

## Fetal Mortality: United States, 2021

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### Abstract

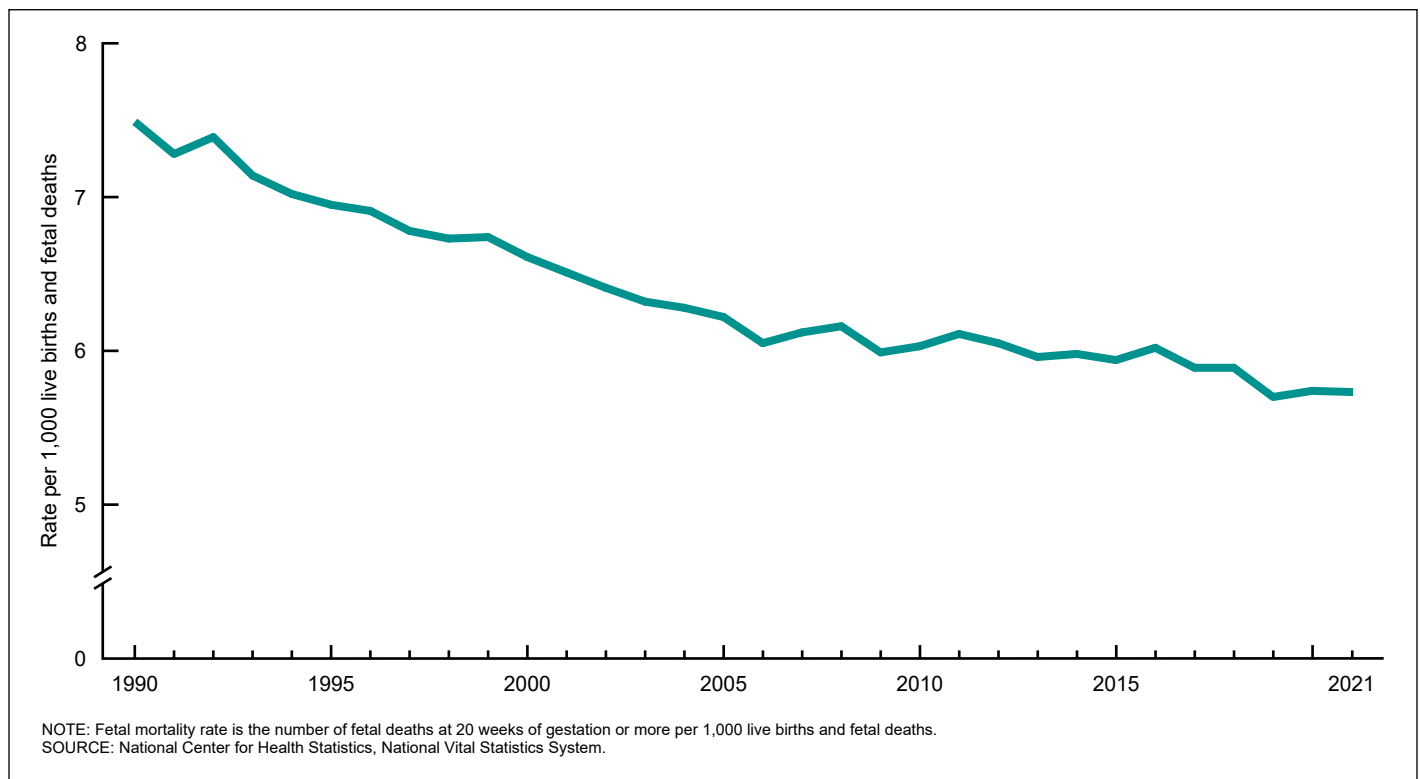
**Objectives**—This report presents 2021 fetal mortality data by maternal race and Hispanic origin, age, tobacco use during pregnancy, and state of residence, as well as by plurality, sex, gestational age, birthweight, and selected causes of death. Trends in fetal mortality are also examined.

**Methods**—Descriptive tabulations of data are presented and interpreted for all fetal deaths reported for the United States for 2021 with a stated or presumed period of gestation of 20 weeks or more. Cause-of-fetal-death data are restricted to residents

of the 41 states and the District of Columbia, where cause of death was based on the 2003 fetal death report revision and less than 50% of deaths were attributed to Fetal death of unspecified cause (P95).

**Results**—A total of 21,105 fetal deaths at 20 weeks of gestation or more were reported in the United States in 2021. The 2021 U.S. fetal mortality rate was 5.73 fetal deaths at 20 weeks of gestation or more per 1,000 live births and fetal deaths, which was essentially unchanged from the rate of 5.74 in 2020. The fetal mortality rate in 2021 for deaths occurring at 20–27 weeks of gestation was 2.95, essentially unchanged from

**Figure 1. Fetal mortality rate: United States, 1990–2021**



2020 (2.97). For deaths occurring at 28 weeks of gestation or more, the rate in 2021 (2.80) was not significantly different from 2020 (2.78). In 2021, the fetal mortality rate ranged from 3.94 for non-Hispanic, single-race Asian women to 9.89 for non-Hispanic, single-race Black women. Fetal mortality rates were highest for females under age 15 and aged 40 and over, for women who smoked during pregnancy, and for women with multiple gestation pregnancies. Five selected causes accounted for 89.9% of fetal deaths in the 41-state and District of Columbia reporting area.

**Keywords:** fetal death • stillbirth • pregnancy loss • National Vital Statistics System

## Introduction

Fetal mortality—the intrauterine death of a fetus at any gestational age—is a major but often overlooked public health issue. Much of the public concern surrounding reproductive loss has focused on infant mortality, due in part to lesser knowledge of the incidence, etiology, and prevention strategies for fetal mortality. This report presents detailed data on numbers and rates of fetal deaths for the United States for 2021. Data are presented by maternal race and Hispanic origin, age, tobacco use during pregnancy, and state of residence, as well as by plurality, sex, gestational age at delivery, birthweight, and selected causes of death. Trends in fetal mortality are also examined.

In addition to the tabulations included in this report, more detailed analysis of fetal mortality is possible by using the annual fetal death public-use file. The data file may be downloaded from: [https://www.cdc.gov/nchs/data\\_access/Vitalstatsonline.htm](https://www.cdc.gov/nchs/data_access/Vitalstatsonline.htm). The public-use file does not include geographic detail; a file with this information may be available upon request (see the Division of Vital Statistics data release policy: [https://www.cdc.gov/nchs/nvss/dvs\\_data\\_release.htm](https://www.cdc.gov/nchs/nvss/dvs_data_release.htm)). Fetal death data may also be accessed via the Centers for Disease Control and Prevention's Wide-ranging Online Data for Epidemiologic Research (WONDER). WONDER is a web-based data query system that makes the Centers for Disease Control and Prevention's data available to public health professionals and the public (1).

## Methods

### Data sources

Data in this report are drawn from two National Center for Health Statistics vital statistics data files: the 2021 fetal death data set (for fetal deaths) and the 2021 birth data set (for births). The 2021 fetal death data set contains information from all reports of fetal death filed in the 50 states, the District of Columbia, Guam, and Puerto Rico (American Samoa did not report data for 2021, and data for the Northern Marianas and the U.S. Virgin Islands were excluded to protect confidentiality due to the small number of events reported) (2). The 2021 birth data set contains information from all Certificates of Live Birth filed in the 50 states, the District of Columbia, Guam, the Northern Marianas, Puerto Rico, and the Virgin Islands (American Samoa

did not report data for 2021). Tables showing data by jurisdiction also provide separate information for Guam and Puerto Rico; however, these data are not included in U.S. totals.

## Fetal mortality

Fetal death refers to the intrauterine death of a fetus prior to delivery (see Technical Notes). Fetal mortality is generally divided into three periods based on gestational age: less than 20 completed weeks of gestation, 20–27 weeks of gestation (early fetal deaths), and 28 weeks of gestation or more (late fetal deaths). Although the vast majority of fetal deaths occur early in pregnancy, most U.S. states only require the reporting of fetal deaths at 20 weeks of gestation or more (2), and fetal mortality data from the National Vital Statistics System are usually presented for fetal deaths at 20 weeks of gestation or more. Therefore, only fetal deaths reported at 20 weeks of gestation or more are included in this report. Numbers and rates for early and late fetal deaths are shown separately for selected variables. Statistics on fetal death exclude data for induced terminations of pregnancy. Fetal mortality rates in this report are computed as the number of fetal deaths at 20 weeks of gestation or more per 1,000 live births and fetal deaths at 20 weeks or more (see Technical Notes).

## Data limitations

Variation exists among states in reporting requirements and possibly in completeness of reporting of fetal death data, and these variations can have implications for data quality and completeness (see Technical Notes). Correct interpretation of fetal death data should include an evaluation of the completeness of reporting of fetal deaths, as well as an evaluation of the completeness of reporting for the specific variables of interest (3–5). The percentage of not-stated responses for fetal death data varies markedly among variables and states; see “User Guide to the 2021 Fetal Death Public Use File” (2).

