

Infant Mortality

An Overview: 2020	
Infant Deaths	
Number	81
Rate per 1,000 Live Births	7.4
Neonatal Deaths	
Number	43
Rate per 1,000 Live Births	3.9
Postneonatal Death	
Number	38
Rate per 1,000 Live Births	3.5

During 2020, there were 81 South Dakota resident infant deaths reported for an infant mortality rate of 7.4 per 1,000 live births. In comparison, there were 80 infant deaths in 2019, with the infant mortality rate of 7.0 per 1,000 live births.

Caution should be used when comparing these annual rates, because the number of South Dakota resident births creates a relatively small denominator to determine infant mortality rates; a small change in the number of infant deaths can result in a relatively large rate change. Infant mortality rates should be monitored over a period of time.

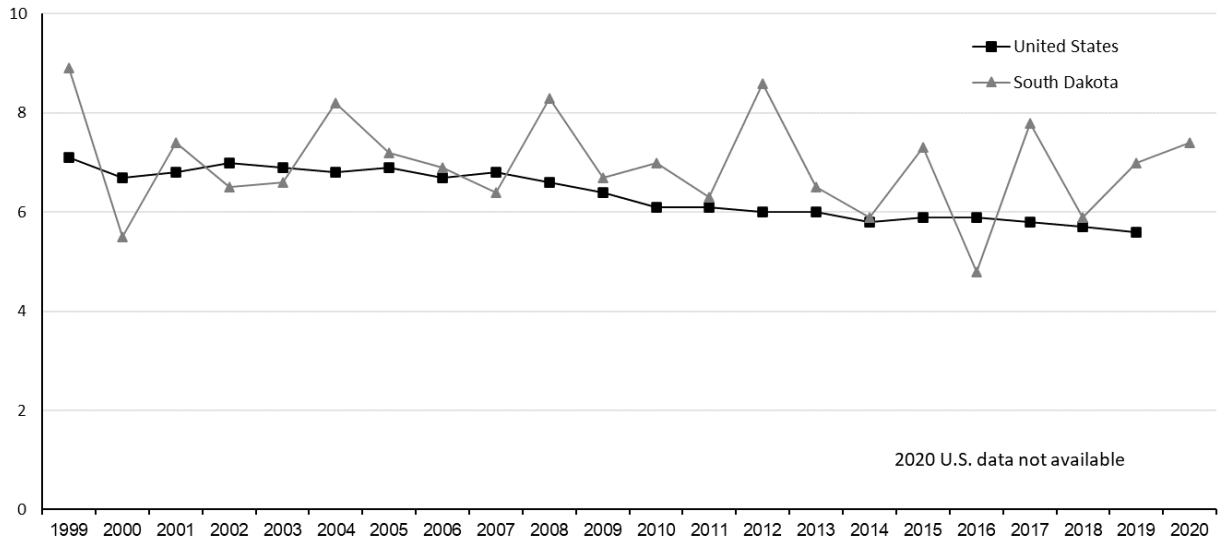
Table 33
Resident Infant Deaths and Infant Mortality Rates,
South Dakota and United States, 1999-2020

Year	United States		South Dakota	
	Number	Mortality Rate	Number	Mortality Rate
2020	*NA	*NA	81	7.4
2019	20,921	5.6	80	7.0
2018	21,498	5.7	70	5.9
2017	22,341	5.8	94	7.8
2016	23,161	5.9	59	4.8
2015	23,455	5.9	90	7.3
2014	23,215	5.8	73	5.9
2013	23,446	6.0	80	6.5
2012	23,629	6.0	104	8.6
2011	23,985	6.1	75	6.3
2010	24,586	6.1	83	7.0
2009	26,412	6.4	80	6.7
2008	28,059	6.6	100	8.3
2007	29,138	6.8	79	6.4
2006	28,527	6.7	82	6.9
2005	28,440	6.9	82	7.2
2004	27,936	6.8	93	8.2
2003	28,025	6.9	73	6.6
2002	28,034	7.0	70	6.5
2001	27,568	6.8	78	7.4
2000	27,200	6.7	57	5.5
1999	27,937	7.1	94	8.9

Note: *U.S. 2020 data were not available at time of publication.
 Infant mortality rates are per 1,000 live births.

Source: National Center for Health Statistics
 South Dakota Department of Health, Office of Health Statistics

Figure 6
Resident Infant Mortality Rates, South Dakota and United States, 1999-2020

