Federal Interagency Forum on Child and Family Statistics

America's Children: Special Issue 2024

Maternal and Infant Health and Well-Being

Federal Interagency Forum on Child and Family Statistics

The Federal Interagency Forum on Child and Family Statistics was founded in 1994. Executive Order No. 13045 formally established the Forum in April 1997 to foster coordination and collaboration in the collection and reporting of Federal data on children and families. Agencies that are members of the Forum as of summer 2024 are as follows:

Consumer Product Safety Commission
https://www.cpsc.gov

Department of Agriculture
Economic Research Service
https://www.ers.usda.gov

Department of Commerce
U.S. Census Bureau
https://www.census.gov

Department of Defense
Office of the Deputy Assistant Secretary of Defense for Military Community and Family Policy
https://prhome.defense.gov/M-RA/Inside-M-RA/MCFP/

Department of Education
National Center for Education Statistics
https://nces.ed.gov

Department of Health and Human Services
Administration for Children and Families
https://www.acf.hhs.gov

Agency for Healthcare Research and Quality
https://www.ahrq.gov

Eunice Kennedy Shriver National Institute of Child Health and Human Development
https://www.nichd.nih.gov/

Maternal and Child Health Bureau
https://www.mchb.hrsa.gov

National Center for Health Statistics
https://www.cdc.gov/nchs

National Institute of Mental Health
https://www.nimh.nih.gov/index.shtml

Office of the Assistant Secretary for Planning and Evaluation
https://aspe.hhs.gov

Office of Population Affairs
https://www.hhs.gov/opa/

Substance Abuse and Mental Health Services Administration
https://www.samhsa.gov

Department of Housing and Urban Development
Office of Policy Development and Research
https://www.huduser.gov/portal/home.html

Department of Justice
Bureau of Justice Statistics
https://www.bjs.ojp.gov

National Institute of Justice
https://nij.ojp.gov/

Office of Juvenile Justice and Delinquency Prevention
https://ojjdp.ojp.gov/

Department of Labor
Bureau of Labor Statistics
https://www.bls.gov

Women's Bureau
https://www.dol.gov/agencies/wb

Department of Transportation
National Highway Traffic Safety Administration
https://www.nhtsa.gov/

Environmental Protection Agency
Office of Children's Health Protection
https://www.epa.gov/children

Office of Management and Budget
Statistical and Science Policy Office
https://www.whitehouse.gov/omb/

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Introduction

Foreword

Maternal and infant health indicators are often used to gauge the overall health of a nation. Understanding the current state of maternal and infant well-being, health behaviors, and social determinants of health across several domains offers the opportunity to kindle ideas for interventions to improve well-being. The United States has one of the highest maternal mortality rates among developed nations. In 2022, the United States reported an increase in infant mortality from 2021 to 2022, its first year-to-year increase in over two decades. We need to reverse these troubling trends.

Maternal and infant well-being in the United States remain crucial areas of interest to the public and policymakers alike. In 2019, the National Institutes of Health established the Implementing a Maternal health and PRegnancy Outcomes Vision for Everyone (IMPROVE) Initiative in response to improve maternal health and reduce maternal mortality. This *America's Children: Maternal and Infant Health and Well-being, Special Issue, 2024* report, extends the commitment of the NIH, IMPROVE, and the Forum to the well-being of the nation.

Using the knowledge, data, and expertise of the 23 forum agencies, indicators of maternal and infant well-being and the social and environmental contexts that contribute to well-being are explored in this volume.

Diana W. Bianchi, MD
Director
Eunice Kennedy Shriver *National Institute*
of Child Health and Human Development (NICHD)
National Institutes of Health

About This Report

The Forum's report, *America's Children, Special Issue: Maternal and Infant Health and Well-Being, 2024* features indicators across various domains. Fifteen indicators are highlighted, covering domains related to health, family and social environment, economic circumstances, healthcare, physical environment and safety, and behavior. The health domain covers topics such as maternal vaccination, maternal mortality, and maternal postpartum depressive symptoms. This publication provides data on maternal and infant health and mortality for all interested members of the public, including community organizations, policymakers, and students.

In addition to indicators of well-being in the report, this special issue also includes a Data Topics section with reference to social determinants of health that may be associated with maternal and infant outcomes. Explanations of the data limitations and further research needed on these measures are provided.

Additionally, the report features the At-A-Glance section, a quick reference with an update on data changes for all 41 indicators found in the Forum's full report.

Next year, the Forum will issue its customary full report, *America's Children: Key National Indicators of Well-Being*.

Office of Chief Statistician
U.S. Office of Management and Budget

Acknowledgments

The success of the Forum is driven by the commitment of the members of the Federal Interagency Forum on Child and Family Statistics.

The development of this report was guided by many of the Forum's principal members and other federal contributors, which include Traci Cook, Forum Staff Director; Amy Branum, National Center for Health Statistics; Juanita Chinn, *Eunice Kennedy Shriver* National Institute of Child Health and Human Development; Josh DeLaRosa, National Center for Education Statistics; Susan Jekielek, *Eunice Kennedy Shriver* National Institute of Child Health and Human Development; Jessica Minnaert, Maternal and Child Health Bureau; Mark Prell, Economic Research Service; Rose Kreider, U.S. Census Bureau; Grace Robiou, Office of Children's Health Protection; Jennifer Turnham, U.S. Department of Housing and Urban Development; and Anthony Nerino, U.S. Office of Management and Budget.

This report was written by the following federal staff including Sheila Franco and Ashley Woodall, National Center for Health Statistics; Adi Noiman, Ruowei Li, Christie Kim, Jian Chen, and Laurie Elam-Evans, Centers for Disease Control and Prevention/Division of Nutrition, Physical Activity, and Obesity; Denise D'Angelo and Katherine Fowler, Centers for Disease Control and Prevention/Division of Violence Prevention; Holly Shulman and Brenda Bauman, Centers for Disease Control and Prevention/Division of Reproductive Health; Katherine Kahn and Carla Black, Centers for Disease Control and Prevention/National Center for Immunization and Respiratory Diseases; Alexandra Thompson, Bureau of Justice Statistics; and Laura Hales, Economic Research Service.

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Race and Ethnicity

Every effort is made to include data breakouts by race and ethnicity for regular indicators in the full *America's Children* report and for selected indicators in this year's special issue. Unless otherwise noted, data by race and ethnicity in this report have implemented the *Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity* (hereafter referred to as standards on race and ethnicity) issued in 1997 by the Office of Management and Budget (https://www.gpo.gov/fdsys/pkg/FR-1997-10-30/pdf/97-28653.pdf). The 1997 standards on race and ethnicity allow for observer or proxy identification of race but clearly state a preference for self-classification. Persons of Hispanic origin may be of any race. Data on race and Hispanic origin are collected separately and presented in the greatest detail possible considering the quality of the data, the amount of missing data, and the number of observations. Data in this report are generally presented for the following six race and Hispanic origin groups: American Indian or Alaska Native, non-Hispanic; Asian, non-Hispanic; Black or African American, non-Hispanic; Native Hawaiian or Other Pacific Islander, non-Hispanic; White, non-Hispanic; and Hispanic or Latino. In the figures, shortened labels often are used because of limited space.

The 1997 standards on race and ethnicity also offer an opportunity for respondents to select more than one of the five race groups, leading to many possible multiple-race categories. These standards allow for two basic ways of defining a race group. A group such as Black may be defined as those who reported Black and no other race (the race-alone or single-race concept) or those who reported Black regardless of whether they also reported another race (the race-alone or in-combination concept). In this report, indicators present data using the first approach (single race). Use of the single-race population does not imply that it is the preferred method of presenting or analyzing data. Generally, a small percentage of people report two or more races. When possible, estimates for this group are shown separately. All groups not shown separately are included in the totals.

On March 28, 2024, the Office of Management and Budget released new standards for the collection of race and ethnicity data (spd15revision.gov). These new standards include updated categories and require that detailed data be collected. These standards have not yet been adopted for the indicators presented in this report. When the new standards have been adopted by data systems, they will be incorporated into future *America's Children* reports.

Statistical Significance

Most data in this report are estimates based on a sample of the population and are therefore subject to sampling error. Differences between estimates are tested for statistical significance at either the 0.05 or 0.10 cutoff level, according to agency standards; all differences discussed in the report are statistically significant according to the standards of the agency responsible for the data. Agency details about statistical reporting standards for indicators included in the *America's Children* report and standard error tables for select indicators are available online at https://www.childstats.gov.

Information on the Forum

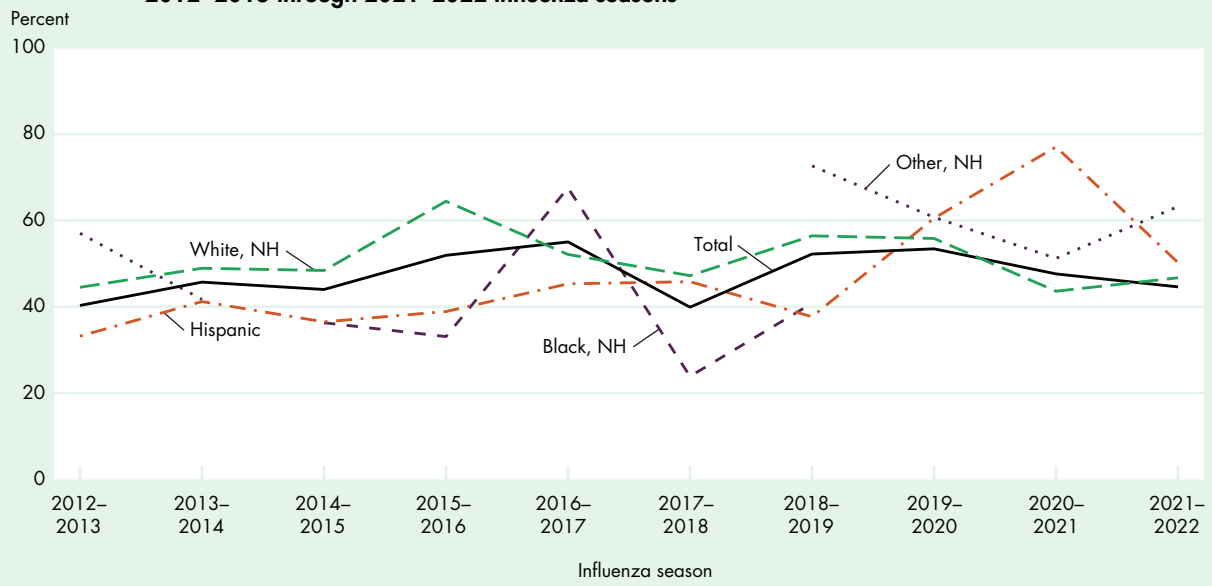
The Forum's website (https://www.childstats.gov) also includes this additional information:

- Detailed data for indicators discussed in this special issue as well as trend data and other *America's Children* indicators not discussed here.
- Data source descriptions and agency contact information.
- *America's Children* reports from 1997 to the present and other Forum reports.
- Links to Forum agencies, their online data tools, and various international data sources.
- Forum news and information on the Forum's overall structure and organization.

Vaccination: Influenza

Pregnant women and infants too young to be vaccinated have a disproportionate burden of influenza-associated hospitalization.[1] The Centers for Disease Control and Prevention recommends that all women who are or might be pregnant during the influenza season receive an influenza vaccine, which can be administered any time during pregnancy, to both protect themselves and provide antibody protection for their infant.[2] However, less than half of pregnant women received an influenza vaccination during the 2022–2023 influenza season.[3] Data on vaccination coverage can be used to identify groups of women who may be more likely to be unvaccinated, which can inform interventions for increasing vaccination coverage.[1,3] Vaccination coverage varies by race and Hispanic origin, education, and type of health insurance.

Figure 1 **Percentage of women ages 18–49 pregnant during the influenza season (August–March) who received an influenza vaccination before or during pregnancy overall and by maternal race and Hispanic origin, 2012–2013 through 2021–2022 influenza seasons**

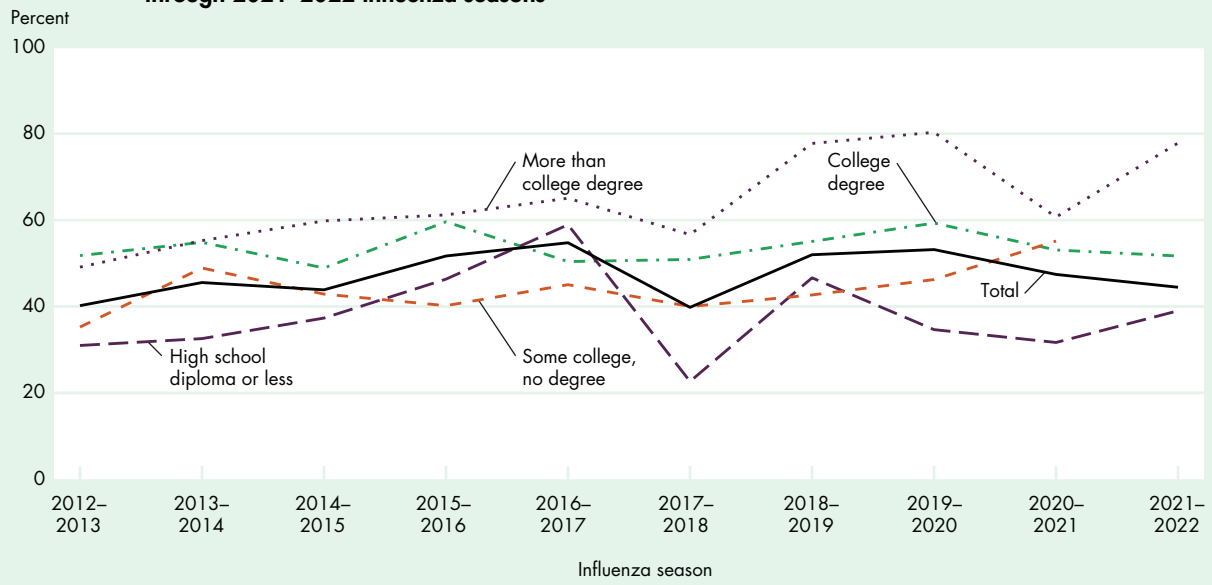


NOTE: NH = non-Hispanic origin. Figure presents data from National Health Interview Survey (NHIS) years 2012–2022. Since 2012, questions have been included in the NHIS that can identify women ages 18–49 who were pregnant anytime from August through March of an influenza season, whether they received an influenza vaccination during this influenza season, and whether it was before or during their pregnancy. Kaplan–Meier survival analysis was used to calculate cumulative influenza vaccination coverage before and during pregnancy among women pregnant anytime during August–March for each influenza season during 2012–2022. NHIS data collected during August–July across 2 survey years were used to assess influenza vaccination coverage during July–March. For example, to calculate the percent vaccinated during the 2012–2013 influenza season, interview data collected during August 2012–July 2013 were analyzed, and respondents pregnant anytime during August 2012–March 2013 were included in the analysis; respondents who reported receiving an influenza vaccination during July 2012–June 2013 (before or during pregnancy) were considered vaccinated, with cumulative estimates through March 2013 being reported. Included as "Other, non-Hispanic" but not shown separately because of the small sample size are American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, and those who reported more than one race. Fluctuations in influenza vaccination coverage observed by race and Hispanic origin may be because of small sample sizes in certain groups. Reporting standards were not met for Black, non-Hispanic women in 2013–2014, 2019–2020, and 2021–2022 and for Other, non-Hispanic women in 2014–2015, 2015–2016, 2016–2017, and 2017–2018; estimates are considered unreliable and are not reported. The influenza questions were changed in 2016. As a result, data for 2016 onward are not strictly comparable with earlier data. In 2019, the NHIS questionnaire was redesigned, and other changes were made to weighting and design methodology. Therefore, data for 2019 onward are not strictly comparable with data for earlier years. An exception for combining data across the redesign was made for the influenza vaccination data because the influenza season runs from July to March. For more information on the 2019 NHIS redesign, see https://www.cdc.gov/nchs/nhis/2019_quest_redesign.htm.

SOURCE: National Center for Health Statistics, National Health Interview Survey.

- Some 45% of women ages 18–49 who were pregnant during the 2021–2022 influenza season received an influenza vaccination before or during their pregnancy. Influenza vaccination coverage during the 2021–2022 season was 47% among White, non-Hispanic women and 50% among Hispanic women.
- During the 2015–2016 and 2017–2018 influenza seasons, Black, non-Hispanic women had lower influenza vaccination coverage than White, non-Hispanic women.
- Among White, non-Hispanic women, influenza vaccination coverage increased from the 2014–2015 season to the 2015–2016 season. Among Black, non-Hispanic women, influenza vaccination coverage decreased from the 2016–2017 season to the 2017–2018 season. There were no statistically significant differences in coverage by season among Hispanic women.

Figure 2 **Percentage of women ages 18–49 pregnant during the influenza season (August–March) who received an influenza vaccination before or during pregnancy overall and by maternal education, 2012–2013 through 2021–2022 influenza seasons**

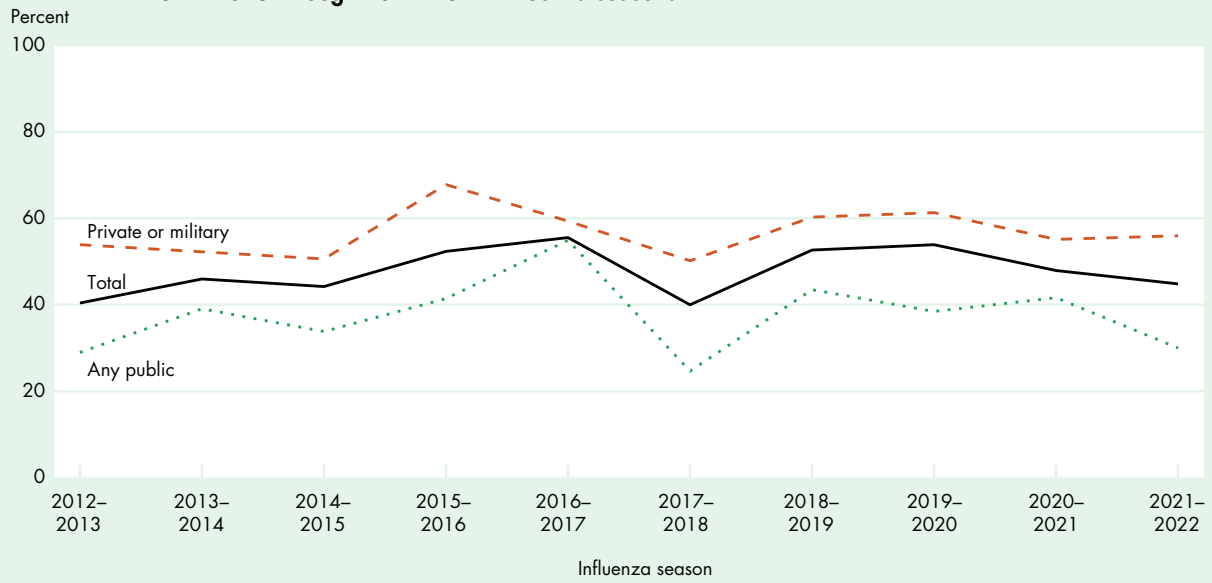


NOTE: Figure presents data from National Health Interview Survey (NHIS) years 2012–2022. Since 2012, questions have been included in the NHIS that can identify women ages 18–49 who were pregnant anytime during August through March of an influenza season, whether they received an influenza vaccination during this influenza season, and whether it was before or during their pregnancy. Kaplan–Meier survival analysis was used to calculate cumulative influenza vaccination coverage before and during pregnancy among women pregnant anytime during August–March for each influenza season during 2012–2022. NHIS data collected during August–July across two survey years were used to assess influenza vaccination coverage during July–March. For example, to calculate the percent vaccinated during the 2012–2013 influenza season, interview data collected during August 2012–July 2013 were analyzed, and respondents pregnant anytime during August 2012–March 2013 were included in the analysis; respondents who reported receiving an influenza vaccination during July 2012–June 2013 (before or during pregnancy) were considered vaccinated, with cumulative estimates through March 2013 being reported. *High school diploma or less* includes women with no education or any education through high school graduation as well as GED or equivalent. *Some college, no degree* includes women who have taken some college-level classes after high school but have not yet earned a college degree. *College degree* includes women who have completed an associate's degree or a bachelor's degree. *More than college degree* includes women who have earned a master's degree, a professional degree, or a doctoral degree. Reporting standards were not met for women with some college, no degree in 2021–2022; estimate is considered unreliable and is not reported. The influenza questions were changed in 2016. As a result, data for 2016 onward are not strictly comparable with earlier data. In 2019, the NHIS questionnaire was redesigned and other changes were made to weighting and design methodology. Therefore, data for 2019 onward are not strictly comparable with data for earlier years. An exception for combining data across the redesign was made for the influenza vaccination data because the influenza season runs from July to March. For more information on the 2019 NHIS redesign, see https://www.cdc.gov/nchs/nhis/2019_quest_redesign.htm.

SOURCE: National Center for Health Statistics, National Health Interview Survey.

- Influenza vaccination coverage during the 2021–2022 season was 39% among women with a high school diploma or less education, 52% among women with a college degree, and 78% among women with more than a college degree.
- Among women with a high school diploma or less education, influenza vaccination coverage decreased from the 2016–2017 season to the 2017–2018 season but then increased in the 2018–2019 season. There were no statistically significant differences in coverage by season among women with more education.
- During most seasons, women with a high school diploma or less education had lower influenza vaccination coverage than women with a college degree or women with more than a college degree. During the 2019–2020 season, coverage for women with some college education but no degree was lower than for women with more than a college degree. During the 2018–2019 and 2021–2022 seasons, coverage was lower for women with a college education than for women with more than a college education.

Figure 3 **Percentage of women ages 18–49 pregnant during the influenza season (August–March) who received an influenza vaccination before or during pregnancy overall and by type of health insurance, 2012–2013 through 2021–2022 influenza seasons**



NOTE: Figure presents data from National Health Interview Survey (NHIS) years 2012–2022. Since 2012, questions have been included in the NHIS that can identify women ages 18–49 who were pregnant anytime during August through March of an influenza season, whether they received an influenza vaccination during this influenza season, and whether it was before or during their pregnancy. Kaplan–Meier survival analysis was used to calculate cumulative influenza vaccination coverage before and during pregnancy among women pregnant anytime during August–March for each influenza season during 2012–2022. NHIS data collected during August–July across two survey years were used to assess influenza vaccination coverage during July–March. For example, to calculate the percent vaccinated during the 2012–2013 influenza season, interview data collected during August 2012–July 2013 were analyzed, and respondents pregnant anytime during August 2012–March 2013 were included in the analysis; respondents who reported receiving an influenza vaccination during July 2012–June 2013 (before or during pregnancy) were considered vaccinated, with cumulative estimates through March 2013 being reported. *Any public* includes women covered by Medicaid, Medicare, or a state-sponsored or other government-sponsored health plan. *Private or military* includes women who do not have public coverage but who have a military plan or any comprehensive private insurance plan (including health maintenance organizations and preferred provider organizations). These plans include those obtained through an employer, purchased directly, purchased through local or community programs, or purchased through the Health Insurance Marketplace or a state-based exchange. This classification of military plans differs from that of the National Center for Health Statistics, which classifies military plans as public insurance. The influenza questions were changed in 2016. As a result, data for 2016 onward are not strictly comparable with earlier data. In 2019, the NHIS questionnaire was redesigned, and other changes were made to weighting and design methodology. Therefore, data for 2019 onward are not strictly comparable with data for earlier years. An exception for combining data across the redesign was made for the influenza vaccination data because the influenza season runs from July to March. For more information on the 2019 NHIS redesign, see https://www.cdc.gov/nchs/nhis/2019_quest_redesign.htm.