Birthweight data for Hawaii for 2021 are excluded from tabulations shown in this report due to a high percentage of unknown responses (56.9%).

## 2003 revision of U.S. Standard Report of Fetal Death

Starting in 2018, all 50 states, the District of Columbia, Guam, the Northern Marianas, Puerto Rico, and the Virgin Islands reported data based on the 2003 U.S. Standard Report of Fetal Death.

Data on items such as mother's date of birth, race, Hispanic origin, level of education, tobacco use during pregnancy, and place of residence are recommended to come from the mother (see the “Patient's Worksheet” [6]). Data on items such as prenatal care, medical risk factors, maternal morbidity, plurality, sex of fetus, gestational age, birthweight, and cause of death are recommended to come from the medical records (see the “Facility Worksheet” [7]). Detailed definitions for data items that are collected from the Facility Worksheet are in the “Guide to the Facility Worksheet” (8). Further information on fetal death

reporting is available in the eLearning training, “Applying Best Practices for Reporting Medical and Health Information on Birth Certificates,” available from: <https://www.cdc.gov/nchs/training/BirthCertificateElearning>.

This report uses the latest fetal death data to present information on fetal deaths and fetal death rates by race and Hispanic origin, maternal age, tobacco use during pregnancy, plurality, sex of fetus, gestational age, birthweight, state of residence, and selected causes of death.

## Race and Hispanic origin

The 2003 revision of the U.S. Standard Report of Fetal Death allows the reporting of more than one race (multiple races) for the mother (9) according to the revised standards issued by the Office of Management and Budget in 1997 (10). Starting in 2018, all 50 states and the District of Columbia, Guam, the Northern Marianas, Puerto Rico, and the Virgin Islands reported race data according to these 1997 Office of Management and Budget standards, which require the reporting of a minimum of five race categories and allow for reporting of race by either single race (reported alone) or in combination (more than one race or multiple races) (10). The race and Hispanic-origin groups shown in this report follow the 1997 standards and differ from the bridged-race categories shown in reports before 2018 (11). The current categories are American Indian or Alaska Native non-Hispanic single race, Asian non-Hispanic single race, Black or African American non-Hispanic single race, Native Hawaiian or Other Pacific Islander non-Hispanic single race, White non-Hispanic single race, and Hispanic (for brevity in text, references to the race groups omit “non-Hispanic single race.”)

Race and Hispanic origin are reported independently on the report of fetal death. Most tables in this report show data for the categories of Black, White, and Hispanic. Selected tables also include data for the categories American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander. Data are also presented in some tables for Hispanic subgroups: Central and South American, Cuban, Dominican, Mexican, Puerto Rican, and Other and unknown Hispanic. Data were presented separately for Dominican women for the first time beginning with the 2018 data year. Data for this subgroup had previously been included in the category Other and unknown Hispanic.

## Fetal deaths by state

Comparisons of fetal mortality rates by state can be affected by differences in reporting requirements for fetal deaths among registration areas, particularly for fetal deaths occurring at gestational ages early in the reporting period (see Technical Notes). Additionally, the small numbers of fetal deaths in some states by year can result in lack of reliability for state-specific fetal mortality rates. To try to address these issues, in addition to showing fetal mortality rates at 20 weeks or more by state for 2021, this report also presents fetal deaths and fetal mortality rates by state for fetal deaths at 24 weeks of gestation or more for the latest combined 3-year period (2019–2021).

## Cause of death

The National Center for Health Statistics codes the cause of fetal death reported by the certifier using the *International Classification of Diseases, 10th Revision* (12). In this report, the five most frequently reported causes of death shown, including unspecified cause, are drawn from 45 causes in the List of 124 Selected Causes of Fetal Death, as defined in Instruction manual, part 9 (13), and ranked according to the number of fetal deaths.

Data on the 5 causes of death are included for the 41 states and the District of Columbia that reported cause of death based on the 2003 revision of the U.S. Standard Report of Fetal Death and met the reporting requirement of having less than 50% of records assigned to unspecified cause (P95). This reporting area includes 15,212 fetal deaths, representing 72.1% of all fetal deaths in 2021. These statistics based on a subnational area are not generalizable to the entire United States. In tables and figures, the five selected causes are shown in descending order according to the number of deaths assigned to each cause.

## Statistical significance

Statements in this report have been tested for statistical significance. A statement that a given mortality rate is higher or lower than another rate indicates that the rates are significantly different unless otherwise noted. For information on the methods used to test for statistical significance, as well as more detailed information on the collection, interpretation, and availability of fetal death data, see the 2021 User Guide (2).

## Results

### Trends in fetal mortality

- In 2021, 21,105 fetal deaths occurring at 20 weeks of gestation or more were reported in the United States, an increase of 1% from 2020 (20,854) (Table 1, Figure 1).
- The fetal mortality rate was 5.73 fetal deaths at 20 weeks of gestation or more per 1,000 live births and fetal deaths in 2021, which was essentially unchanged from the 2020 rate of 5.74. With minor fluctuations, the total U.S. fetal mortality rate has declined 23% since 1990 (7.49) but has remained essentially stable since 2019 (5.70).
- The early fetal mortality rate (20–27 weeks of gestation) was essentially unchanged from 2020 (2.97) to 2021 (2.95). This rate declined 7% from 2014 (3.16) to 2021.
- The late fetal mortality rate (28 weeks of gestation or more) was 2.80 in 2021, which was not significantly different from the 2020 rate of 2.78. Despite minor fluctuations, the late fetal mortality rate has been essentially unchanged since 2014 (2.83).

## Race and Hispanic origin

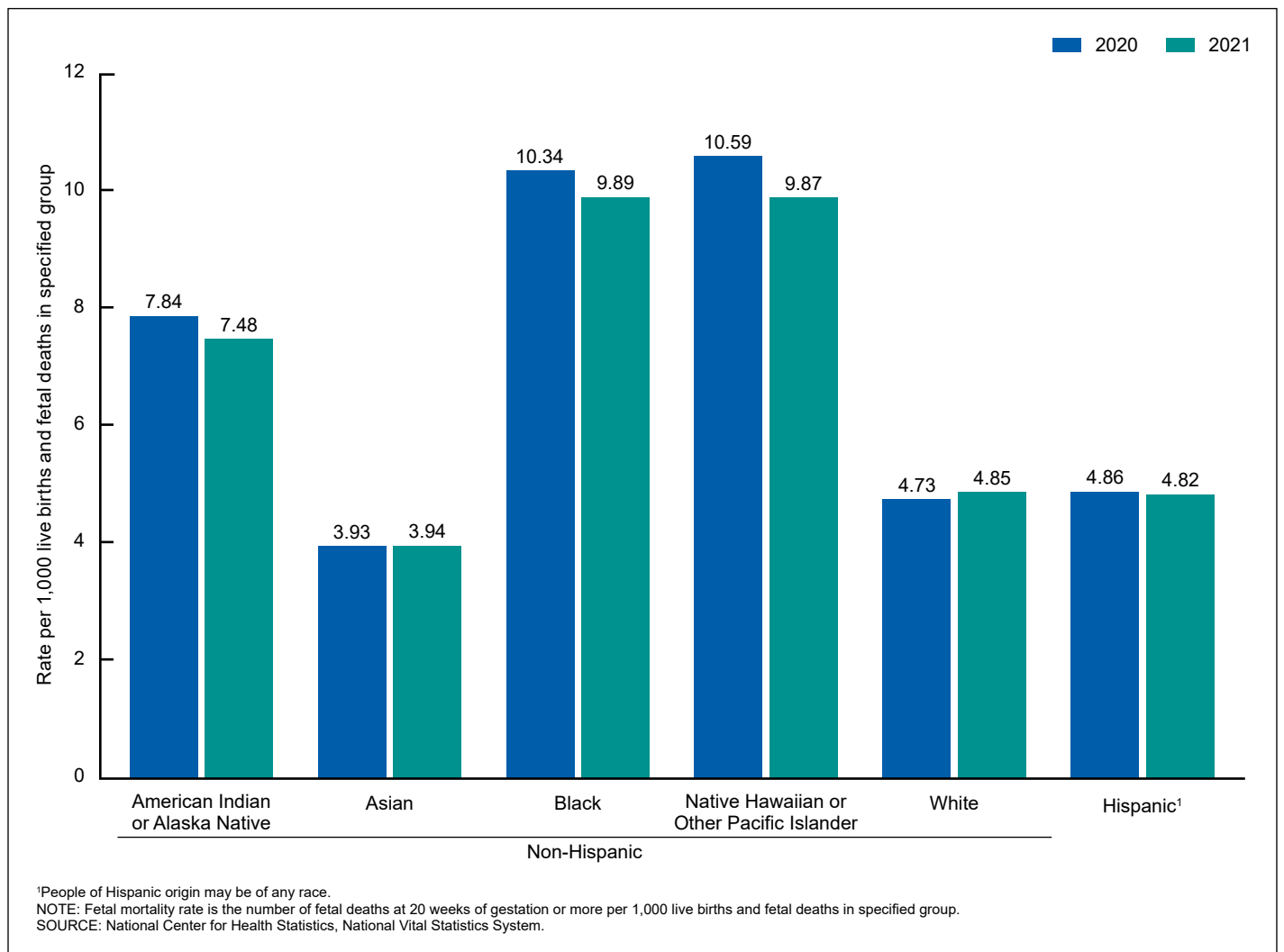
- From 2020 to 2021, the fetal mortality rate declined 4% for Black women (10.34 to 9.89) (Table 2, Figure 2). No significant changes in fetal mortality rates were observed for American Indian or Alaska Native (7.84 to 7.48), Asian (3.93 to 3.94), Native Hawaiian or Other Pacific Islander (10.59 to 9.87), White (4.73 to 4.85), or Hispanic (4.86 to 4.82) women.
- Among Hispanic-origin subgroups, from 2020 to 2021, no significant changes in fetal mortality rates were seen for Central and South American (4.49 to 4.61), Cuban (5.23 to 4.81), Dominican (4.41 to 4.39), Mexican (4.79 to 4.77), Puerto Rican (4.98 to 5.11), and Other and unknown Hispanic (5.87 to 5.41) women (Table 3).
- In 2021, fetal mortality rates continued to vary by race and Hispanic origin; rates ranged from 3.94 for Asian women to 7.48 for American Indian or Alaska Native women, 9.87 for Native Hawaiian or Other Pacific Islander women, and 9.89 for Black women.
- Among Hispanic-origin subgroups in 2021, rates ranged from 4.39 for Dominican women to 5.41 for Other and

