Report on Pregnant Women, Infants and Children

Submitted June 6, 2016

The Ohio Department of Medicaid
John R. Kasich, Governor John B. McCarthy, Director

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MEMORANDUM

TO: Governor of Ohio, John R. Kasich
Ohio House Speaker, the Honorable Cliff Rosenberger
Ohio Senate President, the Honorable Keith Faber
Ohio House Minority Leader, the Honorable Fred Strahorn
Ohio Senate Minority Leader, the Honorable Joe Schiavoni
Joint Medicaid Oversight Committee, Susan Ackerman, Executive Director
Legislative Service Commission Director, Mark Flanders

FROM: Director John B. McCarthy

SUBJECT: Pregnant Women, Infants, and Children Report – Calendar Year 2015

DATE: June 6, 2016

The attached report is provided in compliance with Section 5162.13 of the Ohio Revised Code requiring the Ohio Department of Medicaid to report annually on the effectiveness of the Medicaid program in meeting health care needs of low-income pregnant women, infants, and children. Additionally, the 2015 report focuses on infant mortality, pre-term births, and low birth weight infants.

The rates reported for infant mortality, pre-term births and low birth weight infants are calculated for Medicaid and non-Medicaid populations based on both Medicaid data and infant death and birth files from the Ohio Department of Health Bureau of Vital Statistics using the same basic methodology as used in the Ohio Medicaid 2009 and 2014 Reports on Mothers, Infants and Children.

Given that this report focuses on the Medicaid population, the Ohio Department of Medicaid employs methodologies for these calculations appropriate for the Medicaid population and data as described in Section II and Appendix A of this report that differ from those used by the Ohio Department of Health. Therefore, the data on infant mortality, pre-term births, and low birth weight infants published by the Ohio Department of Health may not be directly compared to the data presented in this report.

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Section I: Profile of Ohio Births

1.1 Profile of Ohio Births and Medicaid Demographics

Medicaid plays a significant role in access to health care for pregnant women and children in Ohio. In 2013 and 2014, Medicaid paid for approximately 52% of births in Ohio. The below information is based on the total number of births to Ohio residents on the 2013 and 2014 birth files from the Ohio Department of Health Bureau of Vital Statistics and Medicaid claims data for the number of Ohio births paid by Medicaid.

Throughout this report, comparisons are made between Medicaid and non-Medicaid beneficiaries based on the linkage of birth files from the Ohio Department of Health Bureau of Vital Statistics to Medicaid birth and delivery claims data. The results for CY 2013 throughout this report have been updated from the previous report based on an improved method for the linkage of birth files with Medicaid data which increased the Medicaid infant to birth certificate linkage rate. *Please see Appendix A for more information on the linkage process.*

Figure 1: Ohio Births by Payer – 2013 & 2014

	# of Births (N)		% of Total Births	
	2013	**2014**	**2013**	**2014**
All	136,137	136,570	100%	100%
Medicaid	70,885	70,634	52.1%	51.7%
Non-Medicaid	65,252	65,936	47.9%	48.3%

1.2 Demographic Information Related to Ohio Births

There are notable differences in the demographics of mothers who delivered while receiving Medicaid benefits compared to those who did not have Medicaid coverage at the time of delivery in 2013 and 2014. This report includes comparisons between Medicaid and non-Medicaid populations that are adjusted for demographic factors that are known to be associated with birth outcomes: race, ethnicity, maternal age, and marital status.[1-3]

