2024 MARCH OF DIMES REPORT CARD
TECHNICAL NOTES

PRETERM BIRTH RATE

Preterm birth is a birth occurring before 37 completed weeks of gestation, based on the obstetric estimate of gestational age. The data used in this report card are derived from the National Center for Health Statistics (NCHS) natality files, which compile information from 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program.[1] This national data source ensures consistency and comparability across state and jurisdiction-specific report cards. Data provided on the report card may differ from data obtained directly from state or local health departments and vital statistics agencies due to the timing of data submission and handling of missing data. The preterm birth rates shown at the top of the report card were calculated using NCHS 2023 final natality data for all US states and Washington DC. The trend graph includes preterm birth rates from NCHS final natality data for the years 2013-2023. County and city preterm birth rates are based on NCHS 2023 final natality data for U.S. states and Washington DC. Preterm birth rates for bridged racial and ethnic categories were calculated from NCHS 2021-2023 final natality data. All provided measures for Puerto Rico are obtained from the Puerto Rico Department of Health for 2023 or the US territorial natality file, 2013-2023. Preterm birth rates were calculated by dividing the number of preterm births by the total number of live births with known gestational age, then multiplying the result by 100. Significant trends in preterm birth were assessed using Joinpoint Trend Analysis Software.[2]

PRETERM BIRTH GRADING METHODOLOGY

Preterm birth grades range from an F to an A. Expanded grade ranges were introduced in 2019. Each score within a grade was divided into thirds to create +/- intervals. The resulting scores were rounded to one decimal place and assigned a grade. The grade ranges remain based on how far each state's or jurisdiction's preterm birth rate deviates from the March of Dimes goal of 8.1 percent. This deviation is measured using the standard deviation of the final 2014 preterm birth rates for all US states and DC. The formula used to score grades is as follows: (current preterm birth rate of each jurisdiction – 8.1 percent) / standard deviation of final 2014 state and DC preterm birth rates.

GRADE	PRETERM BIRTH RATE RANGE SCORING CRITERIA
A	Preterm birth rate less than or equal to 7.7%.
A-	Preterm birth rate of 7.8 to 8.1%.
B+	Preterm birth rate of 8.2 to 8.5%.
B	Preterm birth rate of 8.6 to 8.9%.
B-	Preterm birth rate of 9.0 to 9.2%.
C+	Preterm birth rate of 9.3 to 9.6%.
C	Preterm birth rate of 9.7 to 10.0%.
C-	Preterm birth rate of 10.1 to 10.3%.
D+	Preterm birth rate of 10.4 to 10.7%.
D	Preterm birth rate of 10.8 to 11.1%.
D-	Preterm birth rate of 11.2 to 11.4%.
F	Preterm birth rate greater than or equal to 11.5%.

PRETERM BIRTH BY CITY

The US report card displays cities with the greatest number of live births. Cities are shown if they ranked in the top 100 for total number of live births in 2023 among all cities in the US with populations greater than 100,000. City grading followed the methodology described above. For example, Detroit, Michigan ranked as the top city for preterm births and received a city preterm birth grade of F, calculated as: (the city preterm birth rate – 8.1 percent)/standard deviation of all final 2014 preterm birth rates.

PRETERM BIRTH BY RACE/ETHNICITY OF MOTHER

Mother's race and Hispanic ethnicity are reported separately on the birth certificate. Rates for Hispanic women include all bridged racial categories (White, Black, American Indian/Alaska Native, Asian, and Pacific Islander). Rates for non-Hispanic women are classified according to race. The Pacific Islander category includes Native Hawaiian. To provide stable rates, racial and ethnic groups are shown on the report card if the group had 10 or more.

