

Infant Mortality

An Overview: 2017

Infant Deaths	
Number	94
Rate per 1,000 Live Births	7.75
Neonatal Deaths	
Number	67
Rate per 1,000 Live Births	5.52
Postneonatal Death	
Number	27
Rate per 1,000 Live Births	2.23

During 2017, there were 94 South Dakota resident infant deaths reported for an infant mortality rate of 7.75 per 1,000 live births. In comparison, there were 59 infant deaths in 2016, with the infant mortality rate of 4.81 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.

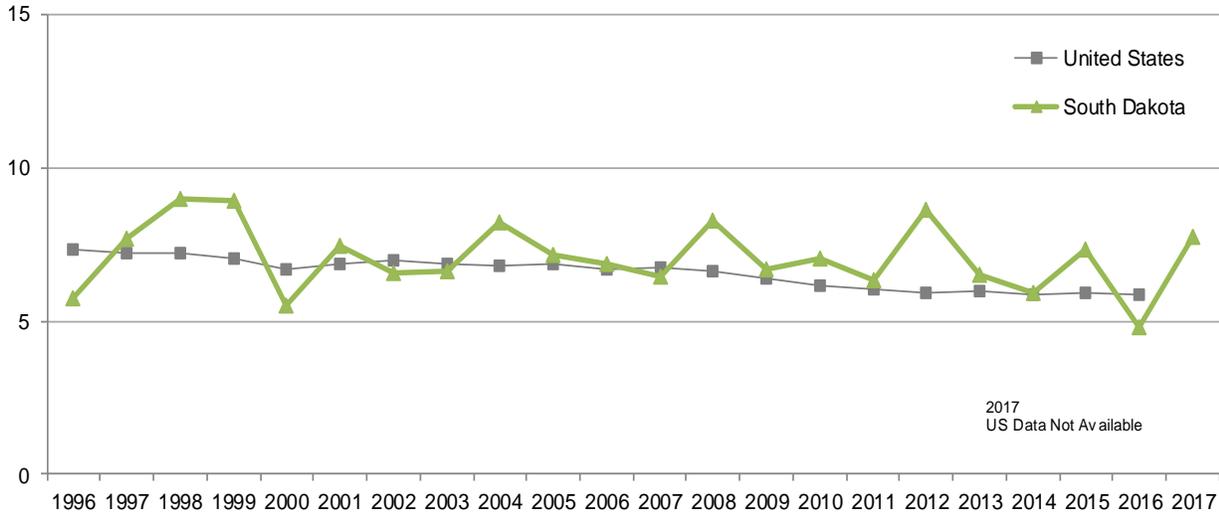
Table 34
Resident Infant Deaths and Infant Mortality Rates,
South Dakota and United States, 1996-2017

Year	United States		South Dakota	
	Number	Mortality Rate	Number	Mortality Rate
2017	*NA	*NA	94	7.75
2016	23,161	5.87	59	4.81
2015	23,455	5.90	90	7.30
2014	23,215	5.82	73	5.94
2013	23,446	5.96	80	6.53
2012	23,629	5.98	104	8.60
2011	23,985	6.07	75	6.34
2010	24,586	6.15	83	7.04
2009	26,412	6.39	80	6.71
2008	28,059	6.61	100	8.28
2007	29,138	6.75	79	6.45
2006	28,527	6.69	82	6.88
2005	28,440	6.87	82	7.15
2004	27,936	6.79	93	8.20
2003	28,025	6.85	73	6.62
2002	28,034	6.97	70	6.54
2001	27,568	6.85	78	7.45
2000	27,200	6.70	57	5.51
1999	27,937	7.06	94	8.94
1998	28,371	7.20	92	8.95
1997	28,045	7.21	78	7.67
1996	28,487	7.32	60	5.73

Note: *U.S. 2017 data was 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, 1996-2017

