CENTER FOR HEALTH INFORMATION AND ANALYSIS

BEHAVIORAL HEALTH & READMISSIONS

IN MASSACHUSETTS ACUTE CARE HOSPITALS SFY 2017

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CHIA.

Table of Contents

Executive Summary

Until recently, hospital readmission reduction efforts have focused primarily on medical or surgical conditions, with less emphasis on patients' behavioral health conditions.[1,2] Given the high hospital utilization and cost associated with behavioral health comorbidity,[3,4] there is a growing body of evidence that patients with comorbid behavioral health conditions are at higher than average risk of readmissions[5,6] and a growing recognition in the health care community of the importance of addressing behavioral health as a component of readmission reduction interventions.[7,8] Efforts to reduce avoidable readmissions may be improved by identifying comorbid behavioral health conditions as contributors to readmission risk.

This report provides an updated analysis of the prevalence and readmission patterns for individuals with comorbid behavioral health conditions discharged from Massachusetts acute care hospitals. Using CHIA's hospital inpatient discharge data, this report examines both the prevalence of behavioral health comorbidity and readmission rates of adult patients with comorbid behavioral health conditions hospitalized between July 1, 2016 and June 30, 2017. This report builds on prior findings and includes new analyses to provide a deeper look into the prevalence of a variety of subtypes of behavioral health conditions and to examine the associations between behavioral health comorbidity and inpatient hospital length of stay.

The report finds important differences in the prevalence of behavioral health comorbidity by payer type, age, and region, and differences in readmission rates with and without comorbid behavioral health conditions. Among patients in acute care hospitals, Medicaid adults were 47% more likely to have any behavioral health comorbidity than Medicare adults and 55% more likely to have any behavioral health comorbidity than commercially insured adults. Relative to hospitalized patients aged 75 or older, patients aged 18-44 had nearly twice the prevalence of comorbid behavioral health conditions. Patients with comorbid behavioral health conditions had inpatient stays that were on average 1.3 days longer and had readmission

rates that were 95% higher than those without a comorbid behavioral health condition. Hospitalized patients with comorbid co-occurring mental health conditions and substance use disorders had the highest readmission rates among all patients with behavioral health conditions. Among the most common discharge diagnoses that result in readmissions, the presence of behavioral health comorbidity was associated with a higher readmission rate following discharge.

This information will assist stakeholders in better identifying opportunities to improve care for individuals with behavioral health comorbidities, with the goal of providing better care and reducing avoidable readmissions.

For questions regarding this report, please contact Christine Loveridge, Senior Research Analyst, at christine.loveridge@massmail.state.ma.us. ■

Key Findings

- Forty-five percent (45%) of adults hospitalized in Massachusetts acute care hospitals had at least one comorbid behavioral health condition in State Fiscal Year (SFY) 2017 (July 1, 2016–June 30, 2017).
- Sixty-three percent (63%) of hospitalized adult Medicaid patients had a comorbid behavioral health condition.
- Readmission rates for patients with any behavioral health comorbidity were nearly double the readmission rates for patients without a comorbid behavioral health condition (21.1% vs. 10.8%).
- Hospitalized Medicaid patients with comorbid co-occurring mental health and substance use conditions had readmission rates three and a half times higher than those with no behavioral health comorbidity (27.0% vs. 7.9%).
- Patients aged 18-44 with comorbid behavioral health conditions had readmission rates three times higher than those with no behavioral health comorbidity (18.6% vs. 5.7%).
- Among patients discharged with heart failure—the most commonly targeted medical diagnosis for readmission reduction efforts[9]—the presence of comorbid behavioral health conditions was associated with a readmission rate that was 55% higher than for heart failure patients with no behavioral health comorbidity (30.0% vs. 19.4%).
- The comorbid mental health conditions with the highest prevalence were mood disorders and anxiety disorders, at 26% each. The comorbid substance use disorders with the highest prevalence were alcohol- and opioid-related disorders, at 9% and 6%, respectively.
- Patients with any behavioral health comorbidity had inpatient stays that were, on average, 1.3 days (31%) longer than patients with no behavioral health comorbidity (5.5 days vs.4.2 days). ■

Introduction

Reducing avoidable readmissions is at the center of numerous payment reform and delivery system transformation efforts. Until recently, hospital readmission reduction efforts have focused primarily on medical or surgical conditions, with less emphasis on patients' behavioral health conditions.[10,11] Given the high hospital utilization and cost associated with comorbid behavioral health conditions,[12,13] stakeholders share a growing awareness that the provision of behavioral health care is integral to any health system improvement program,[14,15] including readmission reduction.

Stakeholders also recognize that patients with comorbid behavioral health conditions have a higher than average risk of readmission,[16,17,18] therefore efforts to reduce avoidable readmissions may be improved by focusing on delivering transitional care services to patients with behavioral health comorbidities.

At the federal level, numerous payment delivery system reforms aim to reduce hospital readmission rates or improve care transitions to post-acute discharge settings, including bundled-payment initiatives, Pioneer Accountable Care Organizations (ACOs), the Independence at Home Demonstration, and the Community-based Care Transitions Program. The Hospital Readmissions Reduction Program (HRRP), which was established under the Affordable Care Act (ACA) in 2010 and came into effect in 2012, stipulated that the Centers for Medicare & Medicaid Services (CMS) levy financial penalties on hospitals with higher-than-expected 30-day readmission rates for patients with certain physical conditions, including heart failure, acute myocardial infarction, and pneumonia.[19] Since the program's announcement, readmissions rates for targeted conditions have fallen nationwide.[20,21] Previous research has indicated that behavioral health comorbidity is associated with higher rates of readmission among patients with conditions targeted by HRRP, suggesting that implementation of more comprehensive interventions or targeting higher risk individuals may improve health care quality, reduce costs of care, and reduce potential risk of penalties under HRRP.[22]

More recently, CMS issued discharge planning requirements in 2016 requiring specific identification of behavioral health needs, post-hospital care planning, linkage to behavioral health services, and follow-up services for all Medicare and Medicaid patients.[23]

Some states have developed policies or programs to emphasize the importance of improved behavioral health care for the purposes of reducing avoidable readmissions. In New York, for example, the New York State Office of Mental Health partnered with local hospitals and health care associations to develop the Behavioral Health Readmissions Quality Collaborative (RQC),[24] which is the first state-level effort to better understand and intervene to reduce behavioral health readmissions.

In Massachusetts, the Health Policy Commission's Community Hospital Acceleration, Revitalization and Transformation (CHART) Investment Program invested a total of $70 million in 30 community hospitals focused on reducing avoidable hospital utilization for patients at highest risk, including those with behavioral health, social, and medical needs.[25] Several CHART programs focused on improving care and reducing avoidable hospital utilization for highest-risk patients—using behavioral health comorbidity, poverty, and a personal history of frequent acute care utilization as the preferred method for identifying patients who would benefit from enhanced services.[26]

Despite the growing recognition that efforts to reduce avoidable readmissions should include targeting interventions toward patients with comorbid behavioral health conditions, there is comparatively little information available on the prevalence of behavioral health comorbidity among hospitalized and readmitted patients on an all-payer, all-condition basis. To address the lack of relevant information and analysis, the Center for Health Information and Analysis (CHIA) released the first statewide, all-payer examination of the prevalence of comorbid behavioral health conditions and readmissions among hospitalized adults in Massachusetts acute care hospitals in August 2016. That report, which used data from State Fiscal Year (SFY) 2014, was the first in a series entitled *Behavioral Health and Readmissions in Massachusetts Acute Care Hospitals*.[27]

This report, the second in CHIA's all-payer readmission reports on behavioral health, updates the previous report with data on inpatient discharges from Massachusetts acute care hospitals in SFY 2017. New analyses in this report provide a deeper look into the prevalence among sub-types of behavioral health conditions and explore associations between the presence of any behavioral health comorbidity and inpatient hospital length of stay. ■

Prevalence of Behavioral Health Comorbidities among Patients in Massachusetts Acute Care Hospitals

This section examines the prevalence of behavioral health comorbidity among adult patients admitted to Massachusetts acute care hospitals. This analysis is based on patients who were discharged from Massachusetts acute care hospitals between July 1, 2016 and June 30, 2017 (SFY 2017). Using diagnosis information, adult patients (age 18+) were identified as having up to 10 sub-types of comorbid mental health conditions (MH) and up to eight sub-types of substance use disorders (SUD).[28] From these indicators patients were categorized into four mutually exclusive groups:

1. Mental health conditions (MH) only
2. Substance use disorders (SUD) only
3. Both MH and SUD or co-occurring conditions (CO)
4. No mention of MH or SUD (None)

Key Findings

- Forty-five percent (45%) of hospitalized patients had a comorbid behavioral health condition.
- Mood disorders and anxiety disorders had the highest prevalence of any comorbid mental health condition, at 26% each.
- Alcohol- and opioid-related disorders had the highest prevalence of comorbid substance use disorders, at 9% and 6%, respectively. Among patients with any comorbid substance use disorder, more than half (57%) had a comorbid alcohol-related disorder.
- Sixty-three percent (63%) of hospitalized Medicaid adults had a comorbid behavioral health condition, which was roughly fifty percent (50%) higher than the prevalence in Medicare or commercial populations (at 43% and 41%, respectively).

