PERINTAL PERIODS OF RISK (PPOR) ANALYSIS

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INTRODUCTION

The Perinatal Periods of Risk (PPOR) approach was originally developed by Dr. Brian McCarthy and his colleagues at the WHO Perinatal Collaborative Center. The intent was to develop a simple method based on a strong conceptual framework that could be used to mobilize a community to prioritize prevention efforts relevant to feto-infant mortality reduction. One group that has considerably assisted in this goal is CityMatCH, a CDC-supported national membership organization of diverse health departments' maternal and child health (MCH) programs nationwide.

PPOR has five major consecutive steps: 1) engage community partners, 2) map feto-infant mortality, 3) focus on reducing the overall feto-infant mortality rate, 4) examine potential opportunity gaps, and 5) target further investigations and prevention efforts. This report outlines the second PPOR step: mapping feto-infant mortality. This map (shown at the bottom of **FIGURE 1**) essentially has two dimensions: age at death and weight at time of delivery. The three categories for age at death start with fetal deaths (starting at 24 weeks of gestation), continue with neonatal deaths (first 27 days of life), and end with postneonatal deaths (28 days to 365 days of life). These time periods are associated with different causes of death. Weight at time of delivery can be divided into two birth-weight categories: those less than 1500 grams (very low birth-weight or "VLBW") and those 1500 grams or more. Combining these two dimensions provides a two-by-three matrix of six cells, three of which are eventually combined into one category. This results in four distinct feto-infant mortality groups for analysis.

To complete this part of the overall PPOR assessment, two protocols – "Phase I" and "Phase II" – need to be performed. Phase I centers on identifying both the populations and periods of risk with the largest "excess" mortality. This excess mortality refers to the difference in feto-infant mortality rates within a particular target group – for example, Black Non-Hispanic women living in Delaware – as compared to a reference group – specifically, White Non-Hispanic women living in Delaware who are at least 20 years of age and have at least 13 years of education. Phase II involves performing a systematic set of statistical analyses on health indicators relevant to preconception and prenatal care for both the reference group and the particular target group identified in Phase I. Overall, the second phase of the PPOR analysis focuses on explaining why the excess mortality occurred between the two groups.

CityMatCH has a thorough website detailing the PPOR process, supplying PPOR success stories, and offering training on conducting a PPOR assessment.[1] The procedures practiced in this report were drawn from this website.

METHODOLOGY

PPOR PHASE I

FIGURE 1 and **FIGURE 2** provide the conceptual framework for the PPOR Phase I calculation of the target groups and reference group, respectively. The methods below refer to the calculation for the target groups but can also be applied to the reference group with some exceptions (see subsection *Reference Group Calculation*). Unless otherwise noted, all tables cited are located in the APPENDIX.

Baseline Data Tables

To generate a table of live births for the target groups (**TABLE A0$_1$**), only data entries (i.e., births) that met the following criteria were extracted from the Delaware Birth Cohort Dataset:

1. Birth took place in the State of Delaware (field *countyr* "is 1 or 3 or 5").
2. Birth during the period between 2000 and 2005 (field *byear* "between 2000 and 2005").
3. Race of the mother is White or Black (field *detracem* "is 1 or 2").
4. Ethnicity of the mother is not Hispanic (field *hispanma* "is 0").
5. Birth-weight is greater than or equal to 500 grams (field *gramsx* "between 500 and 9998").

Using data from the Delaware Fetal Death Registry, only data entries (i.e., fetal deaths) that met the following criteria were extracted to create a table of fetal deaths (**TABLE A1**) for the target groups:

1. Fetal death took place in the State of Delaware (field *county* "is 1 or 3 or 5").
2. Death during the period between 2000 and 2005 (field *year* "between 2000 and 2005").
3. Race of the mother is White or Black (field *mom_race* "is 1 or 2").
4. Ethnicity of the mother is not Hispanic (field *hispanic* "is 0").
5. Weight of the fetus is greater than or equal to 500 grams (field *grams* "between 500 and 9998").
6. Fetal age at death greater than or equal to 24 weeks (field *gest* "is 2 or 3 or 4").

To determine infant deaths for the target groups, the data element of infant death (field *dage*) was applied to the table of live births to generate two tables: neonatal deaths (field *dage* "between 1 and 27") as provided in **TABLE A2** and postneonatal deaths (field *dage* "between 28 and 365") as given in **TABLE A3**. The denominator table (**TABLE A0$_2$**) for the target groups was then calculated by adding the table of live births (**TABLE A0$_1$**) and the table of fetal deaths (**TABLE A1**).

For each table, data was sorted by race/ethnicity (White Non-Hispanic and Black Non-Hispanic) and by weight at the time of delivery (between 500 and 1499 grams and greater than or equal to 1500 grams). This resulted in three target groups: White Non-Hispanics, Black Non-Hispanics, and Total (the combination of the two race/ethnicity groups).

Five-Year Tables

PPOR stipulates a minimum of 10 feto-infant deaths in each of the final cells to be used in the analysis. Because several cells in the data tables above did not meet this criterion, the data in each table was amassed into blocks of five years, the maximum number of years with which data could be aggregated in PPOR analysis. This resulted in **TABLE B0** created from **TABLE A0$_2$**; in **TABLE B1** from **TABLE A1**; in **TABLE B2** from **TABLE A2**; and **TABLE B3** from **TABLE A3**.

Calculation of Rates

Each of the five-year tables for the target groups (**TABLE B1**, **TABLE B2**, and **TABLE B3**) was then divided by the five-year denominator for the particular target group (**TABLE B0**) to construct mortality rates for each feto-infant category. This resulted in five-year fetal mortality rates (**TABLE C1**), five-year neonatal mortality rates (**TABLE C2**), and five-year postneonatal mortality rates (**TABLE C3**).

PPOR Model Construction

The rates from **TABLE C1**, **TABLE C2**, and **TABLE C3** were then aligned with the respective feto-infant and weight category in the PPOR model. The sum of the fetal mortality rates, neonatal mortality rates, and postneonatal mortality rates for feto-infant deaths between 500 and 1499 grams was taken to construct the comprehensive Maternal Health/Prematurity category.

In developing this PPOR model, rates from only the most recent five-year time frame (years 2001 to 2005) were chosen. A previous investigation by Kroelinger found that the PPOR models for Delaware did not significantly differ between 1998 and 2005.[2] Accordingly, the decision to use this specific time frame was considered reasonable.

The PPOR model for the target groups and reference group for the State of Delaware are given in **TABLE G1**; the PPOR models for the target groups and reference group in Kent County, New Castle County, and Sussex County are provided in **TABLE G2**, **TABLE G3**, and **TABLE G4**, respectively. The number in the bottom right corner of each PPOR model is the sum of the mortality rate for each feto-infant category. This number corresponds to the infant mortality rate.

Reference Group Calculation

The calculation for the reference group generally parallels that of the target groups. As noted earlier, however, some minor exceptions exist between the target and reference group methodology. In addition to the data criteria applied to **TABLE A0$_1$** , the live birth table for the reference group (**TABLE D0$_1$**) and infant death tables for the reference group (**TABLE D2** and **TABLE D3**) also feature the following conditions:

1. Race of the mother is White only (field *detracem* "is 1").
2. Age of the mother is greater than or equal to 20 years (field *magex* "is ≥ 20 years").
3. Education of the mother is greater than or equal to 13 years (field *momsed* "is 4 or 5").

These three criteria also apply to the table of fetal deaths for the reference group (**TABLE D1**) which, with exception of the modification of the mother's race above, also has the same conditions as the table of fetal deaths for the target groups (**TABLE A1**).

Finally, although the reference group data is partitioned by weight at the time of delivery, it is not separated by race/ethnicity since the reference group is set as being White Non-Hispanic only.

As shown in **FIGURE** and displayed in **TABLE G1**, **TABLE G2**, **TABLE G3**, and **TABLE G4**, the rates of the reference group were subtracted from the rates of the target groups to obtain the excess rates. These excess rates were then multiplied by the target group denominator (**TABLE E0**) to derive the number of excess deaths in the target groups. The excess deaths for the State of Delaware are provided in **TABLE H1**; the excess deaths for Kent County, New Castle County, and Sussex County are displayed in **TABLE H2**, **TABLE H3**, and **TABLE H4**, respectively. The number in the bottom right corner of each PPOR model is the sum of the excess deaths for each feto-infant category.

