

CENTER FOR HEALTH INFORMATION AND ANALYSIS

HOSPITAL-WIDE ADULT ALL-PAYER READMISSIONS

IN MASSACHUSETTS: SFY 2011-2018

DECEMBER 2019



Executive Summary

Unplanned hospital readmissions within 30 days of an inpatient discharge are a measure of health system performance. In service of its mission to objectively report reliable and meaningful information about the quality, affordability, utilization, access, and outcomes of the Massachusetts health care system, the Massachusetts Center for Health Information and Analysis (CHIA) annually reports on hospital-wide all-payer readmissions.

Massachusetts historically has had readmission rates higher than the national average. Under the Centers for Medicare and Medicaid Services (CMS) Hospital Readmissions Reduction Program, CMS will penalize 94% of the Commonwealth's hospitals in Federal Fiscal Year (FFY) 2020 for having higher than expected readmission rates. Both the percentage of hospitals fined and the average level of fines imposed are greater in Massachusetts than in most other states.¹

To monitor readmissions in the Commonwealth, CHIA adapted the Yale/CMS Hospital-Wide All-Cause Unplanned 30-day Readmission Measure.² Though the Yale/CMS readmission measure was originally developed for use within the Medicare population, CHIA adapted the measure for an all-payer population.³ The readmission analyses presented in this report are based on data from CHIA's Hospital Inpatient Discharge Database.⁴

This report is the sixth in CHIA's annual series of all-payer readmission reports and updates previous reports with State Fiscal Year (SFY) 2018 data and presents statewide trends in readmission rates from SFY 2011 to 2018. Due to technical changes, the rates presented in this report differ from earlier publications. ■

Key Findings

The unplanned, all-payer readmission rate for Massachusetts acute care hospitals is unchanged from last year (15.4% in both 2017 and 2018).

Medicare and Medicaid beneficiaries had higher readmission rates than patients with commercial insurance (17.8%, 16.4% and 9.8%, respectively).

Medicare patients aged 65 and over had the highest total number of readmissions; Medicare patients under 65 had the highest rate of readmission (22.0%).

Frequently hospitalized patients (patients hospitalized four or more times in the previous 12 months) accounted for over half (52%) of all readmissions.

Readmission rates for patients discharged to skilled nursing facilities or rehabilitation have increased in the last three years.

Over one-third (35%) of readmissions occur within one week of initial discharge.

Contents

Introduction	1
Overall Trends in All-Payer Readmissions	3
Key Findings	3
Trends in Statewide All-Payer Readmission Rate, Discharges, and Readmissions	4
Trend in Average Length of Stay (ALOS) by Readmission Status	5
All-Payer Readmissions by Characteristics of Patients and Hospitalizations	6
Key Findings	6
All-Payer Readmissions by Days Since Discharge	7
All-Payer Readmissions by Patient Age	8
Trends in All-Payer Readmissions by Patient Age	9
All-Payer Readmissions by Payer Type	10
All-Payer Readmissions by Payer Type and Patient Age	11
Trends in All-Payer Readmissions by Payer Type and Patient Age	12
All-Payer Readmissions by Discharge Setting	13
Discharge Diagnoses with the Highest Numbers of Readmissions	14
Trends in Discharge Diagnoses with the Highest Numbers of Readmissions	15
Discharge Diagnoses with the Highest Rates of Readmissions	16
All-Payer Readmissions Among Frequently Hospitalized Patients	17

Frequently Hospitalized Patients by Payer Type and Age	18
Percentage of Frequently Hospitalized Patients by Patient Region	19
All-Payer Readmissions by Hospital.....	20
Key Findings	20
All-Payer Risk-Standardized Readmission Rates of Acute Care Hospitals	21
Hospitals Consistently in Highest and Lowest Risk-Standardized Readmission Rate Quartiles	22
All-Payer Risk-Standardized Readmission Rates by Hospital Type.....	23
All-Payer Risk-Standardized Readmission Rates by Hospital System.....	24
All-Payer Observed and Risk-Standardized Readmission Rates by Hospital Region	25
About the Readmissions Methodology	26
Notes.....	28

Introduction

Unplanned hospital readmissions are a measure of health system performance. Massachusetts has historically had higher than average readmission rates compared to the national average for Medicare fee-for-service beneficiaries. In Federal Fiscal Year (FFY) 2020 (October 2019 to September 2020), 94% of Massachusetts hospitals will be penalized for higher than expected readmission rates.⁵

To monitor readmissions in the Commonwealth, the Center for Health Information and Analysis (CHIA) adapted the Yale/CMS Hospital-Wide All-Cause Unplanned 30-day Readmission Measure.⁶ Though initially developed for use within the Medicare population, CHIA adapted the Yale/CMS measure for an all-payer population.⁷ The readmission analyses presented in this report were conducted using CHIA's Hospital Inpatient Discharge Database.⁸ An analysis of statewide and hospital-specific all-payer, all-cause readmission rates provides the public, providers and policymakers a complete view of adult readmissions in the Commonwealth of Massachusetts. An all-payer analysis is helpful as strategies to control the growing cost of health care remain public policy priorities in Massachusetts.

This report is the sixth in CHIA's annual series of readmission reports. This year's report updates previous reports with State Fiscal Year (SFY) 2018 data and reports on trends in readmission rates from SFY 2011 to 2018 (July 2010 through June 2018). Additionally, this year's report uses an enhanced methodology to identify and link patient records, utilizing a probabilistic patient identifier instead of Social Security Number. This enhanced methodology allows for more discharges and readmissions to be kept in the final analytic dataset. Furthermore, this year's report incorporates the 2019 CMS readmission measure methodology (version 8.0), which updates the planned readmission algorithm.⁹ The historical figures presented in this report were recalculated using the enhanced patient identifier and version 8.0 of the CMS readmission measure, and will not match those from earlier reports. See the [technical appendix](#) for more information.

This report presents the overall trend in statewide all-payer readmissions for the past eight years, examines readmissions by characteristics of patients and hospitalizations, and provides readmission rates for individual hospitals and groups of hospitals. ■

Overall Trends in All-Payer Readmissions

This section presents the overall trend in all-payer readmissions for acute care hospitals in Massachusetts for the eight-year study period spanning July 1, 2010 to June 30, 2018. A readmission is defined as an unplanned hospitalization for any reason within 30 days of an eligible discharge. This measure excludes certain categories of hospitalizations, such as obstetric and primary psychiatric admissions.

This report presents readmission rates as both observed and risk-standardized figures. Observed or “raw” readmission rates are calculated as the number of readmissions that occurred in a year as a proportion of all eligible discharges in that year. With observed hospital readmission rates, some portion of differences among hospitals may be attributable to differing service mix and patient case mix. Observed rates are useful for identifying opportunities for improvement and tracking performance over time within individual hospitals. Unless otherwise noted, the readmission rates presented in this report are observed or “raw” readmission rates.

The risk-standardized readmission rates (RSRRs) presented are adjusted observed rates calculated for hospitals and for groups of hospitals. RSRRs take into account the differences across hospitals in patient age, patient comorbidities, and the profile of conditions that each hospital treats, allowing for a more accurate comparison across hospitals. RSRRs are used in this report to compare hospital performance on the readmission measure. ■

Key Findings

- The 2018 all-payer readmission rate in Massachusetts is unchanged from 2017.
- The average length of stay for discharges that led to a readmission was 1.5 days longer than those without a readmission.

OVERALL TREND

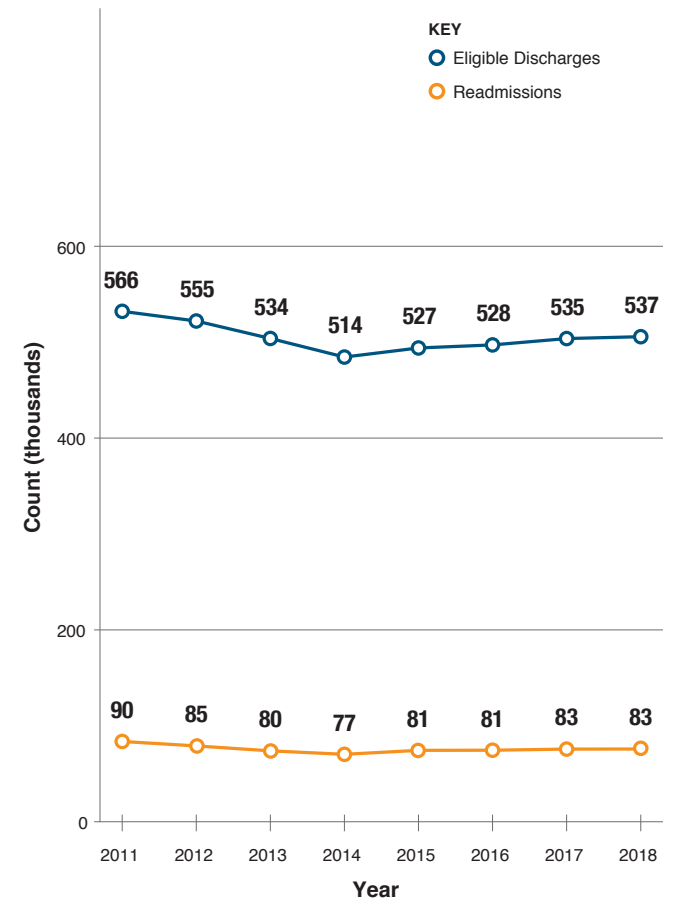
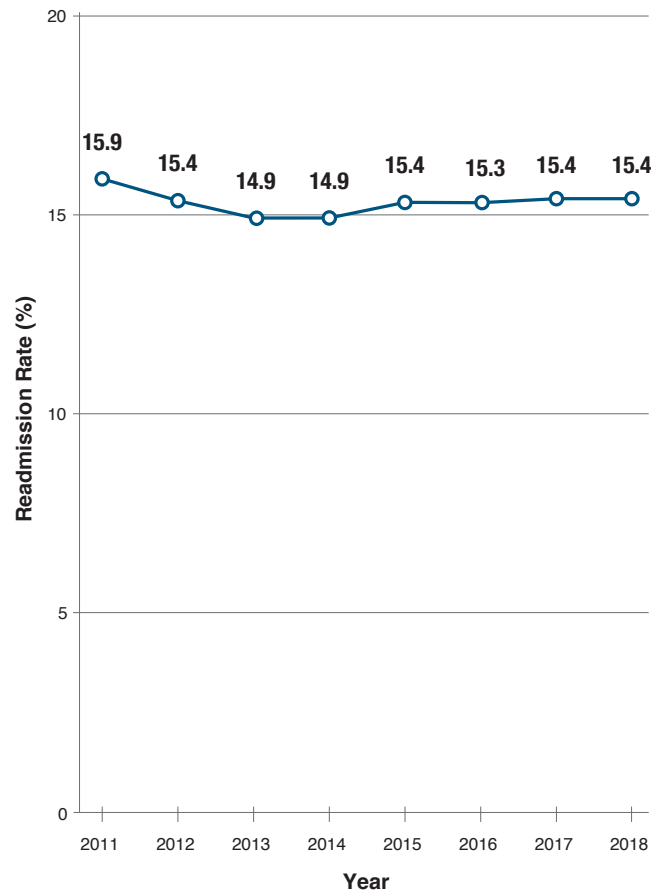
The eight-year trend in all-payer readmission rates shows that after a decline from 2011-2013 and an increase from 2013-2015, readmission rates have stabilized in recent years. In 2018, the statewide observed readmission rate was 15.4%.

