National Vital Statistics Reports

NVSS National Vital Statistics System

Volume 74, Number 11 August 27, 2025

Trends in Births and Deaths: United States, 2010–2023

by Brady E. Hamilton, Ph.D., Anne K. Driscoll, Ph.D., and Arialdi M. Miniño, M.P.H.

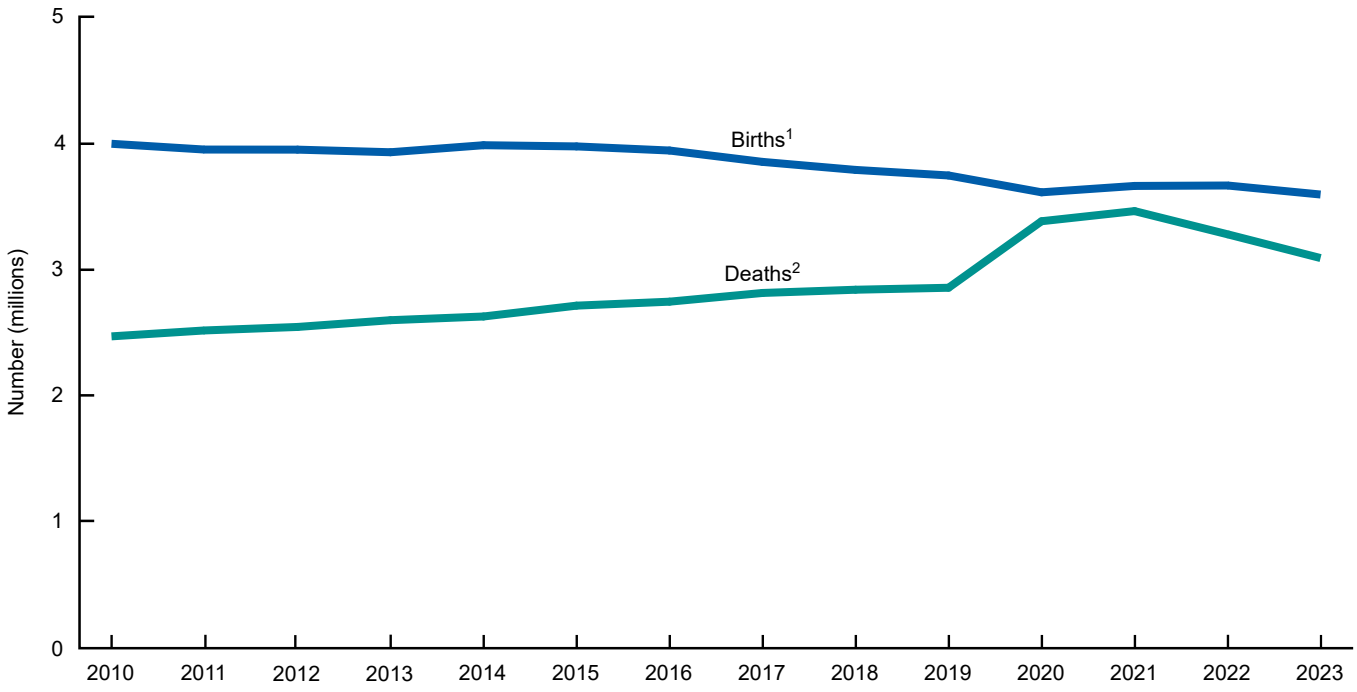
Abstract

Objectives—This report presents and compares trends in U.S. births and deaths from 2010 through 2023. Births and deaths are shown by race and Hispanic origin and urbanicity of county of residence.

Methods—Descriptive tabulations of trends in the numbers, rates, and ratios of births and deaths for the United States from 2010 through 2023 are presented and interpreted.

Results—From 2010 through 2023, the number of births for the United States declined by a total of 10%. Births were essentially stable from 2010 through 2016, declined from 2016 through 2019, and then fluctuated from 2019 through 2023. In contrast, the number of deaths generally increased from 2010 through 2023, by a total of 25%. Deaths increased from 2010 through 2019 and fluctuated from 2019 through 2023. The crude birth rate decreased 18% from 2010 through 2023, declining 0.8% per year from 2010 through 2015 and 2.0% per year from

Figure 1. Number of births and deaths: United States, 2010–2023



[1]No significant trend was observed from 2010 through 2016; a significant decreasing trend was observed from 2016 through 2019; no significant trend was observed from 2019 through 2023 ($p < 0.05$).
[2]A significant increasing trend was observed from 2010 through 2019; no significant trend was observed from 2019 through 2023 ($p < 0.05$).
SOURCE: National Center for Health Statistics, National Vital Statistics System, natality and mortality data files.

U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION

NCHS reports can be downloaded from: https://www.cdc.gov/nchs/products/index.htm.

2015 through 2019; the rate then fluctuated from 2019 through 2023. In contrast, the crude death rate increased 15% from 2010 through 2023, rising 1.0% on average from 2010 through 2019, and then fluctuating from 2019 through 2023. The birth-to-death ratio declined from 2010 through 2023, by a total of 28%, with the ratio decreasing 1.6% per year from 2010 through 2014 and 2.8% per year from 2014 through 2019; the ratio then fluctuated from 2019 through 2023. The ratio generally declined for the three largest race and Hispanic-origin groups from 2010 through 2023, fluctuating but increasing from 2019 through 2023. The differences in the ratios among the groups narrowed from 2010 through 2023. The birth-to-death ratio declined for both urban and rural counties from 2010 through 2023, with differences between ratios narrowing.

Keywords: crude birth rate • crude death rate • birth-to-death ratio • race and Hispanic origin • urban–rural • National Vital Statistics System (NVSS)

Introduction

This report provides information on birth and death trends and patterns in the United States from 2010 through 2023, with special focus on the more recent years from 2020 through 2023 during and following the COVID-19 pandemic. Births and deaths, along with net migration (the number of immigrants minus the number of emigrants), are essential for understanding changes in the size and structure of populations; these changes affect factors such as social security, health care, and economic growth (1–4).

Trends in crude birth and death rates for the United States vary over time and differ by race and Hispanic-origin group and urbanicity. Historically, births have outnumbered deaths, and the crude birth rate has been higher than the crude death rate. For example, from 1970 through 2010, the number of births and the crude birth rate (number of births per 1,000 people) exceeded the number of deaths and the crude death rate (number of deaths per 1,000 people) by 75% on average each year, contributing, in part, to 106 million people being added to the U.S. population (5,6). In 1970, 38% of the population was younger than age 20 and 10% was age 65 or older. The median age was 28.1. By 2010, the population had grown older: 27% of the population was younger than 20 and 13% were at least 65, while the median age rose by more than 9 years to 37.2 (5,6). This report describes more recent trends in the number of births and deaths, crude birth and death rates, and the birth-to-death ratio overall and by race and Hispanic origin and urbanicity from 2010 through 2023. This includes the 10-year period before the pandemic and the years during and after through the most recent final data year.

Methods

Birth and death data shown in this report were collected through the National Vital Statistics System. All data are final and based on 100% of the birth and death certificates registered in all states and the District of Columbia. Detailed information on reporting completeness and criteria may be found elsewhere (7–12).

