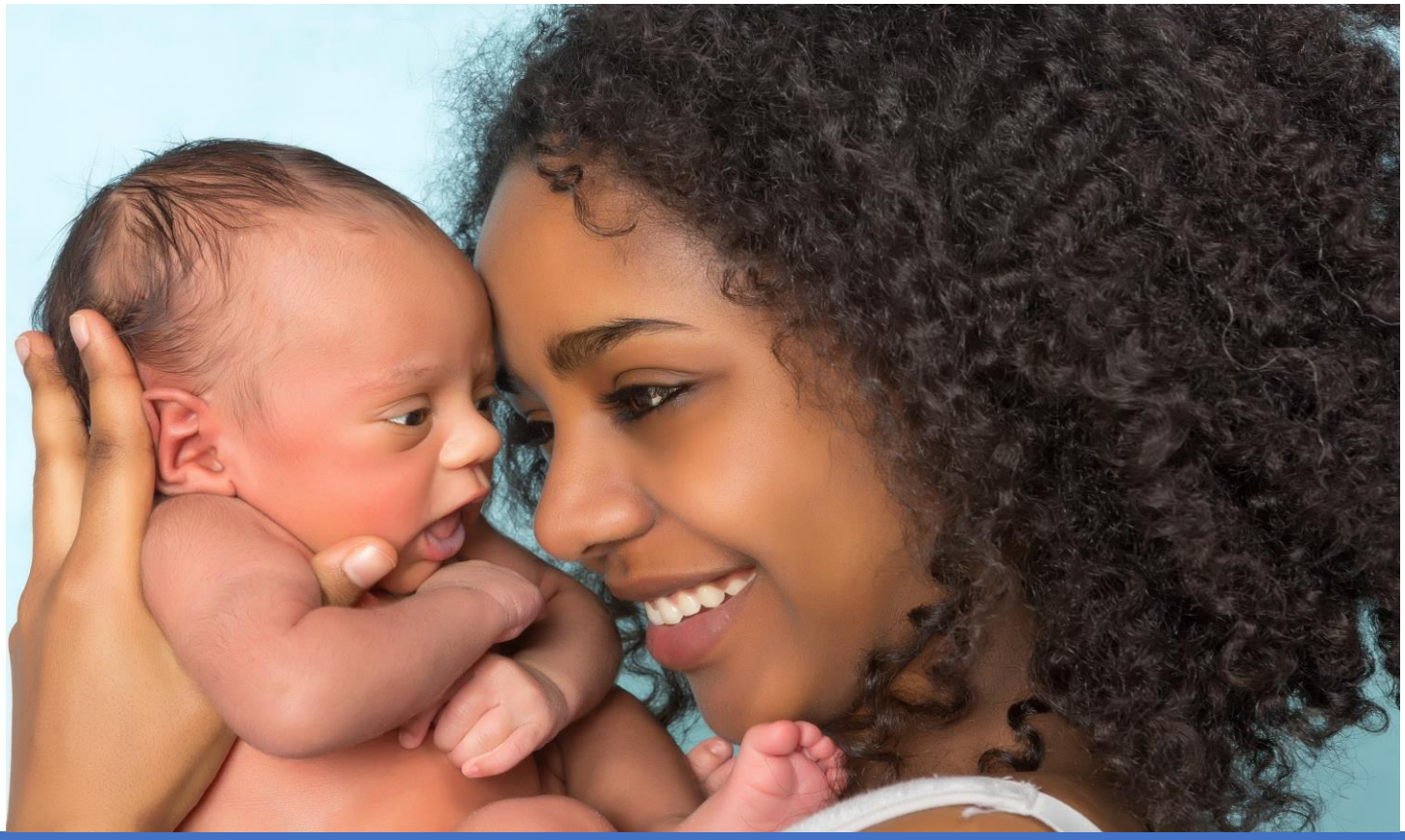


2017 Annual Report

Indiana's Efforts to Address Infant Mortality

July 2018

Indiana State Department of Health

Indiana's Efforts to Address Infant Mortality and Morbidity

The loss of a baby remains a sad reality for many families and takes a serious toll on the health and well-being of families, as well as the nation.

-Centers for Disease Control and Prevention

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 address the issue of infant mortality in Indiana with varying degrees of success. Despite these efforts, with the exception of 2008 when the infant mortality rate dipped slightly to 6.9 deaths per 1,000 live births, Indiana's infant mortality rate has remained above 7 deaths per 1,000 live births for 113 years, and in 2016, the rate was 7.5 deaths per 1,000 live births.

Over the last five years, infant mortality has remained the No. 1 priority of the Indiana State Department of Health (ISDH). 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 during 2017.

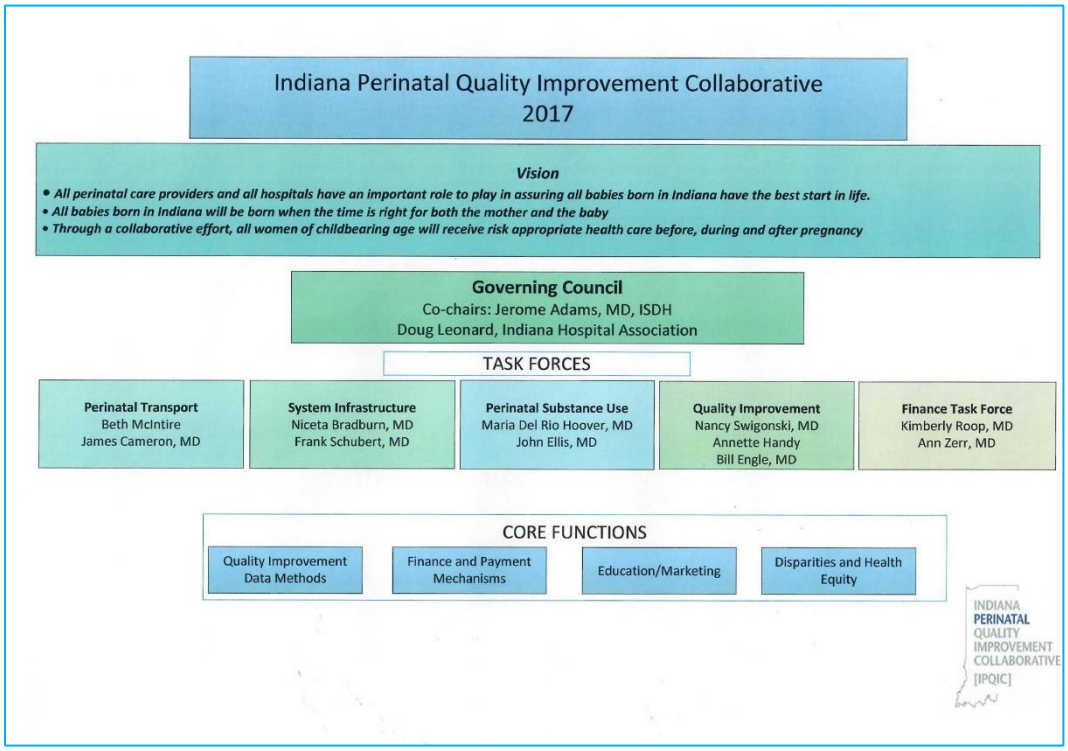
Indiana Perinatal Quality Improvement Collaborative (IPQIC)

Established by ISDH in 2013, IPQIC marked its fifth year of activity in 2017. 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 assuring 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 health care before, during and after pregnancy.

In 2017, IPQIC began to move from committees to task forces allowing for deeper focus and targeted project management on the various initiatives impacting perinatal healthcare. 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 decide whether to continue 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 the vision of IPQIC. 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.

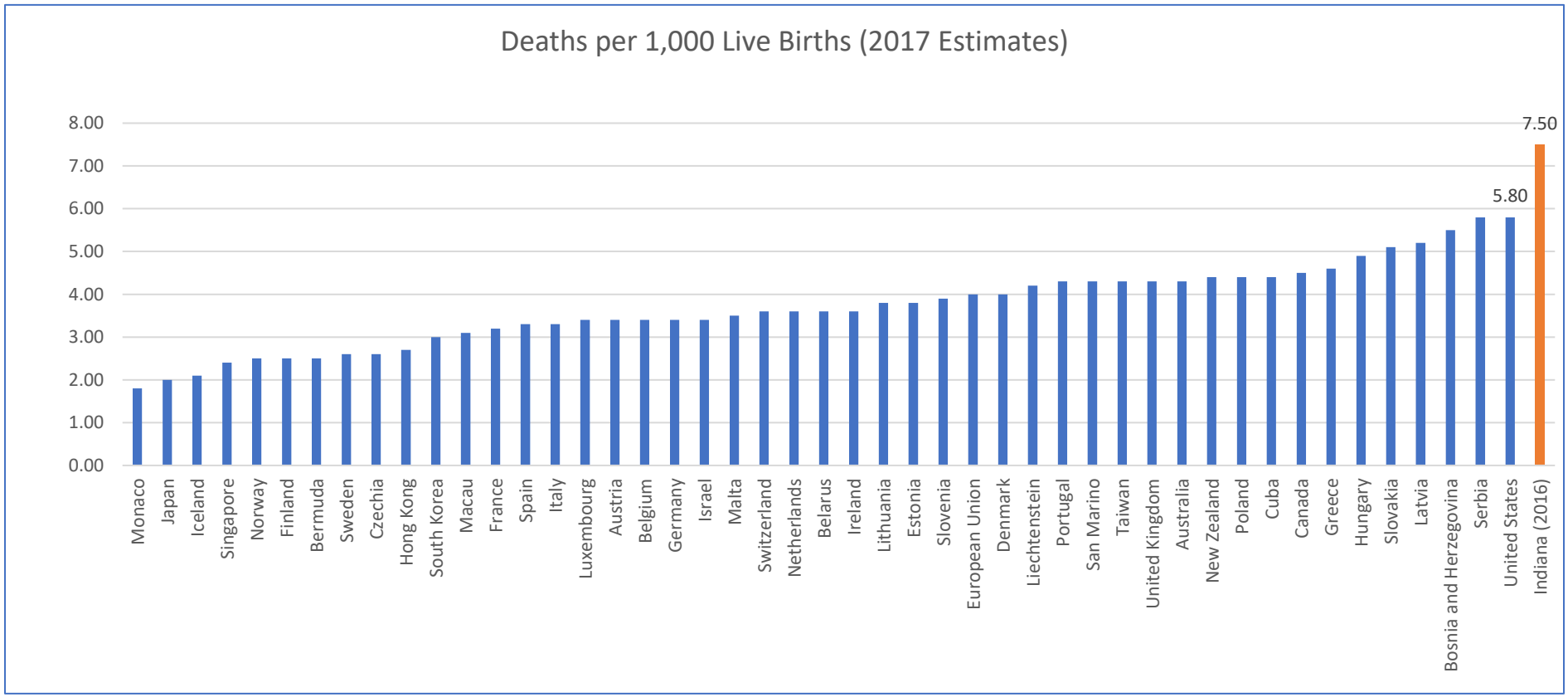
Infant Mortality and Birth Outcomes - 2016[1]

