1 (944/5,514)	Oct'15
Marlborough Hospital	13.0 (311/2,397)	11.0 (264/2,405)	12.2 (303/2,488)	13.0 (322/2,468)	11.8 (272/2,311)	11.3 (264/2,328)	11.9 (147/1,232)	Oct'15
Milford Regional Medical Center	14.3 (976/6,810)	12.6 (845/6,700)	13.6 (1,036/7,613)	14.2 (1,080/7,626)	12.9 (889/6,915)	10.7 (716/6,674)	12.2 (897/7,332)	Oct'15
METROBOSTON REGION	10.9 (2,037/18,658)	10.3 (1,905/18,518)	10.4 (2,089/20,026)	11.3 (2,283/20,277)	10.3 (1,862/18,111)	9.1 (1,624/17,881)	10.0 (1,916/19,113)	Oct'15
Beth Israel Deaconess Hospital – Milton	9.3 (319/3,439)	9.6 (338/3,533)	9.7 (380/3,907)	9.5 (373/3,940)	9.4 (302/3,211)	8.8 (301/3,408)	9.8 (361/3,688)	Oct'15
Emerson Hospital	9.6 (308/3,198)	8.6 (284/3,288)	9.9 (362/3,668)	10.2 (364/3,581)	9.1 (288/3,178)	8.7 (280/3,218)	9.6 (356/3,717)	Oct'15
Hallmark Joint Award	12.9 (936/7,242)	12.0 (843/7,048)	12.5 (955/7,670)	13.7 (962/7,031)	10.5 (676/6,418)	11.4 (729/6,374)	11.1 (750/6,748)	Dec'15
Winchester Hospital	9.4 (463/4,910)	9.5 (453/4,787)	9.4 (487/5,160)	9.4 (480/5,117)	8.3 (411/4,981)	8.3 (409/4,934)	8.2 (422/5,163)	Nov'15

Quarter 1 is defined as the quarter beginning 24 months prior to each hospital's CHART Phase 2 launch date.

NORTHEAST REGION	13.6 (3,992/29,309)	13.4 (3,957/29,510)	14.5 (4,751/32,744)	14.9 (5,002/33,638)	14.3 (4,306/30,214)	13.7 (4,159/30,386)	14.1 (4,584/32,494)	Oct'15
Addison Gilbert Hospital	12.4 (226/1,816)	13.7 (258/1,881)	12.7 (297/2,345)	12.0 (254/2,124)	12.9 (244/1,894)	11.8 (213/1,800)	11.3 (264/2,337)	Nov'15
Anna Jaques Hospital	13.0 (496/3,820)	12.8 (493/3,852)	13.6 (573/4,218)	14.8 (667/4,500)	12.8 (477/3,731)	12.6 (458/3,640)	12.9 (516/3,994)	Oct'15
Beverly Hospital	10.8 (517/4,802)	10.1 (494/4,867)	11.0 (587/5,357)	9.7 (488/5,015)	10.1 (484/4,794)	9.6 (443/4,609)	8.7 (435/4,973)	Nov'15
Lahey-Lowell Joint Award*	12.7 (2,926/23,017)	13.7 (3,406/24,846)	13.6 (3,508/25,801)	12.9 (2,981/23,118)	12.5 (2,902/23,255)	12.7 (3,109/24,525)	Data Not Available Due to Start Date	Jan'16
Lawrence General Hospital	14.2 (1,098/7,742)	13.0 (948/7,297)	14.4 (1,229/8,531)	15.6 (1,381/8,851)	15.2 (1,268/8,325)	14.2 (1,190/8,396)	15.2 (1,352/8,883)	Oct'15
Lowell General Hospital	15.4 (1,706/11,103)	15.6 (1,868/11,990)	16.7 (2,149/12,849)	16.3 (2,012/12,353)	15.6 (1,832/11,716)	16.0 (1,896/11,831)	15.9 (2,009/12,654)	Nov'15
SOUTHEAST REGION	16.0 (6,117/38,179)	16.0 (6,248/39,061)	16.2 (6,720/41,494)	16.6 (7,273/43,868)	16.4 (6,590/40,150)	15.2 (6,091/40,084)	16.0 (6,885/42,970)	Oct'15
Beth Israel Deaconess Hospital – Plymouth	13.7 (950/6,931)	13.2 (913/6,920)	13.3 (985/7,402)	14.2 (1,078/7,608)	13.7 (876/6,397)	12.5 (807/6,478)	11.4 (793/6,969)	Oct'15
Signature Healthcare Brockton Hospital	16.7 (1,339/8,015)	17.5 (1,471/8,410)	18.1 (1,656/9,164)	18.4 (1,728/9,382)	17.4 (1,500/8,626)	15.2 (1,279/8,404)	16.6 (1,420/8,552)	Oct'15
Southcoast Hospitals Group	16.3 (3,857/23,675)	16.4 (4,046/24,700)	16.6 (4,510/27,117)	16.7 (4,211/25,223)	15.9 (4,007/25,125)	17.0 (4,630/27,191)	Data Not Available Due to Start Date	Jan'16
WESTERN REGION	20.0 (7,057/35,248)	19.0 (7,000/36,845)	19.6 (7,803/39,911)	20.6 (7,209/35,002)	19.0 (6,863/36,160)	17.0 (5,623/33,077)	18.0 (6,489/36,044)	Oct'15
Baystate Franklin Medical Center	22.0 (899/4,078)	21.6 (855/3,963)	20.2 (953/4,711)	21.3 (963/4,518)	18.6 (698/3,754)	17.7 (634/3,574)	18.7 (738/3,952)	Nov'15
Berkshire Medical Center	24.2 (2,019/8,360)	23.1 (1,810/7,852)	22.2 (2,035/9,150)	21.8 (1,920/8,793)	22.2 (1,738/7,813)	18.9 (1,372/7,255)	20.5 (1,601/7,826)	Sep'15
Holyoke Medical Center	19.0 (1,294/6,798)	19.2 (1,329/6,921)	20.0 (1,495/7,476)	18.8 (1,295/6,890)	18.9 (1,245/6,597)	18.5 (1,256/6,775)	19.5 (1,421/7,290)	Dec'15
Mercy Medical Center	18.8 (2,302/12,252)	17.4 (2,287/13,163)	19.0 (2,609/13,764)	19.9 (2,841/14,280)	18.5 (2,445/13,207)	15.1 (1,617/10,723)	16.1 (1,893/11,765)	Oct'15
Noble Hospital	17.3 (804/4,641)	15.4 (731/4,751)	14.2 (488/3,440)	15.9 (286/1,798)	15.6 (724/4,631)	16.4 (821/4,996)	16.7 (877/5,247)	Nov'15
ALL CHART	15.4 (22,398/145,271)	15.0 (22,323/148,434)	15.5 (25,060/161,500)	16.0 (25,622/160,469)	15.4 (23,172/150,177)	14.1 (20,659/146,791)	14.9 (23,407/156,945)	Oct'15
ALL NON-CHART MA HOSPITALS	14.2 (21,659/152,453)	13.8 (20,839/151,181)	14.4 (24,173/167,994)	14.3 (24,256/169,439)	13.5 (20,035/147,870)	12.8 (18,930/147,920)	13.5 (21,287/157,988)	Oct'15

TABLE 3. 30-day Return Rate (Inpatient or ED) by CHART Hospital and Region – All patients

Hospital	2 YEARS PRIOR TO CHART LAUNCH				YEAR PRIOR TO CHART LAUNCH			CHART Launch Date
	Return Rate (%) Quarter 1	Return Rate (%) Quarter 2	Return Rate (%) Quarter 3	Return Rate (%) Quarter 4	Return Rate (%) Quarter 5	Return Rate (%) Quarter 6	Return Rate (%) Quarter 7	
CENTRAL REGION	14.2 (3,997/28,144)	14.1 (4,101/29,080)	14.5 (4,650/32,029)	15.0 (4,822/32,168)	15.1 (4,543/30,125)	13.9 (4,183/30,096)	14.6 (4,477/30,670)	Oct'15
Baystate Joint Award	17.4 (1,354/7,766)	17.6 (1,547/8,770)	17.6 (1,505/8,573)	15.2 (1,133/7,448)	15.3 (1,155/7,532)	15.8 (1,269/8,032)	Data Not Available Due to Start Date	Feb'16
Baystate Wing Hospital	10.6 (295/2,772)	9.9 (313/3,146)	11.4 (394/3,470)	10.8 (359/3,322)	9.8 (296/3,020)	10.8 (343/3,188)	10.9 (380/3,474)	Nov'15
Harrington Memorial Hospital	13.7 (581/4,247)	14.0 (637/4,539)	14.1 (683/4,845)	13.9 (673/4,853)	14.7 (658/4,469)	14.2 (677/4,753)	13.9 (736/5,311)	Oct'15
HealthAlliance Hospital	14.5 (720/4,950)	15.8 (850/5,391)	15.7 (917/5,837)	16.0 (929/5,816)	18.0 (1,018/5,663)	15.9 (874/5,495)	16.7 (934/5,594)	Nov'15
Heywood and Athol Memorial Hospitals	15.6 (839/5,371)	15.9 (845/5,307)	16.2 (985/6,071)	16.4 (994/6,079)	17.6 (1,024/5,818)	15.8 (902/5,719)	17.1 (1,073/6,272)	Oct'15
Marlborough Hospital	13.6 (411/3,015)	12.6 (384/3,059)	13.8 (441/3,191)	15.1 (481/3,177)	13.6 (409/3,008)	13.2 (391/2,952)	13.0 (201/1,549)	Oct'15
Milford Regional Medical Center	15.2 (1,198/7,899)	13.5 (1,062/7,839)	15.0 (1,321/8,796)	15.1 (1,321/8,754)	14.3 (1,164/8,128)	12.5 (997/7,962)	13.6 (1,163/8,565)	Oct'15
METROBOSTON REGION	12.8 (3,043/23,767)	12.2 (2,910/23,784)	12.3 (3,113/25,251)	13.1 (3,275/25,063)	12.2 (2,810/22,962)	11.6 (2,704/23,328)	12.1 (2,966/24,416)	Oct'15
Beth Israel Deaconess Hospital – Milton	11.6 (502/4,337)	11.6 (507/4,359)	11.4 (540/4,721)	11.6 (537/4,633)	10.7 (416/3,889)	11.0 (462/4,207)	11.6 (526/4,534)	Oct'15
Emerson Hospital	12.2 (508/4,180)	11.7 (509/4,345)	12.1 (560/4,641)	12.1 (541/4,482)	11.9 (496/4,168)	11.7 (498/4,255)	12.2 (579/4,734)	Oct'15
Hallmark Joint Award	14.0 (1,256/8,987)	13.6 (1,208/8,898)	14.5 (1,360/9,392)	14.5 (1,255/8,665)	12.7 (1,036/8,180)	13.5 (1,100/8,142)	12.6 (1,057/8,382)	Dec'15
Winchester Hospital	11.1 (711/6,410)	11.7 (752/6,428)	11.2 (751/6,694)	11.5 (760/6,599)	11.5 (764/6,650)	10.9 (735/6,725)	10.3 (690/6,707)	Nov'15

Quarter 1 is defined as the quarter beginning 24 months prior to each hospital's CHART Phase 2 launch date.

NORTHEAST REGION	15.4 (5,805/37,671)	15.3 (5,866/38,276)	16.0 (6,646/41,472)	16.4 (6,858/41,842)	16.0 (6,114/38,239)	15.6 (6,115/39,123)	15.8 (6,502/41,027)	Oct'15
Addison Gilbert Hospital	13.9 (305/2,193)	13.9 (314/2,256)	13.6 (376/2,759)	12.7 (319/2,503)	13.9 (317/2,274)	13.9 (306/2,202)	12.6 (342/2,724)	Nov'15
Anna Jaques Hospital	15.7 (760/4,842)	15.7 (780/4,978)	15.1 (799/5,290)	16.9 (926/5,481)	14.7 (688/4,670)	14.6 (671/4,607)	14.6 (724/4,972)	Oct'15
Beverly Hospital	12.9 (926/7,198)	12.8 (948/7,418)	13.1 (1,020/7,781)	12.6 (937/7,438)	13.5 (972/7,198)	13.3 (958/7,185)	12.0 (889/7,381)	Nov'15
Lahey-Lowell Joint Award*	14.5 (4,447/30,658)	15.1 (4,889/32,293)	15.1 (4,976/32,988)	14.9 (4,499/30,212)	14.7 (4,581/31,206)	14.6 (4,686/32,151)	Data Not Available Due to Start Date	Jan'16
Lawrence General Hospital	15.9 (1,465/9,186)	14.8 (1,326/8,936)	16.4 (1,675/10,243)	17.2 (1,804/10,488)	17.0 (1,671/9,858)	16.0 (1,605/10,044)	17.0 (1,760/10,369)	Oct'15
Lowell General Hospital	16.8 (2,388/14,208)	17.3 (2,610/15,089)	18.0 (2,832/15,760)	17.5 (2,663/15,187)	17.4 (2,560/14,694)	17.2 (2,567/14,911)	17.4 (2,720/15,612)	Nov'15
SOUTHEAST REGION	16.8 (7,827/46,600)	17.0 (8,159/47,877)	17.3 (8,708/50,374)	17.9 (9,423/52,599)	17.7 (8,647/48,850)	16.8 (8,273/49,355)	17.6 (9,148/52,019)	Oct'15
Beth Israel Deaconess Hospital – Plymouth	15.3 (1,241/8,107)	15.1 (1,233/8,182)	15.1 (1,298/8,569)	15.8 (1,412/8,935)	15.3 (1,167/7,617)	14.3 (1,110/7,772)	13.8 (1,148/8,342)	Oct'15
Signature Healthcare Brockton Hospital	17.5 (1,698/9,690)	18.1 (1,842/10,163)	19.0 (2,084/10,951)	19.4 (2,161/11,122)	18.1 (1,885/10,417)	16.8 (1,734/10,299)	17.4 (1,786/10,274)	Oct'15
Southcoast Hospitals Group	17.2 (5,081/29,512)	17.3 (5,285/30,549)	18.0 (5,904/32,855)	18.1 (5,603/30,894)	17.4 (5,425/31,219)	18.6 (6,156/33,077)	Data Not Available Due to Start Date	Jan'16
WESTERN REGION	20.7 (8,460/40,955)	19.7 (8,472/42,905)	20.1 (9,293/46,141)	21.0 (8,578/40,885)	19.5 (8,174/41,937)	17.9 (7,050/39,278)	18.9 (7,995/42,356)	Oct'15
Baystate Franklin Medical Center	22.3 (1,029/4,623)	22.6 (1,039/4,597)	21.6 (1,165/5,396)	21.8 (1,131/5,177)	18.9 (837/4,422)	18.7 (811/4,329)	19.4 (905/4,653)	Nov'15
Berkshire Medical Center	24.2 (2,466/10,192)	23.2 (2,237/9,627)	22.6 (2,518/11,145)	22.2 (2,408/10,844)	22.1 (2,177/9,844)	19.6 (1,805/9,215)	21.3 (2,083/9,777)	Sep'15
Holyoke Medical Center	19.8 (1,511/7,634)	20.1 (1,562/7,759)	21.0 (1,741/8,284)	19.6 (1,505/7,666)	19.8 (1,467/7,406)	19.6 (1,503/7,667)	20.5 (1,661/8,107)	Dec'15
Mercy Medical Center	19.5 (2,785/14,310)	18.1 (2,765/15,277)	19.2 (3,035/15,799)	20.2 (3,258/16,143)	18.6 (2,819/15,120)	15.7 (2,015/12,796)	17.1 (2,384/13,953)	Oct'15
Noble Hospital	18.2 (952/5,242)	16.8 (904/5,393)	14.8 (591/3,980)	16.3 (382/2,345)	17.1 (874/5,124)	17.7 (986/5,575)	17.5 (1,010/5,776)	Nov'15
ALL CHART	16.4 (29,132/177,137)	16.2 (29,508/181,922)	16.6 (32,410/195,267)	17.1 (32,956/192,557)	16.6 (30,288/182,113)	15.6 (28,325/181,180)	16.3 (31,088/190,488)	Oct'15
ALL NON-CHART MA HOSPITALS	15.5 (29,784/192,754)	15.3 (29,745/194,064)	15.8 (33,497/211,977)	15.7 (33,158/211,790)	15.2 (28,754/189,792)	14.6 (28,170/192,750)	15.2 (30,817/202,291)	Oct'15

* The Lahey-Lowell Joint Award includes Addison Gilbert Hospital, Beverly Hospital, Lowell General Hospital, and Winchester Hospital

Behavioral Health

30-day readmission rates, 30-day ED revisit rates, 30-day returns

Tables 4-6 list 30-day readmission, ED revisit, and return rates for the subset of Behavioral Health patients. As seen in Table 4, the CHART hospitals' readmission rates fluctuated but showed an upward trend increasing by 6.3% (from 11.1% to 11.8%) from the 1st to the 7th quarter. The non-CHART hospitals had a similar pattern, increasing 3.4% (from 11.6% to 12.0%). Eleven CHART hospitals had higher readmission rates in the 7th quarter than in the 1st quarter and 13 had lower rates. The direction of change in readmission rates for behavioral health patients was not always the same as for the overall sample. In Baystate Joint Award, HealthAlliance Hospital, Emerson Hospital, and Lahey-Lowell Joint Award, readmission rates rose for the overall sample but fell for the Behavioral Health subsample. In Milford Regional Medical Center, Addison Gilbert Hospital, and Beverly Hospital the reverse held, with overall readmission rates falling and Behavioral Health readmission rates rising.

Table 5 shows that 30-day ED revisit rates for Behavioral Health patients were much higher than for patients overall (shown in Table 2). For CHART hospitals, revisit rates were 22% in the 1st quarter and 22.5% in the 7th quarter. In non-CHART hospitals, revisit rates were lower, 19.5% in both the 1st and 7th quarters. The variation among CHART hospitals is also greater; however, this is expected since the numbers of patients are smaller. Only 9 hospitals had an increase in revisit rates; however, these tended to be larger hospitals. Three of these (Ana Jaques, Lahey-Lowell Joint Award*, and Signature Healthcare Brockton Hospital) had falling ED revisit rates in their overall populations. Of the 15 hospitals that had declining revisit rates, Beth Israel Deaconess Hospital-Milton had a rising overall revisit rate. Three relatively smaller hospitals had notable drops in revisit rates: Beverly Hospital (25%), Winchester Hospital (37%), and Addison-Gilbert Hospital (36%).

Table 6 indicates that the 30-day return rates for Behavioral Health patients increased in both CHART and non-CHART hospitals. The former rose from 20.2% to 21.5% (6.4% increase); the latter from 19.1% to 19.6% (2.6% increase). These rates are driven largely by ED revisits. The variation among hospitals was smaller for return rates than for readmission or ED revisit rates. Of the 13 hospitals that had higher return rates, the largest increase was in Harrington Memorial Hospital (20%). Of the 12 hospitals that had lower return rates, the largest decrease was in Winchester Hospital (24%).

