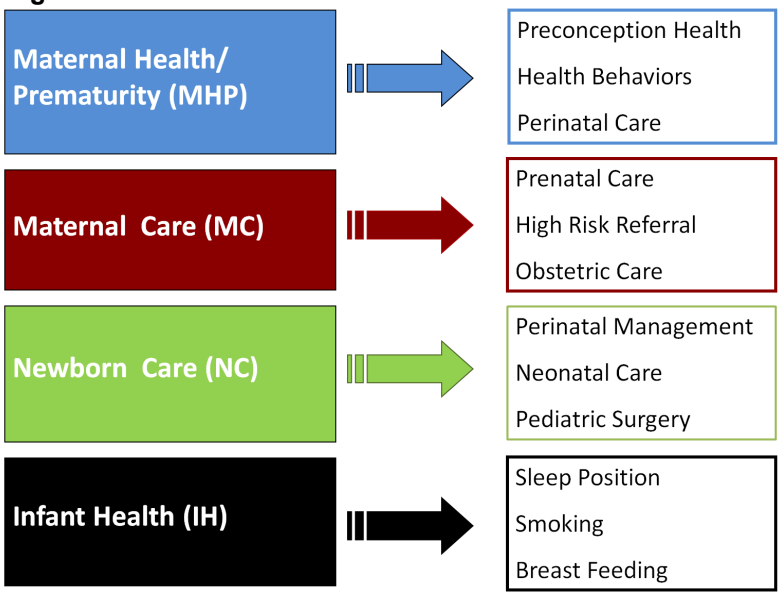
Feto-Infant Mortality in Health Service Region 11

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 HSR 11

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

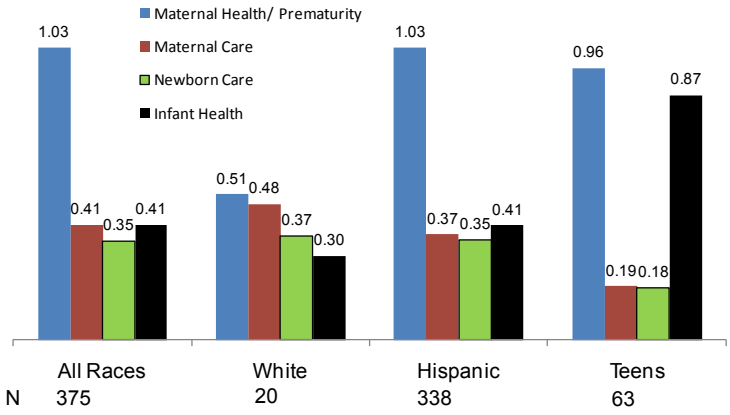
- 7.2/1,000 live births for Hispanics
- 6.7 for Whites
- 7.3 for teens

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):

- 2.2 for Hispanics
- 1.7 for Whites
- 2.2 for teens

Due to low numbers of births and infant deaths among Blacks in HSR 11, they could not be included in some analyses

Figure 2: Excess Feto-infant Mortality Rates by Race/ Ethnicity, HSR 11



- Overall, 47.0% of excess deaths occurred in the Maternal Health/Prematurity risk period. The Infant Health period contributed another 18.6% of excess deaths. Maternal Care and Newborn Care periods contributed 18.5% and 15.9% respectively
- Overall, Hispanics and teens had the highest excess F-IMR (2.2 each). **Potentially 31% of Hispanic and teen feto-infant deaths were preventable**
- For Hispanics, 47.7% of excess deaths occurred in the Maternal Health/Prematurity risk period, with an excess rate twice that of Whites in the same region
- For teens, 43.7% of excess deaths occurred in the Maternal Health/Prematurity, and 39.3% occurred in the Infant Health risk periods

Recommendations

1. Target Maternal Health/Prematurity among the Hispanic population
2. Target Maternal Health/Prematurity and Infant Health among teens

Areas with the Greatest Potential Impact:

Hispanic and teen 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 HSR 11: fetal and infant deaths weighing 500-1,499 grams