FIGURE 1: PPOR Phase I Methodology, PPOR Calculation

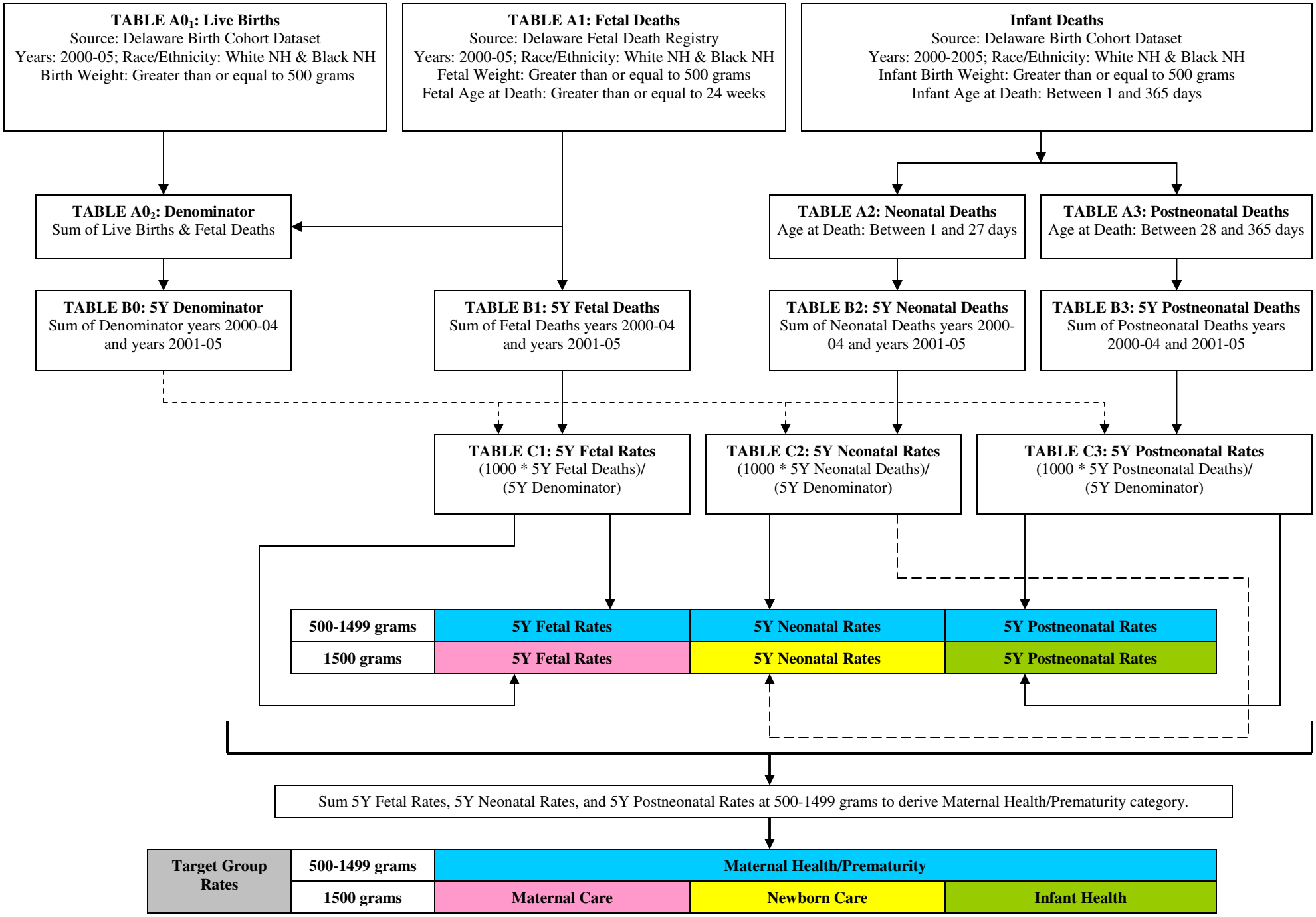


FIGURE 2: PPOR Phase I Methodology, Reference Group Calculation

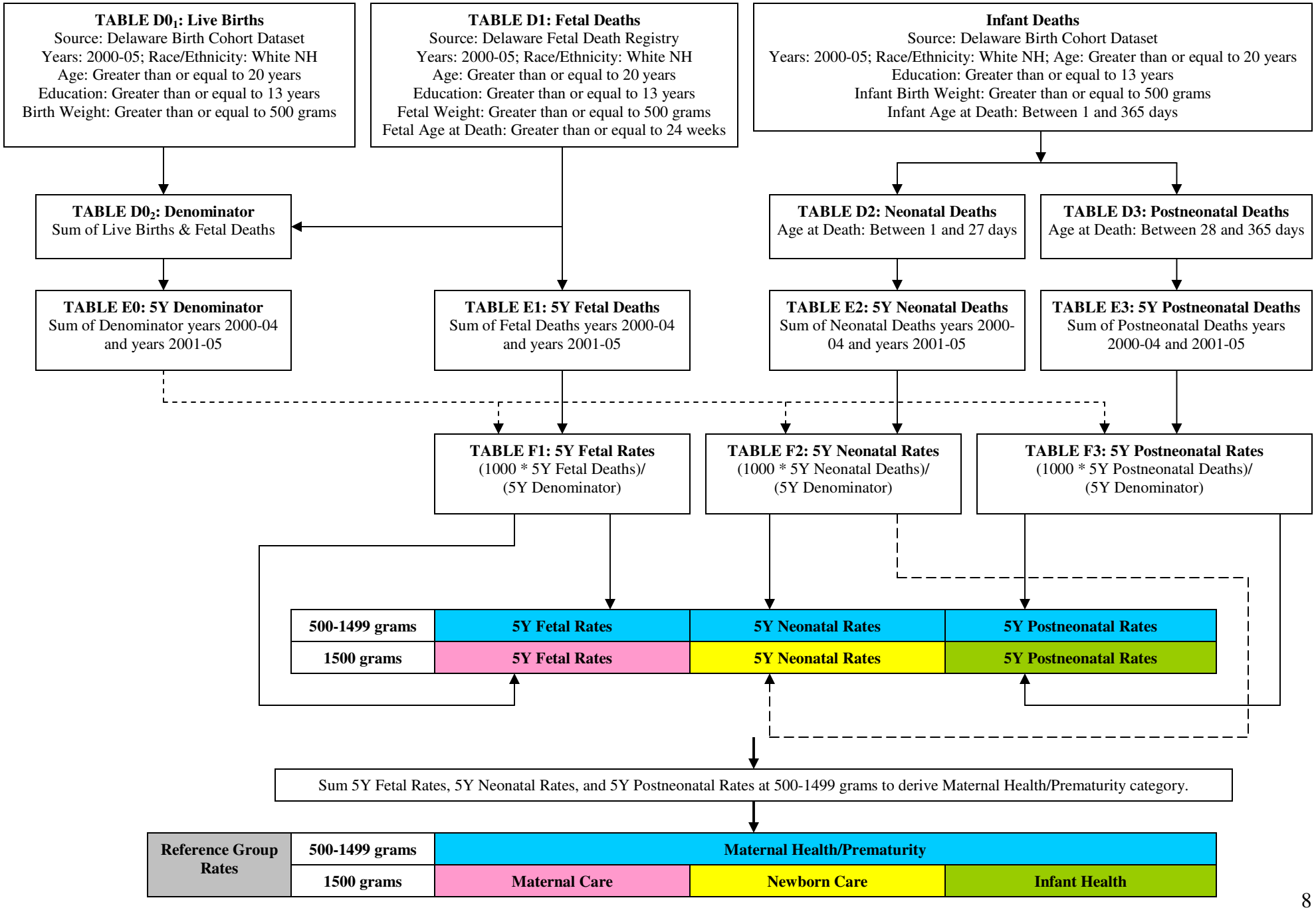
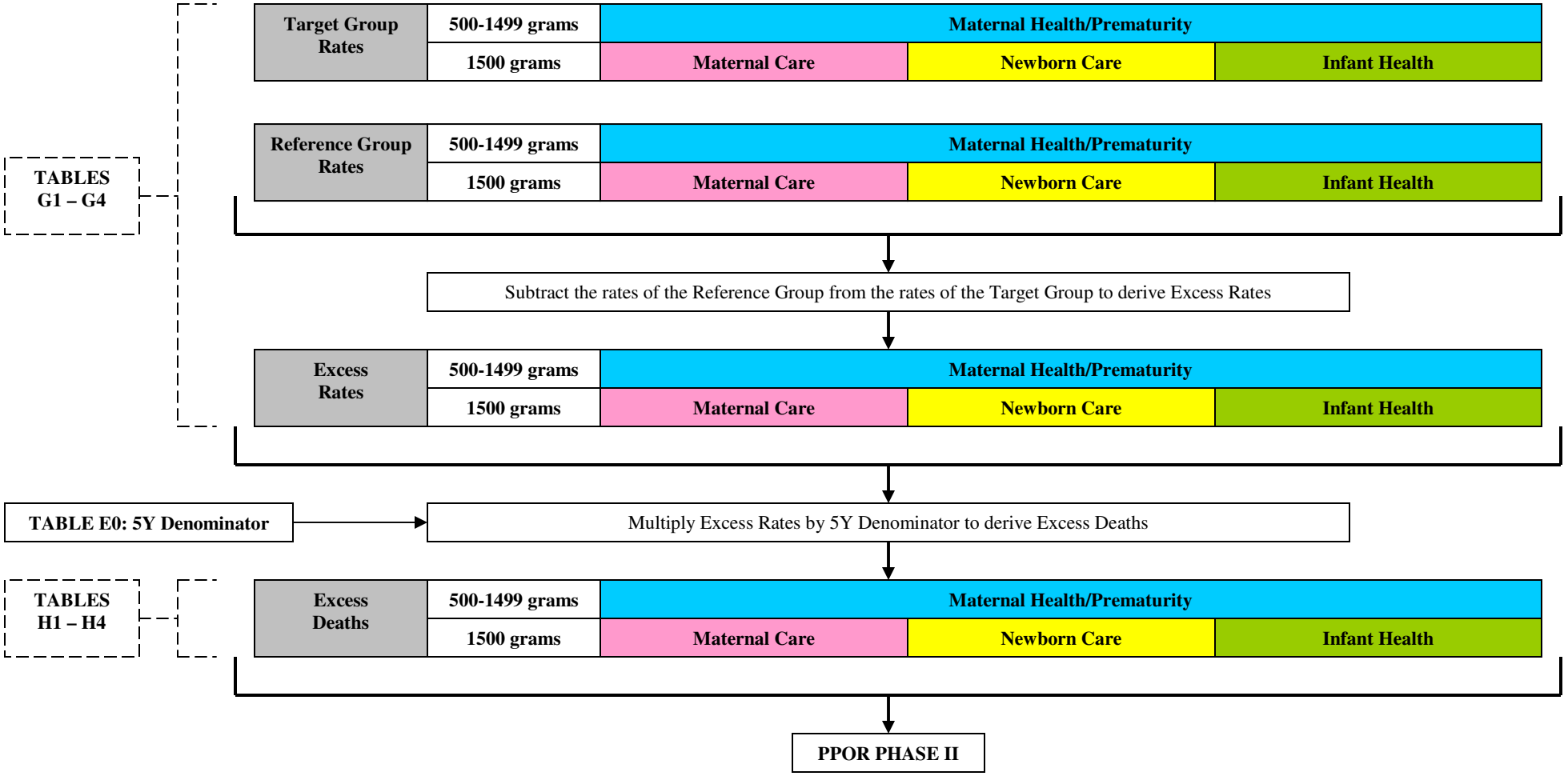


FIGURE 3: PPOR Phase I Methodology, Excess Deaths Calculation



PPOR PHASE II

FIGURE 4 provides the method used to conduct the second phase of the PPOR analysis.*

Choosing Feto-Infant Categories for Investigation

FIGURE 5 displays the percent breakdown of excess deaths for each of the feto-infant categories using data from **TABLE H1**.

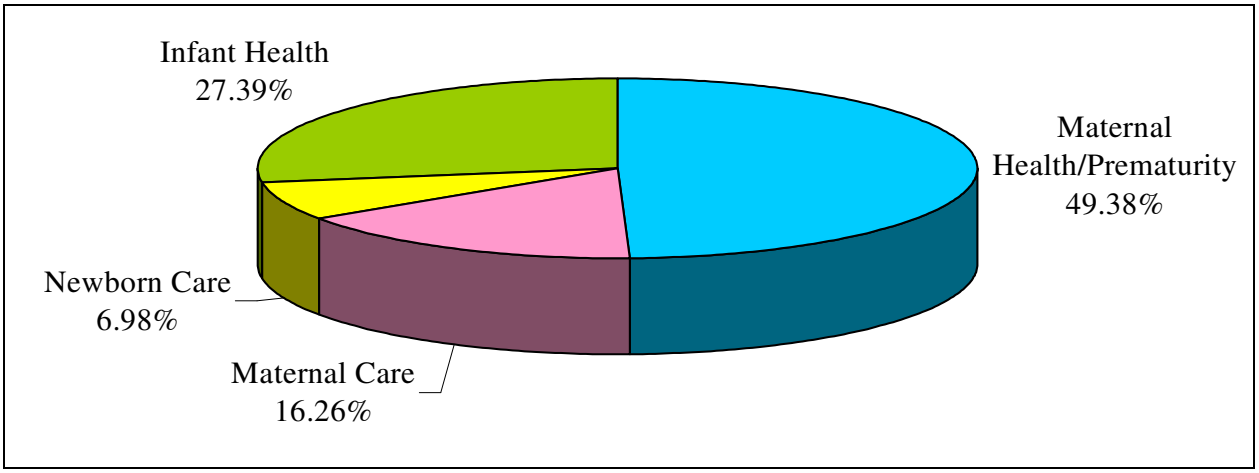


FIGURE 5: Contribution of Each Feto-Infant Category to Excess Deaths, Delaware

Given these percentages, the Maternal Health/Prematurity and Infant Health feto-infant categories were further inspected since together they provided the largest number of excess deaths (76.77%).

Choosing Race/Ethnicity for Investigation

For both the Maternal Health/Prematurity and Infant Health categories, the race/ethnicity category that significantly resulted in more excess deaths was then determined. As shown in **TABLE I**, the outcome of a chi-square test indicated that the excess deaths for the Maternal Health/Prematurity category for Black Non-Hispanics were significantly higher than the excess deaths for White Non-Hispanics.

Delaware	**Excess Deaths**	**Remaining Deaths**†
Black Non-Hispanic	60	33
White Non-Hispanic	25	78
Statistics	$\chi^2 = 32.229$, $p < 0.0001$	

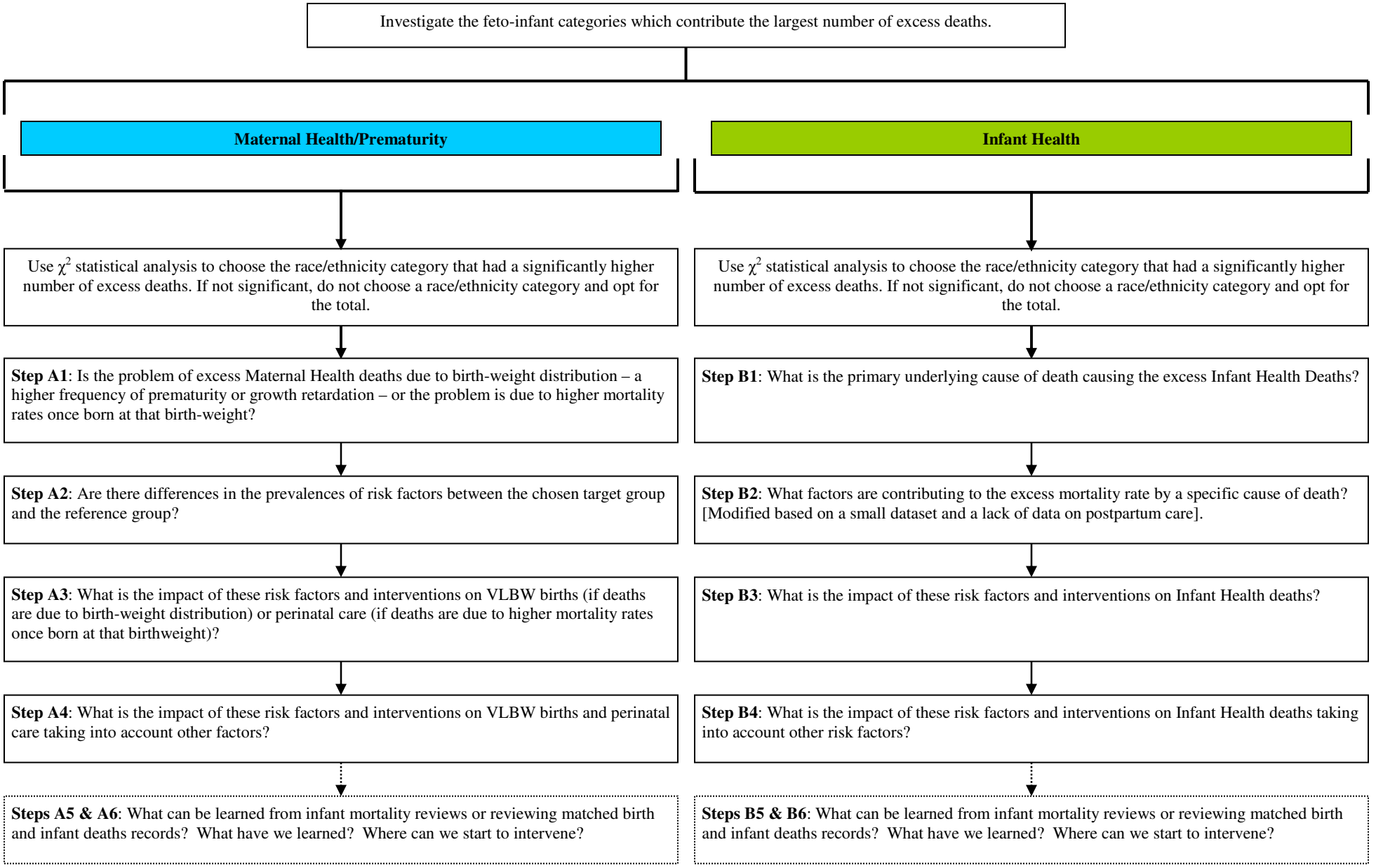
TABLE I: Maternal Health/Prematurity Excess Deaths vs Remaining Deaths by Race/Ethnicity

As indicated in **TABLE J**, the results of a chi-square test demonstrated that the excess deaths for the Infant Health category for Black Non-Hispanics were significantly higher than the excess deaths for White Non-Hispanics.