- Behavioral health comorbidity was most prevalent among patients aged 18-44, at 61%. Among these patients, roughly one in four (26%) had a co-occurring mental health and substance use disorder.
- Male patients were nearly three times more likely to have comorbid substance use disorders only than female patients (9% vs. 3%).
- Fall River (53%) and the Berkshires (53%) had the highest prevalence of behavioral health comorbidity. The prevalence of behavioral health comorbidity was at least 17% higher in these two regions than the state average.
- Patients with any behavioral health comorbidity had inpatient stays that were, on average, 1.3 days (31%) longer than patients with no behavioral health comorbidity (5.5 days vs. 4.2 days). ■

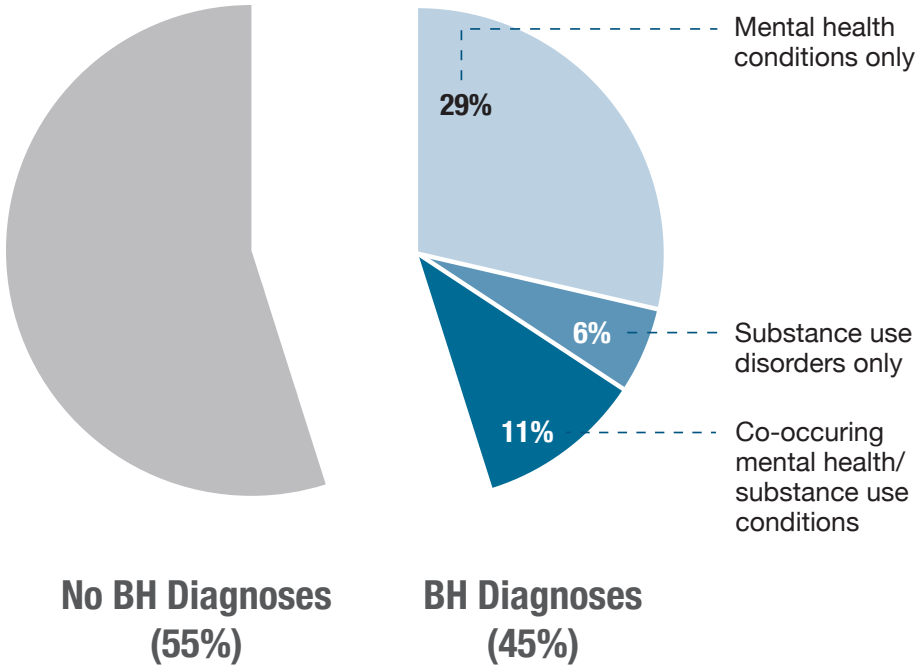
PREVALENCE

Statewide Prevalence of Behavioral Health Comorbidity among Patients in Acute Care Hospitals, SFY 2017

Forty-five percent (45%) of adult patients hospitalized in Massachusetts acute care hospitals between July 2016 and June 2017 had at least one comorbid behavioral health condition.

Of patients with any behavioral health comorbidity, 63% had a diagnosis of mental health condition only, 13% had a diagnosis of substance use disorder only, and 24% had both mental health conditions and substance use disorders.

This high prevalence of behavioral health comorbidity underscores the importance of behavioral health integration in care transition and discharge planning at acute care hospitals.



Among patients in acute care hospitals, 29% had comorbid mental health conditions only, 6% had comorbid substance use disorders only, and 11% had comorbid co-occurring mental health/ substance use conditions.

Note: Analyses include discharges for adults (age 18+) with any payer and exclude obstetric discharges. BH = Behavioral Health. Percentages may not add up to totals due to rounding. Total patients: N = 352,904.

Data source: Massachusetts Hospital Inpatient Discharge Databases, July 2015–June 2017.

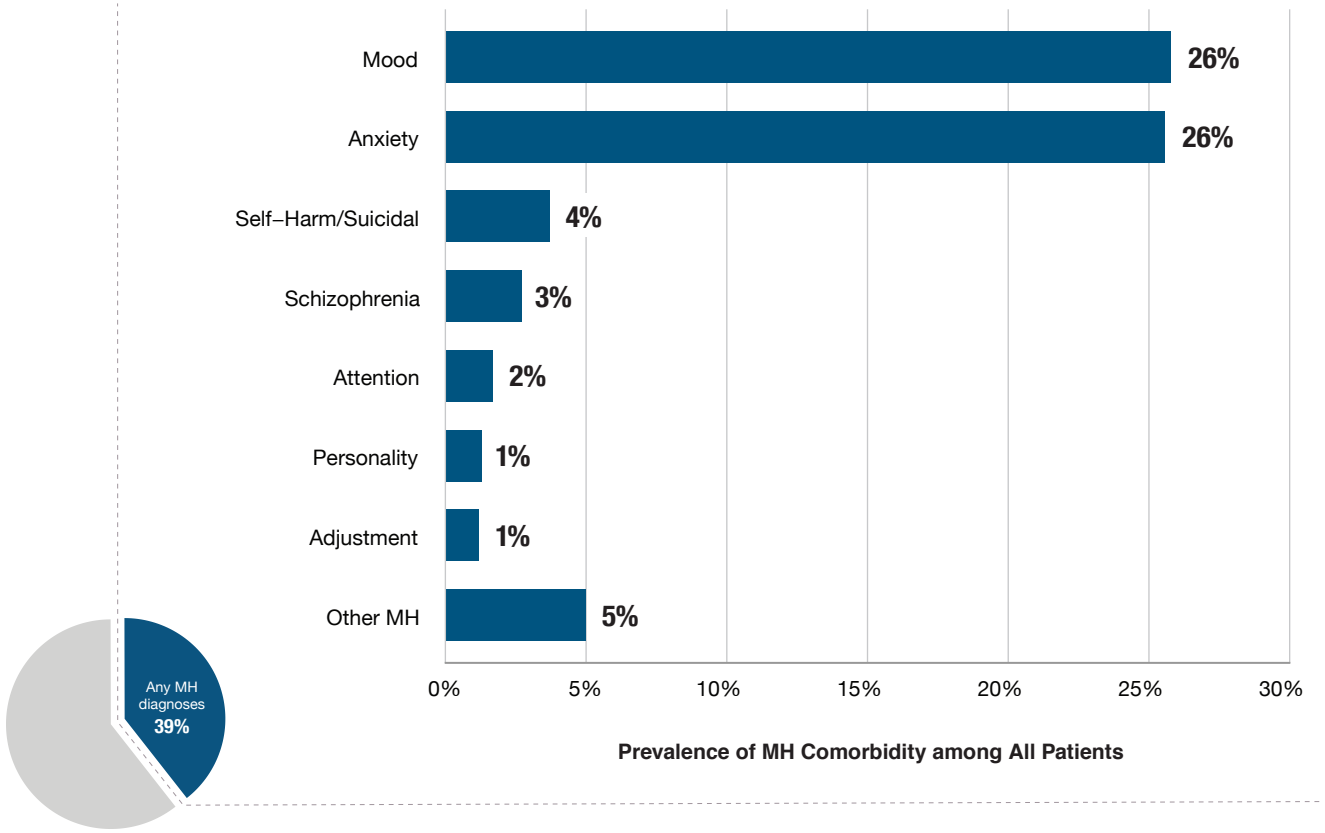
PREVALENCE

Statewide Prevalence of Mental Health Comorbidity among Patients in Acute Care Hospitals, SFY 2017

Thirty-nine percent (39%) of hospitalized adults in Massachusetts acute care hospitals had at least one comorbid mental health condition. Some patients had multiple comorbid mental health conditions and therefore may be shown in more than one category on this page.

The most common comorbid mental health conditions among all patients were mood disorders, including depression and bipolar disorders, and anxiety disorders, at approximately 26% each.

Among patients with any comorbid mental health condition, 93% had a mood disorder, an anxiety disorder, or both.



Note: Analyses include discharges for adults (age 18+) with any payer and exclude obstetric discharges. Patients with multiple comorbid mental health conditions may appear in more than one category. MH = Mental health condition; Attention = Attention-deficit, conduct, and disruptive behavior disorders; Schizophrenia = Schizophrenia and other psychotic disorders; Self-harm/Suicidal = Suicidal ideation and intentional self-harm. See technical appendix for category definitions. Total patients: N = 352,904.

Data source: Massachusetts Hospital Inpatient Discharge Databases, July 2015–June 2017.