PRETERM BIRTH DISPARITY RATIO

The March of Dimes disparity ratio tracks progress toward eliminating racial and ethnic disparities in preterm birth and infant mortality. It compares the group with the lowest preterm birth rate to the average rate of all other groups, with the disparity ratio always being greater than 1. A lower ratio indicates less disparity, while a ratio of 1 signifies no disparity. For example, a ratio of 1.25 means the average rate among all other groups is 1.25 times higher than the lowest group's rate. Starting with 2014-2019 preterm birth data, we identify the group with the lowest rate. Then, using aggregate data from 2021-2023, we calculate the average preterm birth rates for all other racial/ethnic groups and divide this by the 2021-2023 aggregate rate of the group with the lowest rate, rounding to two decimals. For instance, the US preterm birth disparity ratio was 1.29, meaning the average rate for all other racial and ethnic groups was 1.29 times higher than that of the group with the lowest rate. Finally, we repeated these steps using 2014-2016 data to calculate the baseline US disparity ratio of 1.28. We found that the increase in the US disparity ratio from **1.28 to 1.29** was not statistically significant. The US report cards displays the current disparity ratio **(1.29)** and "No improvement" for change from baseline. Please note that this year's analysis is the first to separate Asian and Pacific Islander births as two distinct race/ethnicity groups, resulting in disparity ratios (both baseline and current) higher than previous years. For more detail on how the disparity ratio is calculated see: https://www.marchofdimes.org/peristats/assets/s3/reports/documents/DisparityRatio-2024.pdf

2024 MARCH OF DIMES REPORT CARD
TECHNICAL NOTES

PRETERM BIRTH RANKS

All US states, DC, and Puerto Rico were ranked by preterm birth rate (rounded to tenths place as presented on the report card), with a rank of 1 being assigned to the state or territory with the lowest rate and ranks increasing as preterm birth rates increase. States that tied were given the same rank and the next rank would be skipped. For example, if two states had the same preterm birth rate and were tied for 15th place, they both would receive the rank of 15, and the next state to be ranked would be in 17th place.

PRETERM BIRTH BY CHRONIC HEALTH CONDITIONS

Selected chronic health conditions are presented in the Report Card to show additional circumstances that may impact preterm birth. These include smoking, hypertension, unhealthy weight, and diabetes (see definitions on page 2). All risk conditions presented are not mutually exclusive, meaning more than one can occur at the same time. For instance, a pregnant person could have both diabetes prior to pregnancy and have an unhealthy weight prior to pregnancy. Rates by condition are calculated as: the total number of preterm births among those with the selected condition divided by the total number of all live births for the selected condition, multiplied by 100 to get the rate of preterm birth among those with each condition. To make comparisons we include the percentage of each condition for all live births in parenthesis below each rate. Examples of interpretations of this data include:

- In the US, the preterm birth rate among those who had pre-pregnancy hypertension was 23.3 percent whereas pre-pregnancy hypertension accounts for 3.2 percent of all live births.
- The overall preterm birth rate in Mississippi is 15.0 percent however the preterm birth rate among smokers in Mississippi is 20.2 percent.

All conditions were analyzed using data from NCHS 2023 natality data for both the US and Puerto Rico. These conditions were selected based on their known association with preterm birth and their availability in natality data.

SMOKING

Smoking status was ascertained when the birthing person reported having any cigarettes in the 3 months prior to pregnancy regardless of the number of cigarettes consumed. Smoking before pregnancy is a self-reported measure and data did not include those that smoked during their pregnancy. Smoking status does not capture individuals who use e-cigarettes or vape.

HYPERTENSION

Pre-pregnancy hypertension was defined as the elevation of blood pressure above normal for the birthing persons age and physiological condition prior to onset of the current pregnancy. Data presented for preterm birth by hypertension does not include gestational hypertension and pregnancy induced hypertension (or preeclampsia).

UNHEALTHY WEIGHT BEFORE PREGNANCY

Body mass index (BMI) is a measure of body fat based on height and weight. The percent of birthing people with an unhealthy weight before pregnancy was calculated as the number of birthing people with a BMI that is categorized as either underweight (BMI less than 18.5), overweight (BMI 25 to 29.9), or obese (BMI 30 or higher) divided by the number of birthing people who had a live birth multiplied by 100.

DIABETES

Diabetes was defined as pre-pregnancy diabetes (type 1 or type 2) and does not include gestational diabetes (diabetes during pregnancy).

ENVIRONMENTAL HEALTH FACTORS

The 2024 state and US report cards introduce new measures for environmental exposures. Extensive research has demonstrated the negative effects of air pollution and heat exposure on birthing outcomes.[3-5]

AIR POLLUTION

Air pollution was assessed using the Air Quality Index (AQI), a standardized tool that tracks concentrations of five major pollutants: ground-level ozone, particulate matter (PM2.5 and PM10), carbon monoxide, sulfur dioxide, and nitrogen dioxide. The AQI scores range from 0 to 500, with higher values indicating poorer air quality and increased health risks. The AQI is categorized into six levels based on health impact: Good (0-50 AQI), Moderate (51-100 AQI), Unhealthy for Sensitive Groups (101-150 AQI), Unhealthy (151-200 AQI), Very Unhealthy (201-300 AQI), and Hazardous (301-500 AQI). These categories are used by government agencies to inform the public about air quality and provide recommendations on outdoor activities based on local pollution levels.