Race and Hispanic origin are reported separately on the birth and death certificates. Data shown by Hispanic origin include all people of Hispanic origin of any race. Data for non-Hispanic people are shown separately by race group. For 2018–2023, data by race are based on the revised standards issued by the Office of Management and Budget (OMB) in 1997 and present single-race groups (13). For 2010–2017, data by race are based on the standards issued by OMB in 1977 and present bridged-race groups (14). Single-race data for 2018 and after are not completely comparable with bridged-race data for 2010 through 2017, but the differences between single- and bridged-race groups are relatively small for the groups shown in this report (15,16). The race and Hispanic-origin groups shown in this report are: single- and bridged-race Black non-Hispanic (subsequently, Black), single- and bridged-race White non-Hispanic (subsequently, White), and Hispanic. For brevity, text references to race omit the terms "single-race" and "bridged-race." Births are based on race and Hispanic origin of mother; deaths are based on race and Hispanic origin of decedent.

Urbanicity level of the county of residence of the mother or decedent was categorized using the 2013 National Center for Health Statistics Urban–Rural Classification Scheme for Counties (17). In this system, counties are classified into six levels based primarily on metropolitan–nonmetropolitan status and population distribution. In this report, the urbanicity classification combines the four metropolitan levels: large central, large fringe, medium, and small metropolitan into one category (urban) and combines the two nonmetropolitan levels, micropolitan and noncore, into a second category (rural).

The crude birth rate (CBR) and crude death rate (CDR) are calculated using the annual total number of births or deaths for a group (numerator), divided by the annual total population for the group (denominator) and multiplied by 1,000. Typically the CDR is calculated based on a multiplier of 100,000, but in this report it is based on 1,000 to facilitate comparability between birth and death rates. Population data for 2010 are based on April 1 census counts and for 2011–2019, July 1 postcensal estimates are based on the 2010 census (7–12). Population data for 2020 are based on April 1 population estimates and for 2021, 2022, and 2023, July 1 postcensal estimates are derived from a blended base that incorporates the 2020 census, Vintage 2020 estimates (based on the April 1, 2010, census), and 2020 Demographic Analysis estimates (7–12,18–20). Rates for 2020 have been revised, using blended base population estimates, and may differ from those published in "Births: Final Data for 2020" and "Deaths: Final Data for 2020," which were based on postcensal population estimates based on the 2010 census (21,22). The birth-to-death (B:D) ratio was calculated using the total number of births for a group, dividing by the total number of deaths for the group, and multiplying by 1,000.

Trends were evaluated using the Joinpoint Regression Program with the default settings (23). In addition, pairwise comparisons of changes or differences presented in this report were based on a chi-squared test for the number of births and deaths and on a two-tailed z test for the rates and ratios, both at an alpha level of 0.05. All changes, differences, and trends are statistically significant unless otherwise noted.

Results

Overall trends in births and deaths

Number of births and deaths

- The number of births declined 10% from 2010 through 2023 (Table 1 and Figure 1). The number was essentially stable (trend not significant) from 2010 (3,999,386) through 2016 (3,945,875), then decreased by an average of 1.9% per year from 2016 through 2019 (3,747,540). Births then fluctuated, declining 3.6% from 2019 to 2020 (3,613,647), increasing 1.4% in 2021 (3,664,292), remaining essentially unchanged in 2022 (3,667,758), and then declining 2.0% in 2023 (3,596,017), resulting in an overall decrease of 4.0% from 2010 through 2023.
- In contrast to the decline in births, the number of deaths increased 25% from 2010 to 2023. The number increased from 2010 (2,468,435) through 2019 (2,854,838) by an average of 1.7% per year. From 2019 through 2023, deaths fluctuated, increasing 19% from 2019 to 2020 (3,383,729) and 2.4% in 2021 (3,464,231), and then declining 5.3% in 2022 (3,279,857) and 5.8% in 2023 (3,090,964), for an overall increase of 8.3%.

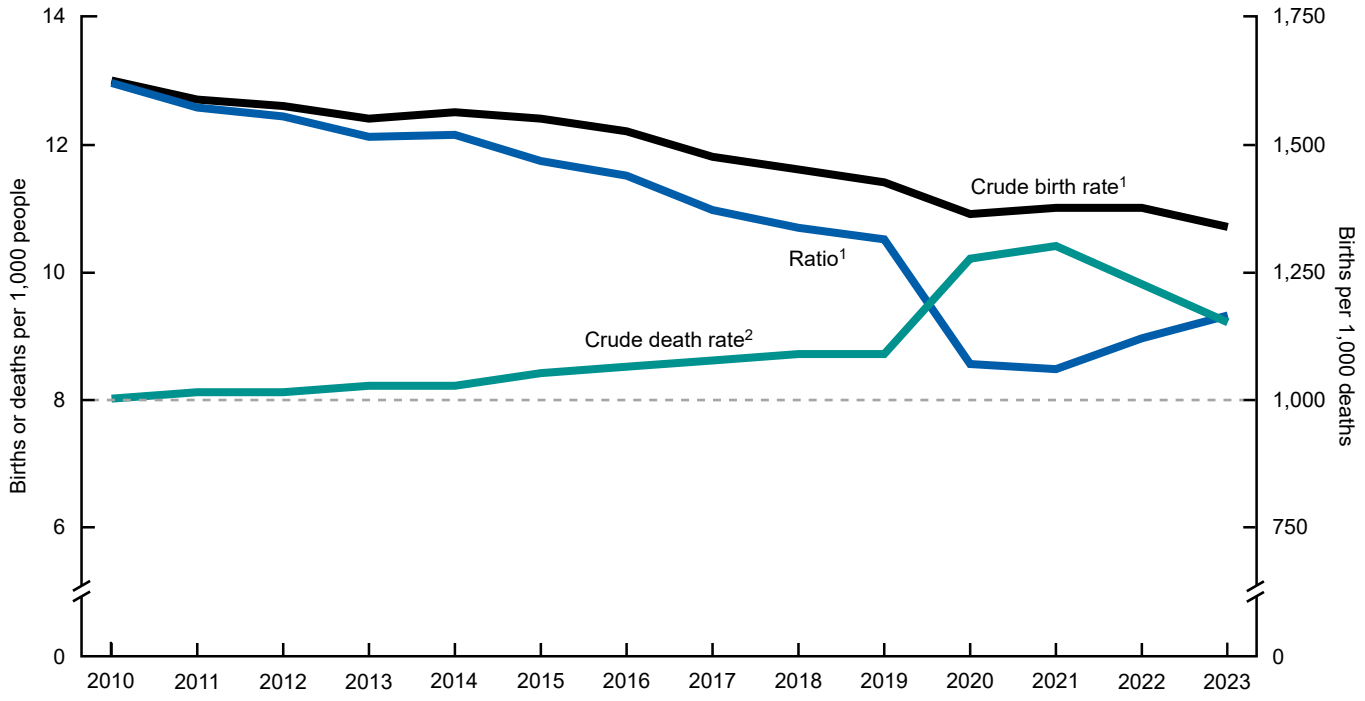
Crude birth and death rates

- The CBR declined 18% from 2010 through 2023 (Table 1 and Figure 2). The rate declined by an average of 0.8% per year from 2010 (13.0 births per 1,000 people) through 2015 (12.4) and 2.0% on average from 2015 through 2019 (11.4). The CBR then fluctuated from 2019 through 2023, with the rate declining 4.4% from 2019 to 2020 (10.9), increasing 0.9% in 2021 (11.0), remaining unchanged in 2022 (11.0), and declining 2.7% in 2023 (10.7), for an overall decrease of 6.1%.
- In contrast to the decline in the CBR, the CDR increased 15% from 2010 through 2023. The rate increased by an average of 1.0% per year from 2010 (8.0 deaths per 1,000 people) through 2019 (8.7). From 2019 through 2023, the CDR fluctuated, with the rate increasing 17% from 2019 to 2020 (10.2) and 2.0% in 2021 (10.4), and then decreasing 5.8% in 2022 (9.8) and another 6.1% in 2023 (9.2), for an overall increase of 5.7%.