SOURCE: National Center for Health Statistics, National Health Interview Survey.

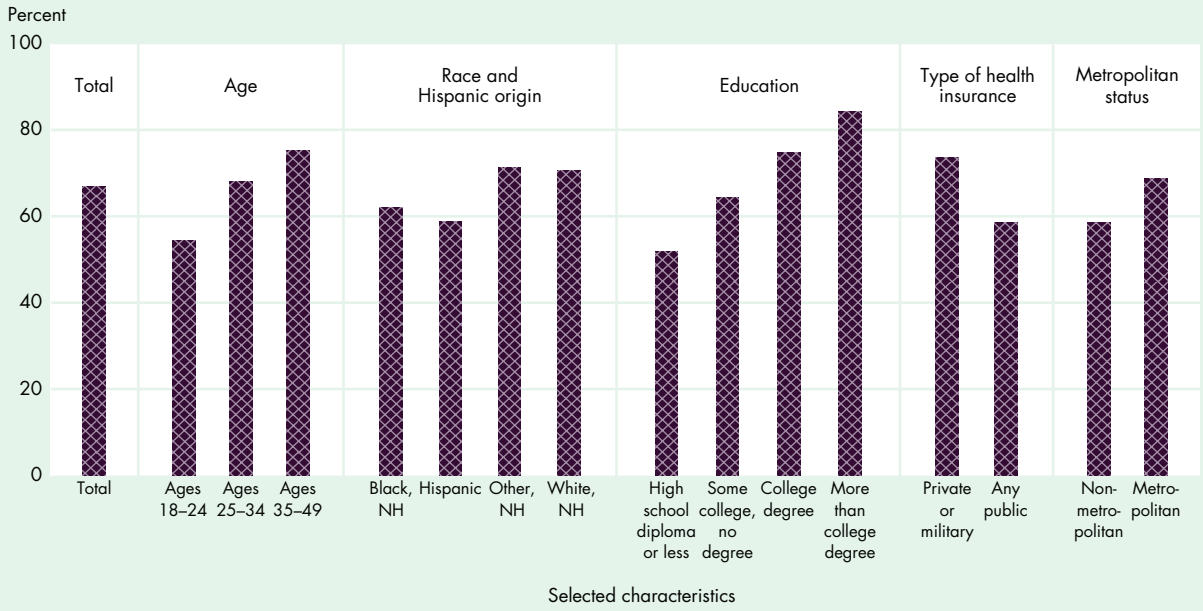
- Influenza vaccination coverage during the 2021–2022 season was 55% among women with private or military health insurance and 30% among women with public health insurance.
- Among women with private or military health insurance, influenza vaccination coverage increased from the 2014–2015 season to the 2015–2016 season. Among women with public health insurance, coverage decreased from the 2016–2017 season to the 2017–2018 season. There were no other statistically significant differences in coverage by season.
- During most seasons, women with public health insurance had lower influenza vaccination coverage than women with private or military insurance.

Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

Vaccination: Tdap

Infants too young to be vaccinated have a disproportionate burden of pertussis-associated hospitalization.[1] The Centers for Disease Control and Prevention recommends all women receive a tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine (Tdap) during each pregnancy to provide some short-term protection against pertussis (whooping cough) for their babies after they are born.[4] However, approximately 45% of women in 2023 who had a recent live birth did not receive a Tdap vaccination during their pregnancy.[3] Data on vaccination coverage can be used to identify groups of women who may be more likely to be unvaccinated, which can inform interventions for increasing vaccination coverage.[1,3]

Figure 4 **Percentage of women ages 18–49 with a recent live birth who received a Tdap vaccination during pregnancy overall and by selected characteristics, 2021–2022**



NOTE: NH = non-Hispanic origin. Figure presents pooled data from National Health Interview Survey (NHIS) years 2012–2022. NHIS data were pooled to increase the sample size for analysis. Since 2019, questions have been included in the NHIS that can identify women ages 18–49 who had a pregnancy that ended in a live birth during the past 12 months and whether they received a Tdap vaccine during this pregnancy. Included in *Other, non-Hispanic* but not shown separately because of the small sample size are American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, and those who reported more than one race. Fluctuations in vaccination coverage observed by race and Hispanic origin may be because of small sample sizes in certain groups. *High school diploma or less* education includes women with no education or any education through high school graduation as well as GED or equivalent. *Some college, no degree* includes women who have taken some college-level classes after high school but have not yet earned a college degree. *College degree* includes women who have completed an associate's degree or a bachelor's degree. *More than college degree* includes women who have earned a master's degree, a professional degree, or a doctoral degree. *Any public* includes women covered by Medicaid, Medicare, or a state-sponsored or other government-sponsored health plan. *Private or military* includes women who do not have public coverage but who have a military plan or any comprehensive private insurance plan (including health maintenance organizations and preferred provider organizations). These plans include those obtained through an employer, purchased directly, purchased through local or community programs, or purchased through the Health Insurance Marketplace or a state-based exchange. This classification of military plans differs from that of the National Center for Health Statistics, which classifies military plans as public insurance. The Office of Management and Budget classifies counties as within a metropolitan statistical areas (MSA). In this report, counties not classified as within an MSA are classified as nonmetropolitan. Nonmetropolitan counties may include small urban areas as well as completely rural areas. Nonmetropolitan counties include counties in micropolitan statistical and rural areas.

SOURCE: National Center for Health Statistics, National Health Interview Survey.

- In 2021–2022, among women ages 18–49 who had a live birth within the past 12 months, 67% received a Tdap vaccination during their pregnancy. There was not a statistically significant difference in Tdap coverage between 2021–2022 (67%) and 2019–2020 (66%).
- Among women in 2021–2022 with a recent live birth, women ages 18–24 (55%) had lower Tdap vaccination coverage than women ages 35–49 (76%).

Vaccination: Tdap—Continued

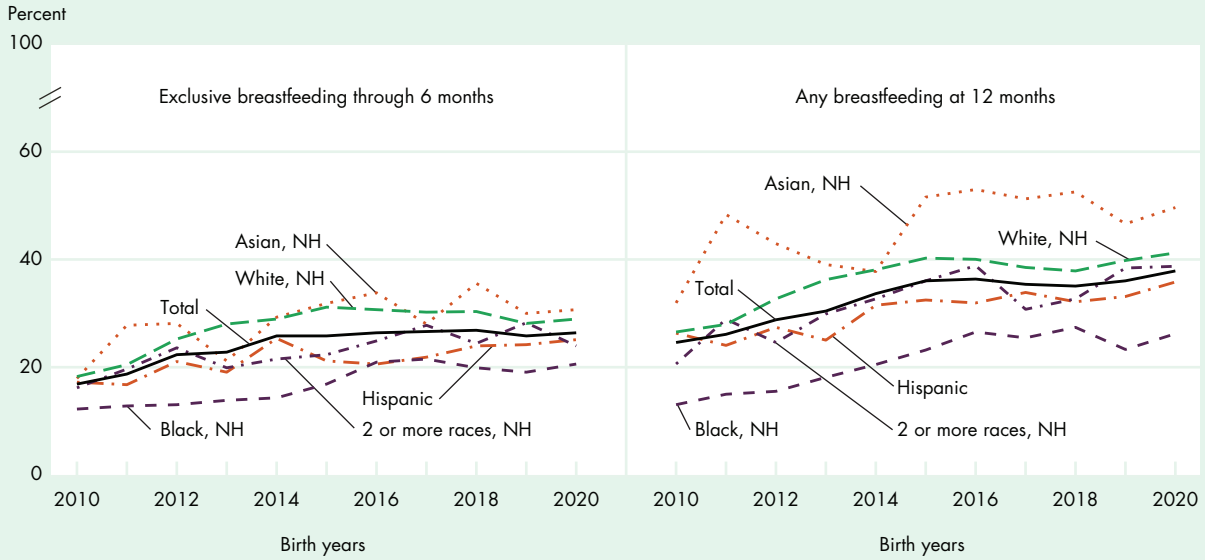
- Among women in 2021–2022 with a recent live birth, Hispanic women (59%) had lower Tdap vaccination coverage than White, non-Hispanic women (71%).
- Among women in 2021–2022 with a recent live birth, women who had a high school diploma or less education (52%) and those with some college education but no degree (65%) had lower Tdap vaccination coverage than those with a college degree (77%) or more than a college degree (85%).
- Among women in 2021–2022 who had a recent live birth, women with any public health insurance (59%) had lower Tdap vaccination coverage than women with private or military health insurance (75%).
- No statistically significant difference in Tdap vaccination coverage was observed between women living in a metropolitan area and women living a nonmetropolitan area.

Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

Breastfeeding

Breast milk is considered the ideal source of nutrition for most infants.[5] Infants who are fed breast milk have a reduced risk of infections, asthma, obesity, type 1 diabetes, and sudden infant death syndrome.[6,7] Breastfeeding initiation is also associated with reduced odds of infant death.[8] Mothers providing breast milk have a reduced risk of high blood pressure, type 2 diabetes, ovarian cancer, and breast cancer.[9,10] Breastfeeding is considered a national public health priority;[11] exclusive breastfeeding through 6 months of age with continued breastfeeding for at least 2 years is recommended.[5] Breastfeeding rates have improved across the past decade, but disparities exist. Breastfeeding trends are presented as four side-by-side figures depicting rates of exclusive breastfeeding through 6 months of age and rates of any breastfeeding at 12 months of age for children born from 2010 to 2020, stratified by race and Hispanic origin, maternal age, poverty status, and maternal education.

Figure 5 **Breastfeeding rates among U.S. children by child race and Hispanic origin, birth years 2010–2020**



NOTE: Breastfeeding is defined as feeding at the breast or feeding expressed human milk; exclusive breastfeeding is defined as receiving only breast milk (no solids, water, or other liquids). Race and Hispanic origin are based on parent/guardian reported race and Hispanic origin of the child and categories reflecting the Office of Management and Budget (OMB) statistical standards for collecting and reporting race and Hispanic origin across federal agencies. Breastfeeding rates for children identified as Hawaiian or Pacific Islander, non-Hispanic or American Indian or Alaska Native, non-Hispanic are not presented because of the uncertainty of the estimates as a result of small sample sizes. Chi-square tests were used to compare the differences between each subgroup and the reference that has the highest rate under the same stratum among 2020 births; weighted least-squares regressions were used to test the significance of breastfeeding trends within each subgroup for children born from 2010 to 2020. A *p*-value of <0.05 was considered significant.

SOURCE: Centers for Disease Control and Prevention, National Immunization Survey—Child.

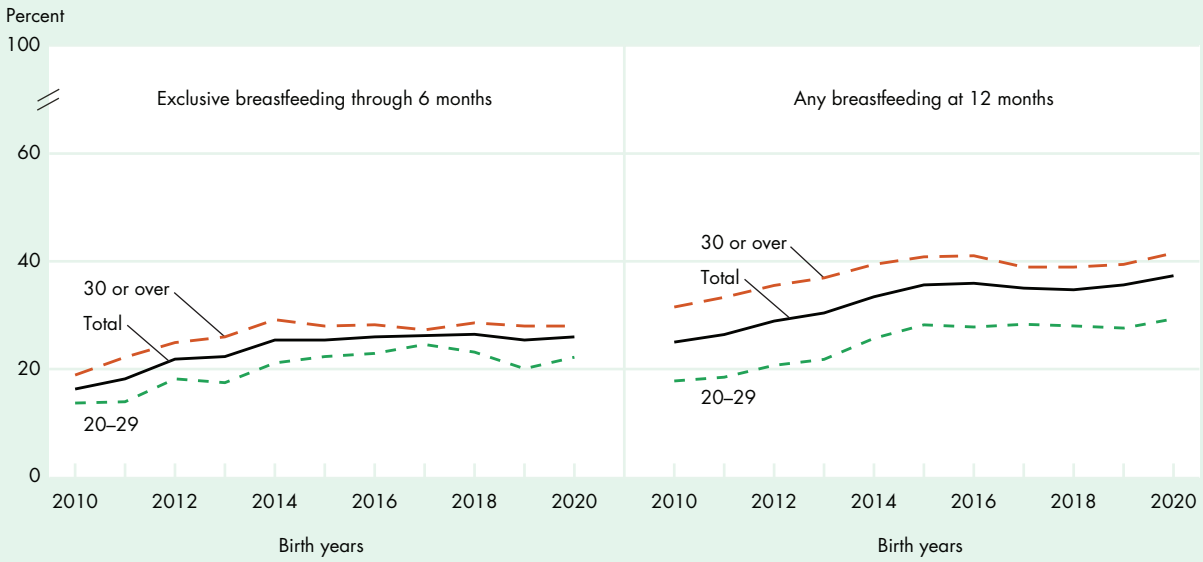
Overall, rates of exclusive breastfeeding through 6 months of age improved from 17.2% for children born in 2010 to 25.4% for children born in 2020, but disparities by race and Hispanic origin existed. For 2020 births, the highest rate was among Asian, non-Hispanic children (29.1%) and the lowest rate was among Black, non-Hispanic children (20.4%). Rates of exclusive breastfeeding through 6 months significantly increased within each race and Hispanic origin subgroup for children born from 2010 to 2020. Specifically,

- among Hispanic children, the rate increased from 17.5% for 2010 births to 24.3% for 2020 births;
- among Asian, non-Hispanic children, the rate increased from 18.1% for 2010 births to 29.1% for 2020 births;
- among Black, non-Hispanic children, the rate increased from 13.2% for 2010 births to 20.4% for 2020 births; and
- among White, non-Hispanic children, the rate increased from 18.4% for 2010 births to 27.6% for 2020 births.

Overall, rates of any breastfeeding at 12 months of age improved from 25.3% for children born in 2010 to 37.6% for children born in 2020, but disparities by race and Hispanic origin existed. For 2020 births, the highest rate was among Asian, non-Hispanic children (48.5%) and the lowest rate was among Black, non-Hispanic children (26.8%). Except for Asian, non-Hispanic children, the rates of any breastfeeding at 12 months significantly increased within each race and Hispanic origin subgroup for children born from 2010 to 2020. Specifically,

- among Hispanic children, the rate increased from 26.9% for 2010 births to 35.7% for 2020 births;
- among Black, non-Hispanic children, the rate increased from 14.6% for 2010 births to 26.8% for 2020 births; and
- among White, non-Hispanic children, the rate increased from 27.1% for 2010 births to 40.7% for 2020 births.

Figure 6 **Breastfeeding rates among U.S. children by maternal age, birth years 2010–2020**



NOTE: Breastfeeding is defined as feeding at the breast or feeding expressed human milk; exclusive breastfeeding is defined as receiving only breast milk (no solids, water, or other liquids). Maternal age is based on parent/guardian self-reported age. Breastfeeding rates for children with mothers under 20 years of age are not presented because of the uncertainty of the estimates as a result of small sample sizes. Chi-square tests were used to compare the differences between each subgroup and the reference that has the highest rate under the same stratum among 2020 births; weighted least-squares regressions were used to test the significance of breastfeeding trends within each subgroup for children born from 2010 to 2020. A *p*-value of <0.05 was considered significant.

SOURCE: Centers for Disease Control and Prevention, National Immunization Survey—Child.

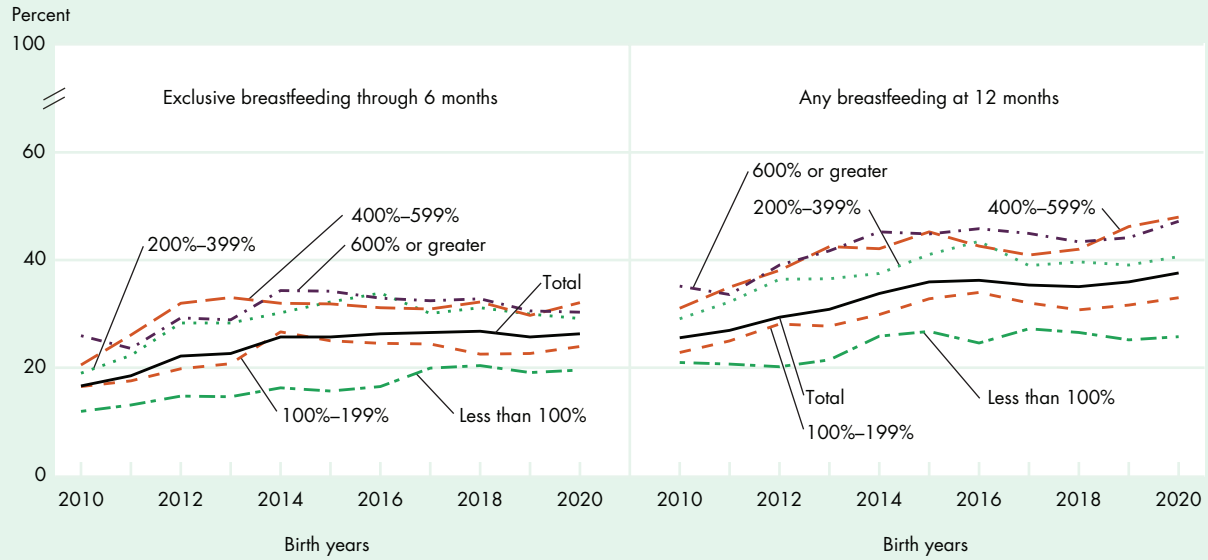
Disparities in rates of exclusive breastfeeding through 6 months also existed by maternal age. For 2020 births, the rate was higher among children born to mothers age 30 and over (27.1%) than among children born to mothers ages 20–29 (22.2%). The rates of exclusive breastfeeding through 6 months significantly increased within both maternal age subgroups for children born from 2010 to 2020. Specifically,

- among children born to mothers ages 20–29, the rate increased from 15.0% for 2010 births to 22.2% for 2020 births; and
- among children born to mothers age 30 and over, the rate increased from 19.4% for 2010 births to 27.1% for 2020 births.

Disparities in rates of any breastfeeding at 12 months also existed by maternal age. For 2020 births, the rate was higher among children born to mothers age 30 and over (41.8%) than among children born to mothers ages 20–29 (29.6%). The rates of any breastfeeding at 12 months significantly increased within both maternal age subgroups for children born from 2010 to 2020. Specifically,

- among children born to mothers ages 20–29 years, the rate increased from 18.1% for 2010 births to 29.6% for 2020 births; and
- among children born to mothers age 30 and over, the rate increased from 31.8% for 2010 births to 41.8% for 2020 births.

Figure 7 **Breastfeeding rates among U.S. children by household poverty status, birth years 2010–2020**



NOTE: Breastfeeding is defined as feeding at the breast or feeding expressed human milk; exclusive breastfeeding is defined as receiving only breast milk (no solids, water, or other liquids). Household income is based on parent/guardian self-report and is defined as a percentage of the federal poverty level (% FPL). Chi-square tests were used to compare the differences between each subgroup and the reference that has the highest rate under the same stratum among 2020 births; weighted least-squares regressions were used to test the significance of breastfeeding trends within each subgroup for children born from 2010 to 2020. A *p*-value of <0.05 was considered significant.

SOURCE: Centers for Disease Control and Prevention, National Immunization Survey—Child.

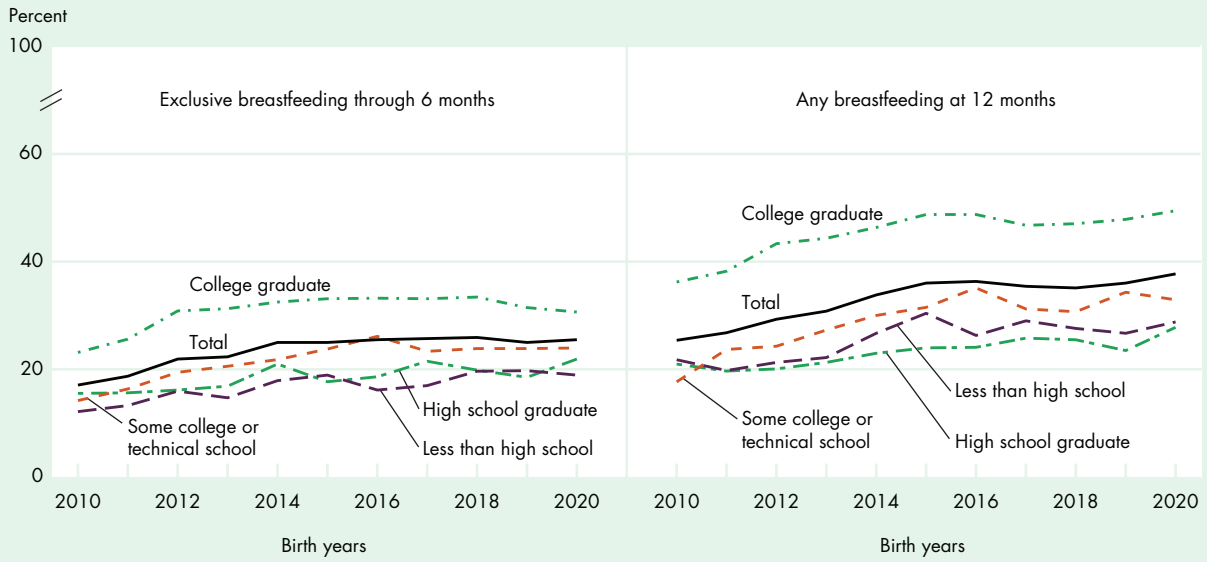
Disparities in rates of exclusive breastfeeding through 6 months also existed by household poverty status. Household poverty status is based on parent/guardian self-reporting and is defined as a percentage of the federal poverty level (% FPL). For 2020 births, the highest rate was among children born to households with 400–599% FPL (30.3%) and the lowest rate was among those with less than 100% FPL (19.7%). Except for households with income greater than or equal to 600% FPL, the rates of exclusive breastfeeding through 6 months significantly increased within each household income subgroup for children born from 2010 to 2020. Specifically,

- among households with income levels less than 100% FPL, the rate increased from 13.2% for 2010 births to 19.7% for 2020 births;
- among households with income levels at 100–199% FPL, the rate increased from 17.1% for 2010 births to 23.4% for 2020 births;
- among households with income levels at 200–399% FPL, the rate increased from 19.2% for 2010 births to 27.8% among for births; and
- among households with income levels at 400–599% FPL, the rate increased from 20.5% for 2010 births to 30.3% for 2020 births.