1.2.1 Race and Ethnicity

Figure 2: Ohio Births by Maternal Race - 2013 & 2014

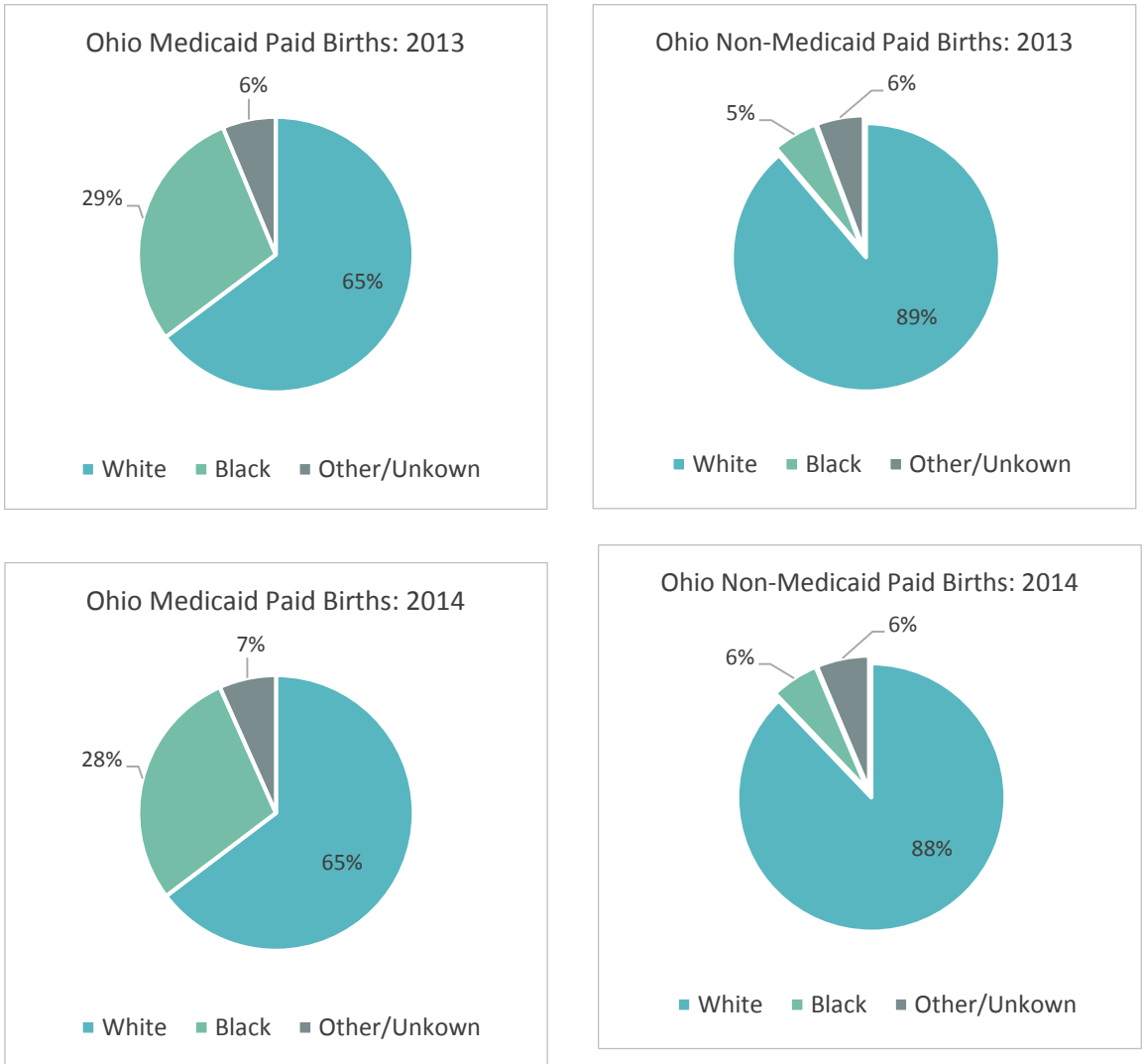
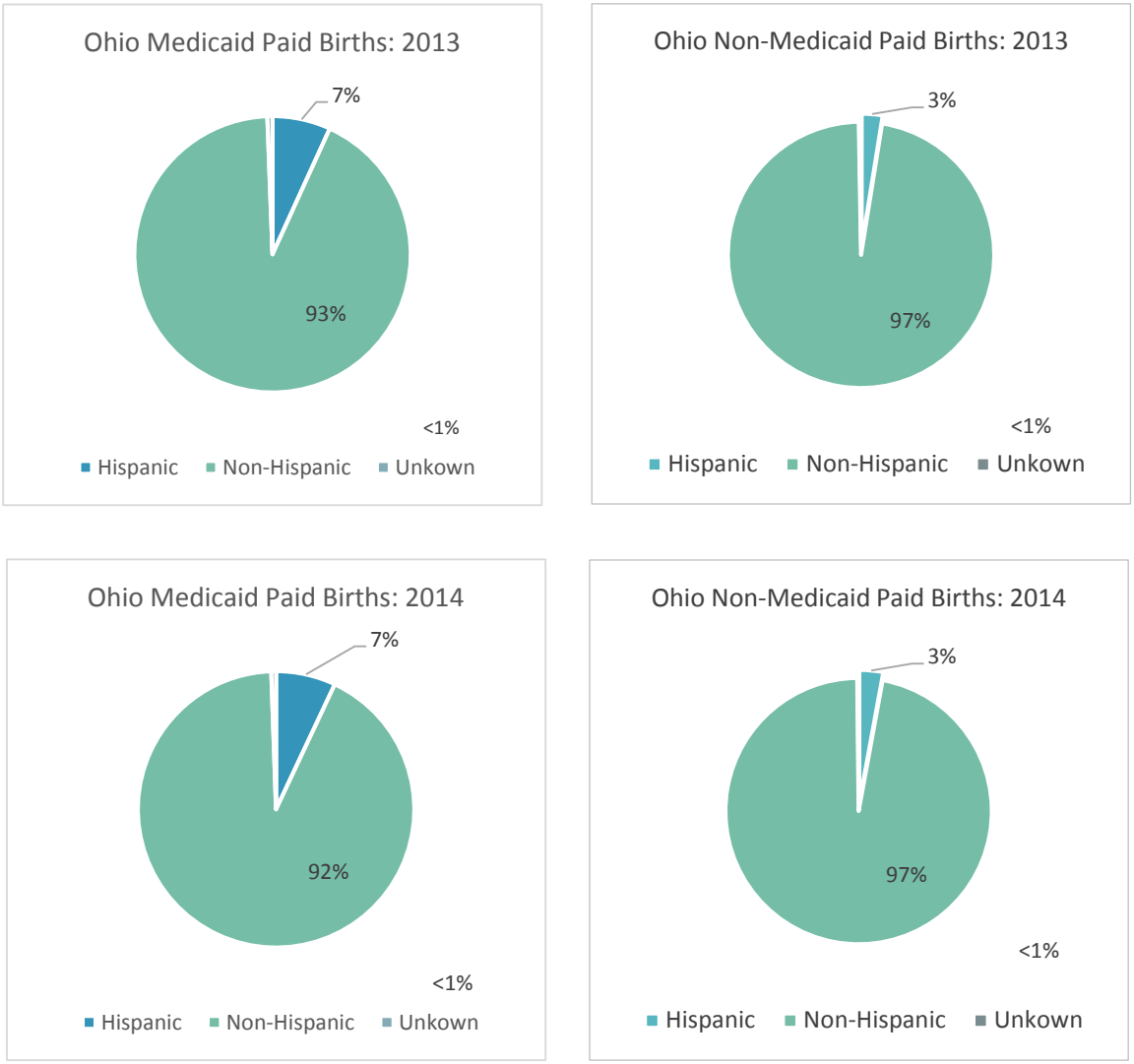