Birth-to-death ratio

- The birth-to-death (B:D) ratio declined 28% from 2010 through 2023 (Table 1 and Figure 2). The ratio declined by an average of 1.6% per year from 2010 (1,620.2 births per 1,000 deaths) through 2014 (1,518.4) and 2.8% per year from 2014 through 2019 (1,312.7). From 2019 through 2023, the ratio fluctuated, declining 19% from 2019 to 2020

Figure 2. Crude birth rate, crude death rate, and ratio of births to deaths: United States, 2010–2023



[1]A significant decreasing trend was observed from 2010 through 2019, with different rates of change over time; no significant trend was observed from 2019 through 2023 ($p < 0.05$).
[2]A significant increasing trend was observed from 2010 through 2019; no significant trend was observed from 2019 through 2023 ($p < 0.05$).
NOTES: Crude birth rate is the number of births per 1,000 people. Crude death rate is the number of deaths per 1,000 people. Rates for 2020 have been revised and may differ from those published in "Births: Final Data for 2020" and "Deaths: Final Data for 2020." The dashed line at the ratio of 1,000 is the point of parity of births and deaths.
SOURCE: National Center for Health Statistics, National Vital Statistics System, natality and mortality data files.

(1,067.9) and 0.9% in 2021 (1,057.8), then rising 5.7% in 2022 (1,118.3) and 4.0% in 2023 (1,163.4), for an overall decrease of 11%.

Trends and differences in births and deaths by race and Hispanic origin

Trends in births and deaths for the Black population

Number of births and deaths

- The number of births for the Black population declined 17% from 2010 through 2023 (Table 1). The number was essentially stable (trend not significant) from 2010 (589,808) through 2017 (587,357) and declined by an average of 3.6% per year from 2017 through 2019 (548,075). Births declined 2.5% per year on average from 2019 through 2023, or 10% overall, with the number decreasing 3.3% from 2019 to 2020 (529,811), 2.3% in 2021 (517,889), 1.2% in 2022 (511,439), and 3.9% in 2023 (491,494).
- In contrast to the decline in births, the number of deaths for the Black population rose 36% from 2010 through 2023. Deaths rose from 2010 (283,438) through 2019 (346,677), by an average of 2.5% per year. From 2019 through 2023, deaths fluctuated, increasing 30% from 2019 to 2020 (449,213), remaining essentially unchanged in 2021 (449,764), and declining 8.4% in 2022 (411,934) and 6.4% in 2023 (385,399), for an overall increase of 11%.

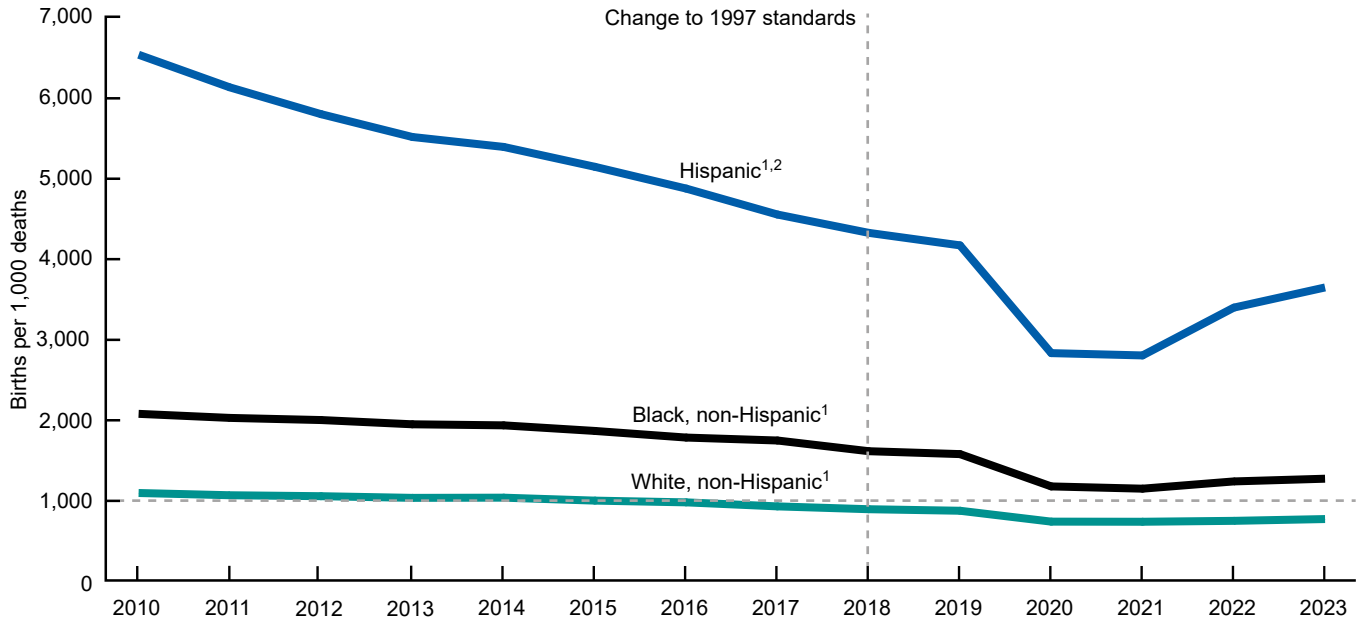
Crude birth and death rates

- The CBR for the Black population declined 23% from 2010 through 2023 (Table 1). The CBR declined by an average of 1.2% per year from 2010 (15.1) through 2019 (13.4). From 2019 through 2023, the rate declined 3.1% per year on average from 2019 through 2023, or 13% overall, with the rate declining 4.5% from 2019 to 2020 (12.8), by 2.3% in 2021 (12.5), 1.6% in 2022 (12.3), and 4.9% in 2023 (11.7).
- In contrast to the decline in the CBR, the CDR for the Black population increased by 26% from 2010 through 2023. The CDR rose by an average of 1.7% per year from 2010 (7.2) through 2019 (8.4). From 2019 through 2023, the rate fluctuated, with the rate rising 29% from 2019 to 2020 (10.8) and then declining 0.9% in 2021 (10.7), 8.4% in 2022 (9.8), and 7.1% in 2023 (9.1), for an overall increase of 8.3%.

