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Fetal Mortality in the United States: Final 2019–2020 and 2020–Provisional 2021

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Abstract

Objectives—This report describes changes from 2020 to 2021 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 2019 to 2020.

Methods—Data are based on reports of fetal death filed in the 50 states and the District of Columbia (D.C.) 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 2019 and 2020 are final and data for 2021 are provisional.

Results—From 2020 to 2021, the overall, early, and late fetal mortality rates, as well as rates for non-Hispanic White and Hispanic women, did not change significantly. The fetal mortality rate for non-Hispanic Black women declined by 5%. Fetal mortality rates increased in 2 states, decreased in 1 state, and were not significantly different for 47 states and D.C. from 2020 to 2021. Similar results were observed from 2019 to 2020, that is, fetal mortality rates were not significantly different overall, for early and late fetal deaths, for the three largest race and Hispanic-origin groups, and for most states.

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

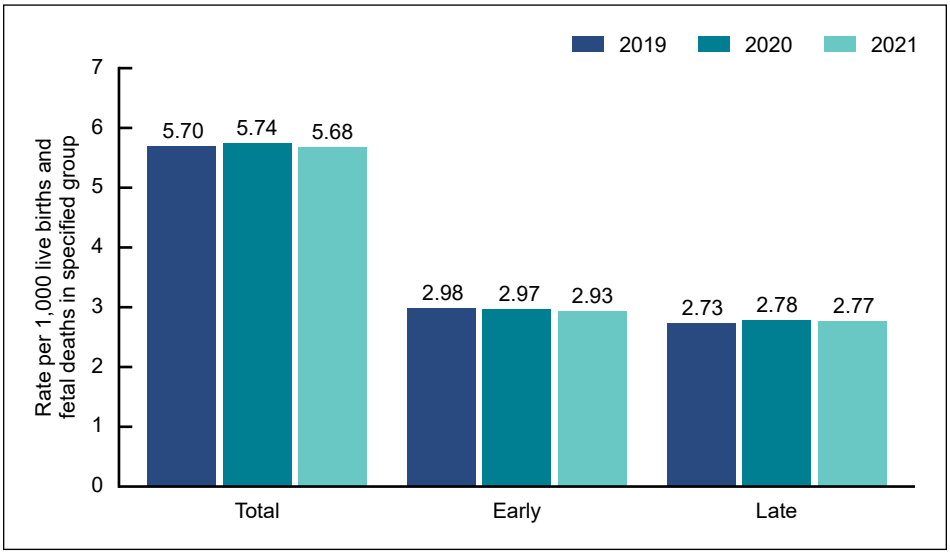
Introduction

From 2019 to 2020, the first year of the COVID-19 pandemic, no significant change was seen in the national fetal mortality rate (1) despite reports of a possible association between COVID-19 in pregnancy and fetal death (2,3). This lack of change was also seen by gestational age, for the three largest race and Hispanic-origin groups, and generally by state of residence (1). This report continues to monitor these measures for change as the COVID-19 pandemic continued, using provisional 2021 data. Changes in fetal mortality rates overall and by maternal race and Hispanic origin and state of residence are described from 2020 to 2021, and comparisons are made with findings from 2019 to 2020.

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

Figure 1. Total, early, and late fetal mortality rates: United States, final 2019 and 2020 and provisional 2021 data



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.

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at 20 weeks of gestation or more to residents of the United States. Fetal death data for 2019 and 2020 are final. Data for 2021 are provisional and based on reports of fetal death received and processed by the National Center for Health Statistics as of June 17, 2022, representing about 99.5% of the expected count for 2021.

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

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 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 non-Hispanic single-race White, non-Hispanic single-race Black, and Hispanic. For brevity, text references to non-Hispanic White or non-Hispanic Black women omit the term "single race." Other groups are not shown separately due to small numbers.

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 result in lack of reliability for state-specific fetal mortality rates. This can limit the ability to detect statistically significant changes between years.

