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## Protecting New Hoosiers and their Parents

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# Protecting New Hoosiers and their Parents



## Indiana Family Impact Seminars

*A project of the Indiana Consortium of Family Organizations*

Center for Families, Purdue University

Department of Early Childhood, Youth, and Family Studies, Ball State University

Indiana Association for Marriage and Family Therapy

Indiana Clinical and Translational Sciences Institute

Indiana Extension Homemakers Association

Indiana Youth Institute

Health and Human Sciences Extension, Purdue University

National Association of Social Workers – Indiana Chapter

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## Family Impact Seminars

Family Impact Seminars have been well received by federal policymakers in Washington, DC, and Indiana is one of several states to sponsor such seminars for state policymakers. Family Impact Seminars provide state-of-the-art research on current family issues for state legislators and their aides, Governor’s Office staff, state agency representatives, educators, and service providers. One of the best ways to help individuals is by strengthening their families. The Family Impact Seminars speakers analyze the consequences an issue, policy or program may have for families. The seminars provide objective, nonpartisan information on current issues and do not lobby for particular policies. Seminar participants discuss policy options and identify common ground where it exists.

*Protecting New Hoosiers and their Parents* is the twenty-fifth seminar in a continuing series design to bring a family focus to policy making. The seminar focused on the changing the shape of the American labor force during the pandemic. The topic was chosen by a bipartisan committee of legislators, representing the very audience the seminars are intended to inform.

### Seminar Speakers

<p><b>James Greenberg, MD</b> Co-Director at Perinatal Institute, Cincinnati Children's Hospital Professor, Department of Pediatrics. University of Cincinnati</p>	<p><b>Jack E. Turman, Jr., PhD</b> Professor, Interim Chair, Social and Behavioral Sciences Richard M. Fairbanks School of Public Health, IUPUI</p>
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### Seminar Legislative Advisory Committee

<p>Senator Veneta Becker Senator Jean Breaux Representative Dale DeVon Senator Jon Ford Representative Sheila Klinker Senator Jean Leising</p>	<p>Senator Fady Qaddoura Representative Vanessa Summers Representative Jeff Thompson Representative Ann Vermilion Senator Shellie Yoder</p>
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### The Indiana Seminars are a project of the Indiana Consortium of Family Organizations, which includes

<p>Center for Families, Purdue University Department of Early Childhood, Youth, and Family Studies, Ball State University Indiana Association for Marriage and Family Therapy Indiana Clinical and Translational Sciences Institute</p>	<p>Indiana Extension Homemakers Association Indiana Youth Institute Health and Human Sciences Extension, Purdue University National Association of Social Workers – Indiana Chapter</p>
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## Key Terms and Definitions

Term	Definition
<b>INFANT MORTALITY<sup>1</sup></b>	<ul style="list-style-type: none"> <li>• The number of infant deaths for every 1,000 live births that occurs between birth of the infant to the child’s first birthday</li> <li>• Is recorded based on mother’s home address</li> </ul>
<b>MATERNAL MORTALITY<sup>2</sup></b>	<ul style="list-style-type: none"> <li>• The death of a pregnant person from complications of pregnancy or childbirth that occur during the pregnancy or within 6 weeks after the pregnancy ends</li> </ul>
<b>SOCIAL DETERMINANTS OF HEALTH<sup>3</sup></b>	<ul style="list-style-type: none"> <li>• The conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks</li> <li>• Can be grouped into five categories: Economic Stability; Education Access and Quality; Health Care Access and Quality; Neighborhood and Built Environment; Social and Community Context</li> </ul>
<b>HEALTH EQUITY<sup>4</sup></b>	<ul style="list-style-type: none"> <li>• The state in which everyone has a fair and just opportunity to attain their highest level of health</li> <li>• Requires ongoing societal efforts to: address historical and contemporary injustices; overcome economic, social, and other obstacles to health and health care; eliminate preventable health disparities</li> </ul>
<b>COLLECTIVE IMPACT<sup>5</sup></b>	<ul style="list-style-type: none"> <li>• A network of community members, organizations, and institutions who advance equity by learning together, aligning, and integrating their actions to achieve population and systems level change</li> <li>• Must meet these five conditions to qualify as collective impact: a common agenda, shared measurement, mutually reinforced activities, continuous communication, a backbone organization</li> </ul>
<b>HOUSING INSECURITY<sup>6</sup></b>	<ul style="list-style-type: none"> <li>• An umbrella term that encompasses several dimensions of housing problems people may experience, including affordability, safety, quality, insecurity, and loss of housing</li> </ul>
<b>OTHER ADVERSE INFANT BIRTH OUTCOMES</b>	<ul style="list-style-type: none"> <li>• Preterm/Premature Birth<sup>7</sup>: Infant born before 37 weeks gestation</li> <li>• Low Birthweight<sup>8</sup>: Infant born less than 5.8 pounds</li> <li>• Neonatal Intensive Care Unit (NICU) Stay<sup>9</sup>: Infant is admitted into the NICU due to a sickness or other need for specialized nursing care</li> </ul>

## Issue Overview

Even though most instances of infant or maternal mortality are preventable<sup>10,11</sup>, Indiana ranks 3rd and 9th in the nation for maternal<sup>12</sup> and infant<sup>13</sup> mortality, respectively. Infant mortality rates are a marker for overall population health while maternal mortality rates reflect the access and quality of available health services<sup>14</sup>. Maternal and infant mortality can have significant impacts. For example, maternal mortality alone costs the U.S. over \$30 billion a year<sup>15</sup>. In Tennessee (ranked 14th), where rates are already lower than Indiana's, infant mortality costs the state \$610 million<sup>16</sup> a year.

Indiana's 2022 Family Impact Seminar was focused on the current state of infant mortality and ways policymakers can get involved to help reduce infant deaths. Stable and secure housing was a theme identified across speakers as a key point for improving maternal and infant wellbeing. In Indianapolis, the Richard M. Fairbanks School of Public Health at IUPUI recently received a \$2.4 million dollar grant to support the Housing Equity for Infant Health Initiative<sup>17</sup>. By helping pregnant women find safe housing, the Indianapolis initiative intends to reduce infant mortality rates as evidenced by a pilot study conducted in Ohio.

Another evidence-based program in Ohio, called Cradle Cincinnati<sup>18</sup>, has reduced infant mortality in Hamilton County. On a larger, county-sized scale this program costs \$4.5 million dollars a year from federal, state, and local funding sources. Cradle Cincinnati has resources for families and uses community partners to help improve infant and maternal health. Research, along with personal accounts, indicates that mothers and infants are best helped through systemic changes like housing availability, public transportation accessibility, and support in healthcare.

## Considerations for Legislators

### Need for System-Level Change

- Forty-nine percent of the Indiana maternal mortality review committee recommendations for prevention of pregnancy-associated deaths in Indiana are for system-level change, followed by facility-level change (22%) recommendations<sup>19</sup>.
- Included as a significant predictor of population health, social determinants of health are as influential on health as a person's genes/biology, health behavior, or medical care<sup>20</sup>.
- There is a persistent inequitable racial gap in Indiana that contributes to higher infant and maternal mortality rates for women and infants of color<sup>19</sup>.

### Addressing Housing Insecurity

- Pregnant women who have housing instability or poor quality of housing are at increased risk of poor infant and birth outcomes<sup>21</sup>.
- Compared to the top 100 evicting large cities, Fort Wayne, Indianapolis, and South Bend are ranked as 13th, 14th, and 18th in the country<sup>22</sup>.
- In 2021, Marion County had the highest recorded number of people experiencing homelessness in a decade<sup>23</sup> with an average of 250 pregnant women experiencing homelessness in the county from 2017-2021.
- In 2020, over half of the 78 recorded infant deaths reviewed in Marion County had housing-related stressors.

