

Fetal Mortality in the United States: Final 2020–2021 and 2021–Provisional 2022

Elizabeth C.W. Gregory, M.P.H., Claudia P. Valenzuela, M.P.H., and Joyce A. Martin, M.P.H.

Abstract

Objectives—This report describes changes between 2021 and 2022 in total, early, and late fetal mortality, as well as fetal mortality by maternal race and Hispanic origin and state of residence. Comparisons are made with findings from 2020 to 2021.

Methods—Data are based on reports of fetal death filed in the 50 states and the District of Columbia and collected via the National Vital Statistics System. In this report, only fetal deaths reported at 20 weeks of gestation or more are included. Data for 2020 and 2021 are final, and data for 2022 are provisional.

Results—Between 2021 and 2022, the overall fetal mortality rate declined 5%, from 5.73 to 5.45. The fetal mortality rate declined for fetal deaths at both 20–27 weeks of gestation (early fetal deaths) (6%) and 28 weeks of gestation or more (late fetal deaths) (4%). The fetal mortality rate declined for White non-Hispanic (8%) and Hispanic (5%) women from 2021 to 2022 but did not change significantly for all other race and Hispanic-origin groups. Fetal mortality rates decreased in 7 states and were not significantly different for 43 states and the District of Columbia from 2021 to 2022. In comparison, from 2020 to 2021, fetal mortality rates did not change significantly overall, for early or late fetal deaths, for most race and Hispanic-origin groups, or for most

states, but the rate declined by 4% for Black women.

Keywords: fetal death • race and Hispanic origin • provisional data • National Vital Statistics System

Introduction

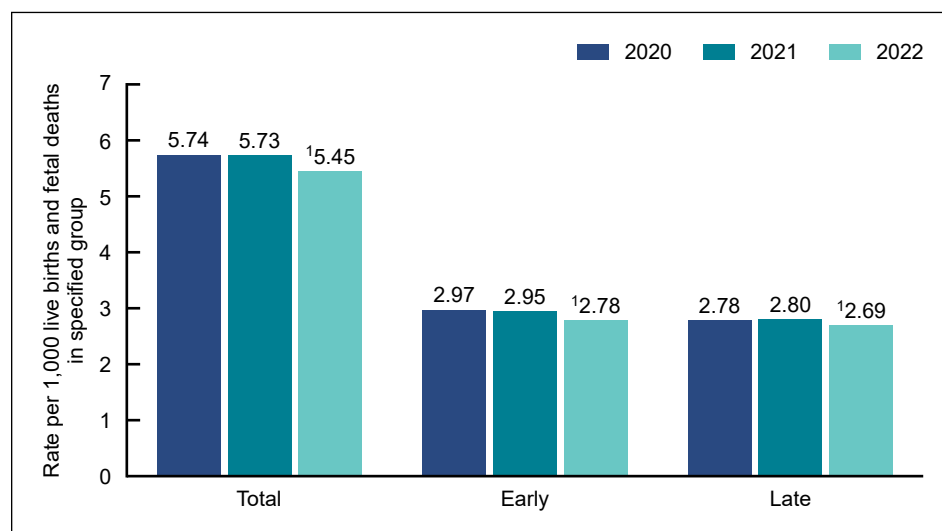
This report presents 2022 provisional national fetal death data for selected maternal and fetal characteristics, providing more timely data for public health surveillance. Changes in fetal

mortality rates overall, by maternal race and Hispanic origin, and by state of residence are examined from 2021 to 2022, and are compared with findings for the period 2020 to 2021.

Methods

The fetal death data shown in this report were collected via the National Vital Statistics System. Findings are based on data for fetal deaths occurring at 20 weeks of gestation or more to residents of the United States. Fetal

Figure 1. Total, early, and late fetal mortality rates: United States, final 2020 and 2021 and provisional 2022 data



¹Significantly lower than 2021 ($p < 0.05$).

NOTES: Fetal mortality rate is the number of fetal deaths at 20 weeks of gestation or more per 1,000 live births and fetal deaths. Early fetal mortality rate is the number of fetal deaths at 20–27 weeks of gestation per 1,000 live births and fetal deaths at 20–27 weeks of gestation. Late fetal mortality rate is the number of fetal deaths at 28 weeks of gestation or more per 1,000 live births and fetal deaths at 28 weeks of gestation or more.