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 2020 User Guide (5).

Results

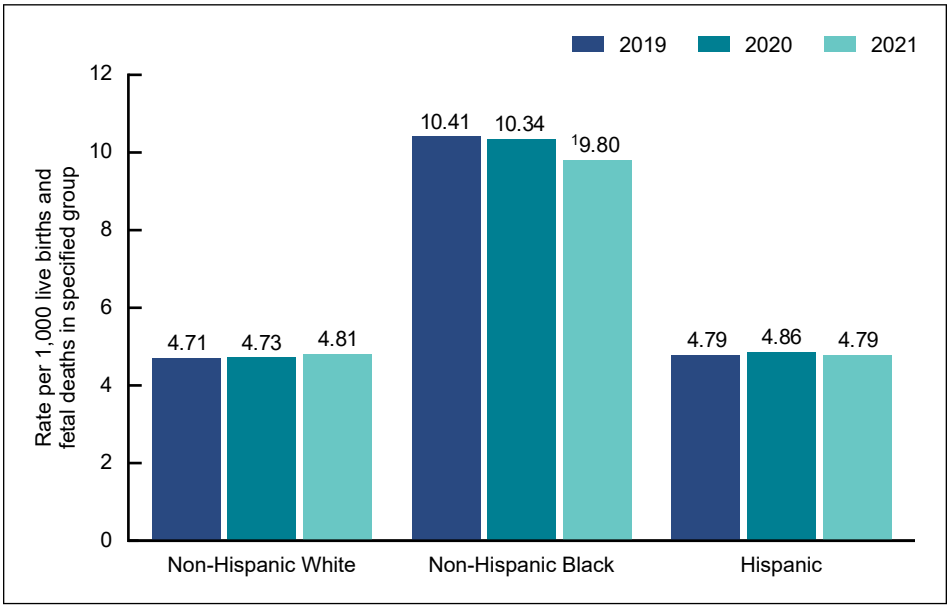
Changes in total, early, and late fetal mortality rates, 2019–2020 and 2020–2021

- In 2021, the total fetal mortality was 5.68, which was not significantly different from the rate of 5.74 in 2020. The rate also did not change significantly from 2019 (5.70) to 2020 (Table 1 and Figure 1).
- The early fetal mortality rate (20–27 weeks of gestation) was 2.93 in 2021, which was not significantly different from the rate in 2020 (2.97). The rate was also essentially unchanged from 2019 (2.98) to 2020.
- The late fetal mortality rate (28 weeks of gestation or more) was essentially unchanged from 2020 (2.78) to 2021 (2.77). The rate was also not significantly different from 2019 (2.73) to 2020.

Changes in fetal mortality rate by race and Hispanic origin, 2019–2020 and 2020–2021

