Methodology

Data

The Pew Charitable Trusts evaluated hospital stays involving alcohol-, opioid-, or stimulant-related disorders by analyzing datasets downloaded from HCUPnet, the online querying tool of the Healthcare Cost and Utilization Project (HCUP). HCUP is sponsored by the Agency for Healthcare Research and Quality, a component of the U.S. Department of Health and Human Services.

HCUP's longitudinal hospital care data, which includes data gathered by partners across the country, is the largest resource of its kind in the United States. HCUPnet allows users, at no charge, to filter inpatient discharge data by Clinical Classifications Software Refined (CCSR) categories. CCSR aggregates International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) codes into clinically meaningful categories. For this analysis, Pew used CCSR categories MBD017: alcohol-related disorders, MBD018: opioid-related disorders, and MBD021: stimulant-related disorders.

Using HCUPnet's dashboards, Pew downloaded data from several datasets: the National Inpatient Sample (NIS), the State Inpatient Databases (SID), the Nationwide Readmissions Database (NRD), and Community-Level Statistics (CLS), which consists of data based on the SID.

Pew collected national- and state-level data from 2016 to 2022. States were included in the analysis if data was available for the state on the SID or CLS dashboards during initial data downloads in spring and summer 2025.

- NIS data draws from nearly all states—47 plus the District of Columbia in 2022. The NIS can be used to make estimates at the national level because of its 20% stratified sample of all discharges from community hospitals in the United States (not including rehabilitation and long-term acute care hospitals). For this project, Pew used weighted NIS estimates from HCUPnet to estimate the national number and rate of discharge for each of the CCSR categories of interest. Pew also used the NIS to estimate the aggregate cost of stays and average cost per stay, the number and percentage of stays ending in a discharge against medical advice, and the number and rate of discharges in various demographic groups at the national level.
- SID data draws from nearly all states—48 plus the District of Columbia in 2022. The data represents all inpatient community hospital stays in each state. Some states include specialty facilities. Because SID data contains all discharge abstracts in

each state, it is not estimate-based. For this project, Pew used SID data to evaluate the number of discharges for each of the CCSR categories of interest in each state where data was available. Pew also used SID data to evaluate the aggregate cost of stays, the average cost per stay, and the number and percentage of stays ending in a discharge against medical advice in each state.

- NRD data draws from most states—30 in 2022. The NRD is composed of data from the SID and can be used to make estimates at the national level because of its large sample size. For this project, Pew used the NRD to estimate the national rate and cost of 30-day all-cause readmissions in 2022 for each of the CCSR categories of interest, as well as the national rate and cost of readmissions for all stays. Pew also used the NRD to estimate the rate and cost of readmissions in various demographic groups at the national level.
- CLS data is based on the SID. The CLS can be used to evaluate state-level rates of discharge. The SID cannot be used to evaluate state-level rates of discharge because discharges are based on hospital location rather than patient location. The CLS calculates rates of discharge by using SID discharges as the numerator and county population estimates produced by Claritas, a third-party data company, as the denominator. For this project, Pew used the CLS to evaluate rate of discharge at the state level in 2022 for each of the CCSR categories of interest.

Discharge data from HCUP can be categorized as principal or all-listed. Principal diagnoses refer to the diagnosis that was determined to be the main reason for admission. All-listed diagnoses include the principal diagnosis, as well as other conditions that were present during the stay. In this project, Pew used both principal and all-listed diagnosis data. Only principal diagnoses were available for hospital costs data, discharges against medical advice, readmissions, and state-level rate of discharge.

Users can query the data on HCUPnet's website by selecting the desired database and choosing the parameters they wish to investigate.

Analysis

To conduct this analysis, Pew downloaded HCUPnet files containing discharge data. Files with estimate-based data contained standard error values. Pew used the standard error values to calculate 95% confidence intervals by multiplying the standard error by 1.96 and adding this value to or subtracting it from the estimated value. A finding was considered statistically significant if the compared values' confidence intervals did not intersect. Details on the suppression of data in the NIS, SID, NRD, and CLS is available on the HCUPnet dashboards.

Notes

Hospital costs

Hospital costs are calculated by dividing the total costs incurred by a hospital by the total amount the hospital charges for the services provided; these are known as cost-to-charge ratios. These ratios are specific to a given hospital or based on similar hospitals. Average hospital costs are calculated at the stay level—meaning they are derived from the costs of individual hospital admissions—and aggregate costs are calculated by totaling all costs across stays. Costs are not adjusted for inflation.

Discharge against medical advice

National- and state-level numbers and percentages of discharges against medical advice are obtained from discharge dispositions in patient medical records.

Expected payer

For patients with dual Medicare and Medicaid eligibility, HCUP typically codes discharges with Medicare as the expected payer. For some dually eligible patients, the expected payer may be listed as Medicaid. Not all states report dual eligibility to HCUP.

Community-level income

The NIS and NRD use the estimated median household income of a patient's ZIP code to define community-level income. Income estimates are based on data from Claritas. Estimated community-level income is broken into quartiles. HCUPnet's reporting of NIS data combines the middle-income quartiles into a single group. HCUPnet's reporting of NRD data maintains four separate quartiles.

Race/ethnicity

HCUP partner organizations are responsible for collecting race/ethnicity data and record Hispanic ethnicity in different manners. In HCUP's reporting of data from the NIS and NRD, Hispanic ethnicity supersedes other racial categories. If "Hispanic" is not listed, HCUP reports any records of "White," "Black," and "Asian/Pacific Islander" as such. American Indian/Alaska Native, mixed race, or other races are reported as "Other."

Urban-rural classifications

The NIS and NRD use National Center for Health Statistics (NCHS) categories to define urban-rural classifications for patient location. NCHS lists six such categories. HCUPnet's reporting of NIS data uses four categories by combining medium and small metro counties into one category, and micropolitan and noncore counties into another. HCUPnet's

reporting of NRD data uses two categories by combining large central metro, large fringe metro, medium metro, and small metro counties into one metropolitan category and combining micropolitan and noncore counties into one non-metropolitan (rural) category.