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ISSUEBRIEF
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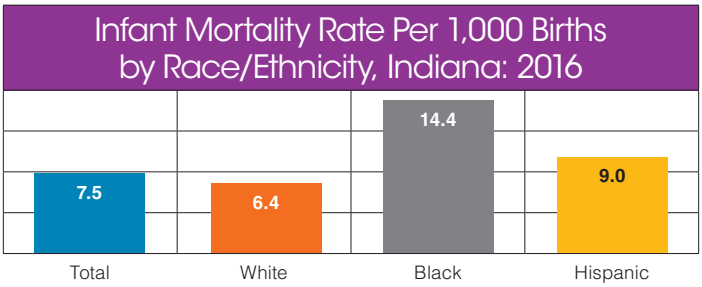
# The Fragile First Year: Infant Mortality in Indiana

**The well-being of mothers and infants determines the health of the next generation.** In the 2018 State of the State address, Governor Eric Holcomb set the goal for Indiana to become the best state in the Midwest for infant mortality rates by 2024, challenging us to work together to improve conditions for infants. The governor labeled our current infant mortality rate as "unacceptable." In 2016, 623 Hoosier children died before their first birthday. Indiana ranks 41st nationally for infant mortality, with our babies being 24% more likely to die before their first birthday than infants nationally. Indiana has lagged behind the national average for the past two decades.

> In 2016, 623 Hoosier babies died before their first birthday.

Indiana faces significant racial disparities in infant mortality. Black Hoosier infants are more than twice as likely to die before their first birthday (14.4 deaths per 1,000 live births) than white infants (6.4 per 1,000). If black infants experienced the same infant mortality rate as white infants, 84 additional black children would have survived in 2016.[1]




*Source: Indiana State Department of Health*

## What contributes to racial disparities?

**Racial disparities in infant mortality may be partially attributed to disparities in the social determinants of health -** the conditions in the places where people live, learn, work and play that impact health risks and outcomes.[2] For mothers and families, this may include disparities in access to health care and early intervention services, availability of resources, and disparities in educational, employment, and economic opportunities.[3] Research suggests that infant mortality rates among black mothers are higher in states that have high levels of racial inequity in other areas, such as education and employment.[4]

**The vulnerability of black infants cannot be explained by disparities in socio-economic status or educational attainment alone.** Even after controlling for these factors, black women still face greater risk of infant mortality.[5] Among black mothers, chronic experiences of racial discrimination are associated with a higher likelihood of poor birth outcomes. Exposure to such chronic stress can be damaging to mothers' health and negatively impact birth outcomes.[6]

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## What causes infant mortality?

**A child's first year of life is the most fragile.** Children are much more likely to die within the first year of life than they are at older ages.[7] In 2016, two-thirds (66.3%) of infant deaths occurred within the first 28 days of a baby's life (neonatal deaths), with the remaining third occurring after the first 28 days but within the first year (post-neonatal deaths). The leading causes of infant mortality in Indiana are birth defects, short gestation and low birthweight, accidents, Sudden Infant Death Syndrome, and maternal complications of pregnancy.

Leading Causes of Infant Mortality: Indiana, 2016

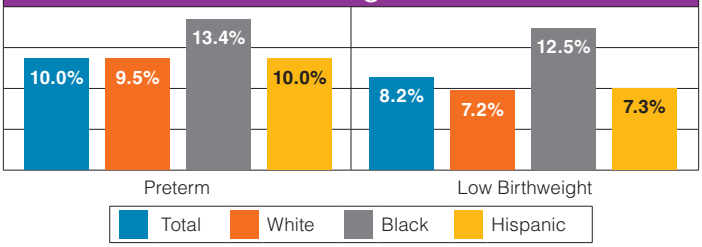
| | Percentage of Infant Deaths | Number of Infant Deaths |
|---|---|---|
| Birth Defects | 24.2% | 151 |
| Short Gestation and Low Birthweight | 21.3% | 133 |
| Accidents (Unintentional Injuries) | 8.8% | 55 |
| Sudden Infant Death Syndrome | 6.4% | 40 |
| Maternal Complication of Pregnancy | 3.5% | 22 |