The air quality data used in the state and US report cards was sourced from 2023 county-level sensor data provided by the Environmental Protection Agency (EPA). The 2023 EPA data measures the number of days for each AQI category. To calculate poor air quality days, we identified days where the AQI was greater than or equal to 101, indicating air quality in the “Unhealthy for Sensitive Groups” range or worse. This number was then divided by the total number of days with available data and multiplied by 365 to determine an annual average of poor air quality days. For state report cards, we report the average number of poor air quality days across all counties with available sensor data. For the US report card, we calculated the number of birthing people exposed to at least one poor air quality day during the year.

ENVIRONMENTAL HEALTH FACTORS (CONTINUED)

EXTREME HEAT

Extreme heat was assessed using the Heat Index, a measure that combines air temperature and humidity to estimate how hot a particular day feels to the human body. The Heat Index is an important indicator of heat stress, particularly during summer months, when heat exposure is highest.

Data for extreme heat was obtained from the CDC National Environmental Public Health Tracking Network using 2023 historical data on the annual number of extreme heat days (full year) for US counties. This dataset includes heat index values calculated from relative humidity data acquired from the North American Land Data Assimilation System (NLDAS-2). For more information on the methods used, please refer to the CDC Tracking Network. Data for Puerto Rico, Hawaii, and Alaska could not be provided as daily maximum, minimum, and average temperatures are collected for the contiguous US.

An extreme heat days is defined on the report cards as any day where the daily maximum Heat Index meets or exceeds the 90th percentile relative to the historical data for each county. For state report cards, the average number of extreme heat days across all counties with available heat data is reported. For the US report card, the number of birthing people exposed to at least 30 or more extreme heat days during the year is reported.

INFANT MORTALITY RATE

Infant mortality rates were calculated using the NCHS 2022 period-linked infant birth and death data. The rates were determined by dividing the number of infant deaths by the number of live births in a given year and then multiplying by 1,000. The trend graph reflects infant mortality rates from the NCHS 2012–2022 period-linked infant birth and infant death files. Joinpoint Trend Analysis Software[2] was utilized to assess significant trends in infant mortality. To account for cases where birth and death records could not be linked, statistical weights were applied to the data.

INFANT MORTALITY RANKS

All US states, DC, and Puerto Rico were ranked by infant mortality rate (rounded to tenths place as presented on the report card), with a rank of 1 being assigned to the state or territory with the lowest rate and ranks increasing as infant mortality rates increase. See preterm birth ranks (page 2) for additional details.

INFANT MORTALITY BY RACE/ETHNICITY OF THE MOTHER

Mother's race and Hispanic ethnicity are reported separately on the birth certificate. Rates for Hispanic women include all bridged racial categories (White, Black, American Indian/Alaska Native, Asian, and Pacific Islander). Rates for non-Hispanic women are classified according to race. The Pacific Islander category includes Native Hawaiian. To provide stable rates, racial and ethnic groups are shown on the report card if the group had 10 or more infant deaths. To calculate infant mortality rates by maternal race/ethnicity on the report card, three years of data were aggregated (2020-2022). Infant mortality rates for not stated/unknown race are not shown on the report card. Weights were applied to account for deaths in which linking was not possible.

An infant mortality rate disparity ratio was calculated for the US only. Please see the preterm birth disparity ratio methods (page 1) or https://www.marchofdimes.org/peristats/assets/s3/reports/documents/DisparityRatio-2024.pdf for more details on calculations.

LEADING CAUSES OF INFANT DEATH

NCHS period linked birth/infant death files (2020-2022) were used for cause of death analyses. See Appendix A for a detailed list of cause of death codes and their groupings. The top four cause of death categories by percent of total deaths per state were selected for chart inclusion. The percent of deaths attributed to causes outside of the categories selected were combined in an "other" category. Please see "130 ICD-10 Cause of Death Recodes' for a full code list and labels.[6] Weights were applied to account for deaths in which linking was not possible.