Birth-to-death ratio

- The B:D ratio for the Black population declined 39% from 2010 through 2023 (Table 1 and Figure 3). The ratio declined by an average of 2.0% per year from 2010 (2,080.9) through 2015 (1,868.5) and by an average of 4.4% from 2015 through 2019 (1,580.9). After 2019, the ratio fluctuated, decreasing by a total of 19%; the ratio declined 25% from 2019 to 2020

Figure 3. Ratio of births to deaths for selected race and Hispanic-origin groups: United States, 2010–2023



[1]A significant decreasing trend was observed from 2010 through 2019, with different rates of change over time; no significant trend was observed from 2019 through 2023 ($p < 0.05$). Differences between race and Hispanic-origin groups are significant for all years ($p < 0.05$).
[2]People of Hispanic origin may be of any race.
NOTES: Race categories for 2010–2017 are consistent with the 1977 Office of Management and Budget standards (that is, bridged-race categories). Race categories for 2018–2021 are consistent with the 1997 Office of Management and Budget standards (that is, single-race categories); see Data source and methods. Single-race data for 2018 and after are not completely comparable with bridged-race data for earlier years. Deaths by race and Hispanic origin are affected by the misclassification of race and Hispanic origin on death certificates (27). The vertical dashed line at 2018 marks the change in the presentation of race from the 1977 standards to the 1997 standards. The horizontal dashed line at the ratio of 1,000 is the point of parity of births and deaths.
SOURCE: National Center for Health Statistics, National Vital Statistics System, natality and mortality data files.

(1,179.4) and 2.4% in 2021 (1,151.5), and then rose 7.8% in 2022 (1,241.6) and 2.7% in 2023 (1,275.3).

Trends in births and deaths for the White population

Number of births and deaths

- For the White population, the number of births declined 17% from 2010 through 2023 (Table 1). The number was essentially stable (trend not significant) from 2010 (2,162,406) through 2015 (2,130,279) and then declined 2.7% per year from 2015 through 2019 (1,915,912). Births fluctuated from 2019 through 2023, with the number declining 3.8% from 2019 to 2020 (1,843,432), rising 2.4% in 2021 (1,887,656), and then declining 2.5% in 2022 (1,840,739) and 2.9% in 2023 (1,787,051), for a total decrease of 6.7%.
- In contrast to the decline in births, the number of deaths rose 17% from 2010 through 2023. The number rose by an average of 1.2% per year from 2010 (1,969,916) through 2019 (2,183,844). From 2019 through 2023, deaths fluctuated, with the number rising 14% from 2019 to 2020 (2,484,072) and 2.6% in 2021 (2,548,809), but then declining 4.0% in 2022 (2,448,093) and 5.7% in 2023 (2,308,328), for an overall increase of 5.7%.

Crude birth and death rates

- For the White population, the CBR declined 15% from 2010 through 2023. The rate was essentially stable (trend not significant) from 2010 (10.9) through 2015 (10.7) and then declined by an average of 2.2% per year from 2015 through 2019 (9.8). From 2019 through 2023, the CBR fluctuated, with the rate declining 4.1% from 2019 to 2020 (9.4), rising 3.2% in 2021 (9.7), declining 2.1% in 2022 (9.5), and declining another 2.1% in 2023 (9.3), for an overall decrease of 5.1%.
- In contrast to the decline in the CBR, the CDR for the White population increased 20% from 2010 to 2023. The CDR rose by an average of 1.4% per year from 2010 (9.8) through 2019 (11.1). From 2019 through 2023, the rate fluctuated, with the rate rising 14% from 2019 to 2020 (12.6) and 2.4% in 2021 (12.9), but then declined 3.1% in 2022 (12.5) and 5.6% in 2023 (11.8), for a total increase of 6.3%.

Birth-to-death ratio

- The B:D ratio for the White population declined 29% from 2010 to 2023 (Table 1 and Figure 3). The ratio declined by an average of 1.6% from 2010 (1,097.7) through 2015 (1,003.1) and 3.6% per year from 2015 through 2019 (877.3). From 2019 through 2023, the ratio fluctuated, with the ratio declining 15% from 2019 to 2020 (742.1), remaining essentially unchanged in 2021 (740.6), and rising 1.5% in 2022 (751.9) and 3.0% in 2023 (774.2), for an overall decrease of 12%.

Trends in births and deaths for the Hispanic population

Number of births and deaths

- For the Hispanic population, the number of births was essentially unchanged from 2010 through 2023 (Table 1). Births declined by 0.5% per year from 2010 (945,180) through 2019 (886,467). From 2019 through 2023, births fluctuated, with births declining 2.2% from 2019 to 2020 (866,713), and then rising 2.2% in 2021 (885,916), 5.8% in 2022 (937,421), and 0.8% in 2023 (945,200), for an overall increase of 6.6%.
- In contrast to the number of births, the number of deaths for the Hispanic population rose by 79% from 2010 through 2023. Deaths rose by 4.4% per year from 2010 (144,490) through 2019 (212,397). The number of deaths fluctuated from 2019 through 2023, with deaths rising 44% from 2019 to 2020 (305,708) and 3.3% in 2021 (315,664), but then declining 13% in 2022 (275,684) and 6.1% in 2023 (258,896), for a total increase of 22%.

Crude birth and death rates

- For the Hispanic population, the CBR declined 22% from 2010 through 2023. The rate declined by an average of 2.5% per year from 2010 (18.7) through 2019 (14.6). From 2019 through 2023, the CBR fluctuated, with the rate declining 4.1% from 2019 to 2020 (14.0), rising 0.7% in 2021 (14.1) and 4.3% in 2022 (14.7), and then declining 1.4% in 2023 (14.5), for an overall decrease of 0.7%.
- In contrast to the decline in the CBR, the CDR for the Hispanic population rose 38% from 2010 through 2023. The rate rose by 2.3% per year from 2010 (2.9) through 2019 (3.5). From 2019 through 2023, the CDR fluctuated, with the rate rising 43% from 2019 to 2020 (5.0), remaining unchanged in 2021 (5.0), and declining 14% in 2022 (4.3) and 7.0% in 2023 (4.0), for a total decrease of 14%.

Birth-to-death ratio

- The B:D ratio for the Hispanic population declined 44% from 2010 through 2023 (Table 1 and Figure 3). The ratio declined by an average of 4.8% per year from 2010 (6,541.5) through 2019 (4,173.6). The ratio fluctuated from 2019 through 2023, with the ratio declining 32% from 2019 to 2020 (2,835.1) and 1.0% in 2021 (2,806.5), and then rising 21% in 2022 (3,400.3) and 7.4% in 2023 (3,650.9), for an overall decrease of 13%.

Differences in the birth-to-death ratio by race and Hispanic origin

- From 2010 through 2023, the ranking in the birth-to-death ratio for the three race and Hispanic-origin groups remained the same, with the lowest ratio observed for the White population and the highest ratio for the Hispanic population (Table 1 and Figure 3). However, the difference in the ratios between the groups narrowed over the period. In 2010,

the ratio ranged from 1,097.7 for the White population to 6,541.5 for the Hispanic population, a difference of 5,443.8 births; in 2023, the ratio ranged from 774.2 for the White population to 3,650.9 for the Hispanic population, a difference of 2,876.7 births. From 2010 through 2015, birth-to-death ratios for each group were above parity (that is, a ratio of 1,000 births per 1,000 deaths, where the number of births equals the number of deaths), while from 2016 through 2023, ratios remained above parity for the Black and Hispanic populations and below parity for the White population.

