

Fetal and Infant Mortality

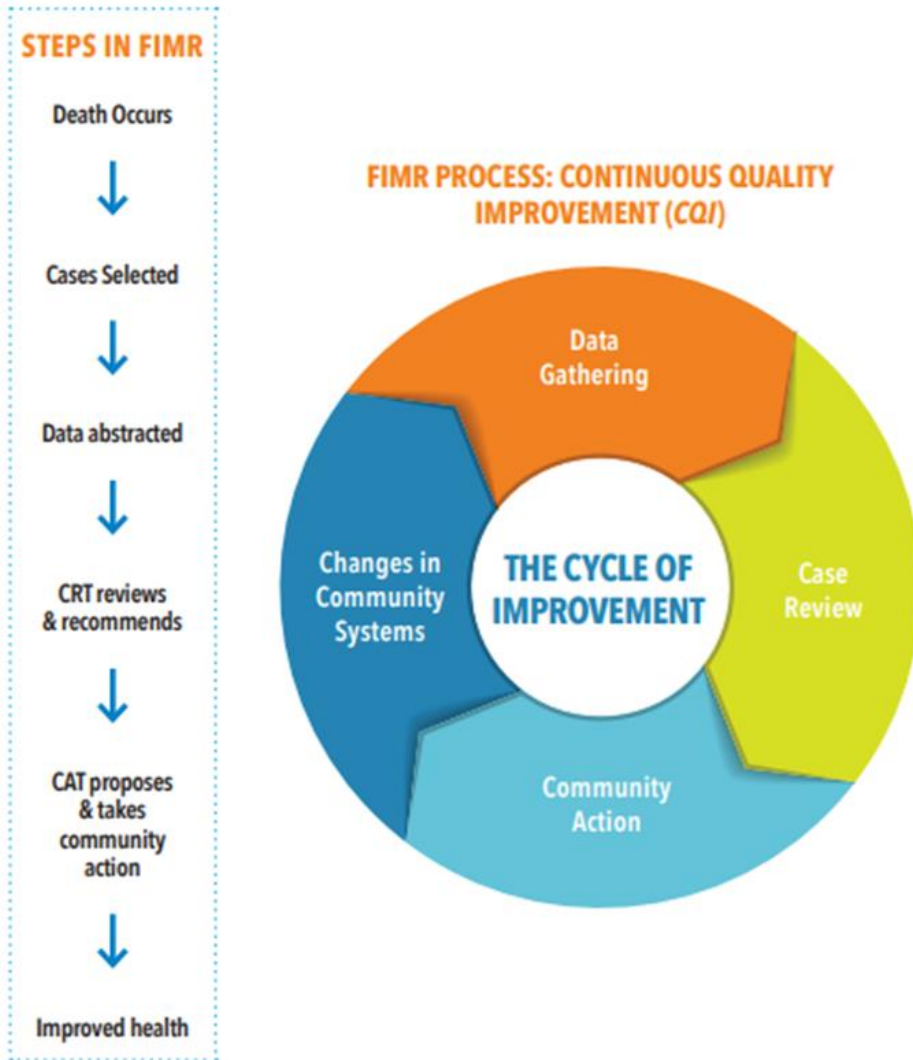
Crystal O'Donnell MPH, BSN, RN



Objectives

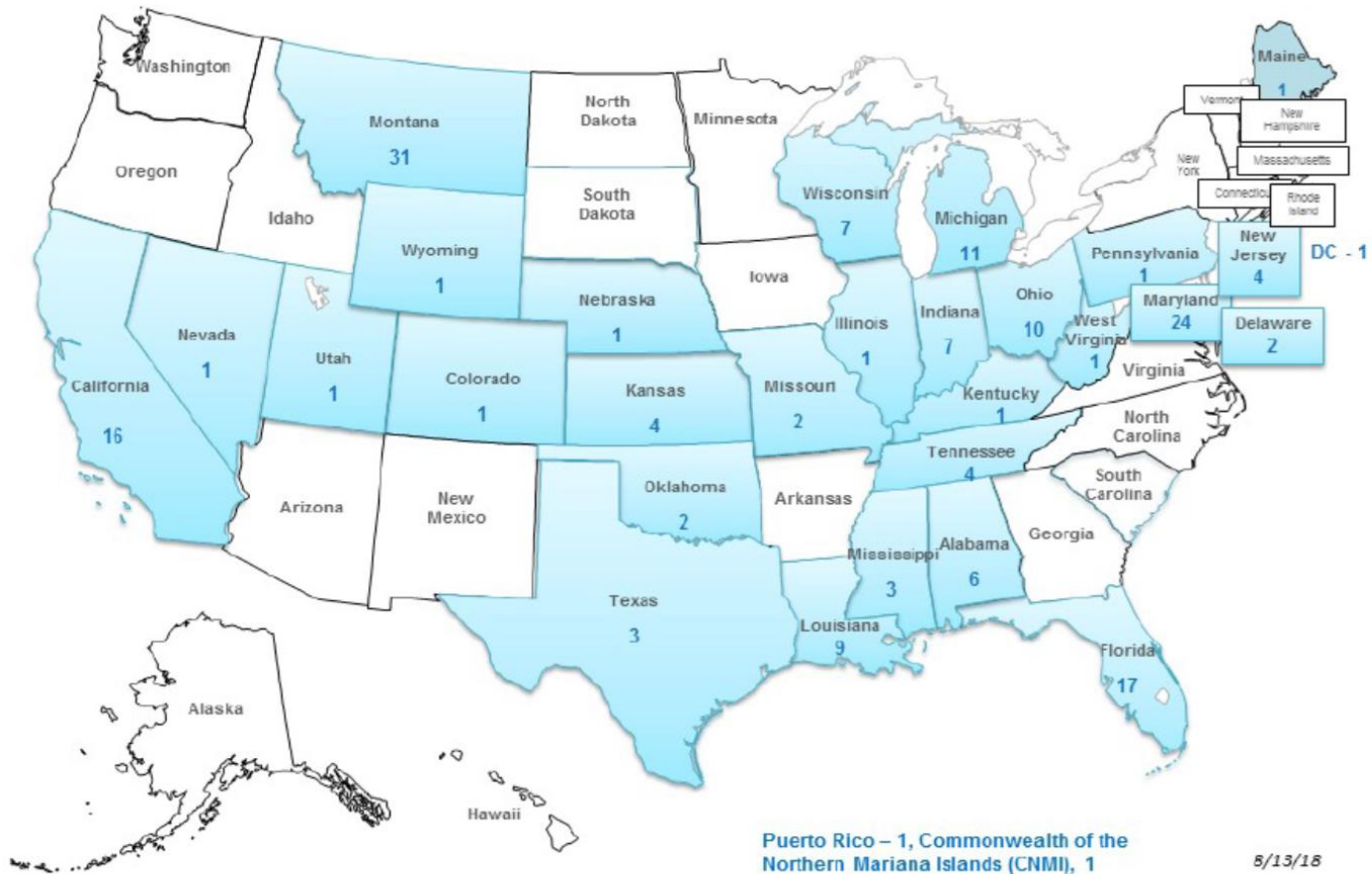
- Discuss Indianapolis Healthy Babies-Fetal Infant Mortality Review (IHB-FIMR) initiatives to improving health equity.
- Understand how Fetal and Infant Mortality Review (FIMR) programs can provide qualitative information on disparities.
- Identify strategies to address fetal and infant mortality.

Fetal and Infant Mortality Review (FIMR)



United States FIMR Programs

175 FIMR Programs in 28 States, DC, Puerto Rico, and CNMI



Indiana FIMR Programs

Allen County FIMR

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Bartholomew Regional FIMR

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Daviess County Regional FIMR Team



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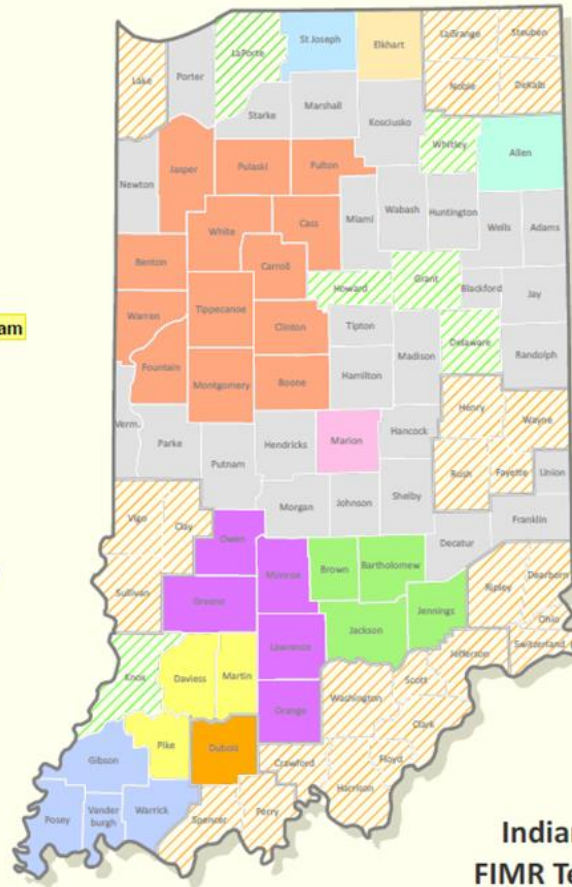
Dubois County FIMR

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Dubois County Health Department
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Elkhart County FIMR

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Elkhart County Health Department
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-  Future Regional Teams
-  Future County Teams



Indiana
FIMR Teams

Indianapolis Healthy Babies FIMR

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Monroe County Regional FIMR

Program Coming Soon
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St Joseph County FIMR

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Fetal Infant Mortality Review Program
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Southwestern Indiana FIMR

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and PHAB Coordinator
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West Central FIMR

Program Coming Soon
Tippecanoe County Health Department
20 N 3rd St
Lafayette, IN 47901



“The infant death rate is the truest index of the welfare of any community.”

