2018 IPQIC Annual Report

Indiana's Efforts to Address Infant Mortality

August 2019

Indiana State Department of Health

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Indiana's Efforts to Address Infant Mortality and Morbidity

In 2017, 602 Hoosier babies died before their first birthdays. That equals more than 50 babies every month and nearly 12 babies every week. In the last five years, more than 3,000 infants died before they were a year old. That represents nearly 42 school buses at maximum capacity.

Infant mortality, defined as the death of a baby before his or her first birthday, is recognized as the No. 1 indicator of population health status in the world. For more than 35 years, healthcare professionals, state health administrators, advocates and consumers have attempted to improve infant mortality in Indiana, with varying degrees of success. Despite these efforts, Indiana's infant mortality rate has remained above 7 deaths per 1,000 live births, except for 2012 when the infant mortality rate dipped slightly to 6.9 deaths per 1,000 live births. In 2017, the rate was 7.3 deaths per 1,000 live births.

Over the last six years, infant mortality has remained the No. 1 priority of the Indiana State Department of Health (ISDH) and is one of the five pillars for Gov. Eric Holcomb's administration. The governor has challenged all state agencies to ensure that Indiana becomes the "best in the Midwest in infant mortality by 2024." Through the efforts of the Maternal and Child Health Division staff and projects, as well as the ISDH-funded Indiana Perinatal Quality Improvement Collaborative (IPQIC), hundreds of committed individuals are dedicated to improving outcomes for Indiana's mothers and babies. This report will document the efforts of these stakeholders in 2018.

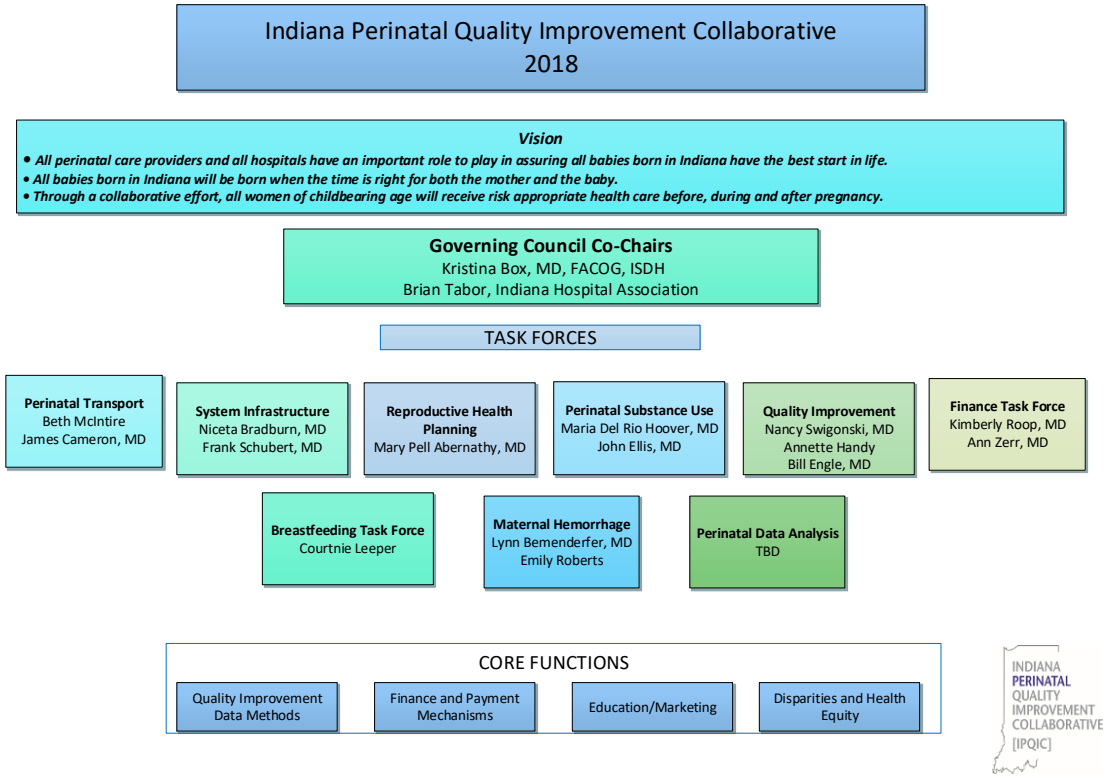
Indiana Perinatal Quality Improvement Collaborative (IPQIC)

Established by ISDH in 2012, IPQIC marked its sixth year of activity in 2018. Since its inception, hundreds of individuals representing all corners of the state, including perinatal healthcare providers, hospitals, state agencies, advocacy organizations and professional associations, have worked diligently to improve the perinatal infrastructure and practices in Indiana. These individuals have generously given their time, experience and expertise for the sole purpose of improving outcomes for mothers and babies in Indiana.

The vision of IPQIC is threefold:

- All perinatal care providers and all hospitals have an important role to play in ensuring all babies born in Indiana have the best possible start in life.
- All babies in Indiana will be born when the time is right for both the mother and the baby.
- Through a collaborative effort, all women of childbearing age will receive risk-appropriate healthcare before, during and after pregnancy.

In 2018, IPQIC continued the move from committees to task forces, allowing for deeper focus and targeted project management on the various initiatives impacting perinatal health care. In addition, task force chairs adapted a quality improvement framework to validate the effectiveness of promising practices prior to broad scale implementation. The chart below reflects the changes.



Task force members are provided annually an opportunity to discontinue serving on their respective task forces. With a few exceptions, the members have remained involved with

the collaborative all five years. New participants are always sought to ensure that all views and perspectives are represented. To the greatest extent possible, participants have set aside their personal interests to focus on implementing IPQIC's vision. The completed work and ongoing activities of IPQIC are designed to complement the continuing efforts of the ISDH in addressing infant mortality and morbidity in Indiana. This report outlines the activities of IPQIC as well as ISDH-sponsored initiatives.

Infant Mortality and Birth Outcomes - 2017[1]

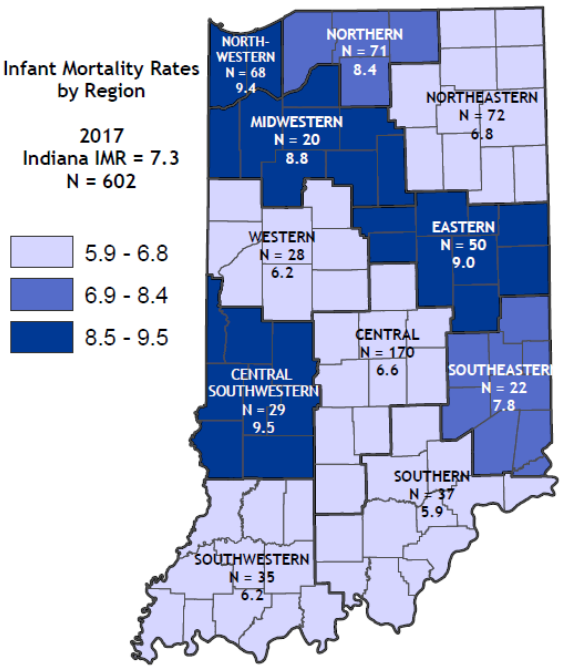
To provide context for IPQIC and ISDH activities, it is important to review relevant data regarding Indiana rates compared to the nation as we strive to improve our state's rate. The Healthy People 2020 goal is the national standard for the United States population to define measures for improving health nationwide. The following table includes 2017 Indiana infant mortality rates compared to the national rate of 5.9 per 1,000 live births and the Healthy People 2020 goal of 6.0 per 1,000 live births. The United States, in aggregate, met the Healthy People 2020 goal in 2012 and has since met and exceeded this goal.

Infant Mortality Rates	2013	2014	2015	2016	2017
Indiana	7.1	7.1	7.3	7.5	7.3
United States	6.0	5.8	5.9	5.9	5.8
Healthy People 2020 Goal	6.0	6.0	6.0	6.0	6.0

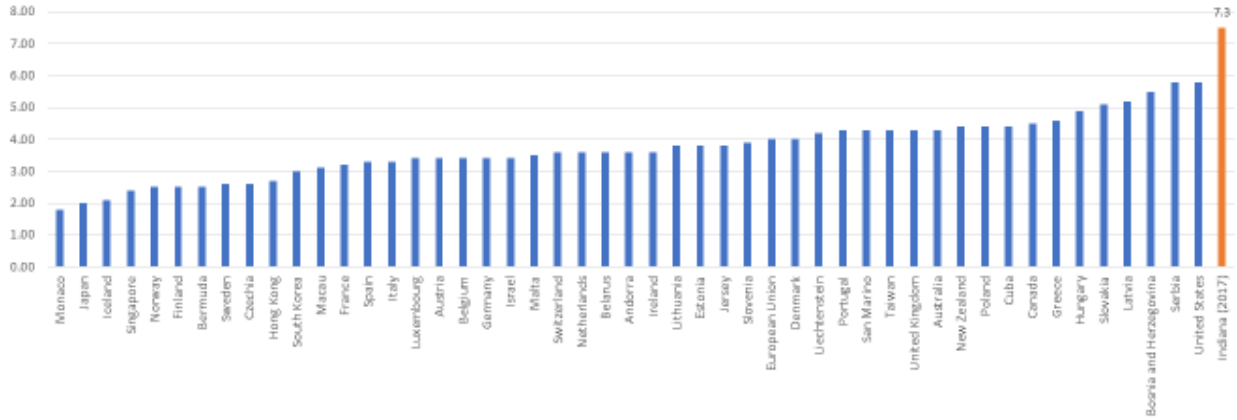
While the national infant mortality rate surpasses the established goal for the United States, the infant mortality rate in the United States is, unfortunately, still significantly higher than that of other developed nations. The following figure depicts the projected

[1] All data included in this report were provided by ISDH, Maternal and Child Health Epidemiology Division

2017 rankings for infant mortality rates across comparable nations; indicating that not only is the United States infant mortality rate higher than most, Indiana's rate is considerably higher than all.



Source: Indiana State Department of Health, Division of Maternal and Child Health
Created: November 1, 2018
Data Source: Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team

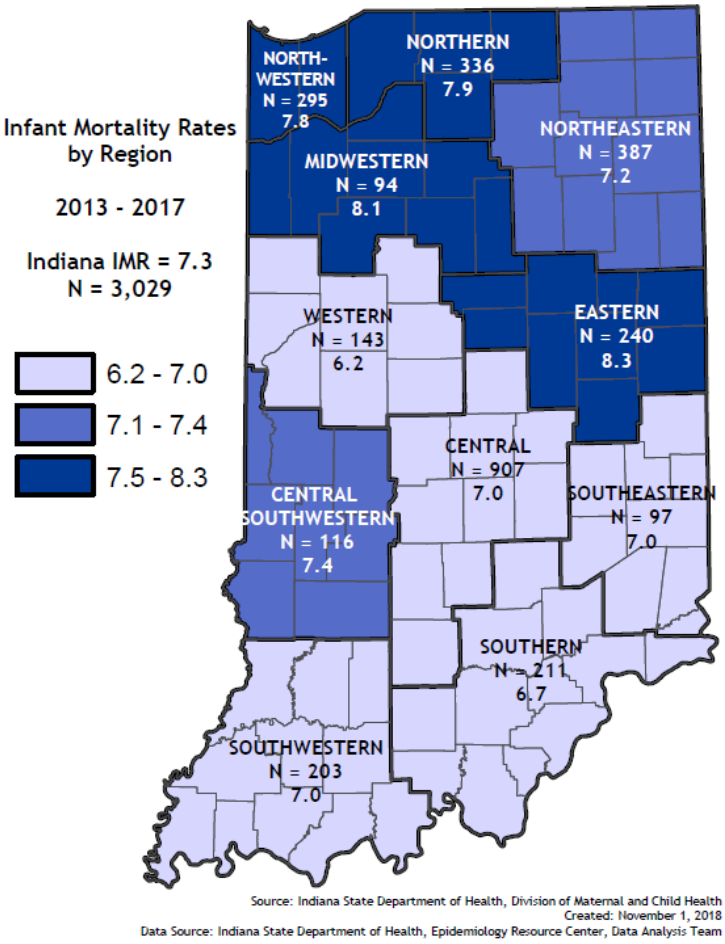


Deaths Per 1,000 Births (2017 estimates)

https://www.cia.gov/library/publications/the-world-factbook/fields/2091.html

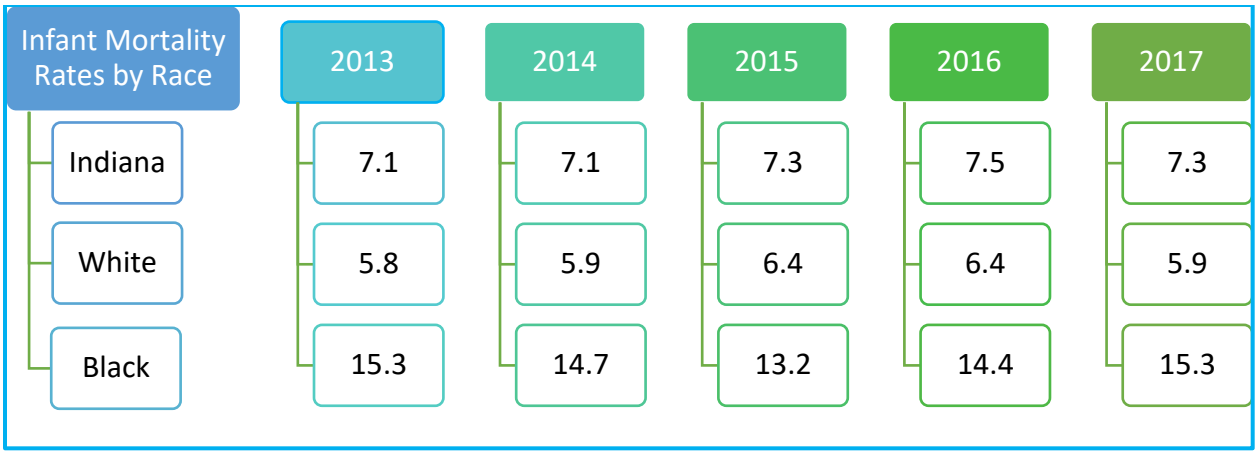
Indiana's infant mortality rate is high overall. However, when examined regionally, there are segments of the state that continue to be exceedingly high, where others are more