### Policy Action Asks from the Pregnant Hoosier Community

- Increased public transportation options.
- Effective efforts to address domestic violence.
- Creation of workplace environments that are sensitive to pregnancy and infant parenting.
- Improved access to affordable childcare.

## Current Indiana Initiatives

### Housing Equity for Infant Health in Indianapolis, IN

- The initiative provides rental assistance, housing navigation, and case management to effectively reduce infant mortality and other poor birth outcomes.
- Women will also receive a health-justice intervention, including education, strategic litigation, and legal analysis, that has previously been successful at stabilizing housing and utilities for families as well as increasing families' ability and access for infant wellbeing.

### Senate Enrolled Act No. 416

- Effective July 1st, 2019, Gov. Eric Holcomb signed legislation to extend Medicaid coverage for doulas. However, funding for the doula Medicaid expansion has since been pulled<sup>24</sup>.
- Doulas provide support to pregnant women and can both help to counteract the negative effects of the social determinants of health<sup>25</sup> and can provide potential cost savings by reducing poor birth outcomes<sup>26</sup>.

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## Appendix: Seminar Presentations

### Understanding Social Determinants of Infant and Maternal Mortality in Indiana

Jack E. Turman, Jr., PhD

Professor, Interim Chair, Social and Behavioral Sciences

Richard M. Fairbanks School of Public Health, IUPUI

Dr. Jack Turman, Jr., has dedicated his career to building community-based participatory programs to improve maternal and child health outcomes. He received his Ph.D. at UCLA conducting neuroscience research, completed a fellowship at the UCLA Medical School in Child and Adolescent Psychiatry, and then went on to serve as a faculty member for 15 years at the University of Southern California, where he ran the perinatal neuroscience research laboratory and directed the Center for Premature Infant Health and Development.

After UCLA, he became a program director at the University of Nebraska Medical Center, where he founded and directed The Connections Project, a community-based program to improve birth and infant development outcomes in Omaha's African American community. Dr. Turman then came to Indiana State University where he served three years as the Dean of the College of Health and Human Services, where he was also a fellow in the National Leadership Academy for the Public's Health. He led programming to address poor birth outcomes in the Wabash Valley and then led the team that created the smartphone application, Mom 101, to promote preconception, prenatal and postpartum health.

**UNDERSTANDING SOCIAL DETERMINANTS OF INFANT AND MATERNAL MORTALITY**

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## What do High Infant and Maternal Mortality Rates Tell Us

- Infant and material mortality are critical indicators of population health
  - Health
  - Social stability
  - Well-being



<https://www.the-scientist.com/speaking-of-science/speaking-of-science-41544>



<https://www.kcl.ac.uk/news/reducing-maternal-mortality-in-low-and-middle-income-countries>

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## FIRST A LOOK AT THE NUMBERS REFER TO:

[HTTPS://WWW.IN.GOV/HEALTH/MCH/FILES/2020-INFANT-MORTALITY-MORBIDITY.PDF](https://www.in.gov/health/mch/files/2020-infant-mortality-morbidity.pdf)

[HTTPS://WWW.IN.GOV/HEALTH/CFR/FILES/MATERNAL-MORTALITY-ANNUAL-REPORT-2022.PDF](https://www.in.gov/health/cfr/files/maternal-mortality-annual-report-2022.pdf)

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# INFANT MORTALITY

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## Infant Mortality Rates (IMRs)

2011-2020



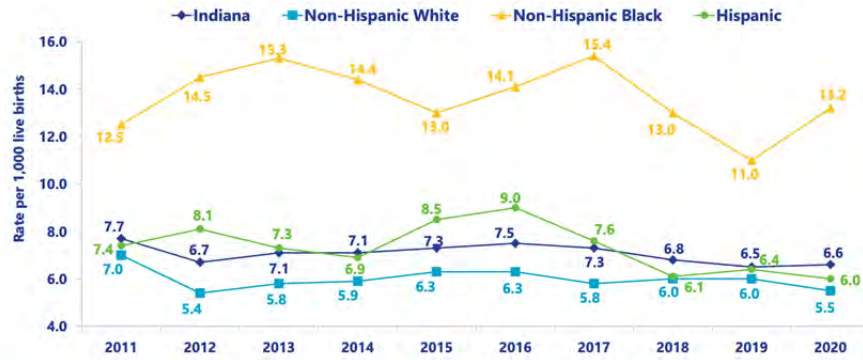
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## Indiana IMRs by Race and Ethnicity 2011-2020



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## County Infant Mortality Rates Compared to the State 2016 - 2020

Low High

### Highest Stable Infant Mortality Rates

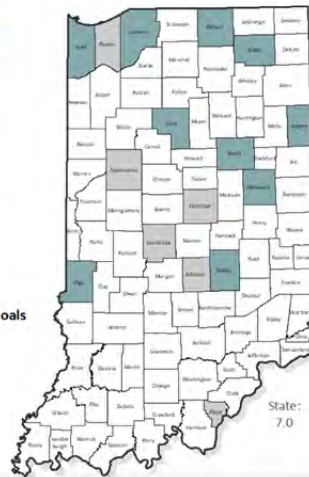
Adams, 9.6  
Delaware, 8.7  
LaPorte, 8.4  
Elkhart, 8.3  
Shelby, 8.3

Cass, 8.8  
Grant, 8.6  
Vigo, 8.4  
Noble, 8.3  
Lake, 8.2

### Counties with Stable Rates Achieving HP2020 Goals

Porter, 4.2  
Johnson, 4.8  
Tippecanoe, 5.7

Hendricks, 4.5  
Hamilton, 4.9  
Floyd, 5.8



DATA SOURCE: ICDH-MCH, OSA-PAC, ILS | MAPS AUTHOR: ICDH OSA-PAC, 11.04.21

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## Highest Infant Mortality Rates by ZIP Code 2016-2020

Zip Code	County	Births	Deaths	IMR	NH White IMR	NH Black IMR	Hispanic IMR
46404	Lake	1121	20	17.8	U	17.7*	U
46516	Elkhart	2823	40	14.2	7.7*	34.9*	11.7*
46628	St. Joseph	2050	26	12.7	5.2*	18.5*	U
47302	Delaware	1583	20	12.6	10.7*	26.7*	U
46219	Marion	2396	26	10.9	7.9*	17.7*	U
46806	Allen	2399	26	10.8	17.8*	11.8*	8.1*
46312	Lake	2068	22	10.6	U	17.0*	6.8*
46410	Lake	2164	23	10.6	U	14.5*	U
46514	Elkhart	2842	30	10.6	8.1*	26.8*	11.3*
46260	Marion	2471	26	10.5	U	18.9	U
46222	Marion	3033	31	10.2	U	19.6	4.3*
46218	Marion	2482	25	10.1	U	12.6	U
46203	Marion	2785	28	10.1	7.9*	15.6*	10.9*
46241	Marion	2587	26	10.1	10.2*	12.8*	U

