

Infant Mortality in the United States, 2020: Data From the Period Linked Birth/Infant Death File

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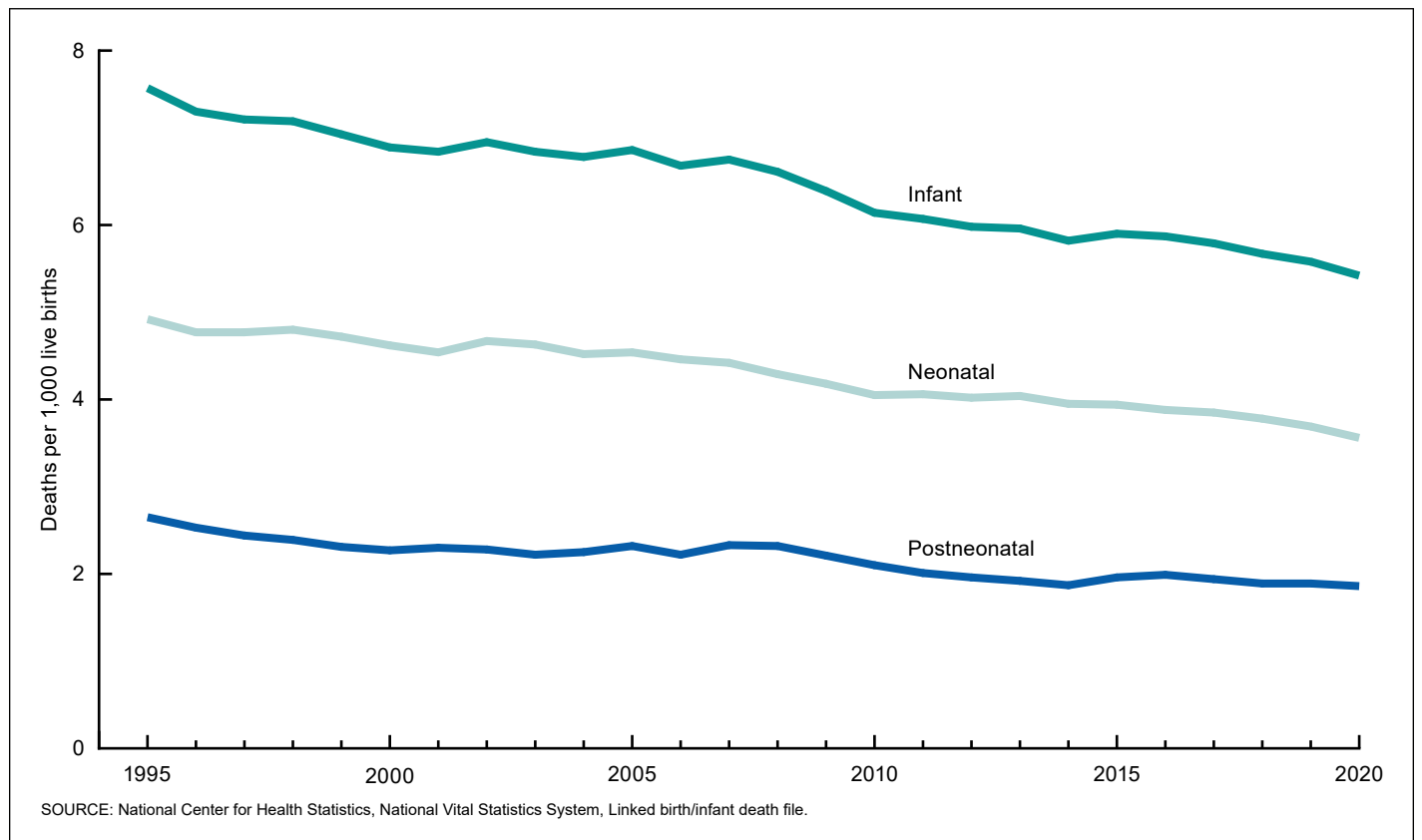
Abstract

Objectives—This report presents 2020 infant mortality statistics by age at death, maternal race and Hispanic origin, maternal age, gestational age, leading causes of death, and maternal state of residence. Trends in infant mortality are also examined.

Methods—Descriptive tabulations of data are presented and interpreted for infant deaths and infant mortality rates using the 2020 period linked birth/infant death file. The linked birth/infant death file is based on birth and death certificates registered in all 50 states and the District of Columbia.

Results—A total of 19,578 infant deaths were reported in the United States in 2020, down 3% from 2019. The U.S. infant mortality rate was 5.42 infant deaths per 1,000 live births,

Figure 1. Infant, neonatal, and postneonatal mortality rates: United States, 1995–2020



lower than the rate of 5.58 in 2019, and another historic low for the country. The neonatal mortality rate declined to 3.56 in 2020 from 3.69 in 2019, and the postneonatal mortality rate was essentially unchanged at 1.86 from 1.89. The mortality rate declined for infants of Hispanic women overall and for Central and South American women in 2020 compared with 2019; declines in rates for the other race and Hispanic-origin groups were not significant. Infants of non-Hispanic Black women had the highest mortality rate (10.38), followed by infants of non-Hispanic American Indian or Alaska Native (7.68), non-Hispanic Native Hawaiian or Other Pacific Islander (7.17), Hispanic (4.69), non-Hispanic White (4.40), and non-Hispanic Asian (3.14) women. Infants born very preterm (less than 28 weeks of gestation) had the highest mortality rate (363.39), 178 times as high as that for infants born at term (37–41 weeks of gestation) (2.04). The five leading causes of infant death in 2020 were the same as in 2019. Infant mortality rates by state for 2020 ranged from a low of 3.92 in California to a high of 8.12 in Mississippi.

Keywords: infant death • maternal and infant characteristics • vital statistics • National Vital Statistics System

Introduction

This report presents infant mortality statistics based on data from the 2020 period linked birth/infant death file. Infant mortality and mortality rates are described by age at death, maternal race and Hispanic origin, maternal age, gestational age, leading causes of death, and maternal state of residence in the United States. Infant mortality trends are also presented by selected characteristics. In the linked file, information from the death certificate is linked to information from the birth certificate for each infant under age 1 year who died in the 50 states, District of Columbia (D.C.), Puerto Rico, or Guam during 2020 (1). The purpose of the linkage is to use variables available from the birth certificate to conduct more detailed analyses of infant mortality patterns (2,3). The linked birth/infant death data set also is the preferred source for examining infant mortality by race and Hispanic origin. Infant mortality rates by race and Hispanic origin are more accurately measured from the birth certificate compared with the death certificate.

For 2020, linked birth/infant death data are not available for American Samoa, Commonwealth of the Northern Marianas, and U.S. Virgin Islands. Some rates calculated from the mortality file differ from those published using the linked file. More details can be found elsewhere (1).

Methods

Data shown in this report are based on birth and infant death certificates registered in all states, D.C., Puerto Rico, and Guam. As part of the Vital Statistics Cooperative Program, each state provides matching birth and death certificate numbers for each infant under age 1 year who died during 2020 to the National Center for Health Statistics. Further discussion of the process of linking births and deaths occurring in different states and file production can be found in the Methodology section of the “User

Guide to the 2020 Period/2019 Cohort Linked Birth/Infant Death Public Use File” (1).

The period linked file for 2017 marked the first data year for which the linked birth data for infant deaths for all 50 states and D.C. were based on the 2003 revision of the U.S. Standard Certificate of Live Birth (4) and, accordingly, the first year for which national data on race and Hispanic-origin categories based on 1997 Office of Management and Budget (OMB) standards became available (5).

In 2020, 99.3% of all infant death records were successfully linked to their corresponding birth records. These records were weighted to adjust for the 0.7% of infant death records that were not linked to their corresponding birth certificates (1) (Technical Notes).

Information on births for age and race of mother is imputed if it is not reported on the birth certificate. In 2020, race of mother was imputed for 7.0% of births; mother’s age was imputed for 0.01% of births (2,3).

