

Center for Health Statistics Report

Infant Mortality

Infant Mortality in Duval County, 2006

This report provides an overview of infant mortality and the major health indices related to infant mortality for 2006. This is a follow-up report to one published in early 2006 based on 2004 data. It highlights the progress that has been made at the local level and the challenges Duval County still faces with this significant public health issue. Infant mortality is defined as the number of infant deaths during the first year of life. Infant mortality is an important measure used to compare the health and well-being of populations across various geographical regions and among races. In general, the leading causes of death among infants are birth defects, pre-term delivery, low birth weight (LBW), Sudden Infant Death Syndrome (SIDS), and maternal complications during pregnancy. Increasing the number of mothers

and infants with health insurance, expanding access to prenatal care among target populations, enhancing data and surveillance efforts around maternal and child health and expanding access to comprehensive reproductive health and family planning services are recommended approaches to decrease infant mortality, specifically in vulnerable populations.

Disparities In Infant Mortality Locally

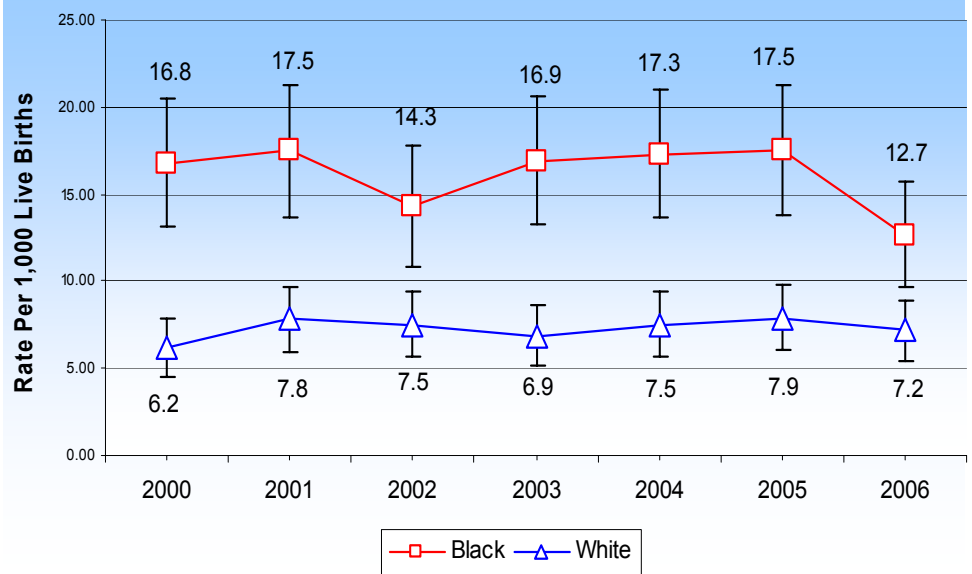
Despite progress in eliminating health disparities, differences in outcomes for infant mortality are still significant. While the infant mortality rate for blacks dropped substantially from 2005 to 2006 (27.4%), it is still higher (76.4%) than the rate for whites (see Figure 1). The infant mortality rates for blacks and whites have remained fairly stable since 2000, with the

(continued on pg. 4)

This Issue:

Infant Mortality in Duval County, 2006	1
Disparities in Infant Mortality Locally	1
Jacksonville Infant Mortality Report Card	2
Infant Emergency Room Visits and Hospitalizations	5
Duval County's Perinatal Periods	6

Figure 1 Infant Mortality Rate by Race, Duval County, 2006



95% Confidence Intervals provide statistical markers to gauge real trends versus differences that are more likely to reflect insignificant variation of data from year to year.