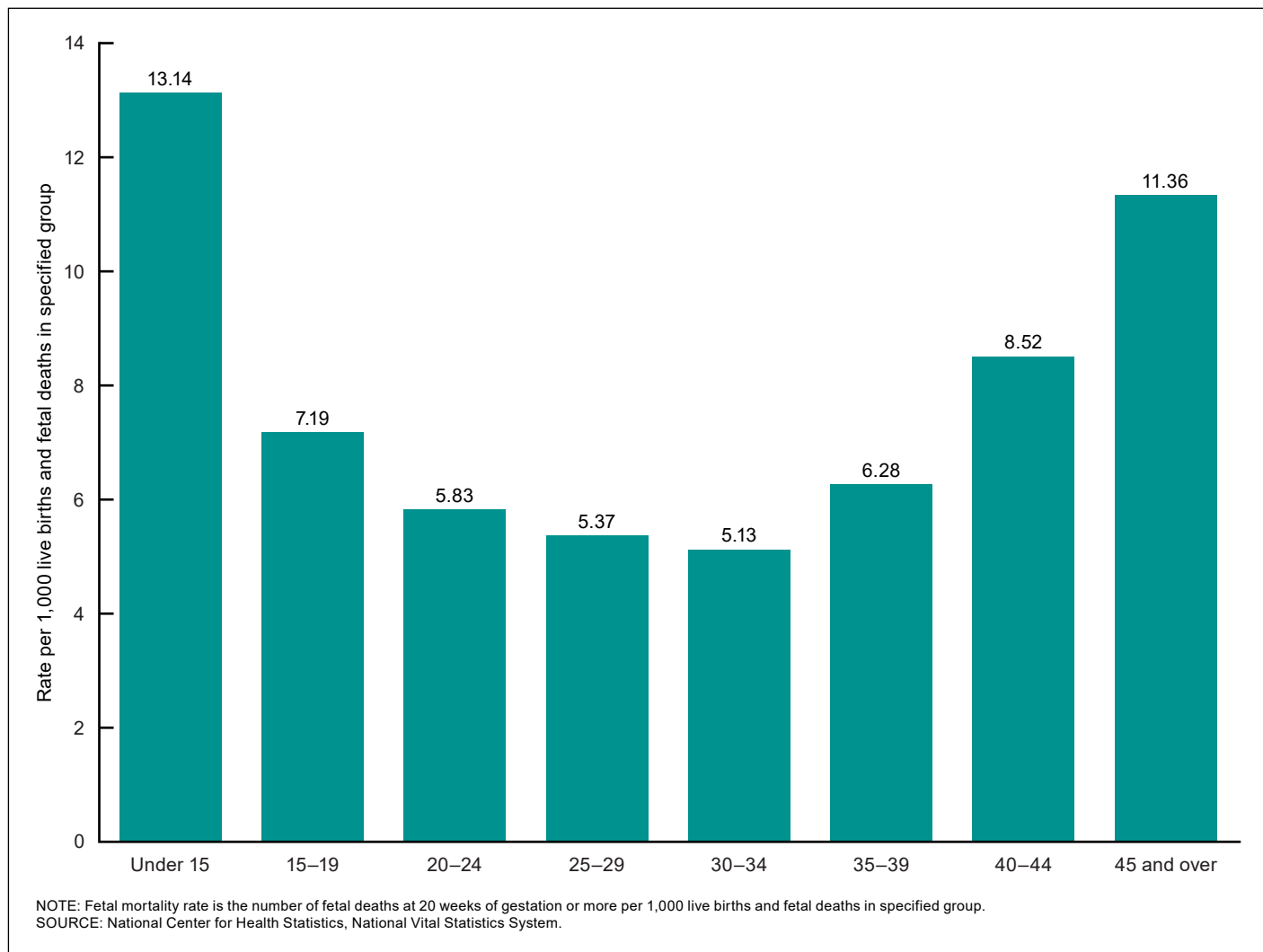
unknown Hispanic women; however, differences among the groups were generally not significant.

## Maternal age

- Fetal mortality rates vary by maternal age (Table 4, Figure 3). In 2021, the rate was 13.14 for females under age 15, then declined for women aged 15–19 (7.19) through 30–34 (5.13). Rates then rose for women aged 35–39 (6.28) through 45 and over (11.36).
- The fetal mortality rate for teenagers aged 15–17 (7.46) was 45% higher and the rate for teenagers aged 18–19 (7.11) was 39% higher than the rate for women aged 30–34 (5.13).
- Age-specific rates for Black women were higher than those for White women for those aged 15 and over. Rates for Black women were higher than those for Hispanic women for those aged 15–44; rates for women aged 45 and over in the two groups were not significantly different. The number of events was too small (fewer than 20 events in the numerator) to calculate reliable rates for females under age 15 for all three race and Hispanic-origin groups.

**Figure 2. Fetal mortality rates, by race and Hispanic origin of mother: United States, 2020 and 2021**



**Figure 3. Fetal mortality rates, by age of mother: United States, 2021**

### Tobacco use during pregnancy

- The fetal mortality rate for women who smoked during pregnancy (9.62) was more than one and one-half times higher than that for women who did not smoke during pregnancy (5.08) (Table 5).
- The pattern was similar for the three largest race and Hispanic-origin groups. The fetal mortality rate for women who smoked during pregnancy compared with those who did not was more than one and one-half times higher for Black women (15.75 and 9.04, respectively), and twice as high for White (8.62 and 4.25) and Hispanic (8.93 and 4.46) women. See Table 5 for fetal mortality rates by tobacco use during pregnancy by age.

### Plurality

- The fetal mortality rate for twins (12.37) was more than twice that for singletons (5.49) (Table A). The rate for triplet or higher-order deliveries (27.84) was five times that for singletons.

- The pattern was similar for the three largest race and Hispanic-origin groups. For example, the fetal mortality rate for twins compared with singletons was more than twice as high for White (10.26 and 4.64, respectively) and Hispanic (12.41 and 4.62) women, and nearly twice as high for Black women (18.06 and 9.52).

### Sex of fetus

- In 2021, the fetal mortality rate for male fetuses was 5.83, which was 4% higher than the rate for female fetuses (5.62) (Table A).
- The fetal mortality rate for male fetuses compared with female fetuses was 9% higher for Black women (10.31 and 9.46, respectively). No significant difference was seen for White (4.88 and 4.81) and Hispanic (4.93 and 4.70) women.

**Table A. Fetal mortality rates, by selected characteristics and race and Hispanic origin of mother: United States, 2021**

Characteristic	Fetal mortality rates <sup>1</sup>				Fetal deaths				Live births			
	All races and origins <sup>3</sup>	Non-Hispanic, single race <sup>2</sup>			All races and origins <sup>3</sup>	Non-Hispanic, single race <sup>2</sup>			All races and origins <sup>3</sup>	Non-Hispanic, single race <sup>2</sup>		
		Black	White	Hispanic <sup>4</sup>		Black	White	Hispanic <sup>4</sup>		Black	White	Hispanic <sup>4</sup>
Plurality . . . . .	5.73	9.89	4.85	4.82	21,105	5,173	9,196	4,290	3,664,292	517,889	1,887,656	885,916
Single . . . . .	5.49	9.52	4.64	4.62	19,591	4,771	8,507	4,009	3,547,198	496,418	1,824,456	863,961
Twin . . . . .	12.37	18.06	10.26	12.41	1,430	387	637	269	114,161	21,047	61,438	21,401
Triplet or higher . . . . .	27.84	*	28.67	*	84	15	52	12	2,933	424	1,762	554
Sex of fetus . . . . .	5.73	9.89	4.85	4.82	21,105	5,173	9,196	4,290	3,664,292	517,889	1,887,656	885,916
Male . . . . .	5.83	10.31	4.88	4.93	10,992	2,736	4,752	2,235	1,873,416	262,679	968,370	450,807
Female . . . . .	5.62	9.46	4.81	4.70	10,113	2,437	4,444	2,055	1,790,876	255,210	919,286	435,109
Male-female ratio . . . . .	1.04	1.09	1.01	1.05	...	...	...	...	...	...	...	...

