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
* 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.

Alabama Medicaid Agency
Opioid Prescribing Patterns
The Number of Unique Females with Claims for Opioids During Pregnancy
2010-2013
Association Between Opioid Use and Neonatal Abstinence Syndrome (NAS)

- 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

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

- 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.