A STUDY OF THE STATUS OF RISK APPROPRIATE MATERNAL AND NEONATAL CARE IN NC:
EVIDENCE BASED STRATEGY TO REDUCE INFANT MORTALITY

ChargeTask Force: NC Session Law 2018-93

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STUDY LEVELS OF MATERNAL AND NEONATAL RISK APPROPRIATE CARE: HB741 AND SB 311

Child Fatality Task Force

- 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.

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

3. IMPROVE THE QUALITY OF PRENATAL CARE

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

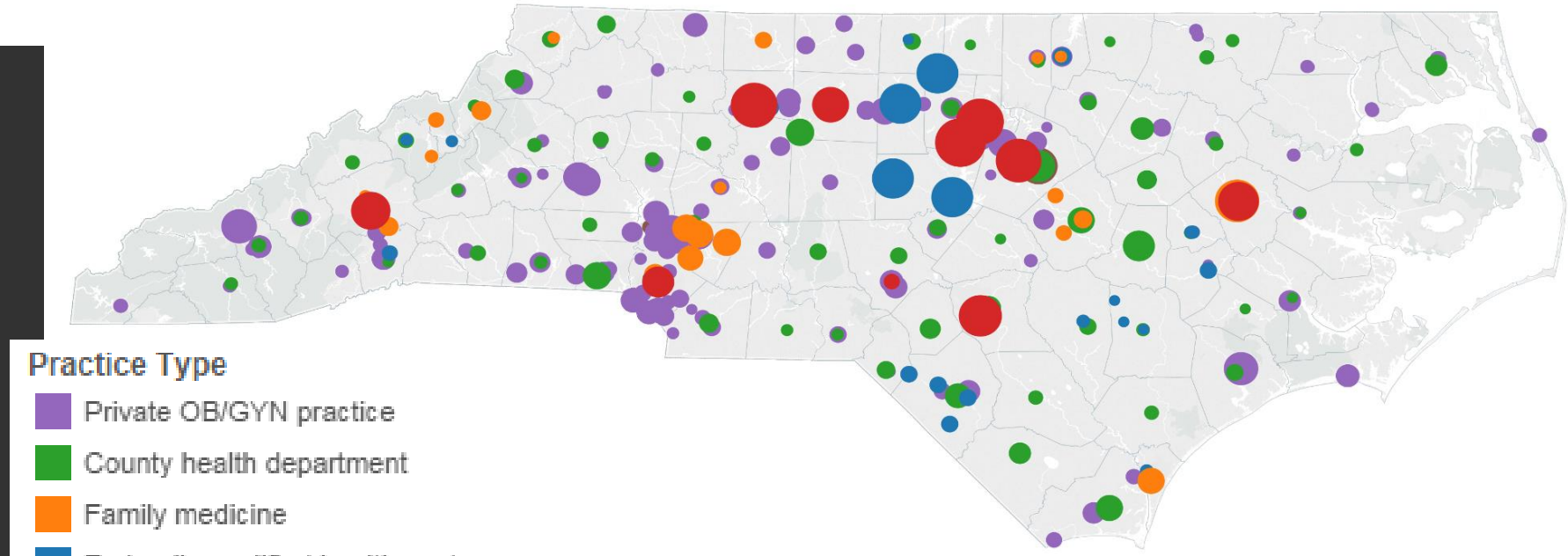
2. Define, identify and promote centers of excellence for VBAC (vaginal birth after cesarean)

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

PMH PROVIDER NETWORK: PARTICIPATION



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 PRENATAL 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?