Jacksonville Infant Mortality Report Card

Obj. #	Objective	U.S. (2004)	FL (2006)	Duval (2006)	2010 Target
16-1	Reduction in Fetal and Infant Deaths. - Per 1,000 Live Births				
16-1c	All infant deaths (within 1 year)	6.8 ²	7.2 ¹	9.5 ¹	4.5
16-1d	Neonatal deaths (within the first 28 days of life)	4.5 ²	4.7 ¹	6.0 ¹	2.9
16-1e	Postneonatal deaths (between 28 days and 1 year).	2.3 ²	2.5 ¹	3.5 ¹	1.2
16-1h	Reduce deaths from sudden infant death syndrome (SIDS).	.55 ²	.4 ¹	.7 ¹	.23
16-6	Increase in Maternal Prenatal Care. – Percent of Live Births				
16-6a	Care beginning in first trimester of pregnancy	***84 ²	76.8 ¹	75.2 ¹	90
16-6b	Early and adequate prenatal care	***75 ²	75 ¹	69.7 ¹	90
16-10	Reduce low birth weight (LBW) and very low birth weight (VLBW)				
16-10a	Low birth weight (LBW)	8.1 ²	8.7 ¹	9.5 ¹	5.0
16-10b	Very low birth weight (VLBW)	1.5 ²	1.6 ¹	1.8 ¹	0.9
16-11	Reduction in pre-term births. – Percent of Live Births				
16-11a	Total pre-term births	12.5 ²	14.2 ¹	14.8 ¹	7.6
16-17	Increase in report abstinence from alcohol, cigarettes, and illicit drugs among pregnant women. – Percent of pregnant women				
16-17a	Alcohol	88.0 ² (2004- 2005)	99.6 ¹	99.7 ¹	95
16-17c	Cigarette smoking	*** +90 ²	92.4 ¹	90.8 ¹	99
16-19	Increase the proportion of mothers who breastfeed their babies.				
16-19a	In early postpartum period	74.0 ²	71.1 ⁴ (2005)	DNA	75
16-19b	At 6 months	42.0 ²	35.0 ⁴ (2005)	DNA	50
16-19c	At 1 year	21.0 ²	16.5 ⁴ (2005)	DNA	25
9-7***	Reduce births among adolescent females. – Rate per 1,000 females aged 15-17				
		21.4 ³	23.0 ¹	24.7 ¹	DNA
9-7a**	Reduce teen births to women ages 15-19 who were already mothers.—Rate per 1,000 teens with previous births				
		DNA	16.5 ¹	16.7 ¹	DNA

¹ Source: Florida CHARTS

² Source: National Center for Health Statistics, CDC Wonder

³ Source: National Vital Statistics Reports, Volume 56, Number 6

⁴ Source: U.S. Department of Health & Human Services, Office of Women's Health, Quick Health Data Online

*Reformulated. Considers births instead of pregnancies.

** Not a Healthy People 2010 Objective

***Excludes data for ID, FL, KY, NH, NY (not incl. NYC), PA, SC, TN, WA

+Excludes data for CA

Jacksonville Infant Mortality Report Card Overview

The data report card provides an overall comparison between local, state, and national data for infant mortality and related risk factors for Healthy People 2010 objectives. The majority of data for this report card were provided by Florida Department of Health's Office of Planning, Evaluation, and Data Analysis. Other data sources include the National Center for Health Statistics and the U.S. Department of Health & Human Services Office of Women's Health.

Duval County had a higher rate than Florida and the U.S. for all infant deaths, neonatal deaths, postneonatal deaths, and SIDS deaths. The county's rates were more than 2 times higher than all of the Healthy People 2010 target rates for the same objectives. Only 75% of mothers received prenatal care during their first trimester of

pregnancy. Likewise, only 69.7% received early and adequate prenatal care, as calculated by the Kotelchuck Index which measures adequacy of prenatal care utilization. The state and nation had higher percentages of women receiving early and adequate prenatal care, both at 75%. However, all were below the Healthy People 2010 target of 90%.

