



*Commonwealth of Virginia
Department of Medical Assistance Services*

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*Improving Birth Outcomes Through
Adequate Prenatal Care Study*

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Delmarva Foundation

Submitted by
Delmarva Foundation for Medical Care
9240 Centreville Road
Easton, Maryland 21601-7098

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Improving Birth Outcomes through Adequate Prenatal Care

Executive Summary

The Virginia Department of Medical Assistance Services (DMAS) is responsible for evaluating the quality of prenatal care provided to pregnant women enrolled in the Family Access to Medical Insurance Security (FAMIS) FAMIS MOMS and Medicaid for Pregnant Women programs. DMAS contracted with the Delmarva Foundation for Medical Care, Inc. (Delmarva) as the External Quality Review Organization (EQRO) to conduct a prenatal care/birth outcomes focused clinical study as an optional EQR task under the Centers for Medicare & Medicaid Services (CMS) Medicaid guidelines.

The Medicaid for Pregnant Women program is funded under Title XIX (Medicaid State Plan) serving pregnant women with incomes up to 133 percent of the federal poverty level (FPL). The FAMIS MOMS program is funded under Title XXI (CHIP Demonstration Waiver) and serves pregnant women with incomes up to 200 percent FPL during the time period covered by this study. FAMIS MOMS provides benefits similar to Medicaid through the duration of the pregnancy and for 60-days postpartum.

Women must have a medically confirmed pregnancy in order to enroll in these programs. Care coordination is available for pregnant women who are identified as high-risk in both the Medicaid and FAMIS MOMS programs. Beginning prenatal care within the first trimester and obtaining the recommended number of prenatal care visits are essential to reducing the likelihood of maternal and newborn complications. Complications, including low birth weight (LBW) infants and premature births can result in long-term health and developmental problems for the child and family. Access to high quality services are expectations for all persons enrolled in Medicaid and are particularly critical for pregnant women to ensure optimal birth outcomes.

The aim of the study was two-fold: 1) to evaluate the adequacy of prenatal care for pregnant women in these two programs; and 2) to determine the impact of prenatal care on birth outcomes. This study evaluated the status of prenatal care and birth outcomes and compares the performance of the FAMIS MOMS and Medicaid for Pregnant Women programs with each other and with national averages for births that occurred in calendar years (CY) 2007, 2008, and 2009.

Findings and Recommendations

The majority (92.8 percent) of pregnant women were enrolled in the Medicaid for Pregnant Women program while 7.2 percent were enrolled in the FAMIS MOMS program. The percentage of pregnant women enrolled in an MCO increased and exceeded 71 percent in 2009 while women enrolled in FFS and PCCM decreased each year from 2007 to 2009.

Women in both programs received adequate prenatal care at rates that are notably better than the national averages. However, infants born to women enrolled in the Medicaid for Pregnant Women program experienced low birth weight rates that were less favorable when compared to the national benchmark.

Adequate Prenatal Care Rates for CY 2007, 2008 and 2009

- Women in the FAMIS MOMS and Medicaid for Pregnant Women programs received adequate prenatal care at rates that were more favorable than the HEDIS[®] National Medicaid Managed Care Averages in all years.

Overall Low Birth Weight (LBW)

- LBW rates for FAMIS MOMS improved during the three years and outperformed the national benchmark in both 2008 and 2009.
- LBW rates for infants born to women in a managed care organization were the most favorable in all years when compared to both FFS and PCCM and with the national benchmark.
- LBW rates for FFS enrollees were the least favorable of all delivery systems and when compared with the national benchmarks for all years.

Preterm Infants

- The rate of infants born prematurely (before 37 completed weeks of pregnancy) in the FAMIS MOMS and Medicaid for Pregnant Women programs was more favorable than the national rates for all three years.

Recommendations

Women who are eligible for Medicaid or the FAMIS MOMS Programs due to pregnancy are considered to be at increased risk for adverse birth outcomes. Health care coverage may improve access to care but does not guarantee improved outcomes. Other considerations such as social determinants of health including race, ethnicity, and socioeconomic factors related to poverty, housing and access to health services play a role in health outcomes. Further, cultural beliefs impact the effectiveness of evidenced based care. The ability to analyze variables and gaps in expected outcomes can help to identify effective, focused interventions to improve birth outcomes.

Improving Birth Outcomes through Adequate Prenatal Care

Introduction

The Virginia Department of Medical Assistance Services (DMAS) is responsible for evaluating the quality of prenatal care provided to pregnant women enrolled in the Family Access to Medical Insurance Security (FAMIS) FAMIS MOMS and Medicaid for Pregnant Women programs. DMAS contracted with the Delmarva Foundation for Medical Care, Inc. (Delmarva) as the External Quality Review Organization (EQRO) to conduct a prenatal care/birth outcomes focused clinical study as an optional EQR task under the Centers for Medicare & Medicaid Services (CMS) Medicaid guidelines.

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Women must have a medically confirmed pregnancy in order to enroll in these programs. Care coordination is available for pregnant women who are identified as high-risk in both the Medicaid and FAMIS MOMS programs.

Beginning prenatal care within the first trimester and obtaining the recommended number of prenatal care visits are essential to reducing the likelihood of maternal and newborn complications. Complications, including low birth weight (LBW) infants and premature births can result in long-term health and developmental problems for the child and family. Access to high quality services for all persons enrolled in Medicaid is very important and particularly critical for pregnant women to ensure optimal birth outcomes.

Purpose and Objectives

The aim of the study was two-fold: 1) to evaluate the adequacy of prenatal care for pregnant women in these two programs; and 2) to determine the impact of prenatal care on birth outcomes. This study evaluated the status of prenatal care and birth outcomes and compares the

performance of the FAMIS MOMS and Medicaid for Pregnant Women programs with each other and with national averages for births that occurred in calendar years (CY) 2007, 2008, and 2009.

Methodology

The Virginia Department of Health (VDH) Birth Registry and DMAS' Medicaid enrollment data were used to identify the eligible population (denominator) for the births that occurred in CY 2009. Birth Registry data was analyzed to identify all births occurring during CY 2009. This data was linked to enrollment data using appropriate member identifiers. The enrollment data provided the demographic strata needed to perform the required analysis.

The following data files for calendar year 2009 were used in conducting this administrative data study to assess birth outcomes for women enrolled in FAMIS MOMS or Medicaid for Pregnant Women* programs:

- Enrollment Files—Including gender, race/ethnicity, date of birth, and the enrollment spans for both the FAMIS MOMS and Medicaid for Pregnant Women programs and the three delivery systems (Fee for Service (FFS), Primary Care Case Management (PCCM) and Managed Care Organization (MCO))
- Birth Registry—Women who met the enrollment criteria of gender, race/ethnicity, date of birth and had a live birth in calendar year 2009.

The birth outcomes study used enrollment and birth registry data as the primary data source. Both the encounter/claims and hospital data were used only as a secondary analysis to confirm the indicator results from the primary data in the birth registry. The indicator results from the birth registry (trimester in which prenatal care began and frequency of prenatal visits) were substantiated by this confirmatory analysis in both CY 2008 and 2009.

- Encounter/Claims Data—Including all professional/provider claims regardless of place of service where the dates of service were in the range April 1, 2008 – December 31, 2009.
- Hospital Data—Including all inpatient data where the dates of service were in the range of April 1, 2008 – December 31, 2009.

*Prenatal Data containing the Other Medicaid population is included in Appendix 3.

After merging the birth registry and enrollment data, analyses were performed using SAS[®] Base software, a product of SAS Institute, Cary, North Carolina. The SAS[®] programs were modified to reflect each of the calendar years being analyzed. All programming was validated by a research scientist to assure the analytic logic. Results from these programs were compared with those from previous years to determine whether the eligible population size was as expected and that data appeared complete.

Since the Virginia Birth Registry data was the primary data source, the Kotelchuck Index, also called the Adequacy of Prenatal Care Utilization (APNCU) Index, was used to analyze the data. The Kotelchuck Index defines the expected number of visits based on the American College of Obstetricians and Gynecologists (ACOG) prenatal care standards for uncomplicated pregnancies and is adjusted for gestational age. This index identifies two crucial elements obtained from birth certificate (self-reported) data: when prenatal care began and the number of prenatal visits from initiation of prenatal care to delivery. The final measure combines these two dimensions into a single summary score. Adequate prenatal care as defined by the Kotelchuck Index is a score of > 80 percent.

Although some specifications were modified to meet the needs of DMAS, the Healthcare Effectiveness Data & Information Set (HEDIS[®]) Vol. 2, Technical Specifications were used as the model for constructing the indicators, numerators, and denominators. HEDIS[®] was developed and is maintained by the National Committee for Quality Assurance (NCQA) and is the most widely used set of performance measures in the managed care industry. The study results are compared with the corresponding HEDIS[®] measure: Frequency of ongoing Prenatal Care (FPC). The HEDIS[®] measure assesses the percentage of Medicaid women in managed care organizations who received the expected number of prenatal care visits. It should be noted that while over 71 percent of the FAMIS MOMS and Medicaid for Pregnant Women populations were enrolled in Managed Care Organizations (MCO), the remainder are in Fee for Service (FFS) and the Primary Care Case Management (PCCM) programs and the average results are not entirely comparable.

The eligible populations for this study were identified from both the Virginia Birth Registry and the DMAS enrollment file. To be included, a new mother must have been enrolled in either the FAMIS MOMS or the Medicaid for Pregnant Women program and in one of the three delivery systems for a minimum of 43 days prior to and including the date of delivery. Then, based on these identified populations, the Virginia Birth Registry data was utilized for calculating the various indicator results.

The most recent national data available from the Centers for Disease Control and Prevention (CDC) National Center for Health Statistics (NCHS), National Vital Statistics System (NVSS), was used as national averages for comparative purposes.

Study Indicators

The study results provide information about the adequacy of prenatal care, the timeliness of pregnant women receiving care, and the outcomes related to pregnancies of women who were enrolled in the FAMIS MOMS or Medicaid for Pregnant Women programs for CY 2009 and met the criteria for inclusion in the study. Please note that for indicators related to birth weight and gestational periods, the overall denominator will be slightly larger due to multiple births. Specifically, this report was designed to address a number of objectives:

- Determine to what extent pregnant women received adequate prenatal care to include both early prenatal care and the recommended number of prenatal care visits.
- Compare the adequacy of prenatal care rates among FAMIS MOMS and Medicaid for Pregnant Women programs with national averages.
- Determine the percentage of infants born with low (LBW), moderately low (MLBW), and very low birth weight (VLBW).
- Compare the birth outcomes by program and delivery system with national averages.

Study Population

The study population included women with a birth documented in the Virginia Birth Registry and who were also found in the DMAS enrollment file for CY 2009. The study population was limited to those who were enrolled in managed care or FFS for at least 43 days prior to delivery and on the Day of Delivery (DOD). All data in this report are based on those deliveries that meet the study criteria, not all deliveries. Results are provided for the FAMIS MOMS and the Medicaid for Pregnant Women populations and by the following delivery systems:

- FFS (considered traditional Medicaid).
- The Medallion II managed care program, in which recipients enroll in an MCO that provides care through its network of providers.
- The MEDALLION PCCM is a program administered by DMAS in which recipients select a primary care provider who provides a medical home and authorizes some specialty care.

When interpreting the findings of this study, it is important to note the size of the program populations in the following three tables.

Table 1. Overall Enrollment of Pregnant Women by Program Population for CY 2007 through CY 2009

Program Population	CY 2007		CY 2008		CY 2009	
	Percent	Count	Percent	Count	Percent	Count
FAMIS MOMS [†]	4.9%	907	7.3%	1,387	7.2%	1,403
Medicaid for Pregnant Women [*]	95.1%	17,578	92.7%	17,631	92.8%	18,024
Totals	100%	18,485	100%	19,018	100%	19,427

^oPrenatal Data containing the Other Medicaid population is included in Appendix 3.

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

^{*} Medicaid for Pregnant Women (a Medicaid Title XIX program)

- Enrollment in the Medicaid for Pregnant Women program continues to exceed enrollment in the FAMIS MOMS program.

Table 2. Overall Enrollment of Pregnant Women by Delivery System for CY 2007 through CY 2009*

Delivery System	CY 2007		CY 2008		CY 2009	
	Percent	Count	Percent	Count	Percent	Count
FFS	23.5%	4,341	22.1%	4,197	21.2%	4,110
MCO	67.0%	12,387	70.2%	13,348	71.5%	13,885
PCCM	9.5%	1,757	7.8%	1,473	7.4%	1,432
Totals	100%	18,485	100%*	19,018	100%*	19,427

*Rates may not add correctly due to rounding.

- The percentage of pregnant women enrolled in the MCO delivery system increased over the three-year period exceeding 70 percent in CY 2009.
- Enrollment (both the number and percentage) of pregnant women in the FFS and PCCM programs continued to decrease during the three-year period.

Table 3. Overall Enrollment of Pregnant Women by Program Population and Delivery System for CY 2007 through CY 2009*

Delivery System	FAMIS MOMS [†] CY 2007	FAMIS MOMS [†] CY 2008	FAMIS MOMS [†] CY 2009	Medicaid for Pregnant Women [‡] CY 2007	Medicaid for Pregnant Women [‡] CY 2008	Medicaid for Pregnant Women [‡] CY 2009
FFS	19.0%	15.7%	12.7%	23.7%	22.6%	21.8%
MCO	81.0%	84.3%	87.3%	66.3%	69.1%	70.2%
PCCM	0%	0%	0%	10.0%	8.4%	7.9%

* Rates may not add correctly due to rounding.

† FAMIS MOMS (a CHIP Title XXI waiver program)

‡ Medicaid for Pregnant Women (a Medicaid Title XIX program)

- The percentage of women enrolled in MCOS in both the FAMIS MOMS and Medicaid for Pregnant Women programs increased during this three-year period.
- The percentage of pregnant women enrolled in the FFS and PCCM programs decreased over the same time period.