TABLE 4. 30-Day Hospital Readmission Rate by CHART Hospital and Region – Behavioral Health Patients

Hospital	2 YEARS PRIOR TO CHART LAUNCH				YEAR PRIOR TO CHART LAUNCH			CHART Launch Date
	Readmission Rate (%) Quarter 1	Readmission Rate (%) Quarter 2	Readmission Rate (%) Quarter 3	Readmission Rate (%) Quarter 4	Readmission Rate (%) Quarter 5	Readmission Rate (%) Quarter 6	Readmission Rate (%) Quarter 7	
CENTRAL REGION	10.1 (192/1,892)	10.7 (220/2,065)	9.9 (211/2,141)	10.4 (208/2,000)	10.0 (217/2,168)	10.1 (218/2,161)	11.1 (224/2,019)	Oct'15
Baystate Joint Award	10.8 (72/666)	11.3 (74/656)	8.5 (56/657)	9.5 (59/619)	9.5 (63/662)	10.6 (65/614)	Data Not Available Due to Start Date	Feb'16
Baystate Wing Hospital	9.5 (25/264)	8.0 (27/338)	8.8 (28/319)	8.0 (25/311)	5.2 (14/271)	7.3 (20/274)	8.5 (24/283)	Nov'15
Harrington Memorial Hospital	5.6 (16/285)	11.8 (36/306)	6.1 (19/309)	11.5 (33/287)	10.0 (30/300)	10.0 (30/300)	10.0 (32/320)	Oct'15
HealthAlliance Hospital	14.4 (50/348)	13.8 (51/370)	10.1 (33/328)	11.0 (39/356)	10.4 (40/385)	11.7 (52/444)	14.3 (64/446)	Nov'15
Heywood and Athol Memorial Hospitals	9.2 (29/315)	8.8 (31/352)	8.7 (29/334)	8.3 (28/336)	10.9 (41/377)	6.2 (20/324)	8.6 (28/324)	Oct'15
Marlborough Hospital	7.0 (23/329)	9.8 (33/336)	12.9 (50/388)	12.8 (48/374)	9.3 (32/345)	8.5 (27/317)	6.9 (10/145)	Oct'15
Milford Regional Medical Center	13.1 (50/383)	11.4 (45/394)	11.7 (50/426)	11.4 (42/369)	11.3 (54/477)	15.2 (78/514)	13.4 (66/491)	Oct'15
METROBOSTON REGION	10.7 (194/1,820)	9.6 (184/1,916)	9.6 (186/1,940)	8.8 (160/1,808)	9.8 (189/1,937)	10.4 (236/2,264)	9.5 (199/2,084)	Oct'15
Beth Israel Deaconess Hospital - Milton	8.3 (19/229)	8.6 (21/244)	8.6 (25/290)	12.6 (31/246)	8.1 (20/248)	9.9 (28/283)	10.5 (33/314)	Oct'15
Emerson Hospital	10.4 (39/375)	9.2 (41/445)	7.6 (28/368)	7.3 (28/381)	9.8 (42/428)	8.5 (42/497)	9.4 (46/490)	Oct'15
Hallmark Joint Award	8.7 (60/691)	9.1 (70/768)	8.6 (66/769)	8.1 (56/692)	10.0 (87/874)	10.9 (84/769)	8.5 (61/720)	Dec'15
Winchester Hospital	13.2 (61/463)	11.1 (57/512)	11.8 (56/473)	10.7 (49/459)	12.3 (72/583)	9.8 (59/601)	10.2 (53/522)	Nov'15

Quarter 1 is defined as the quarter beginning 24 months prior to each hospital's CHART Phase 2 launch date.

NORTHEAST REGION	11.7 (398/3,415)	13.2 (476/3,612)	12.1 (439/3,626)	11.7 (405/3,472)	12.1 (425/3,498)	12.6 (472/3,732)	12.0 (446/3,705)	Oct'15
Addison Gilbert Hospital	9.9 (19/192)	10.2 (21/206)	10.4 (24/230)	7.1 (15/212)	10.2 (25/244)	13.7 (31/227)	10.6 (24/226)	Nov'15
Anna Jaques Hospital	12.2 (61/499)	14.9 (82/551)	9.9 (52/524)	12.2 (59/485)	10.4 (52/501)	8.7 (42/484)	8.4 (37/441)	Oct'15
Beverly Hospital	10.7 (123/1,145)	11.6 (146/1,254)	9.2 (108/1,175)	11.4 (137/1,205)	12.0 (142/1,186)	12.3 (158/1,282)	10.9 (132/1,216)	Nov'15
Lahey-Lowell Joint Award*	12.9 (382/2,972)	12.4 (358/2,887)	11.5 (328/2,863)	12.4 (361/2,900)	13.0 (425/3,257)	12.1 (386/3,197)	Data Not Available Due to Start Date	Jan'16
Lawrence General Hospital	10.8 (59/546)	12.5 (78/624)	12.7 (84/660)	9.5 (60/630)	12.3 (75/610)	12.3 (75/612)	12.4 (71/573)	Oct'15
Lowell General Hospital	13.8 (134/969)	16.3 (163/1,003)	14.6 (145/995)	13.8 (137/991)	17.1 (175/1,026)	13.6 (154/1,133)	13.6 (149/1,097)	Nov'15
SOUTHEAST REGION	12.1 (423/3,500)	13.0 (501/3,843)	12.3 (467/3,803)	12.4 (465/3,741)	13.3 (533/4,010)	12.9 (546/4,241)	13.2 (538/4,082)	Oct'15
Beth Israel Deaconess Hospital – Plymouth	9.0 (38/423)	9.9 (52/526)	10.0 (49/488)	9.5 (51/538)	10.8 (56/517)	8.3 (45/541)	13.0 (73/563)	Oct'15
Signature Healthcare Brockton Hospital	12.5 (89/713)	10.9 (82/749)	13.7 (104/759)	14.7 (110/750)	13.8 (116/840)	14.9 (128/859)	10.9 (81/740)	Oct'15
Southcoast Hospitals Group	14.3 (369/2,588)	12.4 (312/2,520)	12.3 (306/2,480)	13.8 (368/2,659)	13.1 (371/2,842)	13.7 (377/2,745)	Data Not Available Due to Start Date	Jan'16
WESTERN REGION	9.9 (267/2,708)	10.5 (296/2,824)	9.6 (276/2,878)	10.1 (270/2,669)	12.1 (340/2,808)	11.2 (334/2,971)	11.9 (372/3,135)	Oct'15
Baystate Franklin Medical Center	8.3 (23/278)	13.8 (45/325)	13.5 (46/342)	9.1 (31/340)	12.8 (44/345)	11.2 (44/393)	12.2 (41/335)	Nov'15
Berkshire Medical Center	14.3 (124/868)	12.2 (97/795)	12.3 (112/909)	14.2 (134/941)	13.1 (123/942)	12.8 (121/947)	14.4 (138/957)	Sep'15
Holyoke Medical Center	9.0 (35/387)	11.0 (46/418)	11.4 (45/394)	10.4 (39/374)	7.1 (26/368)	9.4 (42/445)	11.0 (49/446)	Dec'15
Mercy Medical Center	7.9 (79/1,002)	8.3 (83/1,005)	6.5 (59/913)	8.3 (68/817)	11.6 (107/924)	9.9 (95/961)	10.5 (112/1,063)	Oct'15
Noble Hospital	6.9 (18/260)	5.9 (16/271)	5.9 (13/221)	9.0 (23/255)	8.8 (22/249)	11.3 (31/275)	8.5 (22/258)	Nov'15
ALL CHART	11.1 (1,474/13,335)	11.8 (1,677/14,260)	11.0 (1,579/14,388)	11.0 (1,508/13,690)	11.8 (1,704/14,421)	11.8 (1,806/15,369)	11.8 (1,779/15,025)	Oct'15
ALL NON-CHART MA HOSPITALS	11.6 (1,857/16,054)	12.0 (2,065/17,219)	12.0 (2,136/17,746)	11.3 (1,954/17,265)	11.9 (2,115/17,843)	12.4 (2,346/18,979)	12.0 (2,233/18,584)	Oct'15

TABLE 5. 30-Day Emergency Department Revisit Rate by CHART Hospital and Region – Behavioral Health Patients

Hospital	2 YEARS PRIOR TO CHART LAUNCH				YEAR PRIOR TO CHART LAUNCH			CHART Launch Date
	ED Revisit Rate (%) Quarter 1	ED Revisit Rate (%) Quarter 2	ED Revisit Rate (%) Quarter 3	ED Revisit Rate (%) Quarter 4	ED Revisit Rate (%) Quarter 5	ED Revisit Rate (%) Quarter 6	ED Revisit Rate (%) Quarter 7	
CENTRAL REGION	17.5 (414/2,366)	18.7 (446/2,390)	21.0 (584/2,787)	20.3 (594/2,922)	20.4 (548/2,687)	20.0 (527/2,637)	20.5 (552/2,699)	Oct'15
Baystate Joint Award	27.2 (149/547)	24.0 (145/605)	26.6 (174/654)	22.1 (125/566)	22.4 (149/666)	21.5 (169/787)	Data Not Available Due to Start Date	Feb'16
Baystate Wing Hospital	14.2 (26/183)	10.3 (17/165)	15.9 (32/201)	7.8 (16/204)	11.2 (19/170)	11.6 (26/225)	10.2 (23/226)	Nov'15
Harrington Memorial Hospital	18.6 (100/537)	18.5 (88/476)	17.3 (90/519)	16.9 (103/608)	17.8 (75/422)	17.8 (80/449)	17.9 (83/463)	Oct'15
HealthAlliance Hospital	16.4 (68/415)	22.0 (93/423)	23.2 (115/495)	23.6 (112/475)	28.7 (140/487)	24.5 (113/461)	21.4 (104/486)	Nov'15
Heywood and Athol Memorial Hospitals	19.5 (111/568)	20.8 (146/701)	24.3 (230/948)	23.5 (227/968)	22.9 (228/997)	21.7 (193/891)	26.5 (256/967)	Oct'15
Marlborough Hospital	19.8 (51/258)	13.9 (30/216)	16.9 (37/219)	23.5 (46/196)	21.5 (41/191)	18.9 (33/175)	18.3 (21/115)	Oct'15
Milford Regional Medical Center	15.3 (67/437)	16.8 (67/400)	20.2 (88/436)	21.3 (98/461)	12.7 (54/426)	15.4 (65/422)	12.8 (60/469)	Oct'15
METROBOSTON REGION	16.4 (409/2,490)	17.3 (492/2,847)	17.0 (431/2,542)	19.5 (510/2,619)	16.7 (318/1,903)	13.7 (239/1,740)	16.3 (289/1,768)	Oct'15
Beth Israel Deaconess Hospital – Milton	14.7 (34/231)	8.5 (20/234)	12.4 (24/194)	17.4 (38/218)	15.5 (32/206)	10.2 (19/186)	14.5 (29/200)	Oct'15
Emerson Hospital	14.2 (45/318)	18.8 (81/432)	16.7 (66/395)	18.3 (84/460)	14.4 (62/430)	10.5 (50/474)	15.9 (89/559)	Oct'15
Hallmark Joint Award	19.4 (372/1,920)	18.6 (330/1,774)	19.2 (315/1,642)	21.3 (260/1,221)	17.0 (146/860)	17.3 (128/741)	18.3 (142/774)	Dec'15
Winchester Hospital	14.5 (42/290)	10.7 (29/270)	12.2 (31/254)	11.5 (30/261)	12.9 (38/294)	15.7 (45/286)	8.9 (28/315)	Nov'15

Quarter 1 is defined as the quarter beginning 24 months prior to each hospital's CHART Phase 2 launch date.

NORTHEAST REGION	22.6 (828/3,657)	21.7 (834/3,847)	24.5 (1,110/4,537)	24.3 (1,149/4,736)	22.4 (976/4,354)	23.5 (1,058/4,494)	23.5 (1,131/4,813)	Oct'15
Addison Gilbert Hospital	28.0 (45/161)	27.3 (54/198)	30.4 (72/237)	23.9 (54/226)	26.5 (53/200)	23.2 (49/211)	17.8 (46/259)	Nov'15
Anna Jaques Hospital	18.3 (78/426)	16.8 (94/558)	19.2 (114/593)	20.0 (126/630)	15.8 (76/481)	16.5 (83/504)	20.9 (117/561)	Oct'15
Beverly Hospital	19.6 (133/679)	15.1 (112/741)	18.2 (159/872)	16.4 (150/914)	13.6 (134/983)	14.9 (135/904)	14.9 (137/917)	Nov'15
Lahey-Lowell Joint Award*	21.9 (674/3,079)	24.4 (857/3,510)	23.8 (876/3,686)	22.0 (767/3,488)	23.6 (861/3,649)	22.4 (852/3,812)	Data Not Available Due to Start Date	Jan'16
Lawrence General Hospital	21.8 (128/587)	19.5 (94/481)	24.5 (167/683)	25.1 (175/697)	26.0 (177/682)	24.9 (157/631)	26.5 (185/697)	Oct'15
Lowell General Hospital	26.2 (477/1,820)	24.7 (505/2,044)	28.4 (621/2,187)	26.7 (579/2,169)	27.2 (576/2,121)	28.4 (644/2,266)	26.9 (633/2,351)	Nov'15
SOUTHEAST REGION	22.9 (910/3,981)	22.6 (960/4,251)	24.5 (1,068/4,354)	23.9 (1,074/4,502)	23.3 (1,035/4,440)	21.7 (973/4,481)	22.4 (1,101/4,926)	Oct'15
Beth Israel Deaconess Hospital – Plymouth	17.5 (119/681)	17.3 (128/740)	18.5 (120/650)	19.6 (111/565)	16.0 (106/664)	18.8 (118/628)	16.4 (140/854)	Oct'15
Signature Healthcare Brockton Hospital	23.4 (238/1,017)	24.3 (267/1,097)	27.1 (301/1,110)	27.1 (314/1,160)	26.5 (326/1,229)	23.2 (337/1,454)	25.0 (342/1,366)	Oct'15
Southcoast Hospitals Group	23.4 (565/2,415)	25.0 (642/2,566)	23.4 (654/2,799)	23.5 (604/2,565)	21.7 (516/2,377)	22.9 (615/2,688)	Data Not Available Due to Start Date	Jan'16
WESTERN REGION	28.0 (845/3,014)	27.6 (862/3,120)	28.4 (986/3,472)	29.6 (964/3,256)	25.6 (1,073/4,190)	23.4 (879/3,762)	25.5 (1,105/4,334)	Oct'15
Baystate Franklin Medical Center	31.5 (115/365)	35.0 (134/383)	27.7 (113/408)	35.1 (157/447)	26.5 (103/388)	28.2 (126/447)	26.0 (147/566)	Nov'15
Berkshire Medical Center	30.6 (190/620)	31.4 (194/618)	30.6 (217/709)	32.5 (229/705)	31.0 (181/583)	23.9 (110/461)	29.4 (178/606)	Sep'15
Holyoke Medical Center	31.9 (265/830)	28.6 (249/871)	32.3 (282/872)	27.9 (226/809)	32.9 (261/794)	31.1 (251/808)	32.9 (294/893)	Dec'15
Mercy Medical Center	23.6 (240/1,017)	22.9 (247/1,079)	26.3 (317/1,205)	24.9 (312/1,254)	24.9 (299/1,200)	19.6 (155/791)	20.6 (196/950)	Oct'15
Noble Hospital	26.0 (52/200)	18.7 (37/198)	17.3 (24/139)	21.8 (113/519)	19.5 (234/1,199)	21.5 (295/1,375)	22.4 (304/1,357)	Nov'15
ALL CHART	22.0 (3,406/15,508)	21.8 (3,594/16,455)	23.6 (4,179/17,692)	23.8 (4,291/18,035)	22.5 (3,950/17,574)	21.5 (3,676/17,114)	22.5 (4,178/18,540)	Oct'15
ALL NON-CHART MA HOSPITALS	19.5 (4,252/21,778)	19.6 (4,404/22,476)	20.6 (4,899/23,727)	20.8 (5,070/24,384)	19.3 (4,411/22,825)	18.5 (4,462/24,182)	19.5 (4,843/24,876)	Oct'15

TABLE 6. 30-Day Return Rate (Inpatient or ED) by CHART Hospital and Region – Behavioral Health Patients

Hospital	2 YEARS PRIOR TO CHART LAUNCH				YEAR PRIOR TO CHART LAUNCH			CHART Launch Date
	Return Rate (%) Quarter 1	Return Rate (%) Quarter 2	Return Rate (%) Quarter 3	Return Rate (%) Quarter 4	Return Rate (%) Quarter 5	Return Rate (%) Quarter 6	Return Rate (%) Quarter 7	
CENTRAL REGION	16.7 (711/4,258)	18.1 (808/4,455)	19.6 (965/4,928)	19.5 (958/4,922)	19.4 (941/4,855)	19.0 (910/4,798)	19.7 (930/4,718)	Oct'15
Baystate Joint Award	23.1 (280/1,213)	22.7 (286/1,261)	21.5 (282/1,311)	18.1 (214/1,185)	20.6 (274/1,328)	21.1 (295/1,401)	Data Not Available Due to Start Date	Feb'16
Baystate Wing Hospital	14.1 (63/447)	13.3 (67/503)	15.0 (78/520)	11.1 (57/515)	10.7 (47/441)	13.2 (66/499)	13.9 (71/509)	Nov'15
Harrington Memorial Hospital	15.8 (130/822)	17.9 (140/782)	16.8 (139/828)	18.0 (161/895)	18.4 (133/722)	19.9 (149/749)	19.0 (149/783)	Oct'15
HealthAlliance Hospital	18.5 (141/763)	21.2 (168/793)	22.0 (181/823)	21.2 (176/831)	23.6 (206/872)	21.3 (193/905)	23.0 (214/932)	Nov'15
Heywood and Athol Memorial Hospitals	19.7 (174/883)	20.0 (211/1,053)	23.1 (296/1,282)	21.5 (280/1,304)	22.8 (313/1,374)	20.2 (246/1,215)	23.7 (306/1,291)	Oct'15
Marlborough Hospital	15.7 (92/587)	15.9 (88/552)	18.3 (111/607)	21.6 (123/570)	19.0 (102/536)	16.3 (80/492)	15.4 (40/260)	Oct'15
Milford Regional Medical Center	16.0 (131/820)	16.1 (128/794)	20.2 (174/862)	19.6 (163/830)	16.1 (145/903)	18.5 (173/936)	15.8 (152/960)	Oct'15
METROBOSTON REGION	17.3 (746/4,310)	17.2 (820/4,763)	16.8 (752/4,482)	18.8 (834/4,427)	17.1 (656/3,840)	15.4 (617/4,004)	16.7 (642/3,852)	Oct'15
Beth Israel Deaconess Hospital – Milton	15.4 (71/460)	12.6 (60/478)	13.6 (66/484)	19.4 (90/464)	14.3 (65/454)	15.4 (72/469)	15.8 (81/514)	Oct'15
Emerson Hospital	19.0 (132/693)	19.2 (168/877)	16.3 (124/763)	16.9 (142/841)	17.8 (153/858)	14.2 (138/971)	18.0 (189/1,049)	Oct'15
Hallmark Joint Award	18.4 (480/2,611)	18.1 (460/2,542)	19.0 (459/2,411)	19.3 (369/1,913)	16.4 (285/1,734)	17.4 (262/1,510)	16.2 (242/1,494)	Dec'15
Winchester Hospital	17.0 (128/753)	14.2 (111/782)	16.0 (116/727)	15.3 (110/720)	16.9 (148/877)	15.1 (134/887)	13.0 (109/837)	Nov'15

Quarter 1 is defined as the quarter beginning 24 months prior to each hospital's CHART Phase 2 launch date.

