Evidence based strategy to reduce infant mortality
STUDY LEVELS OF MATERNAL AND NEONATAL RISK APPROPRIATE CARE: HB741 AND SB 311

- Support a study bill to assess timely and equitable access to high quality risk-appropriate maternal and neonatal care; study to result in actionable recommendations.

- CFTF to administratively supported study (additional funds would need to be made available)

- Passed House last year; request continued support
NORTH CAROLINA, 2014

66% of childhood deaths were infants
860 infant deaths
593 deaths within the first 28 days of life
  187 due to prematurity and LBW
  125 due to maternal factors/complications

- These leading causes of neonatal death disproportionately affect minorities
- Early and risk appropriate prenatal care can make a difference
3C. Improve **access** to and utilization of **first trimester prenatal care**

3E. Ensure that all pregnant women and high-risk infants have access to the **appropriate level of care** through a well-established regional perinatal system

1. Decrease the % of VLBW and high-risk babies who are born at Level 1 and Level 2 hospitals

2. Define, identify and promote centers of excellence for VBAC (vaginal birth after cesarean)

3. Assess the levels of **neonatal and maternity** care services for hospitals using the consensus recommendations of the American Academy of Pediatrics (AAP), the American College of Obstetricians and Gynecologists (ACOG), and the Society for Maternal-Fetal Medicine (SMFM)
RISK APPROPRIATE MATERNAL AND NEONATAL CARE

- Early onset prenatal care
  - Risk assessment and intervention for modifiable risk factors
  - Tobacco cessation
  - Optimal management of medical complications of pregnancy
  - Aspirin to prevent pre-eclampsia
  - 17 hydroxyprogesterone to prevent recurrent preterm birth
  - Care management for those who will benefit most
Provider participation: 380 practices participate in the PMH program, representing >1,700 providers and more than 90% of maternity care provided to Medicaid patients. 95 of 100 NC counties have a PMH.
EARLY AND RISK APPROPRIATE PREGNATAL CARE

- Who is available to provide prenatal care?
  - What are they prepared to manage?
  - What is their capacity to see women in a timely manner?
  - What if more advanced care is needed? What is the system for referral? Do women accept referral?

- Why do only 65% of Medicaid recipients receive prenatal care in the first trimester?
  - Rural counties: 69%
  - Metropolitan: 65%

- Where are the service gaps? How can they be filled?
When preterm delivery is inevitable

- Antenatal steroids
- **Maternal transfer** to hospital with appropriate resources for neonatal care
- VLBW newborns are **1.8X** more likely to die if born outside of a regional center

Lasswell, Barfield, Rochat, Blackmon. *JAMA 2010*
# 2012 AAP Levels of Neonatal Care

<table>
<thead>
<tr>
<th>Level I (Basic)</th>
<th>≥ 35 wks who are stable</th>
<th>Stabilize and transfer &lt; 35 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level II (Specialty Care)</td>
<td>≥32 wks or ≥1500 gms who have physiological immaturity</td>
<td>Provide convalescent care after intensive care; Assisted ventilation for ≤24 hours or CPAP</td>
</tr>
<tr>
<td>Level III (Subspecialty Care)</td>
<td>Continuous life support; Care &lt;32 wks and &lt;1500 gms</td>
<td>Advanced imaging w/ interpretation on an urgent basis (CT, MRI, echocardiography): Prompt access to full range of pediatric medical and surgical subspecialists on site or by pre-arranged consultative agreements</td>
</tr>
<tr>
<td>Level IV</td>
<td>See Level III</td>
<td>Capability to provide surgical repair of complex congenital or postnatal conditions; Immediate at-site access to pediatric subspecialists, pediatric surgeons and pediatric anesthesiologists</td>
</tr>
</tbody>
</table>
Are North Carolina’s highest risk infants born in facilities with resources to provide the best care?
Deliveries at North Carolina Facilities by Volume

- < 500: 9.3%
- $\geq 500$ and < 1000: 12.4%
- $\geq 1000$ and < 2000: 18.3%
- $\geq 2000$ and < 3000: 11.4%
- $\geq 3000$ and < 4000: 8.8%
- $\geq 4000$ and < 5000: 14.7%
- $\geq 5000$ and < 6000: 8.8%
- $\geq 6000$ and < 7000: 10.2%
- > 7000: 5.9%
1853 VLBW births

1487 (80%) born in hospitals with birth volume >3,000

228 born w/ 1000 – 2,999 birth

138 (5%) born w/ <1000 births
RISK APPROPRIATE INTRAPARTUM CARE

- Are the highest risk babies born in facilities with resources and personnel to provide appropriate care?
  - What are the capabilities/Level of neonatal care for NC maternity hospitals?
  - How is Level of care designated?
  - What systems are in place for maternal transport, when indicated?
  - What systems are in place for outreach education and support for quality monitoring and improvement?