Trends and differences in births and deaths by urbanicity

Trends in births and deaths for urban counties

Number of births and deaths

- The number of births in urban counties declined 10% from 2010 through 2023 (Table 2). The number was essentially stable (trend not significant) from 2010 (3,449,289) through 2016 (3,413,288) and then declined by an average of 1.9% per year from 2016 through 2019 (3,241,196). Births then fluctuated from 2019 through 2023, with the number declining 3.6% from 2019 to 2020 (3,123,204), increasing 1.4% in 2021 (3,167,827) and 0.3% in 2022 (3,176,733) before declining 2.1% in 2023 (3,110,071), for a total decrease of 4.0%.
- In contrast to the decline in births, the number of deaths in urban counties rose 27% from 2010 through 2023. Deaths rose from 2010 (1,989,099) through 2017 (2,285,463) by an average of 2.0% per year and by 1.1% from 2017 through 2019 (2,320,231). Urban deaths then fluctuated from 2019 through 2023, with the number increasing 19% from 2019 to 2020 (2,763,553) and 1.7% from 2020 to 2021 (2,810,394) before declining 5.1% from 2021 to 2022 (2,668,273) and 5.6% from 2022 to 2023 (2,519,248), for an overall increase of 8.6%.

Crude birth and death rates

- The CBR for urban counties declined 23% from 2010 through 2023 (Table 2). The CBR was stable (trend not significant) from 2010 (13.1) through 2015 (12.5) and declined by an average of 2.0% per year from 2015 through 2019 (11.5). The urban CBR fluctuated from 2019 through 2023, with the rate declining 5.2% from 2019 to 2020 (10.9) and rising 1.8% from 2020 to 2021 (11.1). No change was seen from 2021 to 2022. The CBR declined 2.7% from 2022 to 2023 (10.8), for a total decrease of 6.1%.
- In contrast to the decline in the CBR, the CDR in urban counties increased by 14% from 2010 through 2023. The CDR rose by an average of 1.0% per year from 2010 (7.6) through 2019 (8.2). The urban CDR fluctuated from 2019 through 2023, with the rate increasing 18% from 2019 to 2020 (9.7) and 1.0% from 2020 to 2021 (9.8) before decreasing by 5.1% from 2021 to 2022 (9.3) and decreasing 6.5% from 2022 to 2023 (8.7), for an overall increase of 6.1%.

Birth-to-death ratio

- The B:D ratio for urban counties declined 29% from 2010 through 2023 (Table 2 and Figure 4). The ratio was stable (trend not significant) from 2010 (1,734.1) through 2014 (1,621.9) and then declined by an average of 2.9% per year from 2014 through 2019 (1,396.9). The ratio fluctuated from 2019 through 2023, decreasing 19% from 2019 to 2020 (1,130.1) and 0.3% from 2020 to 2021 (1,127.2) before increasing 5.6% from 2021 to 2022 (1,190.6) and 3.7% from 2022 to 2023 (1,234.5), for an overall decrease of 12%.

Trends in births and deaths for rural counties

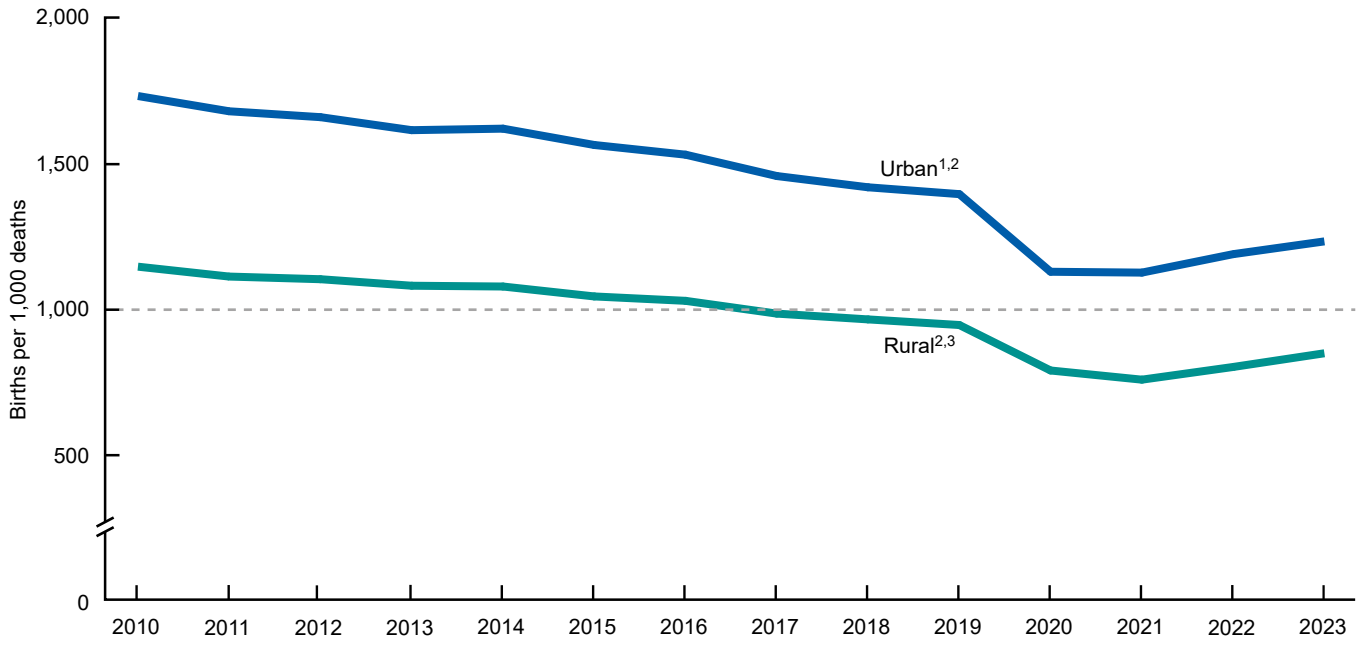
Number of births and deaths

- The number of births in rural counties declined 12% from 2010 through 2023 (Table 2). The number was essentially stable (trend not significant) from 2010 (550,097) through 2015 (539,911) and declined by an average of 1.6% per year from 2015 through 2019 (506,344). Rural births declined 0.8% per year on average from 2019 through 2023, or 4.0% overall, with births decreasing 3.1% from 2019 to 2020 (490,443), increasing 1.2% in 2021 (496,465), and then decreasing 1.1% in 2022 (491,025) and 1.0% in 2023 (485,946).
- In contrast to the decline in births, the number of deaths in rural counties rose 19% from 2010 through 2023. Deaths rose from 2010 (479,336) through 2019 (534,607) by an average of 1.3% per year. Rural deaths fluctuated from 2019 through 2023, increasing 16% from 2019 to 2020 (620,176) and by 5.4% from 2020 to 2021 (653,837) before declining 6.5% from 2021 to 2022 (611,584) and 6.5% from 2022 to 2023 (571,716), for a total increase of 6.9%.

Crude birth and death rates

- The CBR for rural counties declined 23% from 2010 through 2023 (Table 2). The CBR was stable (trend not significant) from 2010 (11.9) through 2016 (11.6) and declined by an average of 1.9% per year from 2016 through 2019 (11.0). It declined 1.0% per year on average from 2019 through 2023, or 4.5% overall, with the rate decreasing 2.7% from 2019 to 2020 (10.7), increasing 0.9% in 2021 (10.8), and then decreasing 1.9% in 2022 (10.6) and 0.9% in 2023 (10.5).
- In contrast to the decline in the CBR, the CDR in rural counties increased by 19% from 2010 through 2023. The CDR rose by an average of 1.3% per year from 2010 (10.4) through 2019 (11.6). The rural CDR fluctuated from 2019 through 2023, with the rate increasing 16% from 2019 to 2020 (13.5) and by 5.2% from 2020 to 2021 (14.2), then decreasing 6.3% from 2021 to 2022 (13.3) and 6.8% from 2022 to 2023 (12.4), for an overall increase of 6.9%.

