



Health Equity Report

Maternal and Infant Health

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Introduction

This HCEDI Health Equity Report is the first to address the Prevention Agenda Priority Area “Promote Healthy Women, Infants and Children”, with a focus on Maternal and Infant Health. The Report reviews birth outcome and prenatal care indicators by health equity for the Capital Region. Birth Outcome indicators include infant mortality (deaths during the first year of life), prematurity (born too soon), and low birthweight (born too small). Prenatal care offers a glimpse at the mother’s access to medical care. The Report looks at optimal access, which is prenatal care within the first 3 months, and poor access, which is during the last 3 months of pregnancy or no prenatal care.

Improving the well-being of mothers, infants and children is an important national public health goal, and a New York State priority, as their well-being determines the health of the next generation.^{1, 2} In 2015, more than 23,000 infants died in the United States, and almost 1,100 died in New York State. Premature birth (< 37 weeks gestation) or low birthweight (< 2,500grams) were a leading cause of infant mortality.³ Babies born premature or low birthweight are also more likely to have or develop significant health problems compared to children who are born at full term or normal birthweight. Complications that can occur during the newborn period include respiratory distress, jaundice, anemia and infection. Long-term complications can include learning and behavioral problems, developmental delays, cerebral palsy, lung problems and vision and hearing loss.^{4, 5}

The annual economic burden related to premature births is estimated to exceed over \$26 Billion, including costs for medical care and early intervention, as well as lost productivity due to disabling conditions.⁵ A recent March of Dimes study estimated that premature babies cost employers \$12.7 Billion annually. The study found the average medical cost for a healthy full-term baby from birth through the first year was \$5,085, of which \$4,389 was paid by employer health plans compared to an average cost of \$55,393 for the premature or low birthweight baby, of which \$54,149 was paid by the health plan. Also, premature and low birthweight infants spent an average of 15 days in the hospital, compared to just over 2 days for healthy full-term infants. Premature babies averaged 20 outpatient medical visits compared to just 14 for full-term infants.⁶

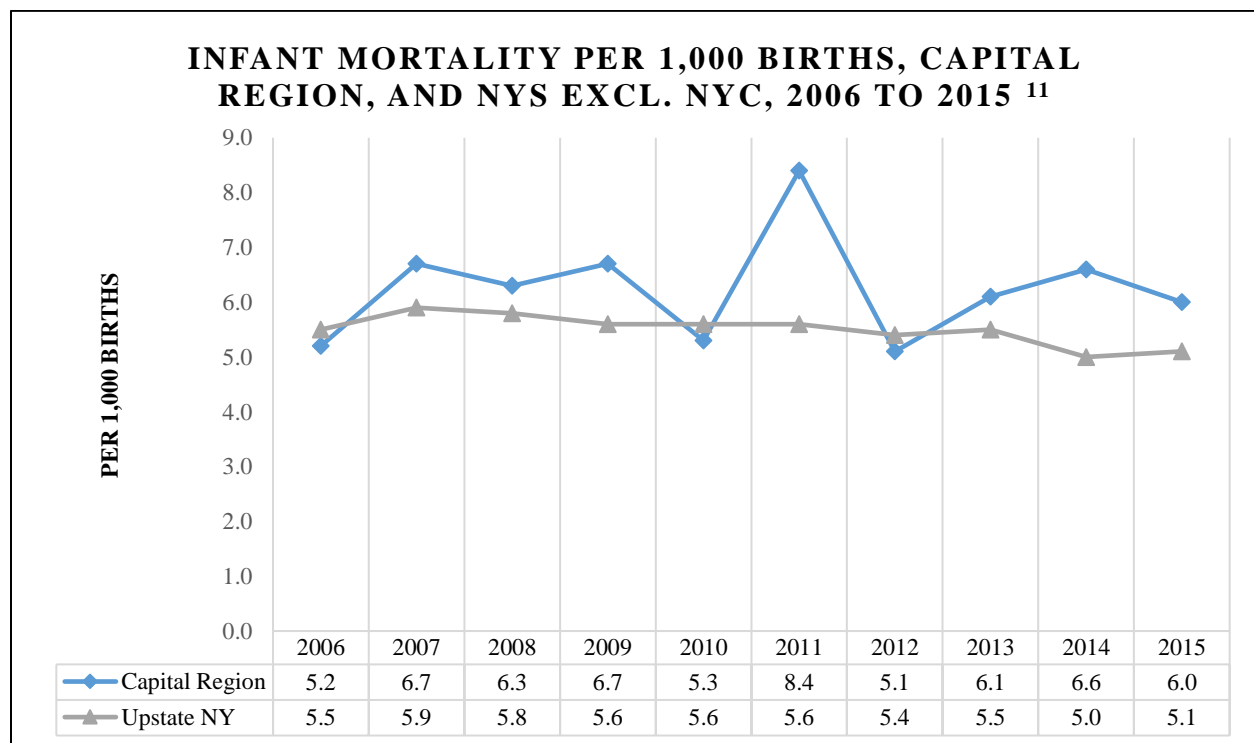
There are many factors associated with poor birth outcomes. Medical and pregnancy-related factors include chronic health conditions such as hypertension, diabetes, heart, lung and kidney problems, obesity; infections such as cytomegalovirus, rubella, chickenpox, and toxoplasmosis; prior preterm or low birthweight birth, and multiple pregnancy (e.g. twins, triplets, etc.). Behavioral conditions include tobacco and alcohol use, substance abuse, stress and inadequate prenatal care. Social, personal and economic characteristics include low or high maternal age, black race low- maternal income or poor socioeconomic status.^{5, 7, 8} Medical and pregnancy-related conditions, and poor birth outcomes can be reduced by increasing access to quality health care before, during, and after pregnancy.¹

