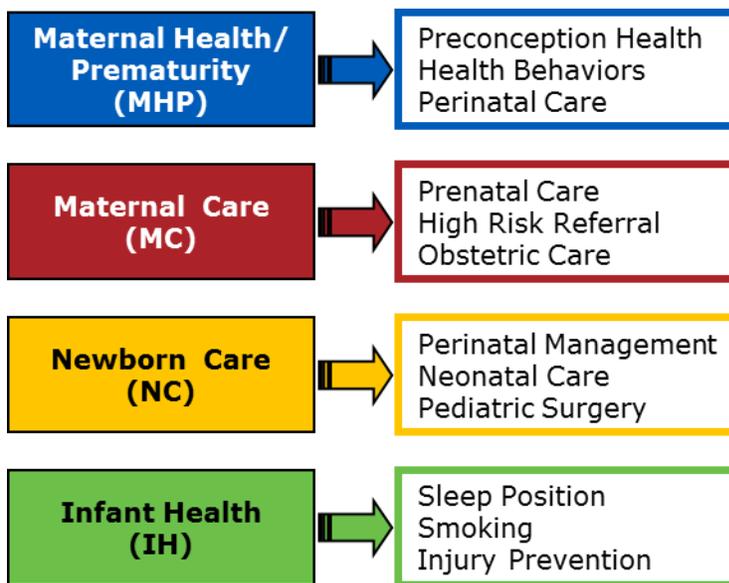


# Feto-Infant Mortality in Public Health Region 7, 2010-2014

## About Perinatal Periods of Risk (PPOR)

- Based on birth weight and age at death, fetal and infant deaths are partitioned into four corresponding risk periods
- These four periods have different risk factors and causes of death, and hence, different opportunities for prevention
- These four risk periods represent distinct points of intervention in the health care continuum (Figure 1)
- Region 7 and specific study populations are compared to a state-level reference group generally known to have better feto-infant mortality outcomes (i.e., non-Hispanic White women who are 20+ years of age and have 13+ years of education)

Figure 1: PPOR Risk Periods Points of Intervention



## Phase I: Perinatal Period Comparison

### Excess Feto-Infant Mortality in Texas

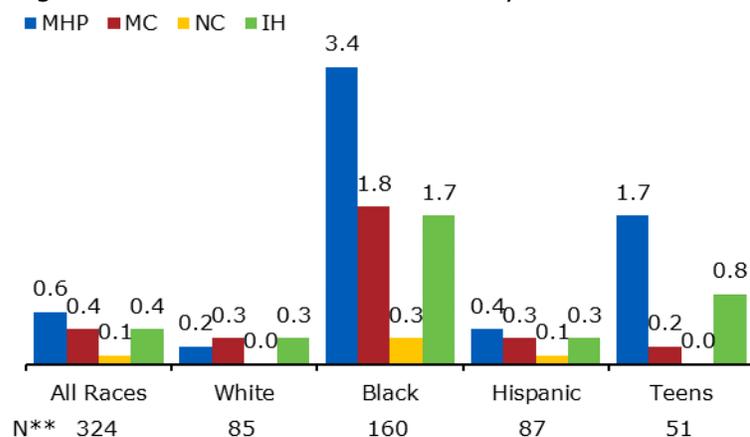
Feto-infant mortality rates\* (F-IMR) were:

- 6.0/1,000 for White mothers
- 12.4 for Black mothers
- 6.3 for Hispanic mothers
- 7.9 for teen mothers

Excess F-IMR is the gap in F-IMR between the study population (i.e., Black, White, Hispanic or teens) and the reference group. Total excess F-IMR estimates were (Figure 2):

- 0.8 for White mothers
- 7.2 for Black mothers
- 1.1 for Hispanic mothers
- 2.7 for teen mothers

Figure 2: Excess Feto-Infant Mortality Rates



\*F-IMR = # of fetal & infant deaths  $\geq$ 500g and  $\geq$ 24 weeks / # of live births & fetal deaths  $\geq$ 500g and  $\geq$ 24 weeks  
 \*\*N = # of excess fetal and infant deaths

- Black mothers had the highest excess F-IMR in each of the 4 risk periods
- Potentially 58% of Black fetal and infant deaths were preventable (i.e., excess fetal and infant deaths)
- For Black mothers, 47% of all excess feto-infant deaths occurred in the MHP risk period
- For teen mothers, 95% of excess feto-infant deaths occurred in the MHP and IH risk periods

### Recommendations

- Target interventions to Black populations for MHP, MC and IH-related deaths
- Target interventions to teen mothers for MHP and IH-related deaths
- Target MHP-related deaths among Hispanic populations
- Target MC and IH-related deaths among White populations