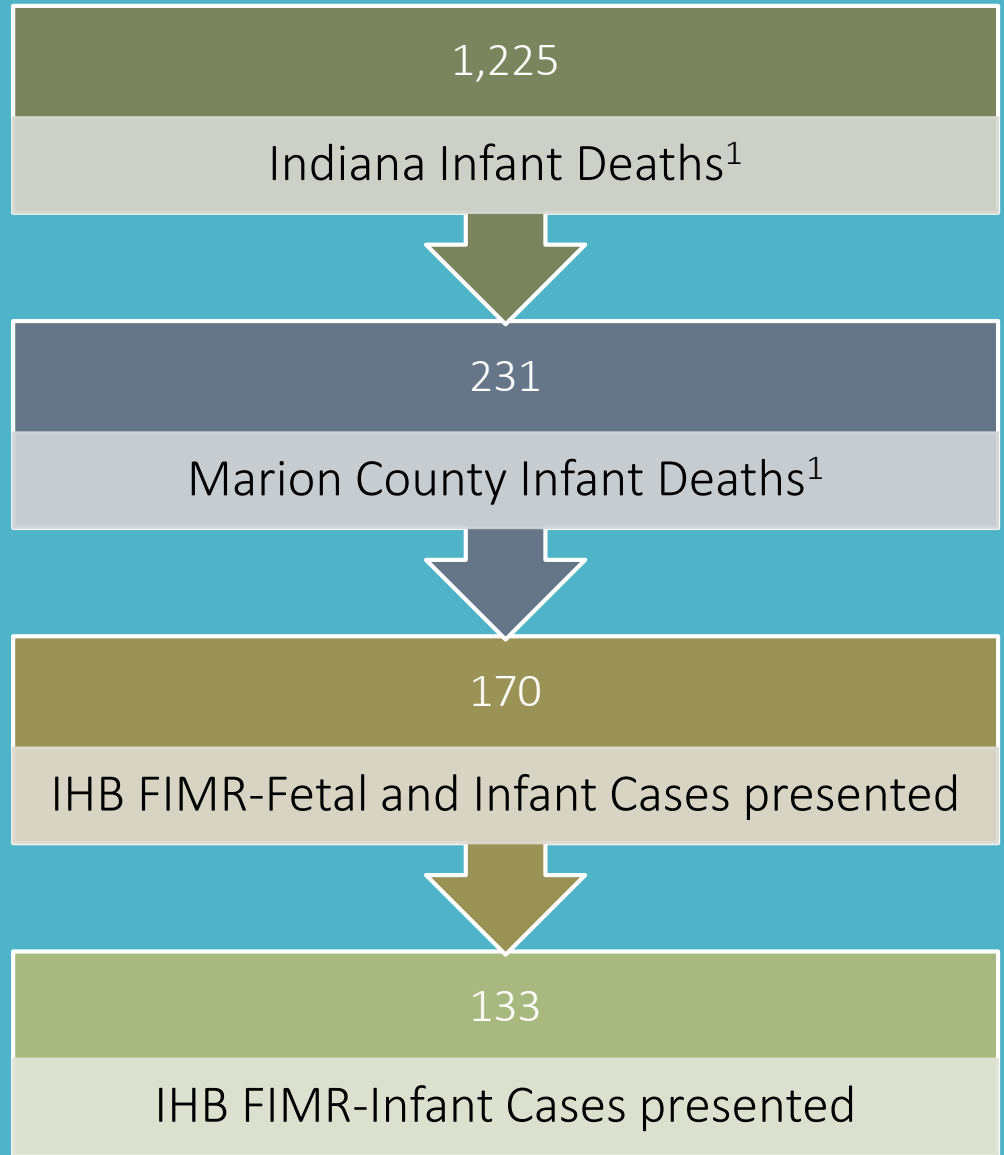
Robert Hamlett
Bremner, 1971

Indianapolis Healthy Babies- Fetal Infant Mortality Review (IHB-FIMR)

Mission

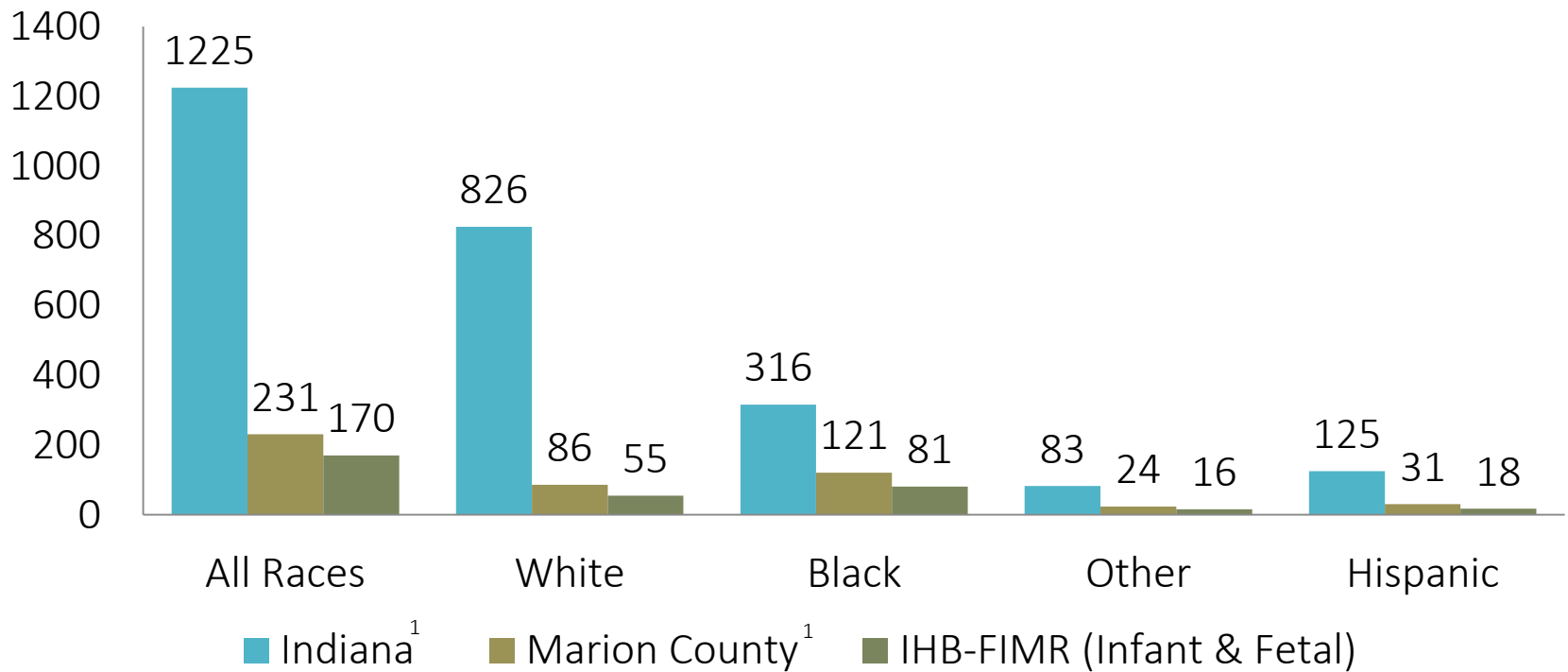
*The mission of FIMR is to tell the stories of mothers whose infants represent the fetal infant mortality rates in Marion County, by **“painting the faces behind the numbers”** through studying fetal & infant death information, listening to the mothers and protecting their privacy, with the goal of improving maternal child services and infant mortality through community partnerships.*

