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## **Why are Tennessee moms and babies dying at such a high rate?**

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The United States is among the most advanced nations in the world, and its promise of freedom and opportunity is the country's most attractive attribute. However, hiding behind America's reputation of advancement lie several dire statistics, two of which are this country's abnormally high infant and maternal mortality rates. Tennessee is among the worst performing states for high rates of infant and maternal deaths, and poor health care access is likely to blame.

### **Key Takeaways**

- The United States is an outlier among developed nations with an infant mortality rate of 5.8 deaths out of 1,000 live births.
- A pregnant woman in the United States is three times as likely to die in the maternal period as a pregnant woman in Canada.
- Tennessee has some of the worst rates of infant and maternal mortality in the United States and is ranked [33<sup>rd</sup> in maternal mortality](#) and [38<sup>th</sup> in infant mortality](#).
- The opioid epidemic, lack of Medicaid expansion and poor health behaviors and pre-conception health contribute to the rising rates of infant and maternal mortality.
- Improving health care access would help address the contributing factors to infant and maternal mortality rates.

## **United States Infant Mortality Rate**

A community's infant mortality rate is the measure of deaths of children under the age of one year old and is used as an [indicator](#) of the health and quality of life of its inhabitants. While low infant mortality rates reveal thriving communities, high infant mortality rates expose struggling communities. Although one would expect America's infant mortality rate to be relatively low, it is actually closer to that of developing countries, like Bosnia, Cuba, and Chile, and significantly higher than those of comparable nations, like Japan, the United Kingdom, and Australia. As of 2014, America's infant mortality rate was [5.8 deaths out of 1,000 live births](#) while the comparable country average was 3.8 deaths out of 1,000 live births. Why is America's infant mortality rate significantly higher than the rate in comparable countries?

The primary causes of death for American infants in 2014 were [congenital malformations, low birthweight, maternal complications, Sudden Infant Death Syndrome \(SIDS\), and unintentional injuries](#). Many of these causes of death stem from premature birth, which is the [largest root cause](#) of infant mortality nationwide and in [Tennessee](#). Premature births are [most common](#) among women who smoke, use drugs, drink alcohol, or are chronically stressed during pregnancy. In addition, lack of access to [quality prenatal care](#) is more likely to result in premature birth, which is consistent with the observation of a [higher rate](#) of preterm deliveries of women living in poverty or in rural areas. External factors, such as injuries and SIDS, also contribute to the infant mortality rate and together accounted for approximately [1 in 6 infant deaths](#) in 2016.

## **How is Europe Different?**

One glaring difference is that most European countries have some variation of [universal health coverage](#), meaning legislation mandates universal access to healthcare services regardless of income and is usually publicly financed through taxation. While it is contested whether having universal access to healthcare services achieves adequate coverage or quality care for all and whether the system is sustainable, it is undeniable that increasing health care access is an important tool to improve health outcomes. The United States attempted to increase the number of Americans having access to health care by enacting the Affordable Care Act, in addition to public coverage options available to some people under Medicare and Medicaid. However, health care coverage in this country is still not universal.

The gap between America's infant mortality rate and its comparable countries' infant mortality rates [widens](#) after an infant reaches one month of age; therefore, it's important that America finds a way to protect infant health in the months after birth. Europe has done this by implementing multiple free [programs](#) that consist of nurses visiting new parents to offer checkups and give advice on proper newborn sleeping practices and safe newborn environments. A few similar programs exist in the United States, but not on as large of a scale.

Europe's generous maternity and paternity leave policies also show proven [positive effects](#) on infant health, as family leave lowers an infant's chances of becoming sick or hospitalized. Currently, America is the only developed country without a system of paid maternity leave. While similar countries like the United Kingdom offer up to [thirty-nine weeks of paid leave](#), America only guarantees unpaid leave for twelve weeks. The believed [benefits](#) of paid maternity

leave include reducing a mother's stress during pregnancy and decreasing her chances of giving birth prematurely. It is also believed to increase the chances of a mother seeking medical care during her third trimester, paying close attention to her child once he or she is born, and breastfeeding. It's likely that if America instituted a policy of paid leave, mothers would feel less pressure to return to work early and, as a result, the health of their babies would improve.

