

About the Data – Neonatal Abstinence Syndrome

Indicator Description

Neonatal abstinence syndrome (NAS) is a drug withdrawal syndrome that most commonly occurs in newborns due to maternal use of opiates such as heroin, methadone and prescription pain medications.

Data Source

California Department of Health Care Access and Information, Patient Discharge Data, 2008–2022: Data sets of inpatient data collected from California-licensed hospitals in California. Each data set consists of individual inpatient records, one record for each inpatient discharged from a California-licensed hospital. Licensed hospitals include general acute care, acute psychiatric, chemical dependency recovery, and psychiatric health facilities. Each patient discharge record contains the patient’s demographic information, International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) or International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) diagnosis and procedure codes, and other information related to the patient’s stay in the hospital.

Data for 2015 represent only three quarters of the year (January through September) due to the coding transition from ICD-9-CM to ICD-10-CM in the last quarter of 2015; thus, the 2015 rate should be interpreted with caution as it does not represent a full year of change, relative to 2014. Data for 2016 and onward are based on ICD-10-CM and may not be comparable to previous estimates based on ICD-9-CM.

National Comparison

Maternal and Child Health Bureau. [Federally Available Data \(FAD\) Resource Document](#). April 1, 2023; Rockville, MD: Health Resources and Services Administration. Retrieved April 3, 2023.

Caution: U.S. estimates are calculated using data from Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases and may not be comparable to California data. In addition, U.S. estimates use the available State data from HCUP State Inpatient Databases and are not nationally weighted; therefore, U.S. estimates may not be comparable across years due to the different states included in any given year.

Data Analysis

The NAS rate shown in these dashboards is the number of birth hospitalizations with a diagnosis code of NAS per 1,000 birth hospitalizations, stratified by selected infant and hospital characteristics. NAS cases were identified using ICD-9-CM diagnosis code 779.5 (drug withdrawal syndrome in newborn) and ICD-10-CM diagnosis code P96.1 (neonatal withdrawal symptoms from maternal use of drugs of addiction). Possible iatrogenic cases or cases due to therapeutic use of drugs were excluded from the numerator. (Maternal and Child Health Bureau. Federally Available Data [FAD] Resource Document. April 1, 2022; Rockville, MD: Health Resources and Services Administration). The 95% confidence interval presented in the tooltips indicates there is a 95% chance that the range contains the true prevalence or rate in the population. Rates or percentages with wide confidence intervals should be interpreted with caution. The state dashboard uses single year data; the county dashboard uses three-year aggregated data.

Denominators include birth hospitalizations identified by ICD-9-CM and ICD-10-CM coding among California residents. Those with an indication of transfer were excluded to avoid duplication. (Maternal and Child Health Bureau. Federally Available Data [FAD] Resource Document. April 1, 2022; Rockville, MD: Health Resources and Services Administration).

See Category and Subcategory Definitions below for additional inclusion/exclusion criteria.

Data Suppression

The numerator, rate and confidence interval are not shown when the numerator is less than 11.

Category and Subcategory Definitions

Geography: State or county of patient's residence at time of hospitalization. Excludes records with unknown county.

Health insurance: The type of entity or organization expected to pay the greatest share of the patient's bill. Other Public includes Medicare, workers' compensation, other county indigent programs or other government programs. Uninsured includes other indigent programs, self-pay or other payer. Excludes records with unknown payment source.

Hospital region: The region where the patient's hospital is located, excludes unknown geography information. Regions are defined as follows:

- LA-Santa Barbara-Ventura Region: Los Angeles, Santa Barbara and Ventura counties
- Mid-Coastal Region: Monterey, San Benito, San Luis Obispo, San Mateo, Santa Clara and Santa Cruz counties

- North Coast-East Bay Region: Alameda, Contra Costa, Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, San Francisco and Sonoma counties
- Northeastern Region: Alpine, Amador, Butte, Calaveras, Colusa, El Dorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Sierra, Siskiyou, Solano, Sutter, Tehama, Trinity, Yolo and Yuba counties
- Orange Region: Orange County
- San Diego-Imperial Region: Imperial and San Diego counties
- Central San Joaquin Valley-Sierra Nevada Region (Southern Central Valley): Fresno, Kern, Kings, Madera, Mariposa, Merced, Stanislaus, Tulare and Tuolumne counties
- Southern Inland Region: Inyo, Mono, Riverside and San Bernardino counties

Race/ethnicity: Hispanic includes all patients of Hispanic origin of any race, including Other and Unknown race. The remaining groups are of non-Hispanic origin: American Indian or Alaska Native (AIAN), Asian/Pacific Islander, Black, White, Other and Unknown. Beginning in 2019, Asian and Native Hawaiian or Other Pacific Islander (Pacific Islander) became separated categories and a Multi-Race category became available. Other and Unknown race are not shown on the dashboards but are available in the downloadable data table.

Urban-rural residence: Based on 2006 and 2013 [National Center for Health Statistics \(NCHS\) Urban-Rural Classification Scheme for Counties](#). Large metro is defined as metropolitan areas with at least 1 million residents. Small/medium metro is defined as metropolitan areas of less than 1 million residents. Non-metro is defined as micropolitan areas of less than 50,000 residents and remaining areas not already classified, also called noncore.

Sex: For discharges occurring from 2008–2016, sex is the gender of the patient for the current admission. Other includes sex changes, undetermined sex, and live births with congenital abnormalities that obscure sex identification. For discharges occurring on or after January 1, 2017, the patient’s biologic sex is reported as recorded at admission. Unknown indicates that the patient’s sex was undetermined. It is also used in the case of congenital abnormalities that obscure sex identification. Other/Unknown sex is not shown on the dashboard but is available in the downloadable data table.

Suggested Citation

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