### Area with the Greatest Potential Impact Black Maternal Health/Prematurity Risk Period



Texas Department of State Health Services

## Phase II: Maternal Health and Prematurity (MHP) Period of Risk

The MHP risk period includes very low birth weight (VLBW) fetal and infant deaths (<1,500g)

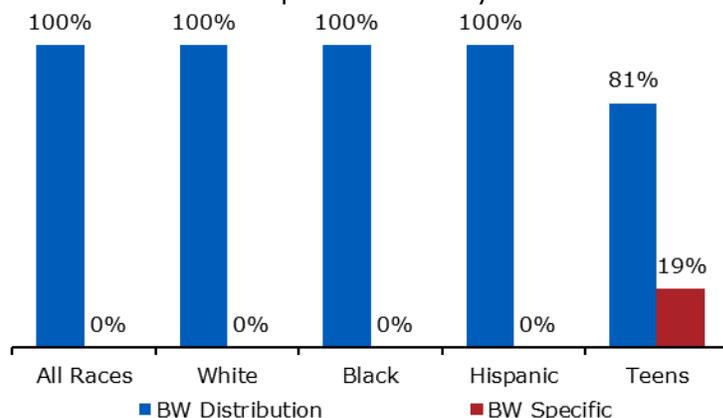
### Birth Weight (BW) Distribution vs. Birth Weight (BW) Specific Mortality (Figure 3)

- The majority of MHP-related excess deaths were due to a greater number of VLBW births among the study populations compared to the reference group (a difference in BW distribution)
- For teen mothers, some proportion of excess fetoinfant death was attributable to a higher mortality rate among VLBW births compared to the reference group (a difference in BW specific mortality)

### BW Distribution Modifiable Risk Factors

- Weight gain less than 15 lbs. accounted for 20% of VLBW births
- Smoking during pregnancy and previous preterm birth also contributed to risk of VLBW birth (3% each)
- Black, Hispanic and teen mothers were more likely to gain less than 15 lbs.
- Black, White and teen mothers had higher rates of smoking during pregnancy
- Black and Hispanic mothers were more likely to have a previous preterm birth

Figure 3: Excess MHP-Related Death Attributable to BW Distribution vs. BW Specific Mortality



### BW Specific Modifiable Risk Factors

- Premature rupture of the membranes accounted for 9% of VLBW infant deaths
- Inadequate prenatal care accounted for 5% of VLBW infant deaths, while congenital anomalies contributed to 3%

### Recommendations

- Reduce the number of women gaining less than 15 lbs. during pregnancy
- Reduce smoking during pregnancy
- Target interventions to women with previous preterm birth or ruptured membranes
- Reduce congenital anomalies
- Increase access to prenatal care

## Phase II: Infant Health (IH) Period of Risk

The IH risk period includes infants weighing  $\geq 1,500$ g at birth and surviving  $\geq 28$  days

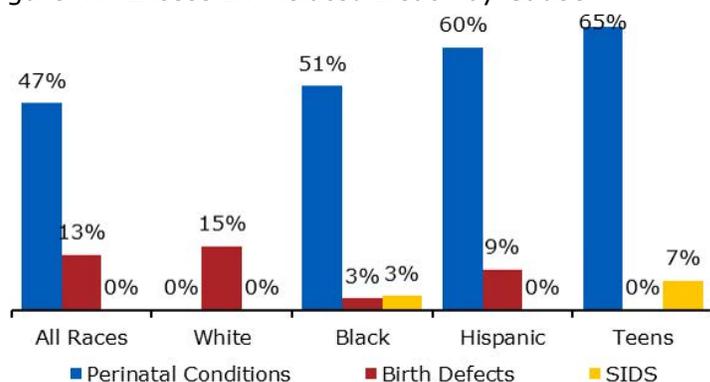
### Causes of IH-Related Death (Figure 4)

- Perinatal conditions accounted for 47% of overall excess deaths in the IH risk period
- In Phase I, Black infants and infants born to teen mothers had the greatest excess mortality in the IH risk period
- SIDS contributed to 7% of excess deaths among infants born to teen mothers
- 5% of Black infant deaths were attributable to infections (not shown)
- Birth defects contributed to 15% of excess deaths among White infants

### IH-Related Modifiable Risk Factors

- 2% of infant deaths were attributable to smoking during pregnancy
- Breastfeeding was associated with a 13% reduced risk of infant death

Figure 4: Excess IH-Related Death by Cause



### Recommendations

- Reduce prematurity among all populations
- Reduce birth defects among White infants
- Reduce SIDS among infants born to teen mothers
- Reduce infections among Black infants
- Reduce parental smoking
- Increase rates of breastfeeding