### **Infant Mortality Rates in Tennessee**

Infant mortality rates are of particular concern in Tennessee, with Tennessee's infant mortality rate reaching 7.4 deaths out of 1,000 live births in 2016, a number considerably [higher](#) than the national average. This is partly due to Tennessee's abnormally high rate of premature births ([11.3%](#) in 2016), which accounted for approximately [26%](#) of the state's reviewed infant deaths. Tennessee's elevated numbers of infants with a low birth weight combine with prematurity to earn the state the 8th highest infant mortality rate in the United States. This reveals a deeper problem rooted in the health and quality of life of our state's mothers -- the [heightened](#) rates of mothers who smoke, have poor health, and struggle with substance abuse can help explain the high rates of premature and low birth weight babies in Tennessee.

Smoking while pregnant has proven to be a common practice in Tennessee; while the national average percentage of women who smoke while pregnant is approximately [8%](#), Tennessee's average is a hefty [14.9%](#), with several counties' rates reaching higher than [27.1%](#). This is a huge issue, as approximately [29%](#) of Tennessee infant deaths in 2015 were linked to mothers who smoked while pregnant. [Intrauterine smoke exposure](#) can deprive a developing fetus of food and oxygen, lead to miscarriage, increase chances of a premature birth and low birth weight, lead to birth defects, and put an infant at greater risk of SIDS.

Tennessee has some of the worst rates of infant and maternal mortality in the United States, ranking [33<sup>rd</sup> in maternal mortality](#) and [38<sup>th</sup> in infant mortality](#). In addition to smoking, bad diet and obesity are prevalent throughout the state, with approximately [26%](#) of women dealing with obesity before getting pregnant. Obese mothers are [more likely](#) to give birth prematurely, have a stillbirth, and have a baby with [heart issues](#). Not only can pre-pregnancy obesity harm an infant, but it can also impact a mother's health by putting her at a [greater risk](#) of sleep apnea, preeclampsia, and gestational diabetes. Tennessee also has a higher rate of women struggling with [high blood pressure and diabetes](#), which are both associated with premature birth and low birth weight. To combat these issues, it's important for pregnant women and women who plan on becoming pregnant to have regular access to the healthcare they need even before they become pregnant for their sake and their children's.

TennCare and CoverKids, Tennessee's Medicaid and CHIP programs respectively, provide vital coverage to low-income pregnant women and children. Over half of births in Tennessee are covered by TennCare and CoverKids. Tennessee has reached historic levels of insured children at 96% of kids covered. However, there are still [53,000 uninsured children](#) in Tennessee. Almost [35,000 uninsured children](#) qualify for TennCare or CoverKids but are not enrolled. The Tennessee Justice Center created the Insure Our Kids campaign to raise awareness about TennCare and CoverKids and enroll every eligible but uninsured child in the state.

Learn more about the Insure Our Kids campaign at <https://insureourkids.org/>.

## **Opioid Crisis in Tennessee**

A larger predicament, Tennessee's opioid crisis, looms in the background of the state's high infant mortality rate. Infants throughout the state are feeling the effects of the opioid epidemic through neonatal abstinence syndrome (NAS), which is experienced by babies born to mothers abusing drugs --mostly opioids-- while pregnant. NAS is defined by the period following birth when an infant goes through withdrawal. During this time, infants experience [symptoms](#) including fever, tremors, breathing issues, slow weight gain, trouble sleeping, and more. NAS also puts an infant at a [higher risk](#) of needing to stay in the newborn intensive care unit (NICU), contracting jaundice, and having a low birthweight. NAS [follows](#) survivors throughout their childhood, with many of them experiencing developmental delays and attention problems later in life, and [some research](#) supports that children born with NAS are more likely to end up in the foster care system.

One of the biggest risks for infants with addicted mothers is present before they are born. If a mother suddenly quits taking opioids altogether, her baby is at a [high risk](#) of severe consequences that include death. Many babies born with NAS are born prematurely, which opens them up to the many risks associated with a preterm birth in conjunction with the symptoms of NAS. Treatment for NAS follows a procedure of slowly weaning the infant off the drug with gradually smaller doses of morphine; this usually results in a long hospital stay averaging 17 days, and the [cost](#) to treat a single infant is upwards of sixty thousand dollars.