To provide context for IPQIC and ISDH activities, it is important to review relevant data regarding Indiana rates and those which portray comparable populations and the rates that we strive to attain. Among those rates is the Healthy People 2020 goal that has been established as a national standard for the United States population to define measures for improving health nationwide. The following table includes 2016 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	2012	2013	2014	2015	2016
Indiana	6.7	7.1	7.1	7.3	7.5
United States	6.0	6.0	5.8	5.9	5.9
Healthy People 2020 Goal	6.0	6.0	6.0	6.0	6.0

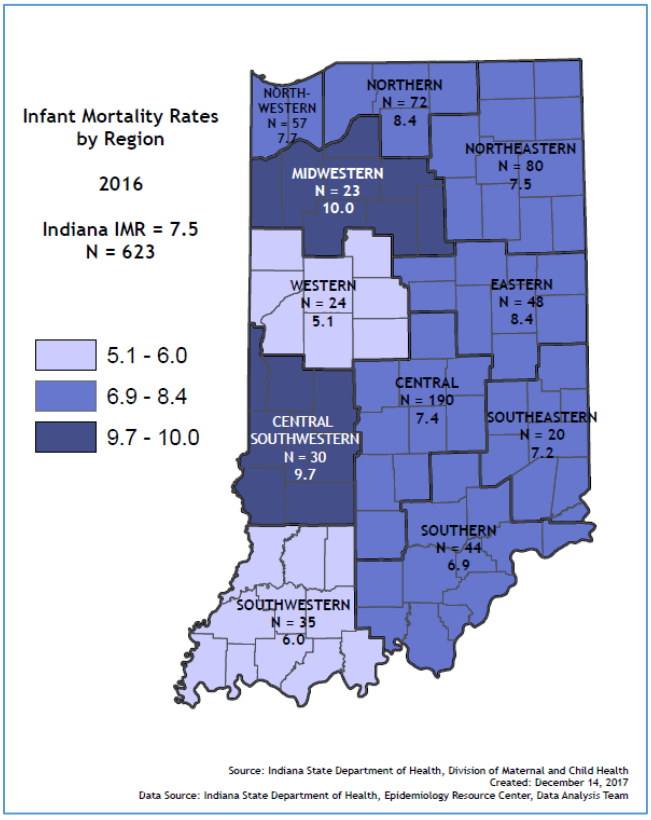
[1] All data included in this report was provided by ISDH, Maternal and Child Health Epidemiology Division

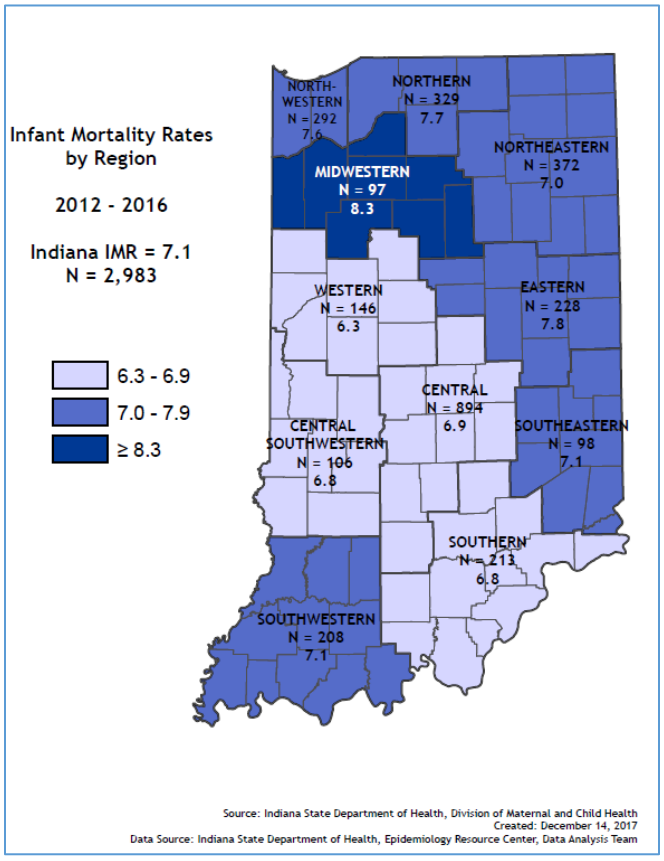
While the national infant mortality rate surpasses the established goal for the United States, the current infant mortality rate in the United States is, unfortunately, still significantly higher than that of other developed nations. The following figure depicts the projected 2017 rankings for infant 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.



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

The infant mortality rate in Indiana 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.





With this view, it can be seen that while the rate may change in any single year, the Midwestern Region has had the highest rate in both 2016 and the five-year average. One explanation for the elevated Midwestern Region rate could be the rural nature of this region reflected in the limited number of delivering hospitals and obstetric providers.

In addition to regional disparities, racial disparities between black and white infant mortality rates in Indiana remain a stark reality. The black infant mortality rate has

dropped from a high of 18.1 per 1,000 live births in 2006 to 14.4 per 1,000 live births in 2016, with the lowest rate being 12.3 per 1,000 live births in 2011. This, however, is still more than twice the infant mortality 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 2006 was 6.4 per 1,000 live births and was the same for 2016. The lowest rate was 5.5 per 1,000 live births in 2008 and was the highest at 6.9 per 1,000 live births in 2011. 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	2012	2013	2014	2015	2016
Indiana	6.7	7.1	7.1	7.3	7.5
White	5.5	5.8	5.9	6.4	6.4
Black	14.5	15.3	14.7	13.2	14.4

Causes of Infant Mortality Black and White populations 2016	
Perinatal Risks	•All: 46.4% •Black: 60.9% •White: 42.3%
Congenital Malformations	•All: 22.2% •Black: 9.3% •White: 26.4%
SUIDS	•All: 13.6% •Black: 13.2% •White13.1%
Assaults and Injuries	•All: 3.7% •Black: 4.6% •White: 3.7%
All Other	•All: 6.3% •Black: 11.9% •White: 14.5%

Major Factors Contributing to the Infant Mortality Rate

Sixty-six percent, approximately 413 infants, of the deaths in 2016 occurred within the first 28 days, which is considered the neonatal period. Approximately 68% of the deaths occurred within the first day. Post-neonatal deaths, accounting for 210 infants, occurred between 29 days and one year. There were four major factors contributing to these deaths:

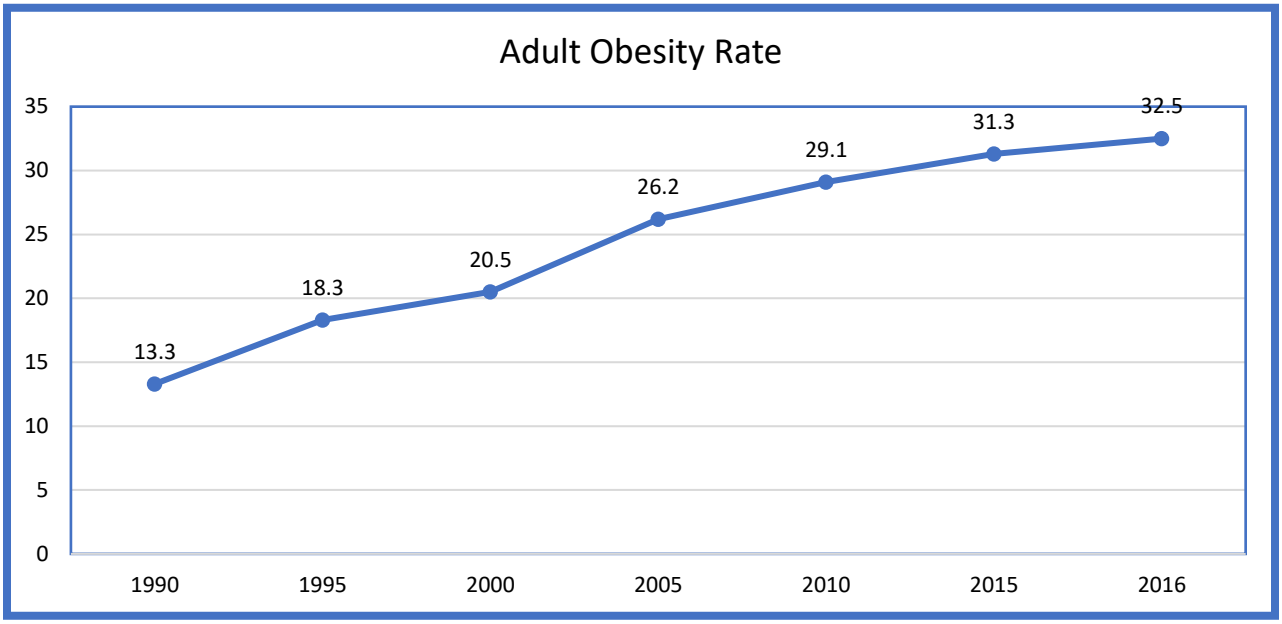
- **Obesity**: If a woman is obese, she has a 25% chance of delivering a premature infant. The chance increases to 33% if a woman is morbidly obese. *Indiana is the 10th most obese state in the United States.*
- **Smoking**: The percentage of Indiana women smoking during pregnancy (13.4%) is twice the national average. The percentage of Indiana pregnant women enrolled in Medicaid who smoke is 23.4%.
- **Limited Prenatal Care:** Only 69.3% of pregnant women receive prenatal care during the first trimester.
- **Unsafe Sleep Practices:** 13.6% of infant deaths in 2016 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); and
    - Unknown/Undetermined.

