The status of child health says a lot about the values of a community.

Even with the most supportive parents, the best child care, and the highest-quality schools, a child is unlikely to reach her potential if she suffers from poor health. Chronic health problems are costly for families and communities, and jeopardize children's chances for happiness, achievement, and success.

The level of child health in a community can be measured by a few commonly accepted markers, such as infant mortality rates (IMR) and other birth outcomes, or by taking a broader view and including other factors that influence children's well-being.

This section of the *Data Book* attempts to incorporate both approaches. First, we look at infant mortality and low birth weight in Shelby County, including comparisons with state and national trends. Next, we discuss other risk factors that are associated with diminished child outcomes and examine their prevalence in our community.

Shelby County performs poorly on most measures of child health.

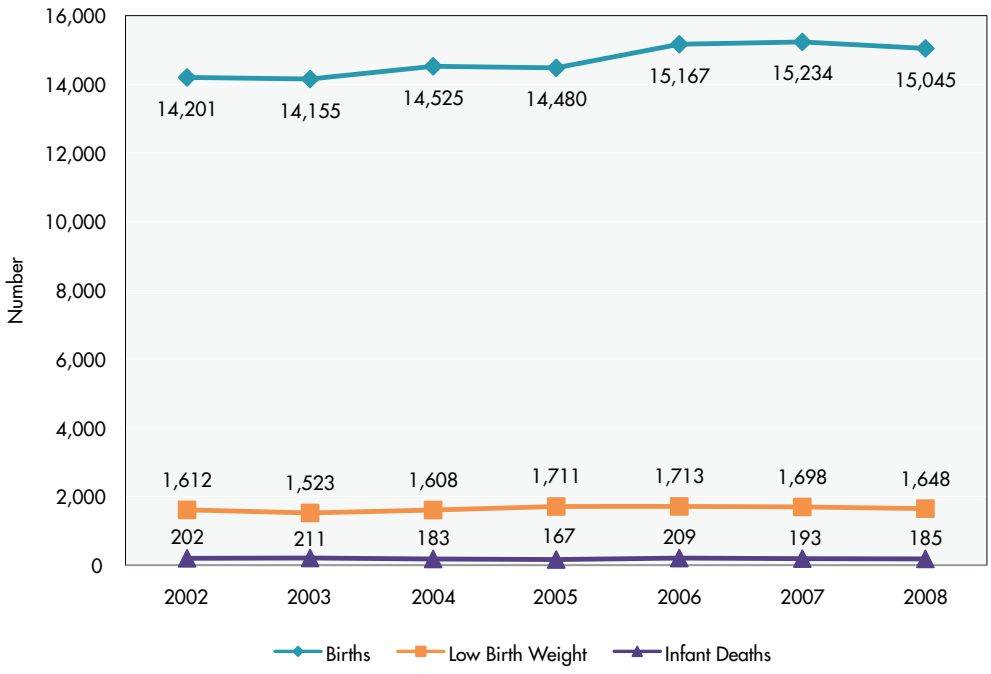
In the Annie E. Casey Foundation's *2009 Kids Count* report, which analyzes state-level information on children's educational, social, economic, and physical well-being, Tennessee ranks 46th of the 50 states, dropping from 42nd in the previous report. In many categories, Shelby County performs near the bottom of all Tennessee counties.[1]

Small numbers can indicate big problems.

At first glance, the number of infant deaths and low birth weight births may seem small. Out of about 15,000 babies born in Shelby County in 2008, around 1,600 were low birth weight (weighing less than 5 lbs. 8 oz.), and 185 died during infancy (Figure 1). However, when compared to national figures, the significance of the problem becomes apparent. The percent of low birth weight births in Shelby County is 25 percent higher than the national percentage. Infants in Shelby County are dying at almost twice the rate of children across the country.

FIGURE 1:
Number of Total Live Births, Low Birth Weight Births, & Infant Deaths, Shelby County, 2002-2008

Source:
Tennessee Department of Health, Office of Policy, Planning and Assessment, Division of Health Statistics, Birth Certificate Data, 2002-2008.



