

Infant and Maternal Health

Births and Birth Rates

Tracking trends in births helps support effective social planning and allocation of resources across generations, and tracking age-specific and race/ethnicity specific trends provides information on the divergent needs of different population groups.^{xv}

In 2013, there were 4,170 resident births in Hamilton County, compared to 4,332 in 2007, the peak year for resident births since 2002. The birth rate (number of births per 1,000 population) in 2013 was 12.0 per 1,000, a decrease of 13% from the 2007 peak. The primary payment source for births in 2013 was private insurance (47.4%), followed by Medicaid/TennCare (43.3%), CoverTN (5.4%), and self-pay (3.1%).

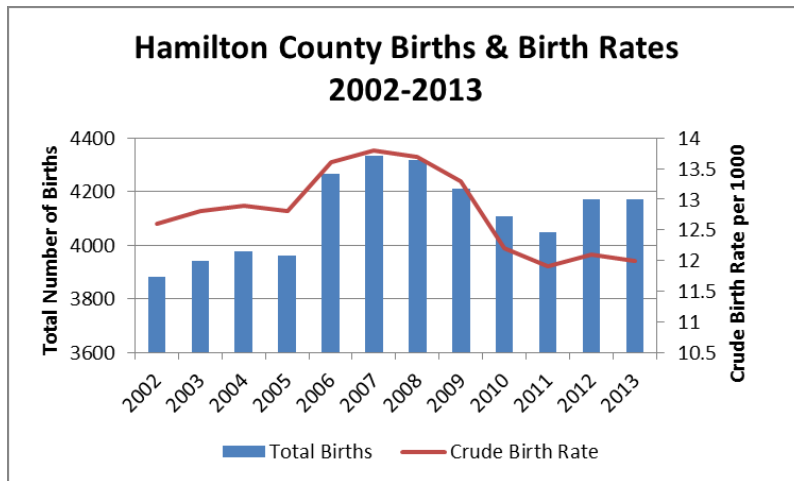


Figure 8 Source: Tennessee Department of Health, Division of Policy, Planning, and Assessment

Births by Race/Ethnicity

Between 2008 and 2012, 73% of resident births in Hamilton County were to white mothers and 23% to African Americans. Births to Hispanic mothers, who can be any race, comprised 11% of births during this time period.

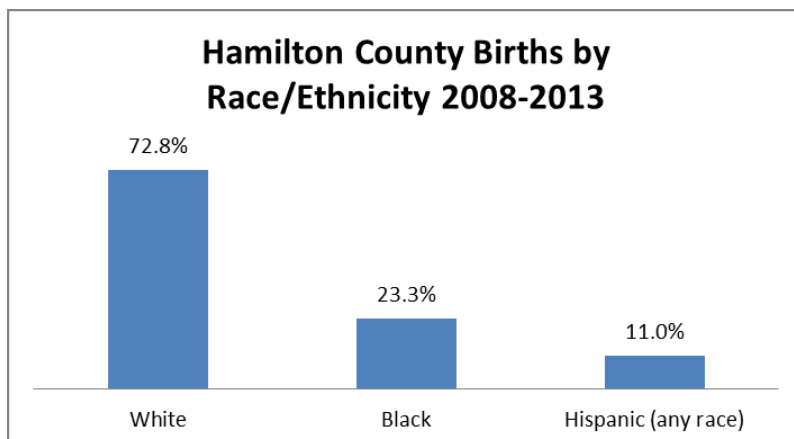


Figure 9 Source: Tennessee Department of Health, Division of Policy, Planning, and Assessment

Teen Births

In 2013, there were 5.7 births for every 1,000 females ages 10 to 17 in Hamilton County, or 94 births to females in this age group. This represents the lowest rate in the eleven year period 2002-2012 and is 61.7% lower than the 2006 rate of 14.9, when there were 230 teen births. Statewide, the 2013 teen birth rate was 5.7 per 1,000 females ages 10 to 17.