NAS is [especially rampant](#) in East Tennessee, where some counties are experiencing NAS rates that are eight times higher than the national average -- the national average is approximately 6 cases of NAS per 1,000 live births, and Sullivan County [reported](#) 50.5 cases per 1,000 live births. To fight the issue, affected counties are trying to limit access to drugs. Eight of East Tennessee's district attorneys are [suing](#) opioid manufacturers for misleading doctors and civilians about the dangers of prescribing and using the drugs. The decision to sue the manufacturers was based on the belief that drug companies are promoting opioids and failing to follow ethical procedures preventing their abuse, which was clear in their [failure](#) to report an alarming order of 500 million addictive painkiller pills in Florida, which ended up being sold illegally. As of May 2018, the lawsuit is [moving forward](#).

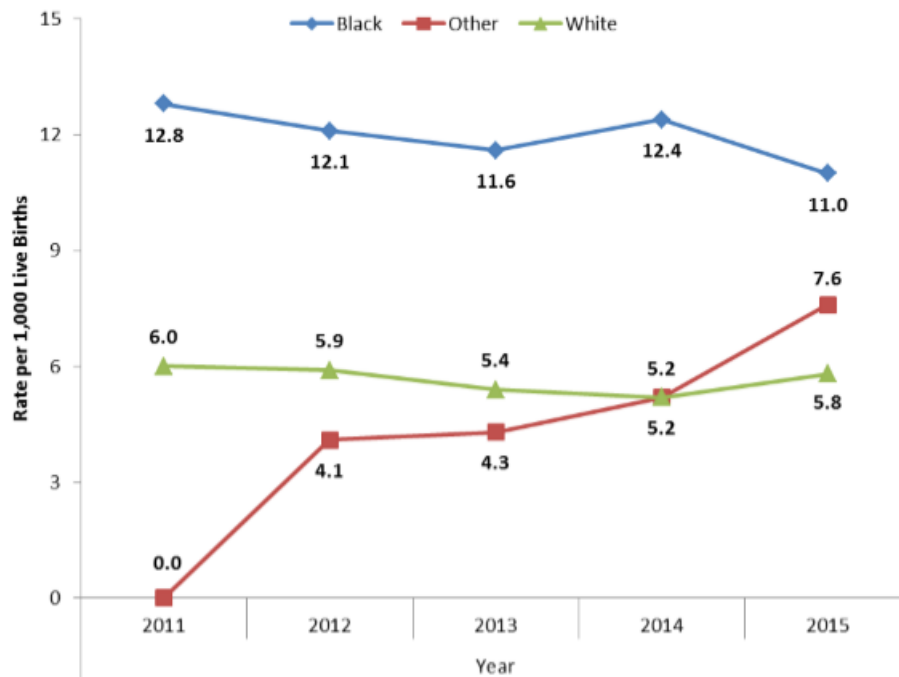
There have been statewide efforts to prevent citizens from abusing the drugs and help those who are abusing them -- Governor Bill Haslam recently unveiled the TN Together [plan](#) in January 2018 that includes various modes of support for opioid abusers, one of which is a greater focus on prevention education for women of a childbearing age in the state's health education system. The plan also aims to improve and expand drug treatment services.

## Disparities

Disparities between counties and neighborhoods in preterm birth rates and infant mortality rates reveal the areas where more effort is needed to improve the health of the community. The state's [highest infant mortality rate](#) can be found in Madison County, which had 15.2 deaths per 1,000 live births in 2015 (compared to the state's rate of 7 deaths per 1,000 live births). Davidson County also has one of the highest infant mortality rates in the state, coming in at 7.3 deaths per 1,000 live births. Disparities in preterm birth and low birth weight rates exist within Davidson County down to the level of [neighborhoods](#) that are within just a few miles of each other. A prime example is in Sylvan Park, North Nashville, and The Nations neighborhoods-- women living in North Nashville and The Nations are [twice as likely](#) to have a preterm birth or give birth to an infant with a low birth weight than women in Sylvan Park, a neighborhood located just across the street. This is the case with multiple Nashville communities, as some neighborhoods have preterm birth rates of 1 in 7 while others have rates of 1 in 25. Since different neighborhoods have different racial demographics, it should come as no surprise that racial disparities are also evident in Tennessee.