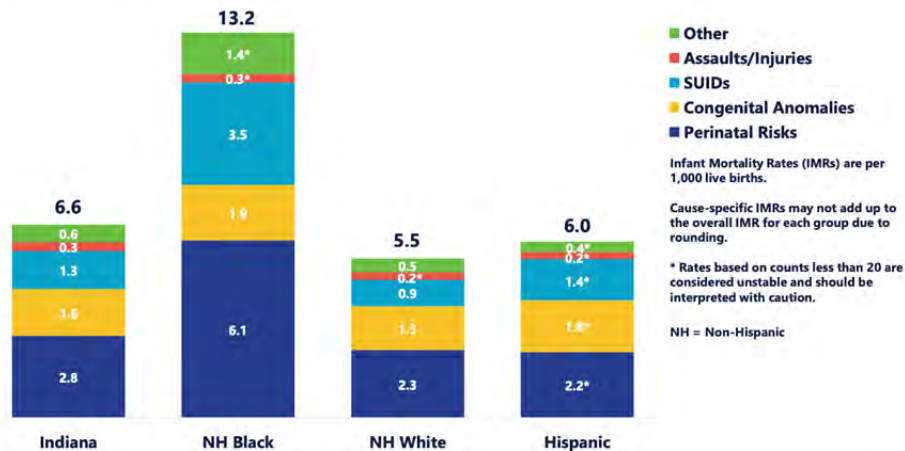
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## 2020 Cause-Specific IMR



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## 2020 Birth Outcomes by Race/Ethnicity

	Indiana	Non-Hispanic Black	Non-Hispanic White	Hispanic
Preterm (< 37 weeks gestation)	10.4%	14.7%	9.8%	9.8%
Low Birthweight (< 2500 g)	8.1%	14.2%	7.2%	7.1%
Very Low Birthweight (< 1500 g)	1.4%	3.1%	1.1%	1.3%
Not Breastfeeding (at discharge)	18.0%	26.7%	17.0%	14.8%
No Early Prenatal Care (1 <sup>st</sup> Trimester)	30.7%	43.7%	25.9%	44.9%
Smoking during Pregnancy	10.9%	7.8%	13.2%	2.7%
Births Covered by Medicaid	38.5%	61.7%	30.5%	62.6%
Teen Pregnancy	5.3%	8.4%	4.4%	8.7%

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## MATERNAL MORTALITY

11





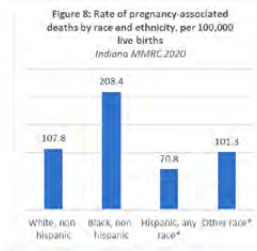
## 2020 Maternal Mortality Review

### Maternal Mortality Ratios for 2020

- **117.1 per 100,000 live births:** pregnancy-associated mortality ratio in Indiana in 2020
- **22.9 per 100,000 live births:** pregnancy-related mortality ratio in Indiana in 2020

Figure 7: Race/Ethnicity (2020)

Race/Ethnicity	N	%
White, non-Hispanic	61	66.3%
Black, non-Hispanic	22	23.9%
Hispanic, any race	6	6.5%
Other race	3	3.3%



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## Profiles of the Women

Figure 11: Age at Death (2020)

Age Group	N	%	Rate
15-19 years	3	3.3%	72.7
20-24 years	19	20.7%	106.2
25-29 years	31	33.7%	123.5
30-34 years	19	20.7%	91.6
35-39 years	16	17.4%	181.8
40+ years	4	4.3%	214.9

Figure 24: Education Level (2020)

Education Level	N	%
Less than HS Grad	13	14.1%
HS Grad or GED	48	52.2%
Some College	18	19.6%
Associate's or Bachelor's	10	10.9%
Advanced Degree	2	2.2%
Unknown	1	1.1%

Figure 22: Urban Status of Last Residence (2020)

Urban Status	N	%
Metropolitan	69	67.4%
Micropolitan	15	16.3%
Rural	8	8.7%

Figure 30: Insurance Status (2020)

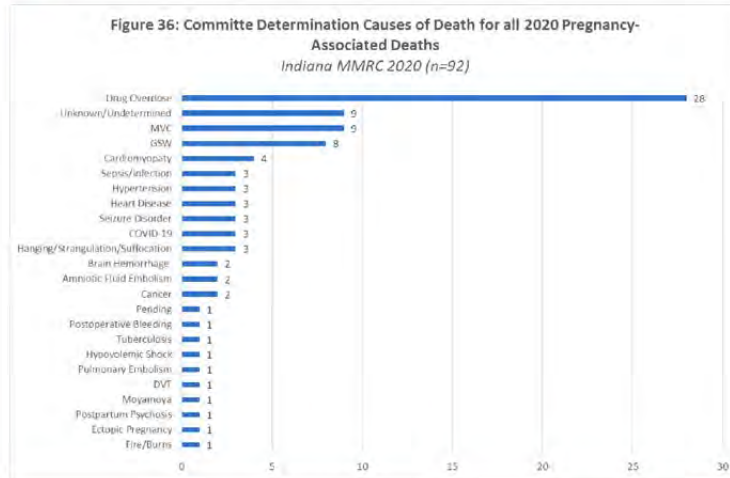
Insurance Status	N	%
Medicaid	69	75.0%
Private	19	20.7%
Self-Pay/None	3	3.3%
Other	1	1.1%

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## Causes of Maternal Mortality



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## Prevention!

- 79.3% of pregnancy-associated deaths were deemed preventable by the Indiana MMRC in 2020
- 77.8% of pregnancy-related deaths were deemed preventable by the Indiana MMRC in 2020

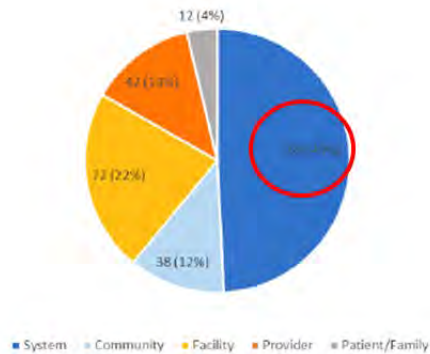
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## Need for Systems Change

Figure 55: 2020 Categories of Committee Recommendations for Prevention of Pregnancy-Associated Deaths in Indiana  
*Indiana MMRC 2020*



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## NOW, FOR THE BACK STORIES

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# MOVING FORWARD WITH SOLUTIONS

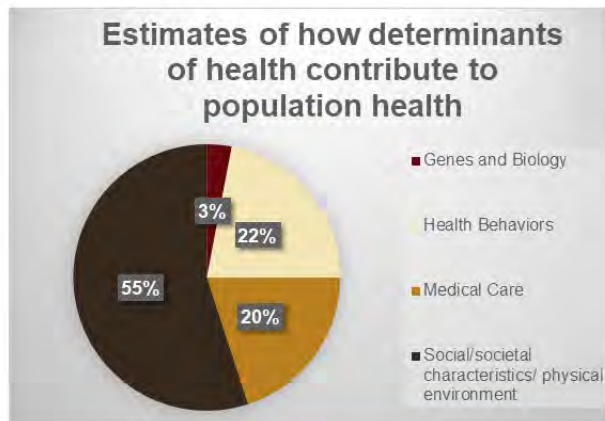
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## The Need to Address Social Factors Surrounding the Families



<http://www.cdc.gov/nchhstp/socialdeterminants/faq.html#c>

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## The Five Social Determinants of Health: Addressing Social Systems to Cause Health Change

Healthypeople.gov



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## EXAMPLE OF ADDRESSING THE SOCIAL DETERMINANTS OF HEALTH

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## The Number One Concern of Low-Income Mothers Across Indiana - Housing

- Fort Wayne ranks 13<sup>th</sup> in nation for eviction
- Indianapolis ranks 14<sup>th</sup> in nation for eviction
- Indianapolis ranks 2<sup>nd</sup> behind New York for sheer number of evictions