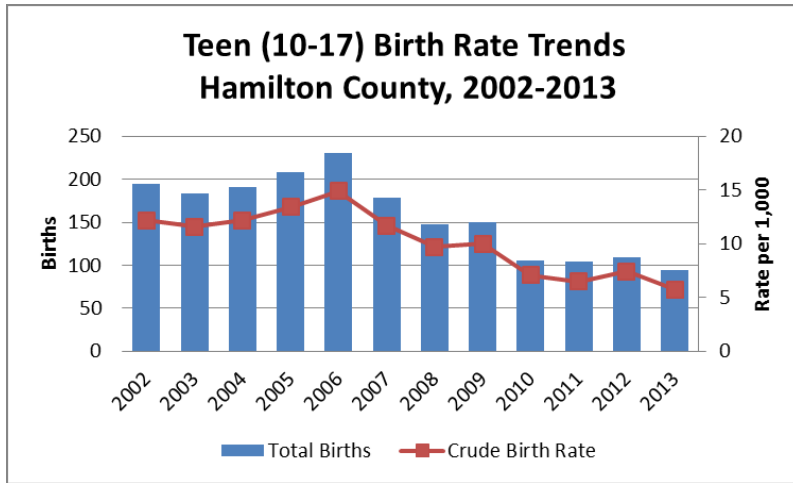


Figure 10 Source: Tennessee Department of Health, Division of Policy, Planning and Assessment

In Hamilton County, there is a consistent racial disparity for teen births, with birth rates among African Americans as much as triple that of whites in the mid-2000s. However, the gap has become much narrower in recent years as rates have decreased for both African Americans and white teens. Compared to the peak in 2006, teen birth rates in Hamilton County decreased by 69% among African Americans (from 27.3 to 8.5 per 1,000) and by 49.2% among whites (from 10.3 to 5.2 per 1,000)

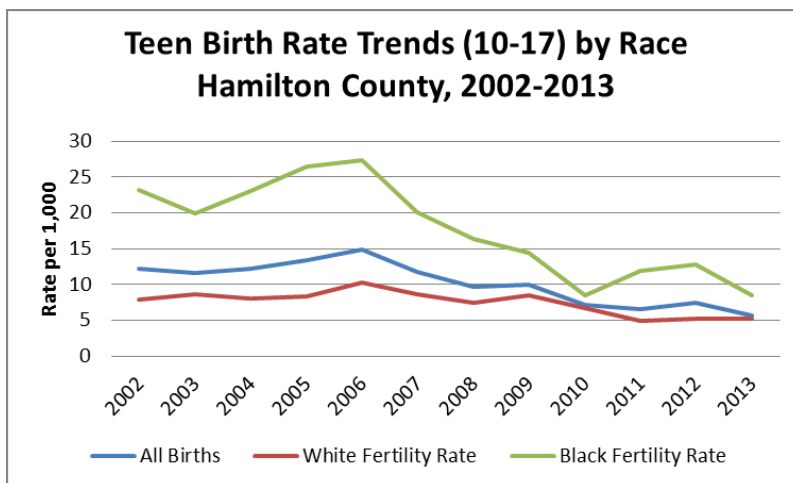


Figure 11 Source: Tennessee Department of Health, Division of Policy, Planning and Assessment

Delayed or No Prenatal Care

It is very important that a woman get early and regular prenatal care. Mothers who do not receive prenatal care are three times more likely to give birth to a low birthweight baby (less than 5.5 pounds), and their baby is five times more likely to die before its first birthday.^{xvi} Prenatal care provides opportunities for health care providers to educate mothers on important health behaviors such as diet and nutrition, exercise, immunizations, weight gain, and abstention from tobacco, drugs and alcohol. Prenatal care can also help parents learn about nutrition for their newborn, the benefits of breastfeeding, as well as illness and injury prevention.

Delayed or no prenatal care is defined as the percentage of mothers who began prenatal care after the first trimester or received no prenatal care at all.^{xvii}

- From 2008 to 2013 in Hamilton County, 231 residents received no prenatal care during their pregnancy (1% of births).
- In 2013, the percentage of births with delayed or no prenatal care was 33.2%, a decrease of 6.6 percentage points compared to 2009 (39.8%).
- The percentage of births with delayed or no prenatal care is consistently higher among African Americans than among whites, and in 2013 was 38.3% and 31.3%, respectively.
- The *Healthy People 2020* objective is to reduce the percentage of mothers with no prenatal care in the first trimester to 22.1%.

