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Opioid-Related Hospital Stays Among Women in the United States, 2016

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Introduction

The opioid epidemic is a national crisis, but research suggests that some subgroups of the population, such as women, may be more affected than other groups. For example, compared with men, women are more likely to be prescribed painkillers and are likely to be prescribed them in higher doses and to become dependent on them more quickly.[1,2] The rate of opioid-related hospitalizations[3] and deaths[4] has been increasing faster in recent years among women than men. Indeed, in most states in 2014, women had higher opioid-related hospitalization rates than men.[5]

Among women, some subgroups may be more severely affected by the opioid crisis than others. Substantial differences in opioid use exist based on characteristics of women such as age, race/ethnicity, income, payer, and geography. For example, compared with Black and Hispanic women, White women are more likely to have long-term use of prescription opioids and are likely to have higher rates of drug overdose deaths involving prescription or illegal opioids.[6,7] Women aged 65 years and older have a higher prevalence of long-term prescription opioid use for

[1] Centers for Disease Control and Prevention. Prescription Painkiller Overdoses: A Growing Epidemic, Especially Among Women. Updated September 4, 2018. https://www.cdc.gov/vitalsigns/prescriptionpainkilleroverdoses/index.html. Accessed December 10, 2018.
[2] U.S. Food and Drug Administration. Women and Pain Medicines. Updated October 1, 2018. https://www.fda.gov/ForConsumers/ByAudience/ForWomen/WomensHealthTopics/ucm621707.htm. Accessed December 10, 2018.
[3] Weiss AJ, Bailey MK, O'Malley L, Barret ML, Elixhauser A, Steiner CA. Patient Characteristics and Opioid-Related Inpatient Stays and Emergency Department Visits Nationally and by State, 2014. HCUP Statistical Brief #224. June 2017. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/reports/statbriefs/sb224-Patient-Characteristics-Opioid-Hospital-Stays-ED-Visits-by-State.pdf. Accessed September 26, 2018.
[4] Mack KA, Jones CM, Paulozzi LJ. Vital signs: overdoses of prescription opioid pain relievers and other drugs among women—United States, 1999–2010. Morbidity and Mortality Weekly Report. 2013;62(26):537–42.
[5] Weiss et al., 2017. Op.cit.
[6] Frenk SM, Porter KS, Paulozzi LJ. Prescription Opioid Analgesic Use Among Adults: United States, 1999–2012. NCHS Data Brief #189. February 2015. Centers for Disease Control and Prevention. www.cdc.gov/nchs/data/dataBriefs/db189.pdf. Accessed September 26, 2018.
[7] Seth P, Scholl L, Rudd RA, Bacon S. Overdose deaths involving opioids, cocaine, and psychostimulants—United States, 2015–2016. Morbidity and Mortality Weekly Report. 2018;67(12):349–58.

Highlights

- The rate of opioid-related stays among women in 2016 was 374.8 per 100,000 population. The rate increased with women's age, decreased with community-level income, and was highest for White women, followed by Black women.
- Most opioid-related stays among women aged 15–44 years involved abuse/dependence (86 percent). Nearly half of opioid stays among women aged 65 years and older were due to adverse events. Nearly 1 in 10 opioid stays among women aged 45–64 years involved self-harm (more than other age groups).
- Regardless of income level, White women had the highest rate of opioid-related stays, followed by Black women, but the difference between White and Black women decreased from 34 percent higher for White women in the lowest income quartile to 17 percent higher in the highest income quartile.
- In large metropolitan areas, White and Black women had a similar rate of opioid-related stays. However, in rural areas, Black women had a lower rate of opioid stays compared with White women.
- Regardless of age group, the rate of opioid-related stays was lowest among women who resided in the West South Central division.
- The rate of opioid-related stays was higher among older women in the western and north central United States but higher among younger women in the northeastern United States.

noncancer pain than do women under age 65 years.[8] Even within age groups, differences may exist. For instance, among women of reproductive age (15–44 years), prescription opioid use is higher among those with Medicaid than among those with private insurance.[9]

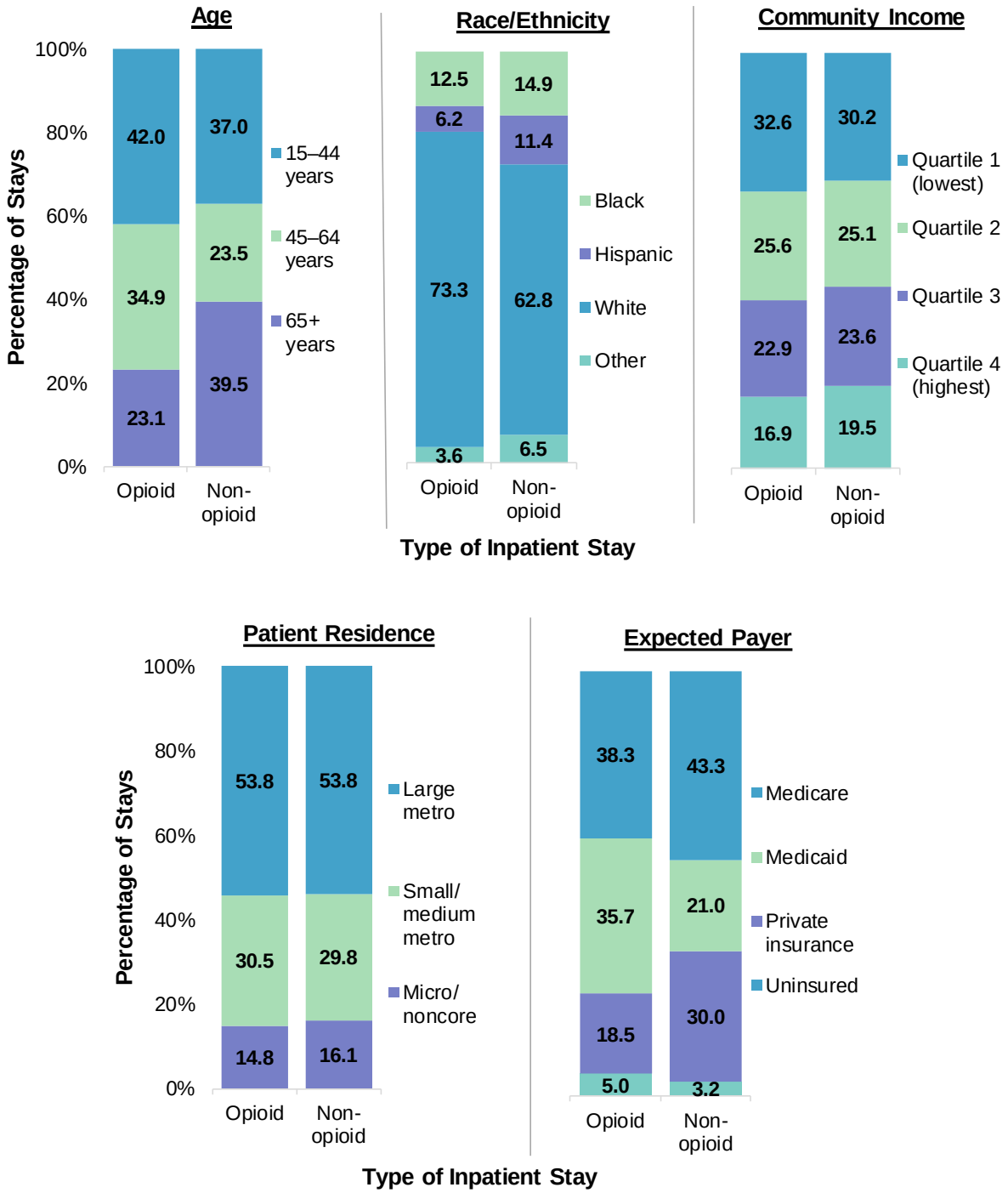
This Healthcare Cost and Utilization Project (HCUP) Statistical Brief presents statistics on opioid-related hospitalizations among women aged 15 years and older using the 2016 National Inpatient Sample (NIS). The distribution of opioid-related stays by select patient and hospitalization characteristics is presented and contrasted with the distribution for non-opioid-related stays. The types of opioid diagnoses during hospitalization are also provided for select patient characteristics. Finally, rates of opioid-related stays are presented by patient characteristics. Differences greater than 10 percent between estimates are noted in the text.