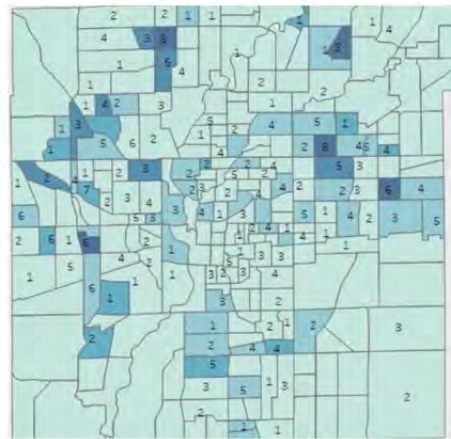
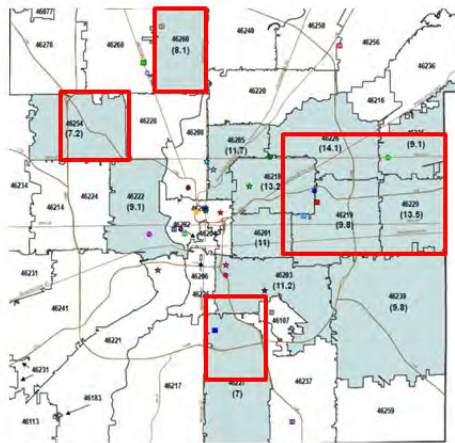
<https://evictionlab.org/rankings/#/evictions?r=United%20States&a=0&d=evictionRate&lang=en>



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## Looking at Evictions and Infant Mortality in Indiana



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## A Winter's Night in Marion County – 2021 and 2022

### 2021

- Highest number of homeless individuals in 10 years
- 54% were Black or Hispanic
- 33% Women

### 2022



You'll soon start seeing striking images like this on sidewalks across Indianapolis, as part of a campaign to raise awareness about homelessness. *Courtesy Wheeler Mission*  
<https://www.indystar.com/story/sponsor-story/wheeler-mission/2018/07/18/wheeler-new-face-homelessness/774509002/>

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## Homeless and Pregnant, Homeless and Parenting




i.huffpost.com

- On average, more than 250 pregnant women and their infants experience homelessness in Marion County between 2017-2021
- In 2020, of 78 infant deaths reviewed by Marion County FIMR – more than half had housing related stressors.


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## Addressing Housing Insecure Pregnant Women in Indy! Housing Equity for Infant Health Initiative



Two interventions comprising the Housing Equity for Infant Health Initiative.

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## Housing Equity for Infant Health Initiative: Healthy Beginnings at Home

Intervention shown to reduce infant mortality, preterm birth, NICU stays, Medicaid spending in Ohio – CareSource.

**Components**

Housing unstable pregnant women in 1<sup>st</sup> or 2<sup>nd</sup> trimester in Indy.

- Rental assistance for 24 months (tapered in last 9 months)
- Housing Navigation
- Case Management

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## Housing Equity for Infant Health Health Justice Intervention

### Health-justice interventions demonstrate systems-level impact by:

- Identifying patterns in the social needs of vulnerable populations
- Leveraging legal expertise to change policies, laws, and regulations to improve their health and social outcomes.

### Previous health-justice interventions have:

- Successfully stabilized housing for vulnerable families
- Increased families' abilities to participate in infant well-care
- Prevented utility shut-offs for families with vulnerable children
- Increased access to nutritional supports for newborns.

### Components

#### Education

- Know your rights materials and presentations.

#### Strategic Litigation

- Filing appeals of evictions; enforcing lease and Indiana habitability rules.
- Filing amicus legal briefs.

#### Legal analysis

- Research and evaluation of Indiana eviction laws and processes.
- Comparative analysis with other states.
- Court rule analysis and amendments.

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## A Great Team Effort

### Gratitude for Funders



### The Best Partners

- Grassroots MCH Initiative Staff
- Grassroots MCH Leaders
- CareSource
- Indiana Justice Project
- IDOH
- Merchant's Affordable Housing
- Wheeler Mission
- Coalition for Homelessness Intervention and Prevention
- Hoosier Housing Needs Coalition
- Mayor's Office – Indianapolis
- Office of Public Health and Safety

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## Some Final Thoughts About Policy Action.... Based on the Voices of Indiana Women Living in High-Risk Zip Codes



Affordable Housing  
Public Transportation Options  
Help Address Domestic Violence  
Workplace Space Sensitive to Pregnancy and Infant Parenting  
Access to Affordable Childcare

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## To Learn More....

### Contact:

- Jack Turman, Jr., Ph.D., Director, ([jaturman@iu.edu](mailto:jaturman@iu.edu))
- 2022 APHA Thought Leadership Series Film: APHA TV Turman Film:  
<https://www.youtube.com/watch?v=RRE0W3jquwM&list=PL9CZabk3nD4HBRBttLBd4-KWgilWKPctI&index=17>

### Visit and Follow Us:

- Grassroots MCH Website: <https://go.iu.edu/3jkX>
- [Facebook](#), [Twitter](#), & [Instagram](#): @GrassrootsMCH
- YouTube: <https://rb.gy/umyp7u>
- LinkedIn: <https://rb.gy/4wjlf6>

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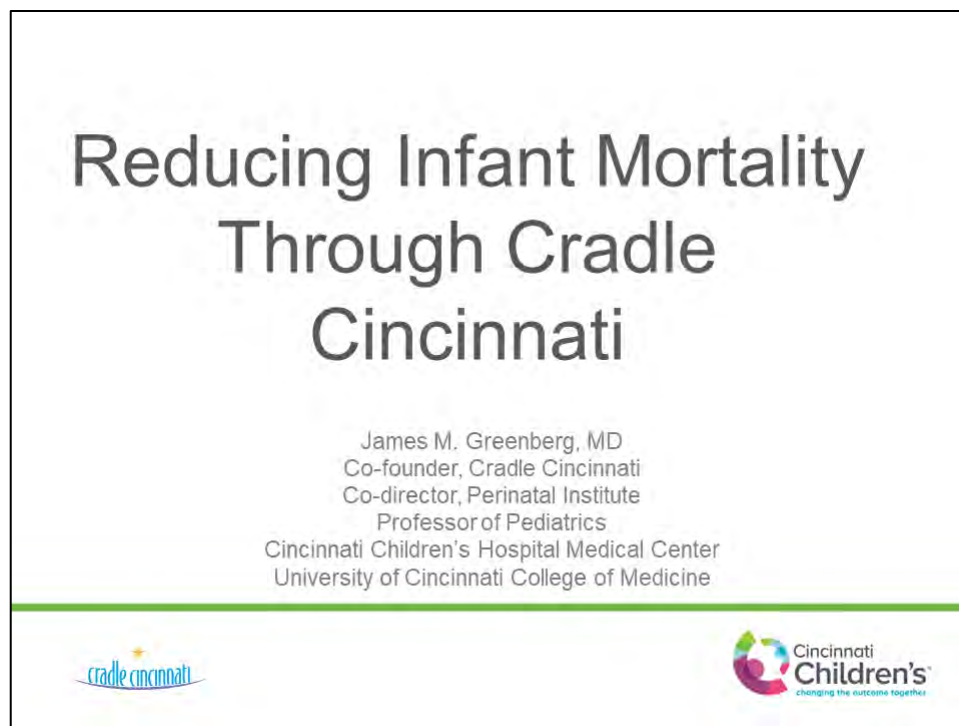
## Reducing Infant Mortality through Cradle Cincinnati

James M. Greenberg, MD

Co-Director, Perinatal Institute; Professor, Department of Pediatrics, Division of Neonatology  
Co-Director, Science of Light Center; Lead Physician Executive, Critical Care Building/Master Planning  
Cincinnati Children's Hospital Medical Center  
University of Cincinnati College of Medicine

Dr. James Greenberg serves as Co-Director of the Perinatal Institute at Cincinnati Children's Hospital Medical Center, leading one of the largest comprehensive clinical and academic programs for newborn care in the United States. He has been an active faculty clinician, researcher, leader, and teacher at Cincinnati Children's for over 30 years. He also serves as Lead Physician Executive overseeing construction of the Cincinnati Children's Critical Care Building, and recently co-founded the Cincinnati Children's Science of Light Center.

