

# **Hospital-Wide Adult All-Payer Readmissions In Massachusetts:** SFY 2011-2023

December 2024



# Executive Summary

A hospital readmission is defined as an admission to a hospital within 30 days of a prior hospitalization. While there are some situations in which a second hospitalization within that time frame is part of a predetermined plan of care, the vast majority of readmissions are unplanned. Unplanned hospital readmissions can be used as an indicator of health system performance and have been a key measure of health system quality and value since the Affordable Care Act's passage in 2010. In service of its mission to provide publicly available information about the quality, affordability, utilization, access, and outcomes of the Massachusetts health care system, the Center for Health Information and Analysis (CHIA) reports on hospital-wide adult all-cause all-payer unplanned readmissions using its Hospital Inpatient Discharge Database.<sup>1</sup>

This report is the ninth in CHIA's annual series of readmission reports and includes data through State Fiscal Year (SFY) 2023 (July 1, 2010, to June 30, 2023). For the first time, this report includes an enhanced payer type classification that leverages insurance enrollment data from Medicare, Medicaid (MassHealth), and commercial payers and includes a new breakout for patients dually eligible for both Medicare and Medicaid. This report also includes additional analyses by patient characteristics, including patient sex and race/ethnicity, to provide a more comprehensive look at differences in readmissions by important sociodemographic factors. In addition to this report, an accompanying [hospital-specific interactive dashboard](#) is provided to showcase readmission rates by hospital and allow comparison with statewide estimates as well as across hospitals. Historical rates presented in this report differ from earlier publications due to methodological updates.

# Key Findings

- The adult all-cause all-payer unplanned readmission rate in 2023 was 16.0 percent, consistent with previous years.
- Dually eligible patients (i.e., individuals enrolled in both Medicare and Medicaid) had the highest readmission rate (21.7 percent).
- Medicare patients, regardless of dual eligibility, accounted for 59 percent of all readmissions.
- Non-Hispanic Black and Hispanic patients age 65 and older had a higher readmission rate (both 17.8 percent) compared with patients of other racial/ethnic and age groups.
- Frequently hospitalized patients, defined as those with four or more hospitalizations within 12 months, accounted for 6 percent of hospitalized patients in 2023 and more than half (51 percent) of all readmissions, with a readmission rate of 44.3 percent. ■

# Table of Contents

<b>Contents</b> . . . . .	<b>3</b>
<b>Introduction</b> . . . . .	<b>5</b>
<b>Overall Trends in All-Payer Readmissions</b> . . . . .	<b>7</b>
Annual Trends in Statewide All-Payer Readmission Rates, Discharges, and Readmissions . . . . .	8
Annual Trend in Average Length of Stay (ALOS) by Readmission Status . . . . .	9
All-Payer Readmissions by Days Since Discharge. . . . .	10
<b>All-Payer Readmissions by Characteristics of Patients and Hospitalizations</b> . . . . .	<b>11</b>
All-Payer Readmissions by Patient Age Group . . . . .	12
Annual Trends in All-Payer Readmissions by Patient Age Group . . . . .	13
All-Payer Readmissions by Patient Sex . . . . .	14
All-Payer Readmissions by Patient Sex and Age Group . . . . .	15
All-Payer Readmissions by Patient Race/Ethnicity. . . . .	16
All-Payer Readmissions by Patient Race/Ethnicity and Age . . . . .	17
Annual Trends in All-Payer Readmissions by Patient Race/Ethnicity and Age . . . . .	18
All-Payer Readmissions by Payer Type . . . . .	19
All-Payer Readmissions by Payer Type and Patient Age Group . . . . .	20
Annual Trends in All-Payer Readmissions by Payer Type and Patient Age Group . . . . .	21
All-Payer Readmissions by Patient Region of Residence . . . . .	22

## Table of Contents (continued)

All-Payer Readmissions by Discharge Setting . . . . .	23
Discharge Diagnoses with the Highest Number of Readmissions . . . . .	24
Annual Trends in Discharge Diagnoses with the Highest Number of Readmissions . . . . .	25
Discharge Diagnoses with the Highest Readmission Rates . . . . .	26
Annual Trends in All-Payer Discharges, Readmissions, and Readmission Rate by COVID-19 Status . . . . .	27
All-Payer Readmissions Among Frequently Hospitalized Patients . . . . .	28
Percentage of Patients Frequently Hospitalized by Payer Type and Age Group . . . . .	29
Percentage of Patients Frequently Hospitalized by Race/Ethnicity and Age Group . . . . .	30
Percentage of Patients Frequently Hospitalized by Patient Region . . . . .	31
<b>All-Payer Readmissions by Hospital . . . . .</b>	<b>32</b>
All-Payer Risk-Standardized Readmission Rates of Acute Care Hospitals . . . . .	33
All-Payer Risk-Standardized Readmission Rates by Hospital Type . . . . .	34
All-Payer Risk-Standardized Readmission Rates by Hospital System . . . . .	35
All-Payer Observed and Risk-Standardized Readmission Rates by Hospital Region . . . . .	36
<b>About the Readmissions Methodology . . . . .</b>	<b>37</b>
<b>Notes . . . . .</b>	<b>39</b>

# Introduction

A hospital readmission is defined as an admission to a hospital within 30 days of a prior hospitalization. While there are some situations in which a second hospitalization within that time frame is part of a predetermined plan of care, the vast majority of readmissions are unplanned. Unplanned hospital readmissions can be used as an indicator of health system performance and have been a key measure of health system quality and value since the Affordable Care Act was passed in 2010. According to the Commonwealth Fund's 2023 Scorecard on State Health System Performance, Massachusetts ranked number one with the best overall score, but it ranked among the lowest for avoidable hospital use and cost, including inpatient admissions for ambulatory care-sensitive conditions, potentially avoidable emergency department visits, and [30-day hospital readmissions](#) for patients age 65 and older. The Centers for Medicare and Medicaid Services (CMS) measures hospital readmission rates for Medicare fee-for-service beneficiaries and uses readmission rates in measures of hospital quality<sup>2</sup> and for purposes of rewarding<sup>3</sup> or penalizing performance.<sup>4</sup>

Although CMS focuses on Medicare fee-for-service beneficiaries, readmissions are not limited to this population. To better understand readmissions in Massachusetts, the Center for Health Information and Analysis (CHIA) produces annualized reports on hospital-wide all-cause all-payer unplanned readmissions for all adult non-obstetric patients (hereafter, all-payer readmissions) discharged from acute care hospitals in the Commonwealth.

This report is the ninth in CHIA's series of readmission reports and includes data through State Fiscal Year (SFY) 2023 (July 1, 2020, to June 30, 2023). This report continues to use an updated risk adjustment methodology to incorporate the impact of social risk factors on readmission rates, based on the recommendations of an expert committee.<sup>5</sup> Because hospitals serve different communities, adjustments for social risk factors provide a more equitable basis for comparison of hospital performance. Due to methodological changes, historical rates presented in this report differ from earlier publications.

This report presents annual trends in statewide all-payer readmissions and readmission rates for the past 13 years, readmission rates by characteristics of patients and hospitalizations, readmission rates for common diagnoses and diagnoses with high rates of readmission, readmission rates among COVID-19 and non-COVID-19 discharges, and readmission rates for individual hospitals

and groups of hospitals. New to this reporting cycle, this report includes an enhanced payer type classification with a breakout for patients dually eligible for Medicare and Medicaid, and it adds breakdowns for readmissions by patient race/ethnicity and sex to provide a more comprehensive look at differences in readmissions by important sociodemographic factors. ■

# Overall Trends in All-Payer Readmissions

This section presents overall trends in all-payer readmissions for acute care hospitals in Massachusetts from July 1, 2010, to June 30, 2023. For this report, a readmission is defined as an unplanned hospitalization for any reason within 30 days of an eligible discharge. For this report, a readmission is defined as an unplanned hospitalization for any reason within 30 days of an eligible discharge excluding discharges for obstetric or primary psychiatric care. This measure excludes certain categories of hospitalizations, such as pediatric, obstetric, and psychiatric admissions. Additionally, this report only includes readmissions for patients who reside in New England or New York and are admitted to an acute care hospital in Massachusetts. Observed readmission rates are calculated as the number of readmissions that occurred within a given time period as a proportion of all eligible discharges in that time period. Observed readmission rates are useful for identifying

opportunities for improvement and tracking performance over time within individual hospitals. Variation in observed readmission rates among hospitals may be attributable to differences in hospitals' service mix and case mix. With the exception of the section on readmission rates by hospital and hospital characteristics, the readmission rates presented in this report are observed readmission rates.

## Key Findings:

- The statewide readmission rate in 2023 was 16.0 percent, consistent with previous years.
- The average length of stay for a discharge resulting in a readmission was 1.8 days longer than for discharges that did not result in a readmission.
- Over one-third (36%) of readmissions occurred within the first week of discharge. ■



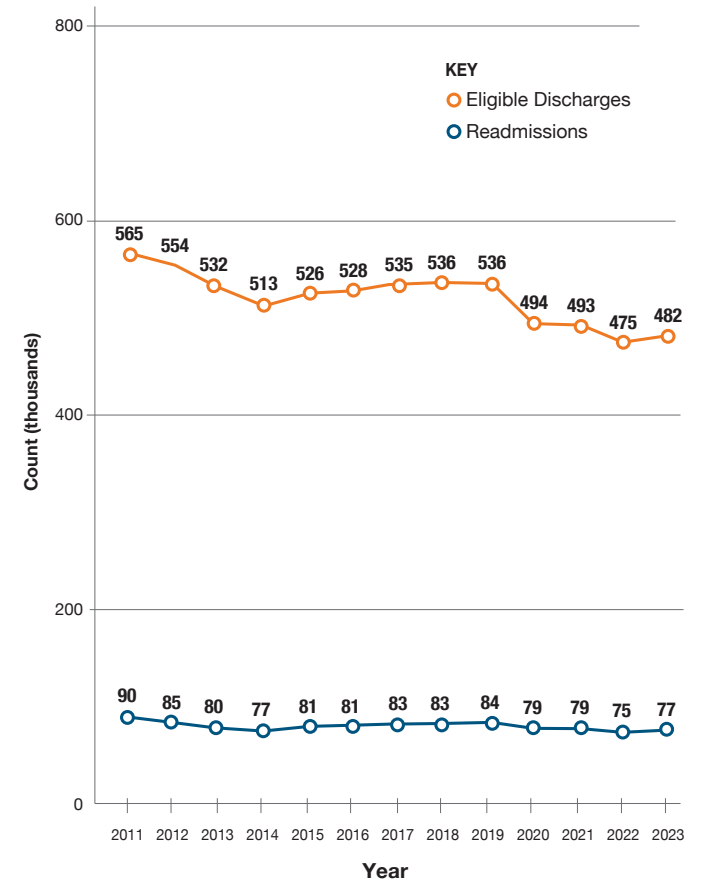
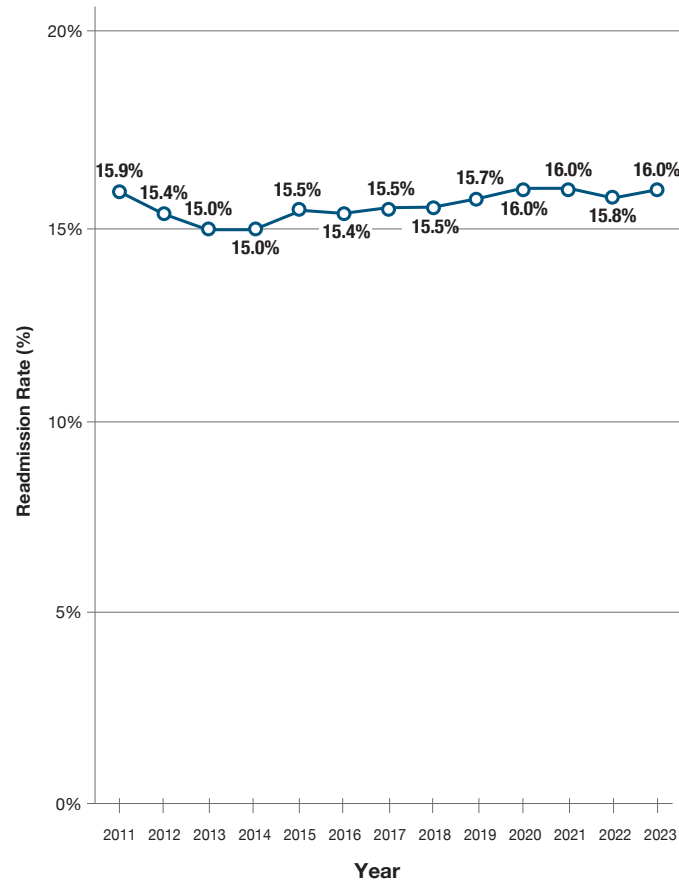
## Overall Trend

In 2023, the statewide all-payer readmission rate was 16.0%. After an initial period of decline from 2011-2014, all-payer readmission rates increased from 2014 to 2020. Since 2020, the readmission rate has remained consistent.

The statewide number of eligible discharges declined during the early years of the COVID-19 pandemic but slightly increased between 2022 and 2023.

# Annual Trends in Statewide All-Payer Readmission Rates, Discharges, and Readmissions

SFY 2011-2023



Note: 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 2023.

## Overall Trend

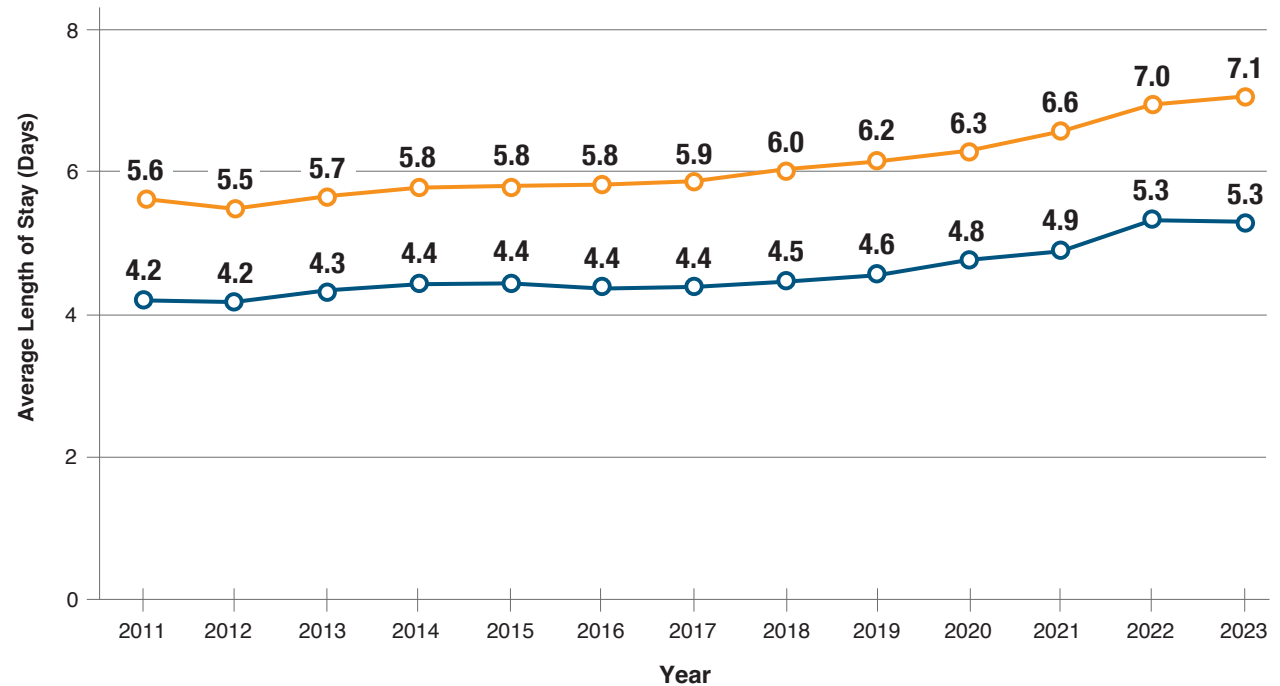
The average length of stay (ALOS) for all hospitalizations has increased over time.