2016 & 2017 Findings



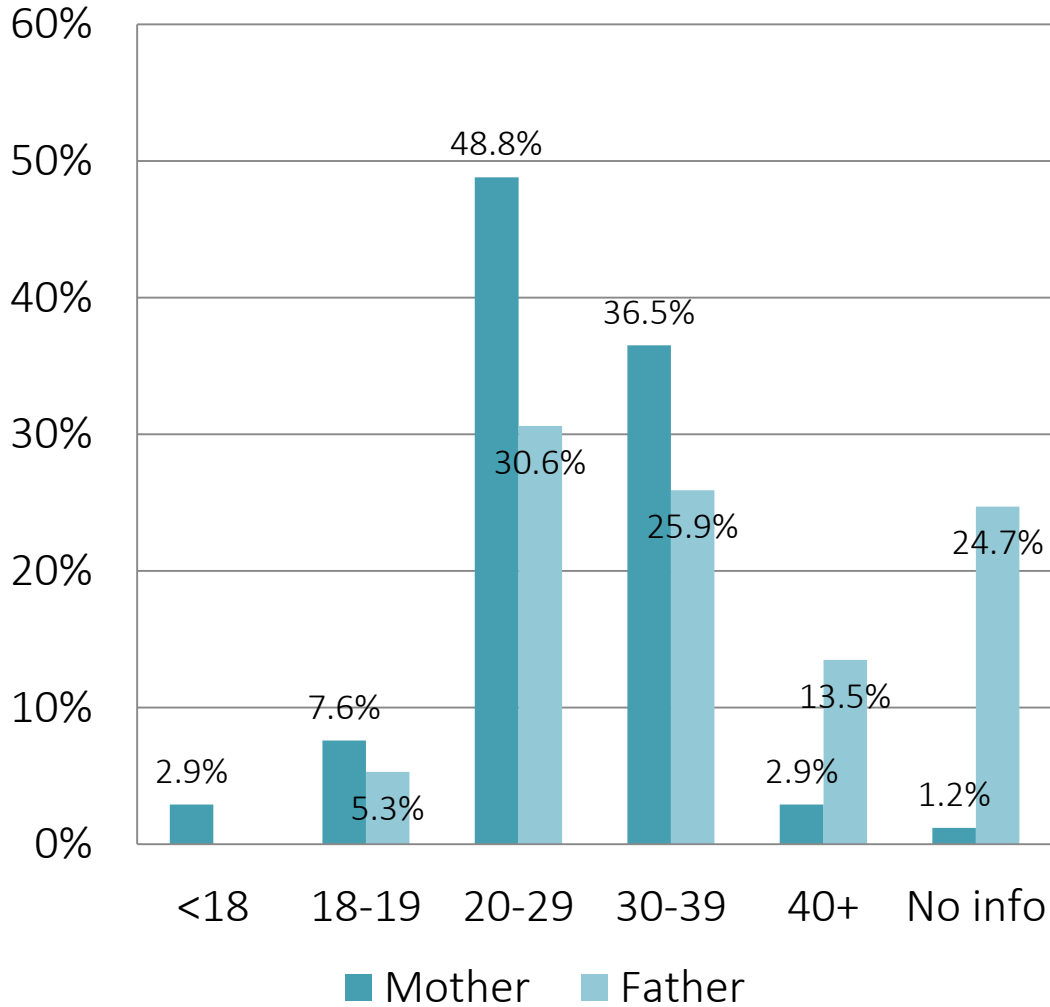
1: <https://www.in.gov/isdh/27470.htm>

Infant Mortality 2016 & 2017



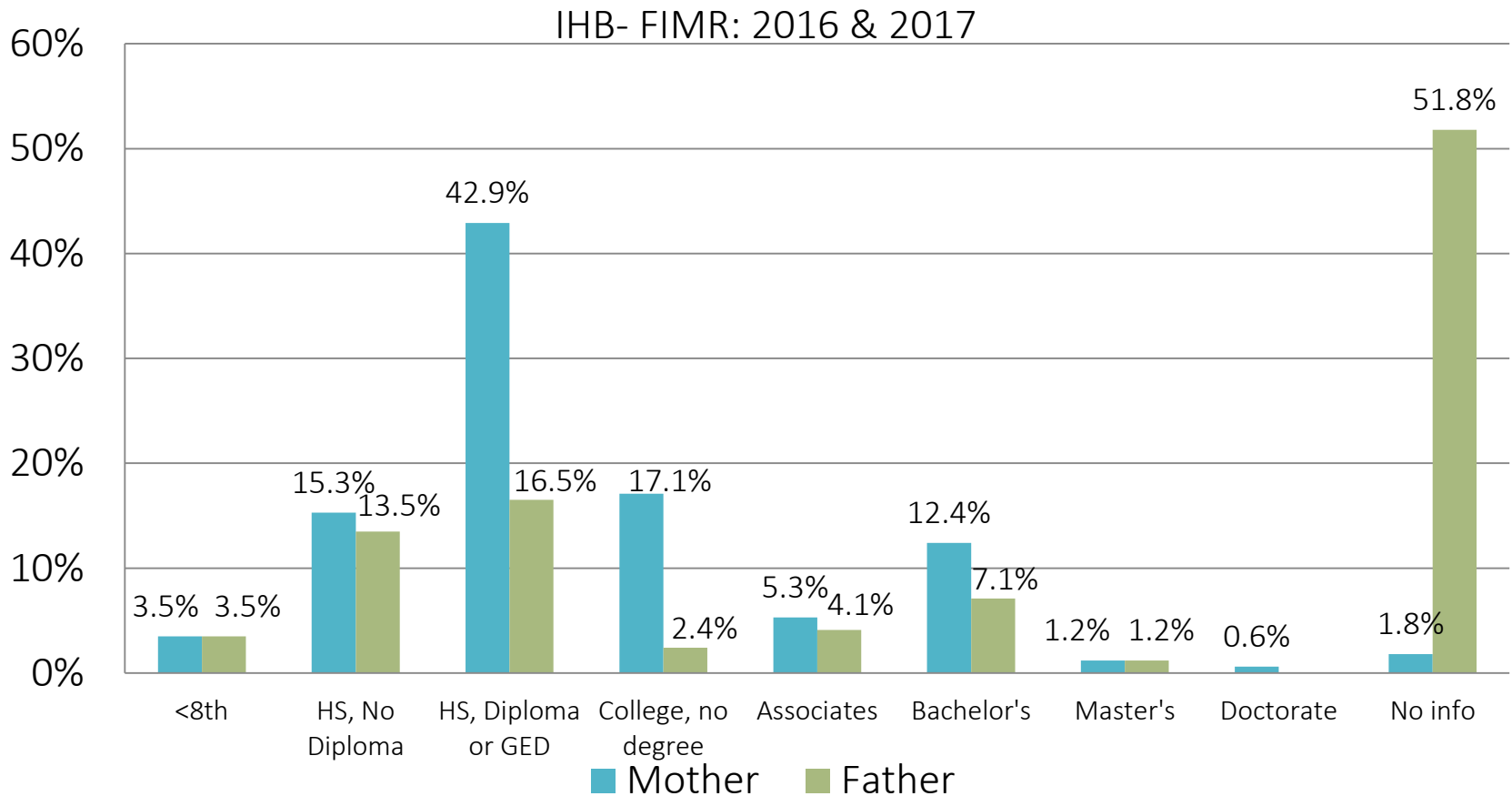
1: <https://www.in.gov/isdh/27470.htm>

IHB-FIMR: 2016 & 2017



Parental Age

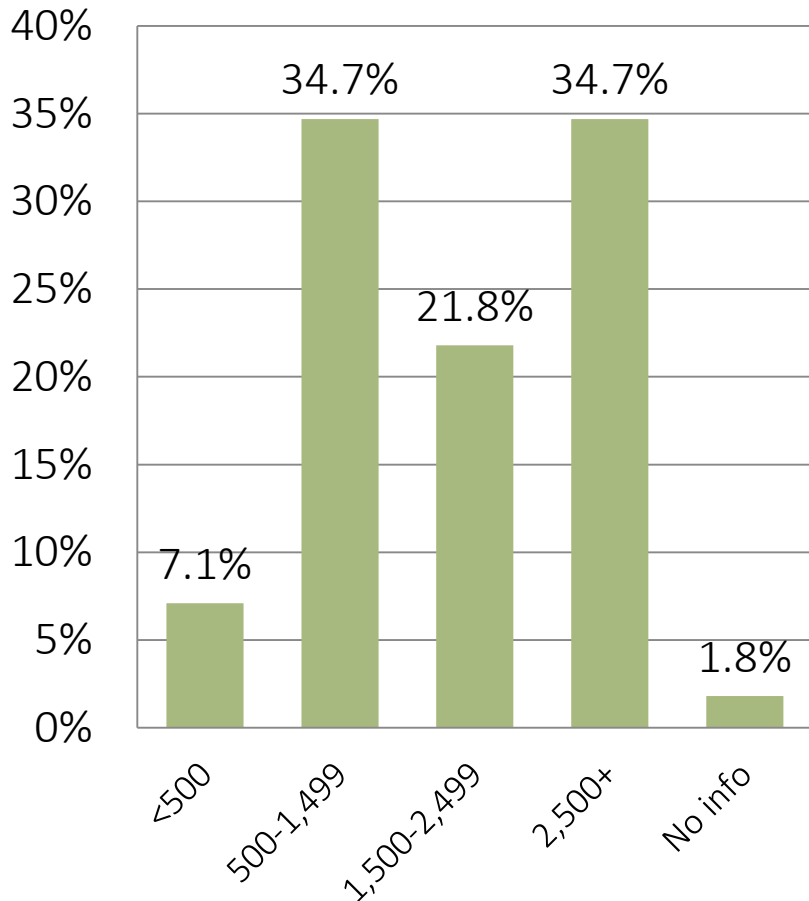
Parental Level of Education



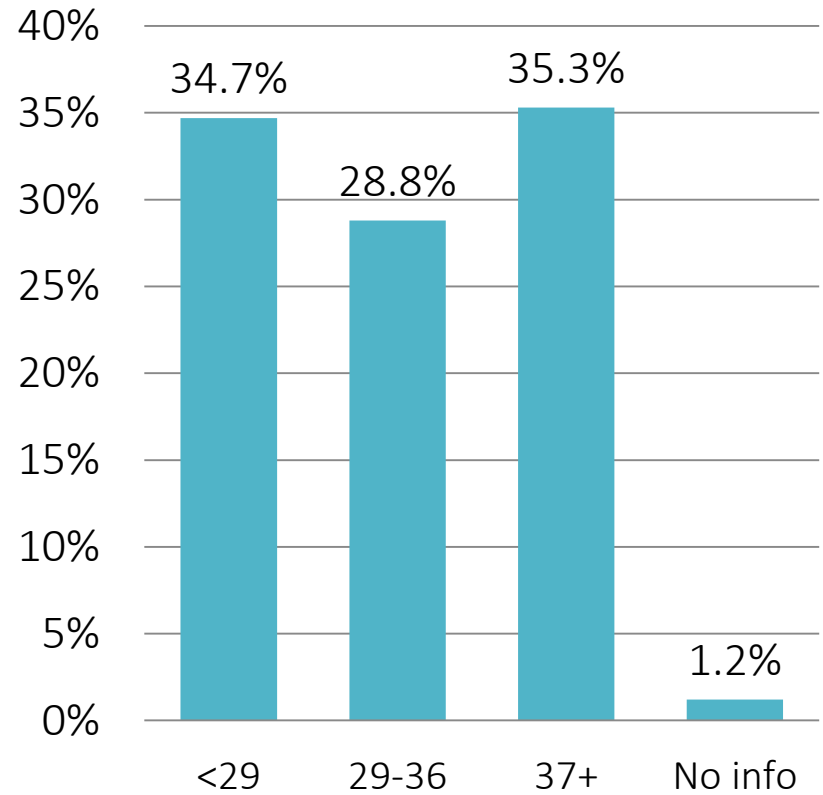
Gestational Age and Weight at Birth

IHB- FIMR: 2016 & 2017

Weight in Grams



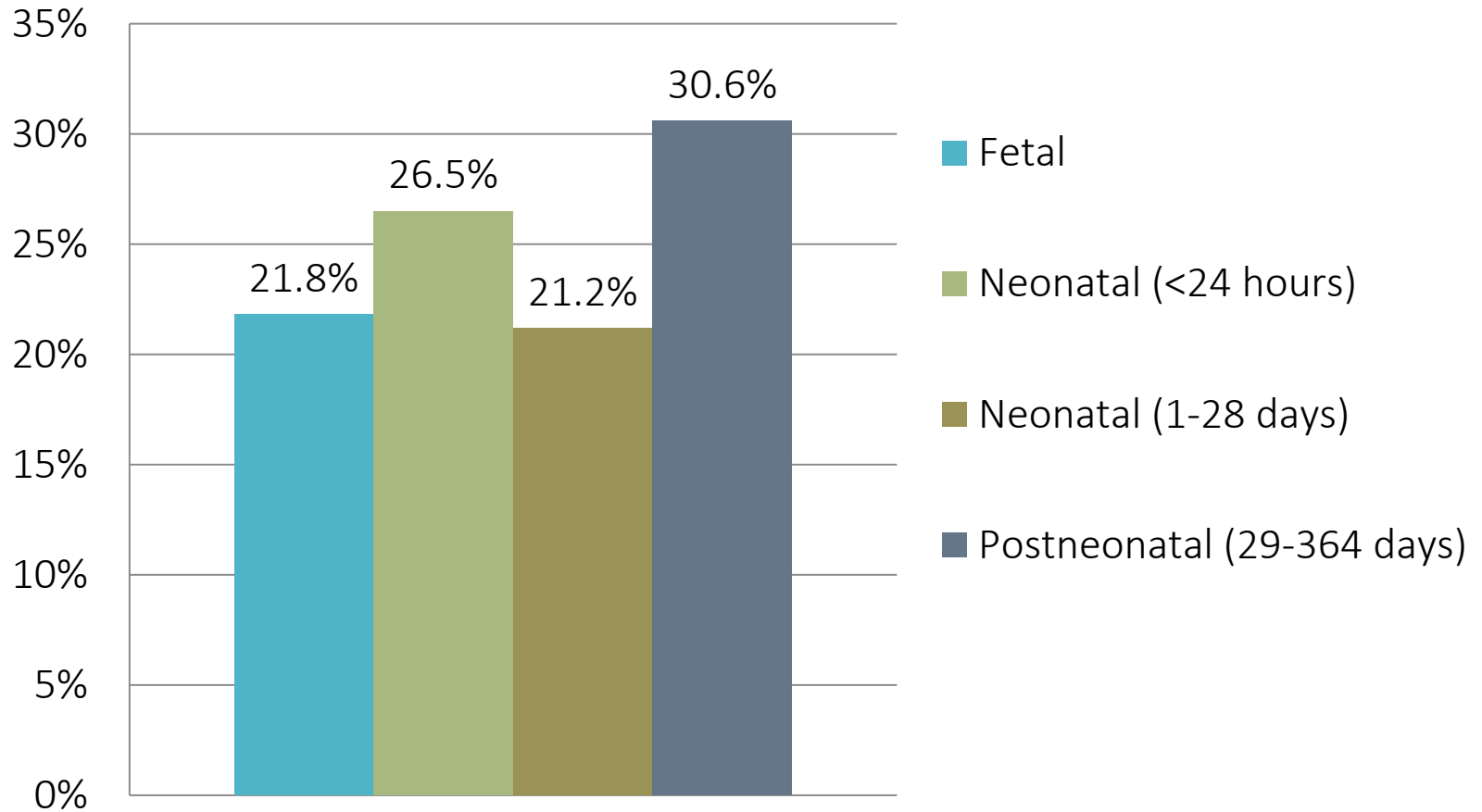
Gestational Age



* 5.9 % are preivable (<500 grams & <24 weeks)

Age at Death

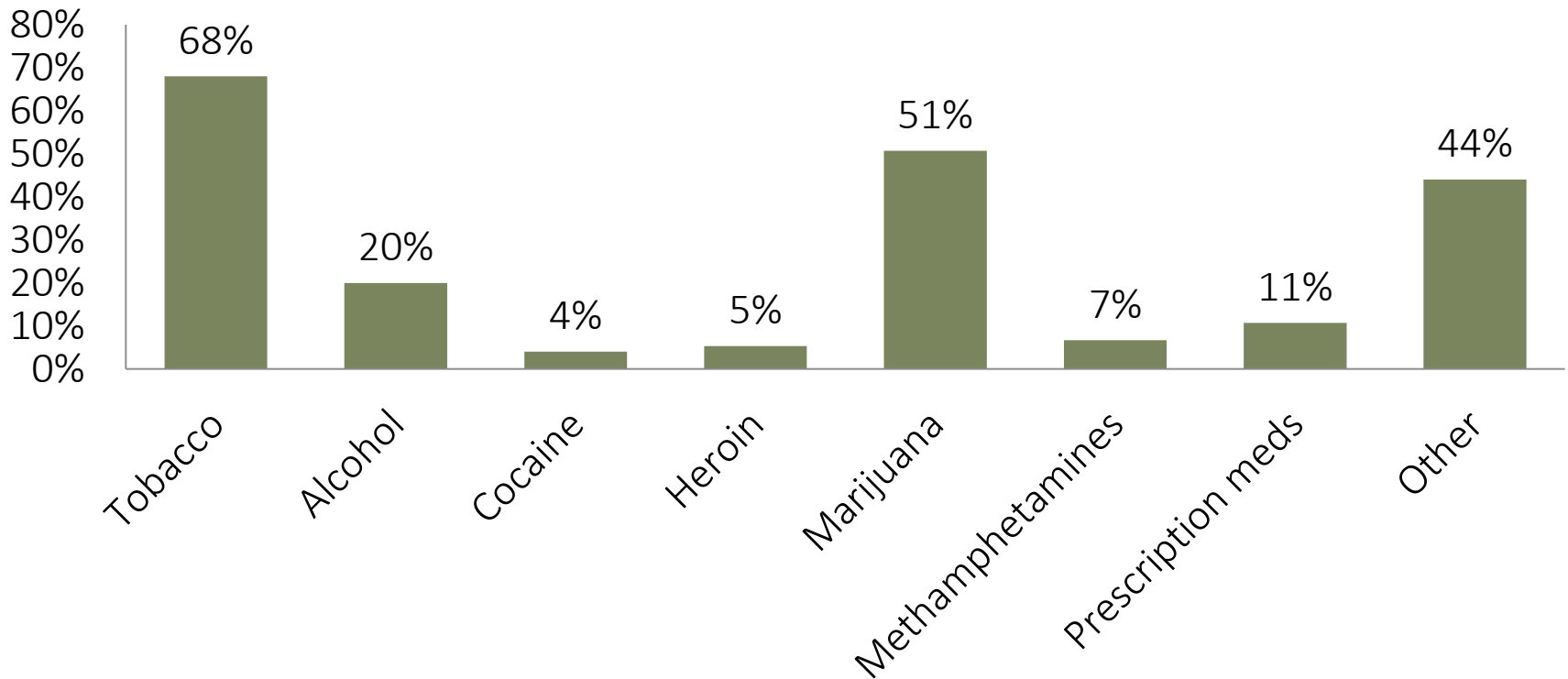
IHB- FIMR: 2016 & 2017



Substance Use

IHB- FIMR: 2016 & 2017
44.1% of records with any substance use

Breakdown by Substance



Adverse Birth Outcomes

Risk Factors

- Early rupture of placental membranes
- Intrauterine infection
- Genetic abnormalities of the uterus, cervix, and/or placenta
- Multiple pregnancies or fertility treatments
- Birth spacing
- Maternal age
- History of preterm birth
- Chronic stress
- Context of pregnancy
- Nutrition, social supports, environment
- Drugs of abuse (i.e. opioids), smoking, alcohol
- Domestic violence

FIMR Contributing Factors

67% Poverty

64% Pre-existing maternal medical conditions (asthma, HTN, diabetes, mental health disorders etc.)