The race and Hispanic-origin groups shown in this report follow the 1997 OMB standards and differ from the bridged-race categories shown in previous reports (5). The categories are: non-Hispanic single-race White, non-Hispanic single-race Black or African American, non-Hispanic single-race American Indian or Alaska Native (AIAN), non-Hispanic single-race Asian, non-Hispanic single-race Native Hawaiian or Other Pacific Islander (NHOPI), and Hispanic (for brevity, text references omit the term “single-race”). Race and Hispanic origin are reported separately on the birth certificate. Data are shown in most cases for five specified Hispanic groups: Mexican, Puerto Rican, Cuban, Central and South American, and Dominican. Data for infants of Dominican women are shown for the first time in this report. Additional details on Hispanic origin are available (3). Comparisons between 2020 and 2019 by race and Hispanic origin are made in this report. The 2003 revision of the U.S. Standard Certificate of Live Birth allows the reporting of five race categories for each parent (6)—either alone, as in single race, or in combination, as in more than one race or multiple races—in accordance with the 1997 revised OMB standards (5). Further details on race reporting are available (3).

Cause-of-death statistics are classified according to the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD–10)* (7); see Technical Notes.

Data by maternal and infant characteristics

This report presents descriptive tabulations of infant mortality data by a variety of maternal and infant characteristics. These tabulations are useful for understanding the basic relationships between risk factors and infant mortality, unadjusted for the possible effects of other variables. However, women with one risk factor may often have other risk factors as well. For example, teen mothers are more likely to be unmarried and of a low-income status, while mothers who do not receive prenatal care are more likely to be of a low-income status and uninsured. The preferred method for disentangling the multiple interrelationships among risk factors is multivariate analysis; however, identifying the basic relationships between risk factors and infant mortality is

the first step before using more sophisticated types of analyses and may help identify high-risk subgroups for prevention efforts. This report presents several key risk factors for infant mortality: age at death, maternal race and Hispanic origin, maternal age, gestational age, leading causes of infant death, and maternal state of residence. For brevity, additional selected risk factors (sex, birthweight, plurality, and nativity [mother's place of birth]) are presented in tables but not discussed in this report.

Race and Hispanic origin—Infant mortality rates are presented by race and Hispanic origin of the mother. The linked file is useful for computing accurate infant mortality rates by these characteristics because the race and Hispanic origin of the mother from the birth certificate are used in both the numerator and denominator of the infant mortality rate. In contrast, for rates based on the vital statistics mortality file, race information for the denominator is the race of the mother as reported on the birth certificate, while race information for the numerator is the race of the decedent as reported on the death certificate (2,3,8). More detail on the reliability of race and Hispanic-origin data from the linked file compared with the mortality file is available (8).

Statistical significance—Statements in the text have been tested for statistical significance, and a statement that a given infant mortality rate is higher or lower than another rate indicates that the rates are significantly different using a two-tailed *z* test at the alpha level of 0.05. Comparisons between state rates and the U.S. rate account for each state's contribution to the U.S. rate. As a result, each state rate is compared to a unique U.S. rate independent of the state's contribution to the total U.S. rate. Information on the methods used to test for statistical significance, as well as information on differences between period and cohort data, the weighting of the linked file, maternal age, period of gestation, birthweight, and cause-of-death classification, also is available (1) (Technical Notes).

Results

Trends in infant mortality and infant age at death

- In 2020, 19,578 infant deaths were reported in the United States, a decline of 3% from 2019 (20,927). The infant mortality rate was 5.42 deaths per 1,000 live births in 2020, a decline of 3% from the 2019 rate of 5.58 and the lowest rate reported in U.S. history (Figure 1, Table 1).
- The U.S. infant mortality rate has generally trended downward since 1995 (the first year that the period linked birth/infant death file was available) and has declined 21% since 2005, the most recent high (6.86).
- The 2020 neonatal mortality rate (infant deaths at less than 28 days) declined 4% to 3.56 from 3.69 in 2019. The neonatal mortality rate has generally declined since 1995 and is down 22% since 2005 (4.54).
- The 2020 postneonatal mortality rate (infant deaths at 28 days or more) of 1.86 was essentially unchanged from 2019 (1.89). The postneonatal mortality rate has also generally declined since 1995 and is down 20% since 2005 (2.32).

Race and Hispanic origin

- The mortality rate for infants of Hispanic women declined 7% from 2019 to 2020 (from 5.03 to 4.69 infant deaths per 1,000 births). Declines in rates for infants born to non-Hispanic White (4.49 to 4.40), non-Hispanic Black (10.62 to 10.38), non-Hispanic AIAN (7.87 to 7.68), non-Hispanic Asian (3.38 to 3.14), and non-Hispanic NHOPI (8.19 to 7.17) women were not significant (Tables 1 and 2, Figure 2).
- Among Hispanic-origin subgroups, the mortality rate for infants of Central and South American women decreased 14% from 2019 to 2020 (4.53 to 3.88); declines in mortality rates for infants of Mexican (4.96 to 4.71) and Dominican (4.71 to 4.53) women were not significant between the 2 years. Increases in the mortality rates for infants of Puerto Rican (6.17 to 6.26) and Cuban (4.14 to 4.23) women were not significant from 2019 to 2020.
- In 2020, infant mortality continued to vary by race: Infants of non-Hispanic Black women had the highest mortality rate (10.38), followed by infants of non-Hispanic AIAN (7.68), non-Hispanic NHOPI (7.17), Hispanic (4.69), non-Hispanic White (4.40), and non-Hispanic Asian (3.14) women.
- Infants of non-Hispanic Black women also had the highest neonatal mortality rate in 2020 (6.55) compared with infants of the other race and Hispanic-origin groups; the lowest mortality rate was for infants of non-Hispanic Asian women (2.30).
- In 2020, postneonatal mortality rates were higher for infants of non-Hispanic AIAN (3.88) and non-Hispanic Black (3.83) women than for infants of non-Hispanic White (1.53), Hispanic (1.42), and non-Hispanic Asian (0.84) women. Postneonatal mortality rates for infants of non-Hispanic NHOPI women (2.80) were higher than rates for infants of non-Hispanic White and non-Hispanic Asian women.
- Among Hispanic-origin subgroups in 2020, the mortality rate for infants of Puerto Rican women (6.26) was higher than that of infants of Mexican (4.71), Dominican (4.53), Cuban (4.23), and Central and South American (3.88) women.

Maternal age

- Declines in infant mortality rates from 2019 to 2020 in each of the maternal age groups were not significant; rates declined from 8.68 to 8.65 for infants of women under age 20, from 6.76 to 6.62 for infants of women aged 20–24, 5.47 to 5.29 for infants of women aged 25–29, 4.57 to 4.50 for infants of women aged 30–34, 5.03 to 4.79 for infants of women aged 35–39, and 7.01 to 6.65 for infants of women aged 40 and over (Figure 3, Table 2).
- Mortality rates were highest for infants of females under age 20 (8.65 infant deaths per 1,000 births), decreased to a low of 4.50 for infants of women aged 30–34, and then increased to 6.65 for infants of women aged 40 and over (the second-highest rate).

Figure 2. Infant mortality rate, by maternal race and Hispanic origin: United States, 2019 and 2020