NORTHEAST REGION	20.2 (1,431/7,072)	20.5 (1,528/7,459)	22.0 (1,798/8,163)	22.4 (1,837/8,208)	21.8 (1,712/7,852)	21.4 (1,762/8,226)	21.5 (1,833/8,518)	Oct'15
Addison Gilbert Hospital	20.4 (72/353)	20.5 (83/404)	21.6 (101/467)	18.3 (80/438)	18.9 (84/444)	21.5 (94/438)	16.7 (81/485)	Nov'15
Anna Jaques Hospital	19.8 (183/925)	20.1 (223/1,109)	18.3 (204/1,117)	20.5 (229/1,115)	17.3 (170/982)	17.4 (172/988)	19.9 (199/1,002)	Oct'15
Beverly Hospital	16.1 (294/1,824)	15.9 (317/1,995)	16.4 (336/2,047)	17.2 (365/2,119)	17.0 (368/2,169)	16.5 (361/2,186)	16.0 (341/2,133)	Nov'15
Lahey-Lowell Joint Award*	20.0 (1,209/6,051)	21.7 (1,391/6,397)	21.5 (1,409/6,549)	21.2 (1,353/6,388)	21.0 (1,452/6,906)	20.5 (1,435/7,009)	Data Not Available Due to Start Date	Jan'16
Lawrence General Hospital	19.9 (225/1,133)	19.5 (216/1,105)	23.0 (309/1,343)	23.4 (310/1,327)	25.3 (327/1,292)	22.7 (282/1,243)	23.5 (298/1,270)	Oct'15
Lowell General Hospital	24.2 (675/2,789)	24.5 (747/3,047)	26.8 (852/3,182)	25.6 (808/3,160)	26.6 (836/3,147)	24.9 (846/3,399)	25.1 (864/3,448)	Nov'15
SOUTHEAST REGION	20.9 (1,561/7,481)	22.0 (1,778/8,094)	22.7 (1,849/8,157)	22.9 (1,890/8,243)	22.3 (1,887/8,450)	21.5 (1,876/8,722)	22.4 (2,022/9,008)	Oct'15
Beth Israel Deaconess Hospital – Plymouth	18.2 (201/1,104)	19.0 (240/1,266)	18.9 (215/1,138)	18.9 (209/1,103)	18.0 (213/1,181)	17.9 (209/1,169)	19.4 (275/1,417)	Oct'15
Signature Healthcare Brockton Hospital	22.1 (382/1,730)	22.9 (422/1,846)	25.7 (481/1,869)	25.9 (494/1,910)	24.4 (505/2,069)	23.5 (544/2,313)	23.6 (497/2,106)	Oct'15
Southcoast Hospitals Group	22.3 (1,118/5,003)	22.5 (1,144/5,086)	22.7 (1,196/5,279)	22.5 (1,178/5,224)	21.4 (1,117/5,219)	22.8 (1,238/5,433)	Data Not Available Due to Start Date	Jan'16
WESTERN REGION	24.0 (1,374/5,722)	24.5 (1,459/5,944)	24.9 (1,581/6,350)	25.5 (1,509/5,925)	24.0 (1,681/6,998)	22.2 (1,496/6,733)	23.9 (1,786/7,469)	Oct'15
Baystate Franklin Medical Center	25.8 (166/643)	30.2 (214/708)	27.9 (209/750)	28.5 (224/787)	22.1 (162/733)	25.4 (213/840)	25.0 (225/901)	Nov'15
Berkshire Medical Center	26.4 (393/1,488)	26.0 (367/1,413)	26.4 (427/1,618)	27.7 (456/1,646)	25.3 (386/1,525)	21.6 (304/1,408)	25.4 (397/1,563)	Sep'15
Holyoke Medical Center	29.3 (356/1,217)	26.8 (346/1,289)	30.1 (381/1,266)	26.0 (307/1,183)	30.3 (352/1,162)	27.9 (350/1,253)	30.0 (402/1,339)	Dec'15
Mercy Medical Center	20.3 (409/2,019)	21.4 (447/2,084)	21.6 (458/2,118)	23.0 (476/2,071)	22.2 (471/2,124)	17.7 (310/1,752)	20.3 (408/2,013)	Oct'15
Noble Hospital	20.0 (92/460)	18.6 (87/469)	15.3 (55/360)	20.3 (157/774)	20.7 (300/1,448)	22.8 (376/1,650)	22.8 (369/1,615)	Nov'15
ALL CHART	20.2 (5,823/28,843)	20.8 (6,393/30,715)	21.6 (6,945/32,080)	22.2 (7,028/31,725)	21.5 (6,877/31,995)	20.5 (6,661/32,483)	21.5 (7,213/33,565)	Oct'15
ALL NON-CHART MA HOSPITALS	19.1 (7,207/37,832)	19.2 (7,613/39,695)	20.1 (8,326/41,473)	20.0 (8,315/41,649)	19.0 (7,721/40,668)	18.9 (8,153/43,161)	19.6 (8,500/43,460)	Oct'15

* The Lahey-Lowell Joint Award includes Addison Gilbert Hospital, Beverly Hospital, Lowell General Hospital, and Winchester Hospital

Patients with High Utilization

30-day readmission rates, 30-day ED revisit rates, 30-day returns

Tables 7-9 provide 30-day readmission, ED revisit, and return rates for the subset of patients with high utilization, defined as ≥ 4 admissions or ≥ 10 ED revisits during a one-year period between October 2012 and September 2015.

Readmissions in CHART hospitals for this subset of patients increased 6.7% between the 1st and 7th quarters (from 35.6% to 38.0%) and readmissions in non-CHART hospitals increased 8.3% (from 36.2% to 39.2%), as seen in Table 7. Not all CHART hospitals, however, saw an increase in readmission rates: eight hospitals had declining rates. A number of hospitals had small increases in readmission rates. However, three hospitals had high increases (Holyoke Medical Center – 38%; Baystate Franklin Medical Center – 49%; Beth Israel Deaconess Hospital – Milton 53%). Two hospitals had very high increases (Noble Hospital – 201%; Harrington Memorial Hospital 256%).

Table 8 shows very high ED revisit rates for both CHART and non-CHART hospitals. CHART hospital revisit rates were 61.2% in the 1st quarter and 61.4% in the 7th quarter. Non-CHART hospitals were 56.6% in the first quarter and dropped slightly to 55.4% in the 7th quarter. At the individual hospital level, changes between the 1st and 7th quarter were relatively small in most cases. The exception is Milford Regional Medical Center, which fell from 60.9% ED revisits to 38.8% (a 36% drop).

Return rates for patients with high utilization are shown in Table 9. Here we see small increases for both CHART and non-CHART hospitals. The former increased 5.2% (46.5% to 48.9%) and the latter 3.9% (43.1% to 44.8%). Fourteen hospitals had increases in return rates; however, many hospitals had percent changes that were relatively small. The overall CHART increase was influenced by larger changes in hospitals that had an increase in their return rates. Harrington Memorial Hospital is notable, increasing from 35.2% to 44.5% (26.4%).

TABLE 7. 30-Day Readmission Rate by CHART Hospital and Region for patients with high utilization

Hospital	2 YEARS PRIOR TO CHART LAUNCH				YEAR PRIOR TO CHART LAUNCH			
	Readmission Rate (%) Quarter 1	Readmission Rate (%) Quarter 2	Readmission Rate (%) Quarter 3	Readmission Rate (%) Quarter 4	Readmission Rate (%) Quarter 5	Readmission Rate (%) Quarter 6	Readmission Rate (%) Quarter 7	CHART Launch Date
CENTRAL REGION	35.5 (170/479)	31.3 (151/482)	31.4 (168/535)	39.5 (194/491)	36.4 (180/494)	30.8 (139/452)	35.1 (129/367)	Oct'15
Baystate Joint Award	33.1 (48/145)	37.1 (56/151)	36.5 (57/156)	33.3 (37/111)	38.9 (44/113)	40.4 (44/109)	Data Not Available Due to Start Date	Feb'16
Baystate Wing Hospital	41.7 (15/36)	28.3 (13/46)	40.0 (20/50)	31.4 (16/51)	27.0 (10/37)	27.8 (10/36)	41.4 (12/29)	Nov'15
Harrington Memorial Hospital	14.9 (7/47)	24.5 (13/53)	20.4 (10/49)	36.1 (22/61)	38.3 (23/60)	36.2 (17/47)	38.2 (13/34)	Oct'15
HealthAlliance Hospital	34.1 (30/88)	39.2 (38/97)	32.3 (31/96)	44.3 (47/106)	35.8 (38/106)	38.7 (43/111)	32.3 (32/99)	Nov'15
Heywood and Athol Memorial Hospitals	36.3 (29/80)	21.4 (15/70)	23.1 (18/78)	37.9 (25/66)	36.8 (28/76)	24.7 (20/81)	24.2 (16/66)	Oct'15
Marlborough Hospital	28.6 (20/70)	33.8 (27/80)	30.6 (30/98)	37.4 (34/91)	30.7 (23/75)	30.6 (19/62)	20.0 (5/25)	Oct'15
Milford Regional Medical Center	42.6 (72/169)	34.5 (48/139)	39.5 (62/157)	39.8 (51/128)	38.2 (52/136)	30.9 (34/110)	42.9 (45/105)	Oct'15
METROBOSTON REGION	35.1 (190/541)	27.9 (132/473)	34.8 (163/468)	31.2 (132/423)	31.4 (127/405)	35.2 (150/426)	37.5 (141/376)	Oct'15
Beth Israel Deaconess Hospital – Milton	28.6 (22/77)	23.0 (17/74)	39.3 (22/56)	35.4 (23/65)	40.0 (16/40)	28.3 (13/46)	43.8 (21/48)	Oct'15
Emerson Hospital	33.7 (29/86)	33.3 (28/84)	30.1 (25/83)	28.6 (18/63)	34.4 (21/61)	33.3 (21/63)	41.9 (26/62)	Oct'15
Hallmark Joint Award	25.9 (42/162)	31.5 (52/165)	34.0 (67/197)	21.8 (36/165)	34.5 (60/174)	37.2 (58/156)	27.8 (30/108)	Dec'15
Winchester Hospital	36.8 (67/182)	36.1 (56/155)	37.6 (50/133)	27.0 (34/126)	38.5 (50/130)	38.0 (57/150)	31.0 (31/100)	Nov'15

Quarter 1 is defined as the quarter beginning 24 months prior to each hospital's CHART Phase 2 launch date.

NORTHEAST REGION	38.0 (443/1,167)	36.8 (436/1,185)	35.4 (384/1,085)	34.9 (356/1,020)	38.2 (407/1,066)	39.3 (401/1,020)	38.9 (340/873)	Oct'15
Addison Gilbert Hospital	34.0 (16/47)	28.2 (11/39)	23.7 (9/38)	13.9 (5/36)	28.2 (11/39)	30.4 (7/23)	27.0 (10/37)	Nov'15
Anna Jaques Hospital	40.1 (63/157)	37.8 (56/148)	33.6 (38/113)	36.8 (46/125)	35.7 (41/115)	30.3 (27/89)	33.3 (24/72)	Oct'15
Beverly Hospital	36.0 (107/297)	39.3 (112/285)	33.1 (82/248)	33.6 (86/256)	40.1 (105/262)	44.6 (125/280)	37.7 (86/228)	Nov'15
Lahey-Lowell Joint Award*	35.8 (342/954)	35.9 (321/895)	34.4 (272/790)	38.4 (338/881)	39.4 (333/846)	38.3 (283/739)	Data Not Available Due to Start Date	Jan'16
Lawrence General Hospital	34.9 (76/218)	35.6 (84/236)	34.7 (76/219)	33.6 (80/238)	35.5 (72/203)	43.8 (98/224)	43.0 (74/172)	Oct'15
Lowell General Hospital	39.4 (180/457)	37.4 (176/470)	37.2 (154/414)	38.3 (154/402)	39.1 (185/473)	38.2 (137/359)	39.5 (121/306)	Nov'15
SOUTHEAST REGION	35.4 (429/1,212)	33.8 (423/1,251)	35.2 (465/1,322)	39.4 (558/1,417)	35.8 (462/1,292)	39.7 (508/1,280)	37.3 (405/1,085)	Oct'15
Beth Israel Deaconess Hospital – Plymouth	41.3 (43/104)	30.8 (33/107)	37.3 (41/110)	44.9 (53/118)	34.9 (38/109)	37.9 (39/103)	42.3 (44/104)	Oct'15
Signature Healthcare Brockton Hospital	31.2 (87/279)	27.5 (84/305)	31.7 (104/328)	37.6 (131/348)	32.5 (107/329)	38.1 (129/339)	30.3 (79/261)	Oct'15
Southcoast Hospitals Group	36.5 (308/844)	36.3 (316/871)	39.4 (379/961)	37.2 (318/854)	40.3 (337/836)	39.2 (279/712)	Data Not Available Due to Start Date	Jan'16
WESTERN REGION	32.2 (217/674)	32.9 (235/715)	33.7 (236/700)	35.8 (250/699)	35.8 (255/713)	36.9 (248/672)	39.7 (243/612)	Oct'15
Baystate Franklin Medical Center	26.8 (19/71)	35.4 (35/99)	35.6 (36/101)	39.0 (41/105)	36.1 (26/72)	44.3 (35/79)	40.0 (32/80)	Nov'15
Berkshire Medical Center	33.9 (92/271)	36.5 (93/255)	34.4 (97/282)	36.8 (100/272)	36.3 (115/317)	36.8 (95/258)	40.6 (102/251)	Sep'15
Holyoke Medical Center	22.5 (20/89)	25.8 (23/89)	37.8 (34/90)	32.5 (25/77)	31.2 (29/93)	34.3 (35/102)	31.0 (22/71)	Dec'15
Mercy Medical Center	36.6 (79/216)	30.7 (59/192)	34.3 (57/166)	37.8 (68/180)	39.7 (79/199)	34.1 (59/173)	39.3 (68/173)	Oct'15
Noble Hospital	17.5 (10/57)	34.4 (22/64)	37.9 (22/58)	22.0 (11/50)	29.6 (16/54)	26.9 (14/52)	35.3 (12/34)	Nov'15
ALL CHART	35.6 (1,449/4,073)	33.5 (1,377/4,106)	34.5 (1,416/4,110)	36.8 (1,490/4,050)	36.0 (1,431/3,970)	37.6 (1,446/3,850)	38.0 (1,258/3,313)	Oct'15
ALL NON-CHART MA HOSPITALS	36.2 (1,757/4,849)	37.2 (1,945/5,235)	37.4 (2,006/5,359)	37.0 (1,905/5,150)	37.3 (1,814/4,869)	38.4 (1,832/4,771)	39.2 (1,696/4,326)	Oct'15

TABLE 8. 30-Day Emergency Department Revisit Rate by CHART Hospital and Region for patients with high utilization

Hospital	2 YEARS PRIOR TO CHART LAUNCH				YEAR PRIOR TO CHART LAUNCH			
	ED Revisit Rate (%) Quarter 1	ED Revisit Rate (%) Quarter 2	ED Revisit Rate (%) Quarter 3	ED Revisit Rate (%) Quarter 4	ED Revisit Rate (%) Quarter 5	ED Revisit Rate (%) Quarter 6	ED Revisit Rate (%) Quarter 7	CHART Launch Date
CENTRAL REGION	56.9 (605/1,064)	57.8 (626/1,083)	59.8 (741/1,240)	59.1 (750/1,269)	60.4 (771/1,276)	59.6 (700/1,175)	58.5 (664/1,135)	Oct'15
Baystate Joint Award	63.4 (369/582)	58.9 (342/581)	60.6 (339/559)	56.8 (239/421)	55.5 (197/355)	59.5 (228/383)	Data Not Available Due to Start Date	Feb'16
Baystate Wing Hospital	44.2 (23/52)	34.9 (15/43)	37.7 (23/61)	43.8 (21/48)	57.4 (35/61)	47.8 (32/67)	44.8 (26/58)	Nov'15
Harrington Memorial Hospital	54.3 (82/151)	55.8 (96/172)	54.1 (92/170)	54.2 (103/190)	56.7 (118/208)	56.9 (91/160)	57.7 (94/163)	Oct'15
HealthAlliance Hospital	60.1 (104/173)	67.1 (171/255)	65.0 (186/286)	63.6 (178/280)	71.3 (249/349)	63.9 (177/277)	59.5 (156/262)	Nov'15
Heywood and Athol Memorial Hospitals	56.0 (158/282)	58.2 (167/287)	64.0 (231/361)	58.1 (223/384)	59.7 (210/352)	60.6 (200/330)	66.0 (280/424)	Oct'15
Marlborough Hospital	53.7 (66/123)	55.4 (56/101)	58.1 (68/117)	57.3 (55/96)	60.4 (64/106)	57.9 (62/107)	55.1 (38/69)	Oct'15
Milford Regional Medical Center	60.9 (165/271)	56.4 (136/241)	59.6 (158/265)	60.2 (160/266)	55.1 (125/227)	50.5 (106/210)	38.8 (59/152)	Oct'15
METROBOSTON REGION	60.7 (423/697)	59.5 (438/736)	54.6 (373/683)	60.7 (479/789)	60.3 (408/677)	57.0 (338/593)	59.0 (390/661)	Oct'15
Beth Israel Deaconess Hospital – Milton	52.1 (38/73)	51.7 (45/87)	43.8 (35/80)	52.2 (48/92)	44.4 (24/54)	57.1 (40/70)	50.7 (37/73)	Oct'15
Emerson Hospital	66.0 (66/100)	66.4 (75/113)	55.7 (54/97)	71.0 (76/107)	57.3 (51/89)	62.1 (54/87)	64.0 (73/114)	Oct'15
Hallmark Joint Award	64.0 (265/414)	58.5 (207/354)	59.2 (235/397)	66.1 (298/451)	57.7 (184/319)	60.6 (215/355)	54.8 (164/299)	Dec'15
Winchester Hospital	60.1 (92/153)	52.4 (77/147)	51.3 (81/158)	55.7 (73/131)	55.6 (65/117)	57.7 (71/123)	56.3 (58/103)	Nov'15

Quarter 1 is defined as the quarter beginning 24 months prior to each hospital's CHART Phase 2 launch date.

NORTHEAST REGION	58.3 (914/1,568)	57.7 (881/1,526)	59.7 (1,079/1,806)	62.6 (1,178/1,882)	60.7 (1,067/1,758)	58.4 (1,013/1,735)	59.5 (1,012/1,700)	Oct'15
Addison Gilbert Hospital	64.0 (57/89)	60.5 (69/114)	56.0 (61/109)	58.0 (51/88)	62.6 (57/91)	43.9 (25/57)	51.8 (29/56)	Nov'15
Anna Jaques Hospital	50.0 (63/126)	52.1 (75/144)	59.0 (85/144)	59.8 (107/179)	61.0 (83/136)	51.3 (61/119)	49.7 (74/149)	Oct'15
Beverly Hospital	57.6 (106/184)	44.9 (80/178)	50.0 (93/186)	57.7 (109/189)	50.8 (94/185)	51.4 (112/218)	54.2 (83/153)	Nov'15
Lahey-Lowell Joint Award*	59.0 (661/1,121)	60.1 (806/1,342)	62.6 (826/1,320)	60.8 (717/1,180)	59.2 (702/1,186)	60.9 (713/1,171)	Data Not Available Due to Start Date	Jan'16
Lawrence General Hospital	57.9 (276/477)	54.0 (217/402)	58.1 (272/468)	59.4 (324/545)	60.0 (334/557)	58.0 (315/543)	58.1 (283/487)	Oct'15
Lowell General Hospital	61.9 (414/669)	62.4 (491/787)	64.9 (566/872)	65.0 (555/854)	61.8 (518/838)	64.4 (479/744)	65.3 (540/827)	Nov'15
SOUTHEAST REGION	60.9 (1,630/2,678)	60.1 (1,590/2,644)	62.9 (1,795/2,853)	62.8 (1,871/2,979)	62.3 (1,750/2,808)	62.2 (1,610/2,589)	62.3 (1,672/2,684)	Oct'15
Beth Israel Deaconess Hospital – Plymouth	55.1 (177/321)	51.2 (147/287)	57.5 (165/287)	59.7 (178/298)	53.6 (165/308)	52.5 (134/255)	49.0 (123/251)	Oct'15
Signature Healthcare Brockton Hospital	60.4 (442/732)	59.7 (425/712)	63.8 (509/798)	60.5 (507/838)	63.4 (478/754)	58.5 (365/624)	59.4 (403/678)	Oct'15
Southcoast Hospitals Group	61.6 (1,011/1,641)	63.5 (1,113/1,752)	64.1 (1,193/1,860)	63.7 (1,109/1,742)	65.0 (1,114/1,715)	65.3 (1,134/1,737)	Data Not Available Due to Start Date	Jan'16
WESTERN REGION	64.0 (2,332/3,644)	63.1 (2,248/3,565)	63.1 (2,401/3,805)	64.5 (2,222/3,447)	62.1 (2,046/3,296)	61.3 (1,628/2,655)	63.5 (1,794/2,827)	Oct'15
Baystate Franklin Medical Center	62.8 (340/541)	65.8 (352/535)	61.2 (323/528)	61.8 (311/503)	57.1 (206/361)	57.7 (169/293)	62.1 (203/327)	Nov'15
Berkshire Medical Center	69.1 (859/1,243)	68.3 (762/1,115)	67.6 (819/1,212)	67.4 (746/1,107)	69.4 (765/1,102)	65.4 (576/881)	68.7 (655/953)	Sep'15
Holyoke Medical Center	63.4 (457/721)	63.0 (453/719)	63.7 (490/769)	60.1 (440/732)	61.1 (429/702)	61.9 (413/667)	64.1 (408/637)	Dec'15
Mercy Medical Center	60.5 (595/983)	57.6 (563/978)	59.6 (633/1,062)	60.3 (605/1,004)	59.4 (523/881)	55.9 (317/567)	58.1 (363/625)	Oct'15
Noble Hospital	67.7 (172/254)	62.2 (135/217)	50.0 (78/156)	69.8 (74/106)	65.0 (184/283)	60.8 (141/232)	60.4 (151/250)	Nov'15
ALL CHART	61.2 (5,904/9,651)	60.5 (5,783/9,554)	61.5 (6,389/10,387)	62.7 (6,500/10,366)	61.6 (6,042/9,815)	60.5 (5,289/8,747)	61.4 (5,532/9,007)	Oct'15
ALL NON-CHART MA HOSPITALS	56.6 (5,289/9,352)	55.9 (5,226/9,355)	57.4 (5,994/10,439)	57.1 (5,846/10,230)	55.3 (4,999/9,035)	53.9 (4,527/8,397)	55.4 (4,682/8,456)	Oct'15

