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fact book 10

Care of Adults With Mental Health and Substance Abuse Disorders in U.S. Community Hospitals, 2004

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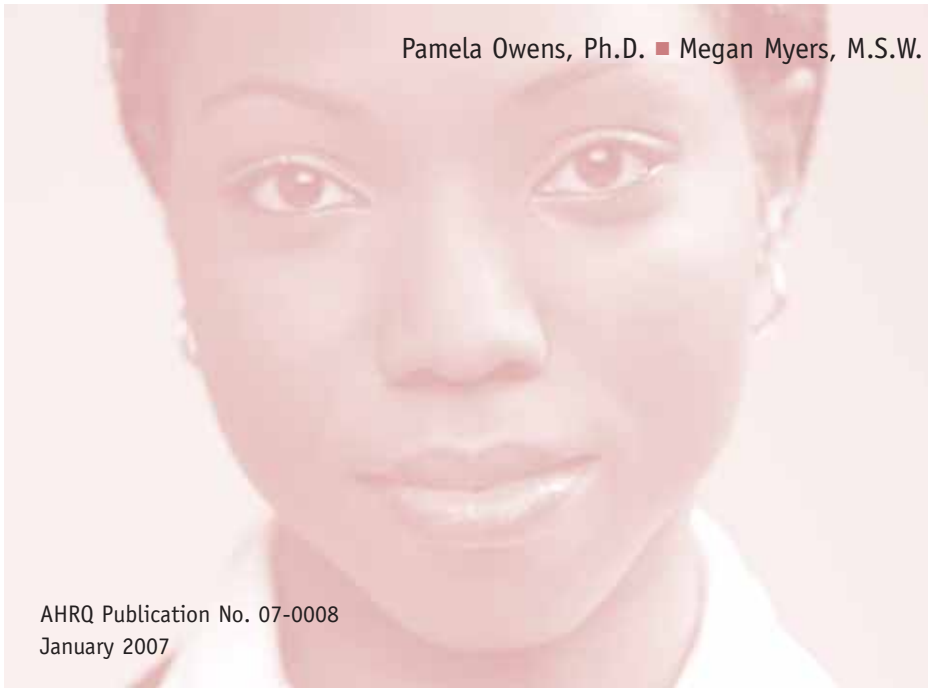
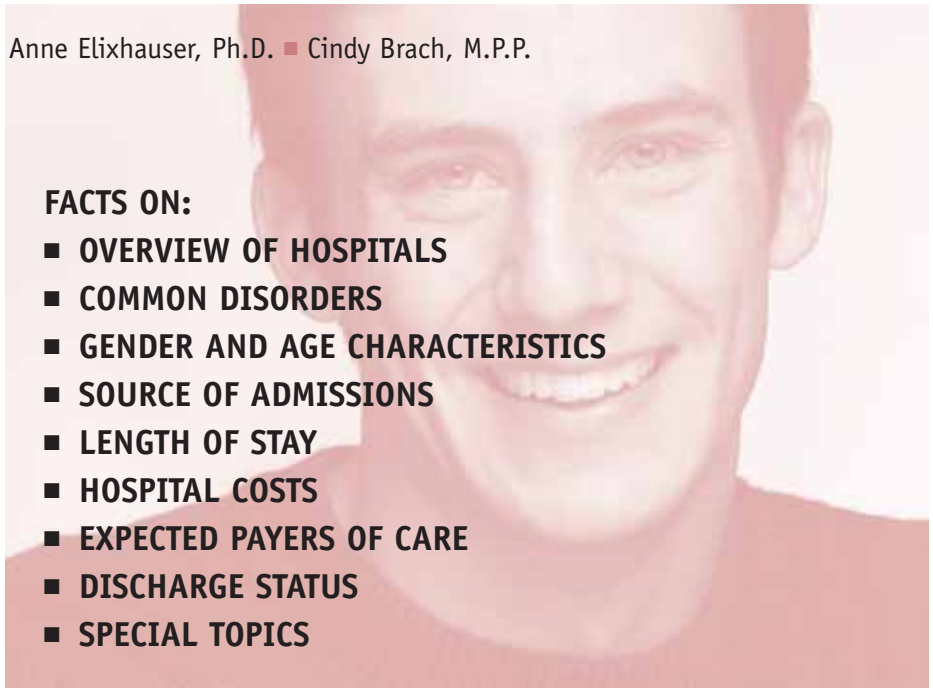
Care of Adults With Mental Health and Substance Abuse Disorders in U.S. Community Hospitals, 2004

Pamela Owens, Ph.D. ■ Megan Myers, M.S.W. ■ Anne Elixhauser, Ph.D. ■ Cindy Brach, M.P.P.





FACTS ON:

- OVERVIEW OF HOSPITALS
- COMMON DISORDERS
- GENDER AND AGE CHARACTERISTICS
- SOURCE OF ADMISSIONS
- LENGTH OF STAY
- HOSPITAL COSTS
- EXPECTED PAYERS OF CARE
- DISCHARGE STATUS
- SPECIAL TOPICS

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HCUP Fact Book Series

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Pamela Owens, Megan Myers, Anne Elixhauser, and Cindy Brach are from the Agency for Healthcare Research and Quality, Rockville, MD.

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Executive Summary

Mental health and substance abuse (MHSA) disorders place a substantial burden on individuals, families, the health care system, and the economy. Beyond the personal costs of these conditions, mental illness and substance abuse result in lost productivity, increased medical expenditures, and other costs including those resulting from law enforcement activities.

Community hospitals play an important role in the treatment of individuals with MHSA disorders. For some of these patients, the MHSA disorder is the principal diagnosis, or the main reason for the hospital stay. For others, the MHSA disorder complicates a principal non-MHSA diagnosis and is listed on the hospital record as a secondary diagnosis. In 2004, 24 percent of stays in community hospitals were for patients with principal and/or secondary MHSA diagnoses.

This Fact Book examines community hospital care for adults 18 years of age and older with MHSA diagnoses. Community hospitals are non-Federal, short-term (or acute care) general and specialty hospitals. They include any type of hospital that is open to the public, such as academic medical centers, medical specialty hospitals, and public hospitals, but they do not include specialty psychiatric or substance abuse treatment facilities.

This Fact Book provides an overview of hospital stays involving MHSA disorders and addresses these key questions:

- What are the common reasons for hospitalization, by type and diagnosis?
- How do stays vary by gender and age?
- How are patients admitted to the hospital?
- What is the mean length of stay?
- How much do hospital stays cost?
- What percentage of hospital resource use is attributable to MHSA disorders?
- Who is billed for hospital stays?
- Where do patients go after they are discharged?

In addition, this Fact Book presents detailed statistics on three special topics related to MHSA hospitalizations:

- Dual diagnosis stays (i.e., the patient has both a substance-related and a mental health disorder).
- Stays related to suicide or attempted suicide.
- Maternal stays complicated by a mental health or substance abuse disorder.

Eleven mutually exclusive categories of MHSA disorders are examined in this Fact Book: mood disorders; substance-related disorders; delirium, dementia, and amnestic and cognitive disorders; anxiety disorders; schizophrenia and other psychotic disorders; personality disorders; adjustment disorders; disruptive behavior disorders; impulse control disorders; disorders usually diagnosed in infancy, childhood, and adolescence; and miscellaneous mental disorders.

In 2004, adults with a mental health and/or substance abuse diagnosis accounted for 1 out of 4 stays at U.S. community hospitals—7.6 million hospital stays.

WHAT ARE THE COMMON REASONS FOR HOSPITALIZATION, BY TYPE AND DIAGNOSIS?

In 2004, nearly 1 out of 4 hospital stays for adults in U.S. community hospitals involved MHSA disorders[i]—about 7.6 million hospitalizations. Of these, 1.9 million hospitalizations (6 percent of adult hospital stays) had a principal MHSA diagnosis and 5.7 million (18 percent) were primarily for non-MHSA diagnoses but had a secondary mental health or substance abuse diagnosis.

[i]Based on all-listed diagnoses

The top 5 MHSA diagnoses[ii] seen in the hospital were mood disorders, substance-related disorders, delirium/dementia, anxiety disorders, and schizophrenia. One out of every 10 hospital stays included a diagnosis of mood disorders (over 3.3 million stays). One out of every 14 hospital stays included substance-related disorders (2.3 million stays). One out of every 20 stays was related to delirium/dementia (1.7 million stays).

HOW DO STAYS VARY BY GENDER AND AGE?

Gender

There were more MHSA-related hospital stays for women than for men. Although women comprised 51 percent of the U.S. adult population, they accounted for 58 percent of MHSA-related stays and 62 percent of non-MHSA stays. The most frequent MHSA diagnosis among hospitalized women was mood disorders. Substance abuse was the most frequent MHSA diagnosis in the hospital for men. Substance-related disorders were 3 times more common among hospitalized men than women.

Age

Older age groups accounted for a disproportionate share of hospital stays for MHSA disorders in 2004. For example, adults 80 and older comprised 5 percent of the U.S. adult population, yet they accounted for nearly 21 percent of MHSA hospital stays. In contrast, adults ages 18 to 44 comprised over half the total U.S. population, but accounted for 30 percent of MHSA hospital stays.

Among adults younger than 80, the most common MHSA diagnosis was mood disorders. Overall, 11 percent of stays for people 18–44 years of age, 13 percent of those 45–64 years of age, and 8 percent of those 65–79 years of age included a diagnosis of mood disorders. For adults 80 and older, delirium/dementia was the most common MHSA diagnosis; this disorder was noted in 21 percent of hospital stays for this age group, but mood disorders ranked second for this age group (8 percent of stays).

One out of every 10 hospital stays included a diagnosis of mood disorders.

■ ■ ■

One out of every 14 hospital stays involved substance-related disorders.

■ ■ ■

The most frequent MHSA diagnosis among hospitalized women was mood disorders.

■ ■ ■

The most frequent MHSA diagnosis for men was substance-related disorders. Substance-related disorders were 3 times more common among hospitalized men than women.

■ ■ ■

Adults 80 and older comprised 5 percent of the U.S. adult population, yet they accounted for 21 percent of MHSA hospital stays.

The second most common MHSA diagnosis for adults ages 18–64 was substance-related disorders, which was noted in about 10 percent of all hospital stays for this age group.

The distribution of age varied by the top 5 most common MHSA diagnoses. Almost half of all substance-related stays were for adults ages 18–44 while nearly all (93 percent) of the stays related to dementia/delirium were for adults age 65 and older.

HOW ARE PATIENTS ADMITTED TO THE HOSPITAL?

Nearly 61 percent of MHSA-related admissions occur through the emergency department (ED) compared to only 45 percent of admissions with no MHSA diagnosis.

Adults with only secondary MHSA diagnoses were the most likely to be admitted through the ED—64 percent—compared with 51 percent for admissions with principal MHSA diagnoses only.

[ii]Based on all-listed MHSA diagnoses

WHAT IS THE MEAN LENGTH OF STAY?

Adults with any MHSA diagnosis (principal or secondary) stayed in the hospital longer than adults with non-MHSA diagnoses (5.8 versus 4.5 days). The difference was even more pronounced for adults with only a principal MHSA diagnosis—they stayed in the hospital an average of 8 days compared with 5 days for patients with non-MHSA diagnoses.

HOW MUCH DO HOSPITAL STAYS COST?

Cost, by Type

The mean total cost for a hospital stay with any MHSA diagnosis ($7,800) was $1,100 lower than for stays with no MHSA diagnosis ($8,900). The mean cost per day for MHSA hospitalizations also was lower than for non-MHSA hospital stays—$1,600 per day compared with $2,300 per day—indicating that MHSA stays were less resource intensive.

The difference in cost was even more pronounced for adults with only a principal MHSA diagnosis. The mean total cost for a hospital stay with only a principal MHSA diagnosis was 39 percent lower than non-MHSA stays ($6,400 versus $8,900), and costs per day were 171 percent lower ($900 versus $2,300).

Hospitalizations for the 5 most common principal MHSA diagnoses cost $9.9 billion nationally.

■ ■ ■

About 33 percent of all uninsured stays, 29 percent of Medicaid stays, and 26 percent of Medicare stays were related to MHSA disorders, compared with only 16 percent of privately insured stays.

■ ■ ■

Over 66 percent of adult hospital stays with MHSA diagnoses were billed to the government in 2004.

Cost, by Principal Diagnosis

Hospitalizations for the 5 most common principal MHSA diagnoses—mood disorder, schizophrenia, substance-related disorders, dementia/delirium, and anxiety disorders—cost $9.9 billion nationally.

The most common principal MHSA diagnosis—mood disorders—had the highest aggregate inpatient hospital costs of all MHSA diagnoses at $3.4 billion nationally in 2004. On a per stay basis, schizophrenia was the most expensive of the common principal MHSA diagnoses to treat at $8,000 per stay.

WHO IS BILLED FOR HOSPITAL STAYS?

A large proportion of stays for the uninsured and for patients covered by Medicaid and Medicare were related to MHSA disorders. About 33 percent of all uninsured stays, 29 percent of Medicaid stays, and 26 percent of Medicare stays were related to MHSA disorders. On the other hand, only 16 percent of privately insured stays were related to MHSA disorders.

Expected Primary Payer, by Type

Over 66 percent of adult hospital stays with MHSA diagnoses were billed to the government in 2004. Medicaid was billed for 18 percent of all MHSA-related stays and Medicare was billed for 49 percent of all MHSA stays. In comparison, 57 percent of hospital stays with non-MHSA diagnoses were billed to the government.

Stays for patients with MHSA diagnoses were 36 percent more likely to be billed as uninsured than stays unrelated to MHSA diagnoses. Nearly 8 percent of MHSA stays were uninsured compared with about 5 percent of stays with non-MHSA diagnoses. Patients with both principal and secondary MHSA diagnoses were the most likely to be uninsured—nearly 13 percent compared with 5 percent for patients with non-MHSA diagnoses.

Only about 23 percent of stays with MHSA diagnoses were billed to private health insurance compared with about 37 percent of stays with non-MHSA diagnoses.

Expected Primary Payer, by Principal Diagnosis

Hospital stays related to schizophrenia and those associated with delirium/dementia were the most likely to be billed to the government. Over 78 percent of hospital stays for schizophrenia were billed to the government (35 percent to Medicaid and 44 percent to Medicare). Similarly, 90 percent of hospital stays for delirium/dementia were billed to the government (4 percent to Medicaid and 86 percent to Medicare). Schizophrenia is a qualifying disorder for Medicaid, and delirium/dementia is more frequent among the elderly who are covered by Medicare. In contrast, 53 percent of hospital stays for mood disorders and 52 percent of stays for substance-related disorders were billed to government payers.

WHERE DO PATIENTS GO AFTER THEY ARE DISCHARGED?

Adults with MHSA disorders were more likely to be transferred to non-acute health care facilities (which include psychiatric facilities, nursing homes, and rehabilitation centers) compared to those with non-MHSA diagnoses. Although only 11 percent of non-MHSA stays ended in transfers to non-acute facilities, 16 percent of stays for a principal MHSA diagnosis ended with such a transfer in 2004. Because of the large proportion of elderly patients with dementia as a secondary diagnosis, 27 percent of hospital stays with only secondary MHSA diagnoses ended with transfer to non-acute health care facilities.

Hospital stays that were principally for MHSA disorders were the least likely to be discharged to home health care. Only 2 percent of hospital stays for principal MHSA diagnoses ended in discharge to home health care, compared with 11 percent of stays with only secondary MHSA diagnoses and 10 percent of non-MHSA stays.

Over 78 percent of hospital stays for schizophrenia and 90 percent of hospital stays for delirium/dementia were billed to the government.

■ ■ ■

Hospital stays related to MHSA disorders accounted for roughly one-fourth of total resource use: 24 percent of all adult stays, 29 percent of days in the hospital, and 22 percent of total hospital costs.

■ ■ ■

About 3 percent of all hospital stays (nearly 1 million hospitalizations) involved dual diagnosis—both substance-related and mental health disorder.

■ ■ ■

Men and adults 18–44 are most likely to have a dual diagnosis—55 percent and 60 percent, respectively.

WHAT PERCENTAGE OF HOSPITAL RESOURCE USE IS ATTRIBUTABLE TO MHSA DISORDERS?

MHSA disorders accounted for roughly one-fourth of total resource use in 2004. MHSA disorders were involved in about 24 percent of all adult hospital stays, 29 percent of days in the hospital, and 22 percent of total hospital costs.

DUAL DIAGNOSIS STAYS

A person with both a substance-related problem and a mental health disorder is considered to have a dual diagnosis. In 2004, nearly 1 million adult hospital stays involved a dual diagnosis—3 percent of all hospital stays. About 13 percent of all MHSA-related hospital stays involved a dual diagnosis.

Among dual diagnosis stays, 34 percent of patients had alcohol-related problems, 45 percent had drug-related problems, and 22 percent had both alcohol- and drug-related problems. The most frequent mental health disorder associated with substance-related problems was mood disorders (68 percent). All other mental health disorders were much less frequent. Anxiety disorders were seen in about 19 percent of hospital stays with a dual diagnosis and schizophrenia was seen in about 18 percent of these stays.

Most dually diagnosed inpatients were men and were younger. Fifty-five percent of stays with a dual diagnosis were for men, even though 41 percent of other MHSA stays and 38 percent of non-MHSA stays were for men. Similarly, nearly 60 percent of all dually diagnosed inpatients were ages 18–44, even though this age group comprised only 26 percent of other MHSA stays and 33 percent of adult non-MHSA hospital stays.

Hospital stays for dual diagnosis were more likely to be billed as uninsured or billed to Medicaid than to any other payer.

SUICIDE-RELATED STAYS

In 2004, nearly 179,000 adult hospital stays were related to suicide or suicide attempts. By far, the most frequent mechanism of injury for suicide-related hospitalizations was poisoning. Nearly two-thirds of hospital stays for suicide attempts were a result of poisoning, while 1 in 10 hospital stays for suicide attempts was a result of cutting/piercing. Firearms were implicated in only 1 percent of suicide-related hospital stays.

Nearly all suicide-related hospital stays involved MHSA disorders (93 percent). The single most common MHSA diagnosis related to attempted suicide was mood disorders, which accounted for nearly 70 percent of all suicide-related stays.

Adults hospitalized for suicide attempt were younger than other patients. Most suicide-related hospital stays occurred among adults ages 18–44 (72 percent), followed by adults ages 45–64 (24 percent). Patients ages 65 and older made up less than 4 percent of all suicide-related stays. Uninsured stays and stays billed to Medicaid made up nearly half of all suicide-related hospitalizations. Even though only 5 percent of non-MHSA hospital stays were uninsured, 22 percent of suicide-related stays were uninsured. Nearly 13 percent of non-MHSA hospital stays were billed to Medicaid compared with 23 percent of suicide-related stays.

There were nearly 179,000 adult hospital stays related to suicide or suicide attempts.

■ ■ ■

Poisoning accounted for 2 out of 3 suicide-related stays—the most frequent mechanism of injury.

■ ■ ■

Most suicide-related stays (72 percent) were among adults 18–44.

■ ■ ■

Although only 5 percent of non-MHSA hospital stays were uninsured, 22 percent of suicide-related stays were uninsured.

■ ■ ■

Five percent of maternal hospital stays involved at least one MHSA disorder.

■ ■ ■

Medicaid was billed for 38 percent of non-MHSA-related maternal stays but almost 57 percent of MHSA-related maternal stays.

MATERNAL STAYS

In 2004, nearly 4.6 million hospital stays were for women with maternal conditions and of these, 240,000 (5 percent) were complicated by at least one MHSA disorder. Women with MHSA disorders complicating a maternal stay were disproportionately younger, ages 18–24. Even though this group accounted for only 32 percent of non-MHSA-related maternal stays, they were responsible for 40 percent of all MHSA-related maternal stays.

Medicaid was much more likely to be billed for maternal stays complicated by MHSA disorders compared with all other payers. Medicaid was billed for 38 percent of non-MHSA-related maternal stays but almost 57 percent of maternal stays with MHSA disorders.