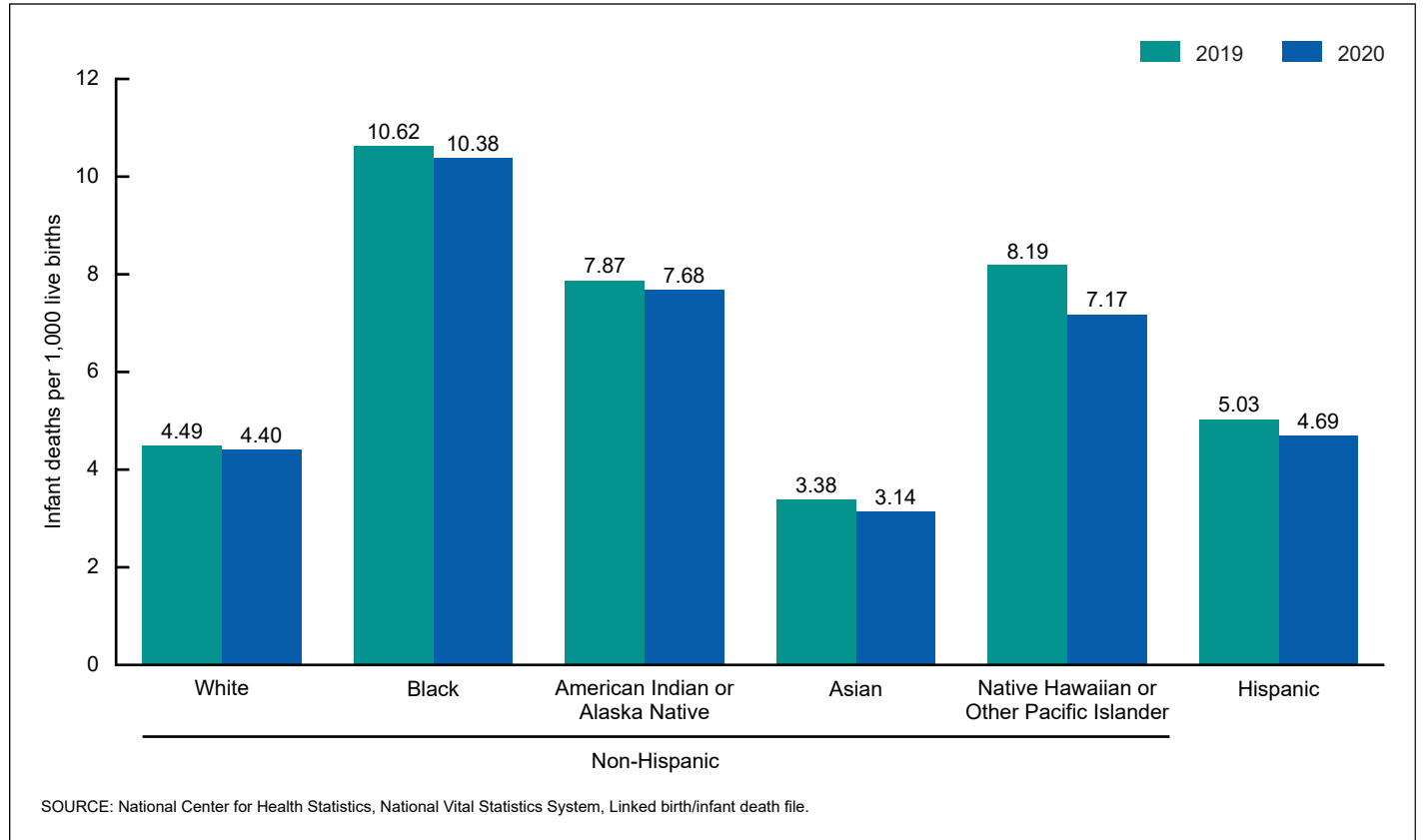
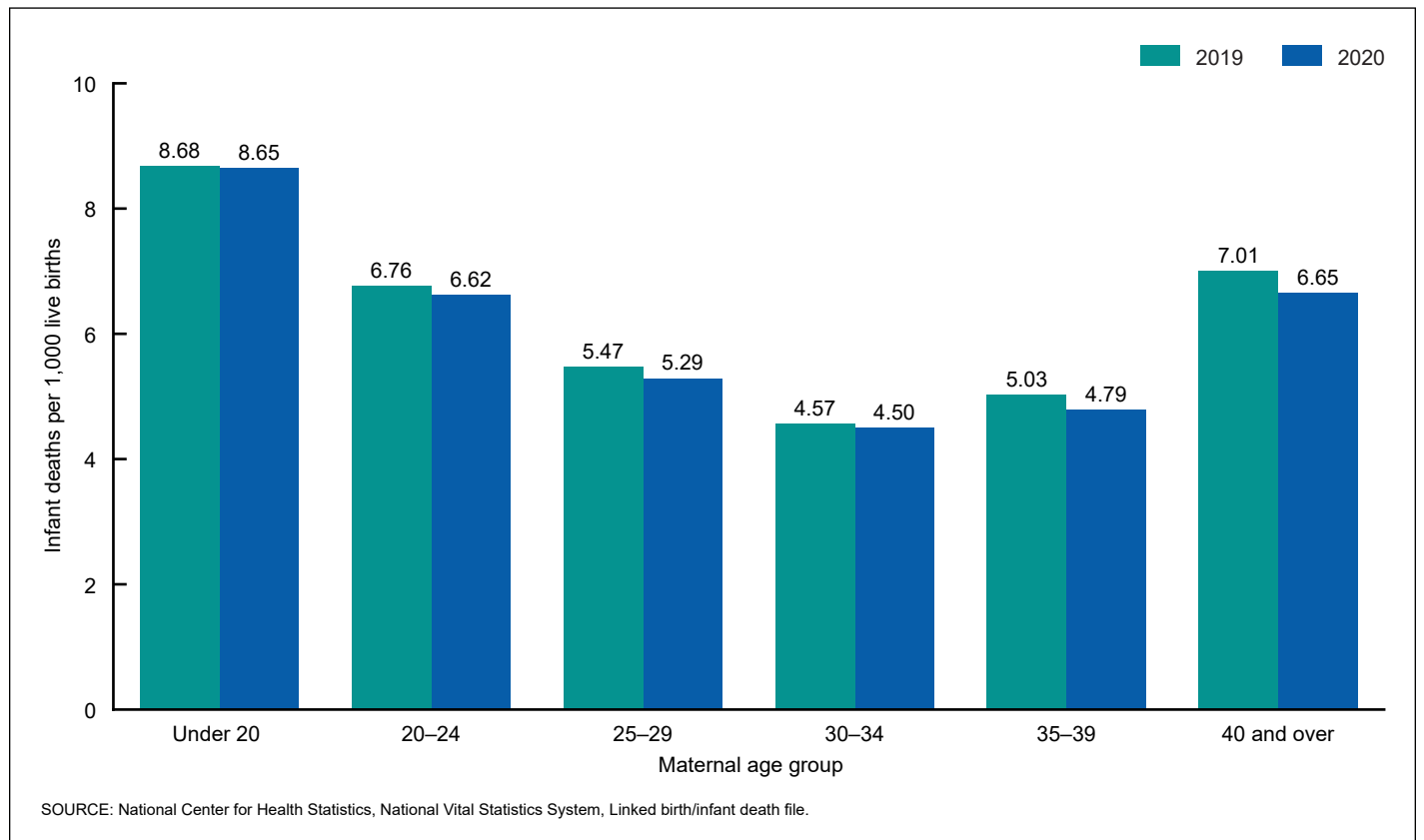


Figure 3. Infant mortality rate, by maternal age: United States, 2019 and 2020



Gestational age

- The infant mortality rate did not change significantly for any gestational age category between the 2 years. From 2019 to 2020, nonsignificant declines were seen in the mortality rate for infants born at less than 32 weeks (180.40 to 175.88), 34–36 weeks (8.21 to 7.92), and 42 weeks or more (5.72 to 4.17). A nonsignificant increase was seen in the mortality rate for infants born at 32–33 weeks (19.21 to 20.11) and 37–41 weeks (2.03 to 2.04) (Table, Table 2) (4).

Table. Infant mortality rate, by gestational age: United States, 2015–2020

Year	Deaths per 1,000 live births				
	Less than 32 weeks	32–33 weeks	34–36 weeks	37–41 weeks	42 weeks or more
2020.....	175.88	20.11	7.92	2.04	4.17
2019.....	180.40	19.21	8.21	2.03	5.72
2018.....	185.79	21.95	8.21	2.05	5.39
2017.....	187.56	20.50	8.50	2.10	3.98
2016.....	190.15	20.12	8.65	2.19	4.31
2015.....	193.54	20.79	8.76	2.17	4.20