RISK APPROPRIATE MATERNAL AND NEONATAL CARE

- 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

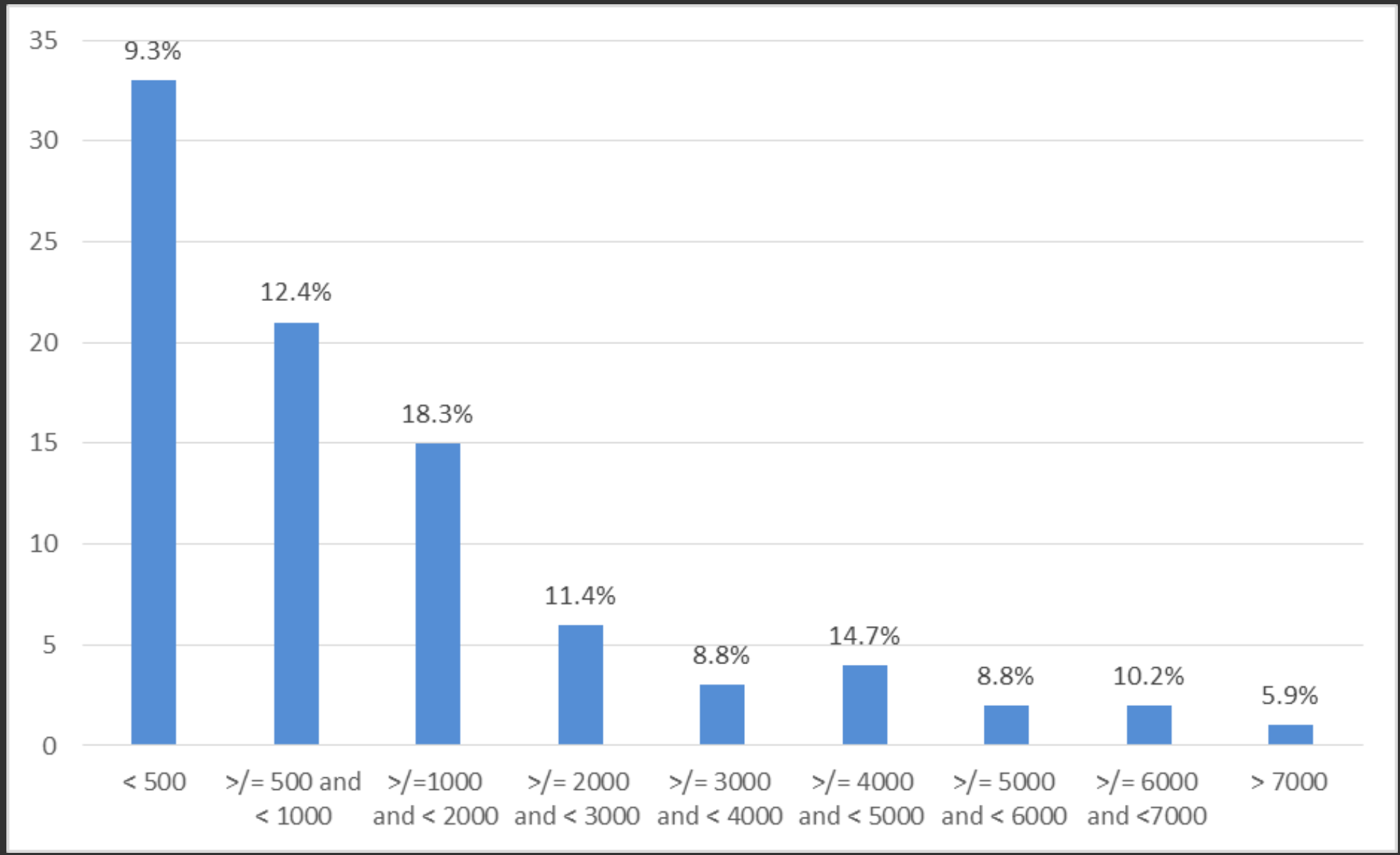
Lasswell, Barfield, Rochat, Blackmon. *JAMA 2010*

2012 AAP LEVELS OF NEONATAL CARE

Level I **(Basic)**	≥ 35 wks who are stable	Stabilize and transfer < 35 weeks
Level II **(Specialty Care)**	≥32 wks or ≥1500 gms who have physiological immaturity	Provide convalescent care after intensive care; Assisted ventilation for ≤24 hours or CPAP
Level III **(Subspecialty Care)**	Continuous life support; Care <32 wks and <1500 gms	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
Level IV	See Level III	Capability to provide surgical repair of complex congenital or postnatal conditions; Immediate at-site access to pediatric subspecialists, pediatric surgeons and pediatric anesthesiologists

Are North Carolina' highest risk infants born in facilities with resources to provide the best care?