Disparities in rates of any breastfeeding at 12 months also existed by household poverty status. Household poverty status is based on parent/guardian self-reporting and is defined as a percentage of the federal poverty level (% FPL). For 2020 births, the highest rate was among children born to households with 400–599% FPL (48.2%) and the lowest rate was among those with less than 100% FPL (25.5%). Rates of any breastfeeding at 12 months significantly increased within each household income subgroup for children born from 2010 to 2020. Specifically,

- among households with income levels less than 100% FPL, the rate increased from 20.6% for 2010 births to 25.5% for 2020 births;
- among households with income levels at 100–199% FPL, the rate increased from 22.5% for 2010 births to 32.9% for 2020 births;
- among households with income levels at 200–399% FPL, the rate increased from 28.9% for 2010 births to 40.7% for 2020 births;
- among households with income levels at 400–599% FPL, the rate increased from 30.9% for 2010 births to 48.2% for 2020 births; and
- among households with income levels ≥600% FPL, the rate increased from 35.1% for 2010 births to 47.4% for 2020 births.

Figure 8 **Breastfeeding rates among U.S. children by maternal education, birth years 2010–2020**



NOTE: Breastfeeding is defined as feeding at the breast or feeding expressed human milk; exclusive breastfeeding is defined as receiving only breast milk (no solids, water, or other liquids). Maternal education is based on parent/guardian self-report. Chi-square tests were used to compare the differences between each subgroup and the reference that has the highest rate under the same stratum among 2020 births; weighted least-squares regressions were used to test the significance of breastfeeding trends within each subgroup for children born from 2010 to 2020. A *p*-value of <0.05 was considered significant.

SOURCE: Centers for Disease Control and Prevention, National Immunization Survey—Child.

Disparities in rates of exclusive breastfeeding through 6 months also existed by maternal education. For 2020 births, the highest rate was among children born to mothers who were college graduates (30.4%) and the lowest rate was among children born to mothers with less than a high school degree (19.0%). The rates of exclusive breastfeeding through 6 months significantly increased within each maternal education subgroup for children born from 2010 to 2020. Specifically,

- among children born to mothers with less than a high school degree, the rate increased from 12.4% for 2010 births to 19.0% for 2020 births;
- among children born to mothers who were high school graduates, the rate increased from 15.7% for 2010 births to 21.9% for 2020 births;

- among children born to mothers with some college or technical school, the rate increased from 14.4% for 2010 births to 23.9% for 2020 births; and
- among children born to mothers who were college graduates, the rate increased from 23.1% for 2010 births to 30.4% for 2020 births.

Disparities in rates of any breastfeeding at 12 months also existed by maternal education. For 2020 births, the highest rates were among children born to mothers who were college graduates (49.3%) and the lowest rates were among children born to mothers who were high school graduates (27.7%). The rates of any breastfeeding at 12 months significantly increased within each maternal education subgroup for children born from 2010 to 2020. Specifically,

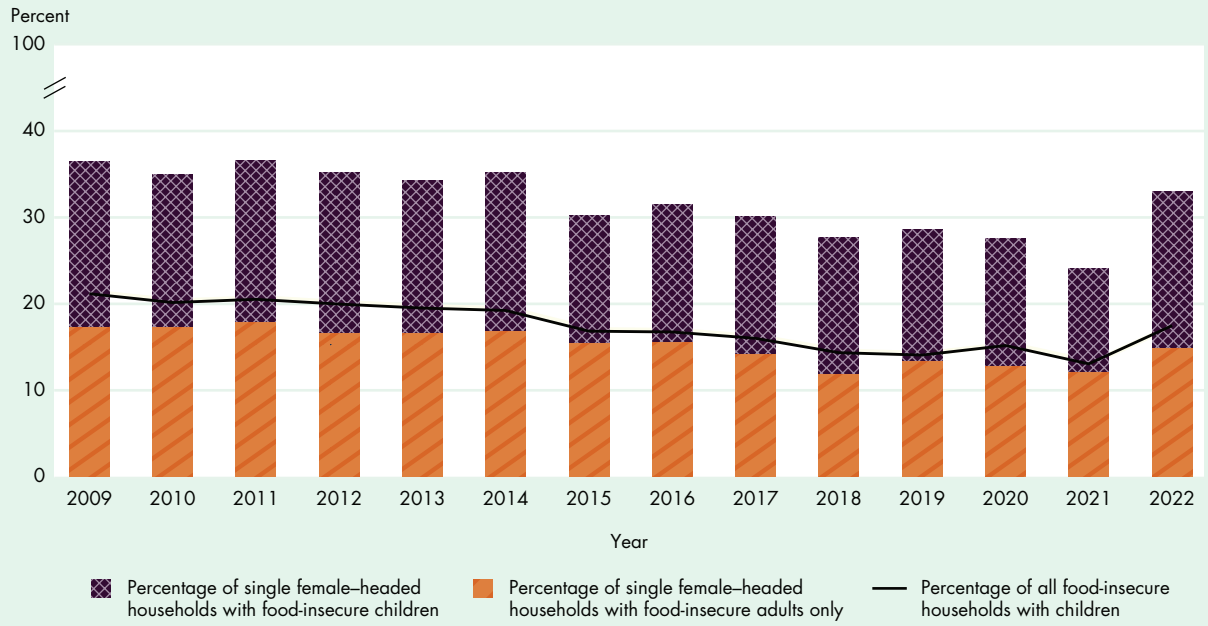
- among children born to mothers with less than a high school degree, the rate increased from 21.7% for 2010 births to 28.7% for 2020 births;
- among children born to mothers who were high school graduates, the rate increased from 20.9% for 2010 births to 27.7% for 2020 births;
- among children born to mothers with some college or technical school, the rate increased from 17.6% for 2010 births to 32.8% for 2020 births; and
- among children born to mothers who were college graduates, the rate increased from 36.1% for 2010 births to 49.3% for 2020 births.

Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

Food Insecurity

Households are classified as food insecure if, at some time during the year, they had difficulty providing enough food for all their members because of a lack of resources. In households with children, food insecurity indicates at least one person in the household experienced reductions in dietary quality or variety and, in some cases, disrupted eating patterns and reduced food intake. However, household food insecurity may be experienced differently across household members. Adults often protect their children from food insecurity and, as a result, some households with children report food insecurity for only the adults.[12] In other households, caregivers report that they were unable to provide adequate, nutritious food for their children at times. In these households, both adults and children experienced food insecurity. Food insecurity is associated with poor health outcomes in adults.[13] Therefore, the effects of food insecurity on adults may affect children in the households as well, even when they themselves are not food insecure.

Figure 9 **Prevalence of food insecurity among single female–headed households with children by food security status of adults and children, 2009–2022**



NOTE: Food-insecure households with children are those with low or very low food security among adults, children, or both. At times, they were unable to acquire adequate food for active, healthy living for all household members because they had insufficient money and other resources for food. Households with food-insecure children are those with low or very low food security among children. In these households, eating patterns of one or more children were disrupted, and their food intake was reduced below a level considered adequate by their caregiver.

SOURCE: U.S. Census Bureau, Current Population Survey Food Security Supplements tabulated by U.S. Department of Agriculture, Economic Research Service and Food and Nutrition Service.

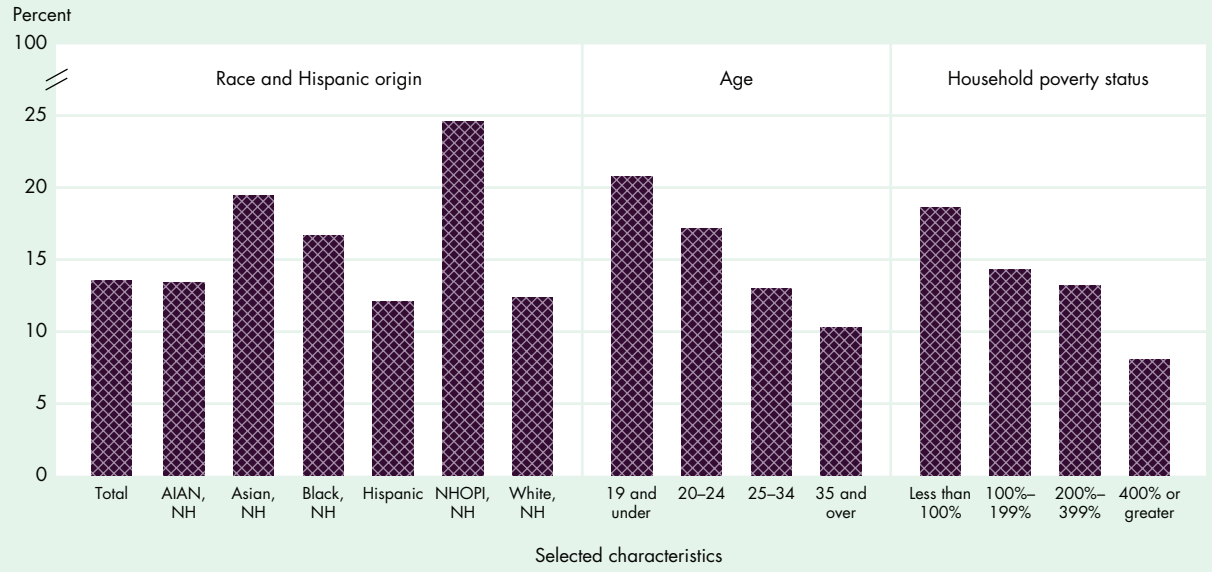
- The prevalence of food insecurity in single female–headed households with children (represented as bars in the figure) has historically been higher than the prevalence for all households with children (represented as the line in the figure).[14]
- In about half of food-insecure single female–headed households with children, only the mother was food insecure. In the other half of those households, the children also were food insecure. This pattern holds for each year between 2009 and 2022.
- The prevalence of food insecurity in single female–headed households was about 35% from 2009 to 2014, before decreasing to 30% in 2015. The prevalence rate decreased again to 28% in 2018 and to 24% in 2021. In 2022, the prevalence of food insecurity for single female–headed households increased to 33%, the first increase since 2009.

Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

Maternal Postpartum Depressive Symptoms

Women with postpartum depressive symptoms are at increased risk for postpartum depression and require further evaluation to determine whether they meet the criteria for having a depressive disorder.[15] Postpartum depression is associated with lower rates of breastfeeding initiation, poorer maternal and infant bonding, and increased likelihood of infants showing developmental delays.[16] The American College of Obstetricians and Gynecologists strongly encourages providers to screen for depression among pregnant and postpartum women,[17] and the American Academy of Pediatrics recommends integrating routine screening for maternal postpartum depression into well-child visits.[18] Women with current depression or a history of major depression warrant particularly close monitoring and evaluation. If left untreated, postpartum depression can adversely affect the mother's health and might cause sleeping, eating, and behavioral problems for the infant; when effectively treated and managed, both mother and child benefit.[18]

Figure 10 **Prevalence of self-reported postpartum depressive symptoms among women with a recent live birth by race and Hispanic origin, age, and household poverty status, 2021**



NOTE: AI/AN = American Indian or Alaska Native; NH = non-Hispanic origin; NHOPI = Native Hawaiian or Other Pacific Islander. Self-reported postpartum depressive symptoms are ascertained by categorizing five responses ("always," "often," "sometimes," "rarely," and "never") from the following two questions adapted from the validated Patient Health Questionnaire-2 screening instrument: 1) "Since your new baby was born, how often have you felt down, depressed, or hopeless?" and 2) "Since your new baby was born, how often have you had little interest or little pleasure in doing things?" Women responding "always" or "often" to either question are classified as experiencing postpartum depressive symptoms. Women classified as not having symptoms must answer "sometimes," "rarely," or "never" to both questions. Race and Hispanic origin refer to the mother's race and Hispanic origin. The 1997 U.S. Office of Management and Budget standards for data on race and ethnicity were used to classify people into one of the following five racial groups: White, Black or African American, Asian, American Indian or Alaska Native, or Native Hawaiian or Other Pacific Islander. All categories are single race. Data on race and Hispanic origin are collected and reported separately. People of Hispanic origin may be of any race. Household poverty status is based on a definition of federal poverty level that incorporates information on family income, size, and composition and is calculated as a percentage of the U.S. Census Bureau's federal poverty thresholds.

SOURCE: Centers for Disease Control and Prevention, Pregnancy Risk Assessment Monitoring System (PRAMS); Ohio Department of Health, Ohio Pregnancy Assessment Survey (OPAS); California Department of Public Health, Maternal and Infant Health Assessment (MIHA).

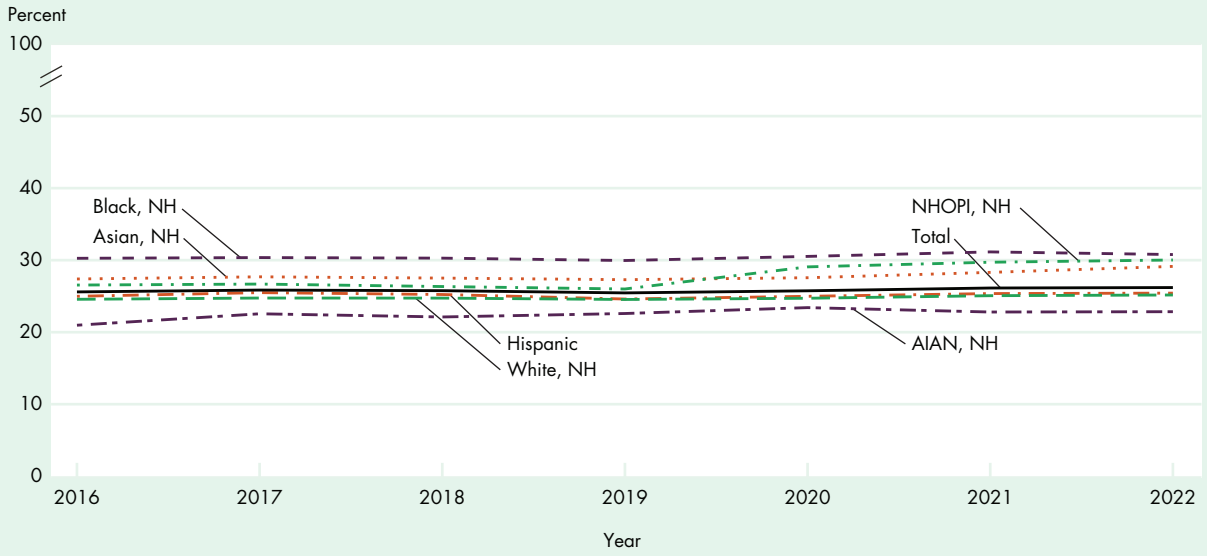
- In 2021, 13.3% of women with a recent live birth self-reported experiencing postpartum depressive symptoms.
- In 2021, the highest rates of postpartum depressive symptoms were experienced by Asian, non-Hispanic women (19.1%) and Native Hawaiian or other Pacific Islander, non-Hispanic women (24.2%). The lowest rates were reported by Hispanic and White, non-Hispanic women (11.9% and 12.2%, respectively).
- In 2021, women age 19 and under experienced more than twice the rate of postpartum depressive symptoms compared with women age 35 and over (20.4% vs. 10.1%).
- In 2021, women below 100% of the federal poverty level experienced more than twice the rate of postpartum depressive symptoms compared with women at 400% of the federal poverty level and above (18.3% vs. 7.9%).

Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

Low-Risk Cesarean Delivery

Cesarean deliveries are often performed because of complications during pregnancy or delivery that make vaginal birth unsafe for the mother or the fetus, such as a previous cesarean delivery, the fetus being in breech position, multiple births (e.g., twins, triplets), an infection like HIV, or medical conditions like preeclampsia, diabetes, or hypertension.[19–21] A cesarean delivery may increase the risk of adverse health outcomes, such as infection, blood loss, blood clots, and complications in future pregnancies for the mother and breathing problems, gastrointestinal symptoms, and surgical injury for the infant.[19] In 2014, the American College of Obstetrician and Gynecologists and the Society for Maternal-Fetal Medicine released a joint statement raising concerns that cesarean delivery is overused in the United States.[22] However, the overall cesarean delivery rate has increased in recent years.[23] A cesarean delivery is considered low-risk if a single infant is delivered head-first at full-term to a first-time mother. Low-risk cesarean deliveries vary by maternal race and Hispanic origin, maternal age, and urbanicity.

Figure 11 **Low-risk cesarean delivery rate by maternal race and Hispanic origin, 2016–2022**



NOTE: NH = non-Hispanic origin; NHOPI = Native Hawaiian or Other Pacific Islander; AIAN = American Indian or Alaska Native. Low-risk cesarean rate is the number of singleton, term (37 or more completed weeks of gestation based on the obstetric estimate), cephalic, cesarean deliveries to women having a first birth per 100 women delivering singleton, term, cephalic, first births. Race and Hispanic origin refer to the mother's race and Hispanic origin. The 1997 U.S. Office of Management and Budget standards for data on race and ethnicity were used to classify people into one of the following five racial groups: White, Black or African American, Asian, American Indian or Alaska Native, or Native Hawaiian or Other Pacific Islander. All categories are single race. Data on race and Hispanic origin are collected and reported separately. People of Hispanic origin may be of any race.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.

- From 2016 (25.7%) to 2022 (26.3%), the total low-risk cesarean delivery rate did not change significantly.
- For Native Hawaiian or Other Pacific Islander, non-Hispanic women, the low-risk cesarean delivery rate did not change significantly from 2016 to 2019; the rate then increased from 26.1% in 2019 to 30.1% in 2022.
- Although the low-risk cesarean delivery rate did not change significantly for any other race and Hispanic origin group from 2016 to 2022, there were differences for some groups from 2021 to 2022.
- From 2021 to 2022, the low-risk cesarean delivery rate increased for Asian, non-Hispanic women (from 28.4% to 29.2%) and decreased for Black, non-Hispanic women (from 31.2% to 30.8%). No significant changes were seen for other race and Hispanic origin groups from 2021 to 2022.

Figure 12 **Low-risk cesarean delivery rate by maternal age, 2016–2022**

NOTE: Low-risk cesarean rate is the number of singleton, term (37 or more completed weeks of gestation based on the obstetric estimate), cephalic, cesarean deliveries to women having a first birth per 100 women delivering singleton, term, cephalic, first births.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.

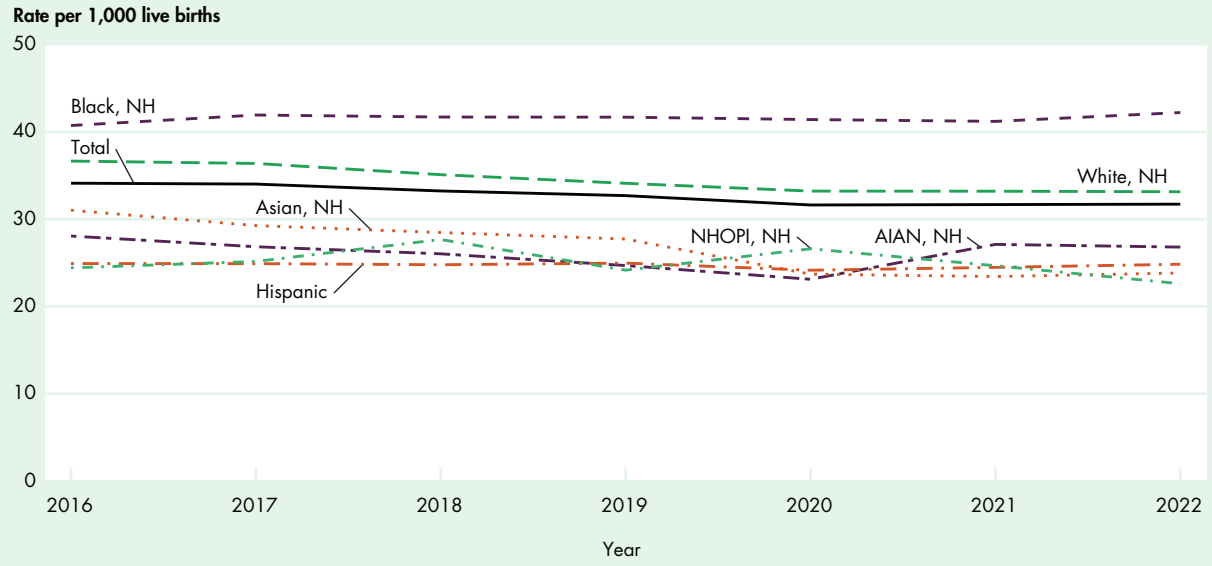
- From 2016 to 2022, the low-risk cesarean delivery rate decreased for adolescents ages 15–19 (from 17% to 15%) and women ages 20–24 (from 22% to 21%) but did not change significantly for women age 25 and over.
- Throughout the period, the low-risk cesarean delivery rate increased with age. In 2022, the rate was highest for women age 40 and over (53%), followed by women ages 35–39 (39%), 30–34 (30%), 25–29 (26%), 20–24 (21%), and 15–19 (15%).

Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

Multiple Birth

Multiple births are the birth of more than one infant during a single delivery (twins, triplets, or higher-order births). Compared with singleton births (one infant), multiple births are at higher risk of adverse health outcomes for both the mother and the infants. For the mother, risks include gestational hypertension, gestational diabetes, and hemorrhage.[24] For the infants, risks include preterm birth, low birthweight, birth defects, physical and mental disabilities, developmental delays, and death.[24] Rates of multiple births vary by maternal race and Hispanic origin, and maternal age.

Figure 13 **Rate of twin, triplet, and higher-order births by maternal race and Hispanic origin, 2016–2022**



NOTE: NH = non-Hispanic origin; NHOPI = Native Hawaiian or Other Pacific Islander; AIAN = American Indian or Alaska Native. Race and Hispanic origin refer to the mother's race and Hispanic origin. The 1997 U.S. Office of Management and Budget standards for data on race and ethnicity were used to classify people into one of the following five racial groups: White, Black or African American, Asian, American Indian or Alaska Native, or Native Hawaiian or Other Pacific Islander. All categories are single race. Data on race and Hispanic origin are collected and reported separately. People of Hispanic origin may be of any race.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.

- The total multiple birth rate decreased from 34 per 1,000 live births in 2016 to 32 per 1,000 in 2020 and then remained stable through 2022.
- For American Indian or Alaska Native, non-Hispanic women, the multiple birth rate decreased from 2016 to 2020 and then increased from 2020 to 2022.
- For Asian, non-Hispanic women, the rate decreased from 2016 to 2022.
- For Black, non-Hispanic; Native Hawaiian or Other Pacific Islander, non-Hispanic; and Hispanic women, the multiple birth rate did not change significantly during the period.
- For White, non-Hispanic women, the multiple birth rate decreased from 2016 to 2020 and then remained stable through 2022.
- Throughout the period, Black, non-Hispanic women were the most likely to have a multiple birth (42 per 1,000 in 2022).

