

Neonatal Abstinence Syndrome (NAS)

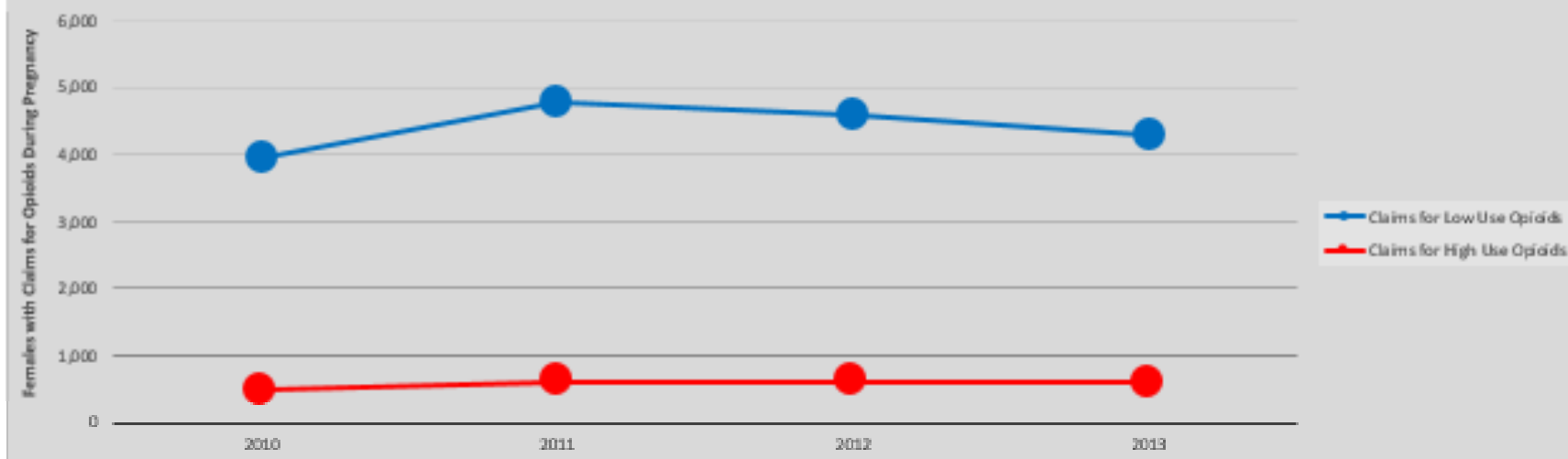
Adverse Fetal Outcomes in Mothers
with Prescribed Opioid Medications Compared to Mothers With No
Prescribed Opioid Medications

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Neonatal Abstinence Syndrome: A National Epidemic

- Neonatal Abstinence Syndrome (NAS) is neonatal withdrawal resulting from maternal use of opioids during pregnancy.
- NAS is a national epidemic with 1.5 infants born per hour with NAS resulting in a vast increase in hospital cost and negative fetal outcomes.
- Clinical Manifestations of NAS:
 - Hyperactivity of the central and autonomic nervous system
 - Failure to thrive
 - Seizures
 - Tremors
 - Tachypnea
 - Excessive yawning

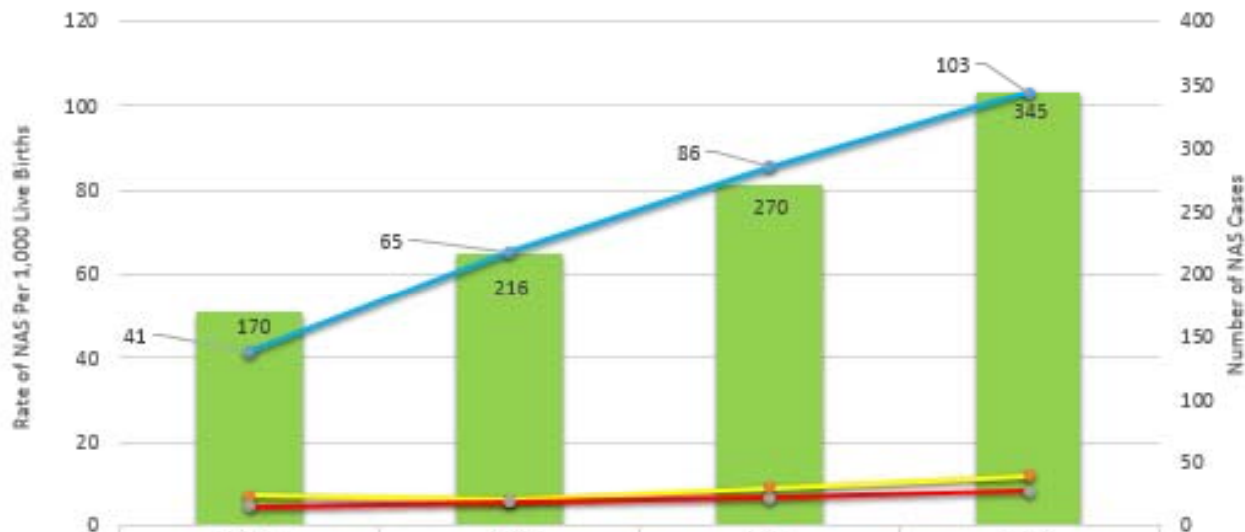
Alabama Medicaid Agency Opioid Prescribing Patterns The Number of Unique Females with Claims for Opioids During Pregnancy 2010-2013



* Low Use is defined as less than a 30 days supply of opioids.

