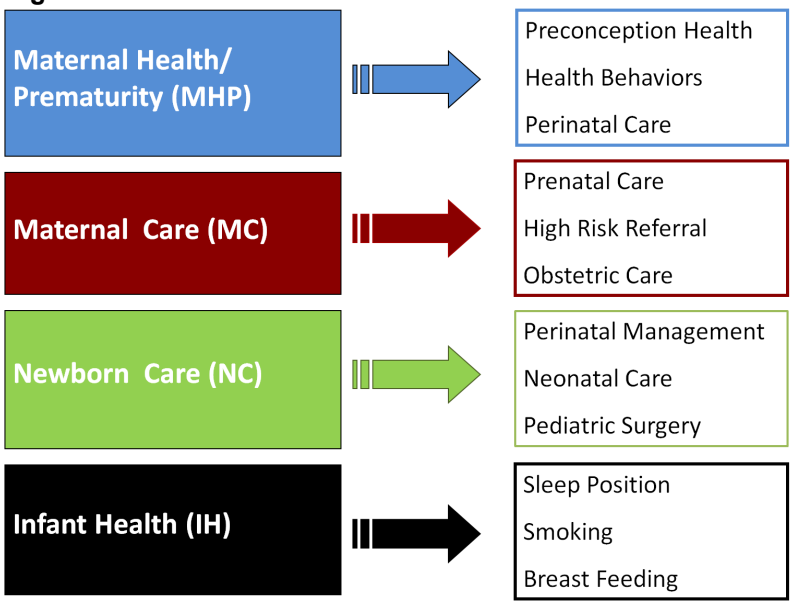
Feto-Infant Mortality in Dallas County

About Perinatal Periods of Risk (PPOR):

- The goal is to prioritize and target prevention and intervention efforts
- Based on birth weight and age of death, the PPOR approach partitions fetal and infant deaths into four areas (Figure 1) corresponding to specific intervention points in the health care continuum. These four components have different risk factors, causes of death, and corresponding interventions
- Texas and sub-populations are compared to a state-level reference group (non-Hispanic White women who are at least 20 years of age and have at 13+ years of education) generally known to have better feto-infant mortality outcomes
- Phase I analysis: Differences between the perinatal periods
- Phase II analysis: Periods and populations with the greatest disparities

Figure 1: PPOR Risk Periods: Points of Intervention



NOTE: Due to relatively small excess mortality, the newborn care risk period is not discussed

Phase I: Perinatal Period Comparison

Excess Feto-Infant Mortality in Dallas County

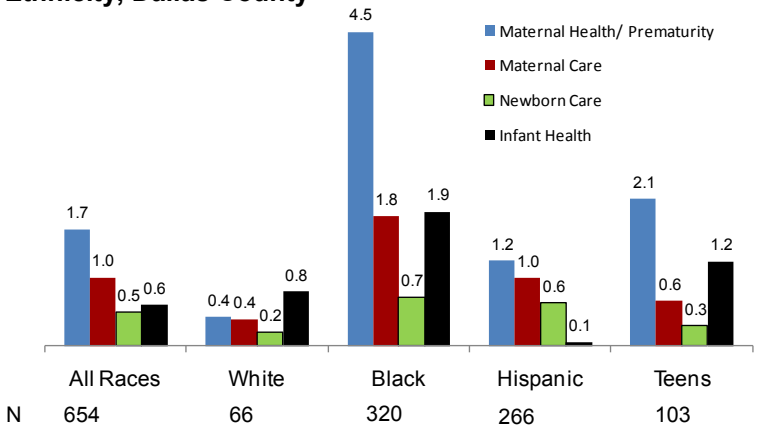
2005-2008 feto-infant mortality rates* (F-IMR) were:

- 14.0/1,000 live births for Blacks
- 7.9 for Hispanics
- 6.9 for Whites
- 9.3 for teens

Excess F-IMR is the difference between the exposure group (i.e. Black, White, Hispanic, teen) and the reference group. The excess F-IMR was (Figure 2):

- 8.9 for Blacks
- 2.9 for Hispanics
- 1.8 for Whites
- 4.2 for teens

Figure 2: Excess Feto-infant Mortality Rates by Race/ Ethnicity, Dallas County



- Overall, 44.7% of excess deaths occurred in the Maternal Health/Prematurity risk period. The Maternal Care period contributed another 26.2% of excess deaths. Infant Health and Newborn Care periods contributed 15.8% and 13.2% respectively
- Overall, Blacks had the highest excess F-IMR (8.9). **Potentially 64% of Black fetal and infant deaths were preventable**
- Blacks had the highest excess rates in all four risk periods, with a rate 11 times that of the White rate in the Maternal Health/Prematurity period
- Teens also had relatively high excess rates in the Maternal Health/Prematurity and Infant Health risk periods
- Among Hispanics the Maternal Health/Prematurity was most problematic

Recommendation

1. Target Maternal Health/Prematurity, Maternal Care and Infant Health-related interventions to Blacks
2. Target Maternal Health/Prematurity and Infant Health related interventions to teens
3. Target Maternal Health/Prematurity among Hispanics