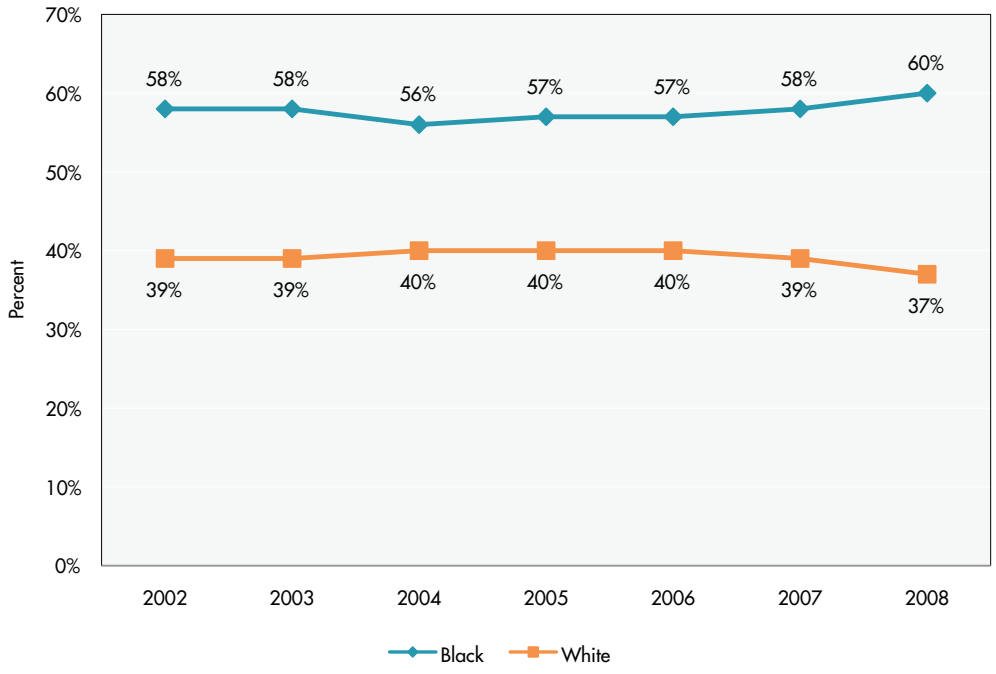


FIGURE 2:
Percent of Live Births by Race, Shelby County, 2002-2008

Source:
Tennessee Department of Health, Office of Policy, Planning and Assessment, Division of Health Statistics, Birth Certificate Data, 2002-2008.

Perhaps even worse, there are large differences in birth outcomes according to race and socioeconomic status. A black infant is three and a half times more likely than a white baby to die before her first birthday. This is of particular concern in Shelby County, where black infants represent 60 percent of births (Figure 2).

Differences in education, income, and health behaviors do not fully explain these persistent racial disparities: college-educated, non-smoking black women have a higher IMR than white women who smoke and drop out of high school.[2]

The infant mortality rate reflects a community's overall health.

The infant mortality rate (IMR) is the number of deaths that occur in the first 12 months of life per 1,000 live births. It is an indicator of access to care, quality of care, socioeconomic conditions, and public health.[3] As such, it reflects the commitment of a community to infants and young mothers. Although the U.S. spends more than other countries on health care, it has one of the highest IMRs among industrialized nations.[1]

About two-thirds of infant deaths occur in the first month of life.

- Infant deaths can be divided into neonatal (birth to 27 days) and post-neonatal (28 days to 1 year) deaths.
- For black infants, prematurity (less than 37 weeks gestation) and low birth-weight are the most common causes of neonatal death.[2]
- For white babies, congenital malformations are the most common cause.[2]
- Post-neonatal deaths are most frequently a result of Sudden Infant Death Syndrome (SIDS), congenital malformations, or accidents.[2]

The basis for the difference in mortality between black and white infants is unclear.

Even among full-term infants (born after at least 37 weeks of gestation) the IMR is 1.74 times higher for black babies than for white babies.[4]

- While prenatal care may lower the chances of infant death, access to prenatal care does not fully explain the black-white IMR gap. Even among mothers with comparable levels of prenatal care, the black IMR is almost double the white IMR.[4]
- Although poverty is associated with infant mortality, it accounts for only part of the black-white gap.[5,6]
- Higher levels of maternal education are also associated with lower infant mortality. However, among mothers with similar levels of education, the black IMR is still more than double the white IMR.[4]

In Shelby County, the gap between the black IMR and white IMR has grown.

- In 2007, the black IMR in Shelby County was triple the rate among white infants.
- In 2008, it was over three and a half times higher.
- Since 2000 the IMR for blacks in Shelby County has decreased by 3 percent, while the white IMR has dropped by 36 percent (Figure 3).

