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Pregnancy Medical Home: improving maternal and infant outcomes in the Medicaid population

The Pregnancy Medical Home (PMH) program was established by a State Plan Amendment in March 2011, was launched by CCNC in April 2011, and now includes the majority of maternity care providers across North Carolina. This triple-aim initiative is intended to improve the quality of care for pregnant Medicaid patients, improve birth outcomes and reduce health care costs, with a specific focus on the reduction of preterm birth.

The PMH model includes **six core components**:

1. **Statewide Provider Network:** there are currently **more than 380 PMH practices** and **2,100 individual PMH providers**, with PMH practices in 94 of 100 counties. 94% of practices that serve pregnant women with Medicaid participate in the PMH program.

2. **Standardized Risk Screening:** nearly 80% of patients who receive care in a PMH are assessed using CCNC's standardized risk screening tool. The screening tool captures medical, obstetric and psychosocial risk factors associated with preterm birth. CCNC receives more than 40,000 screens annually from PMH providers.

3. **Community-Based Care Management**: Pregnancy Care Management is a care coordination model for pregnant Medicaid patients at risk of preterm birth who were identified using the PMH risk screening form and other patient identification strategies. Services are delivered by nurses and social workers in local health departments working by contract with CCNC networks. A Pregnancy Care Management Standardized Plan guides the work of care managers. Pregnancy care managers are expected to work in close collaboration with PMH providers. More than 50% of all pregnant Medicaid patients receive care management, with 16,000 receiving services at any given point in time.

4. **Local Clinical Leadership:** within each CCNC network are OB physician champions, who are opinion leaders from major academic centers, large health systems, public health departments, urban and rural OB/GYN practices, and OB nurse coordinators, all working together to offer the entire PMH provider community consistent messages and support.

5. **Care Pathways**: the PMH program promotes **clinical best practices that reflect the most current evidence base** in terms of strategies to prevent preterm birth. PMH Care Pathways, available on CCNC's website, are used to standardize care, promote best practices, and set performance expectations across all PMH settings. PMH Care Pathways are developed by CCNC physician champions with input from local OB providers. Pathway topics focus on the management of pregnancy-related conditions, including hypertension, obesity, tobacco use, substance use, and multiple gestation, and specific components of care, such as induction of labor, progesterone treatment, postpartum care, and family planning.

6. **Informatics**: CCNC uses **Medicaid claims, birth certificates and risk screening data** to produce quarterly metrics for DMA, local CCNC networks, PMH practices, and county-based pregnancy care management programs. **Measurement of clinical quality** reflects program priorities, such as use of progesterone, timeliness of entry to prenatal care, postpartum care and contraception, risk screening, tobacco cessation counseling, mode of delivery, receipt of care management and others.

