Infant mortality in Northeast Florida continues to be a major health issue affecting families. In 2018, 147 babies died before their first birthday. The regional infant mortality rate of 7.9 deaths per 1000 live births (an increase from 7.3 deaths in 2017) is significantly higher than the state (6 deaths) and nation (5.8 deaths). The leading causes of death were:

- Other perinatal conditions, including placenta complications, premature rupture of membranes, bacterial sepsis (31 percent)
- Sudden Unexpected Infant Deaths (SUIDs), which were largely sleep-related (21 percent)
- Prematurity/Low Birth Weight (20 percent)

Each month, fetal/infant death cases are selected for the project based on specific criteria. Utilizing an approach developed by the American College of Obstetrics and Gynecology (ACOG), information is abstracted from birth, death, medical, hospital, Healthy Start, WIC and autopsy records. In some cases, law enforcement, medical examiner, EMS and child protective services records are included. Efforts are also made to interview the family. No information that identifies the family or medical providers is included on the abstraction form. As part of the annual review, 28 case summaries are developed and presented bimonthly to the Case Review Team (CRT). The CRT, a multidisciplinary group of community medical and social service professionals, examines each case to determine medical, social, financial and other issues that may have impacted the poor birth outcome. A Community Action Group (CAG) works to implement the FIMR recommendations.

The Coalition received funding from local partners to review and complete an analysis of all babies that did not live to see their first birthday in Northeast Florida in 2018.

The detailed analysis included abstraction of medical and vital statistics records for all infant deaths; analysis of fetal and infant deaths (overall and by race) using the Perinatal Periods of Risk to create a population-based framework and identify disparities in birth outcomes; and integration of information abstracted from patient records into PPOR analysis to determine the impact of specific medical and social risks, gaps and opportunities for intervention.

The review utilized Doctor of Nursing Practice students from Jacksonville University to assist with data abstraction and maternal interviews.
The Perinatal Periods of Risk (PPOR) approach is a simple approach to infant mortality that identifies gaps in the community. PPOR provides an analytic framework and steps for investigating and addressing the specific local causes of high fetal and infant mortality rates and disparities. Initial analyses are based only on vital records data (births, infant deaths and fetal deaths). The process looks at mortality data by age of death and birthweight. Each period of risk is associated with its own set of risks and prevention factors.

A review of the 2016-18 fetal and infant deaths found that the largest proportion of fetal-infant deaths fell into the maternal health/prematurity and maternal care periods. Further analysis by race found that these periods of risk also reflected the greatest disparities in birth outcomes.

Infant care contributed to poor outcomes among white babies (sleep-related deaths, accidents, abuse/neglect).

The analysis also looked at the contribution of birthweight in the largest category (maternal health and prematurity). The Northeast Florida deaths were compared to a reference group with the best outcomes to determine whether it was an issue of too many small, unviable babies being born OR whether there was a difference in survival at specific birthweights. The findings pointed to too many babies being born too small and too soon. The root causes of birth weight distribution are behavioral, social, health and economic disparities, which underscores the impact of social determinants of health on birth outcomes. Only 10 percent of deaths in this period were due to medical or health care factors like access, service delivery or quality improvement opportunities.

**Social Determinants of Health Identified Across the Life Course in FIMR Cases**

- **Infancy**
  - Poverty
  - Born substance-exposed
  - Unsafe neighborhood
  - 2 pre-term births

- **Childhood & Adolescence**
  - Poverty
  - No HS diploma
  - Repeat teen pregnancies
  - 8th grade education
  - 2 pre-term births

- **PPOR Results 2016-2018**
  - All Races
  - By Race

- **PPOR Comparison: 2002-04 vs. 2016-18**
  - Maternal Health/Prematurity
  - Maternal Care
  - Newborn Care
  - Infant Care
FIMR Review: Key Takeaways

Pre-pregnancy health of a mother
- Lack of insurance coverage before and after pregnancy
- Chronic health conditions, especially among black moms