Hospitalizations that resulted in readmissions consistently have a longer average length of stay than those that did not result in readmissions.

The ALOS for discharges resulting in readmissions was 7.1 days in 2023.

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

SFY 2011-2023



### KEY

- Discharges with Readmission
- Discharges with No Readmission

Note: 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 2023.

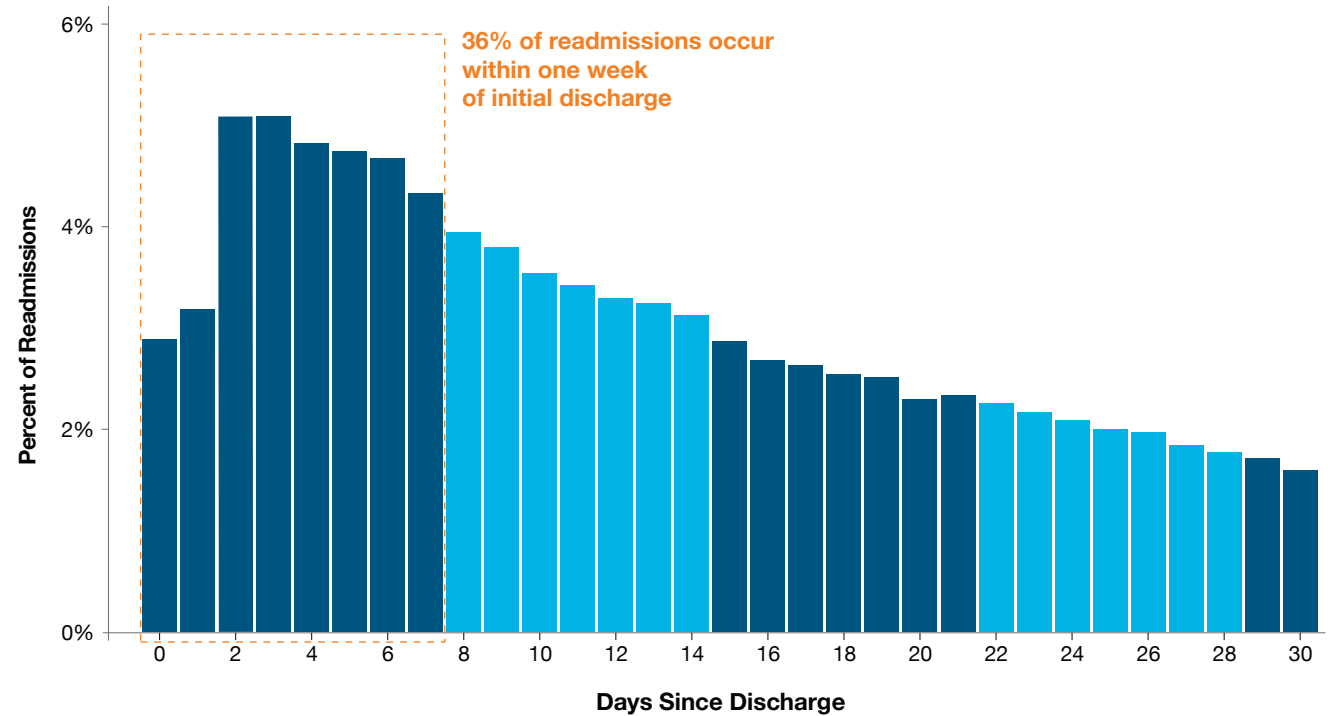
## Statewide Readmissions

Readmissions are most likely to occur within two days following discharge and steadily decrease over time.

Thirty-six percent of all readmissions occurred within the first week after discharge.

## All-Payer Readmissions by Days Since Discharge

SFY 2023



Note: 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 2022 to June 2023.

# 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 group, payer type, discharge setting, primary discharge diagnosis, and prior inpatient utilization. Additionally, this report includes an enhanced payer type classification with a breakout for patients dually eligible for Medicare and Medicaid and adds breakdowns of readmissions by patient race/ethnicity and sex to provide a more comprehensive look at differences in readmissions by important sociodemographic factors. Variations in readmission rates by sociodemographic characteristics may indicate differences in patient clinical complexity as well as disparities in access to and quality of care. For further exploration, see our full report of [trends in acute care utilization by patient race/ethnicity](#). Trend information provided in this section includes data from SFY 2017-2023.

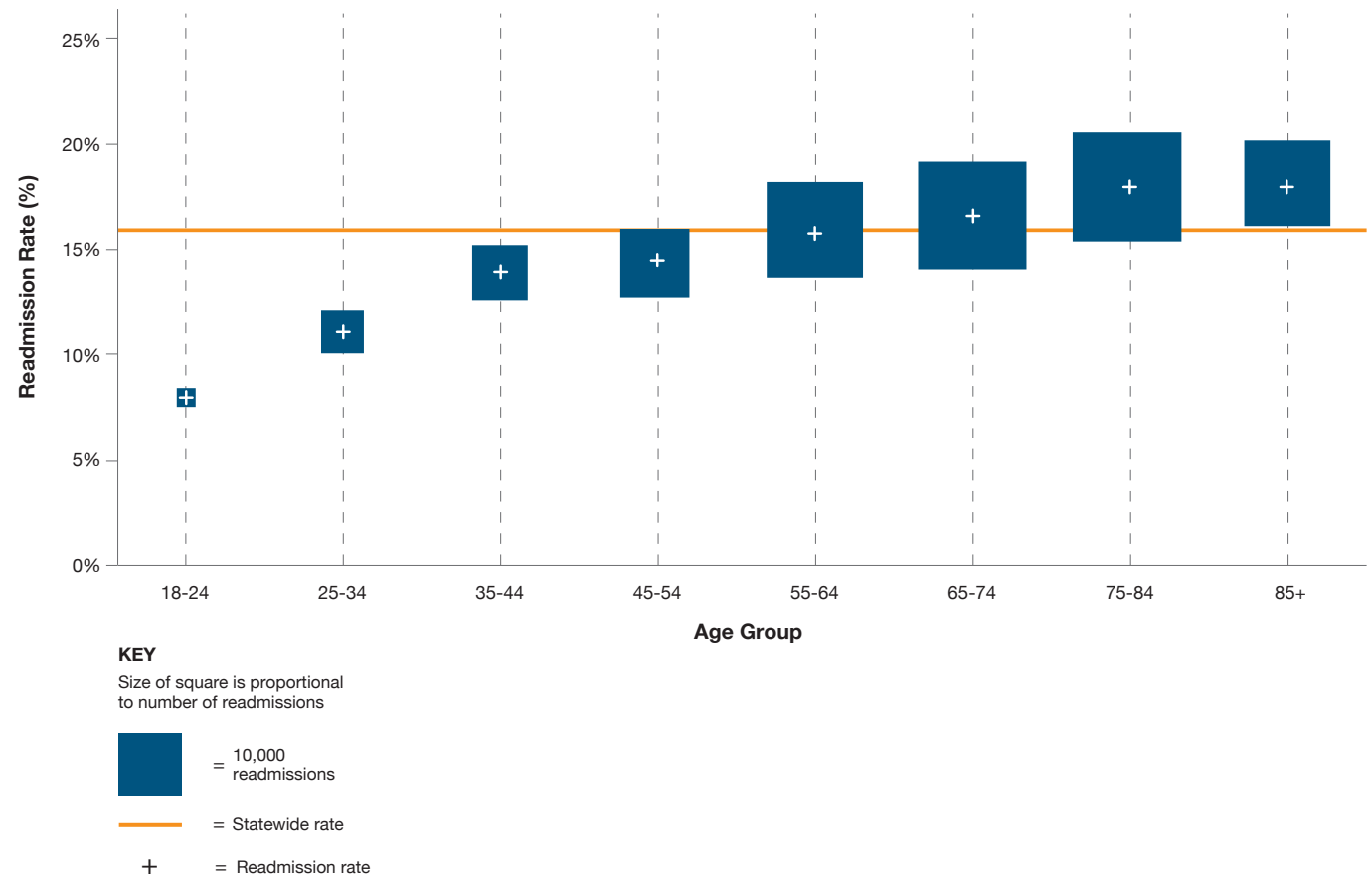
## Key Findings:

- Patients enrolled in both Medicare and Medicaid (i.e., dually eligible patients) had the highest readmission rate (21.7 percent).
- Medicare patients, regardless of dual eligibility, accounted for 59 percent of all readmissions.
- Non-Hispanic Black and Hispanic patients age 65 and older had a higher readmission rate compared with patients of other race/ethnicity and age groups (both 17.8 percent).
- Male patients had higher readmission rates compared with female patients (16.5 percent and 15.5 percent, respectively).
- Frequently hospitalized patients, defined as those with four or more hospitalizations within 12 months, accounted for 6 percent of hospitalized patients and more than half (51 percent) of all readmissions, with a readmission rate of 44.3 percent. ■

## All-Payer Readmissions by Patient Age Group

SFY 2023

Readmission rates increase as age increases. Patients age 65 and older made up a disproportionate share of readmissions and had readmission rates above the statewide average.



Note: The size of the squares is proportional to the number of readmissions.

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 2022 to June 2023.

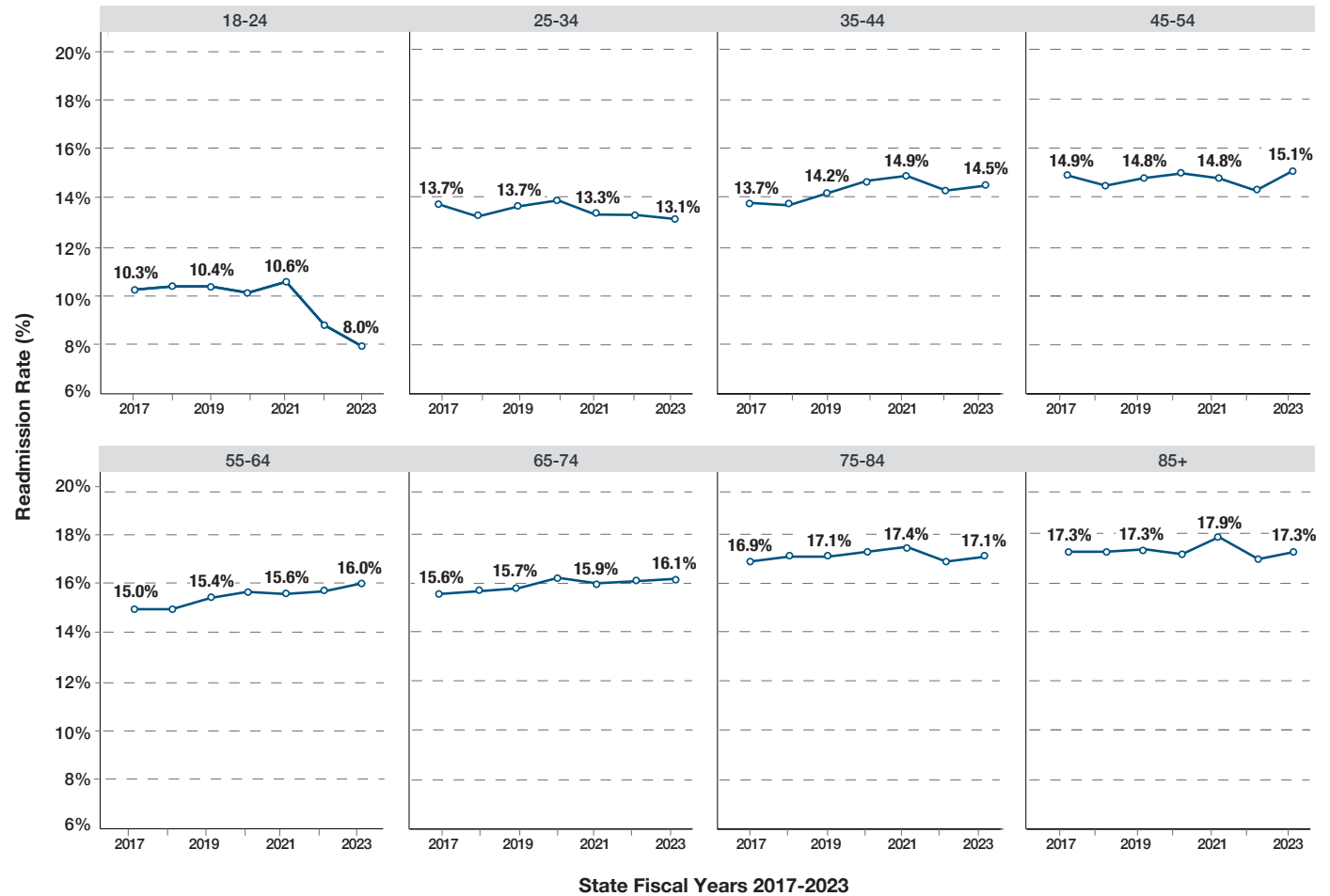
# Annual Trends in All-Payer Readmissions by Patient Age Group

SFY 2017-2023

The trend in readmission rate varies by patient age group.

Readmission rates for patients age 55 and older have increased over time.

From 2021 to 2023, readmission rates declined for patients ages 18-24.