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



Centers for Disease
Control and Prevention
National Center for
Health Statistics

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

death data for 2020 and 2021 are final. Data for 2022 are provisional and based on reports of fetal death received and processed by the National Center for Health Statistics as of June 14, 2023, representing approximately 99.1% of the expected count for 2022. Statistics from previous provisional reports have been shown to be consistent with the final statistics for the respective years (1,2).

Fetal mortality rates 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. Numbers and rates are also presented for fetal deaths at 20–27 weeks of gestation (early fetal deaths) and 28 weeks of gestation or more (late fetal deaths).

Hispanic origin and race are reported separately on the U.S. Standard Report of Fetal Death. Data shown by Hispanic origin include all people of Hispanic origin of any race. Data for non-Hispanic people are shown separately for each single-race group. Data by race are based on the revised standards issued by the Office of Management and Budget in 1997 (3), which allow for the reporting of a minimum of five race categories either by single race (reported alone) or in combination (more than one race or multiple races). The race and Hispanic-origin groups shown in this report are American Indian and Alaska Native non-Hispanic, single-race (subsequently, American Indian and Alaska Native), Asian non-Hispanic, single-race (subsequently Asian), Black non-Hispanic, single-race (subsequently, Black), Native Hawaiian and Other Pacific Islander non-Hispanic, single-race (subsequently, Native Hawaiian and Other Pacific Islander), White non-Hispanic, single-race (subsequently, White), and Hispanic.

Fetal mortality rates by state are based on the mother's state of residence. The small number of fetal deaths in some states by year can limit the ability to detect statistically significant changes between years and between states. Fetal deaths for Connecticut may be underreported in 2020.

The difference between rates is statistically significant at the 0.05 level unless otherwise noted. For information on the methods used to test for statistical significance, see the 2021 user guide (4).

Results

Changes in total, early, and late fetal mortality rates, 2020–2021 and 2021–2022

- In 2022 (provisional), the total fetal mortality rate was 5.45, representing a 5% decline from the rate in 2021 (5.73). No significant change in the rate was observed between 2020 (5.74) and 2021 (Table 1, Figure 1).
- From 2021 to 2022, the early fetal mortality rate (20–27 weeks of gestation) declined by 6%, from 2.95 to 2.78. The rate was not significantly different between 2020 (2.97) and 2021.
- The late fetal mortality rate (28 weeks of gestation or more) declined 4% from 2021 (2.80) to 2022 (2.69). The rate was not significantly different between 2020 (2.78) and 2021.

Changes in fetal mortality rate by race and Hispanic origin, 2020–2021 and 2021–2022

- The fetal mortality rate for Black women was not significantly different for 2022 (10.01) compared with 2021 (9.89). From 2020 (10.34) to 2021, the rate declined 4% (Table 1, Figure 2).
- For White women, the fetal mortality rate declined 8% from 2021 (4.85) to 2022 (4.46). This rate was stable from 2020 (4.73) to 2021.
- For Hispanic women, the fetal mortality rate declined 5% from 2021 (4.82) to 2022 (4.60). The rate for this group was not significantly different between 2020 (4.86) and 2021.
- From 2021 to 2022, the fetal mortality rate did not change significantly for American Indian and Alaska Native (from 7.48 to 7.29), Asian (3.94 to 3.66), and Native Hawaiian

and Other Pacific Islander (9.87 to 10.46) women. Rates for these groups were also not significantly different between 2020 and 2021.

Changes in fetal mortality rate by state, 2020–2021 and 2021–2022

- From 2021 to 2022, the fetal mortality rate decreased in seven states; declines ranged from 6% in California (5.30 to 4.97) to 20% in Maryland (6.65 to 5.31). Changes in the rate were not significant for the remaining 43 states and the District of Columbia (Table 2, Figure 3).
- In contrast, from 2020 to 2021, the fetal mortality rate increased in 2 states (Pennsylvania and Utah) and was not significantly different for 48 states and the District of Columbia.