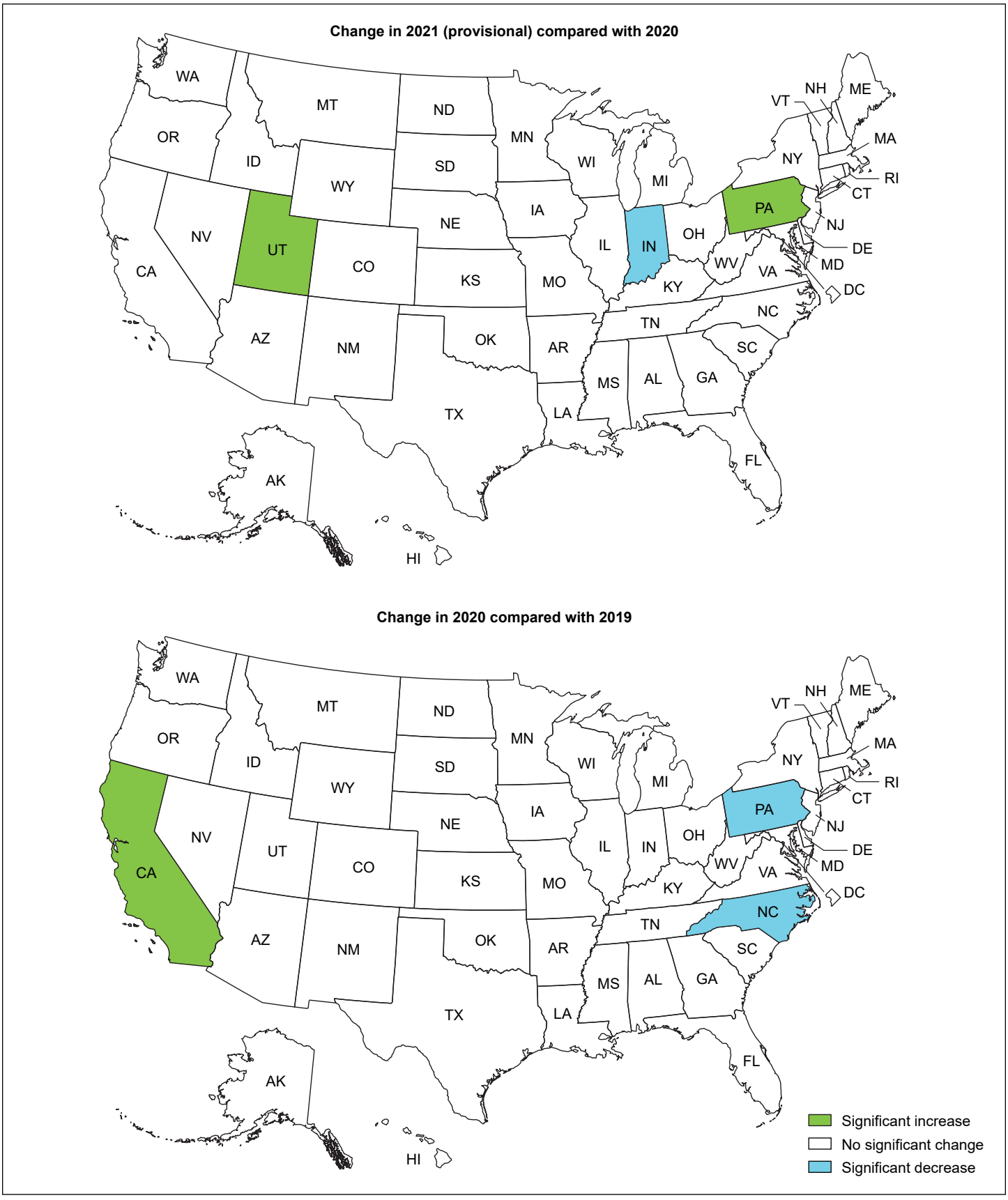
- The fetal mortality rate for non-Hispanic White women was not significantly different for 2021 (4.81) compared with 2020 (4.73). The rate was also stable from 2019 (4.71) to 2020 (Table 1 and Figure 2).
- For non-Hispanic Black women, a 5% decline was seen in the fetal mortality rate from 2020 (10.34) to 2021 (9.80). In comparison, the rate was not significantly different from 2019 (10.41) to 2020.
- For Hispanic women, the fetal mortality rate was not significantly different from 2020 (4.86) to 2021 (4.79). Similarly, no significant change was seen in the rate from 2019 (4.79) to 2020.

Figure 2: Fetal mortality rate, by race and Hispanic origin of mother: United States, final 2019 and 2020 and provisional 2021 data



[1]Significantly lower than 2020 ($p < 0.05$).
SOURCE: National Center for Health Statistics, National Vital Statistics System.