Deliveries at North Carolina Facilities by Volume



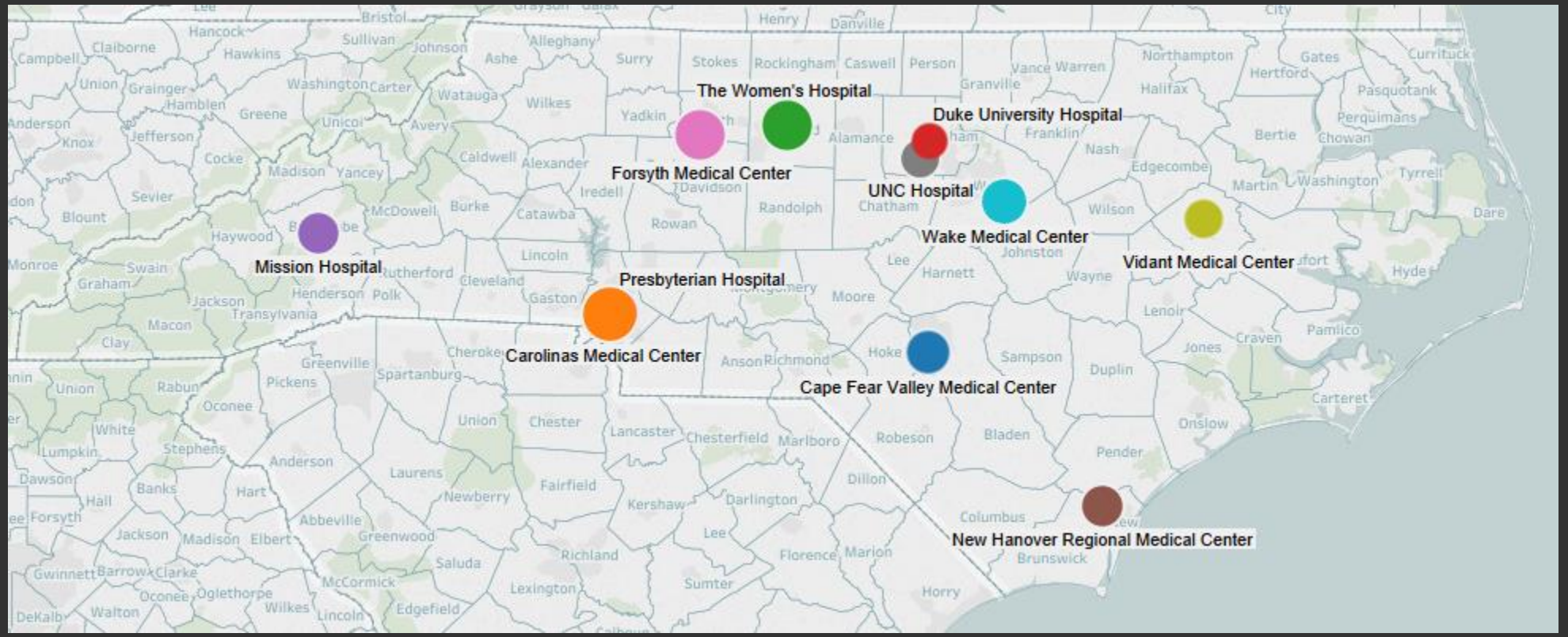
NC VLBW BIRTH BY HOSPITAL TOTAL BIRTH VOLUME, 2014