Demographics of Indiana Mothers in 2016

- Average Age: 27.7 years (Range: 12-60)
- Education:
    - High School Diploma or less: 42.9%
    - Some College but no degree: 20.5%
    - College Degree: 36.4%
- Medicaid Enrollment: ~50% as reported by Medicaid
- Marital Status: 57.4% were married
- Average month prenatal care began: 5 months (Range: No care - 9th month)
- Average number of prenatal visits: 12 (Range: 0-49)
- First time mothers: 37% of births

Obesity

According to *The State of Obesity 2017*[2], Indiana's adult obesity rate is 32.5%, up from 20.5% in 2000 and from 13.3% in 1990. In 2012, the obesity rate by gender was 31.9% for men and 31.0% for women.



Obesity Rate by Age

- 18-25: 17.6%
- 26-44 33.7%
- 45-64: 38.4%
- 65+: 30.6%

Obesity Rate by Race

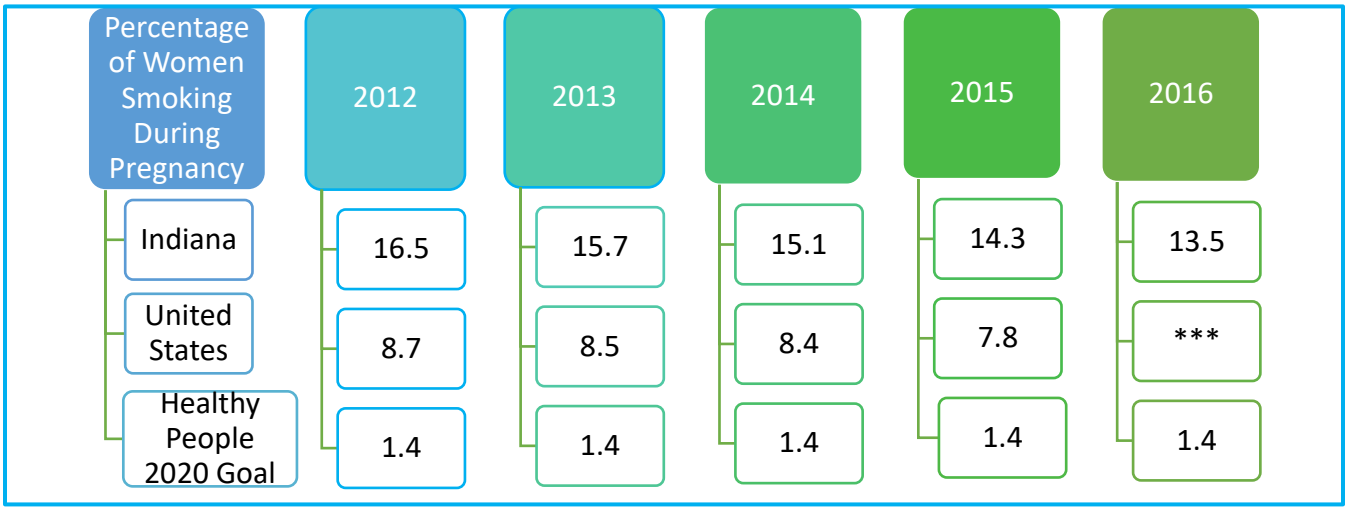
- White: 31.8%
- Black: 41.7%
- Latino: 28.7%

Smoking

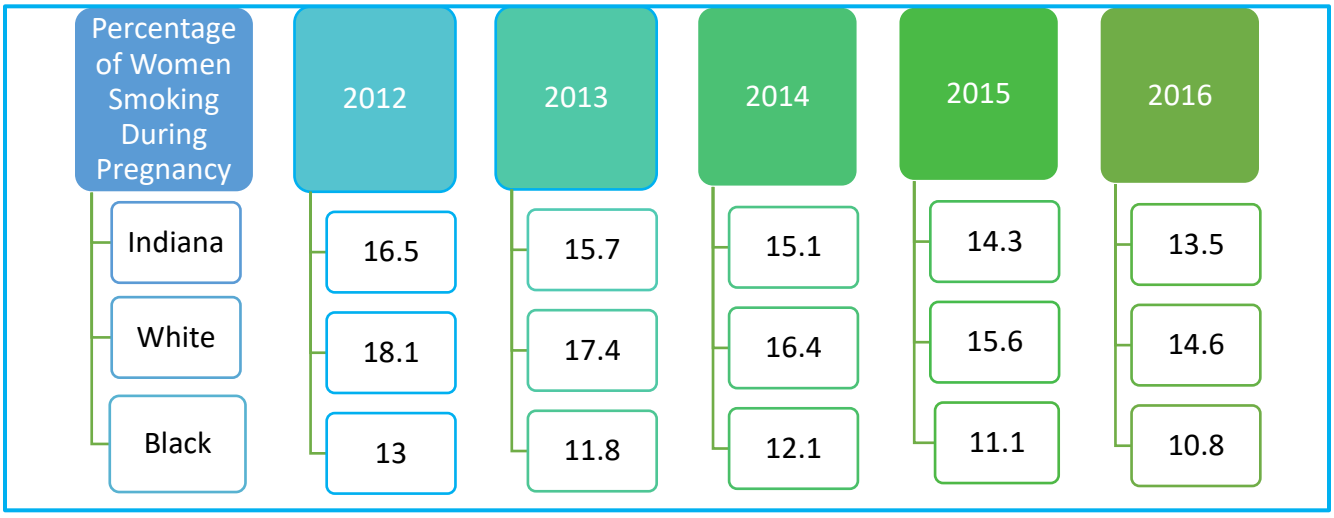
The Healthy People 2020 goal for the percentage of women smoking during pregnancy is 1.4%. In 2015, the percentage of Indiana women smoking during pregnancy (14.3%) was almost twice the national average of 7.8%. National data for 2016 is not yet available for

[2] Source: Trust for America's Health and Robert Wood Johnson Foundation, Washington D.C. 2017

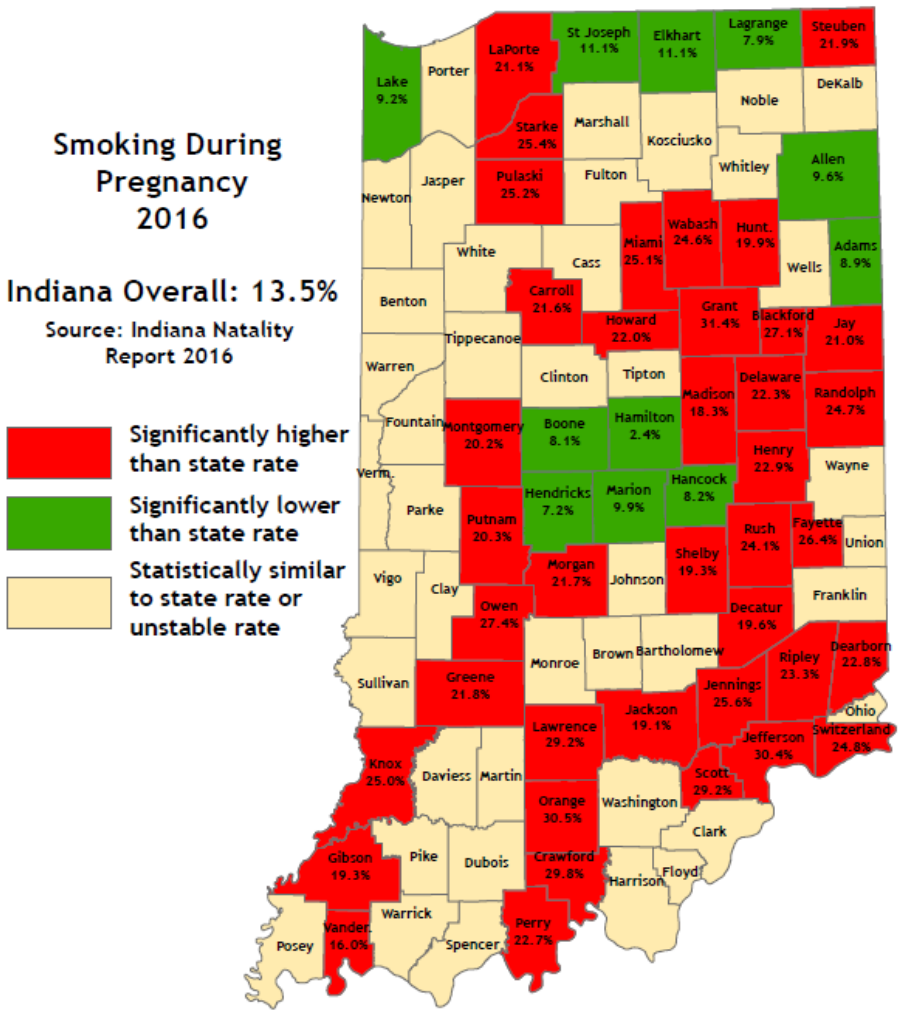
comparison, however, while Indiana's percentage in 2016 has dropped to 13.5%, it is still far from the Healthy People 2020 goal. Based upon historical trends, it is anticipated that the comparison between Indiana's populations to the national average will continue to show a higher percentage of Indiana women smoking during pregnancy.



Racial disparities can be seen amongst populations of Indiana's pregnant women as well as the 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.