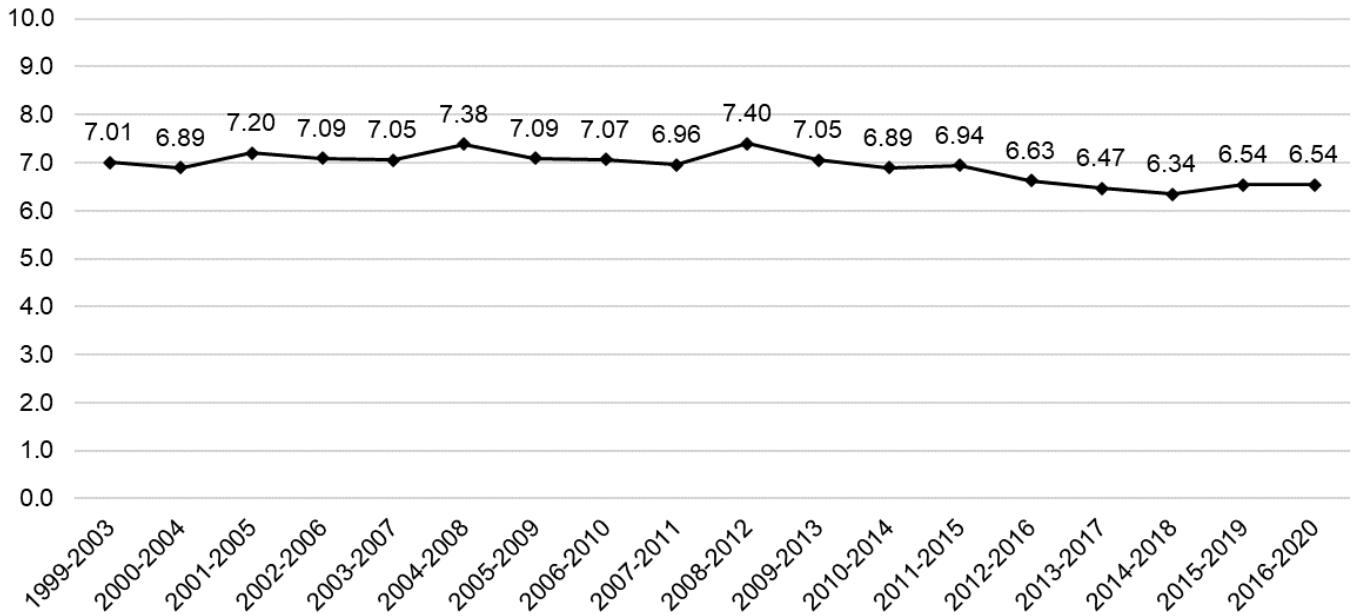


Note: Rate Per 1,000 Live Births. U.S. 2020 data are not available.
 Source: National Center for Health Statistics and South Dakota Department of Health, Office of Health Statistics

Figure 7, below, displays South Dakota's infant mortality rate grouped in five year increments. This graph shows that over the

past 22 years, South Dakota's infant mortality rate has been slowly decreasing.

Figure 7
Resident Infant Mortality Rates for South Dakota, 1999-2020



Note: Rate Per 1,000 Live Births.
 Source: South Dakota Department of Health, Office of Health Statistics

Table 34, below, lists the overall leading causes of infant death in 2016-2020. The leading causes of infant death in 2020 can be broken down as follows: congenital

malformations, 16.0 percent, short gestation and low birth weight with 13.6 percent, and unintentional injuries also with 12.3 percent.

Table 34
South Dakota Resident Leading Causes of Infant Death, 2016-2020

	Total	2016	2017	2018	2019	2020
Total Deaths	384	59	94	70	80	81
Congenital Malformations, Deformations, & Chromosomal Abnormalities (Q00-Q99)	97	13	25	19	27	13
Chromosomal abnormalities (Q90-Q99)	25	5	7	5	6	2
Edward's syndrome (Q91.0-Q91.3)	15	2	4	3	5	1
Congenital malformations of the nervous system (Q00-Q07)	19	3	4	4	4	4
Anencephaly and similar malformations (Q00)	9	1	0	2	4	2
Congenital malformations of the heart (Q20-Q24)	19	3	2	5	6	3
Congenital malformations and deformations of the musculoskeletal system, limbs and integument (Q65-Q85)	9	1	3	2	3	0
Congenital malformations of the genitourinary system (Q50-Q64)	6	0	3	2	1	0
Congenital malformations of the respiratory system (Q30-Q34)	5	0	1	0	2	2
Congenital malformation, unspecified (Q89.9)	5	1	1	0	1	2
Disorders related to short gestation and low birth weight (P07)	50	7	19	3	10	11
Unintentional Injuries (V01-X59, Y85-Y86)	46	8	10	8	10	10
Accidental suffocation and strangulation in bed (W75)	34	6	7	6	7	8
Other threats to breathing (W84)	5	1	2	1	0	1
Ill-Defined and Unknown Causes of Mortality (R96-R99)	32	5	3	5	8	11
Sudden Infant Death Syndrome (R95)	23	6	3	7	1	6
Newborn affected by maternal complications of pregnancy (P01)	15	3	1	3	4	4
Newborn affected by premature rupture of membranes (P01.1)	7	2	1	1	2	1
Newborn affected by incompetent cervix (P01.0)	5	0	0	2	1	2
Newborn affected by complications of placenta, cord, and membranes (P02)	11	0	2	4	2	3
Newborn affected by complications involving placenta (P02.0-P02.3)	8	0	2	3	1	2
Diseases of the circulatory system (I00-I99)	10	1	1	2	3	3
Stroke (I60-I69)	5	1	1	1	1	1
Respiratory distress of newborn (P22)	10	1	4	2	1	2
Cardiovascular disorders originating in the perinatal period (P29)	10	3	3	2	0	2
Neonatal cardiac failure (P29.0)	5	0	1	2	0	2
Homicide (X85-Y09, Y87.1)	8	2	2	2	1	1
Hydrops fetalis not due to hemolytic disease (P83.2)	7	2	0	1	1	3
Bacterial sepsis of newborn (P36)	6	0	3	2	0	1
Pulmonary hemorrhage originating in the perinatal period (P26)	5	1	1	0	0	3
All Other Causes	54	7	17	10	12	8

Source: South Dakota Department of Health, Office of Health Statistics

There were 43 neonatal deaths (deaths occurring to infants from birth through 27 days old) for a rate of 3.9 deaths per 1,000 live births. There were 38 postneonatal deaths (deaths occurring to infants 28 days

to 1 year of age) for a rate of 3.5 deaths per 1,000 live births. In comparison, in 2019 neonatal and postneonatal rates were 4.0 and 3.0 per 1,000 live births, respectively.

