

Fetal Mortality in the United States: Final 2021–2022 and 2022–Provisional 2023

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Abstract

Objectives—This report describes changes in total, early, and late fetal mortality between 2022 and 2023 (provisional), as well as fetal mortality by maternal race and Hispanic origin and state of residence. Comparisons are made with findings from 2021 to 2022.

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 2021 and 2022 are final and data for 2023 are provisional.

Results—In 2023, the overall fetal mortality rate was 5.52 fetal deaths per 1,000 live births and fetal deaths, which was not significantly different from the 2022 rate (5.48). From 2022 to 2023, the early fetal mortality rate (20–27 weeks of gestation) significantly increased by 4% to 2.89 per 1,000, while the late fetal mortality rate (28 weeks of gestation or more) was essentially unchanged at 2.64. Among the race and Hispanic-origin groups, the fetal mortality rate increased for Asian non-Hispanic women and was not significantly different for other groups. Fetal mortality rates increased in 4 states, declined in 1 state, and were not significantly different for 45 states and the District of Columbia from 2022 to 2023. In comparison, from 2021 to 2022, the fetal mortality rate declined for

total, early, and late fetal deaths, as well as for White non-Hispanic women and in five states.

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

Introduction

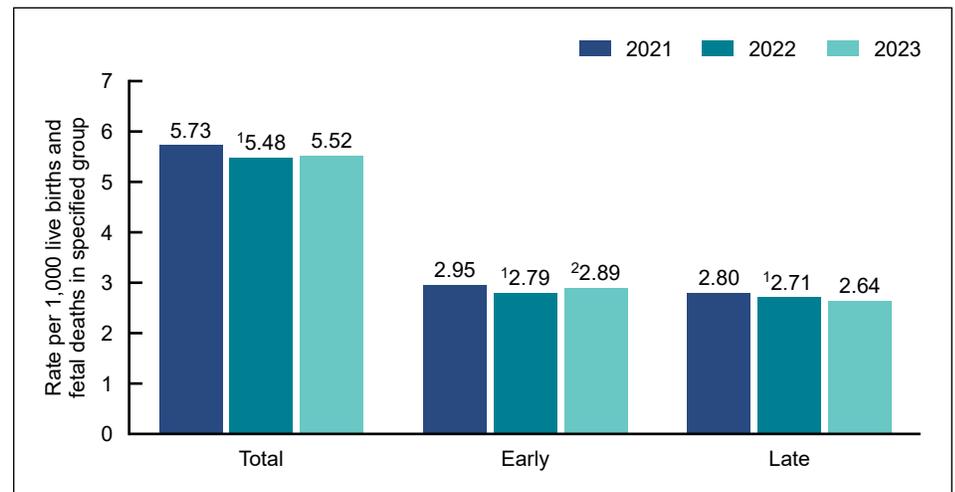
This report presents 2023 provisional national fetal death data for selected maternal and fetal characteristics, providing more timely data for public

health surveillance. Changes in fetal mortality rates overall and by maternal race and Hispanic origin and state of residence are examined from 2022 to 2023, and comparisons are made with findings for the period 2021 to 2022.

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

Figure 1. Total, early, and late fetal mortality rates: United States, 2021 and 2022 final and 2023 provisional



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

²Significantly higher than 2022 ($p < 0.05$).

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. Late fetal mortality rate is the number of fetal deaths at 28 weeks of gestation or more.

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

residents of the United States. Fetal death data for 2021 and 2022 are final. Data for 2023 are provisional and are based on reports of fetal death received and processed by the National Center for Health Statistics as of June 13, 2024, representing about 99.7% of the expected count for 2023. Statistics from previous provisional reports have been shown to be consistent with the final statistics for the respective years (1–3).

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 (4), 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.

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 2022 user guide (5).

Results

Changes in total, early, and late fetal mortality rates, 2021–2022 and 2022–2023

- In 2023 (provisional), the total fetal mortality rate was 5.52, which was not significantly different from the rate in 2022 (5.48) (Table 1, Figure 1). From 2021 (5.73) to 2022, the rate declined 4%.
- The early fetal mortality rate (20–27 weeks of gestation) increased by 4% from 2022 (2.79) to 2023 (2.89). From 2021 (2.95) to 2022, the rate declined 5%.
- The late fetal mortality rate (28 weeks of gestation or more) was 2.64 in 2023, which was not significantly different from the rate in 2022 (2.71). From 2021 (2.80) to 2022, the rate declined 3%.