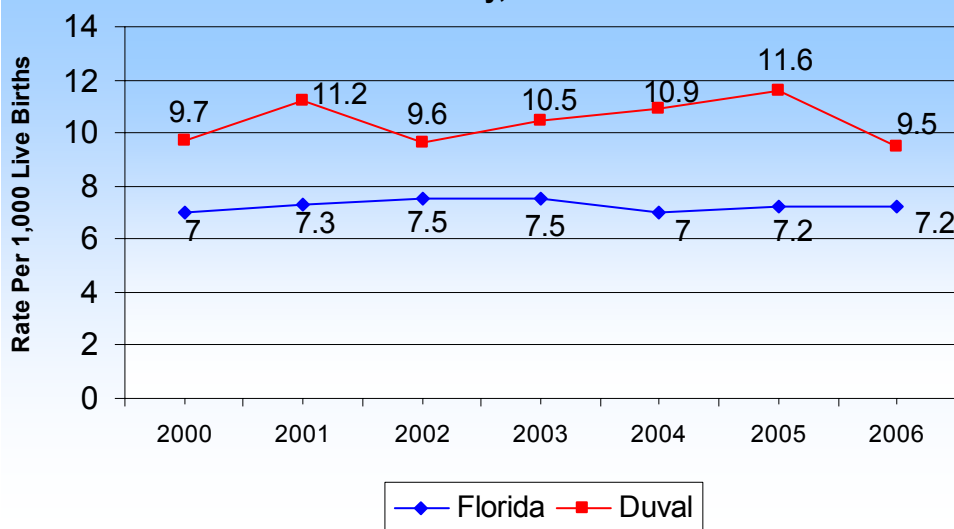
Low birth weight and very low birth weight are also factors related to infant mortality. In Duval County, 9.5% of babies were less than 2500g or "low birth weight" whereas 1.8% were less than 1500g or "very low birth weight." The targets for each objective are 5% and .9%, respectively. Analysis of the Healthy People 2010 target for the objective, reduction of pre-term births, reveals Duval County also had higher rates for this infant

mortality risk factor. In Duval County in 2006, the percentage of live births that were pre-term was 14.8 which was 4% higher than in Florida, 18% higher than the U.S. and 95% higher than the Healthy People 2010 target.

In the county, the rate for births among adolescent females between the ages of 15-17 was 24.7 per 1,000. It was 7.4% higher than the state and 15.4% higher than the country. Duval County does not always drastically differ from the nation, state, and target goal. For example, 99.7% of pregnant women reported abstaining from alcohol while pregnant. Florida's percentage is almost identical and both are higher than the nation and Healthy People 2010 target. On the other hand, cigarette smoking during pregnancy was done more often in the county and state. Nearly 9% of mothers in Duval reported smoking while pregnant; over 7% of mothers in Florida also smoked while pregnant.

Breastfeeding data is not available at the local level. But, the proportions of mothers who breastfeed their babies in Florida in the early postpartum period, at 6 months, and at 1 year are below those of the nation and the Healthy People 2010 targets.

Figure 2 Infant Mortality Rates, Florida and Duval County, 2000-2006



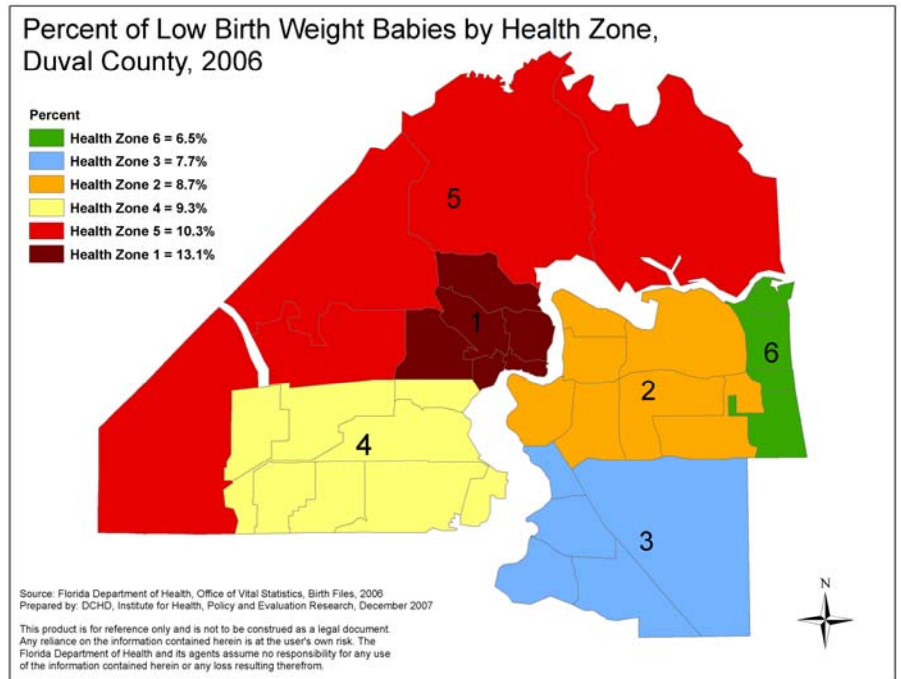
Source: Florida Department of Health, Office of Vital Statistics, 2000-2006
Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, December 2007

Disparities in Infant Mortality Locally (continued from page 1)

exception of a sharp decline from 2005 to 2006 for blacks. The decline, however, was not statistically significant. Certain areas of Duval County are also more likely to have increased infant mortality. For combined years 2004 to 2006, Health Zone 1, also referred to as the urban core, had the highest infant mortality in the county with a rate of 17.2 per 1,000 live births (see Figure 10).

