

## Hospitalizations for Newborns with Neonatal Abstinence Syndrome

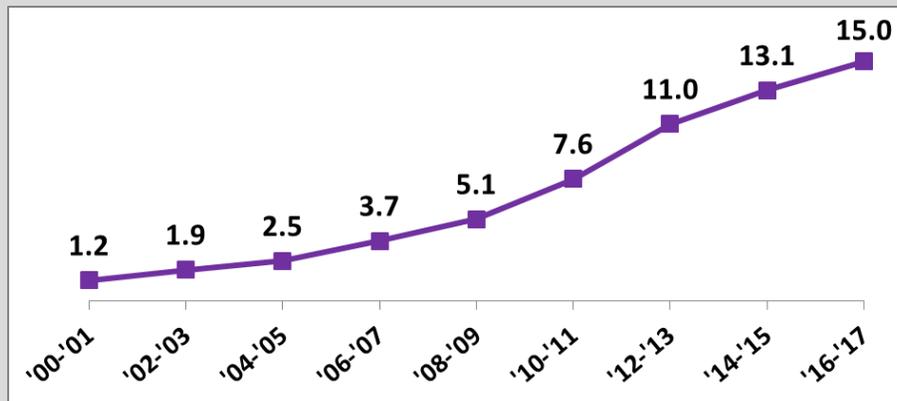


This research brief examines newborn birth admissions involving drug withdrawal, or neonatal abstinence syndrome (NAS). This array of problems develops shortly after birth in newborns who were exposed to addictive drugs, most often opioids, while in the mother’s womb. Withdrawal signs develop because these newborns are no longer exposed to the drug for which they have become physically dependent. Birth admissions are those for Pennsylvania residents occurring in Pennsylvania general acute care hospitals from FY 2000 to FY 2017. Each FY spans the period from July 1 to June 30.

### An increase of more than 1,000%.

The rate of neonatal abstinence syndrome (NAS) in newborns increased 1,096% between FYs 2000-2001 and FYs 2016-2017, from 1.2 to 15.0 per 1,000 newborn stays.

Rate of Neonatal Abstinence Syndrome per 1,000 Newborn Stays, FYs 2000-2001 to FYs 2016-2017



Each data point represents two years of data.

### More than 1,900 newborns.

There were 1,912 NAS-related newborn stays in Pennsylvania in FY 2017. While there was evidence of maternal substance use in a larger number of newborn stays (3,289), not all of these babies developed NAS. In FY 2017, NAS was diagnosed in 58% of the newborn stays involving maternal substance use.

### An estimated \$14.1 million in payments.

NAS-related stays added an estimated \$14.1 million in hospital payments in FY 2017.

*Based on the most recent available (2013) average Medicaid payments. This estimation assumes the payment difference between NAS stays and non-NAS stays for Medicaid claims is similar across all payer types, including commercial insurers, self-pay, and other.*

## Newborns with NAS had:

- **Longer hospital stays.** In FY 2017, the average hospital stay for newborns with NAS was 17.1 days, or approximately five times the average stay of 3.5 days for all other newborn stays. This difference accounted for an additional 26,018 days in the hospital for newborns with NAS, which was approximately 5.5% of the total hospital days for all newborn stays.
- **More complications.** In FY 2017, complications such as low birth weight, prematurity, difficulty feeding, and respiratory distress were much more frequent among newborns with NAS.

Complication	NAS Newborn Stays	All Other Newborn Stays
Low birth weight	15.7%	6.6%
Prematurity	14.8%	8.1%
Difficulty feeding	14.9%	3.5%
Respiratory distress	24.0%	9.3%

- **A higher proportion of hospital stays paid by Medicaid.** In FY 2017, Medicaid was the anticipated primary payer in 86.9% of NAS-related hospital stays, compared to 40.7% of all other newborn stays.

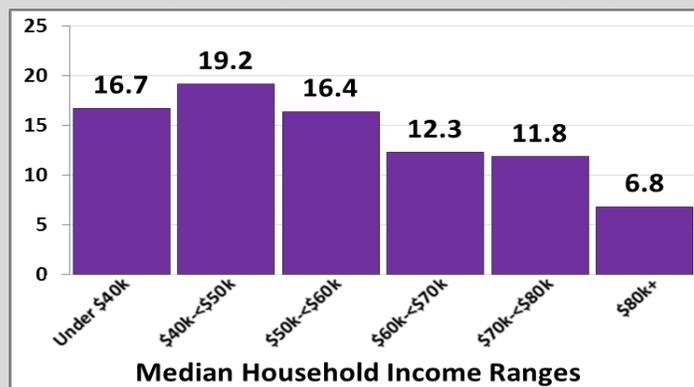
## NAS rates were highest among white, non-Hispanic newborns.

In FY 2017, NAS-related stays were highest among white, non-Hispanic newborns, occurring at a rate of 19.5 per 1,000 newborn stays. The rate among black, non-Hispanic newborns was 7.2.