Changes in fetal mortality rate by race and Hispanic origin, 2021–2022 and 2022–2023

- For Asian women, the fetal mortality rate increased 12% from 2022 (3.70) to 2023 (4.13) (Table 1, Figure 2). The rate for this group was not significantly different between 2021 (3.94) and 2022.
- From 2022 to 2023, the fetal mortality rate did not change significantly for American Indian and Alaska Native (from 7.22 to 6.75), Black (10.05 to 9.89), Native Hawaiian and Other Pacific Islander (10.36 to 10.18), White (4.48 to 4.55), and Hispanic (4.63 to 4.74) women. Rates for these groups were also not significantly different between 2021 and 2022, except for White women, for whom the rate decreased by 8%.

Change in fetal mortality rate by state, 2021–2022 and 2022–2023

- From 2022 to 2023, the fetal mortality rate increased in four states, ranging from 16% in New Jersey (4.82 to 5.57) to 27% in Colorado (4.87 to 6.19) (Table 2, Figure 3). The rate decreased 13% in Tennessee (6.50 to 5.64). Changes in the rate were not significant for the remaining 45 states and the District of Columbia.
- In contrast, from 2021 to 2022, the fetal mortality rate decreased in 5 states (Alabama, Maryland, New Jersey, Pennsylvania, and Utah) and was not significantly different for 45 states and the District of Columbia.

Summary

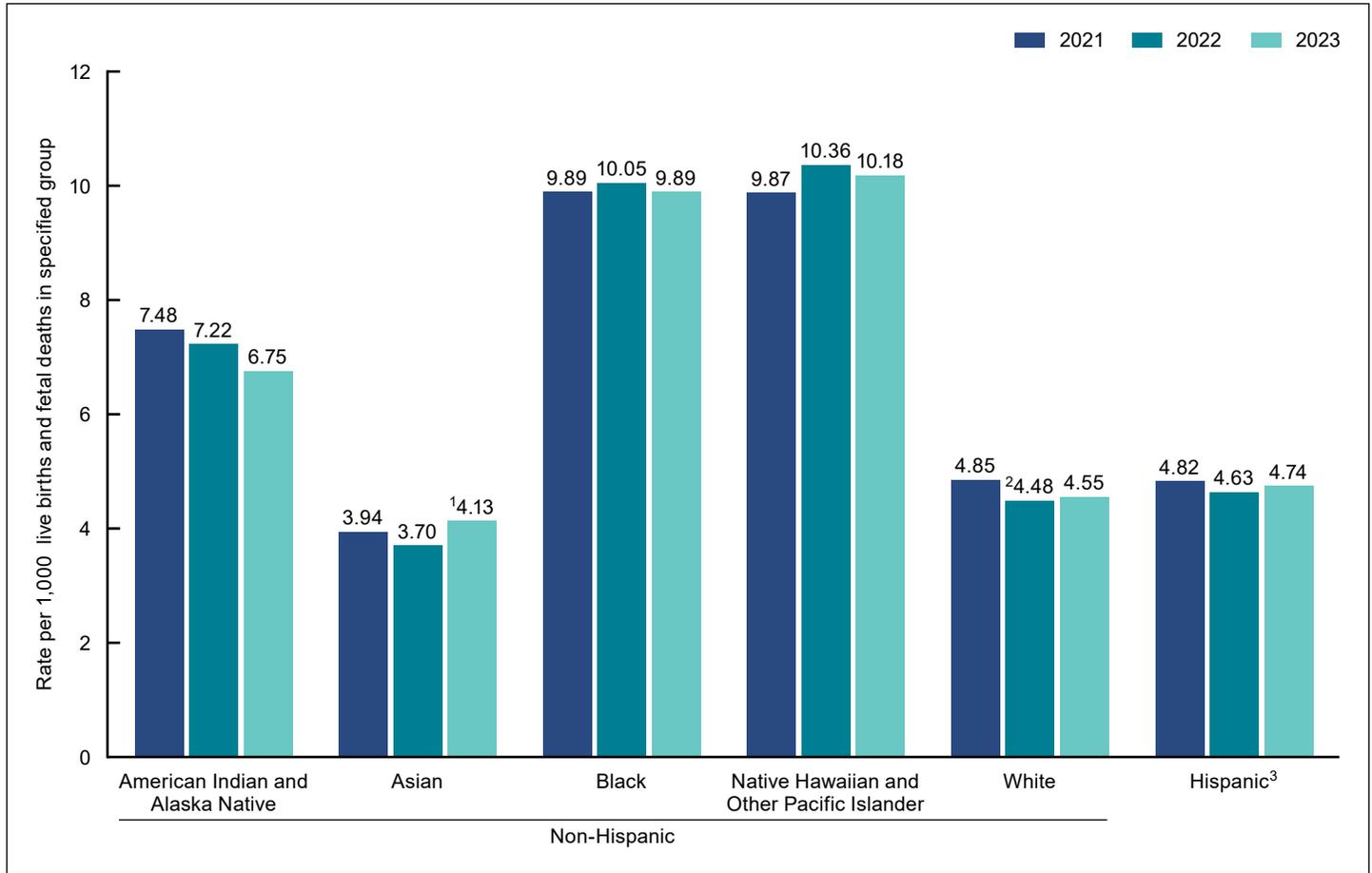
This analysis of provisional 2023 fetal mortality data found that the overall fetal mortality rate was not significantly different from the 2022 rate; however, the early fetal mortality rate increased by 4%. The late fetal mortality rate was essentially unchanged. During this time, the rate increased by 12% for Asian women, while no significant change was observed in the rate for all other race and Hispanic-origin groups. Fetal mortality rates increased in four states and declined in one state from 2022 to 2023; 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 2021 and 2022, the fetal mortality rate declined for total, early, and late fetal deaths, as well as for White women. Rates also declined for five states.