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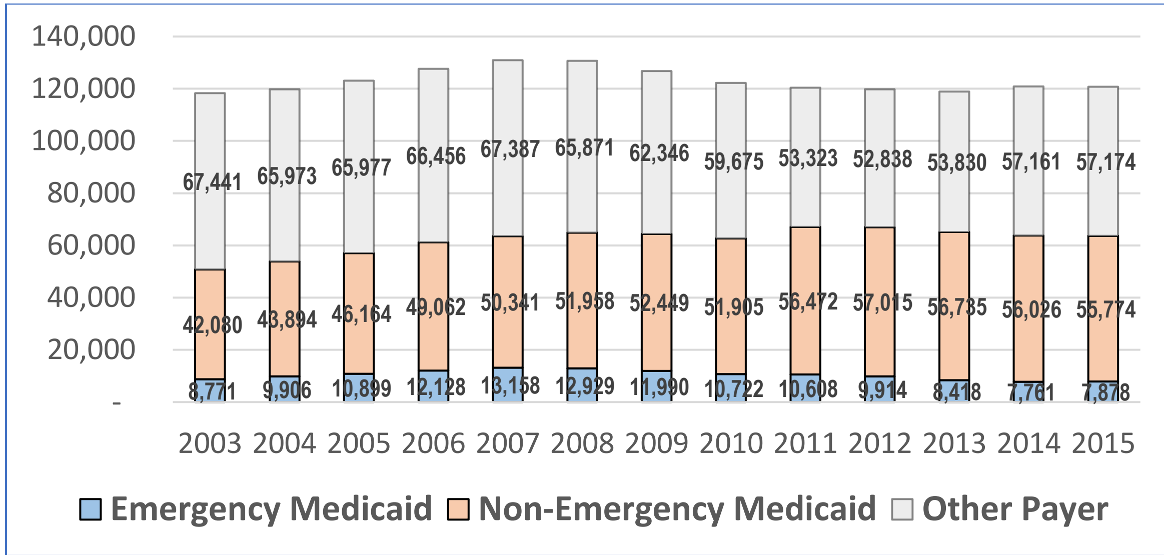
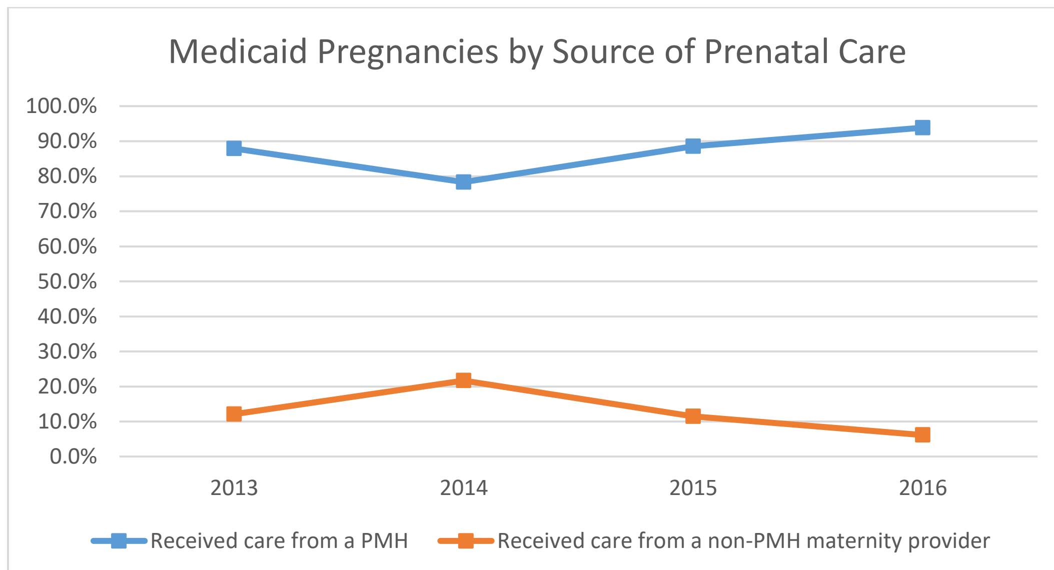
CCNC manages the pregnant Medicaid population through the Pregnancy Medical Home and Pregnancy Care Management programs. The size of the pregnant Medicaid population has grown significantly over the past decade, from 36% to more than 46% of all births in North Carolina.

North Carolina Births, 2003 – 2015, by payer type



<u>Medicaid pregnancies receiving care in a PMH:</u>
The majority of pregnant Medicaid patients receive care in a PMH. Among 2016 Medicaid pregnancies for whom a prenatal care provider could be identified, 94% received care in a PMH, an increase from 88% in 2013. Data quality issues in the spring of 2014 affected the ability to use prenatal care claims to attribute pregnancies to a PMH provider. As of March 2017 (the most recent time period for which linked birth certificate/Medicaid claims data are available), **95.4% of Medicaid pregnancies received care in a PMH practice**.