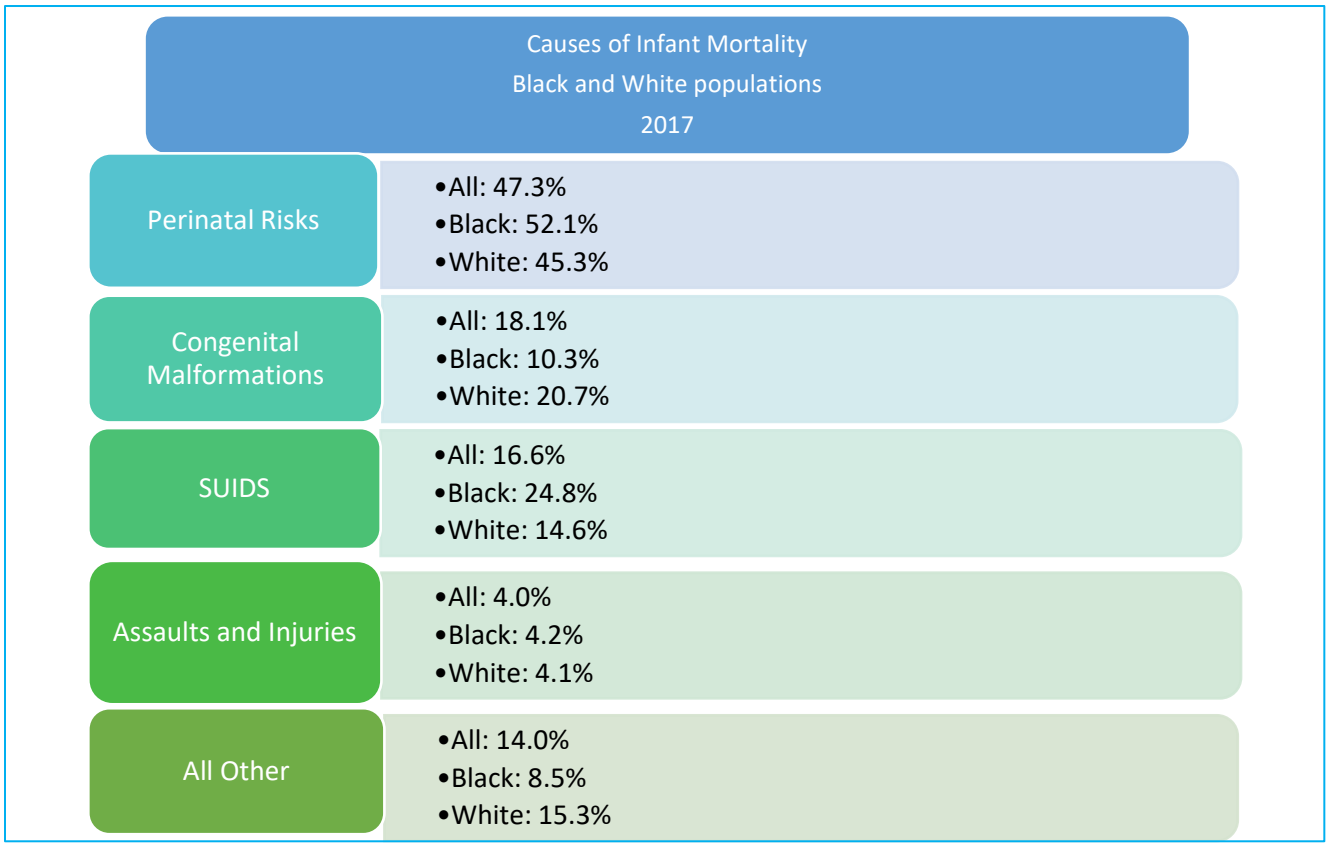
comparable to the national average. ISDH tracks perinatal data using Indiana Hospital Association designated districts.



In this second display of data, while the rate may change in any single year, it is important to look at a five-year average to understand the trend.

In addition to regional disparities, racial disparities between black and white infant mortality rates in Indiana remain a stark reality. While the infant mortality rate overall dropped from 7.5 per 1,000 live births in 2016 to 7.3 per 1,000 live births in 2017, the black infant mortality rate increased from 14.4 per 1,000 live births in 2016 to 15.3 per 1,000 live births in 2017. The black infant mortality rate is more than twice the rate for white infants and shows a much larger variation from year to year than in the white population. The white infant mortality rate in 2016 was 6.4 per 1,000 live births and fell to 5.9 per 1,000 live births in 2017. The tables below outline the statewide trend year over year depicting the differences between black and white populations, as well as outlining the racial disparities within causes of mortality.


Infant Mortality Rates by Race
2013
2014
2015
2016
2017
Indiana
7.1
7.1
7.3
7.5
7.3
White
5.8
5.9
6.4
6.4
5.9
Black
15.3
14.7
13.2
14.4
15.3


Causes of Infant Mortality
Black and White populations
2017
Perinatal Risks
•All: 47.3%
•Black: 52.1%
•White: 45.3%
Congenital Malformations
•All: 18.1%
•Black: 10.3%
•White: 20.7%
SUIDS
•All: 16.6%
•Black: 24.8%
•White: 14.6%
Assaults and Injuries
•All: 4.0%
•Black: 4.2%
•White: 4.1%
All Other
•All: 14.0%
•Black: 8.5%
•White: 15.3%

Major Factors Contributing to the Infant Mortality Rate

Of the deaths in 2017, 65.5% (394) occurred within the first 28 days, which is considered the neonatal period. Approximately 42% of the deaths occurred within the first day. Post-neonatal deaths, accounting for 207 infants, occurred between 29 days and one year. There were four major factors contributing to these deaths:

- **Obesity**: If a woman is obese, she has a 25% chance of delivering a premature infant. The chance increases to 33% if a woman is morbidly obese. *Indiana is the 12th most obese state in the United States.*[2]
- **Smoking**: The percentage of Indiana women smoking during pregnancy (13.5%) is nearly twice the national average. The percentage of Indiana pregnant women enrolled in Medicaid who smoke is 23.6%.
- **Limited Prenatal Care:** Only 68.6% of pregnant women receive prenatal care during the first trimester.
- **Unsafe Sleep Practices:** About 16.6% of infant deaths in 2017 can be attributed to Sudden and Unexplained Infant Deaths (SUIDs). SUIDs encompass three main causes of death:
    - Sudden Infant Death Syndrome (SIDS)
    - Accidental Suffocation and Strangulation in Bed (ASSB)
    - Unknown/Undetermined

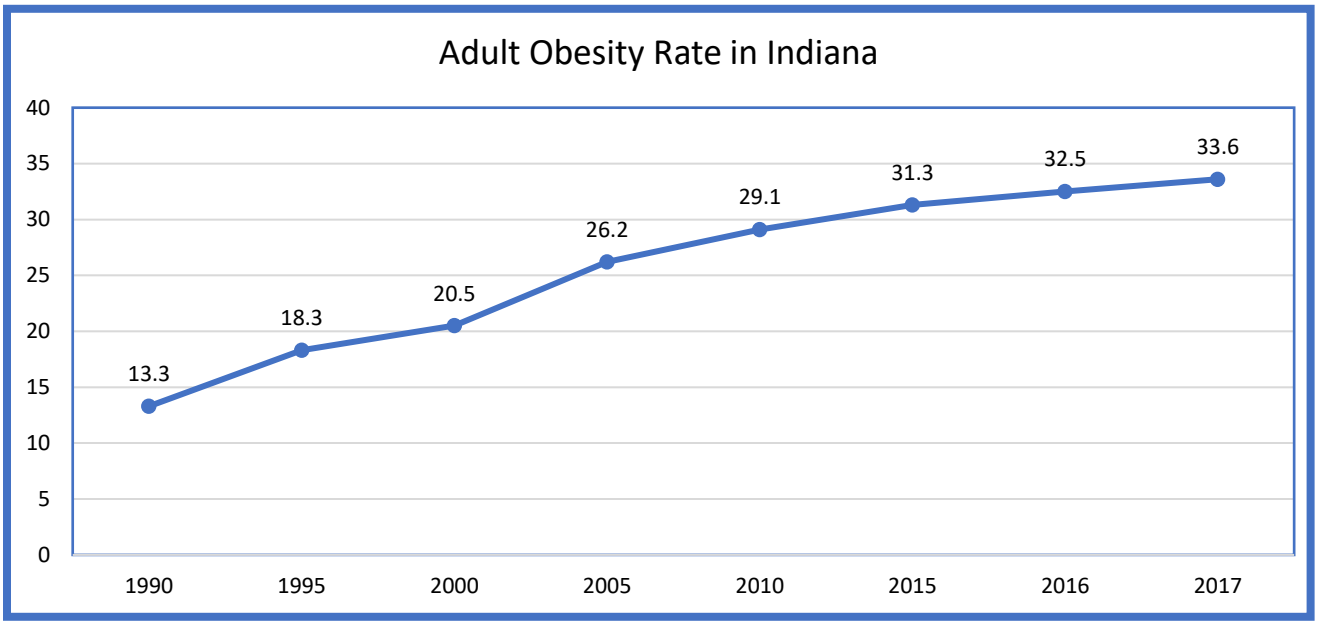
Demographics of Indiana Mothers in 2017

- Average Age: 27.8 years (Range: 11-53)
- Education:
    - High School Diploma or less: 43.5%
    - Some College but no degree: 20.3%
    - College Degree: 36.1%
- Medicaid Enrollment: ~50% as reported by Medicaid
- Marital Status: 56.9% were married
- First time mothers: 36% of births

[2] Trust for America's Health and Robert Wood Johnson Foundation. The State of Obesity 2018. Washington, D.C.:2018.

Obesity

According to a study by the Robert Wood Johnson Foundation[3], Indiana's adult obesity rate is 33.6%, up from 20.5% in 2000 and from 13.3% in 1990. In 2017, the obesity rate by gender was 33.5% for men and 33.7% for women.



