INDIANA UNIVERSITY
PUBLIC POLICY INSTITUTE
Center for Research on Inclusion & Social Policy

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MATERNAL MORTALITY IN INDIANA
Contributing factors, progress, and policy recommendations

BACKGROUND[A]

Maternal mortality—defined as the death of a person either during their pregnancy or up to 12 months postpartum—is a major indicator of a country's or state's overall health and well-being. To meet this definition, the death must be pregnancy-related or due to a mother's preexisting condition exasperated by or during pregnancy.[1] Pregnancy-associated deaths occur during or within one year of a pregnancy, regardless of the cause. Pregnancy-related deaths, however, occur during or 12 months following the end of pregnancy due to a pregnancy-related complication, a chain of events initiated by the pregnancy, or the aggravation of an unrelated condition by the physiological effects of pregnancy.

In 2023, across the United States, there were an estimated 18.6 pregnancy-related deaths per 100,000 live births, compared to 22 pregnancy-related deaths for every 100,000 live births in 2022.[2] The rate of pregnancy-related deaths initially increased in the United States from 23.8 in 2020 to 32.9 deaths per 100,000 live births in 2021.[3] Although pregnancy-related deaths have decreased, the United States continues to have the highest maternal mortality rate (MMR) among the world's wealthiest countries—despite over 80% of those deaths likely being preventable.

KEY FINDINGS

- From 2020 to 2021, Indiana's maternal mortality rate decreased from 22.9 to 17.5 deaths per 100,000 live births.
- On a scale of 1–100, 1 being the best and 100 being the worst, Indiana has a score of 80 on the Maternal Vulnerability Index due to a lack of access to maternal, maternal mental health, and substance use disorder healthcare.
- Since 2022, Indiana has implemented key services and programs to increase access to maternal care.
- In 2023, 71% of pregnancy-associated deaths and 77% of pregnancy-related deaths in Indiana were considered preventable.
- Of the 1,713 maternal healthcare providers in Indiana, 84% were identified as white.

MATERNAL MORTALITY IN INDIANA

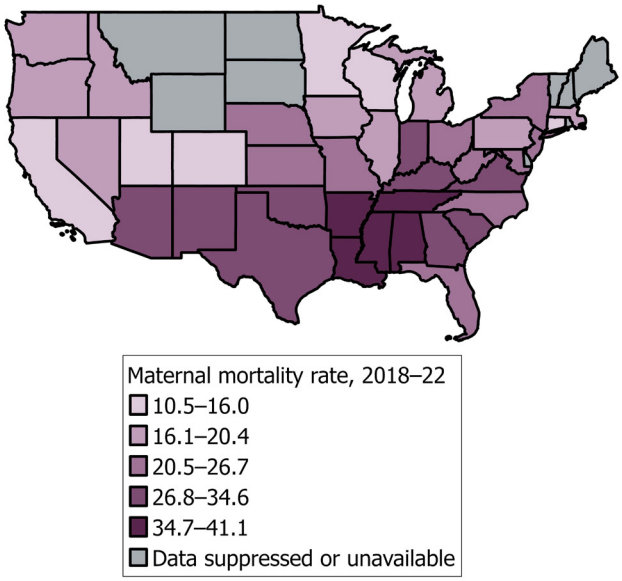
In Indiana, the rate of pregnancy-related deaths fell from 22.9 in 2020 to 17.5 per 100,000 live births in 2021.[4] This drop in MMR's lowered Indiana's MMR among all other reporting states within that time period. When looking at the five-year MMR averages, however, the state remained in the fourth quintile for maternal mortality (Figure 1).[5]

Maternal mortality review committees (MMRCs) convene at the state or local level to examine pregnancy-associated deaths and deem them either pregnancy-associated or pregnancy-related upon review.[6] MMRCs include representatives from various disciplines and community

[A] The annual or consistent collection of maternal mortality rate data is difficult due to various reasons such as underreporting, inconsistent definitions of maternal mortality, and a lack of resources, among others. Further, per Indiana Code 16-50-1-6, healthcare providers and facilities are required to report the death of a patient that either occurred during pregnancy or one year after the pregnancy, meaning data will be backdated by one year. As a result, the data included in this report may reflect conditions from previous years rather than present conditions related to maternal mortality.

organizations. They study these deaths to understand the possible causes or contributing factors. The committees evaluate how many pregnancy-associated and pregnancy-related deaths are likely preventable. In its 2023 report, the Indiana MMRC determined that 71% of pregnancy-associated deaths and 77% of pregnancy-related deaths could have been prevented.