- Why are 20% of babies <1500 grams born in hospitals with low delivery volume? Are the maternal and neonatal resources appropriate?
- Where are the service gaps? How can they be filled?
WHAT ABOUT THE MOM?
North Carolina
Severe Maternal Morbidity Rates During Delivery Hospitalizations
By Perinatal Care Regions
2002 - 2013

Legend
Rates per 10,000 Delivery Hospitalizations
- 79.26 - 82.09
- 82.10 - 87.59
- 87.60 - 99.06
- 99.07 - 138.64

North Carolina Rate 89.5

Note: Includes Cardiomyopathy and excludes Maternal Blood Transfusions.
DEFINING LEVELS OF MATERNAL CARE

- To introduce uniform designations, with standardized definitions for levels of maternal care that are complementary but distinct from levels of neonatal care

- To provide consistent guidelines according to level of maternal care for use in quality improvement and health promotion

- To foster the development and equitable geographic distribution of full-service maternal care facilities and systems that promote proactive integration of risk-appropriate antepartum, intrapartum, and postpartum services
Provide nationally applicable uniform definitions describing capability of facilities to provide increasing complexity of care to pregnant women.

**LEVELS OF MATERNAL CARE**

Endorsement and support from
- American Association of Birth Centers
- American College of Nurse Midwives
- Association of Women’s Health Obstetric and Neonatal Nurses
- Commission for the Accreditation of Birth Centers
- American Academy of Pediatrics
- American Society of Anesthesiologists
- Society of Obstetric Anesthesia and Perinatology

Jointly published by ACOG and SMFM
LEVELS OF MATERNAL CARE (LOMC)

- **NOT** about closing small or rural maternity care centers
- **IS** about role of Level III/IV (Regional) Centers to support education and quality improvement among their referring facilities
- **IS** about building a culture of collaboration
# LOMC: Definitions/Examples

<table>
<thead>
<tr>
<th>Birth Center</th>
<th>Low-risk w/ uncomplicated singleton term pregnancies, vertex presentation; Expected to have uncomplicated birth</th>
<th>Term, singleton, vertex</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level I</strong></td>
<td>Uncomplicated pregnancies; Detect, stabilize, and initiate management of unanticipated problems that occur during antepartum, intrapartum, or postpartum until transfer</td>
<td>Term twins Uncomplicated cesarean Preeclampsia w/o severe features</td>
</tr>
<tr>
<td><strong>Level II</strong></td>
<td>Level I facility plus care of appropriate high-risk conditions, both directly admitted and transferred from another facility.</td>
<td>Severe pre-eclampsia Placenta previa w/ no prior uterine surgery</td>
</tr>
<tr>
<td><strong>Level III</strong></td>
<td>Level II facility plus care of more complex maternal medical conditions, obstetric complications, and fetal conditions</td>
<td>Placenta accreta/percreta; ARDS; Expectant management severe preeclampsia &lt;34 wks</td>
</tr>
<tr>
<td><strong>Level IV</strong></td>
<td>Level III facility plus onsite medical and surgical care of the most complex maternal conditions and critically ill women and fetuses</td>
<td>Severe cardiac conditions or pulmonary htn Requires neurosurgery</td>
</tr>
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3. IMPROVE THE QUALITY OF PRENATAL CARE

3C. Improve **access** to and utilization of **first trimester prenatal care**

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Commission a broadly representative task force to study degree to which NC women receive risk appropriate maternal and neonatal care

Who is available to provide prenatal care? Where?
Why do only 65% of Medicaid recipients receive prenatal care in the first trimester?
Are the highest risk babies born in facilities with resources and personnel to provide appropriate care? Why are 20% of babies <1500 grams born in hospitals with low delivery volume?
Are maternity hospitals equipped for safe maternal care? Do the highest risk mothers have access to necessary resources for high quality care/
Where are the service gaps? How can they be filled?