[8] Campbell CI, Weisner C, LeResche L, Ray T, Saunders K, Sullivan MD, et al. Age and gender trends in long-term opioid analgesic use for noncancer pain. American Journal of Public Health. 2010;100(12):2541–7.
[9] Ailes EC, Dawon AL, Lind JN, Gilboa SM, Frey MT, Broussard CS, et al. Opioid prescription claims among women of reproductive age—United States, 2008–2012. Morbidity and Mortality Weekly Report. 2015;64(2):37–41.

Findings

Distribution of opioid-related inpatient stays among women by patient characteristics, 2016
Figure 1 presents characteristics of opioid-related versus nonopioid-related stays among women in 2016.

Figure 1. Characteristics of opioid-related versus non-opioid-related inpatient stays among women, 2016



Abbreviations: Metro, metropolitan; micro, micropolitan

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2016

- **A higher percentage of opioid-related stays than nonopioid stays were among younger women, White women, and women with Medicaid or who were uninsured.**

  Compared with non-opioid-related stays, a higher percentage of opioid-related stays involved women aged 15–44 years (42.0 vs. 37.0 percent) and 45–64 years (34.9 vs. 23.5 percent), White women (73.3 vs. 62.8 percent), and women with stays billed to Medicaid (35.7 vs. 21.0 percent) or whose stays were not expected to be covered by insurance ("uninsured"; 5.0 vs. 3.2 percent).

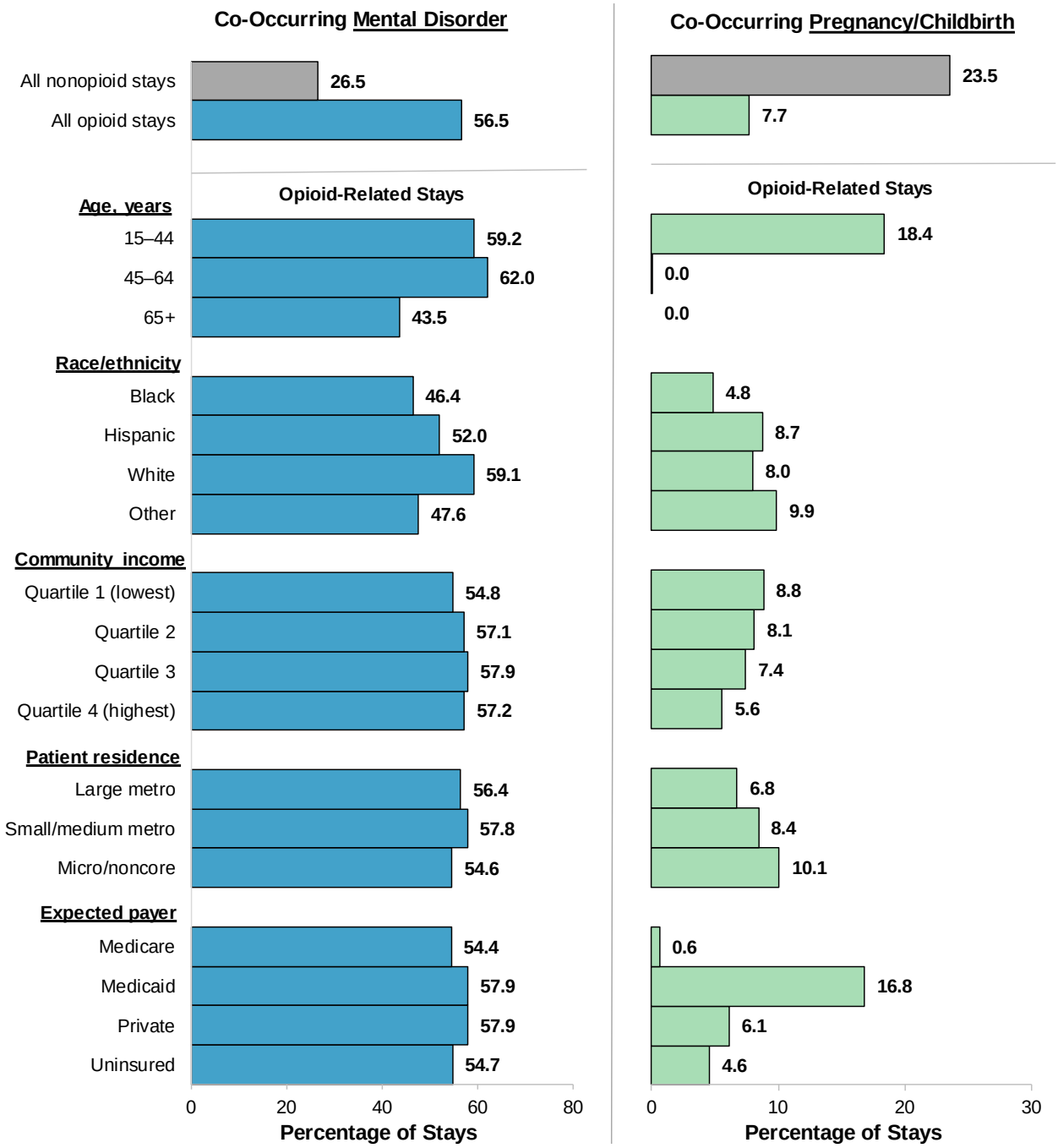
- **A lower percentage of opioid-related stays than nonopioid stays were among older women, racial/ethnic minority women, women in the highest income quartile, and women with Medicare or private insurance.**