Low birth weight (LBW) also disproportionately affects black babies as compared to white babies. The percent of LBW babies in 2006 for blacks (13.5%) was 87.5% higher than whites (7.2%). Similar to infant mortality rates, the LBW percent was highest in Health Zone 1 with 13.1% followed closely by Health Zone 5 with 10.3% (see Figure 3).

Figure 3



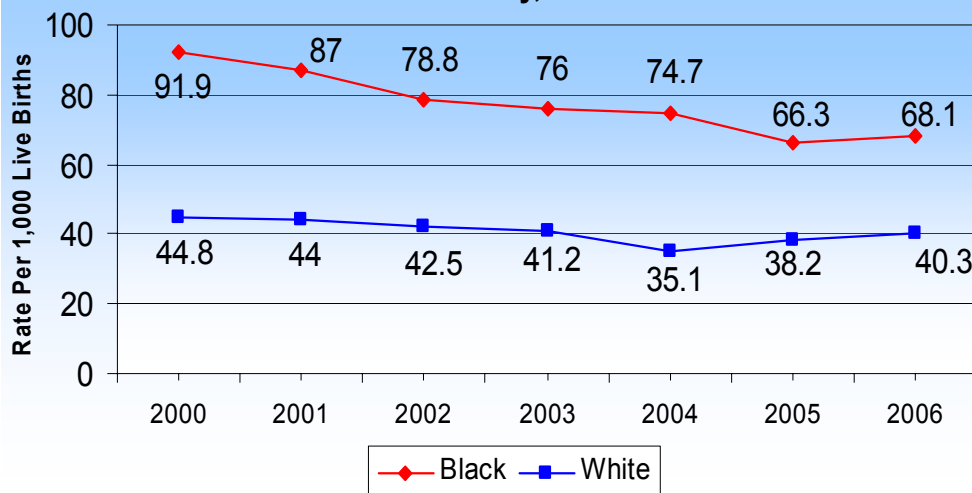
Teen births, also a variable that may affect infant mortality, vary greatly by race. In 2006, the teen birth rate for blacks ages 15-19, in

Duval County, was 69% higher than for whites. However, significant progress has been made related to black teen births with the rate for blacks decreasing by 26% from 2000 to 2006. This dramatic decrease has not been as notable for whites. The rate for whites decreased 10% over these same years (see Figure 4).

Late or no prenatal care, also considered a potential factor in infant mortality, is more prevalent in blacks in Duval County than whites. In 2006, 9.8% of blacks received late or no prenatal care compared to 5.1% of whites. Unfortunately, late or no prenatal care has increased for both races, 70% for whites and 75% for blacks. Other risk factors for infant mortality in which notable disparities exist include preterm birth, smoking,

(continued on pg. 5)

Figure 4 Teen Birth Rate Ages 15-19 by Race, Duval County, 2000-2006



Source: Florida Department of Health, Office of Vital Statistics, 2000-2006
Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, December 2007

Infant Emergency Room Visits and Hospitalizations

From 2003-2005, the leading cause of infant death in Duval County was perinatal period conditions (52%). Perinatal refers to conditions that occur in the time surrounding childbirth and those which affect the newborn baby. These conditions can occur shortly after childbirth or extend through the neonatal period (first 28 days of life). In 2005, Duval County had a notable number of hospital and emergency room admissions due to conditions originating in the perinatal period. The second and third leading cause of infant death was congenital and chromosomal anomalies (16.3%), and symptoms, signs and abnormal clinical/lab findings (15.8%).