Figure 3. Change in fetal mortality rate, by state of residence: United States, final 2020–provisional 2021 and final 2019–2020 data



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

Change in fetal mortality rate by state, 2019–2020 and 2020–2021

- From 2020 to 2021, changes in the fetal mortality rate were not significant for 47 states and the District of Columbia (D.C.). The rate increased 13% in Pennsylvania (from 5.09 to 5.75) and 29% in Utah (from 5.12 to 6.59) and decreased 14% in Indiana (from 6.02 to 5.15) (Table 2 and Figure 3).
- Changes in the fetal mortality rate were also not significant in 47 states and D.C. in 2020 compared with 2019. The fetal mortality rate declined in 2 states (Pennsylvania and North Carolina) and increased in 1 state (California).

Summary

This report found that total, early, and late fetal mortality rates did not change significantly from 2020 to 2021, the second year of the COVID-19 pandemic; a similar lack of change in these measures was seen for 2019–2020. The only significant change between 2020 and 2021 in fetal mortality was for non-Hispanic Black women, for whom the fetal mortality rate declined 5%; this rate is down a total of 6% from 2019. Rates were essentially unchanged for non-Hispanic White and Hispanic women between 2020 and 2021, also similar to patterns observed for 2019–2020.

Fetal mortality rates were not significantly different for nearly all reporting areas (47 states and D.C.) from 2020 to 2021; a similar lack of change for most states was seen for 2019–2020. However, state-specific fetal mortality rates are subject to more variation than the national rate due to small numbers, and 1-year differences may be difficult to detect in small states.

Except for the decline for non-Hispanic Black women, fetal mortality rates were unchanged overall and for other groups studied for 2020–2021, the second year of the COVID-19 pandemic, following a pattern similar to that seen for 2019–2020, the first year of the pandemic.

A study based on a large U.S. hospital-based administrative database, and another based on a systematic review and meta-analysis of observational studies, have found an association between COVID-19 in pregnancy and fetal death (2,3). Another recent study found a small shift in the distribution of cause of fetal death that may be associated with COVID-19 (6). Although this report did not find an overall increase in fetal mortality in the United States between 2020 and 2021, it is important to note that maternal COVID-19 status is not routinely collected on reports of fetal death unless entered as a cause of death and, therefore, its impact cannot be directly examined here.

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List of Detailed Tables

Report tables

Table 1. Number of fetal deaths and fetal mortality rates, by selected characteristics: United States, final 2019 and 2020 and provisional 2021 data

Selected characteristics	Number of fetal deaths			Fetal mortality rate[1]			Percent change	
	2019	2020	2021	2019	2020	2021	2019–2020	2020–2021
Total[2]	21,478	20,854	20,948	5.70	5.74	5.68	1	–1
Early[3,4]	11,216	10,764	10,764	2.98	2.97	2.93	0	–1
Late[4,5]	10,262	10,090	10,184	2.73	2.78	2.77	2	0
Race and Hispanic origin[2,6]:								
Non-Hispanic, single race White	9,067	8,753	9,125	4.71	4.73	4.81	0	2
Non-Hispanic, single race Black	5,766	5,536	5,125	10.41	10.34	9.80	–1	*–5
Hispanic[7]	4,264	4,231	4,263	4.79	4.86	4.79	1	–1

* Significant change ($p < 0.05$).
[1]Number of fetal deaths in specified group per 1,000 live births and fetal deaths.
[2]Fetal deaths with stated or presumed period of gestation of 20 weeks or more.
[3]Fetal deaths at 20–27 weeks of gestation.
[4]Not-stated gestational age is proportionally distributed.
[5]Fetal deaths at 28 weeks of gestation or more.
[6]Race and Hispanic origin are reported separately on reports of fetal death; persons 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.
[7]Includes all persons of Hispanic origin of any race.