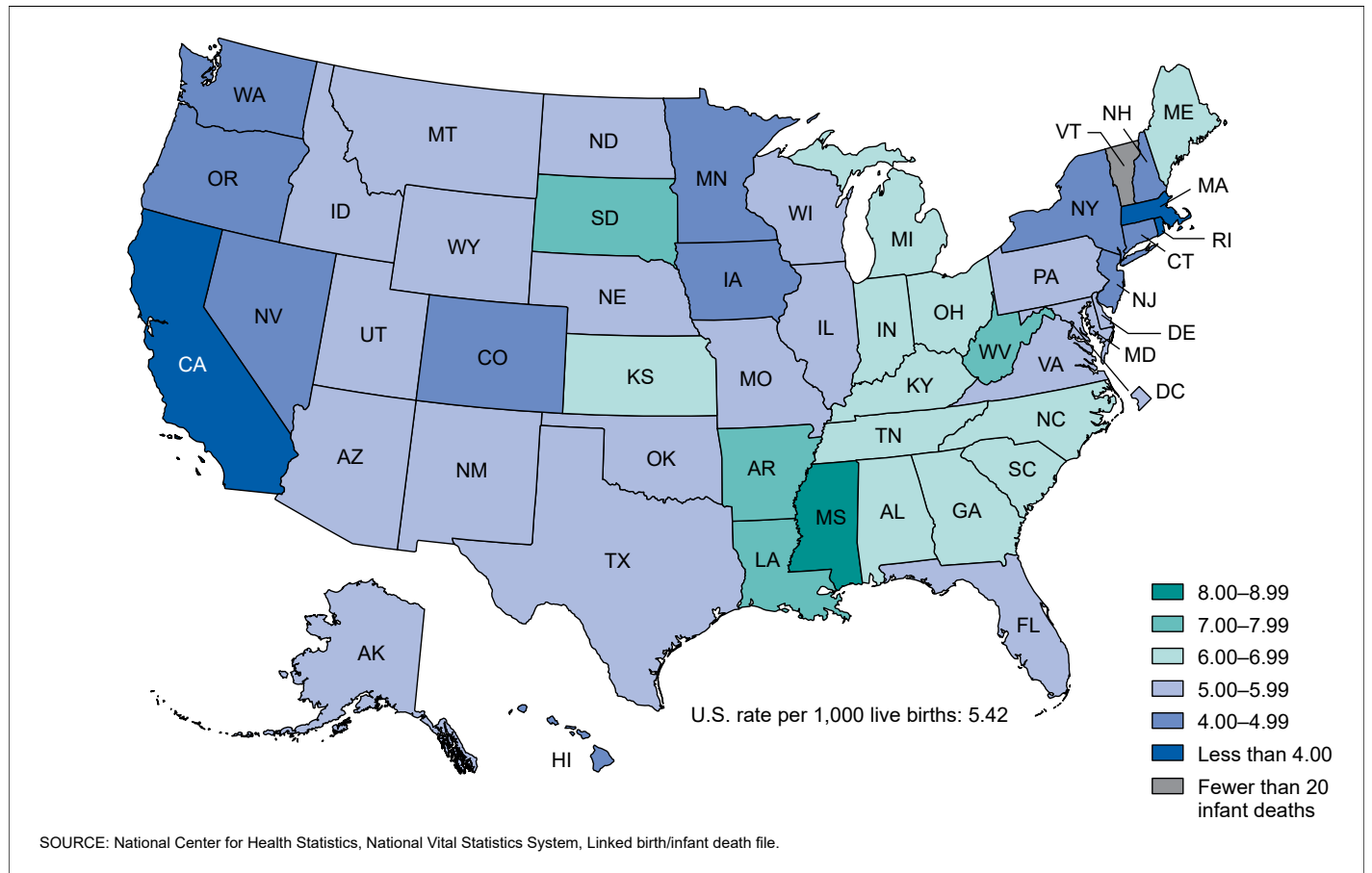
SOURCE: National Center for Health Statistics, National Vital Statistics System, Linked birth/infant death file.

- In 2020, 66% of infant deaths occurred among infants born preterm (less than 37 weeks of gestation), a decline from 67% in 2019.

Leading causes of infant death

- In 2020, the five leading causes of all infant deaths were the same as those in 2019: congenital malformations (21% of infant deaths), disorders related to short gestation and low birth weight (16%), sudden infant death syndrome (SIDS) (7%), unintentional injuries (6%), and maternal complications (6%) (Table 3).
- In 2020, the ranking of the five leading causes of death changed compared with the previous decade (2010–2019). SIDS became the third leading cause of death, up from fourth in 2019; unintentional injuries became the fourth leading cause from the fifth; and maternal complications became the fifth leading cause of death compared with the third leading cause (Table 4).
- From 2019 to 2020, the infant mortality rate for SIDS increased from 33.4 infant deaths per 100,000 births to 38.4, while the infant mortality rate declined for disorders related to short gestation and low birth weight (92.3 to 87.2). Declines in rates for congenital malformations (115.1 to 112.0), maternal complications (33.4 to 30.9), and unintentional injuries (33.7 to 33.0) were not significant.

Figure 4. Infant mortality rate, by state: United States, 2020



- Congenital malformations was the leading cause of death for infants born to non-Hispanic White (107.2), non-Hispanic AIAN (152.9), non-Hispanic Asian (75.3), and Hispanic (112.3) women in 2020 (Table 4).
- In 2020, disorders related to short gestation and low birth weight was the leading cause of death for infants of non-Hispanic Black women (214.4).

Infant mortality by state

- By state, infant mortality ranged from a low of 3.92 infant deaths per 1,000 births in California to a high of 8.12 in Mississippi (Figure 4, Table 5).
- Twelve states had infant mortality rates significantly lower than the national infant mortality rate: California, Colorado, Connecticut, Iowa, Massachusetts, Minnesota, Nevada, New Jersey, New York, Oregon, Rhode Island, and Washington.
- Sixteen states had infant mortality rates significantly higher than the U.S. infant mortality rate: Alabama, Arkansas, Florida, Georgia, Indiana, Kansas, Kentucky, Louisiana, Michigan, Mississippi, North Carolina, Ohio, South Carolina, South Dakota, Tennessee, and West Virginia.

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Table 1. Live births, infant, neonatal, and postneonatal deaths, and mortality rates: United States, 1995–2020, and by maternal race and Hispanic origin, 2017–2020

Year and race and Hispanic origin	Number				Deaths per 1,000 live births		
	Live births	Infant deaths	Neonatal deaths	Postneonatal deaths	Infant	Neonatal	Postneonatal
All race and Hispanic-origin groups							
2020.....	3,613,647	19,578	12,866	6,712	5.42	3.56	1.86
2019.....	3,747,540	20,927	13,834	7,093	5.58	3.69	1.89
2018.....	3,791,712	21,498	14,329	7,169	5.67	3.78	1.89
2017.....	3,855,500	22,341	14,844	7,497	5.79	3.85	1.94
2016.....	3,945,875	23,157	15,303	7,854	5.87	3.88	1.99
2015.....	3,978,497	23,458	15,672	7,786	5.90	3.94	1.96
2014.....	3,988,076	23,211	15,737	7,474	5.82	3.95	1.87
2013.....	3,932,181	23,446	15,893	7,553	5.96	4.04	1.92
2012.....	3,952,841	23,654	15,887	7,767	5.98	4.02	1.96
2011.....	3,953,590	24,001	16,065	7,936	6.07	4.06	2.01
2010.....	3,999,386	24,572	16,193	8,379	6.14	4.05	2.10
2009.....	4,130,665	26,408	17,261	9,148	6.39	4.18	2.21
2008.....	4,247,726	28,075	18,238	9,837	6.61	4.29	2.32
2007.....	4,316,233	29,153	19,094	10,059	6.75	4.42	2.33
2006.....	4,265,593	28,509	19,041	9,468	6.68	4.46	2.22
2005.....	4,138,573	28,384	18,782	9,602	6.86	4.54	2.32
2004.....	4,112,055	27,860	18,602	9,258	6.78	4.52	2.25
2003.....	4,090,007	27,995	18,935	9,060	6.84	4.63	2.22
2002.....	4,021,825	27,970	18,791	9,179	6.95	4.67	2.28
2001.....	4,026,036	27,523	18,275	9,248	6.84	4.54	2.30
2000.....	4,058,882	27,961	18,733	9,227	6.89	4.62	2.27
1999.....	3,959,417	27,865	18,701	9,164	7.04	4.72	2.31
1998.....	3,941,553	28,325	18,915	9,410	7.19	4.80	2.39
1997.....	3,880,894	27,968	18,507	9,461	7.21	4.77	2.44
1996.....	3,891,494	28,419	18,556	9,863	7.30	4.77	2.53
1995.....	3,899,589	29,505	19,186	10,319	7.57	4.92	2.65
Non-Hispanic, single race							
White:							
2020.....	1,843,432	8,115	5,290	2,825	4.40	2.87	1.53
2019.....	1,915,912	8,603	5,589	3,014	4.49	2.92	1.57
2018.....	1,956,413	9,059	5,873	3,186	4.63	3.00	1.63
2017.....	1,992,461	9,306	6,061	3,246	4.67	3.04	1.63
Black:							
2020.....	529,811	5,501	3,472	2,028	10.38	6.55	3.83
2019.....	548,075	5,821	3,754	2,067	10.62	6.85	3.77
2018.....	552,029	5,933	3,897	2,037	10.75	7.06	3.69
2017.....	560,715	6,152	4,012	2,140	10.97	7.16	3.82
American Indian or Alaska Native:							
2020.....	26,813	206	102	104	7.68	3.80	3.88
2019.....	28,450	224	114	110	7.87	4.01	3.87
2018.....	29,092	237	120	117	8.15	4.12	4.02
2017.....	29,957	276	143	132	9.21	4.77	4.41
Asian:							
2020.....	219,068	688	503	185	3.14	2.30	0.84
2019.....	238,769	806	602	204	3.38	2.52	0.85
2018.....	240,798	874	643	231	3.63	2.67	0.96
2017.....	249,250	943	675	268	3.78	2.71	1.08
Native Hawaiian or Other Pacific Islander:							
2020.....	9,626	69	41	27	7.17	4.26	2.80
2019.....	9,770	80	49	31	8.19	5.02	3.17
2018.....	9,476	89	51	38	9.39	5.38	4.01
2017.....	9,426	72	36	36	7.64	3.82	3.82