His current research interests include neonatal epidemiology, prevention of preterm birth, and the environment of care in the NICU. His current work seeks to understand how variables, such as race and place of residence, translate into biomedical events such as preterm birth, and understand how environmental variables such as ambient light affect NICU outcomes. He has authored over 80 original research articles, and 12 textbook chapters.



## Infant Mortality is a Wicked Problem

- Tame: a problem you can solve
- vs.
- Wicked (malignant/risky/tricky/aggressive): a problem you can work at
- Wicked problems:
  - Lack a common definition
  - Require continuous (endless) attention
  - No single solution (bad/better/best)
  - Difficult to validate solutions



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## Infant Mortality is a Wicked Problem

- Controlled trial and error is risky/impossible
- The value of previous knowledge is limited
- Are characterized by a more desired future state
- Those who attempt to solve wicked problems are open to criticism if they are “wrong”



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## What is ?

- Co-Founded with Elizabeth Kelly, MD, MPH, Executive Vice Chair, Department of Obstetrics and Gynecology, UCCOM in 2013 as a collective impact collaborative to eliminate infant mortality in Hamilton County OH
- Response to excess infant mortality in metropolitan Cincinnati
- Housed within the Perinatal Institute at the Cincinnati Children's Research Foundation/Cincinnati Children's Hospital Medical Center



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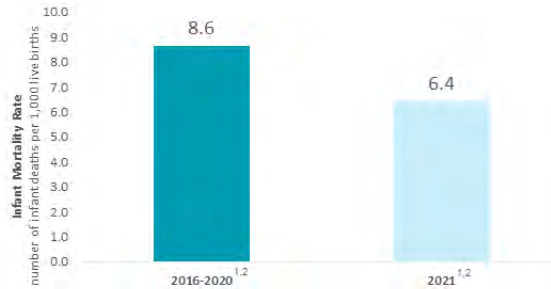
## What is ?

- Budget
  - Annual: \$4.5M
    - Public (federal, state, local)
    - Maternal Health Centers
    - Philanthropy
  - Direct service
  - Data
  - Communication/Outreach/Advocacy



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## Infant Mortality Rate, Hamilton County, 2016-2021



### Key Points:

- In 2021, 66 babies died in Hamilton County—10 fewer than in 2020.
- With 10,266 live births, the 2021 Hamilton County infant mortality rate was 6.4 deaths per 1,000 live births.
- This is by far the lowest rate ever measured in Hamilton County since modern record keeping began in 1968.
- Hamilton County below the state (7.8)<sup>1</sup> and above the nation (5.6)<sup>2</sup>.

### Sources:

- <sup>1</sup> Ohio Department of Health (2019) (2021)
- <sup>2</sup> Hamilton County Fetal and Infant Mortality Review (FIMR)
- <sup>3</sup> National Vital Statistics Reports (CDC) (2019)



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## “Questions”

- What did you do?
- How did you do it?
- What are your interventions?
- We want to do this in (insert location/organization here). Can you help us get started?



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# “Answers”

- Specifics are important
- But not necessarily relevant
- Context is key: “All politics is local”

## But there are generalizable concepts



# 1. Choose a Framework

- Infant Mortality is a wicked problem
- Collective Impact: a framework for wicked problems
  - Common agenda
  - Shared measurement
  - Mutually reinforcing activities
  - Continuous communication
  - Backbone organization
- Cradle Cincinnati June, 2013
- [www.cradlecincinnati.org](http://www.cradlecincinnati.org)

StanfordSOCIAL INNOVATION Review  
*Informing and inspiring leaders of social change*

### Channeling Change: Making Collective Impact Work

All thoughts and views expressed are those of the author and do not necessarily reflect those of the organization.

**W**icked problems are those that are complex, interconnected, and have no clear solution. They are often the result of multiple causes and require a coordinated effort to solve. Collective impact is a framework for addressing wicked problems. It involves a group of organizations working together to address a common agenda, using shared measurement and mutually reinforcing activities. This approach is essential for tackling complex social issues like infant mortality.

**THE FIVE CONDITIONS OF COLLECTIVE IMPACT**

1. Common agenda
2. Shared measurement
3. Mutually reinforcing activities
4. Continuous communication
5. Backbone organization



## 2. Define the Primary Outcome

- The single variable that you will use to judge success.
- Measurable
- Easily understood
- Matters to all stakeholders



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## Infant Mortality!

- **Among standard public health metrics, infant mortality is considered the “canary in the coal mine” as a measure of overall community well-being.**
- Deaths per 1,000 live births in a specific geographic location
- “Live birth” in Indiana:
  - Evidence of live outside the womb
  - Breathing/gasping, heart action, movement of skeletal muscles
- Counted until first birthday
- Counted at Mom’s home address



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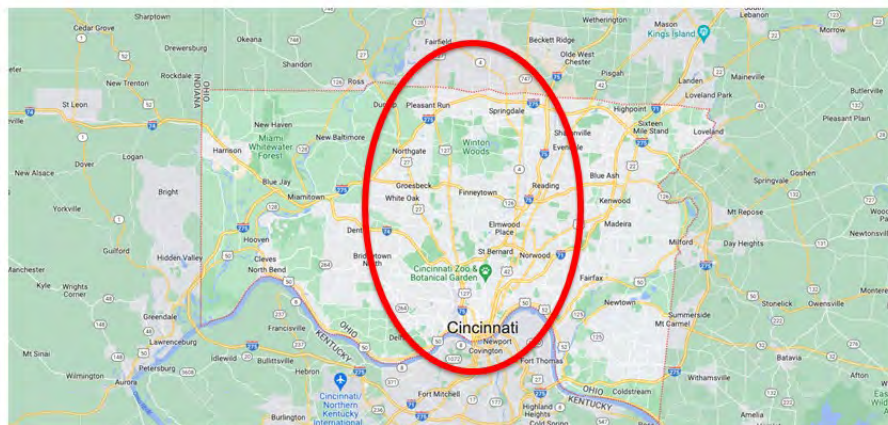
### 3. Define the Geography

- High incidence
- Reliable and sustainable measurement
- Minimal contamination
- Hamilton County OH
  - 10,200 live births/year
  - 2007: 120 infant deaths
  - Two major public health department jurisdictions