Nationally, black mothers are [more than twice as likely](#) to experience the death of an infant as white mothers. In Tennessee, the disparity is roughly the same. Black infants have a higher mortality rate than whites or infants of other races; black infants had almost twice the mortality rate as white infants in 2015.

Figure 4. Infant Mortality Rate by Race  
Tennessee, 2011-2015



Source: 2017 Child Fatality Annual Report, available at [https://www.tn.gov/content/dam/tn/health/documents/2017\\_CFR\\_Annual\\_Report\\_Final.pdf](https://www.tn.gov/content/dam/tn/health/documents/2017_CFR_Annual_Report_Final.pdf)

Black infants are also [1.9 times more likely](#) to die in a sleep-related incident than white infants. Home-visiting programs are growing across the state to address risk factors and teach safe practices to at-risk parents. Faith communities in the Nashville area are helping the Department of Health in reaching at-risk communities by providing helpful information regarding safe infant sleeping practices in weekly bulletins. There are also broader initiatives to address health disparities at-large that will hopefully in turn reduce the higher rates of infant mortality in communities of color.

## **How is Tennessee Working to Decrease Infant Mortality Rates?**

Programs and initiatives have been instituted throughout the state to reduce infant mortality, and many of them come to fruition through the Fetal and Infant Mortality Review ([FIMR](#)), a community that uses an evidence-based system to analyze the causes behind fetal and infant deaths and then create programs and community initiatives designed to lower local infant mortality rates. [FIMR projects](#) currently exist in Davidson County, Hamilton County, Knox County, Shelby County, and East Tennessee.

Four of the state's FIMR reviews have established [programs](#) that focus on screening pregnant women for eligibility to receive the 17P treatment, through which progesterone is administered to pregnant women to reduce the likelihood of premature birth. Pregnant women who have given birth prematurely (before 37 weeks gestation) in the past are screened as eligible and then [referred](#) to their obstetricians to decide if the treatment is a viable, safe, and effective option.

Outside of FIMR, Tennessee has taken steps to reduce the infant mortality rate with multiple prevention efforts. An example of this is found through the staffing of local health departments with [Certified Application Counselors](#), professionals who are available to assist eligible pregnant women in signing up for Medicaid. In addition to this, Tennessee has implemented resources that promote safe and healthy pregnancies, such as the Tennessee Tobacco QuitLine, which offers cessation services to any citizen struggling with a tobacco addiction. To further address the issue of smoking during pregnancy, [tobacco settlement funds](#) are provided in each county with the sole purpose of helping pregnant women stop smoking through participation in cessation services.

[Additional efforts](#) include the Tennessee Department of Health's "ABC's (Alone on their Back in a Crib) of Safe Sleep" campaign that promotes proper infant sleeping practices with the intent of lowering the number of babies dying from SIDS and other sleep-related incidents. Another program that has seen significant success is the PCAT (Prevent Child Abuse Tennessee) home-visit program, which consists of [professionals visiting homes](#) of new and soon-to-be parents on a weekly basis and discussing parent-child bonding, safety, and child development. This has proven to be successful in preventing preterm births, as 93% of the pregnant women enrolled have delivered healthy full-term babies.

The best ways to prevent infant mortality start with early and consistent prenatal care for women. In 2016, only [52.4%](#) of pregnant women in Tennessee received adequate prenatal care. Only [40.7%](#) of black mothers receive adequate prenatal care compared to 55.7% of white mothers. Prenatal care is extremely important for both a fetus and its mother as it [reduces](#) the risk of multiple complications and promotes healthy fetal development. [Other ways](#) of preventing infant



mortality include routine vaccinations, undergoing 17P treatment if necessary, avoiding tobacco, following safe sleeping guidelines, and supporting social programs and services available to low-income, pregnant, and childbearing-age women.

## **Maternal Health & Maternal Mortality**

Although America's infant mortality rate is nothing to be proud of, at least it is declining. On the other hand, America's [maternal mortality rate](#) is higher than that of any other developed country, and this rate continues to rise while rates in comparable countries fall. Maternal health, specifically right after giving birth, is often undermined; with the preconceived idea that maternal mortality is no longer an issue in America, life-threatening yet easily-diagnosable and treatable maternal complications are [often neglected](#). Hospitals do not have clear and consistent procedures for treating dangerous complications, and this is a major disadvantage for new mothers who find themselves in potentially fatal situations.