TABLE 9. 30-Day Return Rate (Inpatient or ED) by CHART Hospital and Region for patients with high utilization

Hospital	2 YEARS PRIOR TO CHART LAUNCH				YEAR PRIOR TO CHART LAUNCH			CHART Launch Date
	Return Rate (%) Quarter 1	Return Rate (%) Quarter 2	Return Rate (%) Quarter 3	Return Rate (%) Quarter 4	Return Rate (%) Quarter 5	Return Rate (%) Quarter 6	Return Rate (%) Quarter 7	
CENTRAL REGION	42.6 (1,298/3,044)	43.8 (1,329/3,034)	45.3 (1,495/3,298)	46.9 (1,598/3,410)	46.7 (1,560/3,338)	45.7 (1,412/3,092)	47.0 (1,381/2,937)	Oct'15
Baystate Joint Award	49.6 (594/1,198)	49.8 (640/1,285)	48.3 (612/1,266)	43.1 (418/969)	44.6 (422/946)	50.2 (454/904)	Data Not Available Due to Start Date	Feb'16
Baystate Wing Hospital	35.6 (83/233)	29.7 (70/236)	37.5 (111/296)	35.4 (105/297)	35.8 (91/254)	36.6 (93/254)	41.9 (96/229)	Nov'15
Harrington Memorial Hospital	35.2 (162/460)	44.2 (215/486)	43.6 (201/461)	42.1 (214/508)	46.9 (245/522)	45.8 (213/465)	44.5 (202/454)	Oct'15
HealthAlliance Hospital	42.5 (243/572)	49.4 (309/626)	48.8 (327/670)	50.0 (356/712)	52.8 (413/782)	49.4 (328/664)	50.2 (339/675)	Nov'15
Heywood and Athol Memorial Hospitals	46.5 (303/652)	47.0 (274/583)	50.6 (354/700)	49.7 (364/732)	49.1 (369/752)	48.0 (342/713)	52.4 (403/769)	Oct'15
Marlborough Hospital	41.6 (169/406)	36.2 (141/390)	40.5 (171/422)	40.7 (160/393)	41.8 (154/368)	46.2 (164/355)	41.6 (89/214)	Oct'15
Milford Regional Medical Center	46.4 (346/746)	43.9 (311/708)	48.8 (373/765)	49.2 (391/794)	44.7 (305/682)	42.1 (252/598)	42.1 (245/582)	Oct'15
METROBOSTON REGION	44.2 (1,141/2,579)	42.0 (1,035/2,467)	40.7 (991/2,435)	44.1 (1,091/2,472)	43.0 (961/2,234)	41.9 (855/2,043)	43.9 (891/2,030)	Oct'15
Beth Israel Deaconess Hospital – Milton	40.3 (144/357)	39.1 (135/345)	36.3 (121/333)	42.0 (142/338)	35.4 (86/243)	43.0 (122/284)	39.5 (107/271)	Oct'15
Emerson Hospital	46.5 (200/430)	44.9 (186/414)	42.8 (173/404)	42.9 (171/399)	43.3 (162/374)	42.9 (146/340)	49.2 (191/388)	Oct'15
Hallmark Joint Award	44.8 (505/1,127)	42.9 (441/1,028)	45.9 (538/1,172)	45.2 (495/1,095)	42.0 (373/888)	45.4 (414/911)	41.0 (308/751)	Dec'15
Winchester Hospital	41.1 (264/643)	40.2 (270/672)	38.4 (228/594)	41.8 (233/558)	43.5 (251/577)	40.6 (215/529)	37.9 (159/420)	Nov'15

Quarter 1 is defined as the quarter beginning 24 months prior to each hospital's CHART Phase 2 launch date.

NORTHEAST REGION	43.1 (2,276/5,275)	44.2 (2,347/5,310)	45.3 (2,547/5,623)	46.4 (2,601/5,607)	46.2 (2,449/5,300)	45.4 (2,332/5,131)	47.1 (2,326/4,936)	Oct'15
Addison Gilbert Hospital	43.2 (105/243)	44.0 (107/243)	42.6 (118/277)	41.6 (99/238)	44.1 (115/261)	39.5 (85/215)	37.2 (77/207)	Nov'15
Anna Jaques Hospital	43.5 (276/635)	41.4 (276/666)	41.1 (267/649)	46.3 (303/654)	40.6 (236/581)	40.8 (215/527)	41.9 (225/537)	Oct'15
Beverly Hospital	38.9 (366/940)	37.9 (358/945)	42.8 (388/907)	40.5 (370/913)	40.7 (377/926)	45.5 (433/951)	42.7 (346/810)	Nov'15
Lahey-Lowell Joint Award*	44.1 (1,813/4,107)	44.6 (1,898/4,258)	45.4 (1,883/4,145)	46.4 (1,829/3,942)	44.5 (1,711/3,847)	46.6 (1,701/3,651)	Data Not Available Due to Start Date	Jan'16
Lawrence General Hospital	44.2 (566/1,281)	42.6 (501/1,175)	46.7 (612/1,311)	46.7 (663/1,420)	47.0 (632/1,345)	48.7 (633/1,299)	47.8 (565/1,183)	Oct'15
Lowell General Hospital	45.1 (999/2,213)	48.3 (1,142/2,366)	48.6 (1,171/2,411)	48.0 (1,097/2,287)	48.4 (1,116/2,308)	47.3 (951/2,011)	50.0 (1,015/2,032)	Nov'15
SOUTHEAST REGION	45.4 (3,157/6,947)	45.3 (3,234/7,136)	46.7 (3,560/7,621)	49.0 (3,752/7,656)	47.9 (3,506/7,313)	47.5 (3,246/6,836)	49.8 (3,354/6,734)	Oct'15
Beth Israel Deaconess Hospital – Plymouth	45.4 (417/918)	42.1 (363/863)	42.9 (380/885)	47.4 (419/884)	44.7 (377/843)	41.4 (312/754)	45.6 (324/711)	Oct'15
Signature Healthcare Brockton Hospital	47.1 (765/1,624)	47.0 (763/1,622)	50.1 (935/1,867)	49.4 (906/1,835)	48.6 (829/1,707)	46.3 (721/1,557)	47.9 (703/1,469)	Oct'15
Southcoast Hospitals Group	45.2 (2,104/4,654)	46.2 (2,228/4,820)	49.1 (2,450/4,989)	48.4 (2,302/4,759)	48.9 (2,210/4,523)	51.1 (2,305/4,508)	Data Not Available Due to Start Date	Jan'16
WESTERN REGION	52.8 (3,563/6,747)	51.8 (3,564/6,880)	52.6 (3,801/7,229)	53.0 (3,537/6,671)	50.2 (3,272/6,513)	49.1 (2,741/5,582)	52.1 (2,972/5,702)	Oct'15
Baystate Franklin Medical Center	53.5 (485/907)	54.6 (521/955)	53.2 (535/1,006)	52.1 (500/959)	45.9 (328/714)	48.0 (334/696)	52.6 (359/682)	Nov'15
Berkshire Medical Center	55.6 (1,273/2,291)	55.1 (1,178/2,138)	55.4 (1,296/2,338)	53.7 (1,217/2,268)	54.1 (1,176/2,173)	50.8 (913/1,798)	54.0 (1,044/1,932)	Sep'15
Holyoke Medical Center	53.5 (642/1,201)	53.8 (651/1,211)	55.6 (705/1,268)	50.4 (627/1,243)	52.0 (638/1,228)	52.4 (612/1,167)	53.9 (583/1,082)	Dec'15
Mercy Medical Center	50.7 (1,005/1,983)	48.4 (965/1,995)	50.1 (1,050/2,096)	51.0 (1,021/2,003)	47.5 (863/1,815)	42.7 (596/1,395)	49.3 (718/1,457)	Oct'15
Noble Hospital	52.0 (306/589)	48.3 (249/515)	43.4 (171/394)	48.2 (149/309)	54.1 (311/575)	52.4 (266/508)	50.4 (253/502)	Nov'15
ALL CHART	46.5 (11,435/24,592)	46.4 (11,509/24,827)	47.3 (12,394/26,206)	48.7 (12,579/25,816)	47.6 (11,748/24,698)	46.7 (10,586/22,684)	48.9 (10,924/22,339)	Oct'15
ALL NON-CHART MA HOSPITALS	43.1 (11,399/26,435)	43.5 (11,467/26,388)	45.2 (12,793/28,320)	44.9 (12,444/27,726)	44.0 (11,037/25,090)	43.6 (10,363/23,769)	44.8 (10,385/23,165)	Oct'15

* The Lahey-Lowell Joint Award includes Addison Gilbert Hospital, Beverly Hospital, Lowell General Hospital, and Winchester Hospital

Average Utilization

30-day readmission rates, 30-day ED revisit rates, 30-day returns

Table 10 provides a summary of the average readmission, ED revisit and return rates by year for the baseline period. Accordingly, we find results consistent with the rates found in Tables 1-9. For all patients, CHART hospitals had lower 30-day inpatient readmission rates than Non-CHART hospitals. Non-CHART hospitals had lower 30-day ED revisit and 30-day return rates. Behavioral Health patients at CHART hospitals had higher 30-day ED revisit and return rates, whereas non-CHART hospitals had slightly higher 30-day inpatient readmission rates when comparing data from similar years. Patients with high utilization fared similarly to behavioral health patients, although their readmission, revisit, and return rates were (predictably) higher across all three categories.

TABLE 10. Average 30-day Readmission, Revisit and Return Rates by Year, Patient Type and Hospital Category

		All patients			BH patients			HU patients		
		Inpatient Readmissions	ED Revisits	Any bed Returns	Inpatient Readmissions	ED Revisits	Any bed returns	Inpatient Readmissions	ED revisits	Any bed returns
CHART	Q1-4 (year 1)	11.0%	15.5%	16.6%	11.2%	22.9%	21.2%	35.1%	61.5%	47.2%
	Q5-7 (year 2)	11.3%	14.8%	16.2%	11.8%	22.2%	21.2%	37.1%	61.2%	47.7%
Non-CHART	Q1-4 (year 1)	11.6%	14.2%	15.6%	11.7%	20.2%	19.6%	37.0%	56.8%	44.2%
	Q5-7 (year 2)	11.6%	13.3%	15.0%	12.1%	19.1%	19.1%	38.3%	54.9%	44.1%

Reutilization to Other Hospitals

(“Leakage”)

Reutilization to a hospital other than the one where the original discharge occurred is sometimes known as “leakage” and can present challenges in identifying and serving target population patients, as well as in tracking reutilization rates. Leakage rates are expected to be lower for hospitals that are more geographically isolated from other hospitals. Tables 11-13 document the extent to which patients who utilized either acute care or ED services during the period October 2012 through September 2015 returned to the same hospital, or to a different hospital. These are examined for 30-day readmissions and for all readmissions as well as for 30-day ED revisits and all ED revisits during the baseline data period.

Table 11a shows that for 30-day readmissions, there is considerable reutilization to other hospitals as well as a broad range across hospitals. This holds in both CHART and non-CHART facilities. Among CHART hospitals, the smallest leakage was for Berkshire Medical Center where only 3.2% of patients readmitted within 30 days went to a different hospital. The largest leakage was for Athol Memorial Hospital: 61.2% of subsequent 30-day readmissions were to other hospitals. Table 11b, which examines any readmission during the baseline period, shows similar patterns. Berkshire Medical Center had 4.2% leakage and Athol Memorial Hospital had 43.9%.

Tables 12a and 12b show a similar pattern for ED reutilization. Among CHART hospitals, Berkshire Medical Center again had the smallest leakage. Only 3.3% of subsequent ED 30-day revisits were to other hospitals (Table 12a) and only 4.6% of all ED revisits were to a different hospital (Table 12b). The largest leakage was from Hallmark Health – Lawrence Memorial Hospital Campus: 40.3% (Table 12a) and 40.4% (Table 12b) of 30-day ED revisits and all ED revisits, respectively, were to other hospitals.

In Tables 13a and 13b showing returns, we see reutilization rates that lie between admissions and ED visits. Among CHART hospitals, the pattern of variation follows that of ED visits, with the smallest leakage observed for Berkshire Medical Center (3.7% for 30-day returns as shown in Table 13a and 5.0% for any return as shown in Table 13b) and the largest for Hallmark Health – Lawrence Memorial Hospital Campus (35.6% for 30-day returns and 38.3% for any return).

TABLE 11a. 30-Day Readmissions to Other Hospitals ("Hospital Leakage") - Hospital Discharges Only

				Readmissions within 30 Days to Same Hospital		Readmissions within 30 Days to Different Hospital		30-Day Readmission Rates	
CHART Hospital or Non	Hospital	Total Hospital Admissions	Total Readmissions within 30 Days	#	Proportion (%)	#	Proportion (%)	Any Hospital (%)	Same Hospital (%)
CHART	Addison Gilbert Hospital	4,589	669	410	61.3	259	38.7	14.6	8.9
CHART	Anna Jaques Hospital	12,402	1,556	1,286	82.6	270	17.4	12.5	10.4
CHART	Athol Memorial Hospital	1,196	147	57	38.8	90	61.2	12.3	4.8
CHART	Baystate Franklin Medical Center	7,601	946	827	87.4	119	12.6	12.4	10.9
CHART	Baystate Wing Hospital	5,918	676	490	72.5	186	27.5	11.4	8.3
CHART	Berkshire Medical Center	23,300	3,068	2,969	96.8	98	3.2	13.2	12.7
CHART	Beth Israel Deaconess Hospital–Milton	10,566	1,140	992	87	148	13	10.8	9.4
CHART	Beth Israel Deaconess Hospital–Plymouth	15,372	1,626	1,444	88.8	182	11.2	10.6	9.4
CHART	Beverly Hospital	28,812	3,745	2,951	78.8	794	21.2	13	10.2
CHART	Emerson Hospital	12,150	1,169	977	83.6	192	16.4	9.6	8
CHART	Hallmark Health – Lawrence Memorial Hospital	6,406	865	643	74.3	222	25.7	13.5	10
CHART	Hallmark Health – Melrose-Wakefield Hospital	15,125	1,733	1,417	81.8	316	18.2	11.5	9.4
CHART	Harrington Memorial Hospital	7,307	889	602	67.7	287	32.3	12.2	8.2
CHART	HealthAlliance Hospital	10,839	1,495	1,187	79.4	308	20.6	13.8	11
CHART	Heywood Hospital	7,729	1,023	732	71.6	291	28.4	13.2	9.5
CHART	Holyoke Medical Center	10,102	1,190	1,055	88.7	134	11.3	11.8	10.4
CHART	Lawrence General Hospital	18,755	2,505	2,118	84.6	387	15.4	13.4	11.3
CHART	Lowell General Hospital	37,066	5,045	4,658	92.3	387	7.7	13.6	12.6
CHART	Marlborough Hospital	7,818	1,139	800	70.2	339	29.8	14.6	10.2
CHART	Mercy Medical Center	24,498	2,610	2,303	88.2	307	11.8	10.7	9.4
CHART	Milford Regional Medical Center	14,477	1,992	1,712	85.9	280	14.1	13.8	11.8
CHART	Noble Hospital	7,064	782	596	76.2	186	23.8	11.1	8.4
CHART	Signature Healthcare Brockton Hospital	21,311	2,723	2,456	90.2	266	9.8	12.8	11.5
CHART	Southcoast Hospitals Group - Charlton Memorial	28,278	3,875	3,307	85.3	568	14.7	13.7	11.7
CHART	Southcoast Hospitals Group - St. Luke's	32,192	4,763	4,271	89.7	492	10.3	14.8	13.3
CHART	Southcoast Hospitals Group - Tobey Hospital	9,554	1,353	1,121	82.9	232	17.1	14.2	11.7
CHART	Winchester Hospital	19,923	2,354	2,104	89.4	250	10.6	11.8	10.6

Non-CHART	Baystate Mary Lane Hospital	2,081	185	149	80.5	36	19.5	8.9	7.2
Non-CHART	Beth Israel Deaconess Hospital - Needham	4,960	464	381	82.1	83	17.9	9.4	7.7
Non-CHART	Brigham and Women's Faulkner Hospital	16,720	1,591	1,370	86.1	221	13.9	9.5	8.2
Non-CHART	CHA - Cambridge Hospital Campus	9,034	1,232	909	73.8	322	26.1	13.6	10.1
Non-CHART	CHA - Whidden Hospital Campus	8,569	1,099	773	70.3	326	29.7	12.8	9
Non-CHART	Cape Cod Hospital	36,214	4,060	3,779	93.1	281	6.9	11.2	10.4
Non-CHART	Carney Hospital	9,512	1,275	947	74.3	327	25.6	13.4	10
Non-CHART	Cooley Dickinson Hospital	14,157	1,594	1,375	86.3	219	13.7	11.3	9.7
Non-CHART	Fairview Hospital	1,689	153	96	62.7	57	37.3	9.1	5.7
Non-CHART	Falmouth Hospital	13,269	1,816	1,599	88.1	217	11.9	13.7	12.1
Non-CHART	Holy Family Hospital	24,734	3,292	2,553	77.6	738	22.4	13.3	10.3
Non-CHART	Lahey Hospital & Medical Center	51,597	7,431	6,471	87.1	939	12.6	14.4	12.5
Non-CHART	Martha's Vineyard Hospital	2,191	207	191	92.3	16	7.7	9.4	8.7
Non-CHART	MetroWest Medical Center	21,975	3,085	2,664	86.4	421	13.6	14	12.1
Non-CHART	Morton Hospital	11,247	1,524	1,290	84.6	234	15.4	13.6	11.5
Non-CHART	Mount Auburn Hospital	19,712	2,223	2,012	90.5	211	9.5	11.3	10.2
Non-CHART	Nantucket Cottage Hospital	757	64	55	85.9	9	14.1	8.5	7.3
Non-CHART	Nashoba Valley Medical Center	4,128	549	408	74.3	141	25.7	13.3	9.9
Non-CHART	Newton-Wellesley Hospital	24,270	2,527	2,192	86.7	335	13.3	10.4	9
Non-CHART	North Shore Medical Center	32,529	3,988	3,669	92	319	8	12.3	11.3
Non-CHART	Norwood Hospital	21,705	2,524	2,058	81.5	466	18.5	11.6	9.5
Non-CHART	Saint Anne's Hospital	15,470	2,366	1,919	81.1	447	18.9	15.3	12.4
Non-CHART	Saint Vincent Hospital	32,572	4,599	3,942	85.7	657	14.3	14.1	12.1
Non-CHART	South Shore Hospital	41,554	5,242	4,931	94.1	311	5.9	12.6	11.9
Non-CHART	St. Elizabeth's Medical Center	24,100	3,467	2,609	75.3	857	24.7	14.4	10.8
Non-CHART	Sturdy Memorial Hospital	10,618	1,228	1,116	90.9	112	9.1	11.6	10.5
Non-CHART	UMass Memorial Medical Center	64,935	11,014	9,735	88.4	1,279	11.6	17	15

TABLE 11b. Any Readmissions to Other Hospitals ("Hospital Leakage") from October 2012 through September 2015 - Hospital Discharges Only

