Effective Review of Natural Infant Deaths

2018 NATIONAL CHILD DEATH REVIEW CONFERENCE
Helping Communities Celebrate More Birthdays
May 8, 2018
Caveat!

- We aren’t asking our CDRs to turn into FIMRs!

- How can we build capacity for teams to think strategically and creatively about how CDR can address natural infant deaths in a meaningful way?
Infant mortality

- Definition: The death of any live born infant prior to his/her first birthday.

- “... the most sensitive index we possess of social welfare ...”

Sir Arthur Newsholme
Infant mortality in the United States

- 3,978,497 births in 2015
  - 8.1% were low birth weight (less than 5.5 pounds)
  - 9.6% preterm, (born less than 37 weeks gestation)
- 23,215 infant deaths
- Rate of 5.84 deaths per 1,000 live births

https://www.cdc.gov/nchs/fastats/infant-health.htm
US infant mortality trends

Deaths per 1,000 Live Births

Data Source: https://www.cdc.gov/nchs/nvss/linked-birth.htm
The National Center for Fatality Review and Prevention
US Infant Mortality Ranking: 27th

Disparities in Infant Mortality Rates

**Deaths per 1,000 Live births**

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Deaths per 1,000 Live births</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Hispanic Black</td>
<td>11.11</td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td>7.61</td>
</tr>
<tr>
<td>Hispanic</td>
<td>5</td>
</tr>
<tr>
<td>Non-Hispanic White</td>
<td>5.06</td>
</tr>
<tr>
<td>Asian, Pacific Islander</td>
<td>4.1</td>
</tr>
</tbody>
</table>

Data Source: [https://www.cdc.gov/nchs/nvss/linked-birth.htm](https://www.cdc.gov/nchs/nvss/linked-birth.htm)
Impact of Infant Deaths on Overall Child Mortality

- There were 42,909 deaths of youth and children <19 in the US in 2015.
- More than half of those deaths (54%) occurred before the 1st birthday.

<table>
<thead>
<tr>
<th>First Year of Life</th>
<th>Next 18 Years of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>23,347 Infant Deaths</td>
<td>3,965 1-4</td>
</tr>
<tr>
<td></td>
<td>5,411 5-14</td>
</tr>
<tr>
<td></td>
<td>10,186 15-19</td>
</tr>
</tbody>
</table>

Preterm \textit{related} infant mortality

- 36.5\% of all infant deaths in the US are preterm related
- Prematurity rate is not going down
  - Preterm birth rate rose for the second straight year in 2016, up 2\% from 9.63 in 2015 to 9.84 in 2016
- Goals: 8.1\% by 2020, 5.5\% by 2030
Birth Defects

• Accounts for about 20% of IM annually
  – Affect 1 in every 33 infants (about 3% of all babies) born in the US each year

• Causes
  – Maternal smoking, drinking, drugs use during pregnancy
  – Medical conditions such as obesity, infections, diabetes
  – Teratogens: radiation, chemicals, drugs
  – Family Hx of birth defects
  – Older maternal age (over 34)
Birth Defects Prevention

• Most of prevention is aimed at reducing exposures and managing risk factors
  – Regular prenatal care
  – Healthy weight
  – Avoid tobacco, alcohol, drugs
  – Prevent infections
  – Manage diabetes and any other chronic medical condition

• 400 micrograms (mcg) of folic acid every day
  – 4,000 micrograms (4.0 mg) daily if previous neural tube defect
Status of Reviews in the NFR-CRS

• Of the 205,621 cases reviewed by teams in the NFR-CRS:
  – 54% (110,743) are infants under the age of 1
    • 31,751 were prematurity/low birth weight
    • 12,058 were congenital anomalies
The 4 “Rs” of successful review of Natural Infant Deaths

- Identify **Risk** factors
- Get the **Right** People to the table
- Gather the **Right** information
  - Get a clear picture of maternal health history
  - Past pregnancy outcomes
- **Recommendations** – best practices and strategies to reduce preterm infant deaths
Risk factors for preterm birth

- Maternal
- Fetal
- Placental

- Biological
- Psychological
- Social
Biological risk factors

- Multiple pregnancies
- Abnormal uterine or cervical anatomy
  - Uterine fibroids
  - Cervical insufficiency
- Infection – UTI, placenta
- Placental abnormalities
- Alcohol / drugs / cigarettes
Biological risk factors

- Previous preterm birth
- Especially young or advanced age
- Underweight or overweight
- Fetal abnormalities
- Short interpregnancy intervals
Biological risk factors

- Poor nutritional status
- Chronic maternal health issues
  - High blood pressure
  - Diabetes
  - Blood clotting disorders
Psychological risk factors

• Stress
• Anxiety / depression
• Domestic violence or abuse
Social risk factors

- Low socioeconomic status
- Late / incomplete prenatal care
- Lack of social support
- Unmarried
- Long work hours / extended standing
- Environmental exposures
- Exposure to racism
The truth about race . . .

“We need to stop saying and teaching that being Black is a risk factor for illness and death. Instead, we need to start telling the truth: It’s exposure to racism that is the risk factor.”

Joia Crear-Perry, president and founder of the National Birth Equity Collaborative, (NBEC)

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Team Composition

• Medical Expertise
  – Obstetrics
  – Maternal Fetal Medicine
  – Pediatrics
  – Pathology
  – Emergency Department
  – Family Practice
  – Psychiatry
Team Composition

• Other Health Care Providers
  – Nurses
  – Social Workers
  – Dietitian
  – Discharge Planning
  – Home Care & Home Visiting
Team Composition

- Human Service Providers
  - Child Welfare Agencies
  - Mental Health
  - Substance Abuse

- Housing Authority
- Transportation Authority
Team Composition

• Public Health
  – Medicaid
  – Health Plans
  – WIC
  – Family Planning
  – Outreach Workers
Team Composition

• Advocacy Groups
  – March of Dimes
  – Healthy Mothers/Healthy Babies
  – Family Support Groups
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Sources of information for Maternal Health History

- Birth and Death certificates
- Prenatal records
  - OB/GYN history, past pregnancies
- Hospital records
  - Antepartum
  - Delivery
  - Newborn/NICU
  - ED admissions
Sources of information for Maternal Health History

• Public Health Records
  – Home Visiting
  – WIC
  – Family Planning
  – Support services (CSHC, Home Visiting, Healthy Start)
• Human Service Records (including CPS histories)
• Police reports (domestic violence, other stressors)
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## Recommendations

<table>
<thead>
<tr>
<th>Improving Health Care Services</th>
<th>Strengthening Families and Communities</th>
<th>Medical Clinical Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preconception care</td>
<td>Father Involvement</td>
<td>Hydroxyprogesterone (P-17)</td>
</tr>
<tr>
<td>Improve access and quality of prenatal care</td>
<td>Care coordination and systems integration</td>
<td>Cervical Cerclage</td>
</tr>
<tr>
<td>Risk Assessment, screening, treatment, referrals</td>
<td>Implement strategies to reduce implicit bias in Health Care settings</td>
<td>Eliminate early elective deliveries for non-medical reasons</td>
</tr>
<tr>
<td>Post Partum Care</td>
<td>Access to evidence based home visiting</td>
<td></td>
</tr>
</tbody>
</table>

https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Optimizing-Postpartum-Care