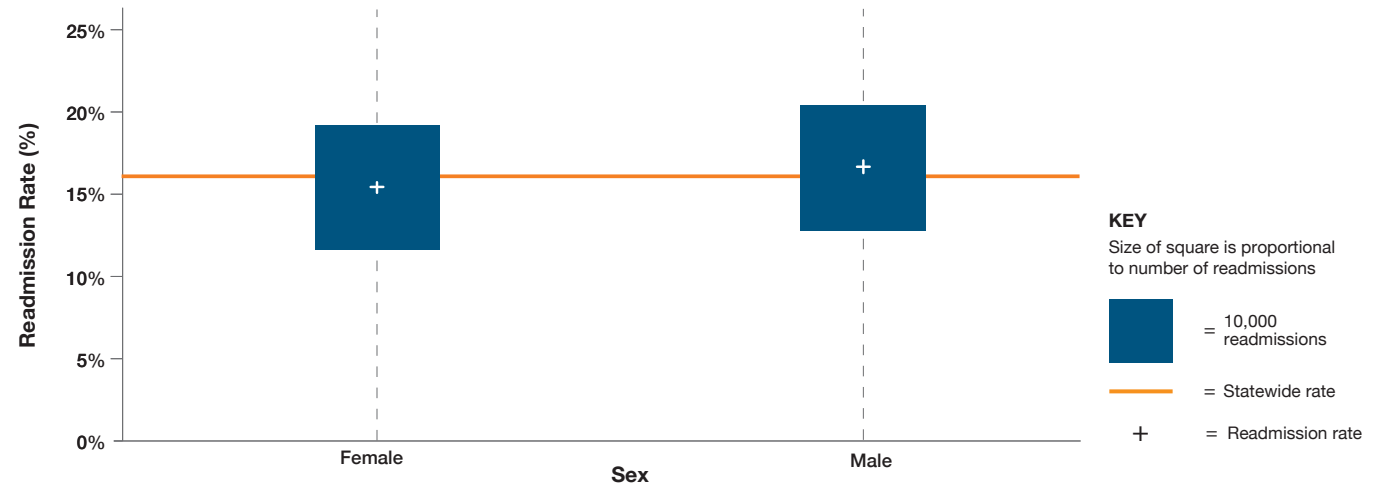
Note: Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2016 to June 2023.

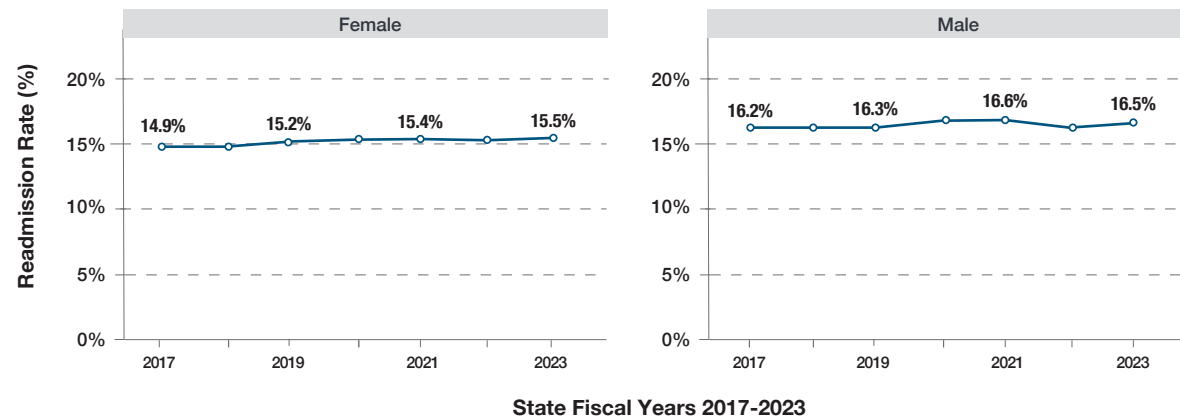
## All-Payer Readmissions by Patient Sex SFY 2023

In 2023, male patients had a higher readmission rate than female patients (16.5% vs. 15.5%, respectively). Readmission rates for male and female patients, including the difference in male and female readmission rates, have been consistent over time.

### SFY 2023



### Seven-Year Trend



Note: The size of the squares in the top figure is proportional to the number of readmissions.

Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

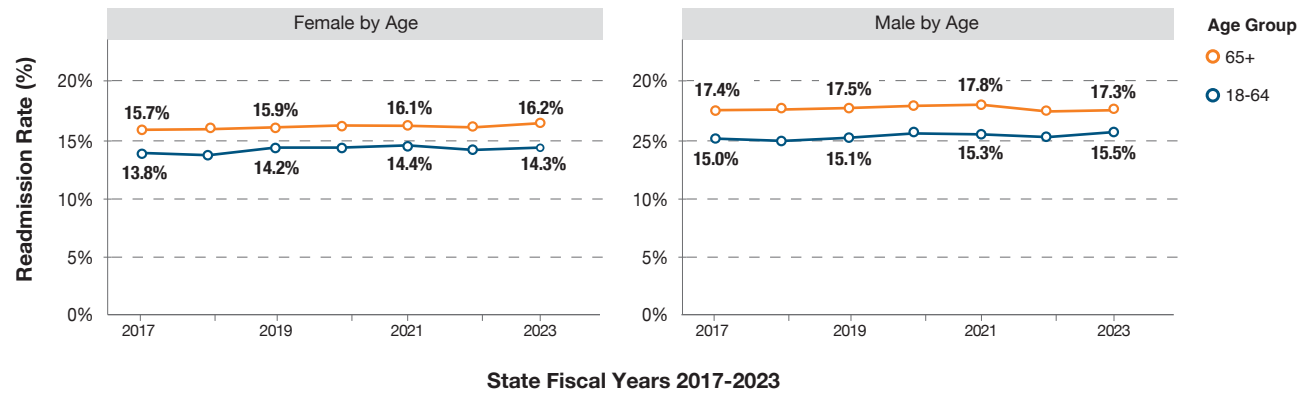
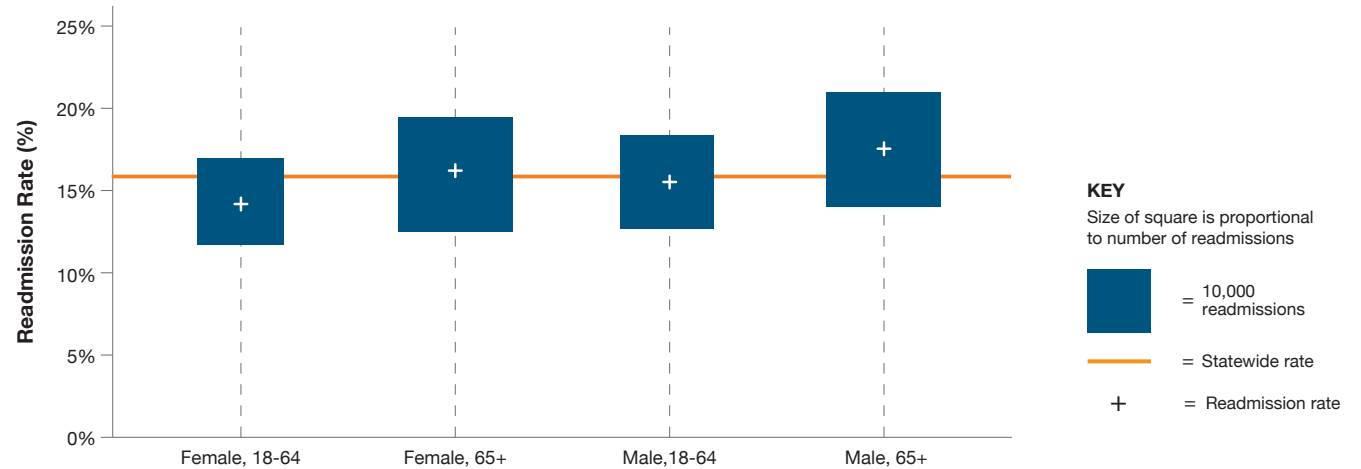
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2016 to June 2023.

# Statewide Readmissions

In 2023, male patients age 65 and older had the highest readmission rate compared with any other group (17.3%). Female patients ages 18-64 had the lowest readmission rate, at 14.3%.

## All-Payer Readmissions by Patient Sex and Age Group

SFY 2023



Note: The size of the squares is proportional to the number of readmissions.

Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

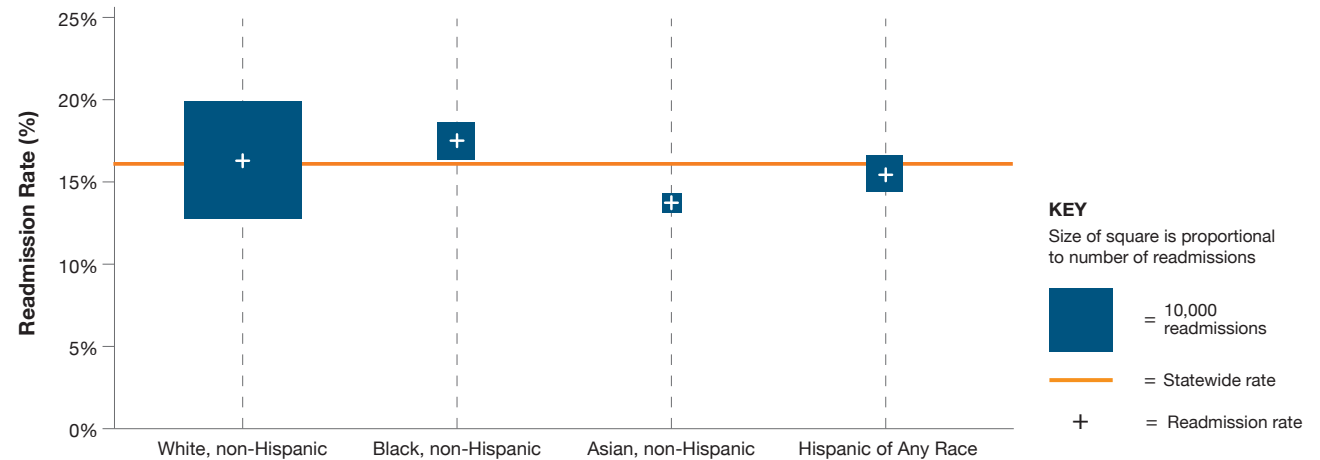
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2016 to June 2023.



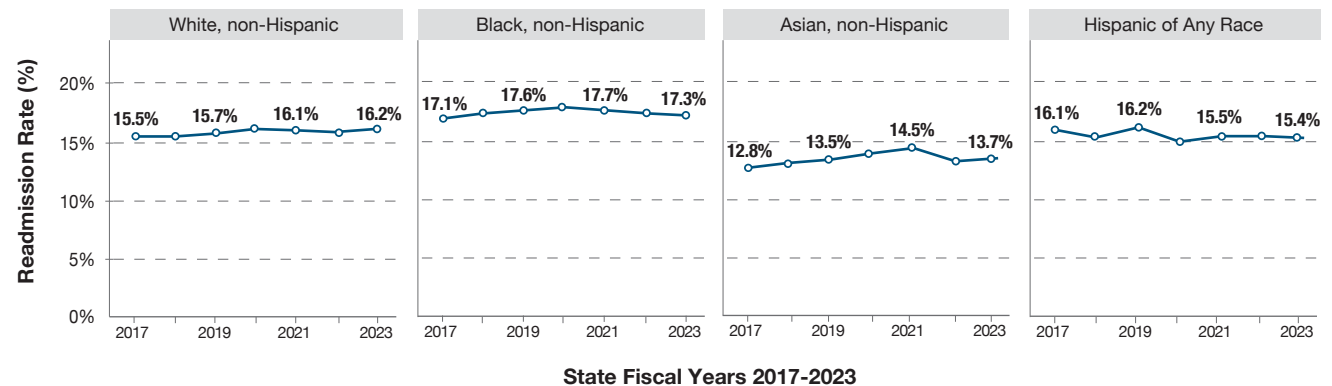
## All-Payer Readmissions by Patient Race/Ethnicity SFY 2023

In 2023, non-Hispanic Black patients had the highest readmission rate among all racial and ethnic groups, at 17.3%. Non-Hispanic Asian patients had the lowest readmission rate, at 13.7%. Readmission rates by patient race/ethnicity have remained consistent over time.

### SFY 2023



### Seven-Year Trend



Note: The size of the squares is proportional to the number of readmissions.

Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. Other/multiple races, non-Hispanic, and Missing categories were not included due to small number of discharges. See [technical appendix](#) for more information.

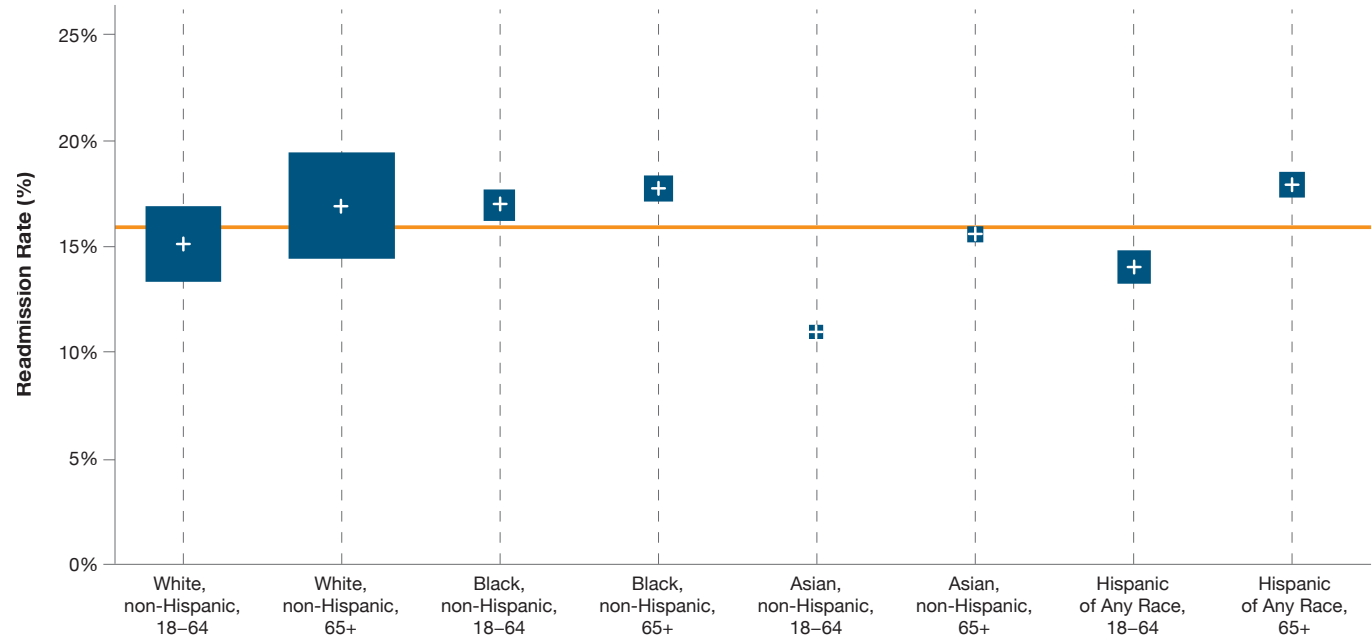
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2016 to June 2023.