Summary

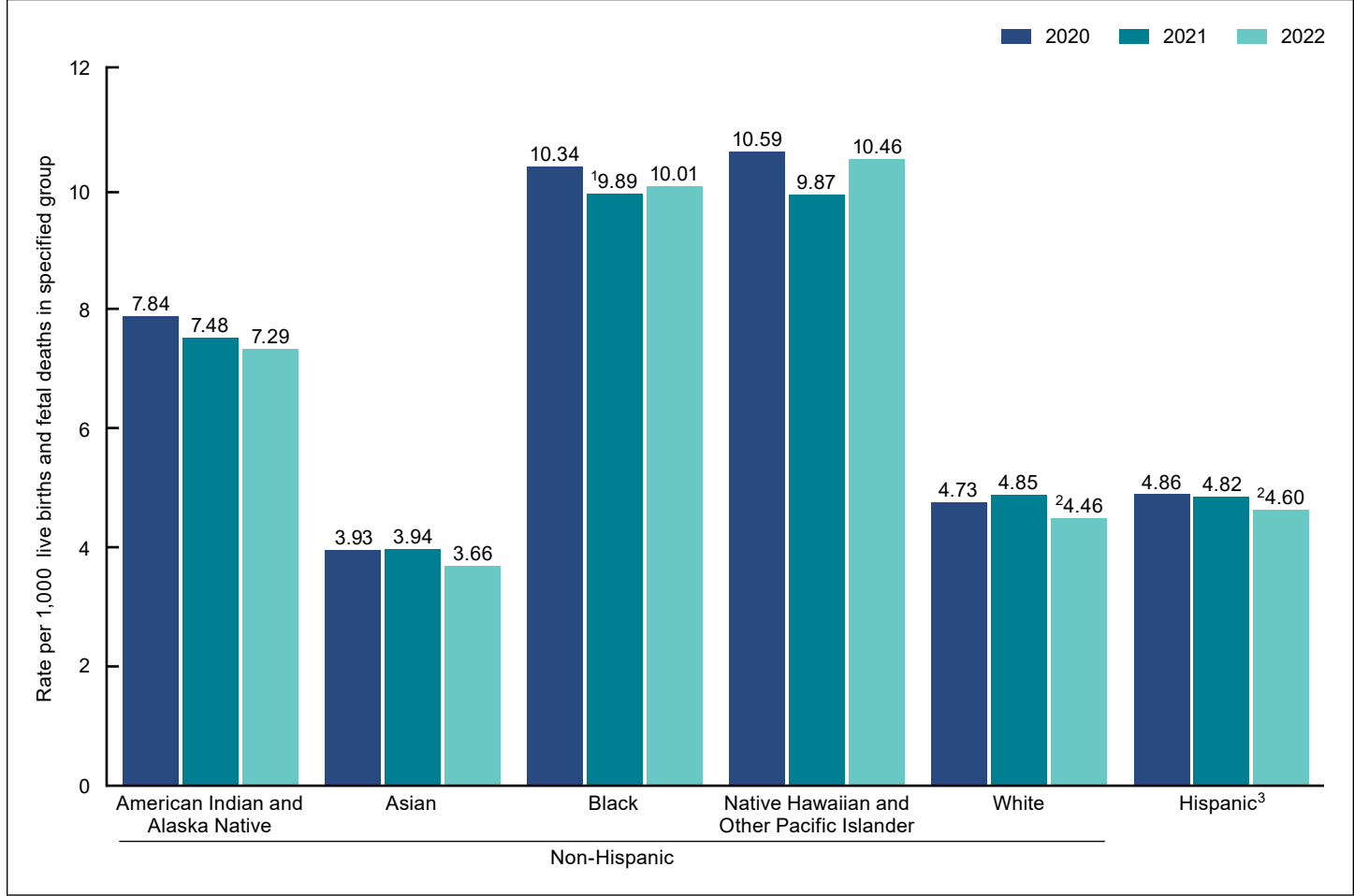
This analysis of provisional 2022 fetal mortality data found that total, early, and late fetal mortality rates declined by 4% to 6%. From 2021 to 2022, rates declined by 8% for White women and by 5% for Hispanic women. No significant change was observed in the fetal mortality rate for all other race and Hispanic-origin groups during this time. Fetal mortality rates declined in seven states from 2021 to 2022; however, the small number of fetal deaths in some states by year can limit the ability to detect statistically significant changes between years and between states.