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Foreword

The mission of the Agency for Healthcare Research and Quality (AHRQ) is to improve the quality, safety, efficiency, and effectiveness of health care for all Americans. To help fulfill this mission, AHRQ develops a number of powerful databases, including those created by the Healthcare Cost and Utilization Project (HCUP). HCUP is a Federal-State-Industry partnership designed to build a standardized, multi-State health data system; HCUP features databases, software tools, and statistical reports to inform policymakers, health system leaders, and researchers.

For data to be useful, they must be disseminated in a timely, accessible way. To meet this objective, AHRQ launched HCUPnet, an interactive, Internet-based tool for identifying, tracking, analyzing, and comparing statistics on hospital utilization, outcomes, and charges (**http://www.hcupnet.ahrq.gov/**). Menu-driven HCUPnet guides users in tailoring specific queries about hospital care online; with a click of a button, users receive answers within seconds.

To make HCUP data even more accessible, AHRQ disseminates HCUP Statistical Briefs, an online publication series that presents simple, descriptive statistics on a variety of specific, focused topics (**http://www.hcup-us.ahrq.gov/reports/statbriefs.jsp**). Statistical Briefs are made available regularly throughout the year and have covered topics such as hospitalizations among the uninsured, the national bill for hospital care by payer, and hospitalizations related to childbirth.

In addition, AHRQ produces the HCUP Fact Books to highlight statistics about hospital care in the United States in an easy-to-use, readily accessible format. Each Fact Book provides information about specific aspects of hospital care—the single largest component of our health care dollar. These national estimates are benchmarks against which States and others can compare their own data.

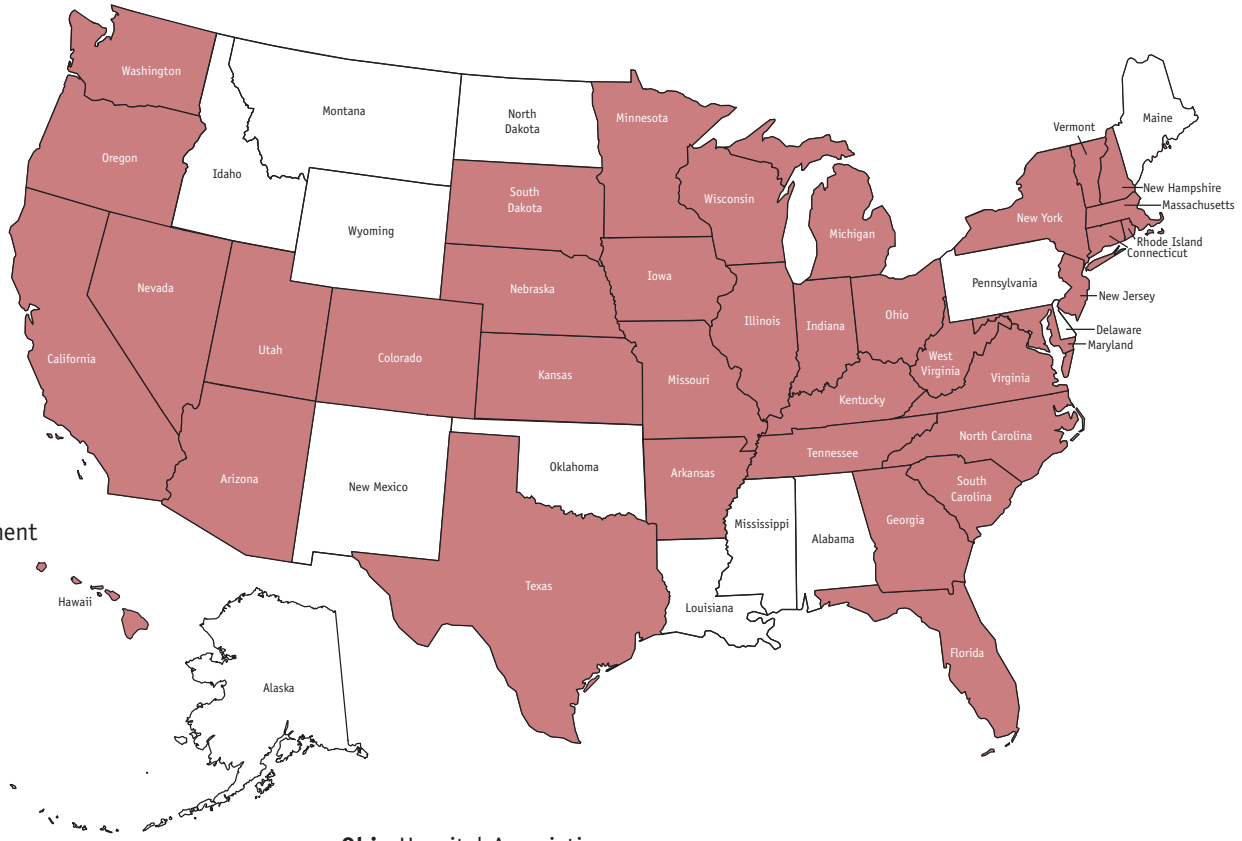
This Fact Book examines inpatient care of mental health and substance abuse (MHSA) disorders. Because HCUP nationwide databases do not include data from long-term care facilities, specialty psychiatric hospitals, or substance-abuse treatment facilities, this report provides a detailed analysis of the treatment of these disorders in short-term, non-Federal, community hospitals. This Fact Book considers MHSA disorders among adults ages 18 and older and offers comprehensive statistics on special topics related to MHSA hospitalizations.

We invite you to tell us how you are using this Fact Book and other HCUP data and tools and to share suggestions on how HCUP products might be enhanced to further meet your needs. Please e-mail us at **hcup@ahrq.gov** or send a letter to the address below.

Irene Fraser, Ph.D.
Director
Center for Delivery, Organization, and Markets
Agency for Healthcare Research and Quality
540 Gaither Road
Rockville, MD 20850

Contributors

HCUP is based on data collected by individual State Partner organizations (including State departments of health, hospital associations, and private agencies). These organizations provide the data to AHRQ where the data are converted to uniform data products. Without the participation of the following Partner organizations, HCUP and the 2004 Nationwide Inpatient Sample (NIS) would not be possible:



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Introduction

For those diagnosed with mental health and/or substance abuse (MHSA) disorders, social relationships are strained, and the ability to perform at school and work is impaired. Many are too debilitated to work. The loss of wages is a burden on families and the loss of labor negatively impacts the economy. Moreover, the financial burden of treatment for these chronic conditions is substantial.[1, 2]

Although an untold number of individuals who suffer from MHSA disorders will go untreated, for those who do receive care, treatment settings are varied. Some will seek care in outpatient or ambulatory settings, where the majority of specialty MHSA care takes place. Others will need more intense treatment in an inpatient setting—community hospitals or long-term, residential facilities. With the continued drop in psychiatric beds in specialty facilities, community hospitals have become the primary source of short-term inpatient care.[1, 3]

This Fact Book examines community hospital stays for adults with MHSA disorders in 2004. MHSA disorders examined in this Fact Book include: mood disorders; substance-related disorders; delirium, dementia, and amnestic and cognitive disorders; anxiety disorders; schizophrenia and other psychotic disorders; personality disorders; adjustment disorders; disruptive behavior disorders; impulse control disorders; disorders usually diagnosed in infancy, childhood or adolescence; and miscellaneous mental disorders. In addition, several special topics are addressed, such as dual diagnosis, hospitalizations for suicide attempt, and maternal stays complicated by MHSA disorders.

Information on data sources and methods are available at the end of the Fact Book. A glossary contains MHSA terms used in this Fact Book. Appendix A provides information on the mapping of diagnostic codes to MHSA disorders. Appendix B provides more detailed information on hospital stays for specific principal MHSA disorders. Appendix C highlights common principal and secondary diagnoses by gender and age.

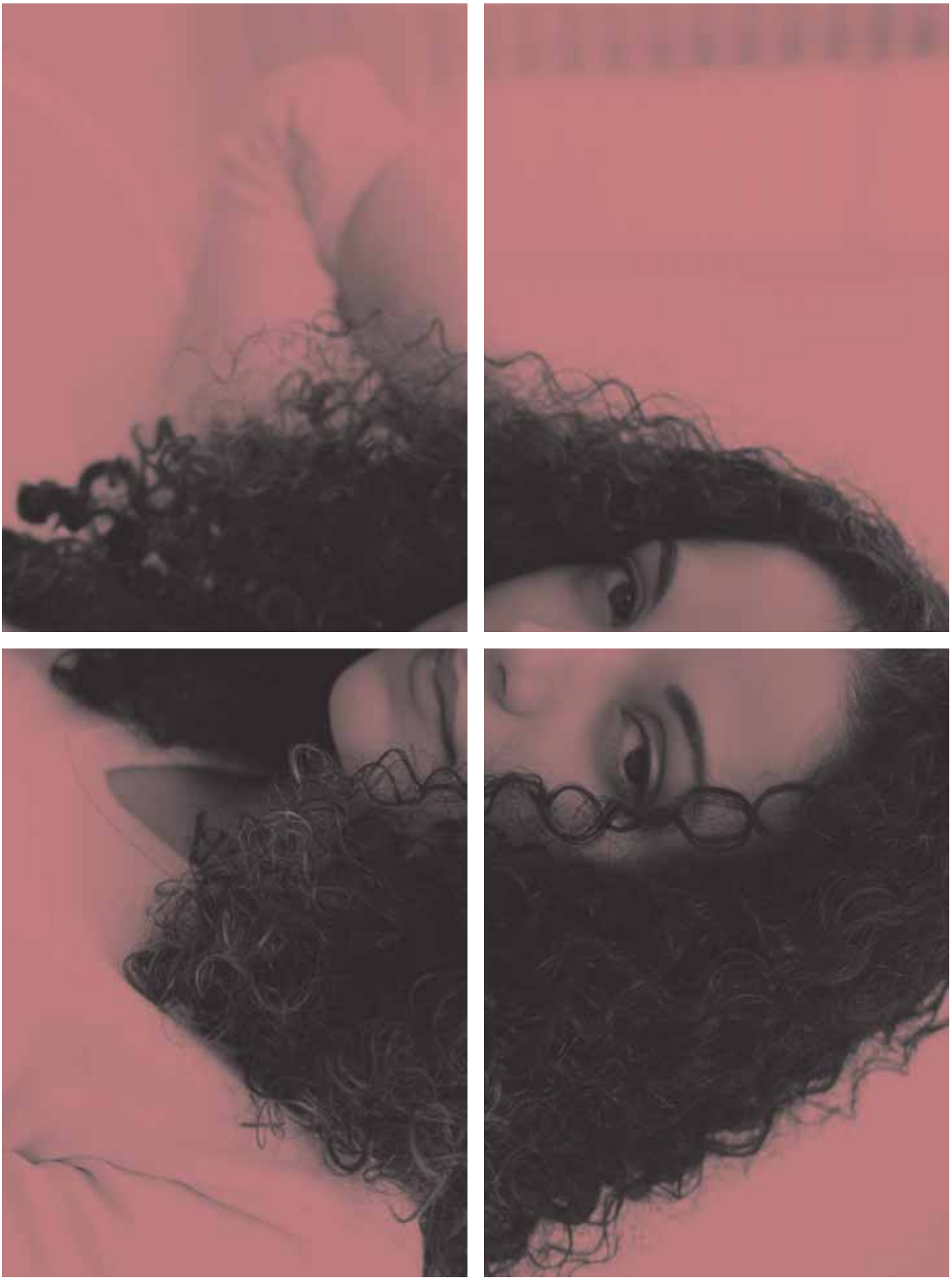
Treatment in Community Versus Specialty Hospitals

This Fact Book presents information on MHSA stays in U.S. community hospitals, which are defined by the American Hospital Association as "all non-Federal, short-term (or acute care) general and specialty hospitals."[4] Although community hospitals include any type of hospital that is open to the public, such as academic medical centers, medical specialty hospitals, and public hospitals, they do not include specialty psychiatric or substance abuse treatment facilities.

- In 2004, nearly all community hospitals in the United States (98.0 percent) provided care to patients with MHSA disorders.
- Almost one-fourth of adult stays in community hospitals (23.8 percent) involved a MHSA disorder.
- Almost 10 times as many patients with MHSA disorders—7.6 million—were seen in community hospitals as in psychiatric facilities.
- Although specialty psychiatric facilities provided nearly 27 million days of care annually, community hospitals provided over 44 million days of care to patients with MHSA disorders.
- Stays in community hospitals were considerably shorter than stays in specialty facilities. The mean length of stay for MHSA disorders was 5.8 days in community hospitals compared to 33.0 days in specialty psychiatric facilities.

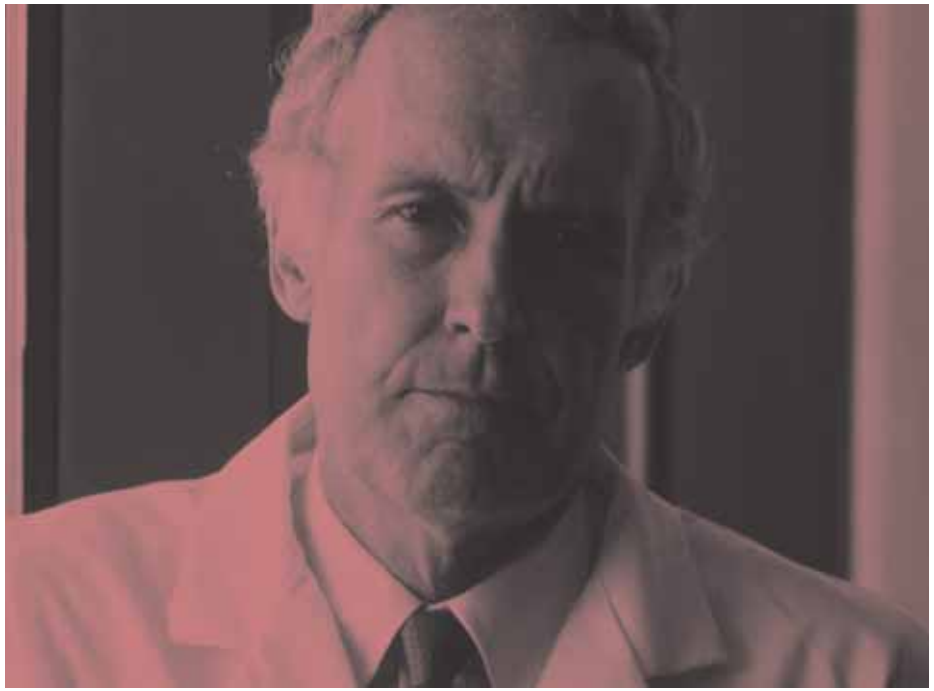
	COMMUNITY HOSPITALS, ALL ADULT STAYS[a]	COMMUNITY HOSPITALS WITH MHSA STAYS, ADULT MHSA-RELATED STAYS[a] (percentage of all community hospitals/stays/days)	SPECIALTY PSYCHIATRIC FACILITIES, ALL STAYS[b, c, d]
Number of hospitals	4,919	4,821 (98.0%)	476
Number of inpatient stays	31,929,000	7,592,000 (23.8%)	807,000
Number of inpatient days	154,786,000	44,295,000 (28.6%)	26,698,000
Mean length of stay, in days	4.8	5.8	33.0[e]

[a] Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP) Nationwide Inpatient Sample (NIS), 2004.
[b] Source: American Hospital Association, *AHA Hospital Statistics*, 2006 ed., Table 2: 2004 U.S. registered hospitals: utilization, personnel and finances.
[c] Specialty psychiatric hospital is based on self-report of American Hospital Association registered hospitals and on the following AHA definition of psychiatric inpatient care: "providing acute or long-term care to emotionally disturbed patients, including patients admitted for diagnosis and those admitted for treatment of psychiatric problems, on the basis of physicians' orders and approved nursing care plans. Long-term care may include intensive supervision to the chronically mentally ill, mentally disordered, or other mentally incompetent persons." Data include facilities with substance abuse treatment services but do not represent all substance abuse treatment facilities.
[d] Data include discharges for both adults and children.
[e] Mean length of stay was calculated by dividing the number of inpatient days by the number of admissions.



PART I:
Overview

What are the common reasons for hospitalization, by type and diagnosis?



This report compares the following types of hospital stays for adults (18 years and over)—

Stays with at least one MHSA diagnosis: Stays related to mental health or substance abuse disorders.[iii] This type is further divided into these three subtypes:

- **Principal MHSA only:** The principal reason for hospitalization was a MHSA disorder and no additional MHSA diagnoses were indicated on the discharge record. [iv]
- **Principal and secondary MHSA:** The principal reason for hospitalization was a MHSA disorder and at least one additional MHSA diagnosis was indicated on the discharge record.
- **Secondary MHSA only:** One or more MHSA diagnoses were listed as secondary or complicating conditions, but the principal reason for the hospital stay was not a MHSA disorder.

Stays with no MHSA diagnosis: Stays related to medical, surgical or obstetric conditions that did not have a MHSA diagnosis on the discharge record.

Common Reasons, by Type

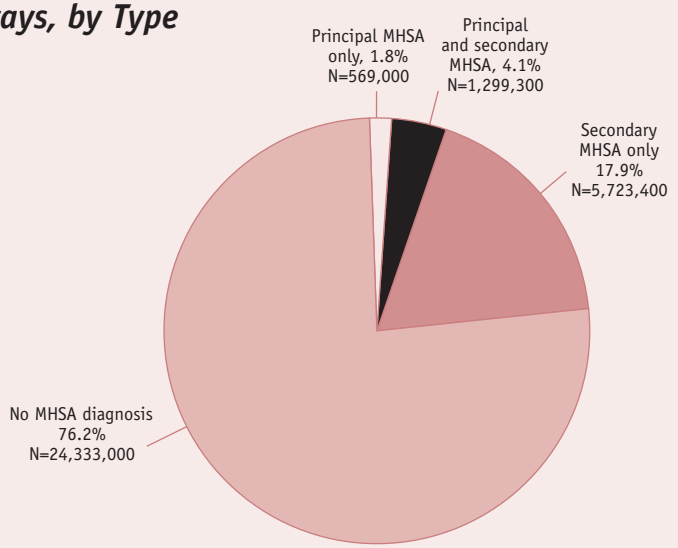
- In 2004, 24 percent of hospital stays for adults in U.S. community hospitals were related to MHSA disorders—almost 7.6 million hospitalizations.
- Nearly 6 percent of adult hospital stays (about 1.9 million) had a principal MHSA diagnosis and 18 percent of adult stays (5.7 million) were primarily for a non-MHSA condition but had a secondary MHSA diagnosis.
- Among MHSA hospital stays, nearly 25 percent had a principal MHSA diagnosis listed on the discharge record. The remaining three-fourths were for non-MHSA disorders with a secondary MHSA diagnosis.

Common Reasons, by Diagnosis

- The most common MHSA disorders seen in hospital stays were mood disorders, substance-related disorders, delirium/dementia, anxiety disorders, and schizophrenia.
- One out of every 10 hospital stays was related to mood disorders (over 3.3 million stays).
- One out of every 14 hospital stays was related to substance-related disorders (2.3 million stays).
- One out of every 20 stays was related to delirium/dementia (1.7 million stays).

[iii] All MHSA diagnoses were classified into 11 mutually exclusive categories. Details on the classification scheme can be found in the Methods, Glossary, and Appendix A.
[iv] "Principal" diagnosis is the main reason for hospitalization after evaluation during the stay. "Secondary" diagnosis is an additional, complicating condition that is present on admission or develops during the stay.