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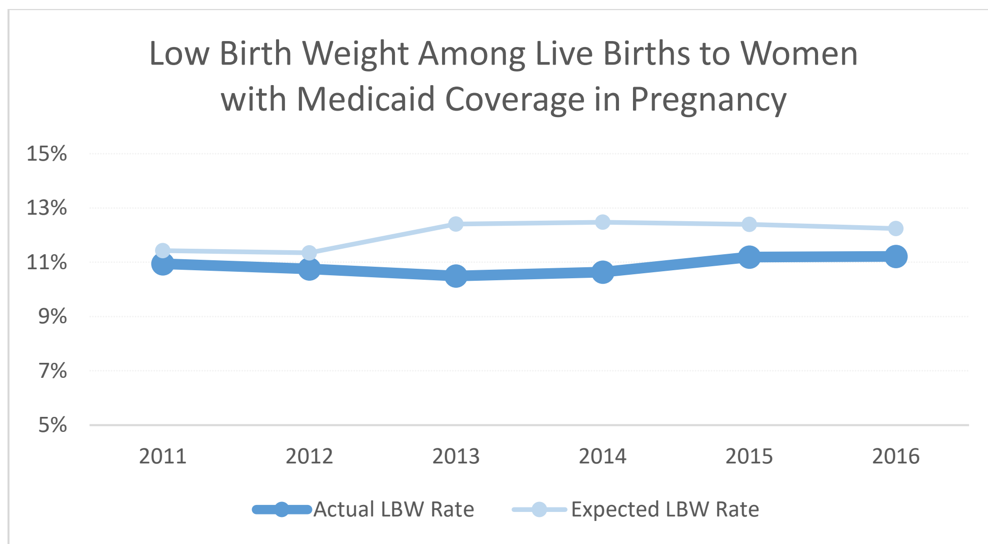
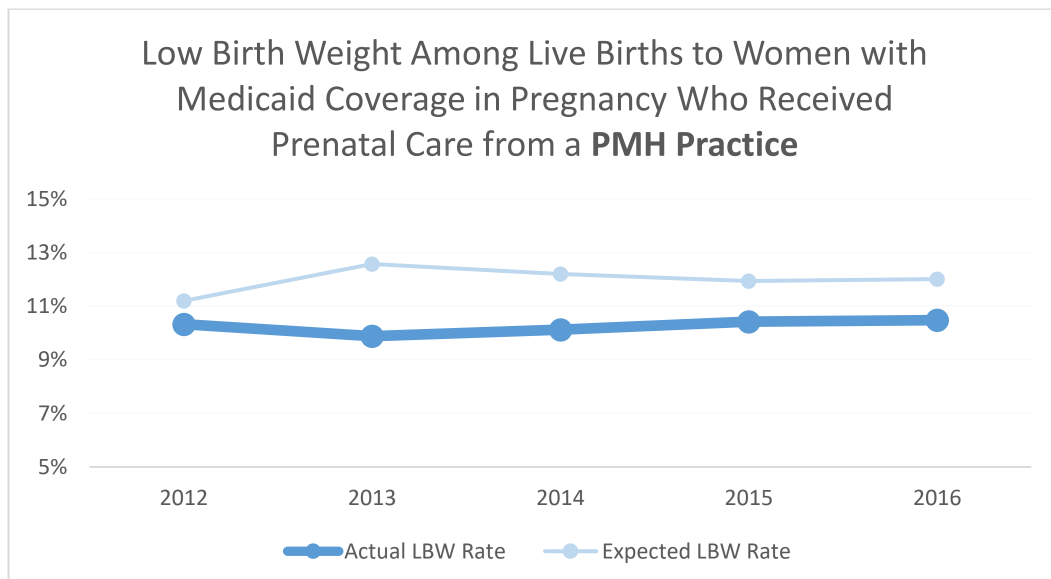
Low birth weight in the Medicaid population:

Low birth weight (LBW) is a key performance indicator in the PMH program. The rate of LBW in the Medicaid population is lower than expected, when controlling for changing patient characteristics over time (for example, the average BMI of pregnant Medicaid patients has increased during this time period, and there has been an increase in the prevalence of hypertension among women at younger ages). Predictive analytics are used to calculate the expected vs. actual rate of LBW in the Medicaid population. The expected rate of LBW is based on a predictive model for LBW occurring among all Medicaid births from 2012-14; this model accounts for variation over time in multi-fetal gestation, race, education, age, parity and BMI. Because these data are available from the birth certificate for all Medicaid births, the model is applied to all births, including those where the woman was not enrolled in the Pregnancy Medical Home program. Women receiving care in a PMH have a lower-than-expected rate of LBW, while those who do not receive PMH care have a higher-than expected rate.



Low birth weight among Medicaid patients who received care in a PMH practice:



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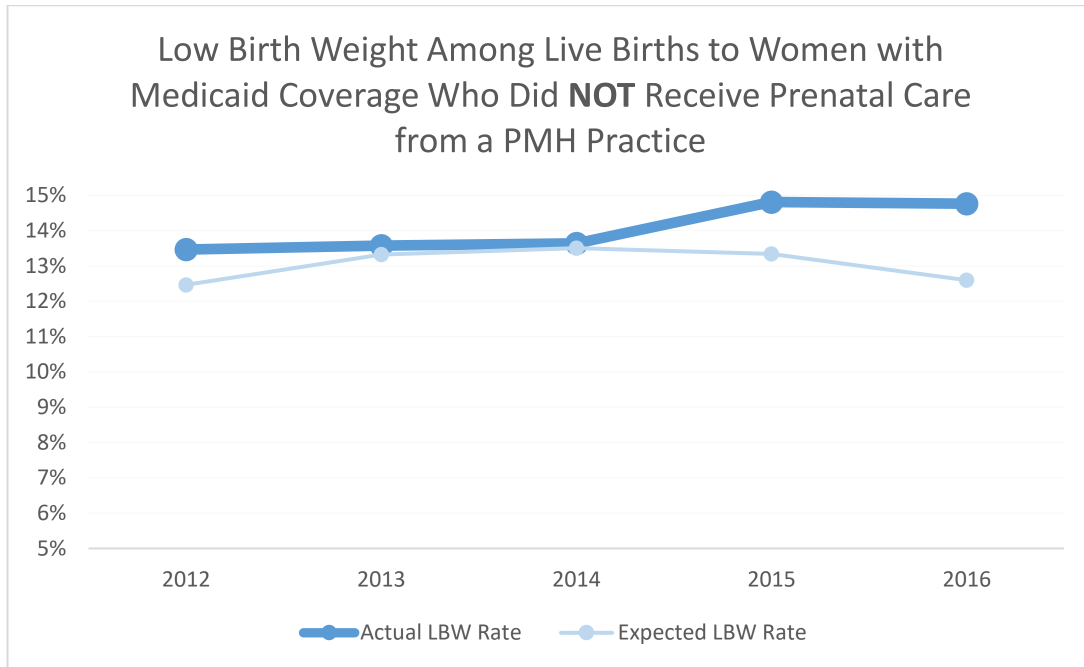
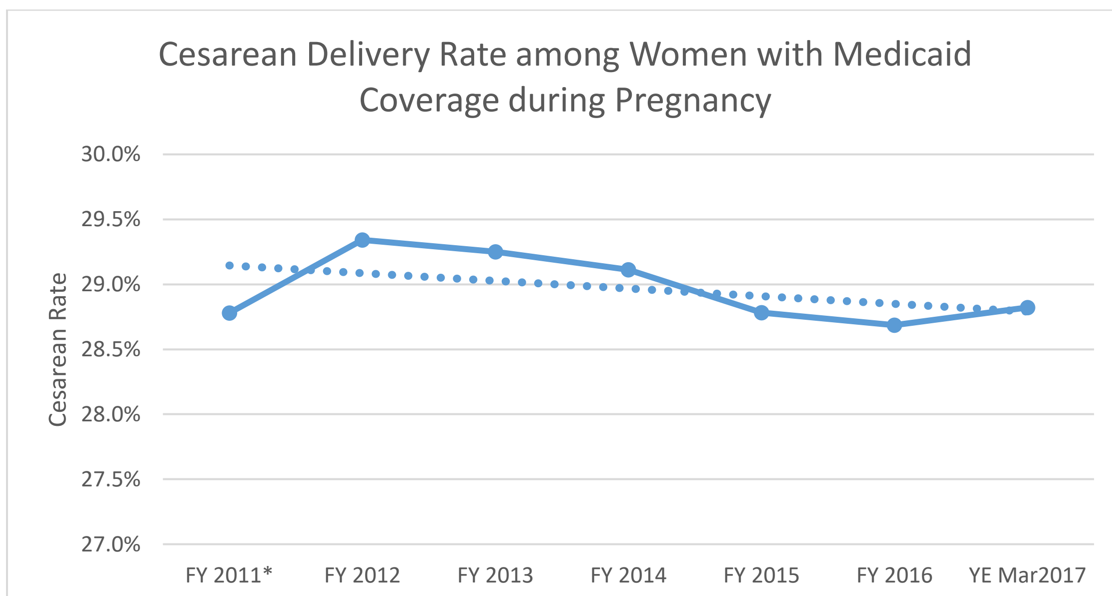
Low birth weight among Medicaid patients who did not receive prenatal care in a PMH practice:



Cesarean delivery:

Cesarean delivery is a driver of higher costs and poor health outcomes due to longer and more complex hospitalizations at the time of delivery and risk for future complications in subsequent pregnancies following each additional cesarean delivery. The c-section rate in the NC Medicaid population is below the national average (32% in 2015) and shows steady decline (the 2011 rate depicted here is based on only 6 months of data; due to NC's transition to the electronic birth certificate in late 2010, it was not possible to analyze a full year of data).