Overview of Capital Region Trends

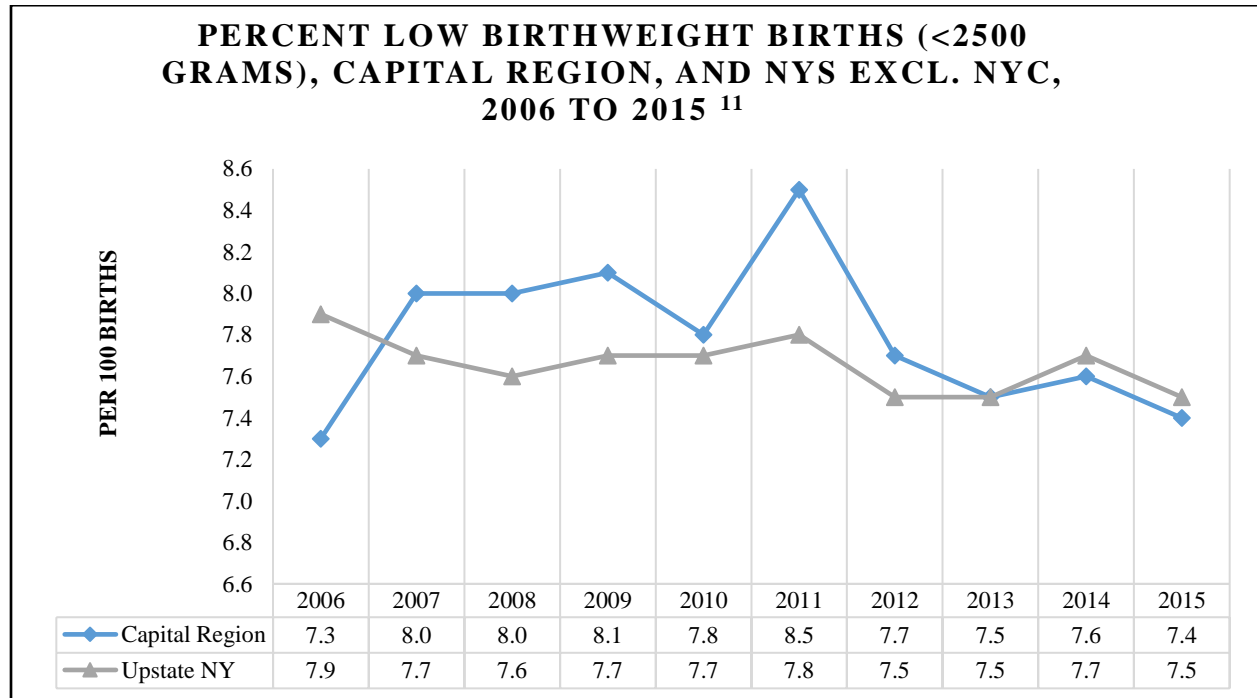
In general, Capital Region’s birth outcome and prenatal care rates worsened during the early part and improved during the latter part of the last decade. Since 2013, the Capital Region’s rates of prematurity, low birthweight, and early prenatal care were better than Upstate NY. However, the rates of infant mortality and late or no prenatal care were poorer. When comparing 2006-08 with 2013-15, the Capital Region showed minor changes: 2% increase in the infant mortality; 4% decrease in low birthweight babies; 3% decrease in prematurity; 2% increase in early prenatal care and a 2% decrease in late or no prenatal care. All Capital Region birth outcome and prematurity rates improved between 2014 and 2015.