* For PPOR Phase II in this report, only the State of Delaware (rather than each of the three counties) was investigated. ***Steps A5 & A6*** and ***Steps B5 & B6*** are not discussed in this report.

† Remaining Deaths are calculated by adding five-year fetal deaths, five-year neonatal deaths, and five-year postneonatal deaths and subtracting the excess deaths.

FIGURE 4: PPOR Phase II Methodology



Delaware	Excess Deaths	Remaining Deaths[†]
Black Non-Hispanic	27	13
White Non-Hispanic	20	30
Statistics	$\chi^2 = 6.736$, $p < 0.0095$	

TABLE J: Infant Health Excess Deaths vs Remaining Deaths by Race/Ethnicity

Based on these results, it was decided that the Black Non-Hispanic population would be the particular target group investigated to uncover the cause of the excess deaths for both the Maternal Health/Prematurity and Infant Health categories.

Maternal Health/Prematurity Investigation

The step-by-step analytic methods for the Maternal Health/Prematurity borrow heavily from the excess maternal/prematurity deaths protocol provided by CityMatCH.[1]

Step A1: Is the problem of excess Maternal Health deaths due to birth-weight distribution – a higher frequency of prematurity or growth retardation – or the problem is due to higher mortality rates once born at that birth-weight?

The cause of excess deaths in the Maternal Health/Prematurity category can be explained by two different paths. The first path, labeled "VLBW Births", involves a higher frequency of very low birth-weight (VLBW) births in the target population. Since the mortality rates for VLBW births are much higher compared to normal births, a difference in the percentage of VLBW births between the populations leads to a difference in the mortality rate. The second path, labeled "Perinatal Care", concerns the higher mortality rate among VLBW babies. It is necessary to separate these two paths because the causes, risk factors, and interventions for VLBW Births are generally different than those for Perinatal Care. The VLBW Births path generally relates to behavioral, social, health, and economic disparities of the mothers and primarily manifests itself as delivering a VLBW birth. The Perinatal Care path generally involves the perinatal or medical care provided to the mother and infant prior to, during, or after birth.

This step uncovers which of the two pathways is the predominant cause for the Maternal Health/Prematurity excess deaths. First, the birth-weight-specific mortality rates and frequency of low birth-weight, the birth-weight distribution and feto-infant mortality rates were calculated for both the target group (**TABLE K**) and the reference group (**TABLE L**).

Weight	Number of Live Births & Fetal Deaths	Number of Feto-Infant Deaths	Birth-Weight Distribution	Feto-Infant Mortality Rates
500-749 g	116	58	0.8%	500.0
750-999 g	114	25	0.8%	219.3
1000-1249 g	91	5	0.7%	54.9
1250-1499 g	101	5	0.7%	49.5
1500-1999 g	399	19	2.9%	47.6
2000-2499 g	1133	19	8.2%	16.8
2500+ g	11894	58	85.9%	4.9
Total	**13848**	**189**	**100.0%**	**13.6**

TABLE K: Target Group, Birth-Weight Distribution & Feto-Infant Mortality Rates

Weight	Number of Live Births & Fetal Deaths	Number of Feto-Infant Deaths	Birth-Weight Distribution	Feto-Infant Mortality Rates
500-749 g	31	18	0.2%	580.6
750-999 g	54	17	0.3%	314.8
1000-1249 g	67	4	0.4%	59.7
1250-1499 g	59	5	0.3%	84.7
1500-1999 g	270	15	1.5%	55.6
2000-2499 g	773	6	4.2%	7.8
2500+ g	17142	36	93.2%	2.1
Total	**18396**	**101**	**100.0%**	**5.5**

TABLE L: Reference Group, Birth-Weight Distribution & Feto-Infant Mortality Rates

Looking at the birth-weight distribution column for both tables, the target group has a higher percentage of its live births and fetal deaths in all but the last birth-weight category (2500 g+) compared to the reference group. The birth-weight-specific mortality rates are less stable: in the lowest five birth-weight classes, the target and reference group both have survival advantage (i.e., the feto-infant mortality rate in the target group is less than the reference group despite an overall higher feto-infant mortality rate in the target group). The survival advantage for the reference group is very pronounced in the highest two birth-weight classes with the mortality rate for the reference group at normal birth-weight (2.1 per 1000) being 2.3 times lower compared to the target group (4.9). The absolute difference in the overall feto-infant mortality rates is 8.1 (i.e., $MR_1 - MR_2 = 13.6 - 5.5 = 8.1$).

The Kitagawa formula[3] (**FIGURE 6**) was then applied to estimate the percentage of excess mortality due to birth-weight distribution (VLBW Births) and the percentage of excess due to high birth-weight-specific mortality rates (Perinatal Care).

$$\sum_{1}^{n}\left(\left(\frac{(P_{1n}+P_{2n})}{2}\times(M_{1n}-M_{2n})\right)+\left(\frac{(M_{1n}+M_{2n})}{2}\times(P_{1n}-P_{2n})\right)\right)$$

FIGURE 6: Kitagawa Formula

FIGURE 7 demonstrates how the Kitagawa formula was used in this specific analysis.

$$MR_1 - MR_2 = \sum_{1}^{n}\left(\left(\frac{(P_{1n}+P_{2n})}{2}\times(M_{1n}-M_{2n})\right)+\left(\frac{(M_{1n}+M_{2n})}{2}\times(P_{1n}-P_{2n})\right)\right)$$

[Difference] = [Birth-weight-specific Mortality (Perinatal Care)]+ [Frequency of low birth-weight (VLBW Births)]

Where: n = Number of birth-weight categories (birth-weight "strata")
MR_1 = Overall feto-infant mortality rate for the target group
MR_2 = Overall feto-infant mortality rate for the reference group
P_{1n} = Proportion of births for a specific birth-weight category for the target group
P_{2n} = Proportion of births for a specific birth-weight category for the reference group
M_{1n} = Birth-weight specific mortality rate for the target group
M_{2n} = Birth-weight specific mortality rate for the reference group

FIGURE 7: Kitagawa Formula Applied to Perinatal Care & VLBW Births

The results of the Kitagawa formula applied to the target and reference group for each birth-weight class, birth-weight distribution percent, and feto-infant mortality rate are given in **TABLE M**.

Weight	Birth-Weight Distribution	Feto-Infant Mortality Rate	Total
500-749 g	3.6	-0.4	3.2
750-999 g	1.4	-0.5	0.9
1000-1249 g	0.2	0.0	0.1
1250-1499 g	0.3	-0.2	0.1
1500-1999 g	0.7	-0.2	0.6
2000-2499 g	0.5	0.6	1.0
2500+ g	-0.3	2.5	2.2
Total	**6.4**	**1.7**	**8.1**

TABLE M: Actual Contribution to the Difference in Excess Mortality Rates

The "Total" column represents the contribution of births and fetal deaths of each birth-weight class to the overall excess mortality rate. According to **TABLE M**, the birth-weight distribution for the 500-749 gram birth-weight class served as the largest contributor (3.6) to the overall excess. The second largest is the contribution of the higher feto-infant mortality rates among the 2500+ gram birth-weight class (2.5). The overall VLBW contribution is the sum of the totals from the birth-weight classes of less than 1500 grams, that is, 3.2 + 0.9 + 0.1 +0.1 = 4.3.

The numbers from **TABLE M** were converted to percentages of the overall excess by dividing each of them by 8.1. These percentages are displayed in **TABLE N**.

Weight	Birth-Weight Distribution	Feto-Infant Mortality Rate	Total
500-749 g	44.3%	-5.0%	39.3%
750-999 g	17.3%	-6.5%	10.8%
1000-1249 g	2.1%	-0.3%	1.8%
1250-1499 g	3.4%	-2.3%	1.1%
1500-1999 g	8.9%	-2.1%	6.8%
2000-2499 g	6.0%	6.8%	12.8%
2500+ g	-3.1%	30.5%	27.4%
Total	**78.9%**	**21.1%**	**100.0%**

TABLE N: Percentage Contribution to the Difference in Excess Mortality Rates

Of the overall excess of 8.1, the majority (78.9%) can be attributed to the birth-weight distribution in the target group. The high rate of live births and fetal deaths in the 500-749 gram birth-weight class for the birth-weight distribution column alone contributed 44.3% to the overall excess. Consequently, in addressing excess deaths in the Maternal Health/Prematurity category, attention should be directed toward reducing the percentage of very low birth-weight. In other words, the VLBW Births path should be exercised.

Step A2: Are there differences in the prevalences of risk factors between the chosen target group and the reference group?

A list of risk factors was drawn from the Birth Cohort dataset (**TABLE O**). Details on the "Notes" column are given below. For consistency in evaluating the difference in the prevalences of risk factors, all risk factors were set to have binary results (i.e., "Yes" if the risk factor was present and "No" if the risk factor was not present). **TABLE P** in the APPENDIX quantifies each of these risk factors.

Risk Factor	Definition	Notes
GRAMS	*Yes* if birth was VLBW (less than 1500 g).	IV
MAGE_<15	*Yes* if mother's age less than 15.	IV, TG
MAGE_15-17	*Yes* if mother's age between 15 and 17.	IV, TG
MAGE_18-34	*Yes* if mother's age between 18 and 34.	IV, TG
MAGE_>34	*Yes* if mother's age greater than 34.	IV
ED_LESS_HG	*Yes* if mother's highest education less than high school graduate.	IV, TG
ED_HG	*Yes* if mother's highest education is high school graduate.	IV, TG
ED_COLLEGE	*Yes* if mother's highest education greater than high school graduate.	IV, TG
PLURALITY	*Yes* if not a singleton birth (e.g., twins, triplets).	
APNCU_PLUS	*Yes* if modified-APNCU score was Adequate Plus.	CV
APNCU_ADE	*Yes* if modified-APNCU score was Adequate.	CV
APNCU_INT	*Yes* if modified-APNCU score was Intermediate.	CV
APNCU_INA	*Yes* if modified-APNCU score was Inadequate.	CV
WGHTGAIN_LOW	*Yes* if pregnancy weight gain was less than 15 lbs.	IV
WGHTGAIN_MED	*Yes* if pregnancy weight gain was between 15 and 40 lbs.	IV
WGHTGAIN_HIGH	*Yes* if pregnancy weight gain was greater than 40 lbs.	IV
ANEMIA	*Yes* if mother was reported to have anemia.	
CARDIAC_DISEASE	*Yes* if mother was reported to have cardiac disease.	
LUNG_DISEASE	*Yes* if mother was reported to have lung disease.	
DIABETES	*Yes* if mother was reported to have diabetes.	
HYPERTENSION_CHR	*Yes* if mother was reported to have chronic hypertension.	
HYPERTENSION_PRE	*Yes* if mother was reported to have hypertension during pregnancy.	
ECLAMPSIA	*Yes* if mother was reported to have eclampsia.	
INCOMP_CERVIX	*Yes* if mother was reported to have an incompetent cervix.	
PREV_INF_PRETERM	*Yes* if mother was reported to have a prior preterm infant.	
UTERINE_BLEEDING	*Yes* if mother was reported to have uterine bleeding.	
AVECIG_NONE	*Yes* if mother did not smoke during pregnancy .	IV
AVECIG_1-10	*Yes* if mother smoked 1-10 cigarettes daily during pregnancy.	IV
AVECIG_11-20	*Yes* if mother smoked 11-20 cigarettes daily during pregnancy.	IV
AVECIG_21+	*Yes* if mother smoked ≥21 cigarettes daily during pregnancy.	IV
AVEDRINKS_NONE	*Yes* if mother did not consume alcohol during pregnancy.	IV
AVEDRINKS_1-5	*Yes* if mother consumed 1-5 drinks weekly during pregnancy.	IV
AVEDRINKS_6+	*Yes* if mother consumed ≥6 drinks weekly during pregnancy.	IV
OPNONE	*Yes* if mother did not have any obstetric procedures.	IH
ACNNONE	*Yes* if newborn did not have birth abnormality.	IH
CANONE	*Yes* if newborn did not have chromosomal abnormality.	IH

TABLE O: Risk Factors Retrieved from Delaware Birth Cohort Dataset

Note: Constructed Variables (CV)

The Birth Cohort dataset supplies two fields relevant to prenatal care utilization: TRI (the trimester when care began with values "0" for "No Prenatal Care", "1" for "First Trimester", "2" for "Second Trimester", "3" for "Third Trimester" and "9" for "N/A") and PREVISIT (the number of prenatal visits with values "0" for "No Visits", "1" for "1-4 Visits", "2" for "5-9 Visits", "3" for "10-12 Visits", "4" for "13+ Visits", and "5" for "N/A"). Instead of using these fields in the analysis, a more standardized method to evaluate prenatal care utilization was embraced. The Adequacy of Prenatal Care Utilization (APNCU) was elected as the metric for this assessment.[4] The ordinal categories in the TRI and PREVISIT fields were satisfactory in creating a similar scale as that embodied by the APNCU.[4,5,6] **TABLE Q** displays how four indicator variables were constructed to gauge the APNCU:

Risk Factor	Definition	SQL Expression
APNCU_PLUS	**Adequate Plus**. Prenatal care begun by the 4th month and 110% or more of ACOG recommended visits received.	IIf(([TRI]=1 And [PREVISIT]=4),"Yes","No")
APNCU_ADE	**Adequate**. Prenatal care begun by the 4th month and 80%-109% of ACOG recommended visits received.	IIf(([TRI]=1 And [PREVISIT]=3),"Yes","No")
APNCU_INT	**Intermediate**. Prenatal care begun by the 4th month and 50%-79% of ACOG recommended visits received.	IIf(([TRI]=1 And [PREVISIT]=2),"Yes","No")
APNCU_INA	**Inadequate**. Prenatal care begun after the 4th month or less than 50% of ACOG recommended visits received.	IIf(([TRI]=2 Or [TRI]=3 Or [PREVISIT]=0 Or [PREVISIT]=1),"Yes","No")

TABLE Q: APNCU Indicator Variables

Note: Infant Health Only (IH)

Because of their relation to newborn deaths, three risk factors – OPNONE, ACNONE, and CANONE – were examined in the Infant Health analysis and not the Maternal Health/Prematurity Analysis. Note that the obstetric procedures referenced by the OPNONE risk factor in this dataset include amniocentesis, electronic fetal monitoring, induction of labor, stimulation of labor, tocolysis, and ultrasound. Specifically, if a mother did not have any of the above-mentioned obstetric procedures, the OPNONE value would be "Yes"; if a mother had at least one of the above-mentioned obstetric procedures, the OPNONE value would be "No". The risk factors CANONE and ACNNONE, however, are not as well-defined.

