

Commonwealth of Virginia Department of Medical Assistance Services

2021–22 Medicaid and CHIP Maternal and Child Health Focus Study Report



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1. Executive Summary

As an optional external quality review (EQR) task under the Centers for Medicare & Medicaid Services (CMS) Medicaid guidelines,¹⁻¹ the Commonwealth of Virginia Department of Medical Assistance Services (DMAS) contracted with Health Services Advisory Group, Inc. (HSAG) to conduct a focus study during contract year 2021–22, providing quantitative information about prenatal care and associated maternal and birth outcomes among women with births paid by Title XIX or Title XXI, which include the Medicaid, Medicaid Expansion, and Family Access to Medical Insurance Security (FAMIS) MOMS programs. The Contract Year 2021–22 Medicaid and Children’s Health Insurance Program (CHIP) Maternal and Child Health Focus Study addressed the following questions:

- To what extent do women with births paid by Virginia Medicaid receive early and adequate prenatal care during pregnancy?
- What clinical outcomes (e.g., preterm births, low birth weight) are associated with births paid by Virginia Medicaid?
- What maternal health outcomes (e.g., depression) are associated with births paid by Virginia Medicaid?
- What health disparities exist in birth outcomes for births paid by Virginia Medicaid?

Methodology and Study Indicators

The study used deterministic and probabilistic data linking to match eligible members with birth registry records to identify births paid by Virginia Medicaid during calendar year (CY) 2021. Medicaid member, claims, and encounter data files were used with birth registry data fields to match members from each data linkage process. All probabilistically or deterministically linked birth registry records were included in the eligible focus study population.

The eligible population consisted of all live births during CY 2021 paid by Virginia Medicaid regardless of whether the births occurred in Virginia. Births paid by Virginia Medicaid were assigned to one of four program categories based on the mother’s program at the time of delivery:¹⁻²

- The Medicaid for Pregnant Women program uses Title XIX (Medicaid State Plan) funding to serve pregnant women with incomes up to 143 percent of the federal poverty level (FPL).
- The Medicaid Expansion program uses Title XIX funding to serve adults ages 19 to 64 years of age with incomes up to 133 percent of the FPL. Members who become pregnant while already enrolled in the Medicaid Expansion group may remain in that eligibility category during the pregnancy, while

¹⁻¹ Department of Health and Human Services, Centers for Medicare & Medicaid Services. *Protocol 9: Conducting Focus Studies of Health Care Quality: An Optional EQR-Related Activity*, October 2019. Available at: <https://www.medicaid.gov/medicaid/quality-of-care/downloads/2019-eqr-protocols.pdf>. Accessed on: Jan 3, 2023.

¹⁻² A standard disregard of 5 percent FPL is applied to the Medicaid for Pregnant Women, Medicaid Expansion, and FAMIS MOMS programs if the woman’s income is slightly above the household income.

individuals who report that they are pregnant at initial application must be enrolled into a pregnancy category such as Medicaid for Pregnant Women or FAMIS MOMS.

- The FAMIS MOMS program uses Title XXI (CHIP Demonstration Waiver) funding to serve pregnant women with incomes up to 200 percent of the FPL and provides benefits similar to Medicaid.
- The Other Aid Categories include births paid by Medicaid that do not fall within the Medicaid for Pregnant Women, Medicaid Expansion, or FAMIS MOMS programs. Please note, births to women in Plan First and the Department of Corrections (DOC) are excluded.^{1-3,1-4}

To examine outcomes among all Virginia Medicaid-paid births, births were grouped into a study population and a comparison group based upon the timing and length of the mother's Medicaid enrollment prior to the delivery:

- Study Population: women enrolled in Medicaid for Pregnant Women, Medicaid Expansion, FAMIS MOMS, or Other Aid Categories on the date of delivery, with continuous enrollment in any Medicaid program or combination of programs for 120 or more days (counting the date of delivery).
- Comparison Group: women enrolled in any of the four Medicaid programs (i.e., Medicaid for Pregnant Women, Medicaid Expansion, FAMIS MOMS, or Other Aid Categories) on the date of delivery with continuous enrollment in any Medicaid program or combination of programs for fewer than 120 days (counting the date of delivery).

HSAG calculated the following birth outcomes study indicators to assess the study questions for all singleton, live births paid by Virginia Medicaid during CY 2021:

- ***Births with Early and Adequate Prenatal Care***—The percentage of births with an Adequacy of Prenatal Care Utilization (APNCU) Index (i.e., the Kotelchuck Index) score greater than or equal to 80 percent (i.e., women who received at least 80 percent of expected prenatal visits).
 - ***Births with Inadequate Prenatal Care***—The percentage of births with an APNCU Index score of less than 50 percent (i.e., women who received less than 50 percent of expected prenatal care visits).
 - ***Births with No Prenatal Care***—The percentage of births with no prenatal care.
- ***Preterm Births (<37 Weeks Gestation)***—The percentage of births before 37 completed weeks of gestation.
- ***Newborns with Low Birth Weight (<2,500 grams)***—The percentage of newborns with birth weights less than 2,500 grams. This includes birth weights in the very low birth weight category (i.e., birth weights less than 1,500 grams) and the low birth weight category (i.e., birth weights between 1,500 and 2,499 grams).

¹⁻³ The “Other Aid Categories” include births paid by Medicaid or CHIP as part of the Low Income Families with Children (LIFC) (parents and caretaker adults), disabled individuals, Medicaid Children, Foster Children and Former Foster Youth, Adoption Assistance Children, FAMIS Children, FAMIS Prenatal Coverage, presumptively eligible individuals, and others.

¹⁻⁴ Prior to the 2021–22 Medicaid and CHIP Maternal and Child Health Focus Study, births to women in the LIFC program were not included in the Other Aid Categories program. Therefore, HSAG recalculated historical (i.e., CY 2019 and CY 2020) Other Aid Categories program rates to include births for women in LIFC.

Additionally, HSAG calculated the following maternal health outcomes study indicators to assess the study questions for all singleton, live births paid by Virginia Medicaid during CY 2021:

- *Postpartum Emergency Department (ED) Utilization*—The percentage of postpartum women who utilized ED services within 90 days of delivery.
- *Postpartum Ambulatory Care Utilization*—The percentage of postpartum women who utilized ambulatory care services within 90 days of delivery.
- *Prenatal Maternal Depression Screening*—The percentage of women who received a screening for depression during pregnancy.
- *Postpartum Maternal Depression Screening*—The percentage of women who received a screening for depression on or between seven and 84 days after delivery.

Within Section 3 of this report, HSAG presents the overall birth characteristics for key maternal demographic characteristics (i.e., maternal age at delivery, race/ethnicity, and managed care region of maternal residence) and by enrollment and program characteristics (i.e., Medicaid program, managed care program, delivery system, trimester of prenatal care initiation, length of continuous enrollment, and managed care organizations [MCOs]). HSAG also presents the birth outcomes study indicators stratified by key demographic, enrollment, and program characteristics, with comparisons to CY 2019 and CY 2020 results. Additionally, for the birth outcomes study indicator results, HSAG presents the health disparity analysis results for the race/ethnicity stratifications. For national benchmark comparisons, HSAG used the Healthy People 2030 goals, which use data derived from the Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), and National Vital Statistics System (NVSS), for the *Births with Early and Adequate Prenatal Care* and *Preterm Births (<37 Weeks Gestation)* study indicators.¹⁻⁵ HSAG used the Federal Fiscal Year (FFY) 2020 CMS Core Set benchmarks for the *Newborns with Low Birth Weight (<2,500 grams)* study indicator.¹⁻⁶

Further, HSAG presents the CY 2021 maternal health study indicators stratified by select demographic characteristics (i.e., maternal race/ethnicity and managed care region of maternal residence) and enrollment and program characteristics (i.e., Medicaid program, managed care program at delivery, delivery system, trimester of prenatal care initiation, and length of continuous enrollment). Please note that HSAG developed the maternal health indicators for this study; therefore, national benchmarks are not available. Additional stratifications of the study indicators are presented in Appendix A.

Findings

Table 1-1 presents the overall number of births paid by Virginia Medicaid (i.e., Title XIX or Title XXI) during each measurement period, as well as the number and percentage of multiple gestation and singleton births.

¹⁻⁵ U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2030: Pregnancy and childbirth. Available at: <https://health.gov/healthypeople/objectives-and-data/browse-objectives/pregnancy-and-childbirth>. Accessed on: Jan 3, 2023.

¹⁻⁶ Centers for Medicare & Medicaid Services. 2020 child and adult health care quality measures quality. Available at: <https://data.medicare.gov/dataset/fbbe1734-b448-4e5a-bc94-3f8688534741>. Accessed on: Jan 3, 2023.

Table 1-1—Overall Births Paid by Virginia Medicaid, CY 2019–CY 2021

Overall Births	CY 2019		CY 2020		CY 2021	
	Number	Percent	Number	Percent	Number	Percent
Overall Births*						
Total Births	38,317	100.0%	37,316	100.0%	36,480	100.0%
Multiple Gestation Births	1,350	3.5%	1,255	3.4%	1,184	3.2%
Singleton Births	36,967	96.5%	36,061	96.6%	35,296	96.8%
Medicaid Births**						
Total Births	33,679	100.0%	33,401	100.0%	34,150	100.0%
Multiple Gestation Births	1,235	3.7%	1,171	3.5%	1,118	3.3%
Singleton Births	32,444	96.3%	32,230	96.5%	33,032	96.7%

* Overall Births includes all births paid by Virginia Medicaid.

** Medicaid Births exclude members enrolled in limited benefit programs (e.g., Plan First) and members who are only eligible for emergency only benefits.

The number of overall births identified in the matched vital statistics data slightly declined in CY 2021, while the number of Medicaid births identified in the matched vital statistics data slightly increased in CY 2021. The increase in Medicaid Births in CY 2021 is likely primarily attributed to the implementation of the FAMIS Prenatal Coverage program in July 2021, which resulted in the inclusion of approximately 2,000 more births for CY 2021, while the decrease observed in the overall births is primarily attributed to a decline in emergency only births that were matched to the vital statistics data. Virginia Medicaid's compliance with federal maintenance of effort (MOE) policies during the continuing coronavirus disease 2019 (COVID-19) public health emergency (PHE), which prevented members' coverage from being terminated in most circumstances for the duration of the PHE, was likely also a factor contributing to the higher number of births.

Births in each measurement period were stratified into four Medicaid programs (i.e., Medicaid for Pregnant Women, Medicaid Expansion, FAMIS MOMS, and Other Aid Categories) and two delivery systems (i.e., Fee-for-Service [FFS] and managed care). Table 1-2 presents the overall number and percentage of singleton births for each of these Medicaid programs and delivery systems.

Table 1-2—Singleton Births by Medicaid Program and Delivery System, CY 2019–CY 2021

Overall Births	CY 2019		CY 2020		CY 2021	
	Number	Percent	Number	Percent	Number	Percent
Singleton Births	32,444	100.0%	32,230	100.0%	33,032	100.0%
Medicaid Program						
Medicaid for Pregnant Women	22,978	70.8%	19,772	61.3%	15,682	47.5%
Medicaid Expansion	2,152	6.6%	4,576	14.2%	6,548	19.8%
FAMIS MOMS	2,193	6.8%	2,091	6.5%	1,785	5.4%
Other Aid Categories†	5,121	15.8%	5,791	18.0%	9,017	27.3%
Delivery System						
FFS	3,827	11.8%	3,025	9.4%	3,916	11.9%
Managed Care	28,617	88.2%	29,205	90.6%	29,116	88.1%

† Other Aid Categories includes all other births not covered by the Medicaid for Pregnant Women, Medicaid Expansion, and FAMIS MOMS programs.

While the majority of Medicaid program births across all three measurement periods were to women in the Medicaid for Pregnant Women program, there was a decline in births for this program for CY 2021. This decrease is expected due to the implementation of Medicaid Expansion on January 1, 2019, which provided coverage to women who were previously only eligible for Medicaid if they became pregnant. As a result, the number of births to women in Medicaid Expansion increased by more than 40 percent between CY 2020 and CY 2021.

Table 1-3 presents the overall birth outcomes study indicator results for each measurement period.

Table 1-3—Overall Birth Outcomes Study Indicator Findings Among Singleton Births, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
Births with Early and Adequate Prenatal Care	76.4%	22,392	72.3%	22,245	71.9%	23,780	72.7%
<i>Births with Inadequate Prenatal Care*</i>	NA	5,043	16.3%	4,651	15.0%	5,106	15.6%
<i>Births with No Prenatal Care*</i>	NA	688	2.2%	534	1.7%	685	2.1%
Preterm Births (<37 Weeks Gestation)*	9.4%	3,263	10.1%	3,168	9.8%	3,327	10.1%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	3,070	9.5%	2,979	9.2%	3,074	9.3%

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

The percentage of CY 2021 *Births with Early and Adequate Prenatal Care* was consistent with prior years and continues to fall below the national benchmark. The rates for the *Newborns with Low Birth Weight (<2,500 grams)* indicator outperformed the national benchmark for all three measurement periods, demonstrating strength for Virginia Medicaid. While the rates of *Births with Early and Adequate Prenatal Care* are consistent across all years, it should be noted that the COVID-19 PHE may have negatively impacted CY 2020 study indicator results due to the public health efforts put in place during CY 2020 to mitigate the spread of COVID-19 (e.g., social distancing, stay at home orders). As a result, caution should be exercised when comparing CY 2019 and CY 2021 study indicator results to CY 2020.

To facilitate DMAS' program evaluation efforts, Table 1-4 presents the CY 2021 study indicator results for the four Medicaid Programs (i.e., Medicaid for Pregnant Women, Medicaid Expansion, FAMIS MOMS, and Other Aid Categories) stratified into a study population and comparison group based on the length of continuous enrollment prior to a woman's delivery. The table also identifies for each study indicator whether there was a statistically significant difference between results for the study population (i.e., continuously enrolled for ≥ 120 days prior to delivery) and the comparison group (i.e., continuously enrolled for < 120 days prior to delivery).

Table 1-4—Overall Medicaid Program Birth Outcomes Study Indicator Findings Among Singleton Births by Comparison Group and Study Population, CY 2021

Study Indicator	National Benchmark	Comparison Group			Study Population		
		Denom	Number	Percent	Denom	Number	Percent
Medicaid for Pregnant Women							
Births with Early and Adequate Prenatal Care	76.4%	2,196	1,345	61.2%	13,348	10,148	76.0%^
<i>Births with Inadequate Prenatal Care*</i>	NA	2,196	530	24.1%	13,348	1,807	13.5%^
<i>Births with No Prenatal Care*</i>	NA	2,196	96	4.4%	13,348	143	1.1%^
Preterm Births (<37 Weeks Gestation)*	9.4%	2,227	272	12.2%	13,454	1,188	8.8%^
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	2,227	221	9.9%	13,451	1,112	8.3%^
Medicaid Expansion							
Births with Early and Adequate Prenatal Care	76.4%	205	156	76.1%	6,287	4,875	77.5%
<i>Births with Inadequate Prenatal Care*</i>	NA	205	24	11.7%	6,287	698	11.1%
<i>Births with No Prenatal Care*</i>	NA	205	S	S	6,287	147	2.3%
Preterm Births (<37 Weeks Gestation)*	9.4%	206	22	10.7%	6,339	711	11.2%

Study Indicator	National Benchmark	Comparison Group			Study Population		
		Denom	Number	Percent	Denom	Number	Percent
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	206	23	11.2%	6,338	684	10.8%
FAMIS MOMS							
Births with Early and Adequate Prenatal Care	76.4%	397	295	74.3%	1,372	1,087	79.2%^
<i>Births with Inadequate Prenatal Care*</i>	NA	397	63	15.9%	1,372	156	11.4%^
<i>Births with No Prenatal Care*</i>	NA	397	S	S	1,372	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	403	41	10.2%	1,382	120	8.7%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	403	34	8.4%	1,382	111	8.0%
Other Aid Categories†							
Births with Early and Adequate Prenatal Care	76.4%	2,024	1,020	50.4%	6,892	4,854	70.4%^
<i>Births with Inadequate Prenatal Care*</i>	NA	2,024	712	35.2%	6,892	1,116	16.2%^
<i>Births with No Prenatal Care*</i>	NA	2,024	83	4.1%	6,892	197	2.9%^
Preterm Births (<37 Weeks Gestation)*	9.4%	2,054	184	9.0%	6,962	789	11.3%^
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	2,054	140	6.8%	6,961	749	10.8%^

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

† Other Aid Categories includes all other births not covered by the Medicaid for Pregnant Women, Medicaid Expansion, and FAMIS MOMS programs.

^indicates a statistically significant difference between the study population rate and the comparison group rate.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Overall, the Medicaid for Pregnant Women and FAMIS MOMS programs demonstrated strength in CY 2021, with the study populations exceeding the applicable national benchmark for the *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)* study indicators. Additionally, the Medicaid Expansion and FAMIS MOMS study populations exceeded the national benchmark for the *Births with Early and Adequate Prenatal Care* study indicator. Conversely, the Other Aid Categories study population rates fell below the national benchmark for all three study indicators that could be compared to national benchmarks, with the study population having the lowest rates of *Births with Early and Adequate Prenatal Care* when compared to the other study populations. Of note, the comparative analysis showed a large difference between the rate of *Births with Early and Adequate Prenatal Care* for the study population and the comparison group for women in the Medicaid for

Pregnant Women and Other Aid Categories, with the study population's rates at least 14 percentage points higher than the comparison group rates, demonstrating strength for these study populations.

Table 1-5 presents the overall maternal health outcomes study indicator results for CY 2021.

Table 1-5—Overall Maternal Health Outcomes Study Indicator Findings Among Singleton Births, CY 2021

Study Indicator	CY 2021		
	Denominator	Numerator	Percent
Postpartum ED Utilization*	33,032	8,504	25.7%
Postpartum Ambulatory Care Utilization	33,032	17,024	51.5%
Prenatal Maternal Depression Screening	33,032	1,638	5.0%
Postpartum Maternal Depression Screening	33,032	2,251	6.8%

*a lower rate indicates better performance for this indicator.

As indicated in Table 1-5, approximately 26 percent and 52 percent of postpartum women utilized ED and ambulatory care services, respectively. Please note that these study indicators do not include services related explicitly to postpartum care visits and instead represent the utilization of ED and ambulatory services within the postpartum period; therefore, exercise caution when interpreting results. Of note, women who received no prenatal care had the highest rates of *Postpartum ED Utilization*, while women who were continuously enrolled for more than 180 days had higher rates of *Postpartum Ambulatory Care Utilization*. These findings are expected given that women who established a provider for prenatal care would likely continue to seek care with that provider in an ambulatory setting after delivery. However, for those women who did not receive prenatal care, there is an opportunity to ensure that these women establish a provider prior to becoming pregnant in order to ensure utilization of appropriate care before and after pregnancy (i.e., ambulatory care instead of ED).

Approximately 5 percent of pregnant women and approximately 7 percent of postpartum women received a maternal depression screening. Please note that these study indicators only consider women who received a standardized maternal depression screening; therefore, these rates are likely low due to providers using nonstandardized screenings. The State of New York Department of Health found that while approximately 63 percent of women received a depression screening during the initial visit with their provider, only around 7 percent received a depression screening using a standardized tool.¹⁻⁷ Overall, HSAG found that women who initiated prenatal care in their first trimester and women who were continuously enrolled for more than 180 days had the highest rates of *Prenatal Maternal Depression Screening* and *Postpartum Maternal Depression Screening* in CY 2021.

¹⁻⁷ New York State Department of Health. Screening for maternal depression. Available at: https://www.health.ny.gov/community/pregnancy/health_care/perinatal/maternal_depression/providers/screening.htm. Accessed on: Jan 3, 2023.

Conclusions and Recommendations

Conclusions

Birth Outcomes

This study considered five quantitative indicators related to prenatal care and associated birth outcomes among births paid by Virginia Medicaid. Between the CY 2019 and CY 2021 measurement periods, study indicators related to prenatal care, preterm birth, and low birthweight showed opportunities for improvement for Virginia Medicaid members. Specifically, overall results for the *Births with Early and Adequate Prenatal Care* and *Preterm Births (<37 Weeks Gestation)* indicators continued to fall below national benchmarks for all three measurement periods. Conversely, rates for the *Newborns with Low Birth Weight (<2,500 grams)* indicator outperformed the national benchmark for all three measurement periods, demonstrating strength for Virginia Medicaid.

The CY 2021 study indicator results also show regional differences in care, with women residing in the Central region having higher rates of early and adequate prenatal care compared to women in other regions; however, these women still had some of the highest rates of preterm births and newborns with low birth weight. Despite a steady decline in the percentage of women with early and adequate prenatal care within the Southwest region in prior years' results, the CY 2021 rate increased by nearly 10 percentage points from CY 2020 to CY 2021 and was the second highest rate among the regions. Within all regions, racial disparities exist, with Black, Non-Hispanic women having the highest rates of preterm births and newborns with low birth weight, and Hispanic women of any race having the lowest rates of early and adequate prenatal care for CY 2021.

DMAS' implementation of the Medicaid Expansion program on January 1, 2019, provided an opportunity for DMAS and the MCOs to provide healthcare coverage to women who were not previously eligible for Medicaid. Research has shown that Medicaid Expansion programs have helped women obtain better health coverage before, during, and after pregnancy, which leads to improved prenatal and postpartum care. Further, Medicaid Expansion programs also decrease the likelihood of women experiencing intermittent healthcare coverage, which is important for improving health outcomes for mothers and babies.¹⁻⁸ All study indicator results for the Medicaid Expansion program for CY 2021, except for the *Newborns with Low Birth Weight (<2,500 grams)* study indicator, demonstrated improvement from CY 2020, with the CY 2021 rate for *Births with Early and Adequate Prenatal Care* surpassing the national benchmark. However, rates for *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)* continue to fall below national benchmarks. Therefore, DMAS should continue to monitor this population by assessing the risk factors for women in the Medicaid Expansion program that could be contributing to higher rates of *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)*.

The FAMIS MOMS program continued to outperform other programs, though it is important to note that women enrolled in FAMIS MOMS have different income eligibility limits compared to other pregnant

¹⁻⁸ Searing A, Ross DC. Medicaid Expansion Fills Gaps in Maternal Health Coverage Leading to Healthier Mothers and Babies. Georgetown University Health Policy Institute Center for Children and Families. May 2019. Available at: https://ccf.georgetown.edu/wp-content/uploads/2019/05/Maternal-Health_FINAL-1.pdf. Accessed on: Jan 3, 2023.

women (i.e., FAMIS MOMS covers women with incomes up to 200 percent of the FPL¹⁻⁹). However, it is beyond the scope of the current study to assess the degree to which study indicator results for women in FAMIS MOMS differ from study indicator results for women in other Medicaid programs based on household income. Though limited in number, births to women enrolled in FAMIS MOMS, especially those with continuous enrollment more than 120 days prior to delivery, had the highest rate of *Births with Early and Adequate Prenatal Care* and the lowest rates of *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)*. While these rates remained stable over time, the promising results from this program suggest that it could offer a valuable starting point for assessing members' satisfaction with care and underlying social determinants of health (SDoH) that may distinguish these women from other Medicaid members.

Maternal Health Outcomes

This study assessed four maternal health outcomes related to utilization in the postpartum period and important screenings during the prenatal and postpartum periods. Overall, approximately 26 percent and 52 percent of postpartum women utilized ED and ambulatory care services, respectively. Women who received no prenatal care had the highest rates of *Postpartum ED Utilization*, while women who were continuously enrolled for more than 180 days had higher rates of *Postpartum Ambulatory Care Utilization*. Approximately 7 percent of postpartum women received a maternal depression screening. These low rates suggest that data may be incomplete and/or providers may not be billing for these services separately. For the maternal depression screenings, it may be possible that these screenings are happening; however, providers may not be using a standardized screening tool.

In CY 2021, there were racial differences related to the utilization of ED and ambulatory services, with Black, Non-Hispanic women and Hispanic women of any race having the highest *Postpartum ED Utilization* rates and the lowest rates of *Postpartum Ambulatory Care*, indicating that these women were more reliant on receiving postpartum care through an ED setting. Further, there were regional differences related to maternal depression screenings, with the Charlottesville/Western region having the highest rates of prenatal and postpartum maternal depression screenings compared to all other regions. Of note, the rate of prenatal maternal depression in Charlottesville/Western was nearly 10 percentage points higher than the next highest regional rate. This may be attributed to the fact that approximately 56 percent of births in Charlottesville/Western were to White, Non-Hispanic women, who had the highest rates of maternal depression screenings.

Study Limitations

Study findings and conclusions may be affected by limitations related to the study design and source data. As such, caveats include, but are not limited to, the following:

- Study indicator and stratification results may be influenced by the accuracy and timeliness of the birth registry data and administrative Medicaid eligibility, enrollment, and demographic data used for calculations.

¹⁻⁹ A standard disregard of 5 percent FPL is applied to the Medicaid for Pregnant Women, Medicaid Expansion, and FAMIS MOMS programs if the woman's income is slightly above the household income.

- Additionally, study indicators rely on gestational estimate data from the birth registry. Reliability of these data, especially due to data collection practice variations in individual healthcare facilities, may have a disproportionate influence on regional study indicator results.¹⁻¹⁰
- Virginia Medicaid’s compliance with federal MOE policies during the continuing COVID-19 PHE prevented members’ coverage from being terminated in most circumstances for the duration of the PHE. This may have contributed to a higher number of births during CY 2020; therefore, caution should be exercised when comparing CY 2021 study results to CY 2020 results.
- COVID-19 may have impacted the CY 2020 study indicator results given the public efforts put in place during CY 2020 to mitigate the spread of COVID-19 (e.g., social distancing, stay at home orders). Additionally, researchers have found that women who were pregnant during the early stages of the COVID-19 pandemic had increased fears and stress about delivering in a hospital, especially when a support person could not be in the hospital for the delivery or go to prenatal visits with the mother.^{1-11,1-12} Further, COVID-19 may have also impacted women’s ability to get timely and frequent prenatal care. As a result, caution should be exercised when comparing CY 2019 and CY 2021 study indicator results to those for CY 2020.
- Healthy People 2030 goals are presented for comparison to Virginia Medicaid results for the *Births with Early and Adequate Prenatal Care* and *Preterm Births (<37 Weeks Gestation)* study indicators. Caution should be used when comparing study results to national benchmarks, as the benchmarks were derived from birth records covered by all payer types and may not mirror birth outcomes among women with births paid by Title XIX or Title XXI.
- The probabilistic data linkage process allows for manual data reviews to confirm or negate a potential match. The degree of manual review for each measurement period may result in annual differences in the number of birth certificates matched to enrollment data. Affected birth records tend to include women without Social Security Numbers (SSNs) and with differences in the names listed in the Medicaid and birth registry systems (e.g., names that are hyphenated and/or difficult to spell).
- The Commonwealth of Virginia allows presumptive eligibility for pregnant women to receive outpatient services, including prenatal care. However, DMAS does not cover inpatient care under the assumption that a woman will qualify for Title XIX or Title XXI benefits. The Virginia Department of Social Services (VDSS), the agency responsible for determining Medicaid eligibility in Virginia, allows 7 days to process a Medicaid application from a pregnant woman; 45 days is allowed for processing if the pregnant woman applies for additional services beyond Medicaid (e.g., supplemental nutrition assistance). As such, a pregnant woman new to Medicaid may have up to a 45-day waiting period before being eligible to have inpatient services covered by Title XIX or Title XXI benefits. Women’s understanding of Medicaid benefits and the timing of coverage may result in delayed initiation or continuation of prenatal care.

¹⁻¹⁰ Dietz PM, Bombard JM, Hutchings YL, et. al. Validation of obstetric estimate of gestational age on US birth certificates. *American Journal of Obstetrics and Gynecology*. Apr 2014; 210(4): 335.e1-335.e5. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4560346/>. Accessed on: Jan 3, 2023.

¹⁻¹¹ Whipps MDM, Phipps JE, Simmons LA. Perinatal health care access, childbirth concerns, and birthing decision-making among pregnant people in California during COVID-19. *BMC Pregnancy and Childbirth*. 2021; 21(477). Available at: <https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-021-03942-y>. Accessed on: Jan 3, 2023.

¹⁻¹² Meaney S, Letiao S, Olander EK, et al. The impact of COVID-19 on pregnant womens’ experiences and perceptions of antenatal maternity care, social support, and stress-reduction strategies. *Women and Birth*. 2021. Available at: <https://doi.org/10.1016/j.wombi.2021.04.013>. Accessed on: Jan 3, 2023.

- As many pregnant women new to Medicaid may not be enrolled in Title XIX or Title XXI benefits until their second or third trimester, use caution when interpreting study findings. Due to the multifactorial nature of birth outcomes and the need for pre-pregnancy interventions, a single delivery system or Medicaid program may not have had adequate time to contact new Medicaid members and subsequently impact birth outcomes.
- Due to differing methodologies and data sources, study findings are not comparable to the Healthcare Effectiveness Data and Information Set (HEDIS®)¹⁻¹³ *Timeliness of Prenatal Care* indicator results. Specifically, the HEDIS *Timeliness of Prenatal Care* indicator does not follow a calendar year measurement period, requires the woman to be continuously enrolled with the health plan for 43 days prior to delivery through 60 days after delivery, and only requires one prenatal care visit for numerator compliance.
- HSAG developed the maternal health outcomes study indicators; therefore, comparisons to any applicable national benchmarks cannot be made. Further, due to billing practices of providers (e.g., global billing), some study indicator results (i.e., maternal depression screenings) are likely more representative of data completeness, rather than actual performance.
- For CY 2021, the FAMIS Prenatal Coverage program was included in the Other Aid Categories group. Since the FAMIS Prenatal Coverage program began in July 2021, women included in the FAMIS Prenatal Coverage population at the time of delivery may not have been eligible for the program in time to receive timely or adequate prenatal care.