				Readmissions to Same Hospital		Readmissions to Different Hospital		Any Readmission Ever Rates	
CHART Hospital or Non	Hospital	Total Hospital Admissions	Total Subsequent Readmissions	#	Proportion (%)	#	Proportion (%)	Any Hospital (%)	Same Hospital (%)
CHART	Addison Gilbert Hospital	4,589	2,330	1,414	60.7	916	39.3	50.8	30.8
CHART	Anna Jaques Hospital	12,402	5,468	4,529	82.8	939	17.2	44.1	36.5
CHART	Athol Memorial Hospital	1,196	583	327	56.1	256	43.9	48.7	27.3
CHART	Baystate Franklin Medical Center	7,601	3,214	2,775	86.3	439	13.7	42.3	36.5
CHART	Baystate Wing Hospital	5,918	2,519	1,840	73	679	27	42.6	31.1
CHART	Berkshire Medical Center	23,300	10,331	9,902	95.8	429	4.2	44.3	42.5
CHART	Beth Israel Deaconess Hospital – Milton	10,566	4,264	3,540	83	724	17	40.4	33.5
CHART	Beth Israel Deaconess Hospital – Plymouth	15,372	5,966	5,107	85.6	859	14.4	38.8	33.2
CHART	Beverly Hospital	28,812	12,360	9,353	75.7	3,007	24.3	42.9	32.5
CHART	Emerson Hospital	12,150	4,382	3,551	81	831	19	36.1	29.2
CHART	Hallmark Health – Lawrence Memorial Hospital	6,406	2,979	2,060	69.2	919	30.8	46.5	32.2
CHART	Hallmark Health – Melrose-Wakefield Hospital	15,125	6,288	4,947	78.7	1,341	21.3	41.6	32.7
CHART	Harrington Memorial Hospital	7,307	3,106	2,216	71.3	890	28.7	42.5	30.3
CHART	HealthAlliance Hospital	10,839	5,112	3,750	73.4	1,362	26.6	47.2	34.6
CHART	Heywood Hospital	7,729	3,508	2,431	69.3	1,077	30.7	45.4	31.5
CHART	Holyoke Medical Center	10,102	4,340	3,692	85.1	648	14.9	43	36.5
CHART	Lawrence General Hospital	18,755	8,592	7,082	82.4	1,510	17.6	45.8	37.8
CHART	Lowell General Hospital	37,066	16,331	14,898	91.2	1,433	8.8	44.1	40.2
CHART	Marlborough Hospital	7,818	3,591	2,409	67.1	1,182	32.9	45.9	30.8
CHART	Mercy Medical Center	24,498	9,016	7,778	86.3	1,238	13.7	36.8	31.7
CHART	Milford Regional Medical Center	14,477	6,254	5,166	82.6	1,088	17.4	43.2	35.7
CHART	Noble Hospital	7,064	3,001	2,397	79.9	604	20.1	42.5	33.9
CHART	Signature Healthcare Brockton Hospital	21,311	9,862	8,777	89	1,085	11	46.3	41.2
CHART	Southcoast Hospitals Group - Charlton Memorial	28,278	13,243	10,817	81.7	2,426	18.3	46.8	38.3
CHART	Southcoast Hospitals Group - St. Luke's	32,192	15,544	13,466	86.6	2,078	13.4	48.3	41.8
CHART	Southcoast Hospitals Group - Tobey Hospital	9,554	4,106	3,036	73.9	1,070	26.1	43	31.8
CHART	Winchester Hospital	19,923	8,325	6,997	84	1,328	16	41.8	35.1

Non-CHART	Baystate Mary Lane Hospital	2,081	785	610	77.7	175	22.3	37.7	29.3
Non-CHART	Beth Israel Deaconess Hospital - Needham	4,960	1,713	1,328	77.5	385	22.5	34.5	26.8
Non-CHART	Brigham and Women's Faulkner Hospital	16,720	5,740	4,620	80.5	1,120	19.5	34.3	27.6
Non-CHART	CHA - Cambridge Hospital Campus	9,034	3,988	2,817	70.6	1,171	29.4	44.1	31.2
Non-CHART	CHA - Whidden Hospital Campus	8,569	3,668	2,475	67.5	1,193	32.5	42.8	28.9
Non-CHART	Cape Cod Hospital	36,214	14,399	13,022	90.4	1,377	9.6	39.8	36
Non-CHART	Carney Hospital	9,512	4,181	3,029	72.4	1,152	27.6	44	31.8
Non-CHART	Cooley Dickinson Hospital	14,157	5,640	4,757	84.3	883	15.7	39.8	33.6
Non-CHART	Fairview Hospital	1,689	666	434	65.2	232	34.8	39.4	25.7
Non-CHART	Falmouth Hospital	13,269	6,062	4,965	81.9	1,097	18.1	45.7	37.4
Non-CHART	Holy Family Hospital	24,734	10,876	8,123	74.7	2,753	25.3	44	32.8
Non-CHART	Lahey Hospital & Medical Center	51,597	22,750	18,893	83	3,857	17	44.1	36.6
Non-CHART	Martha's Vineyard Hospital	2,191	999	914	91.5	85	8.5	45.6	41.7
Non-CHART	MetroWest Medical Center	21,975	9,995	8,486	84.9	1,509	15.1	45.5	38.6
Non-CHART	Morton Hospital	11,247	5,032	4,188	83.2	844	16.8	44.7	37.2
Non-CHART	Mount Auburn Hospital	19,712	7,869	6,862	87.2	1,007	12.8	39.9	34.8
Non-CHART	Nantucket Cottage Hospital	757	293	265	90.4	28	9.6	38.7	35
Non-CHART	Nashoba Valley Medical Center	4,128	1,862	1,350	72.5	512	27.5	45.1	32.7
Non-CHART	Newton-Wellesley Hospital	24,270	8,867	7,327	82.6	1,540	17.4	36.5	30.2
Non-CHART	North Shore Medical Center	32,529	14,226	12,751	89.6	1,475	10.4	43.7	39.2
Non-CHART	Norwood Hospital	21,705	8,957	7,121	79.5	1,836	20.5	41.3	32.8
Non-CHART	Saint Anne's Hospital	15,470	7,471	5,689	76.1	1,782	23.9	48.3	36.8
Non-CHART	Saint Vincent Hospital	32,572	14,413	11,820	82	2,593	18	44.2	36.3
Non-CHART	South Shore Hospital	41,554	17,442	15,832	90.8	1,610	9.2	42	38.1
Non-CHART	St. Elizabeth's Medical Center	24,100	9,962	7,010	70.4	2,952	29.6	41.3	29.1
Non-CHART	Sturdy Memorial Hospital	10,618	4,255	3,775	88.7	480	11.3	40.1	35.6
Non-CHART	UMass Memorial Medical Center	64,935	29,901	24,697	82.6	5,204	17.4	46	38

TABLE 12a. 30-Day ED Revisits to Other Hospitals ("Hospital Leakage") - Emergency Department Visits Only

				ED Revisits within 30 Days to Same Hospital		ED Revisits within 30 Days to Different Hospital		30-Day Revisit Rates	
CHART Hospital or Non	Hospital	Total ED Visits	Total ED Revisits within 30 Days	#	Proportion (%)	#	Proportion (%)	Any Hospital (%)	Same Hospital (%)
CHART	Addison Gilbert Hospital	23,958	3,375	2,888	85.6	483	14.3	14.1	12.1
CHART	Anna Jaques Hospital	49,384	7,302	6,258	85.7	1,030	14.1	14.8	12.7
CHART	Athol Memorial Hospital	18,146	3,517	2,710	77.1	804	22.9	19.4	14.9
CHART	Baystate Franklin Medical Center	50,924	11,420	10,246	89.7	1,157	10.1	22.4	20.1
CHART	Baystate Wing Hospital	32,273	4,042	2,916	72.1	1,120	27.7	12.5	9
CHART	Berkshire Medical Center	99,098	22,203	21,435	96.5	740	3.3	22.4	21.6
CHART	Beth Israel Deaconess Hospital – Milton	43,298	5,199	4,124	79.3	1,067	20.5	12	9.5
CHART	Beth Israel Deaconess Hospital – Plymouth	83,162	13,007	10,498	80.7	2,485	19.1	15.6	12.6
CHART	Beverly Hospital	59,646	7,127	5,670	79.6	1,449	20.3	11.9	9.5
CHART	Emerson Hospital	41,923	4,621	3,760	81.4	850	18.4	11	9
CHART	Hallmark Health – Lawrence Memorial Hospital	22,196	3,398	2,030	59.7	1,361	40.1	15.3	9.1
CHART	Hallmark Health – Melrose-Wakefield Hospital	64,962	10,821	7,935	73.3	2,862	26.4	16.7	12.2
CHART	Harrington Memorial Hospital	50,201	7,683	6,381	83.1	1,290	16.8	15.3	12.7
CHART	HealthAlliance Hospital	54,440	8,671	7,440	85.8	1,226	14.1	15.9	13.7
CHART	Heywood Hospital	41,202	7,324	6,115	83.5	1,192	16.3	17.8	14.8
CHART	Holyoke Medical Center	81,370	17,453	14,791	84.7	2,646	15.2	21.4	18.2
CHART	Lawrence General Hospital	100,944	18,313	13,488	73.7	4,792	26.2	18.1	13.4
CHART	Lowell General Hospital	145,857	25,361	23,050	90.9	2,270	9	17.4	15.8
CHART	Marlborough Hospital	29,990	4,614	3,564	77.2	1,047	22.7	15.4	11.9
CHART	Mercy Medical Center	151,672	29,556	26,377	89.2	3,151	10.7	19.5	17.4
CHART	Milford Regional Medical Center	86,018	12,659	10,904	86.1	1,724	13.6	14.7	12.7
CHART	Noble Hospital	34,765	6,243	5,381	86.2	850	13.6	18	15.5
CHART	Signature Healthcare Brockton Hospital	101,909	19,301	16,314	84.5	2,968	15.4	18.9	16
CHART	Southcoast Hospitals Group - Charlton Memorial	120,063	20,619	16,059	77.9	4,532	22	17.2	13.4
CHART	Southcoast Hospitals Group - St. Luke's	130,164	25,850	22,939	88.7	2,891	11.2	19.9	17.6
CHART	Southcoast Hospitals Group - Tobey Hospital	53,343	10,775	8,225	76.3	2,543	23.6	20.2	15.4
CHART	Winchester Hospital	62,928	7,356	5,571	75.7	1,764	24	11.7	8.9

Non-CHART	Baystate Mary Lane Hospital	28,815	5,086	4,143	81.5	936	18.4	17.7	14.4
Non-CHART	Beth Israel Deaconess Hospital - Needham	24,929	2,676	2,028	75.8	646	24.1	10.7	8.1
Non-CHART	Brigham and Women's Faulkner Hospital	41,030	4,537	3,525	77.7	1,008	22.2	11.1	8.6
Non-CHART	CHA - Cambridge Hospital Campus	39,649	7,533	5,477	72.7	2,049	27.2	19	13.8
Non-CHART	CHA - Somerville Hospital	23,745	3,838	2,590	67.5	1,244	32.4	16.2	10.9
Non-CHART	CHA - Whidden Hospital Campus	62,777	10,649	8,561	80.4	2,071	19.4	17	13.6
Non-CHART	Cape Cod Hospital	141,856	27,829	25,645	92.2	2,171	7.8	19.6	18.1
Non-CHART	Carney Hospital	62,147	10,606	8,582	80.9	2,005	18.9	17.1	13.8
Non-CHART	Cooley Dickinson Hospital	62,825	10,649	8,775	82.4	1,859	17.5	17	14
Non-CHART	Fairview Hospital	21,932	3,116	2,581	82.8	528	16.9	14.2	11.8
Non-CHART	Falmouth Hospital	61,849	11,070	9,212	83.2	1,855	16.8	17.9	14.9
Non-CHART	Holy Family Hospital	119,106	20,880	15,731	75.3	5,125	24.5	17.5	13.2
Non-CHART	Lahey Hospital & Medical Center	88,332	9,267	6,053	65.3	2,170	23.4	10.5	6.9
Non-CHART	Martha's Vineyard Hospital	24,839	3,871	3,668	94.8	201	5.2	15.6	14.8
Non-CHART	MetroWest Medical Center	83,014	17,054	15,220	89.2	1,774	10.4	20.5	18.3
Non-CHART	Morton Hospital	94,222	20,952	18,232	87	2,696	12.9	22.2	19.4
Non-CHART	Mount Auburn Hospital	55,803	6,683	4,869	72.9	1,787	26.7	12	8.7
Non-CHART	Nantucket Cottage Hospital	17,762	2,633	2,537	96.4	95	3.6	14.8	14.3
Non-CHART	Nashoba Valley Medical Center	26,080	3,559	2,737	76.9	811	22.8	13.6	10.5
Non-CHART	Newton-Wellesley Hospital	90,780	11,296	9,286	82.2	1,998	17.7	12.4	10.2
Non-CHART	North Shore Medical Center	103,887	14,131	12,261	86.8	1,852	13.1	13.6	11.8
Non-CHART	Norwood Hospital	60,077	8,087	6,081	75.2	2,000	24.7	13.5	10.1
Non-CHART	Saint Anne's Hospital	58,516	13,271	9,265	69.8	3,994	30.1	22.7	15.8
Non-CHART	Saint Vincent Hospital	111,840	23,859	16,857	70.7	6,972	29.2	21.3	15.1
Non-CHART	South Shore Hospital	112,009	13,344	10,412	78	2,908	21.8	11.9	9.3
Non-CHART	St. Elizabeth's Medical Center	51,514	7,909	6,342	80.2	1,550	19.6	15.4	12.3
Non-CHART	Sturdy Memorial Hospital	94,348	18,667	16,554	88.7	2,093	11.2	19.8	17.5
Non-CHART	UMass Memorial Medical Center	134,022	23,469	16,593	70.7	6,831	29.1	17.5	12.4

TABLE 12b. Any ED Revisits to Other Hospitals ("Hospital Leakage") from October 2012 through September 2015 - Emergency Department Visits Only

				ED Revisits to Same Hospital		ED Revisits to Different Hospital		Any Revisit Ever Rates	
CHART Hospital or Non	Hospital	Total Hospital ED Visits	Total Subsequent ED Revisits	#	Proportion (%)	#	Proportion (%)	Any Hospital (%)	Same Hospital (%)
CHART	Addison Gilbert Hospital	23,958	12,288	10,348	84.2	1,940	15.8	51.3	43.2
CHART	Anna Jaques Hospital	49,384	25,187	21,098	83.8	4,089	16.2	51	42.7
CHART	Athol Memorial Hospital	18,146	10,904	8,473	77.7	2,431	22.3	60.1	46.7
CHART	Baystate Franklin Medical Center	50,924	31,455	28,099	89.3	3,356	10.7	61.8	55.2
CHART	Baystate Wing Hospital	32,273	14,871	10,527	70.8	4,344	29.2	46.1	32.6
CHART	Berkshire Medical Center	99,098	60,770	58,010	95.5	2,760	4.5	61.3	58.5
CHART	Beth Israel Deaconess Hospital – Milton	43,298	19,763	15,173	76.8	4,590	23.2	45.6	35
CHART	Beth Israel Deaconess Hospital – Plymouth	83,162	44,245	35,595	80.4	8,650	19.6	53.2	42.8
CHART	Beverly Hospital	59,646	27,088	20,248	74.7	6,840	25.3	45.4	33.9
CHART	Emerson Hospital	41,923	16,844	13,410	79.6	3,434	20.4	40.2	32
CHART	Hallmark Health – Lawrence Memorial Hospital	22,196	10,911	6,511	59.7	4,400	40.3	49.2	29.3
CHART	Hallmark Health – Melrose-Wakefield Hospital	64,962	33,508	23,945	71.5	9,563	28.5	51.6	36.9
CHART	Harrington Memorial Hospital	50,201	25,989	21,807	83.9	4,182	16.1	51.8	43.4
CHART	HealthAlliance Hospital	54,440	29,499	25,161	85.3	4,338	14.7	54.2	46.2
CHART	Heywood Hospital	41,202	23,296	19,201	82.4	4,095	17.6	56.5	46.6
CHART	Holyoke Medical Center	81,370	51,955	43,813	84.3	8,142	15.7	63.9	53.8
CHART	Lawrence General Hospital	100,944	60,857	45,144	74.2	15,713	25.8	60.3	44.7
CHART	Lowell General Hospital	145,857	81,257	73,260	90.2	7,997	9.8	55.7	50.2
CHART	Marlborough Hospital	29,990	14,869	11,213	75.4	3,656	24.6	49.6	37.4
CHART	Mercy Medical Center	151,672	92,895	81,986	88.3	10,909	11.7	61.2	54.1
CHART	Milford Regional Medical Center	86,018	43,165	36,919	85.5	6,246	14.5	50.2	42.9
CHART	Noble Hospital	34,765	16,895	14,381	85.1	2,514	14.9	48.6	41.4
CHART	Signature Healthcare Brockton Hospital	101,909	60,515	50,533	83.5	9,982	16.5	59.4	49.6
CHART	Southcoast Hospitals Group - Charlton Memorial	120,063	69,687	55,024	79	14,663	21	58	45.8
CHART	Southcoast Hospitals Group - St. Luke's	130,164	78,722	68,780	87.4	9,942	12.6	60.5	52.8
CHART	Southcoast Hospitals Group – Tobey Hospital	53,343	31,836	23,757	74.6	8,079	25.4	59.7	44.5
CHART	Winchester Hospital	62,928	26,539	19,485	73.4	7,054	26.6	42.2	31

Non-CHART	Baystate Mary Lane Hospital	28,815	16,629	13,200	79.4	3,429	20.6	57.7	45.8
Non-CHART	Beth Israel Deaconess Hospital - Needham	24,929	9,963	7,174	72	2,789	28	40	28.8
Non-CHART	Brigham and Women's Faulkner Hospital	41,030	16,533	12,357	74.7	4,176	25.3	40.3	30.1
Non-CHART	CHA - Cambridge Hospital Campus	39,649	21,796	15,346	70.4	6,450	29.6	55	38.7
Non-CHART	CHA - Somerville Hospital Campus	23,745	12,739	8,414	66	4,325	34	53.6	35.4
Non-CHART	CHA - Whidden Hospital Campus	62,777	35,309	27,796	78.7	7,513	21.3	56.2	44.3
Non-CHART	Cape Cod Hospital	141,856	78,319	70,659	90.2	7,660	9.8	55.2	49.8
Non-CHART	Carney Hospital	62,147	31,595	25,030	79.2	6,565	20.8	50.8	40.3
Non-CHART	Cooley Dickinson Hospital	62,825	31,357	25,337	80.8	6,020	19.2	49.9	40.3
Non-CHART	Fairview Hospital	21,932	11,139	9,402	84.4	1,737	15.6	50.8	42.9
Non-CHART	Falmouth Hospital	61,849	33,523	27,189	81.1	6,334	18.9	54.2	44
Non-CHART	Holy Family Hospital	119,106	68,314	51,599	75.5	16,715	24.5	57.4	43.3
Non-CHART	Lahey Hospital & Medical Center	88,332	49,941	41,890	83.9	8,051	16.1	56.5	47.4
Non-CHART	Martha's Vineyard Hospital	24,839	11,498	10,688	93	810	7	46.3	43
Non-CHART	MetroWest Medical Center	83,014	45,806	39,083	85.3	6,723	14.7	55.2	47.1
Non-CHART	Morton Hospital	94,222	59,854	51,040	85.3	8,814	14.7	63.5	54.2
Non-CHART	Mount Auburn Hospital	55,803	21,451	15,303	71.3	6,148	28.7	38.4	27.4
Non-CHART	Nantucket Cottage Hospital	17,762	8,265	7,750	93.8	515	6.2	46.5	43.6
Non-CHART	Nashoba Valley Medical Center	26,080	12,948	9,930	76.7	3,018	23.3	49.6	38.1
Non-CHART	Newton-Wellesley Hospital	90,780	38,735	30,099	77.7	8,636	22.3	42.7	33.2
Non-CHART	North Shore Medical Center	103,887	51,950	43,867	84.4	8,083	15.6	50	42.2
Non-CHART	Norwood Hospital	60,077	27,882	20,282	72.7	7,600	27.3	46.4	33.8
Non-CHART	Saint Anne's Hospital	58,516	36,750	25,293	68.8	11,457	31.2	62.8	43.2
Non-CHART	Saint Vincent Hospital	111,840	66,563	47,964	72.1	18,599	27.9	59.5	42.9
Non-CHART	South Shore Hospital	112,009	48,358	36,867	76.2	11,491	23.8	43.2	32.9
Non-CHART	St. Elizabeth's Medical Center	51,514	24,609	18,889	76.8	5,720	23.2	47.8	36.7
Non-CHART	Sturdy Memorial Hospital	94,348	53,605	46,782	87.3	6,823	12.7	56.8	49.6
Non-CHART	UMass Memorial Medical Center	134,022	71,979	50,532	70.2	21,447	29.8	53.7	37.7