In comparison, between 2020 and 2021, the fetal mortality rate was essentially unchanged overall, and for most characteristics studied, except for a 4% decline in the rate for Black women.

References

1. Gregory ECW, Valenzuela CP, Martin JA. Fetal mortality in the United States: Trends from 2014 through 2019 and changes between 2018–2019 and 2019–2020. Vital Statistics Rapid Release; no 18.

Figure 2. Fetal mortality rate, by race and Hispanic origin of mother: United States, final 2020 and 2021 and provisional 2022 data



¹Significantly lower than 2020 ($p < 0.05$).
²Significantly lower than 2021 ($p < 0.05$).
³People of Hispanic origin may be of any race.
SOURCE: National Center for Health Statistics, National Vital Statistics System.

Hyattsville, MD: National Center for Health Statistics. January 2022. DOI: <https://dx.doi.org/10.15620/cdc:113008>.

2. Gregory ECW, Valenzuela CP, Martin JA. Fetal mortality in the United States: Final 2019–2020 and 2020–provisional 2021. Vital Statistics Rapid Release; no 26. Hyattsville, MD: National Center for Health Statistics. January 2023. DOI: <https://dx.doi.org/10.15620/cdc:122292>.

3. Office of Management and Budget. Revisions to the standards for the classification of federal data on race and ethnicity. Fed Regist 62(210):58781–90. 1997.

4. National Center for Health Statistics. User guide to the 2021 fetal death public use file. 2023. Available from: https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/DVS/fetaldeath/2021fetaluserguide.pdf.