The statewide number of eligible discharges followed a similar trend, with the total number of eligible discharges remaining relatively consistent in the past few years.

In 2018, there were 536,709 eligible discharges and 82,900 readmissions.

Trends in Statewide All-Payer Readmission Rate, Discharges, and Readmissions

SFY 2011-2018



Note: This year's report matches patient records using a probabilistic patient identifier, instead of Social Security Number. Readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

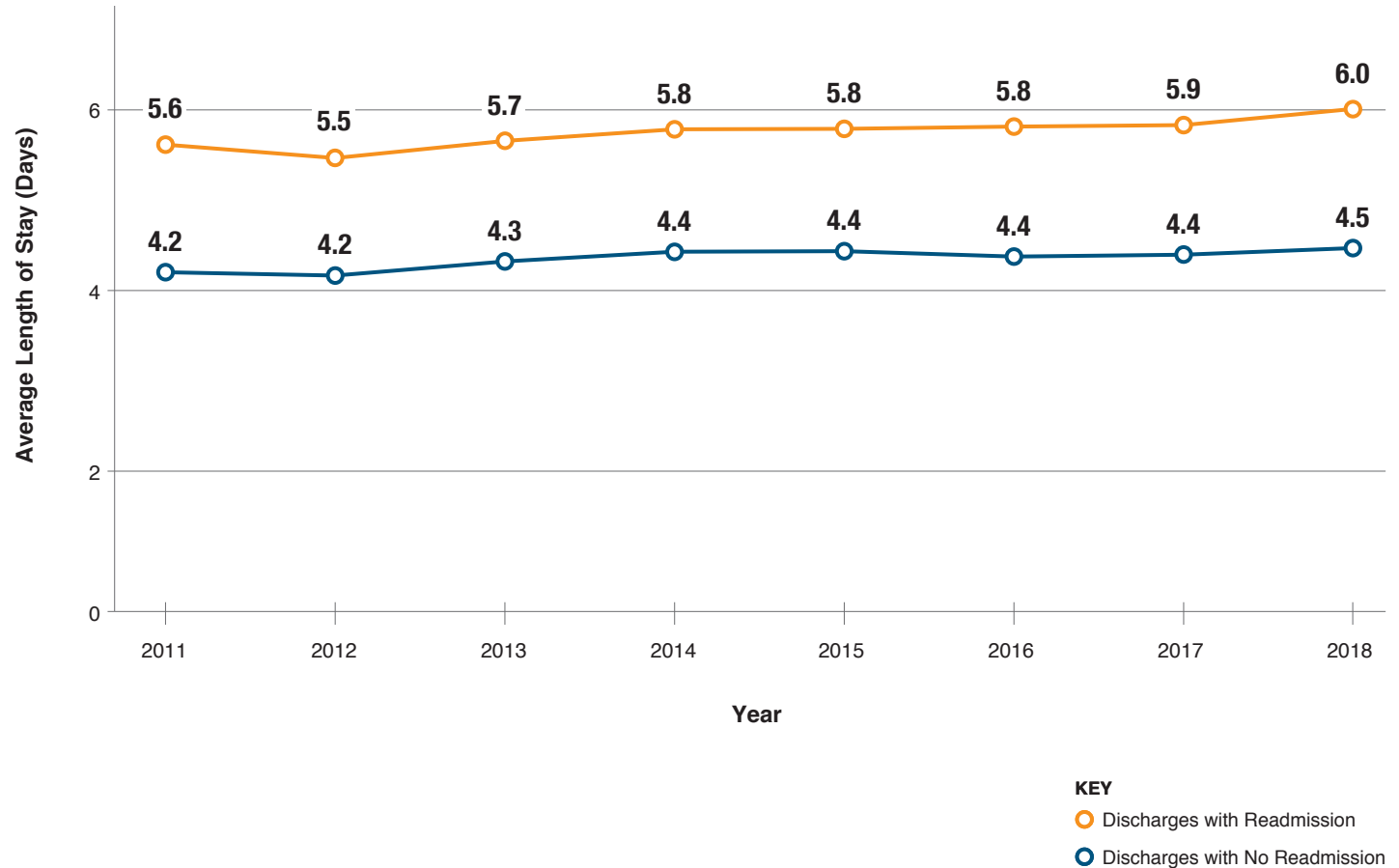
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2010 to June 2018.

OVERALL TREND

The average length of stay (ALOS) for discharges with a subsequent readmission was six days in 2018, 1.5 days longer than discharges without a readmission. ALOS for all discharges has increased since 2012.

Trend in Average Length of Stay (ALOS) by Readmission Status

SFY 2011-2018



Note: The average length of stay (ALOS) was calculated as the difference in the number of days between the discharge date and the admission date. Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2010 to June 2018.

All-Payer Readmissions by Characteristics of Patients and Hospitalizations

This section presents observed readmission rates by several characteristics of patients and hospitalizations, such as patient age, expected payer type, primary discharge diagnosis, prior utilization, and discharge setting. ■

Key Findings

- Medicare and Medicaid beneficiaries have higher readmission rates than patients with commercial insurance (17.8%, 16.4%, and 9.8%, respectively).
- Readmission rates for adults aged 18-64 have remained stable over time, whereas rates for patients aged 65 and over have decreased.
- Though Medicare patients 65 and over had the highest number of readmissions, Medicare patients under age 65 had the highest readmission rate in 2018 (22.0%).
- Frequently hospitalized patients, defined as those with four or more hospitalizations within 12 months of their most recent discharge, represented 6% of the patient population, and accounted for 19% of all discharges and 52% of all readmissions.

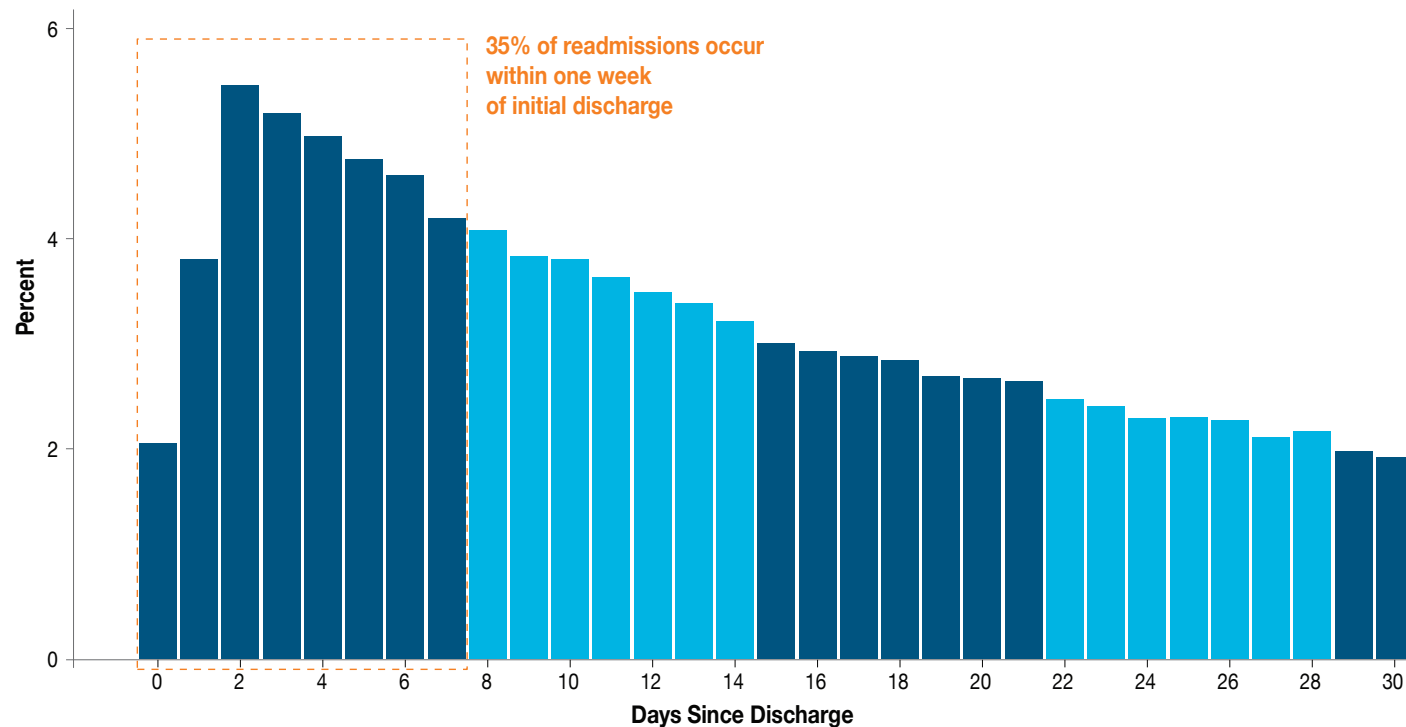
STATEWIDE READMISSIONS

All-Payer Readmissions by Days Since Discharge

SFY 2018

Any unplanned admission, for any cause, within 30 days of an eligible discharge is counted as a readmission.

Over one-third (35%) of readmissions occurred within seven days of the initial discharge, peaking at two days post discharge.



Note: Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

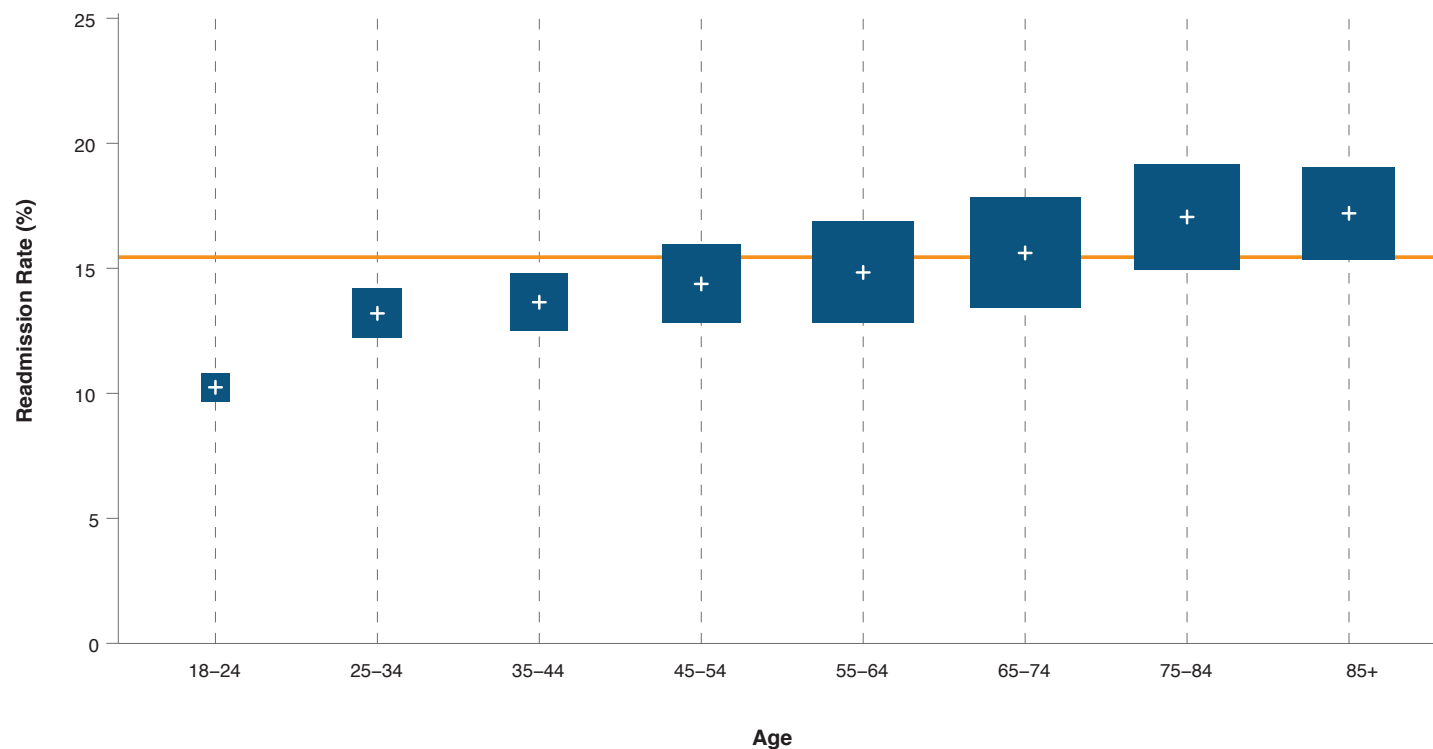
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2017 to June 2018.