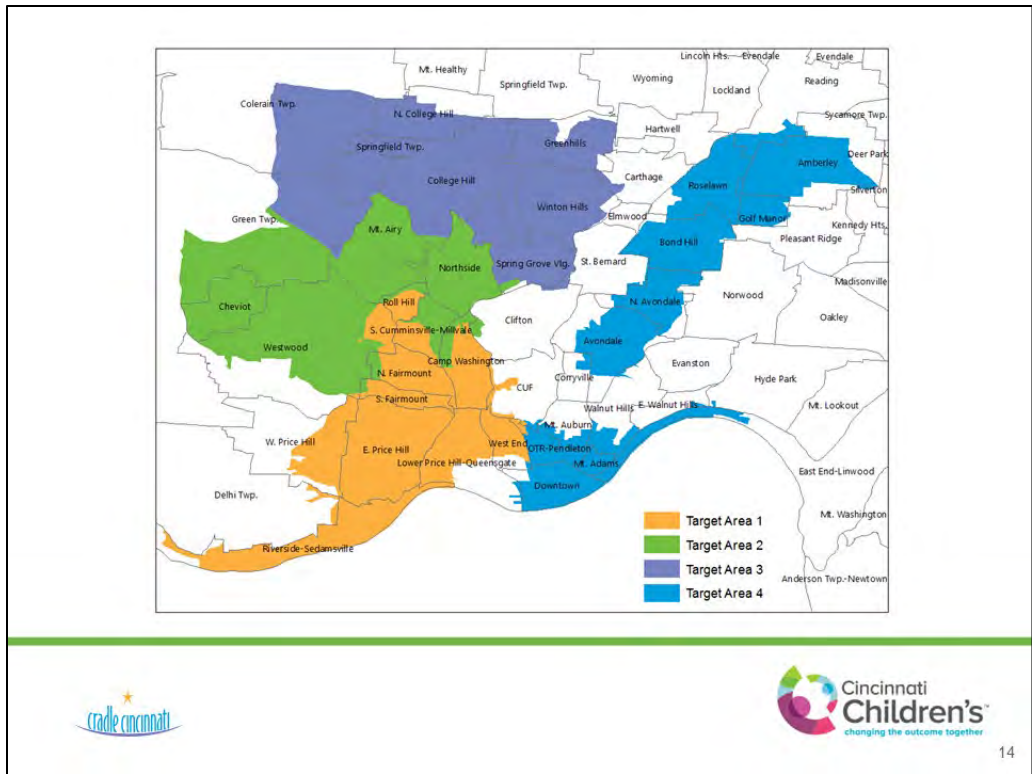
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### Some Modifications



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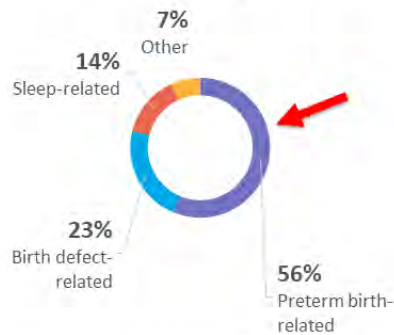




## 4. Data, Data, Data

- Sources
- Access
- Trust
- ODH
- Hamilton County
- City of Cincinnati
- Maternity centers

**Causes of Infant Death  
Hamilton County 2015-2019**



Sources: Hamilton County FIMR, Hamilton County Public Health, City of Cincinnati Health Department

## 5. Translate Theory Into Action

- Theory (preterm birth):



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## A. Strategy

- **Community-driven!**
- Is it effective?
  - Published evidence/Plausibility
  - Learning from others
- Will it matter?
- Is it feasible?
  - Cost
  - Time
- Is it measurable?



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## B. Tactics

### Community-driven!

- The “3 S’s”
  - Smoking
  - Spacing
  - Sleep
- Smoking
- Spacing
- Sleep
- Equity



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## 6. Avoid Well-Intended Distractions

- Impact on IMR:
  - Poverty
  - Education
  - Housing
  - **Breast feeding**
  - **Parent support/Home visiting**
  - **Infant vaccination**

Post “Conceptional” Age at Time of Infant Death-Hamilton County



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# 7.

Health Care ≠ Public Health

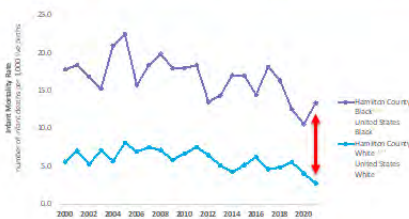


Health Care & Public Health



# 8. Learn Along the Way-This is Important!

## Racial Disparity in Infant Mortality, Hamilton County and United States, 2000-2021



**Key Point:**

- The racial disparity in infant mortality continues in Hamilton County.

**Notes:**

- Black infant mortality rates are defined as deaths of infants who were born Black & allowed to survive.
- U.S. & C.C. United States infant mortality for Black girls in birthweight > 3,500g.

**Source:**

- Center for Global Equity and Prevention (CGEP)
- Ohio Department of Health (ODH)
- Hamilton County Public and Other Secondary Reporting (HCPOR)



## Learning Along the Way...



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## A Few Final Thoughts

- This is not easy work (IM is a wicked problem)
- Focus
- Persistence
- Systems thinking
- **Equity-the racial disparity of infant mortality**



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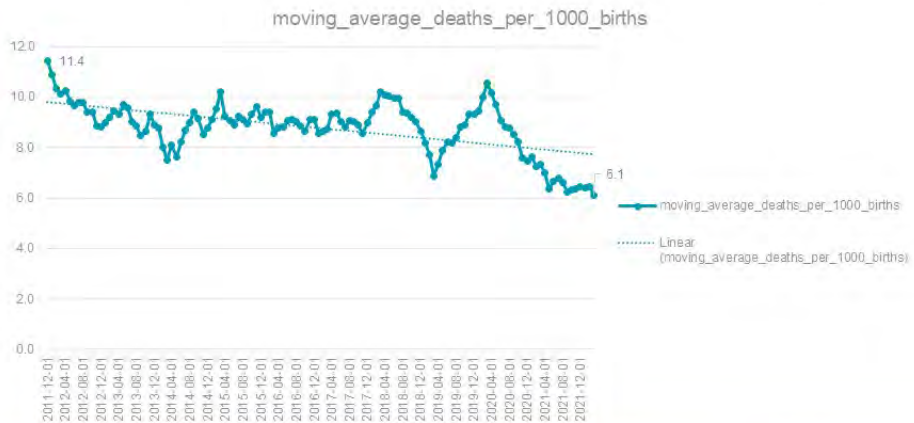