Infant Mortality by Race

Race is assigned based on standards set forth by the National Center for Health Statistics and the US Census Bureau in order for South Dakota's race data to be comparable to other areas. All race data in this section are categorized in the following manner:

white, non-Hispanic
 American Indian, non-Hispanic
 black, non-Hispanic
 multi-racial, non-Hispanic
 Hispanic

The remaining categories (Asian, non-Hispanic, and Pacific Islander, non-Hispanic) are included in the totals but are not necessarily shown specifically in any tables.

Table 35a, below, indicates that from 2019 to 2020, the number of South Dakota resident infant deaths increased for American Indians, Hispanics, and multi-racial. Table 35b, below, displays infant mortality grouped by five-year increments.

Table 35a
South Dakota Resident Infant Deaths and Mortality Rates by Infant's Race, 2011-2020

Year	Race of Infant										Total	
	White, non-Hispanic		American Indian, non-Hispanic		Black, non-Hispanic		Hispanic		Multi-racial, non-Hispanic			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate
2020	43	5.6	22	14.7	4	10.4	5	7.6	7	16.7	81	7.4
2019	50	6.1	18	11.2	5	12.1	4	6.2	2	5.1	80	7.0
2018	44	5.2	14	8.5	2	4.9	4	6.1	5	11.7	70	5.9
2017	61	7.1	15	8.3	7	17.6	3	4.8	6	14.4	94	7.8
2016	33	3.7	21	11.8	3	8.3	1	1.6	1	2.7	59	4.8
2015	52	5.9	24	12.5	3	11.3	3	5.4	7	16.6	90	7.3
2014	36	4.0	23	12.7	3	10.2	4	6.6	7	18.3	73	5.9
2013	46	5.2	22	11.6	4	14.4	2	3.8	4	11.9	80	6.5
2012	53	6.0	24	12.9	3	11.1	9	16.3	10	26.2	104	8.6
2011	42	4.8	24	12.8	3	12.8	0	0.0	4	12.5	75	6.3

Note: Infant mortality rates are per 1,000 live births. Failure of races to add to the total is due to other and unknown races included in the total.
 Source: South Dakota Department of Health, Office of Health Statistics

Table 35b
South Dakota Resident Infant Deaths and Mortality Rates by Infant's Race, Five-Year Increments, 2007-2020

Year	Race of Infant										Total	
	White, non-Hispanic		American Indian, non-Hispanic		Black, non-Hispanic		Hispanic		Multi-racial, non-Hispanic			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate
2016-2020	231	5.5	90	10.8	21	10.7	17	5.3	21	10.4	384	6.5
2015-2019	240	5.6	92	10.5	20	10.8	15	4.8	21	10.3	393	6.5
2014-2018	226	5.2	97	10.8	18	10.4	15	4.9	26	12.9	386	6.3
2013-2017	228	5.2	105	11.4	20	12.5	13	4.4	25	13.0	396	6.5
2012-2016	220	5.0	114	12.3	16	10.9	19	6.6	29	15.3	406	6.6
2011-2015	229	5.2	117	12.5	16	11.9	18	6.5	32	17.4	422	6.9
2010-2014	229	5.2	112	12.1	14	10.7	18	6.7	32	18.6	415	6.9
2009-2013	247	5.6	108	11.7	14	11.4	16	6.2	27	16.4	422	7.0
2008-2012	256	5.8	115	12.4	12	10.6	20	8.0	30	18.9	442	7.4
2007-2011	251	5.6	111	11.8	10	9.5	16	6.6	25	17.1	417	7.0

Note: Infant mortality rates are per 1,000 live births. Failure of races to add to the total is due to other and unknown races included in the total.
 Source: South Dakota Department of Health, Office of Health Statistics

When analyzed by race, Table 36a, below, indicates that the South Dakota resident neonatal mortality rate per 1,000 live births increased for American Indians and multi-racial from 2019 to 2020. The white, non-Hispanic and black, non-Hispanic neonatal

mortality rate decreased from 2019 to 2020. In Table 36b, below, neonatal mortality is grouped in five-year increments. The five-year neonatal mortality rate in 2016-2020 was the lowest of all years shown.