Section continues on the following page.

Figure 14 **Rate of twin, triplet, and higher-order births by maternal age, 2016–2022**

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.

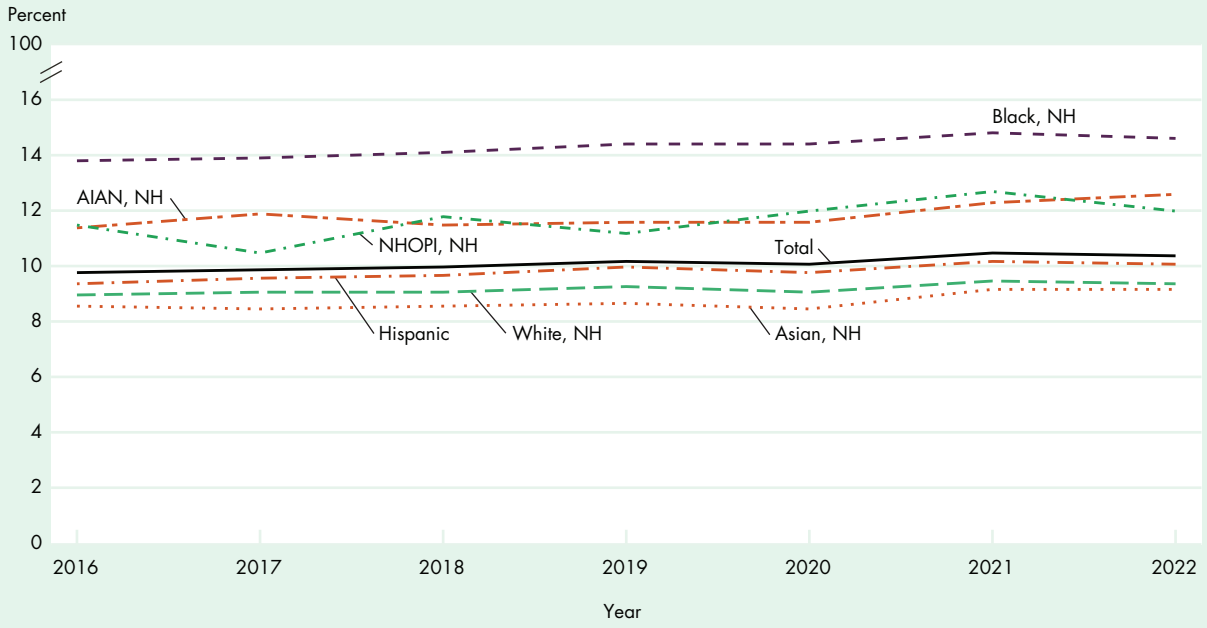
- For adolescents ages 15–19 and women ages 20–24 and 30–34, the multiple birth rate did not change significantly during the period.
- For women ages 25–29, the multiple birth rate decreased from 2016 to 2022.
- For women ages 35–39 and 40 and over, the multiple birth rate decreased from 2016 to 2020 and then remained stable through 2022.
- Generally, the multiple birth rate increases with age. In 2022, the multiple birth rate was highest for women age 40 and over (40 per 1,000), followed by women ages 35–39 (39 per 1,000); 30–34 (35 per 1,000); 25–29 (30 per 1,000); 20–24 (24 per 1,000); and 15–19 (17 per 1,000).
- Throughout the period, the multiple birth rate was generally higher for women age 40 and over compared with the other age groups.

Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

Preterm Birth and Low Birthweight

Infants born preterm (less than 37 completed weeks of gestation) or with low birthweight (less than 2,500 grams, or 5 pounds, 8 ounces) are at higher risk of early death and long-term health and developmental issues than infants born later in pregnancy or at higher birthweights.[25–27] Many but not all preterm infants are born with low birthweight (and vice versa). Although the increasing multiple birth rate since 1980 contributed to the rise in preterm birth and low birthweight infants, preterm birth and low birthweight levels also increased substantially among singleton births.[23] Disorders related to preterm birth and low birthweight are the second leading cause of infant death in the United States.[25] Preterm birth and low birthweight vary by maternal race and Hispanic origin, and maternal age.

Figure 15 **Percentage of infants born preterm by maternal race and Hispanic origin, 2016–2022**

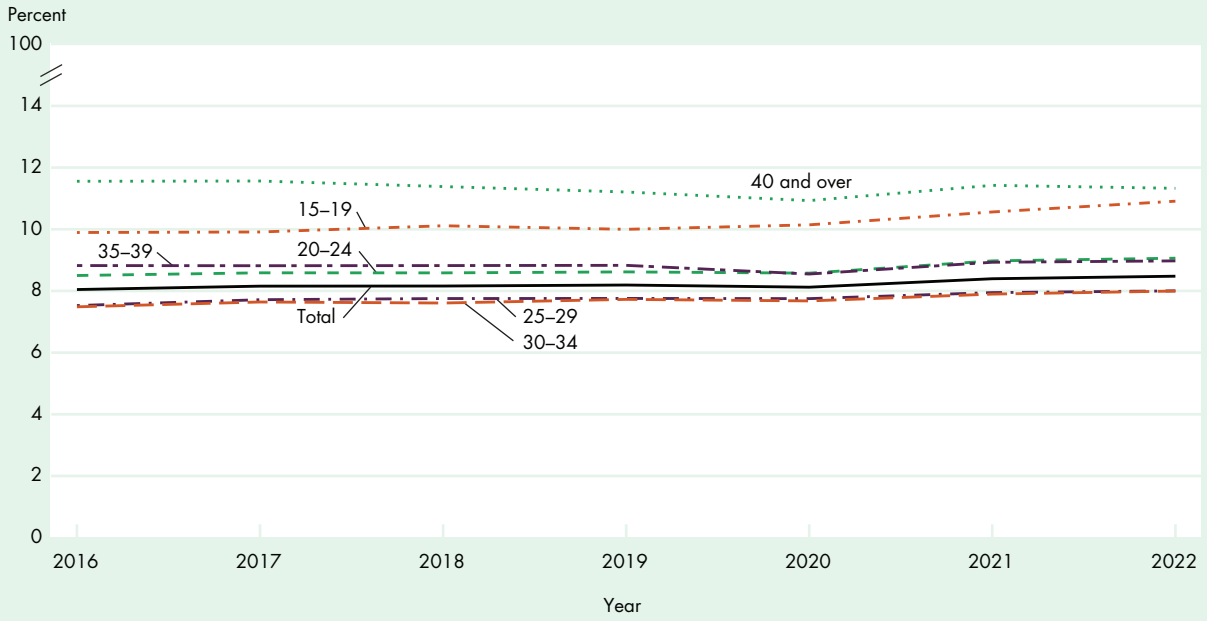


NOTE: NH = non-Hispanic origin; AIAN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander. The obstetric estimate of gestation at delivery is used to estimate the gestational age of a newborn. Infants born at less than 37 weeks of gestation are considered preterm. Race and Hispanic origin refer to the mother's race and Hispanic origin. The 1997 U.S. Office of Management and Budget standards for data on race and ethnicity were used to classify people into one of the following five racial groups: White, Black or African American, Asian, American Indian or Alaska Native, or Native Hawaiian or Other Pacific Islander. All categories are single race. Data on race and Hispanic origin are collected and reported separately. People of Hispanic origin may be of any race.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.

- The percentage of infants born preterm increased from 9.8% in 2016 to 10.4% in 2022.
- From 2016 to 2022, the percentage of infants born preterm increased for Black, non-Hispanic, White, non-Hispanic, and Hispanic women but did not change significantly for the other race and Hispanic origin groups.
- From 2021 to 2022, the percentage of infants born preterm decreased for Black, non-Hispanic and Hispanic women but did not change significantly for the other race and Hispanic origin groups.
- In 2022, infants of Black, non-Hispanic women (14.6%) were the most likely to be born preterm, followed by infants of American Indian or Alaska Native, non-Hispanic (12.6%) and Native Hawaiian or Other Pacific Islander, non-Hispanic (12.0%) women. Infants of Hispanic (10.1%), White, non-Hispanic (9.4%), and Asian, non-Hispanic (9.2%) women were less likely to be born preterm.
- Throughout the period, Black, non-Hispanic women were the most likely to have a preterm birth.

Figure 16 **Percentage of infants born with low birthweight by maternal age, 2016–2022**



NOTE: Infants born at less than 2,500 grams or 5 pounds, 8 ounces are considered low birthweight. Live births with unknown birthweight are excluded.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.

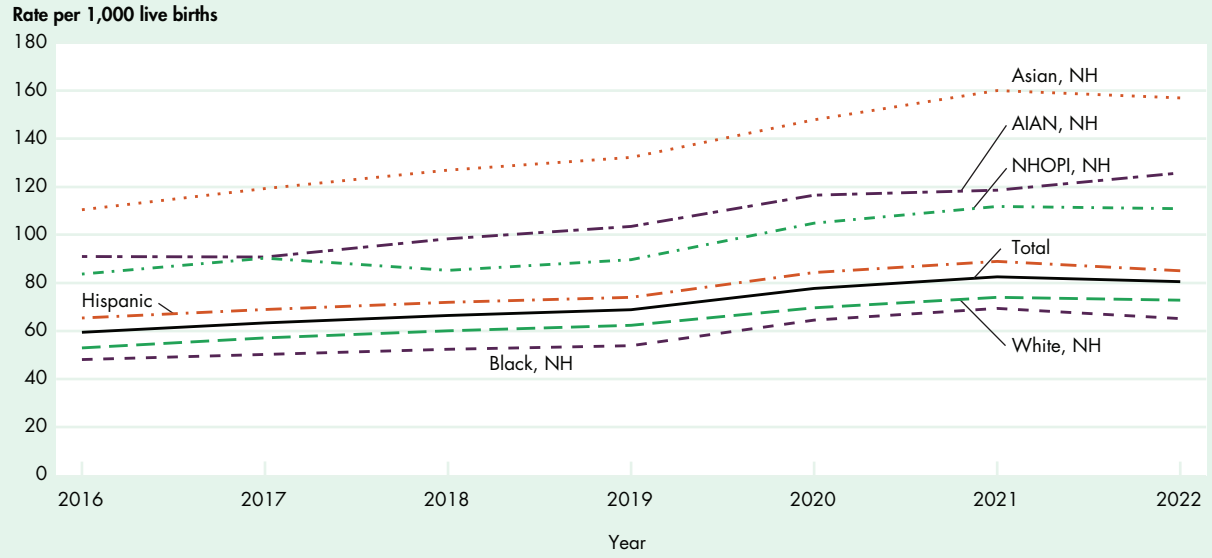
- The total percentage of infants born with low birthweight remained stable from 2016 to 2022.
- From 2016 to 2022, the percentage of infants born with low birthweight varied by age group. For ages 25–29, the percentage increased over the whole period. For ages 20–24 and 35–39, the percentage increased from 2020 to 2022. For women 40 and over, the percentage declined from 2016 to 2020 and then was stable through 2022. The trend remained stable for the other age groups.
- In 2022, the percentage of infants born with low birthweight was highest for women age 40 and over (11.3%), followed by adolescents ages 15–19 (10.9%) and women ages 20–24 (9.1%) and 35–39 (9.0%). Women ages 25–29 and 30–34 (8.0% each) were the least likely to have an infant born with low birthweight.
- Throughout the period, women age 40 and over and adolescents ages 15–19 were the most likely to have an infant born with low birthweight.

Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

Gestational Diabetes

Gestational diabetes mellitus occurs when the body cannot make enough insulin during pregnancy.[28] The condition affects about 2%–10% of pregnancies in the United States and occurs more frequently than prepregnancy diabetes (diagnosis of diabetes before pregnancy).[28,23] Gestational diabetes can lead to negative health outcomes for both mothers and infants, including an increased risk of preterm birth, having a cesarean delivery, maternal hypertensive disorders, and developing cardiovascular disease and type 2 diabetes later in life.[28,29–31] Gestational diabetes varies by demographic factors, such as race and Hispanic origin, and maternal age.

Figure 17 **Rate of gestational diabetes by maternal race and Hispanic origin, 2016–2022**



NOTE: NH = non-Hispanic origin; AIAN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander. The 1997 U.S. Office of Management and Budget standards for data on race and ethnicity were used to classify people into one of the following five racial groups: White, Black or African American, Asian, American Indian or Alaska Native, or Native Hawaiian or Other Pacific Islander. All categories are single race. Data on race and Hispanic origin are collected and reported separately. People of Hispanic origin may be of any race.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.

- From 2016 to 2022, the rate of gestational diabetes increased from 60 per 1,000 live births to 81 per 1,000.
- The rate of gestational diabetes increased for all race and Hispanic origin groups from 2016 to 2022 and was highest for Asian, non-Hispanic women.
- In 2022, the rate of gestational diabetes was highest for Asian, non-Hispanic women at 158 per 1,000, which was 93 points higher than the rate for Black, non-Hispanic women; 85 points higher than the rate for White, non-Hispanic women; 73 points higher than the rate for Hispanic women; 46 points higher than the rate for Native Hawaiian or Other Pacific Islander, non-Hispanic women; and 31 points higher than the rate for American Indian or Alaska Native, non-Hispanic women.

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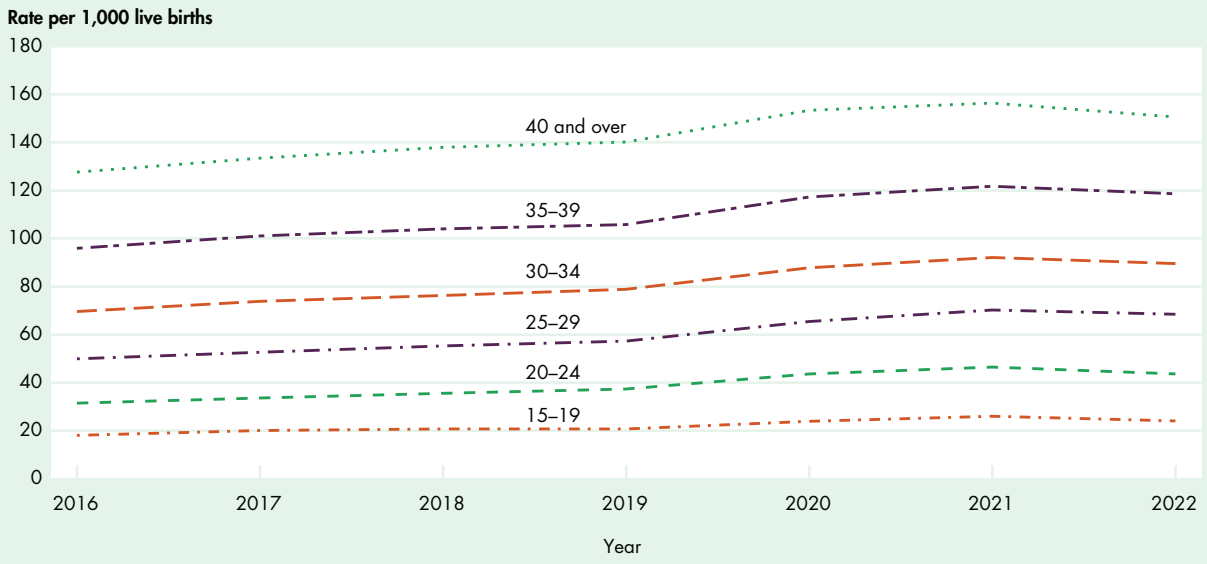
Figure 18 **Rate of gestational diabetes by maternal age, 2016–2022**



SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.

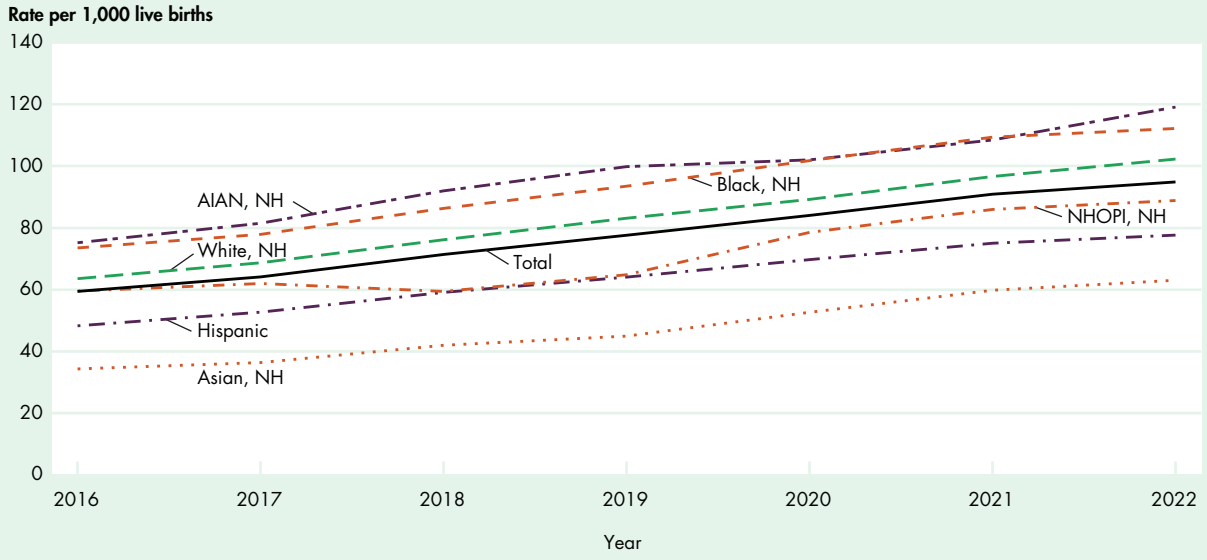
- The risk of gestational diabetes increases with age. In 2022, the rate of gestational diabetes in women age 40 and over was 151 per 1,000, which was 125 points higher than the rate for adolescents ages 15–19; 106 points higher than the rate for women ages 20–24; 81 points higher than the rate for women ages 25–29; 60 points higher than the rate for women ages 30–34; and 32 points higher than the rate for women ages 35–39.
- The rate of gestational diabetes increased for each age group from 2016 to 2022, except for ages 40 and over. For women ages 40 and over, the rate increased from 2016 to 2020 and then was stable.

Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

Gestational Hypertension

Gestational hypertension is high blood pressure (at or above 140/90 mm Hg) during pregnancy without protein in the urine or other heart or kidney problems.[32] It is typically diagnosed after 20 weeks of pregnancy or close to delivery and usually goes away after birth. Gestational hypertension occurs in about 1 in every 12 to 17 pregnancies among women ages 20 to 44 in the United States.[33] The condition can result in adverse health outcomes for the mother, including preeclampsia, stroke, and placental abruption (when the placenta separates from the wall of the uterus).[32,34] Adverse health outcomes for the infant include preterm birth, low birthweight, fetal growth restriction, and fetal and infant mortality.[32,34] Gestational hypertension varies by demographic factors, such as race and Hispanic origin, and maternal age.

Figure 19 **Rate of gestational hypertension by maternal race and Hispanic origin, 2016–2022**

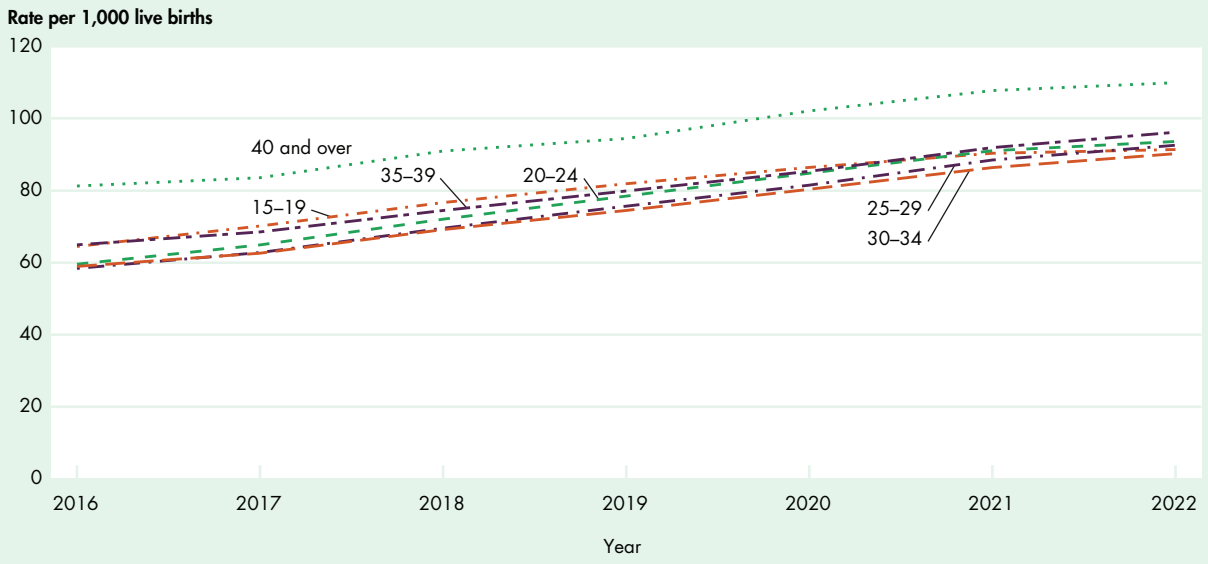


NOTE: AIAN = American Indian or Alaska Native; NH = non-Hispanic origin; NHOPI = Native Hawaiian or Other Pacific Islander. The 1997 U.S. Office of Management and Budget standards for data on race and ethnicity were used to classify people into one of the following five racial groups: White, Black or African American, Asian, American Indian or Alaska Native, or Native Hawaiian or Other Pacific Islander. All categories are single race. Data on race and Hispanic origin are collected and reported separately. People of Hispanic origin may be of any race.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.

- From 2016 to 2022, the rate of women with gestational hypertension increased from 60 to 95 per 1,000 live births.
- For American Indian or Alaska Native, non-Hispanic women, the rate of gestational hypertension did not change significantly from 2016 to 2018 and then increased through 2022.
- For Asian, non-Hispanic and White, non-Hispanic women, the rate of gestational hypertension increased from 2016 to 2022.
- For Black, non-Hispanic women and Hispanic women, the rate of gestational hypertension increased from 2016 to 2020 and then did not change significantly from 2020 to 2022.
- For Native Hawaiian or Other Pacific Islander, non-Hispanic women, the rate did not change significantly from 2016 to 2022.
- In 2022, the rate of gestational hypertension was highest for American Indian or Alaska Native, non-Hispanic women (119 per 1,000), followed by Black, non-Hispanic (112 per 1,000), White, non-Hispanic (103 per 1,000), Native Hawaiian or Other Pacific Islander, non-Hispanic (89 per 1,000) Hispanic (78 per 1,000), and Asian, non-Hispanic (63 per 1,000) women.