Note: Indicator Variables (IV)

Several of the risk factors in the Birth Cohort dataset already featured binary results (e.g., PLURALITY). Indicator variables were developed for those risk factors that did not have binary results. For example, the risk factor "WEIGHT GAINED DURING PREGNANCY" (field *wghtgain*) has scaled results. Guidelines set by the Institute of Medicine[7,8] and suggested PPOR analysis[1] recommend aggregating these

scaled results into one of three ordinal categories: pregnancy weight gain below 15 lbs., pregnancy weight gain between 15 and 40 lbs., and pregnancy weight gain above 40 lbs. Indicator variables with binary results were then designed from each of these three ordinal categories. For example, the indicator variable *wghtgain_low* had a result of "Yes" if pregnancy weight gain was below 15 lbs. and "No" if pregnancy weight gain was not below 15 lbs. The indicator variables *wghtgain_med* and *wghtgain_high* were constructed for pregnancy weight gain between 15 and 40 lbs. and pregnancy weight gain above 40 lbs., respectively.

Note: Target Group Only (TG)

Because the reference group is defined as White Non-Hispanic women over the age of 20 with at least 13 years of education, six risk factors – MAGE_<15, MAGE_15-17, MAGE_18-34, ED_LESS_HG, ED_HG, and ED_COLLEGE – were only applicable to the target group. Although the prevalence of each of these six risk factors was ascertained in the target group, no comparison could be conducted between the target group and the reference group on any of these risk factors.

Assessing Prevalence

For each of the risk factors listed in **TABLE O**, the proportion of "Yes" results was computed for each of the ten years studied (1996 to 2005). The mean and 95% confidence interval of the proportions for the ten years were then calculated. Each of the proportions was then measured against the 95% confidence interval to see if any trends occurred (trends were defined as at least two sets – one below significance and one above significance – of three or more years of significant proportions).[‡] Since trends may indicate that a lurking variable may be influencing the prevalence of the risk factor, the risk factors with noticeable trends were removed. For the target group, three variables had trends: MAGE_<15, MAGE_>34, and LUNG_DISEASE. For the reference group, two variables had trends: WGHTGAIN_MED and LUNG_DISEASE. As a result, prevalence was not compared between the target and reference group for three risk factors: MAGE_>34, WGHTGAIN_MED, and LUNG_DISEASE.

The difference in mean proportions was taken between the target group and reference group and a 95% confidence interval about the difference in mean proportions was then generated. **TABLE R** presents whether significant differences in the prevalences of risk factors took place between the target group and reference group and which group had a higher proportion of "Yes" responses. Between the target group and reference group, note that no significant differences in prevalence occurred in only four risk factors: AVECIG_11-20, AVECIG_21+, AVEDRINKS_NONE, and AVEDRINKS_1-5. Correspondingly, the prevalence of each risk factor differed significantly between the target and reference group in the overwhelming majority of risk factors (23 out of 27) examined.

[‡] Due to the extensive size of these tables, this data is available on request.

Risk Factor	Significant (95% CI)	Higher Proportion of "Yes" Responses
GRAMS	Yes	Target
PLURALITY	Yes	Reference
APNCU_PLUS	Yes	Reference
APNCU_ADE	Yes	Reference
APNCU_INT	Yes	Target
APNCU_INA	Yes	Target
WGHTGAIN_LOW	Yes	Target
WGHTGAIN_HIGH	Yes	Reference
ANEMIA	Yes	Target
CARDIAC_DISEASE	Yes	Reference
DIABETES	Yes	Reference
HYPERTENSION_CHR	Yes	Target
HYPERTENSION_PRE	Yes	Target
ECLAMPSIA	Yes	Target
INCOMP_CERVIX	Yes	Target
PREV_INF_PRETERM	Yes	Target
UTERINE_BLEEDING	Yes	Reference
AVECIG_NONE	Yes	Reference
AVECIG_1-10	Yes	Target
AVECIG_11-20	No	Target
AVECIG_21+	No	Reference
AVEDRINKS_NONE	No	Reference
AVEDRINKS_1-5	No	Reference
AVEDRINKS_6+	Yes	Target
OPNONE	Yes	Target
ACNNONE	Yes	Reference
CANONE	Yes	Reference

TABLE R: Significance in Prevalence of Risk Factors between the Target Group & Reference Group

Step A3: What is the impact of these risk factors and interventions on VLBW births (if deaths are due to birth-weight distribution) or perinatal care (if deaths are due to higher mortality rates once born at that birthweight)?

Since the majority of deaths were found to be due to the birth-weight distribution, the impact of each of the risk factors listed in **TABLE R** on VLBW was investigated.[§] A set of chi-square tests that individually compared these risk factors to GRAMS, the indicator variable for VLBW, was performed to uncover whether any of these risk factors was significantly associated with VLBW.[**] The results of these chi-square tests are displayed in **TABLE S**.

[§] The six Target Group Only (TG) risk factors (MAGE_<15, MAGE_15-17, MAGE_18-34, ED_LESS_HG, ED_HG, and ED_COLLEGE) were added in this analysis. Note that the three Infant Health Only (IH) risk factors (OPNONE, ACNNONE, and CANONE) were not examined in the remaining Maternal Health/Prematurity steps.

[**] Due to the extensive size of these tables, this data is available on request.

Risk Factor	Target Group VLBW χ^2 Significant ($\alpha = 0.05$)	Reference Group VLBW χ^2 Significant ($\alpha = 0.05$)
MAGE_<15	No	N/A
MAGE_15-17	No	N/A
MAGE_18-34	No	N/A
ED_LESS_HG	No	N/A
ED_HG	Yes	N/A
ED_COLLEGE	Yes	N/A
PLURALITY	Yes	Yes
APNCU_PLUS	Yes	Yes
APNCU_ADE	Yes	Yes
APNCU_INT	Yes	Yes
APNCU_INA	Yes	Yes
WGHTGAIN_LOW	Yes	Yes
WGHTGAIN_HIGH	Yes	Yes
ANEMIA	No	No[††]
CARDIAC_DISEASE	No	No
DIABETES	No	No
HYPERTENSION_CHR	Yes	No
HYPERTENSION_PRE	Yes	Yes
ECLAMPSIA	Yes	Yes
INCOMP_CERVIX	Yes	Yes
PREV_INF_PRETERM	Yes	Yes
UTERINE_BLEEDING	Yes	Yes
AVECIG_NONE	Yes	No
AVECIG_1-10	Yes	No
AVECIG_11-20	No	No
AVECIG_21+	No[††]	-[‡‡]
AVEDRINKS_NONE	Yes	No[††]
AVEDRINKS_1-5	Yes	-[‡‡]
AVEDRINKS_6+	Yes	No[††]

TABLE S: Significance in Impact of Risk Factors on VLBW between the Target Group & Reference Group

For the target group, most of the risk factors (20 of 29) have a significant association with VLBW. Similarly, the slight majority of the risk factors (12 of 21) have a significant association with VLBW for the reference group. Overall, the risk factors that were significantly associated with VLBW for the target group tended to be significantly associated with VLBW for the reference group with five exceptions: HYPERTENSION_CHR, AVECIG_NONE, AVECIG_1-10, AVEDRINKS_NONE, and AVEDRINKS_6+.

[††] Fisher's exact test was used rather than chi-square test because the test had a cell with a value between 1 and 4.
[‡‡] Results are not conclusive because the test had a cell with a value equal to 0.

Step A4: What is the impact of these risk factors and interventions on VLBW births and perinatal care taking into account other factors?

In this step, the risk factors are subjected to a multivariate approach as opposed to the univariate approach practiced in the last step. A backwards logistic regression of all of the risk factors listed in **TABLE S** (set as the covariates) on GRAMS (set as the response) was applied for both the target group and reference group. **TABLE T** and **TABLE U** provide the resulting odds ratios for the statistically significant (α = 0.05) risk factors for the target group and reference group, respectively. An OR above 1.000 indicates that the risk factor was positively associated with VLBW.

Risk Factor	OR	Lower 95% CI	Upper 95% CI
ECLAMPSIA	5.909	2.976	11.733
PLURALITY	5.518	4.313	7.060
INCOMP_CERVIX	4.772	3.057	7.448
PREV_INF_PRETERM	3.853	2.810	5.283
UTERINE_BLEEDING	3.435	1.488	7.934
HYPERTENSION_PRE	3.073	2.434	3.880
WGHTGAIN_LOW	2.943	2.480	3.493
HYPERTENSION_CHR	2.223	1.498	3.299
APNCU_INT	2.161	1.810	2.579
AVECIG_NONE	0.793	0.633	0.994
ED_LESS_HG	0.724	0.596	0.879
WGHTGAIN_HIGH	0.327	0.233	0.458
APNCU_ADE	0.146	0.111	0.192
APNCU_PLUS	0.103	0.065	0.164

TABLE T: Target Group, OR for Significant Risk Factors in Multivariate Approach

Risk Factor	OR	Lower 95% CI	Upper 95% CI
PLURALITY	21.553	16.765	27.709
UTERINE_BLEEDING	10.574	5.028	22.234
ECLAMPSIA	8.952	3.380	23.708
INCOMP_CERVIX	6.889	2.907	16.326
HYPERTENSION_PRE	3.926	2.890	5.333
WGHTGAIN_LOW	3.273	2.417	4.433
PREV_INF_PRETERM	2.430	1.127	5.240
APNCU_INT	2.117	1.491	3.005
AVECIG_1-10	1.740	1.086	2.790
WGHTGAIN_HIGH	.217	.144	.327
APNCU_ADE	.186	.125	.276
APNCU_PLUS	.142	.087	.230

TABLE U: Reference Group, OR for Significant Risk Factors in Multivariate Approach

Note that the overwhelming majority of significant risk factors in the target group (12 of 14) are also found in the reference group. Moreover, the risk factors with the highest OR in both groups tend to be the same (PLURALITY, UTERINE BLEEDING, ECLAMPSIA, and INCOMPETENT_CERVIX). Likewise, the risk factors with the lowest OR in both groups are also generally the same (WGHTGAIN_HIGH, APNCU_ADE, and APNCU_PLUS).

Infant Health Investigation

The step-by-step analysis for the Infant Health investigation borrows heavily from the excess infant deaths protocol provided by CityMatCH.[1]

Step B1: What is the primary underlying cause of death causing the excess Infant Health Deaths?

Using the Birth Cohort dataset, causes of infant death (field *dcause*) between 2001 and 2005 were retrieved for both the target group and reference group. **TABLE V** and **TABLE W** show the counts and percent contribution of each cause of infant death for the target group and reference group, respectively.

Cause of Death		Total Count	Percent
ICD-10	**Description**		
R95	Sudden Infant Death Syndrome (SIDS)	11	28.9%
R99	Other ill-defined and unspecified causes of mortality	8	21.1%
W75	Accidental suffocation and strangulation in bed	2	5.26%
I270	Primary pulmonary hypertension	2	5.26%
Q249	Congenital malformation of heart, unspecified	2	5.26%
Q210	Ventricular septal defect	1	2.63%
A491	Streptococcal infection, unspecified	1	2.63%
H669	Otitis media, unspecified	1	2.63%
J988	Other specified respiratory disorders	1	2.63%
N12	Tubulo-interstitial nephritis, not specified as acute or chronic	1	2.63%
N189	Chronic renal failure, unspecified	1	2.63%
A401	Septicaemia due to streptococcus, group B	1	2.63%
P021	Fetus and newborn affected by other forms of placental separation	1	2.63%
X30	Exposure to excessive natural heat	1	2.63%
Q789	Osteochondrodysplasia, unspecified	1	2.63%
Q913	Edwards' syndrome, unspecified	1	2.63%
W83	Other specified threats to breathing	1	2.63%
N19	Unspecified renal failure	1	2.63%
Total		**38**	**100%**

TABLE V: Target Group, Causes of Infant Death (2001-2005)

Cause of Death		Total Count	Percent
ICD-10	**Description**		
R95	Sudden Infant Death Syndrome (SIDS)	5	31.3%
E889	Metabolic disorder, unspecified	2	12.5%
V436	Passenger injured in traffic accident	1	6.25%
Q913	Edwards' syndrome, unspecified	1	6.25%
Q249	Congenital malformation of heart, unspecified	1	6.25%
Q212	Atrioventricular septal defect	1	6.25%
Q203	Discordant ventriculoarterial connection	1	6.25%
P918	Other specified disturbances of cerebral status of newborn	1	6.25%
N19	Unspecified renal failure	1	6.25%
K902	Blind loop syndrome, not elsewhere classified	1	6.25%
I219	Acute myocardial infarction, unspecified	1	6.25%
Total		**16**	**100%**

TABLE W: Reference Group, Causes of Infant Death (2001-2005)

In both groups, Sudden Infant Death Syndrome (SIDS) clearly represented the leading cause of death. In addition to SIDS, however, only three other exact causes of death were in both sets: Congenital Malformation of Heart, Edwards' Syndrome, and Unspecified Renal Failure. With that said, various causes of death were in similar ICD-10 categories for both groups; for example, one infant death in the target group was ICD-10 code Q210 or Ventricular septal defect where as one infant death in the reference group was ICD-10 code Q212 or Atrioventricular septal defect.