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Figure 2. Fetal mortality rate, by race and Hispanic origin of mother: United States, 2021 and 2022 final and 2023 provisional



¹Significantly higher than 2022 ($p < 0.05$).
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.

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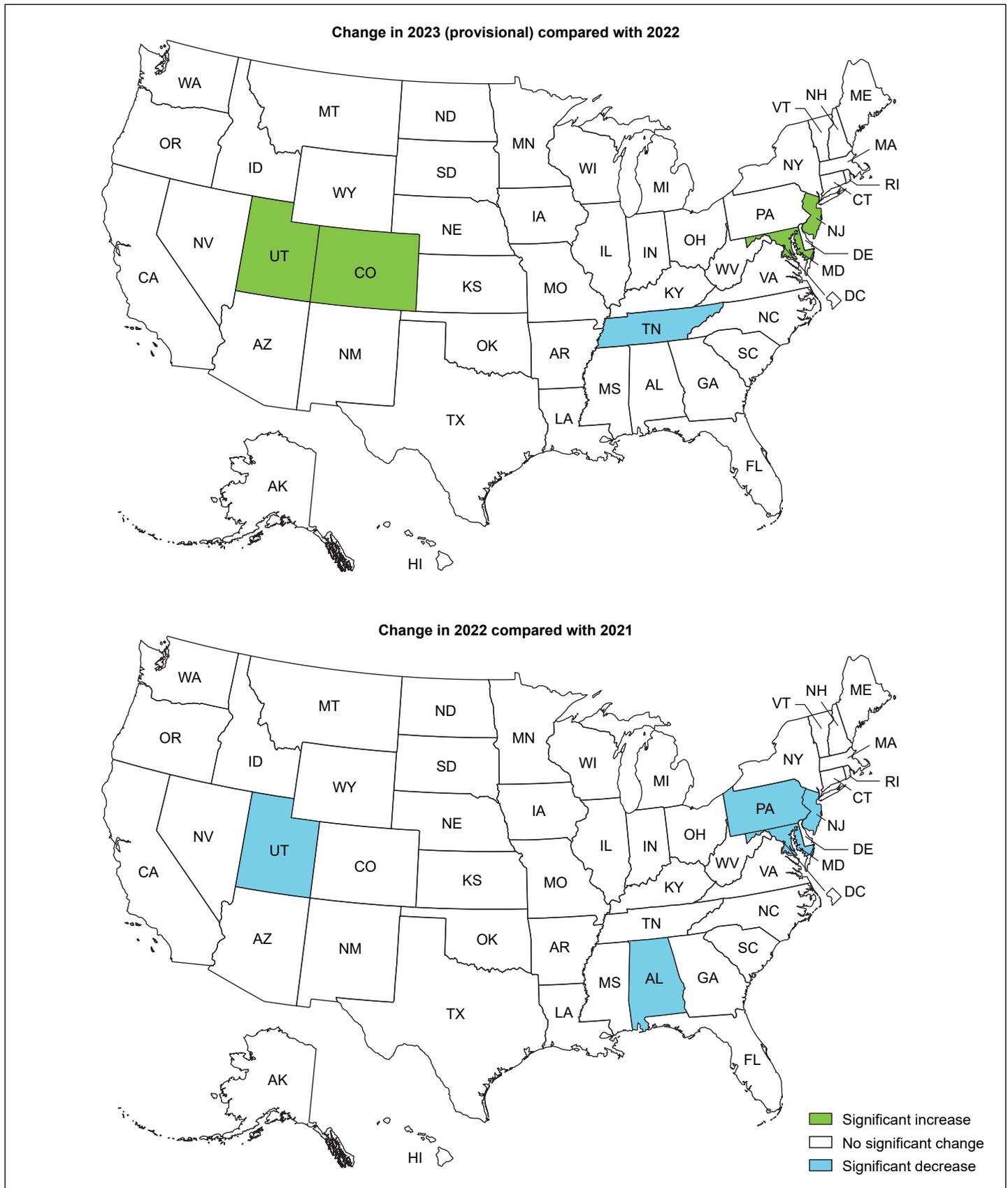
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SOURCE: National Center for Health Statistics, National Vital Statistics System.