50% Prematurity

41% Unplanned pregnancy

40% Obesity

37% Maternal infection other than STD's

34% History of fetal or infant loss

31% Other emotional stressors during pregnancy (job loss, loss of loved one, incarceration, divorce, natural disaster)

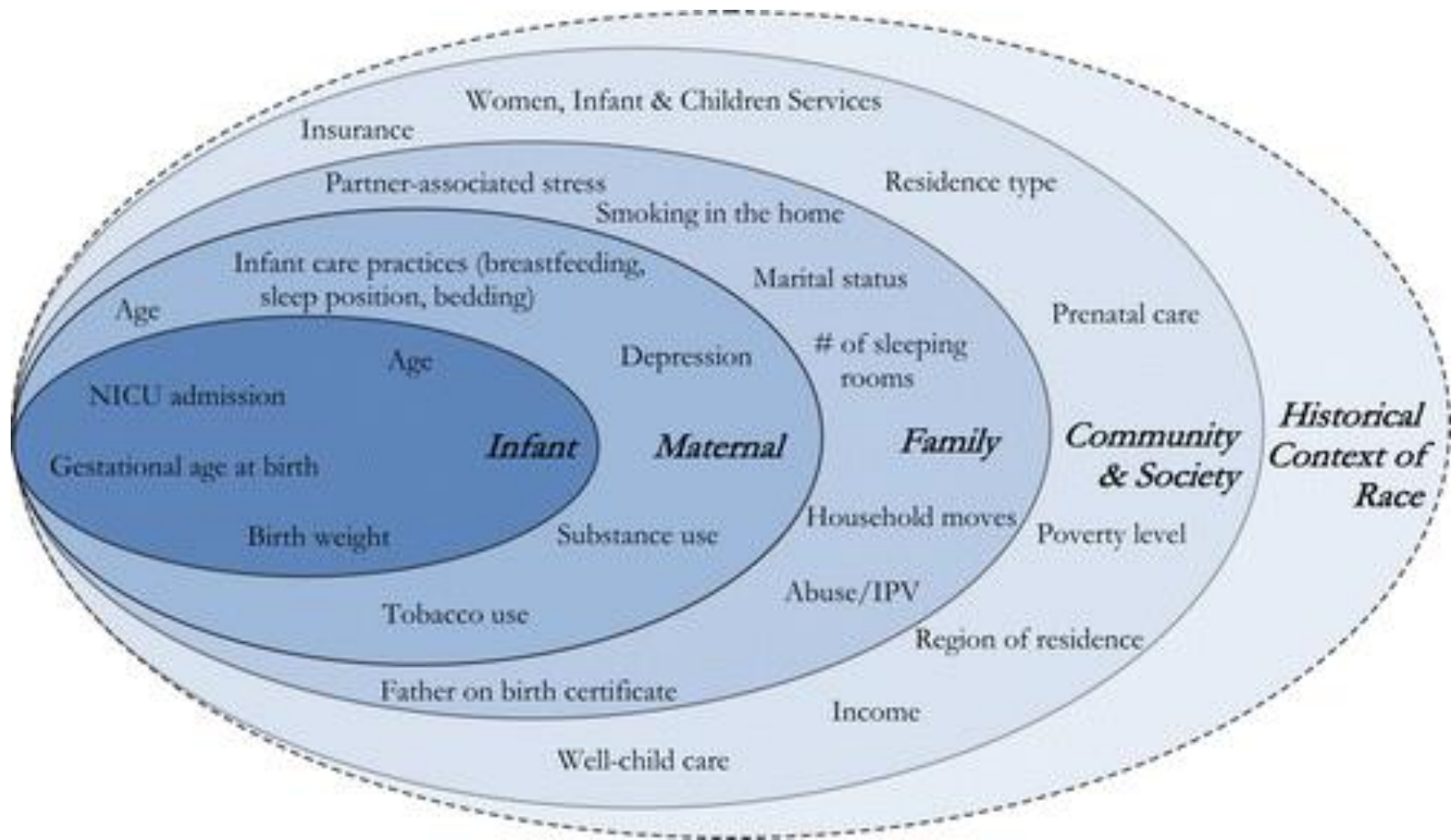
30% Presence of life course perspective risk factors (stressors in childhood, history of abuse, poverty, lack of support).

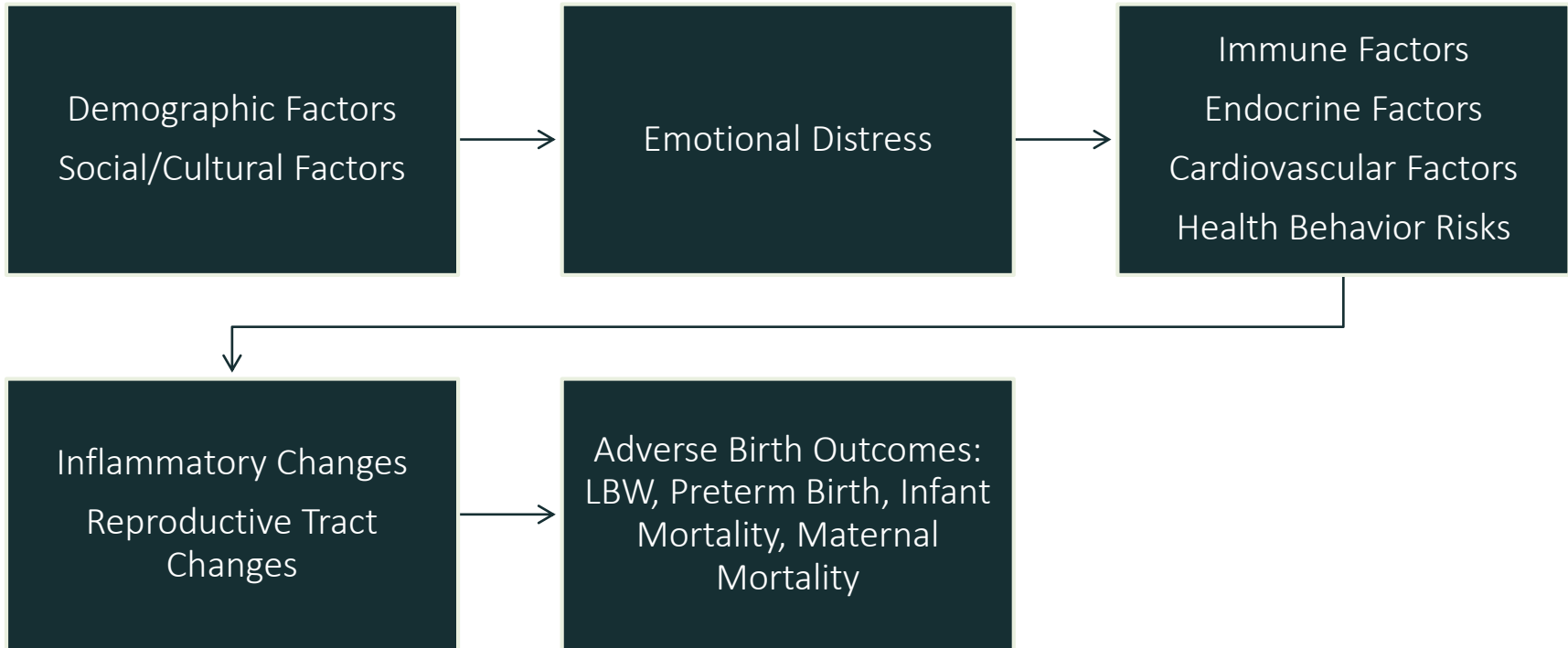
27% Late entry into prenatal care after 13th weeks

Social Ecological Model



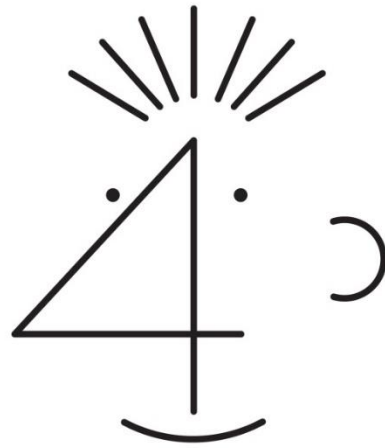
Socio-Ecological Model to Mother-Infant Bed-Sharing





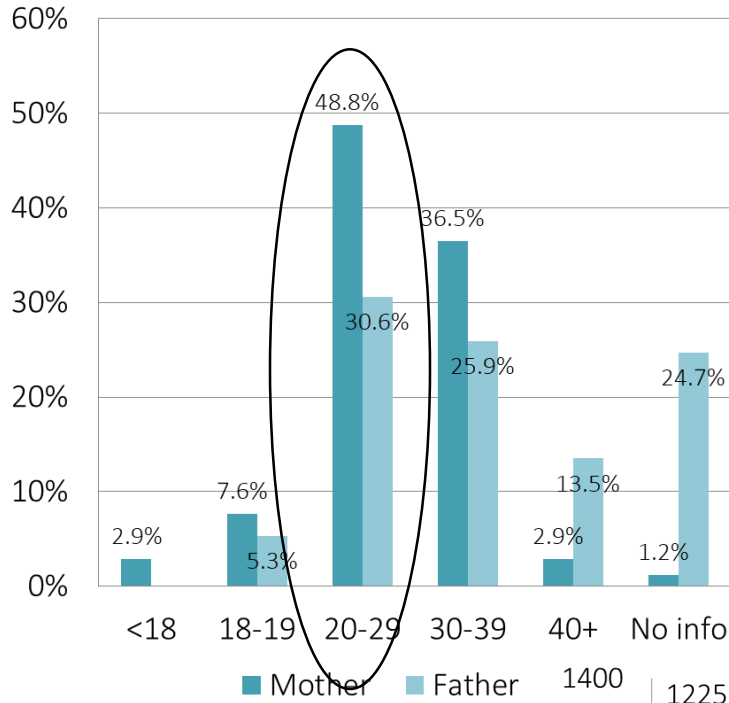
Multifactorial Framework for Adverse Birth Outcomes

