

# Fact Sheet

## Neonatal Abstinence Syndrome in Connecticut



May 2016

### Background and Data Source

This fact sheet highlights the overall magnitude and economic impact of opioid withdrawal among infants in Connecticut. Neonatal abstinence syndrome (NAS) is a drug withdrawal syndrome that occurs in infants exposed to opioids taken by the mother during pregnancy. Opioids are a class of potentially addictive prescription or illicit drugs such as heroin, codeine, oxycodone, and methadone.<sup>1</sup> This fact sheet is intended for use by professionals, policy makers, and healthcare providers in targeting responses to this growing public health problem.

Nationwide, approximately one infant is born every 25 minutes with NAS.<sup>2</sup> These infants experience withdrawal symptoms such as extreme irritability, tremors, vomiting, feeding difficulties, and diarrhea, and are more likely to have seizures, respiratory complications and low birth weight.<sup>3</sup> Treatment to relieve symptoms of withdrawal depends on the severity of the syndrome and may include environmental treatment (e.g. reducing light exposure) or pharmacologic therapy (e.g. administering morphine or methadone). Infants with symptoms of withdrawal or complications from NAS are often admitted to hospitals for treatment, resulting in long hospital stays and increased hospitalization costs.

The Connecticut data reported in this fact sheet were obtained from the Office of Health Care Access, Connecticut Department of Public Health, Acute Care Inpatient Discharge Database. Discharge data were for infants assigned an ICD-9-CM diagnostic code 779.5. Multiple hospitalizations can occur for a single infant, such as if the baby is transferred from one hospital to another, or readmitted for complications of NAS. Also, only severe cases of NAS requiring hospitalization are reported.

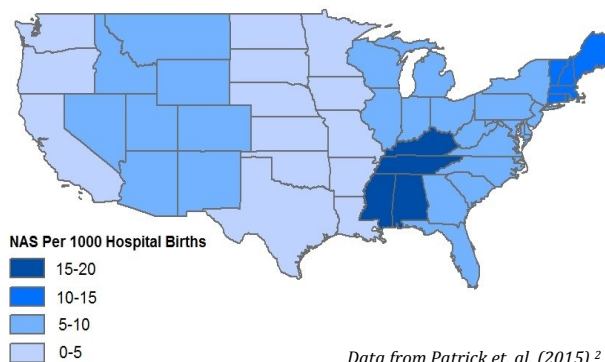
## The Growing Epidemic of NAS in Connecticut

In 2012, the Northeast region of the United States had the second highest incidence of NAS in the country (**Figure 1**).<sup>2</sup>

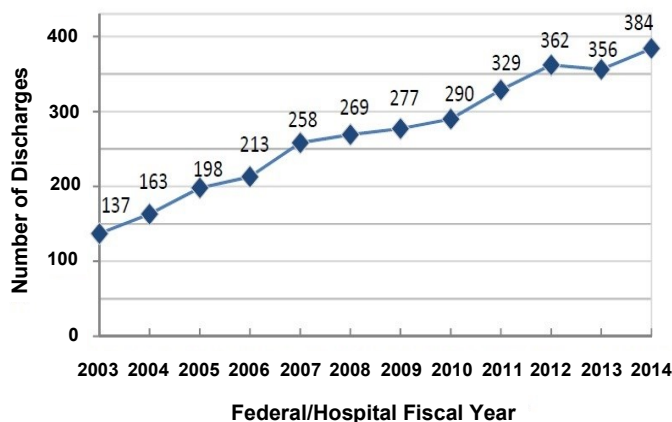
The number of NAS hospitalizations more than doubled in Connecticut from 2003 to 2014 (**Figure 2**). This alarming increase in NAS in the state parallels the national rise of opioid abuse.<sup>2</sup>

NAS varies by race/ethnicity. While 58% of all babies born in Connecticut from 2005-2014 were non-Hispanic White, they accounted for 75% of all NAS hospital discharges (**Figure 3**).

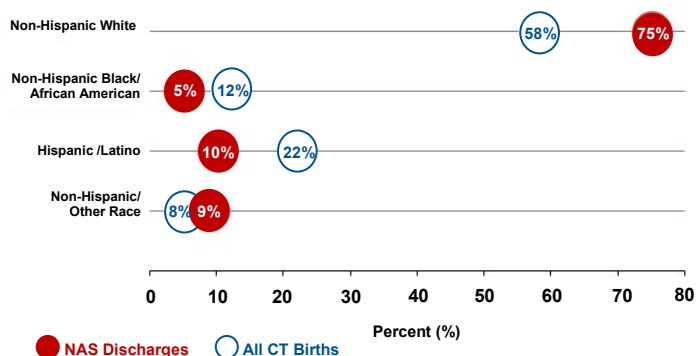
**Figure 1**  
Incidence of NAS in the United States by Region, 2012