*Source: Indiana State Department of Health*

Birth defects are the leading cause of death for infants in Indiana. Birth defects are structural or functional abnormalities that occur while a baby is developing and are present at birth.[8] They can affect almost any part or parts of the body and vary from mild to severe. Birth defects can occur during any stage of pregnancy, but most occur in the first 3 months of pregnancy when the baby's organs are forming.[9]

Preterm births and low birthweight are the second leading cause of death for Hoosier infants. Babies born earlier than the 37th week of pregnancy are considered preterm or premature. The earlier a preterm baby is born, the less likely the child is to survive the first year. In 2016, 8,292 Hoosier babies were born prematurely, accounting for 1 in 10 live births. More than half (56.2%) of babies born prematurely are also born with low birthweight. Babies are considered low birthweight when they weigh less than 2,500 grams (5 pounds 8 ounces) at birth. In 2016, 6,814 Hoosier infants were born with low birthweight (8.2% of all live births).

Percentage of Babies Born Preterm or with Low Birthweight, Indiana: 2016




*Source: Indiana State Department of Health*

For infants, accidents and unintentional injuries may include suffocation, drowning, poisoning, exposure to fire or smoke, and transportation accidents. Accidents are the third leading cause of death among infants and the leading cause of death among children older than age one.[10] In 2015, there were 52,999 injury-related emergency department visits among Hoosier children ages 0-5.[11]

Sudden Infant Death Syndrome (SIDS) describes a sudden and unexpected death of a seemingly healthy baby. SIDS deaths often occur during sleep or in the baby's sleep area. Although the cause is often unknown, research suggests SIDS may be associated with defects in the portion of an infant's brain that controls breathing and arousal from sleep.[12]

Maternal pregnancy complications are health problems that occur during pregnancy. Some mothers have health problems that arise during pregnancy, and others may have health problems before they become pregnant that lead to complications.[13]

Risk factors for infant mortality include unintended pregnancies, late prenatal care, smoking or substance abuse during pregnancy, high parental stress, poor nutrition, and unsafe surroundings.

## What are the risk factors for infant mortality?

**Certain behaviors and parental characteristics are associated with higher infant mortality rates.** These risk factors for infant mortality include unintended pregnancies, late prenatal care, smoking or substance abuse during pregnancy, high parental stress, poor nutrition, and unsafe surroundings. Infants' health is impacted by the health and behavior of mothers during pregnancy and early childhood. Given access to care and appropriate resources, mothers can reduce babies' risk of many of the leading causes of infant mortality by taking good care of their own health before and during pregnancy.[14]

**Late or no prenatal care.** Early prenatal care is important for the health of both the baby and mother. Babies born to mothers who do not receive prenatal care face significantly higher mortality rates.[15] In Indiana, nearly two-thirds (64.9%) of infant deaths occur among mothers with fewer than 10 prenatal visits.[16] Currently, 7 in 10 Hoosier mothers receive prenatal care in the first trimester (69.3%), but women of color are less likely to have access to early prenatal care.[17] Barriers to access may include social and cultural barriers, child care and transportation needs, and provider shortages. Geographic barriers may present an additional challenge for families living in rural areas.

**Smoking during pregnancy.** Maternal smoking, both during pregnancy and after a baby is born, is linked to negative birth outcomes. Smoking is associated with a higher risk of miscarriage, low birthweight, premature birth, some birth defects, and Sudden