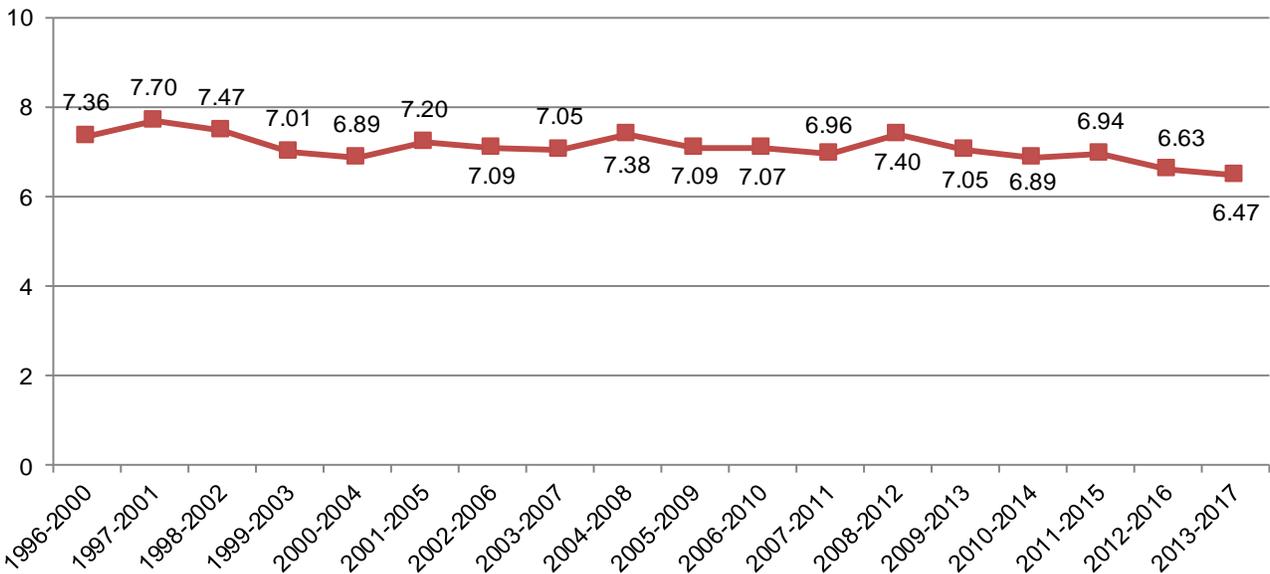


Note: Rate Per 1,000 Live Births. U.S. 2017 data is not available.
 Source: National Center for Health Statistics and South Dakota Department of Health, Office of Health Statistics

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

the past 21 years, South Dakota's infant mortality rate has been slowly decreasing.

Figure 7
Resident Infant Mortality Rates for South Dakota, 1996-2017



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

Table 35, below, lists the overall leading causes of infant death in 2013-2017. The leading causes of infant death in 2017 can be broken down as follows: congenital

malformations, 26.6 percent, extreme immaturity with 20.2 percent, and accidents with 10.6 percent.

**Table 35
South Dakota Resident Leading Causes of Infant Death, 2013-2017**

	Total	2013	2014	2015	2016	2017
Total Deaths	396	80	73	90	59	94
Congenital Malformations, Deformations, & Chromosomal Abnormalities (Q00-Q99)	96	18	21	19	13	25
Chromosomal abnormalities (Q90-Q99)	27	3	6	6	5	7
Edward's syndrome (Q91.0-Q91.3)	15	2	3	4	2	4
Patau's syndrome (Q91.4-Q91.7)	5	1	1	1	1	1
Congenital malformations of the nervous system (Q00-Q07)	19	3	7	2	3	4
Congenital malformations of the heart (Q20-Q24)	13	3	3	2	3	2
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)	13	4	1	4	1	3
Congenital diaphragmatic hernia (Q79.0)	8	2	1	3	0	2
Congenital malformations of the urinary system (Q60-Q64)	5	2	0	0	0	3
Multiple congenital anomalies (Q89.7)	5	0	2	1	0	2
Extreme immaturity and other preterm infants (Less than 37 comp wks of gestation) (P07.2-P07.3)	63	16	10	11	7	19
Accidents (V01-X59, Y85-Y86)	44	8	7	11	8	10
Accidental suffocation and strangulation in bed (W75)	29	1	5	10	6	7
Unspecified threat to breathing (W84)	9	4	2	0	1	2
Sudden Infant Death Syndrome (R95)	34	9	5	11	6	3
III-Defined and Unknown Causes of Mortality (R96-R99)	21	2	4	7	5	3
Newborn affected by other forms of placental separation and hemorrhage (P02.1)	9	1	2	4	0	2
Assault (homicide) (X85-Y09, Y87.1)	9	1	2	2	2	2
Primary atelectasis of newborn (P28.0)	9	2	2	2	0	3
Neonatal cardiac dysrhythmia (P29.1)	8	1	1	3	2	1
Influenza and Pneumonia (J09-J18)	6	1	2	1	0	2
Bacterial Sepsis of newborn, unspecified (P36.9)	5	3	1	0	0	1
All Other Causes	92	18	16	19	16	23