In Duval County in 2005, over one-quarter (25.2%) of all emergency room visits and 5.9% of hospital admissions were related to one of these 3 leading causes of infant death. Out of the 3,067 infants who visited the ER with a principle diagnosis related to the causes, 57.3% were black, 36.9% were white, and 5.4% were of another race/ethnicity. The billed sources of reimbursement used for the emergency room visits were grouped according to common reimbursement types. The first group, “government health plans for the economically disadvantaged” included Medicaid, Medicaid HMO, and KidCare. The second group, “government health plans” consisted of Medicare, Medicare HMO, Champus, VA, Worker’s Compensation, and other state and local

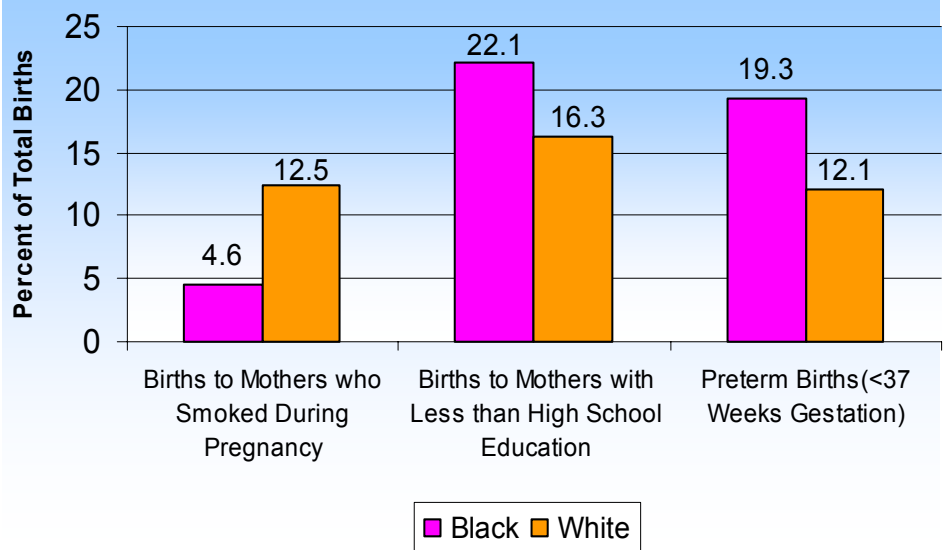
government health plans. The third group, “commercial insurance,” included self-insured and Blue Cross/Blue Shield, commercial HMO, and commercial PPO. The remaining group, “underinsured / self-pay / charity / other” is comprised of individuals not represented under a formal reimbursement plan. Government health plans for the economically disadvantaged was the most common form of reimbursement for the ER visits at 73.5%. Commercial insurance was the source of reimbursement for 16.5% of visits, followed by the underinsured/ self-pay/ charity group and government health plans group at 6.7% and 3.2%, respectively.

The total cost for ER visits related to the 3 leading causes of infant death was \$3,662,989 in 2005.

Disparities in Infant Mortality at the Local Level (continued from page 4)

using illegal substances, and drinking alcohol during pregnancy, and a mother with less than a high school education (see Figure 5). In Duval County, in 2006, blacks were more likely to have preterm births (<37 weeks gestation) than whites with, 19.3% and 12.1%, respectively. In addition, black mothers were also more likely to have less than a high school education compared to whites, 22.1% and 16.3%, respectively. In contrast, white women were almost 3 times more likely to smoke during pregnancy than blacks. Smoking during pregnancy decreased by 13.2% in whites from 2000 to 2006 but has remained relatively unchanged in the black population.