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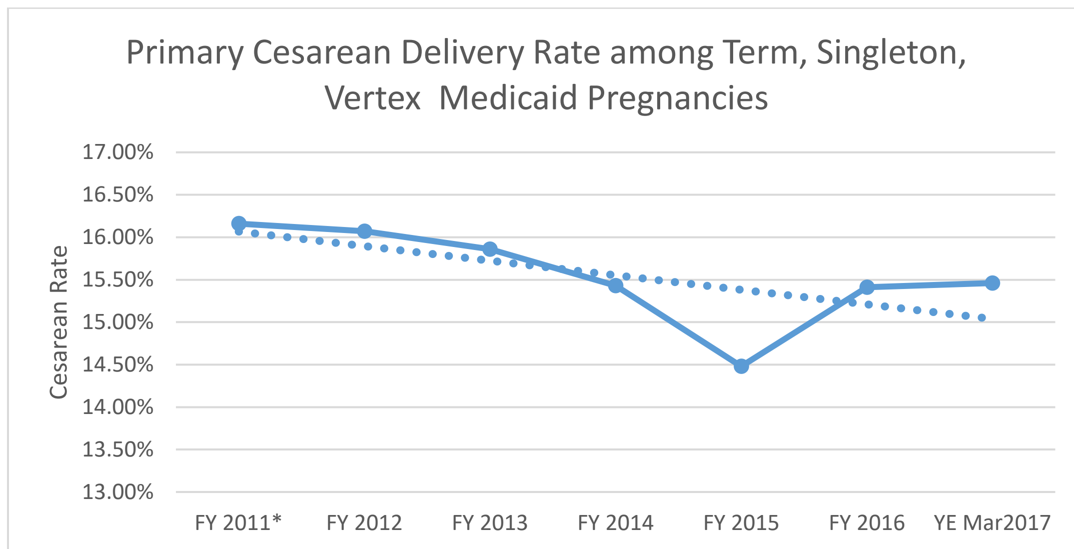
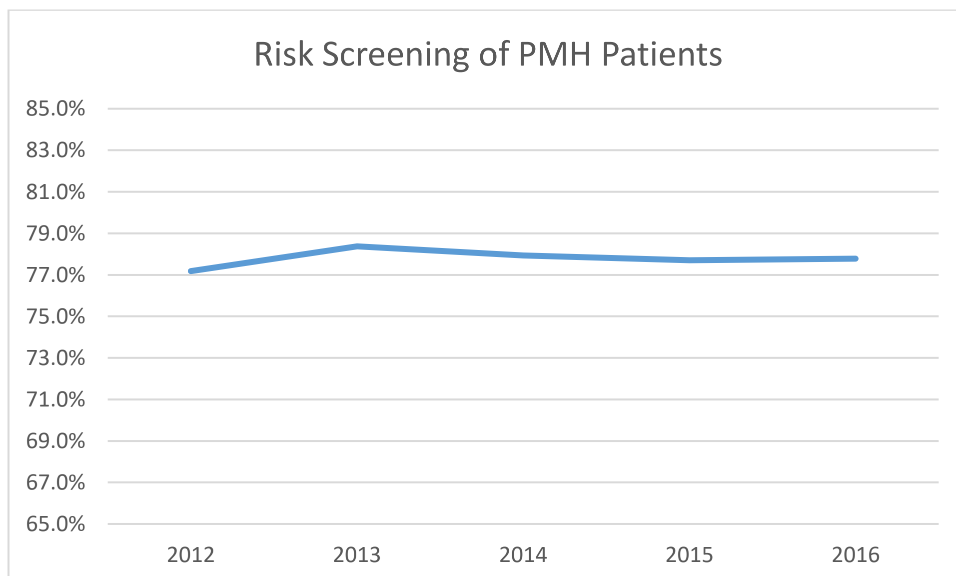
The risk-adjusted primary cesarean delivery rate (rate of first c-sections) among women with Medicaid coverage during pregnancy is an important performance indicator, because presenting the first c-section is the most effective means to prevent cesarean deliveries, and their associated complications, in future pregnancies. An issue with data quality in FY15 created an outlier data point for this rate. This rate was benchmarked at 16% for PMH providers.



Risk Screening:

Risk screening is one of the core performance expectations that providers agree to when joining the PMH program. This rate is consistently just below 80%, allowing for immediate identification of the majority of the pregnant Medicaid population, a significant challenge in population health management models for pregnant women. CCNC is launching a statewide quality improvement initiative to increase the rate of risk screening and ensure that patients are screened as early in pregnancy as possible.