Table 36a
South Dakota Resident Neonatal Deaths and Mortality Rates by Infant's Race, 2011-2020

Year	Race of Infant										Total	
	White, non-Hispanic		American Indian, non-Hispanic		Black, non-Hispanic		Hispanic		Multi-racial, non-Hispanic			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate
2020	23	3.0	10	6.6	4	10.4	3	4.5	3	7.2	43	3.9
2019	30	3.7	6	3.7	5	12.1	3	4.7	1	2.5	46	4.0
2018	24	2.8	7	4.3	1	2.4	3	4.6	1	2.3	36	3.0
2017	46	5.3	10	5.5	6	15.1	2	3.2	2	4.8	67	5.5
2016	22	2.5	8	4.5	0	0.0	0	0.0	1	2.7	31	2.5
2015	36	4.1	15	7.8	3	11.3	2	3.6	2	4.7	59	4.8
2014	25	2.8	8	4.4	1	3.4	4	6.6	4	10.4	42	3.4
2013	31	3.5	9	4.7	4	14.4	1	1.9	2	6.0	48	3.9
2012	39	4.4	14	7.6	1	3.7	6	10.9	6	15.7	69	5.7
2011	29	3.3	10	5.3	2	8.5	0	0.0	3	9.4	46	3.9

Note: Neonatal mortality rates are per 1,000 live births. Failure of races to add to the total is due to other and unknown races included in the total.

Source: South Dakota Department of Health, Office of Health Statistics

Table 36b
South Dakota Resident Neonatal Deaths and Mortality Rates by Infant's Race, Five-Year Increments, 2007-2020

Year	Race of Infant										Total	
	White, non-Hispanic		American Indian, non-Hispanic		Black, non-Hispanic		Hispanic		Multi-racial, non-Hispanic			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate
2016-2020	145	3.5	41	4.9	16	8.1	11	3.4	8	3.9	223	3.8
2015-2019	158	3.7	46	5.3	15	8.1	10	3.2	7	3.5	239	4.0
2014-2018	153	3.5	48	5.4	11	6.4	11	3.6	10	5.0	235	3.9
2013-2017	160	3.6	50	5.4	14	8.8	9	3.1	11	5.7	247	4.0
2012-2016	153	3.5	54	5.8	9	6.1	13	4.5	15	7.9	249	4.1
2011-2015	160	3.6	56	6.0	11	8.2	13	4.7	17	9.2	264	4.3
2010-2014	159	3.6	55	6.0	8	6.1	14	5.2	18	10.5	261	4.3
2009-2013	166	3.8	54	5.8	9	7.4	12	4.7	16	9.8	264	4.4
2008-2012	170	3.8	57	6.1	7	6.2	16	6.4	20	12.6	277	4.6
2007-2011	165	3.7	51	5.4	7	6.7	15	6.2	17	11.6	259	4.3

Note: Neonatal mortality rates are per 1,000 live births. Failure of races to add to the total is due to other and unknown races included in the total.

Source: South Dakota Department of Health, Office of Health Statistics

Table 37a, below, indicates that the postneonatal mortality rate per 1,000 live births increased for all races except black, non-Hispanic infants from 2019 to 2020. The American Indian, non-Hispanic postneonatal mortality rate has been consistently higher than the white, non-

Hispanic rate for each year since 2011. When looking at the data in five-year increments as shown in Table 37b, below, the total postneonatal mortality rate is showing signs of increasing the past couple years.

Table 37a
South Dakota Resident Postneonatal Deaths and Mortality Rates by Infant's Race, 2011-2020

Year	Race of Infant										Total	
	White, non-Hispanic		American Indian, non-Hispanic		Black, non-Hispanic		Hispanic		Multi-racial, non-Hispanic			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate
2020	20	2.6	12	8.0	0	0.0	2	3.0	4	9.5	38	3.5
2019	20	2.5	12	7.5	0	0.0	1	1.6	1	2.5	34	3.0
2018	20	2.4	7	4.3	1	2.4	1	1.5	4	9.3	34	2.9
2017	15	1.7	5	2.8	1	2.5	1	1.6	4	9.6	27	2.2
2016	11	1.2	13	7.3	3	8.3	1	1.6	0	0.0	28	2.3
2015	16	1.8	9	4.7	0	0.0	1	1.8	5	11.8	31	2.5
2014	11	1.2	15	8.3	2	6.8	0	0.0	3	7.8	31	2.5
2013	15	1.7	13	6.8	0	0.0	1	1.9	2	6.0	32	2.6
2012	14	1.6	10	5.4	2	7.4	3	5.4	4	10.5	35	2.9
2011	13	1.5	14	7.5	1	4.3	0	0.0	1	3.1	29	2.5

Note: Postneonatal mortality rates are per 1,000 live births. Failure of races to add to the total is due to other and unknown races included in the total.

Source: South Dakota Department of Health, Office of Health Statistics

Table 37b
South Dakota Resident Postneonatal Deaths and Mortality Rates by Infant's Race, Five-Year Increments, 2007-2020

Year	Race of Infant										Total	
	White, non-Hispanic		American Indian, non-Hispanic		Black, non-Hispanic		Hispanic		Multi-racial, non-Hispanic			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate
2016-2020	86	2.1	49	5.9	5	2.5	6	1.9	13	6.4	161	2.7
2015-2019	82	1.9	46	5.3	5	2.7	5	1.6	14	6.9	154	2.6
2014-2018	73	1.7	49	5.5	7	4.0	4	1.3	16	7.9	151	2.5
2013-2017	68	1.5	55	6.0	6	3.8	4	1.4	14	7.3	149	2.4
2012-2016	67	1.5	60	6.5	7	4.8	6	2.1	14	7.4	157	2.6
2011-2015	69	1.6	61	6.5	5	3.7	5	1.8	15	8.1	158	2.6
2010-2014	70	1.6	57	6.2	6	4.6	4	1.5	14	8.2	154	2.6
2009-2013	81	1.8	54	5.8	5	4.1	4	1.6	11	6.7	158	2.6
2008-2012	86	1.9	58	6.2	5	4.4	4	1.6	10	6.3	165	2.8
2007-2011	86	1.9	60	6.4	3	2.9	1	0.4	8	5.5	158	2.6

Note: Postneonatal mortality rates are per 1,000 live births. Failure of races to add to the total is due to other and unknown races included in the total.