Recommendations

HSAG collaborated with DMAS to ensure that this study contributes to existing quality improvement data needs while informing current and future maternal and child health initiatives. As such, HSAG offers the following recommendations based on the findings detailed in this report:

- Overall, approximately 73 percent of births in CY 2021 received early and adequate prenatal care, and approximately 18 percent of births in CY 2021 received inadequate or no prenatal care. The 2020–21 secret shopper survey that assessed appointment availability for prenatal care providers who accept Medicaid in Virginia found that 76.4 percent of cases were offered a first trimester appointment date, 48.4 percent of cases were offered a second trimester appointment date, and 38.8 percent of cases were offered a third trimester appointment date. The results of both studies suggest that DMAS and the MCOs should investigate the factors contributing to women's ability to access timely prenatal care and implement targeted improvement efforts. These efforts should include ensuring that all women of childbearing age establish a primary care provider or obstetrician/gynecologist (OB/GYN) prior to pregnancy and receive necessary preventive care (e.g., taking folic acid) and management of conditions (e.g., diabetes, high blood pressure, obesity) that were previously left untreated or unmanaged. Improving the health of a woman prior to conception will help to ensure better outcomes for both the mother and baby.¹⁻¹⁴
- Unplanned pregnancies are associated with higher rates of preterm births and newborns with low birthweight.¹⁻¹⁵ Therefore, as part of ensuring that all women of childbearing age have an

¹⁻¹³ HEDIS® is a registered trademark of the National Committee for Quality Assurance (NCQA).

¹⁻¹⁴ March of Dimes. Before or between pregnancies. Available at: <https://www.marchofdimes.org/pregnancy/before-pregnancy.aspx#>. Accessed on: Jan 3, 2023.

¹⁻¹⁵ National Institute for Children's Health Quality. As unplanned pregnancy rates drop, births improve. Available at: <https://www.nichq.org/insight/unplanned-pregnancy-rates-drop-births-improve>. Accessed on: Jan 3, 2023.

established gynecologist prior to pregnancy, DMAS and the MCOs should assess if providers are offering family planning services (e.g., contraception) to women. Given that Medicaid members can now receive a 12-month supply of contraceptives,¹⁻¹⁶ DMAS and the MCOs should monitor contraceptive prescription rates for Medicaid women over time. DMAS should consider calculating and/or having the MCOs report the CMS Adult and Child Core Set measures related to contraceptives (i.e., *Contraceptive Care—All Women* and *Contraceptive Care—Postpartum Women*) to understand better how this policy change impacts the use of contraceptives over time.

- Long-acting reversible contraceptives (LARCs) are an effective contraceptive method that can help reduce unplanned and short-interval pregnancies.¹⁻¹⁷ MCOs should assess if providers are discussing the effectiveness of LARCs as part of the postpartum visit or even prior to the woman leaving the hospital after delivery. MCOs should work to inform their providers, and DMAS should continue to work with hospitals to institute protocols that allow physicians to leverage the Virginia Postpartum LARC toolkit.¹⁻¹⁸
- Approximately 26 percent of postpartum women in CY 2021 utilized ED services within 90 days of delivery. Given that approximately 25 percent of women nationally utilized ED services within six months of delivery¹⁻¹⁹, DMAS should consider investigating the utilization of ED services in the postpartum period to understand the factors contributing to why women are seeking care in the ED instead of an outpatient setting (e.g., assess if these women have an established primary care physician [PCP] or OB/GYN). Additionally, HSAG recommends including an analysis in next year's Medicaid and CHIP Maternal and Child Health Focus Study that provides additional information on ED visits for postpartum women (e.g., most common diagnoses for postpartum ED visits, whether the visit was emergent).
- Less than 7 percent of women had evidence of a maternal depression screening in administrative data sources, either during the prenatal or postpartum periods. However, this is likely due to provider billing practices (i.e., these screenings were performed during standard prenatal/postpartum visits and were not billed separately) or the use of nonstandardized screening methods that were not captured by the measures that HSAG developed to calculate these indicators. DMAS should consider working with the MCOs and providers to promote the use of, and provide trainings related to, standardized maternal depression screening tools during the perinatal period. Further, DMAS could consider requiring the MCOs to report the prenatal and postpartum maternal depression screening study indicators to DMAS annually in order to improve these rates.
- For future focus studies, DMAS should consider leveraging additional data fields in the vital statistics data or other data sources (e.g., claims/encounter data) to better understand the factors

¹⁻¹⁶ Virginia Department of Medical Assistance Services. 12-month supply of contraceptives now available to Virginia Medicaid members. Available at: <https://www.dmas.virginia.gov/media/3779/press-release-virginia-medicaid-announces-12-month-supply-of-contraceptives.pdf>. Accessed on: Jan 3, 2023.

¹⁻¹⁷ The American College of Obstetricians and Gynecologists. Immediate postpartum long-acting reversible contraception. 2017. Available at: <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2016/08/immediate-postpartum-long-acting-reversible-contraception>. Accessed on: Jan 3 2023.

¹⁻¹⁸ Virginia Department of Medical Assistance Services, Virginia Department of Health, and the Virginia chapter of the American College of Obstetricians and Gynecologists. Virginia postpartum LARC toolkit. Available at: https://www.vdh.virginia.gov/content/uploads/sites/28/2016/07/VA_Postpartum_LARC_Toolkit_final.pdf. Accessed on: Jan 3, 2023.

¹⁻¹⁹ Harris A, Chang HY, Wang L, et al. Emergency room utilization after medically complicated pregnancies: A Medicaid claims analysis. *Journal of Women's Health*. 2015; 24(9):745–754. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4589304/>. Accessed on: Jan 3, 2023.

contributing to poor birth outcomes in Virginia. These data sources could be used to assess risk factors (pre-pregnancy and gestational diabetes and hypertension, and previous preterm births and poor pregnancy outcomes); a mother's substance use before and during pregnancy (smoking, alcohol, and drug use); and a mother's body mass index (BMI) before pregnancy and at delivery. Although data may be incomplete, HSAG could still leverage the available data to help understand and provide additional context to the study indicator results.

DMAS' Input on Prior Focused Study Recommendations

In addition to the recommendations noted above, DMAS provided the following detailed feedback to HSAG regarding quality improvement actions and initiatives:

Partnership for Petersburg (P4P)

- On August 26, 2022, Governor Glenn Youngkin announced the new Partnership for Petersburg initiative, which includes six focus areas: Prepare Petersburg Students for Life, Improve Access to Health Care, Keep Our Community Safe, Keep Petersburg Moving, Foster Business & Economic Growth, and Build Relationships with Community and Faith Leaders. The Commonwealth of Virginia and community partners will work together to improve the health of Petersburg residents by expanding access to screenings, promoting awareness of primary care and prenatal care, and addressing health disparities by connecting Petersburg residents with medical and social services.
- In collaboration with the Partnership for Petersburg plan, DMAS mailed out more than 80 prenatal care flyers to pregnant members who had not yet received prenatal services. The flyer raised awareness of prenatal care, MCO extended benefits services, and contact information of local OB/GYNs in Petersburg.
- Approximately 60 percent of Petersburg's 33,000 residents are enrolled in Medicaid, and the vast majority of these members are covered through DMAS' managed care programs. As a result, Virginia MCOs have been tasked with enhanced outreach to pregnant or postpartum Petersburg members to facilitate OB visits, assisting DMAS to ramp up doula services in the Petersburg area, engaging Petersburg pediatricians to help increase well-child visits, and getting out into the community through mobile clinic events and resource fairs. Since the Partnership for Petersburg kick-off in August 2022, Virginia's MCOs, as well as Conexus and DentaQuest partners, have participated in over 40 events and Virginia's MCOs have invested more than \$3 million to support the Petersburg community.
- DMAS staff have engaged Petersburg maternity providers in a series of meetings with the local Federally Qualified Health Centers (FQHCs), regional medical center, health plans, and other stakeholders to learn about community needs, barriers, and opportunities to better serve Petersburg women and children. One of DMAS's key partners, Urban Baby Beginnings, will open a Petersburg maternity hub location in early 2023 to add additional on-the-ground resources and help accelerate the utilization of community doulas in the area. Virginia's MCOs have also committed to hosting quarterly community events targeting pregnant and postpartum members to provide education on topics such as safe sleep and car seats and give away resources such as diapers, cribettes, wipes, and other supplies.
- There are approximately 350 births each year in Petersburg, and DMAS prioritized outreach to pregnant and postpartum women as one of its first Partnership for Petersburg activities. On September 1, 2022, DMAS mailed out 70 flyers to pregnant members whose records indicated

might not have yet had a prenatal visit. The flyer raised awareness of prenatal care, MCO extended benefits services, and contact information of local OB/GYNs in Petersburg. DMAS also shared this list with MCOs who provided follow-up and assistance with appointment scheduling. Following these activities, around 75 percent of women who had not previously had a prenatal visit had received care.

Doula Benefit

- Virginia is the fourth state in the nation to implement community doula services under the State Medicaid program. The overall goal of the Community Doula Program and Medicaid doula benefit is to improve maternal and infant outcomes in Virginia with Medicaid community doulas. Community doulas will offer members physical, emotional, and informational support during pregnancy, at labor and delivery, and during the postpartum period. As doulas receive State certification, DMAS will begin provider enrollment of doulas followed by managed care contracting with the health plans.
- Effective January 2022, VDH established the minimum requirements to be considered a State-certified community doula in Virginia based on the core competencies.
- In June 2022, DMAS launched the Community Doula Program webpage and Community Doula Engagement flyer to educate community stakeholders, doulas, and interested individuals about the Medicaid doula benefit and encourage doula State certification and Medicaid doula enrollment.
- In July 2022, DMAS held a Community Doula Program Meeting, which included a program overview, key highlights supporting the agency's efforts to grow the doula provider network to support Medicaid pregnant members, updates on community doula State certification, and Medicaid provider enrollment, including a testimonial from one of the agency's first contracted community doulas. Representation included the managed care health plans; VDH; the doula community, including the Virginia Doula Task Force Chair and committee members; and other key stakeholders from the provider community and health systems.
- DMAS presented on the Community Doula Program implementation at the Black Maternal Health Summit. The Black Maternal Health Summit is facilitated by Birth in Color RVA and included attendees from the community, private organizations, the provider communities, and other State agencies, including VDH.
- DMAS participated in the Center for Health Care Strategies (CHCS) State Environmental Scan of Medicaid Coverage of Doula Services sponsored by the California Health Care Foundation. Participating states included New Jersey; Virginia, California; Washington, DC; Maryland; Oregon; and Rhode Island. Three sessions were held on July 25, August 5, and August 23, 2022. Topics included rates, billing, and reimbursement; doula training, credentialing, and supervision; and workforce development, sustainability, and contracting with MCOs/healthcare plans.
- DMAS is participating in the Title V Accelerating Equity Learning Collaborative (AELC) established through the University of North Carolina (UNC) WorkForce Development Center to address the issues of racial and health equity. The group consists of the VDH Title V manager, VDH staff members, and early childhood health/home visiting staff members. The collaborative has a doula program operating in the two of the local VDH health districts.
- DMAS is participating in quarterly Virginia Doula Task Force Meetings. The Virginia Task Force assists with the promulgation of regulations and the certification process of doulas and serves as an informational resource for policy-related matters for VDH. Meetings were held in January and April 2022. In April 2022, the Task Force voted in favor of a doula communication plan, and for the

establishment of a workforce and professional development committee to ensure continued training and professional development for doulas.

- DMAS is drafting a Community Doula Program strategic plan to further the implementation efforts of the Medicaid doula benefit. Key areas of focus include infrastructure building and sustainability, collaboration and partnership, and resource and data development.
- In August 2022, two of Virginia Medicaid's first community doulas provided the first two prenatal doula visits to Medicaid members, one of which was provided to a Spanish-speaking member with the use of an interpreter. Both doulas reported that the visits went well and the members were very excited to have the support of a doula. The visits included a detailed review of each member's birth plan and education regarding labor and delivery.
- As of September 2022, 38 doulas have received State certification. Of the 38, 24 doulas have completed Medicaid enrollment and 22 doulas have contracted with an MCO/healthcare plan.
- In November 2022, DMAS, in partnership with the healthcare plans, will launch two doula provider videos, which will be used for statewide community doula recruitment and engagement efforts.

Baby Steps

Baby Steps VA continues to address the needs of both Virginia's pregnant and parenting Medicaid members from preconception to pregnancy and parenting. This lifespan strategy is imperative as DMAS continues to focus on eliminating racial disparities in maternal outcomes. As DMAS is committed to wellness one step at a time, DMAS knows it cannot do this work without the partnerships it has developed since its inception in 2019. DMAS outlined strategies to acknowledge best practices to improve the wellbeing of all Medicaid members and their babies, from pregnancy to postpartum. Virginia Medicaid covered approximately 37,000 births in 2020, to predominately White and African American members.

In 2021, DMAS accomplished and partnered with many of its sister agencies, MCOs, hospital systems, community stakeholders, and internal staff members to collaborate to discuss priorities around maternal health during bimonthly calls.

- Urban Baby Beginnings and the Virginia Neonatal Perinatal Collaborative partnered with Project ReByrth to build sustainable community-based programs and safer childbirth cities throughout Virginia. The goal of the project is to develop State-level support for expectant and postpartum women to improve overall outcomes.
- With a focus on LARCs and reproductive health, the Virginia Department of Health (VDH) and DMAS shared insight on the various contraceptive programs available for members and how providers utilize services for billing.
- Birth in Color RVA supports pregnant persons utilizing four sectors of community-based organizations (CBOs), nonprofits, advocacy, and awareness/education. Birth in Color RVA continues to expand projects and locations, along with addressing maternal mental health and oral health programs.
- DMAS continues to support and address policies and procedures to improve overall wellness from preconception to postpartum for enrolled Medicaid members.
- The Baby Steps VA (BVSA) outreach and information team is member-focused to educate and address health disparities among preconception, pregnancy, postpartum, and parenting Medicaid

populations. In continued support of Baby Steps VA initiatives, the outreach and information team partnered with several external maternal health focused groups to discuss actions items for training opportunities, outreach services, and community partnerships.

- DMAS released the second BSVA Maternal Health Annual Report¹⁻²⁰ for 2021 detailing the accomplishments of the program, including how it is addressing maternal health and racial disparities.
- During each bimonthly meeting for BSVA MCO representatives, community stakeholders, and hospitals systems shared their collaborative efforts with Medicaid pregnant and parenting members.
- FQHCs have partnered to expand services for Medicaid pregnant and parenting members from prenatal and postpartum.
- DMAS and VDH developed an educational document for providers on reimbursement processes for FQHCs.
- The Sixth Annual Virginia Neonatal Perinatal Collaborative (VNPC) Summit: DMAS attendees collaborated with Maternal Health Providers to learn strategies to increase collaboration and build trust with partners, learned about free Hear-Her resources that raises awareness of urgent maternal warning signs during pregnancy and a year post-partum
- Virginia Commonwealth University (VCU) Project Empower: goal to reduce maternal death due to Domestic Violence and suicide; including a screening assessment process and focus on eliminating bias for pregnant moms with substance use disorders (SUDs).

DMAS' Baby Steps VA will continue to be the foundation of maternal health policies as DMAS pursues new policies and initiatives to ensure optimal care for its members in 2022.

Maternal and Child Health Policy Innovation Program (MCH PIP)

- The MCH PIP VA Committee has continued to work and focus on outreach efforts for members around postpartum coverage and doula implementation. The committee has developed a member toolkit that will provide members with information on the new postpartum coverage components along with details on the importance of the postpartum visit.
- The MCH PIP Member Postpartum Coverage toolkit will include details on the new postpartum coverage benefit, postpartum visits, wellness checks, postpartum maternal mental health, post-delivery, and breastfeeding.
- National Academy for State Health Policy (NASHP) MCH PIP Committee members attended the Annual State Convening for NASHP in Seattle on September 12, 2022. The convening allowed states to further refine teamwork plans and action steps for the final months of the policy academy. Virginia presented on the initiatives and accomplishments of maternal health across the Commonwealth.

Additional Successful Strategy Updates

- Starting on July 1, 2021, Virginia offers comprehensive prenatal coverage through FAMIS for pregnant women who meet all other eligibility criteria, regardless of immigration status.

¹⁻²⁰ Baby Steps VA. Department of Medical Assistance Services. Maternal Health Annual Report 2021. Available at: <https://www.dmas.virginia.gov/media/4638/dmas-maternity-report-2021.pdf>. Accessed on: Jan 3, 2023.

- In November 2021, DMAS' 1115 waiver amendment to extend postpartum coverage to 12 months was approved by the federal government. Effective July 1, 2022, Virginia became one of the first states to provide continuous full-benefit coverage across eligibility categories for a full 12 months postpartum. The expanded coverage enables Medicaid and FAMIS MOMS members to receive critical postpartum care for a full year postpartum, an important step in improving health outcomes for both women and their newborns.
- DMAS implemented a 15 percent increase in OB/GYN reimbursement rates for the first time since 2005.
- The Medicaid New Mom Letter was redesigned for new Medallion 4.0 and FFS birthing/moms. This resource guide will assist members with vital tips as they transition from before-to-after pregnancy care. Updates have been made to include new policy services, social media platforms, and direct access to CoverVA services and action items for pregnancy coverage.

Collaboration and Outreach

- DMAS hosted an MCH collaborative with the MCOs. During the call, teams shared updates and an overview of HEDIS data points, maternal projects (Baby Steps VA, Doula Benefit, NASHP communications and postpartum coverage), and child health (foster care; early intervention [EI]; and early and periodic screening, diagnostic, and treatment [EPSDT]). MCOs and DMAS will focus on doulas and postpartum as well as child well visits and immunizations.
- DMAS was invited to speak at the Fourth Annual Perinatal, Maternal, and Infant Mortality Summit held by the VNPC on May 16, 2022. DMAS presented at this summit to provide State program updates. DMAS provided updates on the postpartum 12-month coverage extension, and how that comprehensive coverage provides members access to additional services, such as Addiction and Recovery Treatment Services (ARTS). DMAS had the opportunity to present on the ARTS benefit offered to all members, including pregnant individuals. DMAS presented on the Community Doula Program, including current program implementation and the healthcare benefits of doula care. DMAS is excited to continue its partnership with VNPC to discuss key topics relative to neonatal and perinatal health.
- DMAS awarded one of seven grant-funded sub-awards to the VCU OB MOTIVATE clinic in order to expand access to treatment in a co-located OB/GYN and addiction care clinic. Grant funds were spent on the establishment of a clinical coordinator role, support and supplies to carry out health system navigation procedures by staff members, and trauma-informed training for staff members.

Continued State Support

In April 2021, the Office of the Secretary of Health and Human Resources presented the statewide strategic plan for maternal health. The Virginia Council for Women and former First Lady Pamela Northam emphasized the importance of maternal health initiatives across Virginia and the outcomes of the 2019 listening session that took place to develop this strategic plan.

In accordance with Item 312.G of the 2021 Special Session I Appropriations Act, as of July 1, 2021, FAMIS MOMS members have access to medically necessary treatment for SUD in an institution for mental diseases (IMD), equivalent to such benefits offered to pregnant women.

2. Overview and Methodology

Overview

As an optional activity under the CMS EQR Protocols,²⁻¹ DMAS contracted with HSAG to conduct a focus study in contract year 2021–22 to provide quantitative information about prenatal care and associated birth and maternal health outcomes among women with births paid by Title XIX or Title XXI, which include the Medicaid, Medicaid Expansion, and FAMIS MOMS programs. The Contract Year 2021–22 Medicaid and CHIP Maternal and Child Health Focus Study addressed the following questions:

- To what extent do women with births paid by Virginia Medicaid receive early and adequate prenatal care during pregnancy?
- What clinical outcomes (e.g., preterm births, low birth weight) are associated with births paid by Virginia Medicaid?
- What maternal health outcomes (e.g., depression) are associated with births paid by Virginia Medicaid?
- What health disparities exist in birth outcomes for births paid by Virginia Medicaid?

Methodology

The study included all singleton births paid by Virginia Medicaid during CY 2021. A birth was considered paid by Virginia Medicaid if the member was enrolled in Virginia Medicaid on the date of delivery. From Medicaid member demographic and eligibility data provided by DMAS, HSAG assembled a list of female members between the ages of 10 and 55 years with any Medicaid eligibility during CY 2021 who were eligible for the focus study. This list was submitted to DMAS for linkage to the VDH birth registry. Members eligible for the data linkage included Virginia Medicaid members with a live birth paid by Title XIX or Title XXI during the measurement period, regardless of whether the birth occurred in Virginia.²⁻² DMAS used deterministic and probabilistic data linkage methods to match HSAG's list of potential study members to birth registry records.²⁻³ DMAS returned a data file to HSAG containing the information from HSAG's original member list and selected birth registry data fields for matched members from both data linkage processes.

²⁻¹ Department of Health and Human Services, Centers for Medicare & Medicaid Services. *Protocol 9: Conducting Focus Studies of Health Care Quality: An Optional EQR-Related Activity*, October 2019. Available at: <https://www.medicaid.gov/medicaid/quality-of-care/downloads/2019-eqr-protocols.pdf>. Accessed on: Jan 3, 2023.

²⁻² The Virginia birth registry contains records of live births; other pregnancy outcomes are not included in this study.

²⁻³ The deterministic data linkage sought to match potential study members with birth registry records using only the maternal SSN. The probabilistic data linkage used the Link Plus software program to probabilistically match study members with birth registry records using the following maternal information: last name, first name, SSN, residential street address, city of residence, and five-digit residential ZIP Code.

All probabilistically or deterministically linked birth registry records were included in the overall eligible population for this focus study. Variations in demographic indicators over time may be attributed to probabilistic data linkage considerations in each measurement period, in addition to changes in the demographics of women with births paid by Virginia Medicaid.²⁻⁴

The eligible population was further classified by Medicaid program and service delivery system as follows:²⁻⁵

- The Medicaid for Pregnant Women program uses Title XIX funding to serve pregnant women with incomes up to 143 percent of the FPL.
- The Medicaid Expansion program uses Title XIX funding to serve adults ages 19 to 64 years of age with incomes up to 133 percent of the FPL. Members who become pregnant while already enrolled in the Medicaid Expansion group may remain in that eligibility category during the pregnancy, while individuals who report that they are pregnant at initial application must be enrolled into a pregnancy category such as Medicaid for Pregnant Women or FAMIS MOMS.
- The FAMIS MOMS program uses Title XXI funding to serve pregnant women with incomes up to 200 percent of the FPL and provides benefits similar to Medicaid.
- The Other Aid Categories include births paid by Medicaid that do not fall within the Medicaid for Pregnant Women, Medicaid Expansion, or FAMIS MOMS programs. Please note, births to women in Plan First and DOC are excluded.^{2-6, 2-7}

While HSAG refers to specific programs (e.g., FAMIS MOMS) when applicable, the term “Medicaid” is used throughout the report to refer to all programs included in the Medicaid and CHIP Maternal and Child Health Focus Study regardless of funding source (i.e., Title XIX or Title XXI).

Births to women enrolled in any Medicaid program (i.e., Medicaid for Pregnant Women, Medicaid Expansion, FAMIS MOMS, and Other Aid Categories) at delivery were further categorized into a study population and a comparison group depending on the timing and length of enrollment. The study population included women with continuous enrollment in any Medicaid program or combination of programs for 120 or more days (counting the date of delivery). The comparison group consisted of women with continuous enrollment in any Medicaid program or combination of programs for fewer than 120 days (counting the date of delivery).

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- ²⁻⁴ HSAG provided standard instructions for probabilistically linking data during each study period. However, different individuals from DMAS and VDH may have conducted the probabilistic linkages for the 2018–19, 2019–20, and 2020–21 studies, resulting in a variable percentage of probable birth record linkages that were manually reviewed for each measurement period.
- ²⁻⁵ A standard disregard of 5 percent FPL is applied to the Medicaid for Pregnant Women, Medicaid Expansion, and FAMIS MOMS programs if the woman’s income is slightly above the household income.
- ²⁻⁶ The “Other Aid Categories” include births paid by Medicaid or CHIP as part of the LIFC (parents and caretaker adults), disabled individuals, Medicaid Children, Foster Children and Former Foster Youth, Adoption Assistance Children, FAMIS Children, FAMIS Prenatal Coverage, presumptively eligible individuals, and others.
- ²⁻⁷ Prior to the 2021–22 Medicaid and CHIP Maternal and Child Health Focus Study, births to women in the LIFC program were not included in the Other Aid Categories program. Therefore, HSAG recalculated historical (i.e., CY 2019 and CY 2020) Other Aid Categories program rates to include births to women in LIFC.

Where applicable, HSAG compared the birth outcomes study indicators to national benchmarks. HSAG used the Healthy People 2030 goals,²⁻⁸ which use data derived from the CDC, NCHS, and NVSS, for the *Births with Early and Adequate Prenatal Care* and *Preterm Births (<37 Weeks Gestation)* study indicators and used the FFY 2020 CMS Core Set benchmarks for the *Newborns With Low Birth Weight (<2,500 grams)* study indicator. Please note that national benchmarks were not available for the maternal health study indicators since these are custom measures developed by HSAG for the purposes of this study.

HSAG also compared the CY 2021 study indicator results to historical results, when applicable. Please note that HSAG recalculated the historical Other Aid Categories birth outcomes study indicator results to include births covered by the LIFC program, which were previously evaluated separately for CY 2019 and CY 2020. HSAG also recalculated historical Medallion 4.0 managed care program birth outcomes study indicator results to include births covered by the FAMIS managed care program, which were previously evaluated separately for CY 2019 and CY 2020. Due to these changes, the CY 2019 and CY 2020 results presented in this report do not match results presented in the 2020–21 Birth Outcomes Focus Study report.

Study Indicators

Birth Outcomes Study Indicators

HSAG calculated the following five birth outcomes study indicators for singleton, live births paid by Virginia Medicaid during CY 2021:

- Percentage of births with early and adequate prenatal care
 - Percentage of births with inadequate prenatal care
 - Percentage of births with no prenatal care
- Percentage of preterm births (i.e., births prior to 37 weeks gestation)
- Percentage of births with low birth weight (i.e., birth weights less than 2,500 grams)

The following subsections define the five indicators used to assess the study questions among singleton, live births paid by Virginia Medicaid during the measurement period, as well as provide brief background information in support of each indicator as a birth outcome.

²⁻⁸ U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2030: Pregnancy and childbirth. Available at: <https://health.gov/healthypeople/objectives-and-data/browse-objectives/pregnancy-and-childbirth>. Accessed on: Jan 3, 2023.

Births with Early and Adequate Prenatal Care

The percentage of births with an APNCU Index (i.e., the Kotelchuck Index) score in the “Adequate” or “Adequate Plus” categories

The adequacy of prenatal care received during pregnancy has been associated with a lower incidence of poor birth outcomes, such as preterm delivery and low-birth-weight births.²⁻⁹ The APNCU Index (i.e., the Kotelchuck Index) uses birth certificate information to assess prenatal care in relation to two separate and distinct components. The first component measures initiation of care using the month that prenatal care began. The second component measures adequacy of received services measured by the number of prenatal visits. The two components are combined into a single prenatal care utilization composite score. Higher composite scores on the APNCU Index are assigned to women who initiate prenatal care early in pregnancy and complete at least 80 percent of the visits expected based on the time frame adjusted for gestational age at prenatal care initiation and the infant’s gestational age at delivery.²⁻¹⁰ Table 2-1 shows the composite score categories and criteria defining each category.

Table 2-1—APNCU Index Criteria for Adequacy of Prenatal Care Visits

APNCU Index Category	Number of Prenatal Care Visits
Missing Information	Information on the number of prenatal care visits is unavailable
No Prenatal Care	0% of expected visits
Inadequate Prenatal Care	Less than 50% of expected visits
Intermediate Prenatal Care	50–79% of expected visits
Adequate Prenatal Care	80–109% of expected visits
Adequate Plus Prenatal Care	110% or more of expected visits

In 2003, a revised version of the nationally standard birth certificate was released, capturing prenatal care information, including the month the member initiated prenatal care and the number of visits up to delivery. Virginia implemented the 2003 Revised Standard Certificate of Live Birth in 2012, and national benchmarks for assessing the adequacy of prenatal care were established for those states that initiated consistent reporting of this information.²⁻¹¹ Healthy People 2030 published a national baseline in which 76.4 percent of women received early and adequate prenatal care during 2018, with an initial goal of 80.5 percent and a 1 percentage point improvement for each year.²⁻¹² DMAS opted to compare study

²⁻⁹ Krueger PM, Scholl TO. Adequacy of prenatal care and pregnancy outcome. *The Journal of the American Osteopathic Association*. 2000; 100(8):485–492.

²⁻¹⁰ Kotelchuck M. An evaluation of the Kessner Adequacy of Prenatal Care Index and a proposed Adequacy of Prenatal Care Utilization Index. *American Journal of Public Health*. 1994; 84(9):1414–1420.

²⁻¹¹ March of Dimes Perinatal Data Center. State Summary for Virginia: Prenatal care. Available at: <https://www.marchofdimes.org/peristats/state-summaries/virginia?top=5&lev=1®=99&sreg=51&slev=4>. Accessed on: Jan 3, 2023.

²⁻¹² Healthy People 2030. Increase the proportion of pregnant women who receive early and adequate prenatal care – MICH-08. U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Available at: <https://health.gov/healthypeople/objectives-and-data/browse-objectives/pregnancy->

indicator findings to the Healthy People 2030 baseline goal of 76.4 percent and will assess the benchmark value on an annual basis. Note that this goal is assessed nationally using NVSS data that do not consistently report birth statistics by payer.