Findings

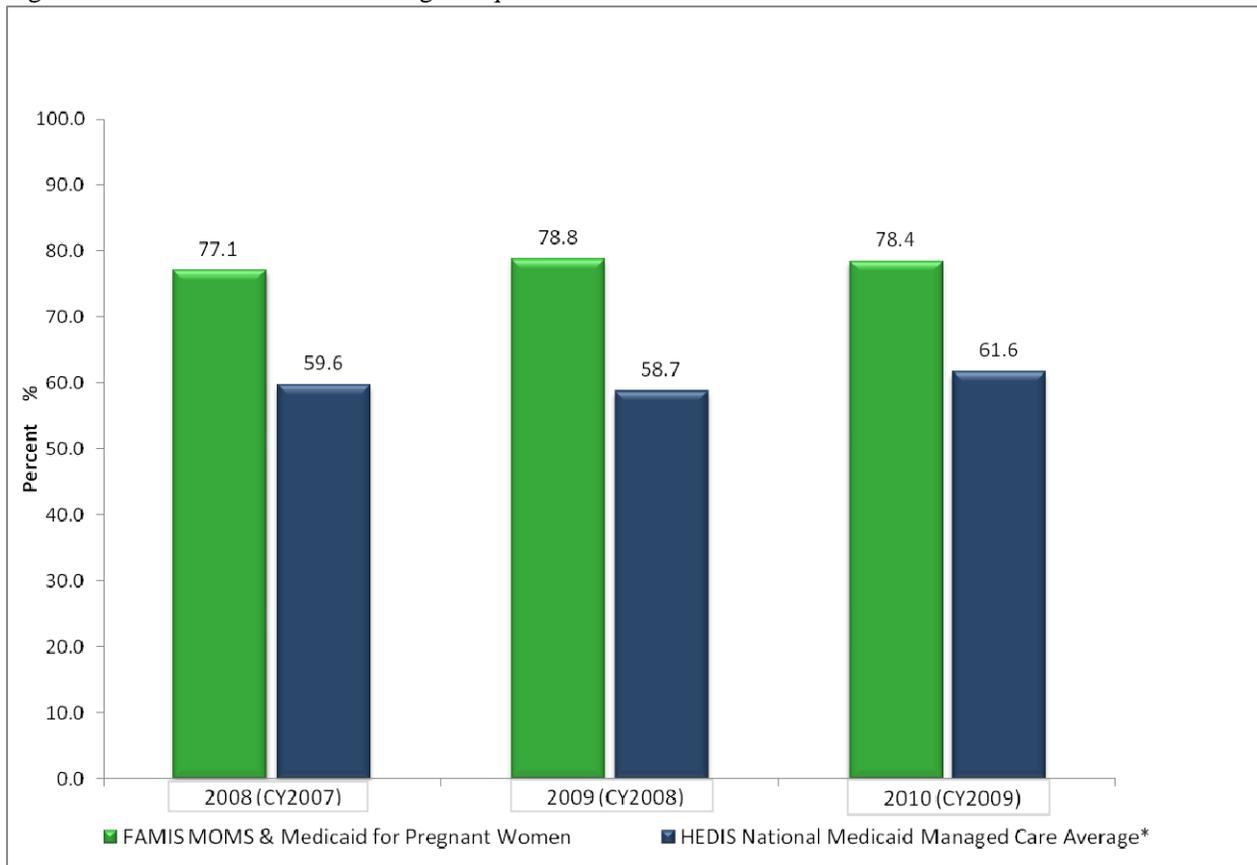
Adequate Prenatal Care: CY 2007, 2008 and 2009

Adequate prenatal care in this study is defined as a combination of two essential factors: early and regular prenatal care. Care is considered adequate if the first prenatal visit occurs in the first trimester of pregnancy and if the total number of visits was appropriate to the gestational age of the baby at birth. This is defined as the number and percent of pregnant women who received *early prenatal care* (in the first 13 weeks of pregnancy) and regular prenatal care (10 or more prenatal care visits).

Figure 1 displays the percentage of women enrolled in the combined FAMIS MOMS and Medicaid for Pregnant Women Programs who received adequate prenatal care in calendar years 2007, 2008, and 2009 as compared to the HEDIS[®] 2009 and 2010 National Medicaid Managed Care Averages.

The HEDIS[®] measure assesses the percentage of Medicaid women enrolled in managed care organizations who received the expected number of prenatal care visits (regardless of when prenatal care began). It should be noted that while over 71 percent of the FAMIS MOMS and Medicaid for Pregnant Women populations were enrolled in managed care MCOs, the remainder are enrolled in the FFS and PCCM Programs and the average results are not entirely comparable.

Figure 1. Trends in Women Receiving Adequate Care

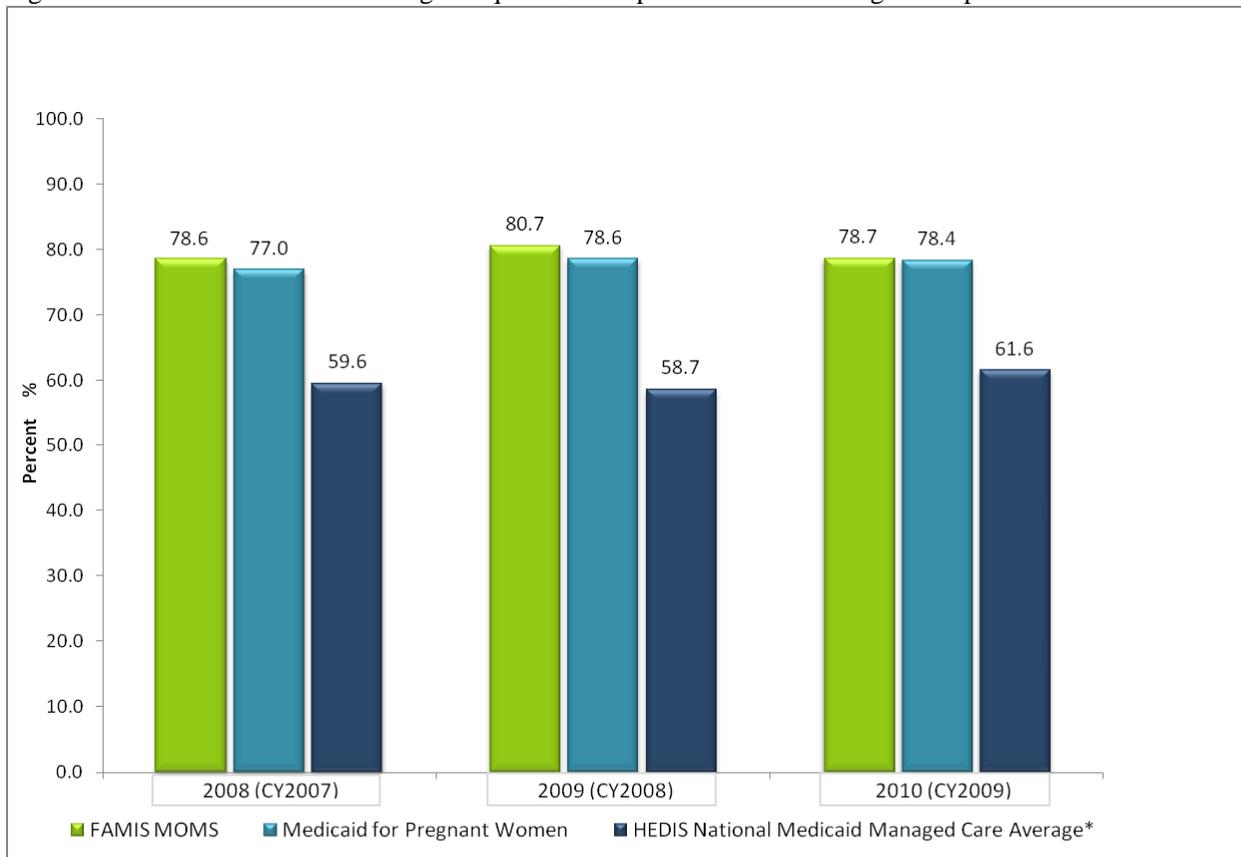


*HEDIS[®] 2008 rates reflect births for CY 2007, HEDIS[®] 2009 rates reflect births for CY 2008, and HEDIS[®] 2010 rates reflect births for CY 2009. Note: the data sources for the Kotelchuck Index (used for FAMIS MOMS and Medicaid for Pregnant Women) and the HEDIS[®] data are slightly different for this comparison and interpretation.

- Combined rates for FAMIS MOMS (a CHIP Title XXI waiver program) and Medicaid for Pregnant Women (a Medicaid Title XIX program) receiving adequate prenatal care compare favorably with the HEDIS® National Medicaid Managed Care Averages for all three years.
- While there was a slight improvement in the adequacy of prenatal care rate from 2007 to 2008, a slight decrease was noted in 2009.

Figure 2 summarizes the percentages of women receiving adequate prenatal care in 2007, 2008, and 2009 by specific Medicaid program populations compared to the HEDIS® National Medicaid Managed Care Averages for the same time periods.

Figure 2. Trends in Women Receiving Adequate Care—Specific Medicaid Program Populations^{†‡}



[†] FAMIS MOMS (a CHIP Title XXI waiver program)

[‡] Medicaid for Pregnant Women (a Medicaid Title XIX program)

* HEDIS® 2008 rates reflect births for CY 2007, HEDIS® 2009 rates reflect births for CY 2008, and HEDIS® 2010 rates reflect births for CY 2009.

- From 2007 to 2008 both FAMIS MOMS and Medicaid for Pregnant Women showed slight improvement in results for adequate prenatal care, but slight decreases for both programs were noted in 2009.
- Women enrolled in both programs received adequate prenatal care at rates that compare favorably to the HEDIS[®] National Medicaid Managed Care Averages for all three years.

Low Birth Weight Outcomes

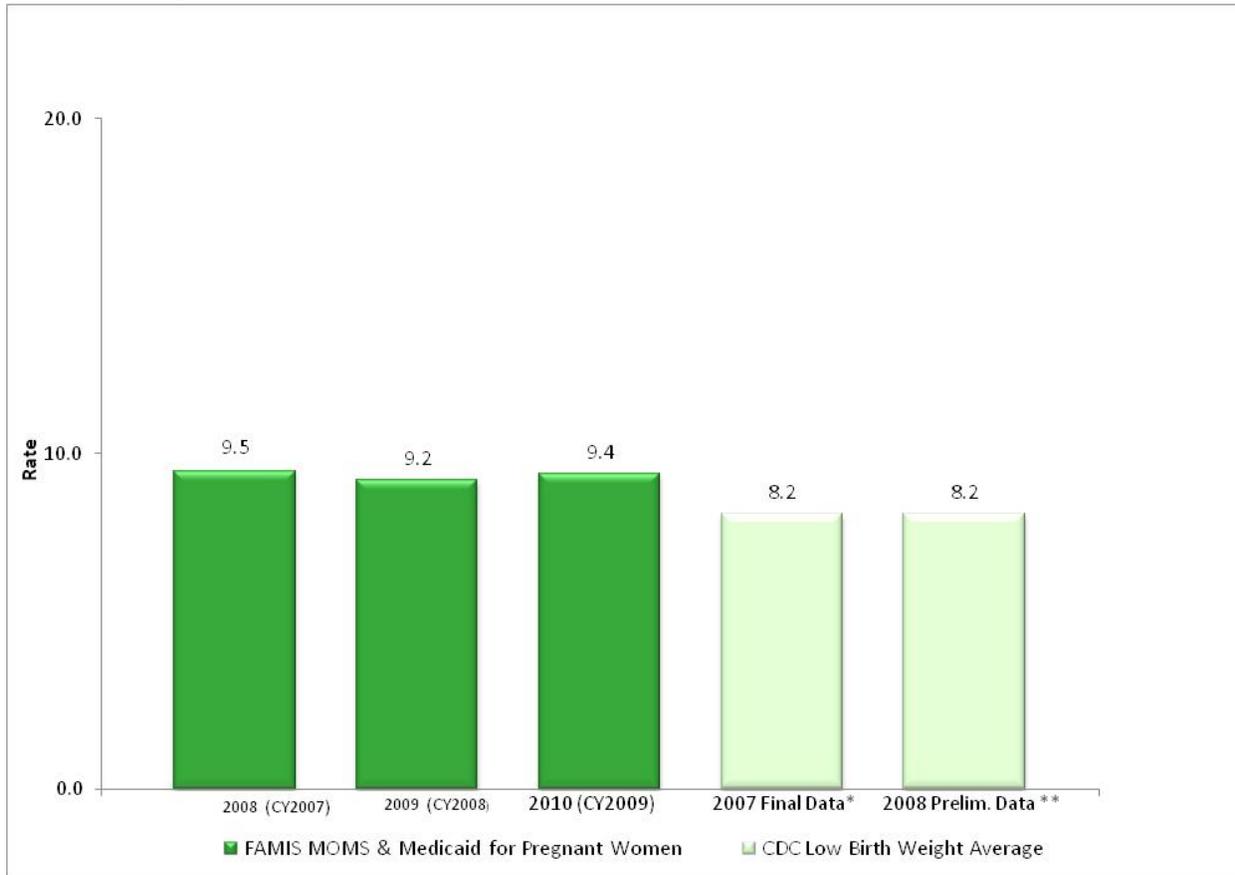
Infants born with overall low birth weights of less than 2,500 grams or 5 lbs. 8 oz. are at higher risk of long-term developmental or health issues than infants born at higher or normal birth weights. The CDC/NCHS publishes data on birth rates and birth outcomes in an annual NVSS Report for the United States. The CDC/NCHS data includes all births that occurred during the year, regardless of payer or income levels. Rates are provided in number per 100 live births.

In this category, a lower score is more desirable for overall low birth weight rates. Due to publishing lag times of national vital statistics data, the Virginia CY 2007 results are compared (for informational purposes only) with the NCHS National Vital Statistics Systems (NVSS) Final Birth Data for CY 2007. For CY 2008 and 2009, Virginia data are compared with the NCHS Preliminary Birth Data for CY 2008. Final national data for 2008 are not yet available. The definitions of birth weight outcomes and the study results are presented in the following low birth weights categories and compared with NCHS national averages:

- Overall low birth weight (LBW < 2,500 grams)
- Moderately low birth weight (MLBW – 1,500 to 2,499 grams)
- Very low birth weight (VLBW < 1,500 grams).

Figure 3 displays the low birth weight outcomes for FAMIS MOMS and Medicaid for Pregnant Women in CY 2007 through CY 2009 as compared to the national CDC/NCHS/NVSS rates.

Figure 3. Trends in Overall Low Birth Weight Rates [▲] [■]
(LBW < 2,500 grams)



[▲] A lower score is more desirable for overall low birth weight rates

[■] Rates calculated per 100 births

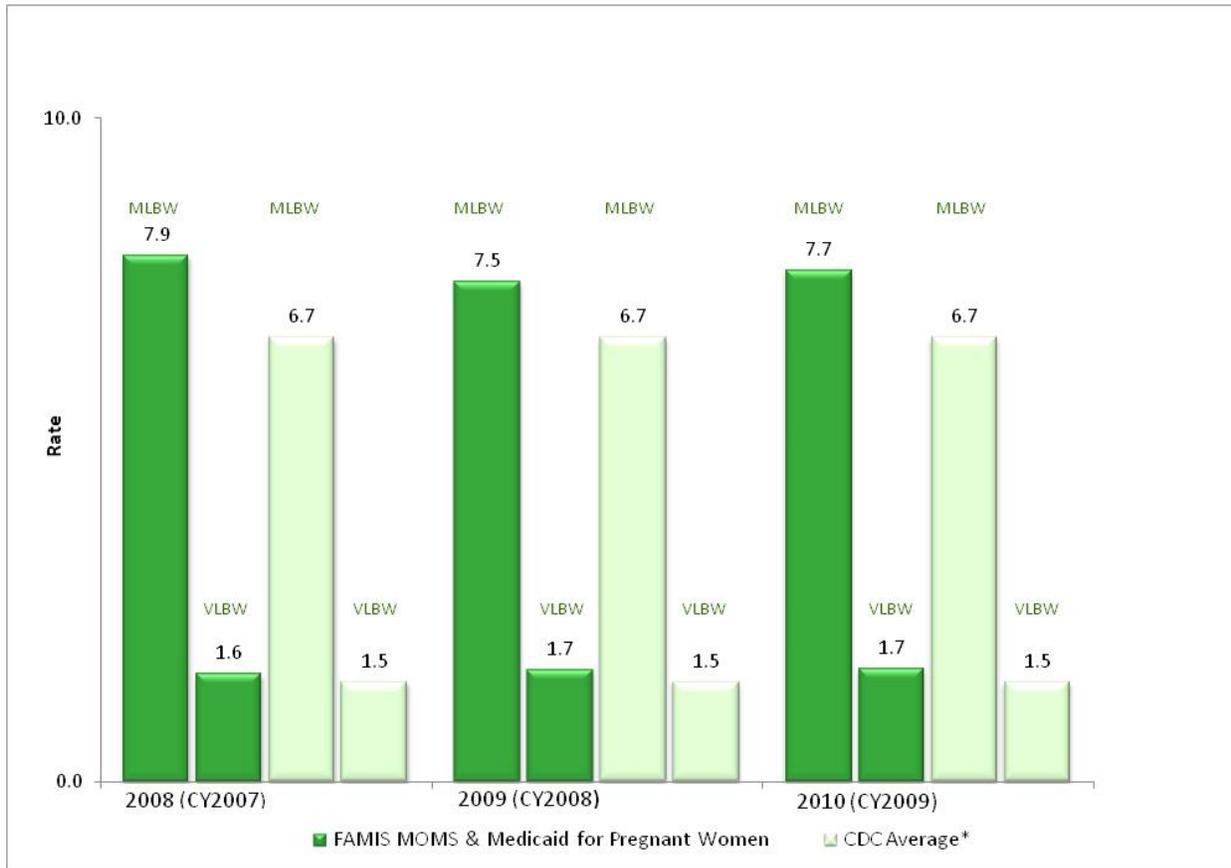
* CDC/NCHS/NVSS Final Birth Data CY 2007

** CDC/NCHS/NVSS Preliminary Birth Data CY 2008

- The combined rates for FAMIS MOMS (a CHIP Title XXI waiver program) and Medicaid for Pregnant Women (a Medicaid Title XIX program) improved slightly from 2007 to 2008, but this improvement was not sustained from 2008 to 2009.
- These combined rates continued to compare unfavorably to the National Average for Overall Low Birth Weight Rate for all three years.