See footnotes at end of table.

Table 1. Live births, infant, neonatal, and postneonatal deaths, and mortality rates: United States, 1995–2020, and by maternal race and Hispanic origin, 2017–2020—Con.

Year and race and Hispanic origin	Number				Deaths per 1,000 live births		
	Live births	Infant deaths	Neonatal deaths	Postneonatal deaths	Infant	Neonatal	Postneonatal
Hispanic							
2020.....	866,713	4,063	2,828	1,235	4.69	3.26	1.42
2019.....	886,467	4,462	3,091	1,371	5.03	3.49	1.55
2018.....	886,210	4,303	3,036	1,267	4.86	3.43	1.43
2017.....	898,764	4,583	3,198	1,383	5.10	3.56	1.54
Mexican:							
2020.....	480,531	2,264	1,586	678	4.71	3.30	1.41
2019.....	496,716	2,462	1,693	769	4.96	3.41	1.55
2018.....	495,831	2,426	1,690	736	4.89	3.41	1.48
2017.....	512,126	2,588	1,795	792	5.05	3.50	1.55
Puerto Rican:							
2020.....	69,763	437	308	129	6.26	4.41	1.85
2019.....	70,950	438	294	144	6.17	4.14	2.03
2018.....	71,614	402	290	112	5.61	4.05	1.56
2017.....	70,813	459	307	151	6.48	4.34	2.13
Cuban:							
2020.....	23,188	98	63	34	4.23	2.72	1.47
2019.....	23,668	98	65	33	4.14	2.75	1.39
2018.....	23,471	90	64	26	3.83	2.73	1.11
2017.....	23,362	93	69	24	3.98	2.95	1.03
Central and South American:							
2020.....	169,811	659	470	189	3.88	2.77	1.11
2019.....	165,229	749	535	214	4.53	3.24	1.30
2018.....	147,430	592	438	154	4.02	2.97	1.04
2017.....	145,614	653	465	188	4.48	3.19	1.29
Dominican ¹ :							
2020.....	31,596	143	101	42	4.53	3.20	1.33
2019.....	32,483	153	111	42	4.71	3.42	1.29

¹Data for infants of Dominican women are available starting with the 2019 period linked birth/infant death data files.

NOTES: Infant deaths are weighted to adjust for the 0.7% of infant death records that were not linked to their corresponding birth certificates. The neonatal and postneonatal mortality rates combined may not add to totals due to rounding.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Linked birth/infant death file.

Table 2. Infant mortality rates, live births, and infant deaths, by selected characteristics and by maternal race and Hispanic origin: United States, 2020

Characteristic	Non-Hispanic						Hispanic					
	Total	White	Black	American Indian or Alaska Native ¹	Asian	Native Hawaiian or Other Pacific Islander	Total ²	Mexican	Puerto Rican	Cuban	Central and South American	Dominican
	Infant deaths per 1,000 live births in specified group											
Total	5.42	4.40	10.38	7.68	3.14	7.17	4.69	4.71	6.26	4.23	3.88	4.53
Age at death												
Total neonatal	3.56	2.87	6.55	3.80	2.30	4.26	3.26	3.30	4.41	2.72	2.77	3.20
Early neonatal (under 7 days)	2.86	2.27	5.28	2.80	1.87	3.43	2.68	2.70	3.60	2.11	2.34	2.41
Late neonatal (7–27 days)	0.70	0.60	1.27	1.01	0.42	*	0.58	0.60	0.82	*	0.42	0.79
Postneonatal	1.86	1.53	3.83	3.88	0.84	2.80	1.42	1.41	1.85	1.47	1.11	1.33
Sex												
Male	5.87	4.76	11.21	8.42	3.32	7.72	5.08	5.06	6.91	4.86	4.27	5.06
Female	4.95	4.02	9.53	6.91	2.95	6.38	4.28	4.35	5.58	3.46	3.49	3.92
Period of gestation (weeks)												
Less than 34	109.25	97.81	129.85	97.92	91.09	121.62	105.78	109.11	116.87	109.62	89.83	97.21
Less than 28	363.39	372.00	355.17	350.28	347.92	375.00	352.99	358.25	371.94	311.26	324.45	314.29
28–31	41.37	43.93	42.12	*	34.28	*	36.71	40.91	33.88	*	29.18	*
32–33	20.11	20.25	20.53	*	13.47	*	20.38	20.34	21.21	*	17.21	*
34–36	7.92	7.55	10.04	11.78	5.68	*	7.03	7.61	7.36	*	6.31	*
37–41	2.04	1.86	3.58	4.15	0.94	2.85	1.63	1.62	1.88	1.66	1.46	1.44
37–38	3.07	3.01	4.85	5.53	1.33	*	2.24	2.37	2.68	*	1.92	*
39–40	1.57	1.40	2.85	3.39	0.75	*	1.34	1.27	1.46	1.50	1.21	1.20
41	1.58	1.31	2.83	*	*	*	1.47	1.35	*	*	*	*
42 or more	4.17	*	*	*	*	-	*	*	-	-	*	*
Birthweight (grams)												
Less than 2,500	43.15	39.17	51.70	48.83	27.32	51.53	43.04	45.42	45.94	38.49	37.62	38.22
Less than 1,500	198.38	192.22	202.44	202.90	169.85	205.48	200.45	209.90	199.84	181.48	178.51	171.67
1,500–2,499	12.49	13.01	12.78	19.05	7.36	*	12.11	13.43	10.29	*	11.38	9.99
2,500 or more	1.98	1.82	3.45	4.13	0.86	2.95	1.59	1.56	2.00	1.67	1.33	1.38
2,500–4,499	1.98	1.83	3.44	4.21	0.85	3.01	1.56	1.54	1.98	1.59	1.33	1.33
4,500 or more	2.13	1.33	*	-	*	-	3.85	*	*	*	*	*
Plurality												
Single births	4.86	3.94	9.23	7.14	2.84	6.41	4.29	4.31	5.62	3.81	3.61	4.30
Twin births	21.28	1.60	1.76	*	0.97	*	1.21	20.86	26.72	*	14.71	*
Triplet and higher-order births	60.17	57.69	72.94	*	*	-	51.23	*	*	-	*	-
Age of mother												
Under 20	8.65	8.17	12.44	*	*	*	6.57	6.62	6.07	*	5.82	*
20–24	6.62	5.64	10.84	7.75	4.39	*	5.22	5.04	8.23	*	3.90	5.96
25–29	5.29	4.32	10.31	8.87	2.92	8.83	4.12	4.02	5.50	4.47	3.42	4.52
30–34	4.50	3.64	9.83	5.65	2.90	*	4.02	4.05	5.76	4.33	3.50	2.47
35–39	4.79	3.95	9.38	8.41	3.34	*	4.63	4.94	4.54	*	4.01	4.45
40–54	6.65	5.53	11.55	*	3.40	*	6.98	7.96	*	*	5.38	*

See footnotes at end of table.