## All-Payer Readmissions by Patient Race/Ethnicity and Age

SFY 2023

Non-Hispanic Black and Hispanic patients age 65 and older had the highest readmission rates of any group, at 17.8% each.

While Asian patients had among the lowest readmission rates, Asian patients had the largest difference in readmission rates between the 18-64 and 65+ groups (10.9% and 15.8%, respectively).



**KEY**  
Size of square is proportional to number of readmissions

- = 10,000 readmissions
- = Statewide rate
- + = Readmission rate

Note: The size of the squares is proportional to the number of readmissions.

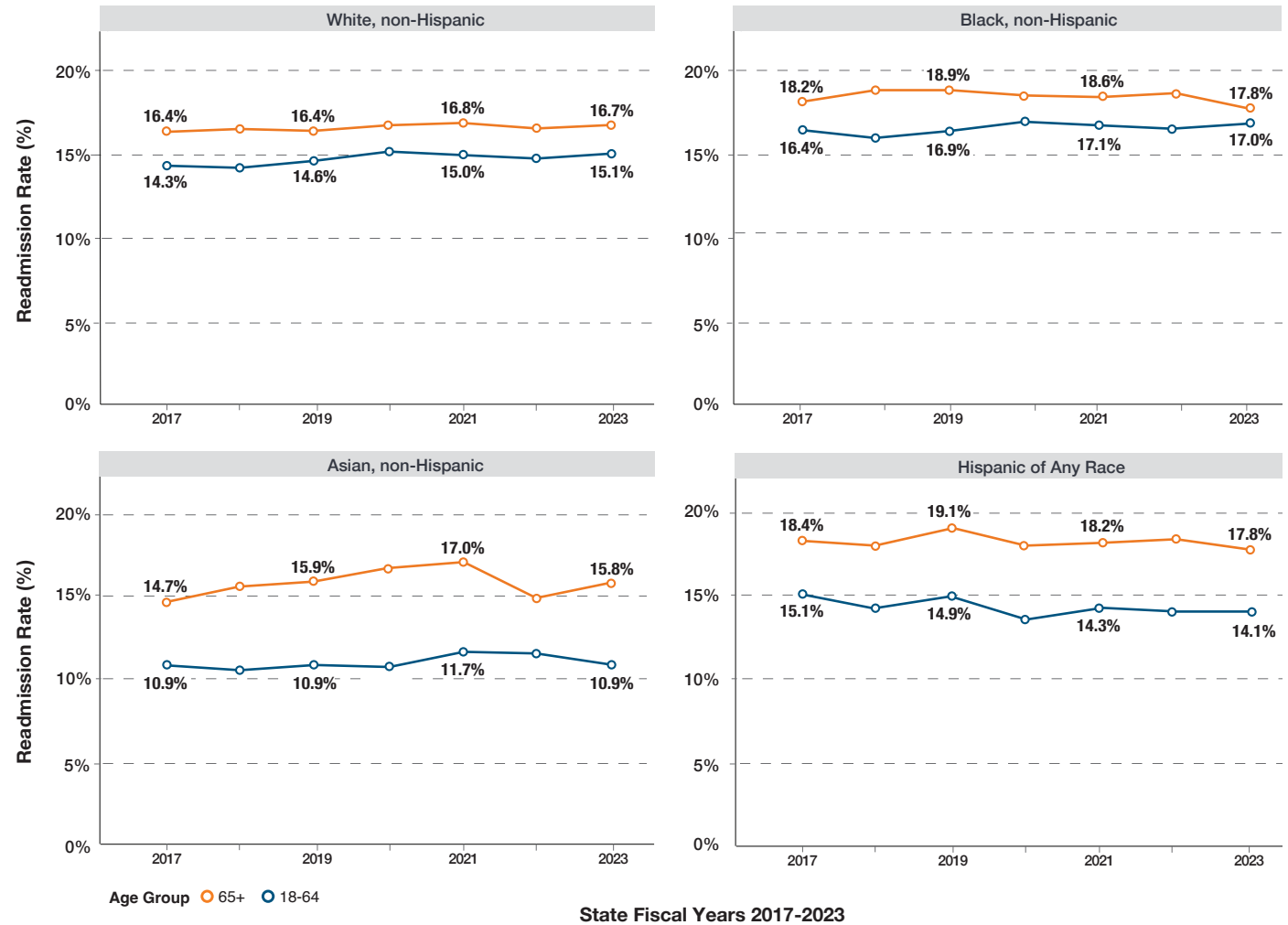
Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. Other/multiple races, non-Hispanic, and Missing categories were not included due to small number of discharges. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2022 to June 2023.

# Annual Trends in All-Payer Readmissions by Patient Race/Ethnicity and Age

SFY 2023

Readmission rates for patients ages 18-64 for each racial and ethnic group have remained consistent over time.



Note: Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. Other/multiple races, non-Hispanic, and Missing categories were not included due to small number of discharges. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2016 to June 2023.

## All-Payer Readmissions by Payer Type

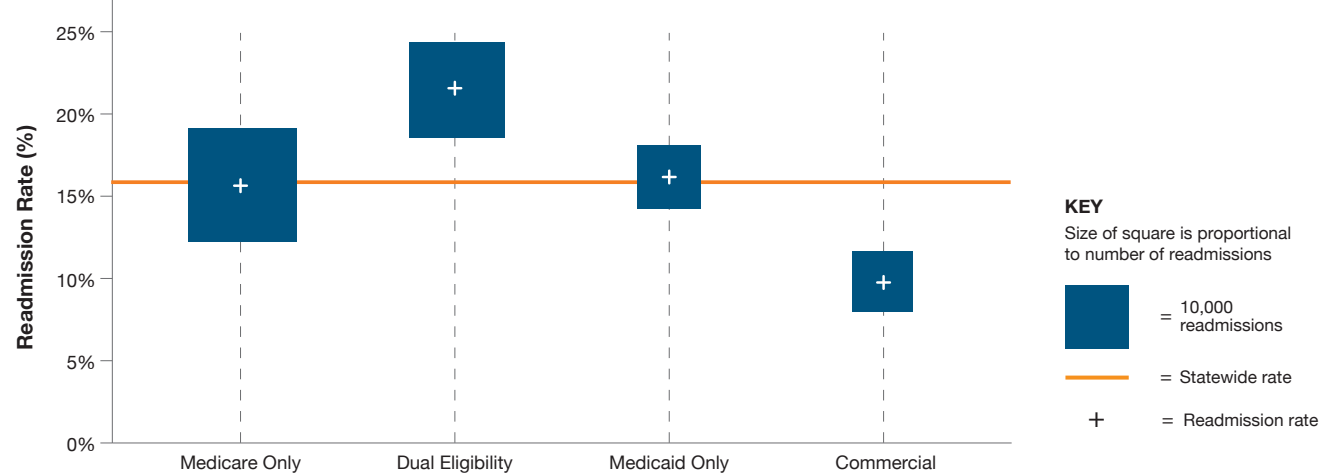
SFY 2023

Dually eligible patients, or patients who are enrolled in both Medicare and Medicaid, had the highest rate of readmission (21.7%), followed by patients with Medicaid only and Medicare only (16.4% and 15.8%, respectively).

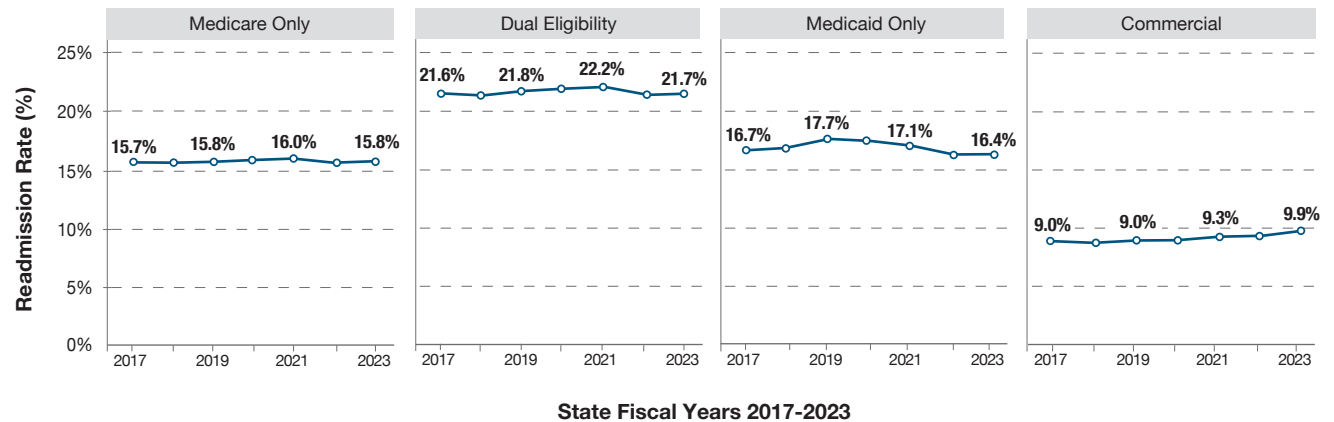
Commercially insured patients had the lowest readmission rate (9.9%), but the readmission rate for this group has increased over the past several years.

Medicare patients accounted for the most readmissions by volume of any payer group (59%) regardless of dual eligibility (data not shown).

### SFY 2023



### Seven-Year Trend



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 the small number of discharges.

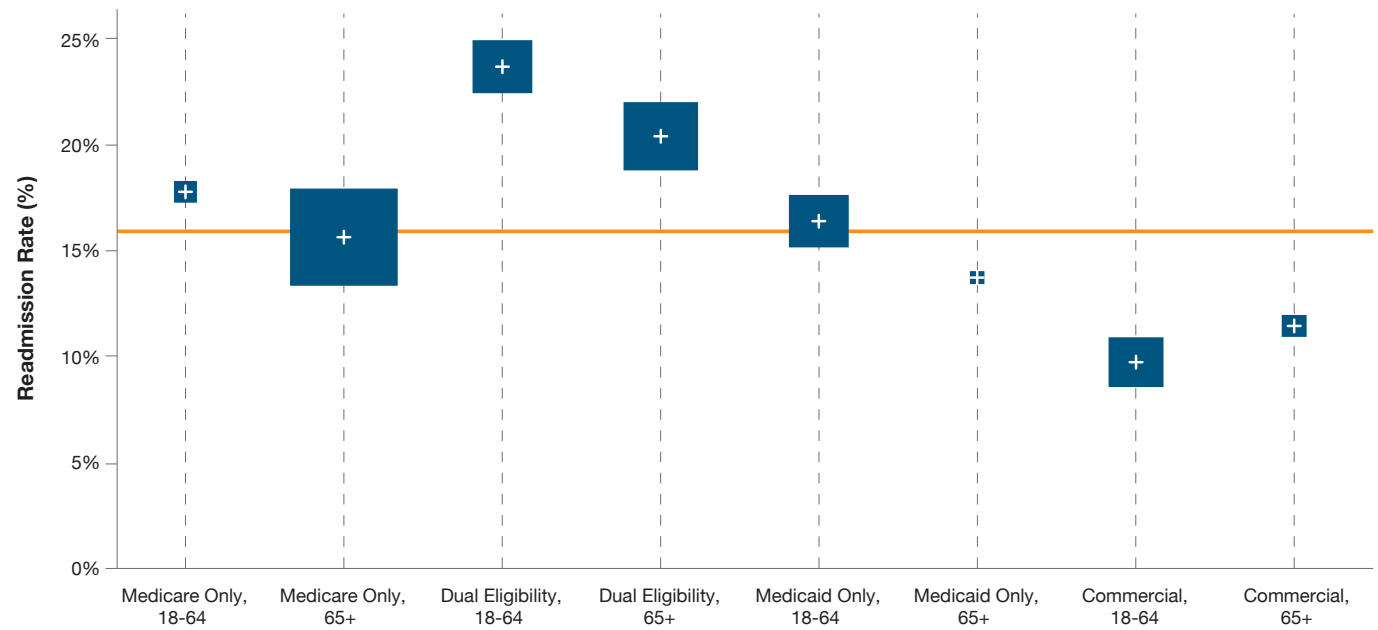
Due to technical changes, readmission rates may not match those from earlier reports. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2016 to June 2023.

## All-Payer Readmissions by Payer Type and Patient Age Group

SFY 2023

Dually eligible patients ages 18-64 had the highest rate of readmission of any group (23.6%), followed by dually eligible patients age 65 and older (20.6%).



**KEY**  
 Size of square is proportional to number of readmissions  
 = 10,000 readmissions  
 = Statewide rate  
 + = Readmission rate

Note: The size of the squares is proportional to the number of readmissions.

Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. Self-pay and other payer type categories were not included due to the small number of discharges. See [technical appendix](#) for more information.