Source: South Dakota Department of Health, Office of Health Statistics

Table 38, below, shows the leading causes of infant death from 2016 to 2020. The overall leading cause of infant death for South Dakota residents was congenital malformations, deformations, and chromosomal abnormalities, which accounted for 25.3 percent of all infant deaths in South Dakota from 2016 to 2020. The second leading cause of death was disorders related to short gestation and low birth weight with 13.0 percent.

When analyzed by race, the leading cause of death for white, non-Hispanic infants was congenital malformations, deformations, and chromosomal abnormalities with 30.3 percent of all white, non-Hispanic infant deaths. The leading cause of death for American Indian, non-Hispanic infants was unintentional injuries with 20.0 percent. The leading cause of death for black, non-Hispanic infants was disorders related to short gestation and low birth weight with 28.6 percent.

Table 38
South Dakota Resident Infant Deaths by Cause of Death and Race, 2016-2020

	Total		Race									
			White, non-Hispanic		American Indian, non-Hispanic		Black, non-Hispanic		Hispanic		Multi-racial, non-Hispanic	
	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate
Total Deaths	384	6.5	231	5.5	90	10.8	21	10.7	17	5.3	21	10.4
1. Congenital malformations, deformations, & chromosomal abnormalities (Q00-Q99)	97	1.7	70	1.7	11	1.3	4	2.0	6	1.9	4	2.0
Chromosomal abnormalities (Q90-Q99)	25	0.4	18	0.4	1	0.1	1	0.5	4	1.2	0	0.0
Edward's syndrome (Q91.0-Q91.3)	15	0.3	12	0.3	0	0.0	1	0.5	2	0.6	0	0.0
Congenital malformations of the nervous system (Q00-Q07)	19	0.3	14	0.3	3	0.4	1	0.5	0	0.0	1	0.5
Anencephaly and similar malformations (Q00)	9	0.2	7	0.2	1	0.1	0	0.0	0	0.0	1	0.5
Congenital malformations of the heart (Q20-Q24)	19	0.3	14	0.3	3	0.4	0	0.0	1	0.3	1	0.5
Congenital malformations and deformations of the musculoskeletal system, limbs and integument (Q65-Q85)	9	0.2	8	0.2	0	0.0	0	0.0	1	0.3	0	0.0
Congenital malformations of the genitourinary system (Q50-Q64)	6	0.1	5	0.1	1	0.1	0	0.0	0	0.0	0	0.0
Congenital malformations of the respiratory system (Q30-Q34)	5	0.1	2	0.0	1	0.1	0	0.0	0	0.0	1	0.5
Congenital malformation, unspecified (Q89.9)	5	0.1	3	0.1	1	0.1	0	0.0	0	0.0	1	0.5
2. Disorders related to short gestation and low birth weight (P07)	50	0.9	30	0.7	12	1.4	6	3.1	0	0.0	1	0.5
3. Unintentional injuries (V01-X59, Y85-Y86)	46	0.8	20	0.5	18	2.2	0	0.0	2	0.6	6	3.0
Accidental suffocation and strangulation in bed (W75)	34	0.6	17	0.4	11	1.3	0	0.0	2	0.6	4	2.0
Other threats to breathing (W84)	5	0.1	2	0.0	2	0.2	0	0.0	0	0.0	1	0.5
4. Ill-Defined and unknown causes of mortality (R96-R99)	32	0.5	19	0.5	11	1.3	0	0.0	1	0.3	1	0.5
5. Sudden infant death syndrome (R95)	23	0.4	15	0.4	5	0.6	1	0.5	0	0.0	2	1.0
6. Newborn affected by maternal complications of pregnancy (P01)	15	0.3	5	0.1	4	0.5	2	1.0	3	0.9	1	0.5
Newborn affected by premature rupture of membranes (P01.1)	7	0.1	2	0.0	1	0.1	1	0.5	2	0.6	1	0.5
Newborn affected by incompetent cervix (P01.0)	5	0.1	2	0.0	1	0.1	1	0.5	1	0.3	0	0.0
7. Newborn affected by complications of placenta, cord and membranes (P02)	11	0.2	4	0.1	6	0.7	0	0.0	0	0.0	1	0.5
Newborn affected by complications involving placenta (P02.0-P02.3)	8	0.1	2	0.0	6	0.7	0	0.0	0	0.0	0	0.0
T8. Diseases of the circulatory system (I00-I99)	10	0.2	7	0.2	3	0.4	0	0.0	0	0.0	0	0.0
Stroke (I60-I69)	5	0.1	3	0.1	2	0.2	0	0.0	0	0.0	0	0.0
T8. Respiratory distress of newborn (P22)	10	0.2	7	0.2	1	0.1	1	0.5	1	0.3	0	0.0
T8. Cardiovascular disorders originating in the perinatal period (P29)	10	0.2	6	0.1	2	0.2	2	1.0	0	0.0	0	0.0
Neonatal cardiac failure (P29.0)	5	0.1	3	0.1	0	0.0	2	1.0	0	0.0	0	0.0
All Other Causes	80	0.2	48	1.1	17	2.0	5	2.5	4	1.2	5	2.5

Source: South Dakota Department of Health, Office of Health Statistics

Note: Failure of races to add to the total is due to other and unknown races included in the total.

