

Measuring Birth Outcomes in New York State: A Multidimensional Approach at the County Level

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Presenter Disclosures


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No relationships to disclose

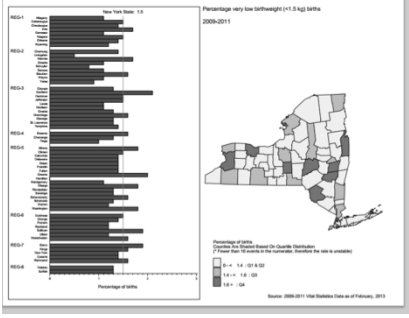
Introduction

- In 2011, there were 3.95 million births in the United States.
 - 8.1% were low birth weight (LBW)
 - 1.4% were very low birth weight (VLBW) (CDC, 2012)
- On an average day in the US,
 - 964 infants are born LBW
 - 173 infants are born VLBW (March of Dimes, 2010)
- In 2011, there were 239,736 births in New York
 - 19,417 babies were total LBW
 - 15,891 babies were Moderately LBW
 - 3,526 babies were VLBW
 - 1,697 babies were ELBW (NYSDOH, 2011)

New York Counties

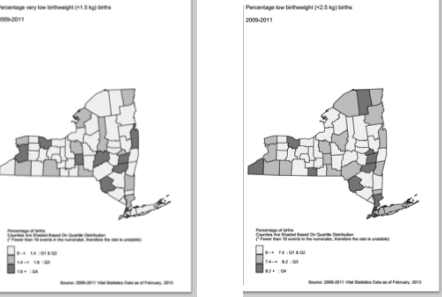


Percentage of VLBW, 2009-2011



<http://www.health.ny.gov/statistics/chac/birth/pdf/b34.pdf>

Comparison of % VLBW & LBW for 2009-2011 in NY Counties



Rationale

- Poorer birth outcomes remain a significant public health concern.
- Despite Medicaid’s comprehensive prenatal care, the introduction of the Affordable Care Act, and evolving models of prenatal care, birth outcomes in New York State (NYS) do not meet Healthy People 2020 objectives and differ significantly across counties.

Distribution of birth weight categories: New York, 2011

March of Dimes Peristats, 2014

- Healthy People 2020 calls for:
 - LBW rate of no more than 7.8%
 - NY State LBW rate for 2011 was 8.1%
 - VLBW rate of no more than 1.4%
 - NY State VLBW rate for 2011 was 1.5%

Purpose

- The purpose of this study is twofold:
 - To assess predictors of ELBW, VLBW, Moderately LBW, and LBW in NYS counties
 - To provide unique policy recommendations to tackle each category of poorer birth outcomes

Birth Outcomes & Contributing Factors

- Factors that add to the burdens of ELBW, VLBW, Moderately LBW, and LBW include:
 - Rural versus urban location
 - Maternal age (adolescents and advanced maternal age)
 - Ethnicity & race (Black population has highest)
 - Prenatal care (early and late)
 - Providers per county
 - Socioeconomic status (poverty, unemployment, income)
 - Marital status (out-of-wedlock)

Gaps in the Literature

- Many studies have examined individual factors that contribute to poorer birth outcomes, but they have not looked at policy related issues.
- The majority of studies have been conducted at the individual level.
- There are no studies that have evaluated multidimensional approaches to measuring categories of lower birth weight for all counties in NY with the purpose of elucidating unique differences at the county level that lead to policy recommendations.

Methodology

- Design and Sample:
 - Ex post facto analysis of a secondary data set utilizing a descriptive correlational design.
- Data set and Data Sources:
 - Data were obtained at the county level for all 62 counties in NY using public domain websites:
 - New York State Department of Health
 - US Census Bureau
 - New York State Education Department
 - US Department of Labor
 - USDA Economic Research Service

Outcome Variables

- For NY counties, analyses were conducted to compare the explanations of a portion of the variation in the following outcome variables:
 - % ELBW (less than 1,000 grams at birth)
 - % VLBW (less than 1,500 grams at birth)
 - % Moderately LBW (1,500-2,499 grams at birth)
 - % LBW (less than 2,500 grams at birth)

Predictors

- Variables from the data set were grouped theoretically into:
 - Demographic predictors:
 - Location
 - % of out-of-wedlock live births
 - teen pregnancy rate per 1,000, 2011
 - advanced maternal age birth rate

Predictors

- Socioeconomic predictors:
 - rate of unemployment by thousands as of August, 2009
 - % Medicaid / Family Health Plus births
 - % poverty for all ages
- Health service predictors:
 - % early prenatal care, 2011
 - % late prenatal care, 2011
 - Medicaid Obstetrical Maternal Services (MOMs) providers per county

Predicted Direction of Variables:

- Those counties in NY that are:
 - more rural
 - have a higher percentage of out-of-wedlock births
 - have higher teen pregnancy rates
 - have higher advanced maternal age birth rates
 - have higher rates of unemployment
 - have higher percentage of Medicaid/FHP births
 - have higher percentage of poverty
 - have higher percentages of early or late prenatal care
 - have fewer MOMs offices per county

will have higher rates of ELBW
VLBW
Moderately LBW
LBW

Analysis

- Multiple Regression analyses were conducted for each of the outcome variables.
- Due to the risk of multicollinearity, % births with Medicaid/Family Health Plus coverage and % poverty were eliminated from the analysis.