STATEWIDE READMISSIONS

All-Payer Readmissions by Patient Age

SFY 2018


Both the volume and rate of readmission increase with patient age. Patients aged 65 and over accounted for almost 60% of all readmissions in the state. Additionally, patients aged 85 and over had the highest readmission rate in 2018 (17.2%), followed by patients aged 75-84 (17.1%).



KEY

Size of square is proportional to number of readmissions.

 = 10,000 readmissions

 = Statewide rate

Note: The size of the squares is proportional to the number of readmissions. Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

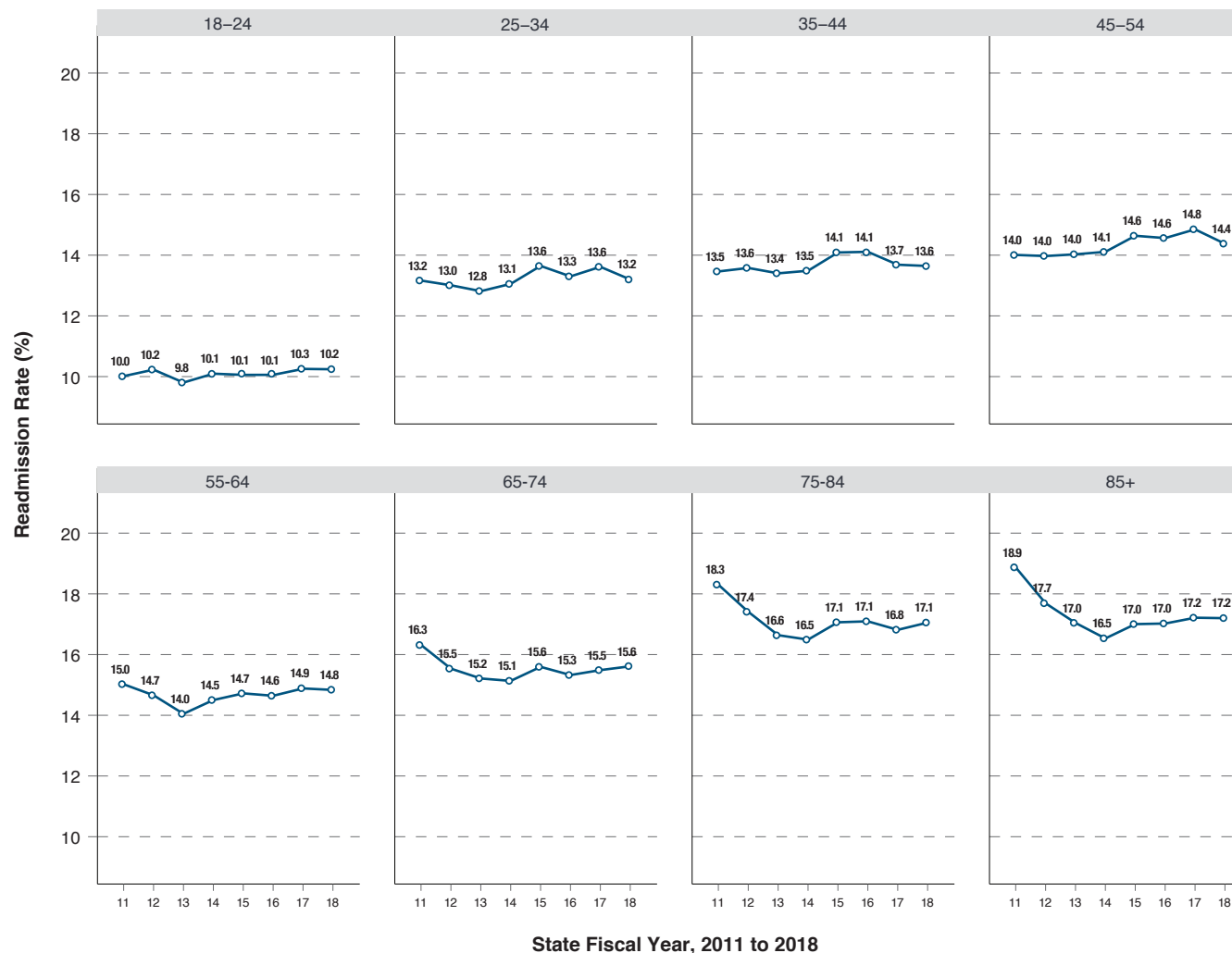
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2017 to June 2018.

STATEWIDE READMISSIONS

Trends in All-Payer Readmissions by Patient Age

SFY 2011-2018

The trend in readmission rates varies by patient age. For patients aged 18-64, the eight-year trend is relatively stable, whereas for patients aged 65 and over, readmission rates have decreased.



Note: Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2010 to June 2018.

STATEWIDE READMISSIONS

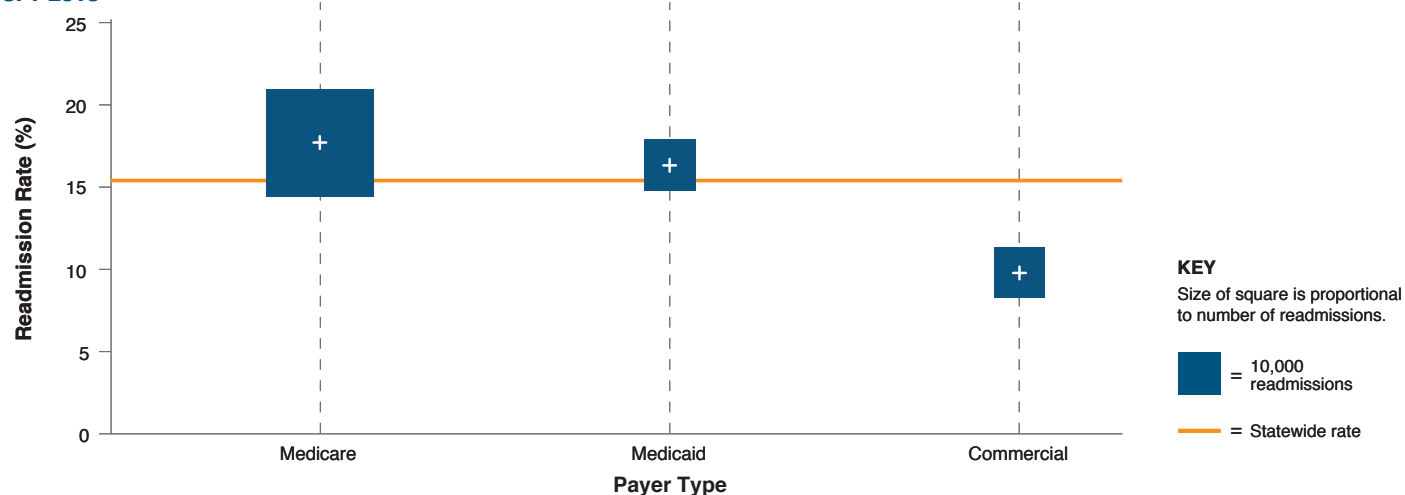
All-Payer Readmissions by Payer Type

SFY 2011-2018

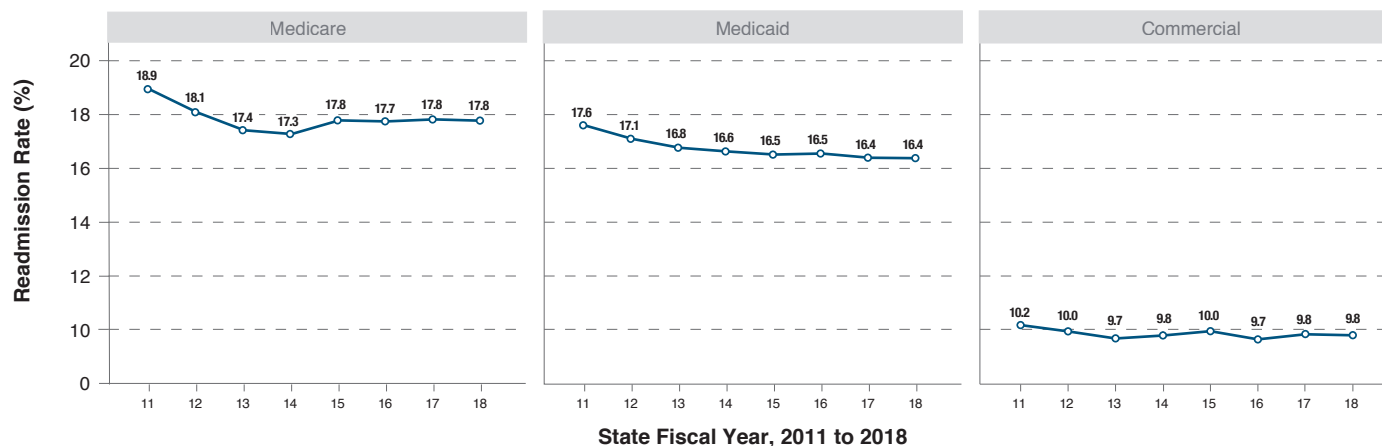
Medicare beneficiaries had the highest number and rate of readmission in 2018, as in previous years. The rates for Medicare and Medicaid patients, 17.8% and 16.4%, respectively, were much higher than that of patients with commercial coverage (9.8%).

The trend in readmission rates for both Medicare and Medicaid patients shows a decline from 2011 to 2015, followed by a plateau in recent years. Readmission rates for patients with commercial insurance have remained consistently low over time.

