



**COMPARING TWO SYSTEMS FOR SURVEILLANCE OF NEONATAL ABSTINENCE SYNDROME IN ALASKA**

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**WHAT IS NEONATAL ABSTINENCE SYNDROME?**

- A drug withdrawal syndrome that occurs after in utero exposure to opioids
- Long-term consequences for the infant are unknown
- Increasing nationally over the past 15 years
- Associated with national increase in prenatal opioid use
- Expensive

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### DATA SOURCE 1: HOSPITAL DISCHARGE DATABASE (HDD)

- AKA, the State Inpatient Database (SID/HCUP)
- Only available for 2001-2012
- Does not include individual identifiers
- Hospital reporting not mandatory until 2015

**Percent of Births Represented in HDD**

Year	Percent of Births Represented in HDD
2001	77%
2002	80%
2003	83%
2004	82%
2005	82%
2006	83%
2007	82%
2008	73%
2009	68%
2010	66%
2011	67%
2012	69%

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### METHODS

- ICD-9-CM and ICD-10-CM codes for "Drug Withdrawal Syndrome in Newborn" (779.5 and P96.1)
- Excluded reports >28 days of birth
- Evaluated exclusion criteria to identify iatrogenic NAS (Patrick et al, JAMA 2012):
  - Very low birth weight (<1500 g)
  - Complex medical conditions
- Trend analysis using negative binomial regression

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### TREND IN NAS RATES, ALASKA (HDD) AND U.S. (HCUP), 2000-2012

Year	Alaska (Rate per 1,000 births)	US (Rate per 1,000 births)
2000	0.8	1.0
2001	1.6	1.0
2002	1.0	1.0
2003	2.1	1.0
2004	2.3	1.0
2005	2.5	1.0
2006	2.9	1.0
2007	4.3	1.0
2008	4.6	1.0
2009	3.5	1.0
2010	3.2	1.0
2011	5.1	1.0
2012	5.1	1.0

Sources for US data: Patrick et al, Neonatal Abstinence Syndrome and Associated Health Care Expenditures, United States 2000-2009, JAMA 2012; Patrick et al, Increasing incidence and geographic distribution of neonatal abstinence syndrome: United States 2009 to 2012, J Perinatol 2015.

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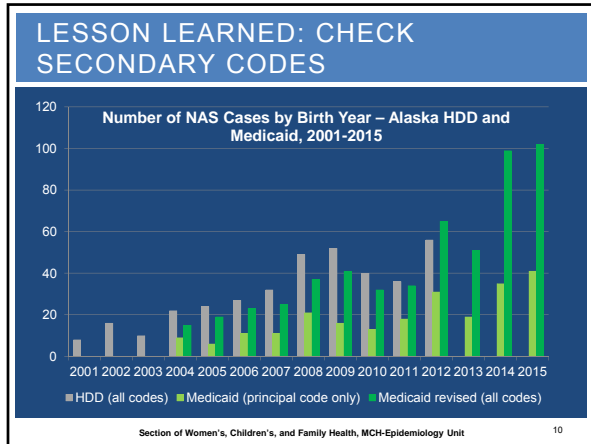
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### LIMITATIONS

- Neither data source completely represents the entire Alaska birth population.
- ICD codes don't distinguish between appropriately prescribed opioid use, abuse of prescription drugs, and use of illicit drugs.
- Potential for misclassification - data are based on billing codes rather than confirmed diagnoses.
- Some of the increase could be due to providers being more aware of the syndrome and revisions to the AAP NAS diagnostic guidelines in 2012.

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### CONCLUSIONS

- The burden on the health care system caring for NAS infants has clearly increased.
- For surveillance of NAS in Alaska, Medicaid is the preferred source of data
  - More timely
  - Encompasses a large percentage of at-risk population
  - Records can be linked to birth certificates
- HDD allows for comparisons to national rates
  - Representativeness may improve with 2015 data
- Exclusion criteria
  - Complicated to apply (on HDD) and did not change interpretation of trends

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**THANK YOU!**



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Ref: Increase in Neonatal Abstinence Syndrome, Alaska, 2001-2015.  
State of Alaska Epidemiology *Bulletin*, February 2016.  
(<http://epibulletins.dhss.alaska.gov/Document/Display?DocumentId=1811>)



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