Infant Death Syndrome (SIDS).[18] Infants whose mothers smoked during pregnancy are an estimated three times more likely to die from SIDS than babies whose mothers did not smoke during pregnancy.[19] In Indiana, 13.5% of expectant mothers smoke while pregnant. White mothers are more likely to smoke during pregnancy (14.6%) than black (10.8%) or Hispanic mothers (3.8%).[20] Nationally, rural counties tend to have higher rates of smoking during pregnancy and higher infant mortality rates.[21]

| Percentage of Mothers who Smoked During Pregnancy: 2016 | | | |
|---|---|---|---|
| **10 Highest Counties** | | **10 Lowest Counties** | |
| Grant | 31.4% | Hamilton | 2.4% |
| Orange | 30.5% | Hendricks | 7.2% |
| Jefferson | 30.4% | LaGrange | 7.9% |
| Crawford | 29.8% | Boone | 8.1% |
| Lawrence | 29.2% | Hancock | 8.2% |
| Scott | 29.2% | Adams | 8.9% |
| Owen | 27.4% | Lake | 9.2% |
| Blackford | 27.1% | Allen | 9.6% |
| Fayette | 26.4% | Dubois | 9.9% |
| Jennings | 25.6% | Marion | 9.9% |

*Source: Indiana State Department of Health*

**Substance abuse.** Drug and alcohol use during pregnancy increases the risk of miscarriage, birth defects, and a range of lifelong physical, behavioral, and intellectual disabilities.[22] Nationally, 8.3% of pregnant women ages 15-44 use alcohol, 4.3% report binge drinking, and 6.3% of pregnant women use illicit drugs.[23]

**Certain health conditions.** Poor overall health and certain health conditions are associated with an increased risk of infant mortality. Poor control of diabetes during pregnancy, infections or obesity can increase a women's risk.[24] Infant mortality rates are higher for overweight and obese mothers, and this risk may increase with higher maternal BMI (body mass index).[25]

**Unsafe surroundings.** Environments that are unsafe for infants can increase the risk of accidents and SIDS. Unsafe sleep practices, such as placing a baby to sleep on the stomach or side, sleeping on a soft surface, sharing a bed or overheating can increase a baby's risk of SIDS.[26]

## How can infant mortality be addressed?

**The infant mortality rate can be an important indicator of a community's overall health.** High infant mortality rates can point to underlying problems such as poor access to prenatal care. It can also reveal inequities, such as in access to health care, safe surroundings or exposure to environmental toxins.[27] Addressing these underlying issues and inequities takes individuals, organizations, communities, leaders and policy makers working together towards a solution.

## What can individuals do?

**Provide support.** Individuals can provide support, encouragement and assistance to expectant parents and new parents. Youth workers and caregivers can support and assist mothers in accessing prenatal care and postnatal care, for example by offering transportation to appointments or providing childcare for other children in the family. Concerned adults can also provide encouragement and assistance to pregnant women seeking to quit smoking, achieve a healthy weight or improve their overall health.

**Make referrals.** Youth workers can refer expectant parents or new parents to available care and services, such as local health clinics, prenatal care, health insurance options and programs for smoking cessation. Concerned adults can also help mothers find culturally-congruent health care and services.

**Create safe environments.** Individuals can do their part to create safe environments for parents and infants. Individuals can avoid smoking around infants and new mothers, since secondhand smoke can be dangerous to their health.[28] Adults should also practice safe sleep practices and provide a safe environment when babysitting or caring for infants. Safe sleep includes placing babies to sleep on their backs, in a crib and away from soft bedding like blankets, pillows and soft toys.[29]

## What can organizations and communities do?

**Support efforts to improve women's overall health.** Mothers' overall health, both before and during pregnancy, can affect birth outcomes. Women benefit when health conditions are detected and treated before pregnancy. Organizations can take a lifespan approach to women's health and support efforts to improve overall health for women of child-bearing age.

**Promote cultural competence.** Organizations can increase diversity and cultural competence in and across the health workforce, ensuring that expectant parents and new parents have access to culturally-congruent health care and services.

| The ABCs of Safe Sleep for Infants | |
|---|---|
| **A**lone | The safest place for babies to sleep is in the room where parents sleep but not in the same bed. |
| **B**ack | Babies should be put to sleep on their backs, which helps them breathe easily by keeping the mouth and nose free of obstructions. |
| **C**rib | Babies should sleep on a firm mattress in a crib without blankets, bumpers or stuffed animals. |

*Source: Cleveland Clinic*

**Expand smoking cessation and addiction programs.** Organizations and communities can expand or develop substance abuse programs that consider the needs of women, especially those who are pregnant.