SFY 2018



Eight-Year Trend



Note: The size of the squares in the top figure is proportional to the number of readmissions. Self-pay and other payer type categories were not included due to small number of discharges. Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

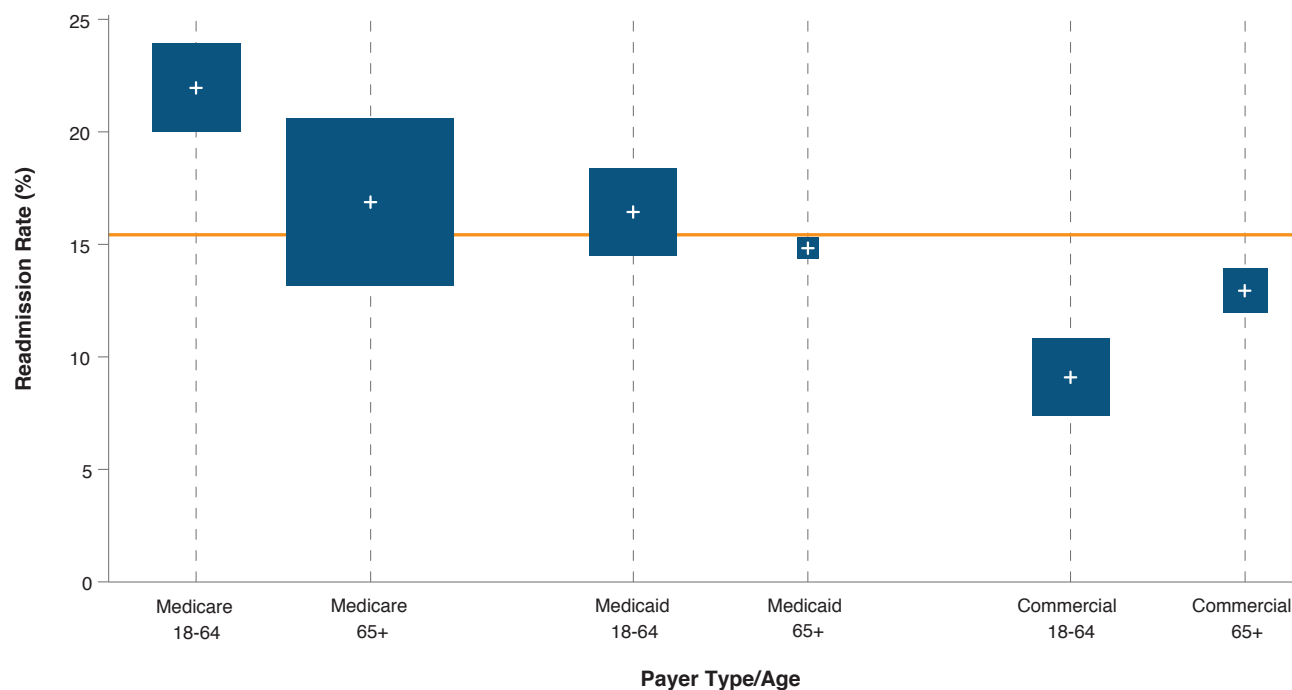
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2010 to June 2018.

STATEWIDE READMISSIONS

All-Payer Readmissions by Payer Type and Patient Age

SFY 2018

Medicare beneficiaries aged 65 and over had the highest number of readmissions. However, Medicare beneficiaries aged 18-64 had the highest readmission rate, at 22.0%. Medicare beneficiaries under age 65 are most likely dually eligible for both Medicare and Medicaid.



KEY

Size of square is proportional to number of readmissions.

 = 10,000 readmissions

 = Statewide rate

Note: The size of the squares is proportional to the number of readmissions. Self-pay and other payer type categories were not included due to small number of discharges. Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

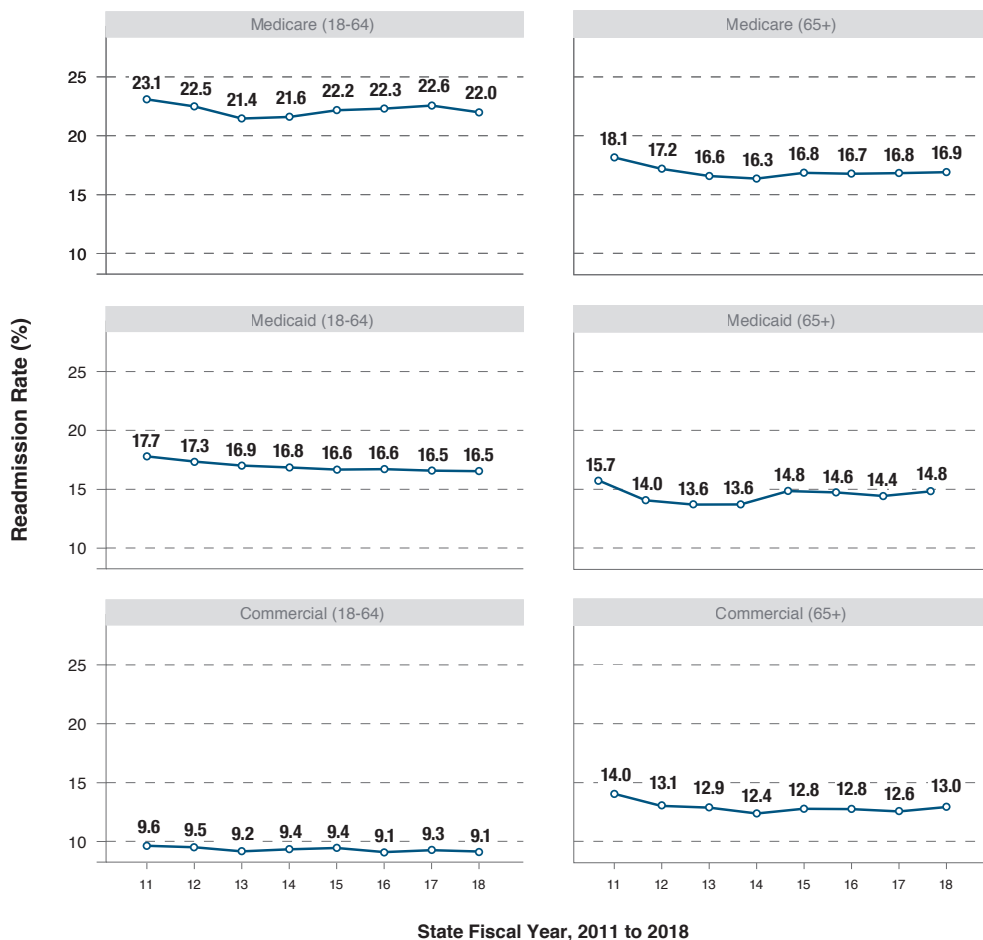
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2017 to June 2018.

STATEWIDE READMISSIONS

Trends in All-Payer Readmissions by Payer Type and Patient Age

SFY 2011-2018

The eight-year trends for readmission rates by payer type and patient age have remained relatively stable over time.



Note: Self-pay and other payer type categories were not included due to small number of discharges. Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2010 to June 2018.

STATEWIDE READMISSIONS

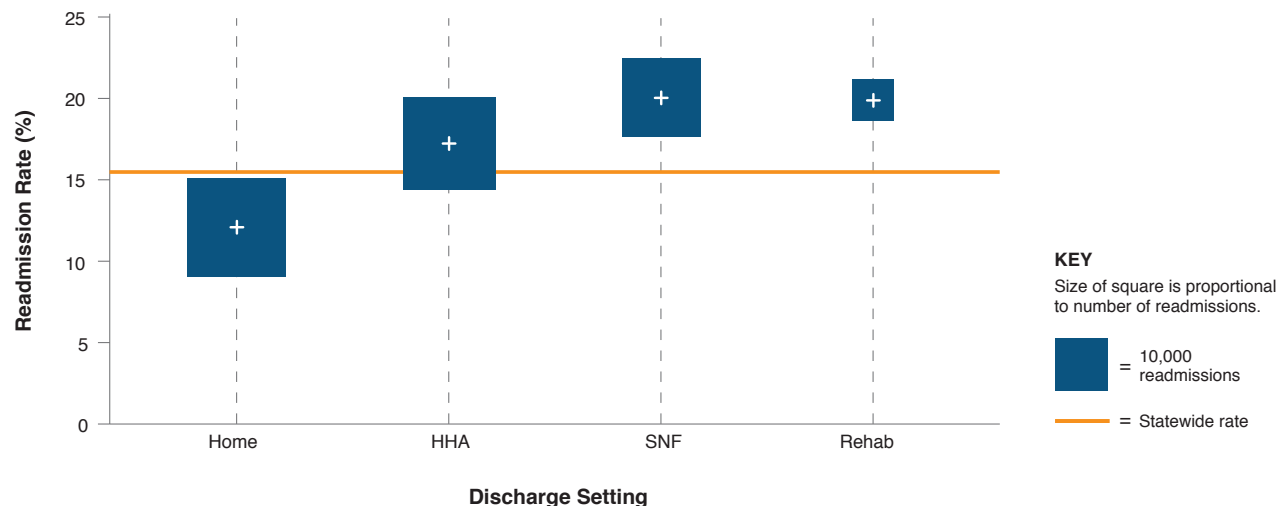
All-Payer Readmissions by Discharge Setting

SFY 2011-2018

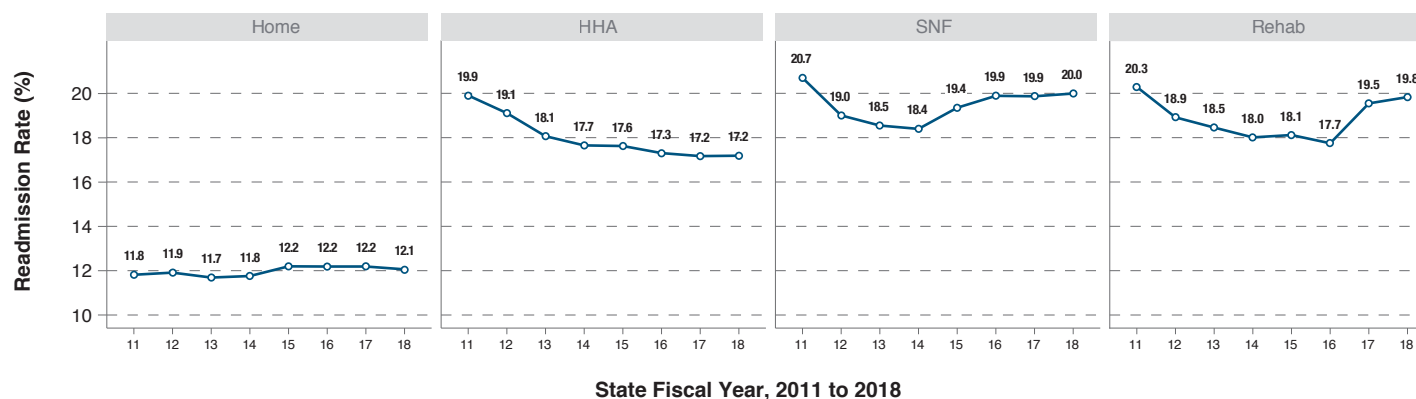
Patients discharged to home had the lowest rate of readmission (12.1%) in 2018. Patients discharged to post-acute care settings had much higher readmission rates: 17.2% for home health agencies (HHAs), 20.0% for skilled nursing facilities (SNFs), and 19.8% for rehabilitation.

Though readmission rates have been relatively stable over time for patients discharged to home, rates for patients discharged to HHA markedly decreased. Readmission rates for patients discharged to SNF and rehabilitation increased over the past few years.

SFY 2018



Eight-Year Trend



Note: The size of the squares in the top figure is proportional to the number of readmissions. HHA = home with home health agency care, SNF = skilled nursing facility. Hospice discharges were not included due to its small number of discharges. Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information. Data source: Massachusetts Hospital Inpatient Discharge Database, July 2010 to June 2018.