Obesity Rate by Age

- 18-25: 20.5%
- 26-44 33.8%
- 45-64: 38.7%
- 65+: 33.3%

Obesity Rate by Race

- White: 32.1%
- Black: 42.2%
- Latino: 28.2%

Smoking

The Healthy People 2020 goal for the percentage of women smoking during pregnancy is 1.4%. In 2016, the percentage of Indiana women smoking during pregnancy (13.5%) was

[3] Source: www.stateofobesity.org/states/in/

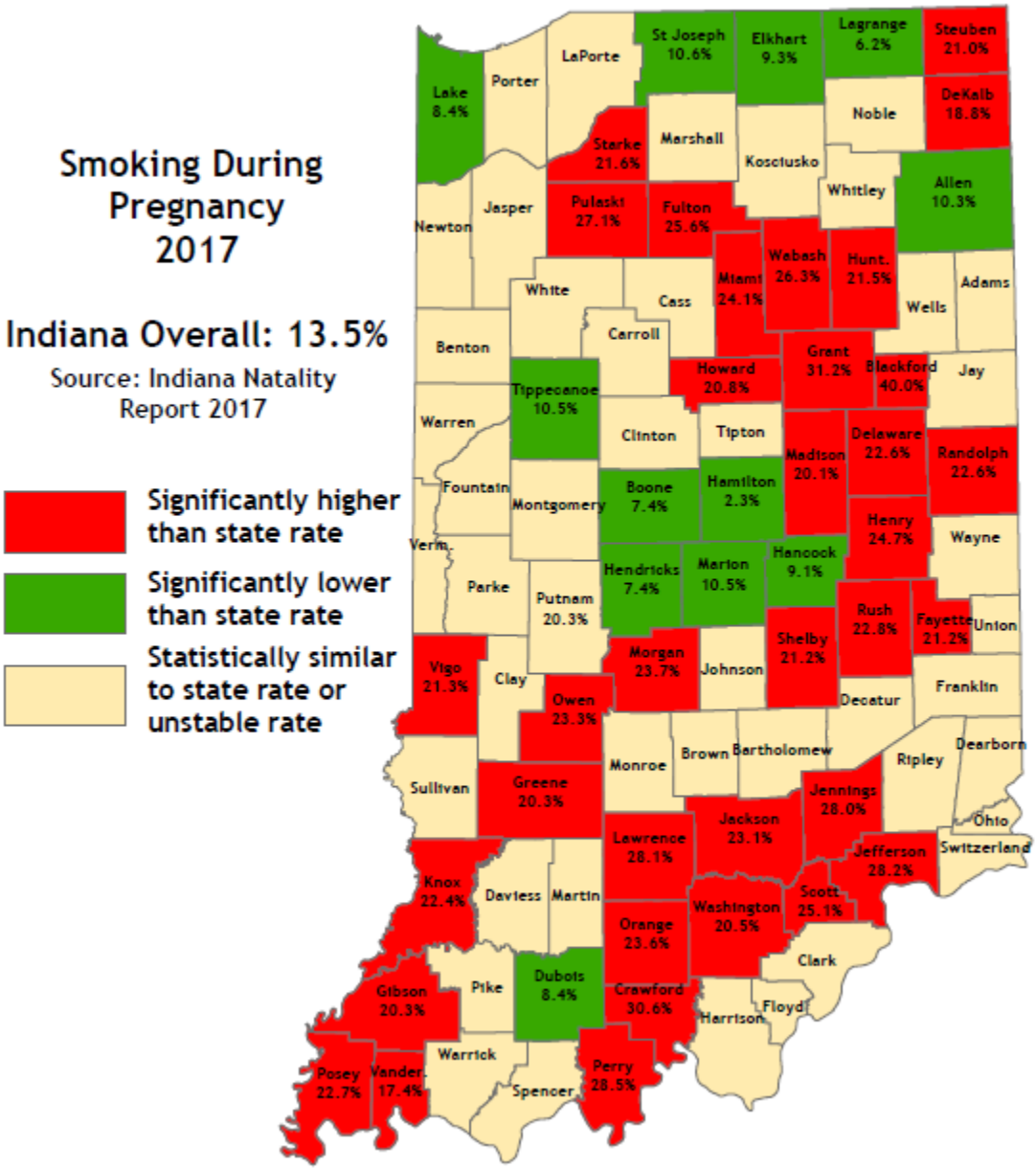
almost twice the national average of 7.2%. National data for 2017 is not yet available for comparison, however, while Indiana's percentage in 2017 has stayed at 13.5%, it is still far from the Healthy People 2020 goal. Based upon historical trends, it is anticipated that the comparison between Indiana's populations to the national average (*** = not yet available) will continue to show a higher percentage of Indiana women smoking during pregnancy.

Percentage of Women Smoking During Pregnancy	2013	2014	2015	2016	2017
Indiana	15.7	15.1	14.3	13.5	13.5
United States	8.5	8.4	7.8	7.2	***
Healthy People 2020 Goal	1.4	1.4	1.4	1.4	1.4

Racial disparities can be seen among populations of Indiana's pregnant women as well as their infants. When we examine smoking rates during pregnancy by race, it is evident that White women are smoking during pregnancy at a higher rate than black women.

Percentage of Indiana Women Smoking During Pregnancy	2013	2014	2015	2016	2017
Indiana	15.7	15.1	14.3	13.5	13.5
White	17.4	16.4	15.6	14.6	14.8
Black	11.8	12.1	11.1	10.8	10.1

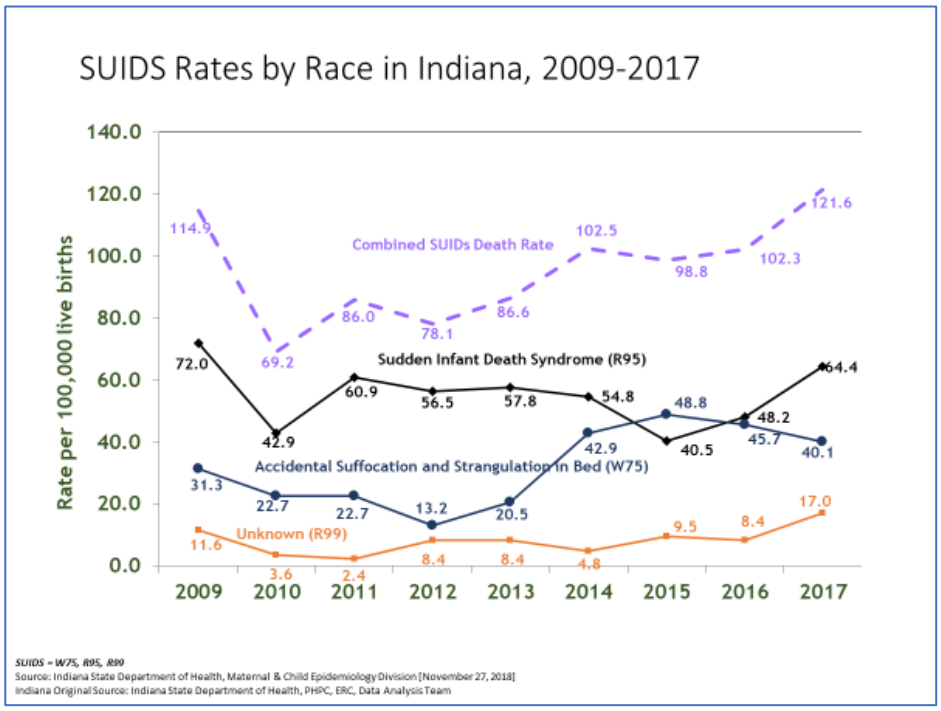
In addition to racial disparities, the rate at which smoking during pregnancy occurs varies regionally. The following figure depicts the counties where reported smoking rates are higher than the state average, as well as the counties where smoking occurs at a lower rate than the state average.



Unsafe Sleep Practices

Sudden unexpected infant deaths (SUID) account for 13.6% of all infant mortality. SUID is the death of an infant younger than 1 year of age that occurs suddenly and unexpectedly, and whose cause of death is not immediately obvious before investigation. Most SUIDs are reported as one of three types:

1. SIDS (Sudden Infant Death Syndrome)
2. Accidental Suffocation or Strangulation in Bed (ASSB)
3. Unknown/ Undetermined



Sudden infant death syndrome (SIDS): The sudden death of an infant younger than 1 year of age that cannot be explained after a thorough investigation is conducted, including a complete autopsy, examination of the death scene, and a review of the clinical history. SIDS is a diagnosis of exclusion, made only after all other possibilities have been ruled out.

Unknown cause: The sudden death of an infant younger than 1 year old that remains undetermined because one or more parts of the investigation were not completed.

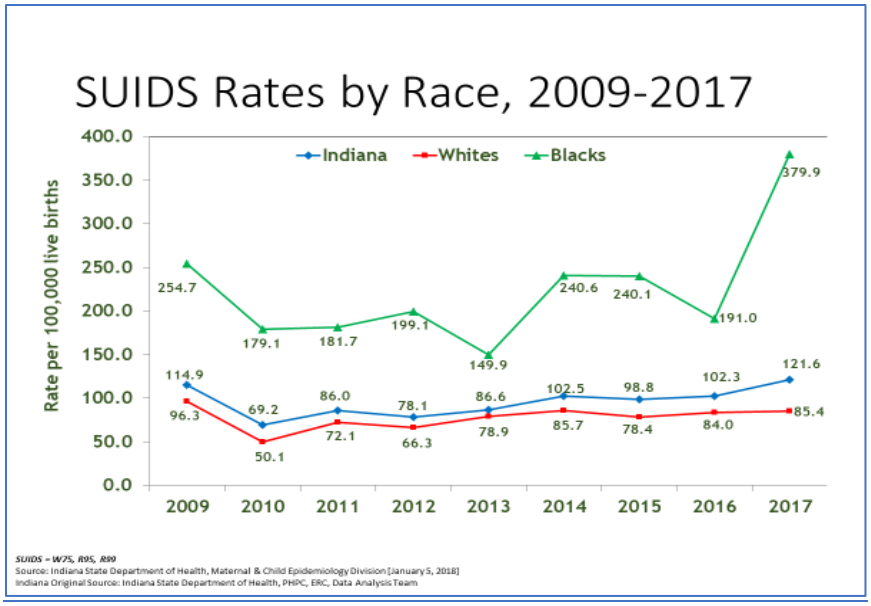
Accidental suffocation and strangulation in bed (ASSB): The sudden death of an infant younger than 1 year of age that can happen because of:

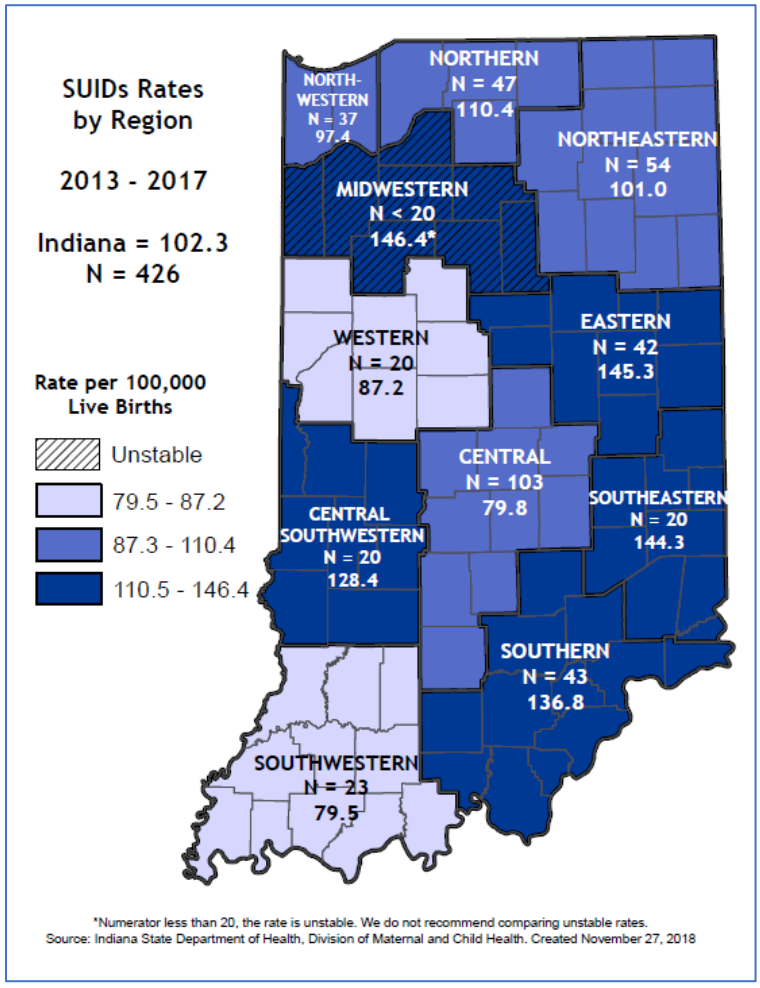
- Suffocation by soft bedding — for example, when a pillow or thick blanket covers an infant's nose and mouth.
- Overlay — when another person rolls on top of or against the infant while sleeping.

- Wedging or entrapment — when an infant is wedged between two objects such as a mattress and the wall, bed frame or furniture.
- Strangulation — for example, when an infant's head and neck become tangled in car seat straps or wrapped in blankets.

A safe sleep environment is one where the infant is placed on his or her back and on a firm sleep surface, including a crib, bassinet or portable crib. Sleep surfaces are free of soft objects, loose bedding, bumper pads or any objects that could increase the risk for entrapment, suffocation or strangulation. Infants placed in unsafe sleep environments are at greater risk of SUID. Even after a thorough investigation, it can be hard to tell SIDS apart from other sleep-related infant deaths, such as overlay or suffocation by soft bedding. This is because these deaths are often unwitnessed and there are no tests to distinguish SIDS from suffocation.