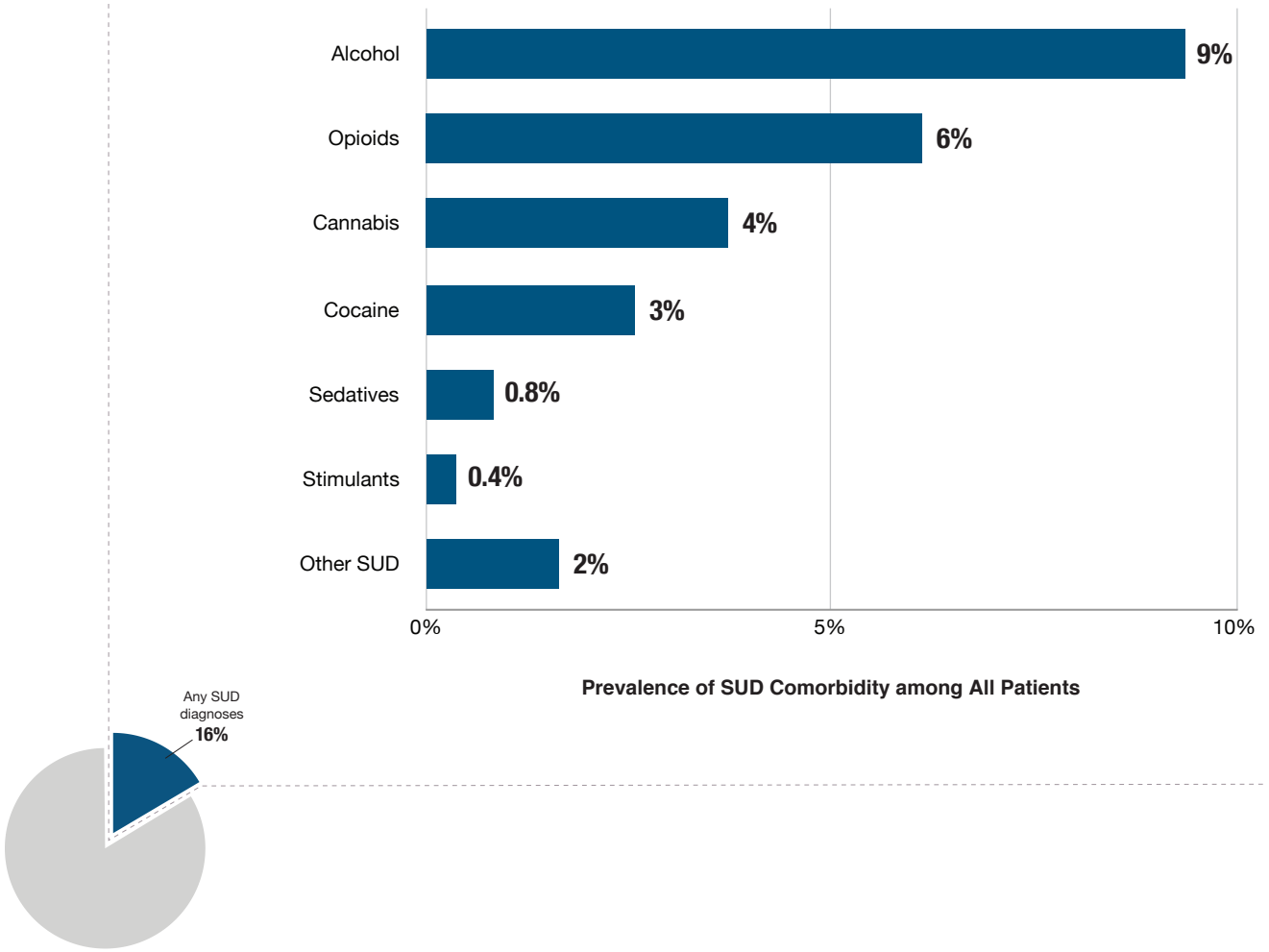
PREVALENCE

Statewide Prevalence of Substance Use Disorder Comorbidity among Patients in Acute Care Hospitals, SFY 2017

Sixteen percent (16%) of hospitalized adults in Massachusetts acute care hospitals had at least one comorbid substance use disorder. Some patients had multiple comorbid substance use disorders and therefore may be shown in more than one category on this page.

The most common comorbid substance use disorders were alcohol-related, opioid-related, and cannabis-related disorders. Among all patients, 9% had an alcohol-related disorder and 6% had an opioid-related disorder.

Among patients with any comorbid substance use disorder, more than half (57%) had a comorbid alcohol-related disorder.



Note: Analyses include discharges for adults (age 18+) with any payer and exclude obstetric discharges. Patients with multiple comorbid substance use disorders may appear in more than one category. SUD = Substance use disorders; Stimulants = Stimulant-related disorders other than cocaine. See technical appendix for category definitions. Total patients: N = 352,904.

Data source: Massachusetts Hospital Inpatient Discharge Databases, July 2015–June 2017.

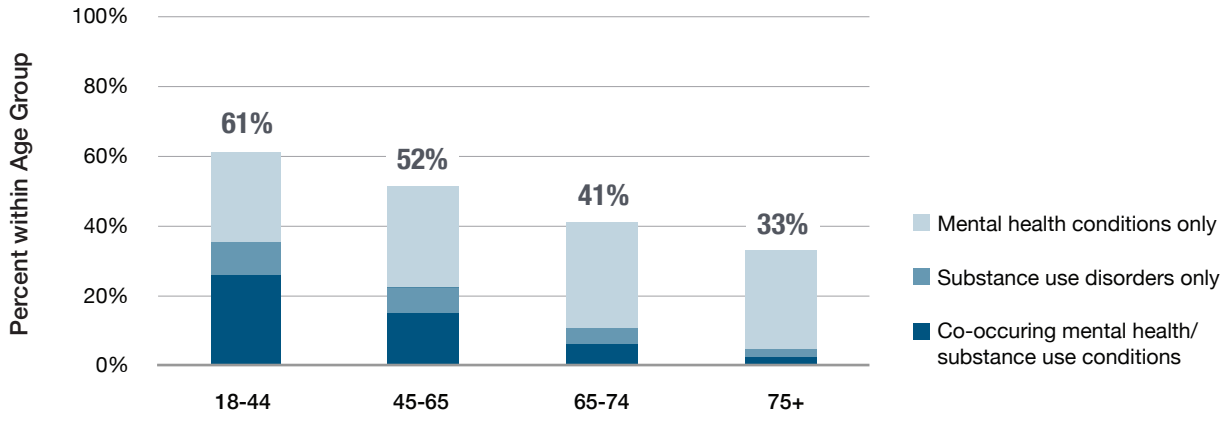
PREVALENCE

Prevalence of Behavioral Health Comorbidity by Age Group, SFY 2017

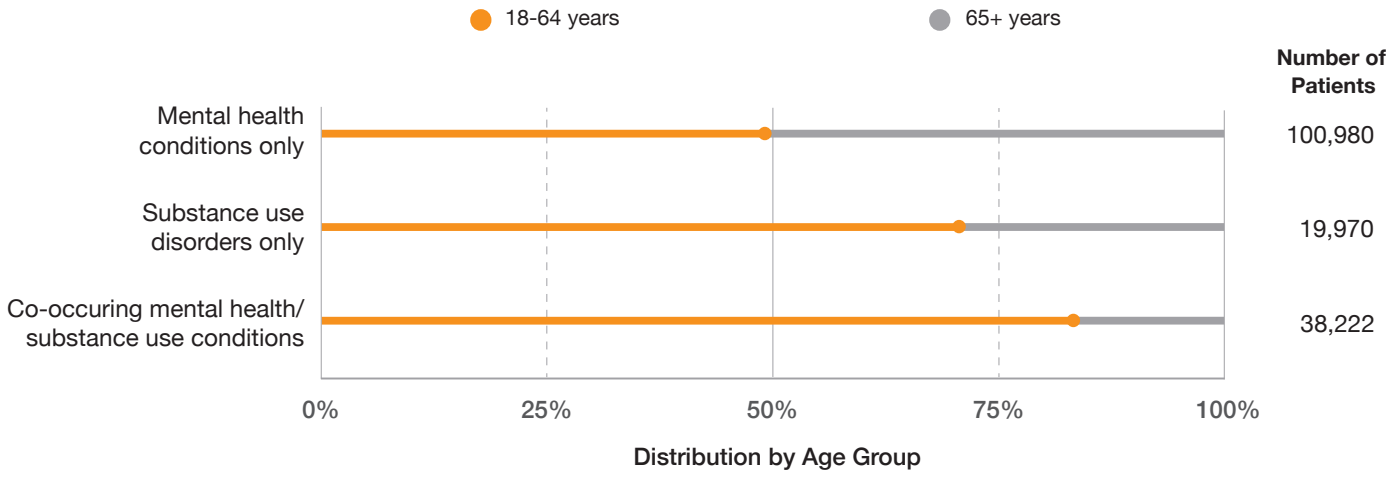
Comorbid behavioral health conditions were more common among younger adults than other age groups; 61% of patients aged 18-44 had at least one comorbid behavioral health condition.

Twenty-six percent (26%) of patients aged18-44 had co-occurring mental health and substance use conditions.

The majority (69%) of patients with comorbid substance use disorders only were under age 65. In contrast, more than half of patients with comorbid mental health conditions only (53%) were elderly patients aged 65 years or older.



Number of Patients	56,448	113,792	74,239	108,425



Note: Analyses include discharges from Massachusetts acute care hospitals for adults (age 18+) with any payer and exclude obstetric discharges.

Data source: Massachusetts Hospital Inpatient Discharge Databases, July 2015–June 2017.