Figure 4. Ratio of births to deaths, by urbanicity of county of residence: United States, 2010–2023



[1]No significant trend was observed from 2010 through 2015; a significant decreasing trend was observed from 2015 through 2019; no significant trend was observed from 2019 through 2023 ($p < 0.05$).
[2]Differences between urbanicity levels are significant for all years ($p < 0.05$).
[3]No significant trend was observed from 2010 through 2014; a significant decreasing trend was observed from 2014 through 2019; no significant trend was observed from 2019 through 2023 ($p < 0.05$).
NOTES: Urbanicity of county of residence is based on the 2013 NCHS Urban-Rural Classification Scheme for Counties; see Data source and methods. The dashed line at the ratio of 1,000 is the point of parity of births and deaths.
SOURCE: National Center for Health Statistics, National Vital Statistics System, natality and mortality data files.

Birth-to-death ratio

- The B:D ratio for rural counties declined 26% from 2010 through 2023 (Table 2 and Figure 4). The ratio was stable (trend not significant) from 2010 (1,147.6) through 2014 (1,079.4) and then declined by an average of 2.5% per year from 2014 through 2019 (947.1). The rural ratio fluctuated from 2019 through 2023, with the ratio decreasing 17% from 2019 to 2020 (790.8) and 4.0% from 2020 to 2021 (759.3) before increasing 5.7% from 2021 to 2022 (802.9) and 5.9% from 2022 to 2023 (850.0), for a total decrease of 10%.

Differences in the ratio of births to deaths by urbanicity

- The ranking in the birth-to-death ratio for the two urbanization categories remained the same from 2010 through 2023, with the lower ratio observed for rural counties and the higher ratio for urban counties (Table 2 and Figure 4). However, the difference in the ratios between the categories narrowed over the period. In 2010, the ratio differed by 586.5 births between rural counties (1,147.6) and urban counties (1,734.1); in 2023, the ratio differed by 384.5 births between rural counties (850.0) and urban counties (1,234.5). The birth-to-death ratio for urban counties was above parity (1,000 births per 1,000 deaths) from 2010 through 2023; the ratio for rural counties was above parity from 2010 through 2016, but below from 2017 through 2023.

Summary

The annual number of births in the United States declined 10% from 2010 through 2023; during the same period, the annual number of deaths increased 25% (including a 19% increase from 2019 to 2020, which was influenced by the COVID-19 pandemic). Similarly, the CBR decreased 18% from 2010 through 2023, while the CDR increased 15%. As a result, the ratio of births to deaths declined 28% from 2010 through 2023, with the largest decline (19%) from 2019 to 2020. Similar trends in the number of births and deaths, crude birth and death rates, and birth-to-death ratios were observed for the three largest race and Hispanic-origin groups and two urbanicity categories shown in this report. The ratio of births to deaths fell below parity (1,000 births per 1,000 deaths) for the White population from 2016 through 2023 and for rural counties from 2017 through 2023.

The upward trend in the number of deaths and the CDR over time is due largely to the aging of the U.S. population, as the numbers and percentage of older people, who die at higher rates than younger people, have increased from 2010 through 2023 (6,24). As a result, the population median age increased from 37.2 in 2010 to 39.1 in 2023, while the percentage of people age 65 and older increased from 13.0% to 17.7%, a difference equal

to almost 19 million people (6,24). At the same time, declining numbers of births and birth rates resulted in almost 1.7 million fewer people younger than age 20 in 2023 than in 2010; people younger than age 20 comprised 27.0% of the population in 2010 and 24.4% in 2023.

Limitations

This comparison of births to deaths does not consider the effect of net migration, which can have a significant impact on population change. Immigration can offset population decline due to deaths, whereas emigration can exacerbate population decline, either simply (people leaving) or in a more multilayered manner (reproductive age females leaving), in addition to deaths. The comparison of births to deaths alone provides only the population change in the absence of migration. Additionally, while a death represents the permanent loss of a person, the decline in births may reflect, in part, postponed births.

Finally, only reproductive age females within a population can give birth, whereas every person within a population can die, including the young, old, and males. The burden of mortality in terms of age and sex of a population is another factor to consider in the comparison of births to deaths and the impact that the difference will have on population change. If, for example, deaths among age groups 65 and older rise compared with younger age groups, increasing the overall mortality rate, the direct effect of this increase on the number of reproductive age females would be negligible, with the potential for births to increase remaining undiminished.

Conclusion

Historically, the number of births in the United States has exceeded the number of deaths; the number of births was 70% greater on average than the number of deaths from 1970 through 2019. Differences in the numbers and rates of births and deaths narrowed from 2010 through 2023, particularly during and after the pandemic. From 2010 through 2019, the number of births was 47% greater on average than the number of deaths; from 2020 through 2023, the number of births exceeded the number of deaths by an average of 10%, with the difference of births minus deaths increasing each year. More recent provisional birth and death data suggest a continuation of this trend at least through 2024 (25,26).