FIGURE 1. U.S. maternal mortality rates, from 2018–22 per 100,000 live births (CDC)[5,7]



Disparities in Indiana maternal mortality rates

In 2021, Black Hoosier women had the highest MMR in the state, at 156 deaths per 100,000 live births, however, this rate was down from the 2020 rate of 208 per 100,000.[4,8] For white women, the trend also showed a decrease to 91 deaths per 100,000 live births from 108 per 100,000 live births.

However, Hispanic Hoosier women and women who did not fit into the Black, white, or Hispanic categories—Asian, Pacific Islander, American Indian or Alaska Native, multiple races, or identity unknown—defined as other races, experienced increases in maternal mortality. Hispanic women saw an increase in the MMR from 71 in 2020 to 79 deaths per 100,000 live births in 2021. The other races group's MMR ratios increased from 101 deaths to 136 deaths per 100,000 births between 2020 and 2021.[4,8] While these two groups may not have the highest MMR overall, potential causes of these increases should be explored.

CONTRIBUTING FACTORS TO HIGH MATERNAL MORTALITY RATES

Indiana's high ranking on the Maternal Vulnerability Index—a tool developed to evaluate why and how women are more susceptible to poor maternal health outcomes—is a matter of urgent concern.[9] This index spans six themes: reproductive healthcare access, physical health, mental health and substance use, general healthcare, socioeconomic determinants, and physical environment. Each state is assigned an overall score between 1–100—a higher score indicating increased levels of maternal vulnerability. Indiana received an overall score of 80, citing lack of access to reproductive care as a key factor in poor health outcomes among pregnant Hoosier women, along with high rates of mental health and substance use conditions.

LACK OF ACCESS TO MATERNAL HEALTH SERVICES

Reproductive healthcare includes access to services such as contraception, family planning resources, fertility and infertility services, and postpartum care services. Access to adequate care at all stages of pregnancy is critical to reducing exposure to poor prenatal care outcomes. However, in recent years, the number of obstetrician-gynecologist (OBGYN) offices and hospitals providing prenatal care in rural Indiana has decreased. A study assessing the impact of birthing center closures nationwide found that 52% of hospitals in rural Indiana did not provide labor and delivery services.[10]

Furthermore, as of 2024, 52 rural Indiana hospitals had closed, 13 were operating but with limited services, and five were at immediate risk of closure. To be considered at immediate risk of closure, hospitals must lose income for multiple years and have low financial reserves to cover the cost of services.[10,11] Because of these recent closures, rural Hoosier women must travel far distances to receive prenatal care, putting them at further risk for adverse health

outcomes such as anxiety and higher rates of postpartum depression.[12,13]

This lack of maternal healthcare services is driving Indiana's high MMR. Hospital closures and a lack of adequate qualified healthcare physicians limit Indiana residents' access to prenatal care. A 2023 March of Dimes report found a 13% decrease in the number of birthing hospitals in Indiana from 2019 to 2020.[14] The report further stated that 23 Indiana counties were considered maternal healthcare deserts.

LACK OF REPRESENTATION IN THE WORKFORCE

Indiana is grappling with a healthcare crisis compounded by workplace and hospital shortages. Currently, 1,713 maternal care providers practice across Indiana, including physicians and advanced practice registered nurses—such as nurse practitioners and certified nurse-midwives. Of the 1,713 maternal healthcare providers, 84% were identified as white, while only 6% were Black or African American, and 10% as another race not specified. Additionally, only 4% of the maternity care workforce were Hispanic or Latino. This disparity can lead to implicit bias and negatively impact the quality of care that minority women receive at different stages of pregnancy, leading to poorer maternal health outcomes.[15]

For instance, a 2024 study that examined the perspectives of maternal healthcare providers on maternal healthcare challenges in Indiana found that Black and Latine women were given shorter appointment times. They stated they felt their physicians ignored and dismissed them.[16] These Hoosier women often expressed frustration with the lack of representation in the healthcare workforce.