  Compared with non-opioid-related stays, a lower percentage of opioid-related stays involved women aged 65 years and older (23.1 vs. 39.5 percent). Non-White women also constituted a lower percentage of opioid-related than non-opioid-related stays (Black: 12.5 vs. 14.9 percent; Hispanic: 6.2 vs. 11.4 percent; Other race/ethnicity: 3.6 vs. 6.5 percent). A lower percentage of opioid-related than nonopioid stays were among women who resided in the highest income quartile (16.9 vs. 19.5 percent) and women who with stays billed to Medicare (38.3 vs. 43.3 percent) or private insurance (18.5 vs. 30.0 percent).

  There were no noteworthy differences by patient residence location.

Figure 2 presents the percentage of opioid-related stays among women with a co-occurring mental disorder or pregnancy/childbirth by patient characteristics in 2016. The percentage of non-opioid-related stays with a co-occurring mental disorder or pregnancy/childbirth is provided across all patient subgroups at the top, for comparison.

Figure 2. Co-occurring mental disorder or pregnancy/childbirth for opioid-related inpatient stays among women, by patient characteristics, 2016



Abbreviations: Metro, metropolitan; micro, micropolitan

Notes: Mental disorder included a range of mental disorders and related diagnoses (e.g., anxiety, bipolar, depressive, personality, schizophrenia, somatic, and suicidal ideation/attempt); see the separate appendix (www.hcup-us.ahrq.gov/reports/statbriefs/sb247-appendix.pdf) for a full list of diagnosis codes used. Pregnancy/childbirth was defined using Major Diagnostic Category 14 (pregnancy, childbirth, and puerperium).

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2016

- **The percentage of stays involving a co-occurring mental disorder was more than twice as high for opioid-related stays as for nonopioid stays.**

  More than half of opioid-related stays involved a mental disorder (56.5 percent) compared with only one-fourth of non-opioid-related stays (26.5 percent). The percentage of opioid-related stays with a co-occurring mental disorder was higher among younger women (aged 15–44 years: 59.2 percent; aged 45–64 years: 62.0 percent) than among women aged 65 years and older (43.5 percent). A higher percentage of opioid stays among White women also involved a co-occurring mental disorder (59.1 percent) compared with other racial/ethnic groups (range: 46.4–52.0 percent, depending on the group).

- **Nearly one in five opioid-related stays among women of reproductive age involved co-occurring pregnancy/childbirth.**

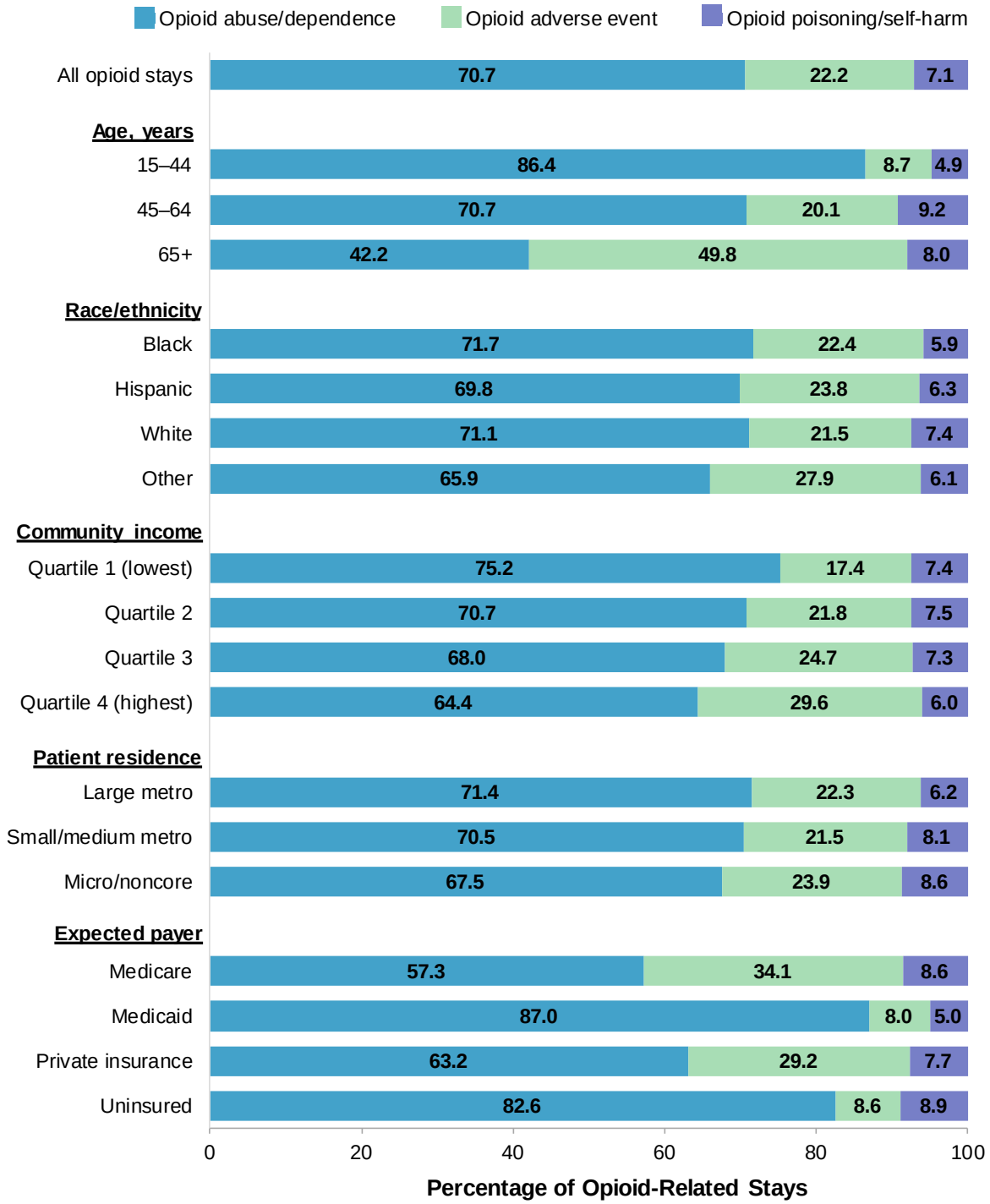
  Among women aged 18–44 years, 18.4 percent of opioid-related stays involved co-occurring pregnancy/childbirth.