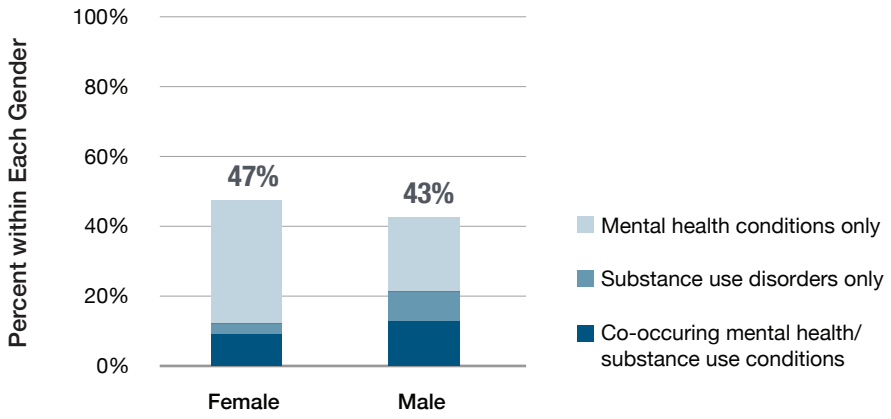
PREVALENCE

Prevalence of Behavioral Health Comorbidity by Gender, SFY 2017

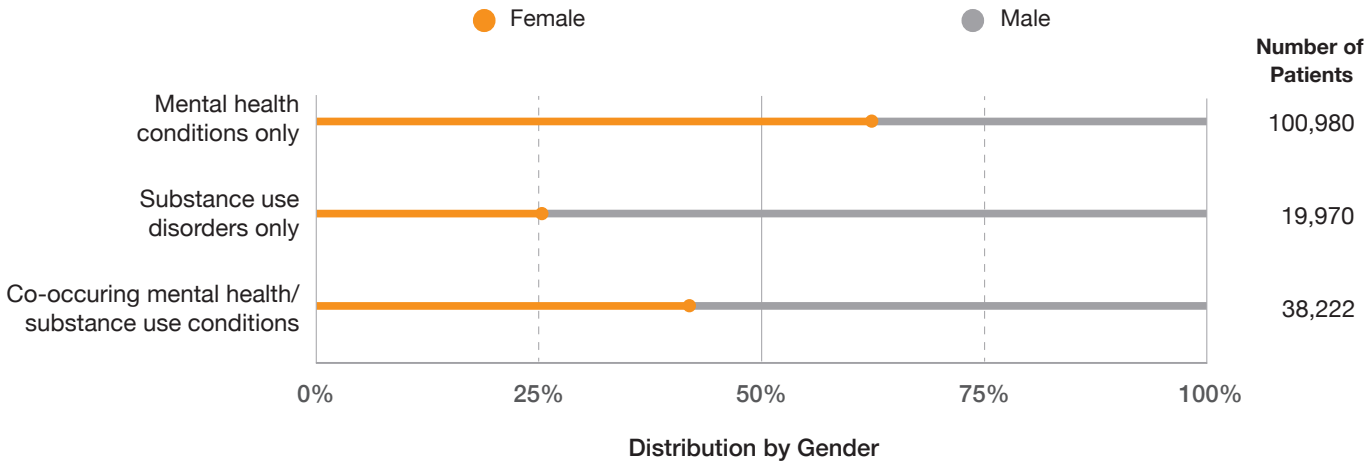
The overall prevalence of comorbid behavioral health conditions was slightly higher for female patients (47%) than for male patients (43%).

Male patients were three times more likely than female patients to have comorbid substance use disorders only (9% vs. 3%).

Among patients with comorbid mental health conditions only, nearly two out of three (65%) were female.



Number of Patients	184,623	168,281



Note: Analyses include discharges from Massachusetts acute care hospitals for adults (age 18+) with any payer and exclude obstetric discharges. Figures for male and female do not sum to total because of discharges with missing gender information.

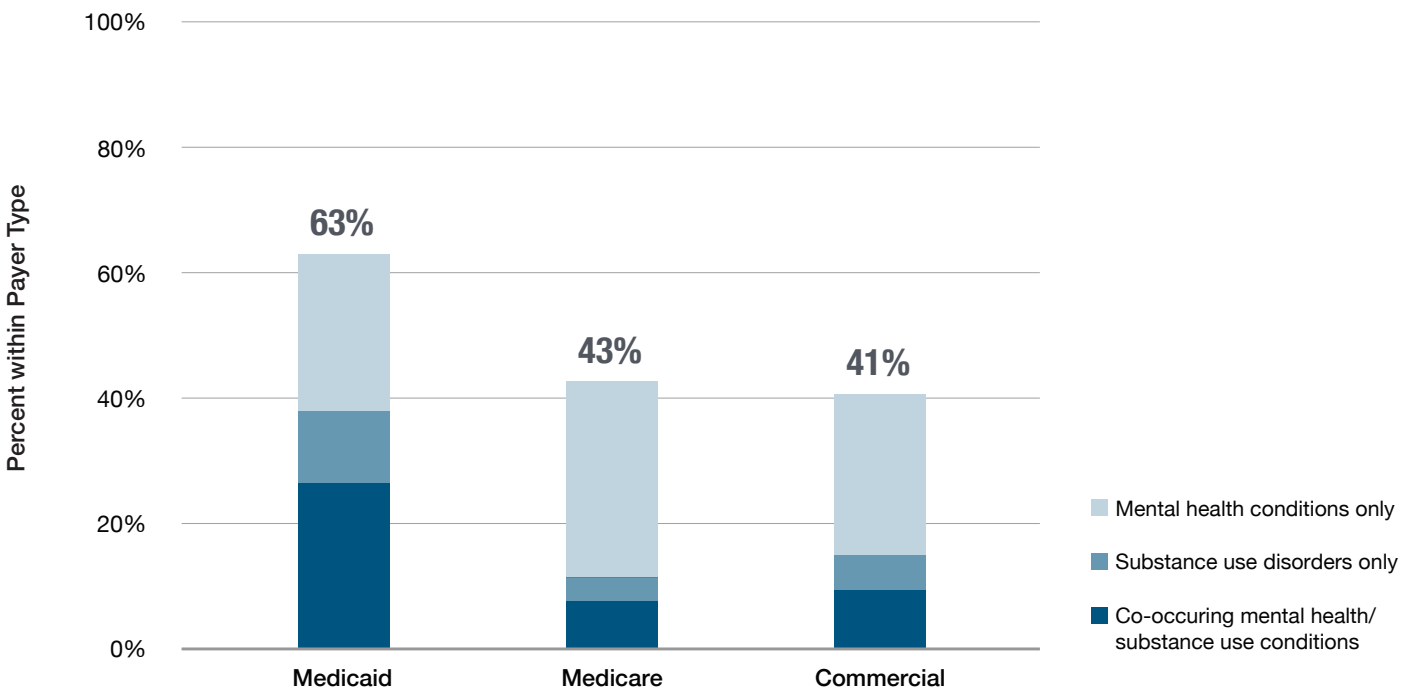
Data source: Massachusetts Hospital Inpatient Discharge Databases, July 2015–June 2017.

PREVALENCE

Prevalence of Behavioral Health Comorbidity by Payer Type, SFY 2017

Sixty-three percent of patients with Medicaid had a comorbid behavioral health condition, which was 47% higher than the rate for the Medicare population (43%) and 55% higher than the rate for the commercial population (41%).

Relative to the statewide patient population (shown on page 10), Medicaid patients were also twice as likely to have comorbid substance use disorders only (11% vs. 6%), and nearly two and a half times as likely to have comorbid co-occurring mental health and substance use conditions (26% vs. 11%).



	Medicaid	Medicare	Commercial
Number of Patients	51,544	197,714	90,997

Note: Analyses include discharges from Massachusetts acute care hospitals for adults (age 18+) with any payer and exclude obstetric discharges. Self-pay and other categories are excluded, which together account for 4% of patients, as well as a small number of discharges with missing payer information.

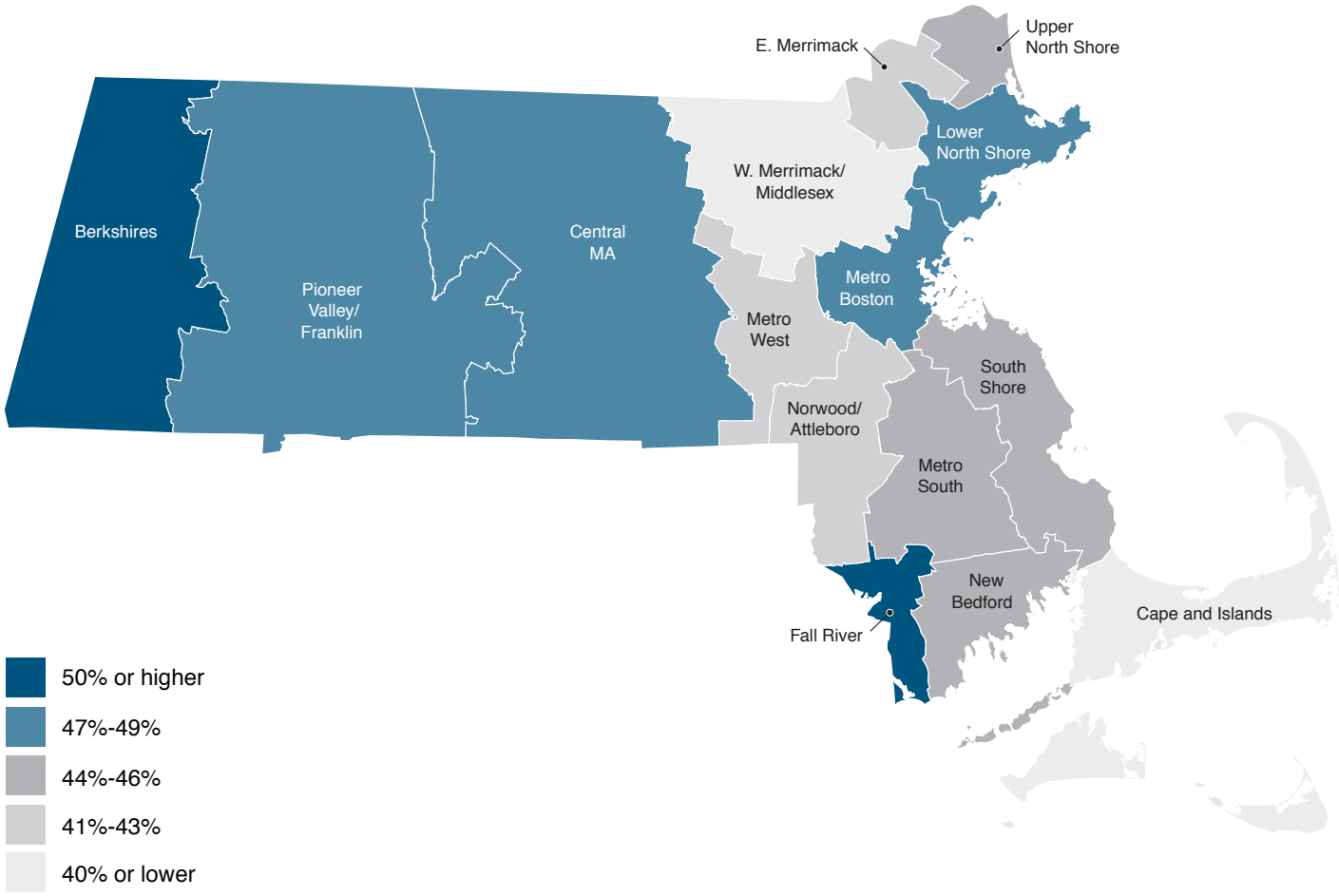
Data source: Massachusetts Hospital Inpatient Discharge Databases, July 2015–June 2017.