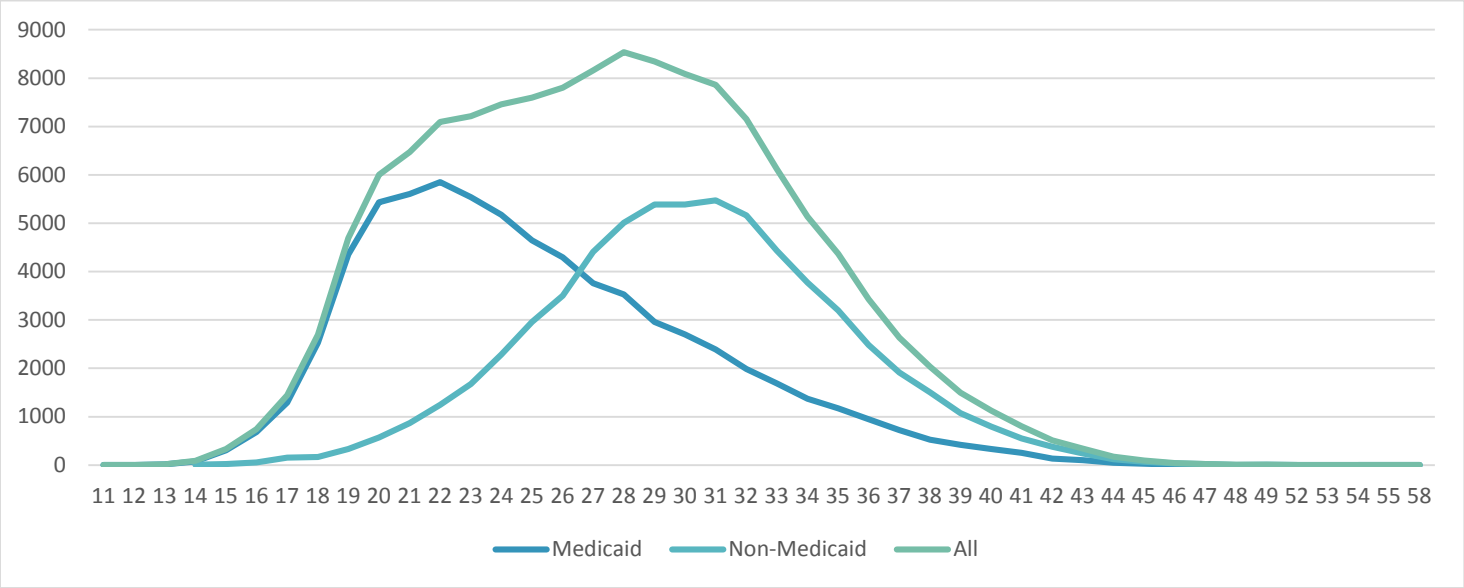
Figure 3: Ohio Births by Maternal Ethnicity – 2013 & 2014