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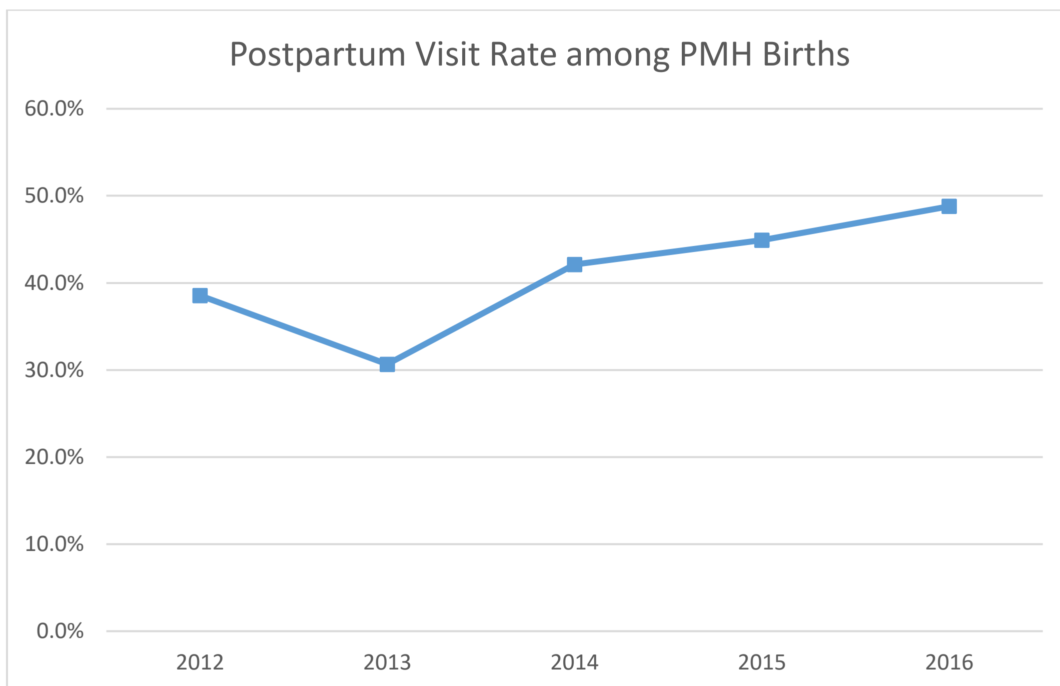
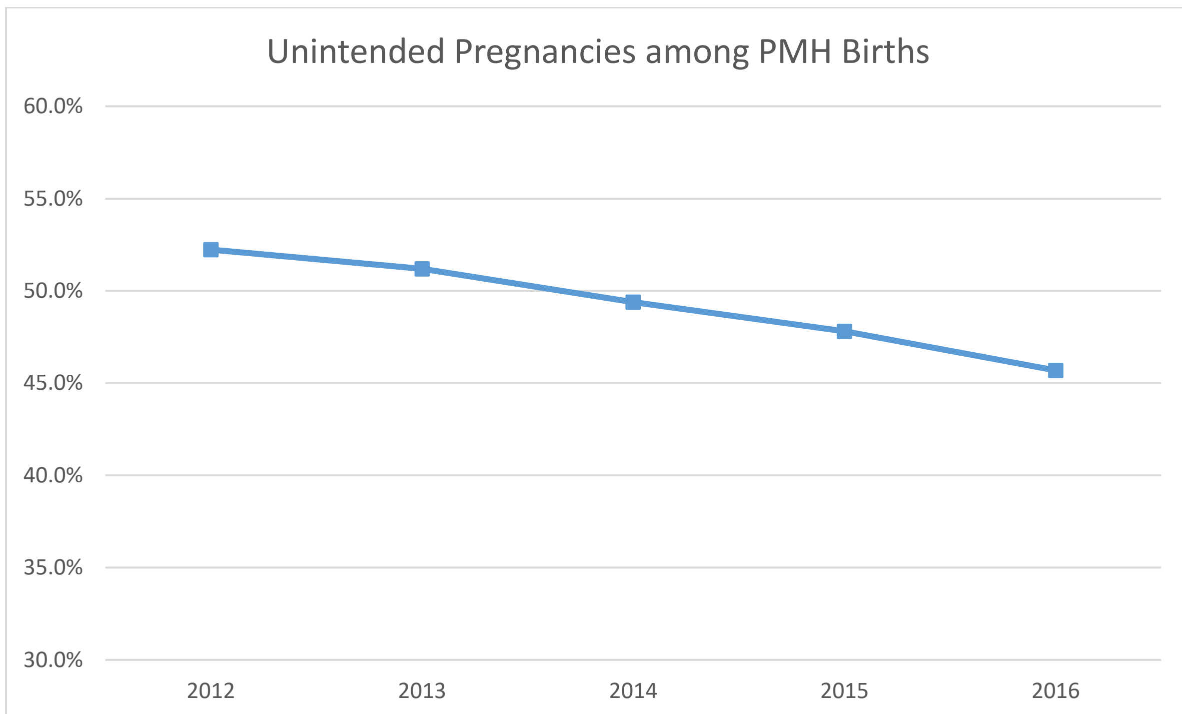
Postpartum Care:

Postpartum follow-up with the maternity care provider is important to address chronic health conditions, postpartum complications, lifestyle management, and family planning. Measurement of postpartum visits is complicated by the fact that the majority of OB care is billed using a single code for the entire package of maternity care, which does not capture the unique postpartum visit. The PMH program implemented a postpartum visit incentive for participating providers, which is billed with a unique billing code. Issues with the use of this code have resulted in under-representation of the true postpartum visit rate, but there has been a steadily increasing trend over time. CCNC ran a statewide quality improvement initiative in 2016 which revealed that actual rates of postpartum visits are higher than reflected by postpartum incentive claims and which resulted in documented best practices to increase the proportion of pregnant Medicaid patients who receive a postpartum visit. Successful interventions included scheduling the visit earlier in the postpartum period than the traditional six-week interval, ensuring patients have a scheduled appointment before discharge at the time of delivery, and coordination with the pregnancy care manager.



<u>Unintended pregnancy</u>:

The rate of unintended pregnancy has declined significantly since the launch of the PMH program. This is important because unintended pregnancies are associated with a greater risk of poor pregnancy outcome (preterm birth) and subsequent risk for additional complications, such as child abuse. The PMH program has provided extensive support and education to both providers and patients to ensure access to highly effective forms of contraception for the Medicaid population, as well as removing barriers to permanent sterilization for those patients requesting this procedure. PMH leadership has worked closely with DMA Clinical Policy and medical leadership to improve access to contraception and has collaborated with the NC Division of Public Health to address barriers for Medicaid patients receiving care in health department family planning clinics.