Figure 4 displays the moderately low birth weight (MLBW) and very low birth weight (VLBW) outcomes for FAMIS MOMS and Medicaid for Pregnant Women in CY 2007 through CY 2009 as compared to the CDC/NCHS/NVSS rates.

Figure 4. Trends in Moderately Low and Very Low Birth Weight Rates (lower rates are better) (MLBW – 1,500 to 2,499 grams; VLBW < 1,500 grams) [□]



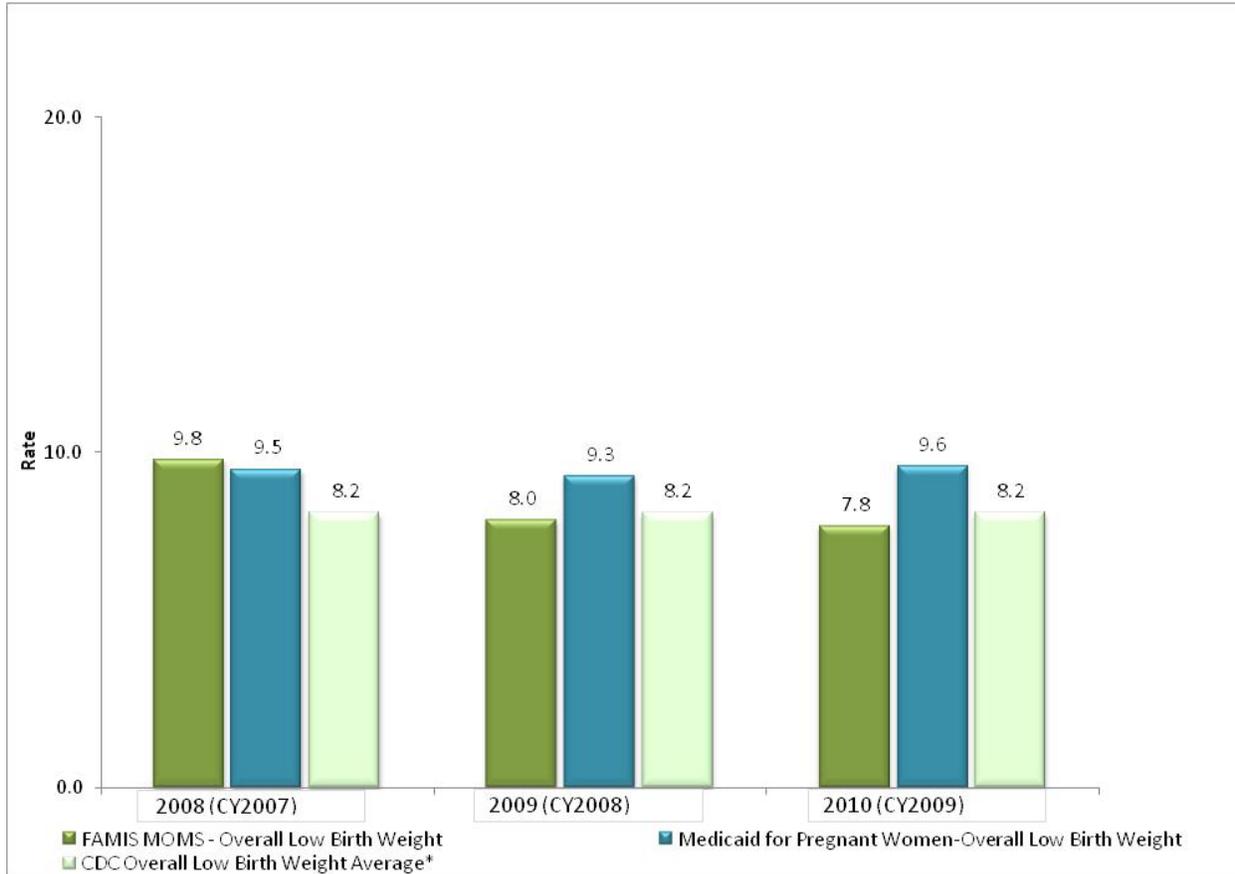
* Final Birth Data 2007 from CDC/NCHS/NVSS is compared to CY 2007 Rates for FAMIS MOMS (a CHIP Title XXI waiver program) & Medicaid for Pregnant Women (a Medicaid Title XIX program). Preliminary Birth Data 2008 from CDC/NCHS/NVSS is compared to CY 2008 and CY 2009 Rates for FAMIS MOMS & Medicaid for Pregnant Women

[□] Rates calculated per 100 births

- Combined rates for FAMIS MOMS and Medicaid for Pregnant Women who delivered infants of MLBW are higher (worse) than the national rates for all three years.
- While the same is true for the VLBW rates, the combined Medicaid programs remain only slightly higher than the national averages.

Figure 5 displays the overall low birth weight outcomes for the FAMIS MOMS and Medicaid for Pregnant Women populations for CY 2007, CY 2008, and CY 2009 as compared to the CDC/NCHS/NVSS averages.

Figure 5. Overall Low Birth Weights – Specific Medicaid Program Populations
 (Overall LBW <2,500 grams) [■]



Final Birth Data 2007 from CDC/NCHS National Vital Statistics Systems (NVSS) is compared to CY 2007 Rates for FAMIS MOMS (a CHIP Title XXI waiver program) and Medicaid for Pregnant Women (a Medicaid Title XIX program). Preliminary Birth Data 2008 from CDC/NCHS/NVSS is compared to CY 2008 and CY 2009 Rates for FAMIS MOMS and Medicaid for Pregnant Women.

[■] Rates calculated per 100 births

- Rates for FAMIS MOMS have continued to improve during the three year period and compare favorably with the national averages in both 2008 and 2009.
- Medicaid for Pregnant Women rates remained unfavorable when compared with the national averages for all three years with an unfavorable change in 2009.
- FAMIS MOMS overall birth weight rate performance improved (lower rate is better) and outperformed the national benchmark for both 2008 and 2009. It should be noted that FAMIS MOMS is the higher income group of the two programs.

Table 4. Trends in Moderately Low and Very Low Birth Weight Outcomes for Specific Program Populations in CY 2007 through CY 2009 as Compared to the CDC/NCHS National Vital Statistics Systems (NVSS) National Rates ■ □

(MLBW – 1,500 to 2,499 grams; VLBW < 1,500 grams)

Indicator	FAMIS MOMS CY 2007 [†]	FAMIS MOMS CY 2008 [†]	FAMIS MOMS CY 2009 [†]	MA for PW CY 2007 [§]	MA for PW CY 2008 [§]	MA for PW CY 2009 [§]	CDC/NCHS NVSS Final Birth Data CY 2007 [*]	CDC/NCHS NVSS Preliminary Birth Data CY 2008 [▲]
Moderately Low Birth Weight Rates	7.9	5.8	6.2	7.9	7.7	7.9	6.7	6.7
Very Low Birth Weight Rates	1.9	2.2	1.6	1.6	1.6	1.7	1.5	1.5

* CDC/NCHS/NVSS Final Birth Data 2007

▲ CDC/NCHS/NVSS Preliminary Birth Data 2008

† FAMIS MOMS (a CHIP Title XXI waiver program)

§ MA for PW indicates Medicaid for Pregnant Women (a Medicaid Title XIX program)

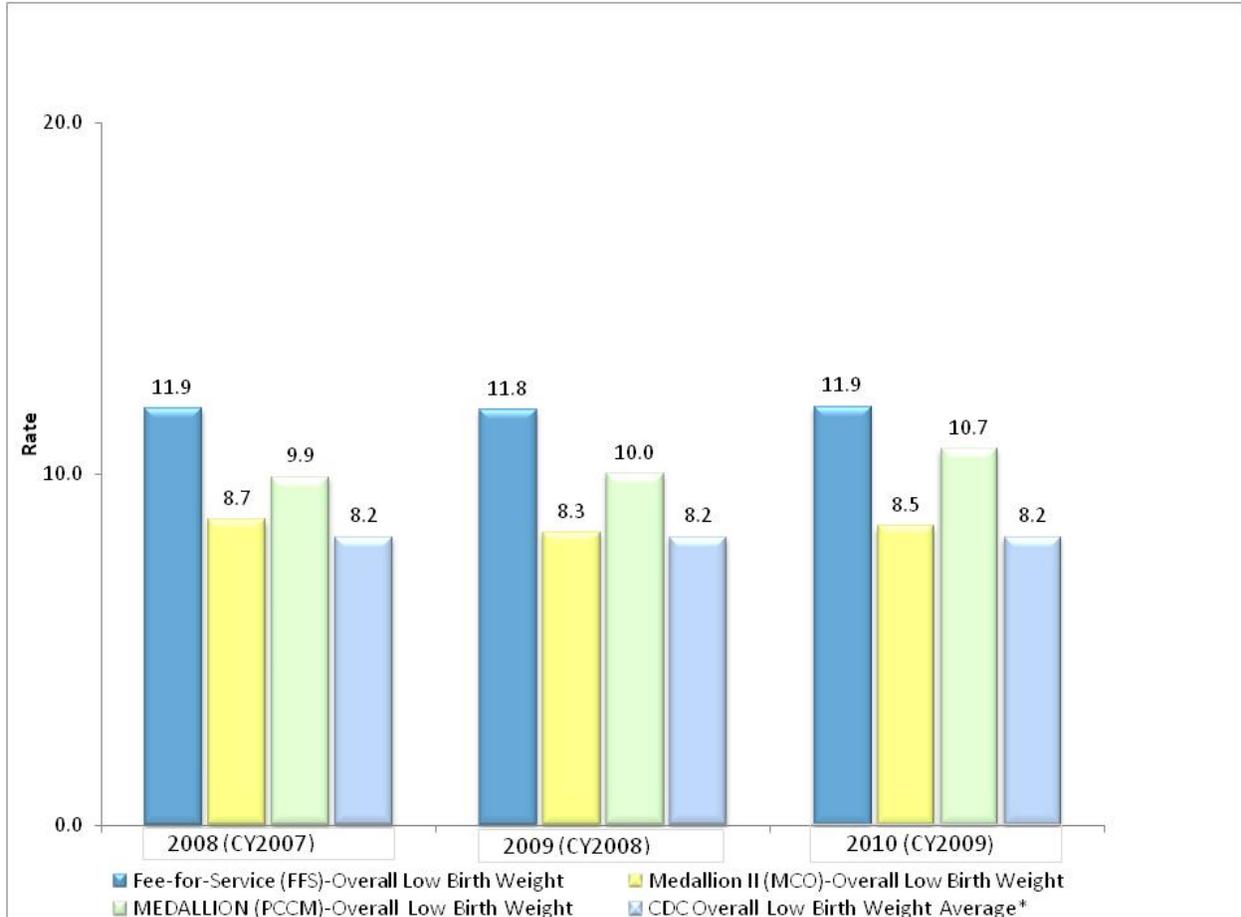
■ Note that when aggregating the Very Low and Moderately Low Birth Weight values to determine the overall Low Birth Weight rate, any discrepancy is due to rounding

□ Rates calculated per 100 births

- Rates of MLBW infants improved for FAMIS MOMS from 2007 to 2008. While this performance trend did not continue in 2009, the 2009 rate was better than the national benchmark which remained unchanged.
- The rate for Medicaid for Pregnant Women was unfavorable when compared with the national rates for MLBW infants.
- While both the national and Medicaid for Pregnant Women rates for VLBW infants were unchanged, the rate for women enrolled in FAMIS MOMS improved slightly, and was just above the national benchmark rate. The Medicaid for Pregnant Women VLBW rate in 2009 increased over the prior period.

Figure 6 presents the overall low birth weight rates (a lower rate is better) by FFS, MCO, and PCCM delivery systems.

Figure 6. Overall Low Birth Weight Rates by Delivery System (Overall LBW <2,500 grams) [■]



* Final Birth Data 2007 from CDC/NCHS/NVSS is compared to CY 2007 Rates for the FFS, MCO, and PCCM delivery systems. Preliminary Birth Data 2008 from CDC/NCHS/NVSS is compared to CY 2008 and CY 2009 Rates for the FFS, MCO, and PCCM delivery systems.

[■] Rates calculated per 100 births

- Overall low birth weight (LBW) rates for FFS enrollees were the least favorable of all delivery systems and when compared with the national comparative rates for all years.
- Overall LBW rates for infants born to women in a managed care organization were the most favorable in all years compared to FFS and PCCM and with the national average.
- Rates for Overall LBW infants in the PCCM program continued an unfavorable trend from 2007 to 2009 and compared less favorably with the national benchmark. However, Virginia's PCCM program compared favorably to the FFS program for the three year period.

Table 5. Overall Low Birth Weight Rates by FFS, MCO, and PCCM Delivery Systems in CY 2007 through CY 2009 as Compared to the CDC/NCHS National Vital Statistics Systems (NVSS) Averages

(Overall LBW <2,500 grams) ■ ■

Indicator	FFS CY 2007	FFS CY 2008	FFS CY 2009	MCO CY 2007	MCO CY 2008	MCO CY 2009	PCCM CY 2007	PCCM CY 2008	PCCM CY 2009	CDC CY 2007 *	CDC CY 2008 ▲
Moderately Low Birth Weight Rates	8.7	8.7	8.8	7.6	7.2	7.4	8.6	7.3	8.0	6.7	6.7
Very Low Birth Weight Rates	3.2	3.1	3.1	1.1	1.1	1.1	1.3	2.7	2.7	1.5%	1.5

■ Note that when aggregating the Very Low and Moderately Low Birth Weight values to determine the overall Low Birth Weight rate, any discrepancy is due to rounding.