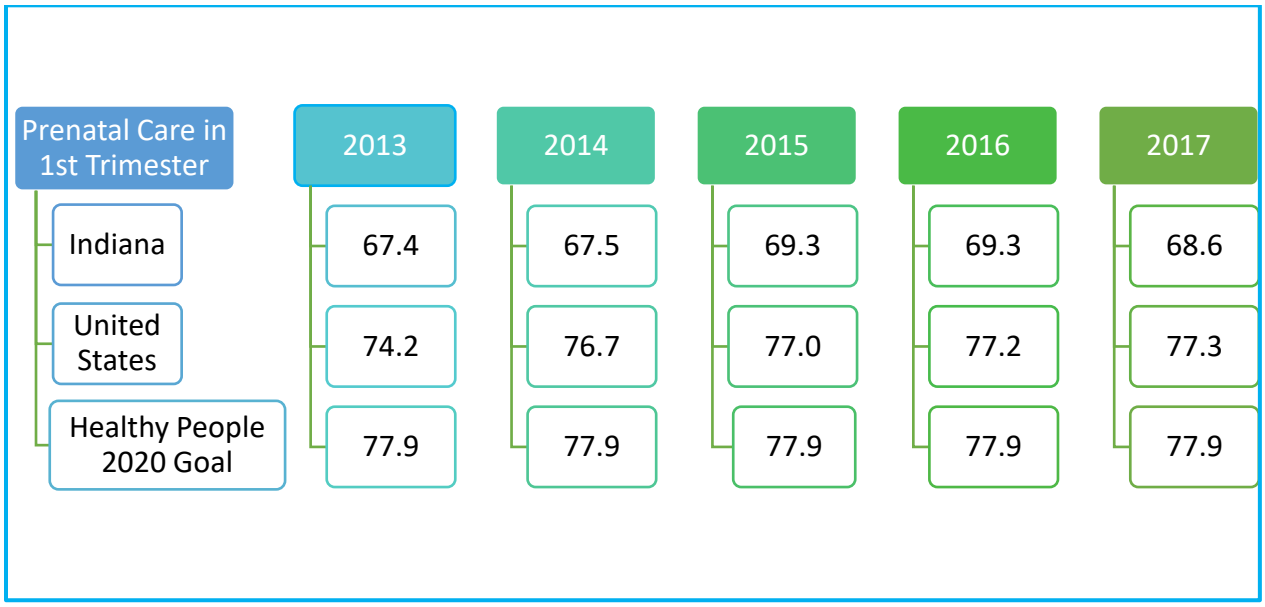
To complicate matters, people who investigate SUIDs may report cause of death in different ways and may not include enough information about the circumstances of the event from the death scene. Unfortunately, differences in classification and coding of causes and manners of infant death, as well as inconsistent investigation techniques, have led to an underreporting of SUIDs in Indiana. The following charts depict SUID rates by cause and by race. As seen throughout rates for our overall infant mortality, racial disparity exists for SUID as well.

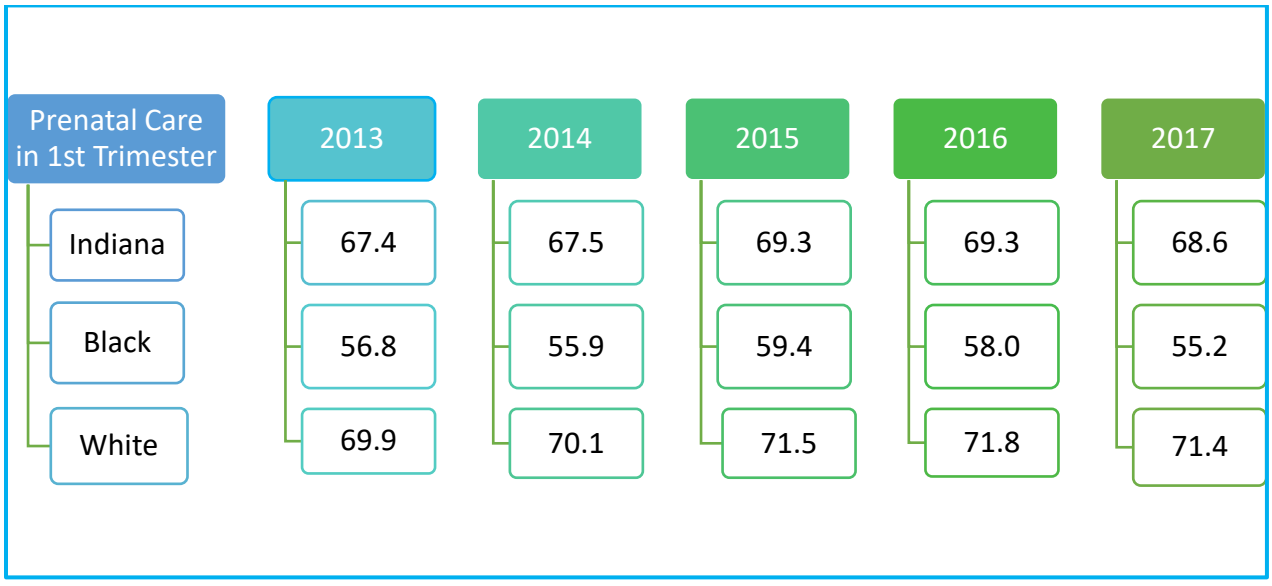

SUIDS Rates by Race, 2009-2017
Indiana
Whites
Blacks
Rate per 100,000 live births
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
254.7
179.1
181.7
199.1
149.9
240.6
240.1
191.0
379.9
114.9
69.2
86.0
78.1
86.6
102.5
98.8
102.3
121.6
96.3
50.1
72.1
66.3
78.9
85.7
78.4
84.0
85.4
2009
2010
2011
2012
2013
2014
2015
2016
2017
SUIDS – W75, R95, R99
Source: Indiana State Department of Health, Maternal & Child Epidemiology Division [January 5, 2018]
Indiana Original Source: Indiana State Department of Health, PHPC, ERC, Data Analysis Team


SUIDs Rates by Region
2013 - 2017
Indiana = 102.3
N = 426
Rate per 100,000 Live Births
Unstable
79.5 - 87.2
87.3 - 110.4
110.5 - 146.4
NORTH-WESTERN N = 37 97.4
NORTHERN N = 47 110.4
NORTHEASTERN N = 54 101.0
MIDWESTERN N < 20 146.4*
WESTERN N = 20 87.2
EASTERN N = 42 145.3
CENTRAL N = 103 79.8
SOUTHEASTERN N = 20 144.3
CENTRAL SOUTHWESTERN N = 20 128.4
SOUTHERN N = 43 136.8
SOUTHWESTERN N = 23 79.5
*Numerator less than 20, the rate is unstable. We do not recommend comparing unstable rates.
Source: Indiana State Department of Health, Division of Maternal and Child Health. Created November 27, 2018

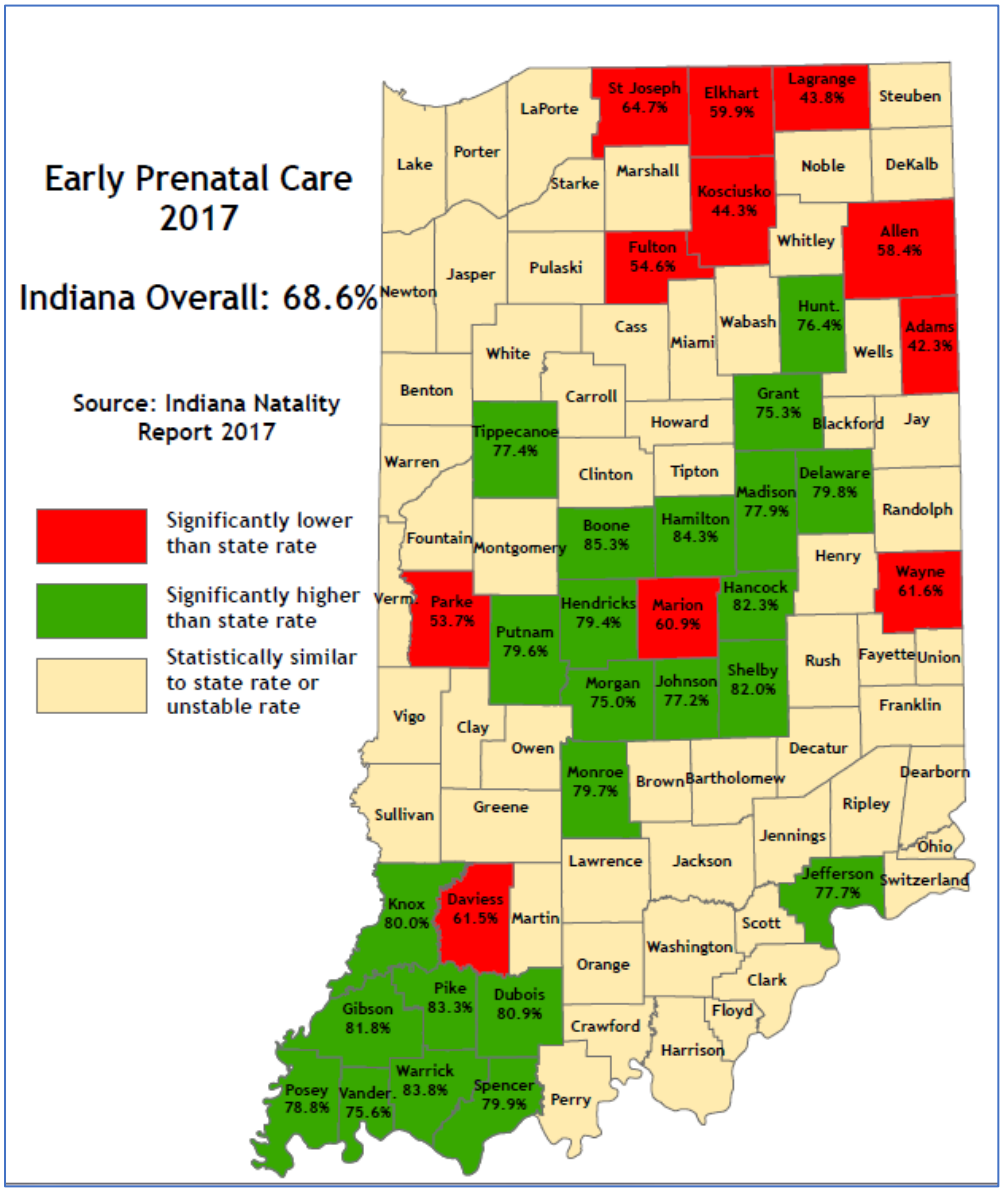
Limited Prenatal Care

The percentage of Indiana women (68.6%) who receive prenatal care in the first trimester was slightly lower than 2016 and continues to lag behind the national percentage of 77.3% and the Healthy People 2020 goal of 77.9%. The percentage of white women (71.8%) receiving prenatal care in the first trimester was significantly higher than that of black women (58%).