1.2.2 Maternal Age

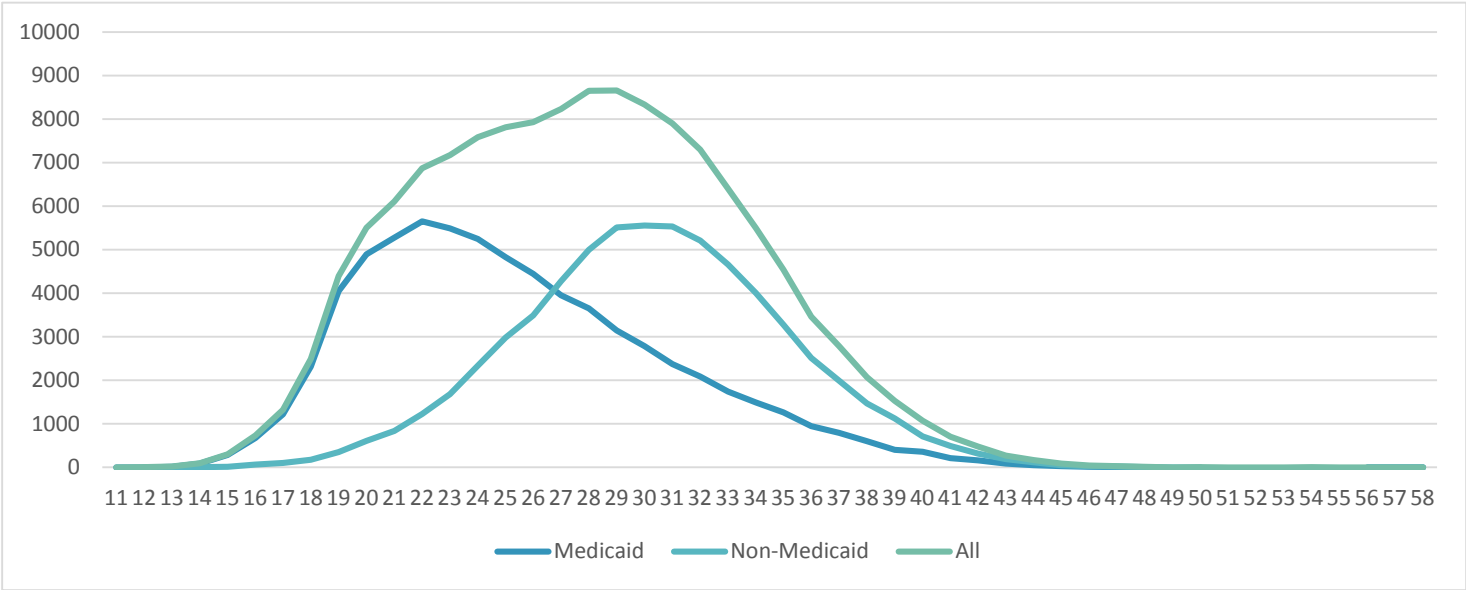
As shown in Figure 4, a wide disparity exists in the maternal age of mothers receiving Medicaid benefits and mothers who were not receiving Medicaid benefits at the time of delivery. In 2013, the median age for mothers with a Medicaid delivery claims was 24 years of age, while the median age for women with non-Medicaid paid deliveries was 30.

Figure 4: Ohio Births by Maternal Age and Medicaid Status - 2013



As shown in Figure 5, this wide disparity in the maternal age of mothers receiving Medicaid benefits and mothers who were not receiving Medicaid benefits at the time of delivery holds steady. In 2014, the median age for mothers with a Medicaid delivery claims was 25 years of age, while the median age for women with non-Medicaid paid deliveries was 30.

Figure 5: Ohio Births by Maternal Age and Medicaid Status - 2014



1.2.3 Marital Status

In 2013, 26.6% of mothers with Medicaid paid deliveries were married compared to 88.4% of women with non-Medicaid paid deliveries. Similarly, in 2014, 26.7% of mothers with Medicaid paid deliveries were married compared to 88.3% of women with non-Medicaid paid deliveries.

Section II: Birth Outcomes and Risk Factors

2.1 Infant Mortality

Information on infant mortality used in this report is from the linked infant death and birth files from the Ohio Department of Health Bureau of Vital Statistics and includes infants who were born in 2012 and 2013 that died before reaching their first birthday. Release of this data lags behind birth data. Therefore, the most recent data that is available is from 2013.

Using the linked infant death and birth files provided by the Ohio Department of Health Bureau of Vital Statistics, the Ohio Department of Medicaid calculated Ohio's infant mortality rate using a cohort approach for births to Ohio residents in 2012 and 2013, comparing Medicaid to non-Medicaid beneficiaries.

This cohort approach was used in The Ohio Department of Medicaid Report on Pregnant Women, Infants, and Children 2014, as well as Ohio Medicaid 2009 Report on Mothers, Infants and Children to follow all infants who were born in Ohio with Ohio maternal residence in 2009 and follow them through their first year of life.

The Ohio Department of Medicaid's calculated infant mortality rate was 7.57 deaths per 1,000 live births for Medicaid-paid births in 2012, and 7.72 deaths per 1,000 live births for Medicaid-paid births in 2013. This cohort approach is different than the traditional measure of infant mortality and should not be compared directly to other infant mortality rates, including those published by the Ohio Department of Health.

Figure 6: Ohio Infant Mortality by Medicaid Status – 2012 & 2013

Crude Rate				**Risk Adjusted Rate**				**Adjusted Relative Risk**	
Medicaid		Non-Medicaid		Medicaid		Non-Medicaid			
2012	2013	2012	2013	2012	2013	2012	2013	2012	2013
7.57	7.72	5.75	5.29	6.79	6.95	10.79	12.37	0.63	0.56

In 2012, the infant mortality rate in Ohio was 7.57 deaths per 1,000 live births for Medicaid-paid births, as compared to 5.75 deaths per 1,000 live births for non-Medicaid paid births. Throughout this report, both crude rates and adjusted rates are presented for the Medicaid and non-Medicaid populations. Adjusted rates are calculated numbers to allow comparisons of two different populations or times. In this case, the adjusted rate answers the question, "what would the infant mortality rate be if the women giving birth in the groups under study (Medicaid, non-Medicaid) had the same demographic characteristics as the overall population of women giving birth in Ohio in 2012?"