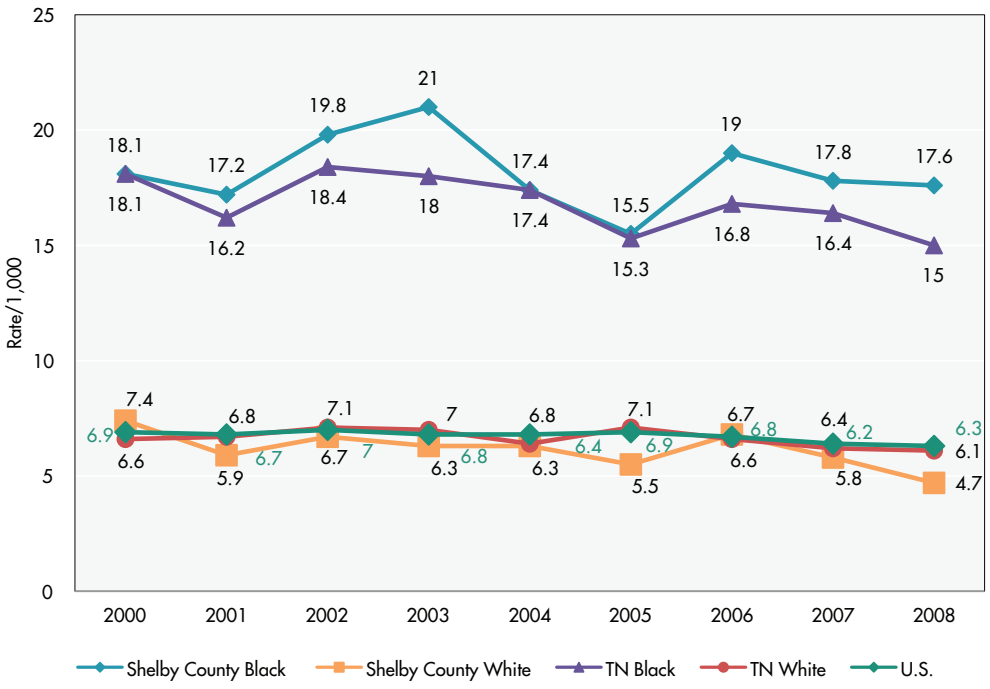


FIGURE 3:
Infant Mortality Rate per 1,000 Live Births by Race, Shelby County, Tennessee & United States, 2000-2008

Source:
Tennessee Department of Health, Office of Policy, Planning and Assessment, Division of Health Statistics, Birth Certificate Data, 2002-2008; Mathews TJ, MacDorman MF. Infant mortality statistics from 2006 period linked birth/infant death data set. National Vital Statistics Reports. 2010;58(17). CIA. Infant mortality Rate. World Factbook. 2008.

Low birth-weight babies have a greater risk of infant death.

Low birth weight is one of the most widely studied developmental outcomes in the research on pregnancy and birth. It is a common cause of infant mortality, and low birth-weight children who survive are vulnerable to a wide array of health complications and developmental problems.[7]

- In Tennessee, babies with normal birth-weight have an IMR of 3.3 per 1,000 live births.[4]
- Moderately low-birth-weight infants (3 lbs. 5 oz. to 5 lbs. 8 oz.) die at a rate 18 times higher.[4]
- Very low-birth-weight infants (less than 3 lbs. 5 oz.) have an IMR that is 77 times higher than that of normal birth-weight infants.[4]
- Low birth weight infants have increased risk of cerebral palsy, respiratory diseases, mental retardation, and vision and hearing impairments.[8]
- Children who were born at low birth weight are more likely than others to have diminished cognitive development and low educational attainment.[9]

Black infants are more likely than whites to be born at a low birth-weight.

- In both Tennessee and Shelby County, the rate of low birth-weight births has remained relatively constant in recent years (Figure 4).
- The black-white gap has remained about the same, with black infants more than twice as likely to be born at a low birth-weight (Figure 4).