Figure 20 **Rate of gestational hypertension by maternal age, 2016–2022**



SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.

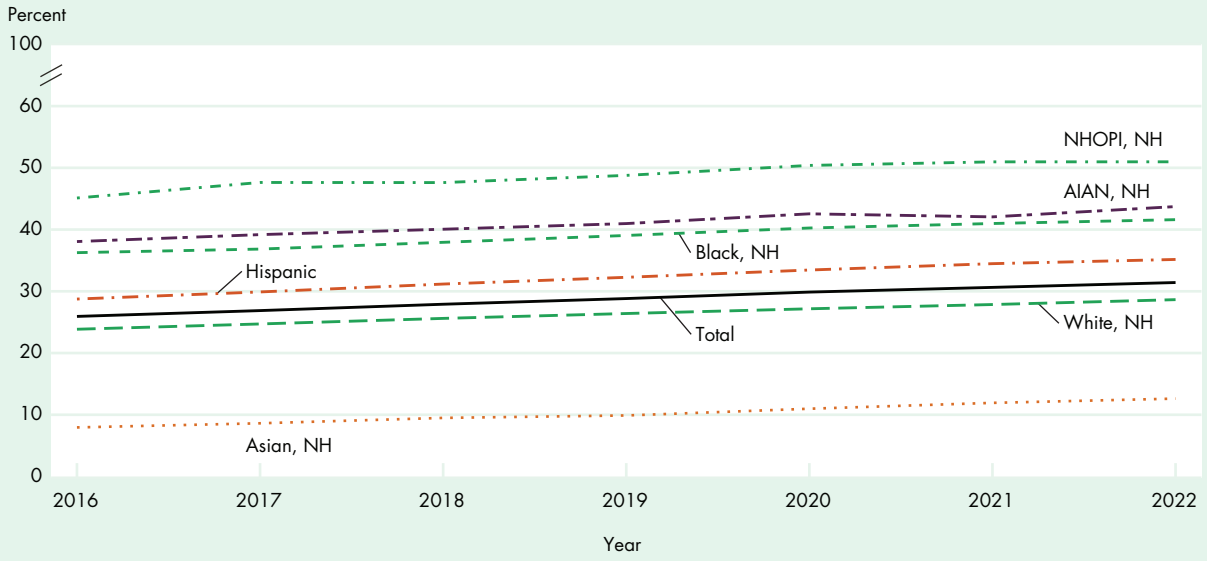
- From 2016 to 2022, the rate of gestational hypertension increased for all age groups, except for women ages 30–34.
- Among women ages 30–34, the rate of gestational hypertension increased from 2016 to 2020 and then did not change significantly from 2020 to 2022.
- In 2022, the rate of gestational hypertension was highest for women age 40 and over (113 per 1,000), followed by women ages 35–39 (98 per 1,000) and 20–24 (96 per 1,000). The rate of gestational hypertension was lowest for women ages 25–29 (94 per 1,000); adolescents ages 15–19 (93 per 1,000); and women ages 30–34 (92 per 1,000).

Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

Prepregnancy Obesity

During the past 2 decades, obesity (body mass index of 30.0 and above) has increased in the United States.[35,36] From 2017 to March 2020, the prevalence of obesity among adults in the United States was 41.9%.[37] Maternal obesity has been linked to adverse health outcomes for both the mother and the infant. Adverse health outcomes for the mother include gestational hypertension, gestational diabetes, preeclampsia, cesarean delivery, and the risk of heart disease, hypertension, and diabetes later in life.[38] Adverse health outcomes for the infant include preterm birth, infant mortality, and the risk of obesity, heart disease, and diabetes later in life.[38,39] Maternal obesity varies by demographic factors, such as race and Hispanic origin, and maternal age.

Figure 21 **Percentage of women with prepregnancy obesity by race and Hispanic origin, 2016–2022**

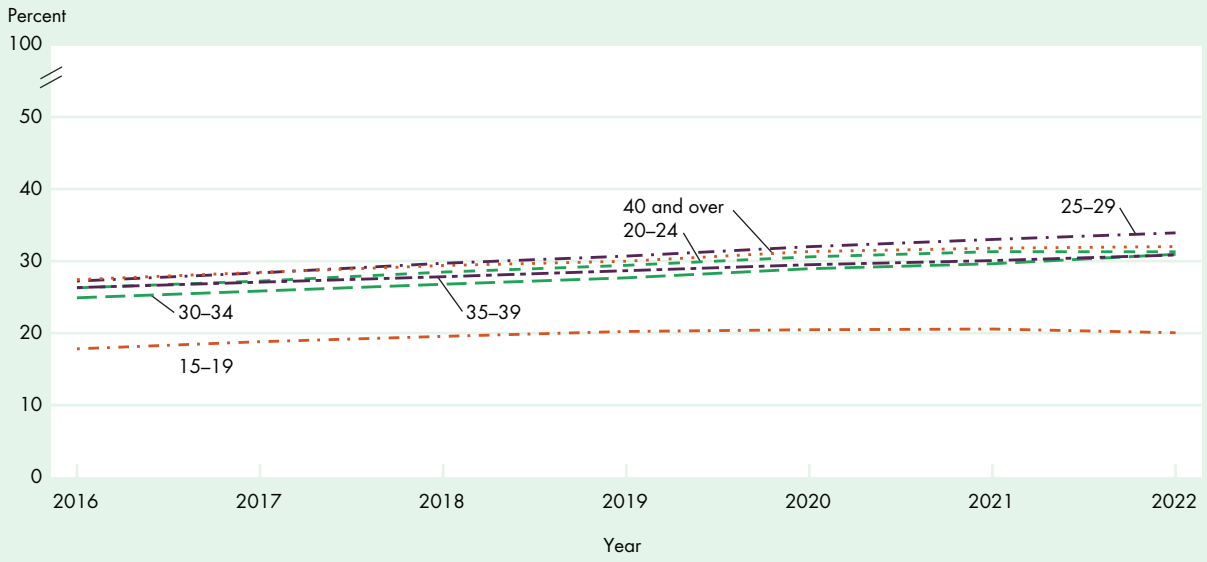


NOTE: NHOPI = Native Hawaiian or Other Pacific Islander; NH = non-Hispanic origin; AIAN = American Indian or Alaska Native. Mother's weight immediately before pregnancy was reported by the mother via the question, "What was your prepregnancy weight, that is, your weight immediately before you became pregnant with this child?" Mother's height also was reported by the mother via the question, "What is your height?" The height and weight measurements are used to calculate the mother's body mass index (BMI)—a measure of body fat—as kg/m^2 ($703 \times lbs/in^2$). A BMI of 30.0 and above before pregnancy is considered obese. The 1997 U.S. Office of Management and Budget standards were used to classify people into one of the following five race groups: White, Black or African American, Asian, American Indian or Alaska Native, or Native Hawaiian or Other Pacific Islander. All categories are single race. Data on race and Hispanic origin are collected and reported separately. People of Hispanic origin may be of any race.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.

- The percentage of women with prepregnancy obesity increased from 26% in 2016 to 32% in 2022.
- From 2016 to 2022, the percentage of women with prepregnancy obesity increased for American Indian or Alaska Native, non-Hispanic; Asian, non-Hispanic; White, non-Hispanic; and Hispanic women.
- For Black, non-Hispanic women, the percentage of women with prepregnancy obesity increased from 36% in 2016 to 40% in 2020 and then remained stable through 2022.
- For Native Hawaiian or Other Pacific Islander women, non-Hispanic, the percentage of women with prepregnancy obesity did not change significantly from 2016 to 2022.
- Throughout the period, Native Hawaiian or Other Pacific Islander, non-Hispanic women were the most likely to have prepregnancy obesity, whereas Asian, non-Hispanic women were the least likely to have pre-pregnancy obesity.
- In 2022, prepregnancy obesity was highest in Native Hawaiian or Other Pacific Islander, non-Hispanic women (51%), followed by American Indian or Alaska Native, non-Hispanic (44%), Black, non-Hispanic (42%), Hispanic (35%); White, non-Hispanic (29%), and Asian, non-Hispanic (13%) women.

Figure 22 **Percentage of women with prepregnancy obesity by age, 2016–2022**



NOTE: Mother's weight immediately before pregnancy was reported by the mother via the question, "What was your prepregnancy weight, that is, your weight immediately before you became pregnant with this child?" Mother's height also was reported by the mother via the question, "What is your height?" The height and weight measurements are used to calculate the mother's body mass index (BMI)—a measure of body fat—as kg/m^2 ($703 \times lbs/in^2$). A BMI of 30.0 and above before pregnancy is considered obese.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.

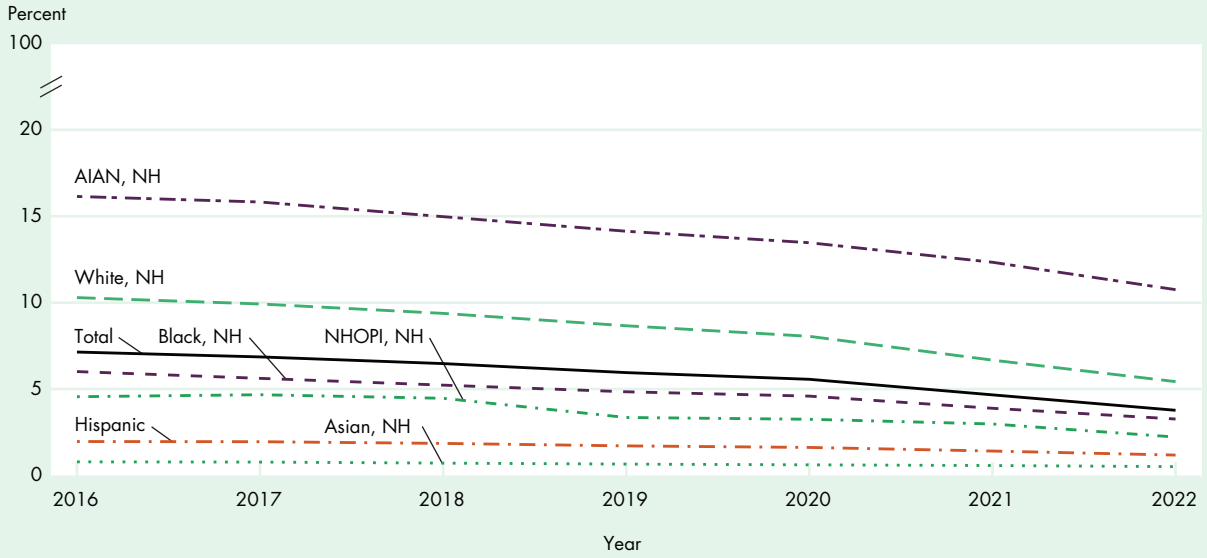
- From 2016 to 2022, the percentage of women with prepregnancy obesity increased for those ages 25–29, 30–34, and 35–39.
- Among women 20–24 and 40 and over, the percentage of those with prepregnancy obesity increased from 2016 to 2020 and then remained stable through 2022.
- Among adolescents ages 15–19, the percentage with prepregnancy obesity increased from 2016 to 2019 and then remained stable through 2022.
- In 2022, prepregnancy obesity was highest in women ages 25–29 (34%), followed by women ages 40 and over (32%), 20–24 (31%), and 30–34 and 35–39 (31% each). Adolescents ages 15–19 were the least likely to have prepregnancy obesity (20%).

Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

Smoking During Pregnancy

Since 1965, the prevalence of cigarette smoking among women has declined by more than half.[40] In 2022, 10.0% of women were current cigarette smokers.[41] Cigarette smoking during pregnancy can have adverse health outcomes for both the mother and the infant. For the mother, risks include preterm birth, stillbirth, miscarriage, and pregnancy complications, such as ectopic pregnancy.[42–45] For the infant, risks include birth defects, low birthweight, neurodevelopmental and behavioral problems, and sudden infant death syndrome.[42,43] Cigarette smoking during pregnancy varies by race and Hispanic origin, and metropolitan status.

Figure 23 **Percentage of women who smoked during pregnancy by race and Hispanic origin, 2016–2022**



NOTE: AIAN = American Indian or Alaska Native; NH = non-Hispanic origin; NHOPI = Native Hawaiian or Other Pacific Islander. The 1997 U.S. Office of Management and Budget standards for data on race and ethnicity were used to classify people into one of the following five racial groups: White, Black or African American, Asian, American Indian or Alaska Native, or Native Hawaiian or Other Pacific Islander. All categories are single race. Data on race and Hispanic origin are collected and reported separately. People of Hispanic origin may be of any race.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.

- The percentage of women who smoked during pregnancy decreased from 7% in 2016 to 4% in 2022.
- For Black, non-Hispanic and White, non-Hispanic women, the percentage of women who smoked during pregnancy decreased from 2016 to 2022.
- For American Indian or Alaska Native, non-Hispanic women, the percentage of women who smoked during pregancy decreased from 2016 to 2020 and then did not change significantly through 2022. Throughout the period, American Indian or Alaska Native, non-Hispanic women were the most likely to smoke during pregnancy.
- For Asian, non-Hispanic women, the percentage of women who smoked during pregnancy did not change significantly from 2016 to 2018 and then decreased through 2022.
- For Native Hawaiian or Other Pacific Islander, non-Hispanic and Hispanic women, the percentage of women who smoked during pregnancy did not change significantly from 2016 to 2022.
- In 2022, the percentage of women who smoked during pregnancy was highest for American Indian or Alaska Native, non-Hispanic women (11%), followed by White, non-Hispanic (5%), Black, non-Hispanic (3%), Native Hawaiian or Other Pacific Islander, non-Hispanic (2%), Hispanic (1%), and Asian, non-Hispanic (0.3%) women.

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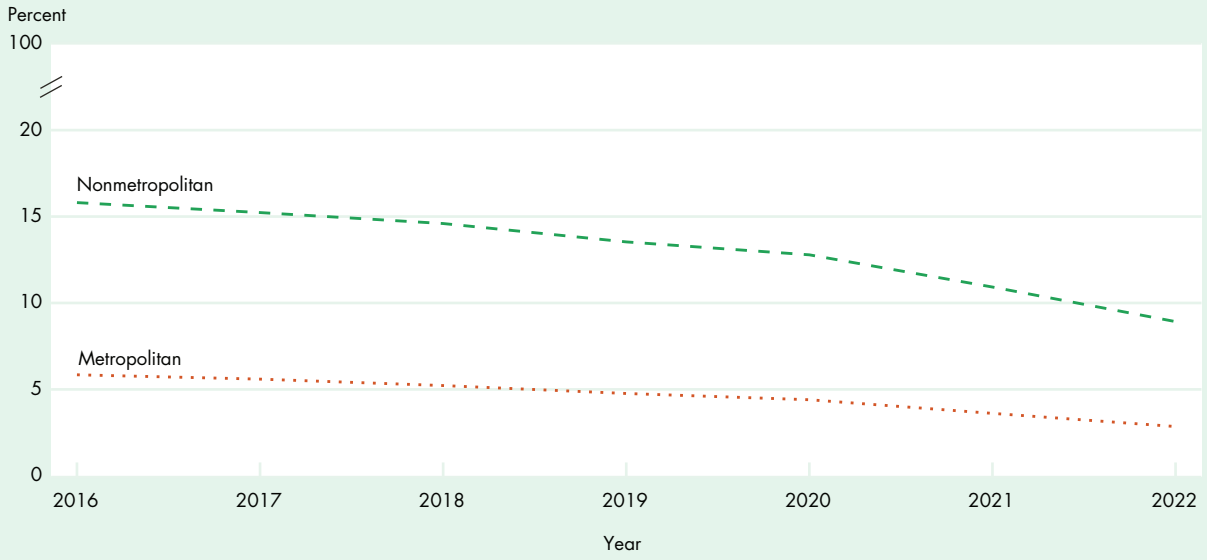
Figure 24 **Percentage of women who smoked during pregnancy by metropolitan status, 2016–2022**



NOTE: The Office of Management and Budget classifies counties as within a metropolitan statistical areas (MSA). In this report, counties not classified as within an MSA are classified as nonmetropolitan. Nonmetropolitan counties may include small urban areas, as well as completely rural areas. Nonmetropolitan counties include counties in micropolitan statistical and rural areas.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.

- From 2016 to 2022, the percentage of women who smoked during pregnancy decreased for those living in both metropolitan and nonmetropolitan counties.
- Throughout the period, smoking during pregnancy was more common among women who lived in nonmetropolitan counties than in metropolitan counties. In 2022, the percentage of women who smoked during pregnancy was 9% for those who lived in nonmetropolitan counties, compared with 3% for those who lived in metropolitan counties.

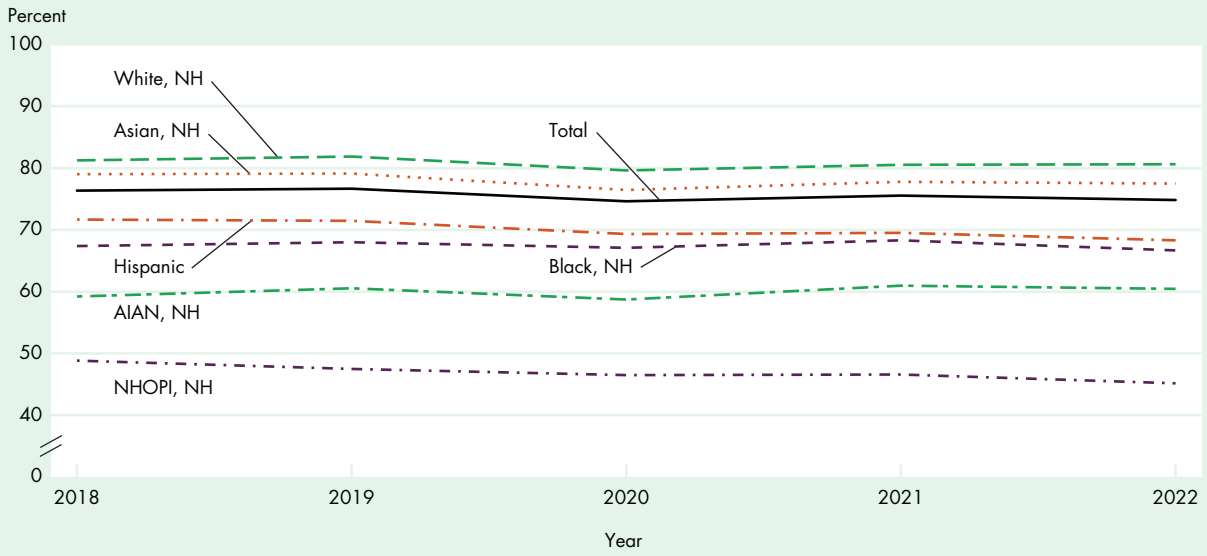
Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

Adequacy of Prenatal Care

Early and regular prenatal care, a measure of healthcare quality for pregnant women, improves the chances of a healthy birth and may prevent complications during pregnancy and birth that negatively impact maternal and infant health.[46] Inadequate prenatal care is associated with increased risk of preterm birth, stillbirth, and infant mortality.[47]

Adequate prenatal care is defined as prenatal care that begins early, before the 4th month of pregnancy, and occurs on a regular basis, with the mother attending 80% or more of the expected number of prenatal care visits based on recommendations from the American College of Obstetricians and Gynecologists.[48,49]

Figure 25 **Percentage of pregnant women who received adequate prenatal care by race and Hispanic origin, 2018–2022**



NOTE: NH = non-Hispanic origin; AIAN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander. This measure is based on the Adequacy of Prenatal Care Utilization Index (APNCU), which uses data from the birth certificate on the month of pregnancy when prenatal care began, the number of prenatal care visits, and the infant's gestational age to classify levels of prenatal care. The APNCU classifies care as intensive use (or adequate plus) and adequate care,[50] which that are combined here to define adequate prenatal care that began by the 4th month of pregnancy and where the woman attended 80% or more of the expected number of visits. Race and Hispanic origin refer to the mother's race and Hispanic origin. The 1997 U.S. Office of Management and Budget standards for data on race and ethnicity were used to classify people into one of the following five racial groups: White, Black or African American, Asian, American Indian or Alaska Native, or Native Hawaiian or Other Pacific Islander. All categories are single race. Data on race and Hispanic origin are collected and reported separately. People of Hispanic origin may be of any race.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.[51]

- From 2018 to 2022, the total percentage of all pregnant women who received adequate prenatal care did not change significantly, ranging from 75% to 77%.
- The percentage of pregnant women who received adequate prenatal care did not change significantly for any race or Hispanic origin group except Native Hawaiian or Other Pacific Islander, non-Hispanic, where the percentage of pregnant women who received adequate prenatal care decreased from 49% in 2018 to 46% in 2022.
- Throughout the period, White, non-Hispanic women were the most likely to receive adequate prenatal care, whereas Native Hawaiian or Other Pacific Islander, non-Hispanic women were the least likely to receive adequate prenatal care.
- In 2022, Native Hawaiian or Other Pacific Islander, non-Hispanic women were the least likely to receive adequate prenatal care (46%), followed by American Indian or Alaska Native, non-Hispanic (61%), Black, non-Hispanic (67%), Hispanic (69%), Asian, non-Hispanic (78%), and White, non-Hispanic (81%) women.