Preterm Births

The percentage of births occurring before 37 completed weeks of gestation

In 2021, preterm delivery affected approximately one in 10 infants born in the United States.²⁻¹³ Preterm delivery (births prior to 37 weeks of gestation) is a leading cause of infant mortality, and 16 percent of United States infant deaths in 2020 were attributable to causes related to preterm birth and low birth weight (LBW).²⁻¹⁴ Additionally, between 2017 and 2019, preterm birth rates in the United States were 51 percent higher among African American women than all other women (i.e., Asian/Pacific Islander, White, Hispanic, and American Indian/Alaska Native).²⁻¹⁵ Infants born prematurely are also at higher risk for persistent and life-long health issues, such as developmental disabilities, cerebral palsy, respiratory problems, hearing and vision problems, and feeding issues. Furthermore, preterm births can result in emotional and financial burdens for families.²⁻¹⁶

Although this topic has been studied extensively, the underlying causes of preterm births are not completely understood. The causes of preterm birth are multifactorial and include genetic, social, and environmental circumstances, as well as multiple gestations (twins, triplets, etc.), which have increased due to the increasing prevalence of assisted reproductive technology.²⁻¹⁷ Some studies have found that among multiparous women, regardless of demographic factors and excluding multiple gestation births, a previous preterm birth has been found as the most influential risk factor for a woman to have a subsequent preterm birth.²⁻¹⁸

Although clinical intervention cannot completely mitigate demographic and genetic factors associated with preterm deliveries, preconception care (i.e., care prior to the start of a pregnancy) and prenatal

[and-childbirth/increase-proportion-pregnant-women-who-receive-early-and-adequate-prenatal-care-mich-08](#). Accessed on: Jan 3, 2022.

²⁻¹³ National Center for Health Statistics, Centers for Disease Control and Prevention. Births in the United States, 2021. Available at: <https://www.cdc.gov/nchs/products/databriefs/db442.htm#fig4>. Accessed on: Jan 3, 2023.

²⁻¹⁴ National Center for Health Statistics, Centers for Disease Control and Prevention. Data Brief 427. Available at: <https://www.cdc.gov/nchs/data/databriefs/db427-tables.pdf#5>. Accessed on: Jan 3, 2023.

²⁻¹⁵ March of Dimes. 2021 March of Dimes report card: United States. Available at: <https://www.marchofdimes.org/2021-march-dimes-report-card>. Accessed on: Jan 3, 2023.

²⁻¹⁶ Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention. Preterm birth. Available at: <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pretermbirth.htm>. Accessed on: Jan 3, 2023.

²⁻¹⁷ Dunietz GL, Holzman C, McKane P, et al. Assisted reproductive technology and the risk of preterm birth among primiparas. *Fertility and Sterility*. 2015; 103(4):974-979.e1. Available at: [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4515958/#:~:text=Conclusion\(s\),infertility%20included%20the%20earliest%20deliveries](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4515958/#:~:text=Conclusion(s),infertility%20included%20the%20earliest%20deliveries). Accessed on: Jan 3, 2023.

²⁻¹⁸ Stubblefield PG, Coonrod DV, Reddy UM, et al. The clinical content of preconception care: Reproductive history. *American Journal of Obstetrics and Gynecology*. 2008; 10.048(suppl):S373–S383.

care may provide clinicians opportunities to monitor and address potential causes of preterm deliveries.²⁻¹⁹

Healthy People 2030 published a national baseline in which 10.0 percent of live births were preterm in 2018, with an initial goal of 9.4 percent of live births being preterm.²⁻²⁰ DMAS opted to compare study indicator findings to the Healthy People 2030 goal of 9.4 percent and will assess the benchmark value on an annual basis. Note that this goal is assessed nationally using NVSS data that do not consistently report birth statistics by payer.

Low Birth Weight

The percentage of births with low birth weight (i.e., less than 2,500 grams)

Infants born weighing less than 2,500 grams (5 pounds, 8 ounces) are considered LBW infants and, compared to normal weight infants, may be at a higher risk for health problems. Common health complications that LBW infants may experience include underdeveloped lungs and respiratory problems, an inability to maintain body temperature, difficulty feeding and gaining weight, and infection. Additionally, these LBW infants may experience long-term issues, such as delayed motor and social development and learning disabilities. They may have a higher risk of health conditions, such as diabetes and high blood pressure, later in life.²⁻²¹ LBW affects approximately one in 12 babies born in the United States.²⁻²²

Infants weighing less than 1,500 grams (3 pounds, 5 ounces) are considered to be very low birth weight (VLBW) infants and have a greater risk for multiple health problems, including cerebral palsy, developmental delay, intellectual disability, visual and hearing impairments, chronic lung disease, neurological problems, and sudden infant death syndrome (SIDS).²⁻²³ Nearly all infants born with VLBW will need specialized care in a neonatal intensive care unit (NICU) until they are healthy enough to be released. NICU care is associated with a financial burden; although VLBW births account for approximately 1.5 percent of all live births in the United States, these births represent 30 percent of newborn healthcare costs and are among the most expensive of all patients.²⁻²⁴

²⁻¹⁹ Dean SV, Mason E, Howson CP, et al. Born too soon: care before and between pregnancy to prevent preterm births: from evidence to action. *Reproductive Health*. 2013; 10 Suppl 1 (Supple 1):S3.

²⁻²⁰ U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2030. Increase the proportion of pregnant women who receive early and adequate prenatal care – MICH-08. Available at: <https://health.gov/healthypeople/objectives-and-data/browse-objectives/pregnancy-and-childbirth/increase-proportion-pregnant-women-who-receive-early-and-adequate-prenatal-care-mich-08>. Accessed on: Jan 3, 2023.

²⁻²¹ National Center for Environmental Health, Environmental Health Tracking Branch. Centers for Disease Control and Prevention. Low birthweight and the environment. Available at: <https://ephtracking.cdc.gov/showRbLBWGrowthRetardationEnv>. Accessed on: Jan 3, 2023.

²⁻²² March of Dimes. Low birthweight. Available at: <https://www.marchofdimes.org/find-support/topics/birth/low-birthweight>. Accessed on: Jan 3, 2023.

²⁻²³ McCallie KR, Lee HC, Mayer O, et al. Improved outcomes with a standardized feeding protocol for very low birth weight infants. *Journal of Perinatology*. 2011; 31:S61–S67.

²⁻²⁴ Johnson TJ, Patel AL, Jegier B, et al. The cost of morbidities in very low birth weight infants. *The Journal of Pediatrics*. 2013; 162(2):243–49.

The CMS Core Set benchmark for the *Newborns with Low Birth Weight (<2,500 grams)* study indicator is released annually and includes data for all 50 states and Washington, DC for a Medicaid/CHIP population.²⁻²⁵ Due to CMS' transition from the Medicaid and CHIP Program (MACPro) reporting system to the Quality Measures Reporting (QMR) system during CY 2022, CMS Core Set benchmarks for FFY 2021 have not yet been released. Due to this, DMAS opted to use the FFY 2020 benchmark of 9.7 percent for the *Newborns with Low Birth Weight (<2,500 grams)* study indicator.²⁻²⁶

Maternal Health Outcomes Study Indicators

HSAG calculated the following four maternal health outcomes study indicators for singleton, live births during CY 2021 paid by Virginia Medicaid:

- Percentage of postpartum women who utilized ED services within 90 days of delivery
- Percentage of postpartum women who utilized ambulatory care services within 90 days of delivery
- Percentage of women who received a screening for depression during pregnancy
- Percentage of postpartum women who received a screening for depression on or between seven and 84 days after delivery

The following subsections define the four maternal health indicators used to assess the study questions among singleton, live births paid by Virginia Medicaid during the measurement period, as well as provide brief background information in support of each indicator as a maternal health outcome. Please note that since the maternal health outcomes indicators were developed by HSAG for the purposes of this study, national benchmarks are not available.

Postpartum ED Utilization

Postpartum ED utilization may indicate that women are not receiving outpatient obstetrics and primary care for necessary postpartum visits. Approximately 25 percent of postpartum women nationally had at least one ED visit within six months postpartum.²⁻²⁷ Further, approximately 5 percent of postpartum women nationally had at least one ED visit within 42 days after delivery. Of the postpartum women who utilized ED services within 42 days of delivery nationally, approximately 28 percent were admitted or transferred to an inpatient setting. However, approximately 68 percent of women who utilized ED services within 42 days of delivery nationally received a diagnosis of "normal postpartum examination," which suggests that visits could have been prevented by improved patient knowledge about the

²⁻²⁵ Centers for Medicare & Medicaid Services. 2020 child and adult health care quality measures quality. Available at: <https://data.medicare.gov/dataset/fbbe1734-b448-4e5a-bc94-3f8688534741>. Accessed on: Jan 3, 2023.

²⁻²⁶ Ibid.

²⁻²⁷ Harris A, Chang HY, Wang L, et al. Emergency room utilization after medically complicated pregnancies: A Medicaid claims analysis. *Journal of Women's Health*. 2015; 24(9):745–754. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4589304/>. Accessed on: Jan 3, 2023.

physiology of the postpartum period and/or by ensuring women see their PCP or OB/GYN during the postpartum period.²⁻²⁸

Postpartum Ambulatory Care Utilization

The American College of Obstetricians and Gynecologists recommends that all postpartum women have contact with their OB/GYN or other obstetric care provider within the first three weeks after delivery.²⁻²⁹ Postpartum visits provide an opportunity for mothers to receive physical examinations; discuss contraceptive options, health concerns during and after pregnancy, and their mental status with their provider, and ask any questions they might still have about postpartum activities (e.g., breastfeeding). The underutilization of postpartum care impedes management of chronic health conditions and access to effective contraception, which increases the risk of short-interval pregnancy and preterm birth. Postpartum follow-up may also facilitate the early screening and treatment of cardiovascular disease, among other conditions, in later life.

Prenatal Maternal Depression Screening

Perinatal depression is one of the most common medical complications during pregnancy and the postpartum period, affecting about one in seven pregnant women.²⁻³⁰ Since half of all postpartum depression cases begin during pregnancy, and women with a personal or family history of depression are at increased risk, the prenatal period is an ideal time for screening and treatment. Further, while approximately 63 percent of women were assessed for depression during their initial visit with a provider, only approximately 7 percent of screening records indicate that a standardized screening tool was used.²⁻³¹ Since the earlier a woman is identified with maternal depression, the earlier she can receive treatment, it is important to analyze the percentage of women who received a prenatal maternal depression screening.

Postpartum Maternal Depression Screening

Maternal depression is one of the most common medical complications during pregnancy and the postpartum period, with approximately 10 percent of postpartum women meeting the criteria for major depressive disorders. Due to this, it is recommended that all OB/GYNs and other obstetric care providers complete a full assessment of mood and emotional well-being during the comprehensive postpartum visit for each patient. Further, if a patient is screened for depression and anxiety during

²⁻²⁸ Brousseau EC, Danilack V, Cai F, Matteson KA. Emergency department visits for postpartum complications. *Journal of Women's Health*. 2018; 27(3):253–257. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5865248/>. Accessed on: Jan 3, 2023.

²⁻²⁹ The American College of Obstetricians and Gynecologists. Optimizing postpartum care. Available at: <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2018/05/optimizing-postpartum-care>. Accessed on: Jan 3, 2023.

²⁻³⁰ The American College of Obstetricians and Gynecologists. Screening for perinatal depression. Available at: <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2018/11/screening-for-perinatal-depression>. Accessed on: Jan 3, 2023.

²⁻³¹ New York State Department of Health. Screening for maternal depression. Available at: https://www.health.ny.gov/community/pregnancy/health_care/perinatal/maternal_depression/providers/screening.htm. Accessed on: Jan 3, 2023.

pregnancy, additional screenings should then occur during the comprehensive postpartum visit.²⁻³² It is important that mothers are screened and treated for maternal depression since left untreated, maternal depression may cause negative physical health effects for mothers and may cause sleeping, eating, and behavioral problems for their children.²⁻³³

Study Indicator Results

Study indicator results were limited to singleton births, defined using the Plurality field in the birth registry data. Since multiple gestation births are subject to different clinical guidelines, results for multiple births are limited to introductory findings and the analytic dataset supplied to DMAS.

Results for each study indicator were calculated among demographic categories for the CY 2021 measurement period. HSAG used Pearson's chi-square tests to assess statistically significant differences between the CY 2021 study population and comparison group for each birth outcomes indicator.

Health Disparities Analysis

For each race/ethnicity, HSAG identified positive and negative health disparities for the *Births with Early and Adequate Prenatal Care*, *Preterm Births (<37 Weeks Gestation)*, and *Newborns with Low Birth Weight (<2,500 grams)* study indicators. For each stratified rate, the reference group was the aggregated rate for all other stratifications within the stratification group (i.e., the rate for the White, Non-Hispanic group was compared to the aggregate of all other race/ethnicity stratifications). The *p*-value of the coefficient from the logistic regression was used to identify statistically significant differences when comparing the stratified rates to the reference groups.

For this report, a health disparity is defined as a stratified rate with a *p*-value of the coefficient of the logistic regression that is less than 0.05.²⁻³⁴ When analyzing a given stratification, HSAG classified the rate in one of the following three categories based on the preceding analyses:

- Better Rate
 - The *p*-value of the coefficient of the logistic regression is less than 0.05 and the stratified rate is higher or more favorable than the rate for the reference group. In other words, the reference group shows a health disparity compared to the stratification being evaluated.

²⁻³² The American College of Obstetricians and Gynecologists. Screening for perinatal depression. Available at: <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2018/11/screening-for-perinatal-depression>. Accessed on: Jan 3, 2023.

²⁻³³ Centers for Disease Control and Prevention. Identifying maternal depression. Available at: <https://www.cdc.gov/reproductivehealth/vital-signs/identifying-maternal-depression/index.html>. Accessed on: Jan 3, 2023.

²⁻³⁴ A *p*-value of the coefficient of the logistic regression less than 0.05 was chosen due to the anticipated large eligible populations for the measures.

- **Worse Rate**
 - The p -value of the coefficient of the logistic regression is less than 0.05 and the stratified rate is lower or less favorable than the rate for the reference group. In other words, the stratification being evaluated shows a health disparity compared to the reference group.
- **Similar Rate**
 - The p -value of the coefficient of the logistic regression is greater than or equal to 0.05. This means no health disparities were identified when the stratification was compared to the reference group.

3. Findings

Overall Birth Characteristics

Table 3-1 through Table 3-3 present the overall number of births paid by Virginia Medicaid (i.e., Title XIX or Title XXI) for CY 2019, CY 2020, and CY 2021 stratified by key characteristics.

Overall Births Paid by Virginia Medicaid

Table 3-1 presents the overall number of births paid by Virginia Medicaid during each measurement period stratified by Medicaid births, as well as the number and percentage of multiple gestation and singleton births.

Table 3-1—Overall Births Paid by Virginia Medicaid, CY 2019–2021

Overall Births	CY 2019		CY 2020		CY 2021	
	Number	Percent	Number	Percent	Number	Percent
Overall Births*						
Total Births	38,317	100.0%	37,316	100.0%	36,480	100.0%
<i>Multiple Gestation Births</i>	1,350	3.5%	1,255	3.4%	1,184	3.2%
<i>Singleton Births</i>	36,967	96.5%	36,061	96.6%	35,296	96.8%
Medicaid Births**						
Total Births	33,679	100.0%	33,401	100.0%	34,150	100.0%
<i>Multiple Gestation Births</i>	1,235	3.7%	1,171	3.5%	1,118	3.3%
<i>Singleton Births</i>	32,444	96.3%	32,230	96.5%	33,032	96.7%

* Overall Births includes all births paid by Virginia Medicaid.

** Medicaid Births exclude members enrolled in limited benefit programs (e.g., Plan First) and members who are only eligible for emergency only benefits.

Overall, the number of births identified in the matched vital statistics data slightly declined in CY 2021, while the number of Medicaid births identified in the matched vital statistics data slightly increased in CY 2021. The increase in Medicaid Births in CY 2021 is likely primarily attributed to the implementation of the FAMIS Prenatal Coverage program in July 2021, which resulted in the inclusion of approximately 2,000 more births for CY 2021, while the decrease observed in the overall births is primarily attributed to a decline in emergency only births that were matched to the vital statistics data. Virginia Medicaid's compliance with federal MOE policies during the continuing COVID-19 PHE, which prevented members' coverage from being terminated in most circumstances for the duration of the PHE, was likely also a factor contributing to the higher number of births.

Overall Singleton Births Paid by Virginia Medicaid

Table 3-2 presents the overall number of singleton births paid by Virginia Medicaid during each measurement period, as well as the number and percentage of births by Medicaid program, managed care program, and delivery system.

Table 3-2—Singleton Births by Medicaid Program, Managed Care Program, and Delivery System, CY 2019–CY 2021

Overall Births	CY 2019		CY 2020		CY 2021	
	Number	Percent	Number	Percent	Number	Percent
Singleton Births	32,444	100.0%	32,230	100.0%	33,032	100.0%
Medicaid Program						
Medicaid for Pregnant Women	22,978	70.8%	19,772	61.3%	15,682	47.5%
Medicaid Expansion	2,152	6.6%	4,576	14.2%	6,548	19.8%
FAMIS MOMS	2,193	6.8%	2,091	6.5%	1,785	5.4%
Other Aid Categories†	5,121	15.8%	5,791	18.0%	9,017	27.3%
Managed Care Program*						
CCC Plus	909	2.8%	887	2.8%	928	2.8%
Medallion 4.0**	27,708	85.4%	28,318	87.9%	28,188	85.3%
Delivery System						
FFS	3,827	11.8%	3,025	9.4%	3,916	11.9%
Managed Care	28,617	88.2%	29,205	90.6%	29,116	88.1%

† Other Aid Categories includes all other births not covered by Medicaid for Pregnant Women, Medicaid Expansion, and FAMIS MOMS programs.

* Because not all births were to women in managed care programs, the percentage of births for the CCC Plus and Medallion 4.0 managed care programs do not sum to 100 percent.

** Medallion 4.0 also includes FAMIS MOMS, FAMIS, and FAMIS Prenatal Coverage.

While the majority of Medicaid program births across all three measurement periods were to women in the Medicaid for Pregnant Women program, there was a decline in births for this program for CY 2021. This decrease is expected due to the implementation of Medicaid Expansion on January 1, 2019, which provided coverage to women who were previously only eligible for Medicaid if they became pregnant. As a result, the number of births to women in Medicaid Expansion increased by more than 40 percent between CY 2020 and CY 2021.

Table 3-3 presents the overall number of singleton births paid by Virginia Medicaid during each measurement period stratified by maternal age, race/ethnicity, and regional residence.

Table 3-3—Singleton Births by Maternal Age at Delivery, Maternal Race/Ethnicity, and Managed Care Region of Residence

Overall Births	CY 2019		CY 2020		CY 2021	
	Number	Percent	Number	Percent	Number	Percent
Singleton Births [†]	32,444	100.0%	32,230	100.0%	33,032	100.0%
Maternal Age at Delivery						
≤15 Years	81	0.2%	94	0.3%	98	0.3%
16–17 Years	492	1.5%	469	1.5%	446	1.4%
18–20 Years	3,702	11.4%	3,460	10.7%	3,433	10.4%
21–24 Years	7,936	24.5%	7,618	23.6%	7,499	22.7%
25–29 Years	10,050	31.0%	9,835	30.5%	9,878	29.9%
30–34 Years	6,550	20.2%	6,801	21.1%	7,276	22.0%
35–39 Years	2,948	9.1%	3,119	9.7%	3,505	10.6%
40–44 Years	614	1.9%	733	2.3%	831	2.5%
≥45 Years	43	0.1%	41	0.1%	38	0.1%
Unknown	28	0.1%	60	0.2%	28	0.1%
Maternal Race/Ethnicity						
White, Non-Hispanic	14,069	43.4%	13,953	43.3%	12,475	37.8%
Black, Non-Hispanic	12,691	39.1%	12,439	38.6%	11,740	35.5%
Asian, Non-Hispanic	1,224	3.8%	1,199	3.7%	1,317	4.0%
Hispanic, Any Race	3,970	12.2%	4,177	13.0%	6,276	19.0%
Other/Unknown	490	1.5%	462	1.4%	1,224	3.7%
Managed Care Region of Residence						
Central	8,184	25.2%	8,153	25.3%	8,714	26.4%
Charlottesville/Western	4,111	12.7%	4,086	12.7%	4,160	12.6%
Northern & Winchester	7,207	22.2%	7,113	22.1%	8,201	24.8%
Roanoke/Alleghany	3,155	9.7%	3,135	9.7%	3,030	9.2%
Southwest	1,860	5.7%	1,915	5.9%	1,081	3.3%
Tidewater	7,875	24.3%	7,821	24.3%	7,841	23.7%

Note: Due to rounding, the percentages in each column may not sum to 100 percent.

† Unknown managed care regions of residence are included in the singleton births total.

The majority of CY 2021 births paid by Virginia Medicaid were to women 21 to 34 years of age (74.6 percent) who were White, Non-Hispanic (37.8 percent) or Black, Non-Hispanic (35.5 percent). Of note, the number of births paid by Virginia Medicaid to Hispanic, Any Race women increased by approximately 47 percent between CY 2020 and CY 2021, which may be attributed to the implementation of the FAMIS Prenatal Coverage program, which provides comprehensive pregnancy coverage for women who do not meet the immigration status rules for other Medicaid programs.

Consistent with prior years, the majority (74.9 percent) of CY 2021 births were to women who resided in the Central, Northern & Winchester, or Tidewater regions.

Birth Outcomes Study Indicator Results and Trending

Table 3-4 presents the overall study indicator results for each measurement period.

Table 3-4—Overall Birth Outcomes Study Indicator Findings Among Singleton Births, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
Births with Early and Adequate Prenatal Care	76.4%	22,392	72.3%	22,245	71.9%	23,780	72.7%
<i>Births with Inadequate Prenatal Care*</i>	NA	5,043	16.3%	4,651	15.0%	5,106	15.6%
<i>Births with No Prenatal Care*</i>	NA	688	2.2%	534	1.7%	685	2.1%
Preterm Births (<37 Weeks Gestation)*	9.4%	3,263	10.1%	3,168	9.8%	3,327	10.1%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	3,070	9.5%	2,979	9.2%	3,074	9.3%

**a lower rate indicates better performance for this indicator.*

NA indicates there is not an applicable national benchmark for this indicator.

The percentage of CY 2021 *Births with Early and Adequate Prenatal Care* was consistent with prior years and continues to fall below the national benchmark. Additionally, the rates for the *Newborns with Low Birth Weight (<2,500 grams)* indicator outperformed the national benchmark for all three measurement periods, demonstrating strength for Virginia Medicaid.

Study Indicators Stratified by Select Demographic Characteristics

Table 3-5 and Table 3-6 present the study indicator results stratified by race/ethnicity and geographic managed care region, respectively, for each measurement period. Table 3-5 also includes shading to represent identified disparities for the birth outcomes study indicators for CY 2021.

Table 3-5—Overall Birth Outcomes Study Indicator Findings Among Singleton Births by Race/Ethnicity, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
White, Non-Hispanic							
Births with Early and Adequate Prenatal Care	76.4%	9,811	74.7%	9,572	73.7%	9,359	75.7%
<i>Births with Inadequate Prenatal Care*</i>	NA	1,939	14.8%	1,783	13.7%	1,648	13.3%
<i>Births with No Prenatal Care*</i>	NA	257	2.0%	192	1.5%	240	1.9%
Preterm Births (<37 Weeks Gestation)*	9.4%	1,232	8.8%	1,296	9.3%	1,112	8.9%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	1,052	7.5%	1,079	7.7%	933	7.5%
Black, Non-Hispanic							
Births with Early and Adequate Prenatal Care	76.4%	8,791	71.0%	8,821	72.0%	8,660	74.4%
<i>Births with Inadequate Prenatal Care*</i>	NA	2,056	16.6%	1,827	14.9%	1,586	13.6%
<i>Births with No Prenatal Care*</i>	NA	307	2.5%	240	2.0%	253	2.2%
Preterm Births (<37 Weeks Gestation)*	9.4%	1,539	12.1%	1,382	11.1%	1,447	12.3%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	1,609	12.7%	1,508	12.1%	1,515	12.9%
Asian, Non-Hispanic							
Births with Early and Adequate Prenatal Care	76.4%	839	71.6%	795	67.8%	956	73.4%
<i>Births with Inadequate Prenatal Care*</i>	NA	220	18.8%	184	15.7%	186	14.3%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	19	1.5%
Preterm Births (<37 Weeks Gestation)*	9.4%	99	8.1%	99	8.3%	98	7.4%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	103	8.4%	94	7.8%	85	6.5%
Hispanic, Any Race							
Births with Early and Adequate Prenatal Care	76.4%	2,639	68.8%	2,752	67.5%	3,938	63.4%

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
<i>Births with Inadequate Prenatal Care*</i>	NA	745	19.4%	771	18.9%	1,501	24.2%
<i>Births with No Prenatal Care*</i>	NA	102	2.7%	83	2.0%	148	2.4%
Preterm Births (<37 Weeks Gestation)*	9.4%	334	8.4%	351	8.4%	556	8.9%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	259	6.5%	261	6.2%	440	7.0%
Other/Unknown							
Births with Early and Adequate Prenatal Care	76.4%	312	67.1%	305	68.1%	867	71.5%
<i>Births with Inadequate Prenatal Care*</i>	NA	83	17.8%	86	19.2%	185	15.3%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	25	2.1%
Preterm Births (<37 Weeks Gestation)*	9.4%	59	12.1%	40	8.7%	114	9.3%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	47	9.6%	37	8.0%	101	8.3%

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11). In instances where only one stratification was suppressed, the values for the second smallest population were also suppressed, even if the values were 11 or more.

Blue shading indicates that a disparity was identified (i.e., had a p-value less than or equal to 0.05) and the stratified rate was higher or more favorable than the reference group rate.

Orange shading indicates that a disparity was identified (i.e., had a p-value less than or equal to 0.05) and the stratified rate was lower or less favorable than the reference group rate.

Consistent with the national birth data,³⁻¹ study indicator results showed poor outcomes for Black, Non-Hispanic women, who had the highest rates of *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)* compared to women of other races/ethnicities. White, Non-Hispanic women had the highest rate of *Births with Early and Adequate Prenatal Care* compared to women of other races/ethnicities but continued to fall below the national benchmark. For Hispanic women of any race, rates for both the *Preterm Births (<37 Weeks)* and *Newborns with Low Birth Weight (<2,500 grams)* study indicators outperformed national benchmarks, despite these women having the lowest rate of *Births with Early and Adequate Prenatal Care*.

The above findings are further supported by the CY 2021 disparities analysis, which identified that White, Non-Hispanic and Black, Non-Hispanic women had significantly more *Births with Early and*

³⁻¹ Martin JA, Hamilton BE, Osterman MJK. Births in the United States, 2021. National Center for Health Statistics Data Brief, No. 442. 2022. Available at: <https://www.cdc.gov/nchs/data/databriefs/db442.pdf>. Accessed on: Jan 3, 2023.

Adequate Prenatal Care than all other race/ethnicities, while Hispanic women of any race had significantly fewer *Births with Early and Adequate Prenatal Care* than all other race/ethnicities. Further, Black, Non-Hispanic women had significantly more *Births with Early and Adequate Prenatal Care*, *Preterm Births (<37 Weeks Gestation)*, and *Newborns with Low Birth Weight (<2,500 grams)* than all other races/ethnicities.