Adjusting for demographic differences, the risk of death for infants born on Medicaid was actually lower in 2012 than those not born on Medicaid. The adjusted relative risk of death in the first year of life for the 2012 cohort of births on Medicaid compared to non-Medicaid was 0.63. After accounting for demographic differences, the risk of death in the first year of life among the Medicaid population was .63 times the risk of death in the first year of life among the non-Medicaid population.

In 2013, the infant mortality rate in Ohio was 7.72 deaths per 1,000 live births for Medicaid-paid births, as compared to 5.29 deaths per 1,000 live births for non-Medicaid paid births. Consistent with the trend seen in 2012, after adjusting for demographic differences, the risk of death for infants born on Medicaid was again lower in 2013 than those not born on Medicaid. The adjusted relative risk of death in the first year of life for the 2012 cohort of births on Medicaid compared to non-Medicaid was 0.56. After accounting for demographic differences, the risk of death in the first year of life among the Medicaid population was .56 times the risk of death in the first year of life among the non-Medicaid population.

2. 2 Premature Birth and Low Birth Weight

Prematurity (birth prior to 37 weeks gestation) and low birth weight (a birth weight under 2,500 grams) are significant risk factors for infant mortality.[4]

For Medicaid paid births in 2013, adjusting for race, Hispanic ethnicity, maternal age, and marital status explains much of the disparity between the preterm and low birth weight rates of the Medicaid and non-Medicaid populations. The adjusted relative risk of 1.24 for preterm births and 1.37 for low birth weight births in 2013, and the adjusted relative risk of 1.24 for preterm births and 1.34 for low birth weight births in 2014, shows little difference between the populations when controlling for demographic differences.

Prematurity is an issue that is not limited to the Medicaid population, but is a broader public health issue for Ohio.

Figure 7: Ohio Preterm and Low Birth Weight Births by Medicaid Status and Race - 2013 & 2014

	Crude Rate				**Risk Adjusted Rate**				**Adjusted Relative Risk**	
	Medicaid		Non-Medicaid		Medicaid		Non-Medicaid			
	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014
Preterm Birth	14.37%	14.53%	9.86%	9.73%	13.81%	13.69%	11.14%	11.04%	1.24	1.24
Low Birth Weight	10.18%	10.21%	6.36%	6.21%	9.57%	9.64%	7.00%	7.19%	1.37	1.34

2.2.1 Risk Factors for Preterm Birth and Low Birth Weight

There is a greater risk for a preterm and/or low birth weight delivery if the mother: had a previous preterm birth; had low maternal weight gain; smoked during pregnancy; had a previous poor birth outcome; delivered within 18 months of a prior delivery; or had little or no prenatal care.[1-3]

With the exception of short birth spacing (less than 18 months between births), pregnant women on Medicaid had higher crude rates for all risk factors than non-Medicaid pregnant women. Adjusting for demographics showed little difference between Medicaid and non-Medicaid beneficiaries for short birth spacing and absence of prenatal care, but showed notable differences for all other risk factors in 2013. All of the data presented about selected risk factors are based on self-reported data on the birth certificates.

Figure 8: Selected Risk Factors for Prematurity and Low Birth Weight - 2013 and 2014

		Crude Rates				Risk Adjusted Rates				Adjusted Relative Risk	
		Medicaid		Non-Medicaid		Medicaid		Non-Medicaid			
		2013	2014	2013	2014	2013	2014	2013	2014	2013	2014
Previous Preterm Birth	Yes	6.36%	6.80%	3.65%	4.00%	6.70%	7.38%	3.58%	3.90%	1.87	1.89
	No	93.64%	93.20%	96.35%	96.00%	93.30%	92.62%	96.42%	96.10%		
Low Maternal Weight Gain	Yes	31.72%	31.30%	21.94%	21.55%	32.70%	32.42%	23.29%	23.22%	1.40	1.40
	No	68.28%	68.70%	78.06%	78.45%	67.30%	67.58%	76.71%	76.78%		
Smoking During Pregnancy	Yes	28.16%	27.14%	4.62%	4.38%	26.87%	25.85%	8.10%	7.71%	3.32	3.35
	No	71.84%	72.86%	95.38%	95.62%	73.13%	74.15%	91.90%	92.29%		
Previous Poor Outcome	Yes	5.27%	5.13%	3.75%	3.79%	5.63%	5.52%	3.55%	3.56%	1.59	1.55
	No	94.73%	94.87%	96.25%	96.21%	94.37%	94.48%	96.45%	96.44%		
Birth Spacing (<18 months)	Yes	5.42%	5.55%	6.87%	7.27%	6.01%	5.91%	6.00%	6.39%	1.00	0.92
	No	94.58%	94.45%	93.13%	92.73%	93.99%	94.09%	94.00%	93.61%		
No Prenatal Care	Yes	2.07%	2.82%	0.71%	0.95%	1.77%	2.46%	1.37%	1.59%	1.29	1.55
	No	97.93%	97.18%	99.29%	99.05%	98.23%	97.54%	98.63%	98.41%		

Comparably in 2014, with the exception of short birth spacing (less than 18 months between births), pregnant women on Medicaid had higher crude rates for all risk factors than non-Medicaid pregnant women. Adjusting for demographic factors, Medicaid beneficiaries showed a slightly decreased risk of having short birth spacing as compared with non-Medicaid beneficiaries. A notable difference was seen in all other risk factors in 2014. All of the data presented about selected risk factors are based on self-reported data on the birth certificates.

