

Preliminary Analyses of Birth Outcomes Community Health Profile Pompton Lakes, New Jersey

Presented to Pompton Lakes Health CAG
May 18, 2011

A. Low Birth Weight

Low birth weight (LBW) is defined as a baby's weight at birth of less than 2,500 grams (about 5.5 pounds). In New Jersey, the average birth weight among full term, singleton infants is around 3,400 grams, or about 7.5 pounds.

LBW infants are at greater risk of dying in the first month of life. LBW infants may require intensive care at birth and are at higher risk of developmental disabilities and chronic illnesses throughout life. They are more likely to require special education services. Health care costs and length of hospital stay are higher for LBW infants.

There are many health, behavioral, and environmental factors known to increase the risk of LBW. In New Jersey, the LBW rate varies widely across the state and by several maternal and infant characteristics. The rate among blacks is more than double the rate among whites. The rate is highest for infants born to the youngest and the oldest mothers. Infants whose mothers used tobacco during pregnancy are twice as likely to have LBW, and those whose mothers receive no prenatal care are more than three times more likely to have LBW than those whose mothers receive prenatal care. The LBW rate among female babies is higher than the rate among males. Exposure to certain chemicals in the work place or environment (in air, drinking water, food, or consumer products) may affect fetal development and increase the risk of LBW.

The overall proportion of LBW babies is slowly increasing because the number of multiple births is increasing. Virtually all triplet infants are born with LBW as are half of twins. The percentage of full term, singleton infants with low birth weight has been steady at about 2% among New Jersey residents.

Methods

The NJDHSS compiles birth records that are filed electronically by hospitals. NJDHSS makes birth record data available to the public through the NJ State Health Assessment Data (NJ SHAD) web-based query system. The birth certificate is the source document for data included in the birth query. The data included in the query are for New Jersey residents regardless of where the birth occurred.

Using NJ SHAD, NJDHSS calculated LBW proportions (rates of LBW prevalence at birth and 95% confidence intervals) among all live births for the town of Pompton Lakes, the six surrounding municipalities combined (Oakland Borough, Pequannock

Township, Riverdale Borough, Bloomingdale Borough, Wanaque Borough, and Wayne Township), and the State of New Jersey, in the period 2000-2007. NJDHSS also computed prevalence rate ratios comparing LBW proportions relative to the State.

Birth weight is strongly affected by multiple births (twins, triplets, etc.) and by prematurity. There is considerable overlap between these factors, since multiple births are often born prematurely. To remove the effect of multiple births and prematurity on comparisons, these analyses were repeated with a data set restricted only to singleton births brought to full term (gestation of 37 weeks or more).

Results for LBW

All Births, 2000 through 2007

Over the 8-year period from 2000 through 2007, the LBW proportion in Pompton Lakes was 7.3%, with a 95% confidence interval of 5.9% to 8.9%. This prevalence rate was similar to the six surrounding towns (7.4%, 95% CI 6.8% to 8.0%), and was lower than in the State (7.9%) over the same time period (see Table 1).

Table 1. Low birth weight proportions among all live births in Pompton Lakes, the six surrounding municipalities, and the State of New Jersey, 2000-2007.

| Population | Number Low Birth Weight Babies | Number of Live Births | Percent Low Birth Weight Babies | 95% Confidence Interval | LBW Rate Ratio vs. State |
|-----------------------|--------------------------------|-----------------------|---------------------------------|-------------------------|--------------------------|
| Pompton Lakes Borough | 86 | 1,183 | 7.3% | 5.9%, 8.9% | 0.92 |
| Six Surrounding Towns | 658 | 8,924 | 7.4% | 6.8%, 8.0% | 0.94 |
| State of New Jersey | 72,995 | 921,456 | 7.9% | 7.9%, 8.0% | -- |

Data source: The New Jersey Birth Certificate Database through NJ SHAD, the New Jersey Department of Health and Senior Service's public web-based data query system (www.nj.gov/health/shad).

In Pompton Lakes during this time period, the proportion of LBW babies was 4.6% among singletons, and 58% among twins. Similarly the LBW proportion among term births was 2.0%, and 56% among premature births.

Singleton Births Brought to Term, 2000 through 2007

From 2000 through 2007, the LBW proportion in Pompton Lakes among singleton, full term babies was 1.3%, which was similar to the prevalence rate in the six surrounding towns (1.5%). Both rates were lower than in the State (2.1%) over the same time period (see Table 2).