STATEWIDE READMISSIONS

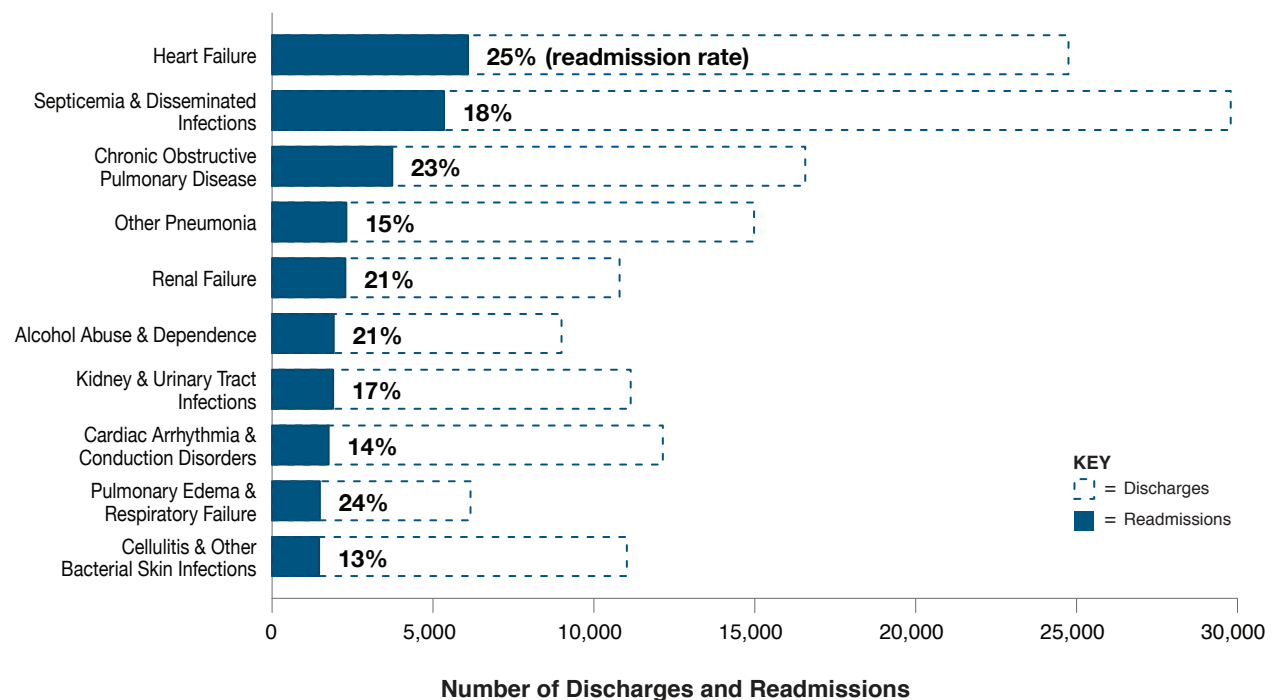
Discharge Diagnoses with the Highest Numbers of Readmissions

SFY 2018

The 10 discharge diagnoses associated with the highest numbers of readmissions have been consistent for the past few years.

These top 10 discharge diagnoses cumulatively accounted for approximately one-third of all readmissions.

While it may be important to focus readmission reduction efforts on these high volume conditions, exclusively focusing on the top 10 diagnoses would miss a substantial portion of all readmissions.



Note: The discharge diagnosis is based on APR DRG version 30.0. Some discontinuity in trend by diagnosis may be attributed to the change in diagnostic coding from ICD-9-CM to ICD-10-CM in October 2015. Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2017 to June 2018.

STATEWIDE READMISSIONS

Trends in Discharge Diagnoses with the Highest Numbers of Readmissions

SFY 2011-2018

Readmission rates for several, but not all, of the diagnoses leading to the most readmissions decreased over the first few years of the eight-year study period. In recent years, many have either remained relatively stable or slightly decreased.

After several years of increasing readmission rates for chronic obstructive pulmonary disease, rates decreased in 2018.



Trends in Readmission Rate by Diagnosis, SFY 2011 to 2018

Note: The discharge diagnosis is based on APR DRG version 30.0. Some discontinuity in trend by diagnosis may be attributed to the change in diagnostic coding from ICD-9-CM to ICD-10-CM in October 2015. Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2010 to June 2018.

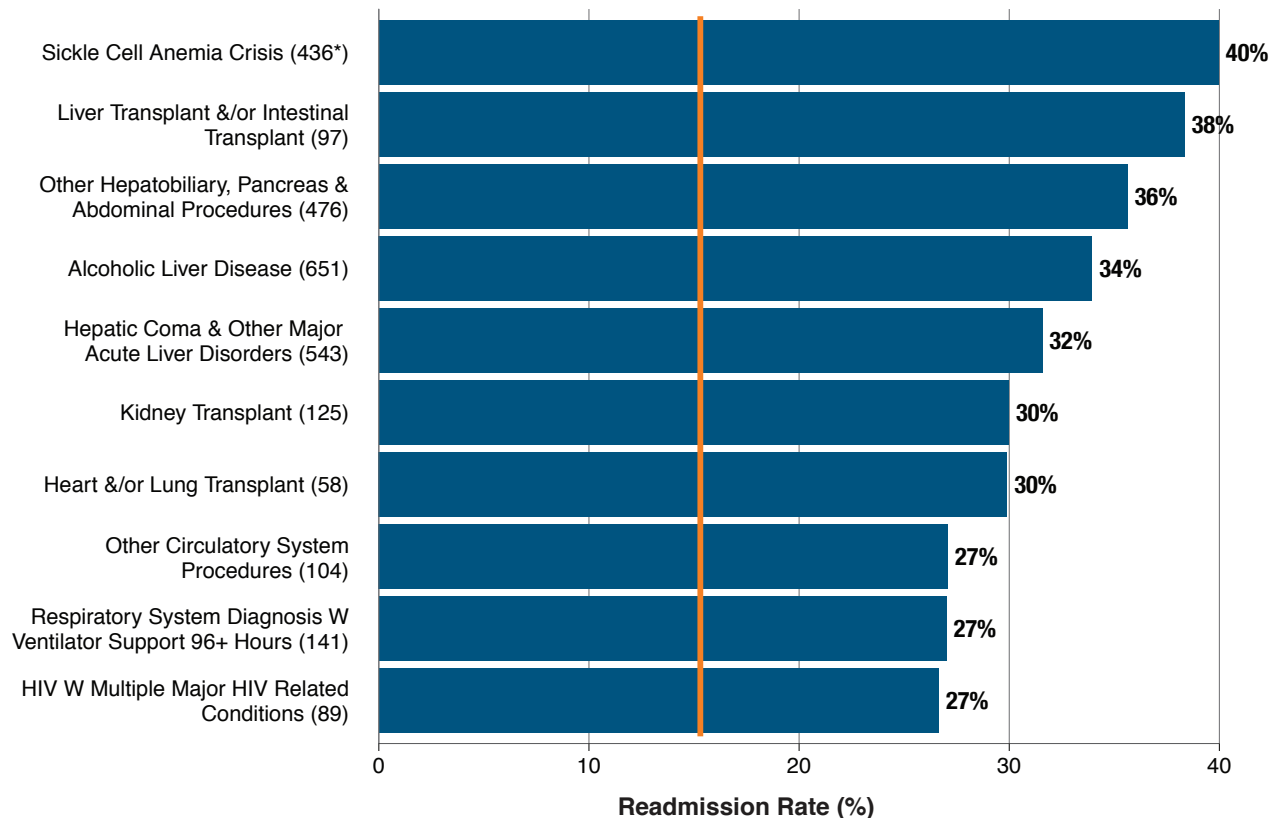
STATEWIDE READMISSIONS

Discharge Diagnoses with the Highest Rates of Readmissions

SFY 2018

As in previous years, sickle cell anemia, transplants, and liver disease are among the discharge diagnoses with the highest readmission rates.

While the overall number of readmissions attributed to these diagnoses is relatively small—about three percent of all readmissions—patients with these diagnoses have a very high risk of readmission.



KEY

— = Statewide rate

* Number of readmissions.

Note: The discharge diagnosis is based on APR DRG version 30.0. Some discontinuity in trend by diagnosis may be attributed to the change in diagnostic coding from ICD-9-CM to ICD-10-CM in October 2015. Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2017 to June 2018.

STATEWIDE READMISSIONS

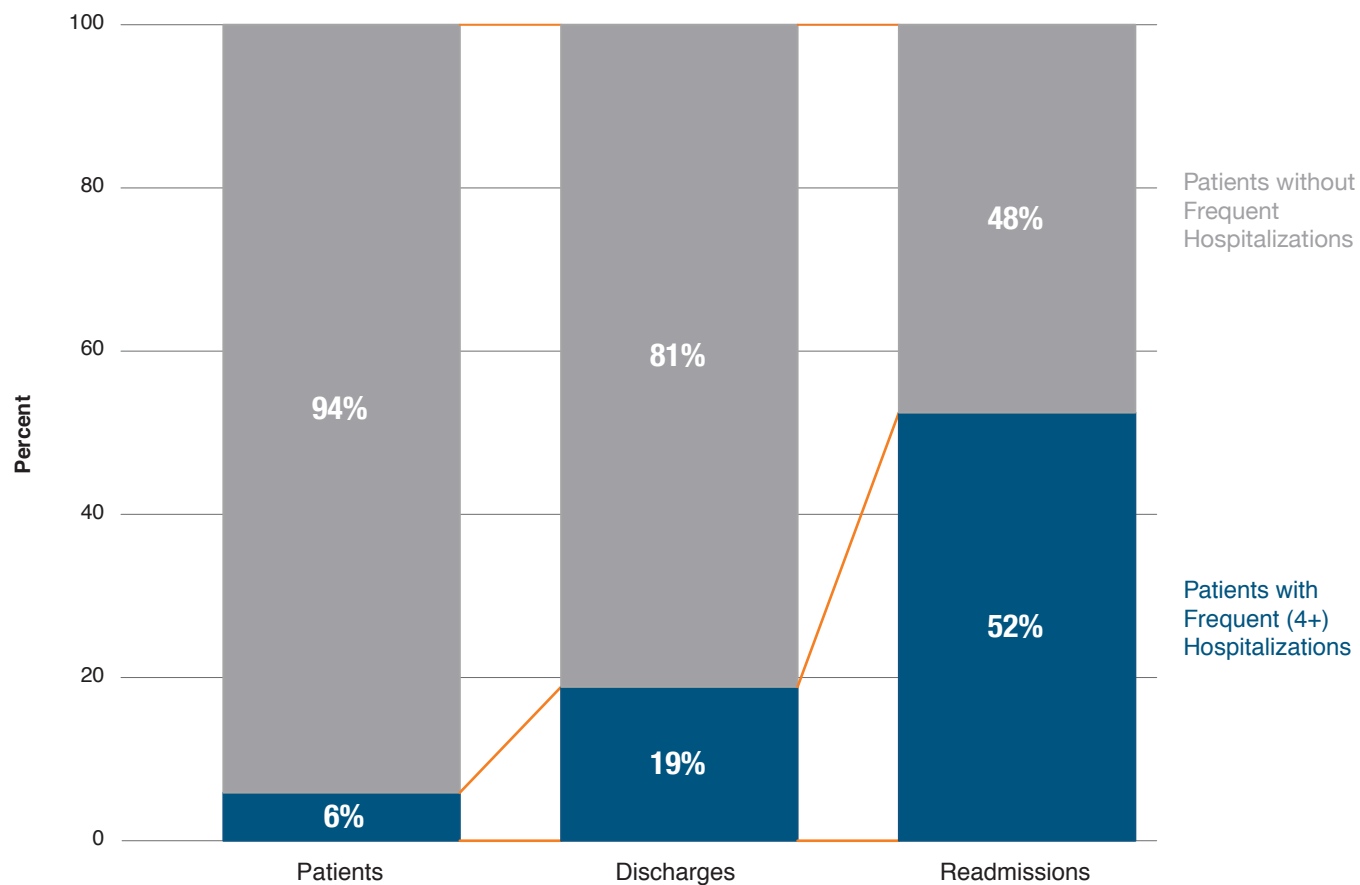
All-Payer Readmissions Among Frequently Hospitalized Patients

SFY 2018

Frequently hospitalized patients are defined as those with four or more hospitalizations within 12 months of their most recent discharge. For example, a patient whose most recent discharge occurred in April 2018 and was hospitalized three other times between April 2017 and April 2018 would be classified as a frequently hospitalized patient.