■ Rates calculated per 100 births

* CDC/NCHS/NVSS Final Birth Data 2007

▲ CDC/NCHS/NVSS Preliminary Birth Data 2008

Moderately Low Birth Rates (MLBW)

- Rates for MLBW increased in all delivery systems from 2008 to 2009 while the national rates remained unchanged.
- Virginia Medicaid MLBW rates for all programs compared unfavorably with national averages for all three years.

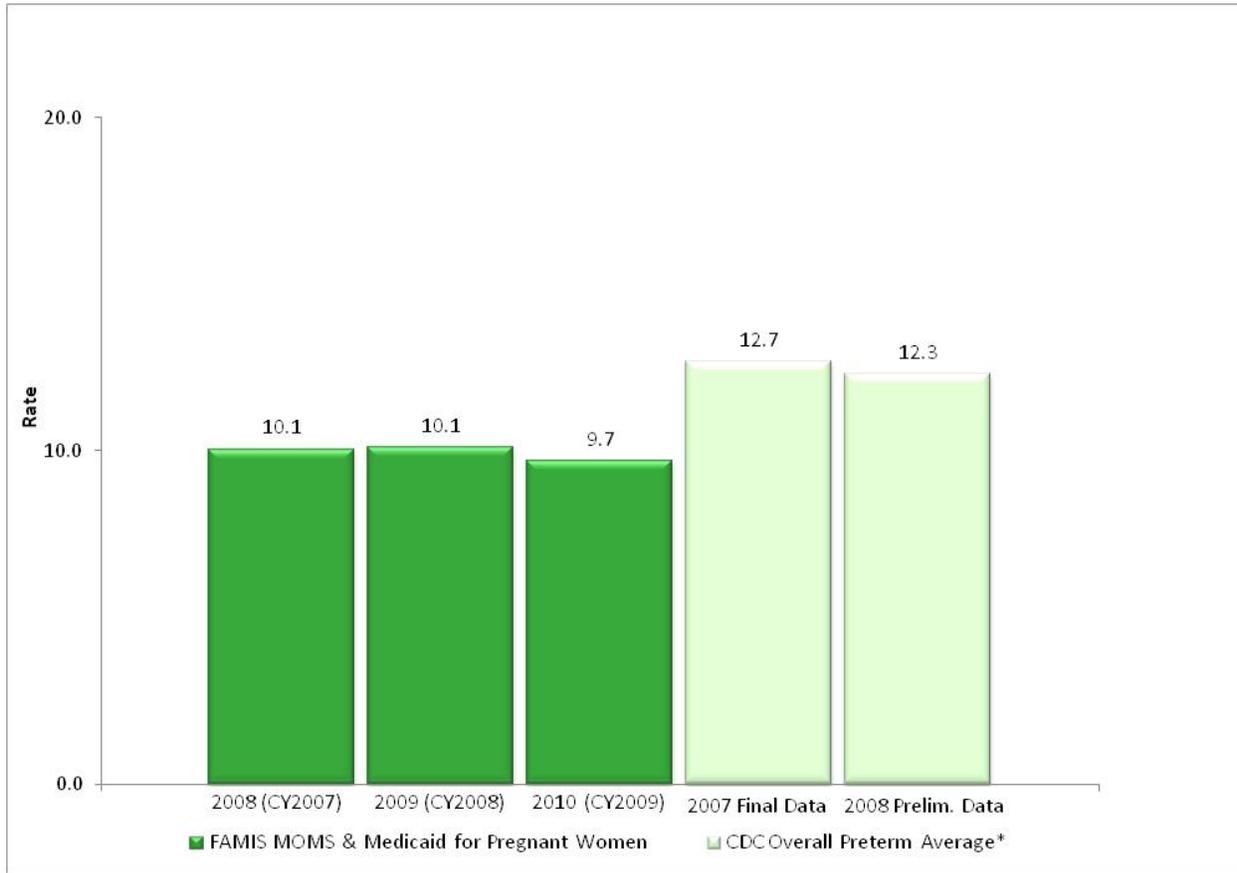
Very Low Birth Weight (VLBW)

- Rates of VLBW remained constant for infants born in the managed care delivery system and remain lower (better) than the national benchmark for all three years.
- The FFS VLBW rates improved slightly from 2007 to 2008 and remain unchanged at 3.1 in 2009. However, the rate was more than twice the national average of 1.5 for all years.
- VLBW rates for infants born into the PCCM program more than doubled from 1.3 in 2007 to 2.7 in both 2008 and 2009 and remain unfavorable when compared with the national rate.

Premature Infants

Infants born before 37 completed weeks of gestation are considered preterm or premature. According to the 2009 March of Dimes White Paper, preterm birth rates in the United States have increased by 36 percent in the last 25 years. The results in this study compare the rate of preterm births for the FAMIS MOMS (CHIP Title XXI waiver) and Medicaid for Pregnant Women (Medicaid Title XIX) programs with national averages in calendar years 2007, 2008, and 2009.

Figure 7. Percentage of Infants Born Premature to FAMIS MOMS and Medicaid for Pregnant Women[■]
(Preterm birth rate: the number of births delivered at less than 37 completed weeks of gestation)



*Final Birth Data 2007 from CDC/NCHS National Vital Statistics Systems (NVSS) is compared to CY 2007 Rates for FAMIS MOMS (a CHIP Title XXI waiver program) & Medicaid for Pregnant Women (a Medicaid Title XIX program). Preliminary Birth Data 2008 from CDC/NCHS/NVSS is compared to CY 2008 and CY 2009 Rates for FAMIS MOMS and Medicaid for Pregnant Women.

■ Rates calculated per 100 births

- The number of infants born prematurely to women in the FAMIS MOMS and Medicaid for Pregnant Women programs improved (decreased) from 2008 to 2009.
- There was a comparable improvement (decrease) in the national averages for this same time period.
- The number of infants born prematurely in the FAMIS MOMS and Medicaid for Pregnant Women programs compared favorably to the national rate for all three years.

Conclusions

This study evaluated the adequacy of prenatal care services and the birth outcomes of Virginia women enrolled in the FAMIS MOMS and the Medicaid for Pregnant Women programs. The results are compared with national benchmarks for calendar years 2007, 2008 and 2009.

The majority (92.8 percent) of pregnant women were enrolled in the Medicaid for Pregnant Women program while 7.2 percent were enrolled in the FAMIS MOMS program. The percentage of pregnant women enrolled in an MCO increased and exceeded 71 percent in 2009 while women enrolled in FFS and PCCM decreased each year from 2007 to 2009.

Women in both programs received adequate prenatal care at rates that are notably better than the national averages. However, infants born to women enrolled in the Medicaid for Pregnant Women program experienced low birth weight rates that were less favorable when compared to the national benchmark.

Adequate Prenatal Care

- Women in the FAMIS MOMS and Medicaid for Pregnant Women programs received adequate prenatal care at rates that were more favorable than the HEDIS[®] National Medicaid Managed Care Averages in all years.

Overall Low Birth Weight Outcomes by Program

- OLBW rates for FAMIS MOMS improved during the three years and outperformed the national benchmark in both 2008 and 2009.
- Medicaid for Pregnant Women OLBW rates remained unfavorable when compared to the national rates for all three years.

Overall Low Birth Weight Outcomes by Delivery System

- OLBW rates for infants born to women in a managed care organization were the most favorable in all years when compared to both FFS and PCCM and with the national benchmark.
- OLBW rates for FFS enrollees were the least favorable of all delivery systems and when compared with the national benchmarks for all years.
- Rates for OLBW infants in the PCCM program continued an unfavorable trend from 2007 to 2009 and compared less favorably with the national rates. However, Virginia's PCCM program compared favorably to the FFS program for the three-year period.

Premature Infants by Program

- The rate of infants born prematurely in the FAMIS MOMS and Medicaid for Pregnant Women programs were better than the national rates for all three years.

Recommendations

Women who are eligible for Medicaid or the FAMIS MOMS Programs due to pregnancy are at increased risk for adverse birth outcomes. Health care coverage may improve access to care but does not guarantee improved outcomes. Other considerations such as social determinants of health including race, ethnicity, and socioeconomic factors related to poverty, housing and access to health services play a role in health outcomes. Further, cultural beliefs impact the effectiveness of evidenced based care. The ability to analyze variables and gaps in expected outcomes can identify effective, focused interventions to target and improve birth outcomes. Consideration should be given to the following interventions:

- Conduct root-cause analyses that may identify subgroups at risk that would respond to targeted educational outreach and interventions.
- Continue to trend standardized and comparable data to provide DMAS with an accurate evaluation of prenatal care and birth outcomes for these populations.
- Evaluate MCO efforts to determine any gaps in services.
- Identify MCO strategies that can be replicated in the FFS and PCCM populations.
- Review the results of programs implemented by other Medicaid agencies and their statewide partnerships/collaborative efforts to improve the rates of infants born at healthy gestational ages and birth weights.

APPENDIX 1

Demographic Characteristics of Study Population

Race Distribution

The racial distribution of births of Virginia Medicaid for Pregnant Women and FAMIS MOMS recipients are displayed by specific population groups. Tables A1-4 and A1-6 include the percentage of White, African American, Asian, Hispanic and Other Women enrolled in the FAMIS MOMS and the Medicaid for Pregnant Women programs during CY 2007 through CY 2009.

Table A1-1. Racial Distribution by Specific Program Population for births during CY 2007*

Program Population	White	African American	Asian	Hispanic	Other	Denominator
FAMIS MOMS [†]	57.6% (522) •	28.4% (258)	2.4% (22)	8.4% (76)	3.2% (29)	907
Medicaid for Pregnant Women [‡]	52.0% (9,139)	38.9% (6,831)	1.5% (266)	5.5% (967)	2.1% (375)	17,578

* Rates may not add correctly due to rounding

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

[‡] Medicaid for Pregnant Women (a Medicaid Title XIX program)

• Numerator

Table A1-2. Racial Distribution by Specific Program Population for births during CY 2008*

Program Population	White	African American	Asian	Hispanic	Other	Denominator
FAMIS MOMS [†]	50.5% (700) •	29.7% (412)	2.3% (32)	8.7% (121)	8.8% (122)	1,387
Medicaid for Pregnant Women [‡]	48.9% (8,622)	37.6% (6,633)	1.2% (220)	6.3% (1,106)	6.0% (1,050)	17,631

* Rates may not add correctly due to rounding

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

[‡] Medicaid for Pregnant Women (a Medicaid Title XIX program)

• Numerator

Table A1-3. Racial Distribution by Specific Program Population for births during CY 2009*

Program Population	White	African American	Asian	Hispanic	Other	Denominator
FAMIS MOMS [†]	49.0% (688) •	26.9% (377)	2.6% (37)	9.8% (138)	11.6% (163)	1,403
Medicaid for Pregnant Women [‡]	47.9% (8,627)	37.2% (6,711)	1.6% (281)	6.0% (1,081)	7.3% (1,324)	18,024

* Rates may not add correctly due to rounding

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

[‡] Medicaid for Pregnant Women (a Medicaid Title XIX program)

• Numerator

- The overall percentage of White women enrolled in FAMIS MOMS and Medicaid for Pregnant Women declined each year from 2007 to 2009.
- The overall percentage of African American women in both programs also decreased from 2007 to 2009.
- Conversely, there was an increase in the proportion of total enrollment who were Hispanic, Asian or “other” race during this three year period.

Racial Group Analysis by Specific Indicators in CY 2007 and CY 2008

Table A1-4. Racial Group Analysis of Recipients Who Gave Birth in CY 2007: Adequacy of Care, Moderately Low Birth Weight, Very Low Birth Weight, and Overall Low Birth Weight

Indicator	White	African American	Asian	Hispanic
Adequacy of Care	79.9% (7,649/9,579) ⁺	75.3% (5,331/7,078)	63.8% (183/287)	69.1% (716/1,036)
Moderately Low Birth Weight ^{o□}	6.3 (612/9,661)	10.4 (739/7,103)	4.5 (13/288)	6.2 (65/1,041)
Very Low Birth Weight ^{o□}	1.1 (105/9,661)	2.4 (169/7,103)	1.0 (3/288)	1.3 (14/1,041)
Overall Low Birth Weight ^{o□}	7.4 (717/9,661)	12.8 (908/7,103)	5.5 (16/288)	7.6 (79/1,041)

⁺ Numerator/Denominator

^o Rates may not add correctly due to rounding

[□] Rates calculated per 100 births

Table A1-5. Racial Group Analysis of Recipients Who Gave Birth in CY 2008: Adequacy of Care, Moderately Low Birth Weight, Very Low Birth Weight, and Overall Low Birth Weight

Indicator	White	African American	Asian	Hispanic
Adequacy of Care	80.8% (7,453/9,219) ⁺	77.9% (5,480/7,035)	74.5% (187/251)	71.4% (875/1,225)
Moderately Low Birth Weight ^{o□}	6.6 (614/9,332)	9.5 (673/7,052)	6.3 (16/252)	5.1 (63/1,230)
Very Low Birth Weight ^{o□}	1.3 (125/9,332)	2.3 (162/7,052)	1.2 (3/252)	1.1 (14/1,230)
Overall Low Birth Weight ^{o□}	7.9 (739/9,332)	11.8 (835/7,052)	7.5 (19/252)	6.3 (77/1,230)

⁺ Numerator/Denominator

^o Rates may not add correctly due to rounding

[□] Rates calculated per 100 births

Table A1-6. Racial Group Analysis of Recipients Who Gave Birth in CY 2009: Adequacy of Care, Moderately Low Birth Weight, Very Low Birth Weight, and Overall Low Birth Weight

Indicator	White	African American	Asian	Hispanic
Adequacy of Care	80.3% (7,273/9,056) ⁺	77.9% (5,499/7,060)	68.8% (218/317)	71.1% (860/1,210)
Moderately Low Birth Weight ^{o□}	6.7 (622/9,320)	10.0 (707/7,099)	5.6 (18/319)	5.3 (65/1,221)
Very Low Birth Weight ^{o□}	1.3 (117/9,320)	2.4 (169/7,099)	1.9 (6/319)	1.1 (13/1,221)
Overall Low Birth Weight ^{o□}	7.9 (739/9,320)	12.3 (876/7,099)	7.5 (24/319)	6.4 (78/1,221)

⁺ Numerator/Denominator

^o Rates may not add correctly due to rounding

[□] Rates calculated per 100 births

- African American women recorded the highest (worst) rates of Overall LBW, MLBW and VLBW even though they received adequate prenatal care at rates that exceed all racial groups except White women.