2024 MARCH OF DIMES REPORT CARD
TECHNICAL NOTES

MATERNAL MORTALITY

Maternal mortality refers to the death of a birthing person from complications of pregnancy or childbirth that occur during the pregnancy or within 6 weeks after the pregnancy ends.[7] Maternal deaths are ascertained using the NCHS 2018-2022 mortality data. Puerto Rico data were provided by the Puerto Rico Department of Health. 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* code numbers A34, O00–O95, and O98–O99. Rates are calculated by dividing the number of maternal deaths by the number of births in the same geographic region during the same data year(s) and multiplying by 100,000.[8]

Maternal mortality rates fluctuate from year to year because of the relatively small number of these events and possibly due to issues with the reporting of maternal deaths on death certificates.[9] Five-year aggregate rates are presented for all racial and ethnic groups and by state, still, some states do not have enough deaths to provide reliable estimates and are therefore suppressed. Individual year rates at the US level were provided for 2018-2022.

MATERNAL VULNERABILITY INDEX

March of Dimes recognizes the importance of certain risk factors that are associated with maternal and infant health outcomes. March of Dimes, in partnership with Surgo Health, is offering the opportunity to examine drivers of maternal health at the county level using the Maternal Vulnerability Index (MVI).[10] The MVI is the first county-level, national-scale, open-source tool to identify where and why mothers in the United States are vulnerable to poor pregnancy outcomes and pregnancy-related deaths. The MVI includes not only widely known clinical risk factors, but also key social, contextual, and environmental factors that are also essential influencers of outcomes. This report displays data from the 2024 updated MVI. Please note that the county of Loving, Texas was excluded due to missing data.

Differences in counties are measured using numerous factors broken into six themes: reproductive healthcare, physical health, mental health and substance abuse, general healthcare, socioeconomic determinants and physical environment. This year's state report cards display the top two factors from the MVI that make birthing people most vulnerable to poor outcomes. The MVI assigns a score of 0-100 to each geography, where a higher score indicates greater vulnerability to adverse maternal outcomes. Learn more about the MVI methodology by visiting Surgo Health website. (Surgo Ventures - The US Maternal Vulnerability Index (MVI)).

ADDITIONAL MATERNAL HEALTH INDICATORS

LOW-RISK CESAREAN BIRTH RATES

A low-risk Cesarean birth occurs when a woman undergoes the surgical procedure if the baby is a single infant, is positioned head-first (head-first position), the mother is full-term (at least 37 weeks), and has not given birth prior.[11] This is also referred to as a NTSV Cesarean birth. NTSV abbreviated to mean Nulliparous (or first-time mother), Term, Singleton, Vertex.

Low-risk Cesarean birth rates were calculated using the NCHS 2023 final natality data for the US, DC, and Puerto Rico. Low-risk Cesarean birth rates were calculated as the number of Cesarean births that occurred to first-time mothers of a single infant, positioned headfirst with a gestational age of at least 37 weeks (NTSV) divided by the number of first-time mothers of a single infant, positioned headfirst with a gestational age of at least 37 weeks (NTSV) multiplied by 100.

INADEQUATE PRENATAL CARE

Adequacy of prenatal care is measured using the Adequacy of Prenatal Care Utilization Index, which classifies prenatal care received into 1 of 4 categories (inadequate, intermediate, adequate and adequate plus) by combining information about the timing of prenatal care, the number of visits and the infant's gestational age.[12] Inadequate prenatal care is defined as a birthing person who received less than 50% of their expected visits or started care in or after the fifth month. Adequate prenatal care is defined as a birthing person who received 80-109% of their expected visits and started their care before the fifth month of pregnancy. Adequate plus prenatal care (presented in combination with adequate care) is defined as a birthing person who received over 110% of their expected visits and started their care before the fifth month of pregnancy. Prenatal care adequacy is calculated using the NCHS 2023 final natality data.

CALCULATIONS

All natality calculations were conducted by March of Dimes Perinatal Data Center.

2024 MARCH OF DIMES REPORT CARD
TECHNICAL NOTES

STATE LEVEL POLICIES

MEDICAID EXTENSION AND EXPANSION

The adoption of this Medicaid extension allows women to qualify for pregnancy-related Medicaid coverage for more than the standard 60 days after pregnancy for up to one year. Extending this coverage option can be done through a State Plan Amendment (SPA) or Section 1115 Waiver.