PREVALENCE

Prevalence of Behavioral Health Comorbidity by Region of Patient Residence, SFY 2017

The prevalence of behavioral health comorbidity varied by region from 40% of patients in West Merrimack/ Middlesex and the Cape and Islands to 53% of patients in Fall River and the Berkshires.

Fall River (53%) and the Berkshires (53%) had the highest prevalence of behavioral health comorbidity. The prevalence of behavioral health comorbidity was at least 17% higher in these two regions than in the state overall (45%).



Note: Analyses include discharges from Massachusetts acute care hospitals for adults (age 18+) with any payer and exclude obstetric discharges. Regions are defined by the Massachusetts Health Policy Commission.

Data source: Massachusetts Hospital Inpatient Discharge Databases, July 2015–June 2017.

PREVALENCE

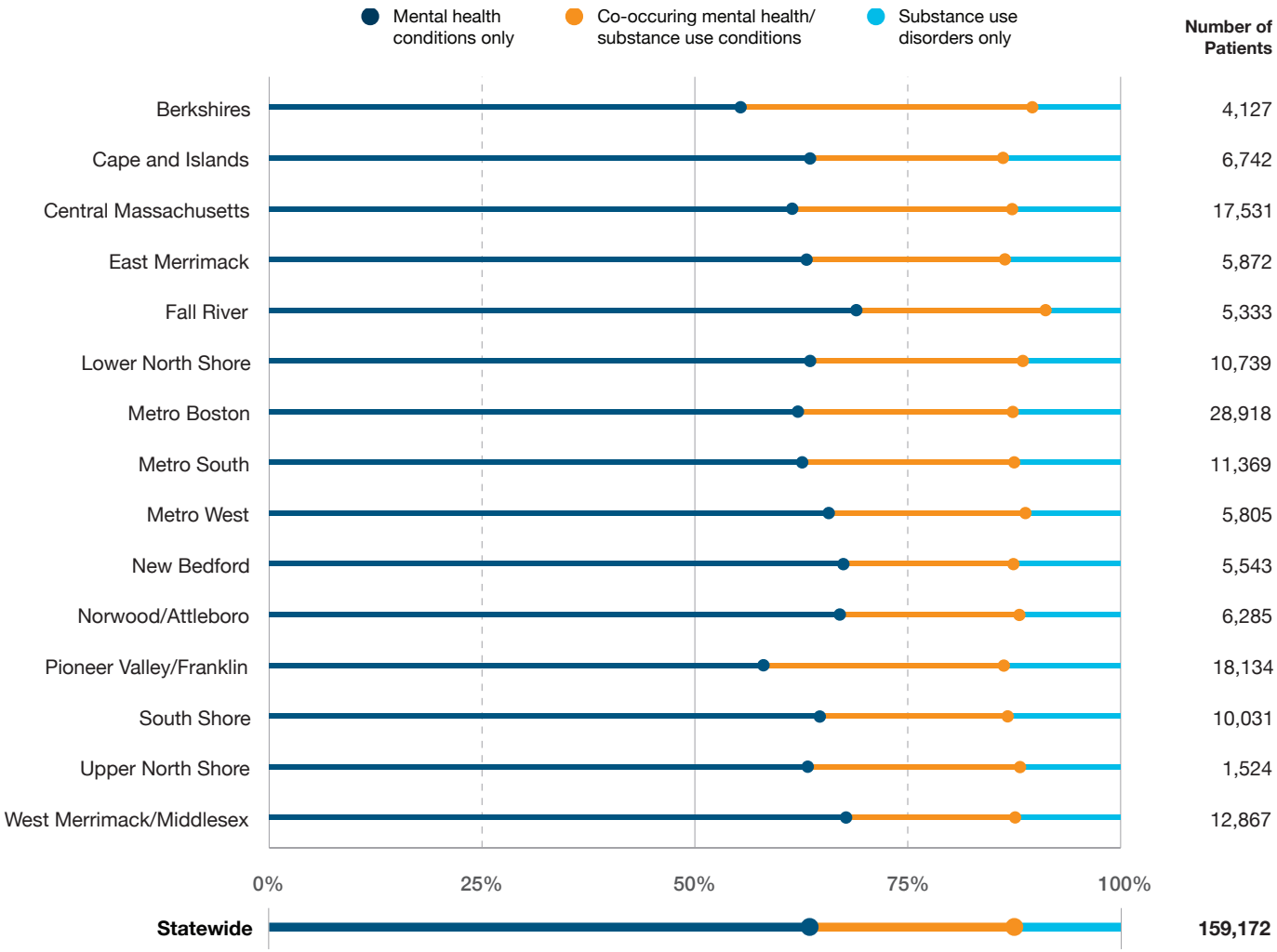
Types of Behavioral Health Comorbidity by Region of Patient Residence, SFY 2017

Among patients with comorbid behavioral health conditions, the types of these conditions varied by region.

Fall River and West Merrimack/Middlesex had the highest proportion of patients with comorbid mental health conditions only, at 69% and 68%, respectively.

The Berkshires and Pioneer Valley/Franklin had the highest proportion of patients with comorbid co-occurring mental health and substance use conditions, at 34% and 28%, respectively.

The Cape and Islands and Pioneer Valley/Franklin had the highest proportion of patients with comorbid substance use disorders only, both at 14%.



Note: Analyses include discharges from Massachusetts acute care hospitals for adults (age 18+) with any payer and exclude obstetric discharges. Regions are defined by the Massachusetts Health Policy Commission.

Data source: Massachusetts Hospital Inpatient Discharge Databases, July 2015–June 2017.

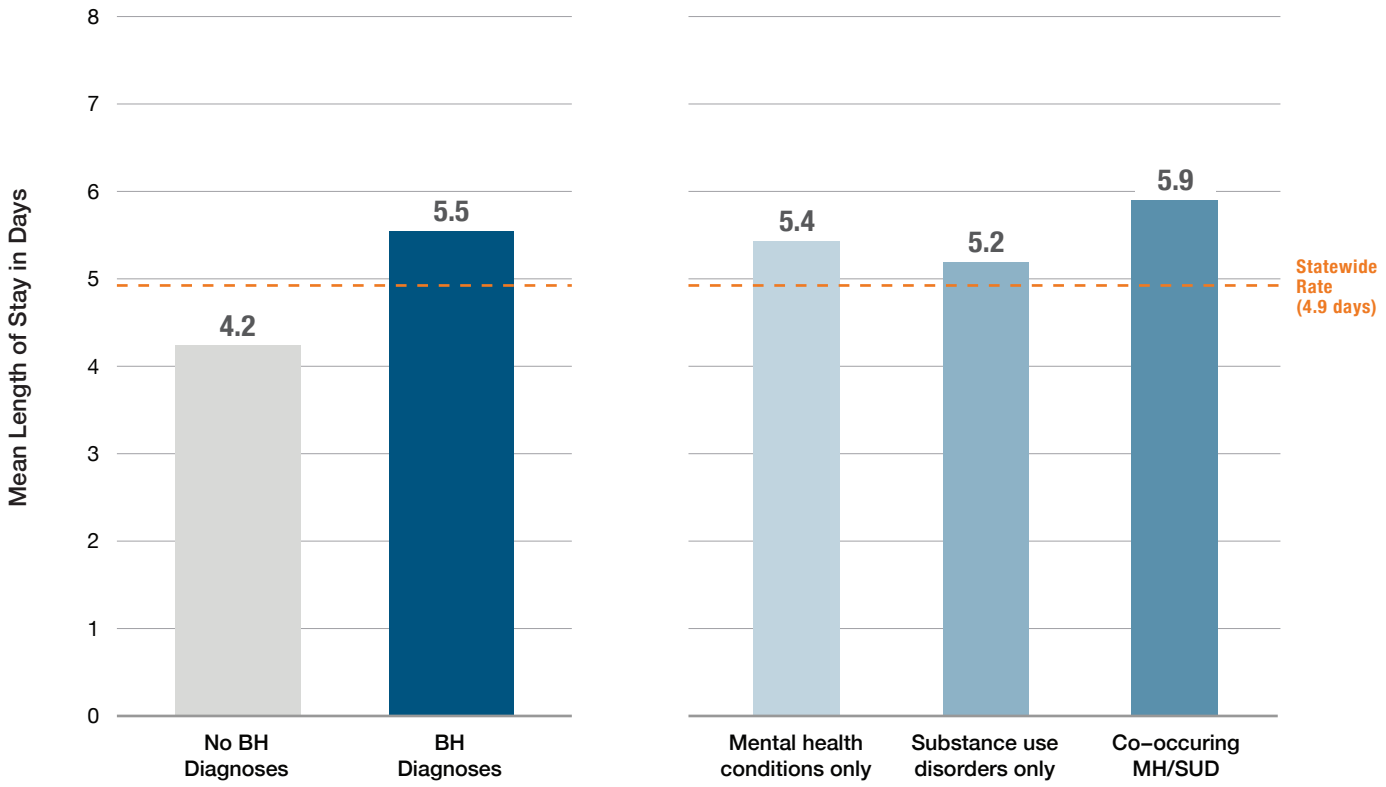
PREVALENCE

Presence of Behavioral Health Comorbidity and Length of Stay, SFY 2017

The length of stay for patients with comorbid behavioral health conditions was 1.3 days (31%) longer than for patients without any behavioral health comorbidity (5.5 days vs. 4.2 days).