Table A1-7. Trimester when Medicaid Eligibility Began for CY 2007 through CY 2009

Trimester	CY 2007	CY 2008	CY 2009
1	76.2% (14,080/18,485) ⁺	77.3% (14,707/19,018)	77.2% (14,992/19,427)
2	17.5% (3,239/18,485)	17.2% (3,262/19,018)	17.2% (3,342/19,427)
3	6.3% (1,166/18,485)	5.5% (1,049/19,018)	5.6% (1,093/19,427)

⁺ Numerator/Denominator

Table A1-8. Trimester when Program* Enrollment Began for CY 2007**

Trimester	FAMIS MOMS [†]	Medicaid for Pregnant Women [‡]
1	66.3% (601/907) [†]	65.9% (11,586/17,578)
2	26.5% (240/907)	25.3% (4,439/17,578)
3	7.3% (66/907)	8.8% (1,553/17,578)

*Program of record is the program in which the mother is enrolled on the day of delivery

**Rates may not add correctly due to rounding

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

[‡] Medicaid for Pregnant Women (a Medicaid Title XIX program)

⁺ Numerator/Denominator

Table A1-9. Trimester when Program* Enrollment Began for CY 2008**

Trimester	FAMIS MOMS [†]	Medicaid for Pregnant Women [‡]
1	70.4% (977/1,387) [†]	66.9% (11,790/17,631)
2	24.7% (343/1,387)	24.7% (4,358/17,631)
3	4.8% (67/1,387)	8.4% (1,483/17,631)

*Program of record is the program in which the mother is enrolled on the day of delivery

**Rates may not add correctly due to rounding

† FAMIS MOMS (a CHIP Title XXI waiver program)

‡ Medicaid for Pregnant Women (a Medicaid Title XIX program)

† Numerator/Denominator

Table A1-10. Trimester when Program* Enrollment Began for CY 2009**

Trimester	FAMIS MOMS [†]	Medicaid for Pregnant Women [‡]
1	70.2% (985/1,403) [†]	66.5% (11,987/18,024)
2	25.5% (358/1,403)	24.8% (4,475/18,024)
3	4.3% (60/1,403)	8.7% (1,562/18,024)

*Program of record is the program in which the mother is enrolled on the day of delivery

**Rates may not add correctly due to rounding

† FAMIS MOMS (a CHIP Title XXI waiver program)

‡ Medicaid for Pregnant Women (a Medicaid Title XIX program)

† Numerator/Denominator

Table A1-11. Trimester when Delivery System* Enrollment Began for CY 2007**

Trimester	Fee-for-Service (FFS)	MCO	PCCM
1	34.8% (1,509/4,341) [†]	12.9% (1,595/12,387)	16.4% (288/1,757)
2	35.6% (1,544/4,341)	63.7% (7,889/12,387)	64.9% (1,140/1,757)
3	29.7% (1,288/4,341)	23.4% (2,903/12,387)	18.7% (329/1,757)

*Delivery system of record is the system in which the mother is enrolled on the day of delivery

**Rates may not add correctly due to rounding

† Numerator/Denominator

Table A1-12. Trimester when Delivery System* Enrollment Began for CY 2008**

Trimester	Fee-for-Service (FFS)	MCO	PCCM
1	37.5% (1,575/4,197) [†]	13.7% (1,823/13,348)	16.8% (247/1,473)
2	34.5% (1,447/4,197)	63.9% (8,529/13,348)	67.3% (991/1,473)
3	28.0% (1,175/4,197)	22.4% (2,996/13,348)	16.0% (235/1,473)

*Delivery system of record is the system in which the mother is enrolled on the day of delivery

**Rates may not add correctly due to rounding

[†] Numerator/Denominator

Table A1-13. Trimester when Delivery System* Enrollment Began for CY 2009**

Trimester	Fee-for-Service (FFS)	MCO	PCCM
1	35.6% (1,464/4,110) [†]	13.3% (1,841/13,885)	18.9% (271/1,432)
2	35.0% (1,439/4,110)	65.1% (9,044/13,885)	66.1% (947/1,432)
3	29.4% (1,207/4,110)	21.6% (3,000/13,885)	14.9% (214/1,432)

*Delivery system of record is the system in which the mother is enrolled on the day of delivery

**Rates may not add correctly due to rounding

[†] Numerator/Denominator

Table A1-14. Number/Rate of Infants Born Premature to FAMIS MOMS and Medicaid for Pregnant Women for CY 2007 through CY 2009[■]

Program Population	CY 2007	CY 2008	CY 2009	CDC/NCHS NVSS Final Birth Data CY 2007*	CDC/NCHS NVSS Preliminary Birth Data CY 2008 [▲]
FAMIS MOMS & Medicaid for Pregnant Women [⊙]	10.1 (1,861/18,497) ⁺	10.1 (1,924/19,036)	9.7 (1,893/19,444)	12.7	12.3

[■] Rates calculated per 100 births

*CDC/NCHS National Vital Statistics Systems (NVSS) Final Birth Data CY 2007

[▲] CDC/NCHS National Vital Statistics Systems (NVSS) Preliminary Birth Data CY 2008

[⊙] FAMIS MOMS is a CHIP Title XXI waiver program and Medicaid for Pregnant Women is a Medicaid Title XIX program

⁺ Numerator/Denominator

Table A1-15. Number/Rate of Infants Born Premature by Program Population for CY 2007 through CY 2009 (Preterm birth rate: the number of births delivered at less than 37 completed weeks of gestation) [■]

Program Population	CY 2007	CY 2008	CY 2009	CDC/NCHS NVSS Final Birth Data CY 2007*	CDC/NCHS NVSS Preliminary Birth Data CY 2008 [▲]
FAMIS MOMS [†]	10.1 (92/907) [†]	10.1 (140/1,390)	8.8 (123/1,405)	12.7	12.3
Medicaid for Pregnant Women [‡]	10.1 (1,769/17,590)	10.1 (1,784/17,646)	9.8 (1,770/18,039)		

■ Rates calculated per 100 births

*CDC/NCHS National Vital Statistics Systems (NVSS) Final Birth Data CY 2007

▲ CDC/NCHS National Vital Statistics Systems (NVSS) Preliminary Birth Data CY 2008

† FAMIS MOMS (a CHIP Title XXI waiver program)

‡ Medicaid for Pregnant Women (a Medicaid Title XIX program)

† Numerator/Denominator

Table A1-16. Number/Rate of Infants Born Premature by Delivery System for CY 2007 through CY 2009 (Preterm birth rate: the number of births delivered at less than 37 completed weeks of gestation) [■]

Program Population	CY 2007	CY 2008	CY 2009	CDC/NCHS NVSS Final Birth Data CY 2007*	CDC/NCHS NVSS Preliminary Birth Data CY 2008 [▲]
Fee for Service (FFS)	13.1 (575/4,395) [†]	13.3 (559/4,203)	13.2 (545/4,117)	12.7	12.3
MCO	8.9 (1,102/12,397)	9.1 (1,220/13,362)	8.6% (1,196/13,898)		
PCCM	10.5 (184/1,755)	9.9 (145/1,471)	10.6 (152/1,429)		

■ Rates calculated per 100 births

*CDC/NCHS National Vital Statistics Systems (NVSS) Final Birth Data CY 2007

▲ CDC/NCHS National Vital Statistics Systems (NVSS) Preliminary Birth Data CY 2008

† Numerator/Denominator

Table A1-17. Number/Rate of Infants Born Premature by Race for CY 2007 through CY 2009[□]
 (Preterm birth rate: the number of births delivered at less than 37 completed weeks of gestation)

Race	CY 2007	CY 2008	CY 2009	CDC/NCHS NVSS Final Birth Data CY 2007*	CDC/NCHS NVSS Preliminary Birth Data CY 2008
White	8.6 (835/9,660) [†]	9.5 (890/9,332)	8.9 (827/9,318)	12.7	12.3
African American	12.2 (864/7,102)	11.4 (806/7,050)	11.5 (817/7,098)		
Asian	8.3 (24/288)	9.9 (25/252)	9.1 (29/319)		
Hispanic	9.1 (95/1,043)	9.0 (111/1,230)	8.4 (102/1,221)		

□ Rates calculated per 100 births

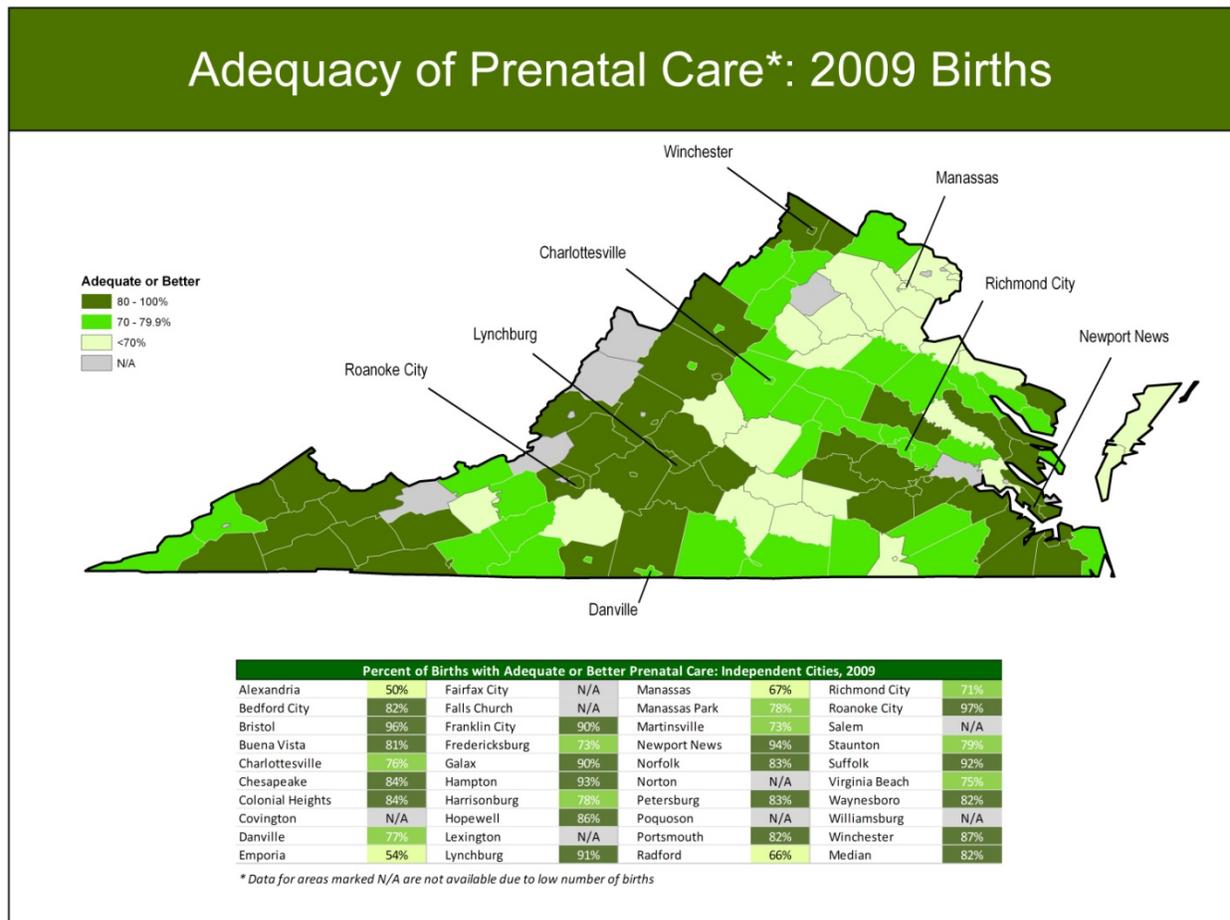
*CDC/NCHS National Vital Statistics Systems (NVSS) Final Birth Data CY 2007

▲ CDC/NCHS National Vital Statistics Systems (NVSS) Preliminary Birth Data CY 2008

† Numerator/Denominator

APPENDIX 2

Map 1. Adequacy of Prenatal Care for Births in CY 2009



* Since the Virginia Birth Registry data was the primary data source, the Kotelchuck Index, also called the Adequacy of Prenatal Care Utilization (APNCU) Index, was used to analyze the data. The Kotelchuck Index defines the expected number of visits based on the American College of Obstetricians and Gynecologists (ACOG) prenatal care standards for uncomplicated pregnancies that is adjusted for the gestational age. This index identifies two crucial elements obtained from birth certificate data: when prenatal care began and the number of prenatal visits from when initiated until delivery. The final measure combines these two dimensions into a single summary score and adequate prenatal as defined by the Kotelchuck Index, is a score of > 80%.

- **Dark Green:** those areas where 80% or more of enrollees received adequate prenatal care.
- **Medium Green:** those areas where at least 70% but less than 80% of enrollees had adequate prenatal care.
- **Lightest green:** those areas where less than 70% of enrollees had adequate prenatal care.
- **Gray:** areas with too few births to be reliably displayed (not applicable).

Table A2-1. Adequacy of Prenatal Care for Births in CY 2009 by City

City Name	FIPS Code	Number of Births	Number with Adequate or Better Prenatal Care	Percent with Adequate or Better Prenatal Care
Alexandria	510	154	77	50.0
Bedford City	515	34	28	82.4
Bristol	520	25	24	96.0
Buena Vista	530	37	30	81.1
Charlottesville	540	140	107	76.4
Chesapeake	550	597	502	84.1
Colonial Heights	570	62	52	83.9
Covington	580	N/A*	N/A	N/A
Danville	590	278	214	77.0
Emporia	595	28	15	53.6
Fairfax	600	N/A	N/A	N/A
Falls Church	610	N/A	N/A	N/A
Franklin	620	49	44	89.8
Fredericksburg	630	100	73	73.0
Galax	640	40	36	90.0
Hampton	650	472	441	93.4
Harrisonburg	660	120	94	78.3
Hopewell	670	143	123	86.0
Lexington	678	N/A	N/A	N/A
Lynchburg	680	330	301	91.2
Manassas	683	58	39	67.2
Manassas Park	685	27	21	77.8
Martinsville	690	63	46	73.0
Newport News	700	830	782	94.2
Norfolk	710	933	773	82.9
Norton	720	N/A	N/A	N/A
Petersburg	730	198	164	82.8
Poquoson	735	N/A	N/A	N/A
Portsmouth	740	472	388	82.2
Radford	750	47	31	66.0
Richmond	760	737	524	71.1
Roanoke	770	461	445	96.5
Salem	775	N/A	N/A	N/A
Staunton	790	81	64	79.0
Suffolk	800	264	243	92.0
Virginia Beach	810	1035	780	75.4
Waynesboro	820	125	103	82.4
Williamsburg	830	N/A	N/A	N/A
Winchester	840	94	82	87.2

* Not Applicable (N/A) due to low numbers *N* below 20

Table A2-2. Adequacy of Prenatal Care for Births in CY 2009 by County

County Name	FIPS Code	Number of Births	Number with Adequate or Better Prenatal Care	Percent with Adequate or Better Prenatal Care
Accomack	1	128	81	63.3
Albemarle	3	157	119	75.8
Alleghany	5	46	40	87.0
Amelia	7	38	34	89.5
Amherst	9	124	109	87.9
Appomattox	11	54	49	90.7
Arlington	13	98	45	45.9
Augusta	15	182	150	82.4
Bath	17	N/A*	N/A	N/A
Bedford	19	149	138	92.6
Bland	21	N/A	N/A	N/A
Botetourt	23	52	51	98.1
Brunswick	25	68	50	73.5
Buchanan	27	78	64	82.1
Buckingham	29	83	55	66.3
Campbell	31	189	173	91.5
Caroline	33	117	85	72.6
Carroll	35	95	69	72.6
Charles	36	N/A	N/A	N/A
Charlotte	37	47	32	68.1
Chesterfield	41	627	534	85.2
Clarke	43	27	23	85.2
Craig	45	N/A	N/A	N/A
Culpeper	47	131	87	66.4
Cumberland	49	49	38	77.6
Dickenson	51	56	46	82.1
Dinwiddie	53	85	75	88.2
Essex	57	42	33	78.6
Fairfax	59	810	485	59.9
Fauquier	61	120	79	65.8
Floyd	63	54	42	77.8
Fluvanna	65	41	31	75.6
Franklin	67	195	129	66.2
Frederick	69	188	170	90.4
Giles	71	50	39	78.0
Gloucester	73	107	87	81.3
Goochland	75	23	17	73.9
Grayson	77	56	46	82.1
Greene	79	64	48	75.0
Greensville	81	27	18	66.7

* Not Applicable (N/A) due to low numbers N below 20

This table is continued from the previous page.