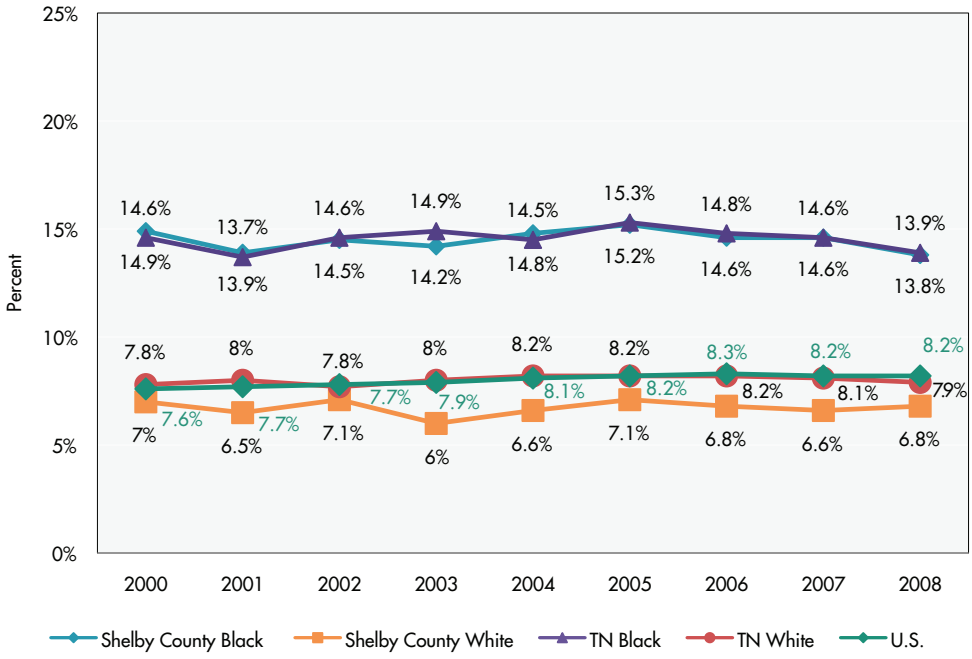


FIGURE 4:
Percent of Low Birth Weight Babies by Race, Shelby County, Tennessee, & United States, 2000-2008

Source:
Tennessee Department of Health, Office of Policy, Planning and Assessment, Division of Health Statistics, Birth Certificate Data, 2002-2008; Hamilton BE, Martin JA, Ventura SJ. Birth: Preliminary data for 2008. National Vital Statistics Reports, 2010; 58(16).

Teenage birth rates are on the rise.

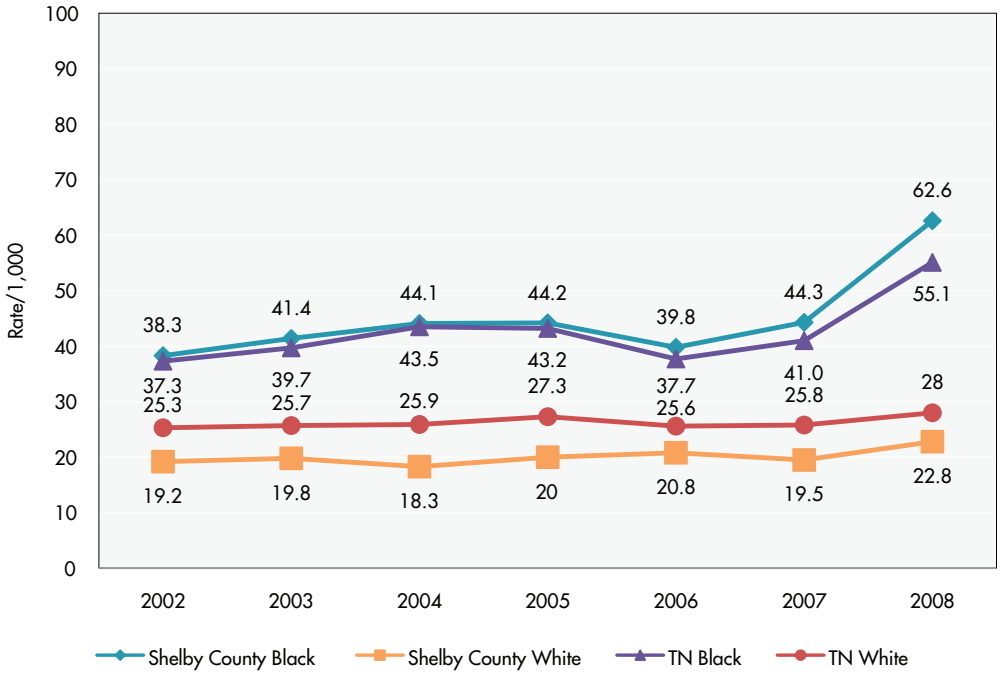
Children of teen mothers face numerous risks throughout life. Young mothers are more likely than older mothers to have low education, receive public assistance, use ineffective parenting strategies, and provide inconsistent care for their babies.[10] Children of teenage mothers are more likely than their peers to live in poverty and to have poor health.[10] As adults, they are more likely to engage in antisocial behavior, face unemployment, and become young parents themselves.[10]

