CLOSING THE FETO-INFANT MORTALITY RACIAL GAP

Identifying areas for intervention using the Perinatal Periods of Risk Approach

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Detroit, MI
Agenda

1. Context
2. Data
3. Intervention
1. Context

A few things to know about Detroit
A few things to know about Detroit

1. It’s a great city.
A few things to know about Detroit

1. It’s a great city.

2. Detroit’s population has plummeted and economic opportunity has gone with it.
DETROIT’S POPULATION 1840 TO 2012

SOURCE: U.S. Census

KOFI MYLER/Detroit Free Press
% Unemployed by Zip Code

5 Year estimates (2008-2012)
Number of Live Births by Zip Code

3 Year Averages (2010-2012)
A few things to know about Detroit

1. It’s a great city.

2. Detroit’s population has plummeted and economic opportunity has gone with it.

3. Detroit is pretty racially segregated.
Distribution of racial and ethnic groups in 2010

One dot = 200 people
- White
- Black
- Hispanic
- Asian
- Native American
- Other
A few things to know about Detroit

1. It’s a great city.
2. Detroit’s population has plummeted and economic opportunity has gone with it.
3. Detroit is racially divided.
4. Infant mortality is high, especially for black women.
Infant Mortality Trends
Detroit vs. MI vs. US

Infant Deaths Per 1,000 Live Births

- Detroit: 20.3
- Michigan: 10.7
- USA: 9.2
- HP2020: 6.9

Years:
Infant Mortality Trends by Race
Detroit, 1990-2012

Deaths per 1,000 live births

<table>
<thead>
<tr>
<th>Year</th>
<th>Black Rate</th>
<th>White Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-1992</td>
<td>22.6</td>
<td>10.3</td>
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<tr>
<td>1992-1994</td>
<td>14.8</td>
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<td>1994-1996</td>
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<td>1996-1998</td>
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<td>1998-2000</td>
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<td>2004-2006</td>
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<td>2006-2008</td>
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<tr>
<td>2008-2010</td>
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<tr>
<td>2010-2012</td>
<td>12.7</td>
<td>14.8</td>
</tr>
</tbody>
</table>
Black babies in Detroit will die at the current rate of white babies in Detroit.

Black babies in Detroit will die at the current rate of babies born outside of Detroit in Wayne County.

Black babies in Detroit will die at the current rate of white babies in the rest of Michigan.
We can’t wait
2. Data

PPOR Analysis Results, Detroit and Wayne County
PPOR “Map” of Fetal/Infant Mortality

Blue Box: 1.3 – 3.3 lbs

Age
Fetal deaths >= 24 weeks
Neonatal (Birth-27 days)
Post neonatal (28 days-1 yr)

Weight
500-1499g (1.3-3.3 lbs)
1500+ g (> 3.3 lbs)

Maternal Health/ Prematurity
Maternal Care
Newborn Care
Infant Health
Each period of risk has its own risk factors

- Maternal Health/Prematurity
  - Preconception Health
  - Health Behaviors
  - Perinatal Care
  - Etc.

- Maternal Care
  - Prenatal Care
  - High Risk Referral
  - Special Obstetric Care
  - Etc.

- Newborn Care
  - Perinatal Management
  - Neonatal Care
  - Pediatric Surgery
  - Etc.

- Infant Health
  - Sleep-related deaths
  - Injuries
  - Infections
  - Etc.

Social Determinants
Study Group

- Detroit Resident
- Black (Non-Hispanic)
- Gave birth 2008-2012

<table>
<thead>
<tr>
<th>Maternal Health/ Prematurity</th>
<th>Infant Health</th>
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</thead>
<tbody>
<tr>
<td>6.3</td>
<td>3.4</td>
</tr>
<tr>
<td>1.9 Maternal Care</td>
<td>1.9 Newborn Care</td>
</tr>
</tbody>
</table>

= 13.5 OVERALL RATE
Per 1,000 live births and fetal deaths
Reference Group

- Wayne County Resident
- White (Non-Hispanic)
- Age 20+
- Attended some college
- Gave birth 2008-2012

\[ \text{Maternal Health/ Prematurity} = 2.3 \]

\[ \text{Maternal Care} = 1.2 \]
\[ \text{Newborn Care} = 0.9 \]
\[ \text{Infant Health} = 0.8 \]

\[ = \mathbf{5.2 \text{ OVERALL RATE}} \]