Section III: Prenatal, Postnatal, and Well-Child Visits

3.1 Statewide Averages for Medicaid Managed Care Plan Self-Reported Audited HEDIS Results

The Healthcare Effectiveness Data and Information Set (HEDIS) results were used to examine frequency and timeliness of prenatal care, as well as postpartum care and well-child visits. HEDIS is a healthcare quality measurement tool through the National Committee for Quality Assurance (NCQA) that is utilized by more than 90 percent of America's health plans. HEDIS measures performance on important dimensions of care and service based on 81 measures across 5 domains of care.

Due to the fact that HEDIS data is so widely collected and so specifically defined, it is possible to compare performance of health care plans and services across the board based on HEDIS measures.

Using HEDIS methodology: in 2013, 86% of women in Medicaid managed care plans received timely prenatal care; 69.9% received over 81% of the expected prenatal visits (Frequency of Ongoing Prenatal Care); and 63% received post-partum visits within 90 days of delivery. [5]

Within the first 15 months of life, 60.1% of infants met the requirement for the well-child visit criteria, whereas, 69.0% of children in their third, fourth, fifth, and sixth year of life met the well-child visit criteria.[5]

Similarly in 2014, 85.9% of women in Medicaid managed care plans received timely prenatal care; 69.8% received over 81% of the expected prenatal visits (Frequency of Ongoing Prenatal Care); and 61.4% received post-partum visits within 90 days of delivery. [6]

Within the first 15 months of life, 59.7% of infants met the requirement for the well-child visit criteria, whereas, 63.1% of children in their third, fourth, fifth, and sixth year of life met the well-child visit criteria.[6]

The ranking represents how Ohio's Medicaid managed care plans' HEDIS results compare with national Medicaid benchmarks collected by NCQA. For example, Ohio's Medicaid managed care plans were between the 50th and 75th percentile for the Timeliness of Prenatal Care HEDIS measure in comparison with other Medicaid managed care plans reporting results to NCQA in calendar years 2013 and 2014.

Figure 9: Statewide Averages for Medicaid MCP Self-Reported Audited HEDIS Rates – CYs 2013 & 2014

HEDIS Measure	Overall Medicaid MCP Reported Rate (%)		Ohio Medicaid MCPs' NCQA's Percentile Range	
	2013	2014	2013	2014
Frequency of Ongoing Prenatal Care	69.9%	69.8%	P50-P75	P50-P75
Timeliness of Prenatal Care	86.0%	85.9%	P50-P75	P50-P75
Postpartum Care	63.0%	61.4%	P25-P50	P25-P50
Well Child Visits *(First 15 Months of Life, Six or More Visits)*	60.1%	59.7%	P25-P50	P25-P50
Well-Child Visits *(Third, Fourth, Fifth, and Sixth Year of Life)*	69.0%	63.1%	P25-P50	P10-P25

Section IV: Medicaid Prenatal Care, Delivery, and Infant Costs

The average total cost during pregnancy of a woman enrolled in Medicaid (costs for all covered services for nine months prior to the delivery month to one month after the delivery month) was $8,641 in 2013 and $9,112 in 2014. Prenatal and delivery costs* paid by Medicaid include direct fee-for-service payments to service providers, and capitation and birth premium payments to managed care providers for women enrolled in managed care.

In 2013, the total paid by Medicaid for prenatal care and deliveries was $612,493,601 for 70,885 births. Of these Medicaid payments, 53% of these dollars ($324,895,506) paid for deliveries compared to 47% of these dollars ($287,598,095) which paid for prenatal care. In 2014, the total paid by Medicaid for prenatal care and deliveries was $643,635,723 for 70,634 births. Of these Medicaid payments, 57% of these dollars ($364,914,896) paid for deliveries compared to 43% of these dollars ($278,720,827) which paid for prenatal care. Only costs and member months for those months in which a woman had Medicaid eligibility were included; a woman may have been a Medicaid beneficiary for only a portion of her pregnancy, in some instances only as of her delivery date.

Costs paid by Medicaid during an infant's first year of life include direct fee-for-service payments to service providers, and capitation payments to managed care providers for infants enrolled in managed care. In 2013,

69,667 infants were eligible and enrolled in Medicaid for at least a portion of their first year of life. In 2014, 70,885 infants were eligible and enrolled in Medicaid for at least a portion of their first year of life.

*Delivery costs include FFS delivery costs, delivery capitation payments and estimated delivery payments for certain managed care members as determined by the applicable capitation rate cell payment.

The total paid by Medicaid for the first year of life for infants enrolled in 2013 was $739,671,129, while the total paid by Medicaid for the first year of life for infants enrolled in 2014 was $842,220,609. Only costs and member months for those months of the infant's first year of life in which the infant had Medicaid eligibility were included; an infant may have been a Medicaid beneficiary for only a portion of their first year of life. There were no industry standard data sources available with current costs of national Medicaid prenatal care, deliveries, and/or infant care for comparison with Ohio data.