County Name	FIPS Code	Number of Births	Number with Adequate or Better Prenatal Care	Percent with Adequate or Better Prenatal Care
Halifax	83	138	104	75.4
Hanover	85	139	112	80.6
Henrico	87	760	551	72.5
Henry	89	184	148	80.4
Highland	91	N/A	N/A	N/A
Isle of Wight	93	89	81	91.0
James	95	136	86	63.2
King and Queen	97	20	18	90.0
King George	99	59	38	64.4
King William	101	43	28	65.1
Lancaster	103	39	29	74.4
Lee	105	91	69	75.8
Loudoun	107	197	143	72.6
Louisa	109	91	67	73.6
Lunenburg	111	49	32	65.3
Madison	113	42	28	66.7
Mathews	115	24	19	79.2
Mecklenburg	117	127	98	77.2
Middlesex	119	37	31	83.8
Montgomery	121	222	170	76.6
Nelson	125	49	33	67.3
New Kent	127	32	23	71.9
Northampton	131	40	27	67.5
Northumberland	133	41	33	80.5
Nottoway	135	59	37	62.7
Orange	137	86	57	66.3
Page	139	93	74	79.6
Patrick	141	40	28	70.0
Pittsylvania	143	201	163	81.1
Powhatan	145	31	28	90.3
Prince Edward	147	68	46	67.6
Prince George	149	64	53	82.8
Prince William	153	621	338	54.4
Pulaski	155	123	82	66.7
Rappahannock	157	N/A	N/A	N/A
Richmond	159	35	27	77.1
Roanoke	161	203	193	95.1
Rockbridge	163	81	67	82.7
Rockingham	165	213	181	85.0

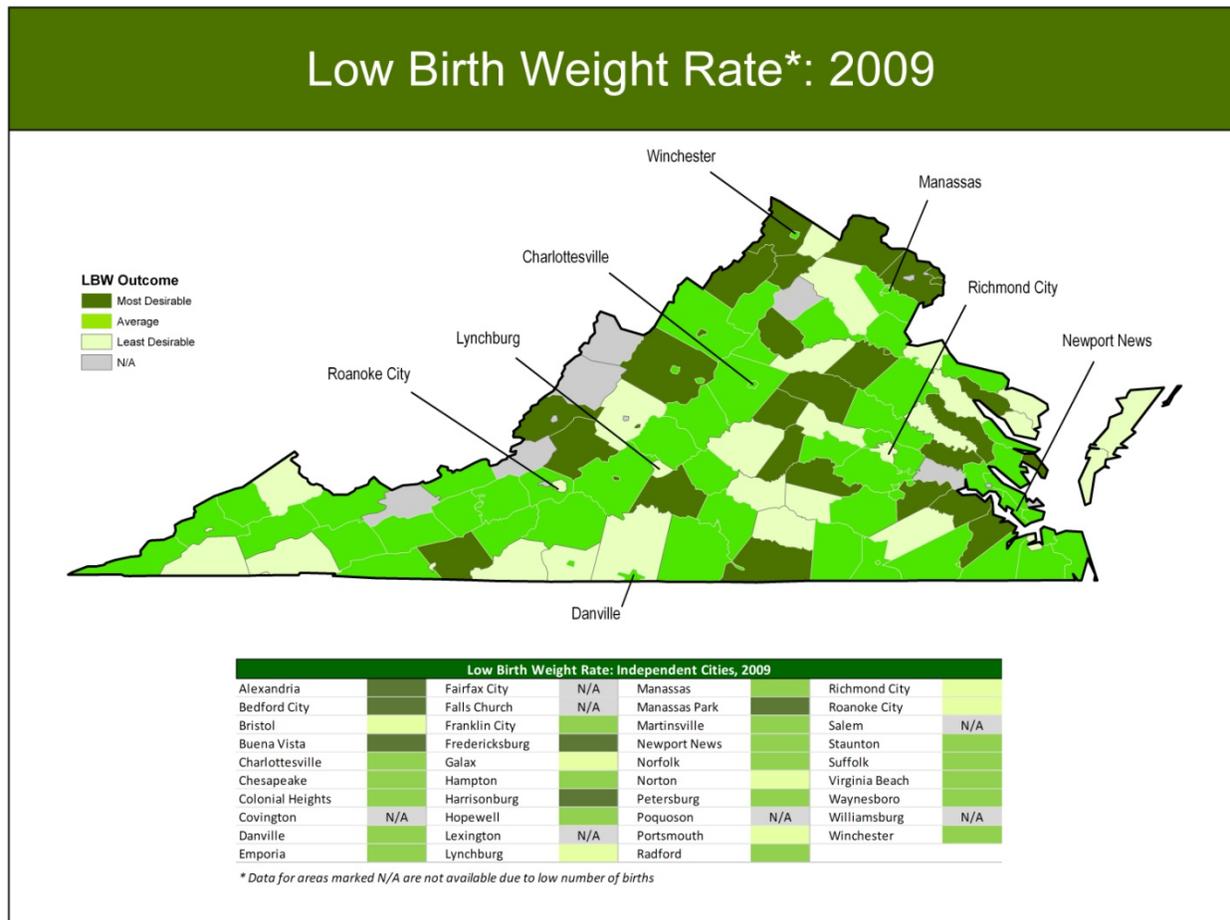
* Not Applicable (N/A) due to low numbers N below 20

This table is continued from the previous page.

County Name	FIPS Code	Number of Births	Number with Adequate or Better Prenatal Care	Percent with Adequate or Better Prenatal Care
Russell	167	124	111	89.5
Scott	169	22	19	86.4
Shenandoah	171	148	117	79.1
Smyth	173	136	119	87.5
Southampton	175	54	41	75.9
Spotsylvania	177	311	223	71.7
Stafford	179	218	138	63.3
Surry	181	31	30	96.8
Sussex	183	34	27	79.4
Tazewell	185	114	97	85.1
Warren	187	138	106	76.8
Washington	191	145	132	91.0
Westmoreland	193	74	51	68.9
Wise	195	168	133	79.2
Wythe	197	107	95	88.8
York	199	75	68	90.7

* Not Applicable (N/A) due to low numbers *N* below 20

Map 2. Low Birth Weight Rates in CY 2009 rate per 100 births



*All infants weighing less than 2,500 grams or 5 lbs. 8 oz. at birth are included in overall low birth weight rates.

- **Dark Green:** those areas with Overall Low Birth Weight (LBW) rates in the lowest (lower is better) quartile statewide and labeled most desirable.
- **Medium Green:** those areas encompassing the two middle quartiles surrounding the statewide median (average) Overall LBW rate.
- **Lightest green:** those areas in the top quartile statewide of the Overall LBW rates (higher is least desirable outcome).
- **Gray:** areas with too few births to be included as reliable data (not applicable).

Table A2-3. Number of Infants Born with Low Birth Weight (LBW) CY 2009 by City

City Name	FIPS Code	Number of Births	Number of Infants Born with LBW	Low Birth Weight Rate (%)
Alexandria	510	154	8	5.2 [♦]
Bedford	515	34	2	5.9
Bristol	520	89	28	31.5
Buena Vista	530	37	2	5.4
Charlottesville	540	140	15	10.7
Chesapeake	550	598	57	9.5
Colonial Heights	570	62	6	9.7
Covington	580	N/A*	N/A	N/A
Danville	590	278	25	9.0
Emporia	595	28	3	10.7
Fairfax	600	N/A	N/A	N/A
Falls Church	610	N/A	N/A	N/A
Franklin	620	49	4	8.2
Fredericksburg	630	101	5	5.0
Galax	640	40	5	12.5
Hampton	650	472	46	9.7
Harrisonburg	660	122	6	4.9
Hopewell	670	143	14	9.8
Lexington	678	N/A	N/A	N/A
Lynchburg	680	330	38	11.5
Manassas	683	58	6	10.3
Manassas Park	685	28	1	3.6
Martinsville	690	63	5	7.9
Newport News	700	831	79	9.5
Norfolk	710	937	103	11.0
Norton	720	21	3	14.3
Petersburg	730	198	20	10.1
Poquoson	735	N/A	N/A	N/A
Portsmouth	740	473	65	13.7
Radford	750	47	5	10.6
Richmond	760	739	100	13.5
Roanoke	770	464	57	12.3
Salem	775	N/A	N/A	N/A
Staunton	790	81	8	9.9
Suffolk	800	265	30	11.3
Virginia Beach	810	1037	76	7.3
Waynesboro	820	126	12	9.5
Williamsburg	830	N/A	N/A	N/A
Winchester	840	95	10	10.5

[♦] The lowest (lower is better) quartile statewide is less than or equal to 6.88% and the top quartile (higher is least desirable) is greater than 11.35%.

* Not Applicable (N/A) due to low numbers *N* below 20

Table A2-4. Number of Infants Born with Low Birth Weight (LBW) CY 2009 by County

County Name	FIPS Code	Number of Births	Number of Infants Born with LBW	Low Birth Weight Rate (%)
Accomack	1	130	18	13.8 [♦]
Albemarle	3	157	12	7.6
Alleghany	5	46	2	4.3
Amelia	7	38	2	5.3
Amherst	9	125	11	8.8
Appomattox	11	54	6	11.1
Arlington	13	104	7	6.7
Augusta	15	182	12	6.6
Bath	17	N/A*	N/A	N/A
Bedford	19	149	12	8.1
Bland	21	N/A	N/A	N/A
Botetourt	23	52	2	3.8
Brunswick	25	68	7	10.3
Buchanan	27	82	10	12.2
Buckingham	29	83	12	14.5
Campbell	31	189	13	6.9
Caroline	33	118	12	10.2
Carroll	35	95	4	4.2
Charles	36	N/A	2	12.5
Charlotte	37	47	5	10.6
Chesterfield	41	627	50	8.0
Clarke	43	27	4	14.8
Craig	45	N/A	N/A	N/A
Culpeper	47	131	10	7.6
Cumberland	49	49	3	6.1
Dickenson	51	67	5	7.5
Dinwiddie	53	85	9	10.6
Essex	57	42	8	19.0
Fairfax	59	816	53	6.5
Fauquier	61	120	14	11.7
Floyd	63	54	5	9.3
Fluvanna	65	41	1	2.4
Franklin	67	195	16	8.2
Frederick	69	188	12	6.4
Giles	71	50	5	10.0
Gloucester	73	107	10	9.3
Goochland	75	23	4	17.4
Grayson	77	56	4	7.1
Greene	79	64	7	10.9
Greensville	81	28	3	10.7
Halifax	83	139	15	10.8

* Not Applicable (N/A) due to low numbers *N* below 20

This table is continued from the previous page.

County Name	FIPS Code	Number of Births	Number of Infants Born with LBW	Low Birth Weight Rate (%)
Hanover	85	139	11	7.9
Henrico	87	762	78	10.2
Henry	89	184	25	13.6
Highland	91	N/A	N/A	N/A
Isle of Wight	93	89	6	6.7
James	95	136	13	9.6
King and Queen	97	20	1	5.0
King George	99	59	7	11.9
King William	101	43	5	11.6
Lancaster	103	39	7	17.9
Lee	105	130	9	6.9
Loudoun	107	197	6	3.0
Louisa	109	91	6	6.6
Lunenburg	111	49	6	12.2
Madison	113	42	1	2.4
Mathews	115	24	0	0.0
Mecklenburg	117	127	8	6.3
Middlesex	119	37	4	10.8
Montgomery	121	222	20	9.0
Nelson	125	49	4	8.2
New Kent	127	32	2	6.3
Northampton	131	41	6	14.6
Northumberland	133	41	7	17.1
Nottoway	135	59	7	11.9
Orange	137	86	10	11.6
Page	139	93	10	10.8
Patrick	141	40	5	12.5
Pittsylvania	143	201	24	11.9
Powhatan	145	31	3	9.7
Prince Edward	147	68	9	13.2
Prince George	149	65	2	3.1
Prince William	153	624	48	7.7
Pulaski	155	124	14	11.3
Rappahannock	157	N/A	N/A	N/A
Richmond	159	35	2	5.7
Roanoke	161	203	16	7.9
Rockbridge	163	81	11	13.6
Rockingham	165	213	15	7.0
Russell	167	141	16	11.3
Scott	169	82	11	13.4
Shenandoah	171	148	9	6.1
Smyth	173	145	15	10.3

* Not Applicable (N/A) due to low numbers *N* below 20

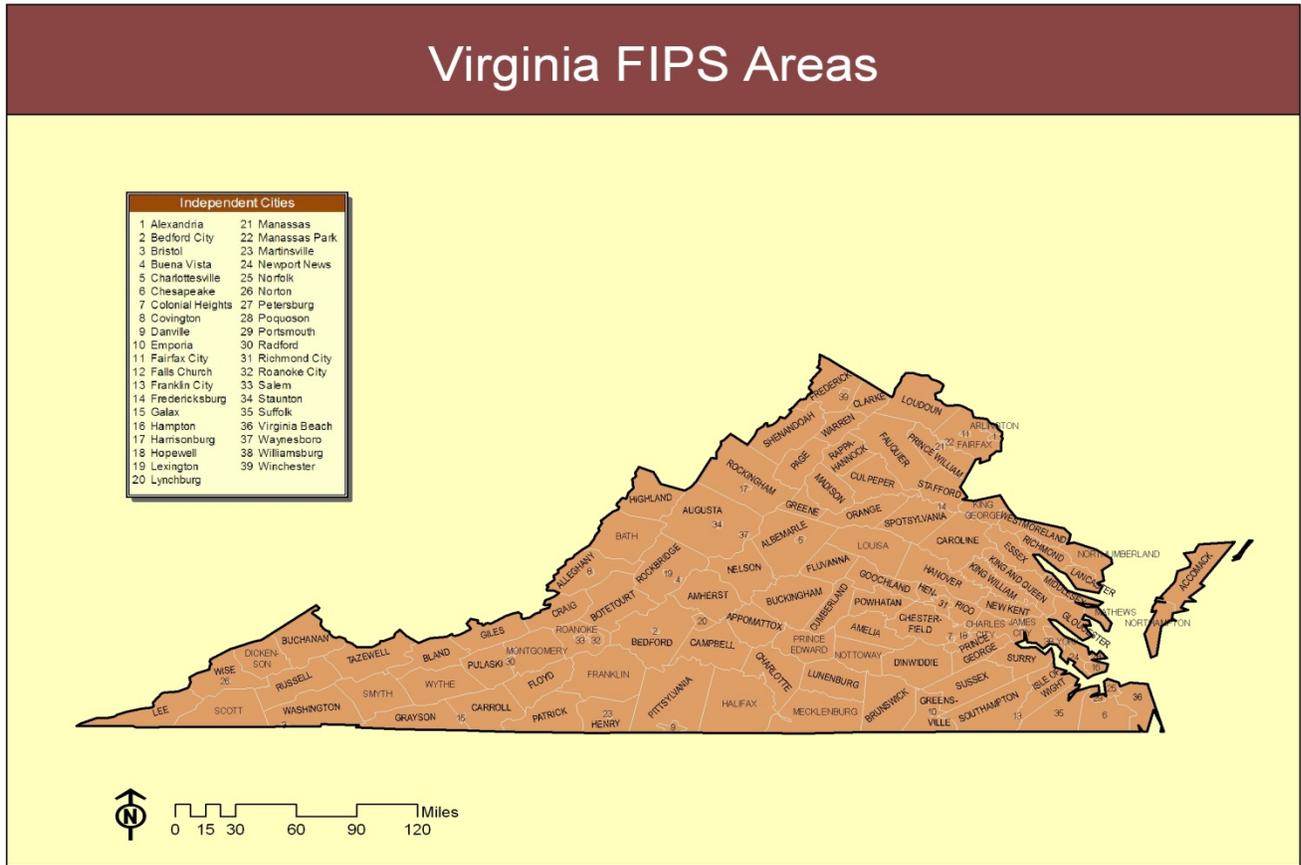
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County Name	FIPS Code	Number of Births	Number of Infants Born with LBW	Low Birth Weight Rate (%)
Southampton	175	54	6	11.1
Spotsylvania	177	313	20	6.4
Stafford	179	219	19	8.7
Surry	181	31	2	6.5
Sussex	183	34	4	11.8
Tazewell	185	117	13	11.1
Warren	187	138	9	6.5
Washington	191	187	22	11.8
Westmoreland	193	74	7	9.5
Wise	195	196	14	7.1
Wythe	197	108	9	8.3
York	199	75	6	8.0

◆ The lowest (lower is better) quartile statewide is less than or equal to 6.88% and the top quartile (higher is least desirable) is greater than 11.35%.