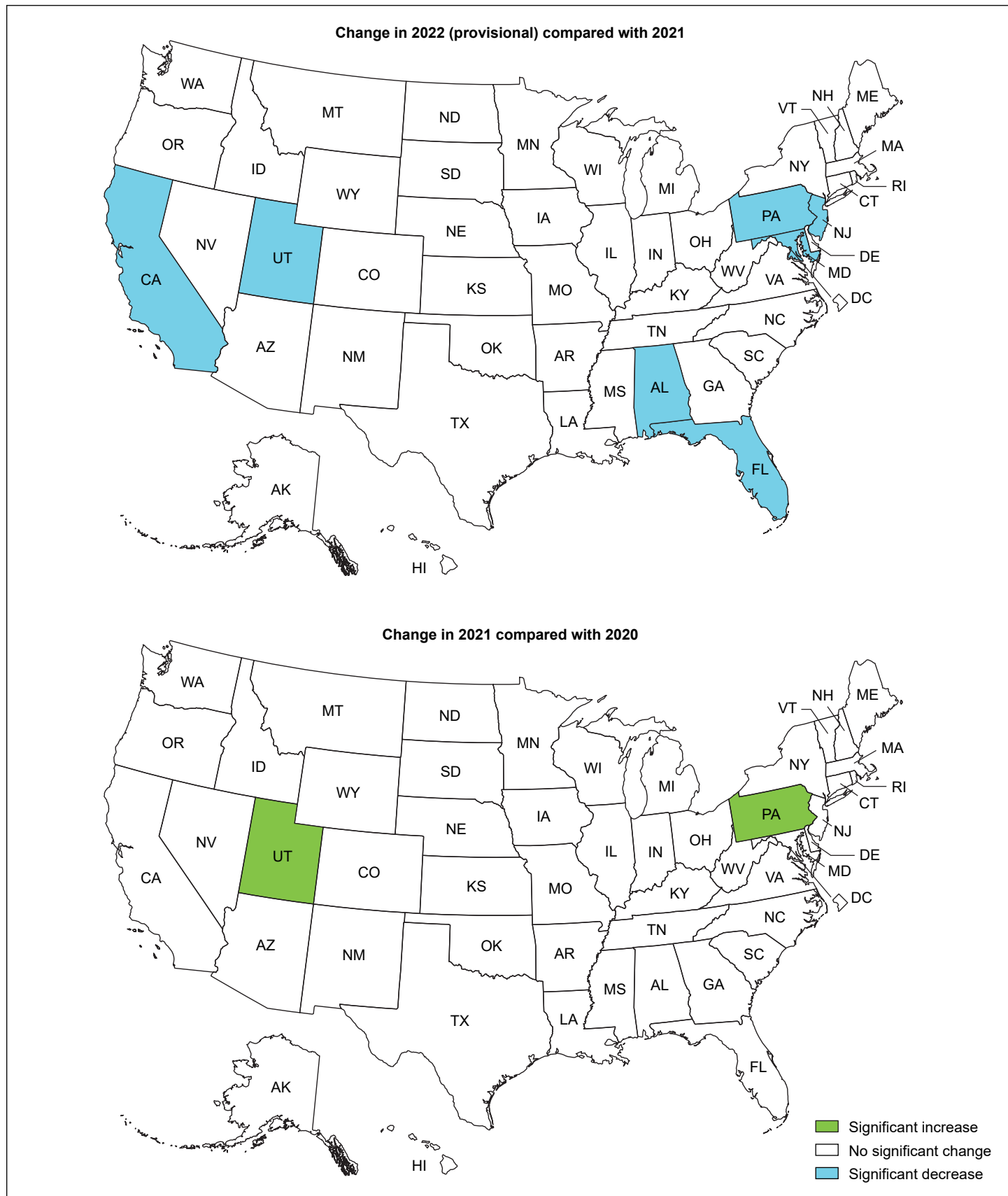
List of Detailed Tables

Report tables

1. Number of fetal deaths and fetal mortality rates, by selected characteristics: United States, final 2020 and 2021 and provisional 2022 data	5
2. Number of fetal deaths and fetal mortality rates, by state of residence: United States, final 2020 and 2021 and provisional 2022 data	6

Vital Statistics Surveillance Report

Figure 3. Change in fetal mortality rate, by state of residence: United States, final 2021–provisional 2022 and final 2020–2021 data



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

Vital Statistics Surveillance Report

Table 1. Number of fetal deaths and fetal mortality rates, by selected characteristics: United States, final 2020 and 2021 and provisional 2022 data

Selected characteristics	Number of fetal deaths			Fetal mortality rate ¹			Percent change	
	2020	2021	2022	2020	2021	2022	2020–2021	2021–2022
Total ²	20,854	21,105	20,091	5.74	5.73	5.45	0	†-5
Early ^{3,4}	10,764	10,824	10,212	2.97	2.95	2.78	-1	†-6
Late ^{4,5}	10,090	10,281	9,879	2.78	2.80	2.69	1	†-4
Non-Hispanic, single race: ⁶								
American Indian and Alaska Native	212	197	189	7.84	7.48	7.29	-5	-3
Asian	864	846	805	3.93	3.94	3.66	0	-7
Black	5,536	5,173	5,172	10.34	9.89	10.01	†-4	1
Native Hawaiian and Other Pacific Islander	103	95	107	10.59	9.87	10.46	-7	6
White	8,753	9,196	8,246	4.73	4.85	4.46	3	†-8
Hispanic ⁷	4,231	4,290	4,330	4.86	4.82	4.60	-1	†-5

† Significant change ($p < 0.05$).
¹Number of fetal deaths in specified group per 1,000 live births and fetal deaths.
²Fetal deaths with stated or presumed period of gestation of 20 weeks or more.
³Fetal deaths at 20–27 weeks of gestation.
⁴Not-stated gestational age is proportionally distributed.
⁵Fetal deaths at 28 weeks of gestation or more.
⁶Race 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 1997 Office of Management and Budget standards. Single race is defined as only one race reported on the fetal death report.
⁷Includes all people of Hispanic origin of any race.
 SOURCE: National Center for Health Statistics, National Vital Statistics System.

Vital Statistics Surveillance Report

Table 2. Number of fetal deaths and fetal mortality rate, by state of residence: United States, final 2020 and 2021 and provisional 2022 data