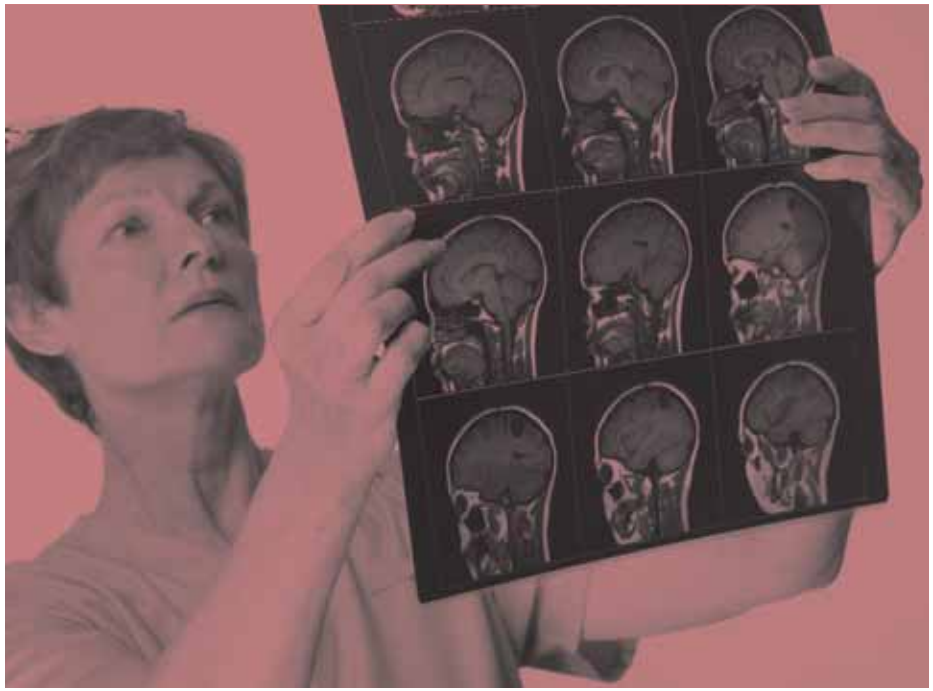
Mental Health and Substance Abuse-Related Hospital Stays, by Type



ALL-LISTED MHSA DIAGNOSES	TOTAL NUMBER OF HOSPITAL STAYS (in thousands)	PERCENTAGE OF ALL HOSPITAL STAYS
Mood disorders including bipolar disorders and depressive disorders	3,311	10.4
Substance-related disorders including drug and alcohol abuse disorders	2,253	7.1
Delirium, dementia, and amnestic and cognitive disorders	1,691	5.3
Anxiety disorders	1,153	3.6
Schizophrenia and other psychotic disorders	821	2.6
Miscellaneous mental disorders	334	1.1
Personality disorders	253	0.8
Adjustment disorders	123	0.4
Disruptive behavior disorders	51	0.2
Impulse control disorders	25	0.1
Disorders usually diagnosed in infancy, childhood, and adolescence	11	0.0

Note: "All-listed MHSA diagnoses" refers to all MHSA diagnoses listed on the discharge record. Patients can have more than 1 MHSA diagnosis; thus, the sum of the number and percentage of hospital stays do not match the pie chart. "0.0" percent indicates < .05 percent.

How do stays vary by gender and age?



Gender

- Women made up a disproportionate share of patients hospitalized for MHSA disorders in 2004. Although women comprised 51 percent of the U.S. adult population, they accounted for 58 percent of MHSA stays and 62 percent of non-MHSA stays. The top 5 MHSA diagnoses for women were:

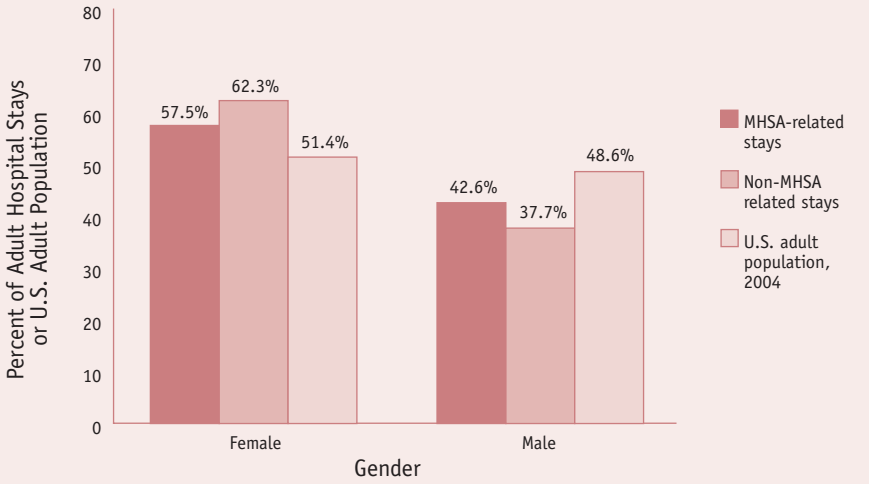
    1. Mood disorders (11.1 percent)
    2. Delirium/dementia (5.5 percent)
    3. Substance-related disorders (4.1 percent)
    4. Anxiety disorders (4.0 percent)
    5. Schizophrenia (2.0 percent)

- Men comprised 49 percent of the U.S. adult population in 2004, but they accounted for only 43 percent of MHSA stays and 38 percent of non-MHSA stays. The top 5 MHSA diagnoses for men were:

    1. Substance-related disorders (11.8 percent)
    2. Mood disorders (9.2 percent)
    3. Delirium/dementia (5.1 percent)
    4. Schizophrenia (3.4 percent)
    5. Anxiety disorders (3.1 percent)

- Hospital stays associated with substance-related disorders were nearly three times more common among men than women.

Hospital Stays and U.S. Population, by Gender



Source for U.S. population figures: Population Division, U.S. Census Bureau, Table 1: Annual Estimates of the Population by Sex and Five-Year Age Groups for the United States: April 1, 2000 to July 1, 2005 (NC-EST2005-01) and related data file; released May 10, 2006.

ALL-LISTED MHSA DIAGNOSES	FEMALE	MALE
	NUMBER OF ALL-LISTED DIAGNOSES, IN THOUSANDS (percentage of all gender-specific hospital stays)	
Mood disorders including bipolar disorders and depressive disorders	2,169 (11.1)	1,139 (9.2)
Substance-related disorders including drug and alcohol abuse disorders	794 (4.1)	1,457 (11.8)
Delirium, dementia, and amnestic and cognitive disorders	1,063 (5.5)	628 (5.1)
Anxiety disorders	774 (4.0)	378 (3.1)
Schizophrenia and other psychotic disorders	398 (2.0)	420 (3.4)
Miscellaneous mental disorders	294 (1.5)	40 (0.3)
Personality disorders	149 (0.8)	104 (0.8)
Adjustment disorders	70 (0.4)	53 (0.4)
Disruptive behavior disorders	23 (0.1)	29 (0.2)
Impulse control disorders	9 (0.1)	16 (0.1)
Disorders usually diagnosed in infancy, childhood, and adolescence	3 (0.0)	8 (0.1)

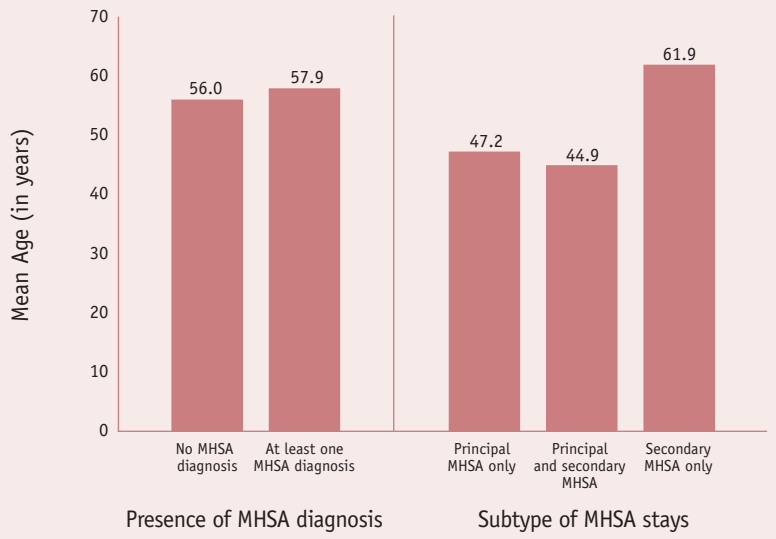
Note: "All-listed MHSA diagnoses" refers to all MHSA diagnoses listed on the discharge record; patients can have more than 1 MHSA diagnosis. "0.0" percent indicates < .05 percent.

Age

- Overall, the mean age for adults hospitalized with any MHSA disorder was similar to that of all other patients—58 and 56 years, respectively. Hospitalizations for principal MHSA disorders (i.e., principal MHSA only plus principal and secondary MHSA) occurred more often among younger adults (mean age = 46 years); hospitalizations for only secondary MHSA disorders occurred more often among older adults (mean age = 62 years).

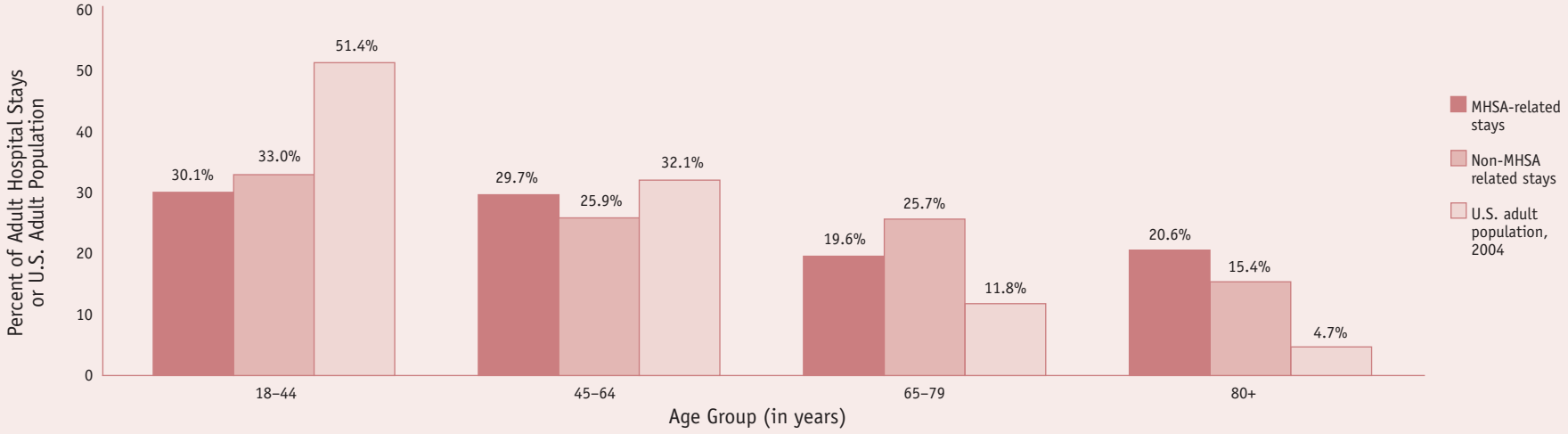
- Older age groups accounted for a disproportionate share of hospital stays for MHSA disorders overall in 2004. Adults 65–79 years comprised 12 percent of the U.S. adult population, but they accounted for nearly 20 percent of MHSA hospital stays and 26 percent of non-MHSA stays.

Mean Age, by Type



- Adults 80 and older comprised 5 percent of the U.S. adult population, yet they accounted for nearly 21 percent of MHSA hospital stays and 15 percent of non-MHSA stays.
- In contrast, adults ages 18 to 44 comprise over half the total U.S. adult population, but they accounted for only 30 percent of MHSA hospital stays and 33 percent of hospital stays with no MHSA diagnosis.
- While adults ages 45 to 64 represented nearly one-third (32.1 percent) of the U.S. adult population, they accounted for slightly fewer hospital stays for MHSA disorders (29.7 percent) and non-MHSA conditions (25.9 percent).

Hospital Stays and U.S. Population, by Age



Source for U.S. population figures: Population Division, U.S. Census Bureau, Table 1: Annual Estimates of the Population by Sex and Five-Year Age Groups for the United States: April 1, 2000 to July 1, 2005 (NC-EST2005-01) and related data file; released May 10, 2006.

Gender and Age Characteristics

- The most common MHSA diagnosis for adults younger than age 80 was mood disorders, seen in 11 percent of stays for patients ages 18–44, 13 percent of stays for patients ages 45–64, and 8 percent of stays for patients ages 65–79. Mood disorder was seen in 8 percent of stays for patients 80 and older, second to delirium/dementia (20.6 percent) as the most common diagnosis for this age group.
- The second most common MHSA diagnosis for adults ages 18–64 was substance-related disorders (about 10 percent).
- Anxiety disorders were the third most common group of MHSA disorders for all age groups—ranging from about 3 percent of inpatients age 80 and older to 5 percent of inpatients ages 45–64.

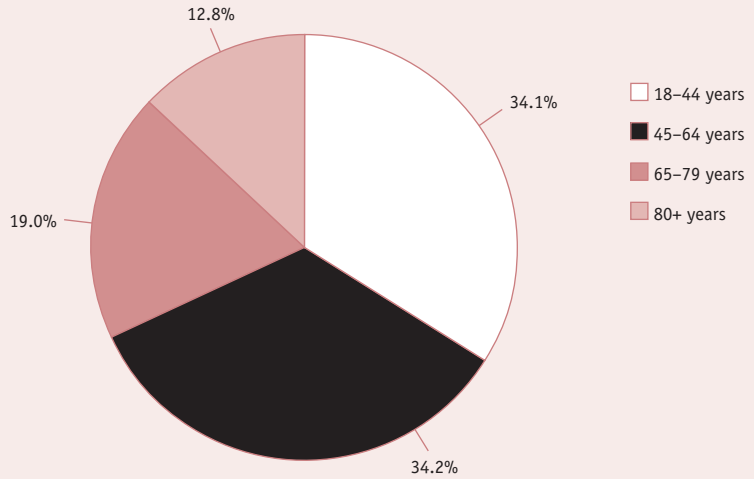
ALL-LISTED MHSA DIAGNOSES	AGE GROUP			
	18–44 YEARS	45–64 YEARS	65–79 YEARS	80+ YEARS
	NUMBER OF ALL-LISTED DIAGNOSES, IN THOUSANDS (percentage of age-specific hospital stays)			
Mood disorders including bipolar disorders and depressive disorders	1,128 (10.9)	1,130 (13.2)	631 (8.1)	423 (8.0)
Substance-related disorders including drug and alcohol abuse disorders	1,104 (10.7)	862 (10.1)	226 (2.9)	61 (1.1)
Delirium, dementia, and amnestic and cognitive disorders	23 (0.2)	90 (1.1)	487 (6.3)	1,090 (20.6)
Anxiety disorders	365 (3.5)	394 (4.6)	252 (3.3)	141 (2.7)
Schizophrenia and other psychotic disorders	319 (3.1)	289 (3.4)	129 (1.7)	84 (1.6)
Miscellaneous mental disorders	265 (2.6)	36 (0.4)	20 (0.3)	13 (0.2)
Personality disorders	168 (1.6)	70 (0.8)	11 (0.2)	4 (0.1)
Adjustment disorders	65 (0.6)	31 (0.4)	17 (0.2)	11 (0.2)
Disruptive behavior disorders	34 (0.3)	12 (0.1)	3 (0.0)	3 (0.1)
Impulse control disorders	19 (0.2)	5 (0.1)	1 (0.0)	1 (0.0)
Disorders usually diagnosed in infancy, childhood, and adolescence	8 (0.1)	2 (0.0)	< 1 (0.0)	< 1 (0.0)

Note: "All-listed MHSA diagnoses" refers to all MHSA diagnoses listed on the discharge record; patients can have more than 1 MHSA diagnosis. "0.0" percent indicates < .05 percent.

Distribution of Age for the Top 5 Most Common MHSA Diagnoses

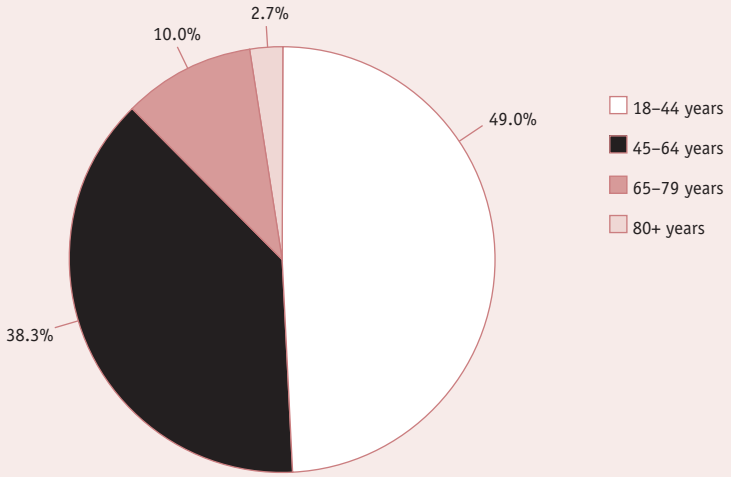
- The distribution of age varied by the top 5 most common MHSA diagnoses. Almost half of all substance-related stays were for patients ages 18 to 44 (49.0 percent), but almost all stays related to dementia/delirium were for adults age 65 and older (93.3 percent).
- Mood and anxiety disorders affected every age group. About one-third of stays for mood or anxiety disorder involved patients 18–44, one-third of patients were 45–64 and one-third were age 65 and older.

Hospital Stays Related to Mood Disorders



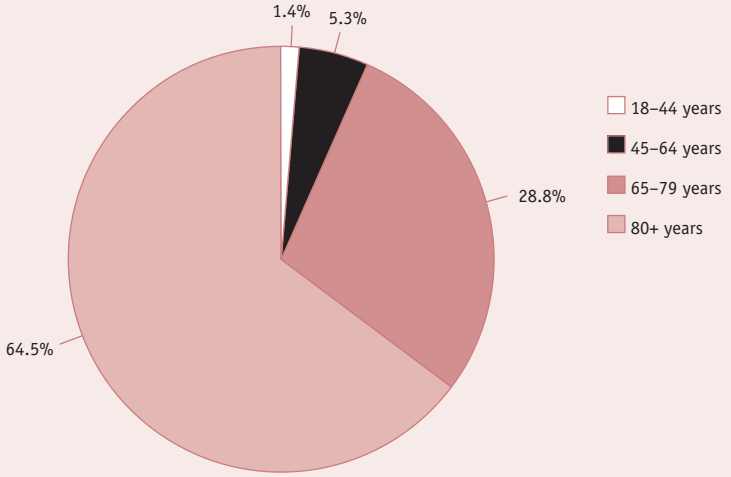
Note: The sum of pie percentages may not total 100 percent, due to rounding.

Hospital Stays Related to Substance-Related Disorders



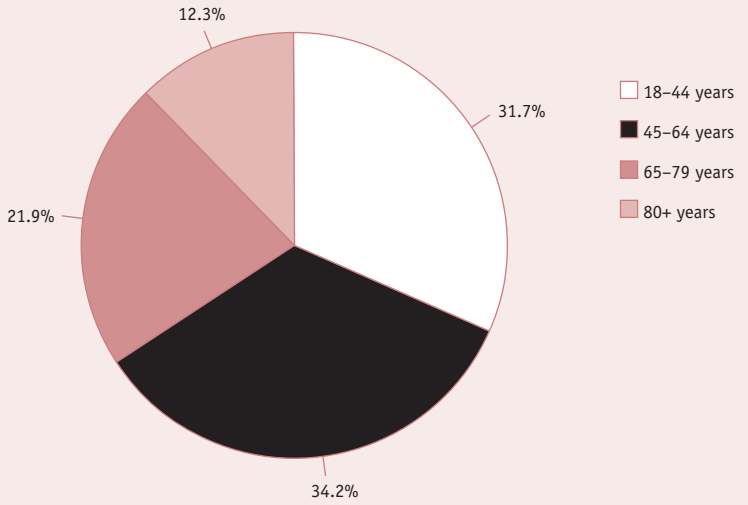
Note: The sum of pie percentages may not total 100 percent, due to rounding.