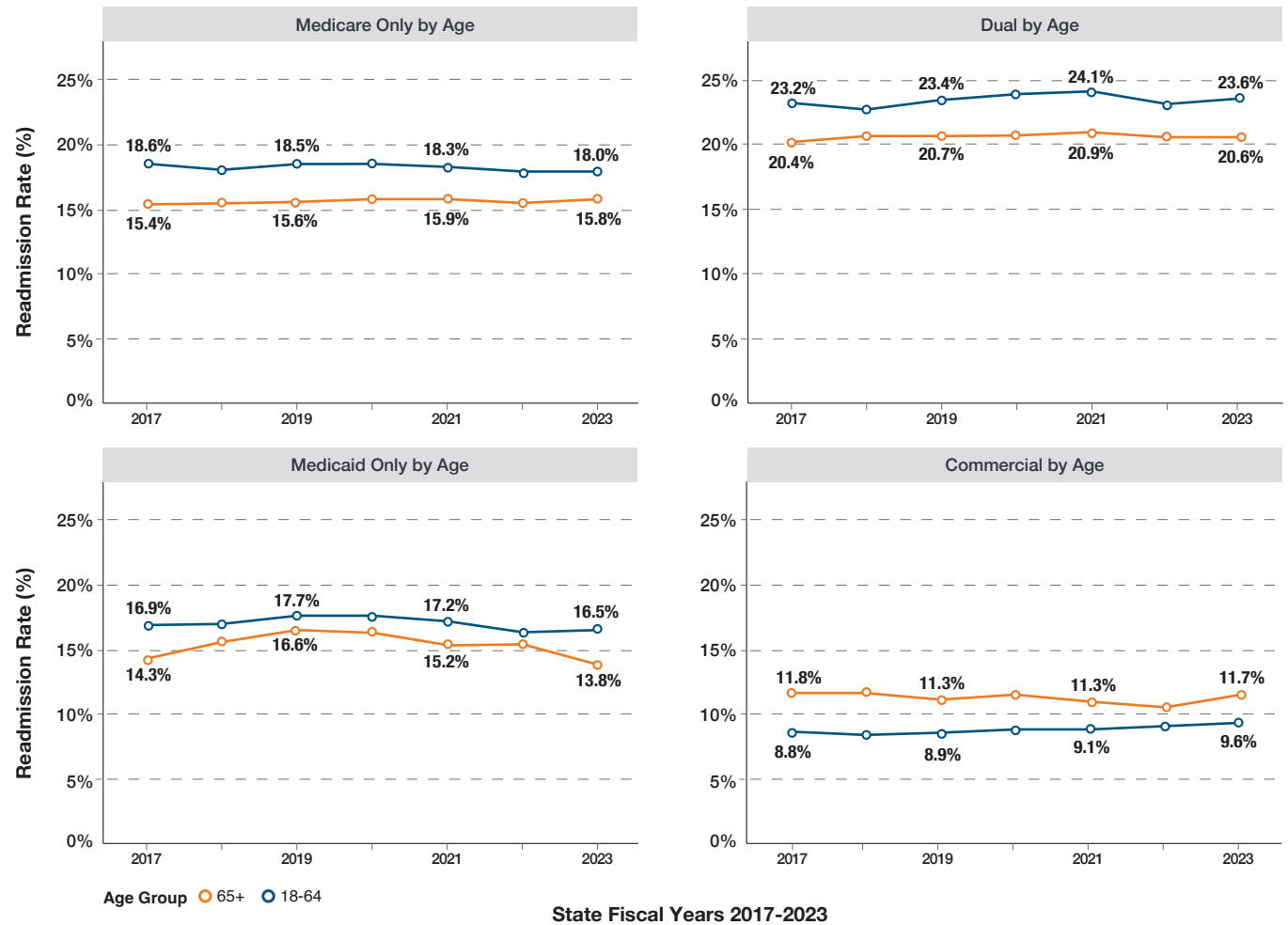
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2022 to June 2023.

# Annual Trends in All-Payer Readmissions by Payer Type and Patient Age Group

SFY 2017-2023

Patients ages 18-64 and Medicaid patients age 65 and older make up a smaller share of overall readmissions volume (data not shown), but readmission rates for these groups have decreased in the past few years.

Readmission rates for commercially insured patients ages 18-64 have increased whereas readmission rates for all other groups have been stable.



Note: Due to technical changes, readmission rates may not match those from earlier reports. Self-pay and other payer type categories were not included due to the small number of discharges. 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 2016 to June 2023.

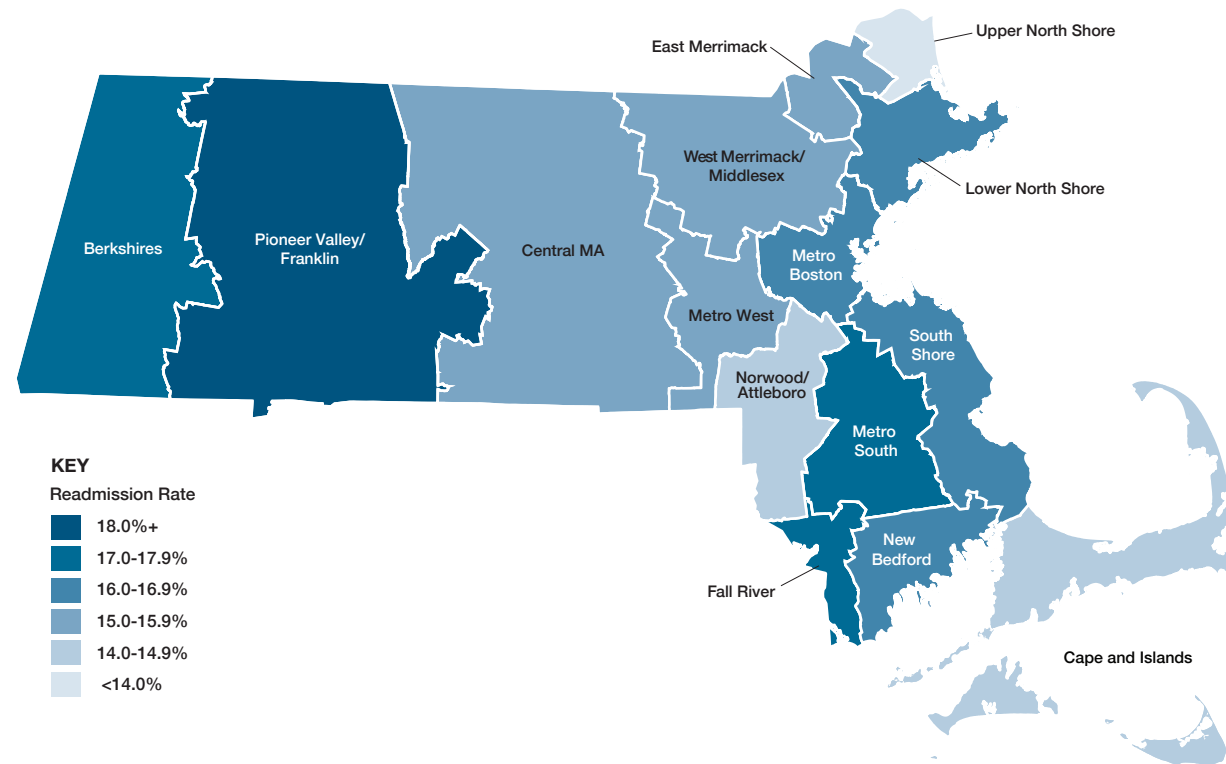
## Statewide Readmissions

Readmission rates were grouped into 15 geographic regions based on the ZIP Code corresponding to the patient's residence.

Patients living in the Pioneer Valley/Franklin region had the highest readmission rate at 18.5%. Patients living in the Upper North Shore had the lowest readmission rate at 13.9%.

## All-Payer Readmissions by Patient Region of Residence

SFY 2023



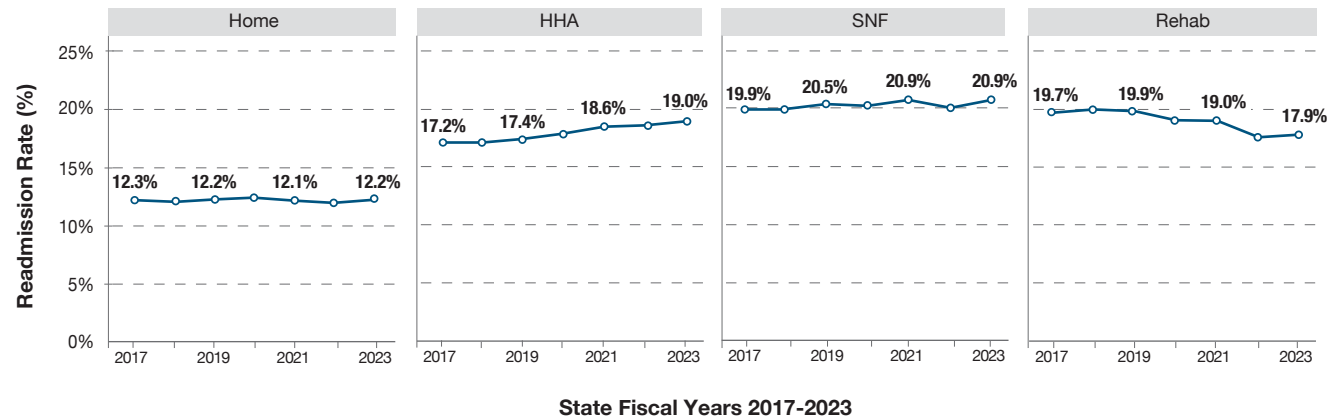
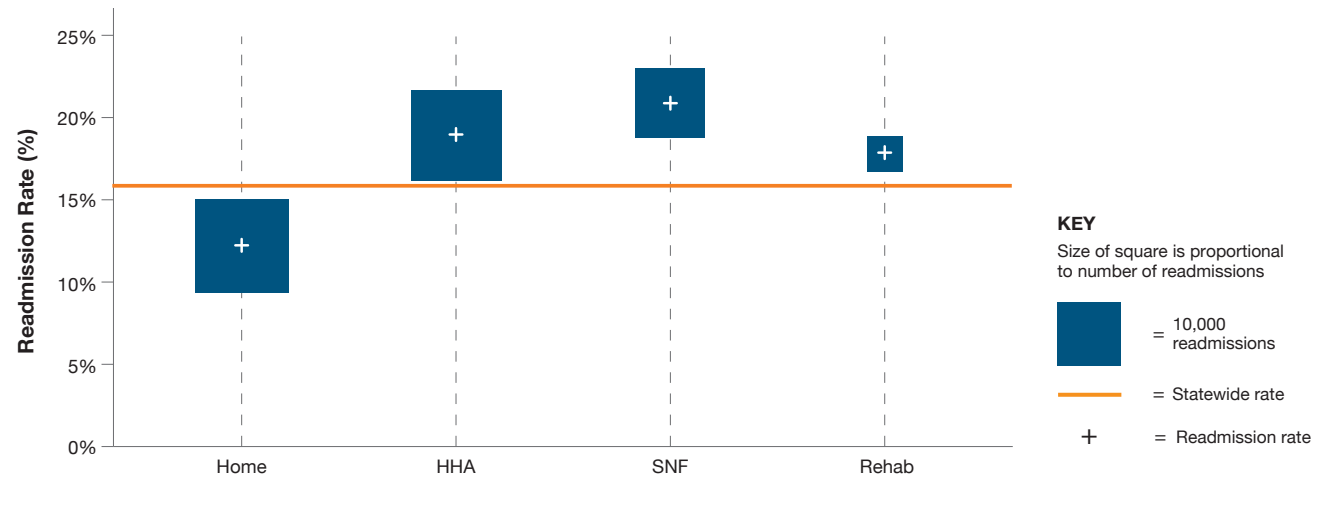
Note: Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.  
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2022 to June 2023.

## All-Payer Readmissions by Discharge Setting

SFY 2023

Patients discharged to home had the lowest readmission rate (12.2%) compared with patients discharged to home with home health agencies (HHA, 19.0%), to skilled nursing facilities (SNF, 20.9%), or to rehabilitation facilities (17.9%).

While the all-payer readmission rate for patients discharged to home has remained low over time, readmission rates for patients discharged to HHA and SNF have increased in recent years. Readmission rates for patients discharged to rehabilitation facilities have decreased.



Note: The size of the squares is proportional to the number of readmissions.

Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. Missing and other discharge setting categories were not included due to the small number of discharges. See [technical appendix](#) for more information.

SNF: skilled nursing facility; HHA: home health agency

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2016 to June 2023.



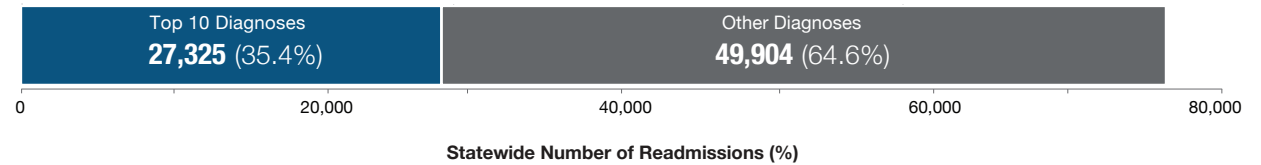
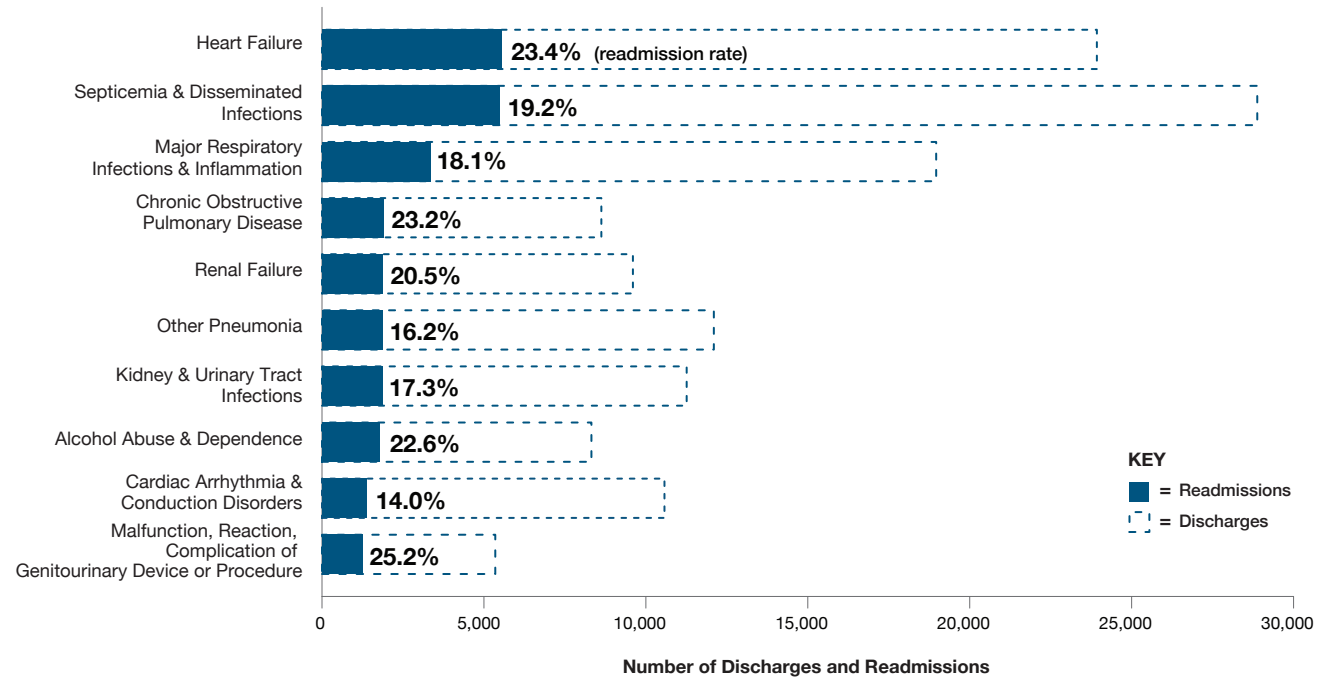
## Statewide Readmissions

Heart failure and septicemia led to the most readmissions, followed by major respiratory infections and inflammations.