- **Co-occurring pregnancy/childbirth with opioid-related stays was more common among women with Medicaid and less common among Black women, women in higher income areas, and women residing in large metropolitan areas.**

  Compared with non-opioid-related stays, the percentage of opioid-related stays that involved a co-occurring pregnancy/childbirth was one-third as high (7.7 vs. 23.5 percent). Women with stays billed to Medicaid had the highest percentage of co-occurring pregnancy/childbirth (16.8 percent vs. 0.6–6.1 percent for other payer types). The percentage of opioid-related stays involving a co-occurring pregnancy/childbirth was lower among Black women (4.8 percent) than among women of other races/ethnicities (8.0–9.9 percent). The percentage of opioid-related stays with a co-occurring pregnancy/childbirth decreased with community-level income, from 8.8 percent in the lowest income quartile to 5.6 percent in the highest income quartile. Conversely, the percentage of opioid-related stays with a co-occurring pregnancy/childbirth increased with rurality of patient residence location, from 6.8 percent in large metropolitan areas to 10.1 percent in micropolitan/noncore areas.

Figure 3 presents the distribution of the type of opioid diagnosis (abuse/dependence, adverse event, or poisoning/self-harm) for opioid-related stays among women by patient characteristics in 2016.

Figure 3. Type of opioid diagnosis for opioid-related inpatient stays among women, by patient characteristics, 2016



Abbreviations: Metro, metropolitan; micro, micropolitan

Note: Some discharges included more than one opioid diagnosis type. For this figure, discharges were categorized into only one opioid diagnosis type category using the following hierarchy: abuse/dependence, adverse effect, and poisoning/self-harm.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2016

- **The percentage of opioid-related stays with an opioid abuse/dependence diagnosis decreased with age, whereas the percentage of stays with an opioid adverse event diagnosis increased with age.**

  The percentage of opioid-related stays with an opioid abuse/dependence diagnosis decreased with age, from 86.4 percent for women aged 15–44 years to 42.2 percent for women aged 65 years and older. Conversely, the percentage of opioid stays with an opioid adverse event diagnosis increased with age, from 8.7 percent for women aged 15–44 years to 49.8 percent for women aged 65 years and older.

- **The percentage of opioid-related stays with an opioid abuse/dependence diagnosis decreased with income, whereas the percentage of stays with an opioid adverse event diagnosis increased with income.**

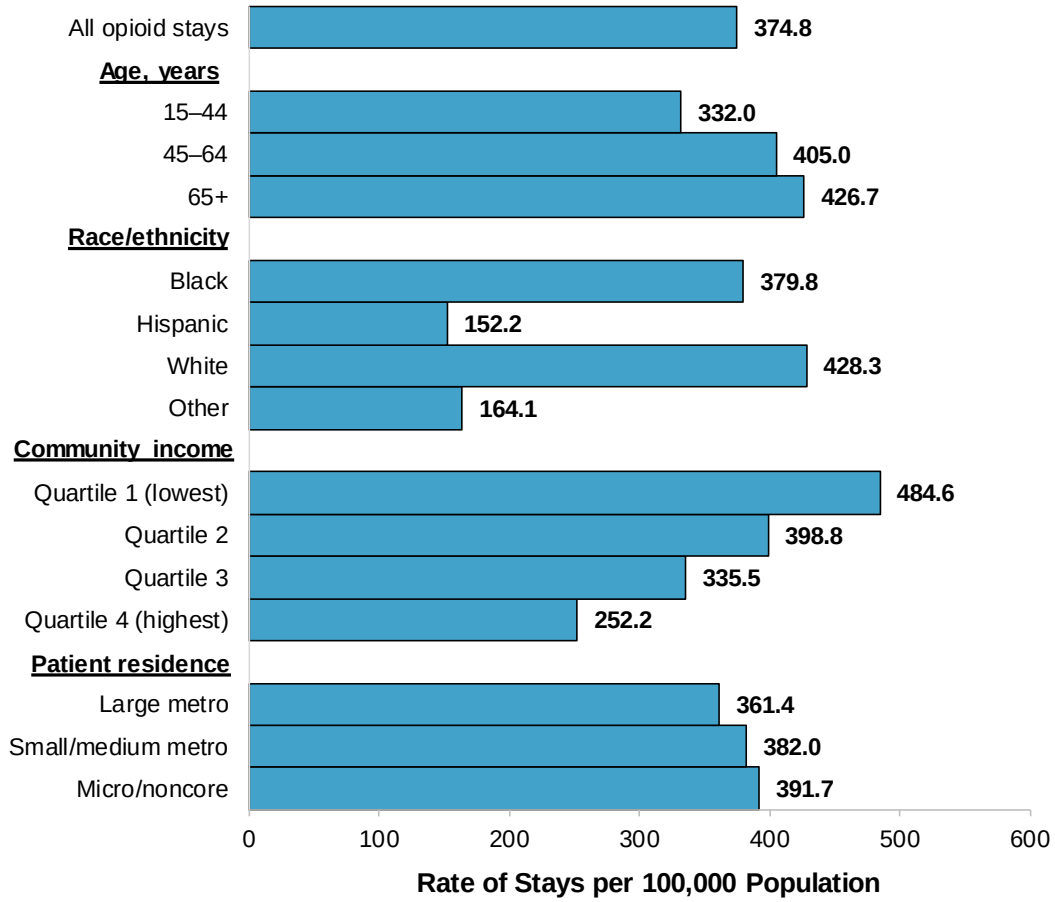
  The percentage of opioid-related stays with an opioid abuse/dependence diagnosis decreased with community-level income, from 75.2 percent for women residing in the lowest income communities to 64.4 percent for women residing in the highest income communities. Conversely, the percentage of opioid stays with an opioid adverse event diagnosis increased with income, from 17.4 percent for women residing in the lowest income communities to 29.6 percent for women residing in the highest income communities.

- **The percentage of opioid-related stays with an opioid abuse/dependence diagnosis was higher for women with Medicaid or who were uninsured, whereas the percentage of stays with an opioid adverse event diagnosis was higher for women with Medicare or private insurance.**

  The percentage of opioid-related stays with an opioid abuse/dependence diagnosis was higher for women with Medicaid or who were uninsured (87.0 and 82.6 percent, respectively) than for women with Medicare or private insurance (57.3 and 63.2 percent, respectively). Conversely, the percentage of opioid stays with an opioid adverse event diagnosis was higher for women with Medicare or private insurance (34.1 and 29.2 percent, respectively) than for women with Medicaid or who were uninsured (8.0 and 8.6 percent, respectively).