Hospital Stays Related to Delirium/Dementia



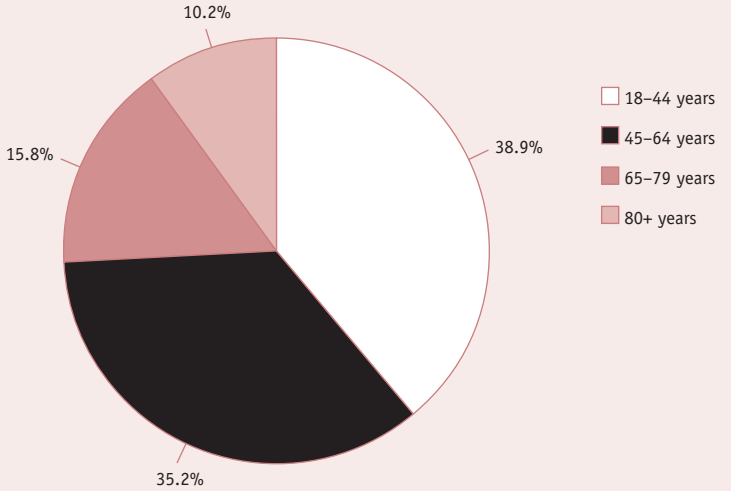
Note: The sum of pie percentages may not total 100 percent, due to rounding.

Hospital Stays Related to Anxiety Disorders



Note: The sum of pie percentages may not total 100 percent, due to rounding.

Hospital Stays Related to Schizophrenia and Other Psychotic Disorders

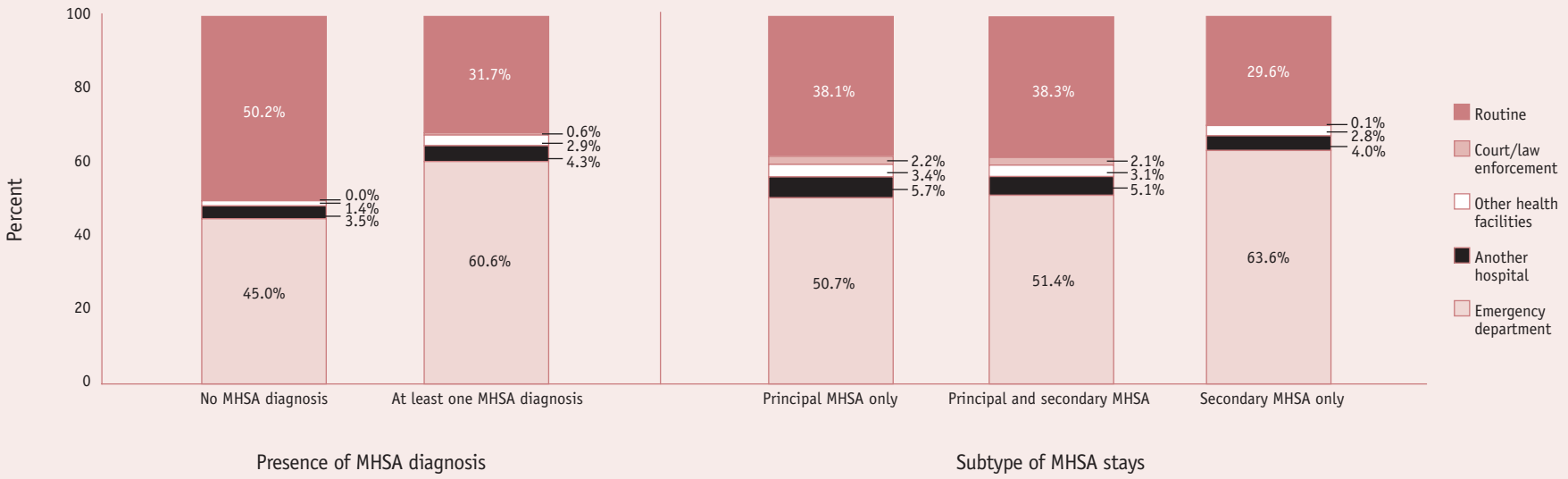


Note: The sum of pie percentages may not total 100 percent, due to rounding.

How are patients admitted to the hospital?

- In 2004, nearly 61 percent of admissions with a MHSA diagnosis were admitted through the emergency department (ED) compared to 45 percent of admissions with no MHSA diagnosis.
- Adults with only secondary MHSA diagnoses were the most likely to be admitted through the ED (63.6 percent). They were 1.4 times more likely to be admitted through the ED than those with no MHSA diagnosis (45.0 percent) and 1.3 times more likely than those with only a principal MHSA diagnosis (50.7 percent).
- Hospital admissions through courts or law enforcement comprised less than 1 percent of all hospitalizations, but more than 83 percent of these admissions had a principal MHSA diagnosis and an additional 6 percent had a secondary MHSA diagnosis (data not shown).

Hospital Admissions, by Type

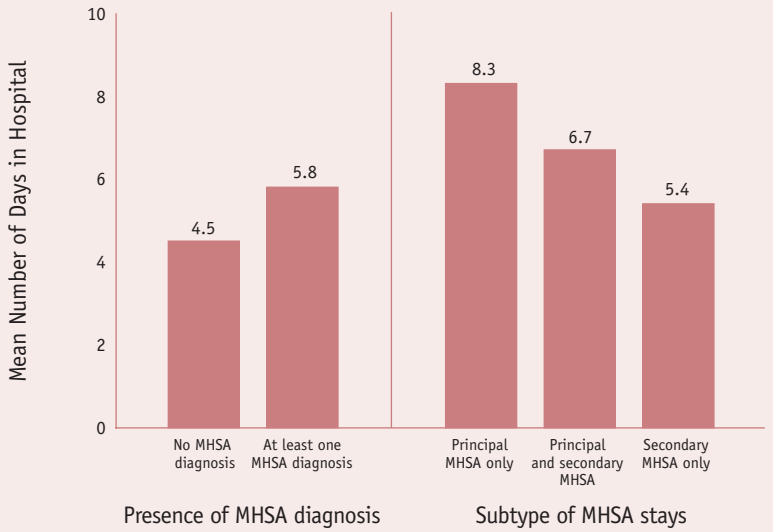


What is the mean length of stay?

Length of Stay, by Type

- On average, hospital stays involving MHSA disorders were 29 percent longer than stays for non-MHSA conditions (5.8 versus 4.5 days) in 2004.
- Adults with only a principal MHSA diagnosis stayed in the hospital an average of 8 days compared with 5 days for patients with no MHSA condition.
- Adults with both principal and secondary MHSA diagnoses had shorter lengths of stay than those with only a principal MHSA diagnosis (6.7 versus 8.3 days).
- Hospital stays for adults with only secondary MHSA diagnoses were 20 percent longer than adults with no MHSA diagnosis (5.4 versus 4.5 days).

Length of Hospitalization, by Type



Length of Stay, by Principal Diagnosis

- Among patients with a principal MHSA diagnosis, those with schizophrenia had the longest length of stay— over 11 days.
- When disorders typically diagnosed in childhood (such as pervasive development disorders and tic disorders) required hospitalization in adulthood, stays averaged about 10 days.
- An additional three MHSA disorders had average lengths of stay of 1 week or longer—impulse control disorders (9.6 days), delirium/dementia (8.6 days), and mood disorders (7.0 days).

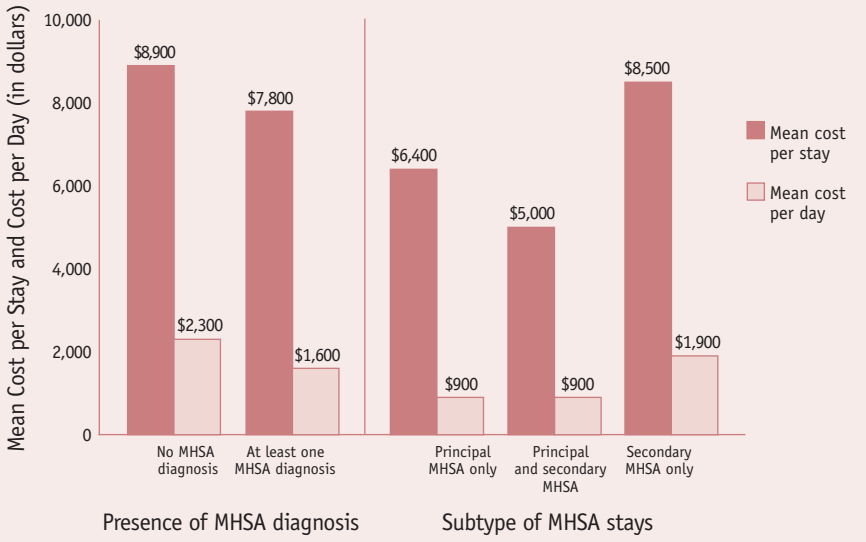
PRINCIPAL MHSA DIAGNOSIS	MEAN LENGTH OF STAY (in days)
Schizophrenia and other psychotic disorders	11.1
Disorders usually diagnosed in infancy, childhood, and adolescence	9.7
Impulse control disorders	9.6
Delirium, dementia, and amnestic and cognitive disorders	8.6
Mood disorders including bipolar disorders and depressive disorders	7.0
Disruptive behavior disorders	5.8
Personality disorders	5.6
Miscellaneous mental disorders	3.6
Substance-related disorders including drug and alcohol abuse disorders	4.6
Anxiety disorders	3.8
Adjustment disorders	3.3

How much do hospital stays cost?

Per-Stay and Per-Day Cost, by Type

- The mean total cost for a hospital stay with any MHSA diagnosis ($7,800) was 14 percent lower than for stays with no MHSA diagnosis ($8,900). The mean cost per day for MHSA hospitalizations was 42 percent lower than for non-MHSA hospital stays—$1,600 per day compared with $2,300 per day—indicating that MHSA stays were less resource intensive.
- The mean total cost for a hospital stay with only a principal MHSA diagnosis was 39 percent lower than non-MHSA stays ($6,400 versus $8,900), and costs per day were 171 percent lower ($900 versus $2,300).
- Stays that involved principal and secondary MHSA diagnoses were the least expensive ($5,000), but the cost per day ($900) was identical to stays for principal MHSA diagnoses only.
- The costs of stays with only secondary MHSA diagnoses were slightly less than stays with no MHSA diagnosis ($8,500 versus $8,900).

Cost per Stay and Cost per Day of Hospitalization, by Type



Total Aggregate and Per-Stay Cost, by Principal Diagnosis

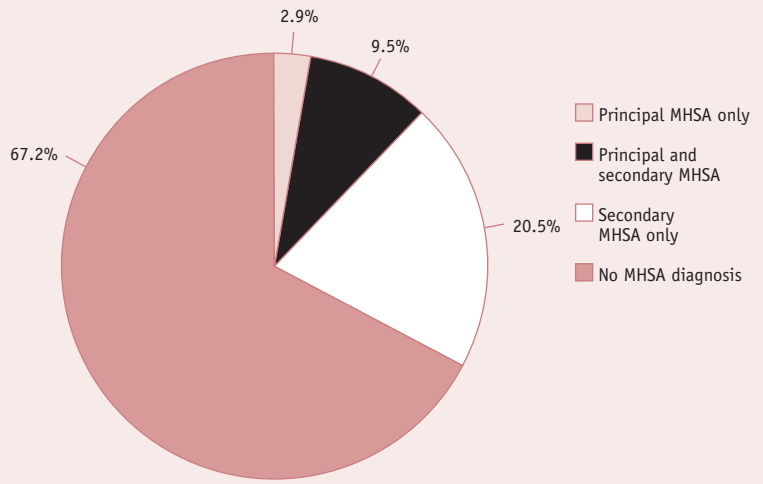
- In 2004, hospitalizations principally for MHSA disorders cost a total of $10.2 billion.
- Hospitalizations for the 5 most common principal MHSA diagnoses—mood disorders, schizophrenia, substance-related disorders, dementia/delirium, and anxiety disorders—cost $9.9 billion nationally in 2004.
- The most common principal MHSA diagnosis—mood disorders—also had the highest aggregate inpatient hospital costs of all MHSA diagnoses at $3.4 billion nationally in 2004.
- On a per stay basis, schizophrenia was the most expensive of the common principal MHSA diagnoses to treat at $8,000 per stay.
- Disorders of childhood are rarely recorded as the principal diagnoses in adults, accounting for only 773 stays in 2004 (Appendix B). When hospitalization did occur, stays were expensive. The mean cost per stay for disorders of childhood in adults was $7,200, almost as high as that for schizophrenia.

PRINCIPAL MHSA DIAGNOSIS	AGGREGATE TOTAL COSTS	MEAN TOTAL COST PER STAY
Mood disorders including bipolar disorders and depressive disorders	$3,438,589,800	$4,800
Schizophrenia and other psychotic disorders	$3,316,145,400	$8,000
Substance-related disorders including drug and alcohol abuse disorders	$2,006,342,800	$4,300
Delirium, dementia, and amnestic and cognitive disorders	$974,618,500	$6,700
Miscellaneous mental disorders	$164,157,600	$3,700
Anxiety disorders	$137,655,800	$3,500
Adjustment disorders	$100,878,900	$2,700
Impulse control disorders	$54,937,100	$7,200
Personality disorders	$19,700,600	$4,500
Disorders usually diagnosed in infancy, childhood, and adolescence	$5,544,500	$7,200
Disruptive behavior disorders	$4,637,800	$4,400

Who is billed for hospital stays?

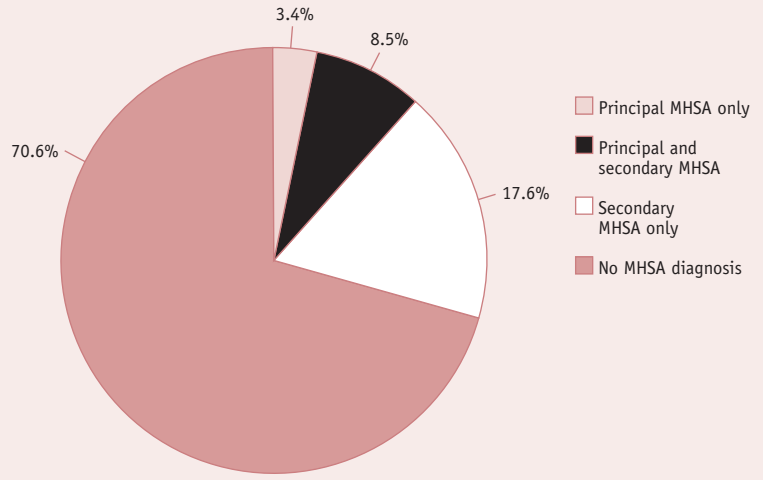
- About 33 percent of all uninsured stays, 29 percent of Medicaid stays, and 26 percent of Medicare stays were related to MHSA disorders. This compares to about 16 percent of privately insured stays.
- Roughly 12 percent of uninsured stays and 12 percent of Medicaid stays were for principal MHSA diagnoses (i.e., principal MHSA only plus principal and secondary MHSA). On the other hand, only about 4 percent of Medicare and privately insured stays were principally for MHSA diagnoses.
- Focusing on those stays with only secondary MHSA diagnoses, nearly twice as many hospital stays were billed to Medicare or were considered uninsured than were billed to private insurance (about 21 percent versus 12 percent).

Uninsured or Self-Pay Hospital Stays



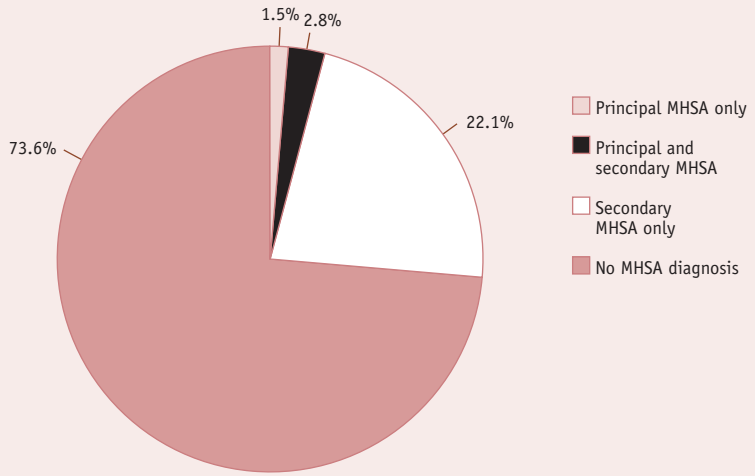
Note: The sum of pie percentages may not total 100 percent, due to rounding.

Hospital Stays Billed to Medicaid



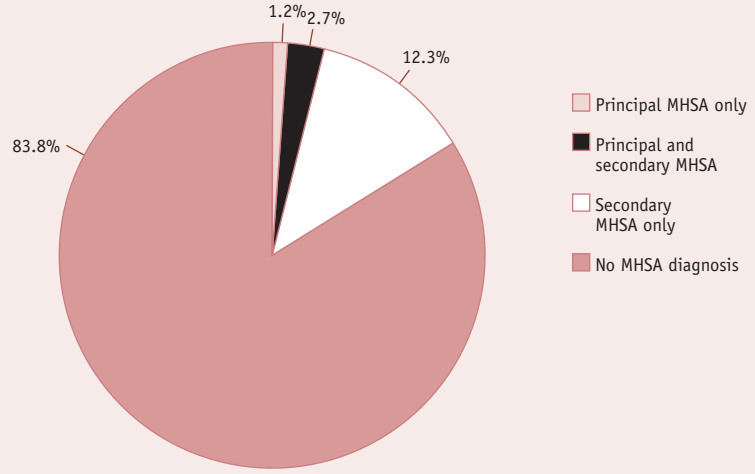
Note: The sum of pie percentages may not total 100 percent, due to rounding.

Hospital Stays Billed to Medicare



Note: The sum of pie percentages may not total 100 percent, due to rounding.

Hospital Stays Billed to Private Insurance

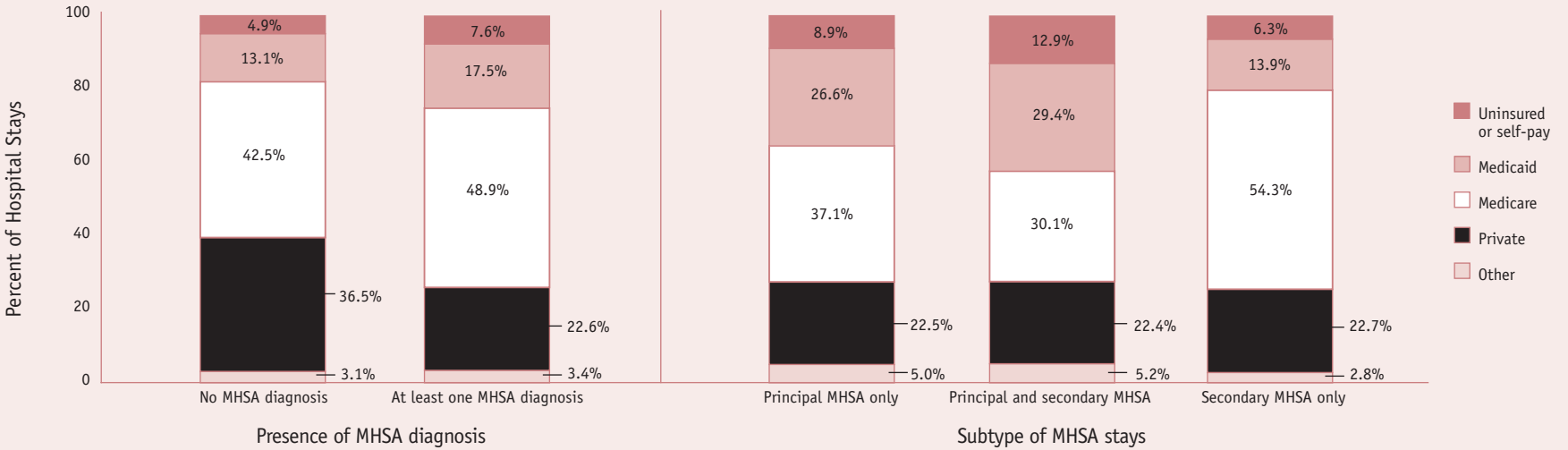


Note: The sum of pie percentages may not total 100 percent, due to rounding.