* High use is defined as greater than or equal to a 30 days supply of opioids.

Association Between Opioid Use and Neonatal Abstinence Syndrome (NAS)



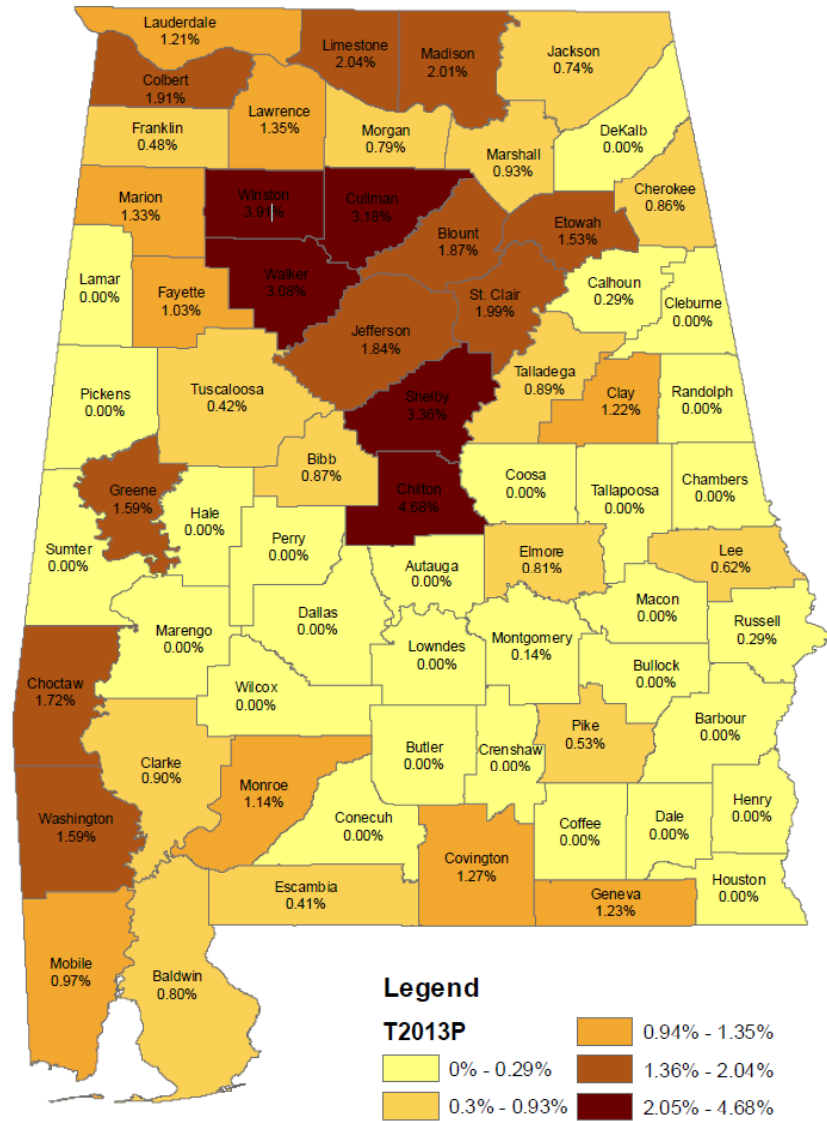
	2010	2011	2012	2013
Number of NAS Cases	170	216	270	345
Greater than 30 Days Supply of Opioids	41	65	86	103
0-29 Days Supply of Opioids	7	6	9	12
No Opioid Claims	4	5	6	8