* Not Applicable (N/A) due to low numbers *N* below 20

Map 3. Virginia FIPS Areas



APPENDIX 3

Appendix 3 contains data for women enrolled in the All Other Medicaid Program which is not reported in the body of the report, but displayed for historical trending purposes. Rates in the body of the report for Overall Low Birth Weights are displayed with rounding to one-tenth of a percentage point. Rates in the Appendix contain both numerators and denominators and may display a slight difference from rounded data.

Table A3-1. Program Populations for CY 2007 through CY 2009

Program Population	CY 2007		CY 2008		CY 2009	
	Percent	Count	Percent	Count	Percent	Count
FAMIS MOMS [†]	3.9%	907	5.8%	1,387	5.7%	1,403
Medicaid for Pregnant Women [‡]	75.0%	17,578	73.4%	17,631	72.8%	18,024
All Other Medicaid	21.1%	4,945	20.8%	4,992	21.6%	5,342

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

[‡] Medicaid for Pregnant Women (a Medicaid Title XIX program)

Table A3-2. Delivery System Populations for CY 2007 through CY 2009

Delivery System	CY 2007		CY 2008		CY 2009	
	Percent	Count	Percent	Count	Percent	Count
Fee for Service (FFS)	22.9%	5,361	21.5%	5,168	20.4%	5,057
MCO	67.9%	15,908	70.9%	17,029	72.5%	17,947
PCCM	9.2%	2,161	7.6%	1,813	7.1%	1,765

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

[‡] Medicaid for Pregnant Women (a Medicaid Title XIX program)

Table A3-3. Program by Delivery System Populations for CY 2007 through CY 2009

Population	Fee-for-Service (FFS) CY 2007	Fee-for-Service (FFS) CY 2008	Fee-for-Service (FFS) CY 2009	MCO CY 2007	MCO CY 2008	MCO CY 2009	PCCM CY 2007	PCCM CY 2008	PCCM CY 2009
FAMIS MOMS [†]	19.0%	15.7%	12.7%	81.0%	84.3%	87.3%	0%	0%	0%
Medicaid for Pregnant Women [‡]	23.7%	22.6%	21.8%	66.3%	69.1%	70.2%	10.0%	8.4%	7.9%
All Other Medicaid Programs	20.6%	19.5%	17.7%	71.2%	73.7%	76.0%	8.2%	6.8%	6.2%

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

[‡] Medicaid for Pregnant Women (a Medicaid Title XIX program)

Table A3-4. Trends in Women Receiving Adequate Care – Specific Program Populations for CY 2007 through CY 2009

Program Population	Women Receiving Adequate Care CY 2007	Women Receiving Adequate Care CY 2008	Women Receiving Adequate Care CY 2009	Numerat or/ Denomin ator CY 2007	Numerat or/ Denomin ator CY 2008	Numerat or/ Denomin ator CY 2009	HEDIS 2008 National Medicaid Managed Care Average CY 2007 [■]	HEDIS 2009 National Medicaid Managed Care Average CY 2008 [*]	HEDIS 2010 National Medicaid Managed Care Average CY 2009 [▽]
FAMIS MOMS [†]	78.6%	80.7%	78.7%	709/902	1,111/1,377	1,093/1,389			
Medicaid for Pregnant Women ^{**}	77.0%	78.6%	78.4%	13,464/17,480	13,773/17,518	13,896/17,726	59.6%	58.7%	61.6%
All Other Medicaid Programs	70.0%	71.6%	71.3%	3,439/4,910	3,556/4,968	3,757/5,269			
Total	75.6%	77.3%	76.9%	17,612/23,292	18,440/23,863	18,746/24,384			

■ HEDIS 2008 rates are for CY 2007

* HEDIS 2009 rates are for CY 2008

▽ HEDIS 2010 rates are for CY 2009

† FAMIS MOMS (a CHIP Title XXI waiver program)

** Medicaid for Pregnant Women (a Medicaid Title XIX program)

Table A3-5. Trends in Women Receiving Adequate Care - Specific Delivery Systems for CY 2007 through CY 2009

Delivery System	Women Receiving Adequate Care CY 2007	Women Receiving Adequate Care CY 2008	Women Receiving Adequate Care CY 2009	Numer ator/ Denomi nator CY 2007	Numer ator/ Denomi nator CY 2008	Numer ator/ Denomi nator CY 2009	HEDIS 2008 National Medicaid Managed Care Average CY 2007 [■]	HEDIS 2009 National Medicaid Managed Care Average CY 2008 [*]	HEDIS 2010 National Medicaid Managed Care Average CY 2009 [▽]
Fee-for-Service (FFS)	69.3%	71.4%	70.6%	3,685/5,321	3,655/5,122	3,497/4,953			
MCO [△]	76.2%	78.2%	78.0%	12,096/15,881	13,305/17,015	13,975/17,911	59.6%	58.7%	61.6%
PCCM [●]	87.6%	85.8%	83.8%	1,831/2,090	1,480/1,726	1,274/1,520			

■ HEDIS 2008 rates are for CY 2007

* HEDIS 2009 rates are for CY 2008

▽ HEDIS 2010 rates are for CY 2009

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Table A3-6. Trends in Overall Low Birth Weight Rates - Specific Program Populations for CY 2007 through CY 2009 [▲] [■]
 (LBW < 2,500 grams)

Program Population	Overall Low Birth Weight Rates CY 2007 [◦]	Overall Low Birth Weight Rates CY 2008 [◦]	Overall Low Birth Weight Rates CY 2009 [◦]	Numerat or/ Denomin ator CY 2007	Numerat or/ Denomin ator CY 2008	Numerat or/ Denomin ator CY 2009	CDC/ NCHS NVSS Final Birth Data CY 2007* [▲]	CDC/ NCHS NVSS Preliminary Birth Data CY 2008 [▲]
FAMIS MOMS ⁺	9.8	8.1	7.8	89/907	112/1,390	109/1,405	8.2	8.2
Medicaid for Pregnant Women [⌘]	9.5	9.3	9.5	1,677/17,590	1,644/17,648	1,721/18,042	8.2	8.2
All Other Medicaid Programs	13.2	12.5	13.2	655/4,953	624/4,991	707/5,341	8.2	8.2
Total	10.3	9.9	10.2	2,421/23,450	2,380/24,029	2,537/24,788	8.2	8.2

[▲] A lower score is more desirable for overall low birth weight rates

[■] Rates calculated per 100 births

[◦] May differ from rates reported in the body of the report due to rounding

* CDC/NCHS National Vital Statistics Systems (NVSS) Final Birth Data CY 2007

[▲] CDC/NCHS National Vital Statistics Systems (NVSS) Preliminary Birth Data CY 2008

* CDC/NCHS National Vital Statistics Systems (NVSS) Final Birth Data CY 2007

[▲] CDC/NCHS National Vital Statistics Systems (NVSS) Preliminary Birth Data CY 2008

Table A3-7. Trends in Overall Low Birth Weight Rates by Specific Delivery Systems for CY 2007 through CY 2009 [▲] [■]
 (LBW < 2,500 grams)

Delivery System	Overall Low Birth Weight Rates CY 2007 [◦]	Overall Low Birth Weight Rates CY 2008 [◦]	Overall Low Birth Weight Rates CY 2009 [◦]	Numerator/ Denominator CY 2007	Numerator/ Denominator or CY 2008	Numerator/ Denominator CY 2009	CDC/ NCHS NVSS Final Birth Data CY 2007 [*]	CDC/ NCHS NVSS Preliminary Birth Data CY 2008 [▲]
Fee-for-Service (FFS)	12.1	11.9	12.3	652/ 5,368	617/ 5,175	625/ 5,066		
MCO	9.7	9.2	9.5	1,551/ 15,920	1,564/ 17,040	1,712/ 17,959	8.2	8.2
PCCM	10.1	11.0	11.3	218/ 2,162	199/ 1,814	200/ 1,763		

[▲] A lower score is more desirable for overall low birth weight rates

[■] Rates calculated per 100 births

^{*} CDC/NCHS National Vital Statistics Systems (NVSS) Final Birth Data CY 2007

[▲] CDC/NCHS National Vital Statistics Systems (NVSS) Preliminary Birth Data CY 2008

[◦] May differ from rates reported in the body of the report due to rounding

Table A3-8. Moderately Low and Very Low Birth Weight Rates by Specific Program Populations for CY 2007[■]

(MLBW – 1,500 to 2,499 grams, VBLW < 1,500 grams)

Program Population	Moderately Low Birth Weight Rates CY 2007	Very Low Birth Weight Rates CY 2007	Moderately Low Birth Weight Numerator/Denominator CY 2007	Very Low Birth Weight Numerator/Denominator CY 2007	Moderately Low Birth Weight Average*	Very Low Birth Weight Average*
FAMIS MOMS [†]	7.9	1.9	72/907	17/907	6.7	1.5
Medicaid for Pregnant Women [‡]	7.9	1.6	1,395/17,590	282/17,590	6.7	1.5
All Other Medicaid Programs	10.2	3.1	503/4,953	152/4,953	6.7	1.5
Total	8.4	1.9	1,970/23,450	451/23,450	6.7	1.5

■ Rates calculated per 100 births

*CDC NCHS National Vital Statistics Systems (NVSS) Final Birth Data CY 2007

† FAMIS MOMS (a CHIP Title XXI waiver program)

‡ Medicaid for Pregnant Women (a Medicaid Title XIX program)

Table A3-9. Moderately Low and Very Low Birth Weight Rates by Specific Program Populations for CY 2008[■]

(MLBW – 1,500 to 2,499 grams, VBLW < 1,500 grams)

Program Population	Moderately Low Birth Weight Rates CY 2008	Very Low Birth Weight Rate CY 2008	Moderately Low Birth Weight Numerator/Denominator CY 2008	Very Low Birth Weight Numerator/Denominator CY 2008	Moderately Low Birth Weight Average*	Very Low Birth Weight Average*
FAMIS MOMS [†]	5.8	2.2	81/1,390	31/1,390	6.7	1.5%
Medicaid for Pregnant Women [‡]	7.7	1.6	1,354/17,648	290/17,648	6.7	1.5
All Other Medicaid Programs	10.3	2.2	515/4,991	109/4,991	6.7	1.5
Total	8.1	1.8	1,950/24,029	430/24,029	6.7	1.5

■ Rates calculated per 100 births

*CDC NCHS National Vital Statistics Systems (NVSS) Preliminary Birth Data CY 2008

† FAMIS MOMS (a CHIP Title XXI waiver program)

‡ Medicaid for Pregnant Women (a Medicaid Title XIX program)

Table A3-10. Moderately Low and Very Low Birth Weight Rates by Specific Program Populations for CY 2009[■]

(MLBW – 1,500 to 2,499 grams, VBLW < 1,500 grams)

Program Population	Moderately Low Birth Weight Rates CY 2009	Very Low Birth Weight Rate CY 2009	Moderately Low Birth Weight Numerator/Denominator CY 2009	Very Low Birth Weight Numerator/Denominator CY 2009	Moderately Low Birth Weight Average*	Very Low Birth Weight Average*
FAMIS MOMS [†]	6.2	1.6	87/1,405	22/1,405	6.7	1.5
Medicaid for Pregnant Women [*]	7.9	1.7	1,419/18,042	302/18,042	6.7	1.5
All Other Medicaid Programs	10.4	2.9	553/5,341	154/5,341	6.7	1.5
Total	8.3	1.9	2,059/24,788	478/24,788	6.7	1.5

[■] Rates calculated per 100 births

*CDC NCHS National Vital Statistics Systems (NVSS) Preliminary Birth Data CY 2008

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

^{*} Medicaid for Pregnant Women (a Medicaid Title XIX program)

Table A3-11. Moderately Low and Very Low Birth Weight Rates by Specific Delivery Systems for CY 2008 (MLBW – 1,500 to 2,499 grams, VBLW < 1,500 grams)[■]

Delivery System	Moderately Low Birth Weight Rates CY 2007	Very Low Birth Weight Rate CY 2007	Moderately Low Birth Weight Numerator/Denominator CY 2007	Very Low Birth Weight Numerator/Denominator CY 2007	Moderately Low Birth Weight Average*	Very Low Birth Weight Average*
Fee-for-Service (FFS)	8.8	3.1	457/5,175	160/5,175	6.7	1.5
MCO	7.9	1.3	1,345/17,040	219/17,040	6.7	1.5
PCCM	8.2	2.8	148/1,814	51/1,814	6.7	1.5

[■] Rates calculated per 100 births

*CDC NCHS National Vital Statistics Systems (NVSS) Preliminary Birth Data CY 2008

Table A3-12. Moderately Low and Very Low Birth Weight Rates by Specific Delivery Systems for CY 2007 (MLBW – 1,500 to 2,499 grams, VBLW < 1,500 grams) [□]

Delivery System	Moderately Low Birth Weight Rates CY 2008	Very Low Birth Weight Rate CY 2008	Moderately Low Birth Weight Numerator/Denominator CY 2008	Very Low Birth Weight Numerator/Denominator CY 2008	Moderately Low Birth Weight Average*	Very Low Birth Weight Average*
Fee-for-Service (FFS)	8.8	3.3	474/5,368	178/5,368	6.7	1.5
MCO	8.2	1.5	1,310/15,920	241/15,920	6.7	1.5
PCCM	8.6	1.5	186/2,162	32/2,162	6.7	1.5

[□] Rates calculated per 100 births

*CDC NCHS National Vital Statistics Systems (NVSS) Final Birth Data CY 2007

Table A3-13. Moderately Low and Very Low Birth Weight Rates by Specific Delivery Systems for CY 2009 (MLBW – 1,500 to 2,499 grams, VBLW < 1,500 grams) [□]

Delivery System	Moderately Low Birth Weight Rates CY 2008	Very Low Birth Weight Rate CY 2008	Moderately Low Birth Weight Numerator/Denominator CY 2008	Very Low Birth Weight Numerator/Denominator CY 2008	Moderately Low Birth Weight Average*	Very Low Birth Weight Average*
Fee-for-Service (FFS)	9.1	3.2	462/5,066	163/5,066	6.7	1.5
MCO	8.1	1.5	1,447/17,959	265/17,959	6.7	1.5
PCCM	8.5	2.8	150/1,763	50/1,763	6.7	1.5