SIDS was further investigated since it constituted approximately one in three deaths in each group. Nevertheless, the percentage of deaths could not be used for comparison because these percentages do not take into account differences in overall mortality rates. Therefore, the contribution of SIDS to the Infant Health mortality for each group was calculated using cause-specific mortality rates (**FIGURE 8**).

$$CSMR = \frac{Deaths_{CauseX}}{LiveBirths_{\geq 1500g}}$$

FIGURE 8: Cause-Specific Mortality Rate (CSMR)

The equations and resulting CSMR for SIDS for the target group and reference group are provided in **FIGURE 9** and **FIGURE 10**, respectively

$$CSMR_{TG} = \frac{Deaths_{SIDS}}{LiveBirths_{\geq 1500g}} = \frac{11}{13394} = \frac{0.821}{1000}$$

FIGURE 9: CSMR for SIDS for Target Group (2001-2005)

$$CSMR_{RG} = \frac{Deaths_{SIDS}}{LiveBirths_{\geq 1500g}} = \frac{5}{18164} = \frac{0.275}{1000}$$

FIGURE 10: CSMR for SIDS for Reference Group (2001-2005)

The Excess CSMR was then calculated as shown in **FIGURE 11**.

$$CSMR_{TG} - CSMR_{RG} = \frac{0.821}{1000} - \frac{0.275}{1000} = \frac{0.546}{1000}$$

FIGURE 11: Excess CSMR for SIDS (2001-2005)

FIGURE 11 indicates that although roughly the same proportion of postneonatal deaths in the target group and reference group were attributed to SIDS, the CSMR for SIDS in the target group is 0.546 per 1,000 births higher than in the reference group. Put another way, the rate of SIDS is roughly three times (0.821/0.275) greater in the target group than in the reference group.

This excess CSMR for SIDS was then compared to the overall Infant Health excess mortality rate. The equations and resulting Infant Health mortality rates for the target group and reference group are displayed in **FIGURE 12** and **FIGURE 13**, respectively.

$$MR_{TG} = \frac{Deaths_{TOTAL}}{LiveBirths_{\geq 1500g}} = \frac{38}{13394} = \frac{2.837}{1000}$$

FIGURE 12: Infant Health MR for Target Group (2001-2005)

$$MR_{RG} = \frac{Deaths_{TOTAL}}{LiveBirths_{\geq 1500g}} = \frac{16}{18164} = \frac{0.881}{1000}$$

FIGURE 13: Infant Health MR for Reference Group (2001-2005)

The Excess Infant Health MR was then calculated as displayed in **FIGURE 14**.

$$MR_{TG} - MR_{RG} = \frac{2.837}{1000} - \frac{0.881}{1000} = \frac{1.956}{1000}$$

FIGURE 14: Excess Infant Health MR (2001-2005)

Applying the result of **FIGURE 11** to the result of **FIGURE 14**, roughly 28.0% (0.546/1.956) of overall excess Infant Health deaths are caused by SIDS alone.

Step B2: What factors are contributing to the excess mortality rate by a specific cause of death?
As indicated above, deaths specifically caused by SIDS comprise a sizeable portion of the overall excess Infant Health deaths. For the remainder of this analysis, however, it was decided that no *specific* cause of death that contributes to the excess Infant Health mortality rate would be assessed since the use of small sample sizes (**TABLE V** and **TABLE W**) would result in poor statistical analysis.

Instead, the differences in the prevalences of risk factors that may contribute to the overall excess mortality rate for infant health were studied. This analysis was carried out in ***Step A2*** and, since the target group evaluated here is the same as that in the Maturity Health/Prematurity analysis, the results in **TABLE R** are valid in this analysis as well. As this is an Infant Health analysis, the fields OPNONE, ACNNONE, and CANONE can be applied in this step. As referenced earlier, between the target group and reference group, no significant differences in prevalence occurred in four risk factors: AVECIG_11-20, AVECIG_21+, AVEDRINKS_NONE, and AVEDRINKS_1-5. Correspondingly, the prevalence of each risk factor differed significantly between the target and reference group in the overwhelming majority of risk factors (23 out of 27) examined.

Step B3: What is the impact of these risk factors and interventions on Infant Health deaths?
In parallel fashion to ***Step A3***, a set of chi-square tests that individually compared the risk factors from **TABLE R** to DEATH, an indicator variable for whether or not a postneonatal infant death occurred, was performed to uncover whether any of these risk factors was significantly associated with Infant Health deaths.[§§] The results of these chi-square tests are displayed in **TABLE X**.

[§§] Due to the extensive size of these tables, this data is available on request.

Risk Factor	Target Group DEATH χ^2 Significant ($\alpha = 0.05$)	Reference Group DEATH χ^2 Significant ($\alpha = 0.05$)
GRAMS[***]	Yes	No
MAGE_<15	No[†††]	N/A
MAGE_15-17	No	N/A
MAGE_18-34	No[†††]	N/A
ED_LESS_HG	Yes	N/A
ED_HG	No	N/A
ED_COLLEGE	Yes	N/A
PLURALITY	No[†††]	No[†††]
APNCU_PLUS	No	No
APNCU_ADE	No	No
APNCU_INT	No	No[†††]
APNCU_INA	Yes	No[†††]
WGHTGAIN_LOW	No	Yes
WGHTGAIN_HIGH	No	No
ANEMIA	No[†††]	No[†††]
CARDIAC_DISEASE	No[†††]	No[†††]
DIABETES	No[†††]	No[†††]
HYPERTENSION_CHR	No[†††]	No[†††]
HYPERTENSION_PRE	No[†††]	No[†††]
ECLAMPSIA	-[‡‡‡]	-[‡‡‡]
INCOMP_CERVIX	No[†††]	-[‡‡‡]
PREV_INF_PRETERM	-[‡‡‡]	-[‡‡‡]
UTERINE_BLEEDING	Yes[†††]	-[‡‡‡]
AVECIG_NONE	Yes	No[†††]
AVECIG_1-10	Yes	No[†††]
AVECIG_11-20	No[†††]	No[†††]
AVECIG_21+	Yes[†††]	-[‡‡‡]
AVEDRINKS_NONE	No	No[†††]
AVEDRINKS_1-5	Yes	No[†††]
AVEDRINKS_6+	No[†††]	-[‡‡‡]
OPNONE	Yes	No[†††]
ACNNONE	No	No[†††]
CANONE	Yes	Yes

TABLE X: Significance in Impact of Risk Factors on DEATH between the Target Group & Reference Group

For the target group, the majority of risk factors (20 of 33) do not have a significant association with postneonatal death. Similarly, most of the risk factors (19 of 27) do not have a significant association with postneonatal death for the reference group. Interestingly, the risk factors that were significantly associated with postneonatal death for the target group tended to not be significantly associated with

[***] For Infant Health analysis, GRAMS is an indicator variable for low birth-weight ("Yes" if between 1500 and 2499 grams and "No" if between 2500 and 9998 grams).
[†††] Fisher's exact test was used rather than chi-square test because the test had a cell with a value between 1 and 4.
[‡‡‡] Results are not conclusive because the test had a cell with a value equal to 0.

postneonatal death for the reference group and vice-versa. For example, having a low birth-weight (GRAMS) was significantly associated with postneonatal death for the target group but was not for the reference group. Conversely, a low pregnancy weight gain (WGHTGAIN_LOW) was not significantly associated with postneonatal death for the target group but was for the reference group. Since many of the chi-square tests had a cell with a sample size of less than five, it is generally difficult to robustly compare significance between the two groups.

Step B4: What is the impact of these risk factors and interventions on Infant Health deaths taking into account other risk factors?

Like ***Step A4***, the risk factors were subjected to a multivariate approach. A backwards logistic regression of all of the risk factors listed in **TABLE X** (set as the covariates) on DEATH (set as the response) was applied on both the target group and reference group. **TABLE Y** and **TABLE Z** display the resulting odds ratios for the statistically significant ($\alpha = 0.05$) risk factors for the target group and reference group, respectively. An OR above 1.000 indicates that the risk factor was positively associated with postneonatal death.

Risk Factor	OR	Lower 95% CI	Upper 95% CI
GRAMS [LBW]	3.450	2.031	5.859
ED_LESS_HG	2.724	1.303	5.695
OPNONE	2.525	1.142	5.583
APNCU_ADE	0.554	0.318	0.965
APNCU_INT	0.415	0.180	0.958
AVECIG_NONE	0.365	0.214	0.620
CANONE	0.193	0.082	0.452

TABLE Y: Target Group, OR for Significant Risk Factors in Multivariate Approach

Risk Factor	OR	Lower 95% CI	Upper 95% CI
WGHTGAIN_LOW	2.630	1.010	6.847
CANONE	0.071	0.027	0.185

TABLE Z: Reference Group, OR for Significant Risk Factors in Multivariate Approach

Only one risk factor (CANONE) was statistically significant in the regression models for both the target group and reference group. In both models, CANONE was negatively associated with postneonatal death, i.e., an infant without a chromosomal abnormality in either the target group or reference group is more likely to experience death in the postneonatal period compared to an infant with a chromosomal abnormality.

DISCUSSION

This report answers to the conceptual framework of a PPOR Phase I and Phase II analysis for the State of Delaware. In Phase I, it was revealed that Black Non-Hispanics served as the target group with the highest excess feto-infant mortality rates compared to a clearly-defined reference group. For this target group, the majority of excess deaths occurred in the Maternal Health/Prematurity and Infant Health categories. In Phase II, the causes of these excess deaths in each of these two feto-infant categories were elucidated using comprehensive statistical analysis. In the Maternal Health/Prematurity analysis, it was determined that excess deaths in the Black Non-Hispanic target group stemmed from a higher frequency of very low birth-weight (VLBW) births. In the Infant Health analysis, noticeably different rates of SIDS between the target group and reference group helped explain the discrepancy in excess deaths; the small overall sample sizes, however, rendered the investigation into other causes of postneonatal death to be tenuous. In both analyses, several risk factors listed in the Delaware Birth Cohort dataset featured a significantly different prevalence in this target group in contrast to the reference group. Univariate chi-square tests and multivariate backward logistic regressions established that some of these risk factors were singularly or interactively associated with VLBW or postneonatal death in the Maternal Health/Prematurity analysis and Infant Health analysis, respectively.

It is essential to note that the entire State of Delaware was evaluated in this approach. Closer inspection of the total excess deaths in each county, however, exposes the diversity of feto-infant health disparities in this geographically-small state. The distribution of excess deaths across feto-infant mortality categories in New Castle (**TABLE H3**), the most populous county, is similar to the results presented in this report. In Kent (**TABLE H2**), however, the number of Infant Health-related excess deaths approaches that of the Maternal Health/Prematurity category and in Sussex (**TABLE H4**), the distribution is almost split evenly among the Maternal Health/Prematurity, Newborn Care, and Infant Health categories. In the future, a Phase II for each county should be performed while keeping in mind the difficulties of conducting sound statistical analysis with limited data.

The answer to whether the problem of excess deaths in the Maternal Health/Prematurity originated from a higher distribution of VLBW births or perinatal care was not surprising. The Kitagawa analysis supported the so-called "birth-weight paradox" in which lower birth-weight Black Non-Hispanic infants have a survival advantage over lower birth-weight White Non-Hispanic infants born to women with generally higher socioeconomic status.[9,10,11] Given this background and since the chosen target group was Black Non-Hispanic women, it was not likely that the problem was due to higher mortality rates for infants born at that birth-weight. A possible method to test this statement would involve applying the Kitagawa analysis to the same reference group with White Non-Hispanics instead set as the designated target group.

The results of many of the statistical analyses highlight the well-documented racial disparities present in feto-infant care and mortality.[12,13,14] In **TABLE R**, the proportion of the reference women with an "Adequate Plus" modified-APNCU or "Adequate" modified-APNCU was significantly higher than in Black Non-Hispanic women. Conversely, the proportion of Black Non-Hispanic women with an

"Intermediate" modified-APNCU or "Inadequate" modified-APNCU score was significantly higher than in the reference group. In addition, the proportion of Black Non-Hispanic women reported as not having had certain obstetric procedures (amniocentesis, electronic fetal monitoring, induction of labor, stimulation of labor, tocolysis, and ultrasound) was significantly higher than in the reference group. Another indication of racial disparities included the sizeable difference between the two groups in cause-specific mortality rates for SIDS.