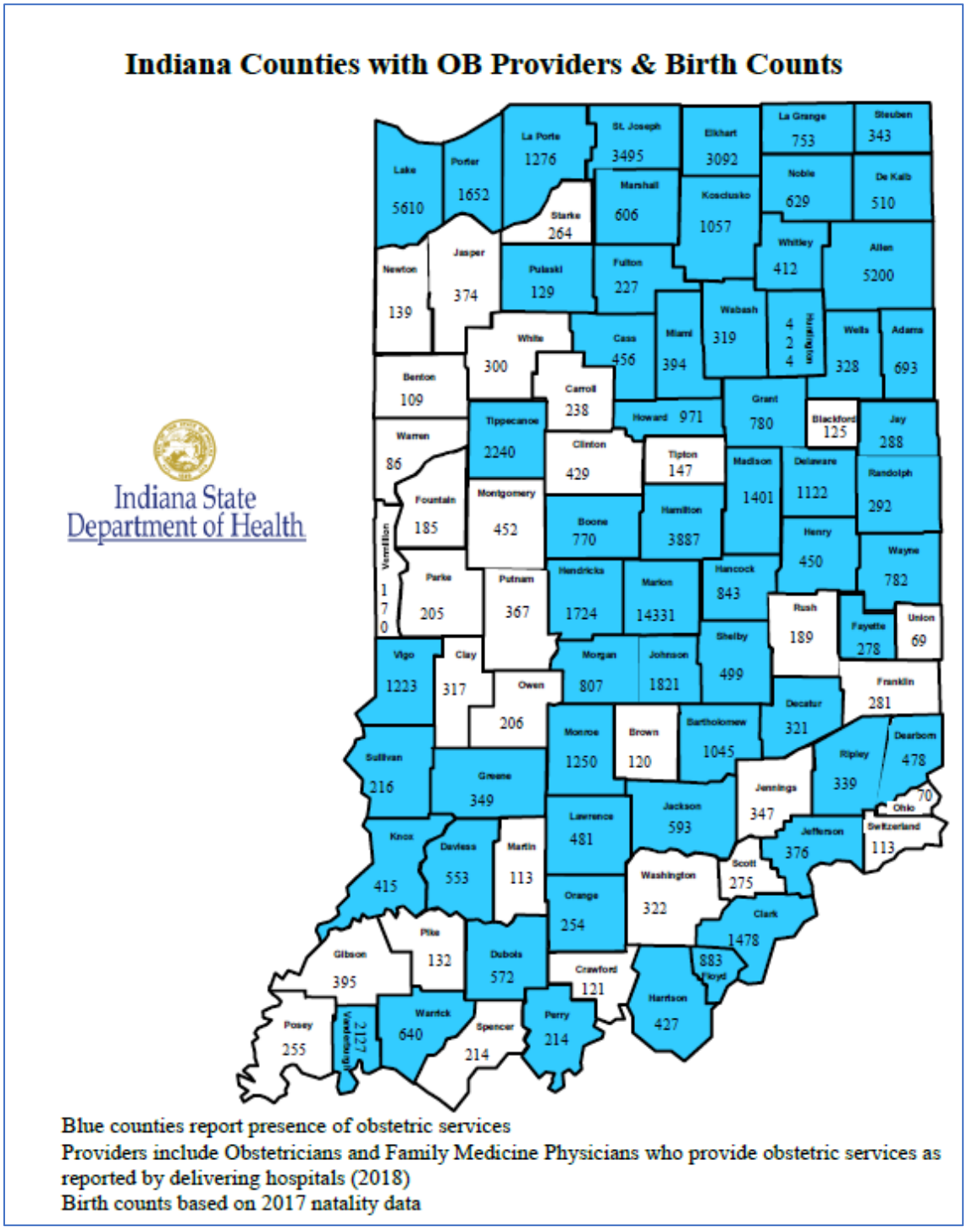




Deeper analysis into early prenatal care participation shows a significant variance among the 92 Indiana counties. In 2016, there were 24 counties where a higher percentage of women initiated prenatal care within the first trimester and 11 counties with a lower percentage than the state average. The moderate clustering of the statistically significant groups alludes to a regional or population-based rationale for the utilization, or lack thereof, of early prenatal care.



An additional factor that may influence access to early prenatal care is the absence of obstetric providers in several Indiana counties. The following map documents the birth count by residency and the counties where there are no obstetric providers.



IPQIC Highlights for 2018

The data provided in the previous section demonstrate the need for focused action to improve outcomes for pregnant women and their newborns. The IPQIC task forces and its many members have developed and implemented initiatives to respond to these challenges.

The **Perinatal Transport Task Force** held its third annual Perinatal Transport Conference in May, with approximately 150 registrants. Participants heard from several national experts including:

- Dr. Richard Orr from University of Pittsburgh, Vice Chair, Commission on Accreditation of Medical Transport Services (CAMTS)
- Jonathan Gryniuk FP-C, CCP-C, NRP, RRT, CMTE, Regional Safety Director, Air Methods Corporation, Executive Board member CAMTS
- John R. Clark, JD, MBA, NRP, FP-C, CCP-C, CMTE, Chief Operating Officer, International Board of Specialty Certification

The conference content included presentations on:

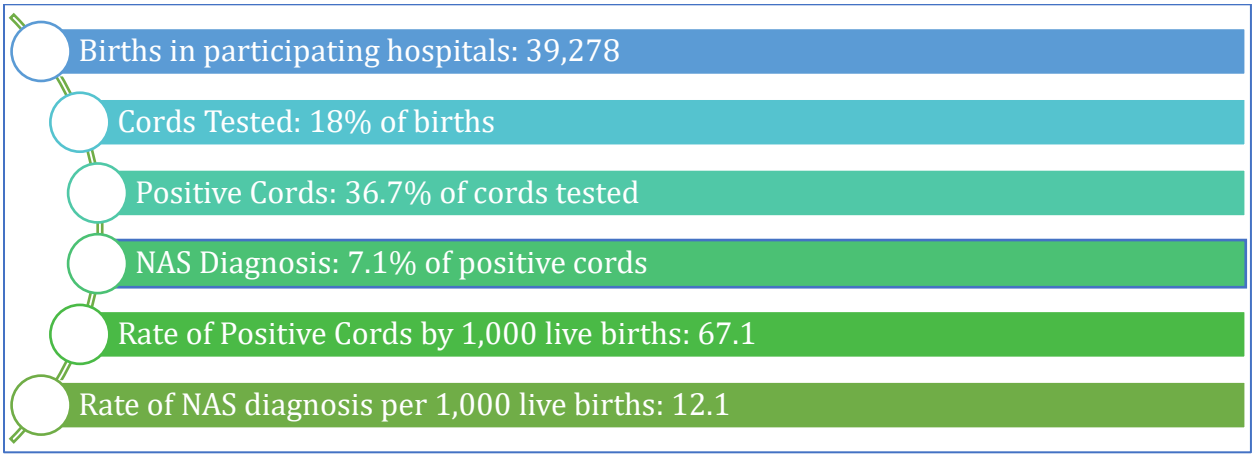
- The CAMTS accreditation process and how it can improve service and promote team building
- Safety risks inherent to interfacility transports and ways to mitigate this risk
- The need for personal accountability in managing the safety of the transport environment
- The nuance of EMTALA regulations as it relates to transport and the meaning of "comes to the emergency room"

The Task Force continued quarterly webinars in 2018 to facilitate increased knowledge and skills related to perinatal transport for participating hospitals.

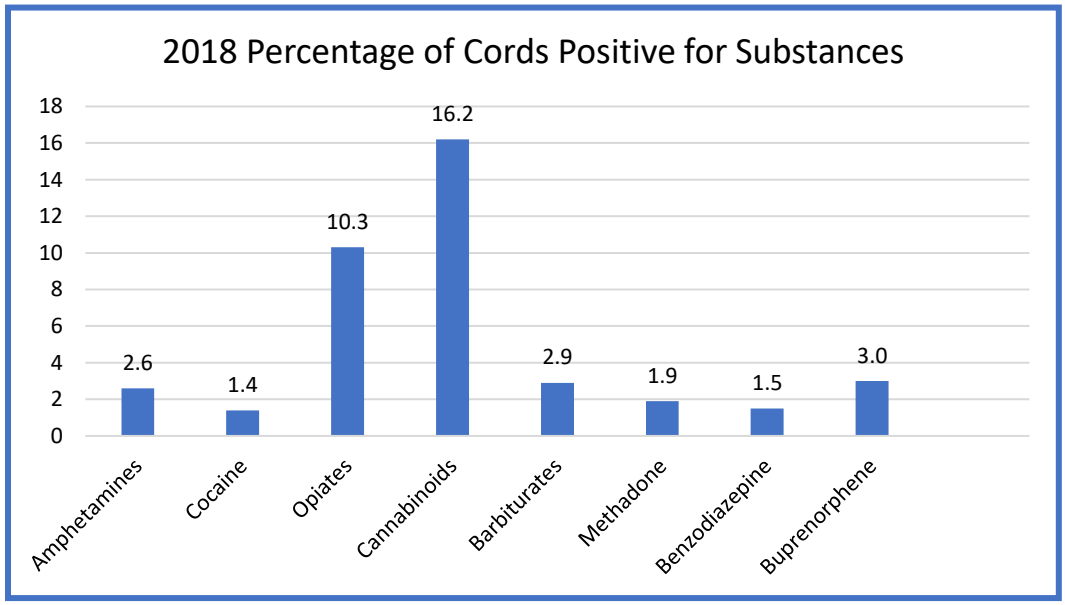
In 2018, the **Perinatal Substance Use Task Force** continued its oversight role for the 30 delivering hospitals implementing the perinatal substance efforts for piloting new

standards in the rapid detection and intervention of mothers and infants impacted by substance use.

Screening data from 2018 is contained in the chart below. It is important to note that due to lack of mandate, not all pilot hospitals conducted universal screening at time of delivery. Therefore, ISDH believes these results are an underrepresentation of true prevalence of substance use disorder.



Four participating hospitals did not use the recommended laboratory for testing. Their positivity reports are not included in the following chart. The chart only reflects those results from USDTL, the recommended laboratory.



In 2018, IPQIC partnered with the Vermont Oxford Network (VON) to provide all participating hospitals with 19 educational modules designed by international and national experts. The two-year subscription to the educational modules also provides CME and CNE credits available to all subscribed participants.

In summer 2018, IPQIC and ISDH continued their partnership with the Indiana Hospital Association to hold the second annual Perinatal Substance Use Conference. Keynote speakers included:

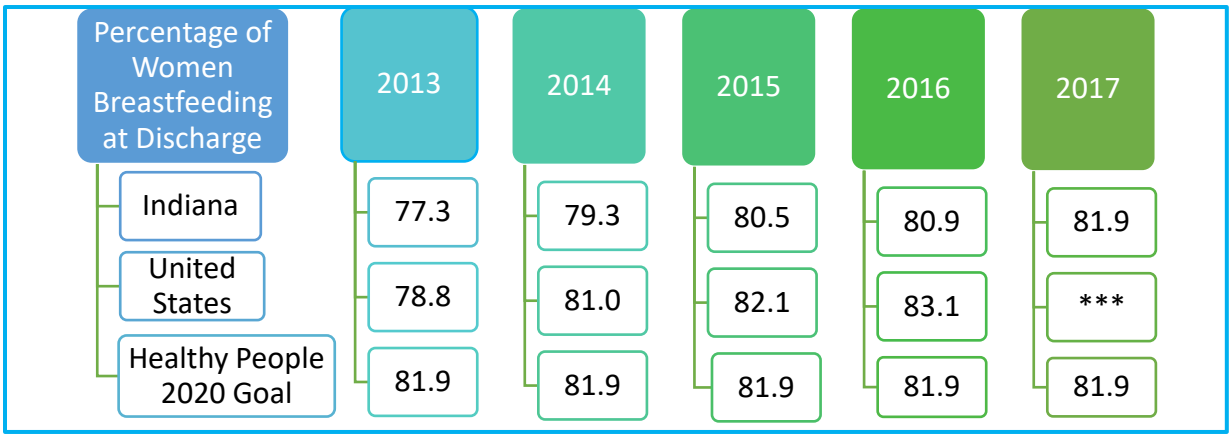
- Madge Buus-Frank DNP, APRN-BC, FAAN, executive vice president and director of Quality Improvement and Education Vermont Oxford Network Faculty, Geisel School of Medicine at Dartmouth and University of Vermont. Buus-Frank provided an overview of national activities related to perinatal substance use; and
- Kelley Saia, M.D.**,** assistant professor of obstetrics and gynecology, Boston University School of Medicine, Boston, director of Project RESPECT, Substance Use Disorder Treatment in Pregnancy at Boston Medical Center, Boston. Dr. Saia shared her approach to medication-assisted therapy with the goal of finding a dose that treats the mother and is sustainable to continue that treatment indefinitely.

Attendees reflected a variety of perspectives, and the conference participation exceeded expectation. Participant evaluations of the conference were very positive. The third Perinatal Substance Use conference will be held in August 2018.