[□] Rates calculated per 100 births

*CDC NCHS National Vital Statistics Systems (NVSS) Preliminary Birth Data CY 2008

Table A3-14. Racial Distribution by Specific Program Populations Who Gave Birth During CY 2007*

Program Population	White	African American	Asian	Hispanic	Other	Denominator CY 2007
FAMIS MOMS [†]	57.6% (522) [•]	28.4% (258)	2.4% (22)	8.4% (76)	3.2% (29)	907
Medicaid for Pregnant Women [‡]	52.0% (9,139)	38.9% (6,831)	1.5% (266)	5.5% (967)	2.1% (375)	17,578
All Other Medicaid Programs	32.8% (1,620)	61.2% (3,025)	0.5% (24)	4.5% (224)	1.1% (52)	4,945
Total	48.1% (11,281)	43.2% (10,114)	1.3% (312)	5.4% (1,267)	1.9% (456)	23,430

* Rates may not add correctly due to rounding

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

[‡] Medicaid for Pregnant Women (a Medicaid Title XIX program)

[•] Numerator

Table A3-15. Racial Distribution by Specific Program Populations Who Gave Birth During CY 2008*

Program Population	White	African American	Asian	Hispanic	Other	Denominator CY 2008
FAMIS MOMS [†]	50.5% (700) [•]	29.7% (412)	2.3% (32)	8.7% (121)	8.8% (122)	1,387
Medicaid for Pregnant Women [‡]	48.9% (8,622)	37.6% (6,633)	1.2% (220)	6.3% (1,106)	6.0% (1,050)	17,631
All Other Medicaid Programs	33.7% (1,683)	58.9% (2,939)	0.6% (28)	5.0% (250)	1.8% (92)	4,992
Total	45.8% (11,005)	41.6% (9,984)	1.2% (280)	6.2% (1,477)	5.3% (1,264)	24,010

* Rates may not add correctly due to rounding

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

[‡] Medicaid for Pregnant Women (a Medicaid Title XIX program)

[•] Numerator

Table A3-16. Racial Distribution by Specific Program Populations Who Gave Birth During CY 2009*

Program Population	White	African American	Asian	Hispanic	Other	Denominator CY 2009
FAMIS MOMS [†]	49.0% (688) [•]	26.9% (377)	2.6% (37)	9.8% (138)	11.6% (163)	1,403
Medicaid for Pregnant Women [‡]	47.9% (8,627)	37.2% (6,711)	1.6% (281)	6.0% (1,081)	7.4% (1,324)	18,024
All Other Medicaid Programs	32.3% (1,726)	59.7% (3,188)	0.6% (31)	5.3% (285)	2.1% (112)	5,342
Total	44.6% (11,041)	41.5% (10,276)	1.4% (349)	6.1% (1,504)	6.5% (1,599)	24,769

* Rates may not add correctly due to rounding

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

[‡] Medicaid for Pregnant Women (a Medicaid Title XIX program)

[•] Numerator

Table A3-17. Racial Group Analysis of Recipients Who Gave Birth in CY 2007: Adequacy of Care, Moderately Low, Very Low and Overall Low Birth Weight*[‡]

Indicator	White	African American	Asian	Hispanic
Adequacy of Care	79.2% (8,856/11,175) ⁺	73.1% (7,381/10,094)	63.9% (198/310)	67.8% (853/1,259)
Moderately Low Birth Weight [‡]	6.6 (746/11,286)	10.7 (1,084/10,131)	4.8 (15/312)	6.6 (83/1,265)
Very Low Birth Weight [‡]	1.3 (144/11,286)	2.8 (279/10,131)	1.0 (3/312)	1.3 (17/1,265)
Overall Low Birth Weight [‡]	7.9 (890/11,286)	13.5 (1,363/10,131)	5.8 (18/312)	7.9 (100/1,265)

* Rates may not add correctly due to rounding

⁺ Numerator/Denominator

[‡] Rates calculated per 100 births

Table A3-18. Racial Group Analysis of Recipients Who Gave Birth in CY 2008: Adequacy of Care, Moderately Low, Very Low and Overall Low Birth Weight*[‡]

Indicator	White	African American	Asian	Hispanic
Adequacy of Care	80.3% (8,737/10,886) ⁺	75.4% (7,517/9,967)	72.4% (202/279)	70.7% (1,043/1,475)
Moderately Low Birth Weight [‡]	6.9 (765/11,016)	10.1 (1,011/9,990)	5.7 (16/280)	5.5 (82/1,479)
Very Low Birth Weight [‡]	1.4 (152/11,016)	2.4 (239/9,990)	1.1 (3/280)	1.3 (19/1,479)
Overall Low Birth Weight [‡]	8.3 (917/11,016)	12.5 (1,250/9,990)	6.8 (19/280)	6.8 (101/1,479)

* Rates may not add correctly due to rounding

⁺ Numerator/Denominator

[‡] Rates calculated per 100 births

Table A3-19. Racial Group Analysis of Recipients Who Gave Birth in CY 2009: Adequacy of Care, Moderately Low, Very Low and Overall Low Birth Weight*[‡]

Indicator	White	African American	Asian	Hispanic
Adequacy of Care	79.5% (8,532/10,726) ⁺	75.5% (7,731/10,233)	67.8% (236/348)	69.4% (1,036/1,493)
Moderately Low Birth Weight [‡]	7.0 (775/11,044)	10.4 (1,074/10,287)	6.0 (21/350)	5.6 (84/1,507)
Very Low Birth Weight [‡]	1.4 (157/11,044)	2.6 (274/10,287)	1.7 (6/350)	1.3 (20/1,507)
Overall Low Birth Weight [‡]	8.4 (932/11,044)	13.1 (1,348/10,287)	7.7 (27/350)	6.9% (104/1,507)

* Rates may not add correctly due to rounding

⁺ Numerator/Denominator

[‡] Rates calculated per 100 births

Table A3-20. Trimester Eligibility Began for All Programs in CY 2007 through CY 2009*

Trimester	CY 2007	Numerator/ Denominator CY 2007	CY 2008	Numerator/ Denominator CY 2008	CY 2009	Numerator/ Denominator CY 2009
1	79.4%	18,592/ 23,430	80.4%	19,295/ 24,010	80.4%	19,925/ 24,769
2	15.1%	3,543/ 23,430	14.8%	3,545/ 24,010	14.7%	3,642/ 24,769
3	5.5%	1,295/ 23,430	4.9%	1,170/ 24,010	4.9%	1,202/ 24,769

*Rates may not add correctly due to rounding

Table A3-21. Trimester Specific Program* Enrollment Began for CY 2007**

Trimester	FAMIS Moms [†]	Medicaid for Pregnant Women [‡]	All Other Medicaid Programs
1	66.3% (601/907) [†]	65.9% (11,586/17,578)	89.6% (4,432/4,945)
2	26.5% (240/907)	25.3% (4,439/17,578)	7.4% (366/4,945)
3	7.3% (66/907)	8.8% (1,553/17,578)	3.0% (147/4,945)

* Program of record is the program in which the mother is enrolled on the day of delivery

**Rates may not add correctly due to rounding

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

[‡] Medicaid for Pregnant Women (a Medicaid Title XIX program)

[†] Numerator/Denominator

Table A3-22. Trimester Program* Enrollment Began for CY 2008 by Program Population**

Trimester	FAMIS Moms [†]	Medicaid for Pregnant Women [‡]	All Other Medicaid Programs
1	70.4% (977/1,387) [†]	66.9% (11,790/17,631)	90.4% (4,514/4,992)
2	24.7% (343/1,387)	24.7% (4,358/17,631)	6.6% (327/4,992)
3	4.8% (67/1,387)	8.4% (1,483/17,631)	3.0% (151/4,992)

* Program of record is the program in which the mother is enrolled on the day of delivery

**Rates may not add correctly due to rounding

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

[‡] Medicaid for Pregnant Women (a Medicaid Title XIX program)

[†] Numerator/Denominator

Table A3-23. Trimester Program* Enrollment Began for CY 2009 by Program Population**

Trimester	FAMIS Moms [†]	Medicaid for Pregnant Women [‡]	All Other Medicaid Programs
1	70.2% (985/1,403) [†]	66.5% (11,987/18,024)	90.8% (4,848/5,342)
2	25.5% (358/1,403)	24.8% (4,475/18,024)	6.6% (355/5,342)
3	4.3% (60/1,403)	8.7% (1,562/18,024)	2.6% (139/5,342)

* Program of record is the program in which the mother is enrolled on the day of delivery

**Rates may not add correctly due to rounding

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

[‡] Medicaid for Pregnant Women (a Medicaid Title XIX program)

[†] Numerator/Denominator

Table A3-24. Trimester Delivery System* Enrollment Began for CY 2007**

Trimester	Fee-for-Service (FFS)	MCO	PCCM
1	40.2% (2,153/5,361) [†]	26.8% (4,256/15,908)	24.9% (539/2,161)
2	32.6% (1,747/5,361)	53.1% (8,453/15,908)	57.2% (1,237/2,161)
3	27.3% (1,461/5,361)	20.1% (3,199/15,908)	17.8% (385/2,161)

*Delivery system of record is the system in which the mother is enrolled on the day of delivery

**Rates may not add correctly due to rounding

[†] Numerator/Denominator

Table A3-25. Trimester Delivery System* Enrollment Began for CY 2008**

Trimester	FFS	MCO	PCCM
1	43.1% (2,229/5,168) [†]	26.7% (4,551/17,029)	26.1% (474/1,813)
2	31.3% (1,618/5,168)	54.1% (9,211/17,029)	59.1% (1,072/1,813)
3	25.6% (1,321/5,168)	19.2% (3,267/17,029)	14.7% (267/1,813)

*Delivery system of record is the system in which the mother is enrolled on the day of delivery

**Rates may not add correctly due to rounding

[†] Numerator/Denominator

Table A3-26. Trimester Delivery System* Enrollment Began for CY 2009**

Trimester	FFS	MCO	PCCM
1	41.2% (2,082/5,057) †	27.2% (4,875/17,947)	28.4% (501/1,765)
2	31.9% (1,615/5,057)	54.3% (9,740/17,947)	58.1% (1,025/1,765)
3	26.9% (1,360/5,057)	18.6% (3,332/17,947)	13.5% (239/1,765)

*Delivery system of record is the system in which the mother is enrolled on the day of delivery

**Rates may not add correctly due to rounding

† Numerator/Denominator

Table A3-27. Percentage of infants born premature to FAMIS MOMS, Medicaid for Pregnant Women (MA for PW), and Other MA for CY 2007 through CY 2009

(Preterm birth rate: the number of births delivered at less than 37 completed weeks of gestation)

Program Population	CY 2007	CY 2008	CY 2009	CDC/NCHS NVSS Final Birth Data CY 2007*	CDC/NCHS NVSS Preliminary Birth Data CY 2008 [▲]	Numerator/Denominator CY 2007	Numerator/Denominator CY 2008	Numerator/Denominator CY 2009
FAMIS MOMS, Medicaid for Pregnant Women & Other MA [°]	11.0%	10.7%	10.5%	12.7%	12.3%	2,580/23,449	2,578/24,024	2,590/24,784

* CDC NCHS National Vital Statistics Systems (NVSS) Final Birth Data CY 2007

[▲] CDC NCHS National Vital Statistics Systems (NVSS) Preliminary Birth Data CY 2008

[°] FAMIS MOMS is a CHIP Title XXI waiver program and Medicaid for Pregnant Women (MA for PW) is a Medicaid Title XIX program

Table A3-28. Percentage of Infants Born Premature by Program Population for CY 2007 through CY 2009
(Preterm birth rate: the number of births delivered at less than 37 completed weeks of gestation)

Program Population	CY 2007	CY 2008	CY 2009	CDC/ NCHS NVSS Final Birth Data CY 2007*	CDC/ NCHS NVSS Preliminary Birth Data CY 2008 [▲]	Numerator/ Denominator CY 2007	Numerator/ Denominator CY 2008	Numerator/ Denominator CY 2009
FAMIS MOMS [†]	10.1%	10.1%	8.8%	12.7%	12.3%	92/907	140/1,390	123/1,405
Medicaid for Pregnant Women ^{**}	10.1%	10.1%	9.8%	12.7%	12.3%	1,769/17,590	1,784/17,646	1,770/18,039
All Other Medicaid Programs	14.5%	13.1%	13.1%	12.7%	12.3%	719/4,952	654/4,998	697/5,340
Total	11.0%	10.7%	10.5%	12.7%	12.3%	2,580/23,449	2,578/24,024	2,590/24,784

* CDC NCHS National Vital Statistics Systems (NVSS) Final Birth Data CY 2007

[▲] CDC NCHS National Vital Statistics Systems (NVSS) Preliminary Birth Data CY 2008

[†] FAMIS MOMS (a CHIP Title XXI waiver program)

^{**} Medicaid for Pregnant Women (a Medicaid Title XIX program)

Table A3-29. Percentage of Infants Born Premature by Delivery System for CY 2007 through CY 2009
(Preterm birth rate: the number of births delivered at less than 37 completed weeks of gestation)

Delivery System	CY 2007	CY 2008	CY 2009	CDC/ NCHS NVSS Final Birth Data CY 2007*	CDC/ NCHS NVSS Preliminary Birth Data CY 2008 [▲]	Numerator/ Denominator CY 2007	Numerator/ Denominator CY 2008	Numerator/ Denominator CY 2009
Fee for Service (FFS)	13.6%	13.5%	13.6%	12.7%	12.3%	729/5,368	700/5,175	690/5,066
MCO	10.2%	9.9%	9.5%	12.7%	12.3%	1,620/15,921	1,689/17,036	1,714/17,957
PCCM	10.7%	10.4%	10.6%	12.7%	12.3%	231/2,160	189/1,813	186/1,761

* CDC NCHS National Vital Statistics Systems (NVSS) Final Birth Data CY 2007

[▲] CDC NCHS National Vital Statistics Systems (NVSS) Preliminary Birth Data CY 2008

Table A3-30. Percentage of Infants Born Premature by Race for CY 2007 through CY 2009
 (Preterm birth rate: the number of births delivered at less than 37 completed weeks of gestation)

Race	CY 2007	CY 2008	CY 2009	CDC/ NCHS NVSS Final Birth Data CY 2007*	CDC/ NCHS NVSS Preliminary Birth Data CY 2008 [▲]	Numerator/ Denominator CY 2007	Numerator/ Denominator CY 2008	Numerator/ Denominator CY 2009
White	9.1%	9.8%	9.3%	12.7%	12.3%	1,028/11,285	1,084/11,013	1,023/11,042
African American	13.4%	12.4%	12.3%	12.7%	12.3%	1,359/10,129	1,234/9,988	1,267/10,285
Asian	8.7%	9.3%	9.1%	12.7%	12.3%	27/312	26/280	32/350
Hispanic	9.4%	9.1%	9.1%	12.7 %	12.3%	119/1,267	135/1479	137/1,507

* CDC NCHS National Vital Statistics Systems (NVSS) Final Birth Data CY 2007

[▲] CDC NCHS National Vital Statistics Systems (NVSS) Preliminary Birth Data CY 2008