Capital Region Trends

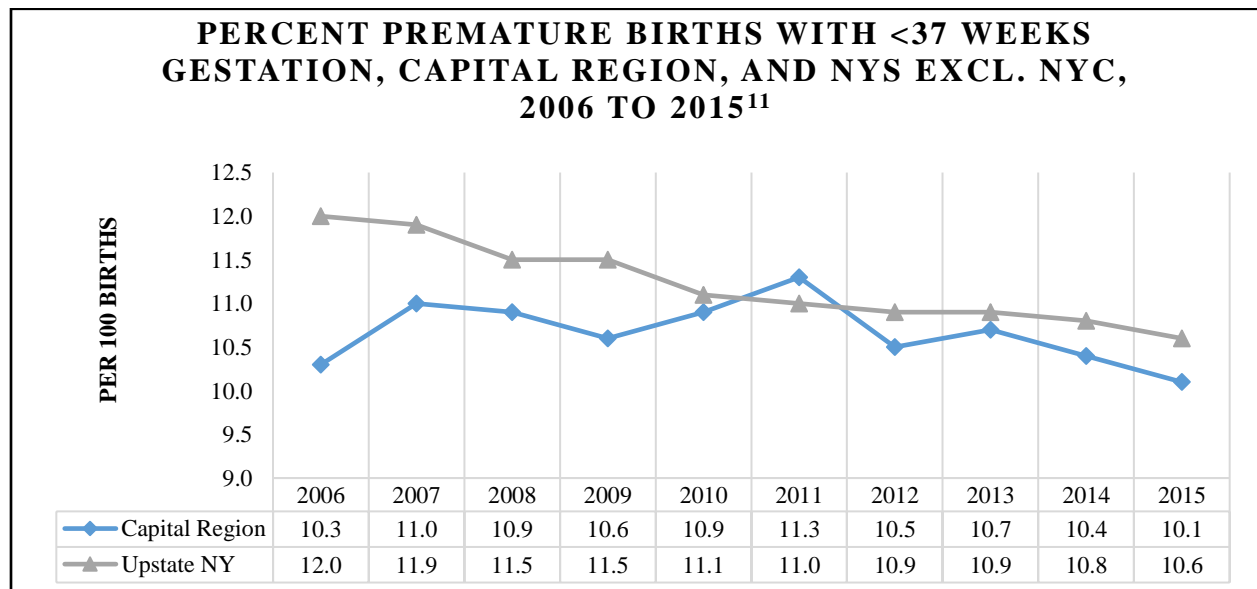
For most of the last decade, the Capital Region’s infant mortality rate has been higher than for New York State, excluding NYC (Upstate). While the Upstate infant mortality decreased 4% from 2006-08 to 2013-15, the Capital Region showed a slight 2% increase.