The 10 discharge diagnoses leading to the highest numbers of readmissions accounted for one-third (35.4%) of all readmissions.

## Discharge Diagnoses with the Highest Number of Readmissions

SFY 2023



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.

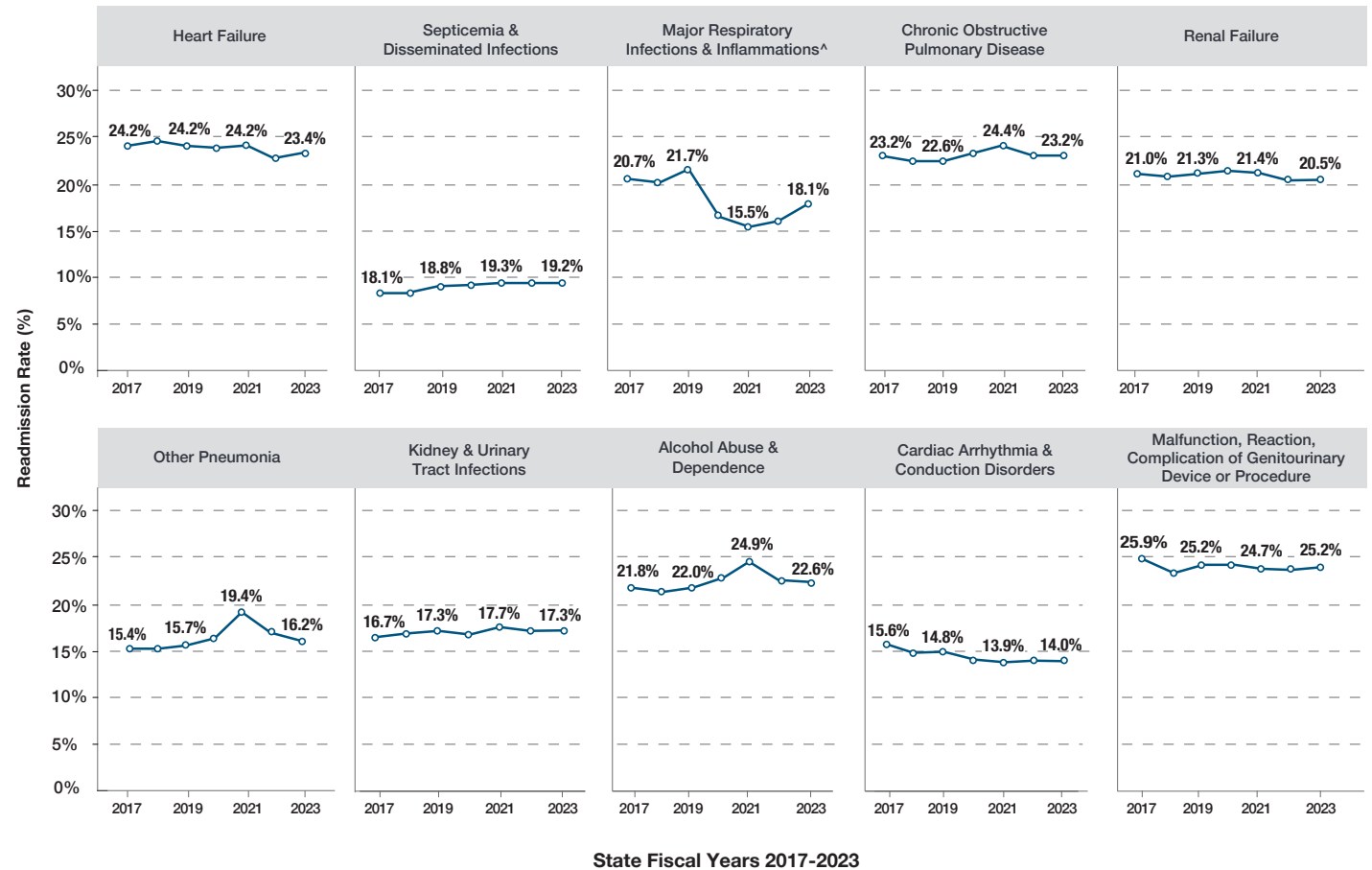
Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2022 to June 2023.

# Annual Trends in Discharge Diagnoses with the Highest Number of Readmissions

SFY 2017-2023

The readmission rate for patients with major respiratory infections has increased since 2021. The readmission rates for patients discharged with other pneumonia or alcohol-related diagnoses have declined since 2021.



^Contains COVID-19 discharges

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 2016 to June 2023.

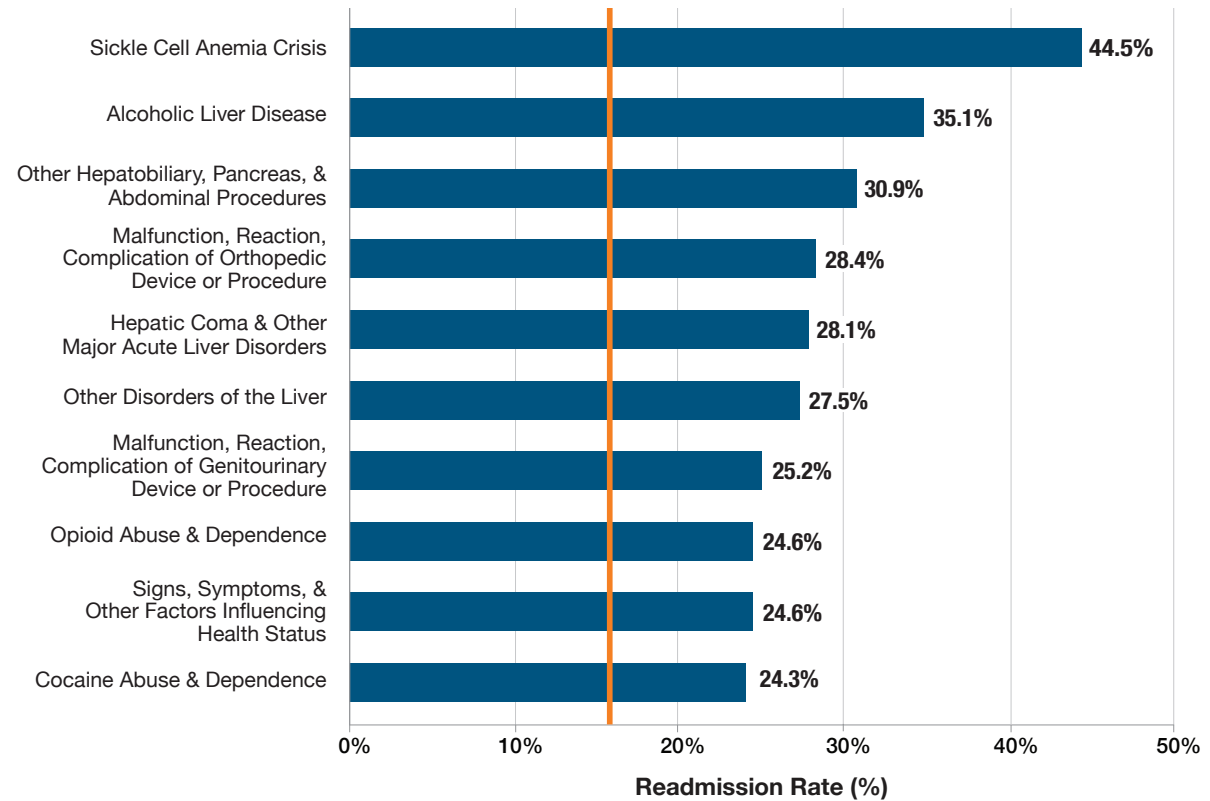
## Discharge Diagnoses with the Highest Readmission Rates

SFY 2023

While it is important to identify the clinical populations experiencing the most readmissions, it is also important to bring visibility to smaller groups of patients experiencing disproportionately high readmission rates.

The 10 discharge diagnoses with the highest rates of readmission were all well above the statewide average of 16.0%.

Nearly 45% of sickle cell hospitalizations were followed by a readmission within 30 days.



**KEY**  
— = Statewide rate

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.

Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

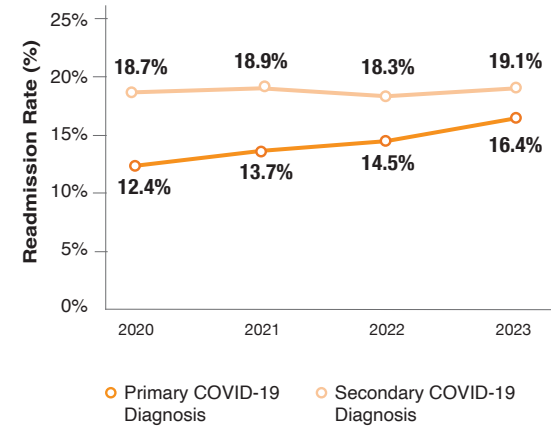
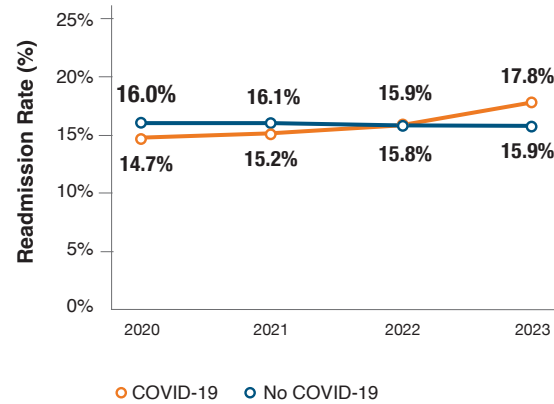
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2022 to June 2023.

# Annual Trends in All-Payer Discharges, Readmissions, and Readmission Rate by COVID-19 Status

SFY 2020-2023

In 2023, the readmission rate for discharges associated with any diagnosis of COVID-19 was higher than those not associated with COVID-19 (17.8% vs. 15.9%). This varies from the trend in readmission rates during the COVID-19 pandemic.

The readmission rate for discharges with a primary diagnosis of COVID-19 has been trending toward the readmission rate for discharges with a secondary diagnosis of COVID-19.



	2020		2021		2022		2023	
	Discharges	Readmissions	Discharges	Readmissions	Discharges	Readmissions	Discharges	Readmissions
Non-COVID-19	479,931	76,932	463,648	74,415	443,009	69,853	455,183	72,377
COVID-19	14,159	2,084	28,979	4,418	32,008	5,101	27,183	4,852
<i>Primary COVID-19 Diagnosis</i>	8,937	1,107	20,350	2,785	19,796	2,863	12,742	2,090
<i>Secondary COVID-19 Diagnosis</i>	5,222	977	8,629	1,633	12,212	2,238	14,441	2,762

Note: A discharge was classified as being associated with COVID-19 if it had a primary or secondary ICD-10-CM diagnosis indicating confirmed COVID-19. A discharge with a secondary diagnosis of COVID-19 was admitted to the hospital for a different primary reason other than COVID-19.

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 2022 to June 2023.

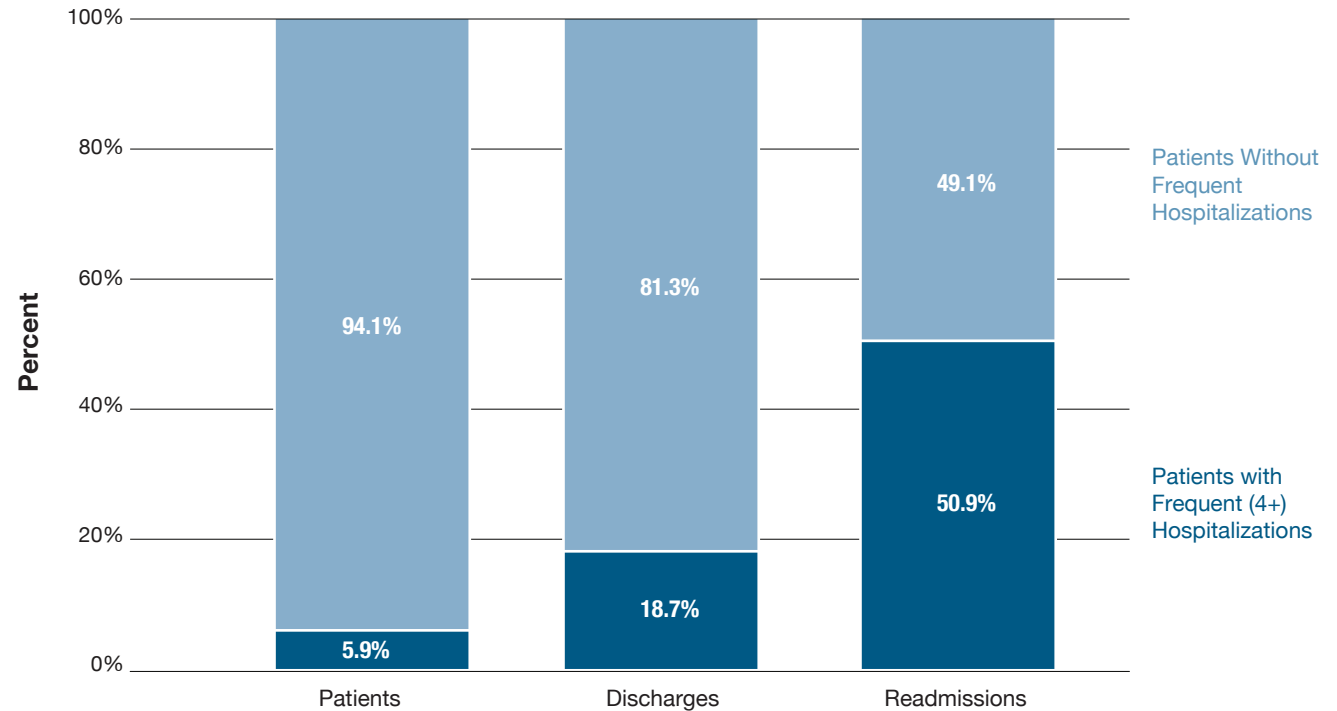
## Statewide Readmissions

Frequently hospitalized patients are defined as those with four or more hospitalizations within 12 months of their most recent discharge. This group of patients experiences a cycle of recurrent utilization.

Frequently hospitalized patients account for approximately 6% of hospitalized patients, 19% of all discharges, and 51% of all readmissions. The readmission rate for frequently hospitalized patients was 44.3%, compared with 9.6% for patients who were not frequently hospitalized.