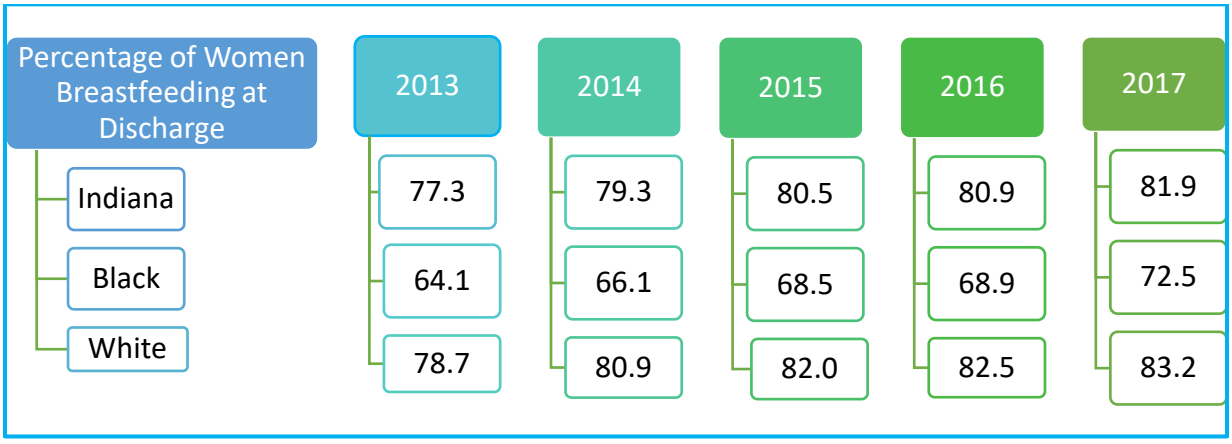
The **Breastfeeding Perinatal Substance Use Task Force** was established in 2018 as a result of hospitals uncertainty of how to proceed when a mother who has documented use of substances wants to breastfeed her infant. The task force is charged with the development of a guidance document to support breastfeeding, when appropriate, for mothers who have used or are currently using licit or illicit substances. Research on the importance of breastfeeding is well established. Infants who have been prenatally exposed to substance are at-risk for short-term and long-term effects from their exposure. Breastfeeding, when appropriate, can help to mitigate potential risks and improve

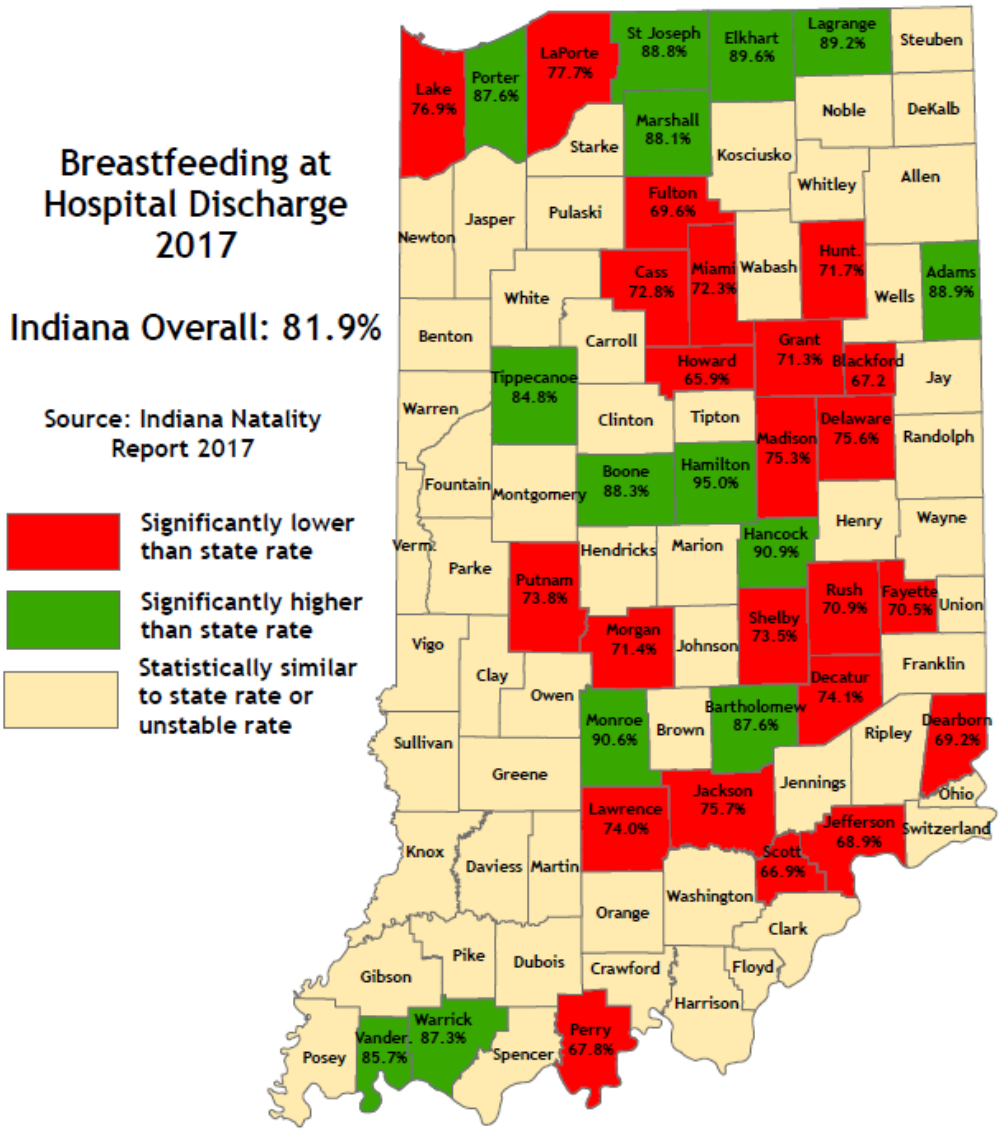
outcomes for both infants and their mothers. The guidance document will be available in fall 2019.

The percentage of women breastfeeding at discharge continues to increase as documented in the following chart. Data for 2017 is not available at the national level (*** = not available).



While there remains a disparity between black and white women breastfeeding at discharge, both are trending in the right direction.





In 2017, the **Finance Task Force** explored the concept of group prenatal care and researched three models that are being used. Group prenatal care models are designed to improve patient education and include opportunities for social support while maintaining the risk screening and physical assessment of individual prenatal care. Results will be available later this year.

The **System Infrastructure Task Force** was established to support the development of evidence-based standards to ensure risk appropriate care for all pregnant women and their newborns. In 2018, the General Assembly passed statute that required the ISDH to

establish a program to certify perinatal Levels of Care designations for every hospital and birthing licensed by the state that provides birthing services. The standards that ISDH used to develop the designation process were developed by the task force, and proposed rules are anticipated to be in effect by fall 2019. The task force continued in a support role for the remainder of 2018 while anticipating the implementation of the Levels of Care rules.

The **Quality Improvement Task Force** focused on two specific projects in 2018:

- Progesterone: The task force is focused on an initiative to improve perinatal outcomes using progesterone to prevent a second preterm birth. The task force developed protocols, identified participants for the pilot and collaborated on a data base that will track project priorities. The appropriate use of 17P (progesterone) can significantly reduce the risk of preterm birth and the associated costs.
- Maternal Hemorrhage: An additional subcommittee related to maternal hemorrhage was established and began its work in 2018 due to an increase in the number of cases statewide. The goal of this subcommittee is to establish evidence-based best practices for preventing and managing maternal hemorrhage.

The **Reproductive Health Planning Task Force** was charged with the development of an action plan that includes:

- Identification of evidence-based interventions
- Development/implementation of education materials for all stakeholders
- Facilitation of access to needed services
- Identification and collection of data for evaluation of effectiveness and benchmarking against national data

The task force spent 2018 researching evidence-based practices and identifying promising practices that can be incorporated into the action plan to be presented to the Governing Council in early 2019.

Maternal and Child Health Division Highlights 2018

In addition to the work of IPQIC, the MCH division has several priorities that staff are working on to address the morbidity and mortality issues facing Indiana's mothers and babies. The following pages provide an overview by month of the work of the division.

January

The ISDH Genomics and Newborn Screening (GNBS) program, in collaboration with the ISDH Chief Nurse Consultants, started educational outreach to birthing facilities. The outreach included an in-depth review of all three newborn screenings: heel stick, pulse oximetry and hearing screening, along with an overview of the Indiana Birth Defects and Problems Registry (IBDPR). Through the outreach, birthing facility staff were able to ask questions and receive feedback onsite. The GNBS program plans to continue the educational outreach initiatives to other key stakeholders.

In July, two new conditions were added to Indiana's newborn screening panel. The first condition, severe combined immunodeficiency (SCID), is a group of rare disorders affecting the immune system of affected individuals. Infants with SCID appear healthy at birth but are highly susceptible to severe infections. The condition can be fatal without rapid detection and treatment through stem cell transplant, gene therapy or enzyme therapy. Newborn screening has made it possible to detect SCID before symptoms appear, which allows for early intervention. Spinal muscular atrophy (SMA) was the other condition added to the panel. SMA is a group of genetic disorders that affects the motor neurons. The motor neurons are nerve cells that control muscles used for breathing, crawling, and walking. Over time, the muscle weakness worsens. Through newborn screening, early detection and intervention is critical for the best outcomes.

In December, the Perinatal Genetics and Genomics advisory committee was chartered. This advisory committee will guide the GNBS program.

February

Indiana State Breastfeeding Conference

The fourth annual Indiana State Breastfeeding Conference on Feb. 21 at the Marriott East in Indianapolis was a sellout for the second year in a row. The one-day conference, which focused on the gap between breastfeeding and safe sleep as its theme, attracted an audience of 500 health professionals.

Keynote speaker Nils Bergman, MD, Ph.D., author and perinatal neuroscience specialist from Cape Town, South Africa, spoke on *The Neuroscience of Skin to Skin Contact- why it matters for both mother and baby.*

March

Anniversary of MOMS Helpline

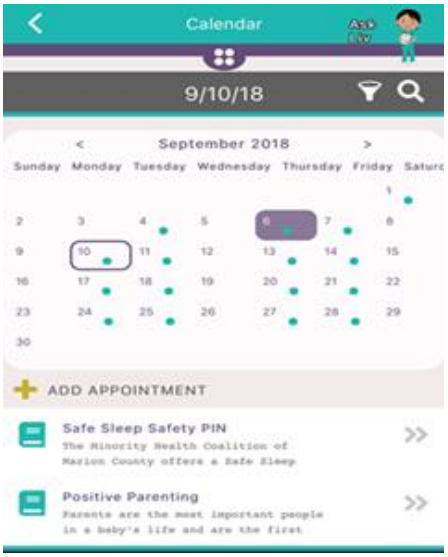
MOMS Helpline, a statewide contact center that offers free information, referral and insurance navigation service, celebrated its third anniversary on March 1, 2018. MOMS Helpline works to reduce infant mortality by connecting Indiana families to information and services that improve families' wellbeing. There is a special focus on mothers' preconception health, access to early and regular prenatal care, health and safety education, and other support. Types of services provided include health coverage enrollment, education, referral and advocacy.

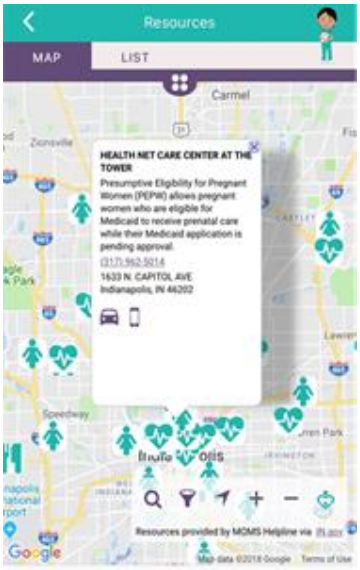
The public can reach the Helpline by phone, email, and through one-touch calling from the Liv mobile app. The MOMS Helpline outreach team also goes out to communities to raise awareness about infant mortality, promote the different practices and programs working to reduce infant mortality and support different events (including baby showers).

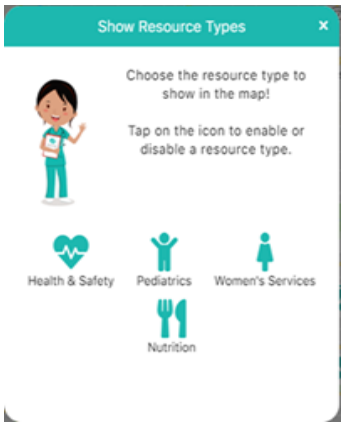
Resources are provided using the family's location. Accessibility (transportation) and eligibility are assessed before offering the resource. All MOMS Helpline communication specialists are certified navigators who can assist with health insurance enrollment and provide the latest information about health insurance managed care entities. Moreover, all services are offered in both English and Spanish. MOMS Helpline also utilizes an interpretation service for any limited English-speaking client.

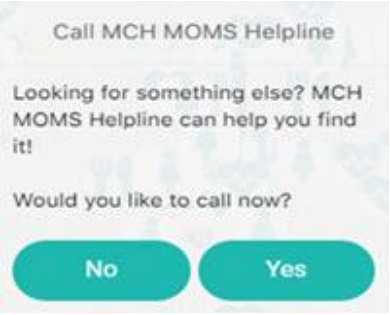
After the initial contact (referral) has been made, the communication specialist will follow up on all referrals to ensure families were able to connect with the resources provided to them. If any barriers to receiving care are identified, the communication specialist will assist them in overcoming any barriers to accessing these services.

MOMS Helpline resource database is also the source for the resource map and the event calendar in the Liv women's health mobile app. MOMS Helpline specialists are available from 7:30 a.m. to 5 p.m. Monday-Friday by calling 1-844-MCH-MOMS (1-844-624-6667).