Patients with comorbid co-occurring mental health and substance use conditions had the longest length of stay, 5.9 days, which was 39% longer than the length of stay for patients with no behavioral health comorbidity.

The average length of stay was also longer for patients with comorbid mental health conditions only (5.4 days) and comorbid substance use disorders only (5.2 days) than those without any behavioral health comorbidity (4.2 days).



Note: Analyses include discharges from Massachusetts acute care hospitals for adults (age 18+) with any payer and exclude obstetric discharges. BH = Behavioral Health, MH/SUD = Mental Health Conditions/Substance Use Disorders. The unit of this analysis is discharges. The statewide average length of stay (ALOS) in this report is not directly comparable to the ALOS presented in CHIA's annual report on readmissions, Hospital-Wide Adult All-Payer Readmissions in Massachusetts: SFY 2011-2017, due to the inclusion of discharges with a primary psychiatric diagnosis.

Data source: Massachusetts Hospital Inpatient Discharge Databases, July 2015–June 2017.

Statewide Readmissions and Behavioral Health Comorbidity among Patients in Massachusetts Acute Care Hospitals

This section examines the readmission rates among patients with and without comorbid behavioral health conditions among adult patients admitted to Massachusetts acute care hospitals. This analysis is based on discharges from Massachusetts acute care hospitals between July 1, 2016 and June 30, 2017 (SFY 2017). To better understand the impact of behavioral health comorbidity on readmission rates, CHIA first examined readmission rates at the statewide level, and then analyzed readmission rates by age, payer type, region of patient residence, discharge diagnosis, and discharge setting.

Key Findings

- The 45% of all hospitalized adults who had any behavioral health comorbidity accounted for 53% of all hospitalizations and 69% of all readmissions.
- Patients with any behavioral health comorbidity were nearly twice as likely to be readmitted as those without any behavioral health comorbidity (21.1% vs. 10.8%).
- Patients with comorbid co-occurring mental health and substance use conditions had the highest readmission rate, at 28.1%, which was higher than the readmission rate for heart failure—the most common current clinical focus of readmission reduction efforts[29]—at 24.3%.
- Younger adults (age 18-44) with behavioral health comorbidity had readmission rates three times higher than younger adults without any behavioral health comorbidity (18.6% v. 5.7%).
- Medicaid patients with comorbid co-occurring mental health and substance use conditions had readmission rates that were three and a half times higher than Medicaid patients without any behavioral health comorbidity (27.0% vs. 7.9%).
- The presence of a comorbid behavioral health condition was associated with an increase in the readmission rate for the top five discharge diagnoses leading to the

most readmissions—heart failure, septicemia, chronic obstructive pulmonary disease (COPD), other pneumonia and renal failure—of at least 54%.

- Among patients discharged to home, 53% had a comorbid behavioral health condition. The readmission rate among patients with any behavioral health comorbidity was 143% higher than those with no comorbid behavioral health conditions (18.1% vs. 7.4%). ■

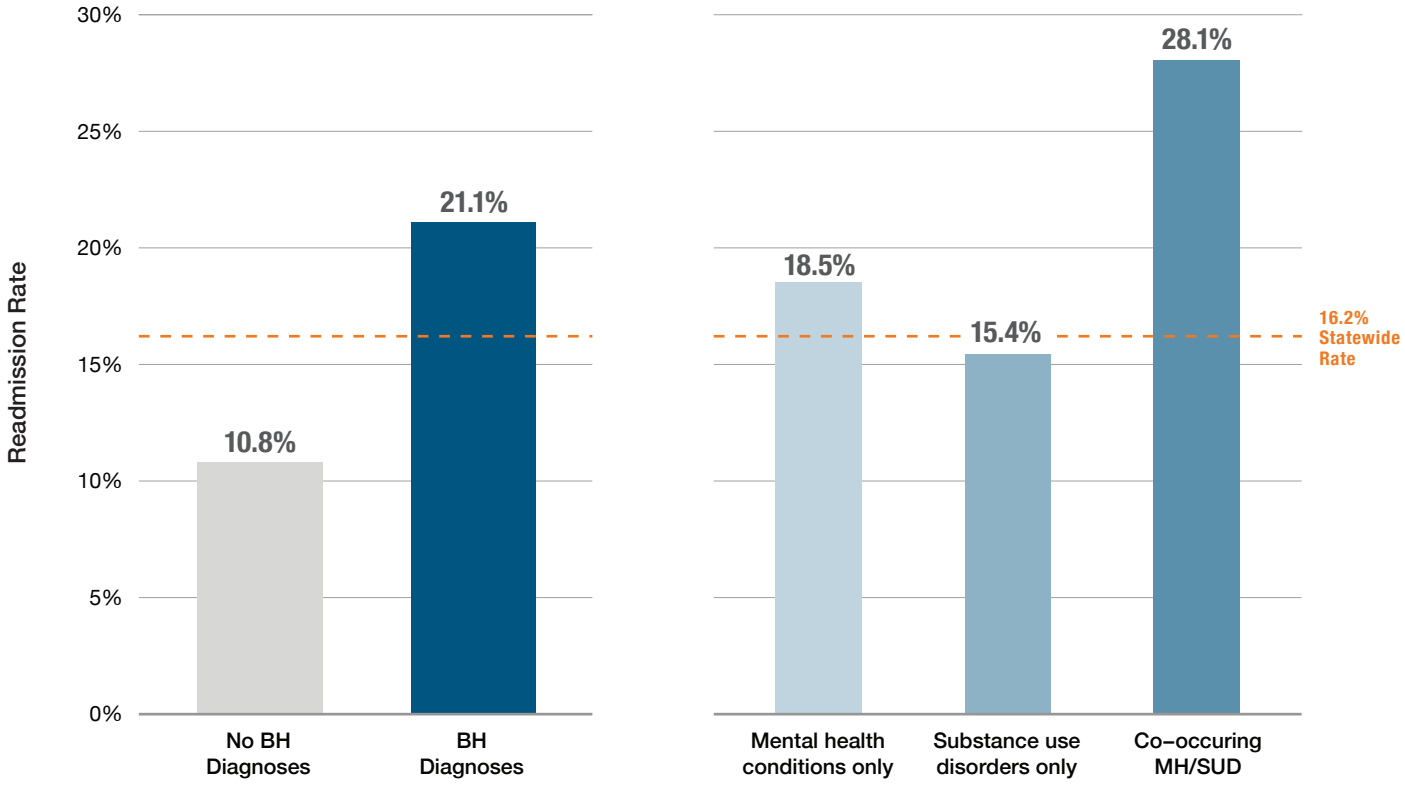
READMISSION RATES

Statewide Readmission Rates and Behavioral Health Comorbidity, SFY 2017

The readmission rate for patients with comorbid behavioral health conditions was nearly twice as high as the readmission rate for patients without any behavioral health comorbidity (21.1% vs. 10.8%).

Patients with comorbid co-occurring mental health and substance use conditions had the highest readmission rate (28.1%), which was more than two and a half times the rate of patients with no behavioral health comorbidity (10.8%). This was higher than the readmission rate for a heart failure—the most common current clinical focus of readmission reduction efforts—at 24.3%.

Relative to patients without any behavioral health comorbidity, patients with comorbid mental health conditions only and substance use disorders only also had higher readmission rates at 18.5% and 15.4%, respectively.



Note: Analyses include discharges from Massachusetts acute care hospitals for adults (age 18+) with any and exclude obstetric discharges. BH = Behavioral Health, MH/SUD = Mental Health Conditions/Substance Use Disorders. The statewide readmission rate in this report is not directly comparable to the rate in CHIA's annual report on readmissions, Hospital-Wide Adult All-Payer Readmissions in Massachusetts: SFY 2011-2017, due to the inclusion of discharges with a primary psychiatric diagnosis.

Data source: Massachusetts Hospital Inpatient Discharge Databases, July 2015–June 2017.