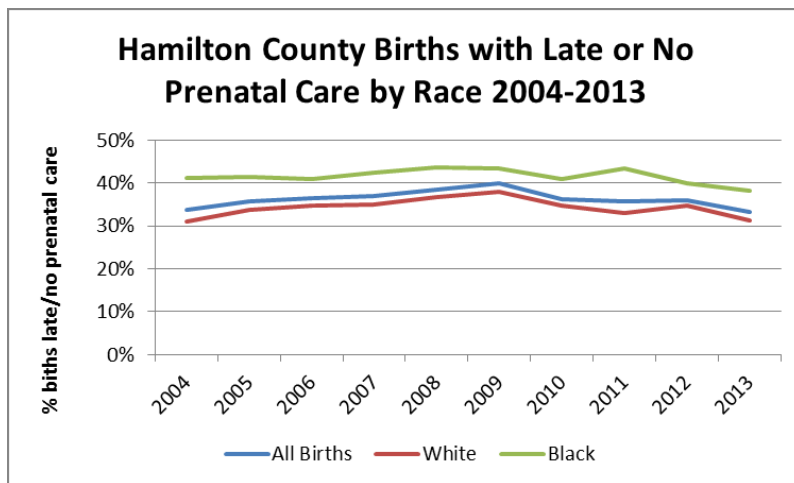


Figure 12 Source: Tennessee Department of Health, Division of Policy, Planning and Assessment

Smoking during Pregnancy

Smoking during pregnancy is one of the most common preventable causes of pregnancy complications illness, and death among infants. Smoking during pregnancy is associated with higher risks of preterm birth, low birth weight, cleft palate or cleft lip, and sudden infant death syndrome. Quitting smoking

before or during pregnancy can reduce the risk of poor pregnancy outcomes.^{xviii} Maternal smoking during pregnancy is recorded on the birth certificate.

- In 2013, 13% of women who gave birth in Hamilton County reported smoking at some time during their pregnancy. Among white mothers, 13% reported smoking, while 11% of black mothers reported doing so.
- These figures represent statistically significant decreases over 2009 pregnancy smoking, when 16% of all mothers, 16% of white mothers, and 17% of black mothers reported smoking during pregnancy.
- Statewide, 16% of women reported smoking during pregnancy in 2013.
- Nationwide, 8.5% of women reported smoking during pregnancy in 2013.^{xix}
- The *Healthy People 2020* goal is to reduce pregnancy smoking to 1.4% by 2020.

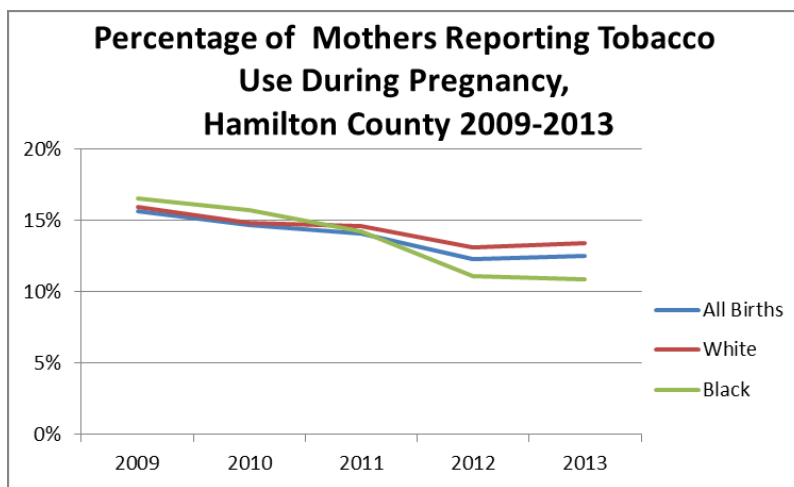


Figure 13 Source: Tennessee Department of Health, Division of Policy, Planning and Assessment