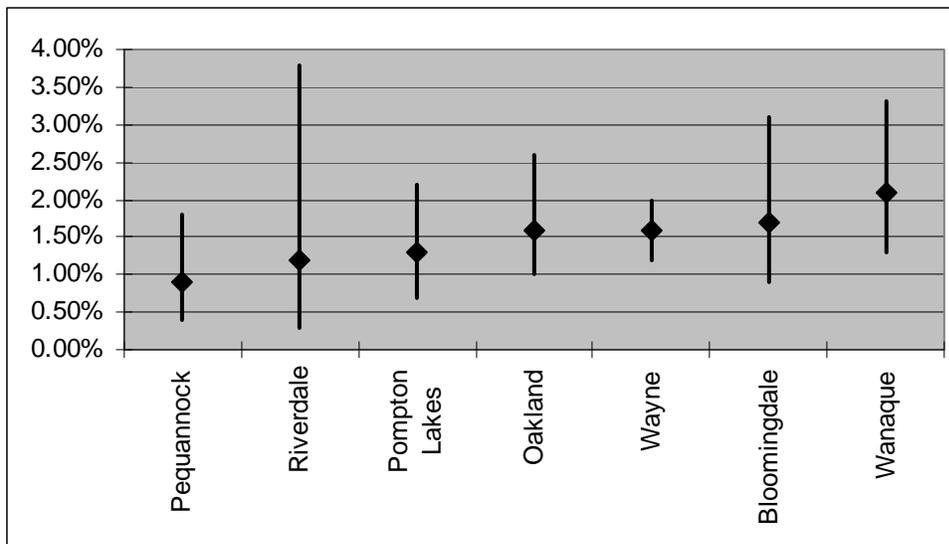
Table 2. Low birth weight proportions among singleton, full term (gestation 37 weeks or more) live births in Pompton Lakes, the six surrounding municipalities, and the State of New Jersey, 2000-2007.

| Population | Number Low Birth Weight Babies | Number of Live Births | Percent Low Birth Weight Babies | 95% Confidence Interval | LBW Rate Ratio vs. State |
|-----------------------|--------------------------------|-----------------------|---------------------------------|-------------------------|--------------------------|
| Pompton Lakes Borough | 13 | 1,011 | 1.3% | 0.7%, 2.2% | 0.62 |
| Six Surrounding Towns | 118 | 7,626 | 1.5% | 1.3%, 1.9% | 0.71 |
| State of New Jersey | 16,010 | 767,595 | 2.1% | 2.0%, 2.1% | -- |

Data source: The New Jersey Birth Certificate Database through NJ SHAD, the New Jersey Department of Health and Senior Service's public web-based data query system (www.nj.gov/health/shad).

Figure 1 shows the LBW proportion and 95% confidence intervals among singleton, term births in Pompton Lakes in comparison to each of the six surrounding municipalities.

Figure 1. Low birth weight proportions and 95% confidence intervals among singleton, full term (gestation 37 weeks or more) live births in Pompton Lakes and the six surrounding municipalities, 2000-2007.



Data source: The New Jersey Birth Certificate Database through NJ SHAD, the New Jersey Department of Health and Senior Service's public web-based data query system (www.nj.gov/health/shad).

B. Prematurity

An infant is considered premature when born prior to 37 weeks of pregnancy. Most pregnancies last around 40 weeks; an infant is considered to have been brought to full term at 37 weeks of gestation or after. Infants from multiple births (twins, triplets, etc.), are more likely to be born premature.

Infants born prematurely are at greater risk of dying. Premature infants may require intensive care at birth and are at higher risk of developmental disabilities and chronic illnesses throughout life, and are more likely to require special education services. Health care costs and length of hospital stay are higher for premature infants.

There are many health, behavioral, and environmental factors known to increase the risk of prematurity. The rate among blacks is double the rate among whites. The rate is highest among the oldest and the youngest mothers. Infants whose mothers used tobacco during pregnancy are more likely to be born premature. Those infants whose mothers receive no prenatal care are about four times as likely to be born premature than those whose mothers receive prenatal care. Exposure to certain chemicals in the work place or environment (in air, drinking water, food, or consumer products) may affect fetal development and increase the risk of prematurity.

The overall proportion of premature babies is slowly increasing because the number of multiple births is increasing. In New Jersey, the proportion of prematurity among singleton infants has been steady at about 8%.

Methods

The NJDHSS compiles birth records that are filed electronically by hospitals. NJDHSS makes birth record data available to the public through the NJ State Health Assessment Data (NJ SHAD) web-based query system. The birth certificate is the source document for data included in the birth query. The data included in the query are for New Jersey residents regardless of where the birth occurred.

Using NJ SHAD, NJDHSS calculated prematurity proportions (and 95% confidence intervals) among all live births for the town of Pompton Lakes, the six surrounding municipalities combined (Oakland Borough, Pequannock Township, Riverdale Borough, Bloomingdale Borough, Wanaque Borough, and Wayne Township), and the State of New Jersey, in the period 2000-2007. NJDHSS also computed prematurity rate ratios comparing proportions relative to the State.

