

# Racial and Ethnic Differences in Emergency Department Visits Related to Substance Use Disorders, 2019

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### Introduction

An estimated 20.4 million people aged 12 years and older were diagnosed with a substance use disorder (SUD) in 2019, with many receiving care or accessing the behavioral healthcare system through the emergency department (ED).<sup>1</sup> The prevalence of SUD remained stable between 2015 and 2019,<sup>1</sup> yet SUD-related ED visits have increased substantially in the past 5 years (i.e., a 45 percent increase from 2013 to 2018).<sup>2,3</sup> Although estimates of SUD in the past year show racial and ethnic differences (higher prevalence of SUD among White individuals than Black, Hispanic, and Asian individuals),<sup>4</sup> little is known about racial and ethnic differences in SUD-related ED utilization. Understanding these differences can help highlight potential inequities in care associated with lack of access to primary SUD-related healthcare and pinpoint areas to target for prevention programs, interventions, and healthcare policies to better ensure equitable care.

This Healthcare Cost and Utilization Project (HCUP) Statistical Brief presents statistics on SUD-related ED visits by patient race and ethnicity using weighted estimates from the 2019 Nationwide Emergency Department Sample (NEDS). SUDs include disorders involving alcohol, cannabis, stimulants, opioids, sedatives, hallucinogens, and inhalants, as well as other substances. The number and percentage of SUD-related ED visits are presented for select patient characteristics and primary expected payer. The population rate of SUD-related ED visits is presented by race and ethnicity for select demographic characteristics, including sex, age group, rural/urban location, and the social vulnerability of the county in which the individual resides (i.e., community's ability to prevent human suffering and financial loss during a disaster).<sup>5</sup> Because of the large sample size of the NEDS data, small differences can be statistically significant. Thus, only differences greater than or equal to 10 percent are discussed in the text.

### Highlights

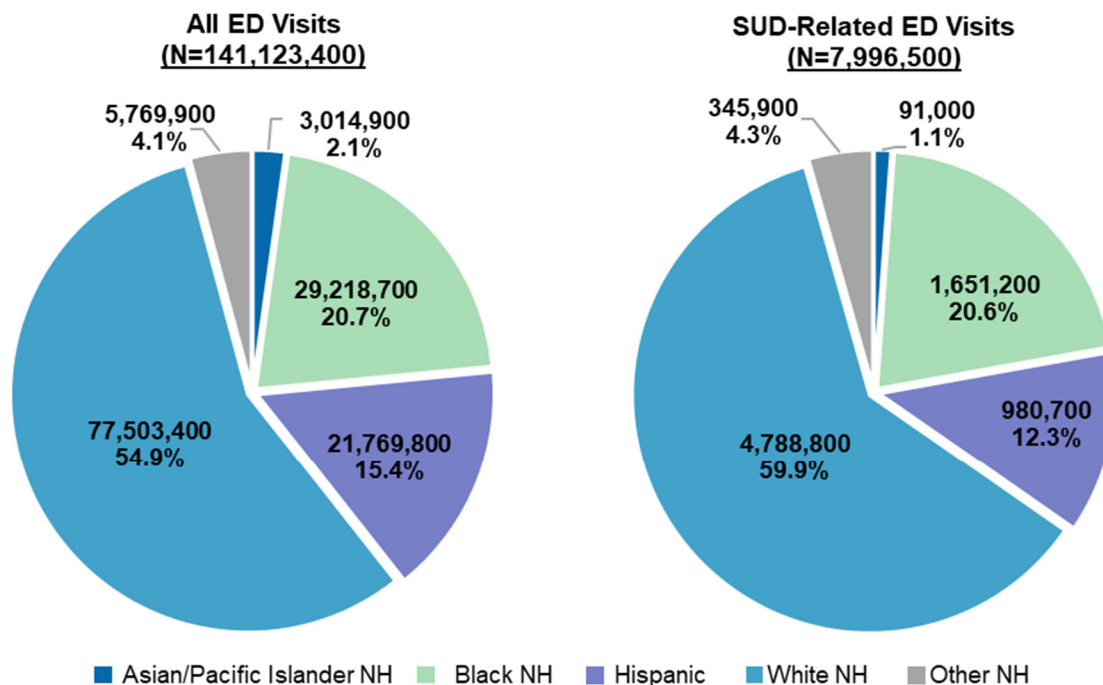
- The population rate of emergency department (ED) visits related to substance use disorders (SUDs) was 28.5 ED visits per 1,000 population in 2019. The rate was highest among Black non-Hispanic individuals (48.3 ED visits per 1,000 population) and lowest for Asian/Pacific Islander non-Hispanic individuals (5.3 ED visits per 1,000 population).
- The population rate of SUD-related ED visits was approximately twice as high for men as women, regardless of an individual's race and ethnicity (37.3 vs. 20.1 ED visits per 1,000 population).
- The rate of SUD-related ED visits was higher among individuals living in the most socially vulnerable communities versus less socially vulnerable communities for all racial and ethnic groups except Asian/Pacific Islander non-Hispanic individuals.
- Population rates of ED visits for specific substances varied by race and ethnicity. Black non-Hispanic individuals had the highest rate of ED visits related to cannabis-, stimulant-, and opioid-related disorders (15.6, 11.4, and 6.5 ED visits per 1,000 population, respectively) compared with all other racial and ethnic groups. White non-Hispanic individuals had the highest rate of ED visits related to sedative-related disorders (1.1 ED visits per 1,000 population).

## Findings

### *Characteristics of emergency department (ED) visits related to substance use disorders (SUDs), by patient race and ethnicity*

Figure 1 presents the number and percentage of all ED visits and SUD-related ED visits by patient race and ethnicity.

**Figure 1. Distribution of all ED visits and SUD-related ED visits, by patient race and ethnicity, 2019**



Abbreviations: ED, emergency department; NH, non-Hispanic; SUD, substance use disorder

Notes: Because the analysis included patient county of residence designations, the population was limited to observations with a patient county of residence within a State that participates in the HCUP NEDS. Therefore, the study population excluded ED visits with unknown or foreign patient residence or where the patient residence county was not in a State that participates in the HCUP NEDS. Patient race and ethnicity information was missing for <3% of all ED visits and <2% of SUD-related ED visits. Percentages are based on unrounded numbers.

Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Emergency Department Sample (NEDS), 2019

- **There were 8.0 million SUD-related ED visits in the United States in 2019 (5.7 percent of all ED visits), and the racial and ethnic distribution of SUD-related ED visits was similar to the distribution of all ED visits.**

Nearly 8.0 million SUD-related ED visits occurred in the United States in 2019. More than one-third of these visits resulted in hospitalization, which is 2.5 times higher than the average admission rate to the hospital from the ED (35.7 vs. 14.2 percent, data not shown).