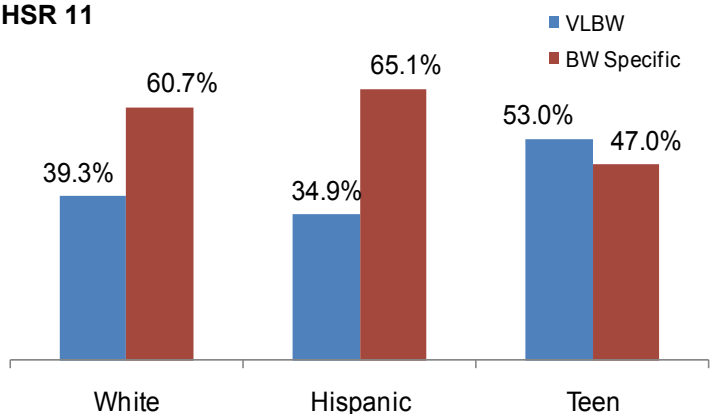
Very Low Birth Weight (VLBW) vs. Birth weight Specific mortality:

- A larger percentage of feto-infant deaths in the MHP period are due to higher mortality rates among Hispanics and Whites at specific birth weight categories (Indicates a higher mortality rate among VLBW babies)
- Deaths in the teen group are primarily due to a greater number of VLBW births (Figure 3)

VLBW-Related Modifiable Risk Factors:

- Risk factors contributing most to VLBW:
  - Weight gain less than 15 lbs.
  - Teen pregnancy
  - MEDICAID as the primary source of hospital payment
- Inadequate prenatal care and high parity (i.e. number of pregnancies) for age were minor contributors
- 16% of VLBW births were attributed to weight gain less than 15 lbs
- Hispanics, Blacks, and teens were more likely to:
  - Gain less than 15 lbs. during pregnancy
  - To use MEDICAID as the primary payer source
  - To have inadequate prenatal care
  - To have high parity for their ages
- Hispanics had the greatest proportion of teen mothers

Figure 3: VLBW vs. Birth Weight Specific Mortality, HSR 11



BW Specific Modifiable Risk Factors for VLBW Births:

- Birth defects contributed to 2.9% of VLBW deaths

Recommendations:

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

Phase II: Infant Health (IH)

Infant Health death in HSR 11: infants weighing more than 1,500g at birth and survived to more than 28 days

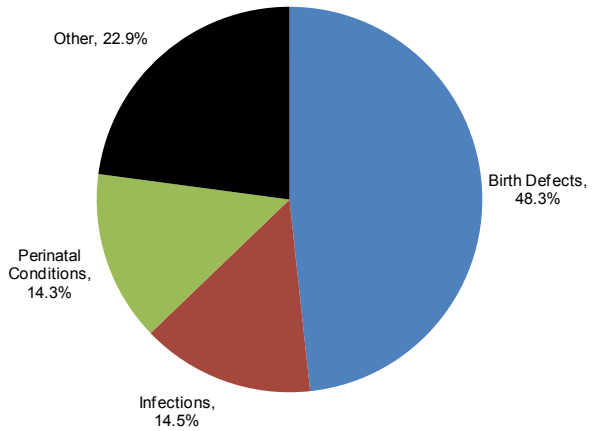
Causes of Infant Health-related death (Figure 4)**:**

- Birth defects were the primary cause of death in the IH period accounting for 48.3% of excess deaths
- Infections represented 14.5% of excess deaths
- Perinatal conditions (primarily disorders related to short gestation and to complications of pregnancy, labor, and delivery) accounted for another 14.3% of excess deaths
- No breast feeding at hospital discharge and having less than 13 years of education were the primary risk factors contributing IH-related infant death

Recommendations:

- Target interventions that reduce birth defects
- Target interventions that reduce infections
- Target interventions that reduce prematurity
- Target interventions that promote breast feeding

Figure 4: Excess IH-Related Death by Race/Ethnicity and Cause, HSR 11



- Provide opportunities/incentives for continuing education beyond high school for women of child-bearing ages

Phase II: Maternal Care (MC)

Maternal Care risk period death in HSR 11: fetal deaths greater than or equal to 1,500 grams

- Hispanics were 2.1 and teens 1.6 times as likely to have gained less than 15 lbs. compared to the reference group
- Hispanic mothers were more likely than the reference group to have diabetes

Recommendations:

- Target interventions aimed at Hispanics and teens to reduce the number of pregnant women gaining less than 15 lbs.
- Target interventions that reduce/control diabetes among Hispanics