July

Maternal Mortality Review

Reducing maternal mortality is a priority of the ISDH. To understand the circumstance contributing to Indiana's maternal mortality, ISDH established a comprehensive investigation of maternal deaths through the creation of a Maternal Mortality Review (MMR) program in 2018. The MMR program is housed within the Fatality Review and Prevention (FRP) division and is supported by the Title V funding administered by the ISDH Maternal and Child Health (MCH) Division. FRP collaborated with the Indiana Section of the American College of Obstetricians and Gynecologists (ACOG) to build organizational capacity to reduce maternal mortality and morbidity. This collaboration was instrumental in the enrollment and passing of IC 16-50 in July 2018, leading to the formation of the MMR Committee (MMRC) in Indiana.

Indiana's MMRC is a diverse committee comprised of state and local health departments, community-based organizations, the Indiana Hospital Association, Indiana Section of ACOG, Indiana Coroners Association, the Family and Social Services Administration (FSSA), and representatives from multiple clinical backgrounds, including obstetrics, maternal-fetal medicine, family medicine, social work, substance abuse, public health nursing, midwifery, anesthesiology, mental health, epidemiology, cardiology and pathology. Recognizing that some maternal death cases may require the expertise of professionals not appointed to the MMRC, IC 16-50 also allows the MMRC the ability to invite ad hoc members as needed.

The goal of Indiana's MMR program is to quantify and understand pregnancy- related and pregnancy-associated deaths in order to create actionable, comprehensive recommendations to prevent future maternal deaths through epidemiological surveillance and a multidisciplinary maternal death review. To prevent future maternal deaths, the program seek to establish a strong, reliable and timely maternal mortality surveillance system to inform, guide and evaluate mortality and morbidity prevention strategies.

October

Help Me Grow

Indiana began implementation of the Help Me Grow (HMG) system in October. HMG provides a comprehensive, integrated process for ensuring developmental promotion, early identification, referral and linkage. The system model reflects a set of best practices for designing and implementing a system that can optimally meet the needs of young children and families.

Indiana will use HMG to implement effective, universal, early surveillance and screening for all children using the Ages and Stages tool and then link them to existing quality programs, services and resources. HMG system is specifically designed to help states organize and leverage existing resources to serve families and children. HMG Indiana provides a feedback loop for families and providers, ensuring that all families were not only given but linked and received the resource(s) needed. The system does not replace existing systems, programs or services. Understanding that all families are not connected or use all the resources available, HMG Indiana hopes to fill in those gaps to ensure that families are linked to resources, services and needs are met.

HMG implementation in Indiana is a collaboration of two funding streams, Maternal Infant and Early Childhood Home Visiting (MIECHV) Innovations and the Early Childhood Compressive Systems Impact (ECCS) Grant, and two state agencies, the Indiana State Department of Health (ISDH) and Indiana Department of Child Services (DCS).

Safety Pin Grants

In 2018, extension grants totaling $3,766,396 were made to 2017 Safety Protecting Indiana's Newborns (PIN) recipients. Safety PIN grants, established by the Indiana legislature, are awarded by ISDH to hospitals, local health departments and not-for-profit organizations for projects designed to help reduce infant mortality rates. The 2018 extension grantees were:

- **Health and Hospital Corporation of Marion County, Indianapolis,** for the Healthy Families and Indiana Healthy Start programs.

- **New Hope Services, Inc., Washington,** for its Safe Sleep program in Clark, Scott, Floyd, Harrison and Washington counties.
- **Bauer Family Resources, Lafayette,** for programs addressing safe sleep, community education and professional training.
- **Franciscan Health Foundation, northwestern Indiana,** for its Prenatal Assistance Program encouraging early prenatal care.
- **Vanderburgh County Health Department, Evansville,** for access to care programs in Vanderburgh, Posey, Gibson, Warrick, Spencer, Dubois, Perry, Pike, Knox and Martin counties.
- **Community Wellness Partners, Cass County,** for its Speak Life: Here to Stay Initiative connecting high-risk women and families to resources.
- **Parkview Health, Fort Wayne,** for its Stand Together for Babies project, which provides families with education and referrals to care and home visiting in the Northeastern Region of Indiana.

November

Labor of Love Summit

The seventh annual Labor of Love Summit was held Nov. 14. The one-day conference is aimed at health professionals and members of the public with an interest in reducing infant mortality in Indiana. Held at the JW Marriott, Indianapolis, the 2018 summit broke all previous attendance records, attracting a sold-out audience of more than 1,300. In fact, the Summit has increased attendance every year since its inception and will expand in 2019 to accommodate an audience of 2,000.

The theme for the summit was "Race to 2024," a reference to the state's goal to have the best infant mortality rate in the Midwest by 2024. Featured speakers were:

- Dr. Kristina Box, ISDH commissioner

- Dr. Elliott Main, MD, Stanford Medical School, medical director and executive committee chairman of the California Maternal Quality Care Collaborative and chairman of the California Pregnancy-Associated Mortality Review Committee
- Dr. Maria J. Small, MD, MPH, maternal-fetal medicine specialist, Duke Health.
- Raymond Paul Miller, division chief of EMS, Crawfordsville, Indiana, Fire Department
- Charles Johnson, founder, 4Kira4moms
- Dr. Hossain Mirandi, MD, MBA, FACHE, president, Peyton Manning Children's Hospital at St. Vincent,

Women's Health App

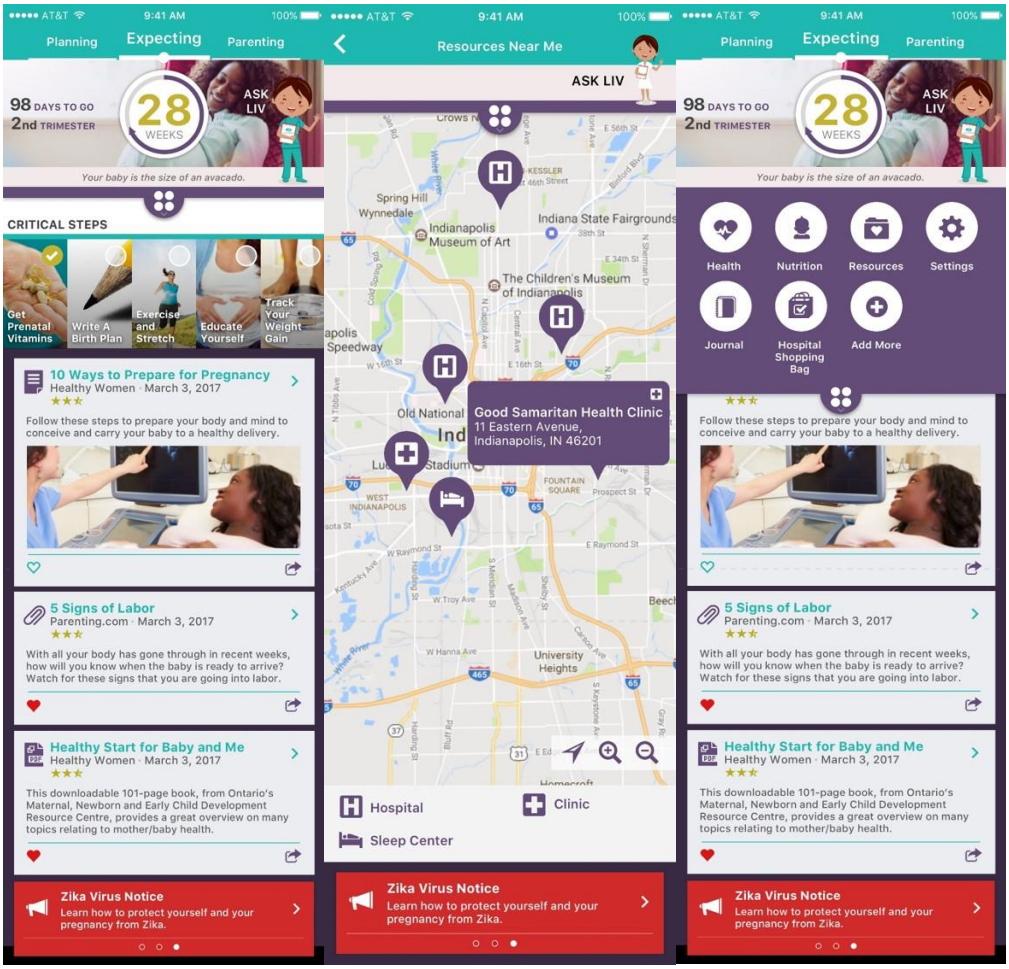
In November 2018, the women's health and pregnancy mobile app, Liv, celebrated one year of service to Indiana women and babies. The app averages about 32 new users (those who have downloaded and registered) a week.

Over the last year, Liv has been enhanced and updated with new features six times. New features include the stages of pregnancy and baby development milestones. Plans for 2019 include the addition of the Indiana Family and Social Services' (FSSA) childcare finder. This feature will allow users to locate daycare and early education providers on an interactive map.

Liv is designed to provide health information relevant to every Indiana woman and can be used on any mobile device. The app is also available online at www.askliv.com. Content — including articles, quizzes, checklists, and how-to's — is updated almost daily. Interactive features include a journal, personal calendar, and baby weight and due date calculators. Registering in the app allows users to receive updates, push notices and personalized information whether they are childfree, pregnant or parenting. Additionally, the app is filled with resources across Indiana to provide easy access to health information and services. With one touch, a user can locate pediatricians, obstetricians, gynecologists,

dentists, midwives, hospitals and clinics in her county or ZIP code. She can locate the nearest WIC office, county health department, Baby and Me - Tobacco Free or Safe Sleep sites. She can find a human to talk to by connecting to the MOMS Helpline.

Marketing of the app is ongoing. The Maternal and Child Health Division is exploring a variety of marketing and grassroots communication to deliver the app to as many Indiana women as possible. Through connection with partners in healthcare professions, social services, education, business, the faith community and other areas of Indiana life, the ISDH will publicize the app and improve and add to content and features.



December

Marketing the women's health app

Promotion of the women's health app was continued in 2018, with specific outreach to each of these groups:

- Rural health organizations: Through the Rural Health Organization, the Lugar Center and other outreach organizations.
- Indiana mayors: Dr. Box sent a letter to mayors asking for a meeting with ISDH staff to discuss local needs and how Liv can assist.
- 13 highest-risk ZIP codes for infant mortality in Indiana: MCH epidemiologists have identified ZIP codes where Hoosier babies are most at risk, and efforts have begun to concentrate marketing in those areas.

Conclusion

As Indiana continues to struggle with high infant mortality and morbidity rates, many individuals remain steadfast in their support of the efforts of the Indiana Perinatal Quality Improvement Collaborative and the Indiana State Department of Health. Our combined commitment to improving outcomes for pregnant women and newborns in Indiana is unparalleled and will be critical to ensuring better health results for these vulnerable populations. Many of these individuals have been involved in IPQIC since its inception in 2012. Their efforts in 2018 have been innovative and aimed at involving as many non-traditional stakeholders and partners as possible. It is only through this collective impact that moms and babies will be able to thrive in Indiana.

IPQIC Governing Council		
Box **(co-chairwoman)**	Kristina	State Department of Health
Abernathy	Mary	IN ACOG
Alley	Ann	ISDH - Office of Primary Care
Allen	Martha	ISDH - MCH
Ellison	Carl	Indiana Minority Health Coalition
Elsworth	Susan	Consumer, Central IN NOFAS
Engle	Bill	IU School of Medicine
Gil	Cindy	IUPUI - Office of Engagement
Halverson	Paul	IU School of Public Health
Herndon	Kitty	IN AWHONN
Kelso	Don	Indiana Rural Health Association
Kurth	Chelsea	IN State Medical Association
Means	Paula	Tabernacle Presbyterian
Morphew	Phil	IN Primary Health Care Association
Patel	Risheet	IN Academy of Family Physicians
Robertson	Stephen	IN Dept of Insurance
Roop	Kimberly	Anthem Medicaid
Saysana	Michelle	Indianapolis Coalition for Patient Safety
Siela	Jeena	IN March of Dimes
Sloan	Mary Anne	Ivy Tech
Sumners	James	IN ACOG
Swigonski	Nancy	IN AAP
Szura	Amanda	Indiana Latino Institute
Tabor **(co-chairman)**	Brian	Indiana Hospital Association
Taylor	Allison	IN Office of Medicaid Policy and Planning
Vanderhorst	Stephanie	IN ACNM
Walthall	Jennifer	FSSA
Whitman	Julie	Commission on Improving Status of Children

Quality Improvement		
Allen	Martha	ISDH
Bezy	Eden	ISDH
Busching	Brian	ISDH
Durica	Jenny	ISDH
Engle	Bill	Riley Hospital
Eskew	Ann	IU Health Bloomington
Grable	Heather	IN Rural Health
Greuter	Karen	ISDH
Kiefer	Marissa	IU Health/Riley
Kinderman	Casey	ISDH
Handy **(co-chairwoman)**	Annette	IHA
Jansen	Robert	St Vincent Hospital
Liechty	Ed	Riley Hospital
Murphy	Michelle	Community Hospital
Peachey	Jessica	
Reynolds	Anne	ISDH
Roberts	Emily	IU Health
Swigonski **(co-chairwoman)**	Nancy	Children's Health Services Research