- Compared to mothers in their 20s or early 30s, teen mothers are more likely to have a premature or low birth weight baby.[11]
- Mothers under 20 years old have higher rates of infant mortality than women who give birth in their 20s or early 30s.[11]
- For babies born to mothers under 15, the IMR is more than twice the overall rate.[11]

Of the 15,000 births in Shelby County, about 15 percent are to teenage mothers. In recent years, teen birth rates (births per 1,000 women under 20 years old) have risen in Shelby County and across Tennessee. The Shelby County white rate rose 19 percent between 2002 and 2008. The black rate rose 63 percent (Figure 5).

FIGURE 5:
Birth Rate per 1,000 Females Age 10 to 19 Years by Race, Shelby County & Tennessee, 2002-2008

Source:
Tennessee Department of Health, Office of Policy, Planning and Assessment, Division of Health Statistics, Birth Certificate Data, 2002-2008.
American Community Survey, 2002-2008,B01001A and B01001B.



Births to unmarried mothers continue to increase.

As a group, children of single mothers do not fare as well as other children. Marital status is influenced by social, personal, and economic resources, making it difficult to isolate the effects of single parenthood. In many studies, the effect of family structure decreases after other factors like income, low birth weight, and maternal traits are taken into account.[12] Nevertheless, being born to an unmarried mother remains an important risk factor for children's health and development.

- Starting with conception, children of single parents face more health risks than other babies. These include maternal prenatal smoking, maternal substance abuse, low birth weight, and poverty.[13]
- Research shows that they are also more likely to have academic, emotional, and behavior problems.[12]
- In Tennessee, consistent with national trends, infants born to unmarried mothers have an IMR that is twice that of infants born to married mothers.[11]

Since 2002, the percentage of births to unmarried mothers has increased in Shelby County (22%) and across Tennessee (14%) (Figure 6).