TABLE 13a. 30-Day Returns to Other Hospitals ("Hospital Leakage") - Both Hospital Discharges & ED Visits

				Returns within 30 Days to Same Hospital		Returns within 30 Days to Different Hospital		30-Day Return Rates	
CHART Hospital or Non	Hospital	Total Hospital Admissions ED Visits	Total Returns within 30 Days	#	Proportion (%)	#	Proportion (%)	Any Hospital (%)	Same Hospital (%)
CHART	Addison Gilbert Hospital	28,547	4,747	3,651	76.9	1,093	23	16.6	12.8
CHART	Anna Jaques Hospital	61,786	10,741	9,069	84.4	1,655	15.4	17.4	14.7
CHART	Athol Memorial Hospital	19,342	4,081	2,887	70.7	1,174	28.8	21.1	14.9
CHART	Baystate Franklin Medical Center	58,525	13,699	12,194	89	1,493	10.9	23.4	20.8
CHART	Baystate Wing Hospital	38,191	5,448	3,896	71.5	1,547	28.4	14.3	10.2
CHART	Berkshire Medical Center	122,398	28,202	27,126	96.2	1,052	3.7	23	22.2
CHART	Beth Israel Deaconess Hospital – Milton	53,864	7,606	6,174	81.2	1,424	18.7	14.1	11.5
CHART	Beth Israel Deaconess Hospital – Plymouth	98,534	17,036	14,047	82.5	2,964	17.4	17.3	14.3
CHART	Beverly Hospital	88,458	13,709	10,652	77.7	3,043	22.2	15.5	12
CHART	Emerson Hospital	54,073	7,514	6,132	81.6	1,371	18.2	13.9	11.3
CHART	Hallmark Health – Lawrence Memorial Hospital	28,602	4,932	3,164	64.2	1,763	35.7	17.2	11.1
CHART	Hallmark Health – Melrose-Wakefield Hospital	80,087	14,398	10,969	76.2	3,404	23.6	18	13.7
CHART	Harrington Memorial Hospital	57,508	9,793	7,750	79.1	2,027	20.7	17	13.5
CHART	HealthAlliance Hospital	65,279	11,719	9,749	83.2	1,965	16.8	18	14.9
CHART	Heywood Hospital	48,931	9,585	7,747	80.8	1,825	19	19.6	15.8
CHART	Holyoke Medical Center	91,472	20,288	17,219	84.9	3,053	15	22.2	18.8
CHART	Lawrence General Hospital	119,699	23,648	17,853	75.5	5,754	24.3	19.8	14.9
CHART	Lowell General Hospital	182,923	34,258	31,191	91	3,031	8.8	18.7	17.1
CHART	Marlborough Hospital	37,808	6,829	5,022	73.5	1,803	26.4	18.1	13.3
CHART	Mercy Medical Center	176,170	35,511	31,649	89.1	3,826	10.8	20.2	18
CHART	Milford Regional Medical Center	100,495	16,316	13,898	85.2	2,386	14.6	16.2	13.8
CHART	Noble Hospital	41,829	7,938	6,698	84.4	1,229	15.5	19	16
CHART	Signature Healthcare Brockton Hospital	123,220	24,252	20,773	85.7	3,465	14.3	19.7	16.9
CHART	Southcoast Hospitals Group - Charlton Memorial	148,341	27,345	21,895	80.1	5,421	19.8	18.4	14.8
CHART	Southcoast Hospitals Group - St. Luke's	162,356	34,060	30,218	88.7	3,819	11.2	21	18.6
CHART	Southcoast Hospitals Group - Tobey Hospital	62,897	13,057	9,894	75.8	3,118	23.9	20.8	15.7
CHART	Winchester Hospital	82,851	11,740	9,427	80.3	2,293	19.5	14.2	11.4

Non-CHART	Baystate Mary Lane Hospital	30,896	5,592	4,565	81.6	1,025	18.3	18.1	14.8
Non-CHART	Beth Israel Deaconess Hospital - Needham	29,889	3,777	2,907	77	869	23	12.6	9.7
Non-CHART	Brigham and Women's Faulkner Hospital	57,750	7,641	6,010	78.7	1,624	21.3	13.2	10.4
Non-CHART	CHA - Cambridge Hospital Campus	48,683	9,987	7,206	72.2	2,772	27.8	20.5	14.8
Non-CHART	CHA - Somerville Hospital Campus	23,745	3,951	2,496	63.2	1,451	36.7	16.6	10.5
Non-CHART	CHA - Whidden Hospital Campus	71,346	12,704	9,955	78.4	2,733	21.5	17.8	14
Non-CHART	Cape Cod Hospital	178,070	36,676	33,784	92.1	2,881	7.9	20.6	19
Non-CHART	Carney Hospital	71,659	13,047	10,343	79.3	2,684	20.6	18.2	14.4
Non-CHART	Cooley Dickinson Hospital	76,982	14,568	12,111	83.1	2,437	16.7	18.9	15.7
Non-CHART	Fairview Hospital	23,621	3,706	2,886	77.9	809	21.8	15.7	12.2
Non-CHART	Falmouth Hospital	75,118	14,755	12,373	83.9	2,374	16.1	19.6	16.5
Non-CHART	Holy Family Hospital	143,840	28,278	21,174	74.9	7,082	25	19.7	14.7
Non-CHART	Lahey Hospital & Medical Center	139,929	20,075	14,908	74.3	4,116	20.5	14.3	10.7
Non-CHART	Martha's Vineyard Hospital	27,030	4,375	4,094	93.6	279	6.4	16.2	15.1
Non-CHART	MetroWest Medical Center	104,989	22,710	20,076	88.4	2,572	11.3	21.6	19.1
Non-CHART	Morton Hospital	105,469	24,049	20,772	86.4	3,262	13.6	22.8	19.7
Non-CHART	Mount Auburn Hospital	75,515	10,691	8,401	78.6	2,268	21.2	14.2	11.1
Non-CHART	Nantucket Cottage Hospital	18,519	2,858	2,710	94.8	144	5	15.4	14.6
Non-CHART	Nashoba Valley Medical Center	30,208	4,736	3,628	76.6	1,096	23.1	15.7	12
Non-CHART	Newton-Wellesley Hospital	115,050	15,838	12,709	80.2	2,864	18.1	13.8	11
Non-CHART	North Shore Medical Center	136,416	21,663	19,031	87.9	2,608	12	15.9	14
Non-CHART	Norwood Hospital	81,782	13,001	9,993	76.9	3,000	23.1	15.9	12.2
Non-CHART	Saint Anne's Hospital	73,986	16,922	12,219	72.2	4,694	27.7	22.9	16.5
Non-CHART	Saint Vincent Hospital	144,412	30,555	22,559	73.8	7,967	26.1	21.2	15.6
Non-CHART	South Shore Hospital	153,563	22,276	18,562	83.3	3,689	16.6	14.5	12.1
Non-CHART	St. Elizabeth's Medical Center	75,614	14,130	10,724	75.9	3,383	23.9	18.7	14.2
Non-CHART	Sturdy Memorial Hospital	104,966	21,611	19,168	88.7	2,420	11.2	20.6	18.3
Non-CHART	UMass Memorial Medical Center	198,957	40,526	30,929	76.3	9,554	23.6	20.4	15.5

TABLE 13b. Any Returns to Other Hospitals ("Hospital Leakage") from October 2012 through September 2015 - Both Hospital Discharges & ED Visits

				Returns to Same Hospital		Returns to Different Hospital		Any Return Ever Rates	
CHART Hospital or Non	Hospital	Total Hospital Admissions ED Visits	Total Subsequent Returns	#	Proportion (%)	#	Proportion (%)	Any Hospital (%)	Same Hospital (%)
CHART	Addison Gilbert Hospital	28,547	16,319	12,531	76.8	3,788	23.2	57.2	43.9
CHART	Anna Jaques Hospital	61,786	34,900	28,858	82.7	6,042	17.3	56.5	46.7
CHART	Athol Memorial Hospital	19,342	12,341	8,926	72.3	3,415	27.7	63.8	46.1
CHART	Baystate Franklin Medical Center	58,525	37,577	33,210	88.4	4,367	11.6	64.2	56.7
CHART	Baystate Wing Hospital	38,191	19,342	13,574	70.2	5,768	29.8	50.6	35.5
CHART	Berkshire Medical Center	122,398	78,146	74,219	95	3,927	5	63.8	60.6
CHART	Beth Israel Deaconess Hospital – Milton	53,864	27,455	21,388	77.9	6,067	22.1	51	39.7
CHART	Beth Israel Deaconess Hospital – Plymouth	98,534	55,945	45,282	80.9	10,663	19.1	56.8	46
CHART	Beverly Hospital	88,458	47,229	34,472	73	12,757	27	53.4	39
CHART	Emerson Hospital	54,073	25,431	20,038	78.8	5,393	21.2	47	37.1
CHART	Hallmark Health – Lawrence Memorial Hospital	28,602	15,766	9,714	61.6	6,052	38.4	55.1	34
CHART	Hallmark Health – Melrose-Wakefield Hospital	80,087	44,814	32,937	73.5	11,877	26.5	56	41.1
CHART	Harrington Memorial Hospital	57,508	32,460	26,066	80.3	6,394	19.7	56.4	45.3
CHART	HealthAlliance Hospital	65,279	38,521	31,585	82	6,936	18	59	48.4
CHART	Heywood Hospital	48,931	29,554	23,336	79	6,218	21	60.4	47.7
CHART	Holyoke Medical Center	91,472	60,005	50,430	84	9,575	16	65.6	55.1
CHART	Lawrence General Hospital	119,699	75,532	56,883	75.3	18,649	24.7	63.1	47.5
CHART	Lowell General Hospital	182,923	109,080	97,777	89.6	11,303	10.4	59.6	53.5
CHART	Marlborough Hospital	37,808	21,301	15,154	71.1	6,147	28.9	56.3	40.1
CHART	Mercy Medical Center	176,170	110,223	96,558	87.6	13,665	12.4	62.6	54.8
CHART	Milford Regional Medical Center	100,495	54,115	45,557	84.2	8,558	15.8	53.8	45.3
CHART	Noble Hospital	41,829	22,105	18,412	83.3	3,693	16.7	52.8	44
CHART	Signature Healthcare Brockton Hospital	123,220	76,832	64,648	84.1	12,184	15.9	62.4	52.5
CHART	Southcoast Hospitals Group - Charlton Memorial	148,341	91,749	72,605	79.1	19,144	20.9	61.9	48.9
CHART	Southcoast Hospitals Group - St. Luke's	162,356	104,292	90,216	86.5	14,076	13.5	64.2	55.6
CHART	Southcoast Hospitals Group – Tobey Hospital	62,897	39,733	28,683	72.2	11,050	27.8	63.2	45.6
CHART	Winchester Hospital	82,851	40,564	30,882	76.1	9,682	23.9	49	37.3

Non-CHART	Baystate Mary Lane Hospital	30,896	18,560	14,712	79.3	3,848	20.7	60.1	47.6
Non-CHART	Beth Israel Deaconess Hospital - Needham	29,889	13,434	9,759	72.6	3,675	27.4	44.9	32.7
Non-CHART	Brigham and Women's Faulkner Hospital	57,750	26,440	19,625	74.2	6,815	25.8	45.8	34
Non-CHART	CHA - Cambridge Hospital Campus	48,683	28,763	19,943	69.3	8,820	30.7	59.1	41
Non-CHART	CHA - Somerville Hospital Campus	23,745	13,153	8,185	62.2	4,968	37.8	55.4	34.5
Non-CHART	CHA - Whidden Hospital Campus	71,346	42,050	32,088	76.3	9,962	23.7	58.9	45
Non-CHART	Cape Cod Hospital	178,070	105,130	94,432	89.8	10,698	10.2	59	53
Non-CHART	Carney Hospital	71,659	38,924	30,186	77.6	8,738	22.4	54.3	42.1
Non-CHART	Cooley Dickinson Hospital	76,982	41,809	34,044	81.4	7,765	18.6	54.3	44.2
Non-CHART	Fairview Hospital	23,621	12,751	10,227	80.2	2,524	19.8	54	43.3
Non-CHART	Falmouth Hospital	75,118	44,318	35,627	80.4	8,691	19.6	59	47.4
Non-CHART	Holy Family Hospital	143,840	87,817	65,404	74.5	22,413	25.5	61.1	45.5
Non-CHART	Lahey Hospital & Medical Center	139,929	82,112	66,821	81.4	15,291	18.6	58.7	47.8
Non-CHART	Martha's Vineyard Hospital	27,030	13,392	12,298	91.8	1,094	8.2	49.5	45.5
Non-CHART	MetroWest Medical Center	104,989	62,406	52,806	84.6	9,600	15.4	59.4	50.3
Non-CHART	Morton Hospital	105,469	69,209	58,361	84.3	10,848	15.7	65.6	55.3
Non-CHART	Mount Auburn Hospital	75,515	34,334	26,127	76.1	8,207	23.9	45.5	34.6
Non-CHART	Nantucket Cottage Hospital	18,519	8,973	8,290	92.4	683	7.6	48.5	44.8
Non-CHART	Nashoba Valley Medical Center	30,208	16,412	12,290	74.9	4,122	25.1	54.3	40.7
Non-CHART	Newton-Wellesley Hospital	115,050	57,495	45,948	79.9	11,547	20.1	50	39.9
Non-CHART	North Shore Medical Center	136,416	76,140	65,007	85.4	11,133	14.6	55.8	47.7
Non-CHART	Norwood Hospital	81,782	42,878	31,715	74	11,163	26	52.4	38.8
Non-CHART	Saint Anne's Hospital	73,986	48,622	33,722	69.4	14,900	30.6	65.7	45.6
Non-CHART	Saint Vincent Hospital	144,412	88,751	65,601	73.9	23,150	26.1	61.5	45.4
Non-CHART	South Shore Hospital	153,563	76,234	61,308	80.4	14,926	19.6	49.6	39.9
Non-CHART	St. Elizabeth's Medical Center	75,614	40,509	29,013	71.6	11,496	28.4	53.6	38.4
Non-CHART	Sturdy Memorial Hospital	104,966	62,042	53,942	86.9	8,100	13.1	59.1	51.4
Non-CHART	UMass Memorial Medical Center	198,957	117,378	85,241	72.6	32,137	27.4	59	42.8

Patients with High Utilization

Heterogeneity over time

Analysis of patients with high utilization over time is complicated by the fact that this population can be expected to change from one period to another. Some patients with high utilization in an earlier period will continue that level of utilization in a later period because they have a chronic condition and require continuous care, some of which will involve a hospital admission or an ED visit. Other patients may have high utilization in an early period for causes that are more episodic. To take an extreme example, an accident that involved a serious injury could result in an episode of care that required repeated hospitalizations. If a relatively large portion of high utilization in the pre-period is episodic, the effects of an intervention will be seriously overstated in the post period because some of the reduction in utilization will be due to patient recovery, which will be confounded with the effect of the intervention.

Tables 14a-c and 15a-c document patterns of utilization for patients with high utilization over the 24-month period beginning October 2013 and ending September 2015. This group is defined as patients who had ≥ 4 inpatient hospitalizations in a one-year period and patients who had ≥ 10 ED visits during a one-year period. For CHART hospitals overall, Table 14a shows that only 26.1% of patients with high utilization during the 1st 4 quarters continued that utilization during the 2nd year. Table 14b shows that only 26.4% of patients who with high utilization in the second year had high utilization in the 1st 4 quarters. In Tables 15a and 15b, we see that for ED visits the percentages are somewhat higher, but still less than one-half: only 40.4% of patients with high utilization continued their utilization from the 1st 4 quarters to the 2nd year and only 43.4% of those with high utilization in year 2 were continuing high utilization from the 1st 4 quarters.

Tables 14c and 15c summarize trends for patients with high utilization. Only 15.1% of patients with high utilization of hospital inpatient care over the 24-month period, and only 26.5% of those with frequent ED use, met the threshold in both years (Table 14c). The conclusion is that a majority of patients identified in one year for high utilization are likely to drop below that threshold in the next, even with no intervention.

TABLE 14a. Patients with high utilization (HU) by Hospital - Year 1 to Year 2 (Hospital Discharges Only)

CHART or Non	Hospital	YEAR 1						YEAR 2	
		Number of Unique Patients	Number of Patients with HU	Patients with HU as a Percent of Unique Patients	Number of Admissions	Number of Admissions for Patients with HU	Percent of Admissions for Patients with HU	Number of Patients with continued HU	Percent of Patients with continued HU
CHART	Addison Gilbert Hospital	1,195	62	5.2%	1,570	164	10.4%	14	22.6%
CHART	Anna Jaques Hospital	3,097	142	4.6%	4,199	489	11.6%	40	28.2%
CHART	Athol Memorial Hospital	314	13	4.1%	406	42	10.3%	1	7.7%
CHART	Baystate Franklin Medical Center	1,811	81	4.5%	2,460	303	12.3%	22	27.2%
CHART	Baystate Wing Hospital	1,593	56	3.5%	2,036	164	8.1%	12	21.4%
CHART	Berkshire Medical Center	5,392	214	4.0%	7,703	841	10.9%	59	27.6%
CHART	Beth Israel Deaconess Hospital – Milton	2,519	77	3.1%	3,236	242	7.5%	14	18.2%
CHART	Beth Israel Deaconess Hospital – Plymouth	3,841	101	2.6%	4,928	373	7.6%	25	24.8%
CHART	Beverly Hospital	7,561	326	4.3%	9,790	1,028	10.5%	81	24.8%
CHART	Emerson Hospital	3,160	84	2.7%	3,915	295	7.5%	19	22.6%
CHART	Hallmark Health – Lawrence Memorial Hospital	1,587	94	5.9%	2,044	249	12.2%	16	17.0%
CHART	Hallmark Health – Melrose-Wakefield Hospital	3,828	127	3.3%	5,005	397	7.9%	29	22.8%
CHART	Harrington Memorial Hospital	1,907	74	3.9%	2,437	221	9.1%	18	24.3%
CHART	HealthAlliance Hospital	2,645	102	3.9%	3,453	334	9.7%	23	22.5%
CHART	Heywood Hospital	1,960	92	4.7%	2,486	251	10.1%	16	17.4%
CHART	Holyoke Medical Center	2,459	93	3.8%	3,265	301	9.2%	34	36.6%
CHART	Lawrence General Hospital	4,682	239	5.1%	6,431	827	12.9%	70	29.3%
CHART	Lowell General Hospital	8,729	365	4.2%	12,077	1,471	12.2%	107	29.3%
CHART	Marlborough Hospital	2,049	108	5.3%	2,683	330	12.3%	27	25.0%
CHART	Mercy Medical Center	6,275	176	2.8%	8,080	621	7.7%	36	20.5%
CHART	Milford Regional Medical Center	3,393	156	4.6%	4,535	547	12.1%	31	19.9%
CHART	Noble Hospital	1,801	62	3.4%	2,390	199	8.3%	12	19.4%
CHART	Signature Healthcare Brockton Hospital	4,788	249	5.2%	6,958	1,019	14.6%	90	36.1%
CHART	Southcoast Hospitals Group - Charlton Memorial	6,692	299	4.5%	9,192	949	10.3%	69	23.1%
CHART	Southcoast Hospitals Group - St. Luke's	7,433	394	5.3%	10,667	1,474	13.8%	114	28.9%
CHART	Southcoast Hospitals Group - Tobey Hospital	2,315	125	5.4%	3,114	480	15.4%	44	35.2%
CHART	Winchester Hospital	4,792	159	3.3%	6,214	581	9.3%	38	23.9%
CHART	ALL CHART HOSPITALS	97,818	4,070	4.2%	131,274	14,192	10.8%	1,061	26.1%