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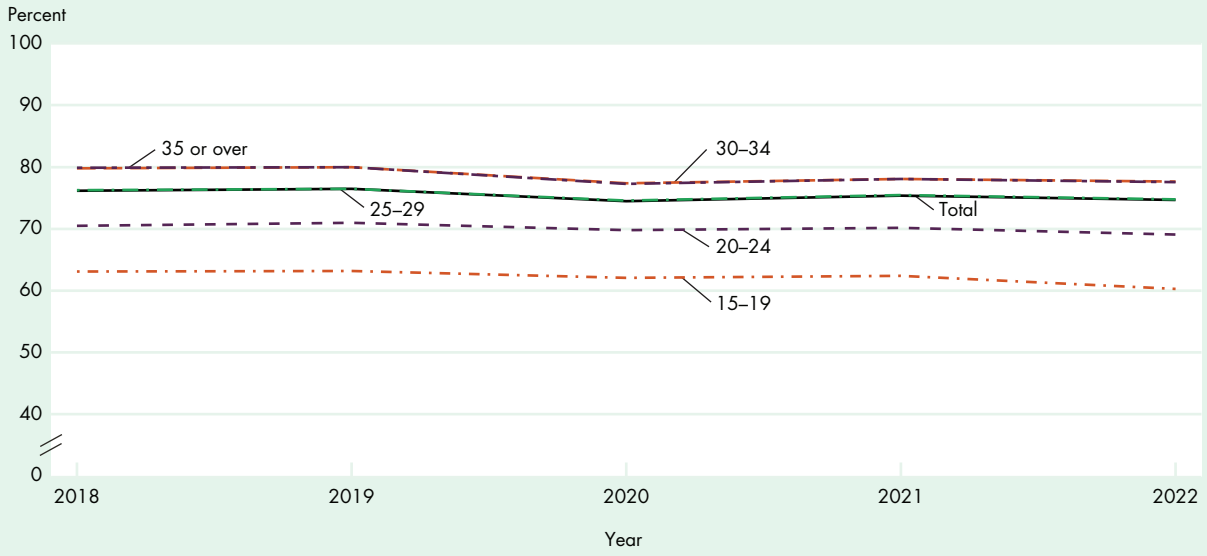
Figure 26 **Percentage of pregnant women who received adequate prenatal care by age, 2018–2022**



NOTE: This measure is based on the Adequacy of Prenatal Care Utilization Index, which uses data from the birth certificate on the month of pregnancy when prenatal care began, the number of prenatal care visits, and the infant's gestational age to classify levels of prenatal care. The APNCU classifies care as intensive use (or adequate plus) and adequate care,[50] which are combined here to define adequate prenatal care that began by the 4th month of pregnancy and where the woman attended 80% or more of the expected number of visits.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.[51]

- From 2018 to 2022, the percentage of pregnant women who received adequate prenatal care did not change significantly for any age group.
- Generally, the receipt of adequate prenatal care increased with age from 2018 to 2022.
- In 2022, adolescents ages 15–19 were the least likely to receive adequate prenatal care (61%), followed by women ages 20–24 (69%) and 25–29 (75%). Women ages 30–34 and 35 and over (78% for both) were the most likely to receive adequate prenatal care.

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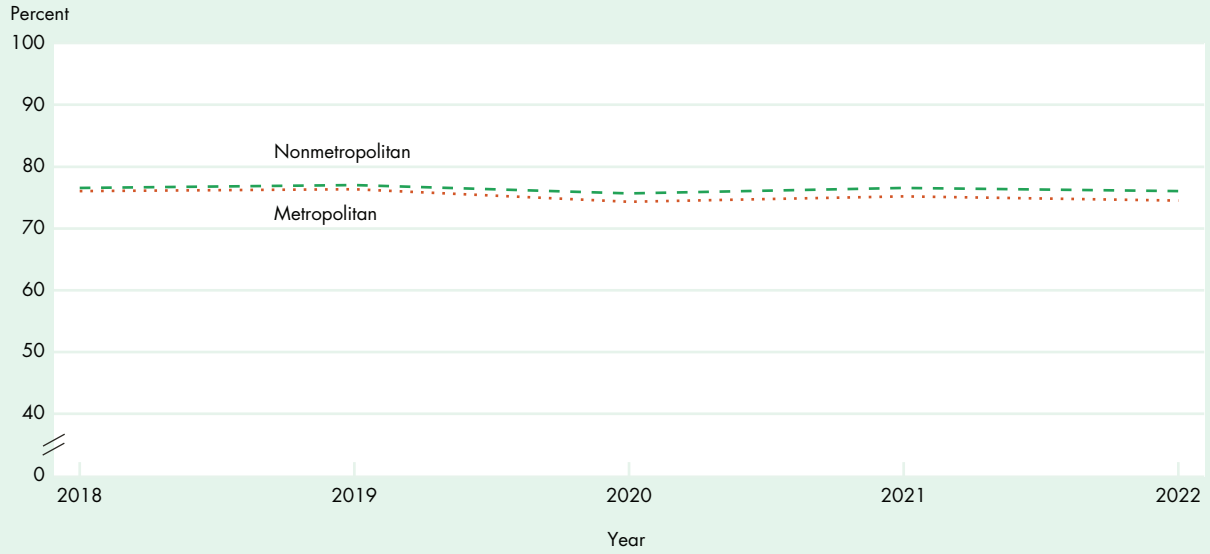
Figure 27 **Percentage of pregnant women who received adequate prenatal care by metropolitan status, 2018–2022**



NOTE: This measure is based on the Adequacy of Prenatal Care Utilization Index, which uses data from the birth certificate on the month of pregnancy when prenatal care began, the number of prenatal care visits, and the infant's gestational age to classify levels of prenatal care. The APNCU classifies care as intensive use (or adequate plus) and adequate care,[50] which are combined here to define adequate prenatal care that began by the 4th month of pregnancy and where the woman attended 80% or more of the expected number of visits. The Office of Management and Budget identifies counties in metropolitan statistical areas (metropolitan). In this report, counties not in a metropolitan statistical area are considered nonmetropolitan.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.[51]

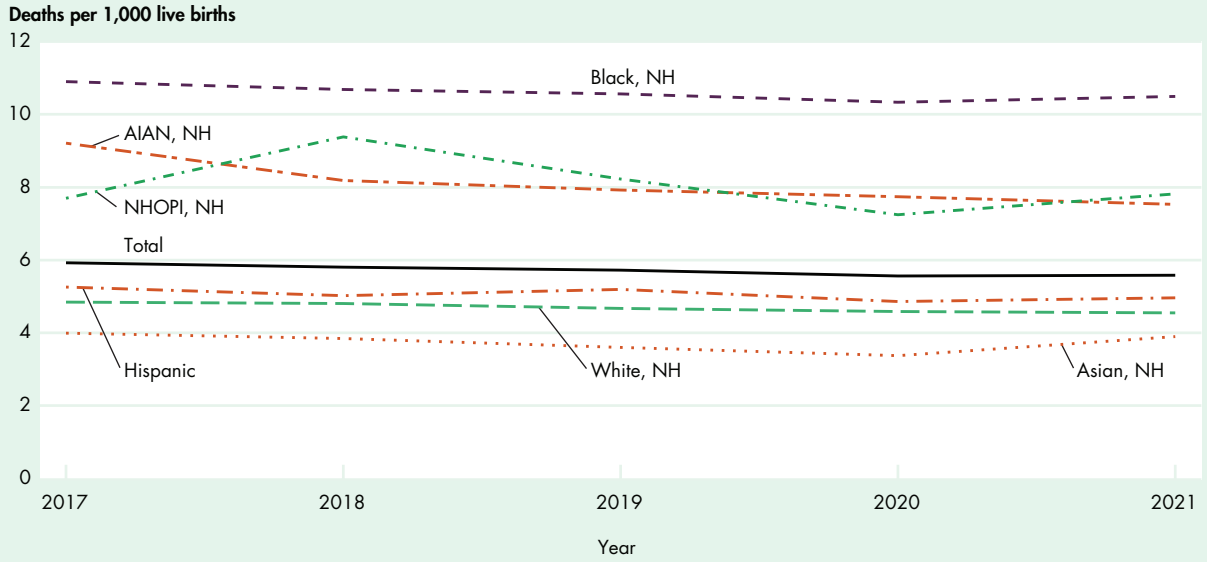
- In 2022, 75% of pregnant women living in metropolitan counties received adequate prenatal care, and 76% of pregnant women in nonmetropolitan counties received adequate prenatal care.
- From 2018 to 2022, the percentage of pregnant women who received adequate prenatal care did not change significantly for those living in metropolitan or nonmetropolitan counties.
- Throughout the period, pregnant women living in nonmetropolitan counties were more likely to receive adequate prenatal care (ranging from 76% to 77%) than pregnant women living in metropolitan counties (ranging from 75% to 77%).

Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

Infant Mortality

Infant mortality is the death of an infant before their first birthday. Infant mortality is related to the underlying health of the mother, public health practices, socioeconomic conditions, and the availability and use of appropriate healthcare for infants and pregnant women.[23,52] In 2021, the five leading causes of infant death were congenital malformations, disorders related to short gestation and low birthweight, sudden infant death syndrome, unintentional injuries, and maternal complications of pregnancy.[53] Together, these five causes of death accounted for 55% of infant deaths.[53] Despite medical advances and public health efforts, disparities in infant mortality persist, particularly by race and Hispanic origin, and maternal age.

Figure 28 **Infant mortality rate by maternal race and Hispanic origin, 2017–2021**



NOTE: AIAN = American Indian or Alaska Native; NH = non-Hispanic origin; NHOPI = Native Hawaiian or Other Pacific Islander. Infant deaths are deaths before an infant's first birthday. Race and Hispanic origin refer to the mother's race and Hispanic origin. The 1997 U.S. Office of Management and Budget standards for data on race and ethnicity were used to classify people into one of the following five racial groups: White, Black or African American, Asian, American Indian or Alaska Native, or Native Hawaiian or Other Pacific Islander. All categories are single race. Data on race and Hispanic origin are collected and reported separately. People of Hispanic origin may be of any race.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Linked Birth/Infant Death Data Set.

- The infant mortality rate decreased from 6 deaths per 1,000 live births in 2017 to 5 per 1,000 in 2021.
- From 2017 to 2021, the infant mortality rate decreased for infants of American Indian or Alaska Native, non-Hispanic and White, non-Hispanic women. The rate did not change significantly for infants of Asian, non-Hispanic; Black, non-Hispanic; Native Hawaiian or Other Pacific Islander, non-Hispanic; and Hispanic women.
- In 2021, the infant mortality rate was highest for infants of Black, non-Hispanic women (11 per 1,000), followed by infants of Native Hawaiian or Other Pacific Islander, non-Hispanic (8 per 1,000) and American Indian or Alaska Native, non-Hispanic (7 per 1,000) women. Rates were lowest for infants of Hispanic (5 per 1,000), White, non-Hispanic (4 per 1,000), and Asian, non-Hispanic (4 per 1,000) women.

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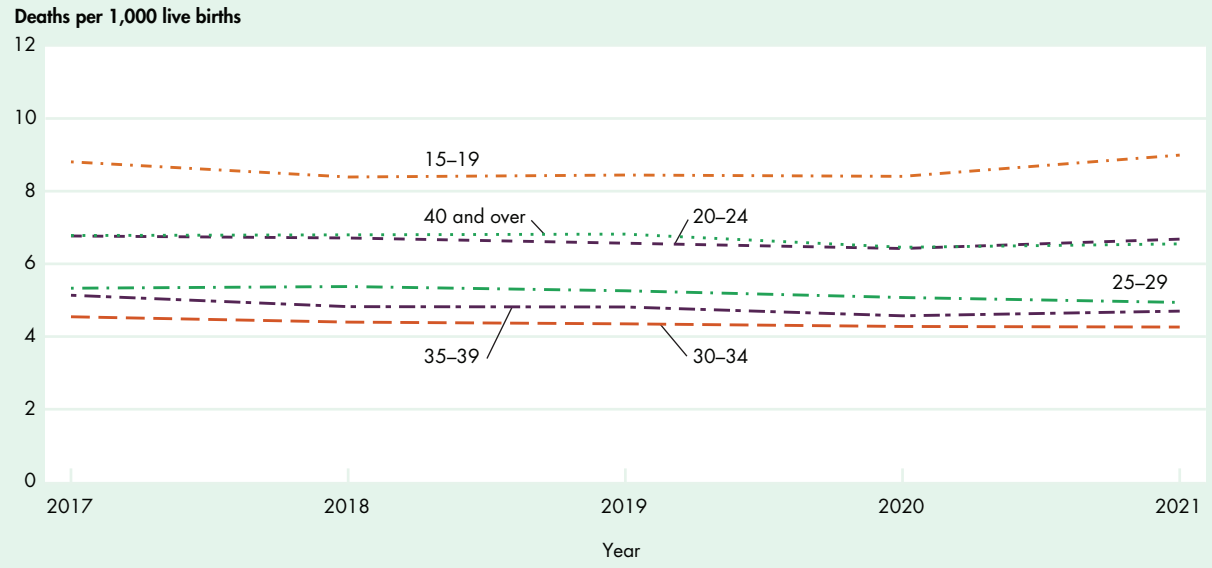
Figure 29 **Infant mortality rate by maternal age, 2017–2021**



NOTE: Infant deaths are deaths before an infant's first birthday.
SOURCE: National Center for Health Statistics, National Vital Statistics System, Linked Birth/Infant Death Data Set.

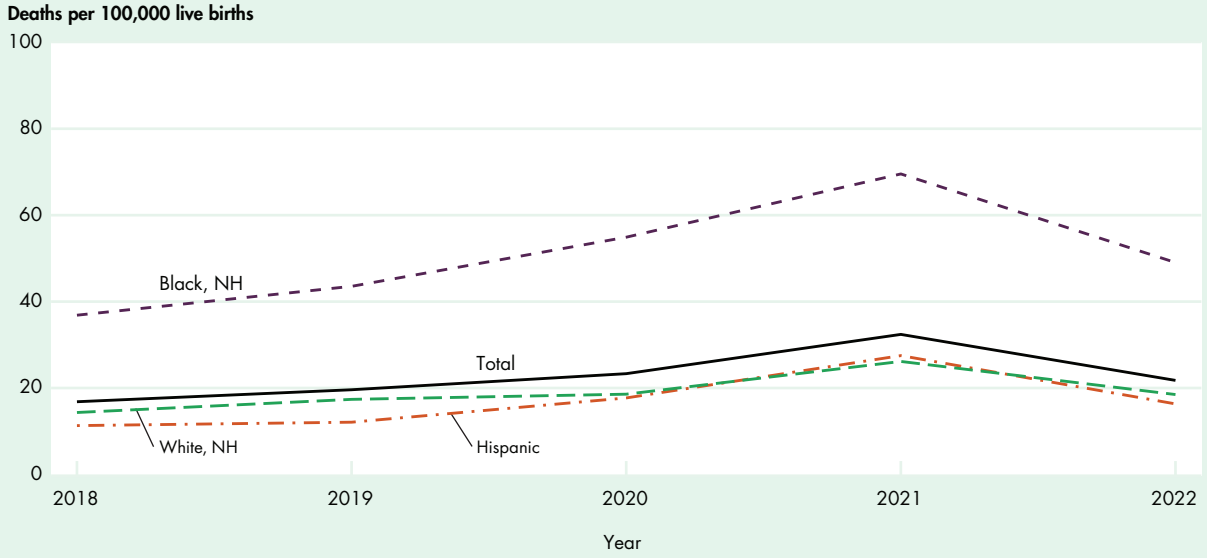
- Infant mortality rates tended to be highest among the youngest and oldest age groups. In 2021, infants of adolescents ages 15–19 had the highest rate (9 deaths per 1,000 live births), which was more than twice the rate of infants of women ages 30–34 (4 per 1,000).

Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

Maternal Mortality

The World Health Organization defines maternal mortality as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes."[54] Maternal mortality varies by maternal race and Hispanic origin, maternal age, and metropolitan status. In the United States, Black, non-Hispanic women have the highest maternal mortality rates.[55] These racial and ethnic disparities may reflect structural racism, particularly inequities in access to quality healthcare services.[56]

Figure 30 **Maternal mortality rates by race and Hispanic origin, 2018–2022**

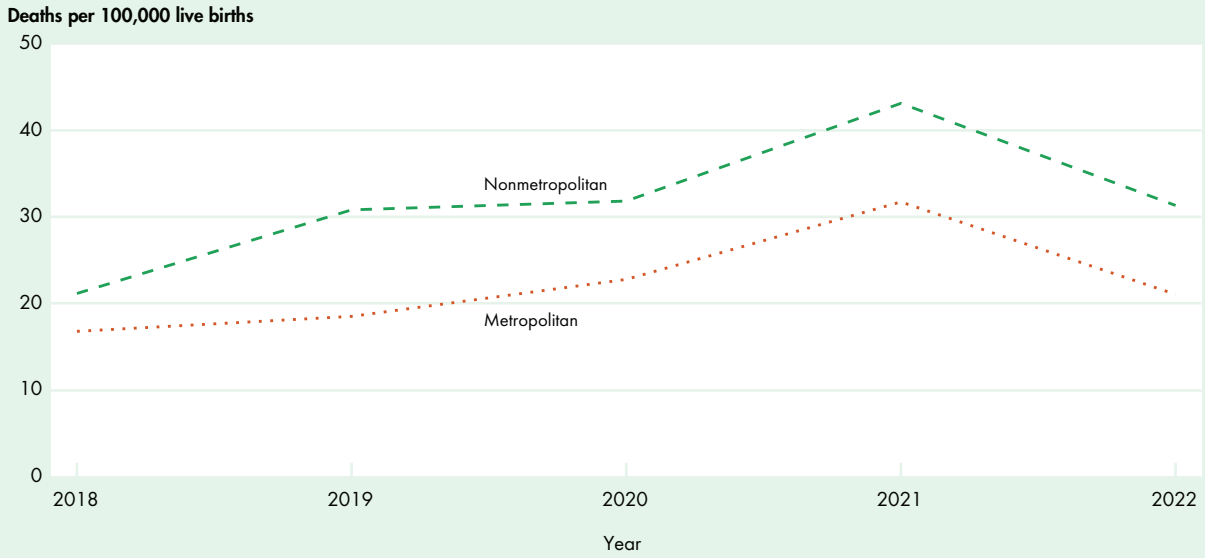


NOTE: NH = non-Hispanic origin. Maternal mortality is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. The number of maternal deaths does not include all deaths occurring to pregnant or recently pregnant women; it only includes those with an underlying cause of death assigned to *International Statistical Classification of Diseases, 10th Revision* codes A34, O00–O95, and O98–O99. To address the underreporting of maternal deaths in vital statistics, a separate pregnancy checkbox item was added to the 2003 U.S. Standard Certificate of Death. The new death certificate was adopted by states and reporting areas on a rolling basis from 2003 to 2017. Starting in 2018, all states and reporting areas are using the new death certificate with the pregnancy checkbox (note that California has implemented a different version of the pregnancy checkbox). The 1997 U.S. Office of Management and Budget standards were used to classify people into one of the following five race groups: White, Black or African American, Asian, American Indian or Alaska Native, or Native Hawaiian or Other Pacific Islander. All categories are single race. Data on race and Hispanic origin are collected and reported separately. People of Hispanic origin may be of any race.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality and Mortality.

- From 2018 to 2021, the maternal mortality rate increased from 17 deaths per 100,000 live births to 33 deaths per 100,000 live births and then declined to 22 deaths per 100,000 live births in 2022. This pattern held by race and Hispanic origin, age and MSA status.
- In 2022, 817 women died of maternal causes in the United States, compared with 1,205 in 2021.
- Rates for each age group were higher in 2022 than 2018, except for rates among women ages 40 and over.
- In 2022, the maternal mortality rate for Black, non-Hispanic women (49.5 per 100,000 live births) was 30 points higher than the rate for White, non-Hispanic women (19 per 100,000 live births) and 33 points higher than the rate for Hispanic women (16.9 per 100,000).

Figure 31 **Maternal mortality rates by metropolitan status, 2018–2022**



NOTE: Maternal mortality is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. The number of maternal deaths does not include all deaths occurring to pregnant or recently pregnant women, but only deaths with the underlying cause of death assigned to *International Statistical Classification of Diseases, 10th Revision* codes A34, O00–O95, and O98–O99. The Office of Management and Budget classifies counties as within a metropolitan statistical area (MSA). In this report, counties not classified as within an MSA are classified as nonmetropolitan. Nonmetropolitan counties may include small urban areas, as well as completely rural areas. Nonmetropolitan counties include counties in micropolitan statistical and rural areas. To address the underreporting of maternal deaths in vital statistics, a separate pregnancy checkbox item was added to the 2003 U.S. Standard Certificate of Death. The new death certificate was adopted by states and reporting areas on a rolling basis from 2003 to 2017. Starting in 2018, all states and reporting areas are using the new death certificate with the pregnancy checkbox (note that California has implemented a different version of the pregnancy checkbox). The Office of Management and Budget classifies counties as within a metropolitan statistical areas (MSA). In this report, counties not classified as within an MSA are classified as nonmetropolitan. Nonmetropolitan counties may include small urban areas, as well as completely rural areas. Nonmetropolitan counties include counties in micropolitan statistical and rural areas.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality and Mortality.

- The maternal mortality rate also varied by metropolitan status. The maternal mortality rate was higher in nonmetropolitan counties than metropolitan counties during 2018 to 2022. In 2022, the maternal mortality rate in nonmetropolitan counties was 31 deaths per 100,000 live births, 10 points higher than the rate in metropolitan counties (21 deaths per 100,000 live births).

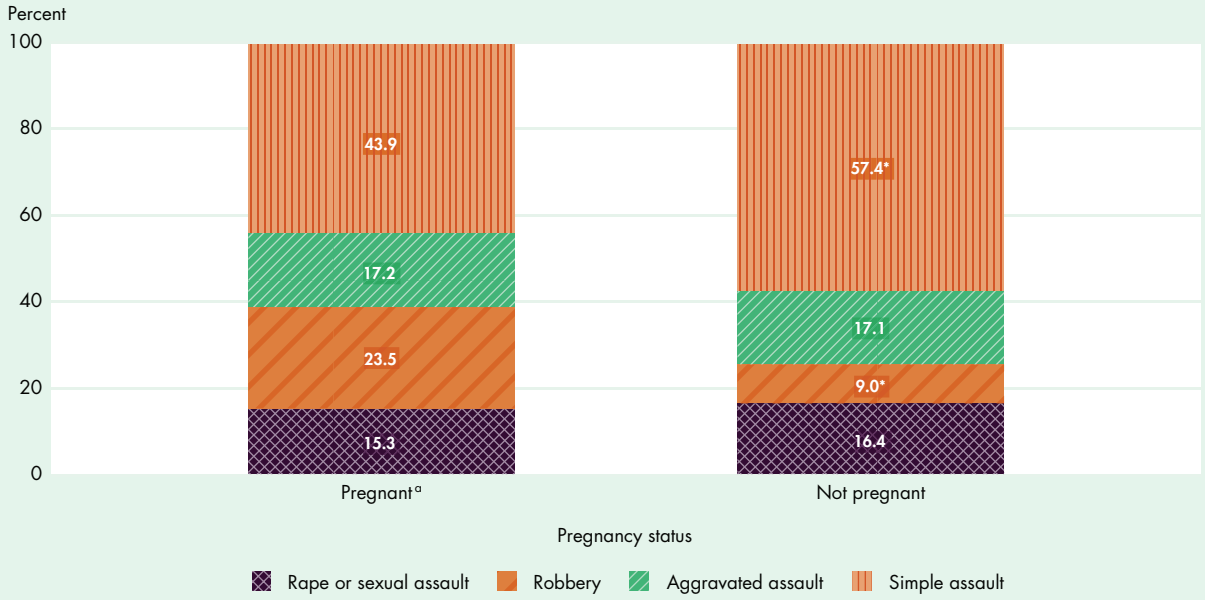
Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

Nonfatal Violence Toward Pregnant Women

Victims of violent crime can experience physical and emotional consequences as a result of the victimization. This effect can be magnified for pregnant victims of crime, as there may be additional health risks for both the pregnant person and the unborn child.[57] Experiencing domestic violence while pregnant is significantly associated with delivering an infant with low birthweight and delivering an infant preterm.[68]

The Bureau of Justice Statistics' National Crime Victimization Survey (NCVS)[59] is a nationally representative household survey that collects information on the pregnancy status of nonfatal violent crime victims.[60] Victims of violent crime are only asked their pregnancy status if they are female and between the ages of 18 and 49. Therefore, all estimates discussed are limited to nonfatal violent victims of crime who were female and between the ages of 18 and 49 when surveyed. Analyzing NCVS data allows examination of how incident characteristics may differ between pregnant and not pregnant victims of violent crime.