Most SUD-related ED visits were among White non-Hispanic (NH) individuals (59.9 percent), followed by Black NH individuals (20.6 percent) and Hispanic individuals (12.3 percent), a distribution similar to that of all ED visits.

Table 1 presents the number and percentage of SUD-related ED visits by patient race and ethnicity for select patient-level characteristics.

**Table 1. Characteristics of SUD-related ED visits, by patient race and ethnicity, 2019**

| Characteristic                                       | Patient race and ethnicity |      |                           |      |          |      |          |      |          |      |          |      |
|--|----------------------------|------|---------------------------|------|----------|------|----------|------|----------|------|----------|------|
|  | All                        |      | Asian/Pacific Islander NH |      | Black NH |      | Hispanic |      | White NH |      | Other NH |      |
|  | N (000s)                   | %    | N (000s)                  | %    | N (000s) | %    | N (000s) | %    | N (000s) | %    | N (000s) | %    |
| <b>SUD-related ED visits*</b>                        | 7,996.5                    | 5.7  | 91.0                      | 3.0  | 1,651.2  | 5.7  | 980.7    | 4.5  | 4,788.8  | 6.2  | 345.9    | 6.0  |
| Sex  |                            |      |                           |      |          |      |          |      |          |      |          |      |
| Female   | 2,856.1                    | 35.7 | 28.9                      | 31.7 | 559.8    | 33.9 | 264.2    | 26.9 | 1,841.0  | 38.4 | 112.9    | 32.6 |
| Age group, years                                     |                            |      |                           |      |          |      |          |      |          |      |          |      |
| 0–17   | 166.0                      | 2.1  | 2.6                       | 2.9  | 24.8     | 1.5  | 33.3     | 3.4  | 86.2     | 1.8  | 10.6     | 3.1  |
| 18–44  | 3,955.0                    | 49.5 | 53.9                      | 59.2 | 806.8    | 48.9 | 567.6    | 57.9 | 2,252.0  | 47.0 | 196.4    | 56.8 |
| 45–64  | 3,001.7                    | 37.5 | 26.7                      | 29.3 | 678.8    | 41.1 | 312.6    | 31.9 | 1,829.6  | 38.2 | 112.4    | 32.5 |
| 65+  | 873.3                      | 10.9 | 7.8                       | 8.5  | 140.6    | 8.5  | 67.0     | 6.8  | 620.9    | 13.0 | 26.5     | 7.7  |
| Primary expected payer†                              |                            |      |                           |      |          |      |          |      |          |      |          |      |
| Medicare   | 1,573.6                    | 19.7 | 11.2                      | 12.3 | 303.3    | 18.4 | 121.8    | 12.4 | 1,075.1  | 22.5 | 43.3     | 12.5 |
| Medicaid   | 2,940.5                    | 36.8 | 33.5                      | 36.8 | 706.9    | 42.8 | 393.1    | 40.1 | 1,624.3  | 33.9 | 142.9    | 41.3 |
| Private  | 1,591.3                    | 19.9 | 27.1                      | 29.8 | 218.0    | 13.2 | 163.5    | 16.7 | 1,080.8  | 22.6 | 60.9     | 17.6 |
| Self-pay/No charge                                   | 1,597.0                    | 20.0 | 16.2                      | 17.8 | 367.5    | 22.3 | 268.2    | 27.4 | 832.9    | 17.4 | 80.2     | 23.2 |
| Other  | 278.2                      | 3.5  | 3.0                       | 3.3  | 52.4     | 3.2  | 32.4     | 3.3  | 166.8    | 3.5  | 16.6     | 4.8  |
| Patient location (urban/rural designation)           |                            |      |                           |      |          |      |          |      |          |      |          |      |
| Rural  | 371.2                      | 4.6  | 1.2                       | 1.3  | 35.1     | 2.1  | 18.8     | 1.9  | 275.3    | 5.7  | 28.7     | 8.3  |
| Micropolitan   | 667.9                      | 8.4  | 4.2                       | 4.6  | 70.2     | 4.2  | 29.3     | 3.0  | 518.0    | 10.8 | 25.0     | 7.2  |
| Metropolitan   | 6,957.4                    | 87.0 | 85.6                      | 94.1 | 1,545.9  | 93.6 | 932.6    | 95.1 | 3,995.6  | 83.4 | 292.2    | 84.5 |
| Patient location (social vulnerability designation)‡ |                            |      |                           |      |          |      |          |      |          |      |          |      |
| Most vulnerable                                      | 2,033.7                    | 25.4 | 16.1                      | 17.6 | 611.4    | 37.0 | 440.7    | 44.9 | 851.2    | 17.8 | 96.7     | 28.0 |

Abbreviations: ED, emergency department; NH, non-Hispanic; SUD, substance use disorder

Notes: Because the analysis included patient county of residence designations, the population was limited to observations with a patient county of residence within a State that participates in the HCUP NEDS. Therefore, the study population excluded ED visits with unknown or foreign patient residence or where the patient residence county was not in a State that participates in the HCUP NEDS. The number of ED visits was rounded to the nearest hundred. All percentages are column percentages except where indicated. Sex, age, and primary expected payer were missing for <1% of SUD-related ED visits; patient race and ethnicity information was missing for <2% of SUD-related ED visits.

\* Percentages of all ED visits in the racial/ethnic group are shown.

† Self-pay/No charge: includes self-pay, no charge, charity, and no expected payment.

‡ Social vulnerability designation is based on patient county of residence. Patient residence counties were classified as most vulnerable (counties with social vulnerability index values in the fourth quartile) versus less vulnerable (counties with social vulnerability index values in the lower three quartiles).

Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Emergency Department Sample (NEDS), 2019

■ **Nearly half (49.5 percent) of all SUD-related ED visits were for patients aged 18–44 years, with slight variation by patient race and ethnicity.**

Over half of SUD-related ED visits for Asian/Pacific Islander non-Hispanic (NH), Hispanic, and other NH race/ethnicity patients were for individuals aged 18–44 years (59.2, 57.9, and 56.8 percent of visits, respectively). Slightly less than half of SUD-related ED visits for Black NH and White NH patients were for individuals aged 18–44 years (48.9 and 47.0 percent, respectively).

- **Over one-third (36.8 percent) of SUD-related ED visits were expected to be paid by Medicaid, regardless of the patient's race and ethnicity.**

Over one-third of SUD-related ED visits had a primary expected payer of Medicaid (36.8 percent), followed by one-fifth that were expected to be self-pay/no charge or to be paid by private insurance (20.0 and 19.9 percent, respectively). SUD-related ED visits for Black NH and Hispanic individuals were more likely to have an expected payer of Medicaid or self-pay/no charge than those for Asian/Pacific Islander NH and White NH individuals (Medicaid: 42.8 and 40.1 vs. 36.8 and 33.9 percent; self-pay/no charge: 22.3 and 27.4 vs. 17.8 and 17.4 percent). Moreover, SUD-related ED visits for Asian/Pacific Islander NH and White NH individuals were more likely to have an expected payer of private insurance than those same visits for Black NH and Hispanic individuals (29.8 and 22.6 vs. 13.2 and 16.7 percent, respectively).