Figure 5 Risk Factors for Poor Pregnancy Outcomes by Race, Duval County, 2006

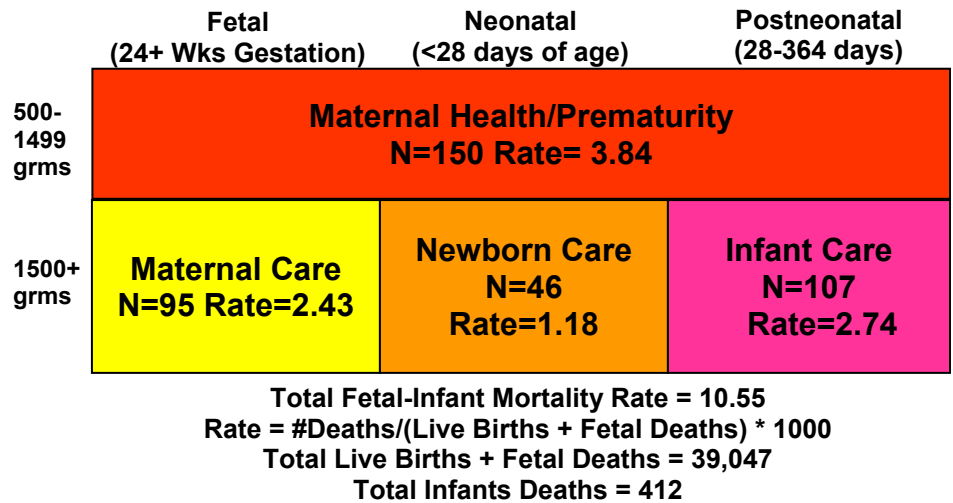


Source: Florida Department of Health, Office of Vital Statistics, 2006
 Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, December 2007

Duval County's Perinatal Periods of Risk

The Perinatal Periods of Risk Approach (PPOR) was developed by Dr. Brian McCarthy from the W.H.O. Perinatal Collaborative Center at CDC and other W.H.O. colleagues to monitor and investigate feto-infant mortality problems. The PPOR approach is a user-friendly tool to map fetal-infant mortality by birth weight and age at death with the aim of reducing the overall fetal-infant mortality rate. PPOR analysis is carried out on a specific geographic area using data on fetal and infant deaths. The 4 components in Figure 6 take into account time of death and weight at delivery. The goal is to help develop strategies that can prioritize prevention efforts after identification

Figure 6 Duval County PPOR 2003-2005

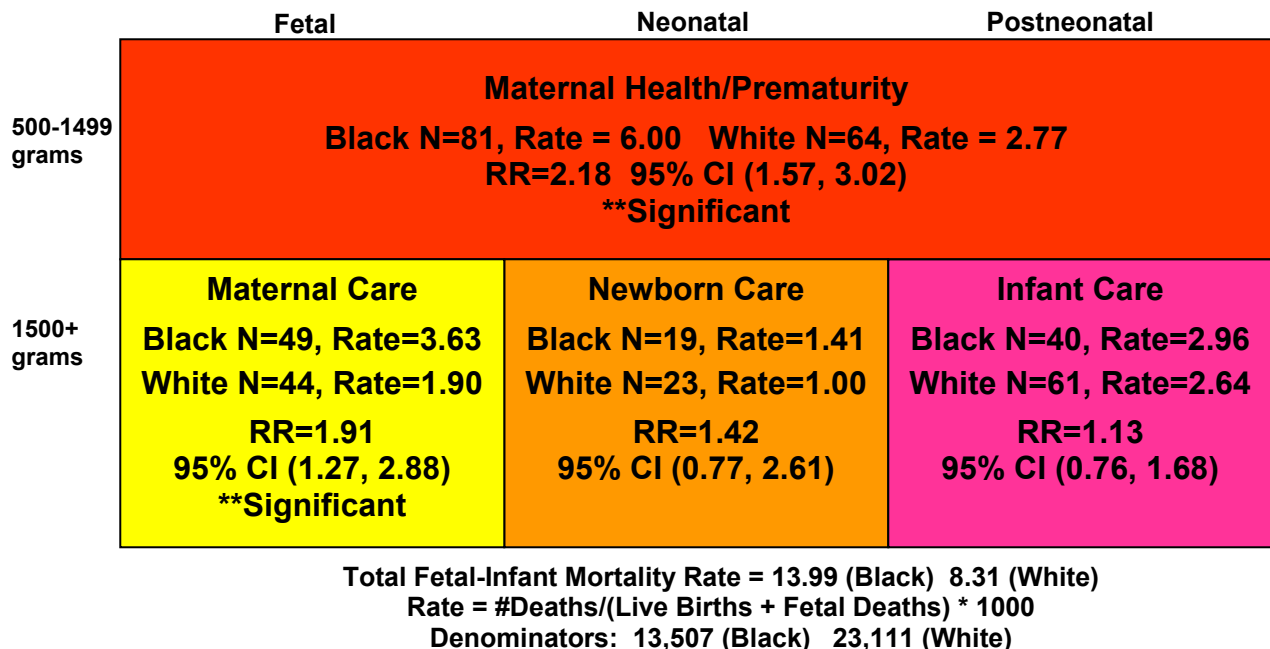


Source: Office of Vital Statistics, Duval Linked Data Files, 2007
Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, December, 2007