\* Estimate does not meet National Center for Health Statistics standards of reliability or precision; based on fewer than 20 fetal deaths in the numerator.

... Category not applicable.

<sup>1</sup>Rate per 1,000 live births and fetal deaths in specified group.

<sup>2</sup>Race and Hispanic origin are reported separately on the report of fetal death; people of Hispanic origin may be of any race. In this table, non-Hispanic women are classified by race. Race categories are consistent with the 1997 Office of Management and Budget standards; see Technical Notes in this report. Single race is defined as only one race reported on the report of fetal death.

<sup>3</sup>Includes fetal deaths to race and Hispanic-origin groups not shown separately.

<sup>4</sup>Includes all people of Hispanic origin of any race; see Technical Notes in this report.

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

### Period of gestation

- In 2021, just over one-half (51.3%) of all fetal deaths at 20 weeks of gestation or more occurred at 20–27 weeks (early fetal deaths) and 48.7% occurred at 28 weeks of gestation or more (late fetal deaths) (Table B).
- The fetal mortality rate was highest at 20–23 weeks of gestation (538.73), declined to a low of 0.59 at 39–40 weeks, and then increased to 5.54 at 42 weeks of gestation or more.

### Birthweight

- In 2021, in the 49-state and District of Columbia reporting area, more than one-third (35.3%) of fetal deaths at 20 weeks of gestation or more weighed less than 500 grams (1 lb. 1 oz.) at delivery, and nearly one-half (47.1%) weighed less than 750 grams (1 lb. 12 oz.) (Table 6).
- The fetal mortality rate was highest for fetuses weighing less than 500 grams (598.92) and decreased with increasing birthweight to a low of 0.60 for fetuses weighing 3,500–3,999 grams. Fetal mortality rates then increased slightly for fetuses weighing 4,000 grams or more (1.22).

### Fetal mortality rates by state

- For combined years 2019–2021, the U.S. fetal mortality rate for fetal deaths at 24 weeks or more was 3.66 per 1,000 live births and fetal deaths (Table C).
- For combined years 2019–2021, fetal mortality rates were highest (above 5.00) in the District of Columbia (5.38), Arkansas (5.54), Alabama (5.60), and Mississippi (6.38), and lowest (below 3.00) in New Mexico (2.60), Connecticut

**Table B. Fetal deaths and mortality rates, by gestational age and race and Hispanic origin of mother: United States, 2021**

Gestational age (weeks)	All races and origins <sup>2</sup>	Non-Hispanic, single race <sup>1</sup>		
		Black	White	Hispanic <sup>3</sup>
		Rate <sup>4</sup>		
Total . . . . .	5.73	9.89	4.85	4.82
20–23 . . . . .	538.73	476.27	604.24	500.16
24–27 . . . . .	170.3	147.98	191.89	150.24
28–31 . . . . .	73.52	78.79	76.23	59.12
32–33 . . . . .	32.04	37.95	29.97	30.72
34–36 . . . . .	9.23	12.06	8.96	7.58
37–38 . . . . .	1.86	2.17	1.83	1.59
39–40 . . . . .	0.59	0.73	0.55	0.54
41 . . . . .	0.77	1.22	0.68	0.73
42 or more . . . . .	5.54	*	4.02	*
Not stated . . . . .	...	...	...	...
		Number of deaths		
Total . . . . .	21,105	5,173	9,196	4,290
20–23 . . . . .	7,469	1,977	3,052	1,550
24–27 . . . . .	3,278	842	1,392	660
28–31 . . . . .	2,756	739	1,205	504
32–33 . . . . .	1,481	377	644	319
34–36 . . . . .	2,618	619	1,225	512
37–38 . . . . .	1,957	363	935	421
39–40 . . . . .	1,216	187	602	268
41 . . . . .	130	22	67	27
42 or more . . . . .	50	9	24	9
Not stated . . . . .	150	38	50	20

\* Estimate does not meet National Center for Health Statistics standards of reliability or precision; based on fewer than 20 fetal deaths in the numerator.

... Category not applicable.

<sup>1</sup>Race and Hispanic origin are reported separately on reports of fetal death; people of Hispanic origin may be of any race. In this table, non-Hispanic women are classified by race. Race categories are consistent with the 1997 Office of Management and Budget standards. Single race is defined as only one race reported on the report of fetal death.

<sup>2</sup>Includes fetal deaths to race and Hispanic-origin groups not shown separately.

<sup>3</sup>Includes all people of Hispanic origin of any race.

<sup>4</sup>Rate per 1,000 live births and fetal deaths in specified group.

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

(2.60), Texas (2.68), and Massachusetts (2.94).

- See [Table 7](#) for fetal deaths at 20 weeks of gestation or more by state and territory for 2021.

## Selected causes of fetal death

- The five most common selected causes of fetal death accounted for 89.9% of fetal deaths in the 41-state and District of Columbia reporting area ([Table 8](#), [Figure 4](#)). By order of frequency, these were: 1) Fetus affected by unspecified cause (unspecified cause); 2) Fetus affected by complications of placenta, cord and membranes (placental, cord and membrane complications); 3) Fetus affected by maternal conditions that may be unrelated to present pregnancy (maternal conditions unrelated to pregnancy); 4) Fetus affected by maternal complications of pregnancy (maternal complications); and 5) Congenital malformations, deformations and chromosomal abnormalities (congenital malformations).
  - The five most common selected causes of fetal death and the top two causes were the same for Black, White, and Hispanic women, while the ranking of the other causes differed ([Table 8](#), [Figure 4](#)).
  - Unspecified cause and placental, cord and membrane complications were the two most common of the selected causes for all three groups.
  - Among Black women, maternal complications was the third most common cause of fetal death, maternal conditions unrelated to pregnancy was fourth, and congenital malformations was fifth.
  - Among White women, maternal conditions unrelated to pregnancy was the third most common cause of fetal death, followed by congenital malformations and maternal complications.
  - Among Hispanic women, maternal complications was the third most common cause of fetal death, congenital malformations was fourth, and maternal conditions unrelated to pregnancy was fifth.

**Table C. Fetal deaths at 24 weeks of gestation or more and fetal mortality rates, by state or territory: United States, 2019–2021**

Area	Fetal deaths	Fetal mortality rate <sup>1</sup>	Area	Fetal deaths	Fetal mortality rate <sup>1</sup>
Total . . . . .	40,506	3.66	New Jersey . . . . .	1,060	3.53
Alabama . . . . .	982	5.60	New Mexico . . . . .	173	2.60
Alaska . . . . .	114	3.96	New York . . . . .	2,280	3.54
Arizona . . . . .	954	4.06	North Carolina . . . . .	1,405	3.93
Arkansas . . . . .	600	5.54	North Dakota . . . . .	120	3.90
California . . . . .	4,279	3.31	Ohio . . . . .	1,531	3.88
Colorado . . . . .	595	3.17	Oklahoma . . . . .	569	3.90
Connecticut . . . . .	269	2.60	Oregon . . . . .	414	3.37
Delaware . . . . .	122	3.87	Pennsylvania . . . . .	1,461	3.66
District of Columbia . . . . .	144	5.38	Rhode Island . . . . .	113	3.66
Florida . . . . .	2,854	4.40	South Carolina . . . . .	756	4.43
Georgia . . . . .	1,835	4.90	South Dakota . . . . .	128	3.78
Hawaii . . . . .	174	3.60	Tennessee . . . . .	1,018	4.21
Idaho . . . . .	220	3.32	Texas . . . . .	3,008	2.68
Illinois . . . . .	1,425	3.50	Utah . . . . .	483	3.46
Indiana . . . . .	856	3.56	Vermont . . . . .	53	3.33
Iowa . . . . .	358	3.23	Virginia . . . . .	922	3.19
Kansas . . . . .	383	3.65	Washington . . . . .	804	3.18
Kentucky . . . . .	628	3.99	West Virginia . . . . .	191	3.61
Louisiana . . . . .	612	3.51	Wisconsin . . . . .	658	3.53
Maine . . . . .	122	3.44	Wyoming . . . . .	81	4.26
Maryland . . . . .	856	4.12	American Samoa . . . . .	---	---
Massachusetts . . . . .	604	2.94	Guam . . . . .	88	10.13
Michigan . . . . .	1,180	3.71	Northern Marianas . . . . .	---	---
Minnesota . . . . .	663	3.41	Puerto Rico . . . . .	353	5.99
Mississippi . . . . .	689	6.38	U.S. Virgin Islands . . . . .	---	---
Missouri . . . . .	836	3.95			
Montana . . . . .	107	3.22			
Nebraska . . . . .	223	3.02			
Nevada . . . . .	465	4.52			
New Hampshire . . . . .	132	3.63			