Figure 32 **Percentage of violent victimizations against females ages 18–49 by type of crime and pregnancy status, 2018–2022**



* Difference with comparison group is significant at the 95% confidence level.

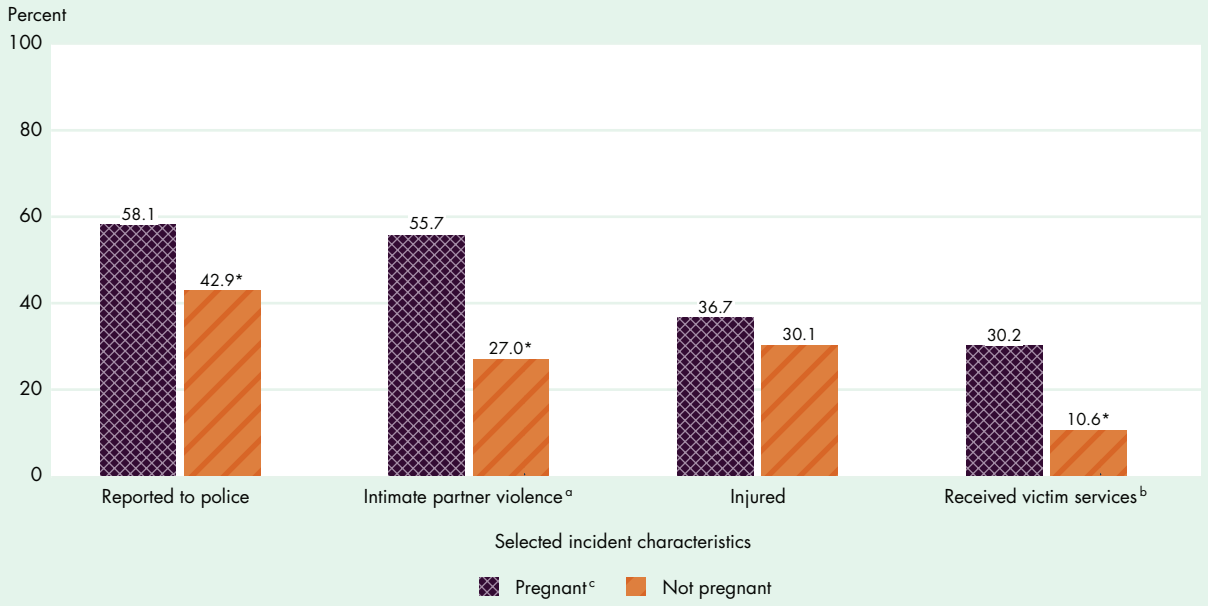
[a] Comparison group.

NOTE: Details may not sum to totals because of rounding. Only victims of crime who were female and between the ages of 18 and 49 at the time of the interview were asked whether they were pregnant at the time of the incident. From 2018 to 2022, the victim was pregnant in 313,730 violent victimizations, whereas there were 8.1 million violent victimizations where the victim was not pregnant. Victimization refers to the total number of times that persons were victims of crime. Therefore, if a person was a victim of both a robbery and simple assault during the time period, both victimizations are included in estimates.

SOURCE: Bureau of Justice Statistics, National Crime Victimization Survey.

- During the 5-year aggregate period of 2018–2022, the victim was pregnant in 313,730 violent victimizations, whereas there were 8.1 million violent victimizations among non-pregnant victims. Both estimates only include victims of crime who were females between the ages of 18 and 49.
- Robberies accounted for a larger share of violent victimizations among pregnant victims (23.5%) than non-pregnant victims (9.0%).
- Simple assaults accounted for a smaller share of violent victimizations among pregnant victims (43.9%) than non-pregnant victims (57.4%).
- Rape or sexual assaults (15.3%–16.4%) and aggravated assaults (17.2%–17.1%%) accounted for similar shares of violent victimizations among pregnant victims and non-pregnant victims.

Figure 33 **Percentage of violent victimizations against females ages 18–49 by selected incident characteristics and pregnancy status, 2018–2022**



* Difference with comparison group is significant at the 95% confidence level.

[a] Includes the subset of violent victimizations that were committed by current or former spouses, boyfriends, or girlfriends.

[b] Includes violent victimizations for which victims received assistance from a victim service provider.

[c] Comparison group.

NOTE: Details may not sum to totals because of rounding and because incident characteristics are not mutually exclusive. Only victims of crime who were female and between the ages of 18 and 49 at the time of the interview were asked whether they were pregnant at the time of the incident. From 2018 to 2022, the victim was pregnant in 313,730 violent victimizations, whereas there were 8.1 million violent victimizations where the victim was not pregnant. Victimization refers to the total number of times that persons were victims of crime.

SOURCE: Bureau of Justice Statistics, National Crime Victimization Survey.

- From 2018 to 2022, the percentage of violent victimizations reported to the police was higher among pregnant victims (58.1%) than non-pregnant victims (42.9%).
- Similarly, the percentage of violent victimizations committed by a current or former intimate partner was higher among pregnant victims (55.7%) than among non-pregnant victims (27.0%).
- Pregnant victims received assistance from a victim service provider in about 30.2% of violent victimizations, which was higher than the percentage among non-pregnant victims (10.6%).
- The percentage of violent victimizations when the victim was injured was similar among pregnant victims and non-pregnant victims.

Endnotes begin on page 44. Bullets contain references to data that can be found in detailed tables on childstats.gov.

The Federal Interagency Forum on Child and Family Statistics (the Forum) recognizes the need to continuously review current indicators and monitor data topics to ensure that the *America's Children* report remains a valuable resource for federal researchers, policymakers, and the general public. The full *America's Children* report published every other year presents key indicators in seven domains: family and social environment, economic circumstances, healthcare, physical environment and safety, behavior, education, and health. This special issue examines a selection of existing data sources related to maternal and infant health and well-being because pregnancy, birth, and infancy are critical periods that can set future trajectories for children in the United States.

Some data topics in this section focus on social determinants of health, which are the nonmedical factors that influence health outcomes. This includes safe neighborhoods, housing, transportation, freedom from violence, and health care access. The data sources supporting these topics do not meet the *America's Children* report criteria because they are not nationally representative, have limited or missing data, and/or do not include valid and reliable data over time. Additionally, there is concern about the inability of some data sources to determine an individual's pregnancy status for select indicators. This section will hopefully stimulate ongoing data development work as it addresses key data topics.

Physical Environment and Safety

The indicators in this special issue help to better understand and monitor the physical environment and safety of pregnant and postpartum women and their infants, but more information could provide a fuller picture, including the following:

- **Housing.** Homelessness is only one measure under the broader category of housing insecurity, which can also be experienced as housing cost burden, poor physical quality, or instability leading to multiple families residing in one household. Housing insecurity poses threats to the well-being of families and challenges for measurement. A growing body of research demonstrates how this social determinant of health impacts the health and well-being of pregnant women and their infants.[61,62,63] Although there are national sources of data on housing insecurity, most do not collect data on pregnancy status or new motherhood.[64]
- **Violence.** *America's Children* provides indicators of victimization and violence to measure the physical environment and safety for children and youths. Intimate partner violence against pregnant women and fatal maternal victimization are consequential aspects of the physical environment and safety for pregnant women.[65] Research demonstrates an association between experiencing intimate partner violence and engaging in risky health behaviors, missing prenatal care visits, experiencing prenatal and postpartum depression and other mental health problems, as well as negative outcomes for infants, such as preterm birth, low birthweight, and fetal and neonatal death.[66] For children, both witnessing intimate partner violence against their mothers and fatal maternal victimization, which results in the loss of their mothers, are considered adverse childhood experiences that threaten children's future health and well-being. National data sources on violence do not collect ample data on pregnancy and postpartum status and present a need for future measurement development.
- **Neighborhood safety.** Living in a safe neighborhood free from violence and other health and safety risks is an important social determinant of health that is part of children's physical environment and safety. Pregnant women who feel unsafe in their neighborhood are at increased risk of perinatal depression (depression during pregnancy and postpartum, weeks after childbirth), decreased number of prenatal care visits, and having infants with low birthweight.[67] The National Survey of Children's Health (NSCH) is a nationally representative survey that includes a question about neighborhood safety for children. However, the NSCH does not collect neighborhood safety data on pregnant women or children under one year of age. The existing federal data sources provide an opportunity for further measurement development around neighborhood safety and violence that focuses on pregnant women and infancy up to the child's first birthday.
- **Pollution and climate events.** *America's Children* presents data on outdoor air quality, drinking water quality, and blood lead levels as indicators of children's physical environment and safety. Exposure to pollution and climate events, such as hurricanes, floods, fires, tornados, and excessive heat, are also a part of children's physical environment and safety.

Pregnancy, like childhood, is a time during which these environmental determinants of health can have an increased impact on a person's well-being. Several government and non-government agencies have created screening and mapping tools to document and compare pollution and environmental risks for children, mothers, and pregnant women.[68–73] However, these measures often provide information on relative risks, rather than absolute risks, which may make interpretation difficult. In addition, some indicators are not collected more frequently than every 10 years.[74] Regular, ongoing data collection (i.e., repeatedly and more frequently than every 10 years) and measurement development that focuses on maternal and child well-being in relation to pollution and climate events are needed to create a clearer picture of the impact of environmental and climate factors on maternal, infant, and child health and well-being.

Behavior

- **Maternal Substance Use.** Prenatal substance use increases the risk of pregnancy-related morbidity and mortality among mothers and adverse birth outcomes among infants.[75] After birth, having a mother with substance use disorder is related to increased risky behaviors among children, such as smoking cigarettes, using alcohol or drugs, sexual activity, or committing serious violent crimes.[76] Consequently, this is an important indicator of child and family well-being. There are unique algorithms that have been developed that specifically identify substance use disorder among pregnant and birthing mothers that can be explored for measurement development to produce high-quality data at the federal level.[77,78,79]

Health Care

- **Health care access.** *America's Children* presents indicators of the availability and use of needed and quality care, which are major determinants of health care access. The U.S. Department of Health and Human Services' Health Resources and Services Administration (HRSA) Bureau of the Healthcare Workforce (BHW) offers data tools on health professional shortage areas and medically underserved areas (primary healthcare services shortage) by geography and other characteristics.[80] These data tools do not currently disaggregate the facilities or providers by maternity care specialties like obstetrics and gynecology. Such information would help to understand health care access before, during, and after birth.

Economic Circumstances

- **Transportation Access.** Transportation barriers may affect a family's economic circumstances, which is a key domain in *America's Children*. Transportation access impacts mothers' and pregnant women's ability to access prenatal and other health care, food security, and economic opportunities.[81,82,83,84] Some information on transportation access is available from Pregnancy Risk Assessment Monitoring System (PRAMS) and the Department of Transportation (DOT). However, PRAMS data related to transportation are not nationally representative, and the DOT data do not include information on pregnancy status. Further development of transportation measures that incorporate high-quality, nationally representative, complete, and contemporaneous data including pregnancy and family information are needed.

Conclusion

The health and well-being of America's children are difficult to understand outside of the context of their families and caregivers. Social and environmental contexts shape all phases of life for America's families, from preconception to the prenatal and infancy periods, and on to childhood. The Forum hopes this section stimulates further discussion of additional data sources and methods that could lead to more indicators that assess and promote maternal and infant health and well-being. General areas for improvement include developing nationally representative coverage for some indicators and ensuring that pregnancy status data are collected.

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California's Maternal and Infant Health Assessment

California's Maternal and Infant Health Assessment (MIHA) is a statewide representative annual survey of California women who recently gave birth to a live infant, sampled from birth certificates. It collects population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy, and is analogous to PRAMS. The goal of MIHA is to improve the health of mothers and infants by providing data to inform programs and policies aimed at reducing adverse outcomes, such as low birthweight, infant and maternal mortality and morbidity. MIHA data are collected via mail, online, or telephone. The survey responses are linked to birth certificate data and weighted to represent all women in California with a live birth each survey year. In 2021, 9,992 women were sampled for MIHA. Of this sample, there were 6,093 respondents for an overall weighted response rate of 61.0%.

MIHA is a collaborative effort of the Maternal, Child and Adolescent Health (MCAH) and the Women, Infant & Children (WIC) Division of the California Department of Public Health and the Center for Health Equity at the University of California, San Francisco

For more information about the MIHA survey methodology see: Maternal and Infant Health Assessment Methods | CA Department of Public Health

For more information about MIHA, visit the MIHA website: Maternal and Infant Health Assessment | CA Department of Public Health

Agency Contact:
Jaynia Anderson, MPH
California Department of Public Health
Email: MIHA@cdph.ca.gov

Current Population Survey

The Current Population Survey (CPS) is a nationwide survey of about 60,000 households conducted monthly for the U.S. Bureau of Labor Statistics by the U.S. Census Bureau. The survey is representative of the civilian noninstitutionalized population of the United States with a sample located in more than 2,000 counties and independent cities and coverage in every state and the District of Columbia.

The CPS sample is selected from a complete address list of geographically delineated primary sampling units, which are based on census addresses and updated using recent construction and other data. It is administered through field representatives, either in person or by telephone using computer-assisted personal interviewing (CAPI). Some CPS data also are collected through a centralized telephone operation, computer-assisted telephone interviewing (CATI). For more information regarding the CPS, its sampling structure, and estimation methodology, see Design and Methodology: Current Population Survey (Technical Paper 77, October 2019) available online at https://www.census.gov/programs-surveys/cps/technical-documentation/complete.html.

The CPS core survey is the primary source of information on the employment characteristics of the civilian noninstitutionalized population, including estimates of unemployment released every month by the U.S. Bureau of Labor Statistics.

In addition to the core survey, monthly CPS supplements provide additional demographic and social data. The food security supplement contains a systematic set of questions validated as measures of the severity of food insecurity on a 12-month and a 30-day basis. Statistics presented in this report are based on 12-month data from the CPS food security supplements. The food security questions are based on material reported in prior research on hunger and food security and reflect the consensus of nearly 100 experts at the 1994 Food Security and Measurement Conference, convened jointly by the National Center for Health Statistics and the Food and Nutrition Service of the U.S. Department of Agriculture. The supplement was developed, tested, and refined further by the conferees, members of a Federal interagency working group, and survey methods specialists for the U.S. Census Bureau's Center for Survey Methods Research. All households interviewed in the CPS in December are eligible for the supplement. Special supplement sample weights were computed to adjust for the demographic characteristics of supplement noninterviews.

Information about food security is available online at the Economic Research Service at https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/. Information about the CPS is available online at https://www.census.gov/cps.

Agency Contact:
Laura J. Hales
Economic Research Service
U.S. Department of Agriculture
Phone: 816-412-7441
Email: laura.hales@usda.gov

National Crime Victimization Survey

The National Crime Victimization Survey (NCVS) is the Nation's primary source of information on criminal victimization. The NCVS is sponsored by the Bureau of Justice Statistics, and data are collected by the U.S. Census Bureau. The NCVS collects information on nonfatal victimizations, reported and not reported to the police, against persons age 12 or over from a nationally representative sample of U.S. households. In 2022, there were 143,794 household interviews. Overall, 64% of eligible households completed an interview. Within participating households, 226,962 persons completed an interview in 2022, representing an 82% response rate among eligible persons from responding households. Sample households are chosen using a multistage stratified sample design. All household members age 12 and over in selected households are interviewed to obtain information on the frequency, characteristics, and consequences of criminal victimization in the United States. The survey measures the likelihood of victimization by rape, sexual assault, robbery, assault, theft, household burglary, and motor vehicle theft for the population as a whole, as well as for segments of the population such as adolescents and members of various racial and gender groups. Victims also are asked (either in person or by telephone) whether they reported the incident to the police. In instances of personal violent crimes, victims are asked about the characteristics of the perpetrator.

The NCVS is the largest national forum that allows victims the opportunity to describe the impact of crime and to provide their characteristics and those of violent offenders. It has been ongoing since 1973 and was redesigned in 1992.

Because of changes in survey methodology in 2006, national-level estimates are not comparable with estimates based on NCVS data from previous years. See *Criminal Victimization, 2006*, https://bjs.ojp.gov/library/publications/criminal-victimization-2006, for more information on the redesigned methodology. In 2016, the NCVS sample was redesigned, and 2016 estimates among youth are not comparable with estimates from other years.

The 2020 NCVS weights include an additional adjustment to address the impact of modified Census Bureau field operations because of COVID-19. For more information on the weighting adjustments applied in 2020, see the Source and Accuracy Statement for the 2020 National Crime Victimization Survey in the NCVS 2020 Codebook (https://www.icpsr.umich.edu/web/NACJD/series/95) and *Criminal Victimization, 2020* (NCJ 301775, BJS, October 2021).

Information about the NCVS is available online at https://bjs.ojp.gov/programs/ncvs.

Agency Contact:
Alexandra Thompson
Bureau of Justice Statistics
Phone: 202-532-5472
Email: alexandra.thompson@usdoj.gov

National Health Interview Survey

The National Health Interview Survey (NHIS) is the principal source of information on the health of the civilian, noninstitutionalized U.S. population and is one of the major data collection programs of the National Center for Health Statistics. Interviews are typically initiated face-to-face in respondents' homes with follow-ups conducted by telephone if needed.

The sample for the NHIS is redesigned and redrawn about every 10 years to better measure the changing U.S. population and to meet new survey objectives. The most recent sample redesign was in 2016. The content of the NHIS questionnaire is revised about every 15–20 years, with the most recent questionnaire redesign in 2019. Due to changes in weighting and design methodology, direct comparisons between estimates before 2019 and 2019 onward should be made with caution, as the impact of these changes has not been fully evaluated.

From 1997 to 2018, one adult was asked questions about the family as a whole and about each member of the family. Starting in 2019, one "sample adult" aged 18 years or older and one "sample child" aged 17 years or younger (if any children live in the household) are randomly selected from each household following a brief screener that identifies the age, sex, race, and ethnicity of everyone who usually lives or stays in the household. Information about the sample adult is collected from the sample adult themselves unless they are physically or mentally unable to do so, in which case a knowledgeable proxy can answer for the sample adult. Information about the sample child is collected from a parent or adult who is knowledgeable about and responsible for the health care of the sample child. This respondent may or may not also be the sample adult. For more information on the NHIS, please visit https://www.cdc.gov/nchs/nhis/index.htm. Sample sizes and response rates from the past five years of data collection are available on pages 30–31 of the following document https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/NHIS/2023/srvydesc-508.pdf.

Starting with data updates for the *America's Children, 2017*, report, the reliability of survey percentage estimates for regular indicators is assessed using the Clopper-Pearson confidence interval, which was adapted for complex surveys by Korn-Graubard, to determine if the estimate is unreliable and should be suppressed. This method has been applied to the NHIS estimates for the maternal Tdap vaccination indicator presented in this special issue. The reliability of estimates for the indicator on maternal influenza vaccination, which are calculated using Kaplan-Meier survival analysis, is evaluated based on relative standard error.

For more information about the survey methodology, see:

National Center for Health Statistics. (2023). *Survey Description, National Health Interview Survey, 2022*. https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/NHIS/2022/srvydesc-508.pdf.

National Center for Health Statistics. (2022). *Survey Description, National Health Interview Survey, 2021*. https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/NHIS/2021/srvydesc-508.pdf.

National Center for Health Statistics. (2020, October 6). *2019 Questionnaire Redesign. National Health Interview Survey*. https://www.cdc.gov/nchs/nhis/2019_quest_redesign.htm.

Information about NHIS is available online at https://www.cdc.gov/nchs/nhis.htm.

Agency Contact:
Jeannine Schiller
National Center for Health Statistics
Phone: (301) 458-4152
E-mail: jschiller@cdc.gov

National Immunization Survey

The National Immunization Surveys (NIS) are a family of telephone surveys used to monitor vaccination coverage among children ages 19–35 months (NIS-Child) and adolescents ages 13–17 years (NIS-Teen). The NIS-Flu also monitors influenza vaccination coverage for those ages 6 month–17 years. Data collection for NIS-Child began in April 1994 to assess vaccination coverage after measles outbreaks in the early 1990s. Similar to the NIS-Child, the NIS-Teen was launched in 2006.

The NIS surveys provide population-based, state, selected local area, and territorial estimates of vaccination coverage among children and adolescents using a standard survey methodology. The surveys collect data through telephone interviews with parents or guardians in all 50 states, the District of Columbia, and some cities or counties and U.S. territories. Cell phone numbers are randomly selected and called to identify one or more age-eligible children or adolescents from the household. The parents and guardians of eligible children for NIS-Child and NIS-Teen are asked during the interview for the names of their children's vaccination providers and permission to contact them. With this permission, a questionnaire is mailed to each child's vaccination provider(s) to collect the information on the types of vaccinations, number of doses, dates of administration, and other administrative data about the healthcare facility. Estimates of vaccination coverage are determined for vaccinations recommended by the Advisory Committee on Immunization Practices (ACIP). Children and adolescents are classified as being up to date based on the ACIP-recommended numbers of doses for each vaccine. All vaccination coverage estimates are based on provider-reported vaccination history.

Additional information about the NIS is available online at https://www.cdc.gov/vaccines/imz-managers/nis/index.html.

Agency Contact:
James A. Singleton, PhD
Centers for Disease Control and Prevention
Phone: 404-639-8560
Email: jsingleton@cdc.gov

National Vital Statistics System—Linked Birth/Infant Death Data Set

The National Center for Health Statistics' National Vital Statistics System collects and publishes data on births and deaths in the United States. The period data set of the Linked Birth/Infant Death Data Set is used to produce the statistics presented in this report. In the period-linked data set, the numerator consists of all infant deaths occurring in a given year linked to their corresponding birth certificates from that calendar year or the previous year. The Linked file includes all the variables on the national natality file, as well as medical information reported for the same infant on the death record and the age of the infant at death. The infant's race and Hispanic origin are classified based on the race and Hispanic origin of the mother reported on the birth certificate. This is preferred over race and Hispanic origin on the death certificate because information on the birth certificate is usually provided by the parents, whereas information on the death certificate may be completed by a third party (like the coroner or physician). Linked files are available starting with the birth cohort of 1983. Linked files were not produced for the 1992–1994 data years.