Lack of family planning
- Non-use of family planning
- High rate of birth intervals <18 months
- Lack of postpartum visits

Maternal Care
- Black N=47, Rate=3.48
- White N=35, Rate=2.02
- RR=1.74  95% CI (1.12, 2.69)
- **Significant

Newborn Care
- Black N=20, Rate=1.48
- White N=18, Rate=1.04
- RR=1.44  95% CI (0.76, 2.72)
- Black N=32, Rate=2.37
- White N=29, Rate=1.67
- RR=1.43  95% CI (0.86, 2.36)

**Significant

Maternal Health/Prematurity
- N=158 Rate= 3.97

Pre-pregnancy

Key issues include: Lack of insurance before pregnancy; social determinants of health had a disproportionate impact on black moms; black moms more likely to have previous pre-term or low birth weight birth

- 61% Unmarried
- 50% Reported pregnancy as unintended or mistimed
- 77% HS education or less
- 43% Self-reported substance use
- 55% Low income
- 20% Used tobacco during pregnancy
- 27% Previous pre-term or low birth weight birth
- 59% Overweight or obese prior to pregnancy
- 40% <18 months between pregnancies

Prenatal

Key issues include: Access or compliance issues (transportation, Medicaid, other insurance problems) were documented in nearly half of the cases; One-third of cases had documented stressors during pregnancy like financial problems, intimate partner violence, depression; While 40 percent of cases had documented home visit, there was low intensity and a short duration of services across programs.

- 33% Entered prenatal care late or not at all
- 59% Covered by Medicaid
- 45% Received <5 prenatal visits prior to delivery

Baby/Postpartum

Key issues include: Only 23 of 147 cases included some documentation of a postpartum visit by mom

- 36% Babies lived less than one day
- 40% Infants had documented morbidity during nursery stay
- 52% Babies lived less than one week
- 11% Infants had documented substance exposure

Delivery

Key issues include: Placental abruptions; Infections; Cord problems; HELLP syndrome.

- Documented pre-term labor
- Premature Rupture of Membranes (PROM) or Preterm PROM

Social Determinants of Health Identified Across the Life Course in FIMR Cases

- Poverty
- Uninsured pre-pregnancy
- Housing unstable
- Limited prenatal care
- Poor oral health
- History of substance use
- Late access Medicaid
- Pregnancy
- Transportation issues
**Recommendations**

**Increase provider screening rates**
In Florida, state law requires every prenatal care provider to offer a Universal Prenatal Risk Screen to all pregnant women to assess risk for preterm birth. The Universal Screen is voluntary and women can choose not to be referred to a home visitation program. The Northeast Florida screening rate was 52.8 percent in 2018, compared to the statewide rate of 70 percent.

**Develop medical home model**

**Home Visitation**
Enhance supports for families before and after birth utilizing home visitation programs like Healthy Start, Healthy Families, Nurse-Family Partnership and Universal Nurse Home Visitation. Improve the identification, engagement and retention of families through continuous quality improvement.

**Medical One Stop Shop: Social Determinants of Health Investment**
Families looking for additional support face a fragmented system, begin with where services are located. Invest in medical provider hospitals/hubs/clinics/offices that offer one-stop comprehensive services in addition to medical care.

**Improve Quality of Care**
The Cultural Humility Model: An effective approach to addressing bias and racism. Results can be used as part of broader efforts to align payment with quality, such as rewarding providers that successfully reduce racial disparities in maternal and infant mortality. Take advantage of opportunities to participate in Florida Perinatal Quality Collaborative. Incorporate CQI in ongoing medical, community service delivery. Incoporate community voice.

**Community Engagement**
- Families, community residents & leaders, faith-based organizations
- Maternal & Child Health providers, stakeholders
- Doctors, hospitals, midwives, other MCH providers
- Hospitals
- Family planning, public health social service providers
- Healthy Start, home visiting programs
- Public & private payers (insurers, MCOs)
- Policymakers
- Businesses

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