# Supplemental Slides

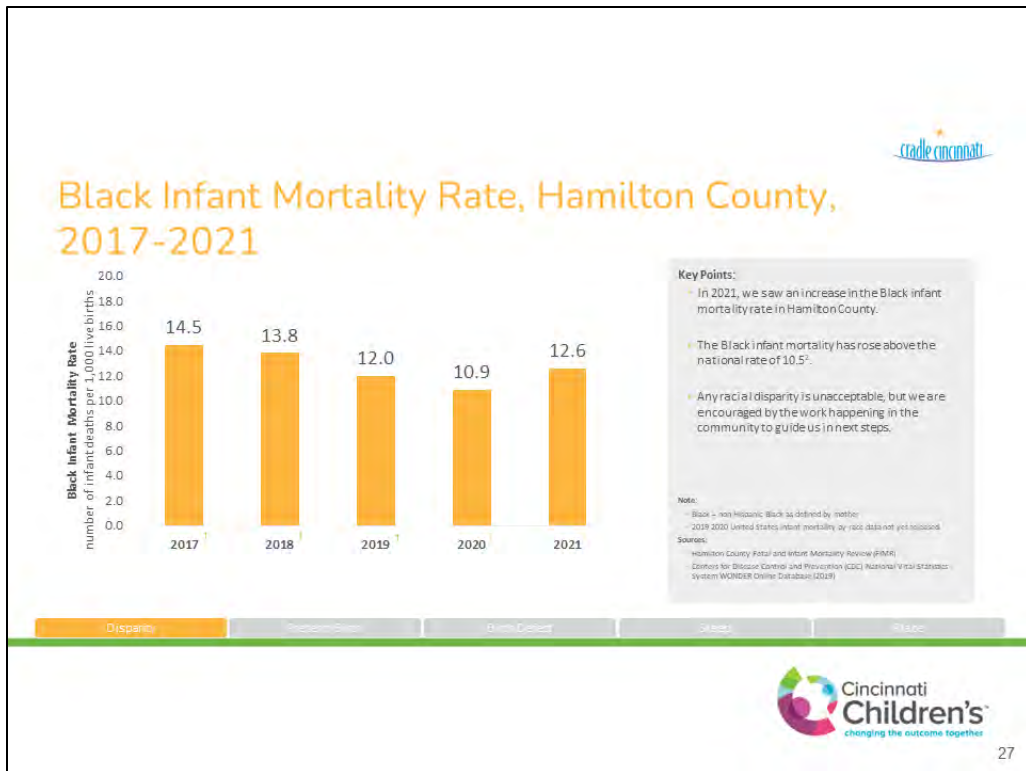
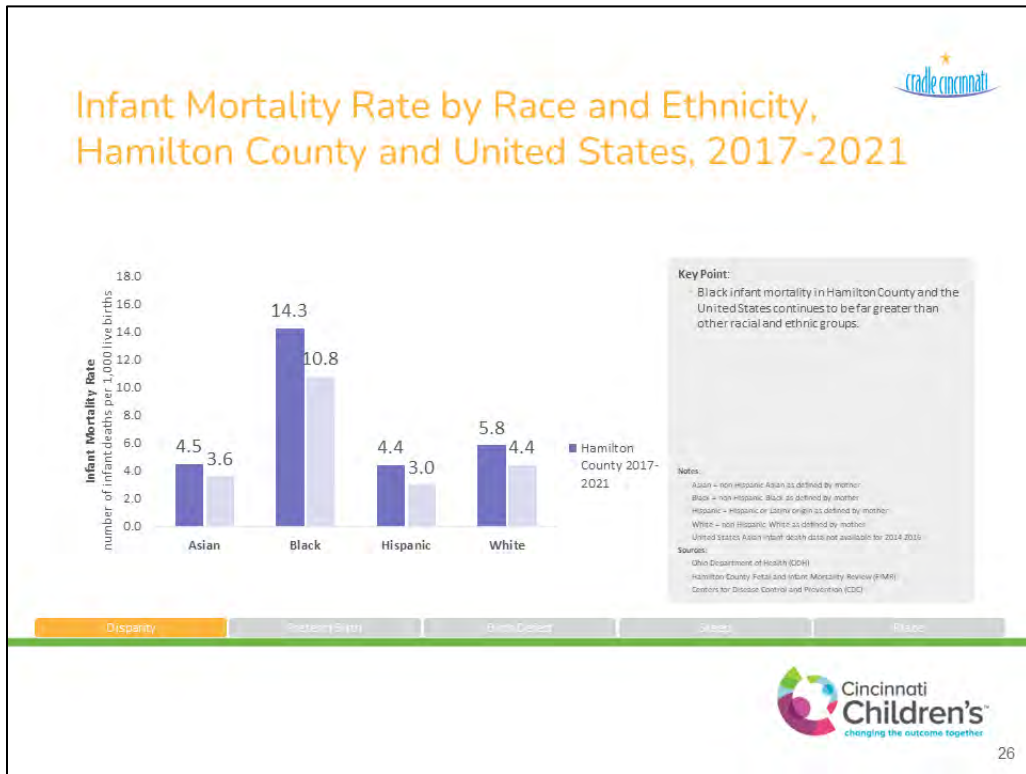


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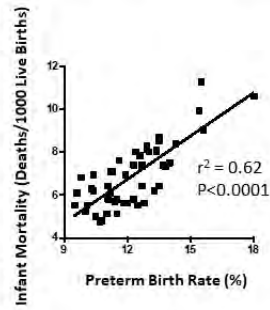
## Where Are We Today? All Cause Infant Mortality Hamilton County Ohio 2011-2021



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## Preterm Birth is the Driving Force Behind Infant Mortality in the US

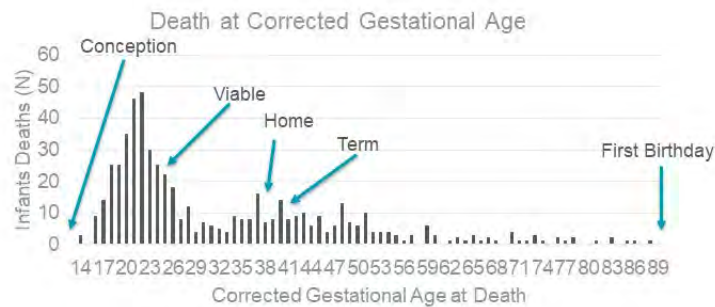


Generated from 2007 US Vital Records Data, Courtesy of L. Muglia, MD PhD



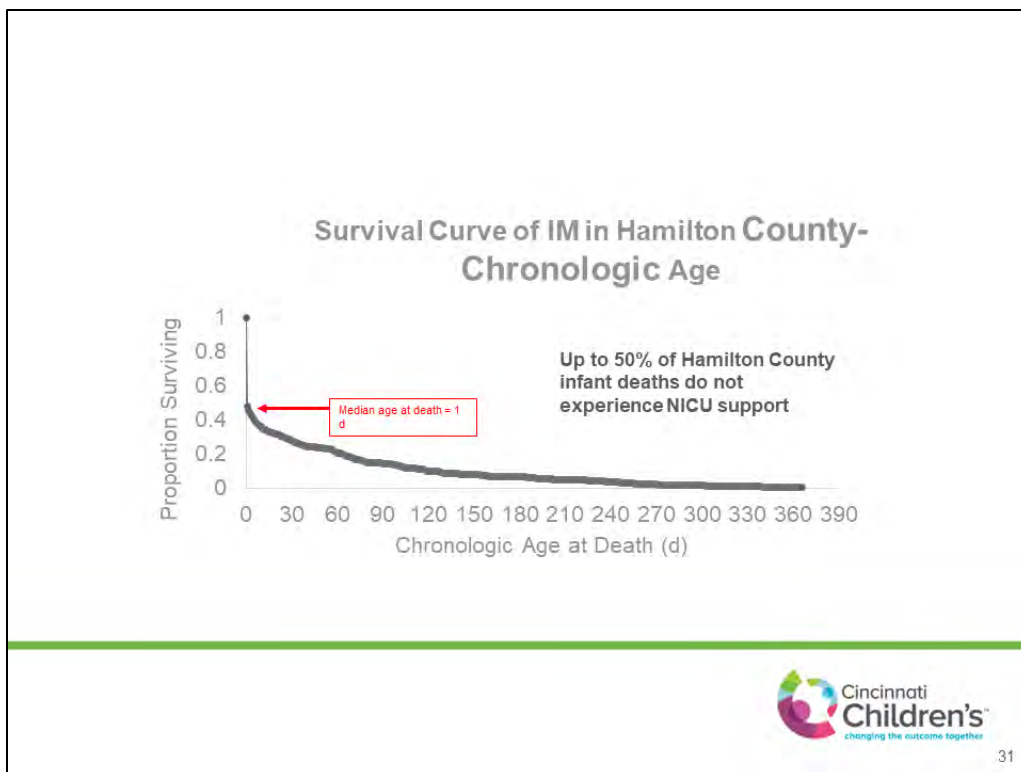
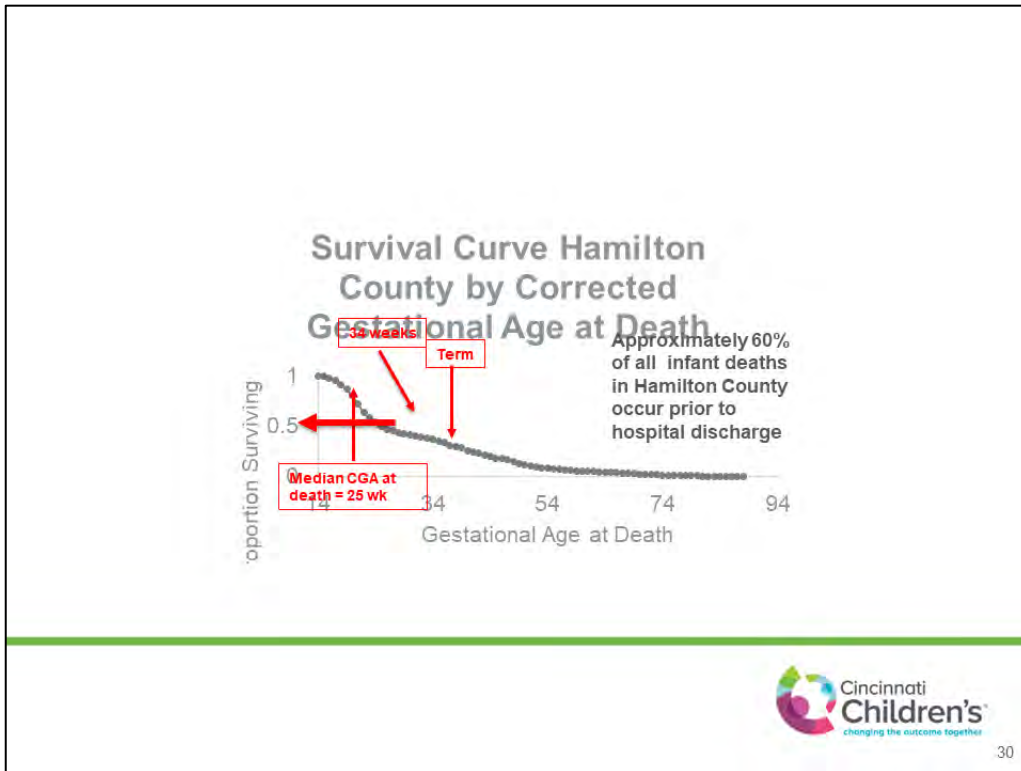
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## When Are Infants Dying?



