North Carolina’s
Pregnancy Medical Home

Improving maternity care and birth outcomes in the North Carolina Medicaid population

NASEM Workshop
June 7-8, 2021
Advancing Maternal Health Equity and Reducing Maternal Mortality
NC Birthing Hospitals and Urban & Rural Counties (2019)

Number of Births
- 93 - 858
- 859 - 1,761
- 1,762 - 3,437
- 3,438 - 6,081

Urban or Rural
- Rural
- Urban

Note: Hospitals with less than 20 births have been excluded. Urban is defined as more than 250 persons per square mile.

Source: NC State Center for Health Statistics, Birth Certificate Data
Births by Race/Ethnicity and Medicaid Status (2019)

**US Total**
- NH White: 51%
- NH AA/Black: 24%
- NH AI/AN: 10%
- Hispanic: 15%
- NH Other: 1%

**NC Total**
- NH White: 52%
- NH AA/Black: 23%
- NH AI/AN: 7%
- Hispanic: 38%
- NH Other: 3%

**NC Medicaid**
- NH White: 35%
- NH AA/Black: 23%
- NH AI/AN: 2%
- Hispanic: 3%
- NH Other: 1%

* Percentages may not add to 100% due to rounding. NH=Non-Hispanic

**Sources:** United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics, CDC WONDER & North Carolina Department of Health and Human Services (NC DHHS), Division of Public Health, State Center for Health Statistics (SCHS), Composite Matched Birth file
Maternal Mortality Rates by Race/Ethnicity, HRSA Region 4, 2015-2019

Death while pregnancy or within 42 days of termination of pregnancy, cause related to or aggravated by pregnancy

Source: CDC, National Center for Health Statistics, National Vital Statistics System (NVSS), 2015-2019

Deaths per 100,000 Live Births

Relative Risk=6.0

2001-2004: 9.2
2005-2008: 11.5
2009-2012: 14.2
2013-2016: 15.9

Relative Risk=3.0

2001-2004: 55.5
2005-2008: 34.3
2009-2012: 28.4
2013-2016: 27.7

Relative Risk=2.0

Relative Risk=1.8

Death while pregnancy or within 1 year of termination of pregnancy, cause related to or aggravated by pregnancy

Source: North Carolina Department of Health and Human Services (NC DHHS), Division of Public Health, Women & Children’s Health Section based on NC Maternal Mortality Review Committee (MMRC) data
Percentage of Births Born Low Birthweight\(^1\) by State, 2019

1 Babies born weighing less than 2,500 grams or 5 lbs. 8 oz.

Low Birthweight & Preterm Birth Percentages by Race/Ethnicity: North Carolina, 2019

Source: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics, CDC WONDER

\*NH=Non-Hispanic

Source: North Carolina Department of Health and Human Services, Division of Public Health, State Center for Health Statistics
North Carolina Pregnancy Medical Home

- Established in 2011 in partnership with NC Medicaid, Community Care of NC and NC Department of Public Health
- To improve quality of care, improve birth outcomes and reduce costs in the Medicaid population
- Primary focus is **preterm birth prevention**
  - Engage maternity care providers serving the Medicaid population in quality improvement efforts
  - Community-based care management targeting those at greatest risk
Pregnancy Medical Home Core Components

Population-based enhanced prenatal care model

- **Access to care**: Large network of OB providers
- **Clinical leadership**: Local teams offer provider support, education and technical assistance
- **PMH Care Pathways**: Clinical best practices that reflect the most current evidence base
- **Risk screening**: Standardized, statewide
- **Data**: Informatics at the state, regional, county and practice level
- **Care coordination**: Community-based care management by nurses/social workers
Provider participation: 490 practice locations participate in the PMH program, representing >2,600 providers and more than 90% of maternity care provided to Medicaid patients.
Clinical Leadership

- CCNC network “OB teams”
  - **Physician Champion** – active OB practice, local opinion leader
  - **Nurse Coordinator** – dedicated FTE for program support, working with PMH providers and Pregnancy Care Managers

- **OB team provides PMH practices with:**
  - Practice support/technical assistance
  - Education about clinical initiatives and performance expectations
  - Data to engage in quality improvement

- **OB team shares information from the state level AND listens to concerns of local providers, brings feedback to state level**