Painting
the faces
behind
the
numbers

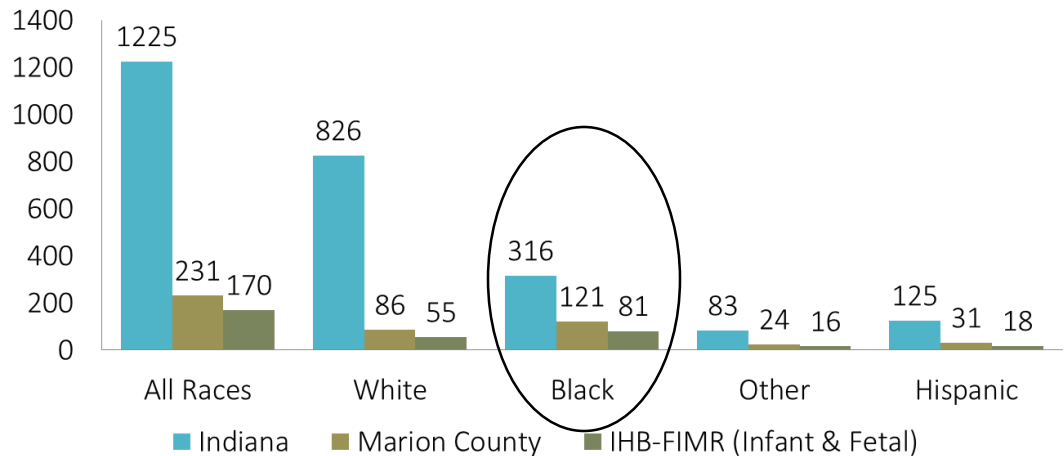
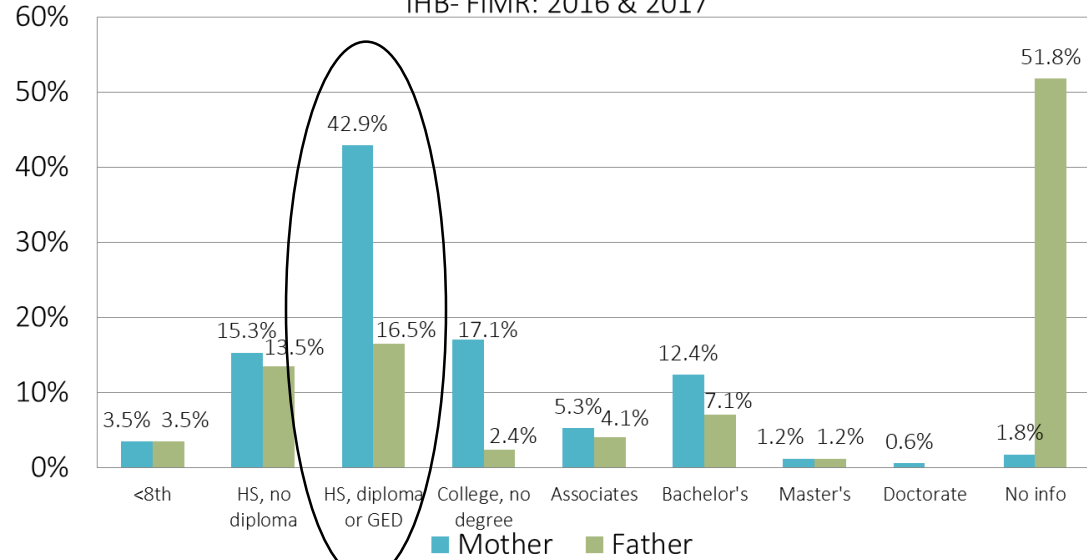


Demographic, Social, & Cultural Factors

IHB-FIMR: 2016 & 2017



IHB-FIMR: 2016 & 2017



2013 - 2017

Infant Mortality Rates by Zip Code

Zip Code	County	Births	Deaths	Infant Mortality Rate (IMR)	White IMR	Black IMR
46404	Lake	1,093	22	20.1	**	21.2
46312	Lake	2,350	37	15.8	11.2*	23.4
46324	Lake	1,409	22	15.6	15.0*	24.1*
46806	Allen	2,333	36	15.4	13.1*	22.2
46619	St. Joseph	1,631	23	14.1	5.7*	19.8*
46218	Marion	2,490	36	14.5	**	18.7
46226	Marion	3,483	44	12.6	6.5*	14.8
46203	Marion	3,093	39	12.6	10.2	16.4*
46205	Marion	2,417	30	12.4	8.9*	15.3
47130	Clark	2,966	36	12.1	12.3	15.6*
46628	St. Joseph	2,059	24	11.7	4.2*	20.8
46229	Marion	1,976	23	11.6	6.3*	13.8*
46235	Marion	3,191	37	11.6	6.3*	13.0

*Numerator less than 20, the rate is unstable.

**Rate has been suppressed due to five or fewer outcomes.

Emotional Stress

Medical Records:

She watched a family member take their life

Father of Baby: Incarcerated

Household income: 0-\$9,999

Prenatal care:

- Weekly Makena injections
- Previous premature baby

“I did not have any events during my childhood or prior to pregnancy that caused any hardship”

“My family was my support; the father of the baby was also supportive”

“I went to a lot of visits since I had to take shots due to [the previous pregnancy] being a preemie”

“I stopped working because they were not flexible with my work schedule”

“I did not have any financial concerns or stress”

“ I was not stressed at all”

Immune, Endocrine, and Cardiovascular factors & Health Behavior Risks

Medical Records:

Medical:

- Former smoker
- BMI 45.7

OB History:

- Hypertension in prior pregnancy
- Preterm delivery around 32 weeks

Prenatal care:

- Started in 1st trimester
- Had 12 visits,
- Followed up with referrals
- Compliant with care

“ I do not have any health issues”

“ I threw up a lot, I was sick a lot. I did not have any difficulty caring for myself or following medical advice”

“ I received a lot of education...”

“ I was satisfied with the care I received”

Inflammatory & Reproductive Tract Changes

Medical Records:

Family planning:

- Unplanned
- 14 month pregnancy interval

Prenatal care:

- Urinary infection,
- Makena injection site infection,
- Bacterial vaginosis,
- Group B strep +

Delivery:

- Elevated blood pressure on admission

“ I was not taking any birth control”

“ The pregnancy was a surprise but I was ok with it, not sad about it”

“ I did not have any health issues with this pregnancy”

“I was not told to do anything to prevent preterm labor”

Adverse Birth Outcome

Medical Records:

38 Week Ultrasound:
Fetal Demise

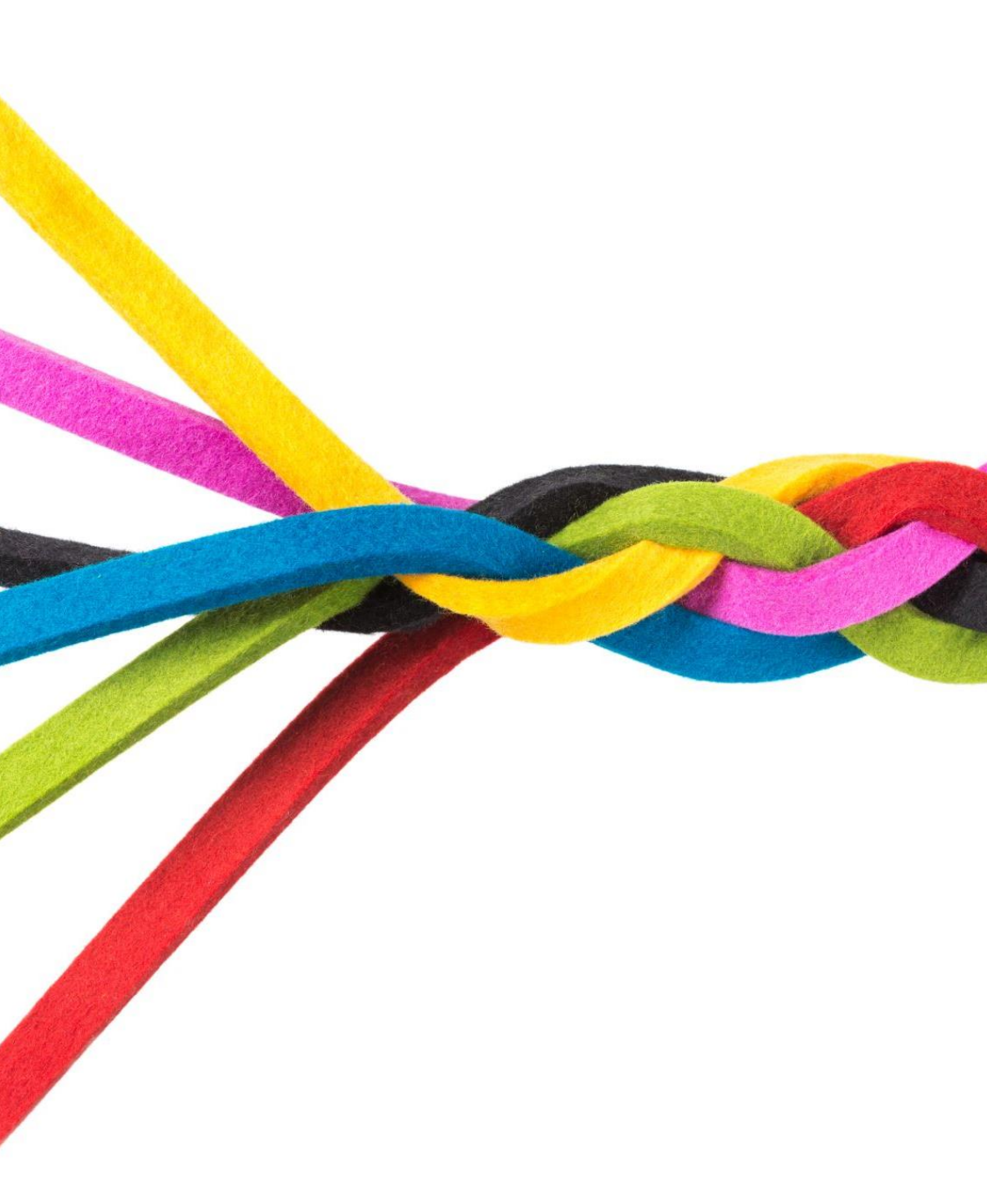
“It was shocking. I wasn’t prepared”

“I went to my appointment and they
said there was no heartbeat. I was
scared.”

“ He was moving the night before but at
the appointment his heart stopped.”