Infant Mortality and Birth Weight

Table 39, below, displays infant mortality rates by birth weight. The highest mortality rate was for babies born who weighed less than 1,000 grams with an infant mortality rate of 452.0, a neonatal mortality rate of 419.9, and a postneonatal mortality rate of

32.0. The highest rates occurred below 2,500 grams, which is considered low birth weight babies. The lowest infant mortality rate occurred in the 4,000-4,499 gram group with 1.9.

Table 39
South Dakota Resident Infant Mortality Rates by Birth Weight, 2016-2020

Birth Weight (in Grams)	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Total	58,687	384	6.5	3.8	2.7
<1,000	281	127	452.0	419.9	32.0
1,000-1,499	340	23	67.6	52.9	14.7
1,500-1,999	810	24	29.6	22.2	7.4
2,000-2,499	2,593	35	13.5	6.9	6.6
2,500-2,999	9,560	53	5.5	1.7	3.9
3,000-3,499	21,989	71	3.2	1.0	2.2
3,500-3,999	17,526	36	2.1	0.6	1.5
4,000-4,499	4,863	9	1.9	0.2	1.6
4,500+	717	2	2.8	0.0	2.8

Note: Infant, neonatal, and postneonatal mortality rates are per 1,000 live births.
Failure of births to add to total is due to unknown birth weights included in the total.
Source: South Dakota Department of Health, Office of Health Statistics

Infant Mortality and Prenatal Care

Table 40, below, displays infant mortality rates by prenatal care. The highest infant mortality rate, 21.1, occurred when mothers did not have prenatal care. This is also

true for neonatal and postneonatal mortality rates. In comparison, when mothers received prenatal care in the first trimester the infant mortality rate was only 5.2.

Table 40
South Dakota Resident Infant Mortality Rates by Prenatal Care, 2016-2020

Trimester Prenatal Care Began	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Total	58,687	384	6.5	3.8	2.7
First Trimester	43,738	228	5.2	3.2	2.0
Second Trimester	10,870	107	9.8	5.2	4.7
Third Trimester	2,878	20	6.9	2.8	4.2
No Prenatal Care	569	12	21.1	15.8	5.3

Note: Infant mortality rates are per 1,000 live births.
Failure of births and infant deaths to add to the total is due to unknown prenatal care included in the total.
Source: South Dakota Department of Health, Office of Health Statistics

Infant Mortality and Gestation Period

Table 41, below, displays infant mortality rates by gestation period. The highest infant mortality rate occurred to those with less than 25 weeks gestation with a rate of 746.4.

The highest neonatal mortality occurred at less than 25 weeks with a rate of 724.6 and the highest postneonatal mortality rate occurred at 25-29 weeks with a rate of 30.9.

Table 41
South Dakota Resident Infant Mortality Rates by Gestation Period, 2016-2020

Weeks of Gestation	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Total	58,687	384	6.5	3.8	2.7
<25 Weeks	138	103	746.4	724.6	21.7
25-29 Weeks	324	39	120.4	89.5	30.9
30-31 Weeks	285	12	42.1	38.6	3.5
32 Weeks	234	4	17.1	12.8	4.3
33 Weeks	317	11	34.7	25.2	9.5
34 Weeks	741	10	13.5	9.4	4.0
35 Weeks	1,057	8	7.6	5.7	1.9
36 Weeks	2,371	32	13.5	5.5	8.0
37 Weeks	5,679	44	7.7	2.3	5.5
38 Weeks	9,722	37	3.8	0.8	3.0
39 Weeks	21,402	50	2.3	0.8	1.5
40 Weeks	12,309	25	2.0	0.5	1.5
41 Weeks	3,763	5	1.3	0.3	1.1
42+ Weeks	286	2	7.0	3.5	3.5

Note: Infant mortality rates are per 1,000 live births.

Failure of births and infant deaths to add to the total is due to unknown gestations included in the total.

Source: South Dakota Department of Health, Office of Health Statistics

Infant Mortality and Cigarette Use

Table 42, below, displays infant mortality rates by cigarette use of the mother. Mothers who reported they smoked cigarettes while pregnant had an infant

mortality rate of 11.7, while mothers who reported they did not smoke cigarettes while pregnant had an infant mortality rate of 5.7.

Table 42
South Dakota Resident Infant Mortality Rates
by Cigarette Use of Mother During Pregnancy, 2016-2020

Cigarette Use of Mother	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Total	58,687	384	6.5	3.8	2.7
Yes	6,908	81	11.7	5.2	6.5
No	51,581	296	5.7	3.5	2.2

Note: Infant mortality rates are per 1,000 live births.