Perinatal Substance Use Task Force		
Bath	Jennifer	Reid Hospital
Benjamin	Tara	IU School of Medicine
Blackmon	Sirrilla	DMHA
Bozell	Dave	FSSA
Brinkerhoff	Brandi	IU School of Medicine
Busching	Brian	ISDH
Cameron	James	Northern IN Neonatal Associates
Carboneau	Kathryn	Retired Physician
Chambers	Joanna	IU School of Medicine
Clancy	Ellen	Staff Nurse, NICU
Commons	Christina	FSSA First Steps
Conard	Teri	Marion Co Health Dept
Culver	Joan	Franciscan Alliance
DeKemper	Stan	ICAADA
Del Rio Hoover **(co-chairwoman)**	Maria	St. Mary's Neonatal Clinic
Detweiler	Kathy	Parkview
Dunstone	Alison	Deaconess
Duvall	Krystal	Community Health Network
Ellis **(co-chairman)**	John	MHS Indiana
Elsworth	Susan	Central Indiana NOFAS
Erwin	Meredith	Hendricks Regional Hospital
Evers	Mary	ISDH
Farthing	Catherine	Hendricks Regional Hospital
Garrity	Shannon	ISDH
Gee-Weiler	Donetta	Community Health Network
GiaQuenta	Tony	Parkview
Goodman-Martin	Dawn	LMHP - Bartholomew County Addictions Team
Griffie	Megan	ISDH

Perinatal Substance Use Task Force		
Grimm	Lori	The Women's Hospital
Guilfoy	Veronica	Franciscan Alliance Indy
Halleck	Rachel	Volunteers of America
Handy	Annette	Indiana Hospital Association
Hawkins	Faith	IU
Hokanson	Katie	ISDH
Hulvershorn	Leslie	DMHA
Jamison	Susan	All IN Pediatrics
Kamatkar	Suyog	Community Health Network
Keck	Julie	Anthem
Kelley	Kristen	Project ECHO
Kenning	Lauren	IU Health
Killen	Kristina	DCS
Knight	Pamela	DCS
LaHood	Amy	St Vincent
Landwehr	Joseph	IU Health Ball Memorial
Lane	Indy	Community Health Network
Littrell	Bethany	St. Vincent Hospital
Logsdon	Art	ISDH
Martin	Joanne	Goodwill of Central Indiana
Martin	Rainey	Community Hospital
Matory	JoAnn	Eskenazi Hospital - March of Dimes
Moorman	Meg	IU School of Nursing
Morrow	Ann	Columbus Regional Hospital
Newhouse	Robin	IU
Nichols	Cara	Schneck Medical Center
O'Donnell	Crystal	Marion County Health Department
Place	Jean Marie	Ball State

Perinatal Substance Use Task Force		
Pollard	Sara	Goodwill of Central Indiana
Price	Clevette	Hendricks Regional Hospital
Robinson	Hope	Community Munster
Russell	Jennifer	Anthem
Sailors	Sarah	IN Department of Child Services
Samanic	Claudine	CDC - ISDH
Savitskas	Lauren	Indiana Criminal Justice Institute
Schumacher	Shannon	Volunteers of America
Scott	Emily	Methodist Hospital
Smith	Kelly	Anthem Medicaid Care Management
Stephenson	Evelyn	IU School of Nursing
Tatum	Madeline	ISDH
Tucker-Edmonds	Brownsyne	IU School of Medicine
Walker	Janice	Family Member
Wehren	Aileen	Porter Starke Services
Welker	Kelly	DMHA
Wire	Amy	Community Health Network
Wolfe	Heather	Lutheran Children's Hospital

System Infrastructure Task Force		
Allen	Farrah	St Mary's
Beaver	Kristyn	Beacon Health Systems
Beynon	Deb	St. Vincent
Boon	Win	Parkview Hospital
Box	Kristina	Community Health Network
Boyle	David	IU School of Medicine
Bradburn **(co-chairwoman)**	Niceta	St Vincent
Brahe	Patti	Parkview Hospital
Cameron	James	Northern IN Neonatal Associates
Cherry	Michelle	LaPorte Hospital
Clark	John	
Coleman	Anne	St Vincent
Craig	Susan	St Vincent
Culler	Jennifer	Dupont Hospital
Culver	Joan	Franciscan Alliance
Del Rio Hoover	Maria	St Mary's
Durham	Elizabeth	Women's Deaconess
Duvall	Krystal	Community Health Network
Gee-Weiler	Donetta	Community Health Network
Green	Laura	Lutheran Hospital
Groves	Rozanna	St. Vincent Critical Care Transport
Hamblin	Tiffany	St. Vincent Critical Care Transport
Hostetter	Meagan	St Mary's Hospital
Inman	Lori	Parkview Hospital
Kaufmann	Michael	St. Vincent Critical Care Transport
Keepes	Tricia	Women's Deaconess
Kiefer	Marissa	IU Health/Riley
Leedy	Melissa	St. Vincent Critical Care Transport

System Infrastructure Task Force		
Lyttle	Angela	Sacred Roots Birth Center
Marandi	Hossain	Peyton Manning Children's Hospital
Martin	Rainey	Community Health Network
McCutchen	Ann	IU Health Lifeline
McIntire	Beth	Riley Hospital
Meyer	Carla	Community Munster
Murray	Amy	St. Joseph Mishawaka
Oberhart	Kathleen	St Vincent
Peak	Krista	Lutheran Children's Hospital
Renschen	Carrie	St Anthony Franciscan Health
Roberts	Emily	IU Health
Ryan	Chris	The Women's Hospital
Sawyer	Renata	Memorial Hospital
Scherle	Patty	Jasper Memorial
Schubert **(co-chairwoman)**	Frank	IU Health
Shuppert	Jessica	Beacon Health Systems
Stout	Leslie	St. Vincent
Stringer	Lisa	St Vincent
Trautman	Michael	IU
Vanderhorst	Stephanie	IN ACNM
Wetzel	Marsha	ISDH
Wire	Amy	Community
Wise	Daniele	St. Vincent Critical Care Transport
Wolfe	Heather	Lutheran Children's Hospital
Yousif	Fatma	ISDH
Zimmer	Dawn	St. Vincent Critical Care Transport

Finance Task Force		
Allen	Charles	Action Health Center
Berry	Tiffany	Lutheran Health Network
Cole	Terry	Indiana Hospital Association
Culver	Joan	Franciscan Alliance
Ellis	John	MHS Indiana
Engle	Bill	Riley Hospital
Feagans	Julia	Medicaid
Grable	Heather	IN Rural Health
Grover	Spencer	Indiana Hospital Association
Hug	Richard	IU Northwest
Kiefer	Marissa	IU Health/Riley
Landwehr	Joseph	IU Health Ball Memorial
Porter	Karen	Strategic Solutions
Roop **(co-chairwoman)**	Kimberly	Anthem Blue Cross & Blue Shield
Sullivan	Ty	MDwise
Watters	Dana	Bloomington Hospital
Wright	Cameual	CareSource
Zerr **(co-chairwoman)**	Ann	Medicaid

Breastfeeding and Perinatal Substance Use Task Force		
Barfoot	Cathy	Franciscan Hammond
Brinkerhoff	Brandi	IU Health
Chambers	Joanne	IU Health
deSomer	Gail	St. Joseph Mishawaka
Furrow	Renee	Methodist/Community
Gehring	Stephanie	WC Allen County
Gloyd	Debra	Margaret Mary
Gora	Diane	Franciscan Hammond
Kline	Christina	Community East
Lancaster	Jill	St. Vincent Women's
Langley	Jacinta	Franciscan Lafayette
Leeper (chairwoman)	Courtnie	ISDH
Long	Sarah	Milk Bank
Marcek	Susan	Franciscan Hammond
Martin	Rainey	Community
Moody	Gretchen	Deaconess
Reid	Nickelle	IU Ball
Renschen	Carrie	Franciscan Crown Point
Rinehart	Shannon	St. Vincent Women's
Smith	Pam	Franciscan Lafayette
Ward	Sheryl	Community South
Watson	Lori	IU Ball
Wheatley	Allissa	St. Vincent Evansville

Transport Task Force		
Allen	Farrah	St Mary's
Beaver	Kristen	South Bend Memorial
Cameron **(co-chairman)**	James	Lutheran
Clark	John	
Collings	Krista	Witham
Culler	Jenny	Dupont
Culver	Joan	Franciscan
Devreese	Deb	South Bend Memorial
Durham	Elizabeth	Deaconess
Evers	Mary	ISDH
Gardner	Stephanie	St. Vincent Critical Care Transport
Groves	Rozanna	St. Vincent Critical Care Transport
Hamblin	Tiffany	St. Vincent Critical Care Transport
Hummel	Stacey	Johnson Memorial
Inman	Lori	Parkview
Kaufmann	Michael	St. Vincent Critical Care Transport EMS Division of DHS
Keepes	Tricia	Deaconess
Leedy	Melissa	St. Vincent Critical Care Transport
McCutchen	Ann	LifeLine
McIntire **(co-chairwoman)**	Beth	IU Riley
Martin	Rainey	Community
Meyer	Carla	Community Munster
Renschen	Carrie	Franciscan
Roberts	Emily	IU Health
Shuppert	Jessica	SB Memorial
Stout	Leslie	St. Vincent
Stringer	Lisa	St Vincent

Trautman	Michael	IU Riley
White	Julie	Porter Health
Wise	Daniele	St. Vincent Critical Care Transport
Zimmer	Dawn	St. Vincent Critical Care Transport

Maternal Hemorrhage Task Force		
Abdala	Sara	ISDH
Arthur	Erica	Jasper Memorial
Baird	Natalie	IU Bloomington
Bemenderfer **(co-chairwoman)**	Lynn	Community Health Network
Benson	Susan	St Vincent
Blouin	Lisa	Beacon Health Systems
Boller	Kaitlyn	IHA
Boosey	Melanie	Franciscan Alliance
Bratina	Angela	Franciscan Alliance
Briley	Sarah	ISDH
Buckmaster	Hillary	IU Bloomington
Cherry	Michelle	LaPorte Hospital
Danford	Lindsey	St Joe Mishawaka
DeStefano	Patty	Beacon Health Systems
Dill	Courtney	Deaconess
Devine	Erica	IU Bloomington
Green	Laura	Lutheran Hospital
Hoover	Andrea	St Vincent
Hunkele	Christine	Franciscan Alliance
Lueder	Teresa	Hancock Regional
Lyttle	Angela	Sacred Roots Midwifery
Moore	Kristin	ISDH
Murray	Amy	St Joe Mishawaka
O'Kelley	Shawna	Daviess Community
Pontones	Pam	ISDH
Powell	Jennifer	Regional of Terre Haute
Roberts **(co-chairwoman)**	Emily	IU Health

Maternal Hemorrhage Task Force		
Roesener	Anita	St Vincent Women's
Sawyer	Renata	Beacon Health Systems
Spears	Elizabeth	IU Bloomington
Summers	Jenna	Deaconess
Wahnsiedler	Miranda	St Vincent Evansville
Waters	Kim	Community Health Network
Wendeln	Janet	IU Health
Yeoman	Stacey	Witham

Reproductive Health Planning Task Force		
Abernathy **(co-chairwoman)**	Mary	IU Maternal Fetal Medicine
Adair	Regina	Parkview
Adams	Kristin	Indiana Family Health Council
Allen	Charles	Action Health Center
Barbato	Alana	
Bernard	Caitlin	IU School of Medicine OBGYN
Briley	Sarah	ISDH
Cashman	Casandra	Community
Chimhanda	Mary Ann	St Vincent Kokomo
Cierzniewski	Angela	
Durica	Jenny	ISDH
Elbert	Gail	Marion General Hospital
Feagans	Julia	OMPP
Gathers	Valerie	Community Physicians Anderson
Greuter	Karen	ISDH
Hunt	Abby	HCET
Ibrahim	Sherrine	IU North
Leeper	Courtnie	ISDH
Meyer	Carla	Community Munster
Miller	Velvet	IU School of Medicine
Overgaard	Megan	IU School of Medicine
Peachey	Jessica	ISDH epidemiology
Peipert	Jeffrey	IU
Robbins	Cynthia	IU Adolescent Medicine
Smith	Dennine	ISDH Adolescent Health
Swigonski	Nancy	IU School of Medicine
Trippel	Rhonda	IU Health Bloomington

Reproductive Health Planning Task Force		
Wilkinson	Tracey	IU Children's Health Svs Research
Williams	Rebekah	IU Adolescent Medicine