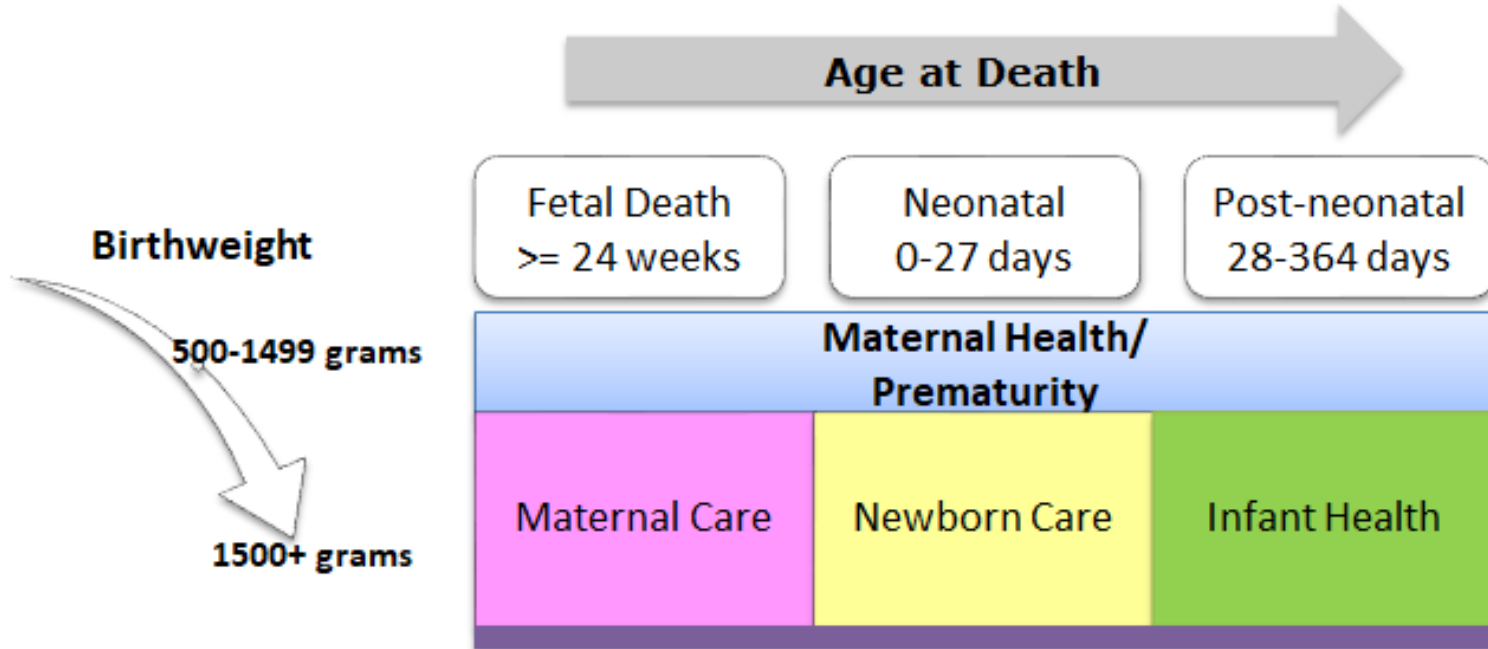
“I am not doing anything [to prevent
pregnancy]. If it happens it happens, I can
take care of my kids.”

“I just keep going, I wake up every day.... I do
what I do, smile all day every day”



Community Action Team

Perinatal Periods of Risk (PPOR)

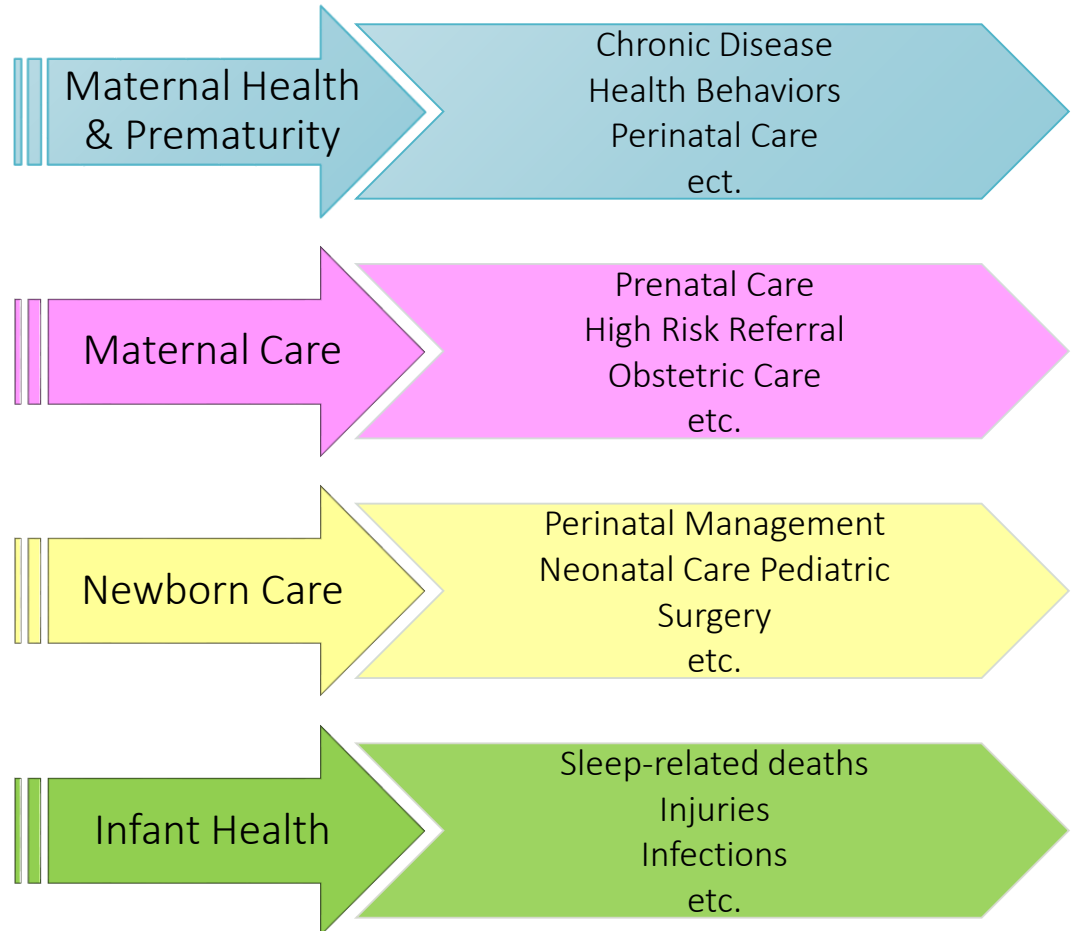


PPOR Mapping Results

Fetal-Infant Mortality Rate by Population Group, Marion County 2013-2017

Group	Maternal Health/ Prematurity	Maternal Care	Newborn Care	Infant Health
Reference Group	1.88	1.93	1.29	1.29
Marion County Compared to Reference Group	3.32 1.44	2.2 0.27	1.4 0.11	1.86 0.57
White, non-Hispanic Compared to Reference Group	2.92 1.04	2.12 0.19	1.4 0.11	1.67 0.38
Black, non-Hispanic Compared to Reference Group	4.83 2.95	2.44 0.51	1.32 0.03	2.29 1.00
Hispanic Compared to Reference Group	2.35 0.47	1.86 -0.07	1.17 -0.12	1.76 0.47
<12 years education Compared to Reference Group	3.5 1.62	1.72 -0.21	0.89 -0.4	2.61 1.32
12+ years education Compared to Reference Group	3.2 1.32	2.3 0.37	1.48 0.19	1.59 0.30
Mother <20 years Compared to Reference Group	4.32 2.44	1.03 -0.90	1.44 0.15	2.67 1.38
Mother 20-35 years Compared to Reference Group	2.99 1.11	2.15 0.22	1.31 0.02	1.72 0.43
Mother 35+ years Compared to Reference Group	4.87 2.99	3.03 1.10	1.97 0.68	2.24 0.95

Risk and Prevention Factors



Intervention Strategies

Broad range of interventions to help improve birth outcomes:

- For mother
- For the healthcare system/provider
- Policy Changes: For larger societal factors that influence birth outcomes
- Community Capacity Building

Life Course Approach

- Preconception care: A set of interventions that aim to identify and modify biomedical, behavioral and social risks to a women's health and pregnancy outcome through prevention and management.
CDC, 2006
- Prenatal care
- Labor/Delivery: Hygiene, Clear Airways, Thermoregulation, Initiate Breastfeeding
- Postpartum
- Interconception care



Public Health Interventions for Prenatal Care

Centering Pregnancy: Group Prenatal Care

<https://www.centeringhealthcare.org/what-we-do/centering-pregnancy>

Healthy Start Program: Comprehensive Prenatal/Postpartum Care (18 months) and community-based initiatives:

<https://mchb.hrsa.gov/maternal-child-health-initiatives/healthy-start>

Home visiting programs: providing home-based prenatal support and education to pregnant women and women of infants using nurse or community health workers.