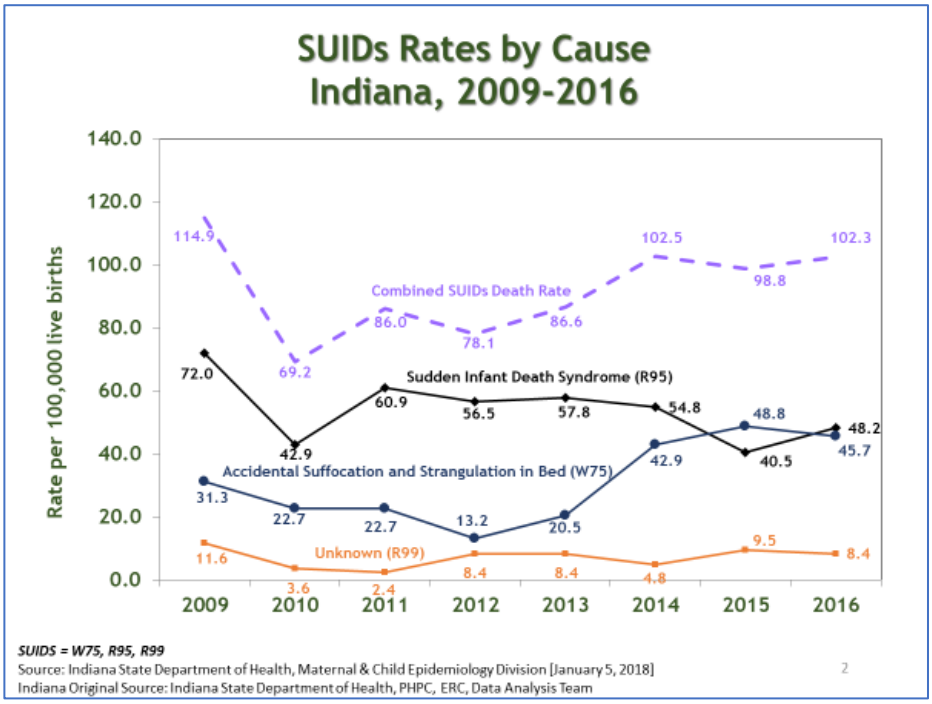


In addition to racial disparities, the rate at which smoking during pregnancy occurs varies regionally. The following figure depicts the counties in which reported smoking rates are higher than the state average, as well as the counties where smoking occurs at a lower rate than the state average.



Unsafe Sleep Practices

Sudden unexpected infant deaths (SUID) account for 13.6% of all infant mortality. SUID is the death of an infant less 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), or 3. Unknown/Undetermined.



Sudden infant death syndrome (SIDS): The sudden death of an infant less 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.

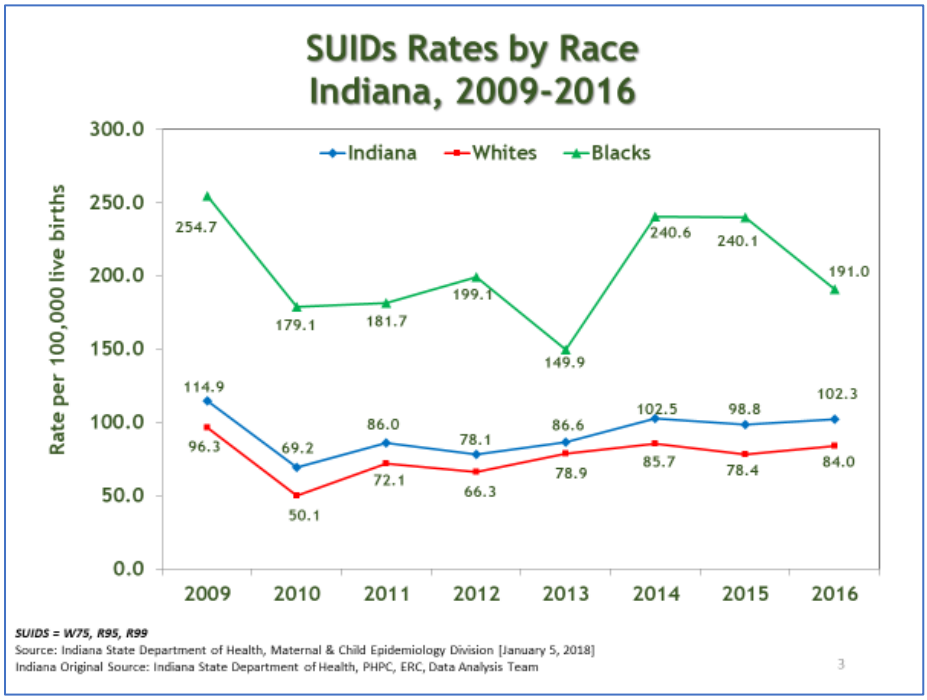
Unknown cause: The sudden death of an infant less than 1 year old that remains undetermined because one or more parts of the investigation were not completed.

Accidental suffocation and strangulation in bed (ASSB): The sudden death of an infant less 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.

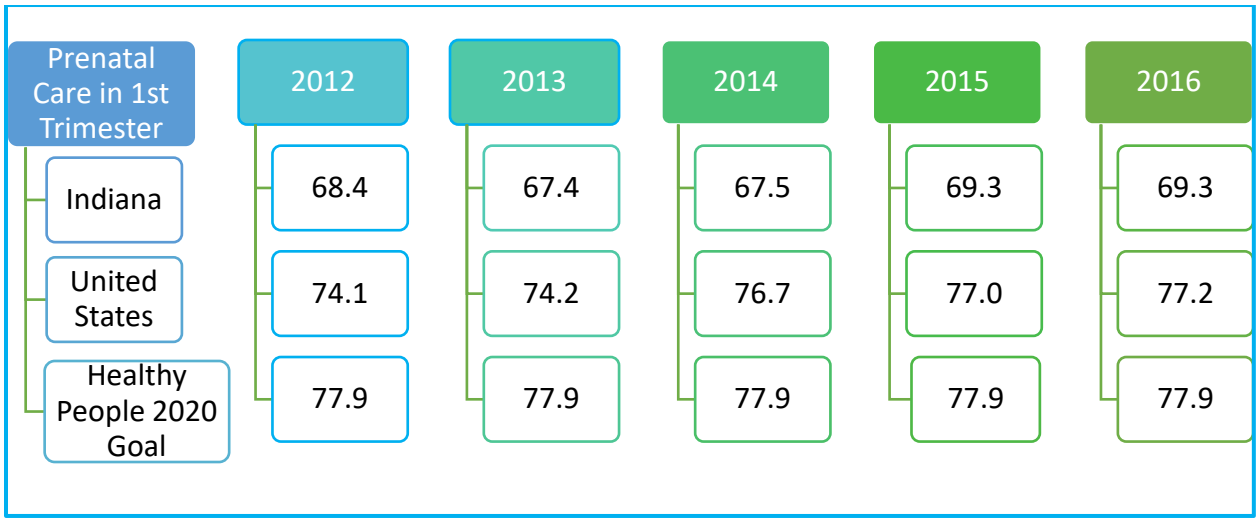
- Strangulation — for example, when an infant's head and neck become tangled in car seat straps or wrapped in blankets.

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 out of the crib. 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.

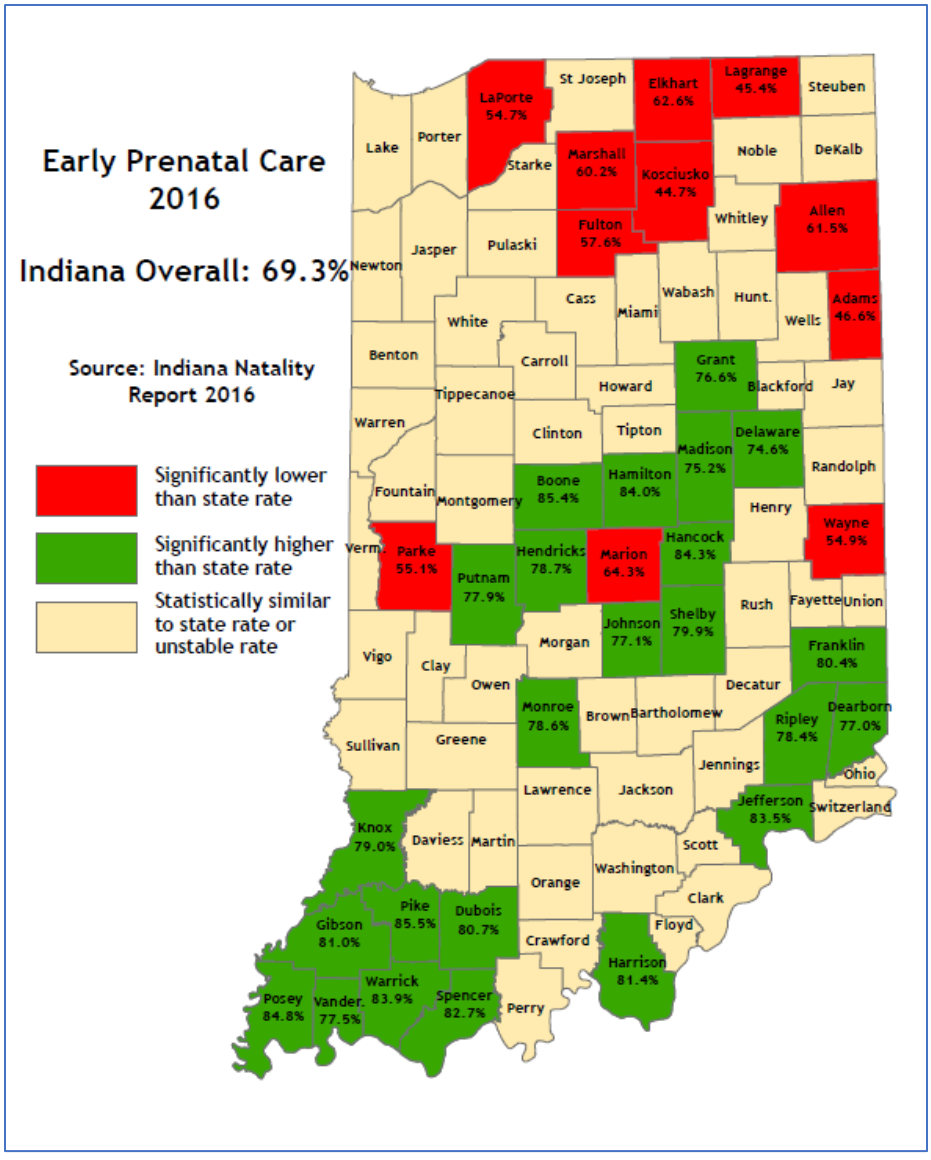


Early Prenatal Care

The percentage of Indiana women (69.3%) who receive prenatal care in the first trimester continues to lag behind the national percentage 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%).