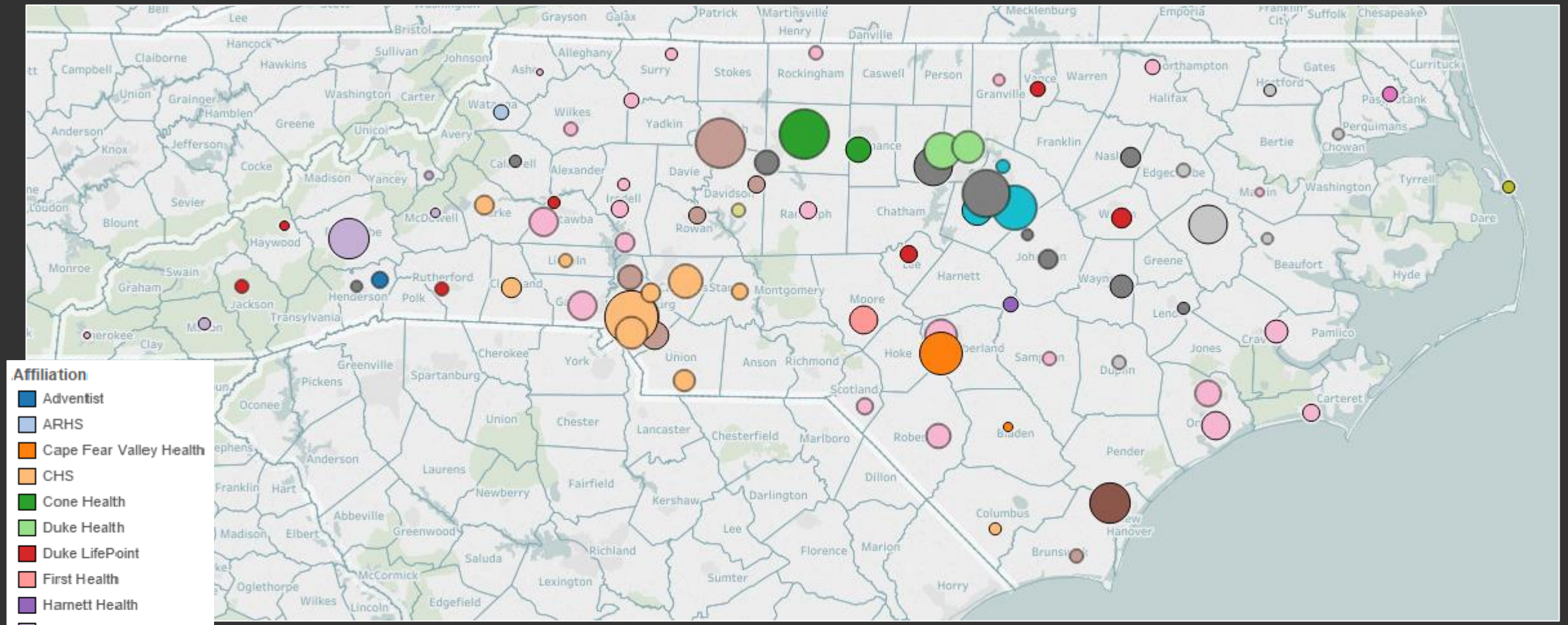
1853 VLBW births

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

228 born w/ 1000 – 2,999 birth

138 (5%) born w/ <1000 births


The Women's Hospital
Duke University Hospital
Forsyth Medical Center
UNC Hospital
Wake Medical Center
Vidant Medical Center
Mission Hospital
Presbyterian Hospital
Carolinas Medical Center
Cape Fear Valley Medical Center
New Hanover Regional Medical Center