These results underscore the critical need for a more representative healthcare workforce and culturally responsive healthcare practices. Facilitating a more culturally and racially representative maternal healthcare workforce is a crucial step in enhancing the overall health and well-being of pregnant Hoosier women and their children.

MATERNAL MENTAL HEALTHCARE AND SUBSTANCE USE DISORDERS

Maternal mental health (MMH) conditions are common, and research suggests that they impact 1 in 5 mothers.[17] Women with untreated MMH conditions during pregnancy are more likely to have poor prenatal care, use substances, and experience physical, emotional, or sexual abuse. These experiences are leading contributors to maternal death in the United States.[18]

The 2023 Indiana MMRC report indicates that of the 80 pregnancy-associated deaths, 28% were determined to have substance overdose (intentional or accidental) as a leading cause of death. Specific medical conditions or complications not directly related to substance use disorder (SUD) most often caused pregnancy-associated deaths. The report also states that SUD contributed to or exacerbated other conditions that may have led to the death of these pregnant individuals.[4]

From 2018–21, pregnancy-associated deaths due to overdose occurred primarily in white, non-Hispanic women (86%), followed by Black, non-Hispanic women at 11%. Hispanic women of any race had the lowest rate of pregnancy-associated deaths due to overdose at 3%.[4]

PROGRESS MADE IN INDIANA

The Indiana General Assembly, public health professionals, and community members have made great strides toward improving access to care for expectant and new mothers despite ongoing challenges. These examples of recent program developments and expansions do not include all the work being done across the state but highlight the steps that have contributed to the health of mothers and their babies.

ADDRESSING MMH AND SUD NEEDS

The state has made efforts to address and provide access to care for MMH and SUD conditions. Although not all implemented programming and services are currently available or accessible in all 92 counties, these are key steps in positively affecting MMR in Indiana.

Support for SUD treatment

In July 2021, the Indiana Family and Social Services Administration (FSSA) launched the Indiana Pregnancy Promise Program (IP3), funded by a grant from the U.S. Centers for Medicare and Medicaid Services.[19] FSSA created IP3 to address opioid use disorders in expectant and new mothers by removing barriers and increasing access to maternal and infant care. IP3's 2024 annual report noted the program had served over 900 mothers across 90 of Indiana's 92 counties since its inception through June 2024. After receiving a second grant in 2024, IP3 is expanding its program to cover all substance use disorders and partnering with other organizations in the state to help uninsured and underinsured mothers access this additional support.[20,21]

Support in this area has not just targeted expectant and new mothers but providers as well. In 2019, the Indiana Department of Health joined the Alliance for Innovation on Maternal Health (AIM)—a collaboration led by the American College of Obstetricians and Gynecologists and numerous other professional healthcare organizations. AIM provides healthcare centers and providers with evidenced-based patient safety bundles focusing on the leading preventable causes of maternal morbidity and mortality, including substance use disorders and perinatal mental health conditions. As of 2022, 82 of Indiana's 84 delivery facilities were voluntarily enrolled in AIM.[22]

Co-locating maternal and behavioral healthcare

Co-locating maternal and behavioral healthcare—which includes mental health and substance use treatment—can increase the likelihood of pregnant individuals seeking treatment for substance use disorders or other mental health problems.[23] Co-locating different kinds of healthcare brings together a variety of healthcare specialists in one location, making it easier for individuals to find multiple kinds of care without having to go to multiple appointments or locations. A local nonprofit, HealthNet, has created a mobile health center serving residents in Monroe and Morgan County.[24] Morgan County is considered a maternal healthcare desert, and Monroe County has low access to hospitals with birth care.[25] The mobile health center offers both primary care and mental health services.