**Ensure safe placement.** Many very low birthweight infants are not born in hospitals with the highest level of neonatal intensive-care units, which have been shown to significantly reduce mortality.[30] Organizations and communities can ensure high-risk babies are cared for at hospitals that can meet their needs. This may include educating parents about the services available at their hospital of choice.

**Ensure early identification.** Organizations and communities can work towards ensuring early identification and treatment of developmental delays, disabilities and other health conditions among infants.

**Expand home visiting programs.** Home visiting programs can give pregnant women and families necessary resources and skills to care for themselves and their infants. Home visits can include supporting preventative health and prenatal practices, assisting mothers with breastfeeding, and helping parents understand child development.

## What can policymakers/leaders do?

**Expand access to care.** Infant mortality risk can be reduced by increasing women's access to quality health care, including pre-conception counseling, pre-pregnancy care, prenatal care and care between pregnancies.[31]

**Expand newborn screening.** Screenings for newborns can be expanded to detect conditions that are not noticeable at the time of birth but can cause serious disability or death if not treated quickly.[32]

**Provide training.** Reproductive health care workers, midwives, doulas and medical professionals working with expectant mothers should receive training in smoking cessation and addiction treatment.

**Focus on equity.** Leaders and policy makers should commit to a focus on equity and addressing racial disparities in infant mortality and the social determinants of health for mothers and families.

## Resources

**Liv** is a pregnancy app created by the Indiana State Department of Health. This free app aims to improve infant and maternal health in Indiana and features information designed to help women improve their health whether they are planning to become pregnant, already are pregnant, or are parents. https://www.askliv.com/

**MCH MOMS Helpline** aims to improve women's access to early and regular prenatal care by connecting them with a network of prenatal and child health care services within their local communities, state agencies, and other organizations around Indiana. Specialists provide information and referrals, education, and advocate on behalf of moms and pregnant women. http://www.in.gov/isdh/21047.htm

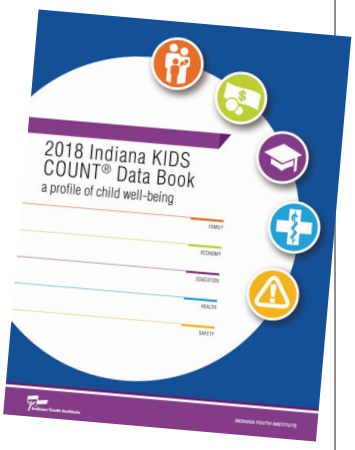
**Labor of Love** is a product of the Indiana State Department of Health in cooperation with other organizations. Labor of Love hosts an annual infant mortality summit and compiles online resources related to infant mortality. http://www.in.gov/laboroflove/index.htm

**Indiana Minority Health Coalition** aims to eliminate health disparities through research, education, advocacy, and access to health care services for minority populations. http://www.imhc.org/

## IYI Resources

**The latest data is at your fingertips with IYI's Data Center.** Search statistics and gather data to improve your program planning and grant writing or, request customized data. Go to www.iyi.org/data.

Get the most comprehensive overview of children's well-being in Indiana. Download **Indiana Kids Count Data Book** at www.iyi.org/databook.




Want in-depth information on youth? Check out the free resources at **IYI's Virginia Beall Ball Library.** We will mail you the library materials and include a postage paid return envelope. Go to www.iyi.org/library for details.

**Text the word "grad"** plus your or your student's high school graduation year to 69979 to receive free, grade-specific text reminders about test and application deadlines and other great tips for college and career readiness.

**Looking for training on youth issues?** IYI provides regional trainings and free webinars on youth development and nonprofit management. Go to https://www.iyi.org/professional-development/trainings for details.

Need **one-on-one assistance** with planning, evaluating, or expanding your organization? Benefit from IYI's **Consulting Services** and receive professional help at affordable hourly rates – discounted far below market value. Go to www.iyi.org/consulting-services for details.

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The Indiana Youth Institute
Serving those who impact youth

603 East Washington Street, Suite 800
Indianapolis, IN 46204

317-396-2700 | 800-343-7060

www.iyi.org