Table 3-6—Overall Birth Outcomes Study Indicator Findings Among Singleton Births by Managed Care Region of Maternal Residence, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
Central							
Births with Early and Adequate Prenatal Care	76.4%	5,848	72.8%	5,886	72.9%	6,658	76.8%
<i>Births with Inadequate Prenatal Care*</i>	NA	1,125	14.0%	1,047	13.0%	954	11.0%
<i>Births with No Prenatal Care*</i>	NA	176	2.2%	159	2.0%	231	2.7%
Preterm Births (<37 Weeks Gestation)*	9.4%	866	10.6%	798	9.8%	972	11.2%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	846	10.3%	820	10.1%	918	10.5%
Charlottesville/Western							
Births with Early and Adequate Prenatal Care	76.4%	3,188	78.8%	3,106	77.0%	3,230	78.4%
<i>Births with Inadequate Prenatal Care*</i>	NA	585	14.5%	602	14.9%	585	14.2%
<i>Births with No Prenatal Care*</i>	NA	52	1.3%	40	1.0%	62	1.5%
Preterm Births (<37 Weeks Gestation)*	9.4%	355	8.6%	352	8.6%	360	8.7%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	358	8.7%	352	8.6%	354	8.5%
Northern & Winchester							
Births with Early and Adequate Prenatal Care	76.4%	4,600	66.8%	4,502	65.0%	5,039	62.5%
<i>Births with Inadequate Prenatal Care*</i>	NA	1,482	21.5%	1,342	19.4%	1,927	23.9%
<i>Births with No Prenatal Care*</i>	NA	197	2.9%	136	2.0%	184	2.3%
Preterm Births (<37 Weeks Gestation)*	9.4%	654	9.1%	607	8.5%	704	8.6%

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	551	7.6%	535	7.5%	572	7.0%
Roanoke/Alleghany							
Births with Early and Adequate Prenatal Care	76.4%	2,203	72.9%	2,223	74.0%	2,213	73.3%
<i>Births with Inadequate Prenatal Care*</i>	NA	420	13.9%	359	12.0%	400	13.3%
<i>Births with No Prenatal Care*</i>	NA	52	1.7%	37	1.2%	40	1.3%
Preterm Births (<37 Weeks Gestation)*	9.4%	268	8.5%	313	10.0%	308	10.2%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	263	8.3%	292	9.3%	298	9.8%
Southwest							
Births with Early and Adequate Prenatal Care	76.4%	828	70.1%	772	67.8%	836	77.4%
<i>Births with Inadequate Prenatal Care*</i>	NA	197	16.7%	175	15.4%	145	13.4%
<i>Births with No Prenatal Care*</i>	NA	14	1.2%	25	2.2%	20	1.9%
Preterm Births (<37 Weeks Gestation)*	9.4%	168	9.0%	192	10.0%	77	7.1%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	166	8.9%	174	9.1%	70	6.5%
Tidewater							
Births with Early and Adequate Prenatal Care	76.4%	5,693	73.3%	5,750	74.1%	5,800	74.6%
<i>Births with Inadequate Prenatal Care*</i>	NA	1,226	15.8%	1,126	14.5%	1,094	14.1%
<i>Births with No Prenatal Care*</i>	NA	197	2.5%	137	1.8%	148	1.9%
Preterm Births (<37 Weeks Gestation)*	9.4%	949	12.1%	904	11.6%	904	11.5%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	883	11.2%	804	10.3%	862	11.0%

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

In CY 2021, the Charlottesville/Western and Southwest regions exceeded the national benchmarks for all study indicators where benchmarks were available. This may be attributed to the fact that approximately 56 percent of births in the Charlottesville/Western region and approximately 93 percent of births in the Southwest region were to White, Non-Hispanic women, who typically have more favorable birth outcomes compared to all other race/ethnicities, as shown in Table 3-5. Despite having the lowest rates of *Births with Early and Adequate Prenatal Care*, women in the Northern & Winchester region had the second lowest rates of *Preterm Births (<37 Weeks)* and *Newborns with Low Birth Weight (<2,500 grams)*, exceeding the national benchmarks for both indicators for all three measurement periods. This may be due to a large number of Hispanic, Any Race women who live in this region (approximately 40 percent) having some of the lowest rates of *Preterm Births (<37 Weeks)* and *Newborns with Low Birth Weight (<2,500 grams)*, as shown in Table 3-5. Tidewater had the highest rates of *Preterm Births (<37 Weeks)* and *Newborns with Low Birth Weight (<2,500 grams)*, and had the highest percentage of women who were Black, Non-Hispanic (approximately 55 percent). As shown in Table 3-5, women of Black, Non-Hispanic race had the highest rates of *Preterm Births (<37 Weeks)* and *Newborns with Low Birth Weight (<2,500 grams)* at 12.3 percent and 12.9 percent, respectively.

Study Indicator Findings by Medicaid Characteristics

Table 3-7 presents the study indicator results stratified by Medicaid program for each measurement period.

Table 3-7—Overall Birth Outcomes Study Indicator Findings Among Singleton Births by Medicaid Program, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
Medicaid for Pregnant Women							
Births with Early and Adequate Prenatal Care	76.4%	16,028	73.1%	13,737	72.4%	11,493	73.9%
<i>Births with Inadequate Prenatal Care*</i>	NA	3,451	15.7%	2,839	15.0%	2,337	15.0%
<i>Births with No Prenatal Care*</i>	NA	393	1.8%	241	1.3%	239	1.5%
Preterm Births (<37 Weeks Gestation)*	9.4%	2,173	9.5%	1,750	8.9%	1,460	9.3%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	2,062	9.0%	1,699	8.6%	1,333	8.5%
Medicaid Expansion							
Births with Early and Adequate Prenatal Care	76.4%	1,462	70.9%	3,249	73.8%	5,031	77.5%
<i>Births with Inadequate Prenatal Care*</i>	NA	330	16.0%	578	13.1%	722	11.1%

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
<i>Births with No Prenatal Care*</i>	NA	74	3.6%	90	2.0%	154	2.4%
Preterm Births (<37 Weeks Gestation)*	9.4%	261	12.1%	544	11.9%	733	11.2%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	235	10.9%	463	10.1%	707	10.8%
FAMIS MOMS							
Births with Early and Adequate Prenatal Care	76.4%	1,626	77.2%	1,564	76.8%	1,382	78.1%
<i>Births with Inadequate Prenatal Care*</i>	NA	292	13.9%	261	12.8%	219	12.4%
<i>Births with No Prenatal Care*</i>	NA	28	1.3%	11	0.5%	12	0.7%
Preterm Births (<37 Weeks Gestation)*	9.4%	168	7.7%	163	7.8%	161	9.0%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	158	7.2%	150	7.2%	145	8.1%
Other Aid Categories†							
Births with Early and Adequate Prenatal Care	76.4%	3,276	66.9%	3,695	66.9%	5,874	65.9%
<i>Births with Inadequate Prenatal Care*</i>	NA	970	19.8%	973	17.6%	1,828	20.5%
<i>Births with No Prenatal Care*</i>	NA	193	3.9%	192	3.5%	280	3.1%
Preterm Births (<37 Weeks Gestation)*	9.4%	661	12.9%	711	12.3%	973	10.8%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	615	12.0%	667	11.5%	889	9.9%

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

† Other Aid Categories includes all other births not covered by Medicaid for Pregnant Women, Medicaid Expansion, and FAMIS MOMS programs.

Overall, the FAMIS MOMS program demonstrated strength, with rates for the *Births with Early and Adequate Prenatal Care*, *Preterm Births (<37 Weeks Gestation)*, and *Newborns with Low Birth Weight (<2,500 grams)* study indicators exceeding the applicable national benchmarks for all three measurement periods. The Medicaid for Pregnant Women program also had *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)* rates that exceeded the national benchmarks in CY 2021. Additionally, the Medicaid Expansion program's rate for the *Births with Early and Adequate Prenatal Care* study indicator improved from CY 2020 to exceed the national

benchmark in CY 2021. Conversely, the Other Aid Categories rates for all three study indicators fell below the national benchmarks for all three measurement periods.

Table 3-8 presents the study indicator results stratified by managed care program for each measurement period.

Table 3-8—Overall Birth Outcomes Study Indicator Findings Among Singleton Births by Managed Care Program, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
CCC Plus							
Births with Early and Adequate Prenatal Care	76.4%	597	69.6%	587	68.7%	660	71.9%
<i>Births with Inadequate Prenatal Care*</i>	NA	151	17.6%	142	16.6%	137	14.9%
<i>Births with No Prenatal Care*</i>	NA	30	3.5%	29	3.4%	36	3.9%
Preterm Births (<37 Weeks Gestation)*	9.4%	138	15.2%	140	15.8%	154	16.6%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	139	15.3%	138	15.6%	146	15.8%
Medallion 4.0							
Births with Early and Adequate Prenatal Care	76.4%	19,438	73.3%	19,777	72.8%	20,800	74.4%
<i>Births with Inadequate Prenatal Care*</i>	NA	4,199	15.8%	3,947	14.5%	4,007	14.3%
<i>Births with No Prenatal Care*</i>	NA	465	1.8%	388	1.4%	473	1.7%
Preterm Births (<37 Weeks Gestation)*	9.4%	2,637	9.5%	2,694	9.5%	2,760	9.8%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	2,474	8.9%	2,561	9.0%	2,590	9.2%

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

Births to women in the Medallion 4.0 managed care program had the highest rates of *Births with Early and Adequate Prenatal Care* and the lowest rates of *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)*, with the rates for the *Newborns with Low Birth Weight (<2,500 grams)* study indicator outperforming the national benchmark for all three measurement periods. Additionally, for the CCC Plus managed care program, the *Births with Early and Adequate Prenatal Care* study indicator rates have improved between CY 2019 and CY 2021; however, opportunities exist to ensure CCC Plus women receive timely and necessary prenatal care and experience improved birth outcomes.

Table 3-9 presents the study indicator results stratified by delivery system for each measurement period.

Table 3-9—Overall Birth Outcomes Study Indicator Findings Among Singleton Births by Delivery System, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
FFS							
Births with Early and Adequate Prenatal Care	76.4%	2,357	65.0%	1,881	64.8%	2,320	60.2%
<i>Births with Inadequate Prenatal Care*</i>	NA	693	19.1%	562	19.4%	962	24.9%
<i>Births with No Prenatal Care*</i>	NA	193	5.3%	117	4.0%	176	4.6%
Preterm Births (<37 Weeks Gestation)*	9.4%	488	12.8%	334	11.0%	413	10.5%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	457	12.0%	280	9.3%	338	8.6%
Managed Care							
Births with Early and Adequate Prenatal Care	76.4%	20,035	73.2%	20,364	72.7%	21,460	74.3%
<i>Births with Inadequate Prenatal Care*</i>	NA	4,350	15.9%	4,089	14.6%	4,144	14.4%
<i>Births with No Prenatal Care*</i>	NA	495	1.8%	417	1.5%	509	1.8%
Preterm Births (<37 Weeks Gestation)*	9.4%	2,775	9.7%	2,834	9.7%	2,914	10.0%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	2,613	9.1%	2,699	9.2%	2,736	9.4%

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

Overall, women enrolled in managed care had better outcomes than women in the FFS population in CY 2021, with the exception of the *Newborns with Low Birth Weight (<2,500 grams)* study indicator rate. The CY 2021 managed care rate for the *Newborns with Low Birth Weight (<2,500 grams)* indicator exceeded the national benchmark but continued to fall below the national benchmark for the *Births with Early and Adequate Prenatal Care* and *Preterm Births (<37 Weeks Gestation)* indicators. Of note, the CY 2021 rate for women in FFS continued to improve from prior measurement periods and outperformed the national benchmark for *Newborns with Low Birth Weight (<2,500 grams)*.

Table 3-10 presents the overall study indicator results among singleton births by trimester of prenatal care initiation.

Table 3-10—Overall Birth Outcomes Study Indicator Findings Among Singleton Births by Trimester of Prenatal Care Initiation, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
First Trimester							
Births with Early and Adequate Prenatal Care	76.4%	19,961	87.0%	20,033	84.8%	21,409	86.6%
<i>Births with Inadequate Prenatal Care*</i>	NA	535	2.3%	585	2.5%	610	2.5%
<i>Births with No Prenatal Care*</i>	NA	0	0.0%	0	0.0%	0	0.0%
Preterm Births (<37 Weeks Gestation)*	9.4%	2,192	9.6%	2,256	9.5%	2,393	9.7%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	2,075	9.0%	2,114	9.0%	2,270	9.2%
Second Trimester							
Births with Early and Adequate Prenatal Care	76.4%	2,431	42.6%	2,212	41.1%	2,371	40.9%
<i>Births with Inadequate Prenatal Care*</i>	NA	2,856	50.0%	2,678	49.8%	2,989	51.5%
<i>Births with No Prenatal Care*</i>	NA	0	0.0%	0	0.0%	0	0.0%
Preterm Births (<37 Weeks Gestation)*	9.4%	512	9.0%	458	8.5%	560	9.7%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	523	9.2%	472	8.8%	510	8.8%
Third Trimester							
Births with Early and Adequate Prenatal Care	76.4%	0	0.0%	0	0.0%	0	0.0%
<i>Births with Inadequate Prenatal Care*</i>	NA	1,652	100.0%	1,388	100.0%	1,507	100.0%
<i>Births with No Prenatal Care*</i>	NA	0	0.0%	0	0.0%	0	0.0%
Preterm Births (<37 Weeks Gestation)*	9.4%	150	9.0%	131	9.3%	143	9.4%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	134	8.0%	130	9.3%	125	8.2%
No Prenatal Care							
Births with Early and Adequate Prenatal Care	76.4%	0	0.0%	0	0.0%	0	0.0%

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
<i>Births with Inadequate Prenatal Care*</i>	NA	0	0.0%	0	0.0%	0	0.0%
<i>Births with No Prenatal Care*</i>	NA	688	100.0%	534	100.0%	685	100.0%
Preterm Births (<37 Weeks Gestation)*	9.4%	195	28.4%	140	26.2%	188	27.5%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	157	22.9%	105	19.7%	137	20.0%

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

Women who initiated prenatal care in their first, second, or third trimesters surpassed the national benchmark for the *Newborns with Low Birth Weight (<2,500 grams)* study indicator in CY 2021. Notably, the *Preterm Births (<37 Weeks Gestation)* study indicator rates for women who initiated prenatal care in their second or third trimesters increased from CY 2020 to CY 2021 and no longer exceed the national benchmark for CY 2021. For CY 2021, nearly 87 percent of women initiated prenatal care in their first trimester, yet these women had higher rates of preterm births and newborns with low birth weight compared to national benchmarks. Further, approximately 91 percent of the preterm births to women who initiated prenatal care in the first trimester received Adequate Plus prenatal care, suggesting that these women may have had high-risk pregnancies where, regardless of receiving timely prenatal care, they were still more likely to have a preterm birth.

Table 3-11 presents the study indicator results among singleton births by length of continuous enrollment.

Table 3-11—Overall Birth Outcomes Study Indicator Findings Among Singleton Births by Length of Continuous Enrollment, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
≤30 Days							
Births with Early and Adequate Prenatal Care	76.4%	812	66.6%	632	65.2%	954	57.5%
<i>Births with Inadequate Prenatal Care*</i>	NA	221	18.1%	173	17.8%	448	27.0%
<i>Births with No Prenatal Care*</i>	NA	55	4.5%	43	4.4%	85	5.1%
Preterm Births (<37 Weeks Gestation)*	9.4%	153	11.9%	103	10.1%	160	9.5%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	143	11.1%	91	8.9%	133	7.9%

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
31–90 Days							
Births with Early and Adequate Prenatal Care	76.4%	1,216	62.8%	1,002	62.8%	1,190	57.9%
<i>Births with Inadequate Prenatal Care*</i>	NA	460	23.7%	360	22.6%	598	29.1%
<i>Births with No Prenatal Care*</i>	NA	87	4.5%	50	3.1%	65	3.2%
Preterm Births (<37 Weeks Gestation)*	9.4%	219	10.7%	198	11.9%	227	10.9%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	204	9.9%	161	9.7%	176	8.5%
91–180 Days							
Births with Early and Adequate Prenatal Care	76.4%	2,341	60.4%	2,165	62.5%	1,914	61.7%
<i>Births with Inadequate Prenatal Care*</i>	NA	1,061	27.4%	844	24.4%	824	26.5%
<i>Births with No Prenatal Care*</i>	NA	106	2.7%	66	1.9%	72	2.3%
Preterm Births (<37 Weeks Gestation)*	9.4%	508	12.5%	388	10.8%	334	10.6%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	481	11.9%	368	10.2%	319	10.1%
>180 Days							
Births with Early and Adequate Prenatal Care	76.4%	17,964	75.3%	18,424	74.1%	19,686	76.2%
<i>Births with Inadequate Prenatal Care*</i>	NA	3,289	13.8%	3,256	13.1%	3,218	12.5%
<i>Births with No Prenatal Care*</i>	NA	434	1.8%	373	1.5%	460	1.8%
Preterm Births (<37 Weeks Gestation)*	9.4%	2,371	9.5%	2,474	9.6%	2,595	10.0%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	2,230	8.9%	2,355	9.1%	2,439	9.4%
Not Continuously Enrolled Prior to Delivery							
Births with Early and Adequate Prenatal Care	76.4%	59	64.8%	22	48.9%	36	55.4%
<i>Births with Inadequate Prenatal Care*</i>	NA	12	13.2%	18	40.0%	18	27.7%

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	12	12.5%	S	S	11	16.4%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	12	12.5%	S	S	S	S

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Women who were continuously enrolled for less than 90 days and more than 180 days had *Newborns with Low Birth Weight (<2,500 grams)* rates that outperformed national benchmarks in CY 2021. Despite not meeting the national benchmark in CY 2021 for *Births with Early and Adequate Prenatal Care*, women who were continuously enrolled for more than 180 days had the highest rate compared to women enrolled for less time. This finding is expected given that women enrolled for more than 180 days likely had an opportunity to initiate prenatal care in their first trimester.

MCO Study Indicator Results

Table 3-12 presents the overall birth outcomes study indicators stratified by MCO for each measurement period.

Table 3-12—Overall Birth Outcomes Study Indicator Findings Among Singleton Births by MCO, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
Aetna							
Births with Early and Adequate Prenatal Care	76.4%	2,363	72.7%	2,703	73.5%	3,028	76.4%
<i>Births with Inadequate Prenatal Care*</i>	NA	522	16.1%	519	14.1%	549	13.8%
<i>Births with No Prenatal Care*</i>	NA	63	1.9%	46	1.3%	54	1.4%
Preterm Births (<37 Weeks Gestation)*	9.4%	337	9.8%	373	9.7%	402	10.1%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	343	10.0%	322	8.4%	381	9.6%
HealthKeepers							
Births with Early and Adequate Prenatal Care	76.4%	6,174	73.5%	6,357	72.6%	6,609	74.2%

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
<i>Births with Inadequate Prenatal Care*</i>	NA	1,290	15.4%	1,271	14.5%	1,291	14.5%
<i>Births with No Prenatal Care*</i>	NA	170	2.0%	121	1.4%	145	1.6%
Preterm Births (<37 Weeks Gestation)*	9.4%	875	10.0%	836	9.3%	870	9.7%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	755	8.6%	785	8.7%	772	8.6%
Molina							
Births with Early and Adequate Prenatal Care	76.4%	1,330	70.4%	1,454	72.4%	1,543	73.4%
<i>Births with Inadequate Prenatal Care*</i>	NA	344	18.2%	317	15.8%	293	13.9%
<i>Births with No Prenatal Care*</i>	NA	31	1.6%	43	2.1%	56	2.7%
Preterm Births (<37 Weeks Gestation)*	9.4%	186	9.4%	229	11.0%	216	10.2%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	189	9.6%	242	11.7%	223	10.5%
Optima							
Births with Early and Adequate Prenatal Care	76.4%	4,438	75.6%	4,380	74.4%	4,586	76.1%
<i>Births with Inadequate Prenatal Care*</i>	NA	855	14.6%	828	14.1%	769	12.8%
<i>Births with No Prenatal Care*</i>	NA	100	1.7%	85	1.4%	109	1.8%
Preterm Births (<37 Weeks Gestation)*	9.4%	609	10.1%	627	10.4%	667	11.0%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	598	9.9%	595	9.9%	629	10.4%
UnitedHealthcare							
Births with Early and Adequate Prenatal Care	76.4%	1,778	70.2%	1,816	71.3%	1,944	70.2%
<i>Births with Inadequate Prenatal Care*</i>	NA	447	17.7%	373	14.6%	489	17.7%
<i>Births with No Prenatal Care*</i>	NA	57	2.3%	40	1.6%	48	1.7%

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
Preterm Births (<37 Weeks Gestation)*	9.4%	231	8.7%	234	8.7%	244	8.7%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	234	8.8%	238	8.9%	233	8.4%
VA Premier							
Births with Early and Adequate Prenatal Care	76.4%	3,952	72.9%	3,654	71.0%	3,750	73.7%
<i>Births with Inadequate Prenatal Care*</i>	NA	892	16.5%	781	15.2%	753	14.8%
<i>Births with No Prenatal Care*</i>	NA	74	1.4%	82	1.6%	97	1.9%
Preterm Births (<37 Weeks Gestation)*	9.4%	537	9.3%	535	9.6%	515	10.0%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	494	8.6%	517	9.3%	498	9.7%

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

UnitedHealthcare was the only MCO to exceed the national benchmarks for both the *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)* indicators in CY 2021, despite having the lowest rate of *Births with Early and Adequate Prenatal Care*. Of note, Aetna and HealthKeepers also exceeded the national benchmark for the *Newborns with Low Birth Weight (<2,500 grams)* indicator for CY 2021. Optima had the highest rate of *Preterm Births (<37 Weeks Gestation)* and the second highest rate of *Newborns with Low Birth Weight (<2,500 grams)* in CY 2021, demonstrating opportunities for improvement.

Comparative Analysis

To facilitate DMAS' program evaluation efforts, Table 3-13 presents the CY 2021 birth outcomes study indicator results for the four Medicaid Programs (i.e., Medicaid for Pregnant Women, Medicaid Expansion, FAMIS MOMS, and Other Aid Categories) stratified into a study population and comparison group based on the length of continuous enrollment prior to a woman's delivery. The table also indicates whether each indicator's results were statistically significantly different between the study population (i.e., continuously enrolled for ≥ 120 days prior to delivery) and the comparison group (i.e., continuously enrolled for < 120 days prior to delivery).

Table 3-13—Overall Birth Outcomes Study Indicator Findings Among Singleton Births by Comparison Group and Study Population, CY 2021

Study Indicator	National Benchmark	Comparison Group			Study Population		
		Denom	Number	Percent	Denom	Number	Percent
Medicaid for Pregnant Women							
Births with Early and Adequate Prenatal Care	76.4%	2,196	1,345	61.2%	13,348	10,148	76.0%^
<i>Births with Inadequate Prenatal Care*</i>	NA	2,196	530	24.1%	13,348	1,807	13.5%^
<i>Births with No Prenatal Care*</i>	NA	2,196	96	4.4%	13,348	143	1.1%^
Preterm Births (<37 Weeks Gestation)*	9.4%	2,227	272	12.2%	13,454	1,188	8.8%^
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	2,227	221	9.9%	13,451	1,112	8.3%^
Medicaid Expansion							
Births with Early and Adequate Prenatal Care	76.4%	205	156	76.1%	6,287	4,875	77.5%
<i>Births with Inadequate Prenatal Care*</i>	NA	205	24	11.7%	6,287	698	11.1%
<i>Births with No Prenatal Care*</i>	NA	205	S	S	6,287	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	206	22	10.7%	6,339	711	11.2%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	206	23	11.2%	6,338	684	10.8%
FAMIS MOMS							
Births with Early and Adequate Prenatal Care	76.4%	397	295	74.3%	1,372	1,087	79.2%^
<i>Births with Inadequate Prenatal Care*</i>	NA	397	63	15.9%	1,372	156	11.4%^
<i>Births with No Prenatal Care*</i>	NA	397	S	S	1,372	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	403	41	10.2%	1,382	120	8.7%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	403	34	8.4%	1,382	111	8.0%

Study Indicator	National Benchmark	Comparison Group			Study Population		
		Denom	Number	Percent	Denom	Number	Percent
Other Aid Categories†							
Births with Early and Adequate Prenatal Care	76.4%	2,024	1,020	50.4%	6,892	4,854	70.4%^
Births with Inadequate Prenatal Care*	NA	2,024	712	35.2%	6,892	1,116	16.2%^
Births with No Prenatal Care*	NA	2,024	83	4.1%	6,892	197	2.9%^
Preterm Births (<37 Weeks Gestation)*	9.4%	2,054	184	9.0%	6,962	789	11.3%^
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	2,054	140	6.8%	6,961	749	10.8%^

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11). In instances where only one stratification was suppressed, the values for the second smallest population were also suppressed, even if the values were 11 or more.

†Other Aid Categories includes all other births not covered by Medicaid for Pregnant Women, Medicaid Expansion, and FAMIS MOMS programs.

^indicates the study population rate is statistically different from the comparison group rate.

Overall, the Medicaid for Pregnant Women and FAMIS MOMS programs demonstrated strength in CY 2021, with the study populations exceeding the applicable national benchmark for the *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)* study indicators. Additionally, the Medicaid Expansion and FAMIS MOMS study populations exceeded the national benchmark for the *Births with Early and Adequate Prenatal Care* study indicator. Conversely, the Other Aid Categories study population rates fell below the national benchmark for all three study indicators that could be compared to national benchmarks, with the study population having the lowest rates of *Births with Early and Adequate Prenatal Care* when compared to the other study populations.

Additional Population-Specific Stratifications

FAMIS MOMS

Table 3-14 provides the FAMIS MOMS singleton births characteristics, stratified by delivery system, maternal age at delivery, maternal race/ethnicity, and managed care region of residence.

Table 3-14—FAMIS MOMS Singleton Births Characteristics

Overall Births	CY 2019		CY 2020		CY 2021	
	Number	Percent	Number	Percent	Number	Percent
Singleton Births [†]	2,193	100.0%	2,091	100.0%	1,785	100.0%
Delivery System						
FFS	375	17.1%	264	12.6%	259	14.5%
Managed Care	1,818	82.9%	1,827	87.4%	1,526	85.5%
Maternal Age at Delivery						
≤15 Years	S	S	S	S	0	0.0%
16–17 Years	12	0.5%	S	S	S	S
18–20 Years	106	4.8%	99	4.7%	74	4.1%
21–24 Years	460	21.0%	383	18.3%	363	20.3%
25–29 Years	740	33.7%	747	35.7%	620	34.7%
30–34 Years	556	25.4%	521	24.9%	455	25.5%
35–39 Years	246	11.2%	267	12.8%	217	12.2%
40–44 Years	66	3.0%	55	2.6%	45	2.5%
≥45 Years	S	S	S	S	S	S
Unknown	S	S	S	S	S	S
Maternal Race/Ethnicity						
White, Non-Hispanic	949	43.3%	914	43.7%	709	39.7%
Black, Non-Hispanic	687	31.3%	621	29.7%	529	29.6%
Asian, Non-Hispanic	166	7.6%	172	8.2%	131	7.3%
Hispanic, Any Race	343	15.6%	344	16.5%	344	19.3%
Managed Care Region of Residence						
Central	527	24.0%	475	22.7%	408	22.9%
Charlottesville/Western	238	10.9%	206	9.9%	213	11.9%
Northern & Winchester	736	33.6%	740	35.4%	625	35.0%
Roanoke/Alleghany	175	8.0%	161	7.7%	140	7.8%
Southwest	88	4.0%	63	3.0%	34	1.9%

Overall Births	CY 2019		CY 2020		CY 2021	
	Number	Percent	Number	Percent	Number	Percent
Tidewater	427	19.5%	446	21.3%	364	20.4%

† Members of Other/Unknown race/ethnicity and with unknown managed care regions of residence are included in the singleton births total.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Table 3-15 presents the FAMIS MOMS birth outcomes study indicator results stratified by delivery system for each measurement period.

Table 3-15—Overall Birth Outcomes Study Indicator Findings Among FAMIS MOMS Singleton Births by Delivery System, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
FFS							
Births with Early and Adequate Prenatal Care	76.4%	260	73.0%	183	71.5%	195	76.5%
<i>Births with Inadequate Prenatal Care*</i>	NA	60	16.9%	42	16.4%	35	13.7%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	39	10.4%	24	9.1%	25	9.7%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	41	10.9%	17	6.4%	22	8.5%
Managed Care							
Births with Early and Adequate Prenatal Care	76.4%	1,366	78.1%	1,381	77.5%	1,187	78.4%
<i>Births with Inadequate Prenatal Care*</i>	NA	232	13.3%	219	12.3%	184	12.2%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	129	7.1%	139	7.6%	136	8.9%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	117	6.4%	133	7.3%	123	8.1%

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Study indicator rates for FAMIS MOMS women in managed care exceeded the national benchmarks for all study indicators for CY 2021, demonstrating strength. Further, the study indicator rates for FAMIS MOMS women in FFS exceeded the applicable national benchmarks for *Births with Early and Adequate*

Prenatal Care and Newborns with Low Birth Weight (<2,500 grams). It is expected that FAMIS MOMS women in managed care would have higher rates of *Births with Early and Adequate Prenatal Care* than FFS women, as MCOs are expected to conduct outreach to pregnant women enrolled in managed care regarding the importance of prenatal visits.

Table 3-16 presents the FAMIS MOMS birth outcomes study indicator results stratified by race/ethnicity for each measurement period.

Table 3-16—Birth Outcomes Study Indicator Findings Among FAMIS MOMS Singleton Births by Race/Ethnicity, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
White, Non-Hispanic							
Births with Early and Adequate Prenatal Care	76.4%	727	80.9%	693	79.0%	570	81.3%
<i>Births with Inadequate Prenatal Care*</i>	NA	104	11.6%	107	12.2%	76	10.8%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	58	6.1%	61	6.7%	53	7.5%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	42	4.4%	55	6.0%	46	6.5%
Black, Non-Hispanic							
Births with Early and Adequate Prenatal Care	76.4%	520	77.7%	481	78.7%	409	77.9%
<i>Births with Inadequate Prenatal Care*</i>	NA	95	14.2%	67	11.0%	62	11.8%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	65	9.5%	60	9.7%	58	11.0%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	73	10.6%	64	10.3%	56	10.6%
Asian, Non-Hispanic							
Births with Early and Adequate Prenatal Care	76.4%	115	73.2%	125	74.0%	107	82.9%
<i>Births with Inadequate Prenatal Care*</i>	NA	22	14.0%	13	7.7%	12	9.3%
<i>Births with No Prenatal Care*</i>	NA	S	S	0	0.0%	S	S

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
Preterm Births (<37 Weeks Gestation)*	9.4%	13	7.8%	16	9.3%	16	12.2%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	15	9.0%	12	7.0%	11	8.4%
Hispanic, Any Race							
Births with Early and Adequate Prenatal Care	76.4%	229	68.6%	236	69.2%	248	72.5%
<i>Births with Inadequate Prenatal Care*</i>	NA	62	18.6%	66	19.4%	55	16.1%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	29	8.5%	26	7.6%	30	8.7%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	25	7.3%	17	4.9%	25	7.3%

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Although the CY 2021 *Births with Early and Adequate Prenatal Care* rate for Black, Non-Hispanic women enrolled in FAMIS MOMS exceeded the national benchmark, Black, Non-Hispanic women had the second highest rate of *Preterm Births (<37 Weeks Gestation)* and the highest rate of *Newborns with Low Birth Weight (<2,500 grams)* compared to other race/ethnicities. Similarly, Asian, Non-Hispanic women had the highest rate of *Births with Early and Adequate Prenatal Care* and the highest rate of *Preterm Births (<37 Weeks Gestation)* in CY 2021. Conversely, despite Hispanic women of any race having the second lowest rate of *Births with Early and Adequate Prenatal Care*, study indicator rates for *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)* outperformed national benchmarks. In CY 2021, White, Non-Hispanic women had the second highest rates of *Births with Early and Adequate Prenatal Care* and some of the lowest rates of *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)*, exceeding the national benchmarks for all three study indicators.