Failure of births to add to the total is due to unknown cigarette use of the mother included in the total.

Source: South Dakota Department of Health, Office of Health Statistics

Infant Mortality and Mother Demographics

The following tables, 43a-43d, compare infant mortality rates among different demographics of the mother, different previous pregnancy histories, different labor and delivery situations, and different post-delivery conditions. The comparison is done using the Chi-Square test. An explanation of this test is given in the Technical Notes section at the end of the report.

The rates denoted with an asterisk are the ones found to illustrate an association with the variables listed in the left column. For example, the test indicates that when there is a change in the education of the mother, there is an associated change with the

infant mortality rate as well as the neonatal and post-neonatal mortality rate.

However, it should be noted that this test does not consider relationships among multiple variables at the same time. Therefore, dependencies detected by Chi-square analyses may be unrealistic or non-causal. There may be other unseen factors that make the variables appear to be associated. However, if properly used, this test is a very useful tool for the evaluation of associations and can be used as a preliminary analysis of more complex statistical evaluations.

Table 43a
South Dakota Resident Infant Mortality Rates by Demographics of Mother, 2016-2020

	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Education					
11 years or less	7,452	79	10.6*	5.4*	5.2*
12+ years	49,430	286	5.8*	3.5*	2.3*
Marital Status					
Single	21,404	202	9.4*	5.0*	4.4*
Married	37,262	175	4.7*	3.1*	1.6*
Mother's WIC Status					
No WIC	41,812	244	5.8*	3.9	2.0*
WIC	16,424	126	7.7*	3.5	4.2*
Age					
<20	2,960	24	8.1*	4.1	4.1*
20-24	11,697	94	8.0*	4.4	3.6*
25-29	19,683	110	5.6*	3.4	2.2*
30-34	16,657	91	5.5*	3.8	1.7*
35+	7,689	59	7.7*	4.0	3.6*
BMI					
Underweight (<18.5)	1,712	22	12.9*	8.2*	4.7*
Recommended (18.5-24.9)	25,839	127	4.9*	3.0*	1.9*
Overweight (25.0-29.9)	15,334	94	6.1*	3.6*	2.5*
Obese (30.0-34.9)	8,211	56	6.8*	3.8*	3.0*
Very Obese (35.0-39.9)	4,207	43	10.2*	5.7*	4.5*
Morbidly Obese (40.0+)	2,865	29	10.1*	5.2*	4.9*
Diabetes					
No Pre-Existing Diabetes	58,028	365	6.3*	3.7	2.6*
Pre-Existing Diabetes	614	10	16.3*	6.5	9.8*
Hepatitis C					
No Hepatitis C	58,395	369	6.3*	3.8*	2.6*
Hepatitis C	253	7	27.7*	11.9*	15.8*
Chlamydia					
No Chlamydia	57,207	360	6.3*	3.8	2.5*
Chlamydia	1,441	16	11.1*	4.2	6.9*
Gonorrhea					
No Gonorrhea	58306	371	6.4	3.8	2.6*
Gonorrhea	342	5	14.6	5.8	8.8*
Family History of Hearing Loss					
No	56,550	342	6.0*	3.6*	2.5
Yes	985	13	13.2*	9.1*	4.1

Table 43a (continued)
South Dakota Resident Infant Mortality Rates by Demographics of Mother, 2016-2020

	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Payment Source					
Medicaid	17,642	159	9.0*	4.1*	4.9*
Private Insurance	35,570	171	4.8*	3.3*	1.5*
Self-Pay	1,747	19	10.9*	8.0*	2.9*
Indian Health Service	1,239	14	11.3*	7.3*	4.0*
Champus/Tricare	1,832	7	3.8*	2.2*	1.6*
Other Government	228	3	13.2*	8.8*	4.4*
Other	144	1	6.9*	6.9*	0.0*

Note: *The Chi-square statistic is significant at the 0.05 level.

Source: South Dakota Department of Health, Office of Health Statistics

Table 43b
South Dakota Resident Infant Mortality Rates by Previous Pregnancy History, 2016-2020

	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Number of Living Children					
0	19,306	114	5.9*	4.0	1.9*
1	17,918	110	6.1*	4.1	2.1*
2	11,373	63	5.5*	3.0	2.5*
3	5,527	44	8.0*	3.8	4.2*
4+	4,552	45	10.0*	3.7	6.2*
Number of Dead Children					
0	57,844	360	6.2*	3.6*	2.7
1+	810	16	19.8*	19.8*	0.0
Number of Previous Terminations					
0	41,505	226	5.4*	3.2*	2.3*
1	11,569	87	7.5*	4.8*	2.7*
2+	5,575	64	11.5*	6.3*	5.2*
Number of Previous C-Sections					
0	50,487	312	6.2*	3.8	2.4*
1	5,258	34	6.5*	3.4	3.0*
2+	2,893	29	10.0*	4.5	5.5*
Number of Previous Pregnancies					
0	15,845	82	5.2*	3.2	2.0*
1	15,223	89	5.8*	4.0	1.8*
2	11,454	57	5.0*	3.1	1.8*
3	7,105	64	9.0*	5.1	3.9*
4	4,047	29	7.2*	3.0	4.2*
5+	4,959	54	10.9*	5.0	5.8*
Previous Pre-Term Infant					
No	56,540	339	6.0*	3.5*	2.5*
Yes	2,102	36	17.1*	10.5*	6.7*
Pre-Pregnancy Hypertension					
No	57,795	367	6.4	3.7*	2.6
Yes	847	8	9.4	8.3*	1.2
Other Poor Previous Pregnancy Outcomes					
No	55,639	334	6.0*	3.5*	2.5*
Yes	2,626	38	14.5*	9.5*	5.0*
Hepatitis B					
No	58,546	373	6.4*	3.8	2.6*
Yes	102	3	29.4*	9.8	19.6*
Infertility Treatment					
No	57,127	362	6.3*	3.7*	2.6
Yes	1,140	13	11.3*	8.7*	2.6