Table 2. Infant mortality rates, live births, and infant deaths, by selected characteristics and by maternal race and Hispanic origin: United States, 2020—Con.

Characteristic	Non-Hispanic						Hispanic					
	Total	White	Black	American Indian or Alaska Native ¹	Asian	Native Hawaiian or Other Pacific Islander	Total ²	Mexican	Puerto Rican	Cuban	Central and South American	Dominican
Infant deaths per 1,000 live births in specified group—Con.												
Mother's place of birth												
Born in the 50 states or District of Columbia	5.71	4.47	11.02	7.77	3.44	6.20	4.95	4.73	6.53	4.52	4.14	5.71
Born elsewhere	4.16	3.19	6.59	*	3.02	7.22	4.32	4.66	5.50	3.92	3.80	3.96
Live births												
Total	3,613,647	1,843,432	529,811	26,813	219,068	9,626	866,713	480,531	69,763	23,188	169,811	31,596
Sex												
Male	1,848,092	945,464	269,341	13,779	112,795	4,922	441,401	244,420	35,733	11,926	86,382	16,020
Female	1,765,555	897,968	260,470	13,034	106,273	4,704	425,312	236,111	34,030	11,262	83,429	15,576
Period of gestation (weeks)												
Less than 34	97,420	40,638	25,537	817	4,556	296	21,790	11,713	2,353	520	3,874	895
Less than 28	23,286	8,043	7,802	177	960	72	5,241	2,836	613	151	863	210
28–31	32,463	13,681	8,381	261	1,517	98	7,273	3,960	797	176	1,268	304
32–33	41,671	18,914	9,354	379	2,079	126	9,276	4,917	943	193	1,743	381
34–36	267,067	127,041	50,522	2,292	14,076	862	63,434	34,974	5,574	1,566	12,041	2,203
37–41	3,237,819	1,668,915	452,357	23,604	200,237	8,425	779,828	432,863	61,746	21,068	153,518	28,471
37–38	1,003,260	478,611	165,321	8,322	64,857	2,890	251,210	139,508	20,128	6,192	48,840	8,579
39–40	2,058,396	1,088,456	267,237	14,155	127,141	5,018	490,413	272,551	38,415	13,997	96,544	18,363
41	176,163	101,848	19,799	1,127	8,239	517	38,205	20,804	3,203	879	8,134	1,529
42 or more	8,863	5,837	1,095	57	163	30	1,313	780	70	30	302	26
Not stated	2,478	1,001	300	43	36	13	348	201	20	4	76	1
Birthweight (grams)												
Less than 2,500	298,547	126,312	75,422	2,130	18,744	815	64,315	34,239	6,705	1,585	11,777	2,669
Less than 1,500	49,235	18,442	15,476	345	2,302	146	10,561	5,574	1,261	270	1,843	466
1,500–2,499	249,312	107,870	59,946	1,785	16,442	669	53,754	28,665	5,444	1,315	9,934	2,203
2,500 or more	3,313,212	1,716,327	454,184	24,670	200,282	8,807	802,216	446,194	63,035	21,601	158,004	28,916
2,500–4,499	3,277,927	1,694,478	451,185	24,203	199,355	8,638	794,431	441,427	62,499	21,402	156,680	28,675
4,500 or more	35,285	21,849	2,999	467	927	169	7,785	4,767	536	199	1,324	241
Not stated	1,888	793	205	13	42	4	182	98	23	2	30	11
Plurality												
Single births	3,498,335	1,781,686	507,736	26,185	213,809	9,367	845,516	469,111	67,637	22,557	166,117	30,679
Twin births	112,437	60,082	21,554	620	5,159	253	20,709	11,171	2,096	622	3,602	884
Triplet and higher-order births	2,875	1,664	521	8	100	6	488	249	30	9	92	33

See footnotes at end of table.

Table 2. Infant mortality rates, live births, and infant deaths, by selected characteristics and by maternal race and Hispanic origin: United States, 2020—Con.

Characteristic	Non-Hispanic						Hispanic					
	Total	White	Black	American Indian or Alaska Native ¹	Asian	Native Hawaiian or Other Pacific Islander	Total ²	Mexican	Puerto Rican	Cuban	Central and South American	Dominican
Age of mother							Live births—Con.					
Under 20	159,808	54,805	34,659	2,220	1,140	456	59,484	34,721	4,775	656	10,826	1,435
20–24	665,595	293,861	124,882	7,227	11,853	2,440	199,151	116,234	18,229	3,657	32,287	6,381
25–29	1,024,402	526,693	156,654	7,891	47,575	2,943	250,518	142,090	20,918	6,482	45,043	9,302
30–34	1,069,984	605,458	126,860	6,015	89,523	2,281	209,243	110,908	16,139	7,847	44,595	8,508
35–39	564,059	301,688	68,134	2,855	56,041	1,194	116,929	60,491	7,714	3,831	28,695	4,724
40–54	129,799	60,927	18,622	605	12,936	312	31,388	16,087	1,988	715	8,365	1,246
Mother's place of birth												
Born in the 50 states or District of Columbia	2,816,447	1,720,835	443,319	26,399	47,031	3,389	474,644	300,114	49,483	10,166	35,957	9,809
Born elsewhere	790,041	120,331	84,822	376	171,319	6,095	390,807	179,924	19,985	13,012	133,670	21,735
Not stated	7,159	2,266	1,670	38	718	142	1,262	493	295	10	184	52
							Infant deaths					
Total	19,578	8,115	5,501	206	688	69	4,063	2,264	437	98	659	143
Age at death												
Total neonatal	12,866	5,290	3,472	102	503	41	2,828	1,586	308	63	470	101
Early neonatal (under 7 days)	10,348	4,180	2,800	75	410	33	2,326	1,299	251	49	398	76
Late neonatal (7–27 days)	2,518	1,111	673	27	93	8	502	287	57	14	72	25
Postneonatal	6,712	2,825	2,028	104	185	27	1,235	678	129	34	189	42
Sex												
Male	10,844	4,505	3,020	116	374	38	2,243	1,237	247	58	369	81
Female	8,734	3,611	2,481	90	314	30	1,820	1,027	190	39	291	61
Period of gestation (weeks)												
Less than 34	10,643	3,975	3,316	80	415	36	2,305	1,278	275	57	348	87
Less than 28	8,462	2,992	2,771	62	334	27	1,850	1,016	228	47	280	66
28–31	1,343	601	353	10	52	6	267	162	27	4	37	13
32–33	838	383	192	8	28	3	189	100	20	6	30	8
34–36	2,115	959	507	27	80	8	446	266	41	5	76	14
37–41	6,594	3,097	1,620	98	188	24	1,275	703	116	35	224	41
37–38	3,076	1,440	802	46	86	8	563	330	54	13	94	16
39–40	3,240	1,525	761	48	95	13	655	345	56	21	117	22
41	279	133	56	3	8	3	56	28	6	1	14	3
42 or more	37	18	10	1	1	-	4	3	-	-	1	-
Not stated	188	66	48	1	4	-	33	14	4	-	10	-

See footnotes at end of table.

Table 2. Infant mortality rates, live births, and infant deaths, by selected characteristics and by maternal race and Hispanic origin: United States, 2020—Con.