Table 3-17 presents the FAMIS MOMS birth outcomes study indicator results stratified by geographic managed care region for each measurement period.

Table 3-17—Birth Outcomes Study Indicator Findings Among FAMIS MOMS Singleton Births by Managed Care Region of Maternal Residence, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
Central							
Births with Early and Adequate Prenatal Care	76.4%	421	81.0%	379	80.3%	351	86.0%
<i>Births with Inadequate Prenatal Care*</i>	NA	55	10.6%	49	10.4%	32	7.8%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	41	7.8%	35	7.4%	42	10.3%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	39	7.4%	34	7.2%	40	9.8%
Charlottesville/Western							
Births with Early and Adequate Prenatal Care	76.4%	193	82.1%	170	82.5%	171	83.0%
<i>Births with Inadequate Prenatal Care*</i>	NA	31	13.2%	23	11.2%	24	11.7%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	17	7.1%	16	7.8%	16	7.5%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	18	7.6%	12	5.8%	16	7.5%
Northern & Winchester							
Births with Early and Adequate Prenatal Care	76.4%	486	69.1%	502	69.2%	427	69.1%
<i>Births with Inadequate Prenatal Care*</i>	NA	134	19.1%	122	16.8%	111	18.0%
<i>Births with No Prenatal Care*</i>	NA	15	2.1%	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	62	8.4%	46	6.2%	52	8.3%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	55	7.5%	42	5.7%	40	6.4%

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
Roanoke/Alleghany							
Births with Early and Adequate Prenatal Care	76.4%	131	78.4%	127	80.4%	121	86.4%
<i>Births with Inadequate Prenatal Care*</i>	NA	S	S	S	S	S	S
<i>Births with No Prenatal Care*</i>	NA	S	S	0	0.0%	0	0.0%
Preterm Births (<37 Weeks Gestation)*	9.4%	S	S	S	S	S	S
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	S	S	S	S	S	S
Southwest							
Births with Early and Adequate Prenatal Care	76.4%	48	90.6%	25	75.8%	31	91.2%
<i>Births with Inadequate Prenatal Care*</i>	NA	S	S	S	S	S	S
<i>Births with No Prenatal Care*</i>	NA	0	0.0%	0	0.0%	0	0.0%
Preterm Births (<37 Weeks Gestation)*	9.4%	S	S	S	S	S	S
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	S	S	S	S	S	S
Tidewater							
Births with Early and Adequate Prenatal Care	76.4%	345	81.2%	361	81.5%	280	77.3%
<i>Births with Inadequate Prenatal Care*</i>	NA	53	12.5%	50	11.3%	47	13.0%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	0	0.0%
Preterm Births (<37 Weeks Gestation)*	9.4%	35	8.2%	48	10.8%	34	9.3%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	37	8.7%	44	9.9%	32	8.8%

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

In CY 2021, the rates for FAMIS MOMS women residing in the Northern & Winchester region did not meet the national benchmark for *Births with Early and Adequate Prenatal Care*. Despite the Northern &

Winchester region having the lowest rate of *Births with Early and Adequate Prenatal Care*, the rates of *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)* were among the lowest compared to all other regions. Conversely, the rate for *Births with Adequate and Prenatal Care* for women residing in the Central region exceeded the national benchmark; however, women in this region also had some of the highest rates of *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)*.

Table 3-18 presents the FAMIS MOMS birth outcomes study indicator results stratified by length of continuous enrollment for each measurement period.

Table 3-18—Birth Outcomes Study Indicator Findings Among FAMIS MOMS Singleton Births by Length of Continuous Enrollment, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
≤30 Days							
Births with Early and Adequate Prenatal Care	76.4%	141	73.8%	99	73.9%	90	72.6%
<i>Births with Inadequate Prenatal Care*</i>	NA	27	14.1%	19	14.2%	23	18.5%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	20	10.0%	14	10.1%	11	8.8%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	19	9.5%	14	10.1%	11	8.8%
31–90 Days							
Births with Early and Adequate Prenatal Care	76.4%	151	72.6%	124	75.2%	128	74.4%
<i>Births with Inadequate Prenatal Care*</i>	NA	40	19.2%	24	14.5%	25	14.5%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	0	0.0%
Preterm Births (<37 Weeks Gestation)*	9.4%	16	7.3%	14	8.2%	19	10.9%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	17	7.8%	11	6.5%	16	9.2%
91–180 Days							
Births with Early and Adequate Prenatal Care	76.4%	295	69.2%	320	73.2%	262	75.5%
<i>Births with Inadequate Prenatal Care*</i>	NA	94	22.1%	73	16.7%	55	15.9%

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	46	10.4%	40	8.9%	44	12.5%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	44	9.9%	46	10.2%	34	9.6%
>180 Days							
Births with Early and Adequate Prenatal Care	76.4%	1,032	81.1%	1,018	78.7%	900	80.1%
<i>Births with Inadequate Prenatal Care*</i>	NA	131	10.3%	142	11.0%	116	10.3%
<i>Births with No Prenatal Care*</i>	NA	13	1.0%	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	86	6.5%	94	7.1%	87	7.7%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	77	5.8%	79	6.0%	84	7.4%

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Women continuously enrolled in FAMIS MOMS for more than 180 days during CY 2021 had the highest rates of *Births with Early and Adequate Prenatal Care* and some of the lowest rates of *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)*.

Table 3-19 presents the FAMIS MOMS birth outcomes study indicator results stratified by trimester of prenatal care initiation for each measurement period.

Table 3-19—Birth Outcomes Study Indicator Findings Among FAMIS MOMS Singleton Births by Trimester of Prenatal Care Initiation, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
First Trimester							
Births with Early and Adequate Prenatal Care	76.4%	1,452	90.1%	1,400	88.3%	1,231	89.2%
<i>Births with Inadequate Prenatal Care*</i>	NA	22	1.4%	24	1.5%	18	1.3%
<i>Births with No Prenatal Care*</i>	NA	0	0.0%	0	0.0%	0	0.0%

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
Preterm Births (<37 Weeks Gestation)*	9.4%	119	7.4%	122	7.7%	122	8.8%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	104	6.5%	102	6.4%	115	8.3%
Second Trimester							
Births with Early and Adequate Prenatal Care	76.4%	174	46.0%	164	43.4%	151	47.0%
<i>Births with Inadequate Prenatal Care*</i>	NA	183	48.4%	175	46.3%	145	45.2%
<i>Births with No Prenatal Care*</i>	NA	0	0.0%	0	0.0%	0	0.0%
Preterm Births (<37 Weeks Gestation)*	9.4%	28	7.4%	25	6.6%	29	9.0%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	32	8.5%	28	7.4%	19	5.9%
Third Trimester							
Births with Early and Adequate Prenatal Care	76.4%	0	0.0%	0	0.0%	0	0.0%
<i>Births with Inadequate Prenatal Care*</i>	NA	87	100.0%	62	100.0%	56	100.0%
<i>Births with No Prenatal Care*</i>	NA	0	0.0%	0	0.0%	0	0.0%
Preterm Births (<37 Weeks Gestation)*	9.4%	S	S	S	S	S	S
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	S	S	12	18.8%	S	S
No Prenatal Care							
Births with Early and Adequate Prenatal Care	76.4%	0	0.0%	0	0.0%	0	0.0%
<i>Births with Inadequate Prenatal Care*</i>	NA	0	0.0%	0	0.0%	0	0.0%
<i>Births with No Prenatal Care*</i>	NA	28	100.0%	11	100.0%	12	100.0%
Preterm Births (<37 Weeks Gestation)*	9.4%	S	S	0	0.0%	S	S
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	S	S	S	S	S	S

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

In CY 2021, the majority of women enrolled in FAMIS MOMS (approximately 78 percent) initiated prenatal care in the first trimester and exceeded the national benchmarks for all three study indicators with an applicable benchmark. Of note, women who enrolled in FAMIS MOMS during the second or third trimesters had *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)* rates that exceeded national benchmarks. The few women enrolled in FAMIS MOMS who did not initiate prenatal care until the third trimester or did not have any prenatal care had the lowest rates of *Births with Early and Adequate Prenatal Care* and highest rates of *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)*. This finding is expected since the timeliness and adequacy of prenatal care received during pregnancy has been associated with a lower incidence of poor birth outcomes, such as preterm delivery and low-birth-weight births.³⁻²

Maternal Health Outcomes Study Indicator Results and Trending

Table 3-20 presents the overall maternal health study indicator results for CY 2021. Please refer to Appendix A for additional stratifications for maternal health study indicator results not presented in this section.

Table 3-20—Overall Maternal Health Outcomes Study Indicator Findings Among Singleton Births, CY 2021

Study Indicator	CY 2021		
	Numerator	Denominator	Percent
Postpartum ED Utilization*	8,504	33,032	25.7%
Postpartum Ambulatory Care Utilization	17,024	33,032	51.5%
Prenatal Maternal Depression Screening	1,638	33,032	5.0%
Postpartum Maternal Depression Screening	2,251	33,032	6.8%

*a lower rate indicates better performance for this indicator.

As indicated in Table 3-20, approximately 26 percent and 52 percent of postpartum women utilized ED and ambulatory care services, respectively. Please note that these study indicators do not include services related explicitly to postpartum care visits and instead represent the utilization of ED and ambulatory services within the postpartum period; therefore, exercise caution when interpreting results. Of note, women who received no prenatal care had the highest rates of *Postpartum ED Utilization*, while women who were continuously enrolled for more than 180 days had higher rates of *Postpartum Ambulatory Care Utilization*. These findings are expected given that women who established a provider for prenatal care would likely continue to seek care with that provider in an ambulatory setting after delivery. However, for those women who did not receive prenatal care, there is an opportunity to ensure that these women establish a provider prior to becoming pregnant in order to ensure utilization of appropriate care before and after pregnancy (i.e., ambulatory care instead of ED).

³⁻² Krueger PM, Scholl TO. Adequacy of prenatal care and pregnancy outcome. *The Journal of the American Osteopathic Association*. 2000; 100(8):485–492.

Approximately 5 percent of pregnant women and approximately 7 percent of postpartum women received a maternal depression screening. Please note that these study indicators only consider women who received a standardized maternal depression screening; therefore, these rates are likely low due to providers using nonstandardized screenings. The State of New York Department of Health found that while approximately 63 percent of women received a depression screening during their initial visit with their provider, only around 7 percent received a depression screening using a standardized tool.³⁻³ Overall, HSAG found that women who initiated prenatal care in their first trimester and women who were continuously enrolled for more than 180 days had the highest rates of *Prenatal Maternal Depression Screening* and *Postpartum Maternal Depression Screening* in CY 2021.

Study Indicators Stratified by Select Demographic Characteristics

Table 3-21 and Table 3-22 present the study indicator results stratified by race/ethnicity and geographic managed care region, respectively.

Table 3-21—Overall Maternal Health Outcomes Study Indicator Findings Among Singleton Births by Race/Ethnicity, CY 2021

Study Indicator	CY 2021		
	Numerator	Denominator	Percent
White, Non-Hispanic			
Postpartum ED Utilization*	2,775	12,475	22.2%
Postpartum Ambulatory Care Utilization	6,549	12,475	52.5%
Prenatal Maternal Depression Screening	783	12,475	6.3%
Postpartum Maternal Depression Screening	1,050	12,475	8.4%
Black, Non-Hispanic			
Postpartum ED Utilization*	3,234	11,740	27.5%
Postpartum Ambulatory Care Utilization	6,022	11,740	51.3%
Prenatal Maternal Depression Screening	629	11,740	5.4%
Postpartum Maternal Depression Screening	756	11,740	6.4%
Asian, Non-Hispanic			
Postpartum ED Utilization*	319	1,317	24.2%
Postpartum Ambulatory Care Utilization	705	1,317	53.5%
Prenatal Maternal Depression Screening	22	1,317	1.7%
Postpartum Maternal Depression Screening	64	1,317	4.9%
Hispanic, Any Race			
Postpartum ED Utilization*	1,805	6,276	28.8%

³⁻³ New York State Department of Health. Screening for maternal depression. Available at: https://www.health.ny.gov/community/pregnancy/health_care/perinatal/maternal_depression/providers/screening.htm. Accessed on: Jan 3, 2022.

Study Indicator	CY 2021		
	Numerator	Denominator	Percent
Postpartum Ambulatory Care Utilization	3,093	6,276	49.3%
Prenatal Maternal Depression Screening	161	6,276	2.6%
Postpartum Maternal Depression Screening	302	6,276	4.8%
Other/Unknown			
Postpartum ED Utilization*	371	1,224	30.3%
Postpartum Ambulatory Care Utilization	655	1,224	53.5%
Prenatal Maternal Depression Screening	43	1,224	3.5%
Postpartum Maternal Depression Screening	79	1,224	6.5%

*a lower rate indicates better performance for this indicator.

In CY 2021, Black, Non-Hispanic women and Hispanic women of any race had the highest *Postpartum ED Utilization* rates and the lowest rates of *Postpartum Ambulatory Care*, indicating that these women were more reliant on receiving postpartum care through an ED setting. According to national sources, approximately 25 percent of postpartum women utilized ED services within six months of giving birth.³⁻⁴ Given that the *Postpartum ED Utilization* study indicator only captures ED services received in the first 90 days after delivery, it is likely that these women were utilizing postpartum ED services more often than would be expected nationally.

Table 3-22—Overall Maternal Health Outcomes Study Indicator Findings Among Singleton Births by Managed Care Region of Maternal Residence, CY 2021

Study Indicator	CY 2021		
	Numerator	Denominator	Percent
Central			
Postpartum ED Utilization*	3,075	8,714	35.3%
Postpartum Ambulatory Care Utilization	5,072	8,714	58.2%
Prenatal Maternal Depression Screening	394	8,714	4.5%
Postpartum Maternal Depression Screening	372	8,714	4.3%
Charlottesville/Western			
Postpartum ED Utilization*	600	4,160	14.4%
Postpartum Ambulatory Care Utilization	2,099	4,160	50.5%
Prenatal Maternal Depression Screening	592	4,160	14.2%
Postpartum Maternal Depression Screening	593	4,160	14.3%

³⁻⁴ Harris A, Chang HY, Wang L, et al. Emergency room utilization after medically complicated pregnancies: A Medicaid claims analysis. *Journal of Women's Health*. 2015; 24(9):745–754. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4589304/>. Accessed on: Jan 3, 2023.

Study Indicator	CY 2021		
	Numerator	Denominator	Percent
Northern & Winchester			
Postpartum ED Utilization*	2,307	8,201	28.1%
Postpartum Ambulatory Care Utilization	4,351	8,201	53.1%
Prenatal Maternal Depression Screening	88	8,201	1.1%
Postpartum Maternal Depression Screening	259	8,201	3.2%
Roanoke/Alleghany			
Postpartum ED Utilization*	714	3,030	23.6%
Postpartum Ambulatory Care Utilization	1,537	3,030	50.7%
Prenatal Maternal Depression Screening	149	3,030	4.9%
Postpartum Maternal Depression Screening	S	3,030	S
Southwest			
Postpartum ED Utilization*	225	1,081	20.8%
Postpartum Ambulatory Care Utilization	607	1,081	56.2%
Prenatal Maternal Depression Screening	32	1,081	3.0%
Postpartum Maternal Depression Screening	S	1,081	S
Tidewater			
Postpartum ED Utilization*	1,582	7,841	20.2%
Postpartum Ambulatory Care Utilization	3,356	7,841	42.8%
Prenatal Maternal Depression Screening	383	7,841	4.9%
Postpartum Maternal Depression Screening	930	7,841	11.9%

*a lower rate indicates better performance for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11). In instances where only one stratification was suppressed, the values for the second smallest population were also suppressed, even if the values were 11 or more.

In CY 2021, the Charlottesville/Western region had the highest rates of *Prenatal Maternal Depression Screening* and *Postpartum Maternal Depression Screening*, with the rate for *Prenatal Maternal Depression Screening* nearly 10 percentage points more than the next highest regional rate. This may be attributed to the fact that approximately 56 percent of births in Charlottesville/Western were to White, Non-Hispanic women, which as Table 3-21 shows, had the highest rates of maternal depression screenings. Despite having the highest rates of *Postpartum Ambulatory Care Utilization*, women in the Central region also had the highest rates of *Postpartum ED Utilization*.

MCO Study Indicator Results

Table 3-23 presents the overall maternal health outcomes study indicators stratified by MCO.

Table 3-23—Overall Maternal Health Outcomes Study Indicator Findings Among Singleton Births by MCO, CY 2021

Study Indicator	CY 2021		
	Numerator	Denominator	Percent
Aetna			
Postpartum ED Utilization*	1,097	3,988	27.5%
Postpartum Ambulatory Care Utilization	2,150	3,988	53.9%
Prenatal Maternal Depression Screening	221	3,988	5.5%
Postpartum Maternal Depression Screening	273	3,988	6.8%
HealthKeepers			
Postpartum ED Utilization*	2,241	9,007	24.9%
Postpartum Ambulatory Care Utilization	4,369	9,007	48.5%
Prenatal Maternal Depression Screening	329	9,007	3.7%
Postpartum Maternal Depression Screening	551	9,007	6.1%
Molina			
Postpartum ED Utilization*	611	2,118	28.8%
Postpartum Ambulatory Care Utilization	1,093	2,118	51.6%
Prenatal Maternal Depression Screening	68	2,118	3.2%
Postpartum Maternal Depression Screening	91	2,118	4.3%
Optima			
Postpartum ED Utilization*	1,557	6,078	25.6%
Postpartum Ambulatory Care Utilization	3,125	6,078	51.4%
Prenatal Maternal Depression Screening	425	6,078	7.0%
Postpartum Maternal Depression Screening	725	6,078	11.9%
UnitedHealthcare			
Postpartum ED Utilization*	779	2,789	27.9%
Postpartum Ambulatory Care Utilization	1,518	2,789	54.4%
Prenatal Maternal Depression Screening	39	2,789	1.4%
Postpartum Maternal Depression Screening	95	2,789	3.4%
VA Premier			
Postpartum ED Utilization*	1,374	5,136	26.8%
Postpartum Ambulatory Care Utilization	3,193	5,136	62.2%

Study Indicator	CY 2021		
	Numerator	Denominator	Percent
Prenatal Maternal Depression Screening	541	5,136	10.5%
Postpartum Maternal Depression Screening	403	5,136	7.8%

*a lower rate indicates better performance for this indicator.

In CY 2021, VA Premier had the highest rates of *Postpartum Ambulatory Care Utilization*, *Prenatal Maternal Depression Screening* and the second highest rate of *Postpartum Maternal Depression Screening* compared to other MCOs. Further, Optima had the second highest rate of *Prenatal Maternal Depression Screening* and had the highest rate of *Postpartum Maternal Depression Screening*. Of note, UnitedHealthcare had the lowest rates of *Prenatal Maternal Depression Screening* and *Postpartum Maternal Depression Screening* despite having the second highest rate of *Postpartum Ambulatory Care Utilization*.

Study Indicator Findings by Medicaid Characteristics

Table 3-24 presents the study indicator results stratified by Medicaid program.

Table 3-24—Overall Maternal Health Outcomes Study Indicator Findings Among Singleton Births by Medicaid Program, CY 2021

Study Indicator	CY 2021		
	Numerator	Denominator	Percent
Medicaid for Pregnant Women			
Postpartum ED Utilization*	3,983	15,682	25.4%
Postpartum Ambulatory Care Utilization	8,301	15,682	52.9%
Prenatal Maternal Depression Screening	709	15,682	4.5%
Postpartum Maternal Depression Screening	1,147	15,682	7.3%
Medicaid Expansion			
Postpartum ED Utilization*	1,585	6,548	24.2%
Postpartum Ambulatory Care Utilization	3,265	6,548	49.9%
Prenatal Maternal Depression Screening	387	6,548	5.9%
Postpartum Maternal Depression Screening	485	6,548	7.4%
FAMIS MOMS			
Postpartum ED Utilization*	404	1,785	22.6%
Postpartum Ambulatory Care Utilization	855	1,785	47.9%
Prenatal Maternal Depression Screening	48	1,785	2.7%
Postpartum Maternal Depression Screening	109	1,785	6.1%

Study Indicator	CY 2021		
	Numerator	Denominator	Percent
Other Aid Categories[†]			
Postpartum ED Utilization*	2,532	9,017	28.1%
Postpartum Ambulatory Care Utilization	4,603	9,017	51.0%
Prenatal Maternal Depression Screening	494	9,017	5.5%
Postpartum Maternal Depression Screening	510	9,017	5.7%

*a lower rate indicates better performance for this indicator.

† Other Aid Categories includes all other births not covered by Medicaid for Pregnant Women, Medicaid Expansion, and FAMIS MOMS programs

Births to women in the FAMIS MOMS program had the lowest rates of *Postpartum Ambulatory Care Utilization*, *Prenatal Maternal Health Screening*, and *Postpartum Maternal Depression Screening* for CY 2021. Additionally, the Medicaid for Pregnant Women program had the highest rate of *Postpartum Ambulatory Care* and had some of the highest rates for *Prenatal Maternal Depression Screening* and *Postpartum Maternal Depression Screening* for CY 2021.

4. Conclusions and Recommendations

Conclusions

Birth Outcomes

This study considered five quantitative indicators related to prenatal care and associated birth outcomes among births paid by Virginia Medicaid. Between the CY 2019 and CY 2021 measurement periods, study indicators related to prenatal care, preterm birth, and low birthweight showed opportunities for improvement for Virginia Medicaid members. Specifically, overall results for the *Births with Early and Adequate Prenatal Care* and *Preterm Births (<37 Weeks Gestation)* indicators continued to fall below national benchmarks for all three measurement periods. Conversely, rates for the *Newborns with Low Birth Weight (<2,500 grams)* indicator outperformed the national benchmark for all three measurement periods, demonstrating strength for Virginia Medicaid.

The CY 2021 study indicator results also show regional differences in care, with women residing in the Central region having higher rates of early and adequate prenatal care compared to women in other regions; however, these women still had some of the highest rates of preterm births and newborns with low birth weight. Despite a steady decline in the percentage of women with early and adequate prenatal care within the Southwest region in prior years' results, the CY 2021 rate increased by nearly 10 percentage points from CY 2020 to CY 2021 and was the second highest rate among the regions. Within all regions, racial disparities exist, with Black, Non-Hispanic women having the highest rates of preterm births and newborns with low birth weight, and Hispanic women of any race having the lowest rates of early and adequate prenatal care for CY 2021.

DMAS' implementation of the Medicaid Expansion program on January 1, 2019, provided an opportunity for DMAS and the MCOs to provide healthcare coverage to women who were not previously eligible for Medicaid. Research has shown that Medicaid Expansion programs have helped women obtain better health coverage before, during, and after pregnancy, which leads to improved prenatal and postpartum care. Further, Medicaid Expansion programs also decrease the likelihood of women experiencing intermittent healthcare coverage, which is important for improving health outcomes for mothers and babies.⁴⁻¹ All study indicator results for the Medicaid Expansion program for CY 2021, except for the *Newborns with Low Birth Weight (<2,500 grams)* study indicator, demonstrated improvement from CY 2020, with the CY 2021 rate for *Births with Early and Adequate Prenatal Care* surpassing the national benchmark. However, rates for *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)* continue to fall below national benchmarks. Therefore, DMAS should continue to monitor this population by assessing the risk factors for women in the Medicaid Expansion program that could be contributing to higher rates of *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)*.

⁴⁻¹ Searing A, Ross DC. Medicaid Expansion Fills Gaps in Maternal Health Coverage Leading to Healthier Mothers and Babies. Georgetown University Health Policy Institute Center for Children and Families. May 2019. Available at: https://ccf.georgetown.edu/wp-content/uploads/2019/05/Maternal-Health_FINAL-1.pdf. Accessed on: Jan 3, 2023.

The FAMIS MOMS program continued to outperform other programs, though it is important to note that women enrolled in FAMIS MOMS have different income eligibility limits compared to other pregnant women (i.e., FAMIS MOMS covers women with incomes up to 200 percent of the FPL⁴⁻²). However, it is beyond the scope of the current study to assess the degree to which study indicator results for women in FAMIS MOMS differ from study indicator results for women in other Medicaid programs based on household income. Though limited in number, births to women enrolled in FAMIS MOMS, especially those with continuous enrollment more than 120 days prior to delivery, had the highest rate of *Births with Early and Adequate Prenatal Care* and the lowest rates of *Preterm Births (<37 Weeks Gestation)* and *Newborns with Low Birth Weight (<2,500 grams)*. While these rates remained stable over time, the promising results from this program suggest that it could offer a valuable starting point for assessing members' satisfaction with care and underlying SDoH that may distinguish these women from other Medicaid members.

Maternal Health Outcomes

This study assessed four maternal health outcomes related to utilization in the postpartum period and important screenings during the prenatal and postpartum periods. Overall, approximately 26 percent and 52 percent of postpartum women utilized ED and ambulatory care services, respectively. Women who received no prenatal care had the highest rates of *Postpartum ED Utilization*, while women who were continuously enrolled for more than 180 days had higher rates of *Postpartum Ambulatory Care Utilization*. Approximately 7 percent of postpartum women received a maternal depression screening. These low rates suggest that data may be incomplete and/or providers may not be billing for these services separately. For the maternal depression screenings, it may be possible that these screenings are happening; however, providers may not be using a standardized screening tool.

In CY 2021, there were racial differences related to the utilization of ED and ambulatory services, with Black, Non-Hispanic women and Hispanic women of any race having the highest *Postpartum ED Utilization* rates and the lowest rates of *Postpartum Ambulatory Care*, indicating that these women were more reliant on receiving postpartum care through an ED setting. Further, there were regional differences related to maternal depression screenings, with the Charlottesville/Western region having the highest rates of prenatal and postpartum maternal depression screenings compared to all other regions. Of note, the rate of prenatal maternal depression in Charlottesville/Western was nearly 10 percentage points higher than the next highest regional rate. This may be attributed to the fact that approximately 56 percent of births in Charlottesville/Western were to White, Non-Hispanic women, who had the highest rates of maternal depression screenings.

Study Limitations

Study findings and conclusions may be affected by limitations related to the study design and source data. As such, caveats include, but are not limited to, the following:

- Study indicator and stratification results may be influenced by the accuracy and timeliness of the birth registry data and administrative Medicaid eligibility, enrollment, and demographic data used for calculations.

⁴⁻² A standard disregard of 5 percent FPL is applied to the Medicaid for Pregnant Women, Medicaid Expansion, and FAMIS MOMS programs if the woman's income is slightly above the household income.

- Additionally, study indicators rely on gestational estimate data from the birth registry. Reliability of these data, especially due to data collection practice variations in individual healthcare facilities, may have a disproportionate influence on regional study indicator results.⁴⁻³
- Virginia Medicaid’s compliance with federal MOE policies during the continuing COVID-19 PHE prevented members’ coverage from being terminated in most circumstances for the duration of the PHE. This may have contributed to a higher number of births during CY 2020; therefore, caution should be exercised when comparing CY 2021 study results to CY 2020 results.
- COVID-19 may have impacted the CY 2020 study indicator results given the public efforts put in place during CY 2020 to mitigate the spread of COVID-19 (e.g., social distancing, stay at home orders). Additionally, researchers have found that women who were pregnant during the early stages of the COVID-19 pandemic had increased fears and stress about delivering in a hospital, especially when a support person could not be in the hospital for the delivery or go to prenatal visits with the mother.^{4-4,4-5} Further, COVID-19 may have also impacted women’s ability to get timely and frequent prenatal care. As a result, caution should be exercised when comparing CY 2019 and CY 2021 study indicator results to those for CY 2020.
- Healthy People 2030 goals are presented for comparison to Virginia Medicaid results for the *Births with Early and Adequate Prenatal Care* and *Preterm Births (<37 Weeks Gestation)* study indicators. Caution should be used when comparing study results to national benchmarks, as the benchmarks were derived from birth records covered by all payer types and may not mirror birth outcomes among women with births paid by Title XIX or Title XXI.
- The probabilistic data linkage process allows for manual data reviews to confirm or negate a potential match. The degree of manual review for each measurement period may result in annual differences in the number of birth certificates matched to enrollment data. Affected birth records tend to include women without SSNs and with differences in the names listed in the Medicaid and birth registry systems (e.g., names that are hyphenated and/or difficult to spell).
- The Commonwealth of Virginia allows presumptive eligibility for pregnant women to receive outpatient services, including prenatal care. However, DMAS does not cover inpatient care under the assumption that a woman will qualify for Title XIX or Title XXI benefits. VDSS, the agency responsible for determining Medicaid eligibility in Virginia, allows 7 days to process a Medicaid application from a pregnant woman; 45 days is allowed for processing if the pregnant woman applies for additional services beyond Medicaid (e.g., supplemental nutrition assistance). As such, a pregnant woman new to Medicaid may have up to a 45-day waiting period before being eligible to have inpatient services covered by Title XIX or Title XXI benefits. Women’s understanding of Medicaid benefits and the timing of coverage may result in delayed initiation or continuation of prenatal care.

⁴⁻³ Dietz PM, Bombard JM, Hutchings YL, et. al. Validation of obstetric estimate of gestational age on US birth certificates. *American Journal of Obstetrics and Gynecology*. Apr 2014; 210(4): 335.e1-335.e5. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4560346/>. Accessed on: Jan 3, 2023.

