Measurement of Maternal Health Care Quality: Considerations for publicly funded health care in North Carolina
NC Births, 2003 - 2015

Emergency Medicaid
Non-Emergency Medicaid
Other Payer
<table>
<thead>
<tr>
<th>% Emergency Medicaid</th>
<th>% Medicaid during Pregnancy</th>
<th>% All Medicaid</th>
<th>% Other Payer</th>
<th>Total Births</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.4%</td>
<td>8.3%</td>
<td>8.9%</td>
<td>9.5%</td>
<td>10.1%</td>
</tr>
<tr>
<td>35.6%</td>
<td>36.6%</td>
<td>37.5%</td>
<td>38.4%</td>
<td>38.5%</td>
</tr>
<tr>
<td>43.0%</td>
<td>44.9%</td>
<td>46.4%</td>
<td>47.9%</td>
<td>48.5%</td>
</tr>
<tr>
<td>57.0%</td>
<td>55.1%</td>
<td>53.6%</td>
<td>52.1%</td>
<td>51.5%</td>
</tr>
<tr>
<td>118,292</td>
<td>119,773</td>
<td>123,040</td>
<td>127,646</td>
<td>130,886</td>
</tr>
</tbody>
</table>
Who provides care to the pregnant Medicaid population?

- OB/GYN practice: 60.0%
- Federally qualified health center: 2.7%
- County health department: 17.8%
- Family medicine practice: 2.4%
- MFM/high-risk OB practice: 2.6%
- Academic center practice: 14.4%
Infant Mortality

- Infant deaths per 1,000 live births
- Indicator of population health at a community, state or national level

Causes:
- Birth defects
- Preterm birth
- Maternal complications of pregnancy
- SIDS/SUID
- Injuries

Racial/ethnic disparity

http://www.schs.state.nc.us/data/vital/ims/2015/ratesgraph.html
Maternal Health Measurement Considerations

- Measurement of maternal vs. infant health outcomes
- Ambulatory vs. inpatient measures
- Levels of influence: prenatal care provider, intrapartum provider, primary care provider, OB office/health department/FQHC clinic, hospital, health system, MCO, public health
- Racial/ethnic disparities – infant mortality, preterm birth, low birth weight, unintended pregnancy
- Economic disparities – access, infant mortality, cesarean
Who Measures What: HEDIS

- **Timeliness of prenatal care** – first trimester or within 42 days of plan enrollment
- **Frequency of ongoing prenatal care** – number of prenatal visits as a function of number of expected visits
- **Postpartum Care** – postpartum visit on or between 21-56 days postpartum
Who Measures What: The Joint Commission

Perinatal Care Core Measure Set (mandatory for hospitals with >1,100 births/year):

- PC-01 Early Elective Delivery (<39 weeks)
- PC-02 Cesarean Section among Term, Singleton, Vertex Pregnancies (NTSV)
- PC-03 Antenatal Steroids
- PC-04 Health Care-Associated Blood Stream Infections in Newborns
- PC-05 Exclusive Breast Milk Feeding at Hospital Discharge
- PC-05a Exclusive Breast Milk Feeding Considering Mother’s Choice
### Who Measures What: CMS

<table>
<thead>
<tr>
<th>Medicaid Adult Core</th>
<th>Medicaid Child Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective Delivery</td>
<td>Timeliness of Prenatal Care</td>
</tr>
<tr>
<td>Antenatal Steroids</td>
<td>Frequency of Ongoing Prenatal Care</td>
</tr>
<tr>
<td>Postpartum Care Rate</td>
<td>Live Births Weighing &lt;2500 grams</td>
</tr>
<tr>
<td>Contraceptive Care – Postpartum</td>
<td>Behavioral Health Risk Assessment for Pregnant Women</td>
</tr>
<tr>
<td></td>
<td>Cesarean Section (NTSV)</td>
</tr>
<tr>
<td></td>
<td>Contraceptive Care – Postpartum</td>
</tr>
<tr>
<td></td>
<td>Central Line-Associated Bloodstream Infections – NICU/PICU</td>
</tr>
</tbody>
</table>
Alliance for Innovation on Maternal Health (AIM)

- Severe maternal morbidity (CDC measure)
- Cesarean Delivery - NTSV
- Venous Thromboembolism during Pregnancy/Postpartum
Who Measures What:
HRSA > Maternal & Child Health Bureau

Collaborative Improvement & Innovation Network (COIIN) to Reduce Infant Mortality:

- Early elective delivery
- Tobacco use among pregnant women
- Safe sleep practices
- Risk-appropriate care (very low birth weight born at appropriate level of care)
- Interconception care coverage (state-level policy)

Maternal Health COIIN:

- Cesarean delivery (NTSV)
- Use of maternal safety bundles in delivery hospitals
<table>
<thead>
<tr>
<th>Name of Measure</th>
<th>Definition</th>
<th>Other use of measure (may not have same specifications)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy Intendedness</td>
<td>Proportion of pregnancies that were intended based on responses to the PMH risk screen</td>
<td>PRAMS</td>
</tr>
<tr>
<td>First Trimester Care</td>
<td>Proportion of women receiving prenatal care in the first trimester (&lt;14 weeks of gestation)</td>
<td>HEDIS; Medicaid Child Core</td>
</tr>
<tr>
<td>Risk Screening</td>
<td>Receipt of Pregnancy Medical Home risk screening during the pregnancy</td>
<td>Medicaid Child Core</td>
</tr>
<tr>
<td>Cesarean Delivery – overall</td>
<td>Proportion of live births delivered via cesarean</td>
<td></td>
</tr>
<tr>
<td>Cesarean Delivery – NTSV</td>
<td>Cesarean delivery among nulliparous women with a term, singleton, vertex fetus (NTSV)</td>
<td>The Joint Commission; Medicaid Child Core</td>
</tr>
<tr>
<td>Early Elective Delivery</td>
<td>Induction of labor or scheduled cesarean delivery &lt;39 weeks of gestation among births without a medical indication for early delivery and in the absence of spontaneous labor</td>
<td>The Joint Commission; Medicaid Adult Core</td>
</tr>
<tr>
<td>17p Treatment</td>
<td>Proportion of women with a history of spontaneous preterm birth who received progesterone therapy during pregnancy</td>
<td></td>
</tr>
<tr>
<td>Tobacco Cessation Counseling</td>
<td>Proportion of pregnant women screened for tobacco use AND who received cessation counseling if identified as a tobacco user</td>
<td>Medicaid Adult Core</td>
</tr>
<tr>
<td>Receipt of Pregnancy Care Management</td>
<td>Proportion of women who received care management during the pregnancy</td>
<td></td>
</tr>
<tr>
<td>Postpartum Visit</td>
<td>Proportion of women receiving a comprehensive postpartum visit within 14-60 days of delivery</td>
<td>HEDIS; CMS - developmental</td>
</tr>
<tr>
<td>Postpartum Contraception</td>
<td>Proportion of women with a paid claim for a contraceptive method or a sterilization procedure within 60 days of delivery</td>
<td>Medicaid Child Core</td>
</tr>
</tbody>
</table>
Non-Medically Indicated Early Term Deliveries Among Singleton Term Deliveries, Reg. IV
Non-Medically Indicated Early Term Deliveries Among Singleton Term Deliveries By Race, Reg. IV & VI
Data Sources – Birth Certificate

- Some fields more reliable than others
  - Less reliable fields tend to be under-reported, not inaccurate
- The “matched file”:
  - Birth certificates matched to Medicaid delivery claims to identify women with Medicaid coverage in pregnancy
  - “Baby Love file” also includes WIC, other data
- Demographics
- Prenatal care
- Cigarette use
- Risk factors/infections
- Mode of delivery
- L&D characteristics
- Maternal morbidity
- Newborn abnormal conditions and congenital anomalies
Data Sources – Pregnancy Risk Assessment Monitoring System (PRAMS)

- Survey of new mothers, 2-6+ months post-delivery
- Response rate issues, now improving

Variables:
- Preconception care/health status
- Pregnancy intendedness
- Prenatal/postpartum care source and content
- Alcohol/tobacco use
- Physical abuse
- Pregnancy-related morbidity
- Infant care/status
- Safe sleep
- Breastfeeding
- Contraception
Data Sources – CCNC Pregnancy Medical Home Risk Screening Form

- Standardized tool used for all Medicaid pregnancies
- Medicaid Child Core Measure – Behavioral Health Risk Assessment (pregnant women)

Variables:
- Demographics
- Height/weight
- Chronic disease
- Obstetric history (preterm birth, LBW, hypertensive disorders, depression)
- Fetal complications
- Pregnancy intendedness
- Domestic violence
- Tobacco use
- Drug/alcohol use
- Food insecurity