A deeper analysis into early prenatal care participation shows a significant variance amongst 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 allude to a regional or population based rationale for the utilization, or lack thereof, of early prenatal care.

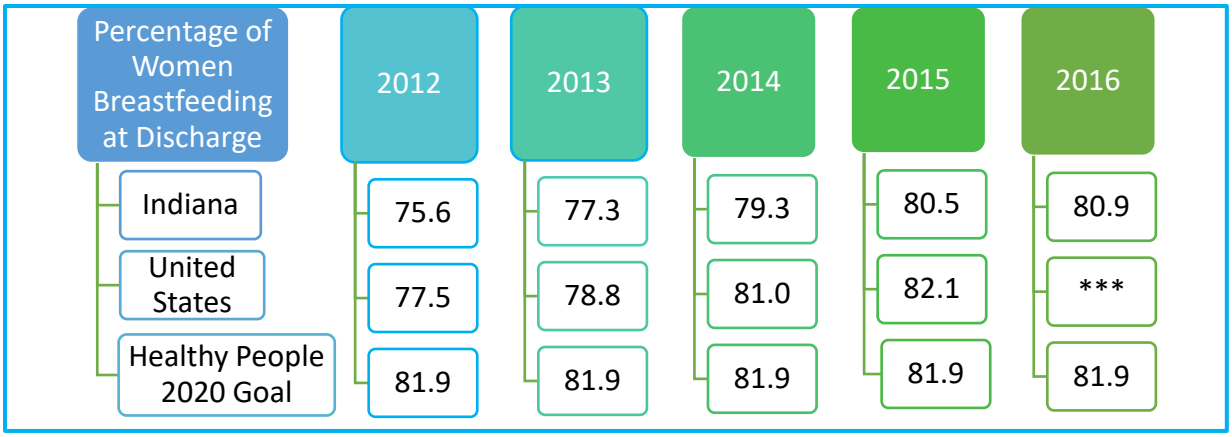


IPQIC Highlights for 2017

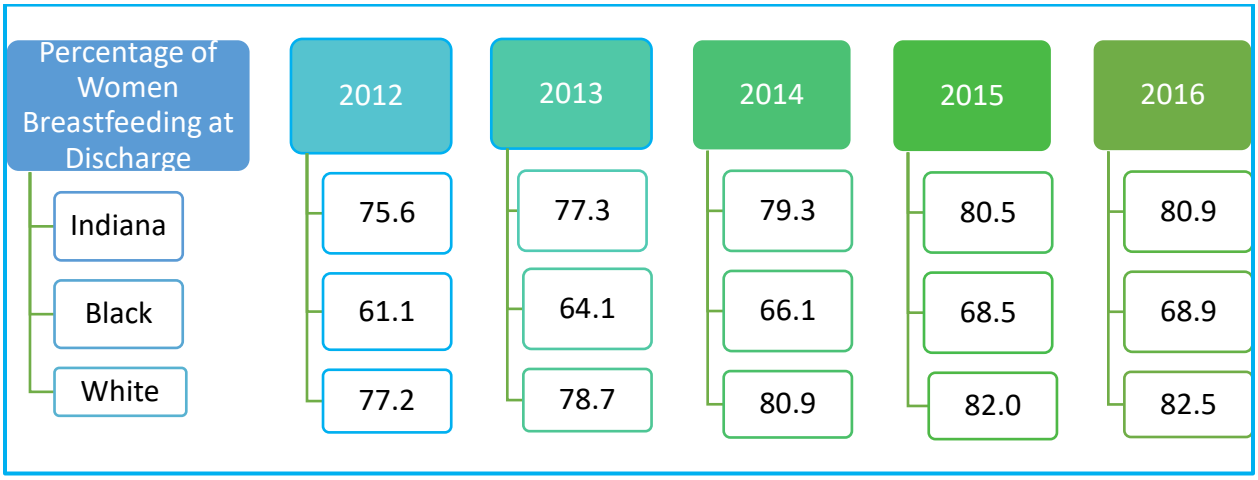
- The **Perinatal Transport Task Force** held its second annual Perinatal Transport Conference in May, nearly doubling the registration from 2016. Participants heard from national experts Michael Frakes from Boston MedFlight, and Dr. Ira Blumen from University of Chicago Aeromedical Network. The conference content included presentations on:
    - The provision of clinical care consistent with current national and state guidelines of practice for specialty team transport;
    - A discussion of safety risks inherent to interfacility transports and ways to mitigate this risk; and
    - A presentation on how quality metrics help achieve quality outcomes.

  The Task Force also added quarterly webinars to facilitate increased knowledge and skills related to perinatal transport.

- The **Lactation Safe Sleep Task Force** was established in 2017 with a specific charge from Dr. Jerome Adams, former ISDH Health Commissioner, to reconcile the issues of breastfeeding and safe sleep. At the time, each team promoted contradicting best practices for mother and infant sleeping needs to support a healthy lifestyle and reduced risk of mortality. The result of the task force efforts promoted increased breastfeeding in combination with safe sleep practices to reduce infant mortality and morbidity; a practice recommended for all Indiana healthcare providers to support. Indiana has been focused on increasing the percentage of women who are breastfeeding on post-natal hospital discharge, and has seen improvement every year, with 2016 Indiana rates nearing the Healthy People 2020 goal of 81.9%.



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



Key stakeholders joined to develop a best practice guidance document for combining breastfeeding with safe sleep. The document was presented to the IPQIC Governing Council and approved on May 24 and can be found at: https://www.in.gov/laboroflove/files/breastfeeding-safe-sleep-guidance-document.pdf

The primary goals for the creation of this document include:

- To promote a standard policy for all Indiana healthcare providers for the practice of breastfeeding in conjunction with safe sleep to optimize the health and safety of Indiana's infants;

- To establish guidelines for providers regarding methods for counseling families on how to breastfeed successfully, while still practicing safe sleep at all times; and
- To ensure families across Indiana have information and necessary resources to achieve success in both breastfeeding and adherence to safe sleep guidelines.

- The **Finance Task Force** focused on two initiatives in 2017. The first initiative 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. The task force is waiting for data, due in 2018, regarding the effectiveness of the March of Dimes model before approaching the Governing Council with a recommendation.

  The second initiative prioritized by the finance task force was to review and promote the findings of national economic research into perinatal morbidity. As stated in the 2016 *Economic Burden of Perinatal Morbidity* drafted by this task force, "Perinatal morbidity in Indiana causes enormous negative impacts to both health outcomes and financial expenditures. Human costs are significant, and the financial burden resulting from poor birth outcomes begins at time of delivery and often stretches into adulthood. Yet there are proven actions that can be taken to significantly improve health outcomes and reduce the economic burden for Indiana families." This document can be found at: https://www.in.gov/laboroflove/files/economic-burden-of-perinatal-morbidity.pdf.
  In 2017 the task force also developed an infographic that focuses on key points from the *Economic Burden of Perinatal Morbidity*. The infographic can be found at: https://www.in.gov/laboroflove/files/ipqic-morbidity-cost-fact-sheet.pdf

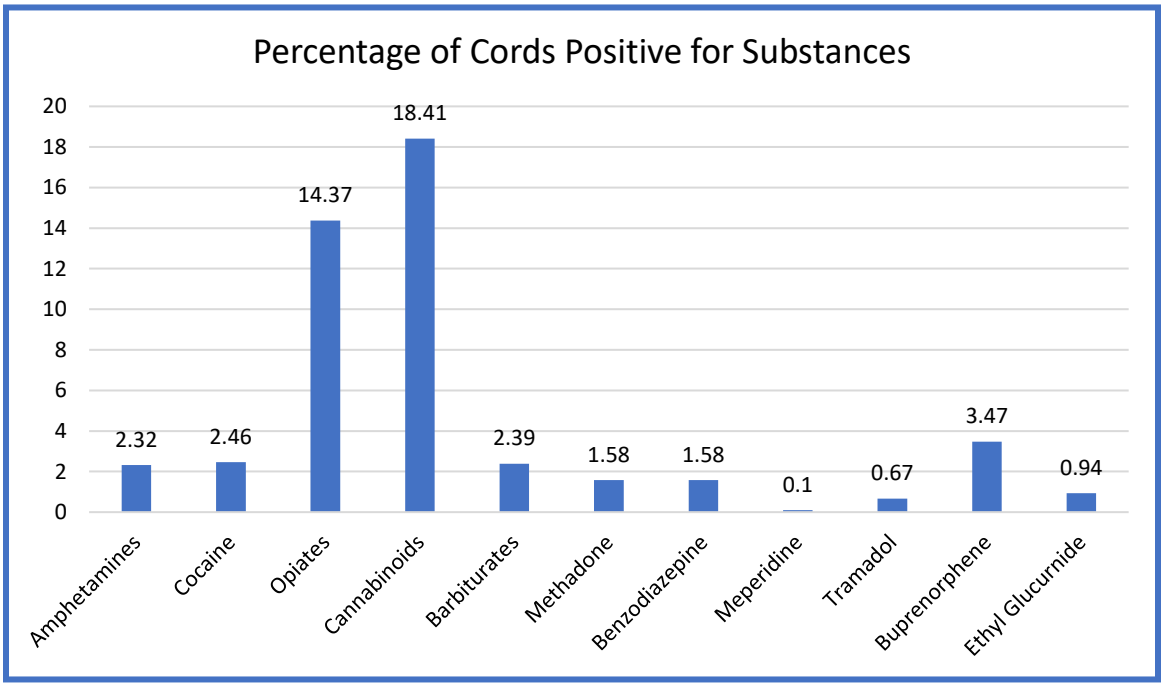
- The **Perinatal Substance Use Task Force** continued efforts for piloting new standards in the rapid detection and intervention of mothers and infants impacted by substance use. In 2017, the pilot study saw an addition of 17 hospitals to the original four pilot hospitals participating in 2016. As the new hospitals began testing both policies and procedures, the task force monitored the data and processes to ensure that the task of identifying prevalence of perinatal substance use and best practices for intervention remain a priority. As a result of reported inconsistencies related to substance exposure versus NAS diagnosis and the use of pharmacologic intervention, the task force recommended and approved clarification for the definition of NAS. The Task Force recommended that the diagnosis of NAS should be applied to babies who meet the following criteria:
  - Symptomatic;
  - Have two or three consecutive Finnegan scores equal to or greater than a total of 24; and
  - Have one of the following:
    - A positive toxicology test or
    - A maternal history with a positive verbal screen or toxicology test.