⁴⁻⁴ Whipps MDM, Phipps JE, Simmons LA. Perinatal health care access, childbirth concerns, and birthing decision-making among pregnant people in California during COVID-19. *BMC Pregnancy and Childbirth*. 2021; 21(477). Available at: <https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-021-03942-y>. Accessed on: Jan 3, 2023.

⁴⁻⁵ Meaney S, Letiao S, Olander EK, et al. The impact of COVID-19 on pregnant womens’ experiences and perceptions of antenatal maternity care, social support, and stress-reduction strategies. *Women and Birth*. 2021. Available at: <https://doi.org/10.1016/j.wombi.2021.04.013>. Accessed on: Jan 3, 2023.

- As many pregnant women new to Medicaid may not be enrolled in Title XIX or Title XXI benefits until their second or third trimester, use caution when interpreting study findings. Due to the multifactorial nature of birth outcomes and the need for pre-pregnancy interventions, a single delivery system or Medicaid program may not have had adequate time to contact new Medicaid members and subsequently impact birth outcomes.
- Due to differing methodologies and data sources, study findings are not comparable to the HEDIS *Timeliness of Prenatal Care* indicator results. Specifically, the HEDIS *Timeliness of Prenatal Care* indicator does not follow a calendar year measurement period, requires the woman to be continuously enrolled with the health plan for 43 days prior to delivery through 60 days after delivery, and only requires one prenatal care visit for numerator compliance.
- HSAG developed the maternal health outcomes study indicators; therefore, comparisons to any applicable national benchmarks cannot be made. Further, due to billing practices of providers (e.g., global billing), some study indicator results (i.e., maternal depression screenings) are likely more representative of data completeness, rather than actual performance.
- For CY 2021, the FAMIS Prenatal Coverage program was included in the Other Aid Categories group. Since the FAMIS Prenatal Coverage program began in July 2021, women included in the FAMIS Prenatal Coverage population at the time of delivery may not have been eligible for the program in time to receive timely or adequate prenatal care.

Recommendations

HSAG collaborated with DMAS to ensure that this study contributes to existing quality improvement data needs while informing current and future maternal and child health initiatives. As such, HSAG offers the following recommendations based on the findings detailed in this report:

- Overall, approximately 73 percent of births in CY 2021 received early and adequate prenatal care, and approximately 18 percent of births in CY 2021 received inadequate or no prenatal care. The 2020–21 secret shopper survey that assessed appointment availability for prenatal care providers who accept Medicaid in Virginia found that 76.4 percent of cases were offered a first trimester appointment date, 48.4 percent of cases were offered a second trimester appointment date, and 38.8 percent of cases were offered a third trimester appointment date. The results of both studies suggest that DMAS and the MCOs should investigate the factors contributing to women's ability to access timely prenatal care and implement targeted improvement efforts. These efforts should include ensuring that all women of childbearing age establish a primary care provider or OB/GYN prior to pregnancy and receive necessary preventive care (e.g., taking folic acid) and management of conditions (e.g., diabetes, high blood pressure, obesity) that were previously left untreated or unmanaged. Improving the health of a woman prior to conception will help to ensure better outcomes for both the mother and baby.⁴⁻⁶
- Unplanned pregnancies are associated with higher rates of preterm births and newborns with low birthweight.⁴⁻⁷ Therefore, as part of ensuring that all women of childbearing age have an established gynecologist prior to pregnancy, DMAS and the MCOs should assess if providers are offering family planning services (e.g., contraception) to women. Given that Medicaid members can now receive a

⁴⁻⁶ March of Dimes. Before or between pregnancies. Available at: <https://www.marchofdimes.org/pregnancy/before-pregnancy.aspx#>. Accessed on: Jan 3, 2023.

⁴⁻⁷ National Institute for Children's Health Quality. As unplanned pregnancy rates drop, births improve. Available at: <https://www.nichq.org/insight/unplanned-pregnancy-rates-drop-births-improve>. Accessed on: Jan 3, 2023.

12-month supply of contraceptives,⁴⁻⁸ DMAS and the MCOs should monitor contraceptive prescription rates for Medicaid women over time. DMAS should consider calculating and/or having the MCOs report the CMS Adult and Child Core Set measures related to contraceptives (i.e., *Contraceptive Care—All Women* and *Contraceptive Care—Postpartum Women*) to understand better how this policy change impacts the use of contraceptives over time.

- LARCs are an effective contraceptive method that can help reduce unplanned and short-interval pregnancies.⁴⁻⁹ MCOs should assess if providers are discussing the effectiveness of LARCs as part of the postpartum visit or even prior to the woman leaving the hospital after delivery. MCOs should work to inform their providers, and DMAS should continue to work with hospitals to institute protocols that allow physicians to leverage the Virginia Postpartum LARC toolkit.⁴⁻¹⁰
- Approximately 26 percent of postpartum women in CY 2021 utilized ED services within 90 days of delivery. Given that approximately 25 percent of women nationally utilized ED services within six months of delivery⁴⁻¹¹, DMAS should consider investigating the utilization of ED services in the postpartum period to understand the factors contributing to why women are seeking care in the ED instead of an outpatient setting (e.g., assess if these women have an established PCP or OB/GYN). Additionally, HSAG recommends including an analysis in next year's Medicaid and CHIP Maternal and Child Health Focus Study that provides additional information on ED visits for postpartum women (e.g., most common diagnoses for postpartum ED visits, whether the visit was emergent).
- Less than 7 percent of women had evidence of a maternal depression screening in administrative data sources, either during the prenatal or postpartum periods. However, this is likely due to provider billing practices (i.e., these screenings were performed during standard prenatal/postpartum visits and were not billed separately) or the use of nonstandardized screening methods that were not captured by the measures that HSAG developed to calculate these indicators. DMAS should consider working with the MCOs and providers to promote the use of, and provide trainings related to, standardized maternal depression screening tools during the perinatal period. Further, DMAS could consider requiring the MCOs to report the prenatal and postpartum maternal depression screening study indicators to DMAS annually in order to improve these rates.
- For future focus studies, DMAS should consider leveraging additional data fields in the vital statistics data or other data sources (e.g., claims/encounter data) to better understand the factors contributing to poor birth outcomes in Virginia. These data sources could be used to assess risk factors (pre-pregnancy and gestational diabetes and hypertension, and previous preterm births and poor pregnancy outcomes); a mother's substance use before and during pregnancy (smoking, alcohol, and drug use); and a mother's BMI before pregnancy and at delivery. Although data may

⁴⁻⁸ Virginia Department of Medical Assistance Services. 12-month supply of contraceptives now available to Virginia Medicaid members. Available at: <https://www.dmas.virginia.gov/media/3779/press-release-virginia-medicaid-announces-12-month-supply-of-contraceptives.pdf>. Accessed on: Jan 3, 2023.

⁴⁻⁹ The American College of Obstetricians and Gynecologists. Immediate postpartum long-acting reversible contraception. 2017. Available at: <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2016/08/immediate-postpartum-long-acting-reversible-contraception>. Accessed on: Jan 3, 2023.

⁴⁻¹⁰ Virginia Department of Medical Assistance Services, Virginia Department of Health, and the Virginia chapter of the American College of Obstetricians and Gynecologists. Virginia postpartum LARC toolkit. Available at: https://www.vdh.virginia.gov/content/uploads/sites/28/2016/07/VA_Postpartum_LARC_Toolkit_final.pdf. Accessed on: Jan 3, 2023.

⁴⁻¹¹ Harris A, Chang HY, Wang L, et al. Emergency room utilization after medically complicated pregnancies: A Medicaid claims analysis. *Journal of Women's Health*. 2015; 24(9):745–754. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4589304/>. Accessed on: Jan 3, 2023.

be incomplete, HSAG could still leverage the available data to help understand and provide additional context to the study indicator results.

DMAS' Input on Prior Focused Study Recommendations

In addition to the recommendations noted above, DMAS provided the following detailed feedback to HSAG regarding quality improvement actions and initiatives:

Partnership for Petersburg (P4P)

- On August 26, 2022, Governor Glenn Youngkin announced the new Partnership for Petersburg initiative, which includes six focus areas: Prepare Petersburg Students for Life, Improve Access to Health Care, Keep Our Community Safe, Keep Petersburg Moving, Foster Business & Economic Growth, and Build Relationships with Community and Faith Leaders. The Commonwealth of Virginia and community partners will work together to improve the health of Petersburg residents by expanding access to screenings, promoting awareness of primary care and prenatal care, and addressing health disparities by connecting Petersburg residents with medical and social services.
- In collaboration with the Partnership for Petersburg plan, DMAS mailed out more than 80 prenatal care flyers to pregnant members who had not yet received prenatal services. The flyer raised awareness of prenatal care, MCO extended benefits services, and contact information of local OB/GYNs in Petersburg.
- Approximately 60 percent of Petersburg's 33,000 residents are enrolled in Medicaid, and the vast majority of these members are covered through DMAS' managed care programs. As a result, Virginia MCOs have been tasked with enhanced outreach to pregnant or postpartum Petersburg members to facilitate OB visits, assisting DMAS to ramp up doula services in the Petersburg area, engaging Petersburg pediatricians to help increase well-child visits, and getting out into the community through mobile clinic events and resource fairs. Since the Partnership for Petersburg kick-off in August 2022, Virginia's MCOs, as well as Conexus and DentaQuest partners, have participated in over 40 events and Virginia's MCOs have invested more than \$3 million to support the Petersburg community.
- DMAS staff have engaged Petersburg maternity providers in a series of meetings with the local FQHCs, regional medical center, health plans, and other stakeholders to learn about community needs, barriers, and opportunities to better serve Petersburg women and children. One of DMAS's key partners, Urban Baby Beginnings, will open a Petersburg maternity hub location in early 2023 to add additional on the ground resources and help accelerate the utilization of community doulas in the area. Virginia's MCOs have also committed to hosting quarterly community events targeting pregnant and postpartum members to provide education on topics such as safe sleep and car seats and give away resources such as diapers, cribettes, wipes, and other supplies.
- There are approximately 350 births each year in Petersburg, and DMAS prioritized outreach to pregnant and postpartum women as one of its first Partnership for Petersburg activities. On September 1, 2022, DMAS mailed out 70 flyers to pregnant members whose records indicated might not have yet had a prenatal visit. The flyer raised awareness of prenatal care, MCO extended benefits services, and contact information of local OB/GYNs in Petersburg. DMAS also shared this list with MCOs who provided follow-up and assistance with appointment scheduling. Following

these activities, around 75 percent of women who had not previously had a prenatal visit had received care.

Doula Benefit

- Virginia is the fourth state in the nation to implement community doula services under the State Medicaid program. The overall goal of the Community Doula Program and Medicaid doula benefit is to improve maternal and infant outcomes in Virginia with Medicaid community doulas. Community doulas will offer members physical, emotional, and informational support during pregnancy, at labor and delivery, and during the postpartum period. As doulas receive State certification, DMAS will begin provider enrollment of doulas followed by managed care contracting with the health plans.
- Effective January 2022, VDH established the minimum requirements to be considered a State-certified community doula in Virginia based on the core competencies.
- In June 2022, DMAS launched the Community Doula Program webpage and Community Doula Engagement flyer to educate community stakeholders, doulas, and interested individuals about the Medicaid doula benefit and encourage doula State certification and Medicaid doula enrollment.
- In July 2022, DMAS held a Community Doula Program Meeting, which included a program overview, key highlights supporting the agency's efforts to grow the doula provider network to support Medicaid pregnant members, updates on community doula State certification, and Medicaid provider enrollment, including a testimonial from one of the agency's first contracted community doulas. Representation included the managed care health plans; VDH; the doula community, including the Virginia Doula Task Force Chair and committee members; and other key stakeholders from the provider community and health systems.
- DMAS presented on the Community Doula Program implementation at the Black Maternal Health Summit. The Black Maternal Health Summit is facilitated by Birth in Color RVA and included attendees from the community, private organizations, the provider communities, and other State agencies, including VDH.
- DMAS participated in the CHCS State Environmental Scan of Medicaid Coverage of Doula Services sponsored by the California Health Care Foundation. Participating states included New Jersey; Virginia, California; Washington, DC; Maryland; Oregon; and Rhode Island. Three sessions were held on July 25, August 5, and August 23, 2022. Topics included rates, billing, and reimbursement; doula training, credentialing, and supervision; and workforce development, sustainability, and contracting with MCOs/healthcare plans.
- DMAS is participating in the Title V AELC established through the UNC WorkForce Development Center to address the issues of racial and health equity. The group consists of the VDH Title V manager, VDH staff members, and early childhood health/home visiting staff members. The collaborative has a doula program operating in the two of the local VDH health districts.
- DMAS is participating in quarterly Virginia Doula Task Force Meetings. The Virginia Task Force assists with the promulgation of regulations and the certification process of doulas and serves as an informational resource for policy-related matters for VDH. Meetings were held in January and April 2022. In April 2022, the Task Force voted in favor of a doula communication plan, and for the establishment of a workforce and professional development committee to ensure continued training and professional development for doulas.

- DMAS is drafting a Community Doula Program strategic plan to further the implementation efforts of the Medicaid doula benefit. Key areas of focus include infrastructure building and sustainability, collaboration and partnership, and resource and data development.
- In August 2022, two of Virginia Medicaid's first community doulas provided the first two prenatal doula visits to Medicaid members, one of which was provided to a Spanish-speaking member with the use of an interpreter. Both doulas reported that the visits went well, and the members were very excited to have the support of a doula. The visits included a detailed review of each member's birth plan and education regarding labor and delivery.
- As of September 2022, 38 doulas have received State certification. Of the 38, 24 doulas have completed Medicaid enrollment and 22 doulas have contracted with an MCO/healthcare plan.
- In November 2022, DMAS, in partnership with the healthcare plans, will launch two doula provider videos, which will be used for statewide community doula recruitment and engagement efforts.

Baby Steps

Baby Steps VA continues to address the needs of both Virginia's pregnant and parenting Medicaid members from preconception to pregnancy and parenting. This lifespan strategy is imperative as DMAS continues to focus on eliminating racial disparities in maternal outcomes. As DMAS is committed to wellness one step at a time, DMAS knows it cannot do this work without the partnerships it has developed since its inception in 2019. DMAS outlined strategies to acknowledge best practices to improve the wellbeing of all Medicaid members and their babies, from pregnancy to postpartum. Virginia Medicaid covered approximately 37,000 births in 2020, to predominately White and African American members.

In 2021, DMAS accomplished and partnered with many of its sister agencies, MCOs, hospital systems, community stakeholders, and internal staff members to collaborate to discuss priorities around maternal health during bimonthly calls.

- Urban Baby Beginnings and the Virginia Neonatal Perinatal Collaborative partnered with Project ReByrth to build sustainable community-based programs and safer childbirth cities throughout Virginia. The goal of the project is to develop State-level support for expectant and postpartum women to improve overall outcomes.
- With a focus on LARCs and reproductive health, VDH and DMAS shared insight on the various contraceptive programs available for members and how providers utilize services for billing.
- Birth in Color RVA supports pregnant persons utilizing four sectors of CBOs, nonprofits, advocacy, and awareness/education. Birth in Color RVA continues to expand projects and locations, along with addressing maternal mental health and oral health programs.
- DMAS continues to support and address policies and procedures to improve overall wellness from preconception to postpartum for enrolled Medicaid members.
- The BSVA outreach and information team is member-focused to educate and address health disparities among preconception, pregnancy, postpartum, and parenting Medicaid populations. In continued support of Baby Steps VA initiatives, the outreach and information team partnered with several external maternal health focused groups to discuss actions items for training opportunities, outreach services, and community partnerships.

- DMAS released the second BSVA Maternal Health Annual Report⁴⁻¹² for 2021 detailing the accomplishments of the program, including how it is addressing maternal health and racial disparities.
- During each bimonthly meeting for BSVA MCO representatives, community stakeholders, and hospitals systems shared their collaborative efforts with Medicaid pregnant and parenting members.
- FQHCs have partnered to expand services for Medicaid pregnant and parenting members from prenatal and postpartum.
- DMAS and VDH developed an educational document for providers on reimbursement processes for FQHC.
- The Sixth Annual VNPC Summit: DMAS attendees collaborated with Maternal Health Providers to learn strategies to increase collaboration and build trust with partners, learned about free Hear-Here resources that raises awareness of urgent maternal warning signs during pregnancy and a year post-partum
- VCU Project Empower: goal to reduce maternal death due to Domestic Violence and suicide; including a screening assessment process and focus on eliminating bias for pregnant moms with SUDs.

DMAS' Baby Steps VA will continue to be the foundation of maternal health policies as DMAS pursues new policies and initiatives to ensure optimal care for its members in 2022.

Maternal and Child Health Policy Innovation Program (MCH PIP)

- The MCH PIP VA Committee has continued to work and focus on outreach efforts for members around postpartum coverage and doula implementation. The committee has developed a member toolkit that will provide members with information on the new postpartum coverage components along with details on the importance of the postpartum visit.
- The MCH PIP Member Postpartum Coverage toolkit will include details on the new postpartum coverage benefit, postpartum visits, wellness checks, postpartum maternal mental health, post-delivery, and breastfeeding.
- NASHP MCH PIP Committee members attended the Annual State Convening for NASHP in Seattle on September 12, 2022. The convening allowed states to further refine teamwork plans and action steps for the final months of the policy academy. Virginia presented on the initiatives and accomplishments of maternal health across the Commonwealth.

Additional Successful Strategy Updates

- Starting on July 1, 2021, Virginia offers comprehensive prenatal coverage through FAMIS for pregnant women who meet all other eligibility criteria, regardless of immigration status.
- In November 2021, DMAS' 1115 waiver amendment to extend postpartum coverage to 12 months was approved by the federal government. Effective July 1, 2022, Virginia became one of the first

⁴⁻¹² Baby Steps VA. Department of Medical Assistance Services. Maternal Health Annual Report 2021. Available at: <https://www.dmas.virginia.gov/media/4638/dmas-maternity-report-2021.pdf>. Accessed on: Jan 3, 2023.

states to provide continuous full-benefit coverage across eligibility categories for a full 12 months postpartum. The expanded coverage enables Medicaid and FAMIS MOMS members to receive critical postpartum care for a full year postpartum, an important step in improving health outcomes for both women and their newborns.

- DMAS implemented a 15 percent increase in OB/GYN reimbursement rates for the first time since 2005.
- The Medicaid New Mom Letter was redesigned for new Medallion 4.0 and FFS birthing/moms. This resource guide will assist members with vital tips as they transition from before-to-after pregnancy care. Updates have been made to include new policy services, social media platforms, and direct access to CoverVA services and action items for pregnancy coverage.

Collaboration and Outreach

- DMAS hosted an MCH collaborative with the MCOs. During the call, teams shared updates and an overview of HEDIS data points, maternal projects (Baby Steps VA, Doula Benefit, NASHP communications and postpartum coverage), and child health (foster care, EI, and EPSDT). MCOs and DMAS will focus on doulas and postpartum as well as child well visits and immunizations.
- DMAS was invited to speak at the Fourth Annual Perinatal, Maternal, and Infant Mortality Summit held by the VNPC on May 16, 2022. DMAS presented at this summit to provide State program updates. DMAS provided updates on the postpartum 12-month coverage extension, and how that comprehensive coverage provides members access to additional services, such as ARTS. DMAS had the opportunity to present on the ARTS benefit offered to all members, including pregnant individuals. DMAS presented on the Community Doula Program, including current program implementation and the healthcare benefits of doula care. DMAS is excited to continue its partnership with VNPC to discuss key topics relative to neonatal and perinatal health.
- DMAS awarded one of seven grant-funded sub-awards to the VCU OB MOTIVATE clinic in order to expand access to treatment in a co-located OB/GYN and addiction care clinic. Grant funds were spent on the establishment of a clinical coordinator role, support and supplies to carry out health system navigation procedures by staff members, and trauma-informed training for staff members.

Continued State Support

In April 2021, the Office of the Secretary of Health and Human Resources presented the statewide strategic plan for maternal health. The Virginia Council for Women and former First Lady Pamela Northam emphasized the importance of maternal health initiatives across Virginia and the outcomes of the 2019 listening session that took place to develop this strategic plan.

In accordance with Item 312.G of the 2021 Special Session I Appropriations Act, as of July 1, 2021, FAMIS MOMS members have access to medically necessary treatment for SUD in an IMD, equivalent to such benefits offered to pregnant women.

Appendix A: Additional Stratifications for Study Indicators

Additional FAMIS MOMS Stratifications

Table A-1 presents the study indicator findings among FAMIS MOMS singleton births by maternal age at the time of delivery for CY 2019 through CY 2021.

Table A-1—Study Indicator Findings Among FAMIS MOMS Singleton Births by Maternal Age at Delivery, CY 2019–CY 2021

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
≤15 Years							
Births with Early and Adequate Prenatal Care	76.4%	S	S	S	S	S	S
<i>Births with Inadequate Prenatal Care*</i>	NA	S	S	S	S	S	S
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	S	S	S	S	S	S
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	S	S	S	S	S	S
16–17 Years							
Births with Early and Adequate Prenatal Care	76.4%	S	S	S	S	11	39.3%
<i>Births with Inadequate Prenatal Care*</i>	NA	S	S	S	S	13	46.4%
<i>Births with No Prenatal Care*</i>	NA	0	0.0%	S	S	S	S

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
Preterm Births (<37 Weeks Gestation)*	9.4%	0	0.0%	S	S	S	S
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	S	S	S	S	S	S
18–20 Years							
Births with Early and Adequate Prenatal Care	76.4%	78	78.0%	71	75.5%	141	52.0%
<i>Births with Inadequate Prenatal Care*</i>	NA	17	17.0%	12	12.8%	91	33.6%
<i>Births with No Prenatal Care*</i>	NA	S	S	0	0.0%	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	13	12.3%	S	S	25	9.1%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	S	S	S	S	24	8.8%
21–24 Years							
Births with Early and Adequate Prenatal Care	76.4%	353	79.9%	292	78.3%	417	61.4%
<i>Births with Inadequate Prenatal Care*</i>	NA	53	12.0%	48	12.9%	179	26.4%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	20	2.9%
Preterm Births (<37 Weeks Gestation)*	9.4%	27	5.9%	29	7.6%	41	6.0%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	30	6.5%	33	8.6%	37	5.4%

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
25–29 Years							
Births with Early and Adequate Prenatal Care	76.4%	558	77.6%	563	76.7%	731	66.0%
<i>Births with Inadequate Prenatal Care*</i>	NA	88	12.2%	92	12.5%	253	22.8%
<i>Births with No Prenatal Care*</i>	NA	15	2.1%	S	S	19	1.7%
Preterm Births (<37 Weeks Gestation)*	9.4%	48	6.5%	55	7.4%	97	8.7%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	51	6.9%	57	7.6%	86	7.7%
30–34 Years							
Births with Early and Adequate Prenatal Care	76.4%	389	73.8%	381	75.4%	601	64.1%
<i>Births with Inadequate Prenatal Care*</i>	NA	84	15.9%	64	12.7%	227	24.2%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	22	2.3%
Preterm Births (<37 Weeks Gestation)*	9.4%	39	7.0%	32	6.1%	85	9.0%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	33	5.9%	29	5.6%	67	7.1%
35–39 Years							
Births with Early and Adequate Prenatal Care	76.4%	189	79.7%	200	77.8%	351	62.3%

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
<i>Births with Inadequate Prenatal Care*</i>	NA	34	14.3%	34	13.2%	146	25.9%
<i>Births with No Prenatal Care*</i>	NA	0	0.0%	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	29	11.8%	30	11.2%	49	8.7%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	25	10.2%	18	6.7%	30	5.3%
40–44 Years							
Births with Early and Adequate Prenatal Care	76.4%	48	78.7%	47	85.5%	97	65.5%
<i>Births with Inadequate Prenatal Care*</i>	NA	S	S	S	S	42	28.4%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	S	S	S	S	18	12.2%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	S	S	S	S	14	9.5%
≥45 Years							
Births with Early and Adequate Prenatal Care	76.4%	S	S	S	S	S	S
<i>Births with Inadequate Prenatal Care*</i>	NA	S	S	S	S	S	S
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	S	S

Study Indicator	National Benchmark	CY 2019		CY 2020		CY 2021	
		Number	Percent	Number	Percent	Number	Percent
Preterm Births (<37 Weeks Gestation)*	9.4%	S	S	S	S	S	S
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	S	S	S	S	S	S

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Additional Birth Outcomes Study Indicators

Table A-2 presents the CY 2021 birth outcomes study indicator results stratified by MCO and managed care program.

Table A-2—Birth Outcomes Study Indicators Stratified by MCO and Managed Care Program, CY 2021

MCO	Managed Care Program	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Aetna	CCC Plus	105	70.5%	25	16.8%	S	S	31	20.7%	27	18.0%
	Medallion 4.0	2,923	76.6%	524	13.7%	S	S	371	9.7%	354	9.2%
	Total	3,028	76.4%	549	13.8%	54	1.4%	402	10.1%	381	9.6%
HealthKeepers	CCC Plus	172	75.1%	32	14.0%	S	S	35	15.0%	31	13.4%
	Medallion 4.0	6,437	74.1%	1,259	14.5%	S	S	835	9.5%	741	8.4%
	Total	6,609	74.2%	1,291	14.5%	145	1.6%	870	9.7%	772	8.6%
Molina	CCC Plus	61	70.1%	11	12.6%	S	S	19	21.6%	S	S
	Medallion 4.0	1,482	73.6%	282	14.0%	S	S	197	9.7%	S	S
	Total	1,543	73.4%	293	13.9%	56	2.7%	216	10.2%	223	10.5%

MCO	Managed Care Program	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Optima	CCC Plus	140	72.5%	24	12.4%	S	S	27	13.8%	30	15.4%
	Medallion 4.0	4,446	76.2%	745	12.8%	S	S	640	10.9%	599	10.2%
	Total	4,586	76.1%	769	12.8%	109	1.8%	667	11.0%	629	10.4%
UnitedHealthcare	CCC Plus	54	65.9%	17	20.7%	S	S	12	14.6%	S	S
	Medallion 4.0	1,890	70.4%	472	17.6%	S	S	232	8.6%	S	S
	Total	1,944	70.2%	489	17.7%	48	1.7%	244	8.7%	233	8.4%
VA Premier	CCC Plus	128	71.9%	28	15.7%	S	S	30	16.9%	29	16.3%
	Medallion 4.0	3,622	73.8%	725	14.8%	S	S	485	9.8%	469	9.5%
	Total	3,750	73.7%	753	14.8%	97	1.9%	515	10.0%	498	9.7%
Total	CCC Plus	660	71.9%	137	14.9%	36	3.9%	154	16.6%	146	15.8%
	Medallion 4.0	20,800	74.4%	4,007	14.3%	473	1.7%	2,760	9.8%	2,590	9.2%
	Total	21,460	74.3%	4,144	14.4%	509	1.8%	2,914	10.0%	2,736	9.4%

Note: Due to rounding, the percentages in each column may not sum to 100 percent.

*a lower rate indicates better performance for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11). In instances where only one stratification was suppressed, the values for the second smallest population were also suppressed, even if the values were 11 or more.

Table A-3 presents the CY 2021 birth outcomes study indicator results stratified by MCO and race/ethnicity.

Table A-3—Overall Birth Outcomes Study Indicators Stratified by MCO and Race/Ethnicity, CY 2021

Study Indicator	National Benchmark	Aetna	Health Keepers	Molina	Optima	United	VA Premier
White, Non-Hispanic							
Births with Early and Adequate Prenatal Care	76.4%	77.6%	77.5%	74.6%	77.5%	74.0%	73.9%
<i>Births with Inadequate Prenatal Care*</i>	NA	12.7%	12.1%	12.6%	12.4%	14.0%	14.5%
<i>Births with No Prenatal Care*</i>	NA	1.1%	1.5%	2.9%	1.6%	1.6%	2.1%
Preterm Births (<37 Weeks Gestation)*	9.4%	8.8%	8.5%	10.0%	8.7%	9.1%	9.3%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	7.0%	6.9%	8.7%	7.1%	7.4%	8.6%
Black, Non-Hispanic							
Births with Early and Adequate Prenatal Care	76.4%	77.4%	74.3%	73.2%	76.0%	71.5%	73.8%
<i>Births with Inadequate Prenatal Care*</i>	NA	12.5%	13.9%	12.6%	12.4%	16.0%	14.7%
<i>Births with No Prenatal Care*</i>	NA	1.7%	2.0%	2.9%	2.1%	1.9%	2.1%
Preterm Births (<37 Weeks Gestation)*	9.4%	12.2%	11.9%	11.6%	13.4%	9.0%	12.2%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	13.9%	12.0%	14.3%	13.9%	10.4%	12.2%

Study Indicator	National Benchmark	Aetna	Health Keepers	Molina	Optima	United	VA Premier
Asian, Non-Hispanic							
Births with Early and Adequate Prenatal Care	76.4%	78.1%	73.1%	80.7%	75.2%	74.1%	74.9%
<i>Births with Inadequate Prenatal Care*</i>	NA	10.2%	13.7%	S	13.1%	15.0%	13.0%
<i>Births with No Prenatal Care*</i>	NA	S	S	0.0%	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	S	6.8%	S	8.0%	S	9.0%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	S	5.6%	S	8.0%	S	8.0%
Hispanic, Any Race							
Births with Early and Adequate Prenatal Care	76.4%	69.3%	67.7%	68.3%	72.0%	63.0%	71.1%
<i>Births with Inadequate Prenatal Care*</i>	NA	21.9%	20.8%	21.3%	15.6%	25.5%	18.1%
<i>Births with No Prenatal Care*</i>	NA	S	1.2%	S	S	2.1%	S
Preterm Births (<37 Weeks Gestation)*	9.4%	9.2%	8.3%	7.3%	8.9%	8.8%	8.1%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	7.4%	6.1%	7.0%	7.3%	7.5%	8.3%
Other/Unknown							
Births with Early and Adequate Prenatal Care	76.4%	76.1%	73.0%	79.7%	73.8%	58.9%	77.3%
<i>Births with Inadequate Prenatal Care*</i>	NA	14.5%	13.6%	S	13.5%	25.2%	10.8%

Study Indicator	National Benchmark	Aetna	Health Keepers	Molina	Optima	United	VA Premier
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	0.0%	S
Preterm Births (<37 Weeks Gestation)*	9.4%	9.4%	9.2%	S	10.0%	S	S
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	8.8%	8.1%	S	7.8%	S	S

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11). In instances where only one stratification was suppressed, the values for the second smallest population were also suppressed, even if the values were 11 or more.