Preterm Births

Preterm births are defined as births before 37 weeks gestation. As with low birthweight, preterm babies have increased risks for serious health problems as newborns, including breathing problems, feeding difficulties, cerebral palsy, developmental delay, vision problems, and hearing impairment. Nationwide, preterm-related causes of death together accounted for 35% of all infant deaths in 2009. Preterm births costs the national health care system more than \$26.2 billion per year, including direct medical costs for infant and mother, early intervention and special education services, and lost work and pay for individuals born prematurely.^{xx}

- In 2013, 12.1% of all babies born in Hamilton County were preterm. Overall, preterm births have declined steadily since 2002, when 17.3% of births were preterm.
- In 2013, the rate of preterm births was significantly higher among African Americans (16.3%) than whites (10.8%).
- Statewide, 11% of babies born in 2013 were preterm.
- Nationwide, 11.4% of babies born in 2013 were born preterm.^{xxi}

- The *Healthy People 2020* goal is to reduce the percentage of babies born preterm to 11.4%.

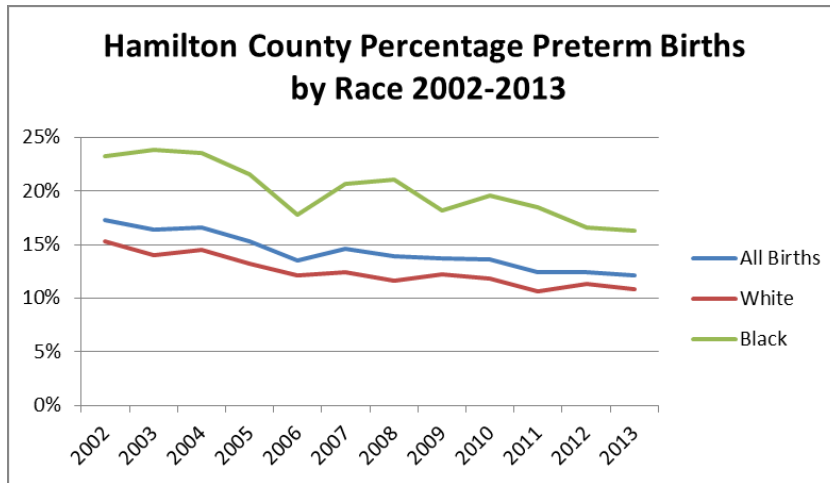


Figure 14 Source: Tennessee Department of Health, Division of Policy, Planning and Assessment

Low Birthweight

Infants who weigh less than 5.5 pounds (or 2,500 grams) are considered low birthweight (LBW). Babies with LBW are at increased risk for serious health problems as newborns, lasting disabilities, and infant death. The leading causes of LBW are being born prematurely (before 37 weeks gestation) and fetal growth restriction (full term but underweight).

A 2007 study published in *Pediatrics* found that low birthweight/premature infants accounted for 8% of all infant hospital stays but 47% of all infant costs. In contrast, uncomplicated newborns accounted for 42% of infant stays but only 10% of all infant costs.^{xxii}

- In Hamilton County, 9.7% of Hamilton County babies had LBW in 2013.
- In Hamilton County, the percentage of low birthweight births among African Americans is more than double (16.2%) the percentage of low birthweight births for whites (7.7%).
- Statewide, 9.1% of babies born in 2013 had LBW.
- In 2013, Hamilton County had the second highest percentage of LBW (9.7%) of the four largest counties in Tennessee (second to Shelby County at 11.7%).
- Nationwide, 8% of babies born in 2013 had LBW.^{xxiii}
- The *Healthy People 2020* goal is to reduce the proportion of low birthweight to 7.8%.