Per 1,000 live births and fetal deaths
Calculating Excess Mortality

Black Women in Detroit

<table>
<thead>
<tr>
<th></th>
<th>Maternal Health/Prematurity</th>
<th>Newborn Care</th>
<th>Infant Health</th>
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<tbody>
<tr>
<td>Maternal Care</td>
<td>1.9</td>
<td>1.9</td>
<td>3.4</td>
</tr>
<tr>
<td>Overall Rate</td>
<td>13.5</td>
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</tbody>
</table>

Reference Group

<table>
<thead>
<tr>
<th></th>
<th>Maternal Health/Prematurity</th>
<th>Newborn Care</th>
<th>Infant Health</th>
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</thead>
<tbody>
<tr>
<td>Maternal Care</td>
<td>1.2</td>
<td>0.9</td>
<td>0.8</td>
</tr>
<tr>
<td>Overall Rate</td>
<td>5.2</td>
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</table>

Excess Mortality

<table>
<thead>
<tr>
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<th>Maternal Health/Prematurity</th>
<th>Newborn Care</th>
<th>Infant Health</th>
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</thead>
<tbody>
<tr>
<td>Maternal Care</td>
<td>0.7</td>
<td>1.0</td>
<td>2.6</td>
</tr>
<tr>
<td>Overall Rate Difference</td>
<td>8.3</td>
<td></td>
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</tr>
</tbody>
</table>

363 excess deaths
Where is the excess mortality?

- Maternal Health/Prematurity: 48%
- Infant Health: 32%
- Newborn Care: 12%
- Maternal Care: 8%
Where is the excess mortality?

- Maternal Health/Prematurity: 48%
- Infant Health: 32%
- Newborn Care: 12%
- Maternal Care: 8%
Why is there a Maternal Health/Prematurity Disparity?

MH/P Disparities in Detroit are due to too many babies being born small.

Kitagawa Analysis Results

- Birthweight Distribution: 95%
- Birthweight Specific Mortality: 5%
Why are Detroit babies being born too small?
Maternal Health/Prematurity Disparities
Preconception Health

- Pre-PG HBP - Check or Tx: 15.1%
- Pre-PG or PG HBP: 9.6%
- No Prenatal Care: 4.6%
- Anemia: 3.8%
- Any STD: 3.8%
Maternal Health/Prematurity Disparities
Stress and Social Support

Unmarried: 4.3
Pre-PG Domestic Violence: 4.2
Stress - Partner Didn't Want PG: 3.0
Stress - Argued w/Partner: 2.1
Stress - Lost Job: 1.9
Maternal Health/Prematurity Disparities
Socioeconomic Status

- Experienced Racism: 4.3
- Unsafe in Neighborhood: 2.0
- Medicaid Birth: 1.8
- WIC: 1.5
- Pre-PG Insurance: 1.2
What did we learn from the data?

1. We need to reduce low birth weight and premature births.

2. To do so, we need to address the life course and social determinants of health:
   - Women’s Health
   - Stress
   - Economic Conditions
   - Racism
Where is the excess mortality?

- Maternal Health/Prematurity: 48%
- Infant Health: 32%
- Newborn Care: 12%
- Maternal Care: 8%
Why is there an Infant Health Disparity?

Cause Specific Mortality Rates

- Prematurity Related: Detroit Group 4.7, Reference Group 3.3
- Congenital Anomalies: Detroit Group 61.6, Reference Group 16.7
- SIDS/SUIDS/Suffocation: Detroit Group 232.3
- Infection: Detroit Group 23.7, Reference Group 3.3
- Other: Detroit Group 54.5, Reference Group 26.7

Postneonatal Deaths per 100,000 Live Births >1500g
Infant Health Disparities
Deaths due to the Disparity

80%
Of black infant deaths >1,500g who died after 27 days is due to the disparity
(128 Excess Deaths)
Why are there disparities in sleep related deaths?
Infant Health Disparities
Risk Factors - Sleep Related Deaths