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Table 1. Number of fetal deaths and births and fetal mortality rate, by selected characteristics: United States, final 2021 and 2022 and provisional 2023 data

Selected characteristics	Number of fetal deaths			Number of live births			Fetal mortality rate ¹			Percent change in rate	
	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021–2022	2022–2023
Total ²	21,105	20,202	19,943	3,664,292	3,667,758	3,596,017	5.73	5.48	5.52	†-4	1
Early ^{3,4}	10,824	10,246	10,413	3,664,292	3,667,758	3,596,017	2.95	2.79	2.89	†-5	†4
Late ^{4,5}	10,281	9,956	9,530	3,664,292	3,667,758	3,596,017	2.80	2.71	2.64	†-3	-3
Non-Hispanic, single race: ⁶											
American Indian and Alaska Native	197	187	167	26,124	25,721	24,571	7.48	7.22	6.75	-3	-7
Asian	846	813	894	213,813	218,994	215,738	3.94	3.70	4.13	-6	†12
Black	5,173	5,194	4,910	517,889	511,439	491,494	9.89	10.05	9.89	2	-2
Native Hawaiian and Other Pacific Islander	95	106	104	9,531	10,122	10,115	9.87	10.36	10.18	5	-2
White	9,196	8,280	8,174	1,887,656	1,840,739	1,787,051	4.85	4.48	4.55	†-8	2
Hispanic ⁷	4,290	4,359	4,503	885,916	937,421	945,200	4.82	4.63	4.74	-4	2

† 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 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 the 1997 Office of Management and Budget standards. Single race is defined as only one race reported on the report of fetal death.

⁷Includes all people of Hispanic origin of any race.

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

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Table 2. Number of fetal deaths and births and fetal mortality rate, by state of residence: United States, final 2021 and 2022 and provisional 2023 data