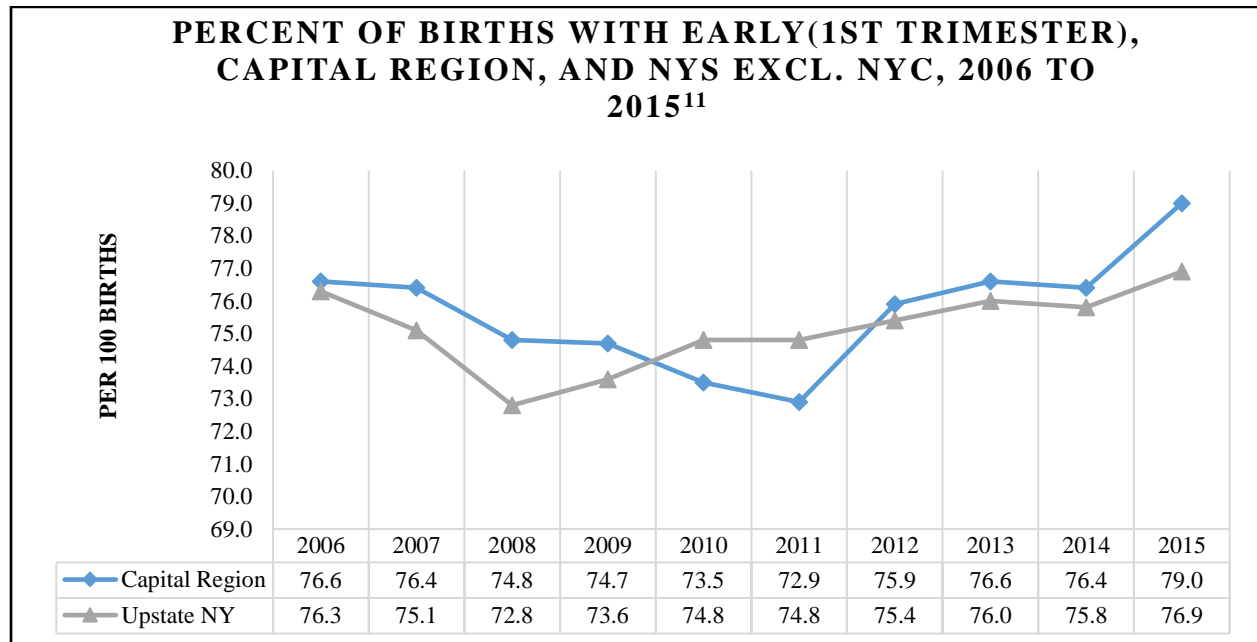
When reviewing the low birthweight trends, the Capital Region showed higher rates than Upstate through 2013; when the Capital Region had slightly lower rates. While Upstate showed no difference in low birthweight between 2006-08 and 2013-15, the Capital Region's rate decreased 4%.