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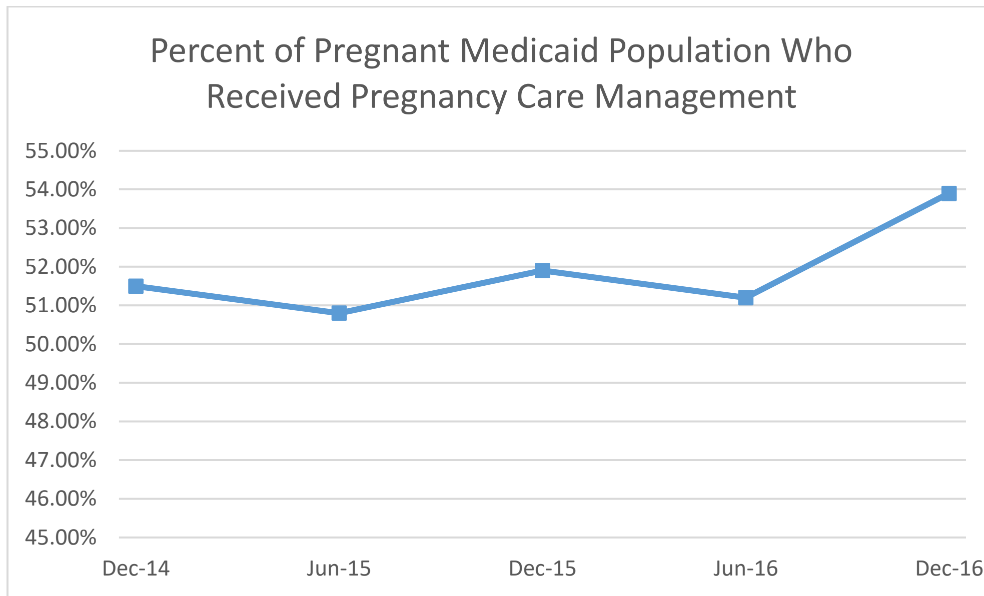
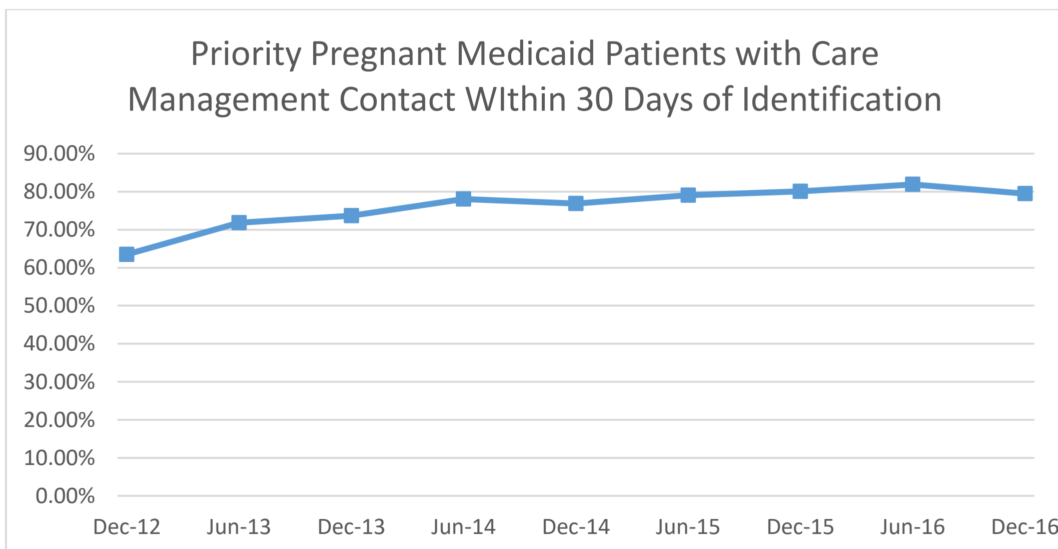
Pregnancy Care Management:

Pregnancy Care Management is the primary patient-level intervention of the PMH model. While funded separately and carried out by nurses and social workers in local health departments working under contract with CCNC networks, it is fully integrated into CCNC's PMH program. Care managers are considered part of the prenatal care team and have regular presence at each PMH practice. They work to assure that the patient is able to adhere to her clinical care plan, to address barriers, and to promote self-management and self-advocacy through assessment, education, advocacy, social support and referral.