<https://www.m2m.org/where-we-work/south-africa/>

<https://www.ednahospital.org>

<https://www.nursefamilypartnership.org>

Fatherhood programs: engaging men in programs about parenthood

<https://fathersandfamiliescoalition.org/affiliates/international-affiliates/fathers-and-families-coalition-of-africa.html>

Postpartum or Interconception Care

Important period for maternal intervention

- Family planning
- General physical health after delivery
- Home environment
- Mental Health

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graph TD; A[Community Action Team] --- B[Safe Sleep]; A --- C[Optimal Maternal Health]
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Community
Action Team

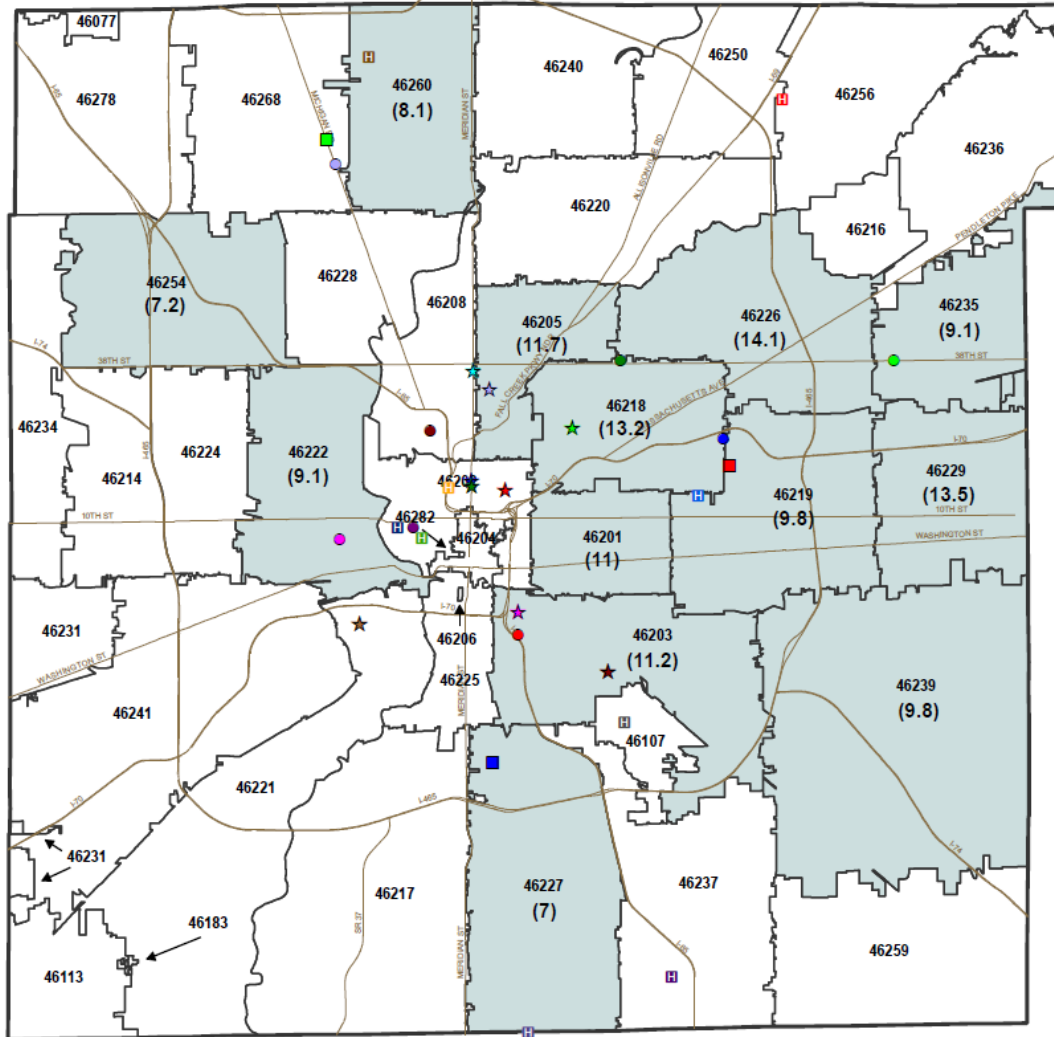
Safe Sleep

Optimal
Maternal
Health

High Risk Zip Codes

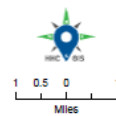


2011-2015 INFANT MORTALITY RATES IN TARGET ZIP CODES



CATCHMENT AREA Marion County, Indiana

- Federally Qualified Health Center**
 - ★ Barrinton Health Center (Healthnet)
 - ★ Citizens Health Center
 - ★ Homeless Initiative Program (Healthnet)
 - ★ Martindale-Brightwood Health Center (Healthnet)
 - ★ People's Health Clinic (Healthnet)
 - ★ Raphael Health Center
 - ★ Shalom Healthy Schools/Healthy Communities
 - ★ Southeast Health Center (Healthnet)
 - ★ Southwest Health Center (Healthnet)
- Health Department**
 - Northeast District Health Office
 - Northwest District Health Office
 - South District Health Office
- Hospital**
 - Community Hospital East
 - Community Hospital North
 - Community Hospital South
 - Eskenazi Health
 - IU Medical Center
 - Methodist Hospital
 - St. Francis Hospital
 - St. Francis-South Campus
 - St. Vincent Indianapolis Hospital
- IUMG**
 - Blackburn Community Health Center
 - Cottage Corner Community Health Center
 - Forest Manor Community Health Center
 - Grassy Creek Community Health Center
 - North Arlington Community Health Center
 - Pecar Health Center
 - Regenstrief Health Center
 - Westside Health Center
- Marion County
- Zip Code
- Major Road



Optimal Maternal Health



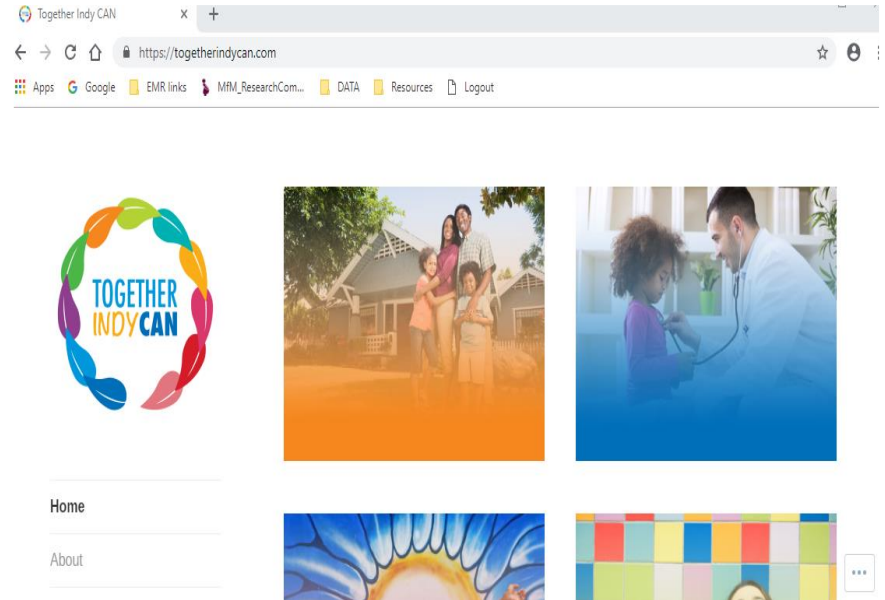
Establish relationships to determine the needs of the community based on what they perceive as their needs.

- Tabernacle Presbyterian
- Al Haqq Muslim Center
- Exodus Refugee Center
- Purpose of life Ministries



Facebook page

- @togetherindycan



Website

- <https://togetherindycan.com/>



Youth

Schools
Community
events



Men

Marion County
Jail Manhood
program
Father's Focused
baby shower



Moms

Project Home
Indy
Family Shelters



Grandparents

Community
Healthplex
Churches
Baby showers

Safe Sleep

Safe Sleep Events

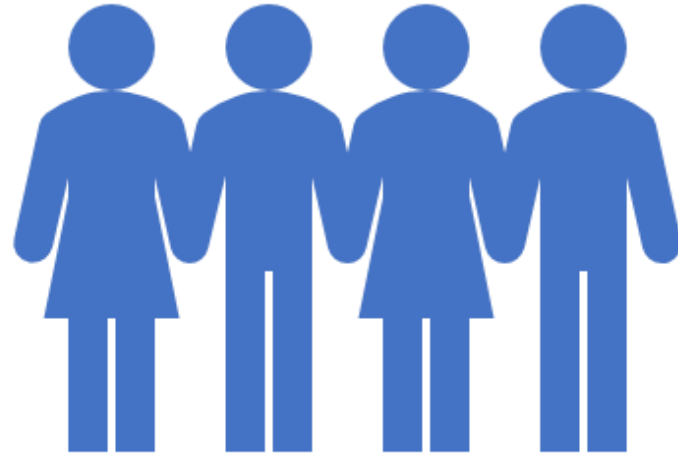


27 Community Events

Safe Sleep Ambassador trainings

78 adults

145 youth



Member Impact

Case Review & Community Action Members



“RENEWED ENERGY TO
IMPROVE DOCUMENTATION”



AWARENESS TO AVAILABLE
PROGRAMS



“FIMR HAS AIDED IN THE
INCREASED EDUCATION AND
KNOWLEDGE OF WHAT IS
OCCURRING IN THE
COMMUNITIES WE SERVE”



“IT HAS FORCED ME TO CHANGE MY NURSING PRACTICE AS I MAKE A
CONSCIOUS EFFORT TO PROVIDE SAFE SLEEP EDUCATION NO MATTER
IF THEY ARE FIRST TIME MOTHERS OR A MOTHER THAT HAS HAD THREE OR
FOUR CHILDREN AND HAS HEARD IT 100 TIMES OVER”

Awareness



- Medicaid HMO's provided an overview of their services and answered questions at Indianapolis Healthy Babies Consortium.
- Media campaigns on preconception health and safe sleep
- Increase utilization of resources after mailing brochures to private obstetrician offices.
- Share findings with leadership, Chin staff, Chin population and personnel from many organizations that serve the Chin population.

Actions

- Letters sent to delivering hospitals on the number of unsafe sleep deaths.
- Safe Sleep education was added to the Indiana Black Barbershop Health Initiative
- Healthy Start provided dolls for death scene reenactments and helped finance Sudden Unexplained infant death training
- Assisted in preparing for the electronic death certificate and fetal death certificate





Thank you

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