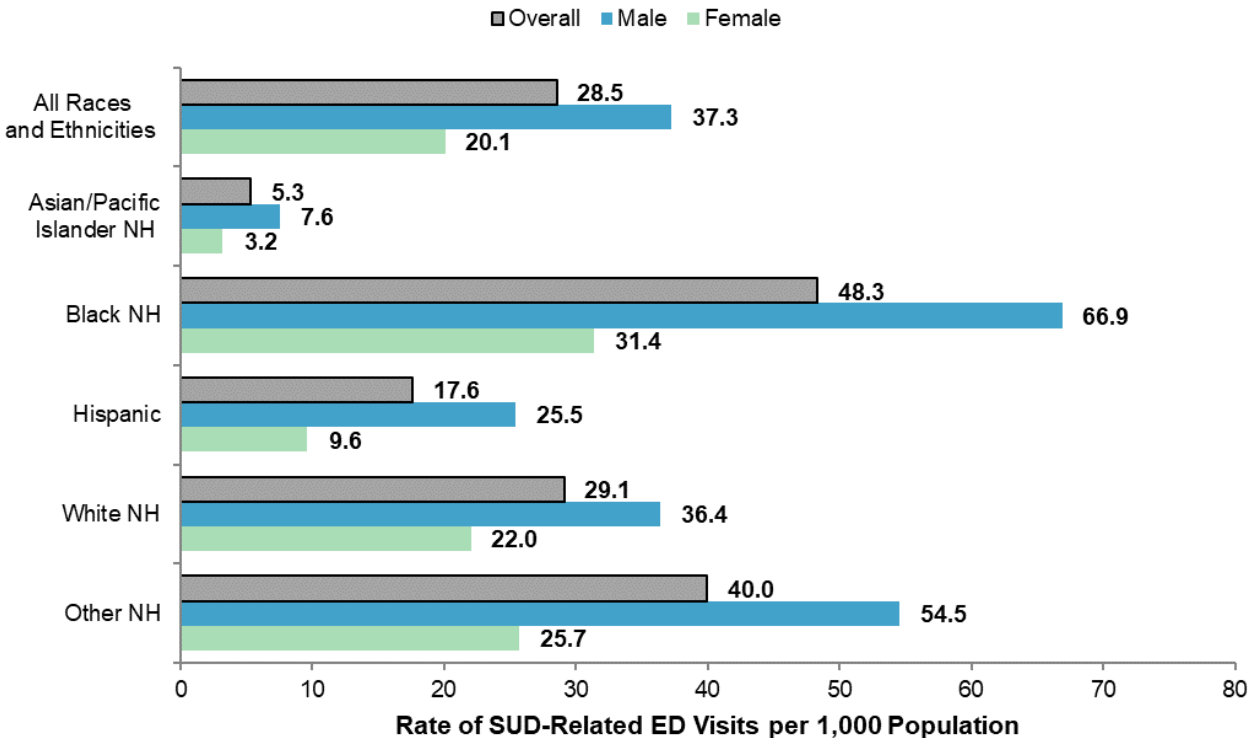
- **One-fourth (25.4 percent) of SUD-related ED visits were for patients from the most vulnerable communities, with substantial variation by patient race and ethnicity.**

Nearly 45 percent of SUD-related ED visits for Hispanic patients were for individuals from the most vulnerable communities, followed by 37.0 percent of SUD-related ED visits for Black NH patients. Less than one in five SUD-related ED visits for White NH and Asian/Pacific Islander NH patients were for individuals from the most vulnerable communities.

*Population rates of ED visits related to SUDs, by race and ethnicity*

Figures 2–5 present the rate per 1,000 population of SUD-related ED visits by race and ethnicity for select demographic characteristics: sex (Figure 2), age group (Figure 3), residence in an urban/rural location (Figure 4), and social vulnerability of residence location (Figure 5).

**Figure 2. Population rates of SUD-related ED visits by race and ethnicity and sex, 2019**



Abbreviations: ED, emergency department; NH, non-Hispanic; SUD, substance use disorder

Notes: All rates are based on the U.S. population specific to each racial and ethnic group and sex. Because the analysis included patient county of residence designations, the population was limited to observations with a patient county of residence within a State that participates in the HCUP NEDS. Therefore, the study population excluded ED visits with unknown or foreign patient residence or where the patient residence county was not in a State that participates in the HCUP NEDS. Sex was missing for <1% of SUD-related ED visits; patient race and ethnicity information was missing for <2% of SUD-related ED visits.

Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Emergency Department Sample (NEDS), 2019

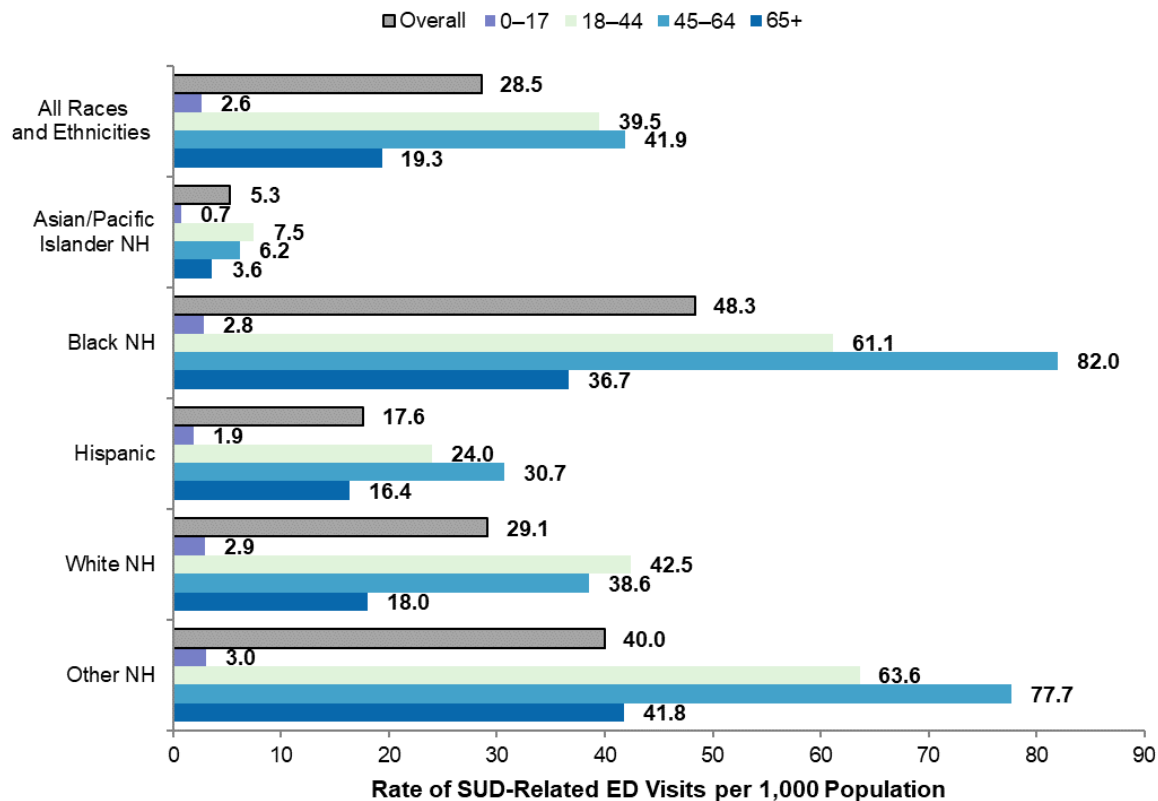
- **The population rate of SUD-related ED visits was approximately twice as high for males as for females, regardless of race and ethnicity.**