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## Social Determinants

Meyer *et al* 2021 SMFM

- Prospective cohort nested case control study
- 261 Non-Hispanic Black postpartum women
- 14.5% preterm birth
- Significantly less social/emotional/financial support
- Diminished resilience
- Substandard housing, food insecurity



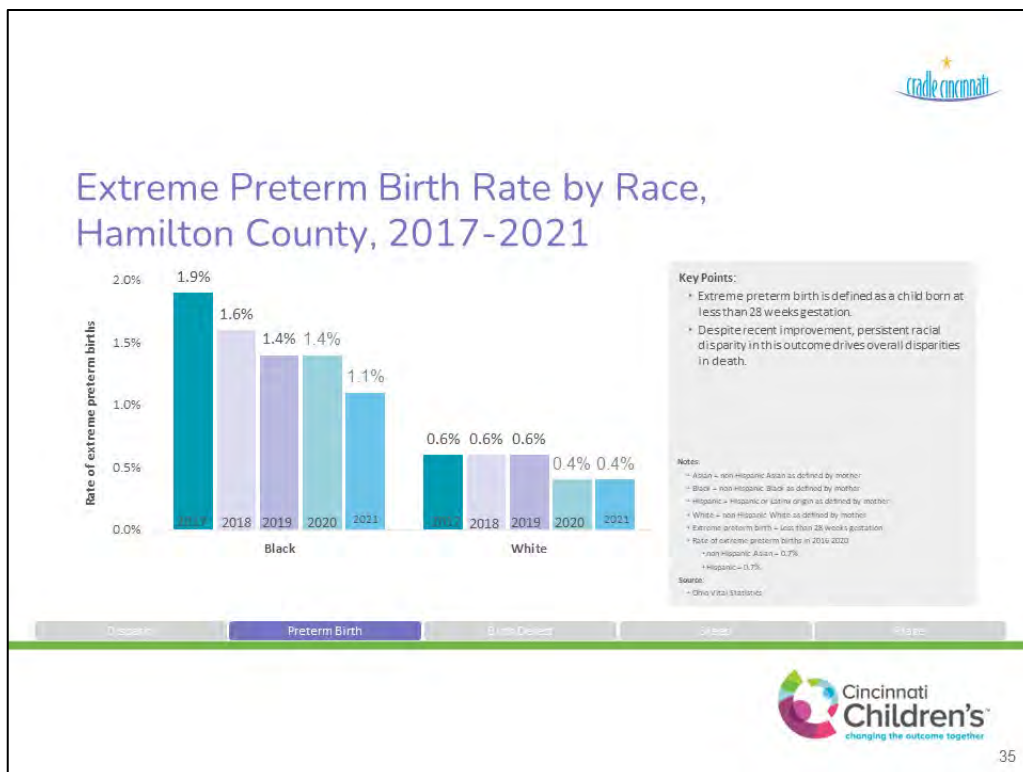
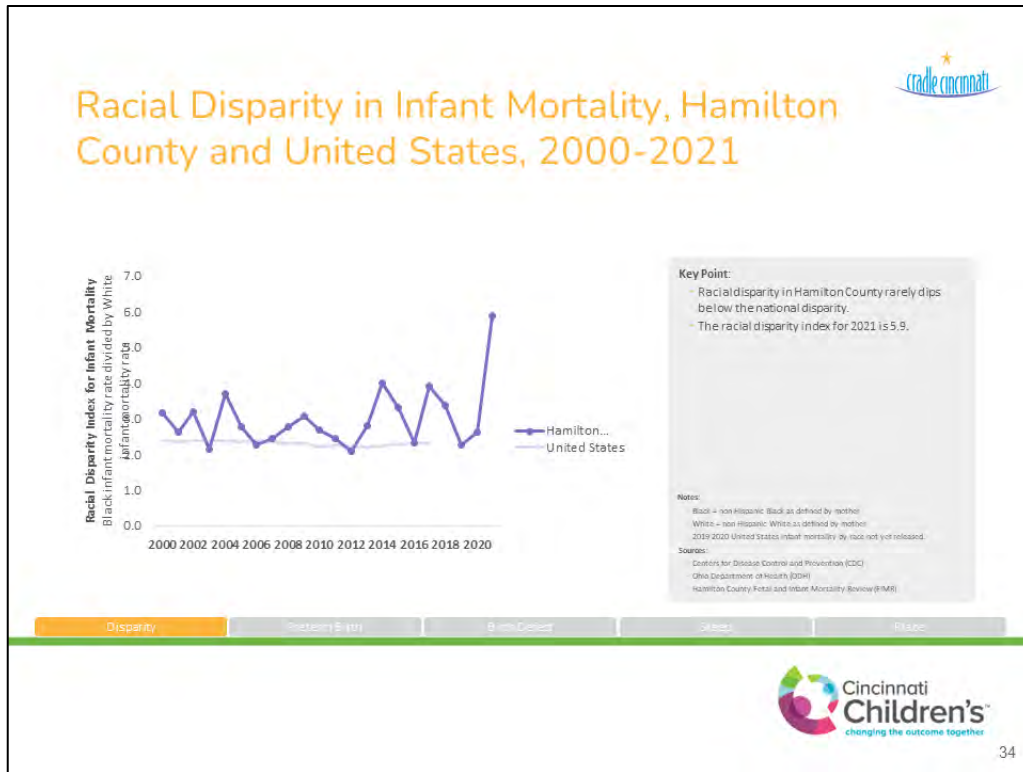
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## Designing Direct Service

- Wraparound model
- Emphasis on trust
- Linking health care and community (public) health
- Care delivered by community health workers
- Focus on Black Women in 12 geographic zones



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where  
**research** meets  
**family policy**

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INFIS #25 Protecting New Hoosiers and Their Parents