## All-Payer Readmissions Among Frequently Hospitalized Patients

SFY 2023



Patients Without Frequent Hospitalizations	310,277	392,031	37,883
Patients with Frequent (4+) Hospitalizations	19,349	90,335	39,346
All Patients	329,626	482,366	77,229

Note: Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

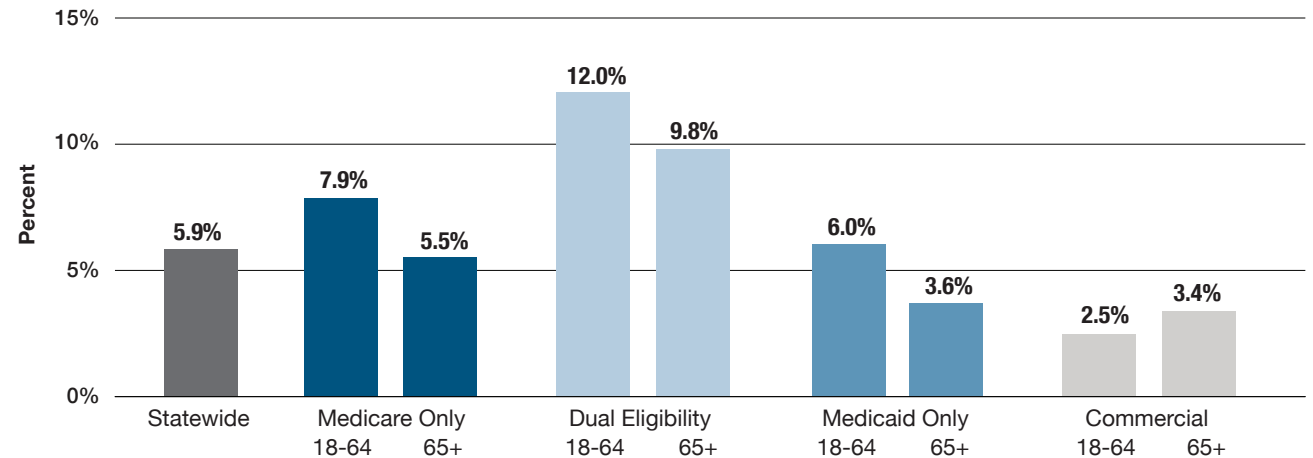
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2022 to June 2023.

## Percentage of Patients Frequently Hospitalized by Payer Type and Age Group

SFY 2023

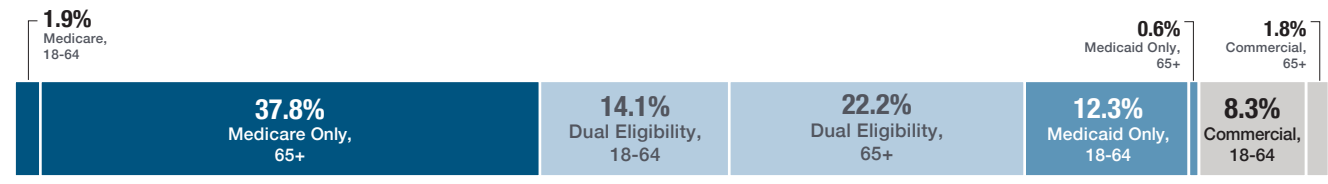
Among dually eligible patients, 12% of those ages 18-64 and 9.8% of those age 65 and older were frequently hospitalized in 2023.

Almost 90% of all frequently hospitalized patients were Medicare, Medicaid, or dually eligible beneficiaries. Only about one in 10 frequently hospitalized patients were primarily commercially insured.



<b>Frequently Hospitalized Patients</b>	19,349	360	7,309	2,729	4,294	2,373	109	1,613	355
<b>All Patients</b>	329,626	4,559	133,261	22,648	43,626	39,409	2,992	64,390	10,416

### Percentage 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.

Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

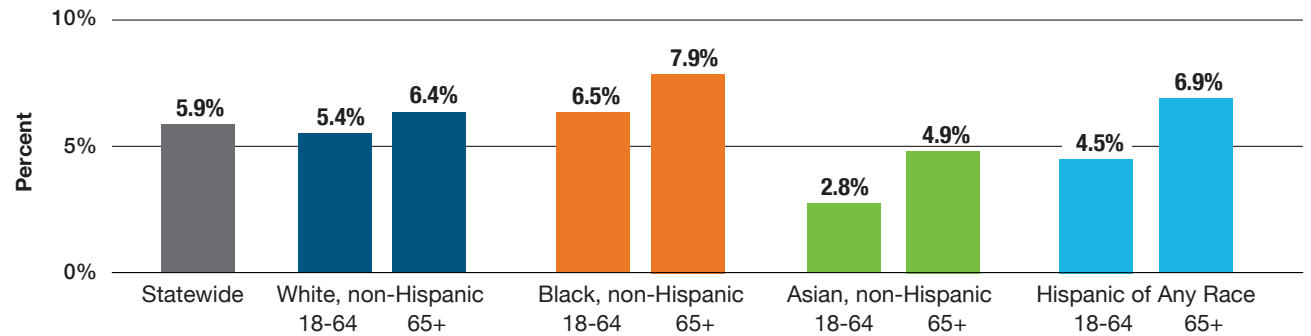
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2022 to June 2023.

# Percentage of Patients Frequently Hospitalized by Race/Ethnicity and Age Group

SFY 2023

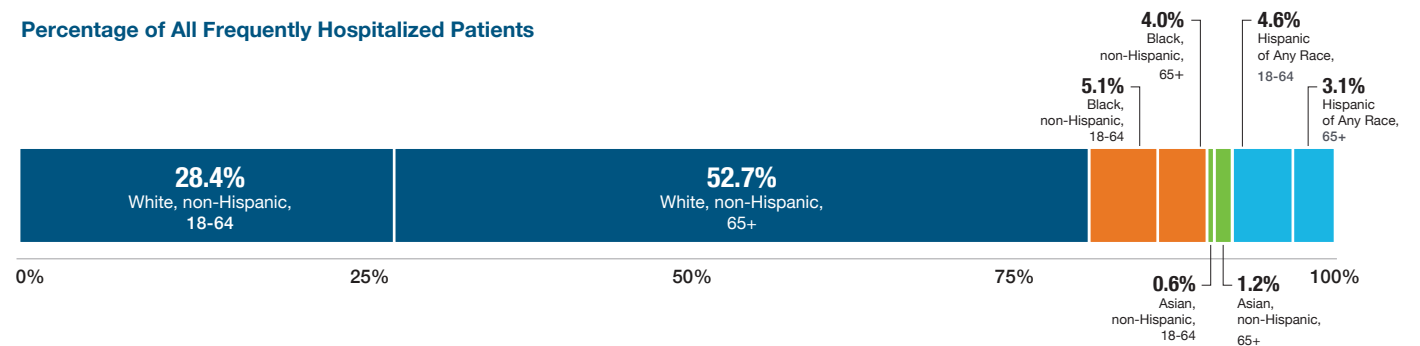
Frequent hospital utilization varies across race/ethnicity and age.

Specifically, 7.9% of non-Hispanic Black patients age 65 and older and 6.9% of Hispanic patients age 65 and older were frequently hospitalized.



<b>Frequently Hospitalized Patients</b>	19,349	5,503	10,188	985	772	114	231	889	593
<b>All Patients</b>	329,626	101,507	160,252	15,214	9,811	4,085	4,734	19,836	8,590

## Percentage of All Frequently Hospitalized Patients

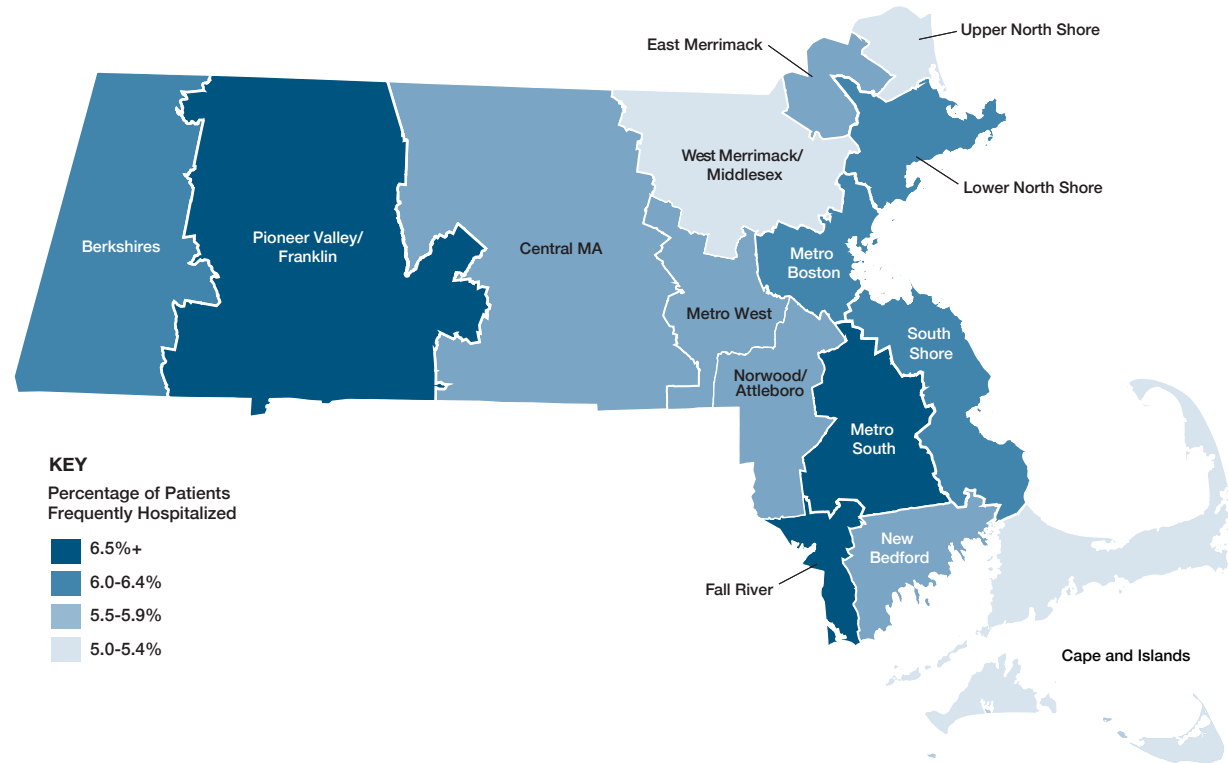


Note: Missing and Other/multiple races, non-Hispanic were not included due to small number of discharges. Percentages may not add up to 100% due to rounding. Analyses include eligible discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information. Data source: Massachusetts Hospital Inpatient Discharge Database, July 2022 to June 2023.

## Statewide Readmissions

The highest proportion of frequently hospitalized patients in 2023 were in the Pioneer Valley/Franklin, Fall River, and Metro South regions (7.0%, 6.7%, and 6.6%, respectively).

## Percentage of Patients Frequently Hospitalized by Patient Region SFY 2023



Note: 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 2022 to June 2023.



# All-Payer Readmissions by Hospital

This section contains analyses of observed readmission rates and risk-standardized readmission rates (RSRRs) for individual hospitals and groups of hospitals. RSRRs control for differences across hospitals that may influence readmission rates. Based on recommendations of an expert committee, CHIA developed an enhanced risk-adjustment methodology to account for social risk factors.<sup>6</sup> CHIA's risk-adjustment model adjusts for patient age, patient case mix, and hospital service mix as well as community- and patient-level social risk factors. Patient-level risk factors include sex, race/ethnicity, homeless status, and dual eligibility for both Medicaid and Medicare; community-level risk factors include indicators of poverty, food insecurity, housing instability, education, and employment. CHIA also expanded the list of behavioral health comorbidities beyond those already included

in the original risk-adjustment model. By adjusting for differences in the patient populations served at each acute care hospital, the enhanced RSRRs allow for a more equitable comparison of hospital performance. For more details about the enhanced RSRRs, see the [technical appendix](#).

## Key Findings:

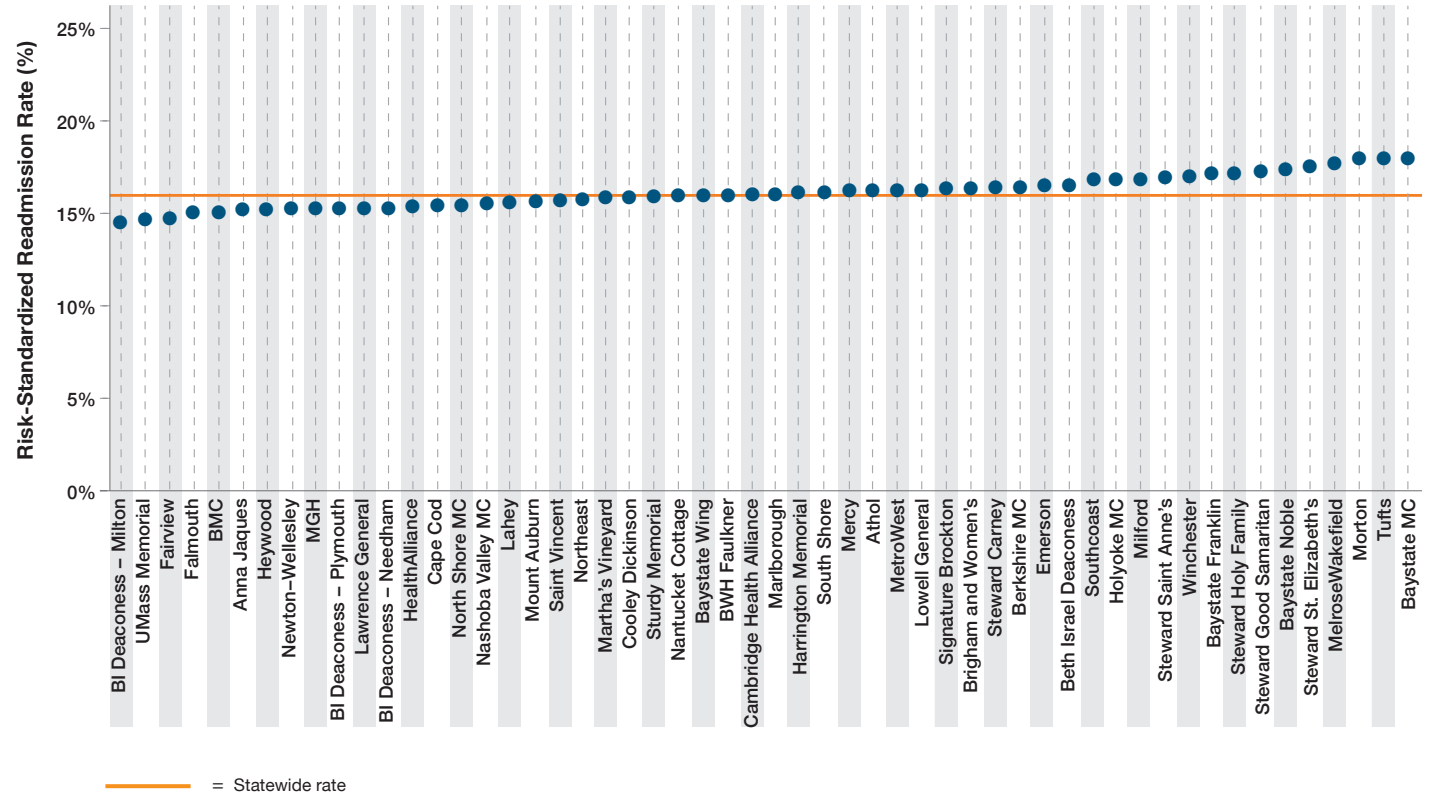
- Risk-standardized readmission rates (RSRR) for all hospitals ranged from 14.5 percent to 18.0 percent in 2023.
- The difference between RSRR for community hospitals and Academic Medical Centers was small.
- The system with the lowest RSRR was UMass Memorial Health Care (14.9 percent), and the highest RSRR was Baystate Health (17.8 percent). ■

## All-Payer Readmissions by Hospital

Observed hospital readmission rates ranged from 11.7% to 20.1% in 2023 (data not shown). After adjusting for patient case mix, hospital service mix, and patient and community social risk factors, RSRRs ranged from a low of 14.1% at Beth Israel Deaconess-Milton to a high of 19.1% at Baystate Medical Center.