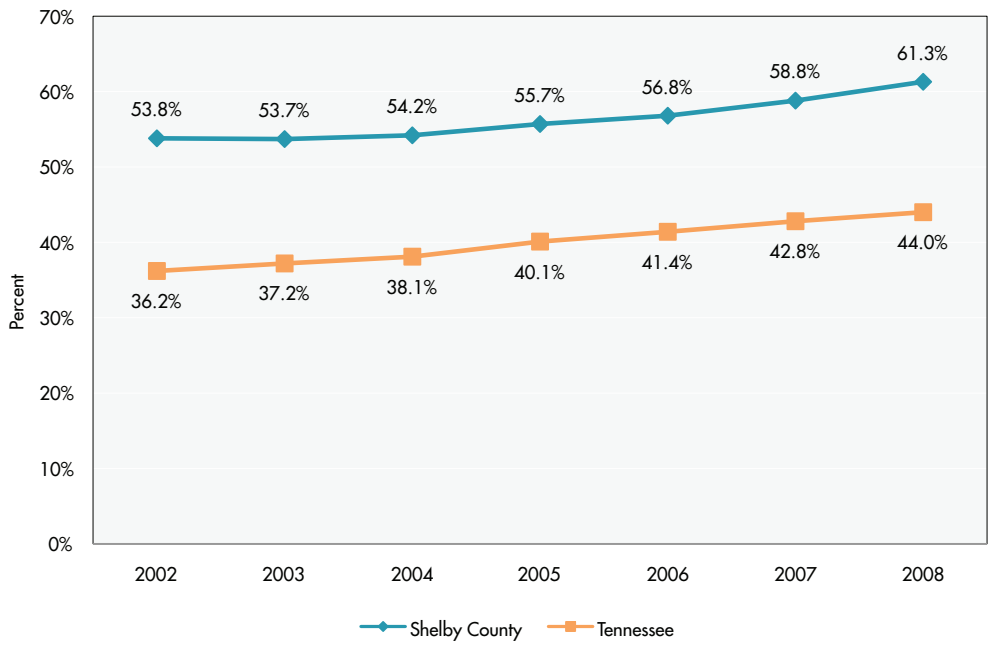
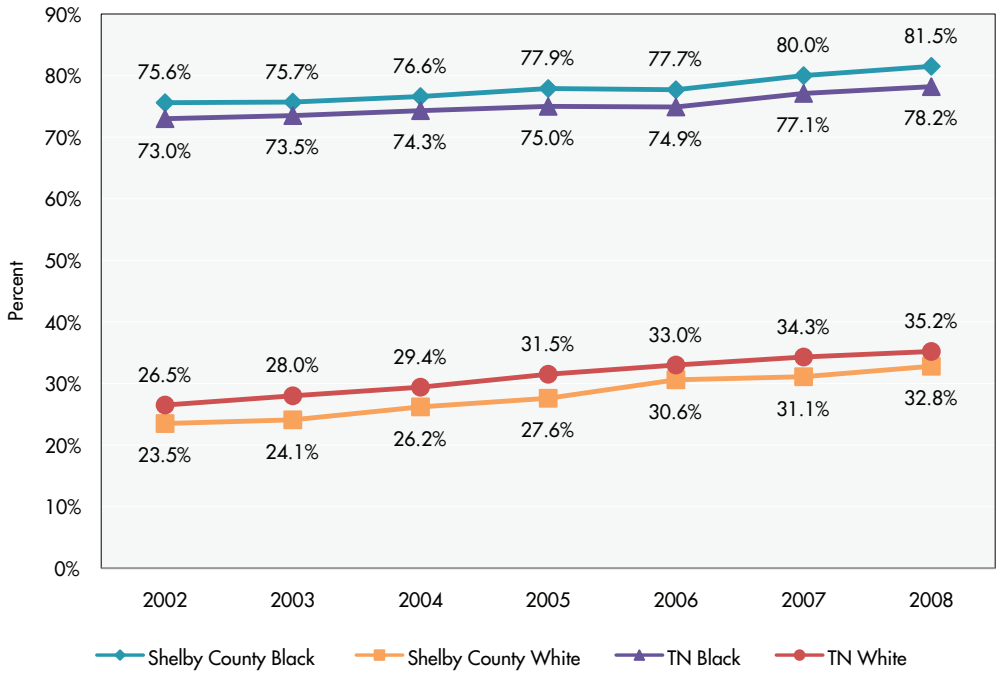


FIGURE 6:
Percent of Births to Unmarried Parents, Shelby County & Tennessee, 2002-2008

Source:
Tennessee Department of Health, Office of Policy, Planning and Assessment, Division of Health Statistics, Birth Certificate Data, 2002-2008.

FIGURE 7:
Percent of Births to Unmarried Mothers by Race, Shelby County & Tennessee, 2002-2008

Source:
Tennessee Department of Health, Office of Policy, Planning and Assessment, Division of Health Statistics, Birth Certificate Data, 2002-2008.



In Shelby County, unmarried births are increasing at a faster rate for white women than for black women. The percent of births to unmarried white mothers rose almost 40 percent between 2002 and 2008. Among black mothers the increase was nearly eight percent. A similar pattern is seen statewide (Figure 7).

Smoking during pregnancy endangers a baby's health.

- Maternal smoking during pregnancy is strongly associated with low birth-weight, congenital defects, and respiratory disease.[14]
- Even when it does not result in low birth weight, prenatal smoking can have negative effects on brain development.[15]
- In Tennessee and nationally, babies born to mothers who smoke during pregnancy have an IMR that is 74 percent higher than that of babies born to non-smoking mothers.[11]
- Smoking is also associated with long-term consequences such as behavioral problems in childhood.[16]

Prenatal smoking is less prevalent in Shelby County than in Tennessee as a whole. Moreover, the percentage of women who smoke during pregnancy has decreased slightly in Shelby County, while across the state it has risen slightly (Figure 8).