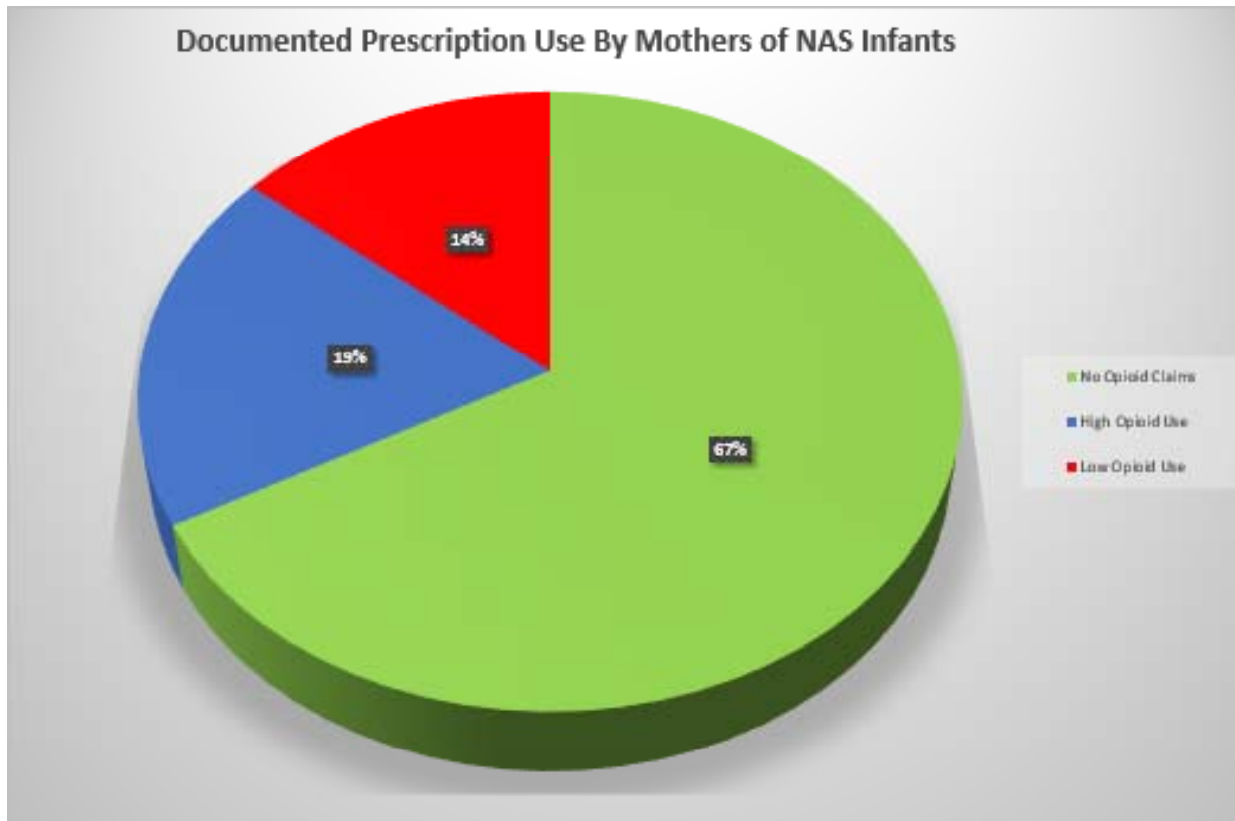
Rate of NAS Per 1000 Live Births

- Cases of NAS increased from 170 in 2010 to 345 in 2013
- The highest rate of growth is in the high use group.
- The rate in the group with no opioid claims doubled over 4 years and is driving the growth because it represents 67% of the NAS population.

Calendar Year 2013

Percentage of Neonatal Abstinence Syndrome by County





67% of Neonatal Abstinence Syndrome in Alabama Medicaid results from mothers without any claims for opioid prescriptions that were paid for by Medicaid.

Cost Analysis of Neonatal Abstinence Syndrome

Alabama Medicaid Agency
 Claims Data Analysis
 Calendar Years 2010-2013

	Infants Diagnosed with NAS (N)	Number of NAS Infants Admitted to NICU	Average Days Spent in the NICU	Average NICU Cost per Infant
NAS Diagnosed from Mothers Who Had Claims For Less Than 30 days Supply of Opioids (Low Use)	143	112 (78%)	15	\$ 27,450
NAS Diagnosed from Mothers Who Had Claims For More Than 30 days Supply of Opioids (High Use)	188	120 (64%)	11	\$ 22,606
NAS Diagnosed from Mothers Who Had No Claims For Opioids	670	495 (74%)	23	\$ 32,814

- Mothers with high use of opioids have a higher rate of NAS, but better fetal outcomes.
- Cost and length of stay are significantly reduced in physician managed mothers.
- 670 infants were diagnosed with NAS during the study time whose mothers had no claims for opioids.

*Reflects opioid claims during pregnancy with or without the use of other medications. Not exclusive.

*Based on CY 2010-2013

Conclusions

- Neonatal Abstinence Syndrome has more than doubled in the past four years and the rate is sharply climbing, especially in those with high use opioids.
- Mothers with opioid claims have an increased rate of preterm delivery and increased infant and neonatal mortality rates, as well as an increased rate of NAS.
- The total NICU cost for those babies diagnosed with NAS from 2010-2013 was \$23.3 million.
- Mothers of NAS diagnosed infants who have no Medicaid opioid prescription claims are likely seeking opioids elsewhere and have worse fetal outcomes such as a longer stay in the NICU.
- High opioid use during pregnancy which is managed by a physician results in infants with decreased severity and better outcomes, as evidenced by shorter lengths of stay in the NICU and reduced NICU costs.