Characteristic	Non-Hispanic						Hispanic					
	Total	White	Black	American Indian or Alaska Native ¹	Asian	Native Hawaiian or Other Pacific Islander	Total ²	Mexican	Puerto Rican	Cuban	Central and South American	Dominican
Birthweight (grams)							Infant deaths—Con.					
Less than 2,500	12,881	4,948	3,899	104	512	42	2,768	1,555	308	61	443	102
Less than 1,500	9,767	3,545	3,133	70	391	30	2,117	1,170	252	49	329	80
1,500–2,499	3,114	1,403	766	34	121	12	651	385	56	12	113	22
2,500 or more	6,559	3,123	1,566	102	173	26	1,272	697	126	36	210	40
2,500–4,499	6,484	3,094	1,554	102	170	26	1,242	678	124	34	209	38
4,500 or more	75	29	11	-	3	-	30	19	2	2	1	2
Not stated	138	44	36	1	3	-	22	12	2	-	6	-
Plurality												
Single births	17,011	7,018	4,688	187	608	60	3,627	2,021	380	86	599	132
Twin births	2,393	1,002	775	18	75	8	411	233	56	11	53	11
Triplet and higher-order births	173	96	38	1	5	-	25	10	1	-	7	-
Age of mother												
Under 20	1,382	448	431	17	5	3	391	230	29	4	63	11
20–24	4,403	1,658	1,354	56	52	12	1,040	586	150	13	126	38
25–29	5,414	2,275	1,615	70	139	26	1,031	571	115	29	154	42
30–34	4,814	2,205	1,247	34	260	14	841	449	93	34	156	21
35–39	2,701	1,192	639	24	187	11	541	299	35	12	115	21
40–54	863	337	215	5	44	2	219	128	15	5	45	9
Mother's place of birth												
Born in the 50 states or District of Columbia	16,083	7,688	4,885	205	162	21	2,351	1,419	323	46	149	56
Born elsewhere	3,286	384	559	1	517	44	1,688	838	110	51	508	86
Not stated	209	43	56	-	9	3	24	7	4	-	2	-

* Rate does not meet National Center for Health Statistics standards of reliability; based on fewer than 20 deaths in the numerator.

- Quantity zero.

¹Includes Aleut and Eskimo infants.

²Includes other and unknown Hispanic origin not stated and not shown separately.

NOTES: Infant deaths are weighted, so numbers may not add to totals due to rounding. Not-stated responses are included in totals but not distributed among groups for rate computations. Race and Hispanic origin are reported separately on the birth certificate. Race categories are consistent with 1997 Office of Management and Budget standards. People of Hispanic origin may be of any race.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Linked birth/infant death file.

Table 3. Infant deaths, percentage of deaths, and infant mortality rates, by five leading causes of infant death: United States, 2010–2020

Year	Congenital malformations (Q00–Q99)			Short gestation and low birth weight, not elsewhere classified (P07)			Sudden infant death syndrome (R95)			Accidents (unintentional injuries) (V01–X59)			Maternal complications of pregnancy (P01)		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
2020.	4,047	20.7	112.0	3,152	16.1	87.2	1,386	7.1	38.4	1,192	6.1	33.0	1,115	5.7	30.9
2019.	4,313	20.6	115.1	3,460	16.5	92.3	1,251	6.0	33.4	1,264	6.0	33.7	1,250	6.0	33.4
2018.	4,501	20.9	118.7	3,683	17.1	97.1	1,331	6.2	35.1	1,169	5.4	30.8	1,371	6.4	36.2
2017.	4,596	20.6	119.2	3,757	16.8	97.4	1,360	6.1	35.3	1,313	5.9	34.1	1,436	6.4	37.2
2016.	4,823	20.8	122.2	3,926	17.0	99.5	1,498	6.5	38.0	1,217	5.3	30.8	1,407	6.1	35.7
2015.	4,847	20.7	121.8	4,087	17.4	102.7	1,567	6.7	39.4	1,289	5.5	32.4	1,527	6.5	38.4
2014.	4,754	20.5	119.2	4,172	18.0	104.6	1,541	6.6	38.6	1,163	5.0	29.2	1,580	6.8	39.6
2013.	4,778	20.4	121.5	4,213	18.0	107.1	1,561	6.7	39.7	1,150	4.9	29.2	1,597	6.8	40.6
2012.	4,967	21.0	125.7	4,214	17.8	106.6	1,676	7.1	42.4	1,163	4.9	29.4	1,518	6.4	38.4
2011.	5,016	20.9	126.9	4,115	17.1	104.1	1,905	7.9	48.2	1,167	4.9	29.5	1,598	6.7	40.4
2010.	5,115	20.8	127.9	4,151	16.9	103.8	2,058	8.4	51.5	1,107	4.5	27.7	1,563	6.4	39.1

NOTES: The five leading causes of death were the same during 2010–2020, but ranking changed in 2020 compared with previous years. Causes of death are identified by codes from the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision*. Rate is defined as infant deaths per 100,000 live births.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Linked birth/infant death file.

Table 4. Infant deaths and mortality rates for the five leading causes of infant death, by maternal race and Hispanic origin: United States, 2020

Cause of death (based on <i>International Classification of Diseases, 10th Revision</i>)	Non-Hispanic														
	All races			White			Black			American Indian or Alaska Native			Asian ¹		
	Rank	Number	Rate	Rank	Number	Rate	Rank	Number	Rate	Rank	Number	Rate	Rank	Number	Rate
All causes.	19,578	541.8	...	8,115	440.2	...	5,501	1,038.3	...	206	768.3	...	688	314.1
Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	1	4,047	112.0	1	1,976	107.2	2	705	133.1	1	41	152.9	1	165	75.3
Disorders related to short gestation and low birth weight, not elsewhere classified (P07)	2	3,152	87.2	2	1,040	56.4	1	1,136	214.4	2	26	97.0	2	124	56.6
Sudden infant death syndrome (R95)	3	1,386	38.4	3	563	30.5	3	472	89.1	4	22	82.0	5	24	11.0
Accidents (unintentional injuries) (V01–X59)	4	1,192	33.0	4	547	29.7	4	375	70.8	3	23	85.8	7	16	*
Newborn affected by maternal complications of pregnancy (P01)	5	1,115	30.9	5	370	20.1	5	337	63.6	5	10	*	3	49	22.4

Cause of death (based on <i>International Classification of Diseases, 10th Revision</i>)	Hispanic														
	Total Hispanic			Mexican			Puerto Rican			Central and South American ²			Dominican ³		
	Rank	Number	Rate	Rank	Number	Rate	Rank	Number	Rate	Rank	Number	Rate	Rank	Number	Rate
All causes.	4,063	468.8	...	2,264	471.1	...	437	626.4	...	659	388.1	...	143	452.6
Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	1	973	112.3	1	587	122.2	2	61	87.4	1	185	108.9	1	27	85.5
Disorders related to short gestation and low birth weight, not elsewhere classified (P07)	2	650	75.0	2	350	72.8	1	85	121.8	2	97	57.1	2	26	82.3
Sudden infant death syndrome (R95)	4	221	25.5	4	118	24.6	4	19	*	4	35	20.6	4	7	*
Accidents (unintentional injuries) (V01–X59)	5	164	18.9	5	101	21.0	4	19	*	6	17	*	8	3	*
Newborn affected by maternal complications of pregnancy (P01)	3	274	31.6	3	147	30.6	3	34	48.7	3	44	25.9	6	6	*

... Category not applicable.

* Rate does not meet National Center for Health Statistics standards of reliability; based on fewer than 20 deaths in the numerator.

¹For infants born to non-Hispanic Asian women, Newborn affected by complications of placenta, cord and membranes (P02) was the fourth leading cause of death, with 28 deaths and a rate of 12.8.

²For infants born to Central and South American women, Neonatal hemorrhage (P50–P52, P54) was the fifth leading cause of death with 21 deaths and a rate of 12.4.

³For infants born to Dominican women, Sepsis was the third leading cause of death with eight deaths, and Diseases of the circulatory system was the fourth leading cause of death with seven deaths.

NOTES: Reliable cause-specific infant mortality rates cannot be computed for infants of Cuban or non-Hispanic Native Hawaiian or Other Pacific Islander women because of the small number of infant deaths. Race and Hispanic origin are reported separately on the birth certificate. Race categories are consistent with 1997 Office of Management and Budget standards. People of Hispanic origin may be of any race. Rate is defined as infant deaths per 100,000 live births.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Linked birth/infant death file.