IP3 has also used its program to co-locate different kinds of care for expectant and new mothers. IP3 centers its programming around the idea of providing enhanced case management alongside care coordination services, enabling it to facilitate any types of care a pregnant individual might need.

Part of IP3's care coordination services include virtual training sessions for healthcare workers to help them better understand substance use disorders during pregnancy and to reduce associated stigma. The Indiana University's Project ECHO (Extension for Community Healthcare Outcomes) program provides these training sessions. Of mothers who were connected to treatment and recovery services for opioid use disorders, IP3 reports that 98% of them maintained their recovery through 12 months postpartum in the third year of the program. Also, in the third year of the program, 99% of pregnant individuals IP3 served were screened for mental and/or behavioral conditions. If left untreated, these conditions are key contributors to substance use disorders.[20]

Increasing access to perinatal psychiatry support

In 2023, the Indiana Consultations for Healthcare Providers in Addiction, Mental Health, and Perinatal Psychiatry Program launched a free statewide consultation service where healthcare providers can call and be connected to a psychiatrist for further referrals or information. This service allows healthcare providers who work with expectant mothers who may have mental health or substance use concerns to receive information regarding best practices in perinatal care.[26]

EXPANSION OF ACCESS

Continuous efforts to expand access to services and supports have played a key role in improving health outcomes for pregnant and postpartum mothers. Increased access to comprehensive services ensures mothers can receive the care necessary to improve their long-term well-being and lower the risk of poor maternal health outcomes across the state.

Medicaid coverage

As of April 2022, Indiana elected to expand Medicaid coverage for pregnant and postpartum mothers for up to 12 months after delivery. In effect through March 31, 2027, this

expansion is critical to ensuring new mothers have access to care when most pregnancy-related deaths occur.[27]

In addition to expanding how long women are insured under Medicaid, more services are now eligible for coverage. As of December 2022, Medicaid covers certain prenatal screenings for all pregnant women.[26] These screenings assess the potential for the presence of genes associated with fetal diseases and provide expectant mothers with critical information about their and their babies' health.[28]

Expanding community-based support

In addition to the other offerings, the state also reauthorized the Maternal Infant and Early Child Home Visiting (MIECHV) Program in 2023 for five years of expanded funding.[29]

MIECHV provides services to expectant mothers or young families through two programs: the Nurse Family Partnership (NFP) or the Healthy Families Indiana program. Healthy Families Indiana is a home-based visiting program which ultimately seeks to increase positive parent-child relationships, reduce child abuse, and improve childhood behavioral and health outcomes. Of the two programs, NFP focuses more on maternal health during pregnancy and seeks to improve outcomes for those living in areas identified as at risk for poor maternal and child health outcomes.

NFP pairs first-time moms with a specially trained nurse who conducts home visits early in pregnancy and through the child's second birthday. To be eligible, individuals must be pregnant with their first child, eligible for Medicaid, and live in a county with services. Currently, the MIECHV programs are not available statewide and, as of April 2024, could only be found in 24 of the 92 counties.

Signed into law in 2019, the My Healthy Baby Initiative connects pregnant women to family support providers in their communities who offer free guidance and support during pregnancy and for at least the first 12 months after birth. This service is available in all 92 counties.

ADDITIONAL CONSIDERATIONS

Indiana has made strides in expanding access to healthcare services across the state, and the MMR has generally decreased for Hoosier women. Further work, however, must be done to cement the progress that has been made and ensure that all women within Indiana have access to the care they need.

ADDRESSING MATERNAL HEALTHCARE DESERTS

While state-backed programs supporting expectant and new mothers have expanded significantly across the state, further work can be done to decrease the number of Hoosier women living in maternal healthcare deserts. Various strategies could address the problem, and the state could strengthen some it already employs.