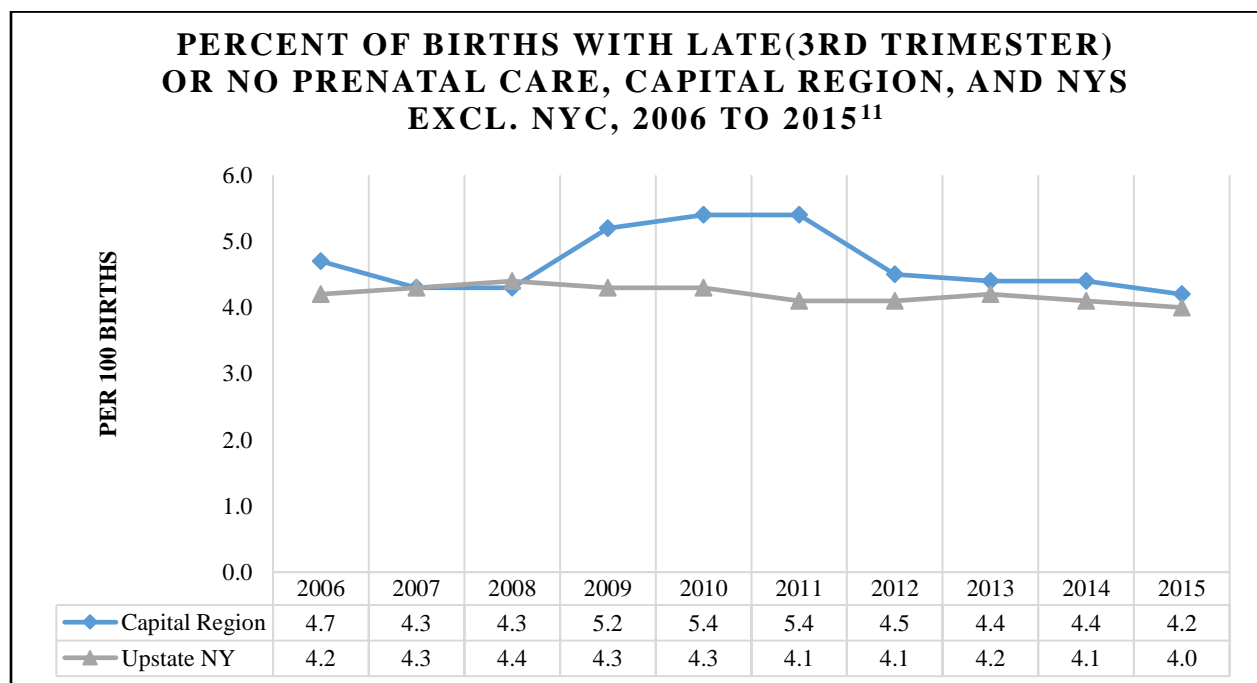
Except for one year, the Capital Region's prematurity rate was lower than Upstate. Both show decreasing trends with the Capital Region's rate of prematurity decreasing 3% from 2006-08 to 2013-15, and the Upstate rate decreasing 8%.



Capital Region prenatal care trends showed worsening rates early in the decade with improvement during the latter half. Upstate showed slight improvement over the decade. The Capital Region had better early prenatal care trends compared to Upstate during the early and latter parts of the decade. Both the Capital Region and Upstate early prenatal care rates showed a slight 2% increase from 2006-08 to 2013-15.



Since the early part of the decade, the Capital Region had poorer late or no prenatal care rates compared to Upstate. Both the Capital Region and Upstate late or no prenatal care rates showed a decrease from 2006-08 to 2013-15 (2% and 5%).



Maternal and Infant Health Data Summary

Birth Distribution Overview

The Capital Region averaged 9,700 births a year. Compared to Upstate NY, the Region had a similar percentage of births to teen mothers, but a smaller percentage of births for mothers 35+ years of age. It also had similar percentages of black non-Hispanic and other non-Hispanic births compared to Upstate, but a much lower percentage of Hispanic and Medicaid births.

- During 2013-15, the Capital Region averaged 9,700 births per year:
 - 4.5% of births were to women < 20 years of age and 17.9% to women 35+ years of age;
 - 10.3% of births were black non-Hispanic, 10.0% were or non-Hispanic, and 7.2% were Hispanic;
 - 35.6% were Medicaid births (*Appendix III, page 3*).
- The % Hispanic births in the Capital Region were much lower than Upstate NY (7.2% vs 17.1%) (*Appendix III, page 3*).
- Black non-Hispanic births ranged from 17.4% in Albany and 12.5 % in Schenectady to 0.9% in Saratoga (*Appendix III*).
- Hispanic births ranged from 10.2 % in Schenectady and 8.6% in Columbia to 2.8% in Greene (*Appendix III*).
- Births to women < 20 years of age ranged from 4.9% in Columbia to 2.9% in Saratoga (*Appendix III*).
- Births to women 35+ years of age ranged from 21.3% in Saratoga and 19.6% in Albany to 15.3 % in Rensselaer (*Appendix III*).
- The % Medicaid births ranged from 52.5% in Columbia and 48.2% in Greene to 21.1% in Saratoga (*Appendix III*).
- Most of the sub-county neighborhoods had significant increases in the % Medicaid/Self pay births between 2007-09 and 2012-14, probably due to increased enrollment of eligible women into Medicaid (*Appendix IV*).
- All counties had neighborhoods that fell into the 4th risk quartile in the Capital Region for Medicaid/Self pay births (*Appendix IV*).