- **Central office team works with state-level stakeholders**
PMH Care Pathways

Care Pathways

- PMH Care Pathways provide evidence-based guidance to PMH providers across the state
- Developed through a consensus process by CCNC OB Physician Champions with input from local PMH providers and state-level experts
- Includes supporting materials and local resources

Example Topics

- Hypertensive Disorders of Pregnancy
- Perinatal Tobacco Use
- Substance Use in Pregnancy
- Postpartum Care and the Transition to Well Woman Care
- Progesterone Treatment and Cervical Length Screening
- Obesity in Pregnancy
- Reproductive Life Planning/Postpartum Contraception
- Multifetal Gestation
- COVID 19 Care and Resources
Informatics

CCNC uses Medicaid claims, birth certificates, risk screening data, and care management documentation to produce quarterly metrics for:

- NC Medicaid
- CCNC networks
- PMH practices
- County pregnancy care management programs

Quality measures include:

- Unintended Pregnancy
- Gestational Age at Delivery
- Risk Screening Rate
- Birth Weight
- Mode of Delivery
- First Trimester Care
- Receipt of Care Management
PMH Practice Comparison for Risk Screening During Pregnancy
First Trimester Care

Entry to Care in the 1st Trimester Rate among non-Emergency Medicaid, PMH-attributed pregnancies

\[ y = 0.0008x + 0.6514 \]
\[ R^2 = 0.217 \]
Unintended Pregnancy

Rate of Unintended Pregnancy based on Initial Risk Screening among non-Emergency Medicaid, PMH-attributed pregnancies

y = -0.0026x + 0.5228
R² = 0.7285
Data Visualization
By Race/Ethnicity and Medicaid Status

2015-19 NC Resident Births: % Low Birthweight (< 2500 grams)

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<th>NH White</th>
<th>NH Black</th>
<th>NH AI/AN</th>
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2015-19 NC Resident Births: % Cesarean Birth

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*NH=Non-Hispanic

Source: North Carolina Department of Health and Human Services (NC DHHS), Division of Public Health, State Center for Health Statistics (SCHS), Composite Matched Birth/Medicaid file
Community-Based Pregnancy Care Management Serves Women in All 100 Counties

- Nurses and social workers in local health departments provide assessment, education, advocacy, referral, monitoring
- Pregnancy care managers work closely with prenatal care team; Most are embedded in PMH practices; Face to face contact is encouraged
- Prior to the creation of the PMH program, Maternity Care Coordination in NC was county based and did not target resources to those patients at highest risk of poor birth outcome
- Risk screening form, provider referral, community referral and hospital “admission/discharge/transfer” data feeds identify at-risk patients for care management
Risk vs. Impact: A more effective prioritization model for pregnancy care management

- Risk screening identifies women at risk of preterm birth and low birth weight
  - Does not predict which women will benefit most from care management interventions
  - Identifies 70% of Medicaid pregnancies at high risk
- CCNC used risk screening and care management data to create an Maternal-Infant Impactability™ Score, based on risk factors found on the risk screening form
  - A higher score indicates that the patient is more likely to benefit from pregnancy care management
Impactability™ Score for Pregnant Women

- “Patient-centered task” = phone call or face-to-face encounter
- Benefit at 5 completed patient-centered tasks; greater benefit with 8-10 completed patient-centered tasks
- Greater benefit with face-to-face vs. telephonic
LBW rates among Black and White women in high-risk strata before and after MIIS implementation, 2016 vs 2017

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<td>11.30%</td>
<td>18.10%</td>
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<tr>
<td><strong>WHITE</strong></td>
<td>25.30%</td>
<td>20.80%</td>
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<tr>
<td>ICM-NO</td>
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<tr>
<td>ICM-YES</td>
<td>16.40%</td>
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★ P<0.01
Potential for Pregnancy Medical Home Model to Advance Maternal Health Equity and Reduce Maternal Mortality

- Standardized risk assessment, appropriate identification of need, and connection with local resources
- Practice level process and outcome data, stratified by race/ethnicity
- Locally designed patient centered team-based model
  - Care managers are community members providing culturally appropriate face to face care coordination, education and social support
  - Care managers are embedded in practices
- Provider engagement and accountability
- Practice support for program implementation and quality improvement
- System level monitoring of access, program performance and quality
Contact & Acknowledgements

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