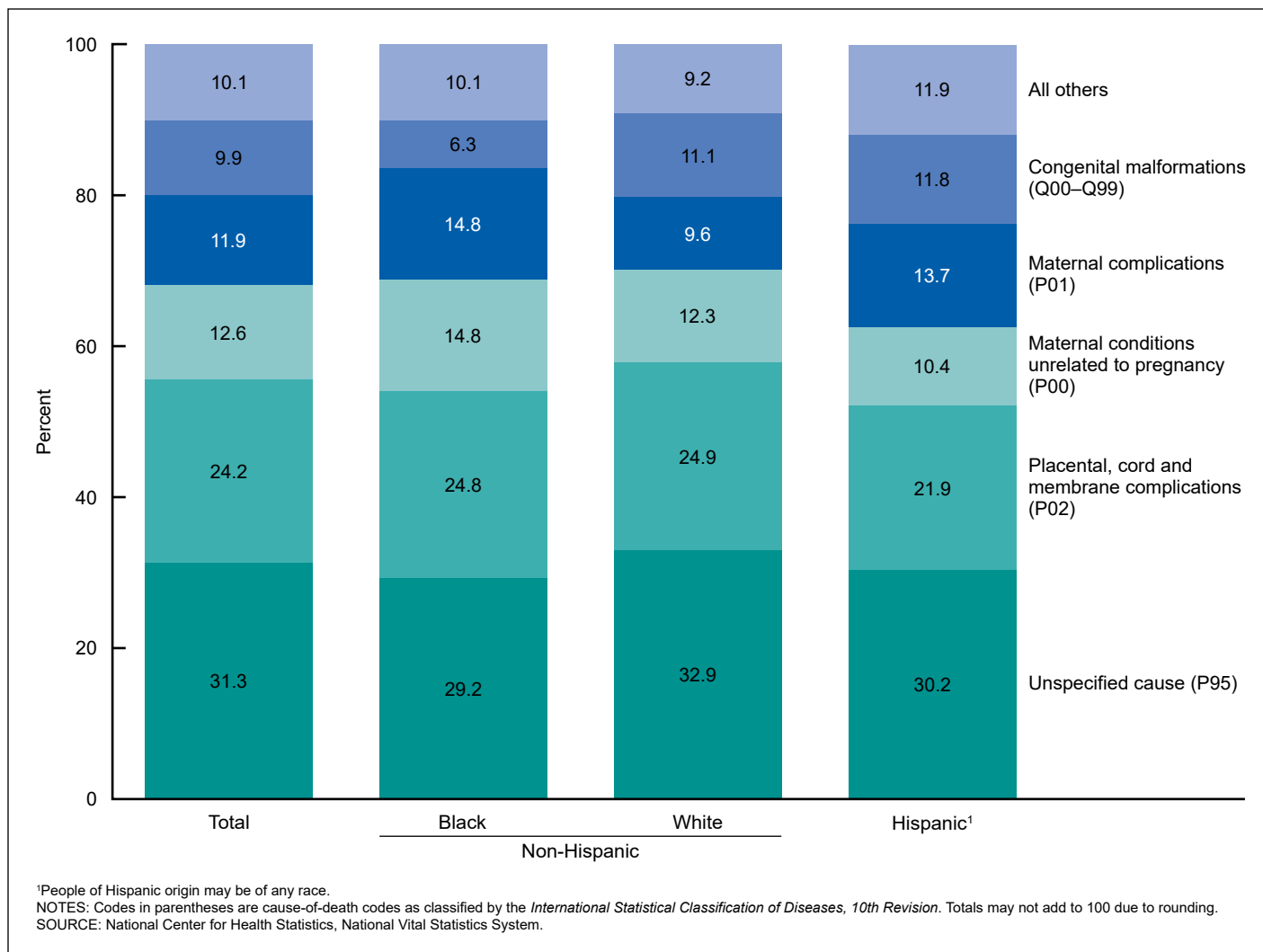
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<sup>1</sup>Rate per 1,000 live births and specified fetal deaths.

NOTES: Fetal deaths with not-stated period of gestation are proportionally distributed to less than 24 weeks and 24 weeks or more; see Technical Notes in this report. Numbers may not add to totals due to rounding.

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

**Figure 4. Percent distribution of fetal deaths, by selected causes of death and race and Hispanic origin of mother: 41 states and the District of Columbia, 2021**



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**Table 1. Number of fetal deaths and births and fetal mortality rates for 1990–2021 and early and late fetal deaths and fetal mortality rates for 2014–2021: United States**

Year	Fetal deaths			Live births	Fetal mortality rate <sup>1</sup>		
	Total <sup>2</sup>	20–27 weeks <sup>3</sup>	28 weeks or more <sup>3</sup>		Total <sup>2</sup>	20–27 weeks <sup>3</sup>	28 weeks or more <sup>3</sup>
2021.....	21,105	10,824	10,281	3,664,292	5.73	2.95	2.80
2020.....	20,854	10,764	10,090	3,613,647	5.74	2.97	2.78
2019.....	21,478	11,216	10,262	3,747,540	5.70	2.98	2.73
2018.....	22,459	11,844	10,615	3,791,712	5.89	3.11	2.79
2017.....	22,827	11,861	10,966	3,855,500	5.89	3.07	2.84
2016.....	23,880	12,486	11,394	3,945,875	6.02	3.15	2.88
2015.....	23,776	12,407	11,369	3,978,497	5.94	3.11	2.85
2014 <sup>4</sup> .....	23,980	12,652	11,328	3,988,076	5.98	3.16	2.83
2013.....	23,595	---	---	3,932,181	5.96	---	---
2012.....	24,073	---	---	3,952,841	6.05	---	---
2011.....	24,289	---	---	3,953,590	6.11	---	---
2010.....	24,258	---	---	3,999,386	6.03	---	---
2009.....	24,872	---	---	4,130,665	5.99	---	---
2008.....	26,335	---	---	4,247,726	6.16	---	---
2007.....	26,593	---	---	4,316,233	6.12	---	---
2006.....	25,972	---	---	4,265,593	6.05	---	---
2005.....	25,894	---	---	4,138,573	6.22	---	---
2004.....	26,001	---	---	4,112,055	6.28	---	---
2003.....	26,004	---	---	4,090,007	6.32	---	---
2002.....	25,943	---	---	4,021,825	6.41	---	---
2001.....	26,373	---	---	4,026,036	6.51	---	---
2000.....	27,003	---	---	4,058,882	6.61	---	---
1995.....	27,294	---	---	3,899,589	6.95	---	---
1990.....	31,386	---	---	4,158,445	7.49	---	---

--- Data not available.

<sup>1</sup>Number of fetal deaths in specified group per 1,000 live births and fetal deaths.<sup>2</sup>Fetal deaths with stated or presumed period of gestation of 20 weeks or more.<sup>3</sup>Not stated gestational age proportionally distributed.<sup>4</sup>Beginning with the 2014 data year, the obstetric estimate of gestation at delivery replaced the measure based on the date of last normal menses as the standard for measuring gestational age; see Technical Notes in this report.

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

**Table 2. Fetal deaths and mortality rates, by race and Hispanic origin of mother: United States, 2018–2021**

Year	Non-Hispanic, single race <sup>1</sup>						
	All races and origins <sup>2</sup>	American Indian or Alaska Native	Asian	Black	Native Hawaiian or Other Pacific Islander	White	Hispanic <sup>3</sup>
				Rate <sup>4</sup>			
2021.....	5.73	7.48	3.94	9.89	9.87	4.85	4.82
2020.....	5.74	7.84	3.93	10.34	10.59	4.73	4.86
2019.....	5.70	7.47	4.02	10.41	10.03	4.71	4.79
2018.....	5.89	6.25	4.26	10.64	9.93	4.89	5.06
				Number of deaths			
2021.....	21,105	197	846	5,173	95	9,196	4,290
2020.....	20,854	212	864	5,536	103	8,753	4,231
2019.....	21,478	214	963	5,766	99	9,067	4,264
2018.....	22,459	183	1,029	5,938	95	9,621	4,510

<sup>1</sup>Race and Hispanic origin are reported separately on reports of fetal death; people of Hispanic origin may be of any race. In this table, non-Hispanic women are classified by race. Race categories are consistent with the 1997 Office of Management and Budget standards. Single race is defined as only one race reported on the report of fetal death.

<sup>2</sup>Includes fetal deaths to race and Hispanic-origin groups not shown separately.

<sup>3</sup>Includes all people of Hispanic origin of any race.

<sup>4</sup>Number of fetal deaths in specified group per 1,000 live births and fetal deaths.

