

Newborns Exposed to Opioids in Vermont

April 2025

The American College of Obstetricians and Gynecologists recommends that all pregnant people with opioid-use disorder receive treatment, including the use of medications for opioid use disorder (MOUD).ⁱ Nearly three percent of Vermonters aged 18-64 receive MOUD treatment each year. Buprenorphine, methadone and naloxone are MOUD treatments used in pregnancy. These medications can cause symptoms of withdrawal in infants after birth, however buprenorphine is associated with a lower rate of neonatal abstinence syndrome (NAS) compared to methadone treatment.ⁱⁱ NAS or neonatal opioid withdrawal syndrome (NOWS) is a group of symptoms that can develop in the days after birth when the baby is no longer exposed to opioids (both non-prescribed and prescribed MOUD).

In 2015, 87% of Vermont infants diagnosed with NAS were born to a person receiving MOUD treatment.ⁱⁱⁱ Infants born to a pregnant person receiving MOUD or using non-prescribed opioids are identified as opioid exposed newborns and monitored for several days after birth for symptoms of NAS. Many infants have very mild symptoms. Of those opioid exposed newborns that are diagnosed with NAS, a minority (37% in 2015) need medication treatment. Since 2002, Vermont hospitals have received rigorous quality improvement training in treating pregnant people with opioid-use disorder and their infants.

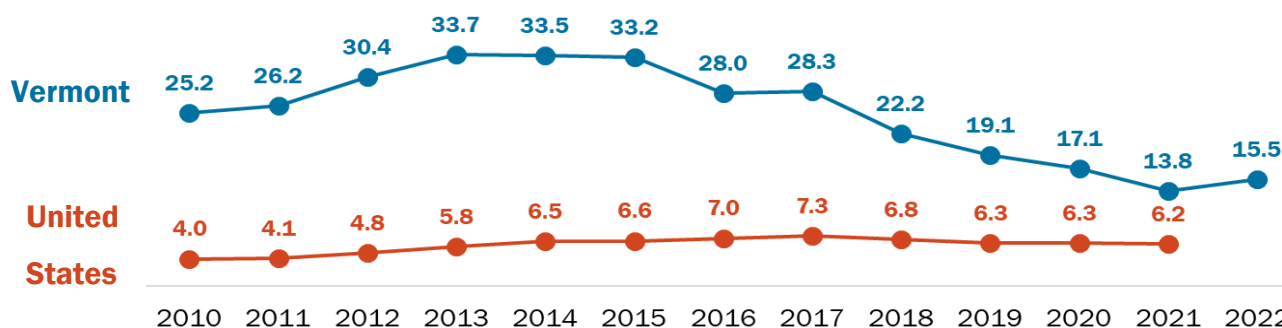
If you need help accessing or understanding this information, contact ahs.vdhhsivuhdds@vermont.gov

Key Points

- The 2022 rate of Vermont newborns diagnosed with neonatal abstinence syndrome is less than half the 2013 rate.
- Vermont NAS rate is becoming more similar to the US rate.

Neonatal Abstinence Syndrome (NAS) Trend Over Time

The rate of VT newborns diagnosed with NAS in Vermont and the United States were more similar in 2021 than in previous years.



Source: Healthcare Cost and Utilization Project (HCUP). HCUP data is not available beyond 2021.



HealthVermont.gov
802-863-7200



In Vermont, the rate of NAS per 1,000 babies has decreased from its peak in 2013 (33.7 newborns with NAS per 1,000 newborns) which was nearly six times the national average. By 2021, the Vermont rate was about two times the national average.

Discussion of Trends

In Vermont, the rate of opioid use disorder in the past year is similar to the rate in US^{iv}, and nearly three percent of Vermonters aged 18-64 have received MOUD in the last year.^v

The difference in NAS rates between Vermont and the US might be related to differences in practices, coding (how cases are recorded), and rates of opioid use and treatment.

The difference in NAS rates may also be due in part to the comprehensive way Vermont treats pregnant people with opioid use disorder, supports provider education and awareness, and improves access to care.

Another possible reason why there is a decrease in Vermont's NAS rate is the changing pregnancy rate of people receiving MOUD. The number of people of childbearing age who are receiving MOUD and are insured by Vermont Medicaid has stayed about the same. However, the percentage of those receiving MOUD who became pregnant dropped from 9.4% in 2015 to 2.3% in 2022.

Key Takeaways

After increasing between 2010 and 2013, the rate of infants in Vermont diagnosed with Neonatal Abstinence Syndrome (NAS) has decreased. However, in 2021 (the most recent year of data available) it is still higher than the national average.

A similar decline was found in the percent of people who are pregnant and receiving MOUD treatment. This may account, at least in part, for the decline in the Vermont rate of infants with NAS.

Limitations

NAS rates may be underestimated by restricting this analysis to live births/birth hospitalizations and excluding cases that may have been identified as transfers from other healthcare facilities to reduce duplication. Secondary outcomes of hospital charges and hospital length of stay were not analyzed as these outcomes would be biased due to the lack of information for infants who were transferred from their birth hospital for additional treatment.