**Figure 2**  
NAS Hospital Discharges  
Connecticut, 2003-2014



**Figure 3**  
Percent Distribution of NAS by Race and Ethnicity  
Connecticut, 2005-2014



All birth data obtained from CT Registration Report Tables, calendar years 2005-2013; provisional data for 2014 obtained courtesy of F. Amadeo, DPH. ([http://www.ct.gov/dph/cwp/view.asp?a=3132&q=394598&dphNav\\_GID=1601](http://www.ct.gov/dph/cwp/view.asp?a=3132&q=394598&dphNav_GID=1601))

## Economic Impact of NAS in Connecticut

	Infants with NAS*	All Newborns
Acute Care Hospital Discharges	384	38,652
Average Length of Stay (days)	15.8	3.8
Hospital Costs (\$)		
Median Cost	\$13,421	\$1,862
Total Cost (million)	\$8.70	\$209.30

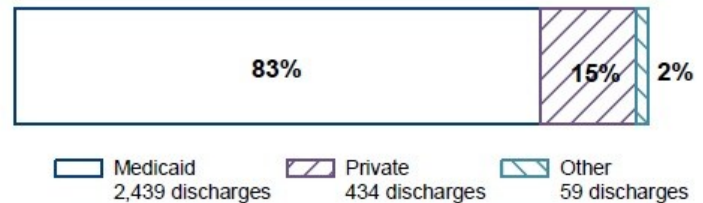
\* - Includes newborn NAS hospital discharges, as well as infants readmitted after an initial newborn hospital event.  
<sup>†</sup> - Cost is calculated by multiplying hospital charges by the statewide hospital ratio of cost to charges (RCC) of a given year.

From 2005-2014, the majority of infants hospitalized for NAS in Connecticut were covered by Medicaid (83%) compared to other forms of payment (**Figure 4**).

In Connecticut during 2014 (**Table I**),

- The average length of hospital stay for infants with NAS was four times longer than that for all newborns (15.8 days *versus* 3.8 days);
- Median inpatient hospitalization cost for NAS was more than seven times higher than that for all newborns (\$13,421 *versus* \$1,862);
- Over \$8.7 million in hospitalization costs could have been saved in 2014 with effective NAS prevention.

**Figure 4  
Medicaid is the Primary Source of Payment for NAS  
Connecticut, 2005-2014**



## Possible Strategies for Connecticut

### Detection & Management

Identify and implement coordinated NAS screening and treatment protocols that are supportive of the mother and baby.<sup>4,5</sup>

### NAS Prevention

Consider widespread implementation of CDC guidelines for opioid prescriptions that include women of childbearing age.<sup>6,7</sup>

### Increase Awareness

Strengthen NAS dialogue in the state to identify and promote effective strategies for NAS prevention.

### NAS Surveillance

Improve data collection to monitor incidence and economic impact of NAS among infants born in the state.

## References

- <sup>1</sup> Hudak, ML, Tan, RC. (2012). Clinical Report: Neonatal drug withdrawal. *Pediatrics* 129:e540-e559; erratum *Pediatrics* 133(5):937-938.
- <sup>2</sup> Patrick, S.W., Davis, M.M., Lehman, C.U., & Cooper, W.O. (2015). Increasing incidence and geographic distribution of neonatal abstinence syndrome: United States 2009-2012. *Journal of Perinatology*, 25, 650-655.
- <sup>3</sup> A.D.A.M Medical Encyclopedia [Online]. Atlanta, GA: A.D.A.M., Inc. (2013). Neonatal abstinence syndrome. Accessed on February 4, 2016. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0004566/>.
- <sup>4</sup> CT Keeping Infants Drug-free (K.I.D) Project, Connecticut Department of Children and Families and the Department of Mental Health and Addiction Services. [http://www.abhct.com/Programs\\_Services/FASD/](http://www.abhct.com/Programs_Services/FASD/).
- <sup>5</sup> Association for State and Territorial Health Officials. (2014). *Neonatal Abstinence Syndrome: How States Can Help Advance the Knowledge Base for Primary Prevention and Best Practices of Care*. Retrieved from <http://www.astho.org/prevention/nas-neonatal-abstinence-report/>.
- <sup>6</sup> Centers for Disease Control and Prevention. (2016). *Guideline for Prescribing Opioids for Chronic Pain*. Retrieved from [http://www.cdc.gov/drugoverdose/pdf/guidelines\\_factsheet-a.pdf](http://www.cdc.gov/drugoverdose/pdf/guidelines_factsheet-a.pdf).
- <sup>7</sup> U.S. Senator Richard Blumenthal. (April 2016). *Opioid Addiction: A Call to Action*. Retrieved from <http://www.blumenthal.senate.gov/opioid>.

### For more information please contact:

Amy C. Smart, Health Statistics and Surveillance, Connecticut Department of Public Health, Amy.Smart@ct.gov (860-509-7125); or Belinda Jivapong, Public Health Systems Improvement, Connecticut Department of Public Health, Belinda.Jivapong@ct.gov (860-509-7127).

This factsheet can be viewed at: <http://ct.gov/dph/nas>