Expected Primary Payer, by Type

- Over 66 percent of adult hospital stays with MHSA diagnoses were billed to the government—about 18 percent to Medicaid, a joint State and Federal Government program, and 49 percent to the Federal Medicare program. In comparison, 56 percent of hospital stays with no MHSA diagnosis were billed to the government.
- Adults with MHSA diagnoses were 36 percent more likely to be uninsured than those without MHSA diagnoses. Nearly 8 percent of MHSA stays were uninsured compared with about 5 percent of stays without MHSA diagnoses.
- Patients with both principal and secondary MHSA diagnoses were the most likely to be uninsured or require self-pay—nearly 13 percent compared with 5 percent for patients with no MHSA diagnosis.
- Only about 23 percent of stays with MHSA diagnoses were billed to private health insurance compared with about 37 percent of stays with no MHSA diagnosis.
- Between 30 and 37 percent of hospital stays with principal MHSA diagnoses were billed to Medicare and about 22 percent were billed to private insurers.
- About 54 percent of stays with only secondary MHSA diagnoses were billed to Medicare, compared with 43 percent of non-MHSA stays.

Expected Primary Payer, by Type



Note: The sum of bar percentages may not total 100 percent, due to rounding.

Expected Primary Payer, by Principal Diagnosis

- The majority of hospital stays for 2 of the 4 most frequent MSHA diagnoses—schizophrenia and delirium/dementia—were billed to government payers. Over 78 percent of hospital stays for schizophrenia were billed to the government (35.0 percent to Medicaid and 43.5 percent billed to Medicare). Similarly, more than 90 percent of hospital stays for delirium/dementia were billed to the government (3.6 percent to Medicaid and 86.1 percent to Medicare). This most likely was because schizophrenia is a qualifying disorder for Medicaid and delirium/dementia is more frequent among the elderly who are covered by Medicare.
- In contrast, 53 percent of hospital stays for mood disorders and 52 percent of stays for substance-related disorders were billed to government payers.
- About 1 in 5 hospital stays principally for adjustment disorders and substance-related disorders was uninsured. About 1 in 10 stays principally for anxiety disorders, personality disorders, mood disorders, and impulse control disorders was uninsured.
- The only MHSA diagnoses for which private insurers covered more than other payers were mood, anxiety, and adjustment disorders.

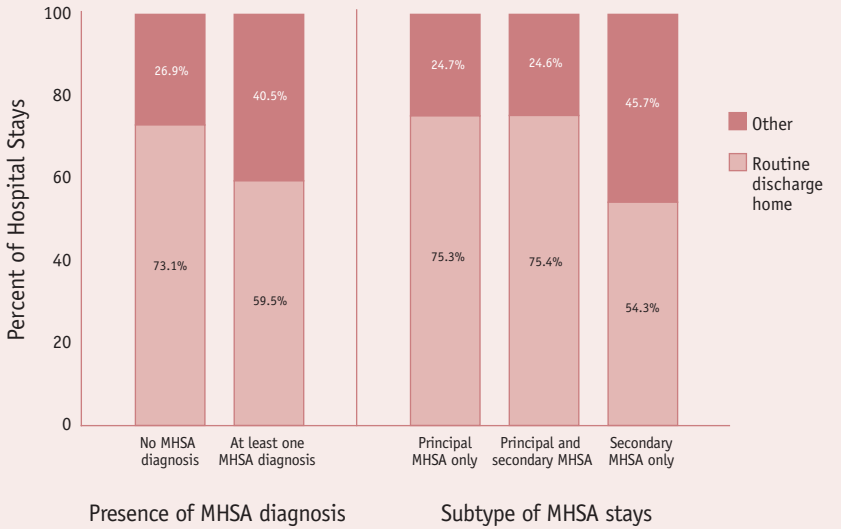
PRINCIPAL MHSA DIAGNOSIS	EXPECTED PRIMARY PAYER			
	UNINSURED OR SELF-PAY'S SHARE	MEDICAID'S SHARE	MEDICARE'S SHARE	PRIVATE INSURER'S SHARE
	NUMBER OF HOSPITAL STAYS, IN THOUSANDS (percentage of disorder-specific hospital stays)			
Mood disorders including bipolar disorders and depressive disorders	76 (10.8)	174 (24.7)	197 (27.9)	217 (30.8)
Substance-related disorders including drug and alcohol abuse disorders	96 (20.5)	170 (36.1)	74 (15.7)	109 (23.2)
Schizophrenia and other psychotic disorders	24 (5.9)	144 (35.0)	178 (43.5)	39 (9.6)
Delirium, dementia, and amnestic and cognitive disorders	2 (1.5)	5 (3.6)	125 (86.1)	11 (7.4)
Miscellaneous mental disorders	3 (7.4)	19 (43.7)	6 (13.2)	14 (31.9)
Anxiety disorders	5 (13.8)	7 (18.0)	12 (30.4)	13 (33.1)
Adjustment disorders	8 (22.6)	9 (22.8)	5 (12.9)	12 (32.6)
Impulse control disorders	1 (10.5)	3 (36.8)	2 (31.7)	1 (14.6)
Personality disorders	1 (13.7)	1 (30.1)	1 (28.0)	1 (20.0)
Disruptive behavior disorders	*	< 1 (33.0)	< 1 (28.9)	< 1 (26.1)
Disorders usually diagnosed in infancy, childhood, and adolescence	*	< 1 (36.5)	< 1 (34.3)	< 1 (24.6)

Note: Percentages represent row percents. Other insurance coverage is excluded; thus, the sum of row percentages does not equal 100. Statistics based on estimates with a relative standard error (standard error/weighted estimate) greater than 0.30 or with standard error = 0 are not reliable. These statistics are suppressed and are designated with an asterisk (*).

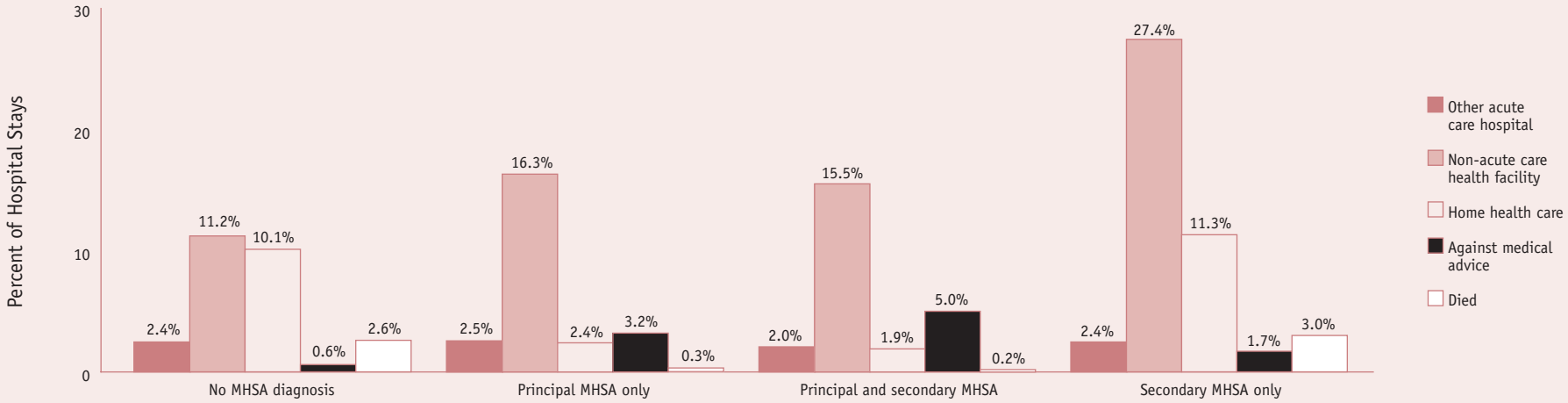
Where do patients go after they are discharged?

- In 2004, about 60 percent of discharges for adults with any MHSA diagnosis were routine; that is, they were discharged to their homes. In contrast, 73 percent of adults with no MHSA diagnosis had routine discharges.
- Adults with MHSA disorders were more likely to be discharged to a non-acute care facility (including psychiatric facilities, nursing homes, and rehabilitation centers) compared with those with no MHSA disorder. About 16 percent of hospital stays for principal MHSA diagnoses (i.e., principal MHSA only or principal and secondary MHSA) resulted in a transfer to a non-acute care health facility, while over 27 percent of hospital stays for those with only secondary MHSA diagnoses ended with such a transfer. This is primarily attributable to the larger proportion of elderly patients with dementia as secondary diagnoses (see Appendix C).
- Home health care was a more common followup to stays for those with non-MHSA principal diagnoses—10 percent of those with no MHSA diagnosis and 11 percent of those with only secondary MHSA diagnoses were discharged to home health care. In contrast, only 2 percent of hospital stays for principal MHSA diagnoses were discharged to home health care.
- Adults with a principal MHSA diagnosis (i.e., principal MHSA only or principal and secondary MHSA) were 5 to 8 times more likely to leave the hospital against medical advice than those without MHSA diagnoses. They were also 2 to 3 times more likely to leave the hospital against medical advice than those with only secondary MHSA diagnoses.
- Adults with principal MHSA diagnoses were less likely to die in the hospital than those with non-MHSA principal diagnoses (<1 percent versus 2.6 percent).

Discharge Status, by Type



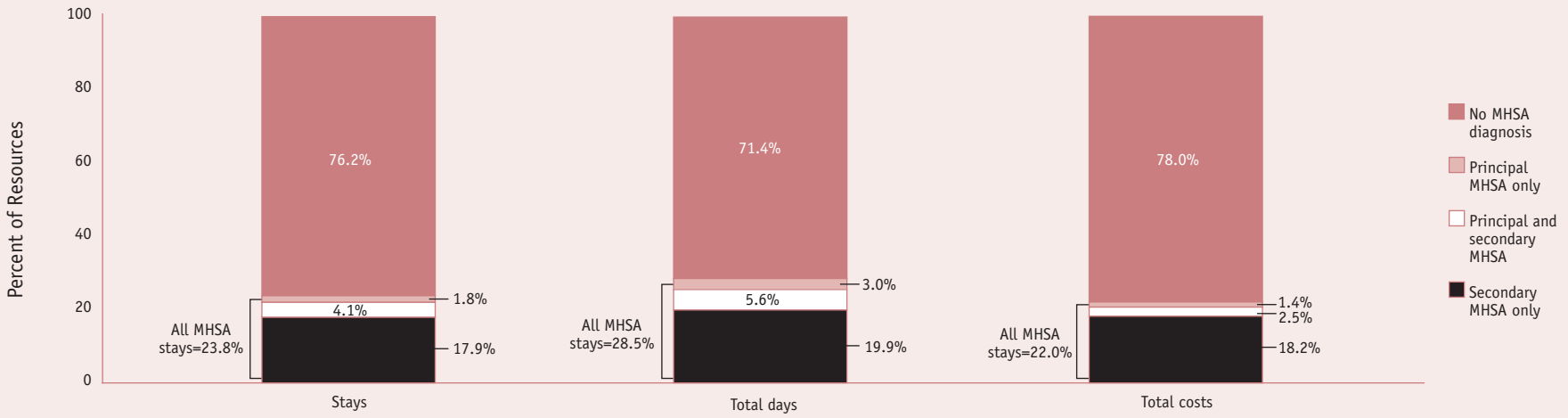
Discharge Status Other Than "Home," by Type



What percentage of hospital resource use is attributable to MHSA disorders?

- About 24 percent of all adult hospital stays, 29 percent of all days in the hospital, and 22 percent of total hospital costs were attributable to adults with a MHSA disorder in 2004.
- Hospitalization for principal MHSA diagnoses (i.e., principal MHSA only plus principal and secondary MHSA) accounted for 6 percent of all adult stays, 9 percent of total days, and 4 percent of total hospital costs, pointing to the relatively low resource intensity of MHSA care in community hospitals.
- Care for adults with only secondary MHSA diagnoses accounted for roughly 18 percent of hospital stays and total hospital costs and 20 percent of all days in the hospital.

Total Hospital Resource Use



Note: The sum of bar percentages may not total 100 percent, due to rounding.

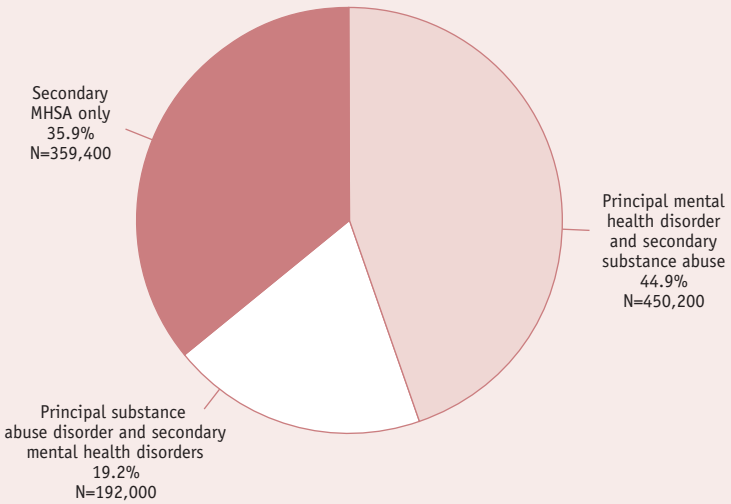
PART II:
Special Topics

Dual Diagnosis Stays

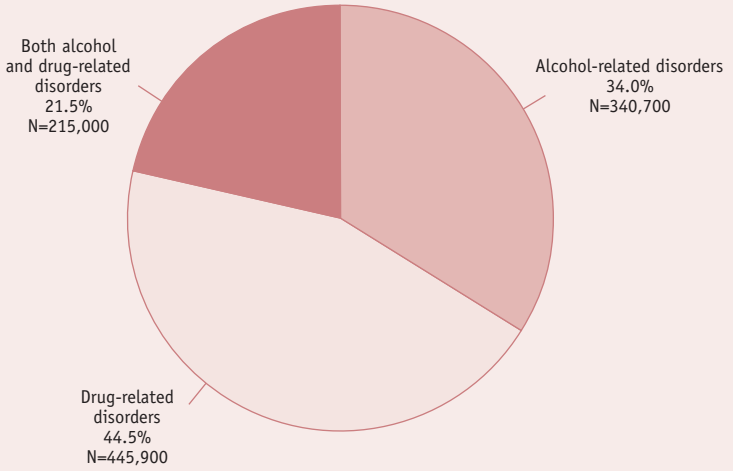
A person with both a substance-related problem and a mental health disorder is considered to have a dual diagnosis. According to studies cited in the Surgeon General's Mental Health Report,[1] nearly half of individuals with serious mental illness have associated alcohol or drug-related problems. For successful treatment, both problems must be addressed.

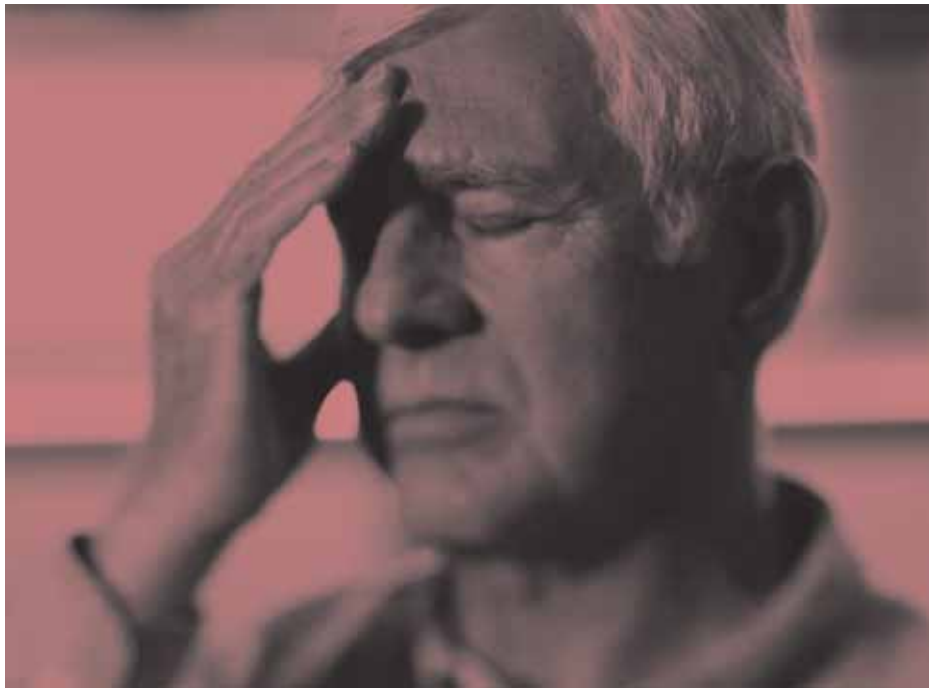
- In 2004, over 1 million adult hospital stays were related to both substance-related disorders and mental health disorders (3.1 percent of all adult hospital stays).
- Approximately 13 percent of the 7.6 million MHSA-related hospital stays involved both substance-related disorders and mental health disorders.
- Among hospital stays with a dual diagnosis, 64 percent had a principal and secondary MHSA diagnosis (44.9 percent with a principal mental health disorder and secondary substance abuse disorder, 19.2 percent with a principal substance abuse disorder and secondary mental health disorder). The remainder had a non-MHSA principal diagnosis and had both mental and substance abuse disorders as secondary diagnoses (35.9 percent).
- Among dual diagnosis stays, 34 percent of patients had alcohol-related disorders, 45 percent had drug-related disorders, and 22 percent had both alcohol and drug-related disorders.
- The most frequent mental health disorder associated with substance-related disorders was mood disorders (67.8 percent). All other mental health disorders occurred less frequently. Anxiety disorders and schizophrenia were seen in about 19 percent and 18 percent, respectively, of dual diagnosis stays.

Dual MHSA Diagnosis: Principal and Secondary Diagnoses



Dual MHSA Diagnosis Stays: Type of Substance Abuse Disorder





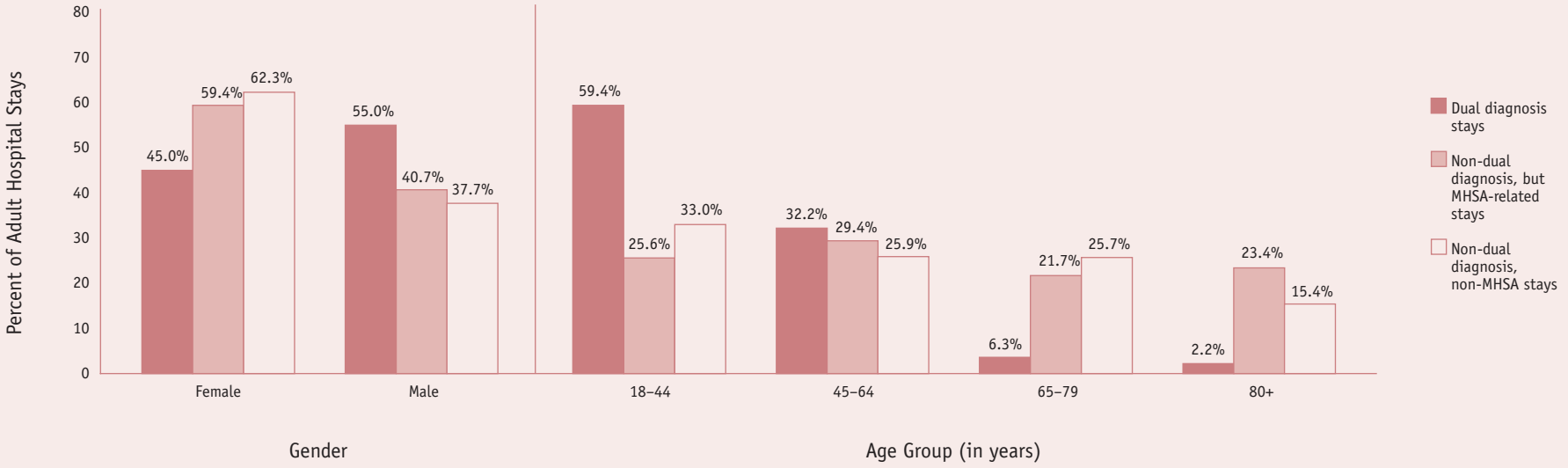
ALL-LISTED MENTAL HEALTH DIAGNOSES	TOTAL NUMBER OF HOSPITAL STAYS	PERCENTAGE OF ALL DUAL DIAGNOSIS HOSPITAL STAYS
Mood disorders including bipolar disorders and depressive disorders	679,336	67.8
Anxiety disorders	187,148	18.7
Schizophrenia and other psychotic disorders	183,584	18.3
Personality disorders	121,783	12.2
Miscellaneous mental disorders	66,231	6.6
Delirium, dementia, and amnestic and cognitive disorders	52,098	5.2
Adjustment disorders	33,619	3.4
Disruptive behavior disorders	16,013	1.6
Impulse control disorders	8,046	0.8
Disorders usually diagnosed in infancy, childhood, and adolescence	1,095	0.1

Note: "All-listed mental health diagnoses" refers to all mental health diagnoses listed on the discharge record; a patient can have more than 1 mental health diagnosis.