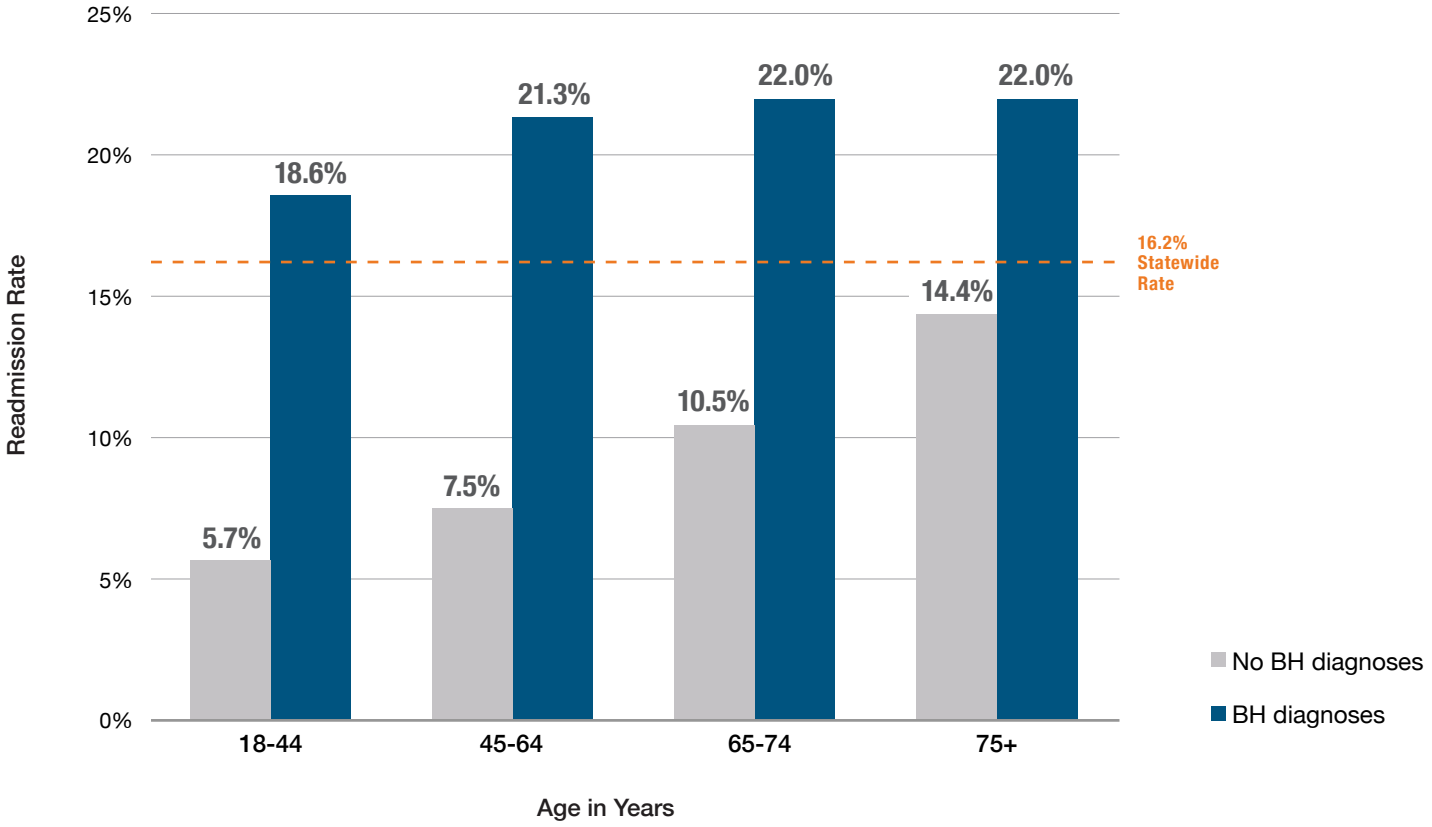
READMISSION RATES

Readmission Rates and Behavioral Health Comorbidity by Age, SFY 2017

For every age group, readmission rates were higher with comorbid behavioral health conditions than without, and the difference in the rates was greatest among younger adults.

Older adults (age 75+) with behavioral health comorbidity had readmission rates 53% higher than those without behavioral health comorbidity, (22.0% vs. 14.4%).

The difference in readmission rates between those with and without comorbid behavioral health conditions was even larger for younger adults (age 18-44). Those with any behavioral health comorbidity had readmission rates three times higher than those without (18.6% vs. 5.7%).



Note: Analyses include discharges from Massachusetts acute care hospitals for adults (age 18+) with any payer and exclude obstetric discharges. The statewide readmission rate in this report is not directly comparable to the rate in CHIA's annual report on readmissions, Hospital-Wide Adult All-Payer Readmissions in Massachusetts: SFY 2011-2017, due to the inclusion of discharges with a primary psychiatric diagnosis.

Data source: Massachusetts Hospital Inpatient Discharge Databases, July 2015–June 2017.

READMISSION RATES

Readmission Rates and Behavioral Health Comorbidity by Payer Type, SFY 2017

Across payers, patients with any comorbid behavioral health condition had higher readmission rates than those without any behavioral health comorbidity. Comorbid co-occurring mental health and substance use conditions were consistently associated with higher readmission rates than other types of behavioral health comorbidities.

Medicaid patients with comorbid co-occurring mental health and substance use conditions had readmission rates that were three times higher than those without any behavioral health comorbidity: 27.0% vs. 7.9%.

Medicaid and commercial patients without any behavioral health comorbidity had relatively similar readmission rates at 7.9% and 6.7%, respectively.

Medicare patients with comorbid co-occurring mental and substance use conditions had the highest readmission rate at 31.9%.

Note: Analyses include discharges from Massachusetts acute care hospitals for adults (age 18+) with any payer and exclude obstetric discharges. BH = Behavioral Health, MH/SUD = Mental Health Conditions/Substance Use Disorders. Figure excludes self-pay and other categories, which together account for 4% of patients and 3% of discharges. A small number of discharges with missing payer information is also excluded. The statewide readmission rate in this report is not directly comparable to the rate in CHIA's annual report on readmissions, Hospital-Wide Adult All-Payer Readmissions in Massachusetts: SFY 2011-2017, due to the inclusion of discharges with a primary psychiatric diagnosis.

Data source: Massachusetts Hospital Inpatient Discharge Databases, July 2015–June 2017.

READMISSION RATES

Readmission Rates and Behavioral Health Comorbidity by Region of Patient Residence, SFY 2017

In all regions, the presence of behavioral health comorbidity substantially increased readmission rates by 80-119%.

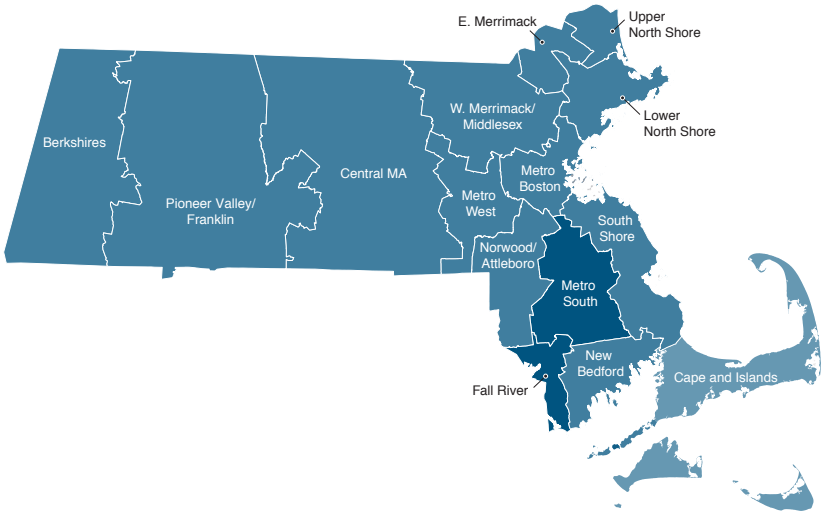
Readmission rates for patients without comorbid behavioral health conditions ranged from 10.0% in the Berkshires to 11.8% in Metro South.

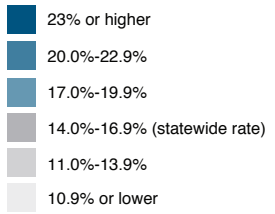
Readmission rates for patients with comorbid behavioral health conditions varied from 18.6% in the Cape and Islands to 23.3% in Metro South. Differences in readmission rates with and without behavioral health comorbidities were particularly pronounced for the Berkshires, Fall River, and Metro Boston; readmission rates were twice as high in these regions with behavioral health comorbidities.

These differences could be due to other regional patient demographics and community characteristics including care transition practices, quality of clinical care and community-based resources. However, these differences also highlight potential opportunities for interventions.

Readmission Rates with No Behavioral Health Comorbidity

Readmission Rates with Behavioral Health Comorbidity





Note: Analyses include discharges from Massachusetts acute care hospitals for adults (age 18+) with any payer and exclude obstetric discharges. Regions are defined by the Massachusetts Health Policy Commission.

Data source: Massachusetts Hospital Inpatient Discharge Databases, July 2015–June 2017.

READMISSION RATES

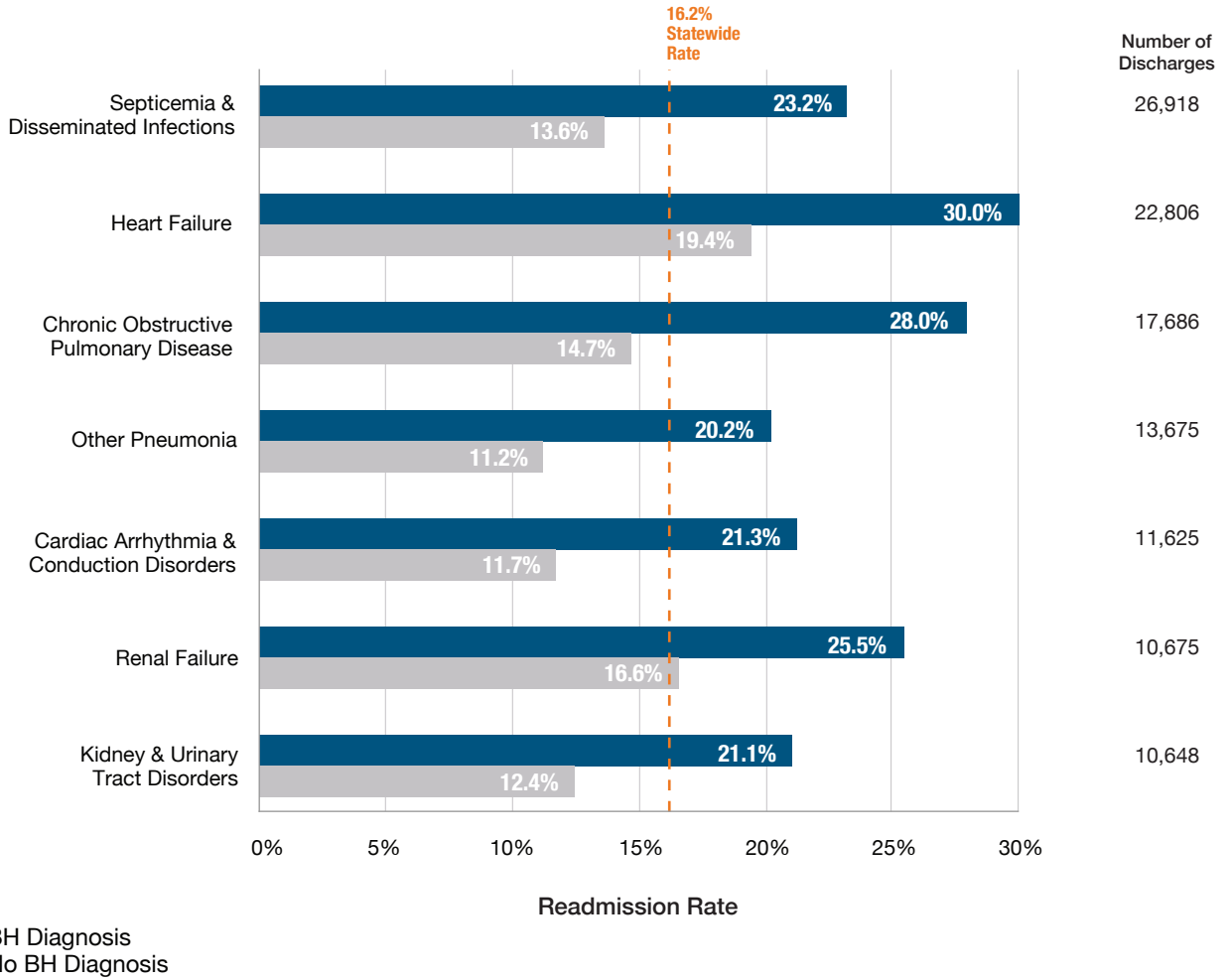
Readmission Rates and Behavioral Health Comorbidity by Common Discharge Diagnosis, SFY 2017