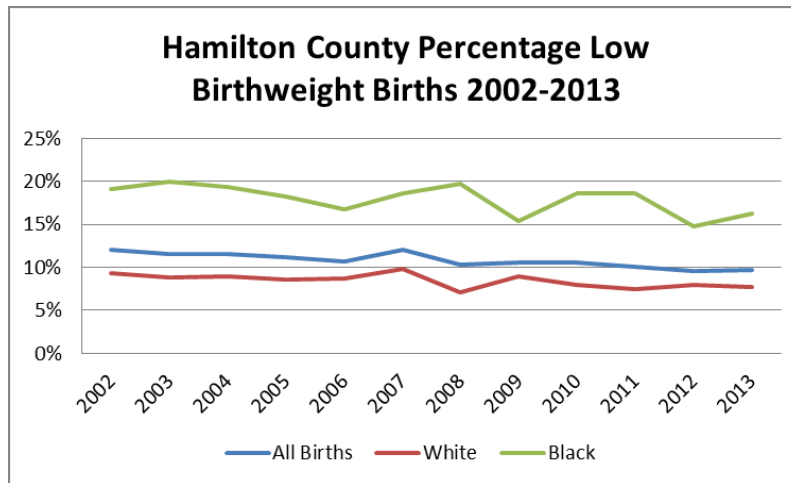


Figure 15 Source: Tennessee Department of Health, Division of Policy, Planning and Assessment

Infant Mortality

Infant mortality (the death of a child during the first year of life) is an important health measure that not only reflects the current health status of a community or population, but also is a measure of the overall social development of a community, including maternal care, quality of and access to care, socioeconomic conditions, and public health interventions. The leading causes of infant death in Tennessee are short gestation and low birthweight, congenital defects, accidents, and sudden infant death syndrome.^{xxiv}

- Between 2008 and 2013, a total of 208 babies in Hamilton County died before their first birthday, or 8.3 deaths per 1,000 live births. In 2013, twenty-eight babies died before their first birthday, or 6.7 per 1,000 births.
- Based on three-year rolling rates, infant mortality decreased by 29.2% from 2000 to 2013, from 10.6 per 1,000 births to 7.5 per 1,000 births.²
- Among African Americans in Hamilton County, the highest three-year infant mortality rate during this time period was 20.2 per 1,000 births in 2002-2004. The rate has since decreased by 33.7% and was 13.4 per 1,000 births in 2011-2013.
- Among whites in Hamilton County, the three-year rolling infant mortality rate decreased by 32.1%, from 7.4 per 1,000 births (2000-2002) to 5.6 per 1,000 births (2011-2013).
- Historically, infant mortality rates have been higher for African Americans than whites, reaching almost four times higher during 2002-2004 (20.2 vs. 5.4). The disparity still exists, but has

² When the numbers used to calculate rates are extremely small, large swings can occur in single year rates which do not reflect real changes, particularly when comparing sub-populations. Three-year infant mortality rates were computed to smooth out the volatility in the annual rates.

narrowed to almost two and a half times higher for African Americans than whites during 2011-2013 (13.4 vs. 5.6) (Figure 16).^{xxv}

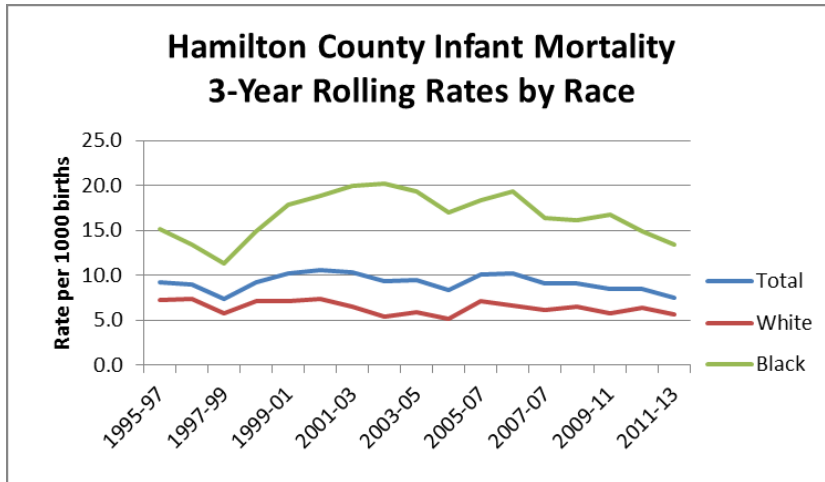


Figure 16 Source: Tennessee Department of Health, Division of Policy, Planning and Assessment