Birth Outcomes Overview

Younger (< 18 yrs.) and older (35+ yrs.) mothers in the Capital Region are more likely to have poorer pregnancy outcomes. Black non-Hispanic births were twice as likely to be low birthweight and 1.5 times more likely to be premature than white non-Hispanic births. Hispanic birth outcomes were much closer to white non-Hispanic births. Capital Region Medicaid births had a slightly higher prematurity rate compared to non-Medicaid births. Surprisingly, four of the six counties had Medicaid births with lower prematurity rates.

- New York State had consistently better birth outcomes than the U.S. across all age and racial groups. Birth outcomes for Hispanic New Yorkers were similar to the US (*Appendix I*).
- During the last decade, Upstate NY has seen improvement in prematurity, low birthweight and infant mortality rates. (*Capital Region Trends, page 3 and 4; Appendix III page 4 and 5*).
- The Capital Region had lower prematurity (10.4 vs. 10.6%) and low birthweight (7.5% vs. 7.7%) rates than Upstate, but poorer infant mortality rates (5.9/1,000 vs. 5.2/1,000) (*Appendix III, page 7*).
- Five of the six Capital Region counties fell into the 3rd or 4th risk quartile for prematurity compared to all NYS counties. The prematurity rate ranged from 11.2% in Rensselaer to 9.1% in Saratoga (*Appendix II, page 4*).
- Three of the six Capital Region counties fell into the 3rd or 4th risk quartile for low birthweight. The low birthweight rate ranged from 7.9% in Albany and Schenectady to 6.4% in Saratoga (*Appendix II, page 5*).
- Four of the six Capital Region counties fell into the 4th risk quartile for infant mortality with a range from 8.8/1,000 in Schenectady and 7.7/1,000 in Columbia to Greene's infant mortality rate of 2.5/1,000 (*Appendix II, page 7*).
- With the exception of Saratoga, all counties had at least 2 neighborhoods that fell into the 4th risk quartile for the Capital Region for both % prematurity and % low birthweight (*Appendix IV*).
- Black non-Hispanic births in the Capital Region were twice as likely to be low birthweight (13.4% vs. 6.7%) and 1.5 times more likely to be premature (14.9% vs. 10.1%) than births to white non-Hispanic women (*Appendix II, pages 4 and 6*).
- Capital Region Hispanic births had rates much closer to the white non-Hispanic population: 3% lower prematurity rates (9.8% vs. 10.1%) and 9 % higher low birth weight rates (7.3% vs. 6.7%) (*Appendix II, pages 4 and 6*).
- Capital Region births to women < 18 years of age had an almost 40% higher low birthweight rate than the general population (10.3% vs. 7.5%); births to women 35+ years of age had an almost 20% higher rate compared to the general population (8.8% vs. 7.5%) (*Appendix II, page 6*).
- Births covered by Medicaid had a 6% higher prematurity rate than non-Medicaid births (10.9% vs. 10.3%). However, 4 of 6 counties had non-Medicaid births with the higher prematurity rates (*Appendix II, page 5*).

Prenatal Care Overview

Compared to Upstate, the Capital Region had slightly poorer late or no prenatal care rates. Black non-Hispanic and Hispanic women had over 140% and 80% higher late or no prenatal care rates than white non-Hispanic women, respectively. However, as maternal age increased, prenatal care rates improved.