The difference in the population rates of SUD-related ED visits between males and females was highest for Hispanic individuals in 2019: the rate was 2.7 times higher for Hispanic males than for Hispanic females.

- **For both males and females, the population rate of SUD-related ED visits was highest among Black non-Hispanic individuals and lowest among Asian/Pacific Islander non-Hispanic individuals.**

The rate of SUD-related ED visits was higher for Black non-Hispanic (NH) males than for males of other racial and ethnic groups (66.9 vs. 7.6–54.5 ED visits per 1,000 population). The rate of SUD-related ED visits also was higher for Black NH females than for females of other racial and ethnic groups (31.4 vs. 3.2–25.7 ED visits per 1,000 population). Asian/Pacific Islander NH males and females had the lowest rates of SUD-related ED visits (7.6 and 3.2 ED visits per 1,000 population, respectively).

**Figure 3. Population rates of SUD-related ED visits by race and ethnicity and age, 2019**



Abbreviations: ED, emergency department; NH, non-Hispanic; SUD, substance use disorder

Notes: All rates are based on the U.S. population specific to each racial and ethnic group and age group. Because the analysis included patient county of residence designations, the population was limited to observations with a patient county of residence within a State that participates in the HCUP NEDS. Therefore, the study population excluded ED visits with unknown or foreign patient residence or where the patient residence county was not in a State that participates in the HCUP NEDS. Age was missing for <1% of SUD-related ED visits; patient race and ethnicity information was missing for <2% of SUD-related ED visits.

Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Emergency Department Sample (NEDS), 2019

- **The population rate of SUD-related ED visits was highest among individuals aged 18–44 and 45–64 years; however, differences were noted across racial and ethnic groups.**

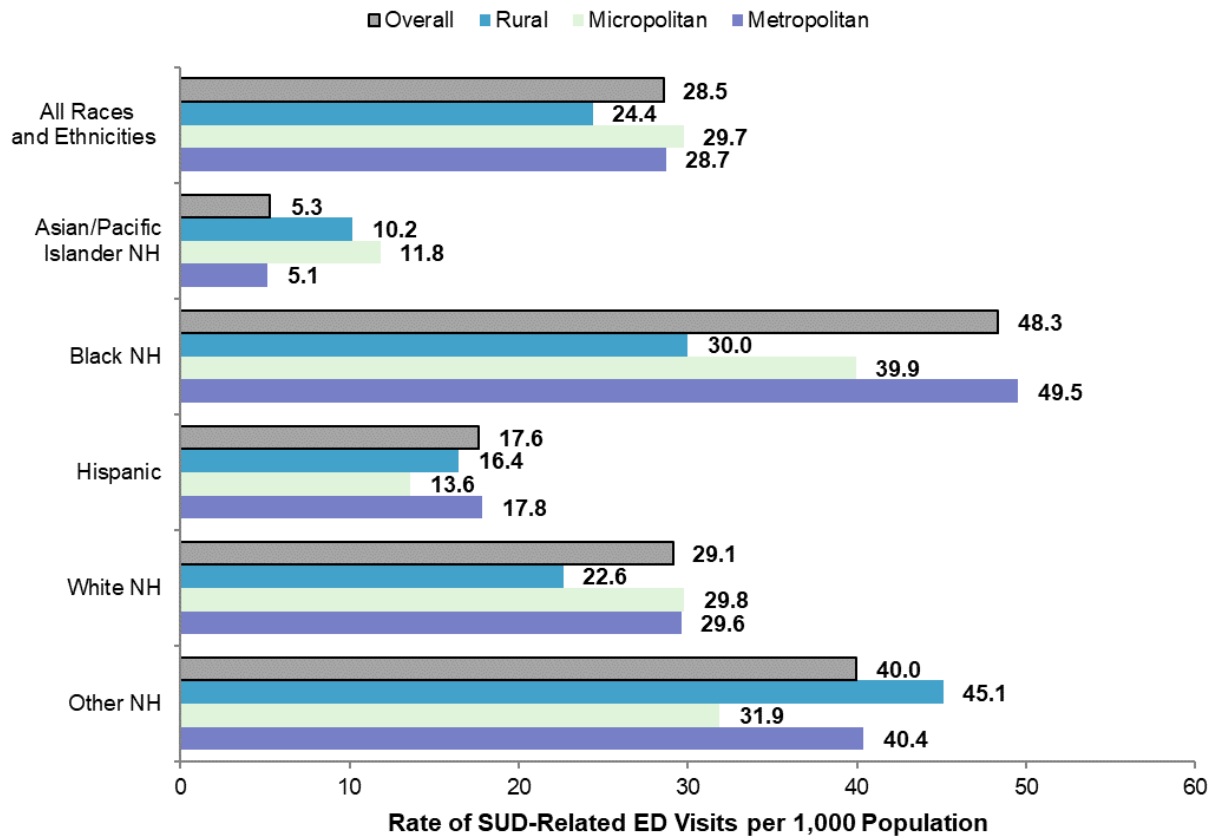
The rate of SUD-related ED visits was lowest among individuals aged 0–17 years regardless of race and ethnicity, with a rate of 2.6 ED visits per 1,000 population (ranging from 0.7 for Asian/Pacific Islander non-Hispanic (NH) individuals to 3.0 for other NH race/ethnicity individuals).