Primary Sleeping Positions - Detroit

- Back: 51.3%
- Side: 17.4%
- Stomach: 23.5%
- Combination: 7.8%

Primary Sleeping Positions - Reference Group

- Back: 83.4%
- Side: 7.3%
- Stomach: 7.3%
- Combination: 2.0%
Infant Health Disparities
Risk Factors - Breastfeeding

- Initiated: Study Group (10%), Reference Group (46%)
- Planned: Study Group (31%), Reference Group (42%)
- Initiated OR Planned: Study Group (41%), Reference Group (88%)
### Infant Health Disparities

#### Risk Factors - Smoking

<table>
<thead>
<tr>
<th>Category</th>
<th>Study Group</th>
<th>Reference Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>During Pregnancy</td>
<td>32%</td>
<td>17%</td>
</tr>
<tr>
<td>Before or During Pregnancy</td>
<td>33%</td>
<td>21%</td>
</tr>
<tr>
<td>Others in Household Smoke</td>
<td>28%</td>
<td>13%</td>
</tr>
</tbody>
</table>

- **Study Group**
- **Reference Group**
Infant Health Disparities
Risk Factors - Prematurity

Postneonatal Deaths per 1,000 live births >1500g

Preterm IMR
- Study Group: 9.0
- Reference Group: 3.0

Full Term IMR
- Study Group: 3.1
- Reference Group: 0.5

Study Group
Reference Group
Cause-Specific Mortality Rates
Preterm vs. Full Term, Detroit Group

Deaths per 100,000 Live Births

- Preterm-related
- Congenital Anomalies
- SIDS/SUIDS
- Accidental Suffocation
- Infection
- Other

Detroit Study Group, Preterm  Detroit Study Group, Full Term
What did we learn from the data?

1. We need to reduce sleep related deaths

2. To do so, we need to reduce low birth weight/premature births and increase safe sleep practices and breastfeeding
3. Intervention

Putting it all together
Detroit is an epicenter of vitality, and a city that considers all families in all policies. Interconnectedness, cooperation and respect are core community values. Policies and practices across all sectors and institutions promote individual and collective health, and are sustained by meaningful collaboration. Every woman, infant, child, and family is valued and nurtured for optimal pregnancy, birth, and development. Families have sufficient resources to support their spiritual, mental, emotional, and physical well-being; and have equitable opportunities and access to housing, safety, education, information, quality health and child care.
Step 10 of the ‘Ten Steps to Successful Breastfeeding’: the hospital is to “foster the establishment of breastfeeding support groups and refer mothers to them on discharge”
Downstream Intervention #1a

Advocate for *city-wide use of education and planning tools*, beginning with DIEBO member maternal child health provider utilization of educational materials and planning tools for linkage and referral.

- Providers Implementing Baby Friendly Practices
- % Women who are Breastfeeding & Using Safe Sleep Practices
Downstream Intervention #1b

Promote an awareness of Baby and First Food Friendly practices and providers through community, maternal child health and social service provider education (with a focus on the relationship between social determinants of health and breastfeeding success, and community resources to support breastfeeding).

Change community norms
- Messages
- Practices
- Physical environment

Value and respect moms and babies (families)
Upstream Intervention

Healthy Families, Healthy Economy

Focus on business practices that support women and their families
Factors that Affect Health – From CDC Public Health Grand Rounds

Smallest Impact

Counseling and Education

Clinical interventions

Long lasting protective interventions - Changing the context – *to make individual’s default decision healthy*

Socioeconomic factors

Largest Impact

EVIDENCE BASED BABY FRIENDLY COUNSELING

BREASTFEEDING

BABY FRIENDLY BIRTHING PRACTICES

HEALTHY FAMILIES

HEALTHY ECONOMY
Thanks!

- DIEBO Co-Leads
  - Detroit Department of Health and Wellness Promotion
  - Henry Ford Health System
- Michigan Department of Health and Human Services
  - Division for Vital Records and Statistics
  - MI PRAMS
- CityMatCH, WK Kellog Foundation
Questions

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