In 2018, six percent of patients were hospitalized four or more times in the previous 12 months. This group of patients accounted for 19% of discharges and over half (52%) of readmissions.

The readmission rate for frequently hospitalized patients was 43%, substantially higher than the rate of 9% for patients who were not frequently hospitalized.



Note: Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2017 to June 2018.

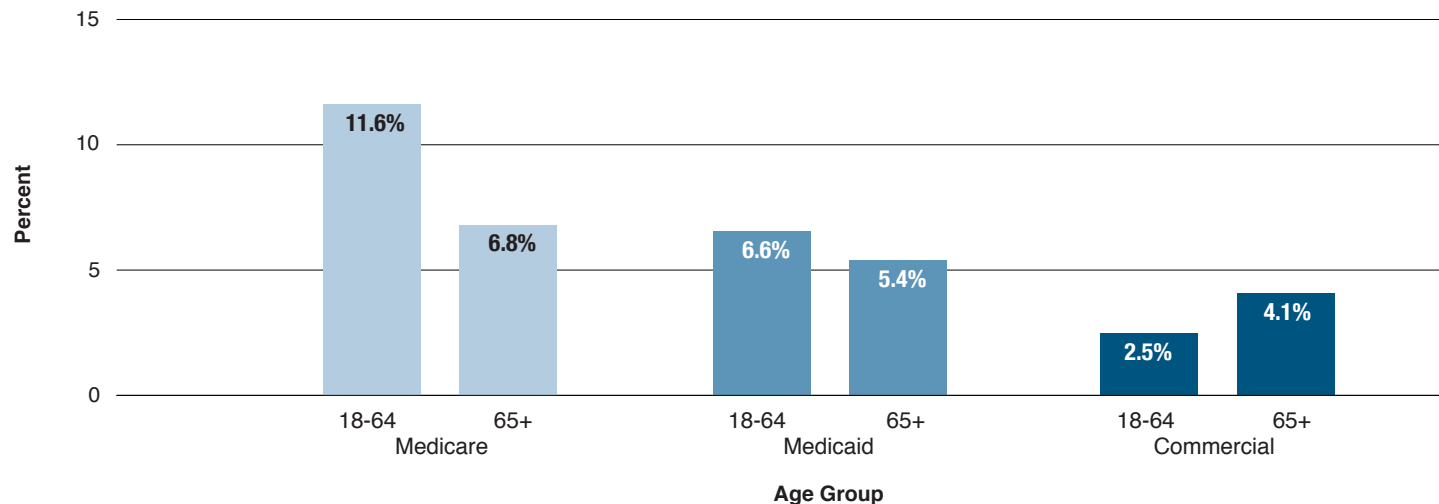
STATEWIDE READMISSIONS

Frequently Hospitalized Patients by Payer Type and Age

SFY 2018

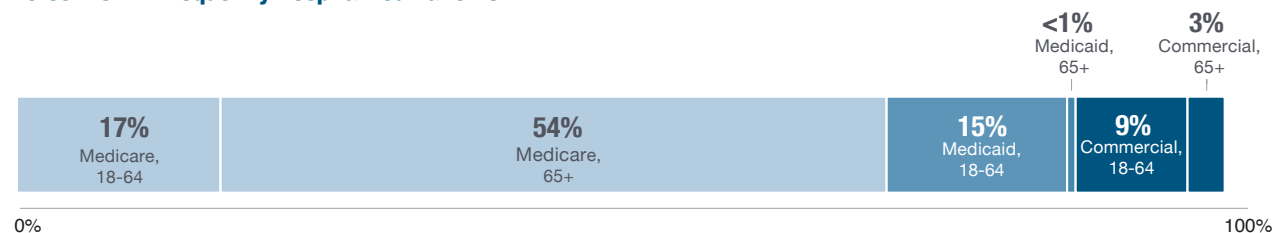
Almost 12% of Medicare beneficiaries aged 18-64 were frequently hospitalized patients in 2018. In contrast, only 2.5% of patients aged 18-64 with commercial insurance were frequently hospitalized patients. The proportion of patients aged 65 and over who were frequently hospitalized varied much less by payer type (4.1%-6.8%).

Among frequently hospitalized patients, the majority were Medicare beneficiaries (71%). Furthermore, patients with either Medicare or Medicaid coverage made up 86% of all frequently hospitalized patients.



	Medicare		Medicaid		Commercial	
Number of Frequently Hospitalized Patients	3,595	11,763	3,187	151	1,976	657
Number of All Patients	30,935	172,650	48,576	2,808	79,993	16,161

Percent of All Frequently Hospitalized Patients



Note: Self-pay and other payer type categories were not included due to small number of discharges. Percentages may not add up to 100% due to rounding. Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

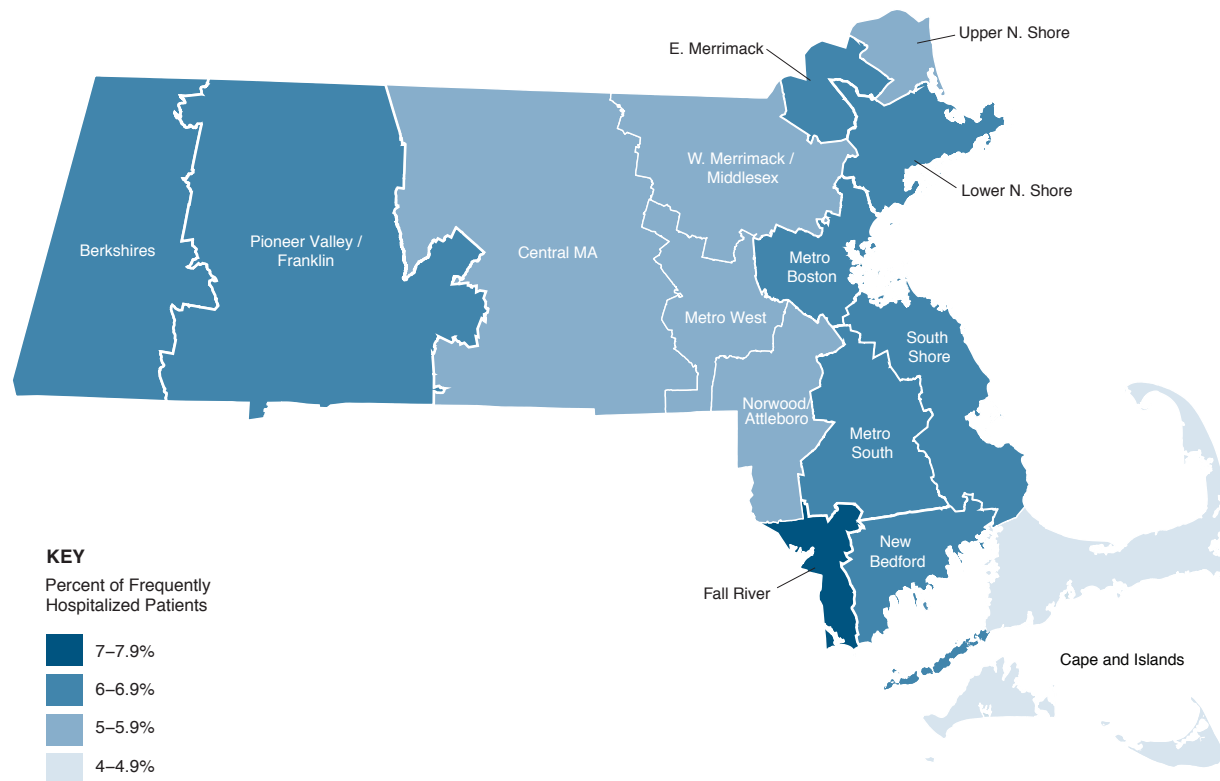
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2017 to June 2018.

STATEWIDE READMISSIONS

Percentage of Frequently Hospitalized Patients by Patient Region

SFY 2018

Almost eight percent of patients in Fall River were frequently hospitalized patients in 2018. The lowest proportion of frequently hospitalized patients were in the Cape and Islands region (4.7%).



Note: Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2017 to June 2018.

All-Payer Readmissions by Hospital

This section contains analyses of both observed (raw) and risk-standardized readmission rates (RSRRs) for individual hospitals and for groups of hospitals. RSRRs account for differences across hospitals in patient age, patient comorbidities and the profile of conditions that each hospital treats. Thus, RSRRs allow for a more accurate comparison of hospitals than observed readmission rates. For details about how RSRRs are calculated, see the [technical appendix](#). ■

Key Findings

- RSRRs for acute care hospitals ranged widely from 12.9% to 19.8% in 2018.
- There was very little difference in RSRRs by hospital type.