The population rate of SUD-related ED visits was highest among individuals aged 18–44 and 45–64 years (39.5 and 41.9 ED visits per 1,000 population, respectively). However, differences were noted across racial and ethnic groups. Black NH, Hispanic, and other NH race/ethnicity adults aged 45–64 years had higher rates of SUD-related ED utilization than individuals of the same race and ethnicity in other age groups. In contrast, among Asian/Pacific Islander NH individuals, adults aged 18–44 years had a higher rate of SUD-related ED visits than those in other age groups.

- **The highest and lowest population rate of SUD-related ED visits varied by age and racial and ethnic group.**

Black NH and other NH race/ethnicity individuals aged 18–44 and 45–64 years had the highest rates of SUD-related ED visits across racial and ethnic groups and all age groups (61.1 and 82.0 ED visits per 1,000 population for Black NH individuals; 63.6 and 77.7 ED visits per 1,000 population for other NH race/ethnicity individuals). Asian/Pacific Islander NH individuals had the lowest rate of SUD-related ED visits across all racial and ethnic groups and age groups.

**Figure 4. Population rates of SUD-related ED visits by race and ethnicity and urban/rural location, 2019**



Abbreviations: ED, emergency department; NH, non-Hispanic; SUD, substance use disorder

Notes: All rates are based on the U.S. population specific to each racial and ethnic group and patient location group. Urban/rural location is assigned based on county of patient residence. Because the analysis included patient county of residence designations, the population was limited to observations with a patient county of residence within a State that participates in the HCUP NEDS. Therefore, the study population excluded ED visits with unknown or foreign patient residence or where the patient residence county was not in a State that participates in the HCUP NEDS. Patient race and ethnicity information was missing for <2% of SUD-related ED visits.

Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Emergency Department Sample (NEDS), 2019

- **Twenty-nine out of every 1,000 individuals had an ED visit related to SUDs. The rate of SUD-related ED visits in 2019 was slightly lower among individuals living in rural areas and higher among those living in metropolitan and micropolitan areas.**

Individuals living in rural areas had a rate of SUD-related ED visits of 24.4 per 1,000 population; the rate was 29.7 and 28.7 per 1,000 population among those living in micropolitan and metropolitan areas, respectively.

- **There was substantial variation by race and ethnicity in the rate of SUD-related ED visits for individuals living in rural, micropolitan, and metropolitan areas.**

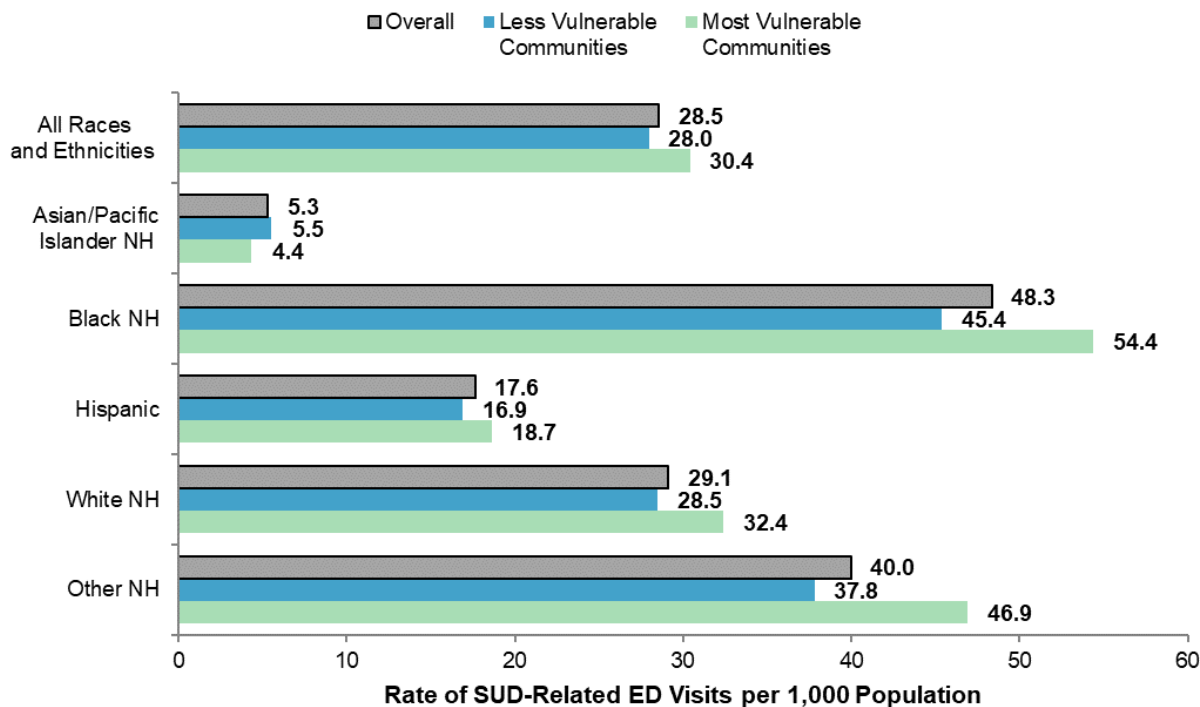
Notable differences in the population rate of SUD-related ED visits by race and ethnicity and location included the following:

- Among Asian/Pacific Islander non-Hispanic (NH) individuals, rates were lowest for those living in metropolitan areas (5.1 per 1,000 population) compared with other areas.
- Among Black NH individuals, rates were lowest for those living in rural areas and highest for those living in metropolitan areas (30.0 and 49.5, respectively).

- Among Hispanic individuals, rates were lowest among those living in micropolitan areas (13.6) compared with other areas.
- Among White NH individuals, rates were lowest for those living in rural areas (22.6) compared with other areas.
- Among other NH race/ethnicity individuals, rates were lowest for those living in micropolitan areas and highest for those living in rural areas (31.9 and 45.1, respectively).



**Figure 5. Population rates of SUD-related ED visits by race and ethnicity and community social vulnerability, 2019**



Abbreviations: ED, emergency department; NH, non-Hispanic; SUD, substance use disorder

Notes: Community social vulnerability is assigned based on patient county of residence. All rates are based on the U.S. population specific to each racial and ethnic group and social vulnerability group. Patient residence counties were classified as most vulnerable (counties with social vulnerability index values in the fourth quartile) versus less vulnerable (counties with social vulnerability index values in the lower three quartiles). Because the analysis included patient county of residence designations, the population was limited to observations with a patient county of residence within a State that participates in the HCUP NEDS. Therefore, the study population excluded ED visits with unknown or foreign patient residence or where the patient residence county was not in a State that participates in the HCUP NEDS. Patient race and ethnicity information was missing for <2% of SUD-related ED visits.

Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Emergency Department Sample (NEDS), 2019

- **In 2019, the highest rate of SUD-related ED visits was among Black non-Hispanic individuals living in the most socially vulnerable communities.**

Across racial and ethnic groups, Black non-Hispanic (NH) individuals living in the most socially vulnerable communities had the highest rate of SUD-related ED visits (54.4 per 1,000 population). The rate for Black NH individuals living in less socially vulnerable communities was the third highest rate (45.4) and similar to the rate for other NH race/ethnicity individuals living in the most socially vulnerable communities (46.9).

- **The rate of SUD-related ED visits was higher among individuals living in the most socially vulnerable communities versus less socially vulnerable communities for all racial and ethnic groups except Asian/Pacific Islander non-Hispanic individuals.**

Generally, those living in the most socially vulnerable communities had a higher rate of SUD-related ED visits than those living in less socially vulnerable communities, ranging from 10.7 percent higher for Hispanic individuals to 24.1 percent higher for other NH race/ethnicity individuals. However, the opposite was true for Asian/Pacific Islander NH individuals, who had a 20.0 percent lower rate for those living in the most socially vulnerable versus less socially vulnerable communities.

*Population rates of SUD-related ED visits, by race and ethnicity and SUD*

Table 2 presents the rate of ED visits per 1,000 population related to specific SUDs by race and ethnicity. A single ED visit may contribute to more than one type of specific SUD category.

**Table 2. Rates of ED visits per 1,000 population by type of SUD and race and ethnicity, 2019**

| Specific type of SUD        | All  | Asian/<br>Pacific<br>Islander NH | Black NH | Hispanic | White<br>NH | Other<br>NH |
|-----------------------------|------|----------------------------------|----------|----------|-------------|-------------|
| Alcohol-related disorders   | 14.3 | 2.8                              | 19.4     | 9.5      | 15.1        | 23.9        |
| Cannabis-related disorders  | 6.0  | 0.9                              | 15.6     | 3.5      | 5.1         | 7.1         |
| Stimulant-related disorders | 5.2  | 1.1                              | 11.4     | 3.4      | 4.7         | 6.3         |
| Opioid-related disorders    | 4.9  | 0.7                              | 6.5      | 2.4      | 5.7         | 5.0         |
| Sedative-related disorders  | 0.9  | 0.2                              | 0.7      | 0.4      | 1.1         | 0.9         |

Abbreviations: ED, emergency department; NH, non-Hispanic; SUD, substance use disorder

Notes: All rates are based on the U.S. population specific to each racial and ethnic group. SUD types are not mutually exclusive. Because the analysis included patient county of residence designations, the population was limited to observations with a patient county of residence within a State that participates in the HCUP NEDS. Therefore, the study population excluded ED visits with unknown or foreign patient residence or where the patient residence county was not in a State that participates in the HCUP NEDS. Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Emergency Department Sample (NEDS), 2019

- **ED visits involving alcohol-related disorders were the most common SUD-related ED visit across all racial and ethnic groups in 2019.**

There were 14.3 alcohol-related ED visits per 1,000 population in 2019, followed by cannabis-, stimulant-, and opioid-related disorders (6.0, 5.2, and 4.9 per 1,000 population, respectively).

Regardless of racial and ethnic group, the alcohol-related ED visit population rate was higher than the population rate of all other SUD-related ED visits, with rates ranging from 2.8 per 1,000 population among Asian/Pacific Islander non-Hispanic (NH) individuals to 23.9 per 1,000 population among other NH race/ethnicity individuals.

Across all racial and ethnic groups, alcohol-related ED visit rates per 1,000 population were approximately three times higher than any other type of SUD-related ED visit rate, with two exceptions. The population rate for cannabis- and stimulant-related ED visits for Black NH individuals was 15.6 and 11.4 per 1,000 population, respectively, versus 19.4 for alcohol-related disorders.

- **Black non-Hispanic individuals had the highest rate of ED visits involving cannabis-, stimulant-, and opioid-related disorders, whereas White non-Hispanic individuals had the highest rate of ED visits involving sedative-related disorders.**

Black NH individuals had the highest rate of ED visits related to cannabis-related disorders (15.6 per 1,000 population vs. 0.9–7.1 for other racial and ethnic groups), stimulant-related disorders (11.4 vs. 1.1–6.3), and opioid-related disorders (6.5 vs. 0.7–5.7). White NH individuals had the highest rate of ED visits related to sedative-related disorders (1.1 per 1,000 population vs. 0.2–0.9 for other racial and ethnic groups).

Asian/Pacific Islander NH individuals consistently had the lowest rate of ED visits per 1,000 population for all specific types of SUDs included in this analysis, ranging from 0.2 for sedative-related disorders to 2.8 for alcohol-related disorders per 1,000 population.

## References

<sup>1</sup> Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. Key Substance Use and Mental Health Indicators in the United States: Results from the 2019 National Survey on Drug Use and Health (HHS Publication No. PEP20-07-01-001, NSDUH Series H-55). 2020.

[www.samhsa.gov/data/sites/default/files/reports/rpt29393/2019NSDUHFFRPDFWHTML/2019NSDUHFFR090120.htm#summary](http://www.samhsa.gov/data/sites/default/files/reports/rpt29393/2019NSDUHFFRPDFWHTML/2019NSDUHFFR090120.htm#summary). Accessed October 11, 2022.

<sup>2</sup> Beckerleg W, Hudgins J. Substance use-related emergency department visits and resource utilization. *Western Journal of Emergency Medicine*. 2022;23(2):166–73.

<sup>3</sup> Theriault KM, Rosenheck RA, Rhee TG. Increasing emergency department visits for mental health conditions in the United States. *The Journal of Clinical Psychiatry*. 2020;81(5):20m13241.

<sup>4</sup> Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. Racial/Ethnic Differences in Substance Use, Substance Use Disorders, and Substance Use Treatment Utilization among People Aged 12 or Older (2015-2019) (Publication No. PEP21-07-01-001). 2021. [www.samhsa.gov/data/sites/default/files/reports/rpt35326/2021NSDUHSUChartbook102221B.pdf](http://www.samhsa.gov/data/sites/default/files/reports/rpt35326/2021NSDUHSUChartbook102221B.pdf). Accessed November 7, 2022.

<sup>5</sup> Centers for Disease Control and Prevention, Agency for Toxic Substances and Disease Registry. CDC/ATSDR SVI Fact Sheet. [www.atsdr.cdc.gov/placeandhealth/svi/fact\\_sheet/fact\\_sheet.html](http://www.atsdr.cdc.gov/placeandhealth/svi/fact_sheet/fact_sheet.html). Accessed September 15, 2022.