Note that the primary cause of mortality for Black Non-Hispanic infants in Delaware is preterm term birth and its correlates while the leading cause of death for White Non-Hispanic infants in Delaware is congenital abnormalities.[15] As shown in **TABLE R**, the proportion of reference group infants with congenital abnormalities was significantly higher than in Black Non-Hispanic infants. Moreover, **TABLE Y** and **TABLE Z** show that the OR for an infant without a chromosomal abnormality experiencing an infant death is lower among reference group infants than in Black Non-Hispanics (0.071 compared to 0.193). Hence, the reference group itself has risk factors worth investigating in feto-infant mortality analysis.

Finally, the fact that the target group and reference group share several of the same risk factors in the logistic regression results for Maternal Health/Prematurity (**TABLE T** and **TABLE U**) suggests that intervention programs may not need to be limited to the Black Non-Hispanic community. In general, it is essential to improve the APNCU for both race/ethnicity categories and assure that preconception and prenatal programs include women presenting with conditions such as eclampsia and incompetent cervix. Although the risk factors drawn in this analysis were more extensive than in other PPOR analyses, the overall results of this report are not unlike those found in peer Phase I and Phase II assessments.[16,17,18] The goal now is to focus on reducing the overall feto-infant mortality rate, the next step in the PPOR paradigm.

END TEXT

TABLE $A0_1$: Target Live Births						
Delaware						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	95	60	94	87	67	87
1500+	6891	6527	6500	6475	6335	6343
Total	7875	7534	7749	7800	7885	8096
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	65	79	66	85	75	88
1500+	2522	2575	2599	2734	2748	2738
Total	2615	2680	2689	2845	2853	2854
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	160	139	160	172	142	175
1500+	9413	9102	9099	9209	9083	9081
Total	9573	9241	9259	9381	9225	9256
Kent						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	23	13	18	18	17	13
1500+	1308	1253	1226	1324	1251	1383
Total	1408	1350	1344	1443	1385	1528
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	12	17	6	16	13	17
1500+	445	449	462	527	500	510
Total	461	477	474	554	524	542
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	35	30	24	34	30	30
1500+	1753	1702	1688	1851	1751	1893
Total	1788	1732	1712	1885	1781	1923
New Castle						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	54	31	55	55	40	58
1500+	4346	4023	4060	3936	3838	3739
Total	5022	4733	4905	4865	4811	4832
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	47	52	48	59	50	57
1500+	1667	1701	1783	1794	1807	1794
Total	1730	1761	1846	1864	1869	1860
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	101	83	103	114	90	115
1500+	6013	5724	5843	5730	5645	5533
Total	6114	5807	5946	5844	5735	5648
Sussex						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	18	16	21	14	10	16
1500+	1237	1251	1214	1215	1246	1221
Total	1445	1451	1500	1492	1689	1736
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	6	10	12	10	12	14
1500+	410	425	354	413	441	434
Total	424	442	369	427	460	452
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	24	26	33	24	22	30
1500+	1647	1676	1568	1628	1687	1655
Total	1671	1702	1601	1652	1709	1685

TABLE A1: Target Fetal Deaths						
Delaware						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	6	4	7	7	0	3
1500+	7	12	11	13	5	8
Total	13	16	18	20	5	11
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	1	5	3	7	5	9
1500+	5	7	11	6	6	2
Total	6	12	14	13	11	11
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	7	9	10	14	5	12
1500+	12	19	22	19	11	10
Total	19	28	32	33	16	22
Kent						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	1	0	2	3	0	1
1500+	0	2	3	1	1	3
Total	1	2	5	4	1	4
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	1	0	2	1	1
1500+	0	0	4	0	0	2
Total	0	1	4	2	1	3
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	1	1	2	5	1	2
1500+	0	2	7	1	1	5
Total	1	3	9	6	2	7
New Castle						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	3	4	4	4	0	1
1500+	6	9	5	8	2	3
Total	9	13	9	12	2	4
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	1	4	2	3	4	6
1500+	4	5	7	5	6	0
Total	5	9	9	8	10	6
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	4	8	6	7	4	7
1500+	10	14	12	13	8	3
Total	14	22	18	20	12	10
Sussex						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	2	0	1	0	0	1
1500+	1	1	3	4	2	2
Total	3	1	4	4	2	3
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	0	1	2	0	2
1500+	1	2	0	1	0	0
Total	1	2	1	3	0	2
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	2	0	2	2	0	3
1500+	2	3	3	5	2	2
Total	4	3	5	7	2	5

TABLE A2: Target Neonatal Deaths						
Delaware						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	17	17	19	7	14	14
1500+	10	10	9	7	7	3
Total	32	28	29	18	24	23
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	7	13	7	9	8	11
1500+	5	4	3	9	5	3
Total	12	17	10	18	13	14
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	24	30	26	16	22	25
1500+	15	14	12	16	12	6
Total	39	44	38	32	34	31
Kent						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	7	4	8	1	3	4
1500+	1	2	3	1	0	0
Total	9	6	11	2	3	4
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	2	0	0	1	1
1500+	1	1	0	0	0	1
Total	1	3	0	0	1	2
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	7	6	8	1	4	5
1500+	2	3	3	1	0	1
Total	9	9	11	2	4	6
New Castle						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	8	8	9	6	9	7
1500+	8	6	4	5	5	3
Total	20	15	13	13	17	16
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	7	8	6	9	6	8
1500+	4	1	0	4	4	1
Total	11	9	6	13	10	9
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	15	16	15	15	15	15
1500+	12	7	4	9	9	4
Total	27	23	19	24	24	19
Sussex						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	2	5	2	0	2	3
1500+	1	2	2	1	2	0
Total	3	7	5	3	4	3
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	3	1	0	1	2
1500+	0	2	3	5	1	1
Total	0	5	4	5	2	3
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	2	8	3	0	3	5
1500+	1	4	5	6	3	1
Total	3	12	8	6	6	6

TABLE A3: Target Postneonatal Deaths						
Delaware						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	3	3	1	4	0
1500+	12	15	5	11	11	8
Total	14	21	9	14	17	11
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	1	2	2	5	3	4
1500+	10	6	5	10	11	8
Total	11	8	7	15	14	12
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	1	5	5	6	7	4
1500+	22	21	10	21	22	16
Total	23	26	15	27	29	20
Kent						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	0	1	0	1	0
1500+	2	2	2	4	5	3
Total	2	2	3	4	6	3
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	1	1	0	2	0	2
1500+	2	1	1	2	1	1
Total	3	2	1	4	1	3
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	1	1	1	2	1	2
1500+	4	3	3	6	6	4
Total	5	4	4	8	7	6
New Castle						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	1	1	1	3	0
1500+	6	9	1	7	3	5
Total	8	13	3	10	8	8
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	1	1	2	2	1
1500+	6	4	2	7	7	4
Total	6	5	3	9	9	5
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	2	2	3	5	1
1500+	12	13	3	14	10	9
Total	12	15	5	17	15	10
Sussex						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	2	1	0	0	0
1500+	4	4	2	0	3	0
Total	4	6	3	0	3	0
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	0	1	1	1	1
1500+	2	1	2	1	3	3
Total	2	1	3	2	4	4
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	2	2	1	1	1
1500+	6	5	4	1	6	3
Total	6	7	6	2	7	4

TABLE A0$_2$: Target Denominator						
Delaware						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	101	64	101	94	67	90
1500+	6898	6539	6511	6488	6340	6351
Total	6999	6603	6612	6582	6407	6441
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	66	84	69	92	80	97
1500+	2527	2582	2610	2740	2754	2740
Total	2593	2666	2679	2832	2834	2837
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	167	148	170	186	147	187
1500+	9425	9121	9121	9228	9094	9091
Total	9592	9269	9291	9414	9241	9278
Kent						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	24	13	20	21	17	14
1500+	1308	1255	1229	1325	1252	1386
Total	1332	1268	1249	1346	1269	1400
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	12	18	6	18	14	18
1500+	445	449	466	527	500	512
Total	457	467	472	545	514	530
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	36	31	26	39	31	32
1500+	1753	1704	1695	1852	1752	1898
Total	1789	1735	1721	1891	1783	1930
New Castle						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	57	35	59	59	40	59
1500+	4352	4032	4065	3944	3840	3742
Total	4409	4067	4124	4003	3880	3801
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	48	56	50	62	54	63
1500+	1671	1706	1790	1799	1813	1794
Total	1719	1762	1840	1861	1867	1857
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	105	91	109	121	94	122
1500+	6023	5738	5855	5743	5653	5536
Total	6128	5829	5964	5864	5747	5658
Sussex						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	20	16	22	14	10	17
1500+	1238	1252	1217	1219	1248	1223
Total	1258	1268	1239	1233	1258	1240
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	6	10	13	12	12	16
1500+	411	427	354	414	441	434
Total	417	437	367	426	453	450
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	26	26	35	26	22	33
1500+	1649	1679	1571	1633	1689	1657
Total	1675	1705	1606	1659	1711	1690

TABLE B0: 5Y Target Denominator		
Delaware		
White	**2000-2004**	**2001-2005**
500-1499	427	416
1500+	32776	32229
Total	33203	32645
Black	**2000-2004**	**2001-2005**
500-1499	391	422
1500+	13213	13426
Total	13604	13848
Total	**2000-2004**	**2001-2005**
500-1499	818	838
1500+	45989	45655
Total	46807	46493
Kent		
White	**2000-2004**	**2001-2005**
500-1499	95	85
1500+	6369	6447
Total	6464	6532
Black	**2000-2004**	**2001-2005**
500-1499	68	74
1500+	2387	2454
Total	2455	2528
Total	**2000-2004**	**2001-2005**
500-1499	163	159
1500+	8756	8901
Total	8919	9060
New Castle		
White	**2000-2004**	**2001-2005**
500-1499	250	252
1500+	20233	19623
Total	20483	19875
Black	**2000-2004**	**2001-2005**
500-1499	270	285
1500+	8779	8902
Total	9049	9187
Total	**2000-2004**	**2001-2005**
500-1499	520	537
1500+	29012	28525
Total	29532	29062
Sussex		
White	**2000-2004**	**2001-2005**
500-1499	82	79
1500+	6174	6159
Total	6256	6238
Black	**2000-2004**	**2001-2005**
500-1499	53	63
1500+	2047	2070
Total	2100	2133
Total	**2000-2004**	**2001-2005**
500-1499	135	142
1500+	8221	8229
Total	8356	8371

TABLE B1: 5Y Target Fetal Deaths		
Delaware		
White	**2000-2004**	**2001-2005**
500-1499	24	21
1500+	48	49
Total	72	70
Black	**2000-2004**	**2001-2005**
500-1499	21	29
1500+	35	32
Total	56	61
Total	**2000-2004**	**2001-2005**
500-1499	45	50
1500+	83	81
Total	128	131
Kent		
White	**2000-2004**	**2001-2005**
500-1499	6	6
1500+	7	10
Total	13	16
Black	**2000-2004**	**2001-2005**
500-1499	4	5
1500+	4	6
Total	8	11
Total	**2000-2004**	**2001-2005**
500-1499	10	11
1500+	11	16
Total	21	27
New Castle		
White	**2000-2004**	**2001-2005**
500-1499	15	13
1500+	30	27
Total	45	40
Black	**2000-2004**	**2001-2005**
500-1499	14	19
1500+	27	23
Total	41	42
Total	**2000-2004**	**2001-2005**
500-1499	29	32
1500+	57	50
Total	86	82
Sussex		
White	**2000-2004**	**2001-2005**
500-1499	3	2
1500+	11	12
Total	14	14
Black	**2000-2004**	**2001-2005**
500-1499	3	5
1500+	4	3
Total	7	8
Total	**2000-2004**	**2001-2005**
500-1499	6	7
1500+	15	15
Total	21	22

TABLE B2: 5Y Target Neonatal Deaths		
Delaware		
White	**2000-2004**	**2001-2005**
500-1499	74	71
1500+	43	36
Total	117	107
Black	**2000-2004**	**2001-2005**
500-1499	44	48
1500+	26	24
Total	70	72
Total	**2000-2004**	**2001-2005**
500-1499	118	119
1500+	69	60
Total	187	179
Kent		
White	**2000-2004**	**2001-2005**
500-1499	23	20
1500+	7	6
Total	30	26
Black	**2000-2004**	**2001-2005**
500-1499	3	4
1500+	2	2
Total	5	6
Total	**2000-2004**	**2001-2005**
500-1499	26	24
1500+	9	8
Total	35	32
New Castle		
White	**2000-2004**	**2001-2005**
500-1499	40	39
1500+	28	23
Total	68	62
Black	**2000-2004**	**2001-2005**
500-1499	36	37
1500+	13	10
Total	49	47
Total	**2000-2004**	**2001-2005**
500-1499	76	76
1500+	41	33
Total	117	109
Sussex		
White	**2000-2004**	**2001-2005**
500-1499	11	12
1500+	8	7
Total	19	19
Black	**2000-2004**	**2001-2005**
500-1499	5	7
1500+	11	12
Total	16	19
Total	**2000-2004**	**2001-2005**
500-1499	16	19
1500+	19	19
Total	35	38