Gender and Age

- Men accounted for disproportionately more dually diagnosed inpatient stays than women. Although 38 percent of non-MHSA stays and 41 percent of other MHSA stays were for men, 55 percent of stays with dual diagnosis were for men.
- Most dually diagnosed inpatients were younger. Patients ages 18–44 accounted for nearly 60 percent of all dual diagnosis stays, even though these patients comprised only 26 percent of other MHSA stays and 33 percent of non-MHSA hospital stays.

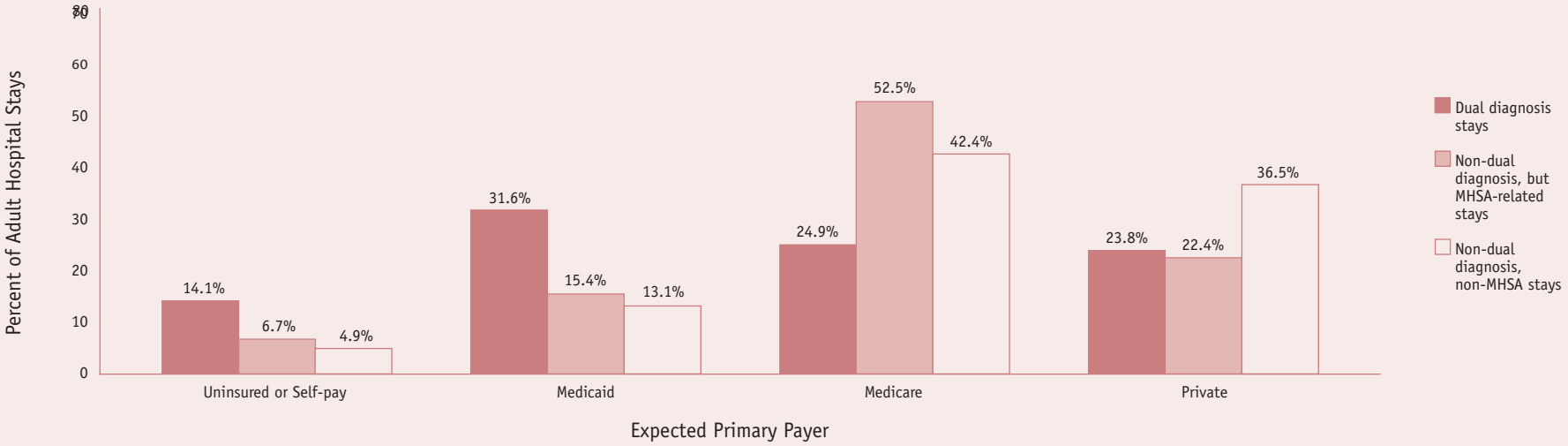
Dual Diagnosis Hospital Stays, by Gender and Age



Expected Primary Payer

- Uninsured stays and hospital stays billed to Medicaid were disproportionately more likely to include both mental health and substance abuse diagnoses. Over 14 percent of dual diagnosis stays were uninsured—nearly three times higher than the rate for non-MHSA stays (4.9 percent) and over two times higher than the rate for other MHSA stays (6.7 percent).
- Similarly, nearly 32 percent of dual diagnosis stays were billed to Medicaid, while 15 percent of other MHSA stays and 13 percent of non-MHSA stays were billed to Medicaid.
- Medicare was billed for smaller proportion of dual diagnosis stays than other MHSA or non-MHSA stays, consistent with the findings on age.

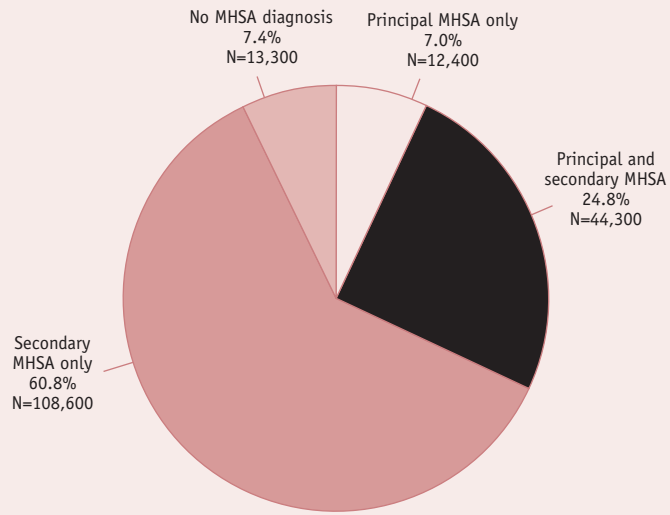
Dual Diagnosis Hospital Stays, by Expected Primary Payer



Note: Other insurance coverage is excluded from bar chart; thus, the sum of bar percentages does not equal 100.

Suicide-Related Stays

Suicide-Related Hospital Stays, by Type



Suicide is the cause of death for approximately 30,000 people each year in the United States,[5] but many more attempts are unsuccessful and result in hospitalization. Although men are 4 times more likely to die from suicide, women are 3 times more likely to attempt suicide. Most suicide deaths result from the use of firearms. Known risk factors for suicide include a history of mental disorders (predominately depression) and a history of alcohol and substance abuse.

- In 2004, nearly 179,000 adult hospital stays were related to suicide or suicide attempts.
- By far, the most frequent mechanism of injury for suicide-related hospitalizations was poisoning. Nearly two-thirds (61.1 percent) of hospital stays for suicide attempts were a result of poisonings, while 1 in 10 hospital stays for suicide attempts was a result of cutting/piercing. Firearms were implicated in only 1 percent of suicide-related hospital stays.
- Nearly all suicide-related hospital stays were related to MHSA disorders (92.6 percent).
- The single most common MHSA diagnosis related to attempted suicide was mood disorders, which accounted for nearly 70 percent of all suicide-related stays. Other common MHSA diagnoses included substance-related disorders (49.1 percent), anxiety disorders (15.5 percent), personality disorders (10.9 percent), and schizophrenia (9.1 percent).
- Although personality disorders and adjustment disorders were uncommon in all MHSA hospital stays (less than 1 percent), they accounted for about 11 and 7 percent of suicide-related stays, respectively.

ALL-LISTED MECHANISM OF INJURY	TOTAL NUMBER OF HOSPITAL STAYS	PERCENTAGE OF ALL SUICIDE-RELATED HOSPITAL STAYS
Poisoning	143,512	61.1
Cut/pierce	23,298	9.9
Firearm	2,900	1.2
Suffocation	2,173	0.9
Fall	1,834	0.8

Note: "All-listed mechanisms of injury" refers to all external cause of injury codes (e-codes) listed on the discharge record; a patient can have more than 1 e-code or mechanism of injury.

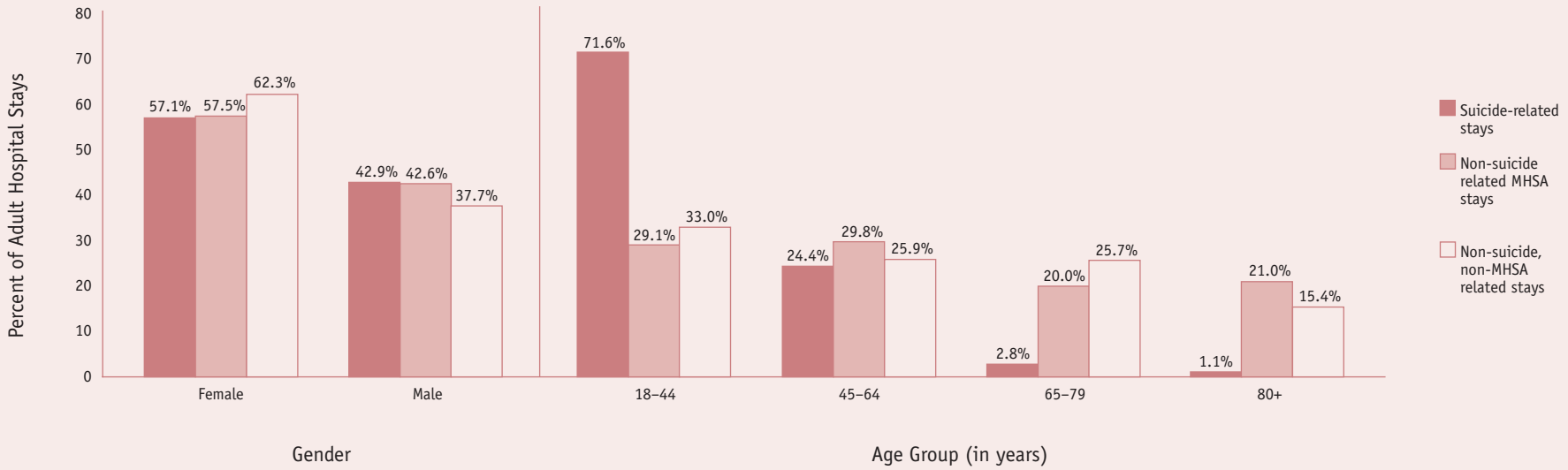
ALL-LISTED MHSA DIAGNOSES	TOTAL NUMBER OF HOSPITAL STAYS	PERCENTAGE OF ALL SUICIDE-RELATED HOSPITAL STAYS
Mood disorders including bipolar disorders and depressive disorders	124,519	69.7
Substance-related disorders including drug and alcohol abuse disorders	87,768	49.1
Anxiety disorders	27,734	15.5
Personality disorders	19,419	10.9
Schizophrenia and other psychotic disorders	16,324	9.1
Adjustment disorders	12,092	6.8
Miscellaneous mental disorders	3,770	2.1
Disruptive behavior disorders	2,583	1.5
Delirium, dementia, and amnestic and cognitive disorders	1,633	0.9
Impulse control disorders	1,440	0.8
Disorders usually diagnosed in infancy, childhood, and adolescence	332	0.2

Note: "All-listed MHSA diagnoses" refers to all MHSA diagnoses listed on the discharge record; a patient can have more than 1 MHSA diagnosis.

Gender and Age

- Women accounted for disproportionately more hospital stays of all kinds—57 percent of stays related to suicide attempts, 58 percent of stays for non-suicide-related MHSA disorders, and 62 percent of non-MHSA stays.
- The mean age for adults hospitalized for suicide attempts was about 30 years, compared with 46 years for all other patients (data not shown).
- The majority of hospital stays for suicide attempts occurred among patients ages 18–44 (71.6 percent), followed by patients 45–64 (24.4 percent). Inpatients in the older age categories, 65 and older, made up less than 4 percent of all stays for suicide.
- Although adults ages 18–44 accounted for 72 percent of suicide-related stays, they accounted for only 29 percent of other MHSA stays and 33 percent of non-MHSA stays.
- Among the 45–64 age group, the rate of hospitalizations related to suicide attempt was consistent with the rate of all other hospitalizations.
- In contrast, patients 65 to 79 years of age accounted for only 3 percent of suicide-related hospital stays while they accounted for 20 percent of MHSA stays and 26 percent of non-MHSA stays. Similarly, only 1 percent of suicide-related stays were for patients 80 and older.

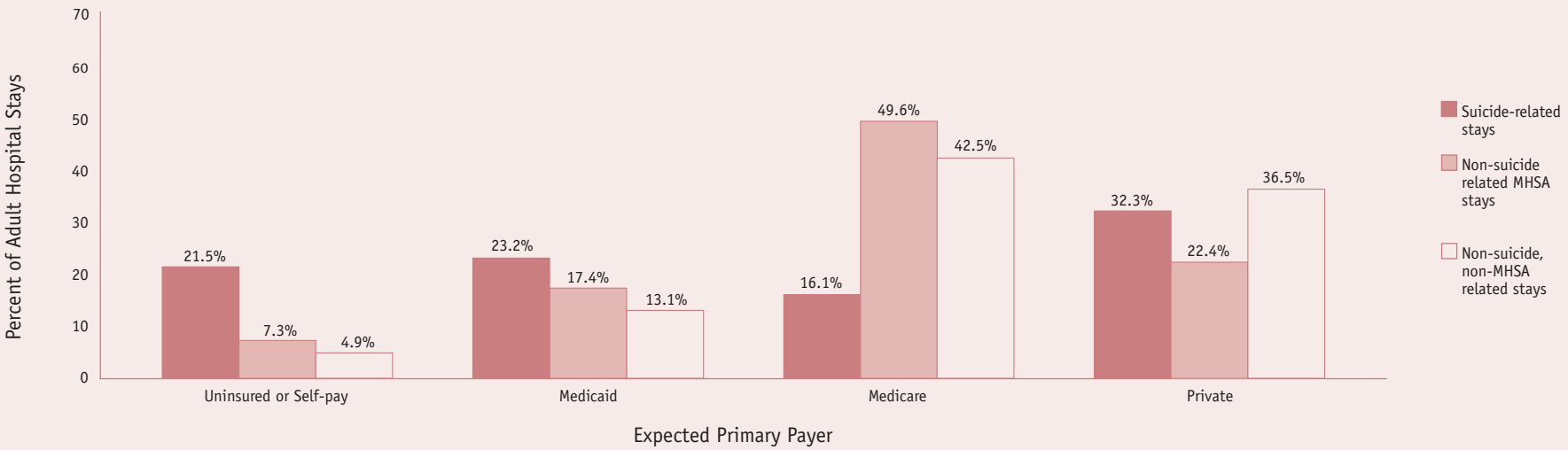
Suicide-Related Hospital Stays, by Gender and Age



Expected Primary Payer

- Uninsured stays and stays billed to Medicaid made up nearly half of all suicide-related hospitalizations. Even though only 5 percent of non-MHSA hospital stays were uninsured, 22 percent of suicide-related stays were uninsured. Nearly 13 percent of non-MHSA hospital stays were billed to Medicaid compared with 23 percent of suicide-related stays.
- Disproportionately fewer suicide-related stays were billed to Medicare (16.1 percent) compared with all other payers.
- Private insurance was billed for 32 percent of suicide-related stays, 37 percent of non-MHSA stays, and only 22 percent of MHSA stays unrelated to suicide attempt.

Suicide-Related Hospital Stays, by Expected Primary Payer



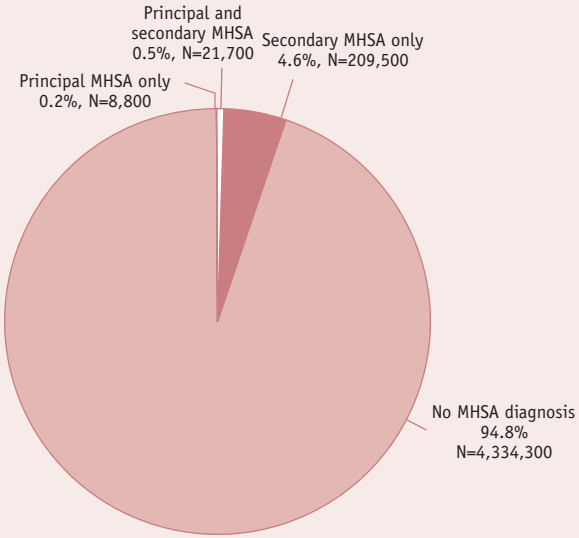
Note: Other insurance coverage is excluded from bar chart; thus, the sum of bar percentages does not equal 100.

Maternal Stays

There is evidence of unmet need among pregnant women with mental health disorders. Some studies suggest that mental illness in pregnancy is underdiagnosed and undertreated. Substance abuse, depression, and high levels of stress are associated with high risk behavior, preterm birth, and poor pregnancy outcomes. Certain conditions, such as depression and eating disorders, are more common in women and can worsen during pregnancy. It has been suggested that 5 to 25 percent of women experience depression during pregnancy or immediately following birth, and that most of these women go untreated.[6, 7] Examining maternal hospitalizations associated with MHSA disorders can provide insight into the problem, although it is likely that MHSA disorders will be underreported in hospital data.

- In 2004, nearly 4.6 million hospital stays occurred for women with maternal conditions. Of these, 240,000 (5.2 percent) involved at least one MHSA diagnosis.
- The top ranked MHSA diagnosis was "miscellaneous mental disorders" which includes "other conditions in the mother classifiable elsewhere, but complicating pregnancy" (ICD-9-CM code = 648.4x). Specifically, "mental disorders during delivery" accounted for 173,900 cases, "mental disorders before delivery" accounted for 30,000 cases, and "mental disorders following delivery" accounted for 5,700 cases.
- Mood disorders were seen in 77,000 maternal stays (1.7 percent). There were nearly 60,000 maternal hospital stays that included some mention of substance-related disorders (1.3 percent). Over 21,000 maternal stays had a complicating diagnosis of anxiety disorders (0.5 percent) and over 4,000 maternal stays also had a diagnosis of schizophrenia (0.1 percent).

Maternal Hospital Stays, by Type



Note: The sum of pie percentages may not total 100 percent, due to rounding.

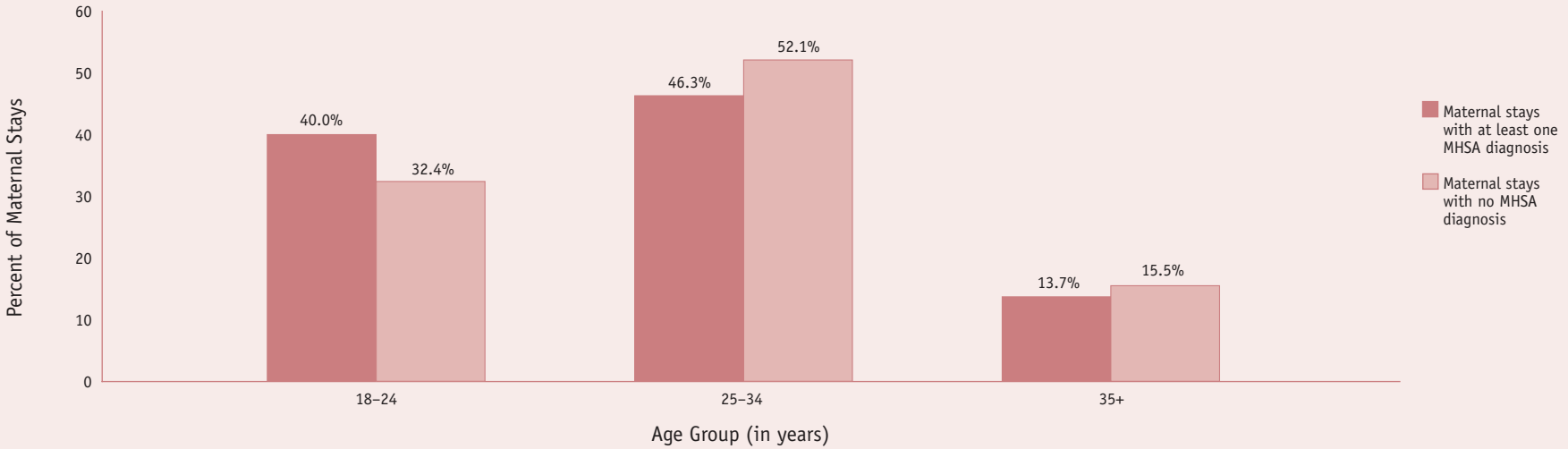
ALL-LISTED MHSA DIAGNOSES	TOTAL NUMBER OF HOSPITAL STAYS	PERCENTAGE OF ALL MATERNAL-RELATED HOSPITAL STAYS
Miscellaneous mental disorders	214,272	4.7
Mood disorders including bipolar disorders and depressive disorders	77,490	1.7
Substance-related disorders including drug and alcohol abuse disorders	58,935	1.3
Anxiety disorders	21,511	0.5
Schizophrenia and other psychotic disorders	4,074	0.1
Adjustment disorders	3,147	0.1
Personality disorders	1,884	0.0
Disruptive behavior disorders	1,065	0.0
Delirium, dementia, and amnestic and cognitive disorders	195	0.0
Impulse control disorders	109	0.0
Disorders usually diagnosed in infancy, childhood, and adolescence	192	0.0

Note: "All-listed MHSA Diagnoses" refers to all MHSA diagnoses listed on the discharge record; a patient can have more than 1 MHSA diagnosis. "0.0" percent indicates < .05 percent.