For the top discharge diagnoses leading to the most readmissions in Massachusetts, the readmission rates for patients with comorbid behavioral health conditions were 54-90% higher than for patients with these same discharge diagnoses who had no behavioral health comorbidity.

For patients discharged for heart failure—the most commonly targeted medical diagnosis for readmission reduction efforts[30]—the presence of behavioral health comorbidity was associated with a 55% increase in the readmission rate (from 19.4% to 30.0%).

The difference in readmission risk associated with the presence of behavioral health comorbidity was even greater for patients discharged with chronic obstructive pulmonary disease (COPD). Behavioral health comorbidity was associated with a 90% increase in the readmission rate for COPD discharges (from 14.7% to 28.0%).

Understanding the impact of behavioral health comorbidity on these and other discharge diagnoses could be very useful for improving care and reducing the risk of readmission.



Note: Analyses include discharges from Massachusetts acute care hospitals for adults (age 18+) with any payer and exclude obstetric discharges. Diagnostic categories are defined by the All-Payer Refined Diagnosis-Related Group (APR-DRG, version 30.0). The statewide readmission rate in this report is not directly comparable to the rate in CHIA's annual report on readmissions, Hospital-Wide Adult All-Payer Readmissions in Massachusetts: SFY 2011-2017, due to the inclusion of discharges with a primary psychiatric diagnosis.

Data source: Massachusetts Hospital Inpatient Discharge Databases, July 2015–June 2017.

READMISSION RATES

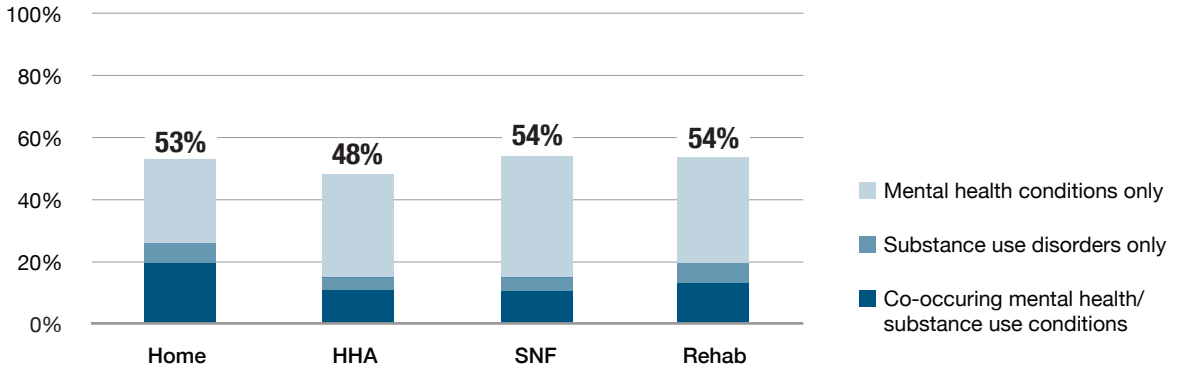
Readmission Rates and Behavioral Health Comorbidity by Discharge Setting, SFY 2017

Readmission rates were higher with the presence of behavioral health comorbidity for patients discharged to all post-acute care settings.

More than half of discharges to home (53%) had a comorbid behavioral health condition.

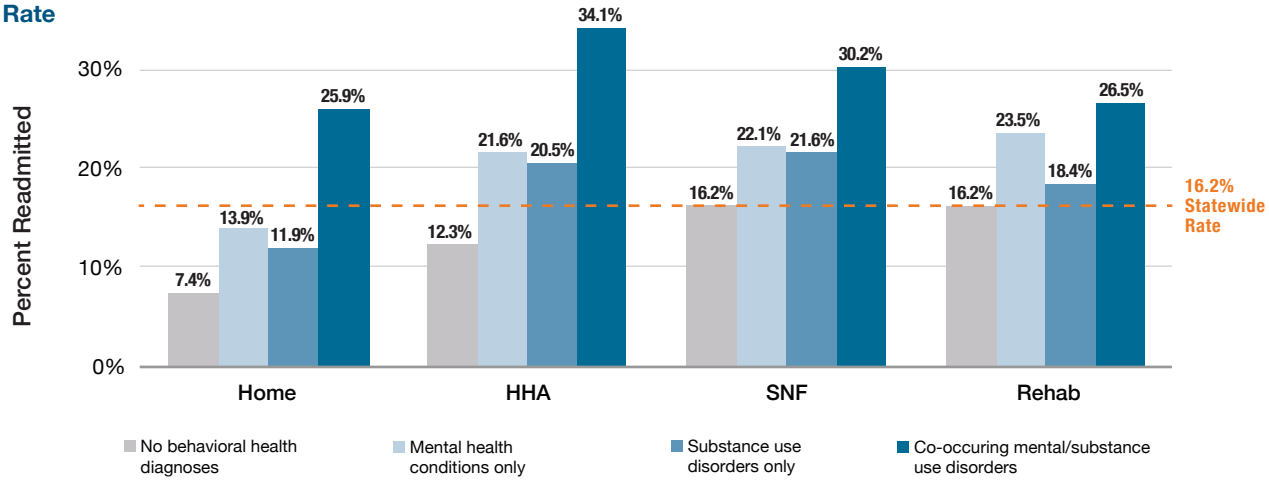
The readmission rate for patients discharged to home with co-occurring mental health and substance use conditions was three and a half times the rate for those without any behavioral health comorbidity (25.9% vs. 7.4%).

Percent of Discharges



Number of Discharges	Home	HHA	SNF	Rehab
	257,107	135,252	94,777	21,980

Readmission Rate



Note: Analyses include discharges from Massachusetts acute care hospitals for adults (age 18+) with any payer and exclude obstetric discharges. The unit of this analysis is discharges. HHA= Home with home health agency care; SNF = Skilled nursing facility; Rehab = Rehabilitation facility. Hospice and other categories are excluded, which account for 3.6% of discharges. Discharges with missing discharge setting information are also excluded. For full category definitions, please see technical appendix. The statewide readmission rate in this report is not directly comparable to the rate in CHIA's annual report on readmissions, Hospital-Wide Adult All-Payer Readmissions in Massachusetts: SFY 2011-2017, due to the inclusion of discharges with a primary psychiatric diagnosis.

Conclusion

This report is the second statewide, all-payer examination of the prevalence of behavioral health comorbidity and readmission rates among hospitalized adults in Massachusetts acute care hospitals.

Despite the limitations of using hospital administrative data to identify the presence or absence of a behavioral health condition—e.g., many behavioral health conditions may be undiagnosed and/or under-coded in the medical record or in billing codes—there is a high prevalence of behavioral health comorbidity among hospitalized adults in Massachusetts acute care hospitals.

Important differences in the prevalence of behavioral health comorbidity by payer type exist. Medicaid adults were 47% more likely to have any behavioral health comorbidity than Medicare adults and 55% more likely to have any behavioral health comorbidity than the commercially insured population. Age was also found to be an important factor—younger adults have nearly twice the prevalence of comorbid behavioral conditions as older adults. Additionally, the prevalence of behavioral health comorbidity among hospitalized adults varies regionally across the Commonwealth.

Hospitalized patients with a comorbid behavioral health condition had inpatient stays that were on average 1.3 days longer, and had a readmission rate that was nearly twice as high as the rate for patients without any comorbid behavioral health conditions. Hospitalized patients with comorbid co-occurring mental health and substance use conditions had the highest readmission rate among all patients with behavioral health conditions. Among the most common discharge diagnoses that result in readmissions, the presence of behavioral health comorbidity was associated with higher readmission rates. This suggests that greater awareness is needed among providers, payers, policymakers, patients and families/advocates of the increased readmission risk of any hospitalized patient with comorbid behavioral health conditions. ■

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10 See note 1 above.

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29 See note 9 above.

30 See note 9 above.

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