Medicaid expansion allows more people to be eligible for Medicaid coverage—it expands the cut-off for eligibility. Medicaid expansion and extension status data is provided by the Kaiser Family Foundation and is a combined measure reported as: state has both policies adopted or state does not have both policies adopted.[13,14] Medicaid expansion has reduced the rates of uninsured. Increased access and utilization of health care are significantly associated with Medicaid expansion.[15]

PAID FAMILY LEAVE

Paid family and medical leave refers to policies that enable workers to receive compensation when they take extended time off work for qualifying reasons, such as bonding with a new child, recovering from one's own serious illness or caring for a seriously ill loved one.[16] The measure is reported as: state has an active policy that provides an option for pay while out on extended leave or it does not have an active policy in place. Data is provided by A Better Balance.[17]

DOULA POLICY ON MEDICAID COVERAGE

Doulas are non-clinical professionals that emotionally and physically support birthing persons during the perinatal period, including birth and postpartum.[18] Doula policy status show states that have enacted bills relating to Medicaid coverage of doula care, or not. The measure is reported as: state Medicaid agency is actively reimbursing doula care or state Medicaid agency does not reimburse doula care. An additional measure includes identifying states that reimburse up to $1,500 for doula services. Data is provided by the National Health Law Program under the Doula Medicaid Project.[19]

COMMITTMENT TO PREVENTION

This is a combined measure that assesses a states commitment to learning more about the causes and circumstances around maternal, fetal and infant deaths. The measure is reported as: state has both a CDC funded MMRC and an active FIMR or state does not have both a CDC funded MMRC and an active FIMR.

MATERNAL MORTALITY REVIEW COMMITTEE (MMRC)

These committees investigate deaths related to pregnancy to determine underlying causes of death and respond to improve conditions and practices. The committees can be made up of representatives from public health, nursing, maternal-fetal medicine, obstetrics and gynecology, midwifery, patient advocacy groups and community-based organizations.[20] The MMRC component of the "commitment to prevention" measure is provided by the Centers for Disease Control (CDC) and is categorized as: state has an MMRC that is receiving CDC federal funding or state does not have an MMRC that is receiving CDC federal funding.[21]

FETAL AND INFANT MORTALITY REVIEW (FIMR)

Fetal and Infant Mortality Review is the community-based, action-oriented process of reviewing fetal and infant death cases to improve maternal and infant health outcomes.[22] The FIMR component of the combined "commitment to prevention" measure is reported as: state has a Fetal and Infant Mortality Review team or teams or state does not have any teams. Data was provided by the National Center for Fatality Review and Prevention.[23]

POSTPARTUM MENTAL HEALTH SCREENING

The adoption of this policy requires postpartum depression screening and reimbursement during well-child visits for mothers and/or caregivers of children enrolled in Medicaid (except Washington that basis eligibility on the mother's Medicaid status). These efforts reflect 2016 federal policy guidance from the Centers for Medicare & Medicaid Services (CMS) allowing states to provide Medicaid coverage under the Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefit. Data was provided by the Commonwealth Fund.[24] The measure is reported as: state requires and reimburses for postpartum depression screening during well-child visits or state does not require and reimburse for postpartum depression screening during well-child visits.

MIDWIFE POLICY

The adoption of these policies remove the regulatory barriers that restrict and limit midwifery practice and impede their ability to provide comprehensive maternal and infant healthcare in the US. The policies included are as follows: independent practice authority, prescriptive authority, pay parity and licensure of Certified Midwives (CMs). Data was obtained from the American College of Nurse-Midwives.[25] The measure is reported as: state has policy or state does not have the policy for each of the 4 policies listed above.

All policies were assessed as of October 15, 2024.

2024 MARCH OF DIMES REPORT CARD
TECHNICAL NOTES

REFERENCES

[1] National Center for Health Statistics, final natality data 2013–2023.

[2] Joinpoint Trend [computer software]. Version 5.0.2. Retrieved from https://surveillance.cancer.gov/joinpoint/

[3] Ha S, Abatzoglou JT, Adebiyi A, et al. Impacts of heat and wildfire on preterm birth. *Environ Res*. 2024;252(Pt 4):119094.

[4] Dresser C, Mahalingaiah S, Nadeau KC. Preterm and Early-Term Birth, Heat Waves, and Our Changing Climate. *JAMA Netw Open*. 2024;7(5).

[5] Jiang P, Li Y, Tong MK, et al. Wildfire particulate exposure and risks of preterm birth and low birth weight in the Southwestern United States. *Public Health*. 2024;230:81-88.

[6] Research Data Assistance Center. 130 ICD-10 Cause of Infant Death Recodes. Accessed October 5, 2024. https://resdac.org/cms-data/variables/130-icd-10-cause-death-recodes.