Age

- Women with MHSA disorders complicating a maternal stay were disproportionately younger, ages 18–24. Although this group accounted for 32 percent of non-MHSA-related maternal stays, they were responsible for 40 percent of all MHSA-related maternal stays.
- Women ages 25–34 accounted for almost half of maternal stays complicated by MHSA disorders (46.3 percent) and over half of all non-MHSA related maternal stays (52.1 percent).
- Women age 35 and older accounted for nearly 14 percent of maternal stays complicated by MHSA disorders and 16 percent of non-MHSA related maternal stays.

Maternal Hospital Stays, by Age

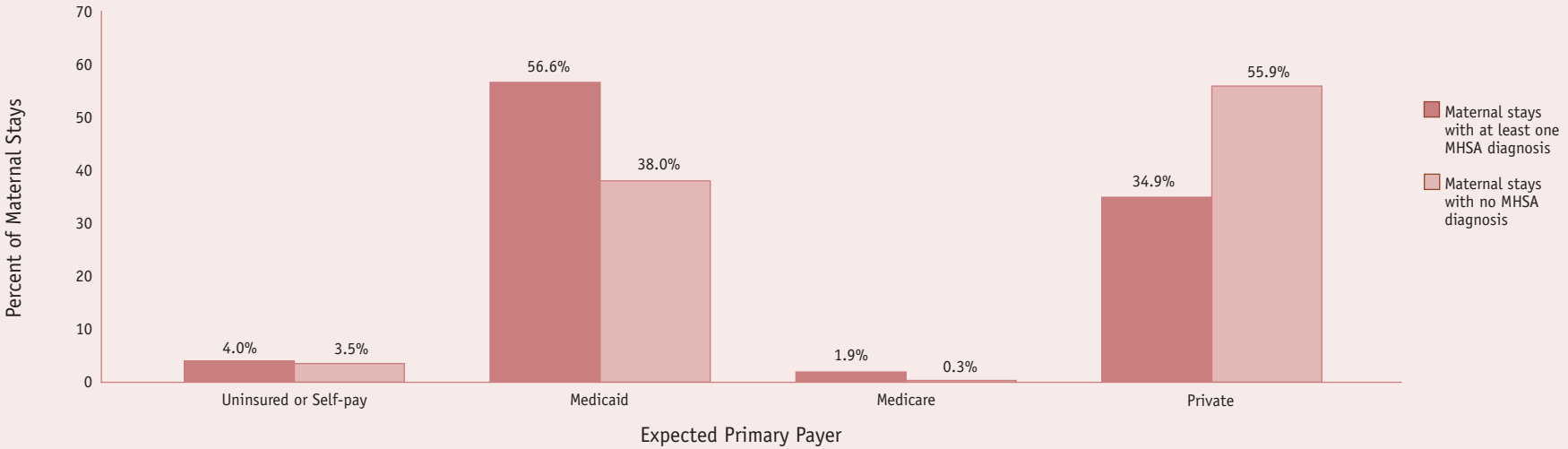


Note: Other insurance coverage is excluded from bar chart; thus, the sum of bar percentages does not equal 100.

Expected Primary Payer

- Medicaid was much more likely to be billed for maternal stays complicated by MHSA disorders. Medicaid was billed for 38 percent of maternal stays with no MHSA disorders, but almost 57 percent of maternal stays with MHSA disorders.
- Private payers were disproportionately less likely to be billed for maternal stays associated MHSA diagnoses. Private insurance was billed for 56 percent of maternal stays with no MHSA disorders, but only 35 percent of maternal stays with MHSA disorders.

Maternal Hospital Stays, by Expected Primary Payer



Note: Other insurance coverage is excluded from bar chart; thus, the sum of bar percentages does not equal 100.

Source of Data for This Report

The results presented in this report are drawn from the Healthcare Cost and Utilization Project (HCUP), a Federal-State-Industry partnership to build a multi-State health care data system. This partnership is sponsored by the Agency for Healthcare Research and Quality (AHRQ) and is managed by staff in AHRQ's Center for Delivery, Organization, and Markets (CDOM). HCUP is based on data collected by individual State Partner organizations (including State departments of health, hospital associations, and private agencies), which provide the data to AHRQ. HCUP would not be possible without statewide data collection projects and their partnership with AHRQ.

For the year 2004, 37 State Partner organizations contributed their data to AHRQ, where all files were validated and converted into a uniform format. The uniform HCUP databases enable comparative studies of health care services and the use and cost of hospital care, including:

- Effects of market forces on hospitals and the care they provide.
- Variations in medical practice.
- Effectiveness of medical technology and treatments.
- Use of services by special populations.

HCUP includes short-term, non-Federal, community hospitals as defined by the American Hospital Association (AHA). This definition includes general hospitals and specialty facilities, such as pediatric, obstetrics-gynecology, short-term rehabilitation, and oncology hospitals. Long-term care and psychiatric hospitals are excluded, as are substance abuse treatment facilities.

This report is based on data from the 2004 Nationwide Inpatient Sample (NIS). The NIS is the largest all-payer inpatient care database that is publicly available in the United States. The database contains data from 8 million hospital stays from roughly 1,000 hospitals sampled to approximate a 20-percent stratified sample of U.S. community hospitals. The data are weighted to obtain estimates that represent the total number of inpatient hospital discharges in the United States. Weighted discharges for adults approximate 31.9 million discharges.

Methods

This Fact Book is based on data from the 2004 HCUP Nationwide Inpatient Sample (NIS) database. The NIS data are weighted to obtain estimates representing the total number of inpatient hospital discharges in the United States; in 2004, this figure totaled 38,661,786. The analyses presented here are limited to 31,928,948 discharges for adults in U.S. community hospitals. Because the NIS is limited to community hospital data, disorders treated in outpatient or ambulatory care settings, long-term care facilities, psychiatric hospitals, and substance-abuse treatment facilities are not reflected in this report. In addition, due to concerns regarding reimbursement and stigma associated with MSHA diagnoses, it is important to note that MHSA diagnoses are likely under-coded in the hospital discharge records. A brief discussion of selected methodological issues pertaining to this Fact Book follows.

Unit of Analysis

For this report, the unit of analysis is the inpatient stay in a community hospital rather than the patient or the procedure. For example, a patient admitted four times to the hospital is included four times in the NIS data. Thus, the same individual can account for more than one hospital stay. Frequencies and rankings of diagnoses are indicated as either principal (first-listed) diagnosis, which is defined as "the condition established after study to be chiefly responsible for occasioning the admission of the patient to the hospital,"[8] or secondary diagnosis, which includes all additional diagnoses on the record. "All-listed diagnoses" indicates that both principal and secondary diagnoses have been included in the analysis. All discharges from the NIS have been weighted to produce national estimates.

Diagnoses, Clinical Classification Software (CCS), and Mental Health and Substance Abuse Clinical Classification Software (CCS-MHSA)

Diagnoses are recorded within the NIS using the *International Classification of Diseases*, *Ninth Revision*, *Clinical Modification* (ICD-9-CM).[9] Although ICD-9-CM codes may be used to provide descriptive statistics, the granular nature of ICD-9-CM reporting is difficult to summarize. Thus, for this Fact Book, the AHRQ-developed Mental Health and Substance Abuse Clinical Classification Software (CCS-MHSA) is applied. The CCS-MHSA, derived primarily from the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*[10] is used to aggregate ICD-9-CM MHSA diagnostic codes into a limited number of clinically meaningful categories. As shown in Appendix A, the CCS-MHSA assigns mental and substance-use ICD-9-CM codes to 1 of the 14 categories shown in the following table.

CCS-MHSA CODE	MENTAL HEALTH OR SUBSTANCE ABUSE DISORDERS
650	Adjustment disorders
651	Anxiety disorders
652	Disruptive behavior disorders including conduct disorder, oppositional defiant disorder, attention-deficit disorder and attention-deficit/hyperactivity disorder
653	Delirium, dementia, and amnestic and other cognitive disorders
654	Developmental disorders including communication disorders, developmental disabilities, intellectual disabilities, learning disorders and motor skills disorders*
655	Disorders usually diagnosed in infancy, childhood, or adolescence such as elimination disorders, separation anxiety disorders, pervasive developmental disorders, and tic disorders
656	Impulse control disorders
657	Mood disorders including bipolar disorders and depressive disorders
658	Personality disorders
659	Schizophrenia and other psychotic disorders
660	Substance-related disorders including alcohol-related disorders and substance-related disorders (e.g., amphetamine-related disorders; cannabis-related disorders; cocaine-related disorders; hallucinogen-related disorders; inhalant-related disorders; opioid-related disorders; phencyclidine-related disorders; sedative-, hypnotic-, or anxiolytic-related disorders; poly-substance-related disorders)
661	Miscellaneous mental disorders including dissociative disorders, eating disorders, factitious disorders, psychogenic disorders, sexual and gender identity disorders, sleep disorders, somatoform disorders, mental disorders due to general medical conditions not elsewhere classified, and other miscellaneous mental conditions
662	Suicide and intentional self-inflicted injury*
663	Screening and history of mental health and substance-related conditions*

*For the purposes of this Fact Book, developmental disorders, suicide and intentional self-inflicted injury, and screening and history of mental health and substance-related disorders were excluded from the definition of MHSA disorders. Suicide and intentional self-inflicted injury, as defined in the CCS-MHSA, is examined as a co-occurring condition with mental health and substance-related disorders.

The groupings for MHSA stays are based on principal (or first-listed) and secondary diagnoses with CCS-MHSA codes in the ranges of 650–653, 655–661. Stays are considered to have at least one MHSA diagnosis if the discharge record includes only a "principal MHSA diagnosis," "principal and secondary MHSA diagnosis," or only "secondary MHSA diagnoses." All other hospital stays are considered unrelated to MHSA conditions and are classified as non-MHSA.

Additionally, hospital stays are classified as dual diagnosis if both a substance abuse disorder (CCS-MHSA = 660) and a mental health disorder (CCS-MHSA codes = 650–653, 655–661) are listed. Hospital stays for maternal conditions were identified using the Clinical Classifications Software (CCS) that encompasses all conditions (not just MHSA disorders; CCS code = 176–196), Major Diagnostic Categories (MDC) code 14, and a recorded gender of female. More detailed information on CCS-MHSA and the CCS can be downloaded from the HCUP User Support Web site at: **http://www.hcup-us.ahrq.gov/tools_software.jsp.**

Chronic Conditions

In Appendix B, non-MHSA conditions were classified as chronic or not chronic, using the AHRQ-developed Chronic Condition Indicator. A chronic condition is defined as a condition that lasts 12 months or longer and meets one or both of the following tests: (a) it places limitations on self-care, independent living, and social interactions; (b) it results in the need for ongoing intervention with medical products, services, and special equipment. More detailed information on the Chronic Condition Indicator can be found at: **http://www.hcup-us.ahrq.gov/toolssoftware/chronic/chronic.jsp.**

Expected Primary Payer

Each hospitalization and its related hospital bill are attributed to the payer who was expected by the hospital to pay the major portion of the bill (i.e., the expected primary payer). The expected primary source of payment at admission may not be the ultimate primary payer. To make coding uniform across all HCUP data sources, the payer variable combines detailed payers into more general groups:

- Medicaid includes fee-for-service and managed care Medicaid patients.
- Medicare includes fee-for-service and managed care Medicare patients.
- Private insurance includes Blue Cross, commercial carriers, and private HMOs and PPOs.
- Other includes Workers' Compensation, TRICARE/VA, Title V, and other government programs.
- Uninsured includes an insurance status of "self-pay" and "no charge."

This categorization of payer differs from previous Fact Books. Previous Fact Books have assumed that payer is a proxy for socioeconomic status, placing more emphasis on Medicaid as an expected source of payment. This Fact Book relies only on expected primary payer, a decision based on several important factors. Individuals with impairments related to MHSA disorders may be eligible for disability and Medicaid, suggesting that it would be important to account for dual eligibility rules. Claims data such as HCUP, however, do not contain information about an individual's disability status. Therefore, it is not possible to determine the reason a hospital bill was submitted to Medicaid. In addition, expected secondary payer was missing in 62 percent of discharges, making it difficult to determine if patients would quality for dual eligibility.

Charges and Costs

Total hospital charges were converted to costs using HCUP Cost-to-Charge Ratio Files based on hospital accounting reports from the Centers for Medicare & Medicaid Services (CMS). Costs will tend to reflect the actual costs of production, while charges represent what the hospital billed for the case. For each hospital, a hospital-wide cost-to-charge ratio is used because detailed charges are not available across all HCUP States. Hospital charges reflect the amount the hospital charged for the entire hospital stay and do not include professional (physician) fees. For the purposes of this Fact Book, costs are reported to the nearest hundreds. More information on the HCUP Cost-to-Charge Ratio Files can be found at: **www.hcup-us.ahrq.gov/db/state/costtocharge.jsp.**

References

1. U.S. Department of Health and Human Services. *Mental Health: A Report of the Surgeon General.* Rockville, MD: Substance Abuse and Mental Health Services Administration, Center for Mental Health Services and National Institutes of Health, National Institute of Mental Health; 1999.

2. Institute of Medicine, Committee on Crossing the Quality Chasm. *Improving the Quality of Health Care for Mental and Substance-Use Conditions.* Washington, DC: National Academies Press; 2006.

3. U.S. Department of Health and Human Services. *Mental Health, United States, 2002.* Rockville, MD: Substance Abuse and Mental Health Services Administration, Center for Mental Health Services; 2004.

4. American Hospital Association. *AHA Hospital Statistics, 2006 Edition.* Chicago, IL: Health Forum; 2005.

5. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Suicide: Fact Sheet. Available at: **http://www.cdc.gov/ncipc/factsheets/suifacts.htm** (Accessed September 27, 2006).

6. Finkelman AW. Mental health policy: Implications for newborns, infants and families. *Newborn and Infant Nursing Reviews* 2003;3(1): 18–26.

7. Agency for Healthcare Research and Quality. Evidence Report/Technology Assessment No. 119, *Prenatal Depression: Prevalence, Screening, Accuracy, and Screening Outcomes.* Rockville, MD: Agency for Healthcare Research and Quality; 2005.

8. Centers for Medicare & Medicaid Services and National Center for Health Statistics. ICD-9-CM Official Guidelines for Coding and Reporting, Effective April 1, 2005. Available at: **http://www.cdc.gov/nchs/data/icd9/icdguide.pdf** (Accessed October 16, 2006).

9. *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM). Reno, NV: Channel Publishing, 2003.

10. *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV). Washington, DC: American Psychiatric Association; 1994.

Glossary

Adjustment disorders—A group of diagnoses characterized by emotional or behavioral symptoms beyond what would be expected in response to an identifiable event or stressful situation. (CCS-MHSA code = 650)

Anxiety disorders—A group of diagnoses characterized by overwhelming apprehension and fear in response to a perceived threat. Symptoms are physical as well as psychological. (CCS-MHSA code = 651)

Attention-deficit and attention-deficit/hyperactivity disorder (ADD, ADHD)—Persistent inattention and/or hyperactive, impulsive behavior that is more frequent and more severe than that typical of age or developmental level. Symptoms must be present in at least two settings, typically home and school. ADD and ADHD are included in the CCS-MHSA code 652 or "Disruptive behavior disorders."

Bipolar disorders—A group of mood disorders characterized by extreme swings between emotional highs and lows. Highs, or manic episodes, are periods of elevated energy, increased activity, and distractible or irritable mood. Lows, or depressive episodes, are characterized by periods of depressed mood, disinterest, lethargy, and fatigue. Bipolar disorders are included in the CCS-MHSA code 657 or "Mood disorders."

Conduct disorder—An inappropriate and persistent pattern of behavior that violates others. This includes aggression to people and animals, destruction of property, deceitfulness, theft, and a serious violation of rules. Conduct disorder is included in the CCS-MHSA code 652 or "Disruptive behavior disorders."

Delirium, dementia and amnestic and other cognitive disorders—The development of multiple cognitive disturbances and deficits, including memory impairment, and occurring as a result of a general medical condition or substance use. Dementia represents a loss of previous functioning and is characterized by gradual onset and continuing decline. Delirium is characterized by a short, fluctuating disturbance of mental status and amnestic disorders entails memory impairment not occurring during dementia or delirium. (CCS-MHSA code = 653)

Depressive disorders—A group of mood disorders characterized by a persistent low mood, profound sadness, and a lack of interest in enjoyable activities. Physical symptoms including weight loss or gain, fatigue, and sleep disturbances are common. Depressive disorders are included in the CCS code 657 or "Mood disorders."

Disorders usually diagnosed in infancy, childhood, or adolescence—A group of diagnoses characterized by the time period in which first diagnosis typically, although not necessarily, occurs. Disorders include elimination disorders, separation anxiety disorders, pervasive development disorders, tic disorders, feeding and eating disorders of early childhood, mutism, and stereotypic movement disorder. (CCS-MHSA code = 655)

Disruptive behavior disorders—A group of diagnoses including attention-deficit disorder, attention-deficit/hyperactivity disorder, conduct disorder, and oppositional defiant disorder. (CCS-MHSA code = 652)

Dissociative disorders—A group of diagnoses characterized by a disintegration of consciousness, memory, identity, and/or perception. The presentation may be sudden or gradual, transient or chronic. Symptoms do not occur in the course of another mental disorder or as a result of a general medical condition or substance use. Dissociative disorders are included in the CCS-MHSA 661 or "Miscellaneous mental disorders."

Dual diagnosis—The presence of both a substance-related diagnosis and a mental health diagnosis.

Eating disorders—A group of diagnoses characterized by a severe disturbance in eating behavior. This includes anorexia nervosa (excessive weight loss), bulimia nervosa (repeated episodes of binging and purging), pica (persistent eating of nonnutritive substances), and rumination disorder (repeated regurgitation and re-chewing of food). Eating disorders are included in the CCS-MHSA 661 or "Miscellaneous mental disorders."

Elimination disorders—Repeated urination (enuresis) or defecation (encopresis) in inappropriate places beyond an appropriate developmental age. Episodes may be intentional or involuntary. Elimination disorders are included in the CCS-MHSA 655 or "Disorders typically diagnosed in childhood."

Factitious disorders—A group of diagnoses characterized by intentionally producing or feigning physical or psychological symptoms in the absence of external incentives such as economic gain or avoiding legal responsibility. Factitious disorders are included in the CCS-MHSA 661 or "Miscellaneous mental disorders."

Impulse control disorders—A group of diagnoses characterized by the repeated failure to resist the urge to perform an act that is harmful to the self or others. This includes assault, theft, fire-setting, pathological gambling, and hair-pulling. Increased arousal is usually experienced before acting, and pleasure, gratification, or relief are felt while committing the act. (CCS-MHSA code = 656)

Mental disorders due to general medical condition, not elsewhere classified—Includes personality changes, anxiety disorders, and unspecified transient mental health disorders where the disturbance is the result of a general medical condition. These disorders are included in the CCS-MHSA 661 or "Miscellaneous mental disorders."