Pregnancy care management has consistently provided services to more than half of all pregnant Medicaid patients:



The majority of patients who meet priority criteria receive timely care management outreach:



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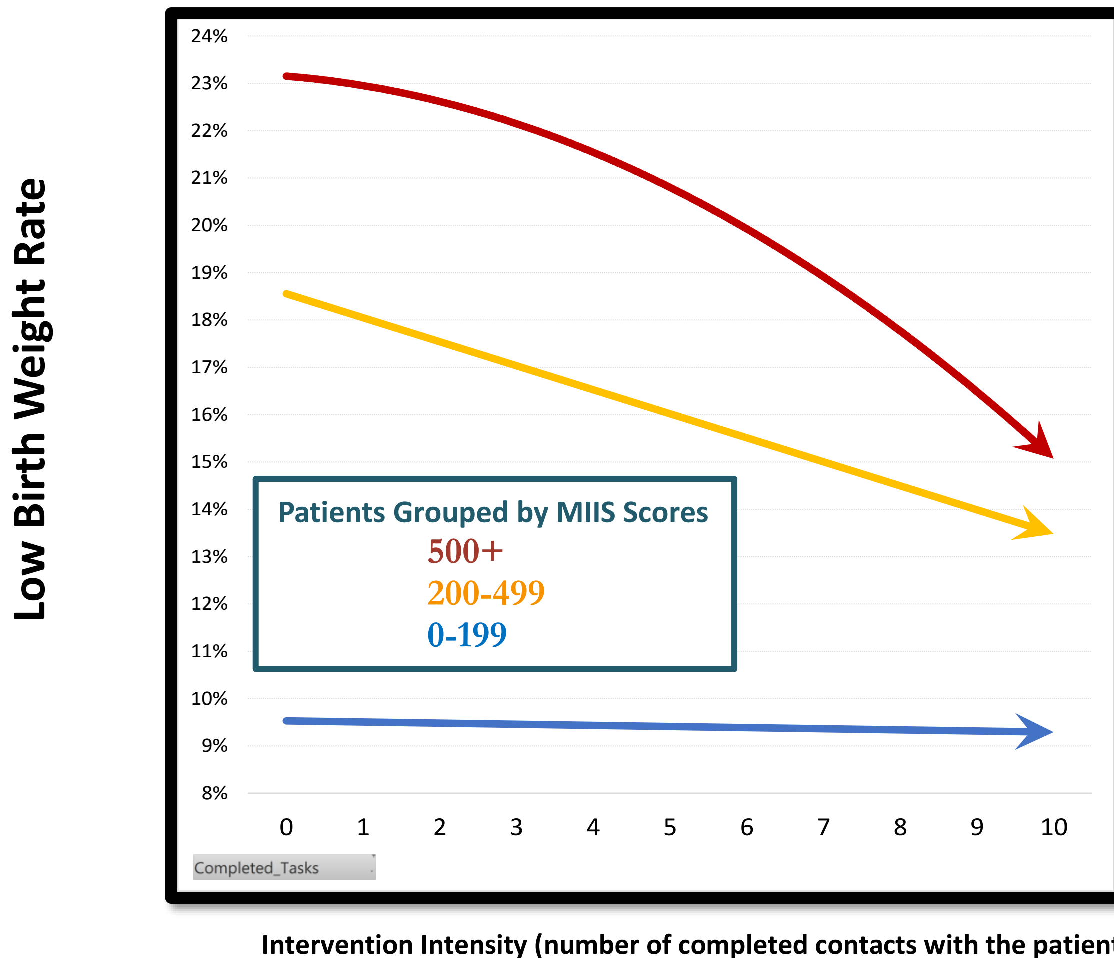
The impact of pregnancy care management on birth outcomes was thoroughly evaluated in 2016, resulting in the development of the Maternal-Infant Impactability Score (MIIS) to prioritize patients for intensive care management. This will allow program resources to be focused more intensively on a smaller proportion of the pregnant Medicaid population, but with greater impact on birth outcomes.

The evaluation demonstrated that patients with certain combinations of characteristics and risk factors benefit more from pregnancy care management than others, in terms of a reduced risk of low birth weight. Pregnant patients are now assigned a score from 0-1,000, reflecting their "impactability", or the degree to which pregnancy care management can influence the birth outcome. The data also indicated that, in order to achieve full impact, intensive intervention, involving at least 8-10 interactions with the care manager during pregnancy, is needed. Patients with a score of 500-1,000 are highly impactable, with a 30% reduction in LBW risk if they receive the intensive care management intervention. Patients with a score of 200-499 are moderately impactable.

Impact of Pregnancy Care Management by Patient Group (Maternal-Infant Impactability Score)



Focusing care management services on the most impactable women, with the appropriate level of intensity, will result in approximately 700 fewer low birth weight deliveries in the Medicaid population annually, yielding a savings of approximately $35 million per year.