Non-CHART	Baystate Mary Lane Hospital	545	9	1.7%	651	36	5.5%	3	33.3%
Non-CHART	Beth Israel Deaconess Hospital - Needham	1,277	28	2.2%	1,547	92	5.9%	6	21.4%
Non-CHART	Brigham and Women's Faulkner Hospital	4,550	130	2.9%	5,664	435	7.7%	32	24.6%
Non-CHART	CHA - Cambridge Hospital Campus	2,292	112	4.9%	3,037	371	12.2%	41	36.6%
Non-CHART	CHA - Whidden Hospital Campus	2,272	131	5.8%	2,895	324	11.2%	21	16.0%
Non-CHART	Cape Cod Hospital	9,200	241	2.6%	12,026	868	7.2%	51	21.2%
Non-CHART	Carney Hospital	2,233	125	5.6%	2,897	370	12.8%	26	20.8%
Non-CHART	Cooley Dickinson Hospital	3,376	124	3.7%	4,445	438	9.9%	34	27.4%
Non-CHART	Fairview Hospital	386	5	1.3%	482	9	1.9%	0	0.0%
Non-CHART	Falmouth Hospital	3,313	133	4.0%	4,534	500	11.0%	24	18.0%
Non-CHART	Holy Family Hospital	6,269	289	4.6%	8,161	868	10.6%	67	23.2%
Non-CHART	Lahey Hospital & Medical Center	12,209	570	4.7%	16,837	2,069	12.3%	147	25.8%
Non-CHART	Martha's Vineyard Hospital	555	22	4.0%	801	82	10.2%	4	18.2%
Non-CHART	MetroWest Medical Center	4,987	211	4.2%	6,792	709	10.4%	52	24.6%
Non-CHART	Morton Hospital	2,755	105	3.8%	3,750	381	10.2%	26	24.8%
Non-CHART	Mount Auburn Hospital	4,874	160	3.3%	6,477	571	8.8%	34	21.3%
Non-CHART	Nantucket Cottage Hospital	192	6	3.1%	274	26	9.5%	1	16.7%
Non-CHART	Nashoba Valley Medical Center	1,086	50	4.6%	1,450	177	12.2%	9	18.0%
Non-CHART	Newton-Wellesley Hospital	6,398	190	3.0%	8,004	668	8.3%	40	21.1%
Non-CHART	North Shore Medical Center	7,671	265	3.5%	10,367	977	9.4%	78	29.4%
Non-CHART	Norwood Hospital	5,462	164	3.0%	7,037	528	7.5%	29	17.7%
Non-CHART	Saint Anne's Hospital	3,586	210	5.9%	4,977	747	15.0%	63	30.0%
Non-CHART	Saint Vincent Hospital	7,864	353	4.5%	10,637	1,227	11.5%	85	24.1%
Non-CHART	South Shore Hospital	9,721	345	3.5%	13,101	1,314	10.0%	92	26.7%
Non-CHART	St. Elizabeth's Medical Center	6,303	279	4.4%	8,159	803	9.8%	51	18.3%
Non-CHART	Sturdy Memorial Hospital	2,684	77	2.9%	3,519	270	7.7%	16	20.8%
Non-CHART	UMass Memorial Medical Center	14,988	790	5.3%	20,973	2,967	14.1%	224	28.4%
Non-CHART	ALL NON-CHART MA HOSPITALS	127,048	5,124	4.0%	169,494	17,827	10.5%	1,256	24.5%

TABLE 14b. Patients with high utilization (HU) by Hospital - Year 2 to Year 1 (Hospital Discharges Only)

CHART or Non	Hospital	YEAR 2						YEAR 1	
		Number of Unique Patients	Number of Patients with HU	Patients with HU as a Percent of Unique Patients	Number of Admissions	Number of Admissions for Patients with HU	Percent of Admissions for Patients with HU	Number of Patients who had HU also in Year 1	Percent of Patients who had HU also in Year 1
CHART	Addison Gilbert Hospital	1,135	62	5.5%	1,497	165	11.0%	14	22.6%
CHART	Anna Jaques Hospital	2,885	118	4.1%	3,773	359	9.5%	40	33.9%
CHART	Athol Memorial Hospital	317	18	5.7%	404	50	12.4%	1	5.6%
CHART	Baystate Franklin Medical Center	2,029	75	3.7%	2,747	310	11.3%	22	29.3%
CHART	Baystate Wing Hospital	1,401	58	4.1%	1,784	148	8.3%	12	20.7%
CHART	Berkshire Medical Center	5,406	226	4.2%	7,719	938	12.2%	59	26.1%
CHART	Beth Israel Deaconess Hospital – Milton	2,413	57	2.4%	3,040	182	6.0%	14	24.6%
CHART	Beth Israel Deaconess Hospital – Plymouth	3,979	109	2.7%	5,112	385	7.5%	25	22.9%
CHART	Beverly Hospital	7,242	309	4.3%	9,424	1,011	10.7%	81	26.2%
CHART	Emerson Hospital	3,184	79	2.5%	3,961	251	6.3%	19	24.1%
CHART	Hallmark Health – Lawrence Memorial Hospital	1,406	76	5.4%	1,830	200	10.9%	16	21.1%
CHART	Hallmark Health – Melrose-Wakefield Hospital	3,762	148	3.9%	4,836	454	9.4%	29	19.6%
CHART	Harrington Memorial Hospital	1,824	74	4.1%	2,334	225	9.6%	18	24.3%
CHART	HealthAlliance Hospital	2,669	133	5.0%	3,620	467	12.9%	23	17.3%
CHART	Heywood Hospital	1,902	78	4.1%	2,473	255	10.3%	16	20.5%
CHART	Holyoke Medical Center	2,422	94	3.9%	3,274	331	10.1%	34	36.2%
CHART	Lawrence General Hospital	4,457	216	4.8%	6,049	768	12.7%	70	32.4%
CHART	Lowell General Hospital	8,476	354	4.2%	11,793	1,414	12.0%	107	30.2%
CHART	Marlborough Hospital	1,746	105	6.0%	2,248	267	11.9%	27	25.7%
CHART	Mercy Medical Center	6,222	180	2.9%	8,094	626	7.7%	36	20.0%
CHART	Milford Regional Medical Center	3,699	129	3.5%	4,866	465	9.6%	31	24.0%
CHART	Noble Hospital	1,583	54	3.4%	2,094	176	8.4%	12	22.2%
CHART	Signature Healthcare Brockton Hospital	4,703	281	6.0%	6,800	1,084	15.9%	90	32.0%
CHART	Southcoast Hospitals Group - Charlton Memorial	6,846	320	4.7%	9,353	1,061	11.3%	69	21.6%
CHART	Southcoast Hospitals Group - St. Luke's	7,210	390	5.4%	10,179	1,466	14.4%	114	29.2%
CHART	Southcoast Hospitals Group - Tobey Hospital	2,491	133	5.3%	3,269	477	14.6%	44	33.1%
CHART	Winchester Hospital	4,957	142	2.9%	6,414	487	7.6%	38	26.8%
CHART	ALL CHART	96,366	4,018	4.2%	128,987	14,022	10.9%	1,061	26.4%

Non-CHART	Baystate Mary Lane Hospital	532	11	2.1%	655	40	6.1%	3	27.3%
Non-CHART	Beth Israel Deaconess Hospital - Needham	1,436	33	2.3%	1,772	93	5.2%	6	18.2%
Non-CHART	Brigham and Women's Faulkner Hospital	4,608	118	2.6%	5,652	377	6.7%	32	27.1%
Non-CHART	CHA - Cambridge Hospital Campus	2,122	113	5.3%	2,766	320	11.6%	41	36.3%
Non-CHART	CHA - Whidden Hospital Campus	1,989	97	4.9%	2,511	264	10.5%	21	21.6%
Non-CHART	Cape Cod Hospital	8,827	216	2.4%	11,556	805	7.0%	51	23.6%
Non-CHART	Carney Hospital	2,339	106	4.5%	2,988	300	10.0%	26	24.5%
Non-CHART	Cooley Dickinson Hospital	3,483	108	3.1%	4,515	376	8.3%	34	31.5%
Non-CHART	Fairview Hospital	429	11	2.6%	523	34	6.5%	0	0.0%
Non-CHART	Falmouth Hospital	3,019	110	3.6%	4,105	407	9.9%	24	21.8%
Non-CHART	Holy Family Hospital	6,007	266	4.4%	7,880	843	10.7%	67	25.2%
Non-CHART	Lahey Hospital & Medical Center	12,403	628	5.1%	17,215	2,271	13.2%	147	23.4%
Non-CHART	Martha's Vineyard Hospital	489	23	4.7%	696	88	12.6%	4	17.4%
Non-CHART	MetroWest Medical Center	5,354	239	4.5%	7,289	808	11.1%	52	21.8%
Non-CHART	Morton Hospital	2,648	113	4.3%	3,592	377	10.5%	26	23.0%
Non-CHART	Mount Auburn Hospital	5,062	161	3.2%	6,608	587	8.9%	34	21.1%
Non-CHART	Nantucket Cottage Hospital	204	3	1.5%	263	8	3.0%	1	33.3%
Non-CHART	Nashoba Valley Medical Center	1,040	40	3.8%	1,351	112	8.3%	9	22.5%
Non-CHART	Newton-Wellesley Hospital	6,536	159	2.4%	8,196	531	6.5%	40	25.2%
Non-CHART	North Shore Medical Center	7,986	290	3.6%	10,855	1,079	9.9%	78	26.9%
Non-CHART	Norwood Hospital	5,430	180	3.3%	6,972	568	8.1%	29	16.1%
Non-CHART	Saint Anne's Hospital	4,089	225	5.5%	5,698	858	15.1%	63	28.0%
Non-CHART	Saint Vincent Hospital	7,946	327	4.1%	10,555	1,149	10.9%	85	26.0%
Non-CHART	South Shore Hospital	10,877	372	3.4%	14,862	1,483	10.0%	92	24.7%
Non-CHART	St. Elizabeth's Medical Center	6,307	282	4.5%	8,019	826	10.3%	51	18.1%
Non-CHART	Sturdy Memorial Hospital	2,588	77	3.0%	3,434	319	9.3%	16	20.8%
Non-CHART	UMass Memorial Medical Center	15,157	848	5.6%	21,349	3,130	14.7%	224	26.4%
Non-CHART	ALL NON-CHART MA HOSPITALS	128,907	5,156	4.0%	171,877	18,053	10.5%	1,256	24.4%

TABLE 14c. Patients with high utilization (HU) by Hospital: Summary (Hospital Discharges Only)

CHART or Non	Hospital	Number of Patients with HU Year 1 or 2	Patients with HU Year 1 Only	Patients with HU Years 1 & 2	Patients with HU Year 2 Only
CHART	Addison Gilbert Hospital	110	43.6%	12.7%	43.6%
CHART	Anna Jaques Hospital	220	46.4%	18.2%	35.5%
CHART	Athol Memorial Hospital	30	40.0%	3.3%	56.7%
CHART	Baystate Franklin Medical Center	134	44.0%	16.4%	39.6%
CHART	Baystate Wing Hospital	102	43.1%	11.8%	45.1%
CHART	Berkshire Medical Center	381	40.7%	15.5%	43.8%
CHART	Beth Israel Deaconess Hospital – Milton	120	52.5%	11.7%	35.8%
CHART	Beth Israel Deaconess Hospital – Plymouth	185	41.1%	13.5%	45.4%
CHART	Beverly Hospital	554	44.2%	14.6%	41.2%
CHART	Emerson Hospital	144	45.1%	13.2%	41.7%
CHART	Hallmark Health - Lawrence Memorial Hospital Campus	154	50.6%	10.4%	39.0%
CHART	Hallmark Health - Melrose-Wakefield Hospital Campus	246	39.8%	11.8%	48.4%
CHART	Harrington Memorial Hospital	130	43.1%	13.8%	43.1%
CHART	HealthAlliance Hospital	212	37.3%	10.8%	51.9%
CHART	Heywood Hospital	154	49.4%	10.4%	40.3%
CHART	Holyoke Medical Center	153	38.6%	22.2%	39.2%
CHART	Lawrence General Hospital	385	43.9%	18.2%	37.9%
CHART	Lowell General Hospital	612	42.2%	17.5%	40.4%
CHART	Marlborough Hospital	186	43.5%	14.5%	41.9%
CHART	Mercy Medical Center	320	43.8%	11.3%	45.0%
CHART	Milford Regional Medical Center	254	49.2%	12.2%	38.6%
CHART	Noble Hospital	104	48.1%	11.5%	40.4%
CHART	Signature Healthcare Brockton Hospital	440	36.1%	20.5%	43.4%
CHART	Southcoast Hospitals Group - Charlton Memorial Campus	550	41.8%	12.5%	45.6%
CHART	Southcoast Hospitals Group - St. Luke's Campus	670	41.8%	17.0%	41.2%
CHART	Southcoast Hospitals Group - Tobey Hospital Campus	214	37.9%	20.6%	41.6%
CHART	Winchester Hospital	263	46.0%	14.4%	39.5%
CHART	ALL CHART	7,027	42.8%	15.1%	42.1%

Non-CHART	Baystate Mary Lane Hospital	17	35.3%	17.6%	47.1%
Non-CHART	Beth Israel Deaconess Hospital - Needham	55	40.0%	10.9%	49.1%
Non-CHART	Brigham and Women's Faulkner Hospital	216	45.4%	14.8%	39.8%
Non-CHART	CHA - Cambridge Hospital Campus	184	38.6%	22.3%	39.1%
Non-CHART	CHA - Whidden Hospital Campus	207	53.1%	10.1%	36.7%
Non-CHART	Cape Cod Hospital	406	46.8%	12.6%	40.6%
Non-CHART	Carney Hospital	205	48.3%	12.7%	39.0%
Non-CHART	Cooley Dickinson Hospital	198	45.5%	17.2%	37.4%
Non-CHART	Fairview Hospital	16	31.3%	0.0%	68.8%
Non-CHART	Falmouth Hospital	219	49.8%	11.0%	39.3%
Non-CHART	Holy Family Hospital	488	45.5%	13.7%	40.8%
Non-CHART	Lahey Hospital & Medical Center	1,051	40.2%	14.0%	45.8%
Non-CHART	Martha's Vineyard Hospital	41	43.9%	9.8%	46.3%
Non-CHART	MetroWest Medical Center	398	39.9%	13.1%	47.0%
Non-CHART	Morton Hospital	192	41.1%	13.5%	45.3%
Non-CHART	Mount Auburn Hospital	287	43.9%	11.8%	44.3%
Non-CHART	Nantucket Cottage Hospital	8	62.5%	12.5%	25.0%
Non-CHART	Nashoba Valley Medical Center	81	50.6%	11.1%	38.3%
Non-CHART	Newton-Wellesley Hospital	309	48.5%	12.9%	38.5%
Non-CHART	North Shore Medical Center	477	39.2%	16.4%	44.4%
Non-CHART	Norwood Hospital	315	42.9%	9.2%	47.9%
Non-CHART	Saint Anne's Hospital	372	39.5%	16.9%	43.5%
Non-CHART	Saint Vincent Hospital	595	45.0%	14.3%	40.7%
Non-CHART	South Shore Hospital	625	40.5%	14.7%	44.8%
Non-CHART	St. Elizabeth's Medical Center	510	44.7%	10.0%	45.3%
Non-CHART	Sturdy Memorial Hospital	138	44.2%	11.6%	44.2%
Non-CHART	UMass Memorial Medical Center	1,414	40.0%	15.8%	44.1%
Non-CHART	ALL NON-CHART MA HOSPITALS	9,024	42.9%	13.9%	43.2%

TABLE 15a. Patients with high utilization (HU) by Hospital - Year 1 to Year 2 (ED Visits Only)

CHART or Non	Hospital	YEAR 1						YEAR 2	
		Number of Unique Patients	Number of Patients with HU	Patients with HU as Percent of Unique Patients	Number of ED Visits	Number of ED Visits for Patients with HU	Percent of ED Visits for Patients with HU	Number of Patients with Continued HU	Percent of Patients with Continued HU
CHART	Addison Gilbert Hospital	5,697	49	0.9%	8,151	372	4.6%	19	38.8%
CHART	Anna Jaques Hospital	11,478	113	1.0%	16,390	602	3.7%	33	29.2%
CHART	Athol Memorial Hospital	3,781	61	1.6%	5,845	347	5.9%	19	31.1%
CHART	Baystate Franklin Medical Center	9,775	226	2.3%	17,226	2,100	12.2%	85	37.6%
CHART	Baystate Wing Hospital	8,203	84	1.0%	10,538	275	2.6%	21	25.0%
CHART	Berkshire Medical Center	19,257	357	1.9%	33,936	4,166	12.3%	170	47.6%
CHART	Beth Israel Deaconess Hospital – Milton	11,344	93	0.8%	14,813	349	2.4%	20	21.5%
CHART	Beth Israel Deaconess Hospital – Plymouth	19,823	227	1.1%	28,880	1,197	4.1%	83	36.6%
CHART	Beverly Hospital	15,305	123	0.8%	20,070	712	3.5%	54	43.9%
CHART	Emerson Hospital	10,844	76	0.7%	13,742	445	3.2%	27	35.5%
CHART	Hallmark Health – Lawrence Memorial Hospital	5,529	122	2.2%	7,234	474	6.6%	38	31.1%
CHART	Hallmark Health - Melrose-Wakefield Hospital	15,586	210	1.3%	21,653	1,388	6.4%	73	34.8%
CHART	Harrington Memorial Hospital	11,093	98	0.9%	16,049	610	3.8%	40	40.8%
CHART	HealthAlliance Hospital	12,501	127	1.0%	18,333	935	5.1%	65	51.2%
CHART	Heywood Hospital	9,237	127	1.4%	14,080	959	6.8%	50	39.4%
CHART	Holyoke Medical Center	16,164	336	2.1%	27,809	2,889	10.4%	160	47.6%
CHART	Lawrence General Hospital	21,516	315	1.5%	32,418	2,006	6.2%	136	43.2%
CHART	Lowell General Hospital	31,098	368	1.2%	48,146	2,829	5.9%	138	37.5%
CHART	Marlborough Hospital	7,192	84	1.2%	9,761	467	4.8%	32	38.1%
CHART	Mercy Medical Center	31,275	511	1.6%	53,447	3,870	7.2%	194	38.0%
CHART	Milford Regional Medical Center	20,116	167	0.8%	28,754	1,047	3.6%	66	39.5%
CHART	Noble Hospital	9,798	88	0.9%	14,581	604	4.1%	43	48.9%
CHART	Signature Healthcare Brockton Hospital	21,656	390	1.8%	34,969	3,031	8.7%	181	46.4%
CHART	Southcoast Hospitals Group - Charlton Memorial	26,465	356	1.3%	39,932	2,332	5.8%	152	42.7%
CHART	Southcoast Hospitals Group - St. Luke's	25,809	408	1.6%	41,834	3,235	7.7%	180	44.1%
CHART	Southcoast Hospitals Group - Tobey Hospital	11,325	221	2.0%	16,978	1,319	7.8%	93	42.1%
CHART	Winchester Hospital	15,770	150	1.0%	20,041	761	3.8%	47	31.3%
CHART	ALL CHART	407,637	5,487	1.3%	615,610	39,321	6.4%	2,219	40.4%