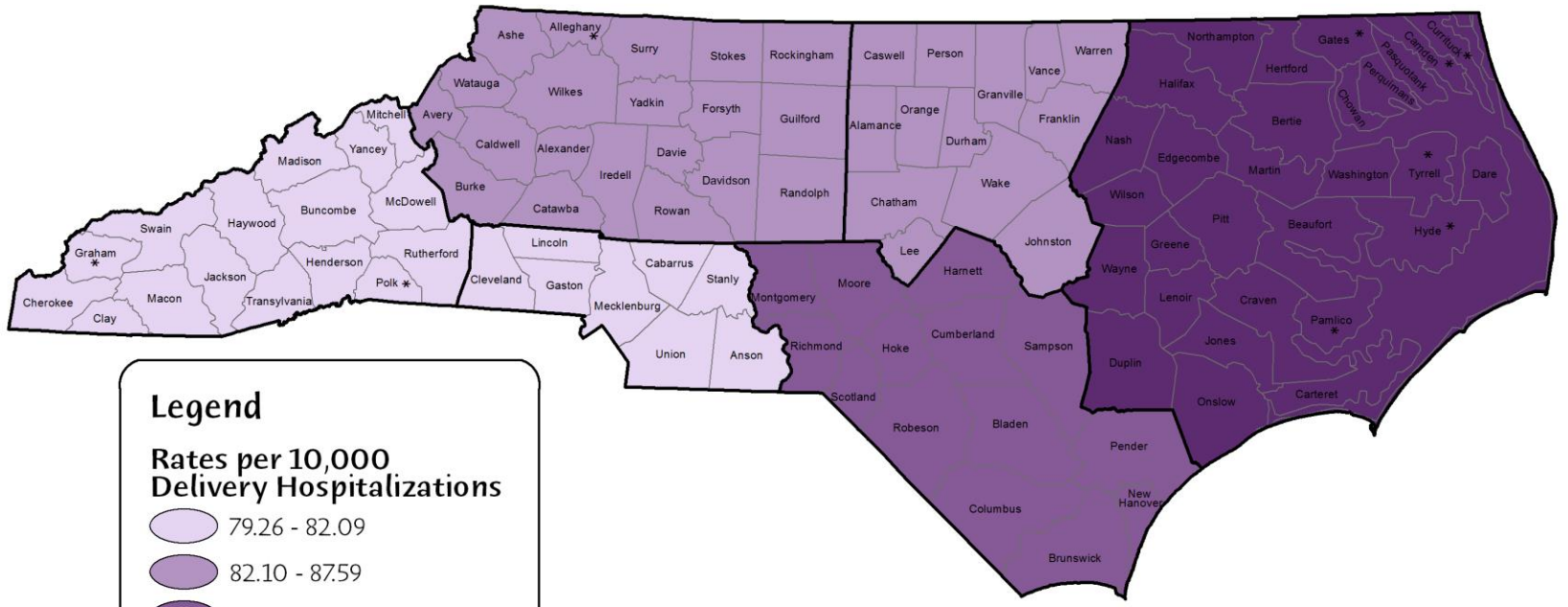

Affiliation
Adventist
ARHS
Cape Fear Valley Health
CHS
Cone Health
Duke Health
Duke LifePoint
First Health
Harnett Health
Mission Health
NHRMC
Novant
Sentara
Unaffiliatied
UNC
Vidant
Vidant and Chesapeak..
Wake Forest Baptist He..
WakeMed

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
- County Boundaries

North Carolina Rate 89.5

schs
State Center for Health Statistics

Note: Includes Cardiomyopathy and excludes Maternal Blood Transfusions.