Race Reporting. The 2003 revision of the U.S. Standard Certificate of Live Birth uses revised race and ethnicity sections conforming to the 1997 Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. The 2003 revision permits reporting of more than one race (multiple races). In 2003, states began adopting this new certificate on a rolling basis. Starting with the 2017 linked data set, single-race data are available for all 50 states and the District of Columbia. For data before 2017, bridged-race categories were presented to provide uniformity and comparability of data over time. Therefore, data for race groups for 2017 onwards are not comparable with earlier data. The bridged population estimates can be found online at https://www.cdc.gov/nchs/nvss/bridged_race.htm. Bridged-race estimates are no longer available after 2020 data.

For more information, see

Ely, D. M., & Driscoll, A. K. (2023). Infant mortality in the United States, 2021: Data from the period linked birth/infant death file. *National Vital Statistics Reports, 72*(11). National Center for Health Statistics. https://dx.doi.org/10.15620/cdc:131356.

Information about the Linked Birth/Infant Death file is available online at https://www.cdc.gov/nchs/nvss/linked-birth.htm.

Agency Contact:
Joyce Martin
National Center for Health Statistics
Phone: 301-458-4362
Email: jamartin@cdc.gov

National Vital Statistics System—Mortality

The National Vital Statistics System of the National Center for Health Statistics (NCHS) collects and publishes data on deaths in the United States. NCHS obtains information on deaths from the registration offices of all states, New York City, and the District of Columbia. Funeral directors and family members provide demographic information on death certificates. Medical certification of cause of death is provided by a physician, medical examiner, or coroner.

Cause of Death. For 1980–1998, cause of death is classified according to the *International Classification of Diseases (ICD), 9th Revision*. From 1999 onward, cause of death is classified according to the *ICD, 10th Revision*. The following ICD codes are used in the *America's Children* report:

Cause of Death	ICD-9	ICD-10
Birth defects	740–759	Q00–Q99
Cancer	140–208	C00–C97
COVID-19	…	U07.1
Heart disease	390–398, 402, 404–429	I00–I09, I11, I13, I20–I51
Homicide	E960–E969	*U01–*U02, X85–Y09, 87.1
Influenza and pneumonia	480–487	J09–J18
Injuries (intentional and unintentional)	E800–E869, E880–E929, E950–E999	*U01–*U03, V01–Y36, Y85–Y87, Y89
Drowning	E830.0–E830.9, E832.0–E832.9, E910.0–E910.9, E954, E964, E984	W65–74, X71, X92, Y21
Fall	E880.0–E886.9, E888, E957.0–E957.9, E968.1, E987.0–E987.9	W00–W19, X80, Y01, Y30
Fire and burns	E890–E899, E924.0–E924.9, E958.1, E958.2, E958.7, E961, E968.0, E968.3, E988.1, E988.2, E988.7	*U01.3, X00–X19, X76–77, X97–X98, Y26–Y27, Y36.3
Firearms	E922, E955.0–E955.4, E965.0–E965.4, E970, E985.0–E985.4	*U01.4, W32–W34, X72–X74, X93–X95, Y22–Y24, Y35.0
Firearm homicide	E965.0–E965.4	*U01.4, X93–X95
Firearm suicide	E955.0–E955.4	X72–X74
Motor vehicle traffic	E810–E825	V02–V04, V09.0, V09.2, V12–V14, V19.0–V19.2, V19.4–V19.6, V20–V79, V80.3–V80.5, V81.0–V81.1, V82.0–V82.1, V83–V86, V87.0–V87.8, V88.0–V88.8, V89.0, V89.2

Table continues on the next page

Cause of Death	ICD-9	ICD-10
Pedestrian (nontraffic)	E800.2, E801.2, E802.2, E803.2, E804.2, E805.2, E806.2, E807.2, E820.7, E821.7, E822.7, E823.7, E824.7, E825.7,E826.0, E827.0, E828.0, E829.0	V01.0, V02.0, V03.0, V04.0, V05, V06, V09.0, V09.1, V09.3, V09.9
Suffocation	E911–E913.9, E953.0–E953.9, E963, E983.0–E983.9	W75–W84, X70, X91, Y20
Suicide	E950–E959	*U03, X60–X84, Y87.0
Unintentional injuries	E800–E869, E880–E929	V01–X59, Y85–Y86

... Category not applicable.

Population Denominators. Population denominators are based on Census data. The 2003 revision of the U.S. Standard Certificate of Death uses revised race and ethnicity sections conforming to the 1997 Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. The 2003 revision permits reporting of more than one race (multiple races). In 2003, states began adopting this new certificate on a rolling basis. Starting with 2018 data, all 50 states and the District of Columbia have adopted the 2003 certificate. Before 2018, to provide uniformity and comparability of data for trend comparison, bridged race categories were presented. Therefore, data for race groups for 2018 and subsequent years are not comparable with earlier data. The bridged population estimates can be found online at https://www.cdc.gov/nchs/nvss/bridged_race.htm. Bridged-race estimates are no longer available after 2020 data. Before *America's Children, 2003*, rates were based on populations estimated from the 1990 Census.

For more information about these methodologies, see

Ingram, D. D., Weed, J. A., Parker, J. D., Hamilton, B. E., Schenker, N., Arias, E., & Madans, J. (2003). U.S. Census 2000 population with bridged race categories. *Vital Health Statistics, 2*(135). National Center for Health Statistics. https://www.cdc.gov/nchs/nvss/bridged_race.htm.

Anderson, R. N., & Arias, E. (2003). The effect of revised populations on mortality statistics for the United States, 2000. *National Vital Statistics Reports, 51*(9). National Center for Health Statistics. https://www.cdc.gov/nchs/data/nvsr/nvsr51/nvsr51_09.pdf.

National Center for Health Statistics. (2015, November 6). Comparability of cause-of-death between ICD revisions. https://www.cdc.gov/nchs/nvss/mortality/comparability_icd.htm.

For more information on national mortality data, see

Murphy, S. L., Kochanek, K. D., Xu, J., & Arias, E. (2022). *Mortality in the United States, 2021* (NCHS Data Brief, No. 456). National Center for Health Statistics. https://dx.doi.org/10.15620/cdc:122516.

Kochanek, K. D., Murphy, S. L., Xu, J., & Arias, E. (2023). Deaths: Final data for 2020. *National Vital Statistics Report, 72*(10). National Center for Health Statistics. https://dx.doi.org/10.15620/cdc:131355.

National Center for Health Statistics. (2004). *Technical Appendix From Vital Statistics of United States, 1999: mortality*. https://www.cdc.gov/nchs/data/statab/techap99.pdf.

Information about NVSS deaths data is available online at https://www.cdc.gov/nchs/nvss/deaths.htm.

Agency Contacts:
Child mortality:
Donna Hoyert
National Center for Health Statistics
Phone: 301-458-4279
Email: dhoyert@cdc.gov

Adolescent mortality:
Julie Weeks
National Center for Health Statistics
Phone: 301-458-4562
Email: jweeks@cdc.gov

National Vital Statistics System—Natality

The National Vital Statistics System of the National Center for Health Statistics (NCHS) collects and publishes data on births in the United States. NCHS obtains information from the registration offices of all states, New York City, and the District of Columbia. The birth certificate must be filed with the local registrar of the district in which the birth occurs. Each birth must be reported promptly; the reporting requirements vary from state to state, ranging from 24 hours to as much as 10 days after the birth. Demographic information on birth certificates, such as race and ethnicity, is provided by the mother at the time of birth. Hospital records provide the base for information on birthweight.

Population Denominators. Population denominators are based on Census data. The 2003 revision of the U.S. Standard Certificate of Live Birth uses revised race and ethnicity sections conforming to the 1997 Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. The 2003 revision permits reporting of more than one race (multiple races). In 2003, states began adopting this new certificate on a rolling basis. Starting with 2016 data, all 50 states and the District of Columbia have adopted the 2003 certificate. Before 2016 data, to provide uniformity and comparability of data for trend comparison, bridged-race categories were presented. Therefore, data for race groups for 2016 and subsequent years are not comparable with earlier data. The bridged population estimates can be found online at https://www.cdc.gov/nchs/nvss/bridged_race.htm. Bridged-race estimates are no longer available after 2020 data. Before *America's Children, 2003*, rates were based on populations estimated from the 1990 Census.

Detailed information on the methodologies used to develop the revised populations, including the populations for birth rates for teenagers and birth rates for unmarried teenagers, is presented in several publications.

For more information about these methodologies, see:

Matthews, T. J., & Hamilton, B. E. (2019). Total fertility rates by state and race and Hispanic origin: United States, 2017. *National Vital Statistics Reports, 68*(1). National Center for Health Statistics. https://www.cdc.gov/nchs/data/nvsr/nvsr68/nvsr68_01-508.pdf.

Ventura, S. J., Hamilton, B. E., & Sutton, P. D. (2003). Revised birth and fertility rates for the United States, 2000 and 2001. *National Vital Statistics Reports, 51*(4). National Center for Health Statistics. https://www.cdc.gov/nchs/data/nvsr/nvsr51/nvsr51_04.pdf.

Hamilton, B. E., Sutton, P. D., & Ventura, S. J. (2003). Revised birth and fertility rates for the 1990s: United States, and new rates for Hispanic populations, 2000 and 2001. *National Vital Statistics Reports, 51*(12). National Center for Health Statistics. https://www.cdc.gov/nchs/data/nvsr/nvsr51/nvsr51_12.pdf.

Ingram, D. D., Weed, J. A., Parker, J. D., Hamilton, B. E., Schenker, N., Arias, E., & Madans, J. (2003). U.S. Census 2000 population with bridged race categories. *Vital Health Statistics, 2*(135). National Center for Health Statistics. https://www.cdc.gov/nchs/nvss/bridged_race.htm.

For more information on national natality data, see

Osterman, M. J. K., Hamilton, B. E., Martin, J. A., Driscoll, A. K., & Valenzuela, C.P. (2024). Births: Final data for 2022. *National Vital Statistics Reports, 73*(2). National Center for Health Statistics. DOI: https://dx.doi.org/10.15620/cdc:145588.

National Center for Health Statistics. (2008). *Detailed technical notes. United States, 2005, natality*. https://wonder.cdc.gov/wonder/sci_data/natal/detail/type_txt/natal05/TechAppendix05.pdf.

Information about NVSS births data is available online at https://www.cdc.gov/nchs/nvss/births.htm.

Agency Contact:
Joyce Martin
National Center for Health Statistics
Phone: 301-458-4362
Email: jmartin@cdc.gov

Ohio Pregnancy Assessment Survey

The Ohio Pregnancy Assessment Survey (OPAS) is representative of women who gave birth in Ohio. Sampled women are contacted approximately 2 to 4 months after delivery and participate by a mailed, online, or telephone survey. OPAS is sponsored by the Ohio Department of Health and the Ohio Department of Medicaid. OPAS data are used to help develop and assess programs designed to identify high-risk pregnancies and reduce adverse pregnancy outcomes. The OPAS also provides data on maternal and infant health in the Ohio Equity Initiative (OEI) counties. The 2021 OPAS was designed to ensure that county-specific estimates for three OEI counties individually and the remaining OEI counties as a group could be made with sufficient precision. In 2021, 13,076 women were sampled for the OPAS. Of this sample, there were 4,462 respondents for an overall weighted response rate of 36.1%.

For more information about the OPAS survey methodology see: 2021 OPAS Databook | Ohio Department of Health

For more information about OPAS, visit the OPAS website: Ohio Pregnancy Assessment Survey (OPAS) | Ohio Department of Health

Agency Contact:
Andrea Arendt, RN, MPH
Ohio Department of Children and Youth
Email: Andrea.Arendt@childrenandyouth.ohio.gov

Pregnancy Risk Assessment Monitoring System

The Pregnancy Risk Assessment Monitoring System (PRAMS) is a joint surveillance project of the Centers for Disease Control and Prevention (CDC), Division of Reproductive Health, and participating health departments. PRAMS is a jurisdiction-specific, population-based surveillance system of women who have recently delivered a live birth. PRAMS includes 46 states (excluding California, Idaho, North Carolina, and Ohio), New York City, District of Columbia, and 2 territories (Puerto Rico and the Commonwealth of the Northern Mariana Islands).

Developed in 1987, PRAMS collects data on maternal behaviors and experiences before, during, and shortly after pregnancy. Its purpose is to decrease maternal and infant morbidity and mortality by influencing programs and policies aimed at reducing health problems among mothers and infants. PRAMS is designed to identify groups of women and infants at high risk for health problems, to monitor changes in health status, and to measure progress towards goals in improving the health of mothers and infants.

The PRAMS sample of women who have had a recent live birth is drawn from the jurisdiction's birth certificate file 2 to 6 months after delivery. Each participating jurisdiction draws a stratified random sample of 100 to 250 new mothers every month from a frame of eligible birth certificates. The sample size is tailored to each jurisdiction's research and programmatic needs. Jurisdictions identify stratification variable(s)—such as birthweight, maternal race and Hispanic origin, Medicaid status, and geography—for oversampling of sub-population(s).

In 2021, annual sample sizes among PRAMS jurisdictions ranged from 950 to 3,500 with 45,224 respondents in all; weighted response rates ranged from 32% to 81%.

Self-reported responses are collected by mailed questionnaire with telephone follow-up for non-respondents. Survey responses are linked to data items from birth certificates. Thus, the PRAMS dataset also contains a wealth of demographic and medical information collected through the jurisdiction's vital records system. The sampling procedures allow for results that are generalizable to the jurisdiction's entire population of annual live births. Nonresponse adjustment factors attempt to compensate for the tendency of women having certain characteristics (such as being unmarried or of lower education) to respond at lower rates than women without those characteristics.

For the postpartum depressive symptoms indicator presented in this special issue, PRAMS data are combined with the California Maternal and Infant Health Assessment (MIHA), and Ohio Pregnancy Assessment Survey (OPAS) data which utilize similar methodology. These data systems collaborate with PRAMS to ensure that identical questions are included on topics included in this issue. The jurisdictions represented by these three surveys consist of 96% of all U.S. live births.

For more information about the PRAMS survey methodology, see:

Shulman HB, D'Angelo DV, Harrison L, Smith RA, Warner L. The Pregnancy Risk Assessment Monitoring System (PRAMS): overview of design and methodology. *American Journal of Public Health*. 2018;108:1305–1313. https://www.cdc.gov/prams/pdf/methodology/PRAMS-Design-Methodology-508.pdf.

For more information about PRAMS, visit the PRAMS website: Pregnancy Risk Assessment Monitoring System | CDC

Agency Contact:
Cynthia Cassell, PhD
Division of Reproductive Health, CDC
Email: chcassell@cdc.gov

	Previous Value (Year)	Most Recent Value (Year)	Change Between Years
Demographic Background			
Child population[a]			
Children ages 0–17 in the United States	73.2 million (2022)	72.8 million (2023)	↓
Children as a percentage of the population[a]			
Children ages 0–17 in the United States	22.0% (2022)	21.7% (2023)	↓
Racial and ethnic composition[a]			
Children ages 0–17 by race and Hispanic origin[b]			
White, non-Hispanic	48.8% (2022)	48.4% (2023)	↓
Black, non-Hispanic	13.8% (2022)	13.9% (2023)	↑
American Indian or Alaska Native, non-Hispanic	0.8% (2022)	0.8% (2023)	NS
Asian, non-Hispanic	5.5% (2022)	5.6% (2023)	↑
Native Hawaiian or Other Pacific Islander, non-Hispanic	0.2% (2022)	0.2% (2023)	NS
Two or more races, non-Hispanic	4.8% (2022)	4.8% (2023)	NS
Hispanic	26.1% (2022)	26.3% (2023)	↑
Family and Social Environment			
Family structure and children's living arrangements			
Children ages 0–17 living with two married parents	65% (2022)	67% (2023)	↑
Births to unmarried women			
Births to unmarried women ages 15–44	38 per 1,000 (2021)	37 per 1,000 (2022)	↓
Births to unmarried women among all births	40.0% (2021)	39.8% (2022)	↓
Child care			
Children ages 3–5, not yet enrolled in kindergarten with employed mothers, whose primary child care arrangement was nonparental care on a regular basis	85% (2016)	86% (2019)	NS
Children ages 3–5, not yet enrolled in kindergarten with employed mothers, who were in center-based care arrangements for any amount of time	70% (2016)	69% (2019)	NS
Children of at least one foreign-born parent			
Children ages 0–17 living with at least one foreign-born parent	25.6% (2022)	26.4% (2023)	↑
Language spoken at home and difficulty speaking English			
Children ages 5–17 who speak a language other than English at home	21% (2021)	21% (2022)	NS
Children ages 5–17 who speak a language other than English at home and who have difficulty speaking English	5% (2021)	5% (2022)	NS
Adolescent births			
Births to females ages 15–17	5.7 per 1,000 (2021)	5.6 per 1,000 (2022)	↓
Child maltreatment[a]			
Substantiated reports of maltreatment of children ages 0–17	8.1 per 1,000 (2021)	7.7 per 1,000 (2020)	↓

See notes at end of table.

Legend: NC = Not calculated | NS = No statistically significant change | ↑ = Statistically significant increase | ↓ = Statistically significant decrease

	Previous Value (Year)	Most Recent Value (Year)	Change Between Years
Economic Circumstances			
Child poverty and family income			
Children ages 0–17 in poverty	15.3% (2021)	15.0% (2022)	NS
Children living in families with incomes below 50% of the poverty threshold	7.2% (2021)	6.7% (2022)	NS
Secure parental employment			
Children ages 0–17 living with at least one parent employed year round, full time	77.2% (2021)	79.4% (2022)	↑
Food insecurity			
Children ages 0–17 in households classified by the USDA as "food insecure"	12.8% (2021)	18.5% (2022)	↑
Healthcare			
Health insurance coverage			
Children ages 0–17 who were uninsured at the time of interview	4% (2021)	4% (2022)	NS
Usual source of healthcare			
Children ages 0–17 with no usual source of healthcare	3% (2021)	3% (2022)	NS
Immunization			
Children age 24 months who received the combined 7-vaccine series	70% (2018)[c]	70% (2019)[c]	NS
Oral health			
Children ages 5–17 who had a dental visit in the past year	89% (2020)	89% (2022)	NS
Physical Environment and Safety			
Outdoor air quality			
Children ages 0–17 living in counties with pollutant concentrations above the levels of the current air quality standards	59% (2021)	54% (2022)	NS
Secondhand smoke			
Children ages 4–11 with any detectable blood cotinine level, a measure for recent exposure to secondhand smoke	37% (2015–2016)	36% (2017–2020)	NS
Drinking water quality			
Children served by community water systems that did not meet all applicable health-based drinking water standards	7% (2021)	7% (2022)	NS
Lead in the blood of children			
Children ages 1–5 with blood lead greater than or equal to 3.5 µg/dL	2.2% (2013–2016)	1.4% (2017–2020)	NS
Housing problems			
Households with children ages 0–17 reporting shelter cost burden, crowding, and/or physically inadequate housing	38% (2019)	39% (2021)	NS
Youth victims of serious violent crimes			
Serious violent crime victimization of youth ages 12–17	4 per 1,000 (2021)	6 per 1,000 (2022)	↑
Child injury and mortality			
Injury deaths of children ages 1–4	10 per 100,000 (2020)	11 per 100,000 (2021)	↑

See notes at end of table.

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	Previous Value (Year)	Most Recent Value (Year)	Change Between Years
Physical Environment and Safety—cont.			
Child injury and mortality—cont.			
Injury deaths of children ages 5–14	6.6 per 100,000 (2020)	7.0 per 100,000 (2021)	↑
Adolescent injury and mortality			
Injury deaths of adolescents ages 15–19	46 per 100,000 (2019)	48 per 100,000 (2020)	↑
Behavior			
Regular cigarette smoking			
Students who reported smoking daily in the past 30 days			
8th grade	0.3% (2022)	0.4% (2023)	NS
10th grade	1% (2022)	1% (2023)	NS
12th grade	2% (2022)	1% (2023)	↓
Alcohol use			
Students who reported having five or more alcoholic beverages in a row in the past 2 weeks			
8th grade	2% (2022)	2% (2023)	NS
10th grade	6% (2022)	5% (2023)	NS
12th grade	13% (2022)	10% (2023)	NS
Illicit drug use			
Students who reported using illicit drugs in the past 30 days			
8th grade	7% (2022)	7% (2023)	NS
10th grade	13% (2022)	11% (2023)	NS
12th grade	22% (2022)	20% (2023)	NS
Sexual activity			
High school students who reported ever having had sexual intercourse	38% (2019)	30% (2020)	↓
Youth perpetrators of serious violent crimes			
Youth offenders ages 12–17 involved in serious violent crimes	5 per 1,000 (2021)	6 per 1,000 (2022)	NS
Education			
Family reading to young children			
Children ages 3–5 who were read to three or more times in the past week	81% (2016)	85% (2019)	↑
Mathematics and reading achievement			
Average mathematics scale score of			
4th-graders (0–500 scale)	241 (2019)	236 (2022)	↓
8th-graders (0–500 scale)	282 (2019)	274 (2022)	↓
12th-graders (0–300 scale)	152 (2015)	150 (2019)	NS

See notes at end of table.

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	Previous Value (Year)	Most Recent Value (Year)	Change Between Years
Education—cont.			
Mathematics and reading achievement—cont.			
Average reading scale score of			
4th-graders (0–500 scale)	220 (2019)	217 (2022)	↓
8th-graders (0–500 scale)	263 (2019)	260 (2022)	↓
12th-graders (0–500 scale)	287 (2015)	285 (2019)	↓
High school completion			
Young adults ages 18–24 who have completed high school	94% (2021)	94% (2022)	NS
Youth neither enrolled in school nor working			
Youth ages 16–19 who are neither enrolled in school nor working	9% (2022)	8% (2023)	↓
College enrollment			
Recent high school completers enrolled in college the October immediately after completing high school	62% (2021)	62% (2022)	NS
Health			
Preterm birth and low birthweight			
Infants less than 37 completed weeks of gestation at birth	10.5% (2021)	10.4% (2022)	↓
Infants weighing less than 5 lb 8 oz at birth	8.5% (2021)	8.6% (2022)	↑
Infant mortality			
Deaths before first birthday	5 per 1,000 (2020)	5 per 1,000 (2021)	NS
Emotional and behavioral difficulties			
Children ages 4–17 reported by a parent to have serious difficulties with emotions, concentration, behavior, or getting along with other people	6% (2019)	7% (2022)	↑
Adolescent depression			
Youth ages 12–17 with major depressive episode in the past year	20.8% (2021)	19.5% (2022)	NS
Disability			
Children ages 5–17 with a disability	13% (2019–2020)	13% (2021–2022)	NS
Obesity			
Children ages 6–17 with obesity	20% (2011–2014)	21% (2017–2020)	NS
Asthma			
Children ages 0–17 with asthma	6% (2021)	6% (2022)	NS

[a] Population estimates are not sample derived and thus not subject to statistical testing. Change between years identifies differences in the proportionate size of these estimates.
[b] Percentages may not sum to 100 because of rounding.
[c] Data years refer to birth years of children receiving vaccinations.

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