Screening data from 2017 is contained in the chart below. It is important to note that due to lack of mandate, not all pilot hospitals are conducting universal screening at time

of delivery. Therefore, ISDH believes these results are an underrepresentation of true prevalence.

- Births in pilot hospitals: 19,048
- Cords Tested: 16% of births
- Positive Cords: 39% of cords tested
- NAS Diagnosis: 12% of positive cords
- Rate of Positive Cords by 1,000 live births: 134.4
- Rate of Positive Cords by 1,000 cords tested: 394.5

Two hospitals were not using 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 addition to the pilot study and development of standards of care, the Perinatal Substance Use Task Force made efforts to increase awareness. In summer 2017, IPQIC and ISDH joined forces with the Indiana Hospital Association to hold the first annual

Perinatal Substance Use Conference. National speakers from West Virginia (Dr. Stefan Maxwell), Connecticut (Dr. Matthew Grossman) and Ohio (Claudia Burchett) shared their expertise on the challenges and opportunities guiding their work related to perinatal substance use. Attendees reflected a variety of perspectives and the conference participation exceeded expectation. Participant evaluations of the conference were very positive. The second Perinatal Substance Use conference will be held in August 2018.

- The **System Infrastructure Task Force** played a fairly quiet role in 2017 as they were anticipating the implementation of the Levels of Care rules. They reviewed the gap analysis conducted by the nurse surveyors of hospitals interested in becoming Perinatal Centers. Until the Levels of Care rule is enacted, the members will stay on hiatus.

- The **Quality Improvement Task Force** continued their work with the other task forces to support the shift to a QI model. The first QI identified initiative to improve perinatal outcomes is the use of progesterone to prevent a second preterm birth. Premature deliveries account for 50% of the pregnancy cost as estimated by Medicaid data, largely from the costs associated with neonatal admissions. The appropriate use of 17P (progesterone) can significantly reduce the risk of preterm birth and the associated costs. Progesterone is a hormone that a woman's body makes naturally during pregnancy. Extra progesterone for some women can help to prevent preterm births. A progesterone subcommittee was established and an initial draft of the charter was developed. An additional subcommittee related to maternal hemorrhage was established and will begin their work in 2018 due to an increase in the number of cases statewide. The goal of this subcommittee will be to establish best practices for preventing and managing maternal hemorrhage.

Maternal and Child Health Division Highlights 2017

January

Zika Birth Defect Surveillance Project

In January, the Indiana Birth Defects and Problems Registry (IBDPR) began a review of babies born in 2016 and 2017 with conditions associated with congenital Zika virus infection. The associated conditions include microcephaly and other brain abnormalities, neural tube defects, eye abnormalities and some central nervous system dysfunctions. To date, the IBDPR program has identified 670 cases meeting definitions for inclusion to the Zika Birth Defect Surveillance at CDC. These cases did not necessarily have congenital Zika syndrome, but did have a specific condition of interest to the Zika Birth Defect Surveillance. The ISDH Epidemiology Resource Center (ERC), monitors pregnant women with congenital Zika virus infection and the follow-up of their infants through the first year of life. Information on the pregnant women and their infants is reported through the U.S. Zika Pregnancy and Infant Registry at the Centers for Disease Control and Prevention (CDC). The collaboration allows the ERC to provide information on pregnant women and infants with confirmed congenital Zika virus infection, while the IBDPR assists in the identification of all infants potentially infected with Zika virus in-utero and the resulting birth defects. This information can be used to further the understanding of the effects and outcomes on mothers and babies with congenital Zika virus infection.

February

Indiana State Breastfeeding Conference

Held on February 16 at the 502 East Event Centre in Carmel, the third annual Indiana State Breastfeeding Conference set a new attendance record. The one-day conference, which focused on the gap between breastfeeding and safe sleep, attracted an audience of more than 200 health professionals. Keynote speaker Shakira Henderson, a nurse researcher at Vidant Medical Center in North Carolina, delivered two addresses, the first on breastfeeding and the second on safe sleep.

March

Direct On-Scene Education (DOSE)™

DOSE™ is an innovative program that works to prevent ASSB by training first responders to identify infant safe sleep hazards, remove the hazards and provide education while responding to emergency and non-emergency calls. This training puts the power of prevention into their hands and has engaged a whole new group of allies in preventing these tragic sleep-related deaths.

In March 2017, the ISDH Division of Child Fatality Review partnered with the Division of Maternal and Child Health to bring DOSE train-the-trainer events to six locations across the state. Program creator Capt. James Carroll came to Indiana and conducted each training event in person. Over the course of the training blitz 249 first responders and home-based service providers representing 46 of Indiana's 92 counties were trained as DOSE trainers. Their respective agencies were provided information about the Safe Sleep Program, MOMS Helpline, and information about car seat fitting stations so they may offer these resources to their clients. These trainers have trained a total of 300 staff. Participating agencies have reported a total of nearly 1500 DOSE encounters with Indiana families.

2- Year Anniversary of MOMS Helpline

MOMS Helpline, a toll-free assistance and referral phone service, celebrated its first birthday on March 1. The Helpline offers help and referrals to callers with pregnancy, parenting and health questions, offering guidance linking to resources. In its brief history, the Helpline has assisted thousands of callers with questions ranging from how to fill out Medicaid forms to how to quit smoking and where to access safe sleep material and cribs. Helpline Specialists also offer information and assistance on other health topics, including:

- Women, Infants, & Children (WIC) Program;
- Infant Health Programs (Safe Sleep, Baby & Me Tobacco Free);
- Educational Resources;
- Local Primary Care Providers;
- Obstetricians & Gynecologists (OB/GYN); and
- Pediatricians & Dentists.

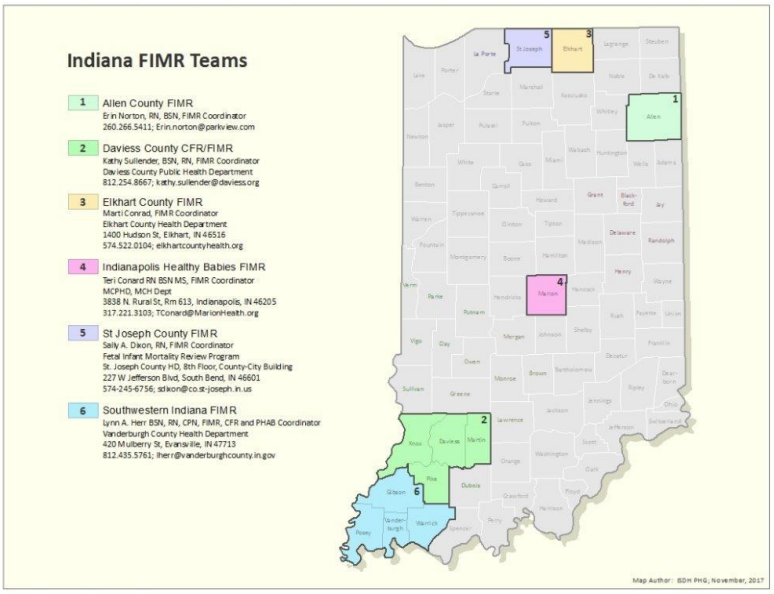
Helpline has certified navigators who can assist callers applying for benefits such as:

- Medicaid;
- Hoosier Healthwise (HHW);
- Children's Health Insurance Plan (CHIP);
- Healthy Indiana Plan (HIP) 2.0; and
- Supplemental Nutrition Assistance Program (SNAP)

Assistance is available in both English and Spanish.

April

Expansion of FIMR in Indiana



Fetal-Infant Mortality Review (FIMR) is a community-based and action-oriented process to improve service systems and resources for women, infants and families. This evidence-based process examines fetal and infant deaths (0-1 years), determines preventability, and engages communities to take action and is managed by the Child Fatality Review Division. In April 2017, a regional FIMR team was formed in the southwestern area of the state and added to the statewide FIMR network in Indiana.

The FIMR team may include healthcare providers, social workers, mental health professionals, health department staff, faith-based community members, drug treatment representatives, local SIDS coalitions, minority rights members and others as determined by the local FIMR. FIMR engages a multi-disciplinary case team to review the case summaries from de-identified infant and fetal deaths. These case summaries include maternal interviews for their perspectives on why the death occurred. Based on these reviews, the team makes recommendations for system changes. A team of community leaders (community action team) takes those recommendations to action.