Population rate of opioid-related inpatient stays among women by patient characteristics, 2016
Figure 4 presents the rate per 100,000 population of opioid-related stays among women overall and by age, race/ethnicity, community-level income, and patient residence in 2016.

Figure 4. Population rate of opioid-related inpatient stays among women overall and by patient characteristics, 2016



Abbreviations: Metro, metropolitan; micro, micropolitan

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2016

- **The rate of opioid-related hospitalizations increased with patient age and decreased with community-level income.**

  Overall the rate of opioid-related stays was 374.8 per 100,000 population. The rate of opioid stays was higher among older patients aged 65+ years and aged 45–64 years (426.7 and 405.0 per 100,000 population, respectively) than among patients aged 15–44 years (332.0 per 100,000 population). The rate of opioid-related stays decreased with community-level income, from 484.6 per 100,000 population in the lowest income quartile to 252.2 per 100,000 in the highest income quartile.

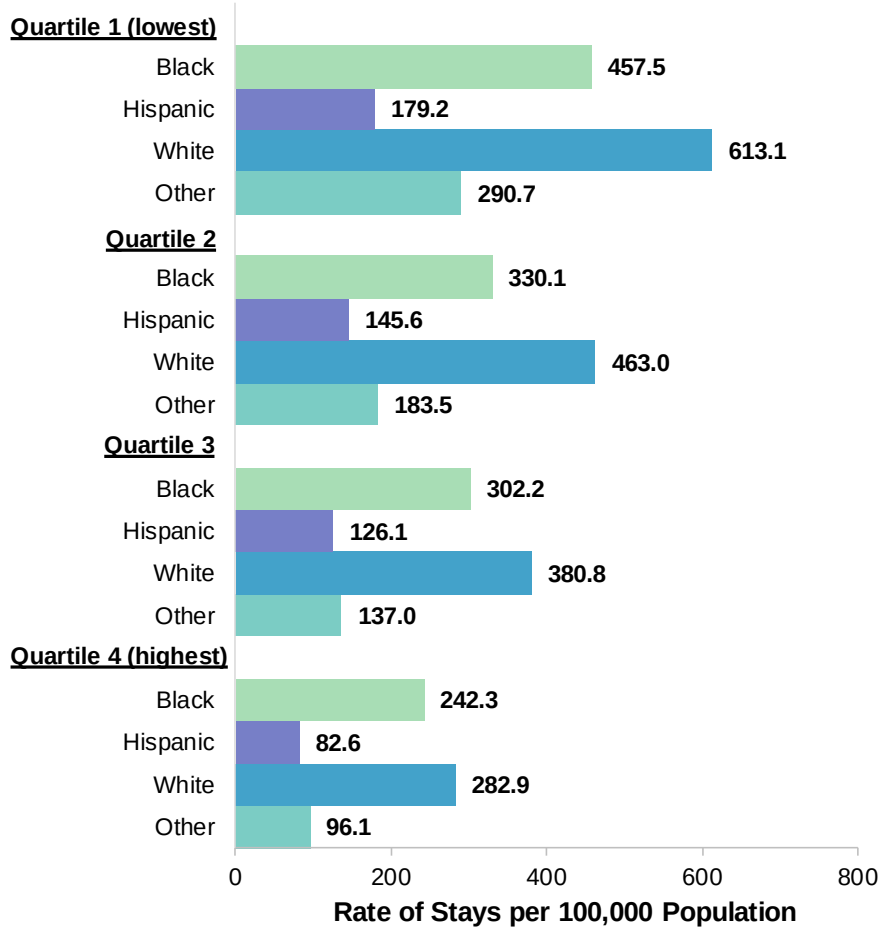
- **The rate of opioid-related stays was higher among White women than among women of other races/ethnicities.**

  The rate of opioid-related hospitalizations was highest among White women (428.3 per 100,000 population), followed by Black women (379.8 per 100,000 population). The rate was less than half as high among Hispanic women or women of other races/ethnicities (152.2 and 164.1 per 100,000 population, respectively).

  There were no noteworthy differences by patient residence location.

Figure 5 presents the rate per 100,000 population of opioid-related stays among women by community-level income quartile and race/ethnicity in 2016.

Figure 5. Population rate of opioid-related inpatient stays among women by community-level income quartile and race/ethnicity, 2016



Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2016

- **The rate of opioid-related stays among women decreased by income quartile for each racial/ethnic group.**

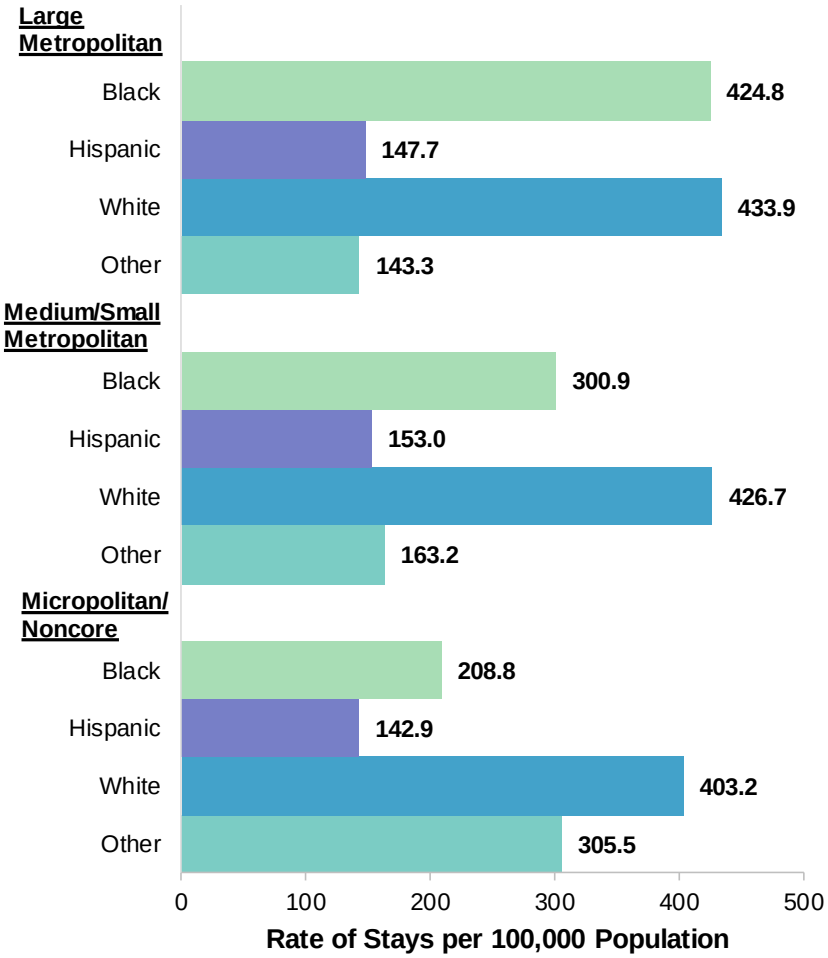
  Across racial/ethnic groups, the rate of opioid-related stays among women decreased as community-level income increased. For instance, among White women, the rate decreased from 613.1 per 100,000 population in the lowest income quartile to 282.9 per 100,000 population in the highest income quartile.