TABLE B3: 5Y Target Postneonatal Deaths		
Delaware		
White	**2000-2004**	**2001-2005**
500-1499	11	11
1500+	54	50
Total	65	61
Black	**2000-2004**	**2001-2005**
500-1499	13	16
1500+	42	40
Total	55	56
Total	**2000-2004**	**2001-2005**
500-1499	24	27
1500+	96	90
Total	120	117
Kent		
White	**2000-2004**	**2001-2005**
500-1499	2	2
1500+	15	16
Total	17	18
Black	**2000-2004**	**2001-2005**
500-1499	4	5
1500+	7	6
Total	11	11
Total	**2000-2004**	**2001-2005**
500-1499	6	7
1500+	22	22
Total	28	29
New Castle		
White	**2000-2004**	**2001-2005**
500-1499	6	6
1500+	26	25
Total	32	31
Black	**2000-2004**	**2001-2005**
500-1499	6	7
1500+	26	24
Total	32	31
Total	**2000-2004**	**2001-2005**
500-1499	12	13
1500+	52	49
Total	64	62
Sussex		
White	**2000-2004**	**2001-2005**
500-1499	3	3
1500+	13	9
Total	16	12
Black	**2000-2004**	**2001-2005**
500-1499	3	4
1500+	9	10
Total	12	14
Total	**2000-2004**	**2001-2005**
500-1499	6	7
1500+	22	19
Total	28	26

TABLE C1: 5Y Target Fetal Rates		
Delaware		
White	**2000-2004**	**2001-2005**
500-1499	0.72	0.64
1500+	1.45	1.50
Total	2.17	2.14
Black	**2000-2004**	**2001-2005**
500-1499	1.54	2.09
1500+	2.57	2.31
Total	4.12	4.40
Total	**2000-2004**	**2001-2005**
500-1499	0.96	1.08
1500+	1.77	1.74
Total	2.73	2.82
Kent		
White	**2000-2004**	**2001-2005**
500-1499	0.93	0.92
1500+	1.08	1.53
Total	2.01	2.45
Black	**2000-2004**	**2001-2005**
500-1499	1.63	1.98
1500+	1.63	2.37
Total	3.26	4.35
Total	**2000-2004**	**2001-2005**
500-1499	1.12	1.21
1500+	1.23	1.77
Total	2.35	2.98
New Castle		
White	**2000-2004**	**2001-2005**
500-1499	0.73	0.65
1500+	1.46	1.36
Total	2.20	2.01
Black	**2000-2004**	**2001-2005**
500-1499	1.55	2.07
1500+	2.98	2.50
Total	4.53	4.57
Total	**2000-2004**	**2001-2005**
500-1499	0.98	1.10
1500+	1.93	1.72
Total	2.91	2.82
Sussex		
White	**2000-2004**	**2001-2005**
500-1499	0.48	0.32
1500+	1.76	1.92
Total	2.24	2.24
Black	**2000-2004**	**2001-2005**
500-1499	1.43	2.34
1500+	1.90	1.41
Total	3.33	3.75
Total	**2000-2004**	**2001-2005**
500-1499	0.72	0.84
1500+	1.80	1.79
Total	2.51	2.63

TABLE C2: 5Y Target Neonatal Rates		
Delaware		
White	**2000-2004**	**2001-2005**
500-1499	2.23	2.17
1500+	1.30	1.10
Total	3.52	3.28
Black	**2000-2004**	**2001-2005**
500-1499	3.23	3.47
1500+	1.91	1.73
Total	5.15	5.20
Total	**2000-2004**	**2001-2005**
500-1499	2.52	2.56
1500+	1.47	1.29
Total	4.00	3.85
Kent		
White	**2000-2004**	**2001-2005**
500-1499	3.56	3.06
1500+	1.08	0.92
Total	4.64	3.98
Black	**2000-2004**	**2001-2005**
500-1499	1.22	1.58
1500+	0.81	0.79
Total	2.04	2.37
Total	**2000-2004**	**2001-2005**
500-1499	2.92	2.65
1500+	1.01	0.88
Total	3.92	3.53
New Castle		
White	**2000-2004**	**2001-2005**
500-1499	1.95	1.96
1500+	1.37	1.16
Total	3.32	3.12
Black	**2000-2004**	**2001-2005**
500-1499	3.98	4.03
1500+	1.44	1.09
Total	5.41	5.12
Total	**2000-2004**	**2001-2005**
500-1499	2.57	2.62
1500+	1.39	1.14
Total	3.96	3.75
Sussex		
White	**2000-2004**	**2001-2005**
500-1499	1.76	1.92
1500+	1.28	1.12
Total	3.04	3.05
Black	**2000-2004**	**2001-2005**
500-1499	2.38	3.28
1500+	5.24	5.63
Total	7.62	8.91
Total	**2000-2004**	**2001-2005**
500-1499	1.91	2.27
1500+	2.27	2.27
Total	4.19	4.54

TABLE C3: 5Y Target Postneonatal Rate		
Delaware		
White	**2000-2004**	**2001-2005**
500-1499	0.33	0.34
1500+	1.63	1.53
Total	1.96	1.87
Black	**2000-2004**	**2001-2005**
500-1499	0.96	1.16
1500+	3.09	2.89
Total	4.04	4.04
Total	**2000-2004**	**2001-2005**
500-1499	0.51	0.58
1500+	2.05	1.94
Total	2.56	2.52
Kent		
White	**2000-2004**	**2001-2005**
500-1499	0.31	0.31
1500+	2.32	2.45
Total	2.63	2.76
Black	**2000-2004**	**2001-2005**
500-1499	1.63	1.98
1500+	2.85	2.37
Total	4.48	4.35
Total	**2000-2004**	**2001-2005**
500-1499	0.67	0.77
1500+	2.47	2.43
Total	3.14	3.20
New Castle		
White	**2000-2004**	**2001-2005**
500-1499	0.29	0.30
1500+	1.27	1.26
Total	1.56	1.56
Black	**2000-2004**	**2001-2005**
500-1499	0.66	0.76
1500+	2.87	2.61
Total	3.54	3.37
Total	**2000-2004**	**2001-2005**
500-1499	0.41	0.45
1500+	1.76	1.69
Total	2.17	2.13
Sussex		
White	**2000-2004**	**2001-2005**
500-1499	0.48	0.48
1500+	2.08	1.44
Total	2.56	1.92
Black	**2000-2004**	**2001-2005**
500-1499	0.48	0.64
1500+	1.44	1.60
Total	1.92	2.24
Total	**2000-2004**	**2001-2005**
500-1499	0.72	0.84
1500+	2.63	2.27
Total	3.35	3.11

TABLE $D0_1$: Reference Live Births						
Delaware						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	37	25	46	47	38	45
1500+	3769	3626	3567	3695	3622	3654
Total	3806	3651	3613	3742	3660	3699
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	37	25	46	47	38	45
1500+	3769	3626	3567	3695	3622	3654
Total	3806	3651	3613	3742	3660	3699
Kent						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	8	8	7	5	7	5
1500+	533	531	551	615	572	685
Total	541	539	558	620	579	690
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	8	8	7	5	7	5
1500+	533	531	551	615	572	685
Total	541	539	558	620	579	690
New Castle						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	20	13	34	35	23	32
1500+	2675	2502	2451	2480	2449	2355
Total	2695	2515	2485	2515	2472	2387
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	20	13	34	35	23	32
1500+	2675	2502	2451	2480	2449	2355
Total	2695	2515	2485	2515	2472	2387
Sussex						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	9	4	5	7	8	8
1500+	561	593	565	600	601	614
Total	570	597	570	607	609	622
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	9	4	5	7	8	8
1500+	561	593	565	600	601	614
Total	570	597	570	607	609	622

TABLE D1: Reference Fetal Deaths						
Delaware						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	1	1	3	4	0	2
1500+	5	4	4	5	3	5
Total	6	5	7	9	3	7
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	1	1	3	4	0	2
1500+	5	4	4	5	3	5
Total	6	5	7	9	3	7
Kent						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	0	0	1	0	1
1500+	0	1	1	0	1	2
Total	0	1	1	1	1	3
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	0	0	1	0	1
1500+	0	1	1	0	1	2
Total	0	1	1	1	1	3
New Castle						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	1	2	3	0	1
1500+	4	2	2	3	1	2
Total	4	3	4	6	1	3
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	1	2	3	0	1
1500+	4	2	2	3	1	2
Total	4	3	4	6	1	3
Sussex						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	1	0	1	0	0	0
1500+	1	1	1	2	1	1
Total	2	1	2	2	1	1
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	1	0	1	0	0	0
1500+	1	1	1	2	1	1
Total	2	1	2	2	1	1

TABLE D2: Reference Neonatal Deaths						
Delaware						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	5	6	5	2	8	10
1500+	5	4	4	5	4	2
Total	10	10	9	7	12	12
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	5	6	5	2	8	10
1500+	5	4	4	5	4	2
Total	10	10	9	7	12	12
Kent						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	3	2	1	0	1	1
1500+	1	1	1	1	0	0
Total	4	3	2	1	1	1
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	3	2	1	0	1	1
1500+	1	1	1	1	0	0
Total	4	3	2	1	1	1
New Castle						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	2	4	2	5	6
1500+	4	3	3	3	2	2
Total	4	5	7	5	7	8
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	2	4	2	5	6
1500+	4	3	3	3	2	2
Total	4	5	7	5	7	8
Sussex						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	2	2	0	0	2	3
1500+	0	0	0	1	2	0
Total	2	2	0	1	4	3
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	2	2	0	0	2	3
1500+	0	0	0	1	2	0
Total	2	2	0	1	4	3

TABLE D3: Reference Postneonatal Deaths						
Delaware						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	0	1	1	1	0
1500+	4	7	1	5	2	2
Total	4	7	2	6	3	2
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	0	1	1	1	0
1500+	4	7	1	5	2	2
Total	4	7	2	6	3	2
Kent						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	0	0	0	0	0
1500+	0	1	0	1	0	0
Total	0	1	0	1	0	0
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	0	0	0	0	0
1500+	0	1	0	1	0	0
Total	0	1	0	1	0	0
New Castle						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	0	1	1	1	0
1500+	4	4	1	4	1	2
Total	4	4	2	5	2	2
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	0	1	1	1	0
1500+	4	4	1	4	1	2
Total	4	4	2	5	2	2
Sussex						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	0	0	0	0	0
1500+	0	2	0	0	1	0
Total	0	2	0	0	1	0
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	0	0	0	0	0	0
1500+	0	2	0	0	1	0
Total	0	2	0	0	1	0

TABLE $D0_2$: Reference Denominator						
Delaware						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	38	26	49	51	38	47
1500+	3774	3630	3571	3700	3625	3659
Total	3812	3656	3620	3751	3663	3706
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	38	26	49	51	38	47
1500+	3774	3630	3571	3700	3625	3659
Total	3812	3656	3620	3751	3663	3706
Kent						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	8	8	7	6	7	6
1500+	533	532	552	615	573	687
Total	541	540	559	621	580	693
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	8	8	7	6	7	6
1500+	533	532	552	615	573	687
Total	541	540	559	621	580	693
New Castle						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	20	14	36	38	23	33
1500+	2679	2504	2453	2483	2450	2357
Total	2699	2518	2489	2521	2473	2390
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	20	14	36	38	23	33
1500+	2679	2504	2453	2483	2450	2357
Total	2699	2518	2489	2521	2473	2390
Sussex						
White	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	10	4	6	7	8	8
1500+	562	594	566	602	602	615
Total	572	598	572	609	610	623
Black	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	N/A	N/A	N/A	N/A	N/A	N/A
1500+	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A
Total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
500-1499	10	4	6	7	8	8
1500+	562	594	566	602	602	615
Total	572	598	572	609	610	623

TABLE E0: 5Y Reference Denominator		
Delaware		
White	**2000-2004**	**2001-2005**
500-1499	202	211
1500+	18300	18185
Total	18502	18396
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	202	211
1500+	18300	18185
Total	18502	18396
Kent		
White	**2000-2004**	**2001-2005**
500-1499	36	34
1500+	2805	2959
Total	2841	2993
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	36	34
1500+	2805	2959
Total	2841	2993
New Castle		
White	**2000-2004**	**2001-2005**
500-1499	131	144
1500+	12569	12247
Total	12700	12391
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	131	144
1500+	12569	12247
Total	12700	12391
Sussex		
White	**2000-2004**	**2001-2005**
500-1499	35	33
1500+	2926	2979
Total	2961	3012
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	35	33
1500+	2926	2979
Total	2961	3012

TABLE E1: 5Y Reference Fetal Deaths		
Delaware		
White	**2000-2004**	**2001-2005**
500-1499	9	10
1500+	21	21
Total	30	31
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	9	10
1500+	21	21
Total	30	31
Kent		
White	**2000-2004**	**2001-2005**
500-1499	1	2
1500+	3	5
Total	4	7
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	1	2
1500+	3	5
Total	4	7
New Castle		
White	**2000-2004**	**2001-2005**
500-1499	6	7
1500+	12	10
Total	18	17
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	6	7
1500+	12	10
Total	18	17
Sussex		
White	**2000-2004**	**2001-2005**
500-1499	2	1
1500+	6	6
Total	8	7
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	2	1
1500+	6	6
Total	8	7

TABLE E2: 5Y Reference Neonatal Deaths		
Delaware		
White	**2000-2004**	**2001-2005**
500-1499	26	31
1500+	22	19
Total	48	50
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	26	31
1500+	22	19
Total	48	50
Kent		
White	**2000-2004**	**2001-2005**
500-1499	7	5
1500+	4	3
Total	11	8
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	7	5
1500+	4	3
Total	11	8
New Castle		
White	**2000-2004**	**2001-2005**
500-1499	13	19
1500+	15	13
Total	28	32
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	13	19
1500+	15	13
Total	28	32
Sussex		
White	**2000-2004**	**2001-2005**
500-1499	6	7
1500+	3	3
Total	9	10
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	6	7
1500+	3	3
Total	9	10