May

Birthing Facility Outreach

Indiana has approximately 90 birthing facilities at which the majority of Indiana babies are born each year. Shortly after birth, each baby is screened by three different tests known as Newborn Screening (NBS): heel stick, pulse oximetry and hearing. Indiana's NBS panel identifies 49 different conditions that otherwise would go undetected. If left undetected and untreated, these conditions result in severe developmental delay and infant death, further contributing to Indiana's growing infant mortality rate. Early diagnosis and intervention is a key component in ensuring NBS is effective at combatting our second leading cause of infant mortality. With that, early education and understanding of our program and NBS is important to all stakeholders to help prevent and reduce our infant mortality rate. The ISDH chief nurse consultants are partnering with the Genomics and Newborn Screening (GNBS) program to implement statewide birthing facility outreach and education to all providers, nurses, lab staff, etc. that are located at these birthing facilities to help inform, refresh and update about the GNBS program, as well as how they take a large role in the screening process by ensuring they are educating families, obtaining and submitting quality NBS, and reporting accurately. In spring 2017, the GNBS team began developing a toolkit along with other resources for our state's GNBS stakeholders to be reviewed at the time of their facilities outreach, as well as be a resource on our website at: https://www.in.gov/isdh/27437.htm. The goal is to ensure every stakeholder involved in

NBS attends an outreach session and/or receives our toolkit and resources for future use and trainings when hospital staff turnover occurs. Early education and understanding of our program and NBS is important to all stakeholders to help prevent and reduce our infant mortality rate.

June

Community-based Paramedicine

Getting early and regular prenatal care is critical for both mom and baby's health, but significant health disparities exist between rural and urban women. Rural women often experience poorer health outcomes and have less access to care than women who live in urban areas. To assist with public health, primary healthcare and preventive services to underserved populations in the community, Community Paramedicine is evolving as a new and innovative healthcare model that allows paramedics and EMTs to expand their roles by improving access to care and coordinating the with patients' other social and medical services.

In summer 2017, the ISDH child fatality review director began working with the Crawfordsville Fire Department to help support the development of their Community Paramedicine Program aimed at improving the well-being of mothers, infants and families and promoting health among those members of the community who need it most.

The Community Paramedicine Program consists of a team of caregivers from Franciscan-Crawfordsville and paramedics from the Crawfordsville Fire Department, who provide the free in-home care to patients. During the home visits the paramedic gather information, record weights and vitals, conduct urine screens if ordered and provide education and counseling on topics such as breastfeeding, smoking cessation, safe sleep education, post-partum depression and social service referrals as needed.

July

Genomics and Newborn Screening Grantees

In July of every year, the Genomics and Newborn Screening program grants program funds to community-based organizations (CBOs) that work to ensure rapid intervention and life-saving treatment are given to all infants positive for disease detected through newborn screening. The newborn screening program services include specialized physician visits, genetic counseling, case management, assistance with medical treatment and connection to resources, laboratory services, as well as community education and outreach initiatives. The conditions on the Indiana newborn screening panel include healthcare fields such as endocrinology, hematology, immunology, pulmonology, metabolics, and neuromuscular pathologies. These follow-up services and treatment options for infants positive for disease, helps aid in the reduction of Indiana's infant mortality rate by conducting rapid detection, disease intervention and care coordination to ensure babies are given the best possible outcomes in life.

August

Help Me Grow

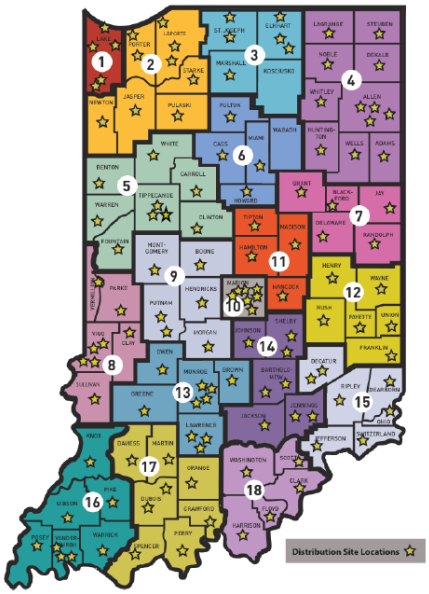
Indiana began a pilot implementation of the Help Me Grow (HMG) system in August. HMG provides a comprehensive, integrated process for ensuring developmental promotion, early identification, referral and linkage. The system model reflects a set of best practices for designing and implementing a system 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 and then link them to existing quality programs. HMG system is specifically designed to help states organize and leverage existing resources to serve families with children at risk. The system does not change or reinvent these programs and services.

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 a partnership between the ISDH and the Department of Child Services (DCS).

September

Safe Sleep & SUID Prevention Program



Since its inception, the Safe Sleep Collaborative/Crib Distribution program had been a partnership between outside agencies and ISDH. In September, the Safe Sleep Program underwent a fundamental improvement cycle and Maternal and Child Health begun funding this vital resource across the state. More than 150 community partners in all 92 counties are offering education about safe infant sleep and SUID reduction in their communities, as well as safe sleep environments and resources to families in need. A collaborative partnership between the Child Fatality Review Division, the Safe Sleep Program has evolved into a program with a larger focus on outreach, emphasizing innovative education techniques, consistent messaging and non-traditional partnerships to help lower the rate of SUID in Indiana.

October

Safety PIN Grants

Safety PIN (Protecting Indiana's Newborns) grants, established by the Indiana legislature, are awarded by the ISDH to hospitals, local health departments and nonprofit organizations for projects designed to help reduce infant mortality in Indiana. Inaugural Safety PIN grantees received a total of $12 million in December 2016. The second cohort of awardees were granted a total of $11M in funding on Oct. 27, 2017, and were awarded to:

- Parkview Health, Fort Wayne, for the Healthier Moms and Babies program;
- Health and Hospital Corporation of Marion County, Indianapolis, for perinatal health services;
- New Hope Services, Inc., Jeffersonville, for a multi-county safe sleep program;
- Bauer Family Resources, Lafayette, for a safe sleep and crib distribution program for low-income families;
- Franciscan Health Foundation, northwestern Indiana, for direct assistance to high-risk pregnant women to increase prenatal care;
- Vanderburgh County Health Department, Evansville, for a multi county program to provide increased perinatal healthcare access to minority populations;
- Community Wellness Partners, Cass County, for a program to connecting to care high-risk African American and Latina mothers and pregnant women, as well as wraparound services for their whole families.

Sudden Unexpected Infant Death Investigation

In an effort to facilitate improved consistency in investigation, classification and coding of infant deaths to inform prevention efforts, Sudden Unexpected Infant Death Investigation (SUIDI) training has been provided to professionals responding to infant fatalities, including coroners, law enforcement, Indiana Department of Child Services, fire/EMS, prosecutors and physicians. More than 50 professionals received this training and accompanying program materials. This training class has now been recognized by the Indiana Law Enforcement Training Academy and is offered on an annual basis.

November

Labor of Love Summit

The fifth annual Labor of Love Summit was held November 17. This daylong conference is aimed at health professionals and members of the public with an interest in reducing infant mortality in Indiana. Held at the Indianapolis Marriott, the 2017 Summit attracted a sold out audience of 1200, breaking all previous attendance records.

The theme for the 2017 Summit was opioid use and its impact on Indiana infant mortality. Presenters included:

- Dr. Kristina Box, ISDH Commissioner, on the most recent infant mortality epidemiology for Indiana;
- Dr. Maria Del Rio Hoover, Co-Chairwoman of the IPQIC Perinatal Substance Use Task Force, on statewide efforts to reduce NAS;
- Dr. Paul Jarris, Chief Medical Officer of the March of Dimes Foundation, on opioid addiction and its impact on infant mortality rates;

- Dr. Michael C. Lu, Professor and Senior Associate Dean at The George Washington University, on adverse childhood experiences;
- Jim McClelland, Indiana's Executive Director for Drug Prevention, Treatment, and Enforcement, on the state's efforts to help victims of opioid addiction through policy and social services;
- Dr. Jennifer Walthall, Secretary of the Indiana Family and Social Services Administration (FSSA), on how cooperation and teamwork can reduce infant mortality and FSSA's efforts on behalf of Indiana babies;
- Dr. Michael Warren, Deputy Commissioner for Population Health for the Tennessee Department of Health, on his state's efforts to cope with opioid use among pregnant women and NAS.

For video clips of the speakers, please visit https://bit.ly/2CWaqMA.