Table 5. Infant mortality rate: United States and each state, 2020

[By place of residence]

Area	Rate ¹	Infant deaths	Live births
United States ²	5.42	19,578	3,613,647
Alabama	6.99	403	57,647
Alaska	5.07	48	9,469
Arizona	5.19	399	76,947
Arkansas	7.38	260	35,251
California	3.92	1,648	420,259
Colorado	4.80	295	61,494
Connecticut	4.33	145	33,460
Delaware	5.10	53	10,392
District of Columbia	5.18	46	8,874
Florida	5.80	1,217	209,671
Georgia	6.28	769	122,473
Hawaii	4.88	77	15,785
Idaho	5.06	109	21,533
Illinois	5.50	733	133,298
Indiana	6.75	531	78,616
Iowa	4.43	160	36,114
Kansas	6.60	227	34,376
Kentucky	6.43	332	51,668
Louisiana	7.59	435	57,328
Maine	6.33	73	11,539
Maryland	5.73	393	68,554
Massachusetts	3.94	262	66,428
Michigan	6.80	708	104,074
Minnesota	4.13	262	63,443
Mississippi	8.12	288	35,473
Missouri	5.89	408	69,285
Montana	5.00	54	10,791
Nebraska	5.68	138	24,291
Nevada	4.64	156	33,653
New Hampshire	4.41	52	11,791
New Jersey	4.00	392	97,954
New Mexico	5.30	116	21,903
New York	4.08	855	209,338
North Carolina	6.77	790	116,730
North Dakota	5.47	55	10,059
Ohio	6.70	865	129,191
Oklahoma	5.90	281	47,623
Oregon	4.22	168	39,820
Pennsylvania	5.58	729	130,693
Rhode Island	3.96	40	10,101
South Carolina	6.64	370	55,704
South Dakota	7.30	80	10,960
Tennessee	6.38	502	78,689
Texas	5.29	1,946	368,190
Utah	5.43	248	45,702
Vermont	*	18	5,133
Virginia	5.76	546	94,749
Washington	4.51	375	83,086
West Virginia	7.33	127	17,323
Wisconsin	5.94	360	60,594
Wyoming	5.22	32	6,128
Puerto Rico	7.34	139	18,933
Guam	8.18	24	2,935

* Rate does not meet National Center for Health Statistics standards of reliability; based on fewer than 20 deaths in the numerator.

¹Defined as infant deaths per 1,000 live births.

²Does not include Puerto Rico or Guam.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Linked birth/infant death file.

Technical Notes

Data source and 2003 revision

Information on the data source for the linked birth/infant death file is available elsewhere (1). Additionally, further information on the 2003 revision of the birth certificate is available (3); see also the U.S. Standard Certificate of Live Birth (9).

Weighting

In 2020, a record weight was added to the U.S. linked file to compensate for the 0.7% of infant death records that could not be linked to their corresponding birth certificates. The percentage of records linked varied by registration area, ranging from 95.7% through 100.0% (Table). The number of infant deaths in the linked file for the 50 states and District of Columbia (D.C.) was weighted to equal the sum of the linked plus unlinked infant deaths by state of occurrence of birth and age at death (under 7 days, 7–27 days, and 28 days to under 1 year). The addition of the weight reduced the potential for bias in comparing infant mortality rates by maternal and infant characteristics.

The 2020 linked file initially included 19,607 infant death records. Of these records, 19,475 were linked; 132 were unlinked because corresponding birth certificates could not be identified. The 19,607 linked and unlinked records contained 29 records of infants whose mothers' usual place of residence was outside of the United States; these records were excluded from linked file analyses for a weighted total of 19,578 infant deaths by place of residence for 2020.

Comparison of infant mortality data between linked file and vital statistics mortality file

The overall infant mortality rate of 5.42 from the 2020 period linked file is the same as that from the 2020 vital statistics mortality file (5.42) (10). The number of infant deaths in the linked file (19,475) differs slightly from the number in the mortality file (19,582) (10). Differences in numbers of infant deaths between the two data sources are primarily due to geographic coverage differences. For the vital statistics mortality file, all deaths occurring in the 50 states and D.C. are included regardless of the place of birth of the infant. In contrast, to be included in the U.S. linked file, both the birth and death must occur in the 50 states or D.C. (the territory linked file is a separate file). Weighting of the linked file also may contribute to small differences in numbers and rates by specific variables between these two data sets.

Period of gestation

Beginning with the 2014 data year, the National Center for Health Statistics (NCHS) transitioned to a new standard for estimating the gestational age of the newborn. The new measure—the obstetric estimate of gestation at delivery (OE)—replaces the measure based on the date of the last normal menses (11). Accordingly, gestational age data shown in this report are based on OE. National data based on OE data are available only from data year 2007 forward. Information on and discussion of

Table. Percentage of infant deaths linked to corresponding birth records, by state of occurrence of death: United States and each state, 2020

Area	Percent linked by state of occurrence of death
United States ¹	99.3
Alabama	100.0
Alaska	97.9
Arizona	100.0
Arkansas	100.0
California	98.9
Colorado	100.0
Connecticut	99.3
Delaware	100.0
District of Columbia	100.0
Florida	100.0
Georgia	99.9
Hawaii	100.0
Idaho	100.0
Illinois	100.0
Indiana	99.6
Iowa	100.0
Kansas	100.0
Kentucky	97.4
Louisiana	100.0
Maine	100.0
Maryland	99.4
Massachusetts	99.2
Michigan	99.0
Minnesota	100.0
Mississippi	100.0
Missouri	99.6
Montana	100.0
Nebraska	99.3
Nevada	99.3
New Hampshire	100.0
New Jersey	96.9
New Mexico	95.7
New York	98.7
New York City	100.0
North Carolina	99.7
North Dakota	100.0
Ohio	99.9
Oklahoma	98.9
Oregon	100.0
Pennsylvania	100.0
Rhode Island	100.0
South Carolina	100.0
South Dakota	98.7
Tennessee	99.7
Texas	97.4
Utah	99.6
Vermont	100.0
Virginia	99.4
Washington	99.7
West Virginia	100.0
Wisconsin	100.0
Wyoming	100.0

¹Excludes data for Puerto Rico, U.S. Virgin Islands, and Guam.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Linked birth/infant death file.

the reasons for the change, as well as a detailed comparison of the two measures, are presented elsewhere (11).

Sex, birthweight, plurality, and nativity

Detailed definitions and more information on sex, birthweight, plurality, and nativity are available elsewhere (1,3).

Cause-of-death classification

The mortality statistics presented in this report were compiled according to World Health Organization regulations, which specify that member nations classify and code causes of death according to the current revision of the *International Classification of Diseases* (ICD). ICD provides the basic guidance to code and classify causes of death, details disease classification, and supplies definitions, tabulation lists, the format of the death certificate, and the rules for coding cause of death. Cause-of-death data presented in this report were coded by procedures outlined in annual issues of the *NCHS Instruction Manual* (12,13).

In this report, tabulations of cause-of-death statistics are based solely on the underlying cause of death. Generally, more medical information is reported on death certificates than is directly reflected in the underlying cause of death. This is captured in NCHS multiple cause-of-death statistics (14,15).

Tabulation lists and cause-of-death ranking

The cause-of-death rankings for the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision* (ICD–10) are based on the “List of 130 Selected Causes of Infant Death.” The tabulation lists and rules for ranking leading causes of death are published in the NCHS Instruction Manual, Part 9: “ICD–10 Cause-of-death Lists for Tabulating Mortality Statistics” (16).

Computation of rates

For more information and discussion on computation of rates (1), see also the “User Guide to the 2010 Natality Public Use File” at: https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/DVS/natality/UserGuide2010.pdf.

Random variation in infant mortality rates

For information and discussion on random variation and significance testing for linked data (1), see also the “User Guide to the 2010 Natality Public Use File” at: https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/DVS/natality/UserGuide2010.pdf.

Availability of linked file

Linked file data are available for download from the Vital Statistics Online Data Portal: https://www.cdc.gov/nchs/data_access/vitalstatsonline.htm. Linked period file data may also be accessed from the Centers for Disease Control and Prevention’s Wide-ranging Online Data for Epidemiologic Research, known

as CDC WONDER, available from: <https://wonder.cdc.gov/lbd.html>. Beginning with 2005, the public-use file no longer includes geographic detail; such files are available on request (see the NCHS Division of Vital Statistics data release policy at: <https://www.cdc.gov/nchs/nvss/nvss-restricted-data.htm>). Data are also available in issues of *Vital and Health Statistics, Series 20*; *National Vital Statistics Reports*; and *NCHS Data Briefs* from the NCHS website: <https://www.cdc.gov/nchs/products/index.htm>.

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