Area	Number of fetal deaths			Number of live births			Fetal mortality rate ¹			Percent change in rate	
	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021–2022	2022–2023
Alabama	510	426	432	58,054	58,149	57,858	8.71	7.27	7.41	†-17	2
Alaska	57	54	42	9,367	9,359	9,015	6.05	5.74	4.64	-5	-19
Arizona	485	492	494	77,916	78,547	78,096	6.19	6.22	6.29	0	1
Arkansas	304	265	248	35,965	35,471	35,264	8.38	7.42	6.98	-11	-6
California	2,243	2,115	1,996	420,608	419,104	400,108	5.30	5.02	4.96	-5	-1
Colorado	312	305	383	62,949	62,383	61,494	4.93	4.87	6.19	-1	†27
Connecticut	162	175	163	35,670	35,332	34,559	4.52	4.93	4.69	9	-5
Delaware	54	56	62	10,482	10,816	10,427	5.13	5.15	5.91	0	15
District of Columbia	65	65	53	8,660	8,075	7,896	7.45	7.99	6.67	7	-17
Florida	1,594	1,548	1,504	216,260	224,433	221,410	7.32	6.85	6.75	-6	-1
Georgia	1,016	1,000	960	124,073	126,130	125,120	8.12	7.87	7.61	-3	-3
Hawaii	109	97	92	15,620	15,535	14,808	6.93	6.21	6.17	-10	-1
Idaho	112	91	124	22,427	22,391	22,397	4.97	4.05	5.51	-19	36
Illinois	795	737	741	132,189	128,350	124,820	5.98	5.71	5.90	-5	3
Indiana	426	439	481	79,946	79,649	79,000	5.30	5.48	6.05	3	10
Iowa	164	163	159	36,835	36,506	36,052	4.43	4.45	4.39	0	-1
Kansas	195	205	183	34,705	34,401	34,065	5.59	5.92	5.34	6	-10
Kentucky	329	283	276	52,214	52,315	51,984	6.26	5.38	5.28	-14	-2
Louisiana	302	300	284	57,437	56,479	54,927	5.23	5.28	5.14	1	-3
Maine	67	63	41	12,006	12,093	11,627	5.55	5.18	3.51	-7	-32
Maryland	457	366	423	68,285	68,782	65,594	6.65	5.29	6.41	†-20	†21
Massachusetts	290	284	259	69,137	68,584	67,093	4.18	4.12	3.85	-1	-7
Michigan	601	614	530	104,980	102,321	99,124	5.69	5.96	5.32	5	-11
Minnesota	349	351	321	64,425	64,015	61,715	5.39	5.45	5.17	1	-5
Mississippi	355	320	343	35,156	34,675	34,459	10.00	9.14	9.86	-9	8
Missouri	388	358	372	69,453	68,985	67,123	5.56	5.16	5.51	-7	7
Montana	39	54	49	11,231	11,175	11,078	3.46	4.81	4.40	39	-9
Nebraska	99	110	121	24,609	24,345	24,111	4.01	4.50	4.99	12	11
Nevada	280	235	250	33,686	33,193	31,794	8.24	7.03	7.80	-15	11
New Hampshire	73	56	44	12,625	12,077	11,936	5.75	4.62	3.67	-20	-21
New Jersey	612	498	566	101,497	102,893	101,001	5.99	4.82	5.57	†-20	†16
New Mexico	84	69	96	21,391	21,614	20,951	3.91	3.18	4.56	-19	43
New York (including New York City)	1,285	1,211	1,139	210,742	207,774	203,612	6.06	5.79	5.56	-4	-4
North Carolina	652	696	697	120,466	121,562	120,082	5.38	5.69	5.77	6	1
North Dakota	52	47	42	10,112	9,567	9,647	5.12	4.89	4.33	-4	-11
Ohio	759	741	777	129,791	128,231	126,896	5.81	5.75	6.09	-1	6
Oklahoma	269	293	266	48,410	48,332	47,909	5.53	6.03	5.52	9	-8
Oregon	187	195	180	40,914	39,493	38,298	4.55	4.91	4.68	8	-5
Pennsylvania	777	663	592	132,622	130,252	126,951	5.82	5.06	4.64	†-13	-8
Rhode Island	56	52	49	10,464	10,269	9,805	5.32	5.04	4.97	-5	-1

See footnotes at end of table.

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Table 2. Number of fetal deaths and births and fetal mortality rate, by state of residence: United States, final 2021 and 2022 and provisional 2023 data—Con.

Area	Number of fetal deaths			Number of live births			Fetal mortality rate ¹			Percent change in rate	
	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021–2022	2022–2023
South Carolina	323	288	310	57,185	57,820	57,729	5.62	4.96	5.34	-12	8
South Dakota	76	54	84	11,369	11,201	11,201	6.64	4.80	7.44	-28	55
Tennessee	537	538	471	81,717	82,265	83,021	6.53	6.50	5.64	0	†-13
Texas	1,457	1,613	1,593	373,594	389,741	387,945	3.88	4.12	4.09	6	-1
Utah	309	252	296	46,712	45,768	45,019	6.57	5.48	6.53	†-17	†19
Vermont	27	21	19	5,384	5,316	5,065	4.99	3.93	3.74	-21	-5
Virginia	493	497	496	95,825	95,630	92,649	5.12	5.17	5.33	1	3
Washington	451	421	430	83,911	83,333	80,932	5.35	5.03	5.29	-6	5
West Virginia	93	70	62	17,198	16,929	16,606	5.38	4.12	3.72	-23	-10
Wisconsin	321	320	315	61,781	60,049	59,754	5.17	5.30	5.24	3	-1
Wyoming	53	36	33	6,237	6,049	5,990	8.43	5.92	5.48	-30	-7

† Significant change ($p < 0.05$).

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

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

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Suggested citation

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