- **Regardless of income quartile, White women had the highest rate of opioid-related stays.**

  For each income quartile, White women had the highest rate of opioid-related stays compared with other racial/ethnic groups. Black women had the second highest rate of opioid stays in each income quartile. Notably, the difference between White and Black women decreased as community-level income increased, from a 34 percent difference between White and Black women in the lowest income quartile (613.1 vs. 457.5 per 100,000 population) to a 17 percent difference between White and Black women in the highest income quartile (282.9 vs. 242.3 per 100,000 population).

Figure 6 presents the rate per 100,000 population of opioid-related stays among women by patient residence and race/ethnicity in 2016.

Figure 6. Population rate of opioid-related inpatient stays among women by patient residence and race/ethnicity, 2016



Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2016

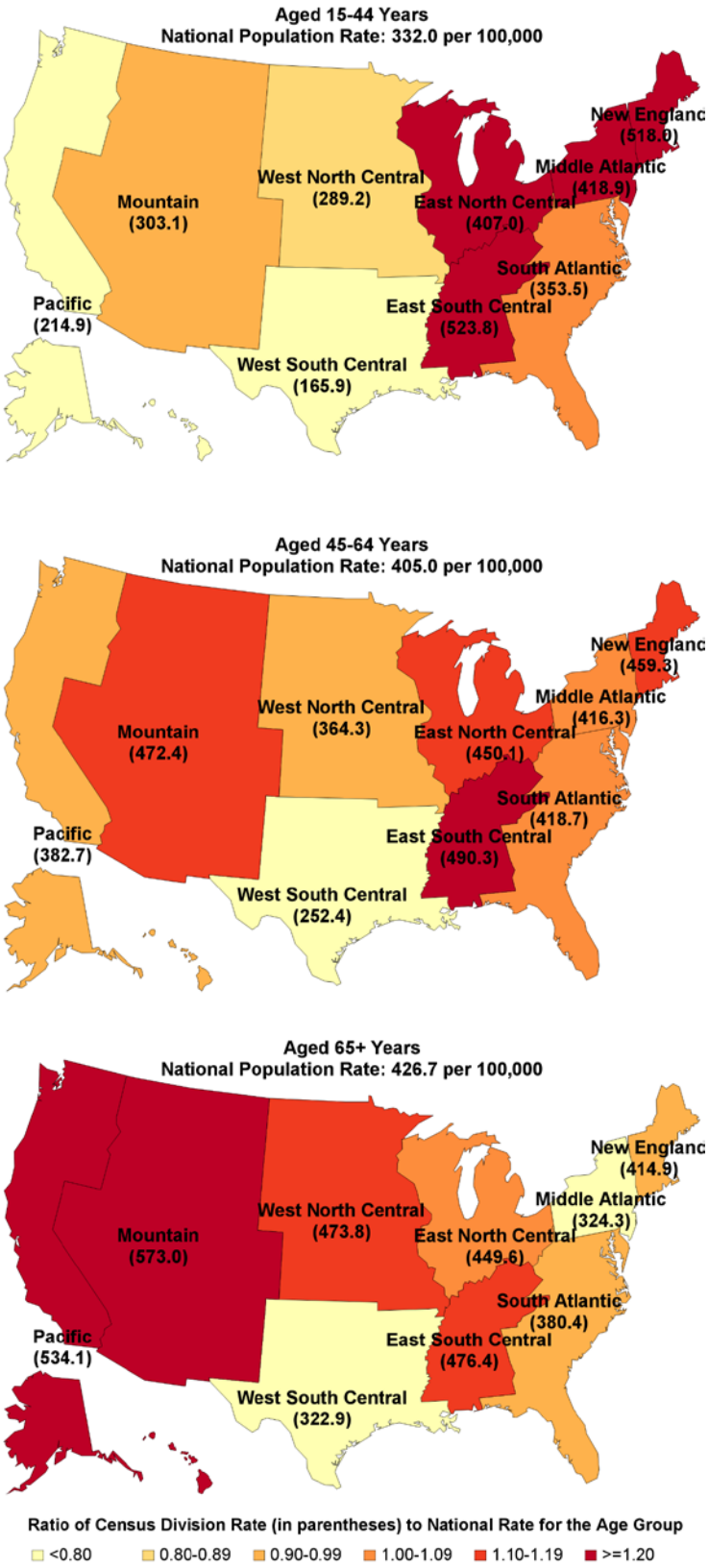
- **White women had a consistently high rate of opioid-related stays across patient residence type, but the rate of stays for Black women was higher in urban areas than in rural areas.**

  Regardless of patient residence, White women had the highest rate of opioid-related stays compared with other racial/ethnic groups, at over 400 stays per 100,000 population. In large metropolitan areas, the rate of stays was similar for White and Black women (433.9 and 424.8 per 100,000 population, respectively). However, as the rurality of patient residence increased, White women continued to have high rates of opioid-related stays, whereas Black women had lower rates of opioid stays (e.g., 208.8 per 100,000 population in micropolitan and noncore areas).

  In micropolitan/noncore areas, women of "Other" race/ethnicity had the second highest rate of opioid-related stays (305.5 per 100,000 population) behind White women (403.2 per 100,000 population).

Regional variation in opioid-related inpatient stays among women by age, 2016
Figure 7 provides the population rate of opioid-related inpatient stays among women aged 15–44 years, 45–64 years, and 65 years and older by U.S. census division in 2016. The ratio of each census division rate to the national rate also is provided in the figure and is reflected in the color-coding of the maps.

Figure 7. Population rate of opioid-related inpatient stays among women by age group and census division, and ratio of census division to national rate, 2016



- **The West South Central division had the lowest rate of opioid stays among women.**

  The rate of opioid-related stays among women in the West South Central division was more than 30 percent lower than the national population rate for all three age groups.

- **The rate of opioid stays increased with age in the Pacific, Mountain, and West North Central divisions.**

  In the western and north central United States, the rate of opioid stays was lower among younger women and higher among older women. For instance, in the Pacific division, women aged 15–44 years had a rate of opioid stays that was more than 50 percent lower than the national rate, whereas women aged 65 years and older had a rate of opioid stays that was more than 25 percent higher than the national rate.