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

**Table 3. Fetal deaths and mortality rates, by Hispanic origin of mother: United States, 2018–2021**

Year	Total	Central and South American	Cuban	Dominican	Mexican	Puerto Rican	Other and unknown Hispanic
				Rate <sup>1</sup>			
2021.....	4.82	4.61	4.81	4.39	4.77	5.11	5.41
2020.....	4.86	4.49	5.23	4.41	4.79	4.98	5.87
2019.....	4.79	4.12	4.71	4.75	4.86	5.17	5.29
2018.....	5.06	4.90	4.16	5.09	5.19	5.07	4.90
				Number of deaths			
2021.....	4,290	825	118	147	2,325	363	512
2020.....	4,231	766	122	140	2,312	349	542
2019.....	4,264	683	112	155	2,427	369	518
2018.....	4,510	726	98	164	2,587	365	570

<sup>1</sup>Number of fetal deaths in specified group per 1,000 live births and fetal deaths.

NOTE: In this table, Hispanic women are classified only by place of origin; non-Hispanic women are not shown.

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

**Table 4. Total, early, and late fetal deaths and mortality rates, by age and race and Hispanic origin of mother: United States, 2021**

Race and Hispanic origin and age of mother	Fetal deaths			Fetal mortality rate <sup>1</sup>		
	Total	20–27 weeks <sup>2</sup>	28 weeks or more <sup>2</sup>	Total	20–27 weeks <sup>2</sup>	28 weeks or more <sup>2</sup>
All races and origins <sup>3</sup>	21,105	10,824	10,281	5.73	2.95	2.80
Under 15	25	17	8	13.14	*	*
15–19	1,065	575	490	7.19	3.90	3.32
15–17	267	139	128	7.46	3.90	3.59
18–19	798	436	362	7.11	3.90	3.24
20–24	3,802	1,868	1,934	5.83	2.87	2.97
25–29	5,532	2,722	2,810	5.37	2.65	2.74
30–34	5,747	2,989	2,758	5.13	2.67	2.47
35–39	3,741	2,010	1,731	6.28	3.38	2.91
40–44	1,085	585	500	8.52	4.61	3.94
45 and over	108	58	50	11.36	6.13	5.29
Non-Hispanic, single race <sup>4</sup> :						
Black	5,173	2,840	2,333	9.89	5.45	4.48
Under 15	5	4	1	*	*	*
15–19	337	186	151	10.68	5.92	4.81
15–17	76	44	32	9.42	5.47	3.99
18–19	261	142	119	11.11	6.07	5.10
20–24	1,096	594	502	9.23	5.02	4.25
25–29	1,388	727	661	9.27	4.88	4.44
30–34	1,281	727	554	9.70	5.53	4.22
35–39	802	454	348	11.32	6.44	4.94
40–44	235	135	100	13.03	7.53	5.59
45 and over	29	13	16	19.19	*	*
White	9,196	4,468	4,728	4.85	2.36	2.50
Under 15	6	4	2	*	*	*
15–19	359	193	166	7.10	3.83	3.30
15–17	86	44	42	8.42	4.32	4.13
18–19	273	149	124	6.77	3.70	3.08
20–24	1,473	646	827	5.12	2.25	2.88
25–29	2,437	1,119	1,318	4.56	2.10	2.47
30–34	2,753	1,363	1,390	4.33	2.15	2.19
35–39	1,692	900	792	5.24	2.80	2.46
40–44	438	221	217	7.20	3.65	3.58
45 and over	38	22	16	8.91	5.18	*
Hispanic <sup>5</sup>	4,290	2,220	2,070	4.82	2.50	2.33
Under 15	8	6	2	*	*	*
15–19	274	145	129	4.93	2.62	2.33
15–17	80	39	41	5.38	2.63	2.76
18–19	194	106	88	4.77	2.61	2.17
20–24	899	455	444	4.48	2.27	2.22
25–29	1,090	560	530	4.23	2.18	2.06
30–34	1,020	544	476	4.60	2.46	2.15
35–39	722	366	356	5.96	3.03	2.95
40–44	255	133	122	8.30	4.35	3.99
45 and over	22	13	9	11.20	*	*

\* Estimate does not meet National Center for Health Statistics standards of reliability or precision; based on fewer than 20 fetal deaths in the numerator.

<sup>1</sup>Rate per 1,000 live births and fetal deaths in specified group.

<sup>2</sup>Fetal deaths with gestational age not stated were proportionally distributed; see Technical Notes in this report.

<sup>3</sup>Includes fetal deaths to race and Hispanic-origin groups not shown separately.

<sup>4</sup>Race and Hispanic origin are reported separately on reports of fetal death; people of Hispanic origin may be of any race. In this table, non-Hispanic women are classified by race. Race categories are consistent with the 1997 Office of Management and Budget standards; see Technical Notes in this report. Single race is defined as only one race reported on the report of fetal death.

<sup>5</sup>Includes all people of Hispanic origin of any race.

NOTES: Fetal deaths with not-stated period of gestation were proportionally distributed to less than 28 weeks and 28 weeks or more for each age group; see Technical Notes in this report. Numbers may not add to totals due to rounding.

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

**Table 5. Fetal mortality rates, by tobacco use during pregnancy, age, and race and Hispanic origin of mother: United States, 2021**

Tobacco use during pregnancy and race and Hispanic origin of mother	Fetal deaths	All ages	Under 20	20–24	25–29	30–34	35–39	40–54	Not stated
All races and origins <sup>1</sup>	Number	Fetal mortality rate <sup>2</sup>							Number
Total .....	21,105	5.73	7.27	5.83	5.37	5.13	6.28	8.71	1,697
Yes .....	1,632	9.62	6.18	7.43	8.82	10.86	12.37	17.51	...
No .....	17,776	5.08	6.77	5.28	4.70	4.51	5.51	7.84	...
Non-Hispanic, single race <sup>3</sup>									
Black:									
Total .....	5,173	9.89	10.66	9.23	9.27	9.70	11.32	13.51	336
Yes .....	313	15.75	*	12.89	14.83	15.82	20.97	*	...
No .....	4,524	9.04	10.07	8.60	8.37	8.83	10.17	12.50	...
White:									
Total .....	9,196	4.85	7.15	5.12	4.56	4.33	5.24	7.31	604
Yes .....	1,096	8.62	6.14	6.77	8.10	9.93	10.32	14.87	...
No .....	7,496	4.25	6.82	4.61	3.93	3.75	4.64	6.50	...
Hispanic <sup>4</sup>									
Total .....	4,290	4.82	5.01	4.48	4.23	4.60	5.96	8.48	286
Yes .....	96	8.93	*	8.21	7.49	8.39	*	*	...
No .....	3,908	4.46	4.66	4.09	3.94	4.29	5.46	7.92	...

... Category not applicable.

\* Estimate does not meet National Center for Health Statistics standards of reliability or precision; based on fewer than 20 fetal deaths in the numerator.

<sup>1</sup>Includes fetal deaths to race and Hispanic-origin groups not shown separately.

<sup>2</sup>Rate per 1,000 live births and fetal deaths in specified group.

<sup>3</sup>Race and Hispanic origin are reported separately on the report of fetal death; people of Hispanic origin may be of any race. In this table, non-Hispanic women are classified by race. Race categories are consistent with the 1997 Office of Management and Budget standards; see Technical Notes in this report. Single race is defined as only one race reported on the report of fetal death.

<sup>4</sup>Includes all people of Hispanic origin of any race; see Technical Notes in this report.

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

**Table 6. Fetal deaths and mortality rates, by birthweight, gestational age, and race and Hispanic origin of mother: 49 states and the District of Columbia, 2021**