## About Statistical Briefs

Healthcare Cost and Utilization Project (HCUP) Statistical Briefs provide basic descriptive statistics on a variety of topics using HCUP administrative healthcare 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 2019 Nationwide Emergency Department Sample (NEDS). Supplemental sources included the Agency for Healthcare Research and Quality Social Determinants of Health Database<sup>a</sup> and population denominator data for use with HCUP databases, derived from information available from the U.S. Census Bureau.<sup>b</sup>

## Definitions

### *Diagnoses and Clinical Classifications Software Refined (CCSR) for ICD-10-CM Diagnoses*

For emergency department (ED) visits that are treated and released, the *first-listed diagnosis* represents the condition, symptom, or problem identified in the medical record to be chiefly responsible for the ED services provided. In cases where the first-listed diagnosis is a symptom or problem, a diagnosis has not been established (confirmed) by the provider. For ED visits that result in an inpatient admission, the first-listed diagnosis is the *principal diagnosis*, the condition established after study to be chiefly responsible for the patient's admission to the hospital. *Secondary diagnoses* are conditions that coexist at the time of the ED visit or inpatient admission, that require or affect patient care treatment received or management, or that develop during the inpatient stay. *All-listed diagnoses* include the first-listed (principal) diagnosis plus the secondary conditions.

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<sup>a</sup> Agency for Healthcare Research and Quality. Social Determinants of Health Database. Content last reviewed July 2022. [www.ahrq.gov/sdoh/data-analytics/sdoh-data.html](http://www.ahrq.gov/sdoh/data-analytics/sdoh-data.html). Accessed November 8, 2022.

<sup>b</sup> Barrett M, Coffey R, Levit K. Population Denominator Data Sources and Data for Use with HCUP Databases (Updated with 2019 Population Data). HCUP Methods Series Report #2020-02. December 1, 2020. Agency for Healthcare Research and Quality. [www.hcup-us.ahrq.gov/reports/methods/2020-02.pdf](http://www.hcup-us.ahrq.gov/reports/methods/2020-02.pdf). Accessed November 8, 2022.

The CCSR aggregates ICD-10-CM diagnosis codes into a manageable number of clinically meaningful categories.<sup>c</sup> The CCSR is intended to be used analytically to examine patterns of healthcare in terms of cost, utilization, and outcomes; rank utilization by diagnoses; and risk-adjust by clinical condition. The CCSR capitalizes on the specificity of the ICD-10-CM coding scheme and allows ICD-10-CM codes to be classified in more than one category. Approximately 10 percent of diagnosis codes are associated with more than one CCSR category because the diagnosis code documents either multiple conditions or a condition along with a common symptom or manifestation. ICD-10-CM coding definitions for each CCSR category presented in this Statistical Brief can be found in the *CCSR reference file*, available at [www.hcup-us.ahrq.gov/toolssoftware/ccsr/ccs\\_refined.jsp#download](http://www.hcup-us.ahrq.gov/toolssoftware/ccsr/ccs_refined.jsp#download). For this Statistical Brief, v2021.2 of the CCSR was used.

#### *Case definition*

For this report, substance use disorder (SUD) visits were defined as ED visits with any-listed diagnosis in the following CCSR diagnosis categories:

- MBD017: Alcohol-related disorders
- MBD018: Opioid-related disorders
- MBD019: Cannabis-related disorders
- MBD020: Sedative-related disorders
- MBD021: Stimulant-related disorders
- MBD022: Hallucinogen-related disorders
- MBD023: Inhalant-related disorders
- MBD025: Other specified substance-related disorders

For this report, the analysis included patient county of residence designations. Therefore, the study population excluded ED visits with unknown or foreign patient residence or where the patient residence county was not in a State that participates in the HCUP NEDS.

#### *Types of hospitals included in the HCUP Nationwide Emergency Department Sample*

The Nationwide Emergency Department Sample (NEDS) is based on ED data from community acute care hospitals, which are defined as short-term, non-Federal, general, and other specialty hospitals available to the public. Included among community hospitals are pediatric institutions and hospitals that are part of academic medical centers. Excluded are long-term care facilities such as rehabilitation, psychiatric, and alcoholism and chemical dependency hospitals. Hospitals included in the NEDS have EDs, and no more than 90 percent of their ED visits result in admission.

#### *Unit of analysis*

The unit of analysis is the ED visit, not a person or patient. This means that a person who is seen in the ED multiple times in 1 year will be counted each time as a separate visit in the ED.

#### *Population rates*

Rates of SUD-related ED visits per 1,000 population were calculated using 2019 ED visit totals in the numerator and U.S. Census Bureau estimates of the 2019 U.S. population by race and ethnicity in the denominator. Individuals with multiple ED visits are counted more than once in the numerator.

$$\text{Population rate of SUD visits} = \left( \frac{\text{number of SUD visits}}{\text{number of U.S. residents}} \right) \times 1,000$$

#### *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:

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<sup>c</sup> Agency for Healthcare Research and Quality. Clinical Classifications Software Refined (CCSR) for ICD-10-CM Diagnoses. Healthcare Cost and Utilization Project (HCUP). Agency for Healthcare Research and Quality. Updated February 2022. [www.hcup-us.ahrq.gov/toolssoftware/ccsr/dxccsr.jsp](http://www.hcup-us.ahrq.gov/toolssoftware/ccsr/dxccsr.jsp). November 8, 2022.

#### Metropolitan:

- 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:

- Micropolitan: Counties in a nonmetropolitan area of 10,000–49,999 residents

#### Rural:

- Rural: Counties in a nonmetropolitan and nonmicropolitan area

#### *Expected payer*

To make coding uniform across all HCUP data sources, the primary expected payer for the ED visit 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 commercial nongovernmental payers, regardless of the type of plan (e.g., private health maintenance organizations [HMOs], preferred provider organizations [PPOs])
- Self-pay/No charge: includes self-pay, no charge, charity, and no expected payment
- Other payers: includes other Federal and local government programs (e.g., TRICARE, CHAMPVA, Indian Health Service, Black Lung, Title V) and Workers' Compensation

ED visits that were expected to be billed to the State Children's Health Insurance Program (SCHIP) are included under Medicaid.

For this Statistical Brief, when more than one payer is listed for an ED visit, the first-listed payer is used.

#### *Social vulnerability*

The Centers for Disease Control and Prevention (CDC)/Agency for Toxic Substances and Disease Registry (ATSDR) Social Vulnerability Index (SVI) is a measure of a community's ability to prevent human suffering and financial loss during a disaster. The SVI uses U.S. Census data to determine the social vulnerability of every census tract. Census tracts are subdivisions of counties for which the census collects statistical data. The SVI ranks each tract on 15 social factors, including poverty, lack of vehicle access, and crowded housing, and groups them into four related themes (socioeconomic status, household composition and disability, minority status and language, housing type and transportation). Each tract receives a separate ranking for each of the four themes, as well as an overall ranking. Detailed descriptions of the CDC/ATSDR SVI and data downloads are available at [www.atsdr.cdc.gov/placeandhealth/svi/index.html](http://www.atsdr.cdc.gov/placeandhealth/svi/index.html).