TABLE E3: 5Y Reference Postneonatal Deaths		
Delaware		
White	**2000-2004**	**2001-2005**
500-1499	3	3
1500+	19	17
Total	22	20
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	3	3
1500+	19	17
Total	22	20
Kent		
White	**2000-2004**	**2001-2005**
500-1499	0	0
1500+	2	2
Total	2	2
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	0	0
1500+	2	2
Total	2	2
New Castle		
White	**2000-2004**	**2001-2005**
500-1499	3	3
1500+	14	12
Total	17	15
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	3	3
1500+	14	12
Total	17	15
Sussex		
White	**2000-2004**	**2001-2005**
500-1499	0	0
1500+	3	3
Total	3	3
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	0	0
1500+	3	3
Total	3	3

TABLE F1: 5Y Reference Fetal		
Delaware		
White	**2000-2004**	**2001-2005**
500-1499	0.49	0.54
1500+	1.14	1.14
Total	1.62	1.69
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	0.49	0.54
1500+	1.14	1.14
Total	1.62	1.69
Kent		
White	**2000-2004**	**2001-2005**
500-1499	0.35	0.67
1500+	1.06	1.67
Total	1.41	2.34
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	0.35	0.67
1500+	1.06	1.67
Total	1.41	2.34
New Castle		
White	**2000-2004**	**2001-2005**
500-1499	0.47	0.56
1500+	0.94	0.81
Total	1.42	1.37
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	0.47	0.56
1500+	0.94	0.81
Total	1.42	1.37
Sussex		
White	**2000-2004**	**2001-2005**
500-1499	0.68	0.33
1500+	2.03	1.99
Total	2.70	2.32
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	0.68	0.33
1500+	2.03	1.99
Total	2.70	2.32

TABLE F2: 5Y Reference Neonatal		
Delaware		
White	**2000-2004**	**2001-2005**
500-1499	1.41	1.69
1500+	1.19	1.03
Total	2.59	2.72
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	1.41	1.69
1500+	1.19	1.03
Total	2.59	2.72
Kent		
White	**2000-2004**	**2001-2005**
500-1499	2.46	1.67
1500+	1.41	1.00
Total	3.87	2.67
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	2.46	1.67
1500+	1.41	1.00
Total	3.87	2.67
New Castle		
White	**2000-2004**	**2001-2005**
500-1499	1.02	1.53
1500+	1.18	1.05
Total	2.20	2.58
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	1.02	1.53
1500+	1.18	1.05
Total	2.20	2.58
Sussex		
White	**2000-2004**	**2001-2005**
500-1499	2.03	2.32
1500+	1.01	1.00
Total	3.04	3.32
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	2.03	2.32
1500+	1.01	1.00
Total	3.04	3.32

TABLE F3: 5Y Reference Postneonatal		
Delaware		
White	**2000-2004**	**2001-2005**
500-1499	0.16	0.16
1500+	1.03	0.92
Total	1.19	1.09
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	0.16	0.16
1500+	1.03	0.92
Total	1.19	1.09
Kent		
White	**2000-2004**	**2001-2005**
500-1499	0.00	0.00
1500+	0.70	0.67
Total	0.70	0.67
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	0.00	0.00
1500+	0.70	0.67
Total	0.70	0.67
New Castle		
White	**2000-2004**	**2001-2005**
500-1499	0.24	0.24
1500+	1.10	0.97
Total	1.34	1.21
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	0.24	0.24
1500+	1.10	0.97
Total	1.34	1.21
Sussex		
White	**2000-2004**	**2001-2005**
500-1499	0.00	0.00
1500+	1.01	1.00
Total	1.01	1.00
Black	**2000-2004**	**2001-2005**
500-1499	N/A	N/A
1500+	N/A	N/A
Total	N/A	N/A
Total	**2000-2004**	**2001-2005**
500-1499	0.00	0.00
1500+	1.01	1.00
Total	1.01	1.00

TABLE G1: Delaware, 2001-2005

White			
500-1499	3.16		
1500+	1.50	1.10	1.53
	7.29		

Black			
500-1499	6.72		
1500+	2.31	1.73	2.89
	13.6		

Total			
500-1499	4.22		
1500+	1.74	1.29	1.94
	9.18		

Reference Group			
500-1499	2.39		
1500+	1.14	1.03	0.92
	5.49		

Reference Group			
500-1499	2.39		
1500+	1.14	1.03	0.92
	5.49		

Reference Group			
500-1499	2.39		
1500+	1.14	1.03	0.92
	5.49		

Excess			
500-1499	0.76		
1500+	0.36	0.07	0.61
	1.80		

Excess			
500-1499	4.32		
1500+	1.17	0.70	1.96
	8.16		

Excess			
500-1499	1.82		
1500+	0.60	0.26	1.01
	3.69		

TABLE G2: Kent County, 2001-2005

White			
500-1499	4.29		
1500+	1.53	0.92	2.45
	9.19		

Black			
500-1499	5.54		
1500+	2.37	0.79	2.37
	11.0		

Total			
500-1499	4.64		
1500+	1.77	0.88	2.43
	9.71		

Reference Group			
500-1499	2.34		
1500+	1.67	1.00	0.67
	5.68		

Reference Group			
500-1499	2.34		
1500+	1.67	1.00	0.67
	5.68		

Reference Group			
500-1499	2.34		
1500+	1.67	1.00	0.67
	5.68		

Excess			
500-1499	1.95		
1500+	-0.14	-0.08	1.78
	3.51		

Excess			
500-1499	3.20		
1500+	0.70	-0.21	1.71
	5.40		

Excess			
500-1499	2.30		
1500+	0.10	-0.12	1.76
	4.03		

TABLE G3: New Castle County, 2001-2005

White			
500-1499	2.92		
1500+	1.36	1.16	1.26
	6.69		

Black			
500-1499	6.86		
1500+	2.50	1.09	2.61
	13.0		

Total			
500-1499	4.16		
1500+	1.72	1.14	1.69
	8.71		

Reference Group			
500-1499	2.34		
1500+	0.81	1.05	0.97
	5.17		

Reference Group			
500-1499	2.34		
1500+	0.81	1.05	0.97
	5.17		

Reference Group			
500-1499	2.34		
1500+	0.81	1.05	0.97
	5.17		

Excess			
500-1499	0.58		
1500+	0.55	0.11	0.29
	1.53		

Excess			
500-1499	4.52		
1500+	1.70	0.04	1.64
	7.90		

Excess			
500-1499	1.82		
1500+	0.91	0.09	0.72
	3.54		

TABLE G4: Sussex County, 2001-2005

White			
500-1499	2.73		
1500+	1.92	1.12	1.44
	7.21		

Black			
500-1499	7.50		
1500+	1.41	5.63	1.60
	16.1		

Total			
500-1499	3.94		
1500+	1.79	2.27	2.27
	10.2		

Reference Group			
500-1499	2.66		
1500+	1.99	1.00	1.00
	6.64		

Reference Group			
500-1499	2.66		
1500+	1.99	1.00	1.00
	6.64		

Reference Group			
500-1499	2.66		
1500+	1.99	1.00	1.00
	6.64		

Excess			
500-1499	0.07		
1500+	-0.07	0.13	0.45
	0.57		

Excess			
500-1499	4.85		
1500+	-0.59	4.63	0.61
	9.50		

Excess			
500-1499	1.29		
1500+	-0.20	1.27	1.27
	3.63		

TABLE H1: Delaware, 2001-2005

White					Black					Total				
500-1499	25				500-1499	60				500-1499	85			
1500+	12	2	20	59	1500+	16	10	27	113	1500+	28	12	47	172

TABLE H2: Kent County, 2001-2005

White					Black					Total				
500-1499	13				500-1499	8				500-1499	21			
1500+	-1	-1	12	23	1500+	2	-1	4	14	1500+	1	-1	16	38

TABLE H3: New Castle County, 2001-2005

White					Black					Total				
500-1499	11				500-1499	41				500-1499	53			
1500+	11	2	6	30	1500+	16	0	15	73	1500+	27	3	21	103

TABLE H4: Sussex County, 2001-2005

White					Black					Total				
500-1499	0				500-1499	10				500-1499	11			
1500+	0	1	3	4	1500+	-1	10	8	26	1500+	-2	11	11	30

TABLE P: Risk Factor Data Characteristics						
Risk Factor	**Target Group**			**Reference Group**		
	"Yes"	**"No"**	**Total**	**"Yes"**	**"No"**	**Total**
GRAMS [VLBW][§§§]	24718	699	25417 (95.8% of Total: 26525)	35621	349	35970 (97.6% of Total: 36857)
GRAMS [LBW][****]	2700	22717	25417 (95.8% of Total: 26525)	1867	34103	35970 (97.6% of Total: 36857)
DEATH[****]	67	25350	25417 (95.8% of Total: 26525)	32	35938	35970 (97.6% of Total: 36857)
MAGE_<15	25232	185	25417 (95.8% of Total: 26525)	N/A	N/A	35970 (97.6% of Total: 36857)
MAGE_15-17	23308	2109	25417 (95.8% of Total: 26525)	N/A	N/A	35970 (97.6% of Total: 36857)
MAGE_18-34	4501	20916	25417 (95.8% of Total: 26525)	N/A	N/A	35970 (97.6% of Total: 36857)
MAGE_>34	23210	2207	25417 (95.8% of Total: 26525)	28813	7157	35970 (97.6% of Total: 36857)
ED_LESS_HG	18976	6441	25417 (95.8% of Total: 26525)	N/A	N/A	35970 (97.6% of Total: 36857)
ED_HG	14771	10646	25417 (95.8% of Total: 26525)	N/A	N/A	35970 (97.6% of Total: 36857)
ED_COLLEGE	17087	8330	25417 (95.8% of Total: 26525)	N/A	N/A	35970 (97.6% of Total: 36857)
PLURALITY	24485	932	25417 (95.8% of Total: 26525)	34367	1603	35970 (97.6% of Total: 36857)
APNCU_PLUS	21300	4117	25417 (95.8% of Total: 26525)	26892	9078	35970 (97.6% of Total: 36857)
APNCU_ADE	13650	11767	25417 (95.8% of Total: 26525)	15417	20553	35970 (97.6% of Total: 36857)
APNCU_INT	21825	3592	25417 (95.8% of Total: 26525)	31856	4114	35970 (97.6% of Total: 36857)
APNCU_INA	19476	5941	25417 (95.8% of Total: 26525)	33745	2225	35970 (97.6% of Total: 36857)
WGHTGAIN_LOW	21574	3843	25417 (95.8% of Total: 26525)	33559	2411	35970 (97.6% of Total: 36857)
WGHTGAIN_MED	9002	16415	25417 (95.8% of Total: 26525)	10307	25663	35970 (97.6% of Total: 36857)
WGHTGAIN_HIGH	20258	5159	25417 (95.8% of Total: 26525)	28074	7896	35970 (97.6% of Total: 36857)
ANEMIA	24535	882	25417 (95.8% of Total: 26525)	35688	282	35970 (97.6% of Total: 36857)
CARDIAC_DISEASE	25131	286	25417 (95.8% of Total: 26525)	35079	891	35970 (97.6% of Total: 36857)
LUNG_DISEASE	24240	1177	25417 (95.8% of Total: 26525)	34903	1067	35970 (97.6% of Total: 36857)
DIABETES	24418	999	25417 (95.8% of Total: 26525)	34407	1563	35970 (97.6% of Total: 36857)
HYPERTENSION_CHR	24862	555	25417 (95.8% of Total: 26525)	35506	464	35970 (97.6% of Total: 36857)
HYPERTENSION_PRE	23588	1829	25417 (95.8% of Total: 26525)	33911	2059	35970 (97.6% of Total: 36857)
ECLAMPSIA	25349	68	25417 (95.8% of Total: 26525)	35919	51	35970 (97.6% of Total: 36857)
INCOMP_CERVIX	25221	196	25417 (95.8% of Total: 26525)	35873	97	35970 (97.6% of Total: 36857)
PREV_INF_PRETERM	24958	459	25417 (95.8% of Total: 26525)	35691	279	35970 (97.6% of Total: 36857)
UTERINE_BLEEDING	25347	70	25417 (95.8% of Total: 26525)	35823	147	35970 (97.6% of Total: 36857)
AVECIG_NONE	2914	22503	25417 (95.8% of Total: 26525)	2188	33782	35970 (97.6% of Total: 36857)
AVECIG_1-10	22905	2512	25417 (95.8% of Total: 26525)	34338	1632	35970 (97.6% of Total: 36857)
AVECIG_11-20	25054	363	25417 (95.8% of Total: 26525)	35478	492	35970 (97.6% of Total: 36857)
AVECIG_21+	25378	39	25417 (95.8% of Total: 26525)	35906	64	35970 (97.6% of Total: 36857)
AVEDRINKS_NONE	253	25164	25417 (95.8% of Total: 26525)	336	35634	35970 (97.6% of Total: 36857)
AVEDRINKS_1-5	25205	212	25417 (95.8% of Total: 26525)	35653	317	35970 (97.6% of Total: 36857)
AVEDRINKS_6+	25376	41	25417 (95.8% of Total: 26525)	35951	19	35970 (97.6% of Total: 36857)
OPNONE	24406	1011	25417 (95.8% of Total: 26525)	35327	913	35970 (97.6% of Total: 36857)
ACNNONE	1586	23831	25417 (95.8% of Total: 26525)	2001	33969	35970 (97.6% of Total: 36857)
CANONE	521	24896	25417 (95.8% of Total: 26525)	487	35483	35970 (97.6% of Total: 36857)

[§§§] Used in the Maternal Health/Prematurity analysis only.
[****] Used in the Infant Health analysis only.

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