Area with the Greatest Potential Impact:
Black Maternal Health/Prematurity

* F-IMR = number of fetal and infant deaths >=500 grams and >=24 weeks gestation / number of live births & fetal deaths >=500 grams and >=24 weeks gestation

Data Source: All data originate from Texas Department of State Health Services, Center for Health Statistics, 2005-2008

Phase II: Maternal Health and Prematurity (MHP)

Maternal Health/Prematurity (MHP) death in Dallas County: fetal and infant deaths weighing 500-1,499 grams

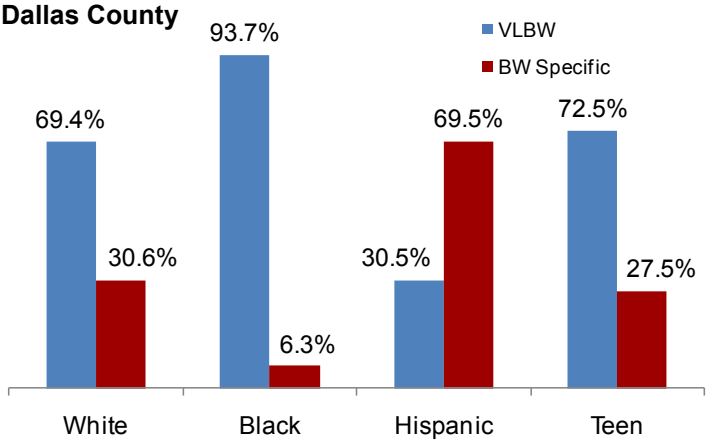
Very Low Birth Weight (VLBW) vs. Birth Weight Specific mortality:

- A larger percentage of feto-infant deaths in the MHP period are due to a greater number of VLBW births to Blacks, Whites and teens with 93.7% of deaths to Blacks attributed to VLBW (Figure 3)
- Hispanic deaths are primarily due to higher mortality rates at specific birth weight categories (Indicates a higher mortality rate among VLBW babies)

VLBW-Related Modifiable Risk Factors:

- Risk factors contributing most to VLBW:
  - Weight gain less than 15 lbs.
  - Inadequate and no first trimester prenatal care
  - Teen pregnancy
  - High parity (i.e. number of pregnancies) for age
  - Parental smoking
- 14% of VLBW births were attributed to weight gain less than 15 lbs
- Blacks, Hispanics and teens were more likely to have:
  - Inadequate and no first trimester prenatal care
  - High parity for age
- Teens were more likely to have gained less than 15 lbs during pregnancy
- Blacks and Hispanics had greater proportions of teen mothers

Figure 3: VLBW vs. Birth Weight Specific Mortality, Dallas County



BW Specific Modifiable Risk Factors for VLBW Births:

- Inadequate prenatal care, less than 12 years of education, premature rupture of membranes, and birth defects contributed most to BW specific mortality

Recommendations:

- Reduce the number of women gaining less than 15 lbs.
- Improve access to and use of prenatal care
- Stress importance of early entry into care
- Target interventions that reduce high parity for age
- Target interventions that reduce rates of teen pregnancy
- Target interventions that reduce parental smoking
- Target interventions that reduce birth defects

Phase II: Infant Health (IH)

Infant Health death in Dallas County: infants weighing more than 1,500g at birth and survived to more than 28 days

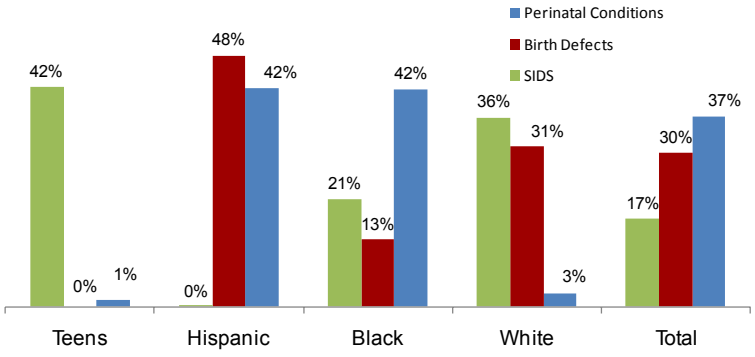
Causes of Infant Health-related death (Figure 4)**:**

- Perinatal conditions (primarily disorders related to short gestation and to complications of pregnancy, labor, and delivery) was the primary cause of death in the IH period representing 37% of excess deaths
- Birth defects and SIDS accounted for 30% and 17% of excess deaths, respectively
- Inadequate and no first trimester prenatal care, no breast feeding at hospital discharge, and parental smoking were risk factors contributing most to IH-related infant death

Recommendations:

- Target interventions that reduce prematurity, birth defects, and SIDS among Blacks and teens

Figure 4: Excess IH-Related Death by Race/Ethnicity and Cause, Dallas County



- Target interventions that promote breast feeding
- Improve access to and use of prenatal care
- Stress importance of early entry into care
- Target interventions that reduce parental smoking

Phase II: Maternal Care (MC)

Maternal Care risk period death in Dallas County: fetal deaths greater than or equal to 1,500 grams

- Blacks were 1.6 times as likely to have gained less than 15 lbs. compared to the reference group

Recommendations:

- Target interventions aimed at Black women to reduce the number of pregnant women gaining less than 15 lbs. during pregnancy