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

Table 2. Number of fetal deaths and fetal mortality rate, by state of residence: United States, final 2019 and 2020 and provisional 2021 data

Area	Number of fetal deaths			Fetal mortality rate[1]			Percent change	
	2019	2020	2021	2019	2020	2021	2019–2020	2020–2021
Alabama	526	489	509	8.89	8.41	8.69	-5	3
Alaska	55	54	57	5.57	5.67	6.05	2	7
Arizona	497	459	485	6.22	5.93	6.19	-5	4
Arkansas	306	318	301	8.30	8.94	8.30	8	-7
California	2,171	2,196	2,242	4.84	5.20	5.30	*7	2
Colorado	350	327	315	5.54	5.29	4.98	-5	-6
Connecticut[2]	133	149	131	3.87	4.43	3.66	14	-17
Delaware	59	57	52	5.56	5.46	4.94	-2	-10
District of Columbia	86	70	66	9.38	7.83	7.56	-17	-3
Florida	1,538	1,458	1,593	6.94	6.91	7.31	0	6
Georgia	976	1,007	1,017	7.66	8.16	8.13	7	0
Hawaii	85	103	110	5.03	6.48	6.99	29	8
Idaho	112	117	112	5.05	5.40	4.97	7	-8
Illinois	829	754	790	5.88	5.62	5.94	-4	6
Indiana	489	476	414	6.01	6.02	5.15	0	*-14
Iowa	196	166	165	5.18	4.58	4.46	-12	-3
Kansas	196	168	195	5.51	4.86	5.59	-12	15
Kentucky	306	327	329	5.73	6.29	6.26	10	0
Louisiana	290	322	289	4.90	5.59	5.01	14	-10
Maine	65	74	66	5.49	6.37	5.47	16	-14
Maryland	462	466	437	6.54	6.75	6.36	3	-6
Massachusetts	298	278	290	4.29	4.17	4.18	-3	0
Michigan	652	612	593	6.01	5.85	5.62	-3	-4
Minnesota	359	343	351	5.41	5.38	5.42	-1	1
Mississippi	348	380	353	9.41	10.60	9.94	13	-6
Missouri	402	431	390	5.54	6.18	5.58	12	-10
Montana	54	44	39	4.85	4.06	3.46	-16	-15
Nebraska	125	104	98	5.02	4.26	3.97	-15	-7
Nevada	230	260	282	6.52	7.67	8.30	18	8
New Hampshire	55	54	65	4.62	4.56	5.12	-1	12
New Jersey	694	658	617	6.92	6.67	6.04	-4	-9
New Mexico	69	77	70	3.00	3.50	3.26	17	-7
New York (including New York City)	1,331	1,338	1,289	5.97	6.35	6.08	6	-4
North Carolina	784	680	646	6.56	5.79	5.33	*-12	-8
North Dakota	66	61	52	6.27	6.03	5.12	-4	-15
Ohio	850	746	759	6.28	5.74	5.81	-9	1
Oklahoma	282	302	268	5.71	6.30	5.51	10	-13
Oregon	189	205	187	4.49	5.12	4.55	14	-11
Pennsylvania	802	668	767	5.94	5.09	5.75	*-14	*13
Rhode Island	49	63	55	4.79	6.20	5.23	29	-16
South Carolina	345	310	322	6.01	5.53	5.60	-8	1
South Dakota	69	67	76	5.99	6.08	6.64	2	9
Tennessee	498	520	537	6.15	6.56	6.53	7	0
Texas	1,504	1,492	1,424	3.97	4.04	3.80	2	-6
Utah	246	235	310	5.23	5.12	6.59	-2	*29
Vermont	20	27	27	3.72	5.23	4.99	41	-5
Virginia	485	466	492	4.95	4.89	5.11	-1	4
Washington	484	448	451	5.67	5.36	5.35	-5	0
West Virginia	79	80	88	4.34	4.60	5.09	6	11
Wisconsin	342	317	322	5.38	5.20	5.18	-3	0
Wyoming	40	31	53	6.06	5.03	8.43	-17	68

* Significant change ($p < 0.05$).
[1]Number of fetal deaths per 1,000 live births and fetal deaths.
[2]Fetal deaths were underreported in 2019 and may be underreported in 2020.

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

Suggested citation

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