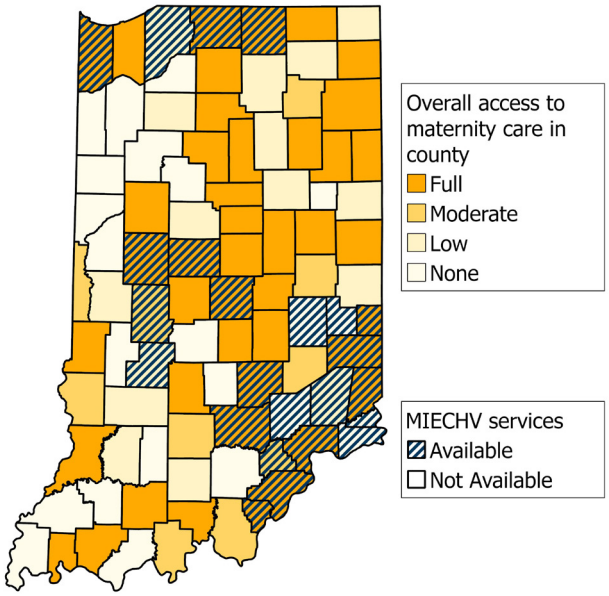
Continue to explore root causes

First, the state should continue to focus on understanding the root causes of rural hospital and clinic closures, especially those that house birthing centers or provide OBGYN services. By understanding why rural hospitals and clinics close, specific policies can be created to address the underlying issues.

Support alternative service delivery methods

Additionally, the state can continue to support the increase of alternative maternal healthcare delivery strategies, such as mobile units, telehealth, or community-based home visiting programs—such as MIECHV. While these programs may already exist in some capacity, making them available to Hoosiers in all 92 counties is imperative for decreasing the impacts of hospital and clinic closures and ensuring equitable access to maternal care for all expectant mothers (Figure 2).

FIGURE 2. Access to maternal care (2020) and services by county (2024)[25,30,31]



Diversify the maternal healthcare workforce

Another way to address maternal healthcare deserts is to focus on workforce challenges—such as the shortage of obstetricians—in these areas. Diversifying the types of maternal healthcare roles Medicare covers and funds—such as midwives and doulas—can increase access to critical care in these areas.[32] Indiana has already passed legislation that allows Medicaid to cover doula services, but state funding must be allocated for Medicaid reimbursement.[33,34]

SUPPORTING REPRESENTATION IN HEALTHCARE ENVIRONMENTS

A more representative healthcare environment can help decrease the likelihood of pregnant individuals facing discrimination or judgment when seeking care—ultimately benefiting maternal health outcomes.

A 2024 Commonwealth Fund survey of 3,000 U.S. healthcare workers from various care settings and demographics showed that 47% of healthcare workers have witnessed discrimination against patients, and 52% say that discrimination against patients is a crisis or a major problem.[35] Having representative healthcare workers who identify with and relate to their patients and understand their needs can help the overall healthcare environment. The study states, "The higher agreement among Black and Latino healthcare workers indicates that they have unique observations on quality of care when it comes to the racial or ethnic communities to which they belong. These unique observations may be just one reason to value a diverse workforce."[34]

Providing healthcare workers with cultural competency and implicit bias training can contribute to a more well-rounded healthcare workforce and environment. A more well-rounded healthcare environment could also benefit maternal health outcomes, both by reducing stigma when serving pregnant individuals with SUD and by spotting and addressing possible discrimination against pregnant individuals. The Commonwealth Fund's survey of healthcare workers about discrimination says, "Healthcare workers require training to ensure they can recognize instances of discrimination and bias within healthcare interactions and understand how discrimination can lead to poor health outcomes."[34] IP3 also recognizes this need and provides training for healthcare workers and case managers within its program through Indiana University's Project ECHO. Implementing similar training programs within the healthcare environment could create a more well-rounded group of healthcare workers, ready to take on any challenges presented by caring for pregnant individuals.

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The Center for Research on Inclusion and Social Policy (CRISP) addresses complex social issues at the intersection of equity and policy through community-engaged research. CRISP analyzes and disseminates community-relevant research about social disparities and policy issues to help leaders and residents around Indiana make informed decisions. CRISP is housed within the IU Public Policy Institute, which also supports the Center for Health and Justice Research (CHJR) and the Manufacturing Policy Initiative (MPI).

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