Multiple Regression Findings

Predictors	Outcome Variables			
	%ELBW	%VLBW	%Mod LBW	%LBW
	Adj. R ² = .122**	Adj. R ² = .096**	Adj. R ² = .227**	Adj. R ² = .231**
Location	√*	√**	-	√
% out-of-wedlock	√*	√	√**	√**
Teen pregnancy rate	√	√	√**	√
Advanced maternal age birth rate	-	-	√**	√
Unemployment rate	√	√	-	-
% early prenatal care	√**	√	√	√*
% late prenatal care	√**	√**	√**	√**
MOMs providers	-**	-**	-	-**

Note. - = relationship not in expected direction
 -** = relationship significant at p≤.05, not in expected direction
 -* = relationship significant at p≤.10, not in expected direction
 √ = relationship in expected direction
 √** = relationship significant at p≤.05, in expected direction
 √* = relationship significant at p≤.10, in expected direction

Common Predictors

- % late prenatal care was a statistically significant predictor of all four birth weight categories
- % out-of-wedlock live births was a statistically significant predictor of ELBW, Moderately LBW, and LBW
- MOMs offices was a statistically significant predictor of ELBW, VLBW, and LBW but did not go in the expected direction.

Policy Recommendations:

- Since prenatal care was a significant predictor of all four categories, it is important for NYS counties to support:
 - Medicaid/Family Health Plus coverage for all people who qualify, whether unemployed or working
 - Title II of the Affordable Care Act (ACA) simplified enrollment into Medicaid and preserved the Child Health Insurance program that provides insurance for uninsured children and teens.
 - The ACA also covers preventive services for pregnant women that include screenings, breastfeeding support, and tobacco cessation counseling.

Policy Recommendations

- Percentage of out-of-wedlock live births includes mothers of all ages ranges. Since it was a significant predictor of 3 of the birth weight categories, it is important to maintain programs that include counseling and support for this population. Important programs to maintain include:
 - School-based health clinics
 - Pre-conception counseling for females of all ages
 - Community education programs

Policy Recommendations

- MOMs provider offices did not go in the expected direction for ELBW, VLBW, and LBW, indicating that counties with fewer MOMs offices have better birth outcomes.
- A positive policy decision supports the need for incentive programs and funding opportunities that encourage more MOMs offices and providers.
 - The ACA set guidelines for calculating the monthly income that a family needs in order to qualify for Medicaid coverage.
 - As of July, 2014, a pregnant female with a family of 4 and a monthly income of \$4,333 qualifies for Medicaid eligibility. This allows more pregnant women to receive comprehensive prenatal, antenatal, and postnatal care

Unique Predictors

- Location and % early prenatal care were significant predictors of ELBW and LBW, however % early prenatal care was weakly correlated with these outcomes.
- % advanced maternal age and teen pregnancy rate were significant predictors of Moderately LBW.

Policy Recommendations

- Location was analyzed using the RUCC codes. It was a significant predictor of the lower categories of birth weight, indicating that the more rural the county, the higher the % of ELBW and VLBW. Regional centers for this population of neonate are located in urban areas. This supports the need for:
 - More OB/GYNs, NPs, MOMs providers, and Midwives in rural and underserved areas so that both adequate prenatal care and referral to specialists is provided as needed.
 - Incentive programs and grants for providers that encourage them to work in rural areas.

Policy Recommendations

- Advanced maternal age was weakly correlated with ELBW and VLBW, but was a significant predictor of Moderately LBW.
 - From a policy perspective, support for women of advanced maternal age makes sense for all birth weight categories, allowing them to receive the needed comprehensive care that a pregnant woman of any age would receive.

Policy Recommendations

- Teen pregnancy rate was a significant predictor of Moderately LBW. As a unique predictor for this category, the following programs are important for NY counties.
 - School-based clinics
 - Education about pregnancy prevention, provision of comprehensive prenatal care, and facilitate higher rates of high school graduation
 - Women, Infant, & Children
 - Nutritionally based care during pregnancy and post-partum periods
 - CHIP
 - Parenting classes and prenatal care through group settings

Conclusion

- Even though in NYS significant efforts are being put into counties that have problematic birth weight issues, our analyses highlighted additional areas that need attention beyond providers.
- In addition to increasing providers, it is important to implement and maintain programs for teen pregnancy, programs that support pregnant women of all ages and marital status, and programs that provide comprehensive prenatal care in both rural and urban counties.

THANK YOU

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