of where fetal/infant deaths occur. Through PPOR, we compare the death rates to the rates of a reference group with the best birth outcomes - white non-Hispanic women with 13 yrs or more of education who are 20 years of age

or older. Comparisons are also made between racial groups to identify disparities. The overall fetal-infant mortality rate for Duval is 10.55 per 1000 live births. The PPOR analysis for all races shows in Figure 6 that the highest rate of mortality, 3.84,
(continued on pg. 7)

Figure 7 Duval County PPOR by Race 2003-2005



Source: Office of Vital Statistics, Duval Linked Data Files, 2007
Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, December, 2007

Duval County's Perinatal Periods of Risk

(continued from page 6)

occurred in the maternal health/prematurity category. Comparisons for disparities indicate several significant differences (Figure 7). The black infant mortality rate is significantly higher in maternal health/prematurity than the white infant mortality rate. The same relationship holds true for black babies in the maternal care category. When comparing fetal-infant mortality rates, black babies die at a higher rate than white babies - 13.99 to 8.34, respectively. In Figure 8, maternal health/prematurity registered the highest death rate, 2.64, for the internal reference group as well. Their fetal-infant mortality rate was lower than the others at 7.67 deaths per 1000 live births. Comparisons against the reference group facilitate calculation of excess death rates (reference group rate minus white/black rate). This represents the fetal-infant deaths that would be prevented if outcomes for all groups were as good as the reference group. The excess death rates in Figure 9 are greatest for black babies. In maternal health/prematurity, 56% of the deaths could possibly be prevented if the outcomes for black moms were the same as the reference group. Fifty percent of white infant deaths in infant care could also have been prevented.

Fetal-infant mortality maps provide a simple approach to direct prevention efforts addressing infant mortality in Duval County.

Figure 8
Duval County Internal Reference Group PPOR 2003-2005

	Fetal (24+ Wks Gestation)	Neonatal (<28 days of age)	Postneonatal (28-364 days)
500-1499 grms	Maternal Health/Prematurity N=32 Rate= 2.64		
1500+ grms	Maternal Care N=19 Rate=1.57	Newborn Care N=10 Rate=0.82	Infant Care N=16 Rate=1.32
Total Fetal-Infant Mortality Rate = 7.67 Rate = #Deaths/(Live Births + Fetal Deaths) * 1000 Total Live Births + Fetal Deaths = 12,128 Total Infants Deaths = 93			

Source: Office of Vital Statistics, Duval Linked Data Files, 2007
Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, December, 2007

Figure 9
Duval Excess Death Rates as Determined by Using Internal Reference Group, 2003-2005

	Fetal	Neonatal	Postneonatal
500-1499 grms	Maternal Health/Prematurity All Races: 1.20 Black: 3.36 White: 0.13		
1500+ grms	Maternal Care All Races: 0.87 Black: 2.06 White: 0.34	Newborn Care All Races: 0.35 Black: 0.58 White: 0.17	Infant Care All Races: 1.42 Black: 1.64 White: 1.32
Total Difference between Ref Group & All Races: 3.84 Total Difference between Ref Group & Blacks: 7.64 Total Difference between Ref Group & Whites: 1.96			

Source: Office of Vital Statistics, Duval Linked Data Files, 2007
Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, December, 2007

Sources:

1. Perinatal Periods of Risk Approach: The U.S. Urban Experience. CityMatCH at the University of Nebraska Medical Center. www.citymatch.org/PPOR.org.
2. National Healthy Start Association. www.healthystartassoc.org/Overview_Part1_NHSA4-30-03.pdf.

Center for Health Statistics Report

Duval County Health Department
Institute for Health, Policy & Evaluation Research
900 University Blvd. North, Suite 604 (MC-99)
Jacksonville, Florida 32211
Phone: 904-253-1370
Fax: 904-253-2480

If you would like to receive this report
by email, please send an email to
DCHD_DataReports@doh.state.fl.us
and type the word subscribe in the subject line.



Visit our website!
www.dchd.net

Figure 10