Since prematurity is strongly affected by multiple births (twins, triplets, etc.), these analyses were repeated with a data set restricted only to singleton births.

Results for Prematurity

All Births, 2000 through 2007

Over the 8-year period from 2000 through 2007, the prematurity proportion in Pompton Lakes was 10.0% (95% CI 8.4% to 11.9%). This prevalence rate was similar to the six surrounding towns (9.7%, 95% CI 9.0% to 10.3%) and the State (9.9%) over the same time period (see Table 3).

Table 3. Premature birth proportions among all live births in Pompton Lakes, the six surrounding municipalities, and the State of New Jersey, 2000-2007.

| Population | Number of Premature Babies | Number of Live Births | Percent Premature Babies | 95% Confidence Interval | Prematurity Rate Ratio vs. State |
|-----------------------|----------------------------|-----------------------|--------------------------|-------------------------|----------------------------------|
| Pompton Lakes Borough | 118 | 1,183 | 10.0% | 8.4%, 11.9% | 1.01 |
| Six Surrounding Towns | 864 | 8,924 | 9.7% | 9.0%, 10.3% | 0.98 |
| State of New Jersey | 91,243 | 921,426 | 9.9% | 9.8%, 10.0% | -- |

Data source: The New Jersey Birth Certificate Database through NJ SHAD, the New Jersey Department of Health and Senior Service's public web-based data query system (www.nj.gov/health/shad).

Singleton Births, 2000 through 2007

From 2000 through 2007, the prematurity proportion in Pompton Lakes among singleton babies was 7.5%, which was higher than the prevalence rate in the six surrounding towns (6.6%), and a little lower than in the State (7.9%) over the same time period (see Table 4).

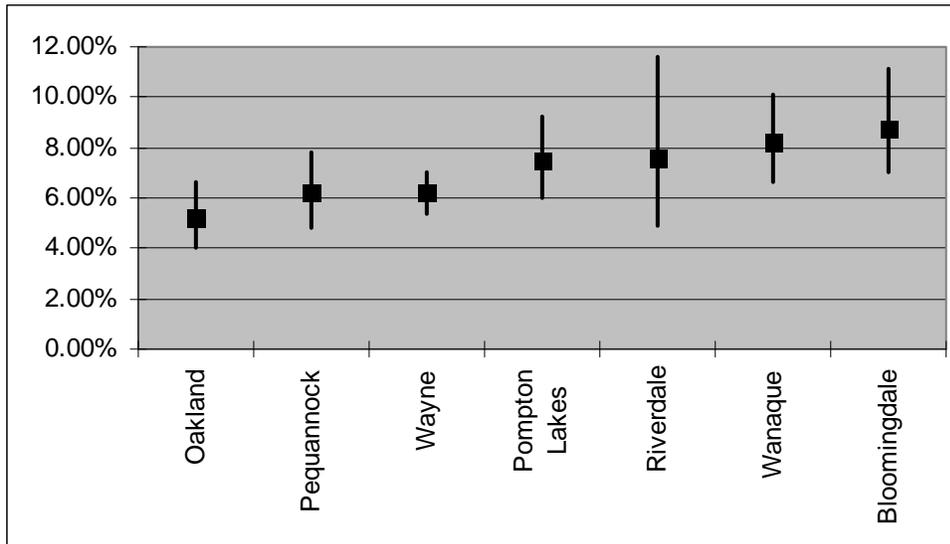
Table 4. Premature birth proportions among singleton live births in Pompton Lakes, the six surrounding municipalities, and the State of New Jersey, 2000-2007.

| Population | Number Premature Babies | Number of Live Births | Percent Premature Babies | 95% Confidence Interval | Prematurity Rate Ratio vs. State |
|-----------------------|-------------------------|-----------------------|--------------------------|-------------------------|----------------------------------|
| Pompton Lakes Borough | 84 | 1,121 | 7.5% | 6.0%, 9.2% | 0.95 |
| Six Surrounding Towns | 550 | 8,380 | 6.6% | 6.0%, 7.1% | 0.84 |
| State of New Jersey | 69,463 | 881,484 | 7.9% | 7.8%, 7.9% | -- |

Data source: The New Jersey Birth Certificate Database through NJ SHAD, the New Jersey Department of Health and Senior Service's public web-based data query system (www.nj.gov/health/shad).

Figure 2 shows the prematurity proportion and 95% confidence intervals among singleton births in Pompton Lakes in comparison to each of the six surrounding municipalities.

Figure 2. Premature birth proportions and 95% confidence intervals among singleton live births in Pompton Lakes and the six surrounding municipalities, 2000-2007.



Data source: The New Jersey Birth Certificate Database through NJ SHAD, the New Jersey Department of Health and Senior Service's public web-based data query system (www.nj.gov/health/shad).