- During the last decade, Upstate NY showed only slight improvement in the rates for early and late or no prenatal care (*Capital Region Trends, page 5; Appendix III page 5 and 6*).
- While the Capital Region births had a slightly better early prenatal care rate compared to Upstate (77.3% vs. 76.3%), they also had a slightly poorer late or no prenatal care rate (4.3% vs. 4.1%) (*Appendix II, pages 8 and 10*).
- Only 2 Capital Region counties fell into the 3rd risk quartile for early prenatal care: Columbia at 72.9% and Greene at 73.6%. Saratoga (79.5%) and Schenectady (79.1%) had the highest rates in the Region (*Appendix II, page 9*).
- Four of the 6 counties fell into the 3rd risk quartile for late or no prenatal care compared to all NYS counties. Albany, Columbia and Greene had the poorest rates (5.0%) while Saratoga had the lowest rate (3.1%) (*Appendix II, pages 10 and 11*).
- All Counties had at least one neighborhood that fell into the 4th risk quartile for late or no prenatal care for the Capital Region, from 7 neighborhoods in Albany to 1 neighborhood in Rensselaer (*Appendix IV*).
- As maternal age increased prenatal rates improved. Capital Region mothers <18 years of age had early prenatal care rates 35% lower than the general population (49.6% vs. 77.3%), and over 150% higher late or no prenatal care rates (10.8% vs. 4.3%). The 35+ year age group had the highest rate of early prenatal care (82.2%) and the lowest rate of late or no prenatal care (2.9%) (*Appendix II, pages 8 and 10*).
- Black non-Hispanic women had 20% lower early prenatal care rates (63.5% vs 79.5%), and over 140% higher late or no prenatal care rates (8.5% vs 3.5%) than white non-Hispanic women. Hispanic women had over 15% lower early prenatal care rates (67.0% vs. 79.5%), and 80% higher late or no prenatal care rates (6.3% vs 3.5%) (*Appendix II, pages 9 and 10*).

Data and Methods

This Health Equity Report on Maternal and Infant Health presents national, state, county, and neighborhood (Zip code aggregate) level information by health equity for birth outcomes and prenatal care. The Report takes a broad definition of equity that includes race/ethnicity, age and socioeconomic status (financial coverage at birth). The counties assessed in this Report include Albany, Columbia, Greene, Rensselaer, Saratoga and Schenectady. A series of county-specific maps, presenting data at the neighborhood (Zip code aggregate), is contained in the Appendix IV- Perinatal Profile Atlas.

National data sources included CDC/National Center for Health Statistics (NCHS) and the March of Dimes PeriStats. Sources of NY State and county data were from NYSDOH and included NYS Vital Statistics Annual Reports, the Prevention Agenda Dashboard; the Community Health Indicator Reports (CHIRS) and the County Health Indicators by Race/Ethnicity (CHIRE). The latest CHIRE data were from 2014. Sub-county Zip code data were taken from the New York State County/ZIP Code Perinatal Profiles. The latest Perinatal Profiles were from 2012-14.

The Zip Code neighborhood groupings used for the sub-county maps are available in the HCIDI 2016 Community Health Needs Assessment, pages 177-189 (http://www.hcdiny.org/content/sites/hcdi/2016_chna/2016_HCIDI_community_health_needs_assessment.pdf).

Definitions

Prematurity/Preterm- the number of infants born at less than 37 weeks gestation among infants with known gestational age. **(Note that in 2014, NCHS started using obstetric estimate (OE) for calculation prematurity. U.S. and NYS prematurity rates from NCHS, March of Dimes and HP 2020 use OE. NYSDOH still uses Last Menstrual Period (LMP) for prematurity calculations. LMP-based prematurity rates tend to be higher).**

Prematurity by Financial Coverage at Birth- The percentage of pre-term births by financial coverage is calculated for births whose primary payer is Medicaid or non-Medicaid.

Low Birthweight- The percentage of infants born less than 2,500 grams among infants with known birthweight.

Infant Mortality- The number of deaths among infants less than 1 year of age per 1,000 live births.

Early (1st Trimester) Prenatal Care- The percentage of births (excluding births without a known prenatal care start date) that began prenatal care within the first three months of pregnancy (1st trimester).

Late (3rd Trimester) or No Prenatal Care- The percentage of births (excluding births without a known prenatal care start date) that began prenatal care within the last three months of pregnancy (3rd trimester) or none at all.

Appendices

Appendix I- Federal and State Context

Appendix II- Indicator comparisons by Capital Region County, Capital Region, and New York State.

Appendix III- County-specific maternal and infant health indicator data.

Appendix IV- Perinatal Profile Atlas-indicator maps and data at the neighborhood (Zip code-aggregate) level.

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