Infant mortality in Kalamazoo
What we know...

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# Kalamazoo County Infant Mortality Trends

Infant Mortality Rates per 1,000 Live Births, Three-year moving Averages

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<tbody>
<tr>
<td>Kalamazoo</td>
<td>10.2</td>
<td>8.8</td>
<td>7.3</td>
<td>6.4</td>
<td>7.2</td>
<td>7.1</td>
<td>8.4</td>
<td>8.6</td>
<td>7.6</td>
<td>6.4</td>
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<td>DISPARITY:</td>
<td>2.3</td>
<td>3.3</td>
<td>3.4</td>
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<td>3.4</td>
<td>3.5</td>
<td>3.5</td>
<td>3.4</td>
<td>3.8</td>
<td>4.5</td>
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<tr>
<td>Ratio of Black</td>
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<td>to White IMR</td>
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<td>DISPARITY:</td>
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<td>1.7</td>
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<td>2.0</td>
<td>2.1</td>
<td>2.1</td>
<td>1.8</td>
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<td>2.9</td>
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<td>Ratio of Poor</td>
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<td>to Non-Poor IMR</td>
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# Infant Mortality, 2010-2012 Period

<table>
<thead>
<tr>
<th></th>
<th>BIRTHS</th>
<th>DEATHS</th>
<th>IMR Rate*</th>
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<tbody>
<tr>
<td></td>
<td>#</td>
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<tr>
<td>Total, Kalamazoo Cnty</td>
<td>9,305</td>
<td>60</td>
<td>6.4</td>
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<tr>
<td>Births to Black Women, Kalamazoo Cnty</td>
<td>1,547</td>
<td>29</td>
<td>17.6 BI (3.9 Wh)</td>
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<tr>
<td></td>
<td>4,328</td>
<td>42</td>
<td>9.7 Poor (3.4 Non)</td>
</tr>
</tbody>
</table>

*Three-year moving average rate among this population

### Overlap between Black Race and Poverty

<table>
<thead>
<tr>
<th></th>
<th>BIRTHS</th>
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<th>DEATHS</th>
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<tbody>
<tr>
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<tr>
<td><strong>Births to Black Women, Kalamazoo Cnty</strong></td>
<td>1,547</td>
<td>16.6%</td>
<td>29</td>
<td>48.3%</td>
</tr>
<tr>
<td><strong>Births to Poor Women, Kalamazoo Cnty</strong></td>
<td>4,328</td>
<td>46.5%</td>
<td>42</td>
<td>70.0%</td>
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</table>

- **84.5%** of Black women giving birth are poor.
- **83.3%** of Black infants dying are poor.
BOTH Poverty and Race contribute risk...

Poverty 2.0X ➕ Black Race 1.7X ➝ Low Birth Weight*

...but what kind of risk? ...and does it vary?

Perinatal Periods of Risk (PPOR)

- 500-1499 g
- 1500+ g

Infant birth weight
Perinatal Periods of Risk (PPOR)

- Fetal
- Neonatal
- Post neonatal

Age at death

500-1499 g

1500+ g
Perinatal Periods of Risk (PPOR)

- **Fetal**
  - 500-1499 g
  - Maternal Preconceptional/Prenatal Health

- **Neonatal**
  - 1500+ g
  - Newborn Care
  - Infant Health

- **Post Neonatal**
Perinatal Periods of Risk (PPOR)

- **Fetal**
  - Maternal Preconceptional/Prenatal Health
  - Unintended pregnancy, Prenatal Smoking, Stress, etc

- **Neonatal**
  - Newborn Care
  - Sleep-Related, Injury Prevention, etc

- **Post neonatal**
  - Infant Health
  - Perinatal Mgmt, Perinatal System, Pediatric Surgery, etc

- **Preconceptional/Prenatal Health**
  - Maternal Care
  - Prenatal Care, Referral System, High Risk OB Care, etc
“Excess Mortality”
BLACK RACE
Excess Mortality: Black Women

PPOR (2003-2012)

Black women - Reference
15.2 IMR - 4.2 IMR = 11.0 IMR

11.0 IMR Excess

Maternal Health 7.3

Maternal Care 0.7
Newborn Care 0.9
Infant Health 2.1
Perinatal Periods of Risk Assessment

TRENDS in Excess Mortality of Black Women

1997-2006

Maternal Health/Prematurity
5.1

Maternal Care 2.0
Newborn Care 0.2
Infant Health 2.9

2003-2012

Maternal Health/Prematurity
7.3

Maternal Care 0.7
Newborn Care 0.9
Infant Health 2.1
BLACK
“Excess Mortality” After Accounting for POVERTY
Perinatal Periods of Risk Assessment (2003-2012)