Table A-4 presents the CY 2021 birth outcomes study indicator results stratified by MCO and managed care region of maternal residence.

Table A-4—Overall Birth Outcomes Study Indicators Stratified by MCO and Managed Care Region of Maternal Residence, CY 2021

Study Indicator	National Benchmark	Aetna	Health Keepers	Molina	Optima	United	VA Premier
Central							
Births with Early and Adequate Prenatal Care	76.4%	80.8%	78.8%	77.8%	77.1%	74.0%	74.3%
<i>Births with Inadequate Prenatal Care*</i>	NA	9.6%	9.3%	9.6%	10.7%	13.7%	11.9%
<i>Births with No Prenatal Care*</i>	NA	1.8%	2.0%	2.6%	2.7%	2.5%	3.3%
Preterm Births (<37 Weeks Gestation)*	9.4%	10.1%	11.1%	10.3%	12.3%	10.1%	12.3%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	10.6%	9.5%	10.8%	12.2%	8.9%	11.8%

Study Indicator	National Benchmark	Aetna	Health Keepers	Molina	Optima	United	VA Premier
Charlottesville/Western							
Births with Early and Adequate Prenatal Care	76.4%	80.9%	78.9%	78.7%	79.3%	75.0%	79.6%
<i>Births with Inadequate Prenatal Care*</i>	NA	11.8%	14.6%	12.9%	11.8%	19.0%	13.8%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	1.5%	0.0%	1.6%
Preterm Births (<37 Weeks Gestation)*	9.4%	9.5%	7.2%	9.2%	8.2%	10.0%	9.6%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	8.4%	5.9%	11.6%	7.6%	10.4%	10.3%
Northern & Winchester							
Births with Early and Adequate Prenatal Care	76.4%	64.4%	67.0%	63.3%	65.4%	65.8%	63.6%
<i>Births with Inadequate Prenatal Care*</i>	NA	23.7%	20.5%	24.0%	21.1%	21.3%	21.2%
<i>Births with No Prenatal Care*</i>	NA	S	1.7%	S	2.4%	1.7%	1.9%
Preterm Births (<37 Weeks Gestation)*	9.4%	9.6%	8.2%	7.2%	8.9%	7.5%	7.2%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	6.7%	7.3%	5.7%	7.1%	7.5%	5.0%
Roanoke/Alleghany							
Births with Early and Adequate Prenatal Care	76.4%	77.3%	77.4%	69.0%	73.3%	69.8%	73.5%
<i>Births with Inadequate Prenatal Care*</i>	NA	11.2%	10.9%	13.5%	12.2%	14.8%	14.7%

Study Indicator	National Benchmark	Aetna	Health Keepers	Molina	Optima	United	VA Premier
<i>Births with No Prenatal Care*</i>	NA	S	S	4.0%	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	9.4%	9.2%	12.8%	9.6%	10.4%	10.2%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	8.8%	9.9%	11.8%	10.2%	8.8%	10.6%
Southwest							
Births with Early and Adequate Prenatal Care	76.4%	81.5%	79.2%	75.2%	76.0%	78.7%	77.3%
<i>Births with Inadequate Prenatal Care*</i>	NA	8.7%	13.1%	16.8%	13.7%	13.0%	13.5%
<i>Births with No Prenatal Care*</i>	NA	S	S	S	S	S	S
Preterm Births (<37 Weeks Gestation)*	9.4%	7.6%	8.2%	S	S	S	6.2%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	6.5%	6.0%	S	S	S	7.9%
Tidewater							
Births with Early and Adequate Prenatal Care	76.4%	74.8%	75.4%	74.7%	76.6%	72.5%	76.2%
<i>Births with Inadequate Prenatal Care*</i>	NA	16.7%	13.5%	12.6%	12.7%	15.9%	13.5%
<i>Births with No Prenatal Care*</i>	NA	S	1.6%	2.3%	1.4%	S	1.4%

Study Indicator	National Benchmark	Aetna	Health Keepers	Molina	Optima	United	VA Premier
Preterm Births (<37 Weeks Gestation)*	9.4%	12.0%	10.8%	11.6%	12.2%	9.6%	11.8%
Newborns with Low Birth Weight (<2,500 grams)*	9.7%	12.5%	9.9%	13.1%	11.4%	10.1%	11.1%

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Table A-5 through Table A-10 present the CY 2021 birth outcomes study indicator results stratified by MCO and race/ethnicity for each managed care region of maternal residence.

Table A-5—Central Region Birth Outcomes Study Indicators Stratified by MCO and Race/Ethnicity, CY 2021

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White, Non-Hispanic										
Aetna	357	81.0%	41	9.3%	S	S	32	7.2%	25	5.6%
HealthKeepers	758	80.9%	68	7.3%	12	1.3%	89	9.4%	70	7.4%
Molina	160	80.0%	15	7.5%	S	S	17	8.5%	16	8.0%
Optima	396	80.0%	46	9.3%	S	S	50	10.0%	35	7.0%
UnitedHealthcare	165	76.0%	19	8.8%	S	S	28	12.8%	18	8.3%
VA Premier	258	73.5%	41	11.7%	12	3.4%	38	10.8%	30	8.5%
Black, Non-Hispanic										
Aetna	568	80.3%	70	9.9%	17	2.4%	89	12.5%	106	14.9%
HealthKeepers	920	77.9%	120	10.2%	33	2.8%	152	12.8%	141	11.9%
Molina	237	77.2%	29	9.4%	S	S	38	12.2%	41	13.2%

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Optima	585	75.6%	89	11.5%	27	3.5%	111	14.3%	123	15.8%
UnitedHealthcare	189	74.1%	38	14.9%	S	S	23	9.0%	27	10.6%
VA Premier	470	73.7%	74	11.6%	23	3.6%	92	14.3%	94	14.6%
Asian, Non-Hispanic										
Aetna	36	87.8%	S	S	0	0.0%	S	S	S	S
HealthKeepers	56	83.6%	S	S	0	0.0%	S	S	S	S
Molina	10	83.3%	S	S	0	0.0%	0	0.0%	S	S
Optima	17	85.0%	S	S	S	S	S	S	S	S
UnitedHealthcare	17	77.3%	S	S	0	0.0%	0	0.0%	S	S
VA Premier	26	96.3%	S	S	0	0.0%	S	S	S	S
Hispanic, Any Race										
Aetna	122	80.3%	18	11.8%	S	S	14	9.2%	11	7.2%
HealthKeepers	198	74.2%	35	13.1%	S	S	25	9.4%	18	6.7%
Molina	57	73.1%	S	S	S	S	S	S	S	S
Optima	85	72.6%	14	12.0%	0	0.0%	S	S	11	9.3%
UnitedHealthcare	55	67.9%	20	24.7%	S	S	S	S	S	S
VA Premier	96	70.1%	23	16.8%	S	S	13	9.5%	15	10.9%
Other/Unknown										
Aetna	51	82.3%	S	S	S	S	S	S	S	S
HealthKeepers	76	80.0%	S	S	S	S	S	S	S	S
Molina	16	80.0%	S	S	0	0.0%	S	S	S	S
Optima	37	80.4%	S	S	S	S	S	S	S	S

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
UnitedHealthcare	21	72.4%	S	S	0	0.0%	S	S	S	S
VA Premier	39	88.6%	S	S	S	S	S	S	S	S

*a lower rate indicates better performance for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11). In instances where only one stratification was suppressed, the values for the second smallest population were also suppressed, even if the values were 11 or more.

Table A-6—Charlottesville/Western Region Birth Outcomes Study Indicators Stratified by MCO and Race/Ethnicity, CY 2021

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White, Non-Hispanic										
Aetna	221	78.1%	40	14.1%	S	S	26	9.1%	19	6.7%
HealthKeepers	323	78.4%	63	15.3%	S	S	29	7.0%	23	5.5%
Molina	108	74.0%	21	14.4%	S	S	18	12.3%	15	10.3%
Optima	433	79.0%	72	13.1%	S	S	37	6.7%	28	5.1%
UnitedHealthcare	113	72.0%	35	22.3%	0	0.0%	16	10.1%	17	10.7%
VA Premier	441	77.1%	87	15.2%	11	1.9%	54	9.3%	51	8.8%
Black, Non-Hispanic										
Aetna	106	85.5%	S	S	S	S	13	10.4%	16	12.8%
HealthKeepers	147	82.6%	19	10.7%	S	S	18	9.9%	15	8.3%

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Molina	61	83.6%	S	S	0	0.0%	S	S	12	16.2%
Optima	293	78.1%	41	10.9%	S	S	44	11.6%	47	12.4%
UnitedHealthcare	54	83.1%	S	S	0	0.0%	S	S	S	S
VA Premier	257	82.6%	39	12.5%	S	S	33	10.5%	42	13.4%
Asian, Non-Hispanic										
Aetna	S	S	S	S	S	S	S	S	S	S
HealthKeepers	S	S	S	S	S	S	S	S	S	S
Molina	S	S	S	S	S	S	S	S	S	S
Optima	S	S	S	S	S	S	S	S	S	S
UnitedHealthcare	S	S	S	S	S	S	S	S	S	S
VA Premier	S	S	S	S	S	S	S	S	S	S
Hispanic, Any Race										
Aetna	21	84.0%	S	S	0	0.0%	S	S	S	S
HealthKeepers	47	79.7%	S	S	0	0.0%	S	S	S	S
Molina	16	84.2%	S	S	0	0.0%	0	0.0%	S	S
Optima	70	85.4%	S	S	0	0.0%	S	S	S	S
UnitedHealthcare	17	81.0%	S	S	0	0.0%	S	S	0	0.0%
VA Premier	76	88.4%	S	S	S	S	S	S	S	S
Other/Unknown										
Aetna	13	86.7%	S	S	0	0.0%	S	S	S	S
HealthKeepers	14	58.3%	S	S	0	0.0%	0	0.0%	0	0.0%
Molina	S	S	S	S	S	S	S	S	S	S

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Optima	25	80.6%	S	S	0	0.0%	S	S	0	0.0%
UnitedHealthcare	S	S	S	S	S	S	S	S	S	S
VA Premier	20	74.1%	S	S	0	0.0%	S	S	S	S

*a lower rate indicates better performance for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Table A-7—Northern & Winchester Region Birth Outcomes Study Indicators Stratified by MCO and Race/Ethnicity, CY 2021

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White, Non-Hispanic										
Aetna	153	68.6%	44	19.7%	S	S	24	10.6%	17	7.5%
HealthKeepers	500	70.6%	125	17.7%	18	2.5%	57	7.8%	54	7.4%
Molina	69	68.3%	20	19.8%	S	S	S	S	S	S
Optima	122	71.8%	32	18.8%	S	S	16	9.1%	13	7.4%
UnitedHealthcare	205	70.4%	45	15.5%	S	S	23	7.8%	17	5.8%
VA Premier	160	61.3%	52	19.9%	11	4.2%	20	7.5%	13	4.9%
Black, Non-Hispanic										
Aetna	100	67.1%	27	18.1%	0	0.0%	S	S	S	S
HealthKeepers	396	66.4%	124	20.8%	S	S	62	10.3%	69	11.4%
Molina	33	57.9%	12	21.1%	S	S	S	S	S	S
Optima	62	63.9%	19	19.6%	S	S	S	S	S	S

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
UnitedHealthcare	154	68.4%	40	17.8%	S	S	15	6.5%	23	9.9%
VA Premier	147	61.3%	63	26.3%	S	S	18	7.4%	11	4.5%
Asian, Non-Hispanic										
Aetna	44	66.7%	11	16.7%	S	S	S	S	S	S
HealthKeepers	242	70.1%	52	15.1%	S	S	24	6.8%	20	5.7%
Molina	21	70.0%	S	S	0	0.0%	S	S	S	S
Optima	19	67.9%	S	S	0	0.0%	S	S	S	S
UnitedHealthcare	83	74.8%	17	15.3%	S	S	S	S	S	S
VA Premier	94	67.6%	23	16.5%	0	0.0%	11	7.6%	S	S
Hispanic, Any Race										
Aetna	150	58.6%	81	31.6%	S	S	27	10.5%	17	6.6%
HealthKeepers	682	63.4%	264	24.6%	13	1.2%	87	8.0%	61	5.6%
Molina	90	60.0%	45	30.0%	S	S	S	S	S	S
Optima	114	60.6%	45	23.9%	S	S	17	8.9%	S	S
UnitedHealthcare	282	60.5%	126	27.0%	S	S	39	8.3%	36	7.6%
VA Premier	160	65.0%	55	22.4%	S	S	16	6.3%	13	5.1%
Other/Unknown										
Aetna	18	64.3%	S	S	0	0.0%	S	S	S	S
HealthKeepers	74	72.5%	13	12.7%	S	S	S	S	S	S
Molina	S	S	S	S	S	S	S	S	S	S
Optima	S	S	S	S	S	S	S	S	S	S

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
UnitedHealthcare	24	54.5%	14	31.8%	0	0.0%	S	S	S	S
VA Premier	37	68.5%	S	S	0	0.0%	S	S	S	S

*a lower rate indicates better performance for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Table A-8—Roanoke/Alleghany Region Birth Outcomes Study Indicators Stratified by MCO and Race/Ethnicity, CY 2021

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White, Non-Hispanic										
Aetna	273	78.0%	36	10.3%	S	S	29	8.3%	26	7.4%
HealthKeepers	224	78.0%	28	9.8%	S	S	28	9.7%	28	9.7%
Molina	135	73.4%	20	10.9%	S	S	25	13.5%	18	9.7%
Optima	193	74.8%	30	11.6%	S	S	27	10.3%	27	10.3%
UnitedHealthcare	147	72.8%	27	13.4%	S	S	20	9.9%	17	8.4%
VA Premier	466	73.9%	96	15.2%	S	S	64	10.1%	65	10.3%
Black, Non-Hispanic										
Aetna	68	71.6%	16	16.8%	0	0.0%	14	14.7%	15	15.8%
HealthKeepers	58	75.3%	10	13.0%	0	0.0%	S	S	S	S
Molina	52	59.8%	16	18.4%	S	S	S	S	15	17.2%
Optima	47	69.1%	11	16.2%	S	S	S	S	S	S
UnitedHealthcare	51	64.6%	12	15.2%	S	S	12	15.2%	S	S

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
VA Premier	101	70.6%	20	14.0%	0	0.0%	17	11.8%	17	11.8%
Asian, Non-Hispanic										
Aetna	S	S	S	S	S	S	S	S	S	S
HealthKeepers	S	S	S	S	S	S	S	S	S	S
Molina	S	S	S	S	S	S	S	S	S	S
Optima	S	S	0	0.0%	0	0.0%	0	0.0%	S	S
UnitedHealthcare	S	S	S	S	S	S	S	S	S	S
VA Premier	11	91.7%	S	S	0	0.0%	S	S	S	S
Hispanic, Any Race										
Aetna	21	84.0%	S	S	0	0.0%	S	S	0	0.0%
HealthKeepers	21	77.8%	S	S	0	0.0%	S	S	S	S
Molina	12	70.6%	S	S	0	0.0%	0	0.0%	0	0.0%
Optima	S	S	0	0.0%	0	0.0%	0	0.0%	0	0.0%
UnitedHealthcare	11	64.7%	S	S	0	0.0%	0	0.0%	0	0.0%
VA Premier	31	70.5%	S	S	0	0.0%	S	S	S	S

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Other/Unknown										
Aetna	S	S	S	S	S	S	S	S	S	S
HealthKeepers	S	S	S	S	S	S	S	S	S	S
Molina	S	S	S	S	0	0.0%	S	S	S	S
Optima	S	S	S	S	0	0.0%	S	S	S	S
UnitedHealthcare	S	S	S	S	0	0.0%	S	S	S	S
VA Premier	14	77.8%	S	S	0	0.0%	S	S	S	S

*a lower rate indicates better performance for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11). In instances where only one stratification was suppressed, the values for the second smallest population were also suppressed, even if the values were 11 or more.

Table A-9—Southwest Region Birth Outcomes Study Indicators Stratified by MCO and Race/Ethnicity, CY 2021

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White, Non-Hispanic										
Aetna	140	80.9%	15	8.7%	S	S	13	7.5%	11	6.4%
HealthKeepers	135	78.0%	24	13.9%	S	S	14	8.1%	S	S
Molina	70	74.5%	16	17.0%	S	S	S	S	S	S
Optima	102	76.1%	17	12.7%	S	S	S	S	S	S
UnitedHealthcare	80	80.0%	12	12.0%	S	S	S	S	S	S
VA Premier	225	77.6%	38	13.1%	S	S	18	6.2%	22	7.6%

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Black, Non-Hispanic										
Aetna	S	S	S	S	S	S	S	S	S	S
HealthKeepers	S	S	S	S	S	S	S	S	S	S
Molina	S	S	S	S	S	S	S	S	S	S
Optima	S	S	S	S	S	S	S	S	S	S
UnitedHealthcare	S	S	S	S	S	S	S	S	S	S
VA Premier	S	S	S	S	S	S	S	S	S	S
Asian, Non-Hispanic										
Aetna	—	—	—	—	—	—	—	—	—	—
HealthKeepers	S	S	S	S	S	S	S	S	S	S
Molina	—	—	—	—	—	—	—	—	—	—
Optima	S	S	S	S	S	S	S	S	S	S
UnitedHealthcare	—	—	—	—	—	—	—	—	—	—
VA Premier	S	S	S	S	S	S	S	S	S	S
Hispanic, Any Race										
Aetna	S	S	S	S	S	S	S	S	S	S
HealthKeepers	S	S	S	S	S	S	S	S	S	S
Molina	S	S	S	S	S	S	S	S	S	S
Optima	S	S	S	S	S	S	S	S	S	S
UnitedHealthcare	S	S	S	S	S	S	S	S	S	S
VA Premier	S	S	S	S	S	S	S	S	S	S

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Other/Unknown										
Aetna	S	S	S	S	S	S	S	S	S	S
HealthKeepers	—	—	—	—	—	—	—	—	—	—
Molina	S	S	S	S	S	S	S	S	S	S
Optima	S	S	S	S	S	S	S	S	S	S
UnitedHealthcare	S	S	S	S	S	S	S	S	S	S
VA Premier	S	S	S	S	S	S	S	S	S	S

*a lower rate indicates better performance for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Table A-10—Tidewater Region Birth Outcomes Study Indicators Stratified by MCO and Race/Ethnicity, CY 2021

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White, Non-Hispanic										
Aetna	158	76.0%	37	17.8%	S	S	24	11.5%	21	10.0%
HealthKeepers	552	79.2%	79	11.3%	S	S	59	8.4%	41	5.8%
Molina	99	73.9%	16	11.9%	S	S	13	9.6%	13	9.6%
Optima	473	77.2%	78	12.7%	S	S	57	9.3%	48	7.8%
UnitedHealthcare	81	79.4%	12	11.8%	0	0.0%	S	S	S	S
VA Premier	167	76.6%	23	10.6%	S	S	24	10.9%	21	9.5%

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Black, Non-Hispanic										
Aetna	276	74.8%	59	16.0%	S	S	52	14.0%	54	14.5%
HealthKeepers	906	73.4%	182	14.7%	24	1.9%	154	12.3%	158	12.7%
Molina	192	73.3%	34	13.0%	S	S	33	12.4%	42	15.7%
Optima	1,175	76.8%	190	12.4%	21	1.4%	212	13.8%	210	13.6%
UnitedHealthcare	141	71.2%	33	16.7%	S	S	17	8.6%	21	10.6%
VA Premier	344	75.8%	65	14.3%	S	S	60	13.0%	55	12.0%
Asian, Non-Hispanic										
Aetna	14	87.5%	S	S	0	0.0%	S	S	0	0.0%
HealthKeepers	35	79.5%	S	S	0	0.0%	S	S	S	S
Molina	S	S	S	S	S	S	S	S	S	S
Optima	49	72.1%	S	S	S	S	S	S	S	S
UnitedHealthcare	S	S	S	S	S	S	S	S	S	S
VA Premier	15	88.2%	S	S	0	0.0%	S	S	S	S
Hispanic, Any Race										
Aetna	56	71.8%	13	16.7%	S	S	S	S	S	S
HealthKeepers	144	76.6%	25	13.3%	S	S	20	10.6%	15	7.9%
Molina	45	76.3%	S	S	S	S	S	S	S	S
Optima	149	76.4%	27	13.8%	S	S	22	11.2%	18	9.1%
UnitedHealthcare	23	71.9%	S	S	S	S	S	S	S	S
VA Premier	48	73.8%	13	20.0%	0	0.0%	S	S	S	S

	Births with Early and Adequate Prenatal Care		Births with Inadequate Prenatal Care*		Births with No Prenatal Care*		Preterm Births (<37 Weeks Gestation)*		Newborns with Low Birth Weight (<2,500 grams)*	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Other/Unknown										
Aetna	29	69.0%	S	S	S	S	S	S	S	S
HealthKeepers	73	70.2%	14	13.5%	S	S	11	10.5%	S	S
Molina	18	85.7%	S	S	0	0.0%	S	S	S	S
Optima	91	73.4%	18	14.5%	0	0.0%	14	11.2%	S	S
UnitedHealthcare	S	S	S	S	0	0.0%	S	S	S	S
VA Premier	30	76.9%	S	S	S	S	S	S	S	S

*a lower rate indicates better performance for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Birth Outcomes Cross-Measure Analysis

Table A-11 presents the CY 2021 cross-measure analysis results that shows the distribution of prenatal care by the *Preterm Births (<37 Weeks Gestation)* and the *Newborns with Low Birth Weight (<2,500 grams)* study indicators for each MCO.

Table A-11—Distribution of Adequacy of Prenatal Care by Birth Outcomes (Preterm Births and Low Birth Weight) and MCO, CY 2021

MCO	Study Indicator	Missing Information	No PNC	Inadequate PNC	Intermediate PNC	Adequate PNC	Adequate Plus PNC
Aetna	Preterm Births (<37 Weeks Gestation)*	S	26.4%	8.6%	8.1%	4.1%	18.5%
	Newborns with Low Birth Weight (<2,500 grams)*	S	20.8%	8.7%	8.4%	5.4%	15.4%
HealthKeepers	Preterm Births (<37 Weeks Gestation)*	14.9%	25.5%	7.8%	6.2%	3.5%	19.2%
	Newborns with Low Birth Weight (<2,500 grams)*	S	15.9%	8.4%	5.8%	4.3%	15.2%
Molina	Preterm Births (<37 Weeks Gestation)*	S	35.7%	8.9%	5.3%	4.2%	18.5%
	Newborns with Low Birth Weight (<2,500 grams)*	S	19.6%	9.6%	7.2%	5.3%	18.8%
Optima	Preterm Births (<37 Weeks Gestation)*	S	30.3%	12.0%	5.8%	4.1%	18.7%
	Newborns with Low Birth Weight (<2,500 grams)*	S	27.5%	10.4%	8.0%	5.6%	15.3%
UnitedHealthcare	Preterm Births (<37 Weeks Gestation)*	S	22.9%	7.6%	3.8%	3.0%	18.5%
	Newborns with Low Birth Weight (<2,500 grams)*	S	S	8.6%	4.2%	4.2%	15.2%

MCO	Study Indicator	Missing Information	No PNC	Inadequate PNC	Intermediate PNC	Adequate PNC	Adequate Plus PNC
VA Premier	Preterm Births (<37 Weeks Gestation)*	S	27.8%	11.8%	4.3%	3.7%	17.9%
	Newborns with Low Birth Weight (<2,500 grams)*	S	23.7%	9.3%	6.1%	6.0%	14.7%

PNC=prenatal care

*a lower rate indicates better performance for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Table A-12 presents the distribution of prenatal care received for women who had or did not have a preterm birth or newborn with low birth weight for each MCO.

Table A-12—Distribution of Prenatal Care by MCO and Whether a Birth Outcome Occurred, CY 2021

MCO	Birth Outcome		Births with Early and Adequate Plus Prenatal Care		Births with Adequate Prenatal Care		Births with Intermediate Prenatal Care		Births with Inadequate Prenatal Care		Births With No Prenatal Care		Births With Missing Prenatal Care Information	
			Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Aetna	Preterm Births (<37 Weeks Gestation)*	No	1,033	28.8%	1,687	47.0%	307	8.6%	502	14.0%	40	1.1%	S	S
		Yes	235	58.5%	73	18.2%	27	6.7%	47	11.7%	14	3.5%	S	S
	Newborns with Low Birth Weight (<2,500 grams)*	No	1,073	29.7%	1,665	46.2%	306	8.5%	501	13.9%	43	1.2%	S	S
		Yes	195	51.2%	95	24.9%	28	7.3%	48	12.6%	11	2.9%	S	S
HealthKeepers	Preterm Births (<37 Weeks Gestation)*	No	2,232	27.4%	3,713	45.6%	814	10.0%	1,190	14.6%	108	1.3%	80	1.0%
		Yes	530	60.9%	134	15.4%	54	6.2%	101	11.6%	37	4.3%	14	1.6%
	Newborns with Low Birth Weight (<2,500 grams)*	No	2,342	28.4%	3,683	44.7%	818	9.9%	1,183	14.4%	122	1.5%	S	S
		Yes	420	54.4%	164	21.2%	50	6.5%	108	14.0%	23	3.0%	S	S

MCO	Birth Outcome		Births with Early and Adequate Plus Prenatal Care		Births with Adequate Prenatal Care		Births with Intermediate Prenatal Care		Births with Inadequate Prenatal Care		Births With No Prenatal Care		Births With Missing Prenatal Care Information	
			Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Molina	Preterm Births (<37 Weeks Gestation)*	No	507	26.7%	882	46.4%	198	10.4%	267	14.0%	36	1.9%	S	S
		Yes	115	53.2%	39	18.1%	11	5.1%	26	12.0%	20	9.3%	S	S
	Newborns with Low Birth Weight (<2,500 grams)*	No	505	26.6%	872	46.0%	194	10.2%	265	14.0%	45	2.4%	S	S
		Yes	117	52.5%	49	22.0%	15	6.7%	28	12.6%	11	4.9%	S	S
Optima	Preterm Births (<37 Weeks Gestation)*	No	1,752	32.4%	2,332	43.1%	533	9.9%	677	12.5%	76	1.4%	S	S
		Yes	402	60.3%	100	15.0%	33	4.9%	92	13.8%	33	4.9%	S	S
	Newborns with Low Birth Weight (<2,500 grams)*	No	1,824	33.5%	2,295	42.1%	521	9.6%	689	12.6%	79	1.4%	S	S
		Yes	330	52.5%	137	21.8%	45	7.2%	80	12.7%	30	4.8%	S	S
UnitedHealthcare	Preterm Births (<37 Weeks Gestation)*	No	650	25.5%	1,112	43.7%	276	10.8%	452	17.8%	37	1.5%	S	S
		Yes	148	60.7%	34	13.9%	11	4.5%	37	15.2%	11	4.5%	S	S
	Newborns with Low Birth Weight (<2,500 grams)*	No	677	26.5%	1,098	43.0%	275	10.8%	447	17.5%	S	S	S	S
		Yes	121	51.9%	48	20.6%	12	5.2%	42	18.0%	S	S	S	S
VA Premier	Preterm Births (<37 Weeks Gestation)*	No	1,328	28.7%	2,054	44.4%	467	10.1%	664	14.4%	70	1.5%	S	S
		Yes	290	56.3%	78	15.1%	21	4.1%	89	17.3%	27	5.2%	S	S
	Newborns with Low Birth Weight (<2,500 grams)*	No	1,380	29.8%	2,005	43.2%	458	9.9%	683	14.7%	74	1.6%	S	S
		Yes	238	47.8%	127	25.5%	30	6.0%	70	14.1%	23	4.6%	S	S

MCO	Birth Outcome		Births with Early and Adequate Plus Prenatal Care		Births with Adequate Prenatal Care		Births with Intermediate Prenatal Care		Births with Inadequate Prenatal Care		Births With No Prenatal Care		Births With Missing Prenatal Care Information	
			Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
FFS	Preterm Births (<37 Weeks Gestation)*	No	737	21.0%	1,337	38.2%	370	10.6%	878	25.1%	130	3.7%	S	S
		Yes	197	47.7%	49	11.9%	28	6.8%	84	20.3%	46	11.1%	S	S
	Newborns with Low Birth Weight (<2,500 grams)*	No	770	21.5%	1,332	37.2%	375	10.5%	904	25.3%	143	4.0%	S	S
		Yes	164	48.5%	54	16.0%	23	6.8%	58	17.2%	33	9.8%	S	S

*a lower rate indicates better performance for this indicator.

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Additional Maternal Health Outcomes Study Indicators

Table A-13 through Table A-16 present the CY 2021 maternal health outcomes study indicator results stratified by managed care program, delivery system, trimester of prenatal care initiation, and length of continuous enrollment, respectively.