References

1. Lee R, Tuljapurkar S. Death and taxes: Longer life, consumption, and social security. Demography. 1997 Feb;34(1):67–81.
2. Lee R, Tuljapurkar S, Ryan ER. Uncertain demographic futures and government budgets in the U.S. in Tuljapurkar S, Ogawa N, and Gauthier A, eds., Responses to aging in advanced industrial states: riding the age wave. 2010;3.
3. Huston BF. Social Security: Demographic trends and the funding shortfall. Congressional Research Service. 2019 Nov. Available from: https://www.congress.gov/crs_external_products/R/PDF/R45990/R45990.2.pdf.
4. Wise DA, Woodbury RG. Social Security in a changing environment: Findings from the Retirement Research Center at the National Bureau of Economic Research. Soc Secur Bull. 2009;69(4):65–81.
5. U.S. Census Bureau, Current Population Reports, Population estimates and projections, Series P25, No. 490, Estimates of the population of the United States, by age and sex: April 1, 1979 to July 1, 1972. Government Publishing Office. 1972 Sep. Available from: https://www2.census.gov/library/publications/1972/demographics/P25-490.pdf.
6. U.S. Census Bureau. 2019 population estimates. Annual estimates of the resident population by single year of age and sex for the United States: April 1, 2010 to July 1, 2019. 2020. Available from: https://www2.census.gov/programs-surveys/popest/tables/2010-2019/national/asrh/nc-est2019-syasexn.xlsx.
7. Osterman MJK, Hamilton BE, Martin JA, Driscoll AK, Valenzuela CP. Births: Final data for 2021. Natl Vital Stat Rep. 2023 Jan;72(1):1–53. DOI: https://dx.doi.org/10.15620/cdc:122047.
8. Murphy SL, Kochanek KD, Xu J, Arias E. Deaths: Final data for 2021. Natl Vital Stat Rep. 2024 Oct;73(8):1–139. DOI: https://dx.doi.org/10.15620/cdc/158787.
9. Osterman MJK, Hamilton BE, Martin JA, Driscoll AK, Valenzuela CP. Births: Final data for 2022. Natl Vital Stat Rep. 2024 Apr;73(2):1–56. DOI: https://dx.doi.org/10.15620/cdc:145588.
10. Kochanek KD, Murphy SL, Xu JQ, Arias E. Mortality in the United States, 2022. NCHS Data Brief. 2024 Mar;(492). DOI: https://dx.doi.org/10.15620/cdc:135850.
11. Osterman MJK, Hamilton BE, Martin JA, Driscoll AK, Valenzuela CP. Births: Final data for 2023. Natl Vital Stat Rep. 2025 Mar;74(1):1–39. DOI: https://dx.doi.org/10.15620/cdc/175204.
12. Murphy SL, Kochanek KD, Xu JQ, Arias E. Mortality in the United States, 2023. NCHS Data Brief. 2024 Dec;(521). DOI: https://dx.doi.org/10.15620/cdc/170564.
13. Office of Management and Budget. Revisions to the standards for the classification of federal data on race and ethnicity. Fed Regist 62(210):58782–90. 1997. Available from: https://www.govinfo.gov/content/pkg/FR-1997-10-30/pdf/97-28653.pdf.
14. Office of Management and Budget. Race and ethnic standards for federal statistics and administrative reporting. Statistical Policy Directive 15. 1977. Available from: https://wonder.cdc.gov/wonder/help/populations/bridged-race/directive15.html.
15. Heron M. Comparability of race-specific mortality data based on 1977 versus 1997 reporting standards. Natl Vital Stat Rep. 2021 Apr;70(3):1–31. DOI: https://dx.doi.org/10.15620/cdc:103476.
16. Martin JA, Hamilton BE, Osterman MJK, Driscoll AK, Drake P. Births: Final data for 2016. Natl Vital Stat Rep. 2018 Jan;67(1):1–55.
17. Ingram DD, Franco SJ. 2013 NCHS urban-rural classification scheme for counties. Vital Health Stat 2. 2014 Apr;(166):1–73. Available from: https://www.cdc.gov/nchs/data/series/sr_02/sr02_166.pdf.
18. U.S. Census Bureau. 2021 population estimates. Annual state resident population estimates for 6 race groups (5 race alone groups and two or more races) by age, sex, and Hispanic origin: April 1, 2020 to July 1, 2021 (SC-EST2021-ALLDATA6). 2022. Available from: https://www2.census.gov/programs-surveys/popest/datasets/2020-2021/state/asrh/sc-est2021-alldata6.csv.
19. U.S. Census Bureau. 2022 population estimates. Annual state resident population estimates for 6 race groups (5 race alone groups and two or more races) by age, sex, and Hispanic origin: April 1, 2020 to July 1, 2022 (SC-EST2022-ALLDATA6). 2023. Available from: https://www2.census.gov/programs-surveys/popest/datasets/2020-2022/state/asrh/sc-est2022-alldata6.csv.

20. U.S. Census Bureau. 2023 population estimates. Annual state resident population estimates for 6 race groups (5 race alone groups and 2 or more races) by age, sex, and Hispanic origin: April 1, 2020 to July 1, 2023 (SC-EST2023-ALLDATA6). 2024. Available from: https://www2.census.gov/programs-surveys/popest/datasets/2020-2023/state/asrh/sc-est2023-alldata6.csv.
21. Osterman MJK, Hamilton BE, Martin JA, Driscoll AK, Valenzuela CP. Births: Final data for 2020. Natl Vital Stat Rep. 2021 Feb;70(17):1–50. DOI: https://dx.doi.org/10.15620/cdc:112078.
22. Kochanek KD, Murphy SL, Xu JQ, Arias E. Deaths: Final data for 2020. Natl Vital Stat Rep. 2023 Sep;72(10):1–92. DOI: https://dx.doi.org/10.15620/cdc:131355.
23. National Cancer Institute. Joinpoint Regression Program (Version 4.8.0.1) [computer software]. 2021.
24. U.S. Census Bureau. 2023 population estimates. Annual estimates of the resident population by single year of age and sex for the United States: April 1, 2020 to July 1, 2023 (NC-EST2023-AGESEX-RES). 2024. Available from: https://www2.census.gov/programs-surveys/popest/tables/2020-2023/national/asrh/nc-est2023-syasexn.xlsx.
25. Centers for Disease Control and Prevention. CDC WONDER. Natality information: Provisional natality data. Available from: https://wonder.cdc.gov/natality.html.
26. Centers for Disease Control and Prevention. CDC WONDER. Mortality data: Provisional multiple cause of death data. Available from: https://wonder.cdc.gov/mcd.html.

List of Detailed Tables

Table 1. Births and deaths, crude birth and death rates, and ratio of births to deaths, by selected race and Hispanic origin: United States, 2010–2023

[Crude birth rates are births per 1,000 people. Crude death rates are deaths per 1,000 people. Rates are based on populations enumerated as of April 1 for 2010, estimated April 1 for 2020, and July 1 for all other years. Ratio of births to deaths is expressed per 1,000 deaths]

	All races and origins[1]					Black, non-Hispanic[2]					White, non-Hispanic[2]					Hispanic[3]				
Year	Births	Crude birth rate	Deaths	Crude death rate	Ratio	Births	Crude birth rate	Deaths	Crude death rate	Ratio	Births	Crude birth rate	Deaths	Crude death rate	Ratio	Births	Crude birth rate	Deaths	Crude death rate	Ratio
2023	3,596,017	10.7	3,090,964	9.2	1,163.4	491,494	11.7	385,399	9.1	1,275.3	1,787,051	9.3	2,308,328	11.8	774.2	945,200	14.5	258,896	4.0	3,650.9
2022	3,667,758	11.0	3,279,857	9.8	1,118.3	511,439	12.3	411,934	9.8	1,241.6	1,840,739	9.5	2,448,093	12.5	751.9	937,421	14.7	275,684	4.3	3,400.3
2021	3,664,292	11.0	3,464,231	10.4	1,057.8	517,889	12.5	449,764	10.7	1,151.5	1,887,656	9.7	2,548,809	12.9	740.6	885,916	14.1	315,664	5.0	2,806.5
2020	3,613,647	10.9	3,383,729	10.2	1,067.9	529,811	12.8	449,213	10.8	1,179.4	1,843,432	9.4	2,484,072	12.6	742.1	866,713	14.0	305,708	5.0	2,835.1
2019	3,747,540	11.4	2,854,838	8.7	1,312.7	548,075	13.4	346,677	8.4	1,580.9	1,915,912	9.8	2,183,844	11.1	877.3	886,467	14.6	212,397	3.5	4,173.6
2018	3,791,712	11.6	2,839,205	8.7	1,335.5	552,029	13.6	341,408	8.3	1,616.9	1,956,413	10.0	2,182,552	11.0	896.4	886,210	14.8	204,719	3.4	4,328.9
2017	3,855,500	11.8	2,813,503	8.6	1,370.4	587,357	13.9	335,667	7.9	1,749.8	2,030,493	10.2	2,179,857	10.8	931.5	898,764	15.2	197,249	3.3	4,556.5
2016	3,945,875	12.2	2,744,248	8.5	1,437.9	583,786	14.0	326,810	7.8	1,786.3	2,094,054	10.5	2,133,463	10.6	981.5	918,447	16.0	188,254	3.3	4,878.8
2015	3,978,497	12.4	2,712,630	8.4	1,466.7	589,047	14.2	315,254	7.5	1,868.5	2,130,279	10.7	2,123,631	10.6	1,003.1	924,048	16.3	179,457	3.2	5,149.1
2014	3,988,076	12.5	2,626,418	8.2	1,518.4	588,891	14.4	303,844	7.4	1,938.1	2,149,302	10.8	2,066,949	10.3	1,039.8	914,065	16.5	169,387	3.1	5,396.3
2013	3,932,181	12.4	2,596,993	8.2	1,514.1	583,834	14.4	299,227	7.3	1,951.1	2,129,196	10.7	2,052,660	10.2	1,037.3	901,033	16.7	163,241	3.0	5,519.6
2012	3,952,841	12.6	2,543,279	8.1	1,554.2	583,489	14.6	291,179	7.2	2,003.9	2,134,044	10.7	2,016,896	10.0	1,058.1	907,677	17.1	156,419	2.9	5,802.9
2011	3,953,590	12.7	2,515,458	8.1	1,571.7	582,345	14.7	286,797	7.2	2,030.5	2,146,566	10.8	2,006,319	10.0	1,069.9	918,129	17.6	149,635	2.9	6,135.8
2010	3,999,386	13.0	2,468,435	8.0	1,620.2	589,808	15.1	283,438	7.2	2,080.9	2,162,406	10.9	1,969,916	9.8	1,097.7	945,180	18.7	144,490	2.9	6,541.5