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

SFY 2023



Note: The risk-standardized readmission rates (RSRRs) shown in this figure account for patient case mix and hospital service mix as well as patient-level and community-level social risk factors. This figure excludes specialty hospitals (New England Baptist and the Massachusetts Eye and Ear Infirmary). Steward Health Care hospitals either closed or merged with other health systems in October 2024 and therefore are still reported here with the Steward Health Care system.

Analyses include eligible discharges for adults residing in New England and New York and with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

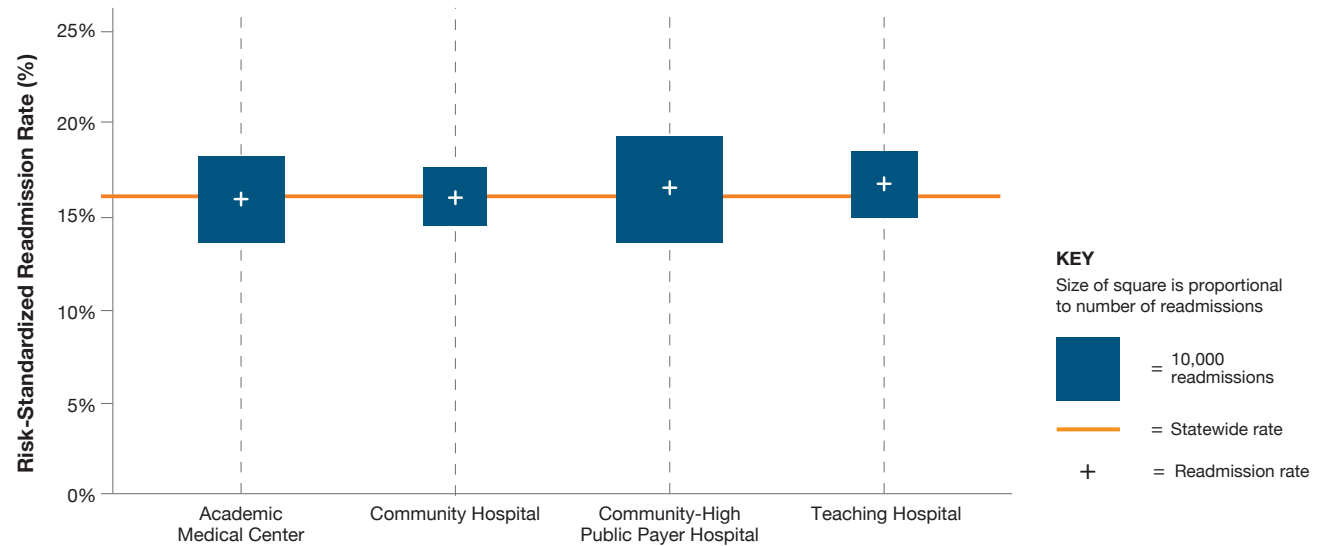
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2022 to June 2023.

## All-Payer Readmissions by Hospital

Variation in risk-standardized readmission rates by hospital type was small, from a low of 15.8% for Academic Medical Centers to a high of 16.7% for Teaching Hospitals.

# All-Payer Risk-Standardized Readmission Rates by Hospital Type

SFY 2023



Note: The size of the squares is proportional to the number of readmissions.

The risk-standardized readmission rates (RSRRs) shown in this figure account for patient case mix and hospital service mix as well as patient-level and community-level social risk factors.

Analyses include eligible discharges for adults residing in New England and New York and with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information.

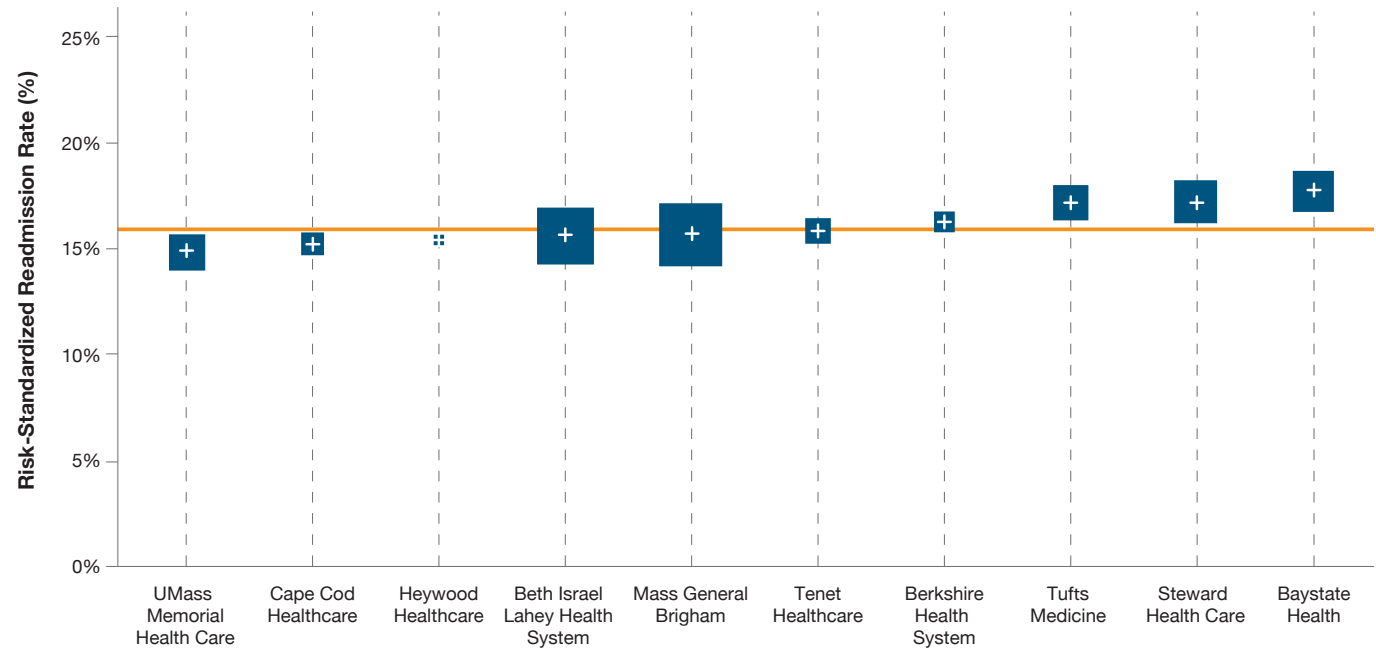
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2022 to June 2023.

## All-Payer Readmissions by Hospital

RSRRs varied by hospital system, from a low of 14.9% for UMass Memorial Healthcare to a high of 17.8% for Baystate Health.


## All-Payer Risk-Standardized Readmission Rates by Hospital System


SFY 2023



### KEY

Size of square is proportional to number of readmissions

 = 10,000 readmissions

 = Statewide rate

 = Readmission rate

Note: The risk-standardized readmission rates (RSRRs) shown in this figure account for patient case mix and hospital service mix as well as patient-level and community-level social risk factors.

Analyses include eligible discharges for adults residing in New England and New York and with any payer, excluding discharges for obstetric or primary psychiatric care. See [technical appendix](#) for more information. Steward Health Care hospitals either closed or merged with other health systems in October 2024 and therefore are still reported here with the Steward Health Care system.

Data source: Massachusetts Hospital Inpatient Discharge Database, July 2022 to June 2023.

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

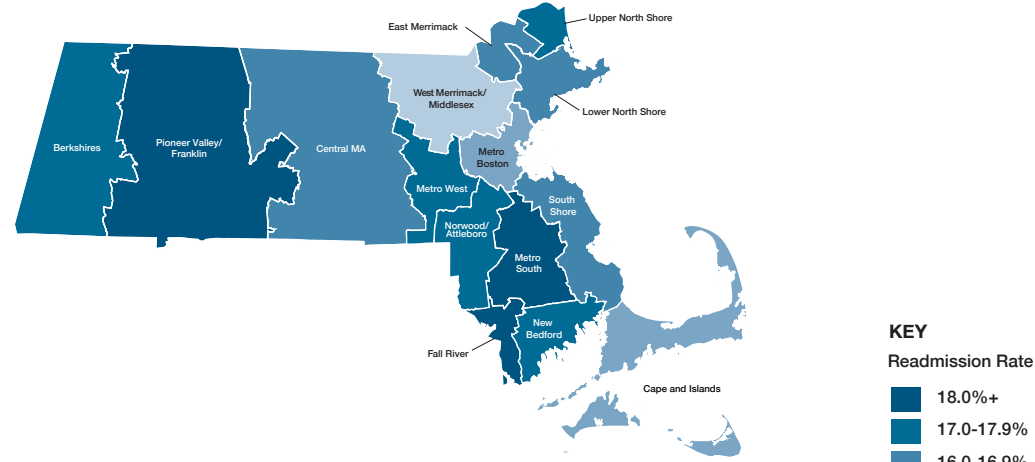
SFY 2023

The top figure shows observed readmission rates by region, and the bottom figure shows variation in risk-standardized readmission rates by region.

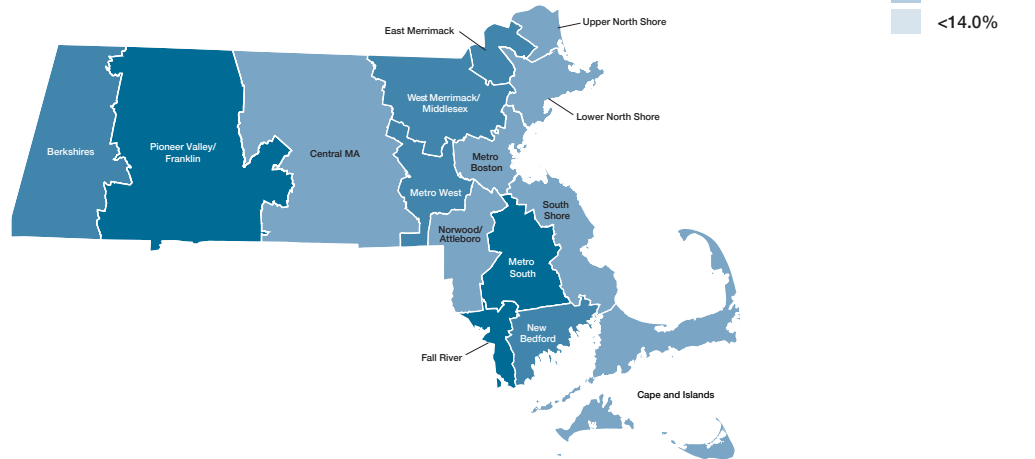
The observed rates varied from a low of 14.2% in the West Merrimack/Middlesex region to a high of 18.5% in the Pioneer Valley/Franklin region.

The geographic variation in rates narrowed after adjusting for risk, ranging from 15.2% in the Upper North Shore region to 17.4% in the Pioneer Valley/Franklin region.

### Observed Readmission Rates



### Risk-Standardized Readmission Rates



Note: The risk-standardized readmission rates (RSRRs) shown in this figure account for patient case mix and hospital service mix as well as patient-level and community-level social risk factors. Analyses include eligible discharges for adults residing in New England and New York and 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 2022 to June 2023.

## 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.<sup>7</sup> This year's methodology is adapted from the 2024 CMS readmission measure specification (version 13.0), which uses the V24 CMS-HCC crosswalk and updates the planned readmissions algorithm.<sup>8</sup> Some discontinuity in trends may be attributable to the change in diagnostic coding from ICD-9-CM to ICD-10-CM.

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 as well as patient-level and community level social risk factors.

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

1 Count of eligible discharges\*

2 Count of eligible readmissions\*\* within 30 days

3 Observed Readmission Rate =  $\frac{\text{\# of eligible readmissions}}{\text{\# of eligible discharges}} * 100$

4 **Enhanced Risk-Standardized Readmission Rate =**

Observed rate adjusted for:

- Patient age
- Patient comorbidities
- Discharge condition
- Patient race
- Patient gender
- Patient dual-eligibility status
- Patient homeless status
- Median family income<sup>^</sup>
- Median home value<sup>^</sup>
- Percent of civilian labor force age 16+ that is unemployed<sup>^</sup>
- Percent of single parents in family households with people less than 18 years old<sup>^</sup>
- Percent of population age 25+ with at least a high school education<sup>^</sup>
- Percent of white-collar workers of all civilian workers age 16+<sup>^</sup>
- Percent of households with cash public assistance or SNAP<sup>^</sup>
- Percent of population living in same house as one year ago<sup>^</sup>

\*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. Eleven 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.

<sup>^</sup>Sourced from the Census and American Community Survey.

# Notes

- 1** Information on the Massachusetts Hospital Inpatient Discharge Database is available at <https://www.chiamass.gov/case-mix-data>. 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
- 2** 2023 Scorecard on State Health System Performance, The Commonwealth Fund, <https://www.commonwealthfund.org/publications/scorecard/2023/jun/2023-scorecard-state-health-system-performance>.  
Overall star rating for hospitals, <https://www.medicare.gov/care-compare/resources/hospital/overall-star-rating>.
- 3** The Hospital Value-Based Purchasing (VBP) Program, <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-BasedPrograms/HVBP/Hospital-Value-Based-Purchasing>.
- 4** Medicare Fines for High Hospital Readmissions Drop, but Nearly 2,300 Facilities Are Still Penalized, <https://khn.org/news/article/medicare-fineshospital-readmissions-drop-covid/>.
- 5** See note 2.
- 6** See note 2.
- 7** See note 4.
- 8** See note 3.





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