National and Tennessee Metro Comparison

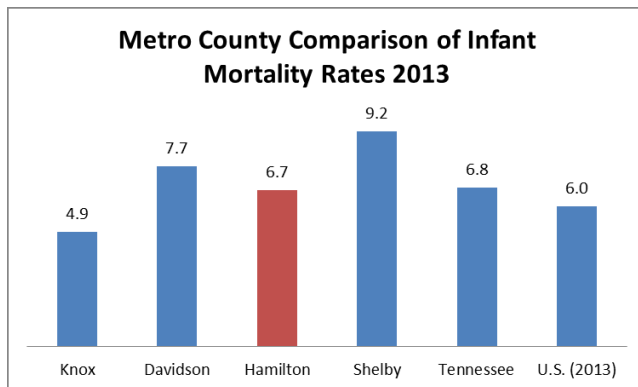


Figure 17 Source: Tennessee Department of Health, Division of Policy, Planning and Assessment and CDC

- Statewide, the 2013 infant mortality rate was 6.8 per 1,000 births
- The infant mortality rate in Hamilton County was higher than in Knox County (4.9) but lower than in Davidson County (7.7) and Shelby County (9.2).
- The U.S. infant mortality rate was 6.0 deaths per 1,000 live births in 2013, which meets the Healthy People 2020

Summary of Birth Outcomes

The following table summarizes Hamilton County birth outcomes by race and ethnicity from 2003 to 2013.³ Combining birth data in five-year increments allows us to compute rates for Hispanic births. The 2010 Community Health Data Profile for Hamilton County included birth summary data for 2003-2007. The number of Hispanic/Latino births increased by 31.8% from the first 5-year period (2003-2007) to the second 5-year period (2008-2012). The overall infant mortality rate for African Americans has decreased 21.8%. The percentage of births to teens has decreased by 39.6% overall and by 45.9% among African Americans.

³ Combining birth data in five-year increments allows us to report Hispanic data. The percentage change is based on comparison of 2008-2012 data to the 2003-2007 data presented in the 2010 Community Health profile.

Table 14: Summary of Hamilton County Birth Outcomes

	2003-2007	2008-2012	Percentage Change	2013
Total Births and Percentage of Total				
<i>Hamilton County</i>	20,482	20,853	+ 1.8%	4,170
<i>White</i>	14,828 (72.4%)	15,191 (72.8%)	+ 2.4%	3,030 (72.7%)
<i>Black/AA</i>	5,166 (25.2%)	4,996 (24.0%)	- 3.3%	1,026 (24.6%)
<i>Hispanic/Latino Ethnicity</i>	1,769 (8.6%)	2,332 (11.1%)	+ 31.8%	421 (10.1%)
Infant Mortality Rate (IMR) per 1,000				
<i>Hamilton County</i>	9.9	8.6	- 13.1%	6.7
<i>White</i>	6.2	6.3	+ 1.6%	5.3
<i>Black/AA</i>	19.7	15.4	- 21.8%	11.7
<i>Hispanic/Latino Ethnicity</i>	8.5	8.6	+ 1.1%	†
Percentage Low Birthweight Births				
<i>Hamilton County</i>	11.4%	10.2%	- 10.5%	9.7%
<i>White</i>	9.0%	7.9%	- 12.2%	7.7%
<i>Black/AA</i>	18.5%	17.4%	- 5.9%	16.2%
<i>Hispanic/Latino Ethnicity</i>	7.6%	7.8%	+ 2.6%	8.1%
Percentage Teen Births (10-17)				
<i>Hamilton County</i>	4.8%	2.9%	- 39.6%	2.3%
<i>White</i>	3.2%	2.3%	- 28.1%	1.9%
<i>Black/AA</i>	9.8%	5.3%	- 45.9%	3.4%
<i>Hispanic/Latino Ethnicity</i>	6.3%	3.8%	- 39.7%	2.8%
Source: TN Department of Health *Hispanic/Latino ethnicity are small numbers and subject to unstable rates † There were too few cases to calculate a rate.				