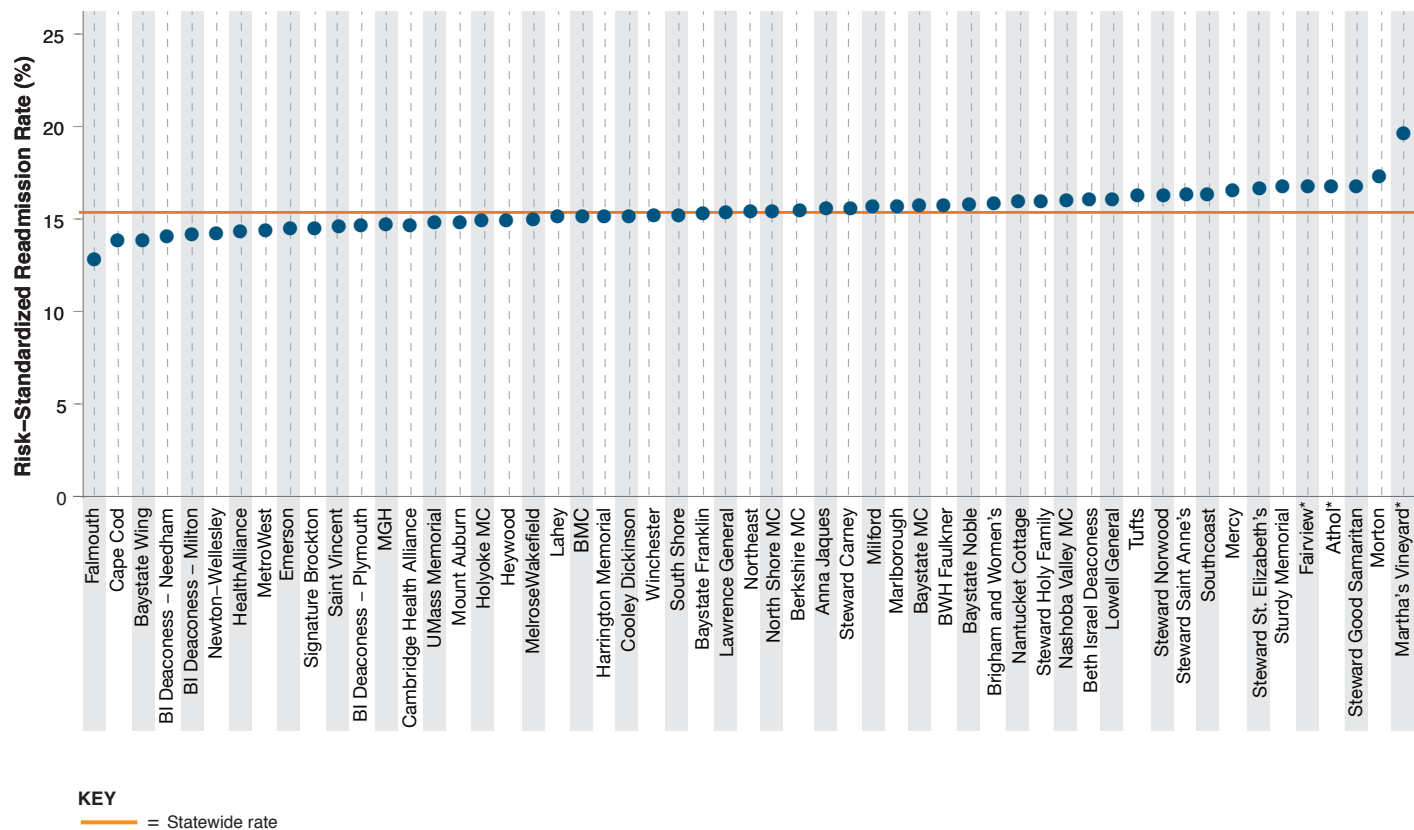
READMISSIONS BY HOSPITAL

All-Payer Risk-Standardized Readmission Rates of Acute Care Hospitals

SFY 2018

Hospital RSRRs ranged from a low of 12.9% at Falmouth Hospital to a high of 19.8% at Martha's Vineyard Hospital.

The range of RSRRs between hospitals in Massachusetts varied by 6.9 percentage points.



*Readmission rate calculations for these hospitals, and potentially other hospitals, may include swing bed discharges. CHIA will examine approaches to appropriately account for these discharges in future reporting.

Note: The risk-standardized readmission rates (RSRRs) shown in this figure account for patient case mix and hospital service mix. This figure excludes specialty hospitals (New England Baptist and the Massachusetts Eye and Ear Infirmary). Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2017 to June 2018.

READMISSIONS BY HOSPITAL

Hospitals Consistently in Highest and Lowest Risk-Standardized Readmission Rate Quartiles

SFY 2014-2018

Hospitals were grouped into quartiles based on their RSRRs for each of the last five years (2014 to 2018). Those in the highest quartile had the highest readmission rates, while those in the lowest quartile had the lowest readmission rates of all Massachusetts acute care hospitals in the last five years.

Three hospitals had consistently high RSRRs in each of the last five years, while five hospitals had consistently low rates.

RSRR Quartile	Hospitals	Median Risk-Standardized Readmission Rate in SFY 2018
Highest RSRRs (worse readmission rates) in each of the last five years	Martha's Vineyard Hospital* Steward Good Samaritan Medical Center Steward St. Elizabeth's Medical Center	16.9%
Lowest RSRRs (better readmission rates) in each of the last five years	Beth Israel Deaconess Hospital – Plymouth Cape Cod Hospital Emerson Hospital HealthAlliance Hospital Newton-Wellesley Hospital	14.4%

*Readmission rate calculations for these hospitals, and potentially other hospitals, may include swing bed discharges. CHIA will examine approaches to appropriately account for these discharges in future reporting.

Note: Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2013 to June 2018.

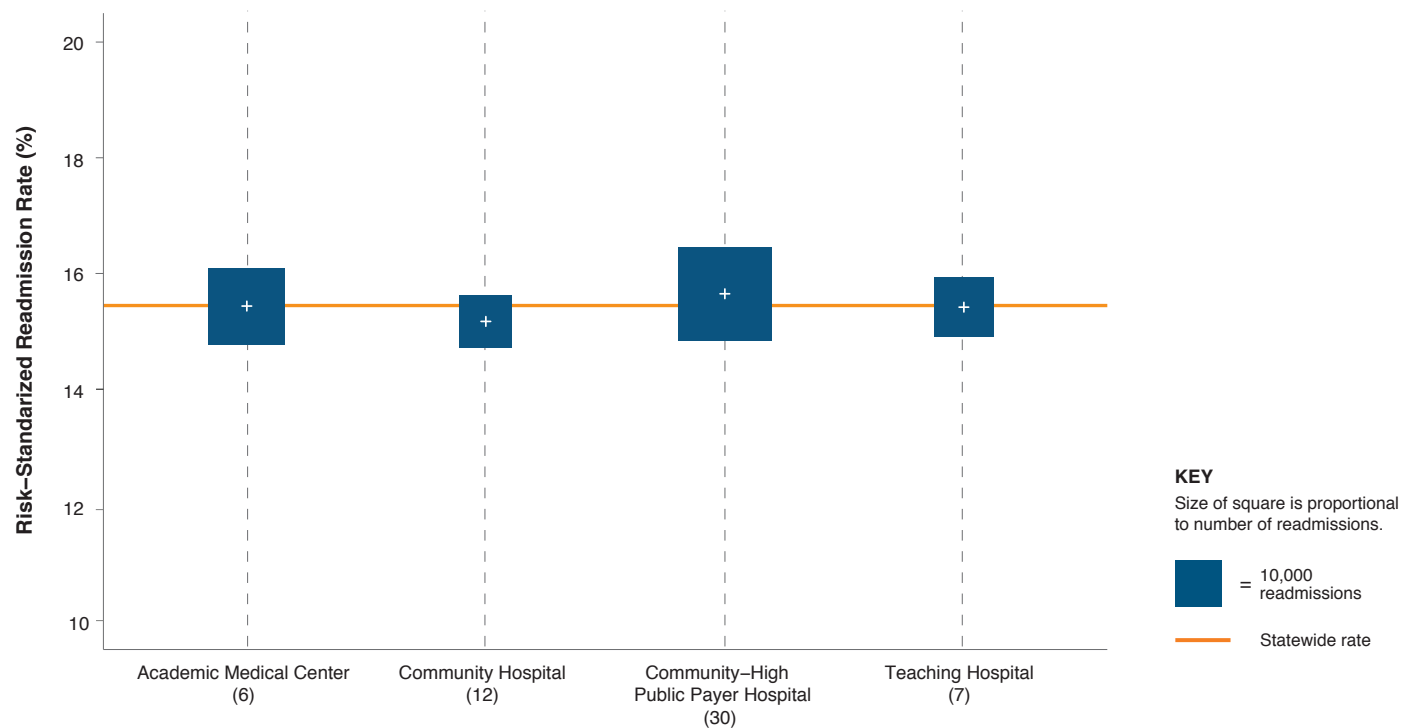
READMISSIONS BY HOSPITAL

All-Payer Risk-Standardized Readmission Rates by Hospital Type

SFY 2018

RSRRs are presented by types of similar hospitals: Academic Medical Centers, teaching hospitals, community hospitals, and community-High Public Payer (HPP) hospitals.

There was very little difference in RSRRs by hospital type. Rates ranged from 15.2%-15.6%.



Note: The size of the squares is proportional to the number of readmissions. Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2017 to June 2018.

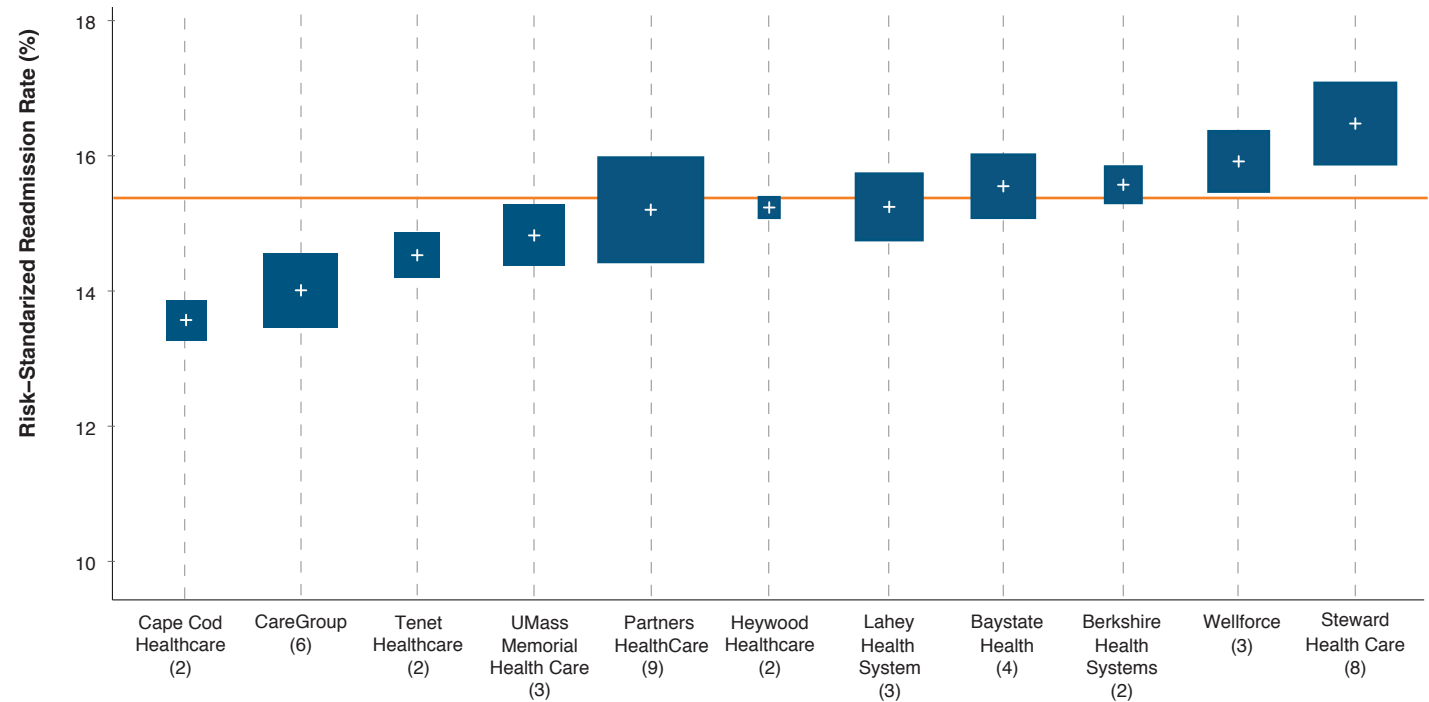
READMISSIONS BY HOSPITAL

RSRRs varied by hospital system, from a low of 13.6% for Cape Cod Healthcare to a high of 16.5% for Steward Health Care. The largest hospital system—Partners HealthCare—had an RSRR of 15.3% and accounted for 19% of all discharges and 19% of all readmissions.

