

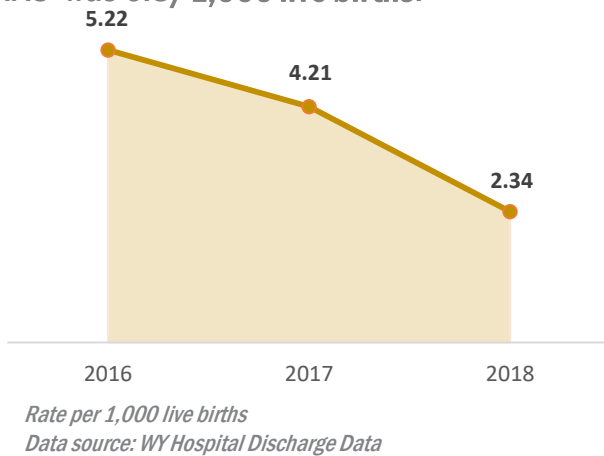


Neonatal Abstinence Syndrome Wyoming, 2016 – 2018

Neonatal Abstinence Syndrome (NAS) is a group of signs of withdrawal that occurs following *in utero* exposure to medications or illicit substances, most commonly opioids. NAS may also occur with exposures to benzodiazepines, SSRIs and barbiturates. NAS due to opioid exposure can result from maternal use of prescription opioids as legitimately prescribed, misuse of prescription opioids, use of illicit opioids (like heroin), or from medication used to treat opioid use disorder (like methadone).¹ NAS symptoms may include seizures, excessive irritability, poor feeding, dehydration and temperature instability. Infants with NAS may experience longer hospital stays and are more likely to experience other complications including low birth weight, respiratory problems, jaundice, and sepsis.² Not all exposed infants experience NAS, and their risk for long-term health issues has not been studied.

Surveillance of NAS

There has been considerable variation in the NAS definition. In 2019, the Council of State and Territorial Epidemiologists (CSTE) created a standardized case definition for NAS. The definition includes Tier 1 case reporting focused on reporting from providers to public health authorities and Tier 2 case reporting focused on administrative data (claims data using ICD10 diagnosis codes). Because NAS is not a reportable condition in Wyoming, this fact sheet uses the Tier 2 (administrative data) to present Wyoming NAS rates from hospital discharge data based on ICD10 code P96.1 among neonates (babies 28 days or younger). According to 2016 national administrative data, the rate of NAS was 6.8/1,000 live births.³



The NAS rate has **decreased** in Wyoming since 2016, and is now lower than the US estimate. Because the number of NAS cases and births in WY are low, we should use caution when comparing WY to US or making conclusions about trends over the three year period.

Between 2016-2018 in Wyoming hospitals:

- An average of **22 neonates per year** were diagnosed with NAS.
- Rate of NAS: **4.2 per 1,000 live births**
- Average length of hospital stay was **7.9 days** among NAS neonates compared with 2 days among infants who did not have a diagnosis related to drug exposure.
- Outcomes (based on ICD10 codes) among the neonates with NAS:

Seizures	1.5%
Respiratory distress syndrome	1.5%
Feeding difficulties	1.5%
Affected by other drugs of addiction	10.8%



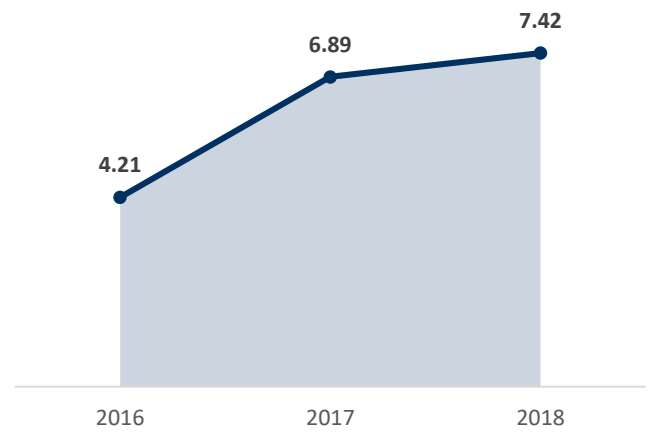
Neonates who have been “Affected by Other Drugs of Addiction,” Wyoming, 2016 – 2018

The ICD10 code P96.1, used to identify NAS, ideally covers infants who are exposed primarily to opioids, benzodiazepines, and barbiturates. The ICD10 code **P04.49** captures “neonates affected by other drugs of addiction.” The specific type of drug the infant was exposed to is not available for this code. The ICD10 code P04.49 is not a part of the CSTE NAS case definition. To date, little research has been done nationally to understand what drugs are represented by this code and the symptoms that may be associated. Some neonates with this diagnosis may also have a NAS diagnosis.

Between 2016-2018 in Wyoming hospitals:

- An average of **33 neonates per year** were diagnosed as being affected by a drug of addiction.
- Rate of neonates affected by other drugs of addiction: **6.2 per 1,000 live births**
- Average length of hospital stay was **4.6 days** among neonates affected by other drugs of addiction compared with 2 days among infants who did not have a diagnosis related to drug exposure.
- Outcomes (based on ICD10 codes) among the neonates affected by other drugs of addiction:

Seizures	1.0%
Respiratory distress syndrome	2.9%
Feeding difficulties	7.7%
NAS	6.3%



Rate per 1,000 live births
Data source: WY Hospital Discharge Data

The rate of neonates affected by other drugs of addiction has **increased** in Wyoming since 2016. Comparisons to US rates are not available. However, because the number of cases and births in WY are low, we should use caution when making conclusions about the three year trend.

Limitations:

- ICD10 coding is reflective of claims billed, it may not accurately reflect the true number of cases
- Data represent only WY hospitals, so neonates treated at out of state facilities are not included
- Hospital reporting of discharge data in Wyoming is voluntary; not all hospitals participate

References

1. Ko JY, Patrick SW, Tong VT, Patel R, Lind JN, Barfield WD. Incidence of Neonatal Abstinence Syndrome – 28 States, 1999–2013. *MMWR Morb Mortal Wkly Rep* 2016;65:799–802
2. Hudak ML, Tan RC; COMMITTEE ON DRUGS; COMMITTEE ON FETUS AND NEWBORN; American Academy of Pediatrics. *Pediatrics*. 2012 Feb;129(2):e540-60. doi: 10.1542/peds.2011-3212. Epub 2012 Jan 30.
3. Federally Available Data Resource Document 4/1/2019 available at: <https://grants6.tvisdata.hrsa.gov/uploadedfiles/TvisWebReports/Documents/FADResourceDocument.pdf>