Excess Mortality: Black women – Poor Women

Maternal Health/Prematurity
3.8

Maternal Care
0.0

Newborn Care
0.8

Infant Health
0.5
PPOR Summary

- The majority of mortality risk associated with Black race is related to **women’s health before and during pregnancy**
  - Some of this risk is associated with Poverty
  - Some is not
  - It has gotten worse over time, along with disparities

- The other notable mortality risk is in the area of **infant health and safety**
  - Most of this risk has to do with being Poor
  - This risk category has gotten better over time
## Infant Deaths, 2010-2012

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Number</th>
<th>Linked Data (n)</th>
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<tbody>
<tr>
<td># of Infant Deaths (N=60)</td>
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<tr>
<td>Linked “Cause” data (n=52)</td>
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<tr>
<td>Race &amp; Poverty data (n=38)</td>
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</table>
Causes of Infant Death, 2010-2012
-By Race & Poverty-

Maternal Health

Maternal Care

Newborn Care

Infant Health

DELIVERY COMPL

Medicaid, Not Black

BIRTH DEFECT

INFANT DISEASE

Non-Medicaid, White

13.6%

0%

Medicaid, Not Black

SLEEP-REL.

HOMICIDE

ACCIDENT

37.9%

0%

12.5%

0%

4.2%

Black Not

Black Not

Black Not
SAFE SLEEP – CDC-funded study, MI

Kalamazoo County
Sleep-Related Infant Deaths

From 2010 to 2012, there were 14 sleep-related infant deaths in Kalamazoo County.

Mortality Rate
The sleep-related infant mortality rate in Kalamazoo County is 1.5 deaths per 1,000 live births, which is higher than the overall rate in Michigan (1.2 deaths/1,000 live births).

Sleep Environment
The American Academy of Pediatrics (AAP) recommends that infants:
1) sleep in a safety-approved crib, bassinet, or portable crib with a firm mattress and tight-fitting sheet,
2) sleep on surfaces separate from adults or other children free of blankets, pillows, or toys,
3) be placed on his or her back every sleep time.

Approximately 65% of sleep-related deaths in Kalamazoo County involved an infant sleeping on the same surface with another person at the time of death.

Approximately 80% of sleep-related deaths in Kalamazoo County occurred in an AAP unsafe sleep position.

Approximately 2 in 3 infants were found unresponsive in a position other than their back.

Nearly 80% had a mother who smoked during pregnancy.
Infant Deaths, 2010-2012

- # of Infant Deaths (N=60)
- Linked “Cause” data (n=52)
- Race & Poverty data (n=38)
- “Contributor” data (n=29)
RISK CLUSTERS IN FAMILIES WITH INFANT DEATH
-FIMR, 2010-2012-

- poverty
- being black
- unplanned pregnancy

- substance use / abuse
- violence (domestic violence, child abuse/neglect)
- inadequate medical care

- mental illness
- homelessness
Maternal Health

PREMATURITY

- Black (n=22): 36.4%
- Not (n=24): 25.0%
MIECHV Assessment, 2012

- Home visiting programs successfully enroll high-risk women (minority, poor, adolescent, single, multiparous, pre-pregnancy diabetes/hypertension)

- Need to target women with previous poor birth outcomes (low birth weight, intrauterine growth retardation, perinatal death)
  …Currently under-enrolled, even though it is the leading predictor of prematurity and low birth weight

- Home visiting programs increase prenatal care
- But this has not been sufficient to improve participants’ birth outcomes

- Well-developed maternal-infant & early childhood resources
- But fragmentation within the system
  …with medical providers, between the maternal-infant and the early-childhood networks, between maternal-infant programs

Kalamazoo Infant Mortality Community Action Initiative

Strategic Intent

Reduce the infant mortality rate in racial ethnic minorities to 6.0 (Healthy People 2020 Goal) in Kalamazoo by 2020.

Preconception to first year

- Protecting infants from serious intentional or unintentional injuries and death.
- Any contributing factors that influence birth outcomes including cognitive, physical, emotional, and social.
- Ensuring infants are reaching cognitive, physical, emotional, and social milestones.
- Empowering women to make informed choices and have equal access to resources and information.
- Families and community recognize the strength that exists within each family and helps build and grow the protective factors.

Race and Poverty

- Infant Safety
- Maternal Wellbeing
- Infant Wellbeing
- Women’s Empowerment
- Strengthening Families