Social vulnerability designation in this Statistical Brief is based on the overall SVI measure in the patient county of residence. Patient residence counties with social vulnerability index values in the fourth quartile are included in the most vulnerable communities category. Counties with social vulnerability index values in the lower three quartiles are included in the less vulnerable communities category.

#### *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 ethnicity separately from race, HCUP uses Hispanic ethnicity to override any other race category to create a Hispanic category for the uniformly coded race and ethnicity data element, while also retaining the original race and ethnicity data. This Statistical Brief reports race and ethnicity for the following categories: Asian/Pacific Islander non-Hispanic (NH), Black NH, Hispanic, White NH, and other NH race/ethnicity.

## About HCUP

The Healthcare Cost and Utilization Project (HCUP, pronounced "H-Cup") is a family of healthcare 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 healthcare 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 healthcare 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:

|  |   |
|--|---|
| <b>Alaska</b> Department of Health                                 | <b>New Hampshire</b> Department of Health & Human Services                |
| <b>Alaska</b> Hospital and Healthcare Association                  | <b>New Jersey</b> Department of Health                                    |
| <b>Arizona</b> Department of Health Services                       | <b>New Mexico</b> Department of Health                                    |
| <b>Arkansas</b> Department of Health                               | <b>New York</b> State Department of Health                                |
| <b>California</b> Department of Health Care Access and Information | <b>North Carolina</b> Department of Health and Human Services             |
| <b>Colorado</b> Hospital Association                               | <b>North Dakota</b> (data provided by the Minnesota Hospital Association) |
| <b>Connecticut</b> Hospital Association                            | <b>Ohio</b> Hospital Association  |
| <b>Delaware</b> Division of Public Health                          | <b>Oklahoma</b> State Department of Health                                |
| <b>District of Columbia</b> Hospital Association                   | <b>Oregon</b> Association of Hospitals and Health Systems                 |
| <b>Florida</b> Agency for Health Care Administration               | <b>Oregon</b> Health Authority  |
| <b>Georgia</b> Hospital Association                                | <b>Pennsylvania</b> Health Care Cost Containment Council                  |
| <b>Hawaii</b> Laulima Data Alliance                                | <b>Rhode Island</b> Department of Health                                  |
| <b>Hawaii</b> University of Hawai'i at Hilo                        | <b>South Carolina</b> Revenue and Fiscal Affairs Office                   |
| <b>Illinois</b> Department of Public Health                        | <b>South Dakota</b> Association of Healthcare Organizations               |
| <b>Indiana</b> Hospital Association                                | <b>Tennessee</b> Hospital Association                                     |
| <b>Iowa</b> Hospital Association                                   | <b>Texas</b> Department of State Health Services                          |
| <b>Kansas</b> Hospital Association                                 | <b>Utah</b> Department of Health  |
| <b>Kentucky</b> Cabinet for Health and Family Services             | <b>Vermont</b> Association of Hospitals and Health Systems                |
| <b>Louisiana</b> Department of Health                              | <b>Virginia</b> Health Information  |
| <b>Maine</b> Health Data Organization                              | <b>Washington</b> State Department of Health                              |
| <b>Maryland</b> Health Services Cost Review Commission             | <b>West Virginia</b> Department of Health and Human Resources             |
| <b>Massachusetts</b> Center for Health Information and Analysis    | <b>Wisconsin</b> Department of Health Services                            |
| <b>Michigan</b> Health & Hospital Association                      |   |
| <b>Minnesota</b> Hospital Association                              |   |
| <b>Mississippi</b> State Department of Health                      |   |
| <b>Missouri</b> Hospital Industry Data Institute                   |   |
| <b>Montana</b> Hospital Association                                |   |
| <b>Nebraska</b> Hospital Association                               |   |

## About the NEDS

The HCUP Nationwide Emergency Department Sample (NEDS) is a unique and powerful database that yields national estimates of emergency department (ED) visits. The NEDS was constructed using records from both the HCUP State Emergency Department Databases (SEDD) and the State Inpatient Databases (SID). The SEDD capture information on ED visits that do not result in an admission (i.e., patients who were treated in the ED and then released from the ED, or patients who were transferred to another hospital); the SID contain information on patients initially seen in the ED and then admitted to the same hospital. The NEDS was created to enable analyses of ED utilization patterns and support public health professionals, administrators, policymakers, and clinicians in their decision making regarding this critical source of care. The NEDS is produced annually beginning in 2006. Over time, the sampling frame for the NEDS has changed; thus, the number of States contributing to the NEDS varies from year to year. The NEDS is intended for national estimates only; no State-level estimates can be produced. The unweighted sample size for the 2019 NEDS is 33,147,251 (weighted, this represents 143,432,284 ED visits).

## For More Information

For other information on hospitalizations related to substance use disorders and differences in hospitalizations by patient race and ethnicity, refer to the Mental and Substance Use Disorders as well as the Race and Ethnicity HCUP Statistical Briefs topic areas located at [www.hcup-us.ahrq.gov/reports/statbriefs/sbtopic.jsp](http://www.hcup-us.ahrq.gov/reports/statbriefs/sbtopic.jsp).

For additional HCUP statistics, visit:

- HCUP Fast Stats at <https://datatools.ahrq.gov/hcup-fast-stats> for easy access to the latest HCUP-based statistics for healthcare information topics
- HCUPnet, HCUP's interactive query system, at <https://datatools.ahrq.gov/hcupnet>
- HCUP Summary Trend Tables at [www.hcup-us.ahrq.gov/reports/trendtables/summarytrendtables.jsp](http://www.hcup-us.ahrq.gov/reports/trendtables/summarytrendtables.jsp) for monthly information on hospital utilization

For more information about HCUP, visit [www.hcup-us.ahrq.gov/](http://www.hcup-us.ahrq.gov/).

For a detailed description of HCUP and more information on the design of the Nationwide Emergency Department Sample (NEDS), please refer to the following database documentation:

Agency for Healthcare Research and Quality. Overview of the Nationwide Emergency Department Sample (NEDS). Healthcare Cost and Utilization Project (HCUP). Rockville, MD: Agency for Healthcare Research and Quality. Updated October 2021. [www.hcup-us.ahrq.gov/nedsoverview.jsp](http://www.hcup-us.ahrq.gov/nedsoverview.jsp). Accessed November 8, 2022.

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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 healthcare 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 email us at [hcup@ahrq.gov](mailto:hcup@ahrq.gov) or send a letter to the address below:

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