Birthweight (grams) and race and Hispanic origin of mother	Total	Gestational age (weeks)										Fetal mortality rate <sup>1</sup>
		20–23	24–27	28–31	32–33	34–36	37–38	39–40	41	42 or more	Not stated	
All races and origins <sup>2</sup>	20,996	7,423	3,262	2,745	1,473	2,606	1,949	1,212	130	50	146	5.72
Less than 500	6,896	5,574	1,016	202	26	32	18	6	–	–	22	598.92
500–749	2,305	898	1,078	258	29	22	3	3	–	1	13	212.23
750–999	1,366	142	665	445	57	32	10	4	–	–	11	121.38
1,000–1,249	1,034	39	181	616	126	52	8	3	1	–	8	80.16
1,250–1,499	926	20	42	503	197	131	20	7	1	–	5	56.64
1,500–1,999	1,770	17	39	455	571	522	127	26	3	1	9	28.05
2,000–2,499	1,647	–	16	77	301	836	297	96	7	4	13	8.21
2,500–2,999	1,468	–	11	25	59	527	571	234	25	7	9	2.09
3,000–3,499	1,215	–	–	14	26	217	488	418	32	14	6	0.86
3,500–3,999	566	–	–	–	3	73	188	263	29	8	2	0.60
4,000 or more	332	–	–	–	5	42	147	102	21	11	4	1.22
Not stated	1,471	733	214	150	73	120	72	50	11	4	44	...
Fetal mortality rate <sup>1</sup>	5.72	538.05	170.17	73.53	32.01	9.23	1.86	0.59	0.77	5.59	...	...
Non-Hispanic, single race <sup>3</sup> :												
Black	5,171	1,977	842	739	376	618	363	187	22	9	38	9.89
Less than 500	1,902	1,549	278	58	5	5	–	1	–	–	6	537.29
500–749	638	244	300	72	10	4	1	1	–	1	5	180.02
750–999	342	31	148	130	20	11	1	–	–	–	1	100.88
1,000–1,249	280	5	37	176	40	14	3	–	1	–	4	76.80
1,250–1,499	255	4	5	128	71	40	4	1	–	–	2	59.03
1,500–1,999	430	3	9	108	134	145	23	5	–	–	3	27.76
2,000–2,499	393	–	5	22	53	214	69	24	2	1	3	8.52
2,500–2,999	290	–	1	5	14	109	112	41	4	1	3	2.15
3,000–3,499	183	–	–	4	5	36	78	56	2	2	–	0.95
3,500–3,999	74	–	–	–	2	9	27	30	4	1	1	0.81
4,000 or more	71	–	–	–	–	7	34	21	7	1	1	3.31
Not stated	313	141	59	36	22	24	11	7	2	2	9	...
Fetal mortality rate <sup>1</sup>	9.89	476.39	148.14	78.83	37.89	12.05	2.17	0.73	1.22	*	...	...
White	9,187	3,048	1,392	1,205	643	1,224	934	601	67	24	49	4.85
Less than 500	2,846	2,282	424	87	14	18	10	3	–	–	8	659.56
500–749	938	350	454	107	9	13	1	2	–	–	2	244.65
750–999	559	55	289	171	22	13	4	1	–	–	4	131.72
1,000–1,249	443	18	82	264	45	25	4	2	–	–	3	86.39
1,250–1,499	402	11	26	236	66	51	8	2	–	–	2	59.10
1,500–1,999	808	7	16	216	262	230	63	8	2	–	4	29.53
2,000–2,499	729	–	7	28	147	374	131	35	2	1	4	8.34
2,500–2,999	713	–	7	13	28	269	271	108	12	3	2	2.29
3,000–3,499	651	–	–	10	16	117	253	227	19	6	3	0.90
3,500–3,999	308	–	–	–	–	42	95	148	17	5	1	0.56
4,000 or more	143	–	–	–	4	16	61	44	10	7	1	0.84
Not stated	647	325	87	73	30	56	33	21	5	2	15	...
Fetal mortality rate <sup>1</sup>	4.85	604.28	192.03	76.32	29.97	8.97	1.83	0.55	0.68	4.06	...	...

See footnotes at end of table.

**Table 6. Fetal deaths and mortality rates, by birthweight, gestational age, and race and Hispanic origin of mother: 49 states and the District of Columbia, 2021—Con.**

Birthweight (grams) and race and Hispanic origin of mother	Total	Gestational age (weeks)										Fetal mortality rate <sup>1</sup>
		20–23	24–27	28–31	32–33	34–36	37–38	39–40	41	42 or more	Not stated	
Hispanic <sup>4</sup>	4,283	1,550	658	502	318	512	420	267	27	9	20	4.83
Less than 500	1,416	1,158	202	37	5	6	4	1	–	–	3	581.28
500–749	476	210	204	47	8	5	–	–	–	–	2	196.61
750–999	302	36	147	94	13	7	1	2	–	–	2	119.51
1,000–1,249	206	11	41	115	29	8	–	1	–	–	1	71.85
1,250–1,499	188	4	9	92	45	27	7	4	–	–	–	51.55
1,500–1,999	349	6	12	74	119	96	27	12	1	1	1	25.34
2,000–2,499	346	–	2	21	70	157	61	28	3	1	3	7.75
2,500–2,999	298	–	3	4	11	98	121	52	7	2	–	1.72
3,000–3,499	257	–	–	–	4	48	107	89	5	3	1	0.72
3,500–3,999	112	–	–	–	–	20	42	43	6	1	–	0.50
4,000 or more	85	–	–	–	1	17	38	25	3	1	–	1.44
Not stated	248	125	38	18	13	23	12	10	2	–	7	...
Fetal mortality rate <sup>1</sup>	4.83	500.65	150.16	59.05	30.73	7.61	1.59	0.54	0.73	*	...	...

– Quantity zero.

... Category not applicable.

\* Estimate does not meet National Center for Health Statistics standards of reliability or precision; based on fewer than 20 fetal deaths in the numerator.

<sup>1</sup>Rate per 1,000 live births and fetal deaths in specified group.

<sup>2</sup>Includes fetal deaths to race and Hispanic-origin groups not shown separately.

<sup>3</sup>Race and Hispanic origin are reported separately on the report of fetal death; people of Hispanic origin may be of any race. In this table, non-Hispanic women are classified by race. Race categories are consistent with the 1997 Office of Management and Budget standards; see Technical Notes in this report. Single race is defined as only one race reported on the report of fetal death.

<sup>4</sup>Includes all people of Hispanic origin of any race; see Technical Notes in this report.

NOTE: Excludes data for Hawaii; see Technical Notes in this report.

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



**Table 7. Fetal deaths at 20 weeks of gestation or more and fetal mortality rates: United States and each state and territory, 2021**

Area	Fetal deaths <sup>1</sup>	Fetal mortality rate <sup>2</sup>	Area	Fetal deaths <sup>1</sup>	Fetal mortality rate <sup>2</sup>
Total	21,105	5.73	South Carolina	323	5.62
Alabama	510	8.71	South Dakota	76	6.64
Alaska	57	6.05	Tennessee	537	6.53
Arizona	485	6.19	Texas	1,457	3.88
Arkansas	304	8.38	Utah	309	6.57
California	2,243	5.30	Vermont	27	4.99
Colorado	312	4.93	Virginia	493	5.12
Connecticut	162	4.52	Washington	451	5.35
Delaware	54	5.13	West Virginia	93	5.38
District of Columbia	65	7.45	Wisconsin	321	5.17
Florida	1,594	7.32	Wyoming	53	8.43
Georgia	1,016	8.12	American Samoa	---	---
Hawaii	109	6.93	Guam	31	11.68
Idaho	112	4.97	Northern Marianas	---	---
Illinois	795	5.98	Puerto Rico	242	12.38
Indiana	426	5.30	U.S. Virgin Islands	---	---
Iowa	164	4.43			
Kansas	195	5.59			
Kentucky	329	6.26			
Louisiana	302	5.23			
Maine	67	5.55			
Maryland	457	6.65			
Massachusetts	290	4.18			
Michigan	601	5.69			
Minnesota	349	5.39			
Mississippi	355	10.00			
Missouri	388	5.56			
Montana	39	3.46			
Nebraska	99	4.01			
Nevada	280	8.24			
New Hampshire	73	5.75			
New Jersey	612	5.99			
New Mexico	84	3.91			
New York	1,285	6.06			
North Carolina	652	5.38			
North Dakota	52	5.12			
Ohio	759	5.81			
Oklahoma	269	5.53			
Oregon	187	4.55			
Pennsylvania	777	5.82			
Rhode Island	56	5.32			

--- Data not available.

<sup>1</sup>Fetal deaths with stated or presumed period of gestation of 20 weeks or more.<sup>2</sup>Number of fetal deaths per 1,000 live births and fetal deaths.

NOTES: American Samoa did not report data for 2021. Data for the Northern Marianas and the U.S. Virgin Islands were excluded due to small numbers.

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

**Table 8. Fetal deaths and percentage of total deaths for the five selected causes, by race and Hispanic origin of mother: 41 states and the District of Columbia, 2021**

Rank	Cause and race and Hispanic origin of mother	Deaths	Percent
All races and origins <sup>1</sup>			
...	All causes .....	15,212	100.0
1	Fetal death of unspecified cause ..... (P95)	4,765	31.3
2	Fetus affected by complications of placenta, cord and membranes ..... (P02)	3,688	24.2
3	Fetus affected by maternal conditions that may be unrelated to present pregnancy ..... (P00)	1,915	12.6
4	Fetus affected by maternal complications of pregnancy ..... (P01)	1,804	11.9
5	Congenital malformations, deformations and chromosomal abnormalities ..... (Q00–Q99)	1,503	9.9
...	All other causes .....	1,537	10.1
Non-Hispanic, single-race Black <sup>2</sup>			
...	All causes .....	3,813	100.0
1	Fetal death of unspecified cause ..... (P95)	1,114	29.2
2	Fetus affected by complications of placenta, cord and membranes ..... (P02)	946	24.8
3	Fetus affected by maternal complications of pregnancy ..... (P01)	566	14.8
4	Fetus affected by maternal conditions that may be unrelated to present pregnancy ..... (P00)	564	14.8
5	Congenital malformations, deformations and chromosomal abnormalities ..... (Q00–Q99)	239	6.3
...	All other causes .....	384	10.1
Non-Hispanic, single-race White <sup>2</sup>			
...	All causes .....	7,288	100.0
1	Fetal death of unspecified cause ..... (P95)	2,396	32.9
2	Fetus affected by complications of placenta, cord and membranes ..... (P02)	1,818	24.9
3	Fetus affected by maternal conditions that may be unrelated to present pregnancy ..... (P00)	899	12.3
4	Congenital malformations, deformations and chromosomal abnormalities ..... (Q00–Q99)	806	11.1
5	Fetus affected by maternal complications of pregnancy ..... (P01)	697	9.6
...	All other causes .....	672	9.2
Hispanic <sup>3</sup>			
...	All causes .....	2,624	100.0
1	Fetal death of unspecified cause ..... (P95)	793	30.2
2	Fetus affected by complications of placenta, cord and membranes ..... (P02)	575	21.9
3	Fetus affected by maternal complications of pregnancy ..... (P01)	360	13.7
4	Congenital malformations, deformations and chromosomal abnormalities ..... (Q00–Q99)	310	11.8
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy ..... (P00)	273	10.4
...	All other causes .....	313	11.9

... Category not applicable.