- **The rate of opioid stays decreased with age in the New England, Middle Atlantic, and East North Central divisions.**

  In the northeastern United States, the rate of opioid stays was higher among younger women and lower among older women. For instance, in the Middle Atlantic division, women aged 15–44 years had a rate of opioid stays that was more than 25 percent higher than the national rate, whereas women aged 65 years and older had a rate of opioid stays that was more than 20 percent lower than the national rate.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2016

About Statistical Briefs

Healthcare Cost and Utilization Project (HCUP) Statistical Briefs provide basic descriptive statistics on a variety of topics using HCUP administrative health care data. Topics include hospital inpatient, ambulatory surgery, and emergency department use and costs, quality of care, access to care, medical conditions, procedures, and patient populations, among other topics. The reports are intended to generate hypotheses that can be further explored in other research; the reports are not designed to answer in-depth research questions using multivariate methods.

Data Source

The estimates in this Statistical Brief are based upon data from the HCUP 2016 National Inpatient Sample (NIS). Supplemental sources included population denominator data for use with HCUP databases, derived from information available from Claritas, a vendor that compiles and adds value to data from the U.S. Census Bureau.[10]

Definitions

Diagnoses, ICD-10-CM/PCS, and major diagnostic categories (MDCs)
The *principal diagnosis* is that condition established after study to be chiefly responsible for the patient's admission to the hospital. *Secondary diagnoses* are concomitant conditions that coexist at the time of admission or develop during the stay. *All-listed diagnoses* include the principal diagnosis plus these additional secondary conditions.

ICD-10-CM/PCS is the International Classification of Diseases, Tenth Revision, Clinical Modification/Procedure Coding System. In October 2015, ICD-10-CM/PCS replaced the ICD-9-CM diagnosis coding system with the ICD-10-CM diagnosis coding system for most inpatient and outpatient medical encounters. There are over 70,000 ICD-10-CM diagnosis codes.

MDCs assign ICD-10-CM principal diagnosis codes to 1 of 25 general diagnosis categories.

Case definition
Opioid-related hospital use was identified using the all-listed ICD-10-CM diagnosis codes shown in Table 1.

[10] Claritas. Claritas Demographic Profile by ZIP Code. https://claritas360.claritas.com/mybestsegments/. Accessed June 6, 2018.

Table 1. ICD-10-CM diagnosis codes defining different opioid-related conditions

Type of opioid-related condition	ICD-10-CM diagnosis codes
Abuse or dependence	F11 series: Opioid-related disorders (except F11.21)
Adverse event	T40.0X5: Adverse effect of opium T40.2X5: Adverse effect of other opioids T40.3X5: Adverse effect of methadone T40.4X5: Adverse effect of other synthetic narcotics T40.605: Adverse effect of unspecified narcotics T40.695: Adverse effect of other narcotics
Poisoning, including self-harm	T40.0X1, 0X2, 0X3, 0X4: Poisoning by opium–accidental, intentional self-harm, assault, or undetermined T40.1X1, 1X2, 1X3, 1X4: Poisoning by heroin–accidental, intentional self-harm, assault, or undetermined T40.2X1, 2X2, 2X3, 2X4: Poisoning by other opioids–accidental, intentional self-harm, assault, or undetermined T40.3X1, 3X2, 3X3, 3X4: Poisoning by methadone–accidental, intentional self-harm, assault, or undetermined T40.4X1, 4X2, 4X3, 4X4: Poisoning by other synthetic narcotics–accidental, intentional self-harm, assault, or undetermined T40.601–T40.604: Poisoning by unspecified narcotics–accidental, intentional self-harm, assault, or undetermined T40.691–T40.694: Poisoning by other narcotics–accidental, intentional self-harm, assault, or undetermined

Abbreviation: ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification

Co-occurring mental disorders were defined using the ICD-10-CM codes provided in the separate appendix associated with this Statistical Brief on the HCUP-US website at www.hcup-us.ahrq.gov/reports/statbriefs/sb247-appendix.pdf. Co-occurring pregnancy/childbirth was defined as MDC 14 (pregnancy, childbirth and puerperium).

Types of hospitals included in the HCUP National Inpatient Sample
The National Inpatient Sample (NIS) is based on data from community hospitals, which are defined as short-term, non-Federal, general, and other hospitals, excluding hospital units of other institutions (e.g., prisons). The NIS includes obstetrics and gynecology, otolaryngology, orthopedic, cancer, pediatric, public, and academic medical hospitals. Excluded are long-term care facilities such as rehabilitation, psychiatric, and alcoholism and chemical dependency hospitals. Beginning in 2012, long-term acute care hospitals are also excluded. However, if a patient received long-term care, rehabilitation, or treatment for a psychiatric or chemical dependency condition in a community hospital, the discharge record for that stay will be included in the NIS.

Unit of analysis
The unit of analysis is the hospital discharge (i.e., the hospital stay), not a person or patient. This means that a person who is admitted to the hospital multiple times in 1 year will be counted each time as a separate discharge from the hospital.

Location of patients' residence
Place of residence is based on the urban-rural classification scheme for U.S. counties developed by the National Center for Health Statistics (NCHS) and based on the Office of Management and Budget (OMB) definition of a metropolitan service area as including a city and a population of at least 50,000 residents:

- Large Central Metropolitan: Counties in a metropolitan area with 1 million or more residents that satisfy at least one of the following criteria: (1) containing the entire population of the largest principal city of the metropolitan statistical area (MSA), (2) having their entire population contained within the largest principal city of the MSA, or (3) containing at least 250,000 residents of any principal city in the MSA
- Large Fringe Metropolitan: Counties in a metropolitan area with 1 million or more residents that do not qualify as large central metropolitan counties

- Medium Metropolitan: Counties in a metropolitan area of 250,000–999,999 residents
- Small Metropolitan: Counties in a metropolitan area of 50,000–249,999 residents
- Micropolitan: Counties in a nonmetropolitan area of 10,000–49,999 residents
- Noncore: Counties in a nonmetropolitan and nonmicropolitan area

Community-level income
Community-level income is based on the median household income of the patient's ZIP Code of residence. Quartiles are defined so that the total U.S. population is evenly distributed. Cut-offs for the quartiles are determined annually using ZIP Code demographic data obtained from Claritas, a vendor that adds value to data from the U.S. Census Bureau.[11] The value ranges for the income quartiles vary by year. The income quartile is missing for patients who are homeless or foreign.