See the [technical appendix](#) for a list of hospitals with their system affiliation.

All-Payer Risk-Standardized Readmission Rates by Hospital System

SFY 2018



KEY

Size of square is proportional to number of readmissions.

 = 10,000 readmissions

 = Statewide rate

Note: The size of the squares is proportional to the number of readmissions. Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2017 to June 2018.

READMISSIONS BY HOSPITAL

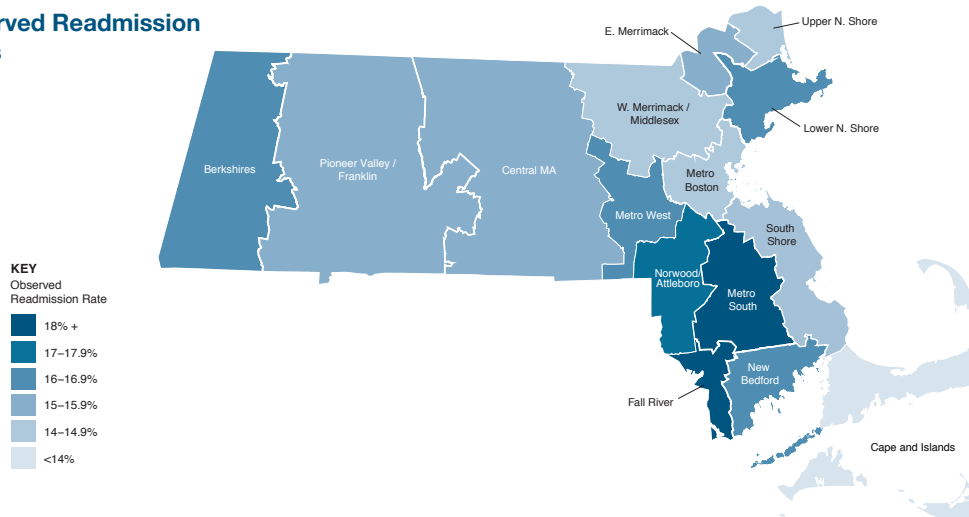
All-Payer Observed and Risk-Standardized Readmission Rates by Hospital Region

SFY 2018

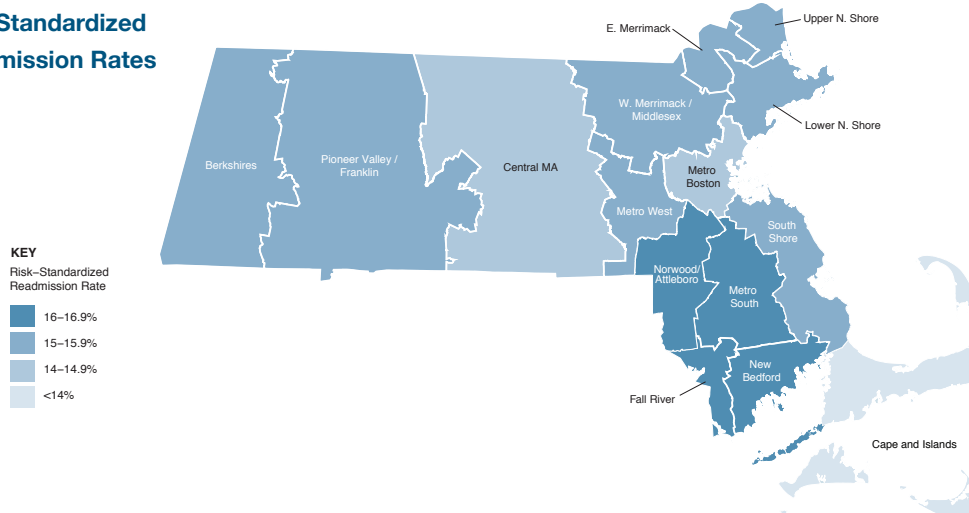
The top figure shows geographic variation in **observed** readmission rates, while the bottom figure shows variation in **RSRRs** that account for differences in hospitals' patient populations and services provided.

The observed rates varied considerably from a low of 12.7% on the Cape and Islands to 19.0% in Fall River. Once differences in patient populations and hospital service mix were accounted for by risk-standardization (bottom figure), the geographic variation narrowed, ranging from 14.0% in the Cape and Islands to 16.6% in Norwood/Attleboro.

Observed Readmission Rates



Risk-Standardized Readmission Rates



Note: Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2017 to June 2018.

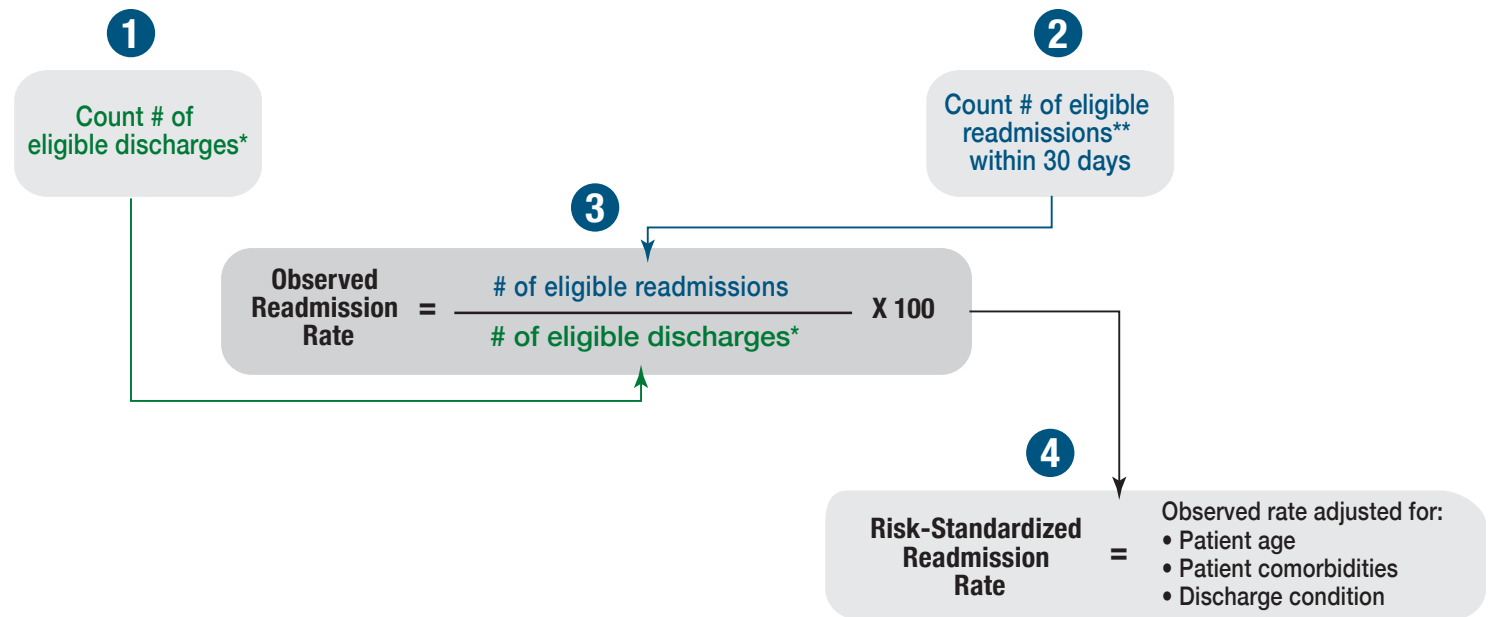
About the Readmissions Methodology

CHIA has adapted the Hospital-Wide All-Cause Unplanned 30-day Readmission Measure (NQF #1789) developed by CMS and the Yale Center for Outcomes Research and Evaluation to report on all-payer readmissions in the Commonwealth. The measure was applied to CHIA's Hospital Inpatient Discharge Database, which is collected from all non-federal acute care hospitals in Massachusetts.¹⁰ This year's report uses the 2019 CMS readmission measure methodology (version 8.0), which updates the planned readmissions algorithm.¹¹ This year's report also matches patient records using a probabilistic patient identifier instead of Social Security Number. Readmission rates will not match those from earlier reports.

A readmission is defined as an inpatient admission to an acute care facility in Massachusetts occurring within 30 days of an eligible index discharge. All readmissions are counted except for those that are considered planned.

Readmission rates are calculated in four broad steps. First, eligible hospital discharges are defined. Second, from among this set of eligible discharges, the number of eligible readmissions within 30 days is derived. Then, the latter is divided by the former and turned into a percentage to calculate the observed readmission rate. In step four, the risk-standardized readmission rate (RSRR) is derived from the volume-weighted results of five different statistical models, one for each of the following clinically-defined patient cohorts: surgery/gynecology, general medicine, cardiorespiratory, cardiovascular, and neurology. These risk-standardized readmission rates account for differences between hospitals in patient case mix and hospital service mix.

The [technical appendix](#) has further details on the readmissions methodology, including the categories of discharges that are excluded from the readmissions analyses. ■



* Eligible discharges are discharges for adults during the study period from non-Federal acute-care hospitals in Massachusetts. Analyses exclude obstetric and primary psychiatric discharges. Nine further exclusions are made. See the [technical appendix](#) for further details.

** Eligible readmissions are admissions for any reason that occur within 30 days of an eligible discharge and are not planned.

Notes

- 1** Rau, J. “New Round of Medicare Readmission Penalties Hits 2,583 Hospitals.” *Kaiser Health News* (October 1, 2019). Accessed 10/17/2019. <https://khn.org/news/hospital-readmission-penalties-medicare-2583-hospitals>.
- 2** For the original measure technical report see: Horwitz, L., C. Partovian, Z. Lin, J. Herrin, J. Grady, M. Conover, J. Montague et al. “Hospital-wide all-cause unplanned readmission measure: final technical report.” *Centers for Medicare and Medicaid Services* (2012).
- 3** For this report, CHIA used version 8.0 of the readmission measure specification. Yale New Haven Health Services Corporation/Center for Outcomes Research & Evaluation (YNNHSC/CORE). “2019 Hospital-Wide Readmission Measure Updates and Specifications – Version 8.0” (March 2019). Accessed 10/17/2019. <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Measure-Methodology.html>.
- 4** Information on the Massachusetts Hospital Inpatient Discharge Database is available at <http://www.chiamass.gov/case-mix-data/>. The FY 2018 Hospital Inpatient Discharge Dataset processed by CHIA on September 5, 2018 was used for all analyses published in this year’s annual statewide report. CHIA’s readmission measure is based on inpatient data only. Observation stay data, which is reported by acute care hospitals to CHIA in a separate data file, was not included in the readmission measure.
- 5** See note 1.
- 6** See note 2.
- 7** See note 3.
- 8** See note 4.
- 9** See note 3.
- 10** National Quality Forum, ““Patient Outcomes: All-Cause Readmissions Expedited Review 2011” (July 2012). Accessed 4/5/2018. http://www.qualityforum.org/Projects/Readmissions_Endorsement_Maintenance.aspx.
- 11** See note 3.



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