Perinatal Periods of Risk:

The Miami-Dade County Experience



Guoyan Zhang, Vanessa Villamil Florida Department of Health in Miami-Dade County Epidemiology, Disease Control & Immunization Services

Background and History:

- Perinatal Periods of Risk (PPOR) is a comprehensive approach to help communities use data to reduce infant mortality
- Helps identify periods of risk and primary prevention areas for feto-infant death
- Originates from an assessment tool created for developing countries by Dr. Brian McCarthy and colleagues at the World Health Organization (WHO) and Centers for Disease Control and Prevention (CDC)
- Adapted and modified for use in the US by a City MatCH working group





"If some mothers and babies in our community or elsewhere in the nation already are achieving optimal birth outcomes in terms of lower fetoinfant mortality, why should not all mothers and babies experience similar levels of lower mortality?"

Background Continued:

- Stage 1: Readiness
- Stage 2: Data and assessment
- Stage 3: Strategy and planning
- Stage 4: Implementation
- Stage 5: Monitoring and evaluation
- Stage 6: Investment

Analytical Preparation:

- A group with optimal birth outcomes is identified in the community and used as a benchmark to identify excess deaths
- PPOR uses birth certificate data, death certificate data, and linked infant death data to map periods of risk and identify excess deaths as well as opportunity gaps





Year

Infant Mortality Rate

Rate/1,000 live births

in Miami-Dade County and Florida, 2000-2017





Year



Target and Reference Group in Miami-Dade

Target Group: Non-Hispanic Black including Haitian

- Live Birth-Infant Death Data: Non-Hispanic Black including Haitian
- Fetal Death Data: 24 weeks and above, Birthweight 500 grams and Above

<u>Reference Group</u>: Non-Hispanic White and Hispanic Aged 20 and above, education: high school and above

- Live Births-Infant Death Data: Non-Hispanic White and Hispanic
- Fetal Death Data: 24 weeks and above, Birthweight 500 grams and above



Data Selection:

- Miami-Dade County Residents' Live Birth 2014-2016 cohort data with birthweight 500 grams and above
- Miami-Dade County Residents' Fetal Death data with gestation age 24 weeks and above; birthweight 500 grams and above







Map Fetal-Infant Mortality, Miami-Dade, 2014-2016 Live Births Cohort and Fetal Deaths All Race/Ethnicity











Comparison of Fetal-Infant Death Mortality Between Targeted Group and Reference Group, Miami-Dade County, 2014-2016

Group	Maternal Health/	Maternal	Newborn	Infant	Fetal-Infant
	Prematurity	Care	Care	Health	Mortality
Miami-Dade Overall	284 (2.9)	187 (1.9)	75 (0.8)	85 (0.9)	631 (6.5)
NonHispanic Black	108 (5.6)	76 (3.9)	27 (1.4)	37 (1.9)	248 (12.8)
NonHispanic White & Hispanic	128 (2.0)	78 (1.2)	37 (0.6)	39 (0.6)	284 (4.3)
NonHispanic Black includes Haitian					

Excess Rate



Excess Fetal-Infant Mortality in Targeted Group Compared to Reference Group, Miami-Dade County, 2014-2016

Maternal Health/	Maternal	Newborn	Infant	Fetal-Infant
Prematurity	Care	Care	Health	Mortality
5.6	3.9	1.4	1.9	12.8
2	1.2	0.6	0.6	4.3
3.6	2.7	0.8	1.3	8.5
	Maternal Health/ Prematurity 5.6 2 3.6	Maternal Health/ PrematurityMaternal Care5.63.921.23.62.7	Maternal Health/ PrematurityMaternal Newborn Care5.63.91.421.20.63.62.70.8	Maternal Health/ PrematurityMaternal Newborn CareInfant Health5.63.91.41.921.20.60.63.62.70.81.3

NonHispanic Black includes Haitian





Reduce Infant Mortality among Black Mothers



- Infant Mortality represents many factors surrounding birth, including but not limited to: the health of the mother, health services accessibility, prenatal care and the services delivered to the mother and infant care.
- In addition, high infant mortality rates are considered preventable and thus can be influenced by various education and care programs.



Infant Mortality Rates for Selected Top 3 Causes of Death by Mother's Race/Ethnicity, Miami-Dade County, 2005-2016



Extremely low birth weight accounted for 26% of Perinatal Conditions (P00-P96)

Infant Deaths from Congenital Malformations in Miami-Dade, 2005-2016



—Miami-Dade

Infant Deaths from extremely low birthweight or extreme immaturity in Miami-Dade, 2005-2016





—Miami-Dade

Birthweight and Infant Mortality Rates Miami-Dade County, 2005-2016





Birthweight (grams)

Percent of Low Birthweight (<2,500 grams) by Mother's Race/Ethnicity Miami-Dade County, 2005-2016





Percent of Preterm Birth (<37 weeks) by Mother's Race/Ethnicity Miami-Dade County, 2005-2016





%

Most Common Risk Factors Associated with Low Birthweight and Infant Mortality

Low Birthweight

- Mother's Social Demographic Characteristics: Age, Race/Ethnicity, Education, Marital Status, Low Income
- Congenital Anomalies
- Preterm
- Previous Preterm Birth
- Low Weight Gain during Pregnancy
- Unintentional Pregnancy, Stress/Depression, Substance use
- Chronic Disease/Condition

Infant Mortality

HEALTH

- Mother's Social Demographic Characteristics: Age, Race/Ethnicity, Education, Marital Status, Low Income
- Congenital Anomalies
- Preterm and Low Birthweight
- Previous Poor Outcome
- Low Weight Gain during Pregnancy
- Breast Feeding
- Unintentional Pregnancy, Stress/Depression, Substance use

Using unlinked data to Compare Miami-Dade County's Selected Indicators With Broward, Palm Beach and State Average 2008-2017



Infant Deaths Per 1,000 Live Births in Miami-Dade, Broward, Palm Beach And Florida, 2008-2017



Percent of Live Births Under 2500 Grams (Low Birth Weight)



шн

Percent of Live Births Under 1,500 Grams (Very Low Birth Weight),





Percent of Preterm Birth with Low Birth Weight





Percent of Live Births with Adequate Prenatal Care (Kotelchuck index)





Percent

Percent of Mothers who initiate breastfeeding

Percent





Infant Deaths From Perinatal Conditions Per 100,000 population





Infant Deaths From Congenital & Chromosomal Anomalies Per 100,000 Live Births







Florida HEALTH





Questions?

Questions?