*Rates were calculated based on the total number of newborn stays (PHC4 hospital admission data).*

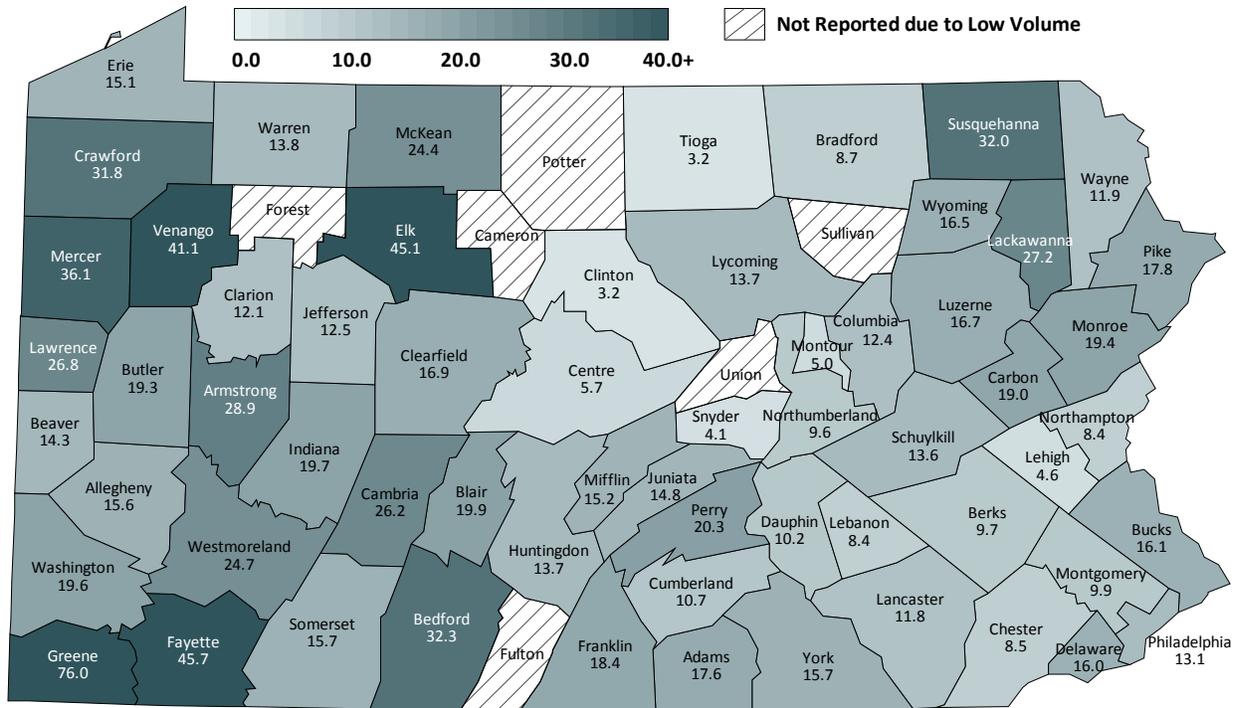
## NAS rates vary by income category.

Rate of Neonatal Abstinence Syndrome per 1,000 Newborn Stays by Income Category, FY 2017



*The median household incomes were approximated at the patient zip code level using the most recent (2016) estimates provided by the U.S. Census Bureau's American Community Survey.*

## Rate of Neonatal Abstinence Syndrome per 1,000 Newborn Stays by County of Residence, FYs 2016-2017



### About PHC4

Created by the PA General Assembly in 1986, the PA Health Care Cost Containment Council (PHC4) is an independent state agency charged with collecting, analyzing and reporting information that can be used to improve the quality and restrain the cost of health care in the state. Today, PHC4 is a recognized national leader in public health care reporting. More than 840,000 public reports on patient treatment results are downloaded from the PHC4 website each year, and nearly 100 organizations and individuals annually utilize PHC4's special requests process to access and use data. PHC4 is governed by a 25-member board of directors, representing business, labor, consumers, health care providers, insurers and state government.

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## Rate of Neonatal Abstinence Syndrome per 1,000 Newborn Stays by County of Residence, FYs 2016-2017

County Name	Number of NAS Stays	Rate per 1,000 Newborn Stays
<b>Statewide</b>	<b>3,883</b>	<b>15.0</b>
Adams	30	17.6
Allegheny	399	15.6
Armstrong	31	28.9
Beaver	46	14.3
Bedford	26	32.3
Berks	87	9.7
Blair	49	19.9
Bradford	10	8.7
Bucks	151	16.1
Butler	70	19.3
Cambria	64	26.2
Cameron	NR	NR
Carbon	22	19.0
Centre	13	5.7
Chester	80	8.5
Clarion	NR	12.1
Clearfield	23	16.9
Clinton	NR	3.2
Columbia	14	12.4
Crawford	53	31.8
Cumberland	53	10.7
Dauphin	67	10.2
Delaware	204	16.0
Elk	27	45.1
Erie	93	15.1
Fayette	115	45.7
Forest	NR	NR
Franklin	53	18.4
Fulton	NR	NR
Greene	40	76.0
Huntingdon	10	13.7
Indiana	27	19.7
Jefferson	11	12.5

County Name	Number of NAS Stays	Rate per 1,000 Newborn Stays
Juniata	NR	14.8
Lackawanna	118	27.2
Lancaster	137	11.8
Lawrence	48	26.8
Lebanon	25	8.4
Lehigh	36	4.6
Luzerne	105	16.7
Lycoming	32	13.7
McKean	15	24.4
Mercer	75	36.1
Mifflin	12	15.2
Monroe	53	19.4
Montgomery	167	9.9
Montour	NR	5.0
Northampton	50	8.4
Northumberland	17	9.6
Perry	19	20.3
Philadelphia	549	13.1
Pike	11	17.8
Potter	NR	NR
Schuylkill	36	13.6
Snyder	NR	4.1
Somerset	18	15.7
Sullivan	NR	NR
Susquehanna	19	32.0
Tioga	NR	3.2
Union	NR	NR
Venango	40	41.1
Warren	NR	13.8
Washington	78	19.6
Wayne	NR	11.9
Westmoreland	146	24.7
Wyoming	NR	16.5
York	145	15.7

NR: Not reported due to low volume of NAS cases and/or newborn stays.