Figure 10: Total and Average Cost of Deliveries, Prenatal Care, and Infants - 2013 & 2014

	Total Beneficiaries (N)		Total Cost ($)		Average Cost/ Beneficiary ($)		Total Member Months (N)		Average Cost/ Member Month ($)	
	2013	2014	2013	2014	2013	2014	2013	2014	2013†	2014
Deliveries	70,885	70,634	324,895,506	364,914,896	4,583	5,166	N/A	N/A	N/A	N/A
Prenatal Care	70,885	70,634	287,598,095	278,720,827	4,057	3,946	515,592	521,369	558	535
Total Prenatal and Delivery Care	70,885	70,634	612,493,601	643,635,723	8,641	9,112	639,506	659,310	958	976
Infants – First Year of Life	69,667	70,885	739,671,129	842,220,609	10,617	11,882	874,847	884,729	845	952

Section V: References

1. Centers for Disease Control and Prevention (2014). Factors Associated with Preterm Birth. Retrieved December 18, 2014 from http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PDF/PretermBirth-Infographic.pdf.

2. March of Dimes (2014). Low Birth Weight. Retrieved December 18, 2014 from http://www.marchofdimes.org/baby/low-birthweight.aspx#.

3. Institute of Medicine, Committee on Understanding Premature Birth and Assuring Healthy Outcomes (2007). Preterm Birth Causes, Consequences, and Prevention. Retrieved December 18, 2014 from http://www.ncbi.nlm.nih.gov/books/NBK11362/pdf/TOC.pdf.

4. Centers for Disease Control and Prevention. Infant Mortality. Retrieved December 18, 2014 from http://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm.

5. National Committee for Quality Assurance. HEDIS & Performance Measurement. Retrieved December 18, 2014 from http://www.ncqa.org/HEDISQualityMeasurement.aspx.

6. National Committee for Quality Assurance. HEDIS & Performance Measurement. Retrieved March 7, 2015 from http://www.ncqa.org/HEDISQualityMeasurement.aspx.

Appendix A: Data Sources and Methodologies for Calculations

Data Sources

Medicaid information was obtained from Medicaid claims, premium payment records, and eligibility records from Ohio Medicaid's Medicaid Information Technology System (MITS), Business Intelligence and Analytical Research (BIAR) system and Medicaid's QDSS (Quality Decision Support System). In addition, the Ohio Department of Health Bureau of Vital Statistics provided birth certificate data and linked birth certificate and death certificate data. Infant death certificates are linked to birth certificates by the Ohio Department of Health Bureau of Vital Statistics. Details of that linkage can be obtained by contacting the bureau. Where information is reported for Medicaid beneficiaries and non-Medicaid populations, it was taken from The Ohio Department of Health Bureau of Vital Statistics birth certificate data.

Linkage of Ohio Birth Certificates to Medicaid Data

The matching process for mothers and infants typically consists of two rounds of multiple-iteration probabilistic linkages and employs probabilistic record linkage software, implemented in the statistical software product SAS, called The Link King.† The Link King was originally developed at Washington State's Division of Alcohol and Substance Abuse (DASA) and incorporates a probabilistic algorithm developed by MEDSTAT for the Substance Abuse and Mental Health Services Administration (SAMHSA). As with Link Plus, probabilistic record linkage software developed by the Centers for Disease Control and Prevention (CDC), The Link King is a rigorous public domain option for matching individuals in administrative datasets in the absence of a common identifier.

The first round of matching seeks to identify the same infants in 1) a file of infants derived from an analysis of Medicaid claims, encounter, and eligibility files and 2) an annual file of birth certificate data. Likewise, the second round of matching attempts to find the same mothers in 1) a file of mothers created from an analysis of Medicaid claims, encounter, and eligibility files and 2) the same annual file of birth certificate data mentioned above. Scores are assigned to linked pairs of records so that only those links that have received a score above a certain threshold are kept. In both rounds, the matching process uses date of birth, first, middle, and last names, sex, race/ethnicity, and zip code and generates an output file that, where possible, includes an associated Medicaid ID and birth certificate number for Ohio births with the individual. For infants, this would be the infant's Medicaid ID and, for mothers, the mother's Medicaid ID. Both baby and mother would be associated with the same birth certificate number for Ohio births. Because both baby and mother would share the same birth certificate number for Ohio births, this common birth certificate number is then used to create a final linked file of infants and mothers that contains the unique identifiers from both data sources.

For 2012, 90.8% of Medicaid birth claims were linked to a birth certificate. The linked percentage for 2013 and 2014 is 89.44% and 90.14%, respectively.

† While two rounds are sufficient in most cases, an additional round of matching with relaxed criteria may be needed when data quality issues make it difficult to use certain fields in the matching process due to missing and/or invalid data entries. For example, for infants whose first name is listed as "BABY BOY" or "BABY GIRL" in the available data sources, information about the father can be used as an alternative to attempt to find a match.