[7] National Institute of Child Health and Human Development (NICHD). Maternal Morbidity and Mortality. Accessed October 5th, 2023. https://www.nichd.nih.gov/health/topics/maternal-morbidity-mortality.

[8] Hoyert DL. Maternal Mortality Rates in the United States, 2022. NCHS Health E-Stats. 2024.

[9] Hoyert DL, Miniño AM. Maternal Mortality in the United States: Changes in Coding, Publication, and Data Release, 2018. National Vital Statistics Reports; vol 69 no 2. Hyattsville, MD: National Center for Health Statistics. 2020.

[10] Surgo. Maternal Vulnerability Index. Accessed October 5, 2023. https://mvi.surgoventures.org.

[11] Martin JA, Hamilton BE, Osterman MJK, Driscoll AK. Births: Final Data for 2018. Natl Vital Stat Rep 2019;68(13):1- Retrieved from: https://www.cdc.gov/nchs/data/nvsr/nvsr68/nvsr68_13-508.pdf.

[12] Kotelchuck M. An evaluation of the Kessner Adequacy of Prenatal Care Index and a Proposed Adequacy of Prenatal Care Utilization Index. Am J Public Health 1994;84(9):1414-1420.

[13] Kaiser Family Foundation. Medicaid Postpartum Coverage Extension Tracker. Published September 28, 2023. https://www.kff.org/medicaid/issue-brief/medicaid-postpartum-coverage-extension-tracker/.

[14] Kaiser Family Foundation. Status of State Medicaid Expansion Decisions: Interactive Map. Accessed September 22, 2023. https://www.kff.org/medicaid/issue-brief/status-of-state-medicaid-expansion-decisions-interactive-map/.

[15] Kaiser Family Foundation. Status of State Action on the Medicaid Expansion Decision. Accessed September 29, 2023. https://www.kff.org/health-reform/state-indicator/state-activity-around-expanding-medicaid-under-the-affordable-care-act/.

[16] U.S. Department of Labor- Women's Bureau. Paid family and medical leave fact sheet. Accessed October 4, 2023. https://www.dol.gov/sites/dolgov/files/WB/paid-leave/PaidLeavefactsheet.pdf.

[17] A Better Balance. Overview of Paid Family and Medical Leave Laws in the United States. Updated March 15, 2024. Accessed October 1, 2024. https://www.abetterbalance.org/resources/paid-family-medical-leave-laws/.

[18] DONA International. What is a Doula? Accessed October 4, 2023. https://www.dona.org/what-is-a-doula/.

[19] National Health Law Program. Doula Medicaid Project. Accessed September 22, 2022. https://healthlaw.org/doulamedicaidproject/.

[20] Guttmacher Institute. Maternal Mortality Review Committees. Accessed September 29, 2023. https://www.guttmacher.org/state-policy/explore/maternal-mortality-review-committees.

[21] Centers for Disease Control and Prevention. Enhancing Reviews and Surveillance to Eliminate Maternal Mortality. Accessed September 22. 2024. https://www.cdc.gov/maternal-mortality/php/erase-mm/index.html#cdc_generic_section_2-erase-mm-participants-across-the-nation.

[22] The National Center for Fatality Review and Prevention. Fetal & Infant Mortality Review. Accessed October 4, 2023. https://ncfrp.org/fimr/.

[23] The National Center for Fatality Review and Prevention. FIMR map. Accessed September 22, 2024. https://ncfrp.org/fimr-map/.

[24] Commonwealth Fund. State policies to improve perinatal health outcomes. Published 2023. Accessed October 15th, 2024. https://www.commonwealthfund.org/publications/maps-and-interactives/state-policies-improve-perinatal-health-outcomes.

[25] Vanderlaan J. Access to Midwifery Care National Chartbook. Published 2023. Accessed October 1, 2024. https://www.midwife.org/midwifery-workforce.

APPENDIX A: CAUSE OF DEATH CATEGORIES AND CORRESPONDING CODES

Cause of death category	Cause of death codes included
Birth defects	119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133
Preterm birth/low birth weight	089, 090
SUIDS	135
Maternal complications	075, 076, 077, 078
Respiratory distress syndrome	096
Complications of the placenta, cord, or membranes	080, 081, 082, 083
Accidents (unintentional injury)	141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
Bacterial sepsis of newborn	106
Diseases of the circulatory system	047, 048, 049, 050, 051, 052
Intrauterine hypoxia and birth asphyxia	094, 095