Miscellaneous mental disorders—A group of diagnoses that include dissociative disorders, eating disorders, factitious disorders, mental disorders due to general medical condition, not elsewhere classified, psychogenic disorders, sexual and gender identity disorders, sleep disorders, somatoform disorders, and other miscellaneous mental health disorders. (CCS-MHSA code = 661)

Mood disorders—A group of diagnoses including bipolar disorders and depressive disorders. (CCS-MHSA code = 657)

Oppositional defiant disorder—A pattern of negative, angry, defiant, disobedient behaviors directed toward authority figures. These behaviors are more frequent than that typical of age or development level. Oppositional defiant disorder is included in the CCS-MHSA 652 or "Disruptive behavior disorders."

Other disorders of infancy, childhood, or adolescence—Includes emotional, attachment, and movement related conditions impairing specific developmental tasks of childhood but not meeting diagnostic conditions for disorders classified elsewhere. These disorders are included in the CCS-MHSA 655 or "Disorders typically diagnosed in childhood."

Personality disorders—A group of diagnoses characterized by a pattern of cognitions, emotional responses, interpersonal relations, and impulse control that deviates noticeably from cultural expectations. This pattern of cognitions and behaviors is inflexible, pervasive, and lasts over time. (CCS-MHSA code = 658)

Pervasive developmental disorders—A group of childhood diagnoses characterized by severe and pervasive impairment in social, communication, or motor skills or by the presence of stereotyped behavior, interests, and activities. The impairments represent a loss of previously acquired skills or are significantly atypical of age or developmental level. Pervasive developmental disorders are included in the CCS-MHSA 655 or "Disorders typically diagnosed in childhood."

Psychogenic disorders—Refers to diagnoses where physical symptoms occur as a result of other diagnosed mental disorders. Symptoms may be musculoskeletal, respiratory, cardiovascular, of the skin, gastrointestinal, genitourinary, endocrine, or unspecified. Psychogenic disorders are included in the CCS-MHSA 661 or "Miscellaneous mental disorders."

Schizophrenia—A chronic, severe, and disabling brain disease that affects cognition, speech, emotional expression, social relations, and behavior. Symptoms include delusions (bizarre thoughts with no basis in reality); hallucinations (experiencing sensations that have no source); disordered thinking and nonsensical speech that impair effective communication; disorganized and agitated behavior; and negative symptoms including social withdrawal, extreme apathy, and blunted affect. Other psychotic disorders include conditions that have delusions, hallucinations, and paranoia in their presentation. (CCS-MHSA code = 659)

Sexual and gender identity disorders—A group of diagnoses including psychologically based sexual dysfunctions, paraphilias (intense and unusual sexual fantasies or behaviors), and gender identity disorders (a strong cross-gender identification and persistent discomfort with one's biological sex). These disorders are included in the CCS-MHSA 661 or "Miscellaneous mental disorders."

Sleep disorders—A group of diagnoses characterized by disturbances to healthy, normal sleep patterns that are not to the result of another mental disorder, a general medical condition, or substance use. Sleep disorders are included in the CCS code "Miscellaneous mental disorders."

Somatoform disorders—A group of diagnoses characterized by the presence of physical symptoms suggesting a general medical condition but not accounted for by a medical diagnosis, mental health disorder, or substance use. Symptoms are not intentional or under voluntary control. Somatoform disorders are included in the CCS-MHSA 661 or "Miscellaneous mental disorders."

Substance-related disorders—A group of diagnoses related to the abuse, dependence or withdrawal from alcohol or drugs. Abuse and dependence disorders are characterized by maladaptive patterns of use leading to increased tolerance and physical symptoms of withdrawal in the absence of the substance. (CCS-MHSA code = 660)

Suicide and intentional self-inflicted injury—Includes external cause of injury codes that indicate an attempt to voluntarily and intentionally take one's own life or to voluntarily and intentionally cause physical harm to oneself. (CCS-MHSA code = 662)

Tic disorders—A group of diagnoses characterized by the presence of sudden, rapid, recurrent, non-rhythmic, stereotyped movements or vocalizations that are not the result of a general medical condition or substance use. Tic disorders are included in the CCS-MHSA 655 or "Disorders typically diagnosed in childhood."

For More Information

More information regarding HCUP data is available at **www.ahrq.gov/data/hcup**, as well as on the HCUP User Support Web site at **www.hcup-us.ahrq.gov**.

Additional descriptive statistics can be viewed through HCUPnet (**http://www.hcupnet.ahrq.gov/**), a Web-based tool providing easy access to information on hospital stays.

NIS data are available for the following data years:
2004 data
2003 data
2002 data
2001 data
2000 data
1999 data (PB 2002-500020)
1998 data (PB 2001-500092)
1997 data, Release 6 (PB 2000-500006)
1996 data, Release 5 (PB 99-500480)
1995 data, Release 4 (PB 98-500440)
1994 data, Release 3 (PB 97-500433)
1993 data, Release 2 (PB 96-501325)
1988-1992 data, Release 1 (PB 95-503710)

NIS data can be purchased for research through the HCUP Central Distributor sponsored by AHRQ: Social Scientific Systems, Inc., telephone: 866-556-4287 (toll-free), fax: 301-628-3201, or e-mail: **hcup@s-3.com**.

Price of the data is $322 for Release 1; $160 per year for 1993 to 1999; and $200 per year for 2000 to 2004. The student price is $20 per database. Prices may be higher for customers outside the United States, Canada, and Mexico.

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Healthcare Cost and Utilization Project (HCUP)
Center for Delivery, Organization, and Markets
Agency for Healthcare Research and Quality
Phone: 866-290-HCUP (4287); E-mail: **HCUP@AHRQ.gov**

Appendix A: Mapping ICD-9-CM Codes Into the Mental Health and Substance Abuse Clinical Classification Software (CCS-MHSA)

Adjustment disorders
3090 3091 30922 30923 30924 30928 30929 3093 3094 30982 30983 30989 3099

Anxiety disorders
29384 30000 30001 30002 30009 30010 30020 30021 30022 30023 30029 3003 3005 30089 3009 3080 3081 3082 3083 3084 3089 30981 3130 3131
31321 31322 3133 31382 31383

Disruptive behavior disorders
Attention-deficit disorder and Attention-deficit/hyperactivity disorder
31400 31401 3141 3142 3148 3149
Conduct disorder
31200 31201 31202 31203 31210 31211 31212 31213 31220 31221 31222 31223 3124 3128 31281 31282 31289 3129
Oppositional defiant disorder
31381

Delirium, dementia, and amnesic and other cognitive disorders
2900 29010 29011 29012 29013 29020 29021 2903 29040 29041 29042 29043 2908 2909 2930 2931 2940 2941 29410 29411 2948 2949 3100 3102
3108 3109 3310 3311 33111 33119 3312 33182 797

Developmental disorders*
Communication disorders
3070 3079 31531 31539 V401
Developmental disabilities
31501 31502 31509 31532 3155 3158
Intellectual disabilities
317 3180 3181 3182 319
Learning disorders
31500 3151 3152 3159 V400
Motor skill disorders
3154

Disorders usually diagnosed in infancy, childhood, or adolescence
Elimination disorders
3076 3077
Other disorders usually diagnosed in infancy, childhood or adolescence
3073 30921 31323 31389 3139
Pervasive developmental disorders
29900 29901 29910 29911 29980 29981 29990 29991
Tic disorders
30720 30721 30722 30723

Impulse control disorders
31230 31231 31232 31233 31234 31235 31239

Mood disorders

Bipolar disorders

29600 29601 29602 29603 29604 29605 29606 29610 29611 29612 29613 29614 29615 29616 29640 29641 29642 29643 29644 29645 29646 29650 29651 29652
29653 29654 29655 29656 29660 29661 29662 29663 29664 29665 29666 2967 29680 29681 29682 29689 29690 29699

Depressive disorders

29383 29620 29621 29622 29623 29624 29625 29626 29630 29631 29632 29633 29634 29635 29636 3004 311

Personality disorders

3010 30110 30111 30112 30113 30120 30121 30122 3013 3014 30150 30151 30159 3016 3017 30181 30182 30183 30184 30189 3019

Schizophrenia and other psychotic disorders

29381 29382 29500 29501 29502 29503 29504 29505 29510 29511 29512 29513 29514 29515 29520 29521 29522 29523 29524 29525 29530 29531 29532 29533
29534 29535 29540 29541 29542 29543 29544 29545 29550 29551 29552 29553 29554 29555 29560 29561 29562 29563 29564 29565 29570 29571 29572 29573
29574 29575 29580 29581 29582 29583 29584 29585 29590 29591 29592 29593 29594 29595 2970 2971 2972 2973 2978 2979 2980 2981 2982 2983
2984 2988 2989

Substance-related disorders

Alcohol-related disorders

2910 2911 2912 2913 2914 2915 2918 29181 29189 2919 30300 30301 30302 30303 30390 30391 30392 30393 30500 30501 30502 30503

Drug related disorders

2920 29211 29212 2922 29281 29282 29283 29284 29289 2929 30400 30401 30402 30403 30410 30411 30412 30413 30420 30421 30422 30423 30430 30431
30432 30433 30440 30441 30442 30443 30450 30451 30452 30453 30460 30461 30462 30463 30470 30471 30472 30473 30480 30481 30482 30483 30490 30491
30492 30493 30510 30511 30512 30513 30520 30521 30522 30523 30530 30531 30532 30533 30540 30541 30542 30543 30550 30551 30552 30553 30560 30561
30562 30563 30570 30571 30572 30573 30580 30581 30582 30583 30590 30591 30592 30593 64830 64831 64832 64833 64834 65550 65551 65553 76072 76073
76075 7795 96500 96501 96502 96509 V6542

Miscellaneous mental disorders

Dissociative disorders

30012 30013 30014 30015 3006

Eating disorders

3071 30750 30751 30752 30753 30754 30759

Factitious disorders

30016 30019

Mental disorders due to general medical condition not elsewhere classified

29389 2939 3101

Other miscellaneous mental conditions

316 64840 64841 64842 64843 64844 V402 V403 V409 V673

Psychogenic disorders

3060 3061 3062 3063 3064 30650 30652 30653 30659 3066 3067 3068 3069

Sexual and gender identity disorders

3021 3022 3023 3024 30250 30251 30252 30253 3026 30270 30271 30272 30273 30274 30275 30276 30279 30281 30282 30283 30284 30285 30289 3029
30651

Sleep disorders

30740 30741 30742 30743 30744 30745 30746 30747 30748 30749

Somatoform disorders

30011 3007 30081 30082 30780 30781 30789

Screening and history of mental health and substance abuse codes*

Mental health disorder related codes

33392 V110 V111 V112 V118 V119 V154 V1541 V1542 V1549 V1582 V663 V701 V702 V7101 V7102 V7109 V790 V792 V793 V798 V799

Substance-related disorder codes

3051 3575 4255 5353 5710 5711 5712 5713 76071 7903 V113 V791

Suicide and intentional self-inflicted injury*

E9500 E9501 E9502 E9503 E9504 E9505 E9506 E9507 E9508 E9509 E9510 E9511 E9518 E9520 E9521 E9528 E9529 E9530 E9531 E9538 E9539 E954 E9550 E9551
E9552 E9553 E9554 E9555 E9556 E9557 E9559 E956 E9570 E9571 E9572 E9579 E9580 E9581 E9582 E9583 E9584 E9585 E9586 E9587 E9588 E9589 E959

*Categories are not included in the definition of mental health and substance abuse disorders in this Fact Book

Appendix B: Adult Stays in U.S. Community Hospitals, Principal Diagnosis of Mental Health or Substance Abuse Disorder, 2004

Number of Stays, Mean Length of Stay, Mean Costs, Percent with Secondary Conditions, Percent Admitted from the Emergency Department (ED), and Percent Discharged to Another Health Facility

PRINCIPAL MHSA DIAGNOSIS	NUMBER OF HOSPITAL STAYS	MEAN LENGTH OF STAY, IN DAYS	MEAN TOTAL COST PER STAY, IN DOLLARS	PERCENT WITH AN ADDITIONAL MHSA DISORDER	PERCENT WITH A SECONDARY NON-MHSA CONDITION	PERCENT ADMITTED FROM THE ED	PERCENT TRANSFERRED TO PSYCHIATRIC, NURSING HOME, OR LONG-TERM CARE FACILITY
Adjustment disorders	37,444	3.3	$2,694	67.0	40.5	52.6	6.7
Anxiety disorders	39,124	3.8	$3,518	65.5	63.6	65.1	8.4
Delirium, dementia, and amnestic and cognitive disorders	145,261	8.6	$6,709	72.3	91.8	53.1	58.3
Disorders diagnosed in infancy, childhood, or adolescence	773	9.7	$7,171	74.7	48.2	59.1	14.8
Elimination disorders	*	*	*	*	*	*	*
Other disorders of infancy, childhood, or adolescence	*	*	*	*	*	*	*
Pervasive development disorders	600	11.5	$8,351	72.5	45.3	62.4	17.4
Tic disorders	158	3.2	$2,944	83.8	54.2	49.4	3.4
Disruptive behavior disorders	1,063	5.8	$4,363	78.4	48.8	54.0	18.1
Attention-deficit/hyperactivity disorders	457	6.1	$4,421	90.6	36.1	51.3	5.2
Conduct disorder	542	5.7	$3,571	67.4	60.6	55.5	29.6
Oppositional defiant disorder	*	*	*	*	*	*	*
Impulse control disorders	7,589	9.6	$7,239	69.7	51.4	56.8	19.9

PRINCIPAL MHSA DIAGNOSIS	NUMBER OF HOSPITAL STAYS	MEAN LENGTH OF STAY, IN DAYS	MEAN TOTAL COST PER STAY, IN DOLLARS	PERCENT WITH AN ADDITIONAL MHSA DISORDER	PERCENT WITH A SECONDARY NON-MHSA CONDITION	PERCENT ADMITTED FROM THE ED	PERCENT TRANSFERRED TO PSYCHIATRIC, NURSING HOME, OR LONG-TERM CARE FACILITY
Mood disorder	707,126	7.0	$4,863	68.5	58.5	50.6	9.0
Bipolar disorders	269,902	7.9	$5,495	64.4	57.9	52.1	10.1
Depressive disorders	437,224	6.5	$4,473	71.0	58.9	49.6	8.4
Personality disorder	4,383	5.6	$4,495	84.4	52.0	53.5	10.4
Schizophrenia and other psychotic disorders	410,617	11.1	$8,076	54.1	59.7	53.0	20.6
Substance-related disorders	470,895	4.6	$4,261	84.4	52.2	50.2	10.9
Alcohol-related disorders	227,837	4.6	$4,232	82.6	57.4	59.5	11.1
Drug-related disorders	243,058	4.6	$4,288	86.0	47.4	41.6	10.7
Miscellaneous mental disorders	44,137	3.6	$3,719	67.2	39.4	34.1	5.4
Dissociative disorder	1,002	6.8	$4,972	84.3	63.9	48.0	6.7
Eating disorders	2,844	9.2	$6,946	74.0	60.2	31.4	7.6
Factitious disorder	393	4.0	$3,912	78.8	58.7	70.0	16.8
Mental disorders due to general medical condition	1,043	8.0	$6,951	68.4	76.2	41.4	29.3
Other miscellaneous mental conditions	27,364	2.9	$2,822	68.6	19.5	19.7	2.5
Psychogenic disorders	2,599	3.1	$4,504	65.2	80.2	74.2	13.7
Sexual and gender identity disorders	266	3.4	$7,991	22.4	59.2	15.5	3.9
Sleep disorders	107	2.9	$3,405	68.7	81.3	50.9	8.7
Somatoform disorders	8,520	3.3	$4,605	59.7	74.2	64.8	7.9

Note: Percents shown above are percentages of diagnosis-specific discharges. Weighted estimates from HCUP Nationwide Inpatient Sample (NIS), 2004, Agency for Healthcare Research and Quality, based on data collected by individual States and provided to AHRQ by the States. The total number of weighted adult discharges in the U.S. is based on HCUP NIS=31,928,948. Statistics based on estimates with a relative standard error (standard error/weighted estimate) greater than 0.30 or with standard error = 0 are not reliable. These statistics are suppressed and are designated with an asterisk (*).

Appendix C: Adult Stays in U.S. Community Hospitals, Most Common Principal and Secondary Diagnoses of Mental Health or Substance Abuse Disorder, by Gender and Age, 2004

PRINCIPAL MHSA DIAGNOSIS*	TOTAL NUMBER OF HOSPITAL STAYS (in thousands)	ALL PRINCIPAL MHSA STAYS	GENDER		AGE GROUP			
			FEMALE	MALE	18–44 YRS	45–64 YRS	65–79 YRS	80+ YRS
		PERCENTAGE OF HOSPITAL STAYS WITH PRINCIPAL MHSA DISORDER						
Mood disorders including bipolar disorders and depressive disorders	707	37.9	45.0	31.0	41.0	38.2	31.9	18.2
Substance-related disorders including drug and alcohol abuse disorders	471	25.2	16.2	33.9	27.1	29.5	14.5	5.3
Schizophrenia and other psychotic disorders	411	22.0	19.7	24.0	22.2	25.7	17.2	9.7
Delirium, dementia, and amnestic and cognitive disorders	145	7.8	9.3	6.4	0.3	1.9	31.4	63.3
Miscellaneous mental disorders	44	2.4	4.3	0.5	3.6	0.9	1.1	0.7
Anxiety disorders	39	2.1	2.7	1.5	1.9	2.2	2.9	2.0
Adjustment disorders	37	2.0	2.1	2.0	2.8	1.3	0.8	0.5
Impulse control disorders	8	0.4	0.3	0.5	0.6	0.2	0.1	0.2
Personality disorders	4	0.2	0.3	0.2	0.3	0.2	0.1	0.0
Disruptive behavior disorders	1	0.1	0.0	0.1	0.1	0.0	0.0	0.1
Disorders usually diagnosed in infancy, childhood, and adolescence	1	0.0	0.0	0.1	0.1	0.0	0.0	0.0

Note: Percentages represent column percents; "0.0" percent indicates < .05 percent.
*Includes stays principally for MHSA disorders regardless of whether a secondary MHSA disorder is present.

SECONDARY MHSA DIAGNOSIS**	TOTAL NUMBER OF HOSPITAL STAYS (in thousands)	ALL SECONDARY MHSA ONLY STAYS	GENDER		AGE GROUP			
			FEMALE	MALE	18–44 YRS	45–64 YRS	65–79 YRS	80+ YRS
		PERCENTAGE OF HOSPITAL STAYS FOR SECONDARY MHSA DISORDER						
Mood disorders including bipolar disorders and depressive disorders	2,330	40.7	46.9	31.3	44.7	49.0	41.7	26.6
Delirium, dementia, and amnestic and cognitive disorders	1,488	26.0	27.4	23.9	1.3	4.1	31.0	69.0
Substance-related disorders including drug and alcohol abuse disorders	1,332	23.3	13.3	38.4	40.9	33.9	14.3	3.5
Anxiety disorders	873	15.3	17.6	11.8	15.6	18.4	17.6	9.1
Schizophrenia and other psychotic disorders	343	6.0	5.4	7.0	5.0	7.5	6.8	4.4
Miscellaneous mental disorders	258	4.5	6.7	1.2	16.4	1.3	1.2	0.8
Adjustment disorders	63	1.1	1.1	1.1	1.8	1.1	1.0	0.6
Personality disorders	43	0.8	0.8	0.7	1.8	0.9	0.3	0.1
Disruptive behavior disorders	25	0.4	0.3	0.6	1.2	0.5	0.1	0.1
Disorders usually diagnosed in infancy, childhood, and adolescence	7	0.1	0.1	0.2	0.3	0.1	0.1	0.0
Impulse control disorders	3	0.1	0.0	0.1	0.2	0.1	0.0	0.0

Note: Percentages represent column percents. Secondary diagnoses are not mutually exclusive; therefore, the sum of column percent is greater than 100. "0.0" percent indicates < .05 percent.
**Includes only stays principally for non-MHSA diagnoses with a secondary MHSA disorder.

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U.S. Department of Health and Human Services
Agency for Healthcare Research and Quality
540 Gaither Road
Rockville, MD 20850
www.ahrq.gov