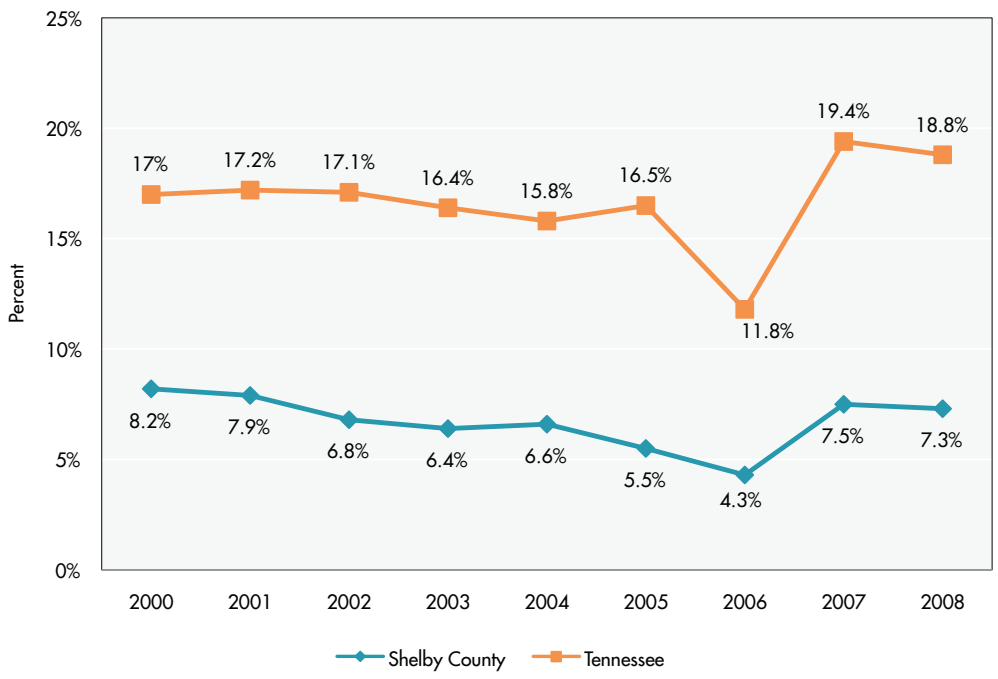


FIGURE 8:
Percent of Mothers Who Reported Smoking During Pregnancy, Shelby County & Tennessee, 2000-2008

Source:
Tennessee Department of Health, Office of Policy, Planning and Assessment, Division of Health Statistics, Birth Certificate Data, 2000-2008.

Prenatal care improves maternal and child health.

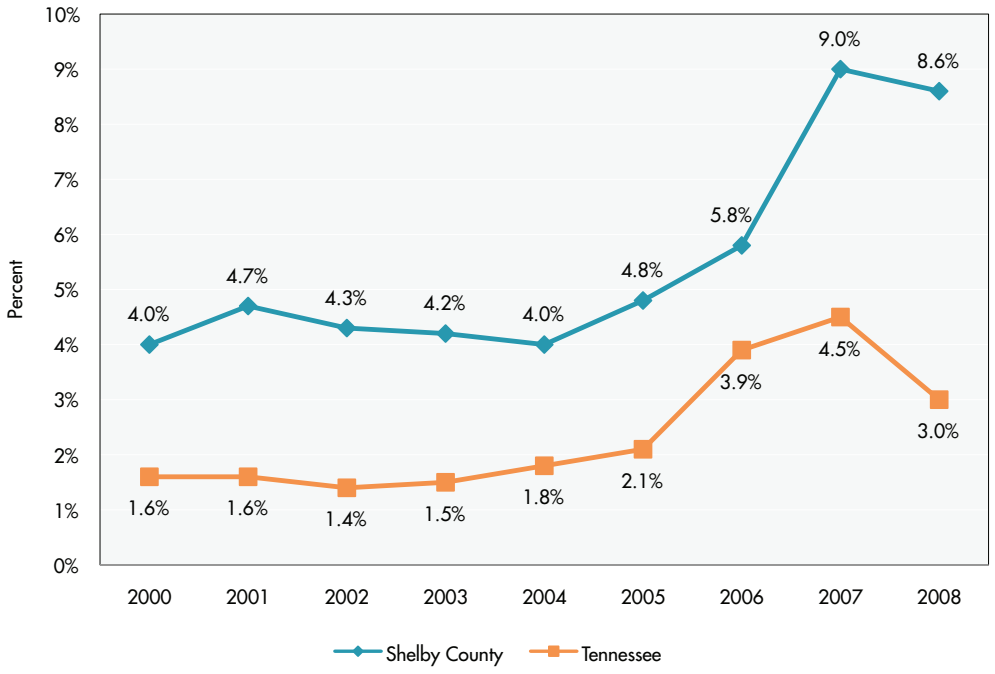
There have been many efforts to improve birth outcomes; one example is the effort to extend early prenatal care to more women. Timely prenatal care improves the health of both the mother and the fetus, and may contribute to a reduction in infant mortality.[17] Prenatal care should begin in the first trimester. A full-term pregnancy usually involves 10 to 14 visits.[18]