There have been recent discussions with state partners regarding the limitations of tracking NAS with hospital discharge data. For several years, community hospitals in Vermont have

been collecting data on opioid-exposed newborns through quality improvement initiatives by direct chart review and data entry into reporting platforms as well as through electronic health record (EHR) reports. Direct chart review and EHR reporting may give a much more accurate accounting of opioid-exposed newborns including those with clinically significant symptoms of NAS requiring medication treatment. A comparison of the 2022 data from both data sources indicates that the hospital discharge data is underestimating the number of cases by over one-third. In addition, care must be taken in how these data are reported as decreasing incidence of the NAS discharge diagnosis may actually be a negative sign suggesting individuals are not seeking treatment during pregnancy.

Data Notes

Analyses were limited to discharges of live births (diagnosis code of V3 or Z28) among Vermont residents at Vermont hospitals, excluding transfers from other facilities. Data was limited to Vermont hospitals because data for 2014-2022 are not yet available from all bordering states. Unless otherwise stated, infants diagnosed with NAS were identified by any mention of either ICD-9 CM diagnosis code 779.5 or ICD-10-CM diagnosis code P96.1. Cases of iatrogenic NAS (ICD-9 CM 772.1x, 779.7, 777.5x, 777.6, 770.7 or ICD-10-CM P91.2x, P78.0x, P52x, P77x, P27x) were excluded from the NAS rate.

There are different ways of coding NAS. This analysis is based on a single NAS code to allow a comparison of Vermont and U.S. Rates. The U.S. rate of NAS increased from 4.0 infants per 1,000 hospital deliveries in 2010 to 6.2 in 2021,^{vi} while the VT rate has decreased from 25.2 to 13.8 in the same period. Unlike previous NAS data briefs, we are not including information on exposure to illegal drugs because of a lack of comparable national rates.

The Green Mountain Care Board (GMCB) is the data steward to the Vermont Uniform Hospital Discharge Data Set (VUHDDS). VUHDDS data are submitted annually to the Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project.

For More Information

Substance Use Data in Vermont: HealthVermont.gov/DSUReports

Find data briefs, reports, assessments, evaluations, survey results and other publications on alcohol, opioids, cannabis and overall substance use in Vermont as well as analyses that inform and evaluate Health Department efforts on addressing substance use.

One More Conversation: 1MoreConversation.com and HealthVermont.gov/1MoreConversation These are resources for pregnant people and their healthcare providers to discuss substance use during pregnancy.

Plan of Safe Care: dcf.vermont.gov/fsd/partners/posc Information about Vermont's procedures related to federal legislation for infants exposed to any substance abuse during

pregnancy, with substance withdrawal symptoms after birth, and suspected of having fetal alcohol spectrum disorder (FASD).

Vermont Child Health Improvement Program (VCHIP) Improving Care of Newborns with Substance Exposure (ICoNS): med.uvm.edu/vchip/improving_care_for_opioid-exposed_newborns Information about the ICoNS project, which partners with the Vermont Department of Health and the University of Vermont Children's Hospital to improve health outcomes for opioid-exposed newborns.

Vermont Helplink: [VTHelplink.org](https://vthelplink.org) VT Helplink is your connection to Alcohol and Drug Support Services. Call or text "LINK" to 802.565.LINK.

For questions about this data, contact: ahs.vdhhsivuhdds@vermont.gov

ⁱ *Opioid use and opioid use disorder in pregnancy.* (n.d.).ACOG
<https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2017/08/opioid-use-and-opioid-use-disorder-in-pregnancy>

ⁱⁱ Lemon, L.S., Caritis, S.N., Venkataramanan, R., Platt, R.W., & Bodnar, L.M. (2017). Methadone versus buprenorphine for opioid use dependence and risk of neonatal abstinence syndrome. *Epidemiology*, 29(2),261-268.
<https://doi.org/10.1097/ede.0000000000000780>

ⁱⁱⁱ Neonatal Abstinence Syndrome Surveillance Pilot Study Report, [NAS Study](#)

^{iv} National Survey on Drug Use and Health. (2021b). National Survey on Drug Use and Health: Model-Based Prevalence Estimates (50 states and the District of Columbia). In Table 1 Illicit Drug Use in the Past Month: Among People Aged 12 or Older; by Age Group and State, Annual Average Percentages, 2021 and 2022.
<https://www.samhsa.gov/data/sites/default/files/reports/rpt44484/2022-nsduh-sae-tables-percent-CSVs/2022-nsduh-sae-tables-percent.pdf>

^v Substance Use Dashboard | Vermont Department of Health. (2024, August 29).
<https://www.healthvermont.gov/alcohol-drugs/substance-use-data-reports/substance-use-dashboard>

^{vi} HCUP Fast Stats. Healthcare Cost and Utilization Project (HCUP). December 2022. Agency for Healthcare Research & Quality, Rockville, MD. <http://datatools.ahrq.gov/hcup-fast-stats>