Non-CHART	Baystate Mary Lane Hospital	6,475	84	1.3%	9,944	570	5.7%	32	38.1%
Non-CHART	Beth Israel Deaconess Hospital - Needham	6,699	57	0.9%	8,345	227	2.7%	20	35.1%
Non-CHART	Brigham and Women's Faulkner Hospital	10,861	96	0.9%	13,719	309	2.3%	27	28.1%
Non-CHART	CHA - Cambridge Hospital	8,600	156	1.8%	12,026	954	7.9%	55	35.3%
Non-CHART	CHA - Somerville Hospital Campus	5,207	75	1.4%	6,939	255	3.7%	21	28.0%
Non-CHART	CHA - Whidden Hospital Campus	13,004	138	1.1%	19,030	1,047	5.5%	49	35.5%
Non-CHART	Cape Cod Hospital	31,013	439	1.4%	49,589	3,725	7.5%	138	31.4%
Non-CHART	Carney Hospital	12,952	179	1.4%	18,874	1,037	5.5%	72	40.2%
Non-CHART	Cooley Dickinson Hospital	14,401	229	1.6%	20,729	1,681	8.1%	81	35.4%
Non-CHART	Fairview Hospital	5,191	45	0.9%	7,393	286	3.9%	22	48.9%
Non-CHART	Falmouth Hospital	14,783	202	1.4%	22,137	1,274	5.8%	40	19.8%
Non-CHART	Holy Family Hospital	26,040	356	1.4%	39,096	2,374	6.1%	160	44.9%
Non-CHART	Lahey Hospital & Medical Center	24,262	586	2.4%	43,936	4,076	9.3%	233	39.8%
Non-CHART	Martha's Vineyard Hospital	5,797	32	0.6%	8,113	220	2.7%	7	21.9%
Non-CHART	MetroWest Medical Center	17,816	234	1.3%	27,650	1,989	7.2%	90	38.5%
Non-CHART	Morton Hospital	18,365	370	2.0%	31,010	2,876	9.3%	146	39.5%
Non-CHART	Mount Auburn Hospital	15,200	161	1.1%	19,085	681	3.6%	58	36.0%
Non-CHART	Nantucket Cottage Hospital	3,981	16	0.4%	5,563	161	2.9%	6	37.5%
Non-CHART	Nashoba Valley Medical Center	6,446	63	1.0%	8,792	329	3.7%	23	36.5%
Non-CHART	Newton-Wellesley Hospital	22,531	194	0.9%	28,668	915	3.2%	57	29.4%
Non-CHART	North Shore Medical Center	24,015	189	0.8%	33,347	1,114	3.3%	66	34.9%
Non-CHART	Norwood Hospital	14,837	159	1.1%	19,590	809	4.1%	58	36.5%
Non-CHART	Saint Anne's Hospital	12,450	302	2.4%	19,720	2,173	11.0%	130	43.0%
Non-CHART	Saint Vincent Hospital	23,764	581	2.4%	37,580	4,116	11.0%	267	46.0%
Non-CHART	South Shore Hospital	27,444	213	0.8%	35,036	1,032	2.9%	82	38.5%
Non-CHART	St. Elizabeth's Medical Center	12,472	159	1.3%	17,213	903	5.2%	50	31.4%
Non-CHART	Sturdy Memorial Hospital	19,940	313	1.6%	31,780	2,238	7.0%	114	36.4%
Non-CHART	UMass Memorial Medical Center	32,521	548	1.7%	46,233	3,246	7.0%	231	42.2%
Non-CHART	ALL NON-CHART MA HOSPITALS	437,067	6,176	1.4%	641,137	40,617	6.3%	2,335	37.8%

TABLE 15b. Patients with high utilization (HU) by Hospital - Year 2 to Year 1 (ED Visits Only)

CHART or Non	Hospital	YEAR 2						YEAR 1	
		Number of Unique Patients	Number of Patients with HU	Patients with HU as Percent of Unique Patients	Number of ED Visits	Number of ED Visits for Patients with HU	Percent of ED Visits for Patients with HU	Number of Patients who also had HU in Year 1	Percent of Patients who also had HU in Year 1
CHART	Addison Gilbert Hospital	5,562	45	0.8%	7,826	260	3.3%	19	42.2%
CHART	Anna Jaques Hospital	11,006	94	0.9%	15,592	573	3.7%	33	35.1%
CHART	Athol Memorial Hospital	3,851	60	1.6%	6,104	426	7.0%	19	31.7%
CHART	Baystate Franklin Medical Center	9,457	158	1.7%	15,478	1,294	8.4%	85	53.8%
CHART	Baystate Wing Hospital	8,555	68	0.8%	11,095	275	2.5%	21	30.9%
CHART	Berkshire Medical Center	18,286	274	1.5%	30,686	3,325	10.8%	170	62.0%
CHART	Beth Israel Deaconess Hospital – Milton	10,858	69	0.6%	14,108	299	2.1%	20	29.0%
CHART	Beth Israel Deaconess Hospital – Plymouth	18,229	224	1.2%	25,789	1,099	4.3%	83	37.1%
CHART	Beverly Hospital	14,877	139	0.9%	19,071	760	4.0%	54	38.8%
CHART	Emerson Hospital	10,748	65	0.6%	13,603	365	2.7%	27	41.5%
CHART	Hallmark Health – Lawrence Memorial Hospital	4,998	95	1.9%	6,479	463	7.1%	38	40.0%
CHART	Hallmark Health - Melrose-Wakefield Hospital	14,634	173	1.2%	19,772	1,079	5.5%	73	42.2%
CHART	Harrington Memorial Hospital	12,774	111	0.9%	18,532	769	4.1%	40	36.0%
CHART	HealthAlliance Hospital	12,252	145	1.2%	18,637	1,202	6.4%	65	44.8%
CHART	Heywood Hospital	8,814	126	1.4%	13,371	1,095	8.2%	50	39.7%
CHART	Holyoke Medical Center	16,051	334	2.1%	27,440	2,737	10.0%	160	47.9%
CHART	Lawrence General Hospital	22,682	353	1.6%	34,454	2,303	6.7%	136	38.5%
CHART	Lowell General Hospital	31,245	364	1.2%	48,478	3,129	6.5%	138	37.9%
CHART	Marlborough Hospital	6,207	75	1.2%	8,345	434	5.2%	32	42.7%
CHART	Mercy Medical Center	29,509	385	1.3%	46,718	2,505	5.4%	194	50.4%
CHART	Milford Regional Medical Center	20,191	144	0.7%	28,447	805	2.8%	66	45.8%
CHART	Noble Hospital	12,837	158	1.2%	20,182	1,213	6.0%	43	27.2%
CHART	Signature Healthcare Brockton Hospital	21,702	378	1.7%	34,229	2,846	8.3%	181	47.9%
CHART	Southcoast Hospitals Group - Charlton Memorial	27,400	345	1.3%	41,232	2,165	5.3%	152	44.1%
CHART	Southcoast Hospitals Group - St. Luke's	28,619	417	1.5%	48,091	3,898	8.1%	180	43.2%
CHART	Southcoast Hospitals Group - Tobey Hospital	11,345	196	1.7%	17,653	1,378	7.8%	93	47.4%
CHART	Winchester Hospital	16,110	123	0.8%	20,081	596	3.0%	47	38.2%
CHART	ALL CHART	408,799	5,118	1.3%	611,493	37,293	6.1%	2,219	43.4%

Non-CHART	Baystate Mary Lane Hospital	5,957	56	0.9%	8,663	284	3.3%	32	57.1%
Non-CHART	Beth Israel Deaconess Hospital - Needham	6,785	52	0.8%	8,455	237	2.8%	20	38.5%
Non-CHART	Brigham and Women's Faulkner Hospital	11,101	96	0.9%	13,912	298	2.1%	27	28.1%
Non-CHART	CHA - Cambridge Hospital Campus	8,196	128	1.6%	11,487	711	6.2%	55	43.0%
Non-CHART	CHA - Somerville Hospital Campus	5,193	52	1.0%	6,990	184	2.6%	21	40.4%
Non-CHART	CHA - Whidden Hospital Campus	12,900	140	1.1%	18,681	1,149	6.2%	49	35.0%
Non-CHART	Cape Cod Hospital	26,929	260	1.0%	40,239	2,124	5.3%	138	53.1%
Non-CHART	Carney Hospital	18,480	275	1.5%	27,197	1,714	6.3%	72	26.2%
Non-CHART	Cooley Dickinson Hospital	14,336	193	1.3%	20,404	1,447	7.1%	81	42.0%
Non-CHART	Fairview Hospital	5,039	48	1.0%	7,023	228	3.2%	22	45.8%
Non-CHART	Falmouth Hospital	12,215	108	0.9%	16,928	522	3.1%	40	37.0%
Non-CHART	Holy Family Hospital	27,929	399	1.4%	42,055	2,630	6.3%	160	40.1%
Non-CHART	Lahey Hospital & Medical Center	24,143	878	3.6%	44,383	5,430	12.2%	233	26.5%
Non-CHART	Martha's Vineyard Hospital	5,948	16	0.3%	8,224	155	1.9%	7	43.8%
Non-CHART	MetroWest Medical Center	17,544	226	1.3%	26,909	1,885	7.0%	90	39.8%
Non-CHART	Morton Hospital	18,342	347	1.9%	30,985	2,996	9.7%	146	42.1%
Non-CHART	Mount Auburn Hospital	13,678	134	1.0%	16,757	522	3.1%	58	43.3%
Non-CHART	Nantucket Cottage Hospital	4,267	15	0.4%	6,131	138	2.3%	6	40.0%
Non-CHART	Nashoba Valley Medical Center	6,128	48	0.8%	8,301	235	2.8%	23	47.9%
Non-CHART	Newton-Wellesley Hospital	20,910	139	0.7%	25,900	679	2.6%	57	41.0%
Non-CHART	North Shore Medical Center	24,941	206	0.8%	34,922	1,203	3.4%	66	32.0%
Non-CHART	Norwood Hospital	14,617	162	1.1%	19,296	906	4.7%	58	35.8%
Non-CHART	Saint Anne's Hospital	13,007	298	2.3%	19,997	1,853	9.3%	130	43.6%
Non-CHART	Saint Vincent Hospital	23,591	513	2.2%	36,135	3,422	9.5%	267	52.0%
Non-CHART	South Shore Hospital	29,991	248	0.8%	38,689	1,182	3.1%	82	33.1%
Non-CHART	St. Elizabeth's Medical Center	11,434	148	1.3%	15,698	710	4.5%	50	33.8%
Non-CHART	Sturdy Memorial Hospital	20,151	282	1.4%	31,725	2,061	6.5%	114	40.4%
Non-CHART	UMass Memorial Medical Center	26,794	460	1.7%	36,712	2,588	7.0%	231	50.2%
Non-CHART	ALL NON-CHART MA HOSPITALS	430,546	5,927	1.4%	622,798	37,493	6.0%	2,335	39.4%

TABLE 15c. Patients with high utilization (HU) by Hospital: Summary (ED Visits Only)

CHART or Non	Hospital	Number of Patients with HU Year 1 or 2	Patients with HU Year 1 Only	Patients with HU Years 1 & 2	Patients with HU Year 2 Only
CHART	Addison Gilbert Hospital	75	40.0%	25.3%	34.7%
CHART	Anna Jaques Hospital	174	46.0%	19.0%	35.1%
CHART	Athol Memorial Hospital	102	41.2%	18.6%	40.2%
CHART	Baystate Franklin Medical Center	299	47.2%	28.4%	24.4%
CHART	Baystate Wing Hospital	131	48.1%	16.0%	35.9%
CHART	Berkshire Medical Center	461	40.6%	36.9%	22.6%
CHART	Beth Israel Deaconess Hospital – Milton	142	51.4%	14.1%	34.5%
CHART	Beth Israel Deaconess Hospital – Plymouth	368	39.1%	22.6%	38.3%
CHART	Beverly Hospital	208	33.2%	26.0%	40.9%
CHART	Emerson Hospital	114	43.0%	23.7%	33.3%
CHART	Hallmark Health - Lawrence Memorial Hospital	179	46.9%	21.2%	31.8%
CHART	Hallmark Health - Melrose-Wakefield Hospital	310	44.2%	23.5%	32.3%
CHART	Harrington Memorial Hospital	169	34.3%	23.7%	42.0%
CHART	HealthAlliance Hospital	207	30.0%	31.4%	38.6%
CHART	Heywood Hospital	203	37.9%	24.6%	37.4%
CHART	Holyoke Medical Center	510	34.5%	31.4%	34.1%
CHART	Lawrence General Hospital	532	33.6%	25.6%	40.8%
CHART	Lowell General Hospital	594	38.7%	23.2%	38.0%
CHART	Marlborough Hospital	127	40.9%	25.2%	33.9%
CHART	Mercy Medical Center	702	45.2%	27.6%	27.2%
CHART	Milford Regional Medical Center	245	41.2%	26.9%	31.8%
CHART	Noble Hospital	203	22.2%	21.2%	56.7%
CHART	Signature Healthcare Brockton Hospital	587	35.6%	30.8%	33.6%
CHART	Southcoast Hospitals Group - Charlton Memorial	549	37.2%	27.7%	35.2%
CHART	Southcoast Hospitals Group - St. Luke's Campus	645	35.3%	27.9%	36.7%
CHART	Southcoast Hospitals Group - Tobey Hospital	324	39.5%	28.7%	31.8%
CHART	Winchester Hospital	226	45.6%	20.8%	33.6%
CHART	ALL CHART	8,386	39.0%	26.5%	34.6%

Non-CHART	Baystate Mary Lane Hospital	108	48.1%	29.6%	22.2%
Non-CHART	Beth Israel Deaconess Hospital - Needham	89	41.6%	22.5%	36.0%
Non-CHART	Brigham and Women's Faulkner Hospital	165	41.8%	16.4%	41.8%
Non-CHART	CHA - Cambridge Hospital Campus	229	44.1%	24.0%	31.9%
Non-CHART	CHA - Somerville Hospital Campus	106	50.9%	19.8%	29.2%
Non-CHART	CHA - Whidden Hospital Campus	229	38.9%	21.4%	39.7%
Non-CHART	Cape Cod Hospital	561	53.7%	24.6%	21.7%
Non-CHART	Carney Hospital	382	28.0%	18.8%	53.1%
Non-CHART	Cooley Dickinson Hospital	341	43.4%	23.8%	32.8%
Non-CHART	Fairview Hospital	71	32.4%	31.0%	36.6%
Non-CHART	Falmouth Hospital	270	60.0%	14.8%	25.2%
Non-CHART	Holy Family Hospital	595	32.9%	26.9%	40.2%
Non-CHART	Lahey Hospital & Medical Center	1,231	28.7%	18.9%	52.4%
Non-CHART	Martha's Vineyard Hospital	41	61.0%	17.1%	22.0%
Non-CHART	MetroWest Medical Center	370	38.9%	24.3%	36.8%
Non-CHART	Morton Hospital	571	39.2%	25.6%	35.2%
Non-CHART	Mount Auburn Hospital	237	43.5%	24.5%	32.1%
Non-CHART	Nantucket Cottage Hospital	25	40.0%	24.0%	36.0%
Non-CHART	Nashoba Valley Medical Center	88	45.5%	26.1%	28.4%
Non-CHART	Newton-Wellesley Hospital	276	49.6%	20.7%	29.7%
Non-CHART	North Shore Medical Center	329	37.4%	20.1%	42.6%
Non-CHART	Norwood Hospital	263	38.4%	22.1%	39.5%
Non-CHART	Saint Anne's Hospital	470	36.6%	27.7%	35.7%
Non-CHART	Saint Vincent Hospital	827	38.0%	32.3%	29.7%
Non-CHART	South Shore Hospital	379	34.6%	21.6%	43.8%
Non-CHART	St. Elizabeth's Medical Center	257	42.4%	19.5%	38.1%
Non-CHART	Sturdy Memorial Hospital	481	41.4%	23.7%	34.9%
Non-CHART	UMass Memorial Medical Center	777	40.8%	29.7%	29.5%
Non-CHART	ALL NON-CHART MA HOSPITALS	9,768	39.3%	23.9%	36.8%

Appendix

ASSUMPTIONS USED IN ANALYSIS

- 1 Admissions and ED visits for patients under 18 years of age were excluded from analysis.
- 2 Admissions and ED visits resulting in death, discharge against medical advice, or transfer to another short-term hospital for acute care were excluded from analysis.
- 3 Dementia, Intellectual Disability, Pregnancy, and Tobacco Use Disorder-related admissions/ED visits were excluded from analysis.
- 4 Readmissions & Returns to the hospital are defined as one new admission/ED visit within 30 days of an eligible index admission/ED visit. For example, 4 inpatient admissions in 30 days would be index-revisit, then another index-revisit.
- 5 Metrics presented are:
 - a Tables 1, 4, 7: Readmission Rate (Number of Admissions Resulting in Readmissions within 30 Days / Total Eligible Admissions)
 - b Tables 2, 5, 8: Revisit Rate (Number of ED Visits Resulting in Revisit within 30 Days / Total Eligible ED Visits)
 - c Tables 3, 6, 9: Return Rate (Number of Admissions/ED Visits Resulting in Return to Hospital within 30 Days) / Total Eligible Admissions + ED Visits)
- 6 Reporting periods are aggregate rates of quarterly data preceding the CHART initiation date. (e.g. If the initiation date is October 2015, Quarter 1 represents October, November, and December 2013 and Quarter 8 represents July, August, and September 2015, etc.) The 8 reporting periods combine for a 24-month look at a sites' data.
 - a NOTE: The Case Mix Data is only available through September 2015, as such periods extending beyond September 2015 may be under reported. Berkshire Medical Center is the only hospital with complete data based on their launch date.
- 7 Behavioral Health-specific tables examine Admissions/ED Visits with an ICD-9 Diagnosis Code of 291-316 in any diagnosis position. (This definition excludes dementia and intellectual disability.) In 2015, additional diagnosis code fields were included in the CMD.
- 8 High Utilization-specific tables examine Admissions/ED Visits for a patient with ≥ 4 hospital admissions or ≥ 10 ED visits in a 1-year window.
- 9 Hospitals contributing to Central Region: Athol Memorial Hospital, Baystate Mary Lane Hospital, Baystate Wing Hospital, Harrington Memorial Hospital, HealthAlliance Hospital, Heywood Hospital, Marlborough Hospital, Milford Regional Medical Center.
- 10 The Baystate joint award is presented under the Central Region header since 2 of its 3 contributing hospitals are located there.
- 11 Hospitals contributing to MetroBoston Region: Beth Israel Deaconess Hospital – Milton, Emerson Hospital, Hallmark Health - Lawrence Memorial Hospital Campus, Hallmark Health - Melrose-Wakefield Hospital Campus, Winchester Hospital.
- 12 Hospitals contributing to Northeast Region: Addison Gilbert Hospital, Anna Jaques Hospital, Beverly Hospital, Lawrence General Hospital, Lowell General Hospital.
- 13 The Lahey-Lowell joint award is presented under the Northeast Region header since 3 of its 4 participating hospitals are located there.

- 14** Hospitals contributing to Southeast Region: Beth Israel Deaconess Hospital – Plymouth, Signature Healthcare Brockton Hospital, Southcoast Hospitals Group - Charlton Memorial Campus, Southcoast Hospitals Group - St. Luke's Campus, Southcoast Hospitals Group - Tobey Hospital Campus.
- 15** Hospitals contributing to Western Region: Baystate Franklin Medical Center, Berkshire Medical Center, Holyoke Medical Center, Mercy Medical Center, Noble Hospital.
- 16** Hospitals contributing to Non-CHART Average: Beth Israel Deaconess Hospital - Needham, Brigham and Women's Faulkner Hospital, CHA - Cambridge Hospital Campus, CHA - Somerville Hospital Campus, CHA - Whidden Hospital Campus, Cape Cod Hospital, Carney Hospital, Cooley Dickinson Hospital, Fairview Hospital, Falmouth Hospital, Holy Family Hospital, Lahey Hospital & Medical Center, Martha's Vineyard Hospital, MetroWest Medical Center, Morton Hospital, Mount Auburn Hospital, Nantucket Cottage Hospital, Nashoba Valley Medical Center, Newton-Wellesley Hospital, North Shore Medical Center, Norwood Hospital, Saint Anne's Hospital, Saint Vincent Hospital, South Shore Hospital, St. Elizabeth's Medical Center, Sturdy Memorial Hospital, UMass Memorial Medical Center.