Reporting and Interpretation of Crude and Adjusted Rates

For each of the birth outcomes of interest (prematurity, low birth weight, and infant mortality) and each of the risk factors of interest (previous preterm birth, low maternal weight gain, smoking during pregnancy, previous poor outcomes, short birth spacing, and no prenatal care) a crude and adjusted rate were calculated for both the Medicaid population and the non-Medicaid population. Crude rates are the number of events in a population divided by the number of people who were eligible for the event in the population. For example, the crude prematurity rate within the Medicaid population is the number of premature births in the Medicaid population divided by the total number of births in the Medicaid population for a specific year.

Comparing the crude rate for the Medicaid population to the crude rate for the non-Medicaid population may be misleading due to the large disparities that are observed between the Medicaid and non-Medicaid populations on age, race, ethnicity, and marital status. In order to make more accurate comparisons between the two populations and statistically control for demographic factors, adjusted rates were calculated using direct standardization. The adjusted rate for each population more effectively illustrates the convergence of the rates that occurs when demographic disparities are eliminated. The adjusted rate answers the question, "what would the rate be if the women giving birth in the groups under study (Medicaid, non-Medicaid) had the same demographic characteristics as the overall population of women giving birth in Ohio?"

The directly standardized rates were calculated by dividing the population of each study group into 48 subgroups or stratum. Each of the strata represents a unique combination of the demographic characteristics that are being adjusted (age, race, ethnicity, and marital status). Standardized rates in this report are based on four age brackets, three race categories (black, white, other), Hispanic ethnicity, and marital status as reported on the vital statistics birth files. The 2013 and 2014 vital statistics birth files were used for the preterm birth, low birth weight and risk factor analyses. The 2012 and 2013 vital statistics birth files linked with the respective year's death file were used for the infant mortality calculations.

Once each study population (Medicaid and non-Medicaid) was divided into the stratum, 48 stratum-specific rates were calculated and each rate was multiplied by the number of people within that corresponding stratum in the standard population. The number this yields is the number of people that would have experienced the event in each study population if each of the study populations had the same age, race, ethnicity, and marital status distribution as the entire population of women who gave birth (the standard population) in 2013 or 2014 (for the preterm, low birth weight, and risk factor analysis) and 2012 or 2013 (for the infant mortality analysis). The number of expected events for each stratum was then summed and divided by the total number of people in the standard population to yield a directly standardized rate for each study population. A ratio of each of the directly standardized rates can be taken to obtain an adjusted relative risk.

Reporting and Interpretation of Adjusted Relative Risk

In this report, adjusted relative risk can be interpreted as the adjusted risk of occurrence in the Medicaid population divided by the adjusted risk of occurrence in the non-Medicaid population. An adjusted relative risk close to one indicates that there is not much difference in the risk of occurrence of the event between the two populations. An adjusted relative risk greater than one indicates that the risk of the occurrence of the event is higher in the Medicaid population than the non-Medicaid population. An adjusted relative risk less than one indicates that the risk of the occurrence of the event is lower in the Medicaid population than the non-Medicaid population.

Calculation of Costs during Pregnancy and the Cost of Deliveries

Costs were included for all Medicaid deliveries in calendar years 2013 and 2014. Costs during pregnancy, for the purposes of this report, include all costs for the nine (9) months prior to the month of delivery, the month of delivery and the month following the month of delivery.

The costs of deliveries for women enrolled in managed care include: 1) birth premium payments; and 2) estimated birth premium payments for women with managed care encounter claims for a delivery service(s) but no delivery premium payment (incurred but not paid deliveries). Estimated birth premium payments were determined using the mother's county of residence, the last date of service on the delivery encounter claim, and the applicable managed care delivery Rate Cell code & premium amount (delivery encounter claims included those with a $0 payment and no indication of third party payment, and those with a net claim payment > $0).

Delivery payments for mothers with fee-for-service claims include net payments for inpatient hospital claims with an Ohio DRG Ohio code for a delivery, as applicable for the date of service/delivery. For those mothers with fee-for-service claims indicating delivery, but no inpatient claim with an applicable DRG, the cost of delivery was estimated using the statewide fee-for-service average net payment for inpatient claims with an Ohio DRG code for a delivery. There were deliveries identified for both managed care and fee-for-service for which the Ohio Medicaid cost was $0: 1) managed care deliveries for which third party payment was rendered and the net payment (by the managed care plan) was $0; and 2) fee-for-service claims with an Ohio DRG delivery code in a paid status where the net payment was $0. Delivery and prenatal care costs were estimated for infants with Medicaid IDs identified on the Ohio Department of Health Bureau of Vital Statistics birth file where the mother's Medicaid ID could not be determined.

Calculation of Costs of Infants in Medicaid

Infant costs include all managed care premium payments for dates of service in the month of birth through the month of the infant's first birthday if the infant was enrolled in a managed care plan. In addition, infant costs include fee-for-service claims with dates of service in the month of birth up through the first 365 days of life. Infants may have both fee-for-service claims and managed care premium payments included in the analysis. For CY 2014, costs were estimated for approximately 3% of newborns for whom a Medicaid recipient ID could not be determined, but who were identified on the Ohio Department of Health Bureau of Vital Statistics birth file and linked to a mother with Medicaid birth and delivery claims data.