The continuing decline in access to prenatal care in Shelby County is a disturbing trend. Fewer mothers are receiving adequate care, and more mothers are receiving none at all. Good prenatal care is essential for monitoring maternal and fetal health, providing mothers with necessary information, and identifying possible risks.

Since 2000, the percentage of women in Shelby County receiving no prenatal care during their pregnancy has more than doubled (Figure 9).

FIGURE 9:
Percent of Mothers Who Report Having No Prenatal Care, Shelby County & Tennessee, 2000-2008

Source:
Tennessee Department of Health, Office of Policy, Planning and Assessment, Division of Health Statistics, Birth Certificate Data, 2002-2008.



Excessive weight gain during pregnancy is bad for mothers and their babies.

- A mother who shows excess weight gain during pregnancy, especially if she was already overweight, places the child at risk for obesity within the first few years of life.[19]
- Excess weight gain is also associated with labor and delivery complications, preterm birth, and infant mortality.[20]
- Too much weight gain during pregnancy can result in high infant birth weight, which is a risk factor for diabetes, cardiovascular disease, and obesity later in a child's life.[21]

The percentage of mothers who gained 50 pounds or more during pregnancy increased between 2000 and 2008. Both Shelby County and Tennessee saw an increase of 32 percent (Figure 10).

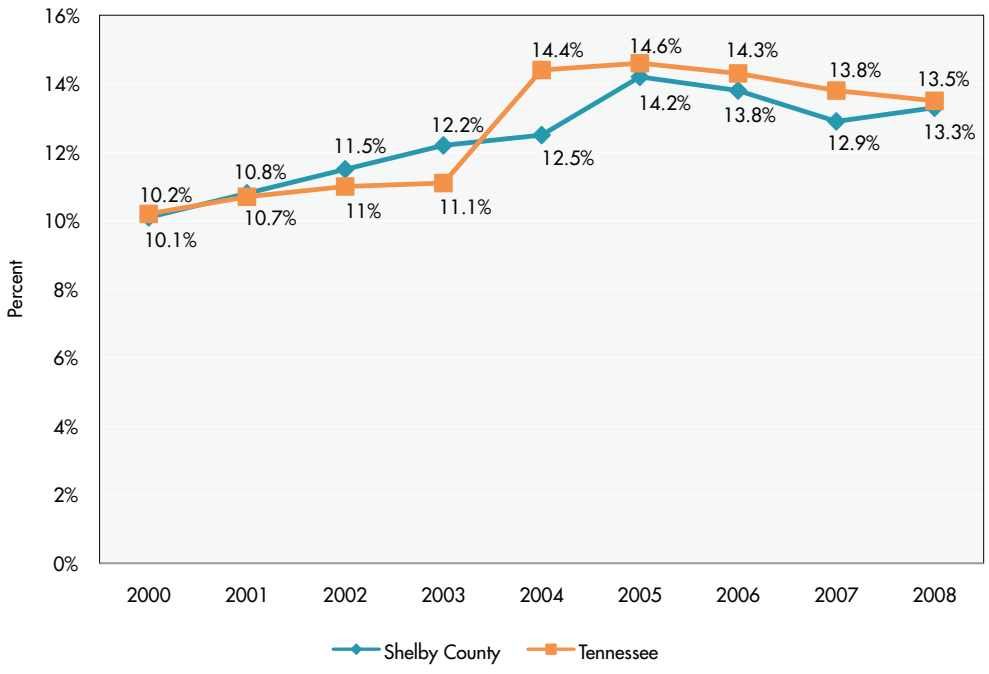


FIGURE 10:
Percent of Mothers Who Gained 50 lbs. or More During Pregnancy, Shelby County & Tennessee, 2000-2008

Source:
Tennessee Department of Health, Office of Policy, Planning and Assessment, Division of Health Statistics, Birth Certificate Data, 2000-2008.

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