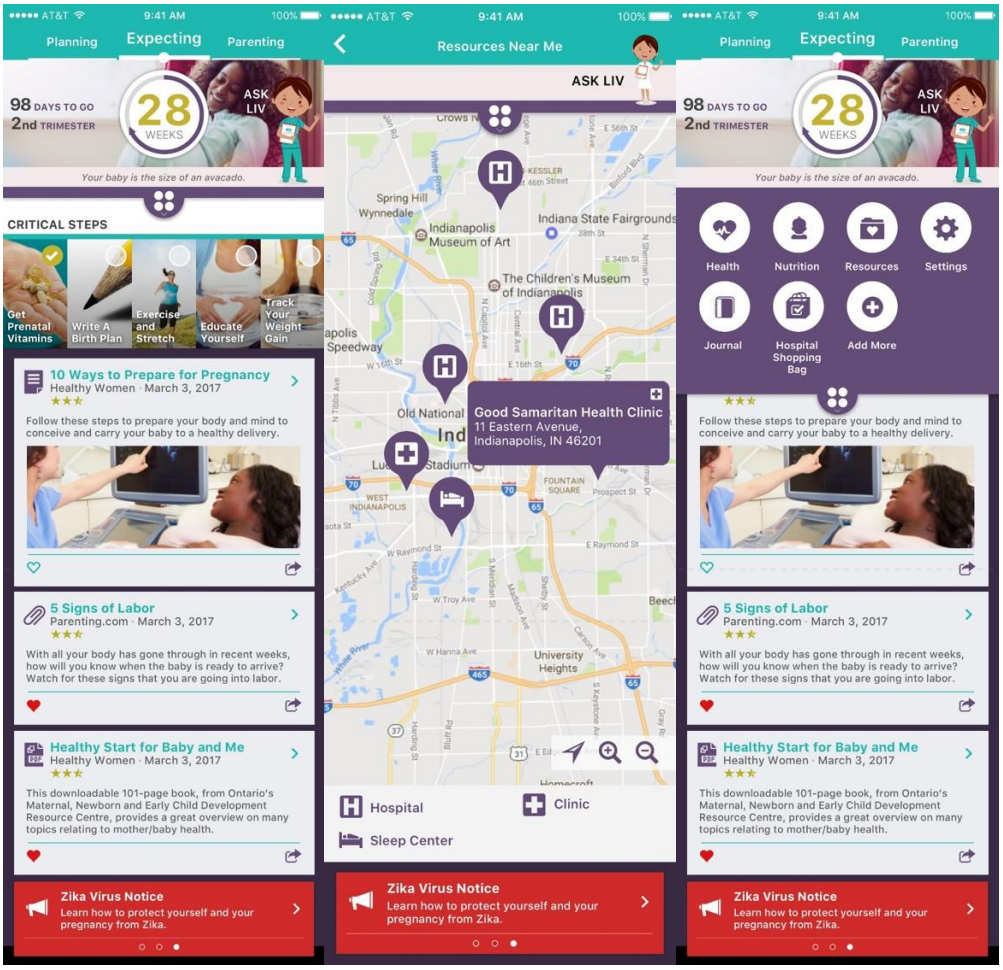
Pregnancy Mobile App

A mobile app focusing specifically on the health of Indiana women was launched on Nov. 17 and unveiled at the Labor of Love Summit. Given the title, Liv, this tool is a powerful interactive app available for free download to any mobile device. Funded by the Indiana legislature and developed in partnership with Indianapolis-based software developer, eImagine, Liv has been nominated for two app development awards.

This innovative app has the ability to reach Indiana women ages 12 to 60, whether on a mobile device or online at www.askliv.com and provides health information in the form of articles, quizzes, checklists, and how-tos relating to her health and well-being. Interactive features include a journal, personal calendar and due date calculator for pregnant moms. 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 a compilation of resources located across Indiana to help connect clients to connections 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 even find a live resource to talk to by connecting to the MOMS Helpline.

Promotion of the app is ongoing. The ISDH 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 connections with partners in the health professions, social services, education, business, faith community, and other areas of Indiana life, ISDH will publicize the app and continually improve and add to the content and features.



December

Database Management System

In December 2017, MCH initiated a data system rebuild project to provide technological solutions for programs supporting improvements in perinatal health and reducing infant mortality statewide. The primary purpose of this project is to provide technological solutions for rapid patient needs assessment and referrals to services, using data to drive programmatic direction and inform policy, as well as providing healthcare systems interoperability for information sharing with intervention of disease.

This data system rebuild will provide solutions for accurate and secure health information exchange (HIE) and database management system (DBMS) efficacy as it relates to the MCH Title V block grant national performance measures as well as specific Indiana initiatives. The MCH data system vendor will work in alignment with the ISDH mission to increase healthcare outcomes by facilitating reliable, data-based information exchange throughout the community allowing for more effective and more collaborative healthcare programs available for Hoosier families.

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 seeing the health outcomes improve for these vulnerable populations. Many of these individuals have been involved in IPQIC since its inception in 2012. Their efforts in 2017 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 **	Kristina	State Department of Health
Alley	Ann	ISDH - Office of Primary Care
Allen	Martha	ISDH - MCH
Ellison	Carl	Indiana Minority Health Coalition
Carter	Marilyn	IN State Medical Association
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
Means	Paula	Tabernacle Presbyterian
Morphew	Phil	IN Primary Health Care Association
Moser	Joe	IN Office of Medicaid Policy and Planning
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
Tabor**	Brian	Indiana Hospital Association
Tostado	Yecenia	Indiana Latino Institute
Walthall	Jennifer	FSSA
Whitman	Julie	Commission on Improving Status of Children
** Co-Chairs		

Quality Improvement		
Allen	Martha	ISDH
Bezy	Eden	ISDH
Engle	Bill	Riley Hospital
Eskew	Ann	IU Health Bloomington
Kiefer	Marissa	IU Health/Riley
Kinderman	Casey	ISDH
Gurganus	Kelsey	ISDH - MCH
Handy **	Annette	IHA
Jansen	Robert	St Vincent
Liechty	Ed	Riley Hospital
Reynolds	Anne	ISDH
Roberts	Emily	IU Health
Swigonski **	Nancy	Children's Health Services Research
** Co-Chairs		

Perinatal Substance Use Task Force		
Benjamin	Tara	IU School of Medicine
Bisbee	Jane	Dept of Child Services
Blackmon	Sirrilla	DMHA
Box	Kristina	Community
Bozell	Dave	FSSA
Brown	Hannah	IN Academy of Family Physicians
Cameron	James	Northern IN Neonatal Associates
Carboneau	Kathryn	
Clancy	Ellen	Staff Nurse, NICU
Commons	Christina	FSSA First Steps
Conard	Teri	Marion Co Health Dept
Culver	Joan	Franciscan Alliance
Danielson	Ted	ISDH
DeKemper	Stan	ICAADA
Del Rio Hoover**	Maria	St. Mary's Neonatal Clinic
Duwve	Joan	ISDH / IU
Ellis**	John	MHS Indiana
Elsworth	Susan	Central Indiana NOFAS
Evers	Mary	ISDH
Farthing	Catherine	Hendricks Regional Hospital
Garrity	Shannon	ISDH
Gee-Weiler	Donetta	Community Health Network
Gentry	Mark	IN ACOG
Goodman-Martin	Dawn	LMHP - Bartholomew County Addictions Team
Griffie	Megan	ISDH
Grimm	Lori	The Women's Hospital
Guilfoy	Veronica	Franciscan Alliance Indy

Perinatal Substance Use Task Force		
Handy	Annette	Indiana Hospital Association
Hokanson	Katie	ISDH
Hulvershorn	Leslie	DMHA
Jamison	Susan	All IN Pediatrics
Kamatkar	Suyog	Community Health Network
Keck	Julie	Anthem
Kelley	Kristen	Attorney General's Office
Kenning	Lauren	IU Health
Killen	Kristina	DCS
Knight	Pamela	DCS
LaHood	Amy	St Vincent
Landwehr	Joseph	IU Health Ball Memorial
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
Moore	Kristen	ISDH
Morrow	Ann	Columbus Regional Hospital
Nichols	Cara	Schneck Medical Center
Orentlicher	David	IU
Russell	Jennifer	Hendricks Regional Hospital
Samanic	Claudine	CDC - ISDH
Savitskas	Lauren	ISDH
Schumacher	Shannon	Volunteers of America
Scott	Emily	Methodist Hospital
Smith	Kelly	Anthem Medicaid Care Management
Sparkman	Laura	Community Hospital

Perinatal Substance Use Task Force		
Tucker-Edmonds	Brownsyne	IU School of Medicine
Walker	Janice	
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
Boon	Win	Parkview Hospital
Box	Kristina	Community Health Network
Boyle	David	IU School of Medicine
Bradburn **	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
Gee-Weiler	Donetta	Community Health Network
Green	Laura	Lutheran Hospital
Hostetter	Meagan	St Mary's Hospital
Keepes	Tricia	Women's Deaconess
Kiefer	Marissa	IU Health/Riley
Martin	Rainey	Community Health Network
McCutchen	Ann	IU Health Lifeline
McIntire	Beth	Riley Hospital
Meyer	Carla	Community Munster
Murray	Amy	St. Joseph Mishawaka
Musgrave	Michelle	St Mary's Hospital
Inman	Lori	Parkview Hospital
Oberhart	Kathleen	St Vincent

System Infrastructure Task Force		
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**	Frank	IU Health
Shuppert	Jessica	Beacon Health Systems
Stringer	Lisa	St Vincent
Trautman	Michael	IU
Wetzel	Marsha	ISDH
Wire	Amy	Community
Wolfe	Heather	Lutheran Children's Hospital
Yousif	Fatma	ISDH
** Co-Chairs		

Finance Task Force		
Allen	Charles	Action Health Center
Berry	Tiffany	Lutheran Health Network
Culver	Joan	Franciscan Alliance
Ellis	John	MHS Indiana
Engle	Bill	Riley Hospital
Feagans	Julia	Medicaid
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**	Kimberly	Anthem Blue Cross & Blue Shield
Sullivan	Ty	MDwise
Watters	Dana	Bloomington Hospital
Wright	Cameual	CareSource
Zerr**	Ann	Medicaid
**Co-Chairs		

Lactation Safe Sleep Task Force		
Allen	Martha	ISDH
Babbitt	Tina	IPN
Cardarelli	Tina	IPN
Casavan	Kara	IU School of Medicine
Chavez	Laura	WIC
Crane	Lisa	Goodwill Indy
Cunningham	Kelly	ISDH
Detweiler	Kathy	ISDH
Fowler	Crystal	WIC
George	Lauren	Child Care
Handy	Annette	IHA
Himes	Barb	NAPPS
Long	Sarah	Milk Bank
Martin	Gretchen	ISDH
Puntillo	Mary	
Schneider	Kim	IU Riley
Scott	Emily	IU Riley
Ward	Nancy	Bureau of Child Care
Wood	Holly	ISDH

Transport Task Force		
Allen	Farrah	St Mary's
Cameron**	James	Lutheran
Cherry	Michelle	LaPorte
Clark	John	
Collings	Krista	Witham
Culler	Jenny	Dupont
Culver	Joan	Franciscan
Durham	Elizabeth	Deaconess
Evers	Mary	ISDH
Hummel	Stacey	Johnson Memorial
Inman	Lori	Parkview
Keepes	Tricia	Deaconess
McCutchen	Ann	LifeLine
McIntire**	Beth	IU Riley
Martin	Rainey	Community
Meyer	Carla	Community Munster
Renschen	Carrie	Franciscan
Roberts	Emily	IU Health
Shuppert	Jessica	SB Memorial
Stringer	Lisa	St Vincent
Trautman	Michael	IU Riley
** Co-Chairs		