Area	Number of fetal deaths			Fetal mortality rate ¹			Percent change in rate	
	2020	2021	2022	2020	2021	2022	2020–2021	2021–2022
Alabama	489	510	427	8.41	8.71	7.29	4	†-16
Alaska	54	57	54	5.67	6.05	5.74	7	-5
Arizona	459	485	492	5.93	6.19	6.22	4	0
Arkansas	318	304	265	8.94	8.38	7.42	-6	-11
California	2,196	2,243	2,095	5.20	5.30	4.97	2	†-6
Colorado	327	312	308	5.29	4.93	4.91	-7	0
Connecticut ²	149	162	168	4.43	4.52	4.73	2	5
Delaware	57	54	56	5.46	5.13	5.15	-6	0
District of Columbia	70	65	65	7.83	7.45	7.99	-5	7
Florida	1,458	1,594	1,539	6.91	7.32	6.81	6	†-7
Georgia	1,007	1,016	1,004	8.16	8.12	7.90	0	-3
Hawaii	103	109	97	6.48	6.93	6.21	7	-10
Idaho	117	112	91	5.40	4.97	4.05	-8	-19
Illinois	754	795	742	5.62	5.98	5.75	6	-4
Indiana	476	426	436	6.02	5.30	5.44	-12	3
Iowa	166	164	161	4.58	4.43	4.39	-3	-1
Kansas	168	195	203	4.86	5.59	5.87	15	5
Kentucky	327	329	281	6.29	6.26	5.34	0	-15
Louisiana	322	302	293	5.59	5.23	5.16	-6	-1
Maine	74	67	63	6.37	5.55	5.18	-13	-7
Maryland	466	457	367	6.75	6.65	5.31	-1	†-20
Massachusetts	278	290	267	4.17	4.18	3.88	0	-7
Michigan	612	601	617	5.85	5.69	5.99	-3	5
Minnesota	343	349	349	5.38	5.39	5.42	0	1
Mississippi	380	355	320	10.60	10.00	9.14	-6	-9
Missouri	431	388	358	6.18	5.56	5.16	-10	-7
Montana	44	39	54	4.06	3.46	4.81	-15	39
Nebraska	104	99	110	4.26	4.01	4.50	-6	12
Nevada	260	280	234	7.67	8.24	7.00	7	-15
New Hampshire	54	73	55	4.56	5.75	4.53	26	-21
New Jersey	658	612	504	6.67	5.99	4.87	-10	†-19
New Mexico	77	84	69	3.50	3.91	3.18	12	-19
New York (including New York City)	1,338	1,285	1,208	6.35	6.06	5.78	-5	-5
North Carolina	680	652	689	5.79	5.38	5.64	-7	5
North Dakota	61	52	45	6.03	5.12	4.68	-15	-9
Ohio	746	759	744	5.74	5.81	5.77	1	-1
Oklahoma	302	269	290	6.30	5.53	5.96	-12	8
Oregon	205	187	195	5.12	4.55	4.91	-11	8
Pennsylvania	668	777	661	5.09	5.82	5.05	†14	†-13
Rhode Island	63	56	52	6.20	5.32	5.04	-14	-5
South Carolina	310	323	287	5.53	5.62	4.94	2	-12
South Dakota	67	76	53	6.08	6.64	4.71	9	-29
Tennessee	520	537	529	6.56	6.53	6.39	0	-2
Texas	1,492	1,457	1,591	4.04	3.88	4.07	-4	5
Utah	235	309	252	5.12	6.57	5.48	†28	†-17
Vermont	27	27	21	5.23	4.99	3.93	-5	-21
Virginia	466	493	491	4.89	5.12	5.11	5	0
Washington	448	451	418	5.36	5.35	4.99	0	-7
West Virginia	80	93	64	4.60	5.38	3.77	17	-30
Wisconsin	317	321	321	5.20	5.17	5.32	-1	3
Wyoming	31	53	36	5.03	8.43	5.92	68	-30

† Significant change ($p < 0.05$).

¹Number of fetal deaths per 1,000 live births and fetal deaths.

²Fetal deaths for Connecticut may be underreported in 2020.

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

Vital Statistics Surveillance Report

Suggested citation

Gregory ECW, Valenzuela CP, Martin JA. Fetal mortality in the United States: Final 2020–2021 and 2021–provisional 2022. Vital Statistics Rapid Release; no 32. Hyattsville, MD: National Center for Health Statistics. November 2023. DOI: <https://doi.org/10.15620/cdc:133319>.

Copyright information

All material appearing in this report is in the public domain and may be reproduced or copied without permission; citation as to source, however, is appreciated.

National Center for Health Statistics

Brian C. Moyer, Ph.D., *Director*

Amy M. Branum, Ph.D., *Associate
Director for Science*

Division of Vital Statistics

Paul D. Sutton, Ph.D., *Acting Director*

Andrés A. Berruti, Ph.D., M.A.,
Associate Director for Science