Table A-13—Overall Maternal Health Outcomes Study Indicator Findings Among Singleton Births by Managed Care Program, CY 2021

Study Indicator	CY 2021		
	Numerator	Denominator	Percent
CCC Plus			
Postpartum ED Utilization*	279	928	30.1%
Postpartum Ambulatory Care Utilization	566	928	61.0%
Prenatal Maternal Depression Screening	80	928	8.6%
Postpartum Maternal Depression Screening	59	928	6.4%

Study Indicator	CY 2021		
	Numerator	Denominator	Percent
Medallion 4.0			
Postpartum ED Utilization*	7,380	28,188	26.2%
Postpartum Ambulatory Care Utilization	14,882	28,188	52.8%
Prenatal Maternal Depression Screening	1,543	28,188	5.5%
Postpartum Maternal Depression Screening	2,079	28,188	7.4%

*a lower rate indicates better performance for this indicator.

Table A-14—Overall Maternal Health Outcomes Study Indicator Findings Among Singleton Births by Delivery System, CY 2021

Study Indicator	CY 2021		
	Numerator	Denominator	Percent
FFS			
Postpartum ED Utilization*	845	3,916	21.6%
Postpartum Ambulatory Care Utilization	1,576	3,916	40.2%
Prenatal Maternal Depression Screening	15	3,916	0.4%
Postpartum Maternal Depression Screening	113	3,916	2.9%
Managed Care			
Postpartum ED Utilization*	7,659	29,116	26.3%
Postpartum Ambulatory Care Utilization	15,448	29,116	53.1%
Prenatal Maternal Depression Screening	1,623	29,116	5.6%
Postpartum Maternal Depression Screening	2,138	29,116	7.3%

*a lower rate indicates better performance for this indicator.

Table A-15—Overall Maternal Health Outcomes Study Indicator Findings Among Singleton Births by Trimester of Prenatal Care Initiation, CY 2021

Study Indicator	CY 2021		
	Numerator	Denominator	Percent
First Trimester			
Postpartum ED Utilization*	6,302	24,728	25.5%
Postpartum Ambulatory Care Utilization	12,893	24,728	52.1%
Prenatal Maternal Depression Screening	1,303	24,728	5.3%
Postpartum Maternal Depression Screening	1,819	24,728	7.4%
Second Trimester			
Postpartum ED Utilization*	1,491	5,802	25.7%
Postpartum Ambulatory Care Utilization	2,885	5,802	49.7%
Prenatal Maternal Depression Screening	232	5,802	4.0%
Postpartum Maternal Depression Screening	308	5,802	5.3%
Third Trimester			
Postpartum ED Utilization*	378	1,517	24.9%
Postpartum Ambulatory Care Utilization	732	1,517	48.3%
Prenatal Maternal Depression Screening	74	1,517	4.9%
Postpartum Maternal Depression Screening	81	1,517	5.3%
No Prenatal Care			
Postpartum ED Utilization*	252	685	36.8%
Postpartum Ambulatory Care Utilization	370	685	54.0%
Prenatal Maternal Depression Screening	19	685	2.8%
Postpartum Maternal Depression Screening	24	685	3.5%

*a lower rate indicates better performance for this indicator.

Table A-16—Overall Maternal Health Outcomes Study Indicator Findings Among Singleton Births by Length of Continuous Enrollment, CY 2021

Study Indicator	CY 2021		
	Numerator	Denominator	Percent
≤30 Days			
Postpartum ED Utilization*	S	1,683	S
Postpartum Ambulatory Care Utilization	620	1,683	36.8%
Prenatal Maternal Depression Screening	S	1,683	S
Postpartum Maternal Depression Screening	31	1,683	1.8%
31–90 Days			
Postpartum ED Utilization*	529	2,080	25.4%
Postpartum Ambulatory Care Utilization	941	2,080	45.2%
Prenatal Maternal Depression Screening	S	2,080	S
Postpartum Maternal Depression Screening	89	2,080	4.3%
91–180 Days			
Postpartum ED Utilization*	757	3,145	24.1%
Postpartum Ambulatory Care Utilization	1,468	3,145	46.7%
Prenatal Maternal Depression Screening	32	3,145	1.0%
Postpartum Maternal Depression Screening	152	3,145	4.8%
>180 Days			
Postpartum ED Utilization*	6,819	26,057	26.2%
Postpartum Ambulatory Care Utilization	13,977	26,057	53.6%
Prenatal Maternal Depression Screening	1,599	26,057	6.1%
Postpartum Maternal Depression Screening	1,979	26,057	7.6%

Study Indicator	CY 2021		
	Numerator	Denominator	Percent
Not Continuously Enrolled Prior to Delivery			
Postpartum ED Utilization*	S	67	S
Postpartum Ambulatory Care Utilization	18	67	26.9%
Prenatal Maternal Depression Screening	0	67	0.0%
Postpartum Maternal Depression Screening	0	67	0.0%

*a lower rate indicates better performance for this indicator

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11). In instances where only one stratification was suppressed, the values for the second smallest population were also suppressed, even if the values were 11 or more.

Table A-17 presents the CY 2021 maternal health outcomes study indicator results stratified by MCO and managed care program.

Table A-17—Maternal Health Outcomes Study Indicators Stratified by MCO and Managed Care Program, CY 2021

MCO	Managed Care Program	Postpartum ED Utilization*		Postpartum Ambulatory Care Utilization		Prenatal Maternal Depression Screening		Postpartum Maternal Depression Screening	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate
Aetna	CCC Plus	41	27.3%	87	58.0%	15	10.0%	12	8.0%
	Medallion 4.0	1,056	27.5%	2,063	53.8%	206	5.4%	261	6.8%
	Total	1,097	27.5%	2,150	53.9%	221	5.5%	273	6.8%
HealthKeepers	CCC Plus	64	27.4%	144	61.5%	17	7.3%	18	7.7%
	Medallion 4.0	2,177	24.8%	4,225	48.2%	312	3.6%	533	6.1%
	Total	2,241	24.9%	4,369	48.5%	329	3.7%	551	6.1%
Molina	CCC Plus	27	30.7%	53	60.2%	S	S	S	S
	Medallion 4.0	584	28.8%	1,040	51.2%	S	S	S	S
	Total	611	28.8%	1,093	51.6%	68	3.2%	91	4.3%

MCO	Managed Care Program	Postpartum ED Utilization*		Postpartum Ambulatory Care Utilization		Prenatal Maternal Depression Screening		Postpartum Maternal Depression Screening	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate
Optima	CCC Plus	71	36.4%	125	64.1%	21	10.8%	15	7.7%
	Medallion 4.0	1,486	25.3%	3,000	51.0%	404	6.9%	710	12.1%
	Total	1,557	25.6%	3,125	51.4%	425	7.0%	725	11.9%
UnitedHealthcare	CCC Plus	26	31.7%	46	56.1%	S	S	S	S
	Medallion 4.0	753	27.8%	1,472	54.4%	S	S	S	S
	Total	779	27.9%	1,518	54.4%	39	1.4%	95	3.4%
VA Premier	CCC Plus	50	27.9%	111	62.0%	22	12.3%	S	S
	Medallion 4.0	1,324	26.7%	3,082	62.2%	519	10.5%	S	S
	Total	1,374	26.8%	3,193	62.2%	541	10.5%	403	7.8%
Total	CCC Plus	279	30.1%	566	61.0%	80	8.6%	59	6.4%
	Medallion 4.0	7,380	26.2%	14,882	52.8%	1,543	5.5%	2,079	7.4%
	Total	7,659	26.3%	15,448	53.1%	1,623	5.6%	2,138	7.3%

Note: Due to rounding, the percentages in each column may not sum to 100 percent.

*a lower rate indicates better performance for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Table A-18 presents the CY 2021 maternal health outcomes study indicator results stratified by MCO and race/ethnicity.

Table A-18—Overall Maternal Health Outcomes Study Indicators Stratified by MCO and Race/Ethnicity, CY 2021

Study Indicator	Aetna	Health Keepers	Molina	Optima	United	VA Premier
White, Non-Hispanic						
Postpartum ED Utilization*	23.6%	21.8%	27.1%	21.8%	21.9%	24.2%
Postpartum Ambulatory Care Utilization	54.3%	49.5%	53.9%	52.1%	52.8%	61.7%
Prenatal Maternal Depression Screening	6.8%	4.2%	3.1%	7.4%	1.4%	13.5%
Postpartum Maternal Depression Screening	8.2%	7.7%	4.3%	15.0%	3.5%	9.4%
Black, Non-Hispanic						
Postpartum ED Utilization*	29.5%	24.9%	30.9%	28.2%	30.4%	30.6%
Postpartum Ambulatory Care Utilization	52.0%	46.1%	51.7%	51.9%	55.5%	62.3%
Prenatal Maternal Depression Screening	5.4%	4.1%	4.0%	7.0%	1.8%	8.9%
Postpartum Maternal Depression Screening	6.1%	5.6%	4.3%	9.7%	2.2%	7.2%
Asian, Non-Hispanic						
Postpartum ED Utilization*	31.4%	27.8%	19.3%	21.0%	30.6%	18.4%
Postpartum Ambulatory Care Utilization	58.4%	54.1%	38.6%	44.2%	63.3%	67.5%
Prenatal Maternal Depression Screening	S	S	S	S	S	S

Study Indicator	Aetna	Health Keepers	Molina	Optima	United	VA Premier
Postpartum Maternal Depression Screening	S	4.8%	S	11.6%	S	S
Hispanic, Any Race						
Postpartum ED Utilization*	32.5%	28.8%	31.3%	26.8%	34.0%	26.2%
Postpartum Ambulatory Care Utilization	55.0%	49.2%	48.9%	49.3%	53.4%	60.5%
Prenatal Maternal Depression Screening	4.0%	2.5%	S	5.5%	S	8.6%
Postpartum Maternal Depression Screening	5.1%	4.7%	4.9%	11.2%	4.5%	6.1%
Other/Unknown						
Postpartum ED Utilization*	30.6%	31.3%	22.9%	30.0%	29.9%	32.8%
Postpartum Ambulatory Care Utilization	60.0%	51.8%	45.7%	48.3%	57.0%	66.7%
Prenatal Maternal Depression Screening	S	S	S	7.8%	S	5.9%
Postpartum Maternal Depression Screening	S	5.4%	S	11.7%	S	7.0%

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Table A-19 presents the CY 2021 maternal health outcomes study indicator results stratified by MCO and managed care region of maternal residence.

Table A-19—Overall Maternal Health Outcomes Study Indicators Stratified by MCO and Managed Care Region of Maternal Residence, CY 2021

Study Indicator	Aetna	Health Keepers	Molina	Optima	United	VA Premier
Central						
Postpartum ED Utilization*	32.3%	35.2%	39.7%	34.1%	34.7%	45.8%
Postpartum Ambulatory Care Utilization	57.9%	57.7%	61.4%	57.3%	59.8%	69.9%
Prenatal Maternal Depression Screening	4.0%	4.9%	4.5%	5.5%	3.5%	6.4%
Postpartum Maternal Depression Screening	3.9%	4.6%	4.8%	5.2%	5.3%	4.3%
Charlottesville/Western						
Postpartum ED Utilization*	13.4%	14.3%	12.8%	17.2%	13.2%	16.5%
Postpartum Ambulatory Care Utilization	51.1%	40.1%	46.0%	53.8%	50.0%	60.9%
Prenatal Maternal Depression Screening	18.9%	8.9%	S	15.4%	S	26.9%
Postpartum Maternal Depression Screening	19.2%	12.0%	S	18.6%	S	20.4%
Northern & Winchester						
Postpartum ED Utilization*	34.9%	28.0%	33.0%	25.0%	30.9%	17.7%
Postpartum Ambulatory Care Utilization	56.8%	52.3%	50.1%	45.4%	57.6%	67.3%
Prenatal Maternal Depression Screening	1.5%	1.2%	S	S	S	2.1%
Postpartum Maternal Depression Screening	3.6%	2.7%	3.4%	5.5%	3.7%	2.2%

Study Indicator	Aetna	Health Keepers	Molina	Optima	United	VA Premier
Roanoke/Alleghany						
Postpartum ED Utilization*	25.9%	23.8%	25.7%	22.3%	23.6%	25.7%
Postpartum Ambulatory Care Utilization	53.1%	49.0%	49.0%	50.1%	50.9%	56.6%
Prenatal Maternal Depression Screening	4.5%	S	S	3.9%	S	11.7%
Postpartum Maternal Depression Screening	3.9%	3.0%	S	5.0%	S	2.8%
Southwest						
Postpartum ED Utilization*	18.5%	16.9%	29.7%	17.8%	18.5%	24.6%
Postpartum Ambulatory Care Utilization	52.7%	47.5%	62.4%	49.3%	48.1%	72.1%
Prenatal Maternal Depression Screening	S	S	S	S	S	5.6%
Postpartum Maternal Depression Screening	S	0.0%	0.0%	S	0.0%	S
Tidewater						
Postpartum ED Utilization*	22.8%	13.4%	22.2%	25.3%	23.9%	23.8%
Postpartum Ambulatory Care Utilization	46.0%	36.0%	42.4%	48.5%	43.1%	48.3%
Prenatal Maternal Depression Screening	5.8%	4.3%	4.3%	6.2%	S	6.7%
Postpartum Maternal Depression Screening	11.8%	11.5%	8.0%	15.9%	S	12.0%

*a lower rate indicates better performance for this indicator.

NA indicates there is not an applicable national benchmark for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Table A-20 through Table A-25 present the CY 2021 maternal health outcomes study indicator results stratified by MCO and race/ethnicity for each managed care region of maternal residence.

Table A-20—Central Region Maternal Health Outcomes Study Indicators Stratified by MCO and Race/Ethnicity, CY 2021

	Postpartum ED Utilization*		Postpartum Ambulatory Care Utilization		Prenatal Maternal Depression Screening		Postpartum Maternal Depression Screening	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White, Non-Hispanic								
Aetna	133	30.0%	274	61.7%	19	4.3%	23	5.2%
HealthKeepers	314	33.3%	554	58.8%	39	4.1%	49	5.2%
Molina	77	38.3%	126	62.7%	S	S	12	6.0%
Optima	151	30.3%	275	55.2%	27	5.4%	25	5.0%
UnitedHealthcare	57	26.1%	122	56.0%	S	S	12	5.5%
VA Premier	156	44.1%	254	71.8%	23	6.5%	14	4.0%
Black, Non-Hispanic								
Aetna	233	32.8%	392	55.2%	29	4.1%	23	3.2%
HealthKeepers	404	34.2%	658	55.6%	71	6.0%	43	3.6%
Molina	134	43.1%	194	62.4%	17	5.5%	14	4.5%
Optima	280	36.0%	467	60.0%	45	5.8%	42	5.4%
UnitedHealthcare	105	41.2%	164	64.3%	11	4.3%	12	4.7%
VA Premier	298	46.4%	448	69.8%	47	7.3%	34	5.3%
Asian, Non-Hispanic								
Aetna	15	36.6%	24	58.5%	0	0.0%	0	0.0%
HealthKeepers	30	44.8%	44	65.7%	S	S	S	S
Molina	S	S	S	S	0	0.0%	0	0.0%

	Postpartum ED Utilization*		Postpartum Ambulatory Care Utilization		Prenatal Maternal Depression Screening		Postpartum Maternal Depression Screening	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Optima	S	S	S	S	S	S	0	0.0%
UnitedHealthcare	S	S	12	54.5%	0	0.0%	S	S
VA Premier	14	51.9%	19	70.4%	0	0.0%	0	0.0%
Hispanic, Any Race								
Aetna	55	35.9%	92	60.1%	S	S	S	S
HealthKeepers	104	39.0%	156	58.4%	11	4.1%	23	8.6%
Molina	25	32.1%	43	55.1%	S	S	S	S
Optima	43	36.4%	64	54.2%	S	S	S	S
UnitedHealthcare	30	37.0%	45	55.6%	S	S	S	S
VA Premier	58	42.3%	88	64.2%	S	S	S	S
Other/Unknown								
Aetna	20	32.3%	34	54.8%	S	S	S	S
HealthKeepers	48	49.5%	63	64.9%	S	S	S	S
Molina	S	S	12	60.0%	0	0.0%	S	S
Optima	16	34.8%	21	45.7%	S	S	S	S
UnitedHealthcare	11	37.9%	19	65.5%	S	S	S	S
VA Premier	26	59.1%	32	72.7%	S	S	S	S

*a lower rate indicates better performance for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Table A-21—Charlottesville/Western Region Maternal Health Outcomes Study Indicators Stratified by MCO and Race/Ethnicity, CY 2021

	Postpartum ED Utilization*		Postpartum Ambulatory Care Utilization		Prenatal Maternal Depression Screening		Postpartum Maternal Depression Screening	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White, Non-Hispanic								
Aetna	33	11.6%	139	48.8%	56	19.6%	65	22.8%
HealthKeepers	55	13.2%	169	40.6%	47	11.3%	57	13.7%
Molina	20	13.7%	72	49.3%	S	S	S	S
Optima	94	17.0%	308	55.8%	89	16.1%	124	22.5%
UnitedHealthcare	18	11.3%	74	46.5%	S	S	S	S
VA Premier	98	17.0%	348	60.2%	160	27.7%	129	22.3%
Black, Non-Hispanic								
Aetna	23	18.4%	70	56.0%	22	17.6%	19	15.2%
HealthKeepers	30	16.6%	75	41.4%	S	S	12	6.6%
Molina	S	S	29	39.2%	0	0.0%	S	S
Optima	69	18.2%	195	51.3%	48	12.6%	45	11.8%
UnitedHealthcare	S	S	36	55.4%	0	0.0%	0	0.0%
VA Premier	49	15.7%	197	62.9%	71	22.7%	50	16.0%
Asian, Non-Hispanic								
Aetna	S	S	S	S	S	S	S	S
HealthKeepers	0	0.0%	S	S	S	S	S	S
Molina	S	S	S	S	S	S	S	S
Optima	S	S	S	S	S	S	S	S

	Postpartum ED Utilization*		Postpartum Ambulatory Care Utilization		Prenatal Maternal Depression Screening		Postpartum Maternal Depression Screening	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
UnitedHealthcare	S	S	S	S	S	S	S	S
VA Premier	S	S	S	S	S	S	S	S
Hispanic, Any Race								
Aetna	S	S	12	48.0%	S	S	S	S
HealthKeepers	S	S	18	30.5%	S	S	S	S
Molina	S	S	S	S	0	0.0%	0	0.0%
Optima	12	14.5%	46	55.4%	19	22.9%	20	24.1%
UnitedHealthcare	S	S	11	52.4%	0	0.0%	0	0.0%
VA Premier	15	17.4%	50	58.1%	36	41.9%	21	24.4%
Other/Unknown								
Aetna	S	S	S	S	S	S	S	S
HealthKeepers	S	S	11	45.8%	S	S	S	S
Molina	S	S	S	S	S	S	S	S
Optima	S	S	14	45.2%	S	S	S	S
UnitedHealthcare	S	S	S	S	S	S	S	S
VA Premier	S	S	15	53.6%	S	S	S	S

*a lower rate indicates better performance for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Table A-22—Northern & Winchester Region Maternal Health Outcomes Study Indicators Stratified by MCO and Race/Ethnicity, CY 2021

	Postpartum ED Utilization*		Postpartum Ambulatory Care Utilization		Prenatal Maternal Depression Screening		Postpartum Maternal Depression Screening	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White, Non-Hispanic								
Aetna	72	31.7%	125	55.1%	S	S	S	S
HealthKeepers	169	23.2%	385	52.8%	S	S	25	3.4%
Molina	32	31.7%	59	58.4%	S	S	S	S
Optima	39	22.2%	84	47.7%	S	S	17	9.7%
UnitedHealthcare	78	26.5%	172	58.5%	S	S	14	4.8%
VA Premier	38	14.3%	161	60.8%	18	6.8%	15	5.7%
Black, Non-Hispanic								
Aetna	51	34.0%	80	53.3%	S	S	S	S
HealthKeepers	185	30.7%	324	53.7%	S	S	15	2.5%
Molina	19	32.8%	25	43.1%	S	S	0	0.0%
Optima	21	21.6%	38	39.2%	S	S	S	S
UnitedHealthcare	61	26.3%	133	57.3%	S	S	S	S
VA Premier	52	21.5%	177	73.1%	S	S	S	S
Asian, Non-Hispanic								
Aetna	20	30.3%	42	63.6%	S	S	S	S
HealthKeepers	96	27.4%	193	55.0%	S	S	11	3.1%
Molina	S	S	11	36.7%	S	S	0	0.0%
Optima	S	S	14	50.0%	0	0.0%	0	0.0%

	Postpartum ED Utilization*		Postpartum Ambulatory Care Utilization		Prenatal Maternal Depression Screening		Postpartum Maternal Depression Screening	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
UnitedHealthcare	36	32.4%	75	67.6%	S	S	S	S
VA Premier	17	11.8%	102	70.8%	0	0.0%	0	0.0%
Hispanic, Any Race								
Aetna	103	39.8%	151	58.3%	S	S	13	5.0%
HealthKeepers	324	29.6%	544	49.7%	19	1.7%	24	2.2%
Molina	57	37.7%	76	50.3%	S	S	S	S
Optima	56	29.2%	88	45.8%	S	S	S	S
UnitedHealthcare	167	35.4%	255	54.0%	S	S	20	4.2%
VA Premier	50	19.8%	164	64.8%	0	0.0%	S	S
Other/Unknown								
Aetna	S	S	17	60.7%	0	0.0%	0	0.0%
HealthKeepers	34	32.4%	60	57.1%	0	0.0%	S	S
Molina	S	S	S	S	S	S	S	S
Optima	S	S	S	S	0	0.0%	S	S
UnitedHealthcare	14	31.8%	29	65.9%	0	0.0%	S	S
VA Premier	13	24.1%	41	75.9%	0	0.0%	S	S

*a lower rate indicates better performance for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Table A-23—Roanoke/Alleghany Region Maternal Health Outcomes Study Indicators Stratified by MCO and Race/Ethnicity, CY 2021

	Postpartum ED Utilization*		Postpartum Ambulatory Care Utilization		Prenatal Maternal Depression Screening		Postpartum Maternal Depression Screening	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White, Non-Hispanic								
Aetna	87	24.9%	186	53.1%	17	4.9%	13	3.7%
HealthKeepers	57	19.7%	134	46.4%	S	S	S	S
Molina	51	27.6%	96	51.9%	S	S	S	S
Optima	57	21.8%	127	48.7%	13	5.0%	18	6.9%
UnitedHealthcare	47	23.3%	105	52.0%	S	S	S	S
VA Premier	165	26.0%	369	58.2%	85	13.4%	22	3.5%
Black, Non-Hispanic								
Aetna	26	27.4%	49	51.6%	S	S	S	S
HealthKeepers	22	28.6%	40	51.9%	S	S	S	S
Molina	21	24.1%	42	48.3%	S	S	S	S
Optima	S	S	30	44.1%	0	0.0%	0	0.0%
UnitedHealthcare	19	24.1%	40	50.6%	S	S	S	S
VA Premier	32	22.2%	73	50.7%	S	S	S	S
Asian, Non-Hispanic								
Aetna	S	S	S	S	S	S	S	S
HealthKeepers	S	S	S	S	S	S	S	S
Molina	S	S	S	S	S	S	S	S
Optima	S	S	S	S	0	0.0%	0	0.0%

	Postpartum ED Utilization*		Postpartum Ambulatory Care Utilization		Prenatal Maternal Depression Screening		Postpartum Maternal Depression Screening	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
UnitedHealthcare	S	S	S	S	S	S	S	S
VA Premier	S	S	S	S	0	0.0%	0	0.0%
Hispanic, Any Race								
Aetna	S	S	11	44.0%	0	0.0%	0	0.0%
HealthKeepers	S	S	16	59.3%	0	0.0%	S	S
Molina	S	S	S	S	0	0.0%	0	0.0%
Optima	S	S	S	S	S	S	0	0.0%
UnitedHealthcare	S	S	S	S	0	0.0%	0	0.0%
VA Premier	11	25.0%	22	50.0%	S	S	0	0.0%
Other/Unknown								
Aetna	S	S	S	S	S	S	S	S
HealthKeepers	S	S	S	S	S	S	S	S
Molina	S	S	S	S	S	S	0	0.0%
Optima	S	S	S	S	0	0.0%	0	0.0%
UnitedHealthcare	S	S	S	S	0	0.0%	0	0.0%
VA Premier	S	S	14	77.8%	0	0.0%	0	0.0%

*a lower rate indicates better performance for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Table A-24—Southwest Region Maternal Health Outcomes Study Indicators Stratified by MCO and Race/Ethnicity, CY 2021

	Postpartum ED Utilization*		Postpartum Ambulatory Care Utilization		Prenatal Maternal Depression Screening		Postpartum Maternal Depression Screening	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White, Non-Hispanic								
Aetna	32	18.5%	92	53.2%	S	S	S	S
HealthKeepers	27	15.6%	82	47.4%	S	S	0	0.0%
Molina	28	29.8%	60	63.8%	S	S	0	0.0%
Optima	24	17.9%	69	51.5%	S	S	S	S
UnitedHealthcare	19	19.0%	51	51.0%	S	S	0	0.0%
VA Premier	72	24.7%	213	73.2%	15	5.2%	S	S
Black, Non-Hispanic								
Aetna	S	S	S	S	S	S	S	S
HealthKeepers	S	S	S	S	S	S	S	S
Molina	S	S	S	S	S	S	S	S
Optima	S	S	S	S	S	S	S	S
UnitedHealthcare	S	S	S	S	S	S	S	S
VA Premier	S	S	S	S	S	S	S	S
Asian, Non-Hispanic								
Aetna	—	—	—	—	—	—	—	—
HealthKeepers	S	S	S	S	S	S	S	S
Molina	—	—	—	—	—	—	—	—
Optima	S	S	S	S	S	S	S	S
UnitedHealthcare	—	—	—	—	—	—	—	—

	Postpartum ED Utilization*		Postpartum Ambulatory Care Utilization		Prenatal Maternal Depression Screening		Postpartum Maternal Depression Screening	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
VA Premier	S	S	S	S	S	S	S	S
Hispanic, Any Race								
Aetna	S	S	S	S	S	S	S	S
HealthKeepers	S	S	S	S	S	S	S	S
Molina	S	S	S	S	S	S	S	S
Optima	S	S	S	S	S	S	S	S
UnitedHealthcare	S	S	S	S	S	S	S	S
VA Premier	S	S	S	S	S	S	S	S
Other/Unknown								
Aetna	S	S	S	S	S	S	S	S
HealthKeepers	—	—	—	—	—	—	—	—
Molina	S	S	S	S	S	S	S	S
Optima	S	S	S	S	S	S	S	S
UnitedHealthcare	S	S	S	S	S	S	S	S
VA Premier	S	S	S	S	S	S	S	S

*a lower rate indicates better performance for this indicator.

—indicates that data are not available.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).

Table A-25—Tidewater Region Maternal Health Outcomes Study Indicators Stratified by MCO and Race/Ethnicity, CY 2021

	Postpartum ED Utilization*		Postpartum Ambulatory Care Utilization		Prenatal Maternal Depression Screening		Postpartum Maternal Depression Screening	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White, Non-Hispanic								
Aetna	41	19.6%	101	48.3%	15	7.2%	34	16.3%
HealthKeepers	87	12.4%	284	40.5%	40	5.7%	109	15.5%
Molina	26	19.1%	52	38.2%	S	S	15	11.0%
Optima	123	20.0%	303	49.3%	33	5.4%	148	24.1%
UnitedHealthcare	17	16.5%	44	42.7%	0	0.0%	S	S
VA Premier	38	17.2%	100	45.2%	16	7.2%	37	16.7%
Black, Non-Hispanic								
Aetna	96	25.8%	164	44.1%	22	5.9%	35	9.4%
HealthKeepers	177	14.2%	419	33.6%	45	3.6%	112	9.0%
Molina	63	23.6%	122	45.7%	13	4.9%	15	5.6%
Optima	429	27.8%	759	49.3%	104	6.7%	187	12.1%
UnitedHealthcare	57	28.8%	88	44.4%	S	S	S	S
VA Premier	120	26.1%	227	49.3%	28	6.1%	43	9.3%
Asian, Non-Hispanic								
Aetna	S	S	S	S	S	S	S	S
HealthKeepers	S	S	15	34.1%	S	S	S	S
Molina	S	S	S	S	S	S	S	S
Optima	S	S	22	31.9%	S	S	15	21.7%
UnitedHealthcare	S	S	S	S	S	S	S	S

	Postpartum ED Utilization*		Postpartum Ambulatory Care Utilization		Prenatal Maternal Depression Screening		Postpartum Maternal Depression Screening	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
VA Premier	S	S	S	S	S	S	S	S
Hispanic, Any Race								
Aetna	14	17.9%	31	39.7%	S	S	S	S
HealthKeepers	23	12.2%	70	37.0%	S	S	20	10.6%
Molina	15	25.4%	25	42.4%	S	S	S	S
Optima	48	24.4%	93	47.2%	S	S	37	18.8%
UnitedHealthcare	S	S	15	45.5%	S	S	S	S
VA Premier	19	29.2%	31	47.7%	S	S	S	S
Other/Unknown								
Aetna	S	S	28	65.1%	S	S	S	S
HealthKeepers	14	13.3%	36	34.3%	S	S	13	12.4%
Molina	S	S	S	S	S	S	S	S
Optima	36	28.8%	59	47.2%	S	S	17	13.6%
UnitedHealthcare	S	S	S	S	0	0.0%	0	0.0%
VA Premier	S	S	19	48.7%	S	S	S	S

*a lower rate indicates better performance for this indicator.

S indicates that the data were suppressed due to a small numerator or denominator (i.e., fewer than 11).