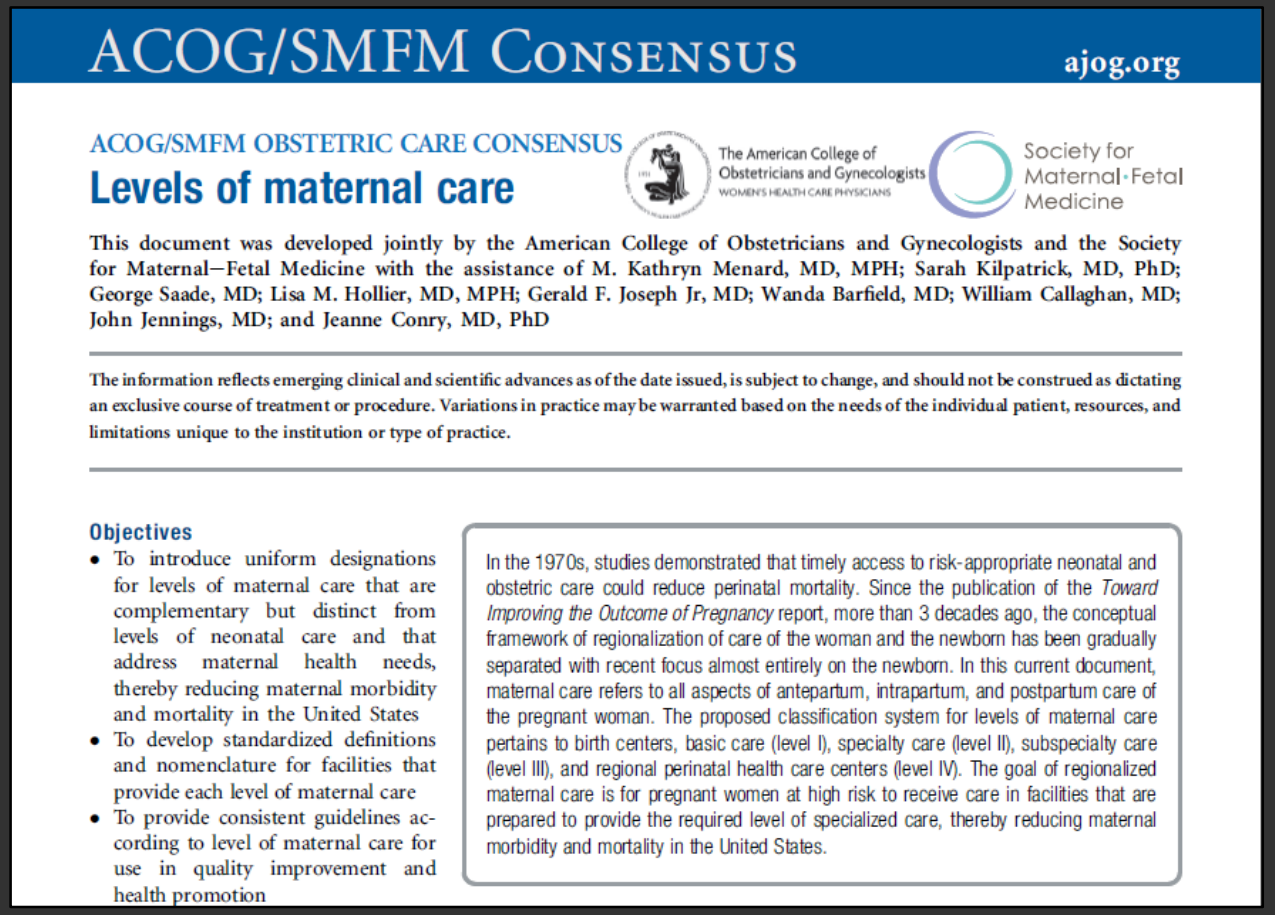
NCPH
North Carolina Public Health

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

LEVELS OF MATERNAL CARE

Provide nationally applicable uniform definitions describing capability of facilities to provide increasing complexity of care to pregnant women



ACOG/SMFM CONSENSUS ajog.org

ACOG/SMFM OBSTETRIC CARE CONSENSUS

Levels of maternal care

The American College of Obstetricians and Gynecologists WOMEN'S HEALTH CARE PHYSICIANS

Society for Maternal-Fetal Medicine

This document was developed jointly by the American College of Obstetricians and Gynecologists and the Society for Maternal–Fetal Medicine with the assistance of M. Kathryn Menard, MD, MPH; Sarah Kilpatrick, MD, PhD; George Saade, MD; Lisa M. Hollier, MD, MPH; Gerald F. Joseph Jr, MD; Wanda Barfield, MD; William Callaghan, MD; John Jennings, MD; and Jeanne Conry, MD, PhD

The information reflects emerging clinical and scientific advances as of the date issued, is subject to change, and should not be construed as dictating an exclusive course of treatment or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institution or type of practice.

Objectives

- To introduce uniform designations for levels of maternal care that are complementary but distinct from levels of neonatal care and that address maternal health needs, thereby reducing maternal morbidity and mortality in the United States
- To develop standardized definitions and nomenclature for facilities that provide each level of maternal care
- To provide consistent guidelines according to level of maternal care for use in quality improvement and health promotion

In the 1970s, studies demonstrated that timely access to risk-appropriate neonatal and obstetric care could reduce perinatal mortality. Since the publication of the *Toward Improving the Outcome of Pregnancy* report, more than 3 decades ago, the conceptual framework of regionalization of care of the woman and the newborn has been gradually separated with recent focus almost entirely on the newborn. In this current document, maternal care refers to all aspects of antepartum, intrapartum, and postpartum care of the pregnant woman. The proposed classification system for levels of maternal care pertains to birth centers, basic care (level I), specialty care (level II), subspecialty care (level III), and regional perinatal health care centers (level IV). The goal of regionalized maternal care is for pregnant women at high risk to receive care in facilities that are prepared to provide the required level of specialized care, thereby reducing maternal morbidity and mortality in the United States.

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 Perinatalogy

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

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

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RECOMMENDATION: INFORMED ACTION PLAN

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?