Payer
Payer is the expected payer for the hospital stay. To make coding uniform across all HCUP data sources, payer combines detailed categories into general groups:

- Medicare: includes fee-for-service and managed care Medicare
- Medicaid: includes fee-for-service and managed care Medicaid
- Private Insurance: includes Blue Cross, commercial carriers, and private health maintenance organizations (HMOs) and preferred provider organizations (PPOs)
- Uninsured: includes an insurance status of no insurance, self-pay, no charge, charity, research (e.g., clinical trial or donor), refusal to pay, and no payment
- Other: includes Workers' Compensation, TRICARE/CHAMPUS, CHAMPVA, Title V, and other government programs

Hospital stays billed to the State Children's Health Insurance Program (SCHIP) may be classified as Medicaid, Private Insurance, or Other, depending on the structure of the State program. Because most State data do not identify patients in SCHIP specifically, it is not possible to present this information separately.

For this Statistical Brief, when more than one payer is listed for a hospital discharge, the first-listed payer is used.

Division
Division corresponds to the location of the hospital and is one of the nine divisions defined by the U.S. Census Bureau:

- New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut
- Middle Atlantic: New York, New Jersey, Pennsylvania
- East North Central: Ohio, Indiana, Illinois, Michigan, Wisconsin
- West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas
- South Atlantic: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida
- East South Central: Kentucky, Tennessee, Alabama, Mississippi
- West South Central: Arkansas, Louisiana, Oklahoma, Texas
- Mountain: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada
- Pacific: Washington, Oregon, California, Alaska, Hawaii

Reporting of race and ethnicity
Data on Hispanic ethnicity are collected differently among the States and also can differ from the census methodology of collecting information on race (White, Black, Asian/Pacific Islander, American Indian/Alaska Native, Other [including mixed race]) separately from ethnicity (Hispanic, non-Hispanic). State data organizations often collect Hispanic ethnicity as one of several categories that include race. Therefore, for multistate analyses, HCUP creates the combined categorization of race and ethnicity for data from States that report ethnicity separately. When a State data organization collects Hispanic

[11] Claritas. Claritas Demographic Profile by ZIP Code. https://claritas360.claritas.com/mybestsegments/. Accessed June 6, 2018.

ethnicity separately from race, HCUP uses Hispanic ethnicity to override any other race category to create a Hispanic category for the uniformly coded race/ethnicity data element, while also retaining the original race and ethnicity data. This Statistical Brief reports race/ethnicity for the following categories: Hispanic, non-Hispanic White, non-Hispanic Black, and other race/ethnic groups (which includes Asian/Pacific Islander, American Indian/Alaska Native, and non-Hispanic Other).

About HCUP

The Healthcare Cost and Utilization Project (HCUP, pronounced "H-Cup") is a family of health care databases and related software tools and products developed through a Federal-State-Industry partnership and sponsored by the Agency for Healthcare Research and Quality (AHRQ). HCUP databases bring together the data collection efforts of State data organizations, hospital associations, and private data organizations (HCUP Partners) and the Federal government to create a national information resource of encounter-level health care data. HCUP includes the largest collection of longitudinal hospital care data in the United States, with all-payer, encounter-level information beginning in 1988. These databases enable research on a broad range of health policy issues, including cost and quality of health services, medical practice patterns, access to health care programs, and outcomes of treatments at the national, State, and local market levels.

HCUP would not be possible without the contributions of the following data collection Partners from across the United States:

Alaska Department of Health and Social Services
Alaska State Hospital and Nursing Home Association
Arizona Department of Health Services
Arkansas Department of Health
California Office of Statewide Health Planning and Development
Colorado Hospital Association
Connecticut Hospital Association
Delaware Division of Public Health
District of Columbia Hospital Association
Florida Agency for Health Care Administration
Georgia Hospital Association
Hawaii Health Information Corporation
Illinois Department of Public Health
Indiana Hospital Association
Iowa Hospital Association
Kansas Hospital Association
Kentucky Cabinet for Health and Family Services
Louisiana Department of Health
Maine Health Data Organization
Maryland Health Services Cost Review Commission
Massachusetts Center for Health Information and Analysis
Michigan Health & Hospital Association
Minnesota Hospital Association
Mississippi State Department of Health
Missouri Hospital Industry Data Institute
Montana Hospital Association
Nebraska Hospital Association
Nevada Department of Health and Human Services
New Hampshire Department of Health & Human Services
New Jersey Department of Health
New Mexico Department of Health
New York State Department of Health
North Carolina Department of Health and Human Services
North Dakota (data provided by the Minnesota Hospital Association)
Ohio Hospital Association

Oklahoma State Department of Health
Oregon Association of Hospitals and Health Systems
Oregon Office of Health Analytics
Pennsylvania Health Care Cost Containment Council
Rhode Island Department of Health
South Carolina Revenue and Fiscal Affairs Office
South Dakota Association of Healthcare Organizations
Tennessee Hospital Association
Texas Department of State Health Services
Utah Department of Health
Vermont Association of Hospitals and Health Systems
Virginia Health Information
Washington State Department of Health
West Virginia Department of Health and Human Resources, West Virginia Health Care Authority
Wisconsin Department of Health Services
Wyoming Hospital Association

About the NIS

The HCUP National (Nationwide) Inpatient Sample (NIS) is a nationwide database of hospital inpatient stays. The NIS is nationally representative of all community hospitals (i.e., short-term, non-Federal, nonrehabilitation hospitals). The NIS includes all payers. It is drawn from a sampling frame that contains hospitals comprising more than 95 percent of all discharges in the United States. The vast size of the NIS allows the study of topics at the national and regional levels for specific subgroups of patients. In addition, NIS data are standardized across years to facilitate ease of use. Over time, the sampling frame for the NIS has changed; thus, the number of States contributing to the NIS varies from year to year. The NIS is intended for national estimates only; no State-level estimates can be produced. The unweighted sample size for the 2016 NIS is 7,135,090 (weighted, this represents 35,675,421 inpatient stays).

For More Information

For other information on mental and substance abuse disorders, refer to the HCUP Statistical Briefs located at www.hcup-us.ahrq.gov/reports/statbriefs/sb_mhsa.jsp.

For additional HCUP statistics, visit:

- HCUP Fast Stats at www.hcup-us.ahrq.gov/faststats/landing.jsp for easy access to the latest HCUP-based statistics for health care information topics
- HCUPnet, HCUP's interactive query system, at www.hcupnet.ahrq.gov/

For more information about HCUP, visit www.hcup-us.ahrq.gov/.

For a detailed description of HCUP and more information on the design of the National Inpatient Sample (NIS) please refer to the following database documentation:

Agency for Healthcare Research and Quality. Overview of the National (Nationwide) Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP). Rockville, MD: Agency for Healthcare Research and Quality. Updated February 2018. www.hcup-us.ahrq.gov/nisoverview.jsp. Accessed February 12, 2018.

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AHRQ welcomes questions and comments from readers of this publication who are interested in obtaining more information about access, cost, use, financing, and quality of health care in the United States. We also invite you to tell us how you are using this Statistical Brief 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:

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