[1]Includes races and origins not shown separately, such as Hispanic, single-race White; Hispanic, single-race Black; and non-Hispanic, multiple-race people; and births or deaths with origin not stated.
[2]Race and Hispanic origin are reported separately on birth and death certificates. In this table, non-Hispanic people are classified by race. For 2018–2022, race categories are consistent with the 1997 Office of Management and Budget (OMB) standards. For 2010–2017, race categories are consistent with the 1977 OMB standards. Race categories in this table include both bridged race (the race reported either alone or in combination with one or more of the other races bridged to one race) and single race (the race reported alone with only one race reported); see Data source and methods in this report. Single-race data are not completely comparable with bridged-race data. Deaths and death rates by race and Hispanic origin are affected by the misclassification of race and Hispanic origin on death certificates; see "The Validity of Race and Hispanic-origin Reporting on Death Certificates in the United States: An Update."
[3]Includes all people of Hispanic origin of any race; see Data source and methods.

NOTE: Rates for 2020 have been revised and may differ from those published in "Births: Final Data for 2020" and "Deaths: Final Data for 2020"; see Data source and methods.

SOURCE: National Center for Health Statistics, National Vital Statistics System, natality and mortality data files.

Table 2. Births and deaths, crude birth and death rates, and ratio of births to deaths, by urbanicity of county of residence: United States, 2010–2023

[Crude birth rates are births per 1,000 people. Crude death rates are deaths per 1,000 people. Rates are based on populations enumerated as of April 1 for 2010, estimated April 1 for 2020, and July 1 for all other years. Ratio of births to deaths is expressed per 1,000 deaths]

Urbanicity of county	Year													
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Number of births													
Metropolitan (urban)	3,449,289	3,411,670	3,412,444	3,392,843	3,447,282	3,438,586	3,413,288	3,334,692	3,278,590	3,241,196	3,123,204	3,167,827	3,176,733	3,110,071
Nonmetropolitan (rural)	550,097	541,920	540,397	539,338	540,794	539,911	532,587	520,808	513,122	506,344	490,443	496,465	491,025	485,946
	Crude birth rate													
Metropolitan (urban)	13.1	12.9	12.7	12.6	12.6	12.5	12.3	11.9	11.7	11.5	10.9	11.1	11.1	10.8
Nonmetropolitan (rural)	11.9	11.7	11.7	11.7	11.7	11.7	11.6	11.3	11.1	11.0	10.7	10.8	10.6	10.5
	Number of deaths													
Metropolitan (urban)	1,989,099	2,028,813	2,053,995	2,098,572	2,125,424	2,196,111	2,227,271	2,285,463	2,308,265	2,320,231	2,763,553	2,810,394	2,668,273	2,519,248
Nonmetropolitan (rural)	479,336	486,645	489,284	498,421	500,994	516,519	516,977	528,040	530,940	534,607	620,176	653,837	611,584	571,716
	Crude death rate													
Metropolitan (urban)	7.6	7.6	7.7	7.8	7.8	8.0	8.0	8.2	8.2	8.2	9.7	9.8	9.3	8.7
Nonmetropolitan (rural)	10.4	10.5	10.6	10.8	10.8	11.2	11.2	11.5	11.5	11.6	13.5	14.2	13.3	12.4
	Ratio of births to deaths													
Metropolitan (urban)	1,734.1	1,681.6	1,661.4	1,616.7	1,621.9	1,565.8	1,532.5	1,459.1	1,420.4	1,396.9	1,130.1	1,127.2	1,190.6	1,234.5
Nonmetropolitan (rural)	1,147.6	1,113.6	1,104.5	1,082.1	1,079.4	1,045.3	1,030.2	986.3	966.4	947.1	790.8	759.3	802.9	850.0

NOTE: Urbanicity of county of residence is based on the 2013 NCHS Urban–Rural Classification Scheme for Counties; see Data source and methods in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, natality and mortality data files.

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES

Centers for Disease Control and Prevention
National Center for Health Statistics
3311 Toledo Road, Room 4551, MS P08
Hyattsville, MD 20782–2064

For more NCHS NVSRs, visit:
https://www.cdc.gov/nchs/products/nvsr.htm.

National Vital Statistics Reports, Vol. 74, No. 11, August 27, 2025

Contents

Acknowledgments

This report was prepared in the Division of Vital Statistics (DVS) under the general direction of Paul D. Sutton, DVS Director; Amy M. Branum, National Center for Health Statistics Associate Director for Science; Andrés A. Berruti, DVS Associate Director for Science; Isabelle Horon, DVS Deputy Director; Robert N. Anderson, Statistical Analysis and Surveillance Branch Chief; Joyce Martin, Perinatal Statistics and Research Team (PeSaRT) Leader; and Elizabeth Arias, Mortality Statistics and Research Team Leader. Claudia P. Valenzuela (PeSaRT) provided content and table review. Rajesh Virkar, Chief of the Systems, Programming, and Statistical Resources Branch (SPSRB), Steve J. Steimel (SPSRB), and Annie S. Liu (SPSRB) provided computer programming support. Steve J. Steimel and Annie S. Liu also prepared the natality file. Registration Methods staff and Data Acquisition, Classification, and Evaluation Branch staff provided consultation to state vital statistics offices regarding collection of the birth and death certificate data on which this report is based. Information Design and Publishing Staff edited and produced this report: Jen Hurlburt edited the report and Jiale Feng produced the typesetting and graphics.

Suggested citation

Hamilton BE, Driscoll AK, Miniño AM. Trends in births and deaths: United States, 2010–2023. Natl Vital Stat Rep. 2025 Aug;74(11):1–12. DOI: https://dx.doi.org/10.15620/cdc/174614.