<sup>1</sup>Includes fetal deaths to race and Hispanic-origin groups not shown separately.

<sup>2</sup>Race and Hispanic origin are reported separately on the report of fetal death; people of Hispanic origin may be of any race. In this table, non-Hispanic women are classified by race. Race categories are consistent with the 1997 Office of Management and Budget standards; see Technical Notes in this report. Single race is defined as only one race reported on the report of fetal death.

<sup>3</sup>Includes all people of Hispanic origin of any race; see Technical Notes in this report.

NOTES: Findings exclude data for jurisdictions (Arizona, Georgia, Hawaii, Mississippi, New York [including New York City], North Dakota, Vermont, and Wisconsin) for which the cause of death was unspecified (P95) for 50% or more of records. Also excludes data for California, which did not report cause of death based on the 2003 revision of the U.S. Standard Report of Fetal Death.

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

## Technical Notes

### Definition of fetal death

Fetal death means death prior to the complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy and which is not an induced termination of pregnancy. The death is indicated by the fact that after such expulsion or extraction, the fetus does not breathe or show any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. Heartbeats are to be distinguished from transient cardiac contractions; respirations are to be distinguished from fleeting respiratory efforts or gasps.

This definition (14) has been adopted by the Centers for Disease Control and Prevention, National Center for Health Statistics as the nationally recommended standard and is based on the definition published by the World Health Organization in 1950 and revised in 1988. The term fetal death is defined on an all-inclusive basis to end confusion arising from the use of such terms as stillbirth, spontaneous abortion, and miscarriage. All U.S. states and registration areas have definitions similar to the standard definition, except for Puerto Rico and Wisconsin, which have no formal definition (15). Fetal deaths do not include induced terminations of pregnancy.

### Reporting requirements for fetal death data

Variation exists among states in reporting requirements (2) and possibly in completeness of reporting for fetal death data, and this can have important implications for comparisons of fetal mortality rates by state. All jurisdictions require reporting of fetal deaths of at least 20 weeks of gestation or more, or a minimum birthweight of 350 grams (roughly equal to 20 weeks), or some combination of the two. However, six states, New York City, American Samoa, and the U.S. Virgin Islands require reporting of fetal deaths at all periods of gestation, two states require reporting beginning at 12 weeks of gestation, and one state requires reporting beginning at 16 weeks of gestation. Areas that report fetal deaths at all periods of gestation appear to have a higher percentage of fetal deaths occurring at 20–27 weeks of gestation than those that begin reporting at later gestational ages. [Table C](#) presents fetal mortality rates for fetal deaths at 24 weeks of gestation or more for a combined 3-year period to better account for state differences in reporting requirements and to improve on the reliability of rates based on smaller numbers. Aside from this exception, this report presents data on fetal deaths with a stated or presumed period of gestation of 20 weeks or more.

### Percentage of unknown responses

In the tables in this report, unknown responses are shown in frequencies tables but are excluded from the computation of percent distributions and fetal mortality rates. As a result, rates published in this report by variables with a substantial percentage of unknown responses (such as birthweight) may understate the true rates of fetal mortality for that characteristic.

In this report, birthweight data for Hawaii are excluded due to a high percentage of unknown responses (56.9%).

### 2003 revision of U.S. Standard Report of Fetal Death

Data for 2018–2021 presented in this report are based on the 2003 revision of the U.S. Standard Report of Fetal Death; data for earlier years are based on both the 1989 and the 2003 fetal death report revisions. The 2003 revision is described in detail elsewhere (16).

### Computation of rates

Fetal mortality rates in this report are computed as the number of fetal deaths at 20 weeks of gestation or more per 1,000 live births and fetal deaths at 20 weeks or more. The denominators for all fetal mortality rates are live births plus fetal deaths in the specified gestational age group, thus representing the population at risk of the event.

$$\text{Fetal mortality rate} = \frac{\text{Fetal deaths at 20 weeks of gestation or more}}{\text{Live births and fetal deaths at 20 weeks or more}} \bullet 1,000$$

In each case, the fetal deaths included in the denominator of each rate mirror the fetal deaths included in the numerator. A previous report (17) contains information on the historical development of various perinatal measures. An asterisk (\*) is shown in place of any rate based on fewer than 20 fetal deaths in the numerator.

### Hispanic origin and race

#### Hispanic origin

Hispanic origin and race are reported separately on the report of fetal death. Data are presented in some tables for specific Hispanic subgroups: Central and South American, Cuban, Dominican, Mexican, Puerto Rican, and Other and unknown Hispanic. Data are presented separately for Dominican women beginning in 2018. Data for this subgroup had previously been included in the category Other and unknown Hispanic. In tabulations of fetal death data by race and Hispanic origin, data for people of Hispanic origin are not further classified by race because most fetal deaths to Hispanic women are reported as White.

#### Race

This report presents data on race and Hispanic origin based on the 1997 Office of Management and Budget standards (10). The 2003 revision of the U.S. Standard Report of Fetal Death requires the reporting of a minimum of five race categories and allows for the reporting of race either alone (single race) or in combination (more than one race or multiple races) for the mother (9), according to the Office of Management and Budget's 1997 revised standards (10). The five categories for

race specified in the revised standards are: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, and White.

Beginning in 2018, all states and the District of Columbia, in addition to Guam, the Northern Marianas, Puerto Rico, and the Virgin Islands were reporting race on fetal death reports according to the 1997 revised Office of Management and Budget standards. In 2021, 2.1% of women in the United States reported more than one race. Before 2018, the number of states that reported multiple-race information varied widely, increasing from 1 state in 2003 to all 50 states, the District of Columbia, Guam, the Northern Marianas, Puerto Rico, and the Virgin Islands in 2018.

## Period of gestation

Beginning with the 2014 data year, the National Center for Health Statistics began using the obstetric estimate of gestation at delivery as the primary measure for estimating gestational age (18). The obstetric estimate of gestation at delivery data are edited for gestational ages that are clearly inconsistent with birthweight. If the obstetric estimate of gestation at delivery is not reported, or is inconsistent with birthweight, the last menstrual period-based gestational age is used (0.5% of fetal death records and 0.1% of live birth records in 2021). These procedures are described in more detail elsewhere (19).

See the “User Guide to the 2017 Fetal Death Data File” for a more detailed description of the transition and Table 1 of the “User Guide to the 2018 Fetal Death Data File” for trends in total, early, and late fetal mortality based on both the obstetric estimate of gestation at delivery- and last menstrual period-based measures (20,21).

## Gestational age not stated

Fetal deaths with not-stated gestational age are presumed to be 20 weeks of gestation or more if the state requires reporting of all fetal deaths at 20 weeks or more, or if the fetus weighed 350 grams or more in those states requiring reporting of all fetal deaths regardless of gestational age. In [Tables 1 and 4](#), fetal deaths with not-stated gestational age are allocated to the 20–27 week and 28 weeks or more categories according to the proportion of fetal deaths with stated gestational age that fall into each category (proportional distribution). Similarly, for [Table C](#), fetal deaths with not-stated gestational age are proportionally distributed into the 20–23 week and 24 weeks or more categories. Proportional distribution is not performed for data in tables that show more detailed gestational age categories ([Tables B and 6](#)). The allocation of not-stated gestational age for fetal deaths is made individually for each maternal age, race and Hispanic-origin group, and state in the computation of fetal mortality rates.

## Cause of death

Cause-of-death data are included for the 41 states and the District of Columbia that reported cause of death based on the 2003 revision of the U.S. Standard Report of Fetal Death and met

the reporting requirement of having less than 50% of records assigned to unspecified cause (P95) (cause-of-death data did not meet these requirements for Arizona, California, Georgia, Hawaii, Mississippi, New York [including New York City], North Dakota, Vermont, and Wisconsin).

## Random variation in fetal mortality

Please see the “User Guide to the 2021 Fetal Death Public Use File” (2) for more detailed information and formulas.

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