Note: *The Chi-square statistic is significant at the 0.05 level.

Source: South Dakota Department of Health, Office of Health Statistics

Table 43c
South Dakota Resident Infant Mortality Rates by Labor and Delivery, 2016-2020

	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Infertility Treatment-Drugs, Insemination					
No	57,801	366	6.3	3.7*	2.6
Yes	839	9	10.7	9.5*	1.2
Tocolysis					
No	58,097	356	6.1*	3.5*	2.6*
Yes	571	21	36.8*	29.8*	7.0*
Cervical Cerclage					
No	58,478	366	6.3*	3.7*	2.6*
Yes	190	11	57.9*	47.4*	10.5*
Premature Rupture of Membranes					
No	56,690	315	5.6*	3.1*	2.5*
Yes	1,969	61	31.0*	24.4*	6.6*
Antibiotics Received by the Mother During Labor					
No	42,273	225	5.3*	3.2*	2.1*
Yes	16,387	153	9.3*	5.3*	4.0*
Non-Vertex Presentation					
No	55,622	304	5.5*	2.8*	2.6
Yes	2,664	71	26.7*	24.0*	2.6
Steroids for Fetal Lung Maturation Received by the Mother Prior to Delivery					
No	54,650	295	5.4*	3.3*	2.1*
Yes	4,010	83	20.7*	11.5*	9.2*
Clinical Chorioamnionitis Diagnosed During Labor – Maternal Temp $\geq 38^{\circ}\text{C}$					
No	57,934	361	6.2*	3.6*	2.7
Yes	726	17	23.4*	23.4*	0.0
Epidural or Spinal Anesthesia During Labor					
No	15,816	146	9.2*	6.8*	2.4
Yes	32,749	127	3.9*	1.6*	2.3
Fetal Presentation					
Cephalic	55,699	294	5.3*	2.7*	2.5
Breech	2,348	71	30.2*	27.3*	3.0
Method of Delivery					
Vaginal	42,460	233	5.5*	3.2*	2.3
Vaginal after previous C-section	1,689	19	11.2*	8.3*	3.0
Primary C-section	8,036	79	9.8*	6.6*	3.2
Repeat C-section	6,466	44	6.8*	2.6*	4.2
Maternal Transfusion					
No	58,411	373	6.4*	3.8*	2.6
Yes	247	5	20.2*	16.2*	4.0
Unplanned Operating Procedure Following Delivery					
No	58,462	369	6.3*	3.7*	2.6*
Yes	196	9	45.9*	35.7*	10.2*

Note: *The Chi-square statistic is significant at the 0.05 level.

Source: South Dakota Department of Health, Office of Health Statistics

Table 43d
South Dakota Resident Infant Mortality Rates by Post Delivery Conditions, 2016-2020

	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Five Minute APGAR Score					
0-7	2,481	208	83.8*	73.8*	10.1*
8	5,549	38	6.8*	2.2*	4.7*
9	4,761	114	2.4*	0.4*	2.0*
10	2,768	7	2.5*	0.4*	2.2*
Ten Minute APGAR Score					
0-2	124	107	862.9*	862.9*	0.0
3-7	391	39	99.7*	92.1*	7.7
8-10	207	6	29.0*	19.3*	9.7
Plurality					
1	56,588	336	5.9*	3.4*	2.6
2+	2,099	42	20.0*	15.7*	4.3
Breastfeeding at the Time of Discharge					
No	11,236	96	8.5*	2.8*	5.8*
Yes	47,017	108	2.3*	0.4*	1.9*
Assisted Ventilation Required Immediately Following Delivery					
No	55,081	259	4.7*	2.6*	2.1*
Yes	3,596	118	32.8*	22.8*	10.0*
Assisted Ventilation for More than Six Hours					
No	57,188	306	5.4*	3.1*	2.2*
Yes	1,489	71	47.7*	30.2*	17.5*
Neonatal Intensive Care Unit Admission					
No	52,823	250	4.7*	2.9*	1.8*
Yes	5,854	127	21.7*	12.0*	9.7*
Newborn Given Surfactant Replacement Therapy					
No	58,264	222	5.7*	3.3*	2.5*
Yes	413	44	106.5*	79.9*	26.6*
Antibiotics Received by the Newborn for Suspected Neonatal Sepsis					
No	56,168	319	5.7*	3.3*	2.4*
Yes	2,509	58	23.1*	14.7*	8.4*

Note: *The Chi-square statistic is significant at the 0.05 level.

Source: South Dakota Department of Health, Office of Health Statistics