American women are over [three times as likely to die](#) in the maternal period than Canadian women. Aside from hospital unpreparedness, there are a few [explanations](#); American women are now getting pregnant later in life, and approximately half of the nation's pregnancies are unplanned. Unplanned pregnancies can lead to complications because women aren't able to correct any bad habits they may have before getting pregnant that may harm their health during the maternal period. C-sections, which typically lead to more complications than natural births, are widely performed, and many women living in rural areas and in poverty (especially those with no health insurance) are having an increasingly difficult time obtaining adequate prenatal care.

A [Canadian study](#) revealed that rural women's health and the health of their babies is typically not as strong as the health of women and children living in suburban or urban areas. The study noted that mothers who have to spend over an hour traveling to a hospital to give birth are more likely to experience adverse perinatal outcomes and their babies are more likely to require time in the NICU. This is due to the increasing rate of hospital and maternal care provider closures. Difficulty recruiting maternal and fetal care professionals is forcing hospitals to cut down or close their obstetrics units altogether.

A state's Medicaid program can help counter these hospital closures, as Medicaid pays for more than half of rural families' hospital bills. However, the generosity of the state's Medicaid program can determine the quality of rural women's health; in states where Medicaid is only available to the poorest of pregnant women, maternal care deserts are more common.

Fortunately, in Tennessee, low-cost or free health insurance is available to pregnant women making up to \$30,350 or 250% of the federal poverty level (FPL) through TennCare and CoverKids, but Tennessee has felt the strain of hospital closures, particularly in rural areas, leading to longer travel times and riskier births. [47](#) of Tennessee's 95 counties do not have an ob-gyn.

## **Conclusion**

America's infant and maternal mortality rates are disheartening, but there is hope for improvement through changes in our medical system and with an addition of state and federally-funded resources for new parents. Women would have better prenatal health and continuity of care if they had access to health insurance *before* they got pregnant. Medicaid expansion is a cost-effective solution for better pre-conception health and therefore healthier mothers and babies. Additionally, Medicaid expansion would bring an influx of federal dollars (an estimated [\\$1.4 billion annually](#)) that could help struggling hospitals, particularly in rural Tennessee where mothers are in worse health. Increasing access to health insurance through Medicaid expansion could help prevent unnecessary maternal and infant deaths. These and other steps to increase health care coverage and access are necessary to help keep mothers and babies from needlessly dying in Tennessee.

Tennessee is among the states that have been hit hardest by the national opioid abuse crisis. The state is facing higher than average rates of prescriptions, newborns with Neonatal Abstinence Syndrome, children in state custody, people incarcerated for drug-related offenses, and overdose deaths. Opioids now cause more fatalities than auto accidents, homicide, and suicide; yet, the number of reported deaths related to opioids are underestimated.

Any effective strategy to address the epidemic must build on the critical role of Medicaid, known in Tennessee as TennCare. Currently, Medicaid is the largest single payer for behavioral health services in the United States and plays a crucial role in covering both prevention and treatment of substance use disorders.<sup>1</sup> Unlike funding programs targeted at addiction, Medicaid has the advantage of providing broad medical, as well as behavioral, coverage. Since addiction often presents with other medical or mental health disorders, Medicaid's ability to cover integrated services that are needed for effective prevention and treatment is a game-changer.

Tennessee has opportunities to better use federal Medicaid funding by adopting cost-effective, evidence-based policies and treatment methods. The state should implement the recommendations of the legislature's Three-Star Task Force to use federal Medicaid funding to extend coverage to veterans and adults with behavioral health needs, at a minimum. TennCare should make medication assisted treatment more accessible by removing the requirement for prior authorization to prescribe medications that are proven effective for opioid abuse treatment. TennCare should reexamine its 2005 decision to discontinue coverage of methadone treatment for adults based on the latest research and the experience of the 31 other states that cover such therapy.

State officials should also ensure that Federal policy makers understand the impact of pending congressional proposals on Tennessee's efforts to combat the opioid epidemic. Budget proposals to cut federal Medicaid funding would cripple the state's major resource for preventing and treating addiction.

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