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

There were 67 neonatal deaths (deaths occurring to infants from birth through 27 days old) for a rate of 5.52 deaths per 1,000 live births. There were 27 postneonatal deaths (deaths occurring to infants 28 days

to 1 year of age) for a rate of 2.23 deaths per 1,000 live births. In comparison, in 2016 neonatal and postneonatal rates were 2.53 and 2.28 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. All race data in this section are categorized in the following manner:

- Single-race white
- Single-race American Indian
- Single-race black
- Two or more races

The remaining single-race categories (Asian and Pacific Islander) are included in the totals but are not shown specifically in any tables.

Table 36a, below, indicates that from 2016 to 2017, the number of South Dakota resident infant deaths decreased for American Indians yet increased for white and black races. Table 36b, below, displays infant mortality grouped by five-year increments.

Table 36a
South Dakota Resident Infant Deaths and Mortality Rates by Infant's Race, 2008-2017

Year	Race of Infant								Total	
	White		American Indian		Black		Two or more races			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate
2017	63	7.00	16	8.61	7	17.07	6	13.64	94	7.75
2016	33	3.58	21	11.38	3	8.15	2	5.03	59	4.81
2015	54	5.96	25	12.58	3	11.11	7	15.84	90	7.30
2014	40	4.36	23	12.18	3	10.03	7	16.99	73	5.94
2013	48	5.25	22	11.25	4	14.13	5	13.70	80	6.53
2012	58	6.37	26	13.43	3	10.79	10	25.06	104	8.60
2011	43	4.82	24	12.29	3	12.50	4	11.76	75	6.34
2010	54	5.84	19	10.35	1	4.39	8	24.54	83	7.04
2009	56	6.00	19	10.08	3	16.22	2	5.87	80	6.71
2008	60	6.36	29	14.56	2	10.36	9	29.80	100	8.28

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 36b
South Dakota Resident Infant Deaths and Mortality Rates by Infant's Race, Five-Year Increments, 2005-2017

Year	Race of Infant								Total	
	White		American Indian		Black		Two or more races			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate
2013-2017	238	5.22	107	11.22	20	12.27	27	13.13	396	6.47
2012-2016	233	5.10	117	12.17	16	10.68	31	15.38	406	6.63
2011-2015	243	5.35	120	12.34	16	11.68	33	16.85	422	6.94
2010-2014	243	5.33	114	11.91	14	10.31	34	18.46	415	6.89
2009-2013	259	5.66	110	11.50	14	11.23	29	16.37	422	7.05
2008-2012	271	5.89	117	12.19	15	13.05	33	19.32	442	7.40
2007-2011	264	5.68	112	11.52	10	9.40	29	18.25	417	6.96
2006-2010	271	5.77	114	11.73	11	10.99	27	17.77	424	7.07
2005-2009	272	5.83	120	12.47	11	12.17	20	11.94	423	7.09

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 37a, below, indicates that the South Dakota resident neonatal mortality rate per 1,000 live births increased for whites, American Indians, blacks, and two or more races from 2016 to 2017. The American Indian neonatal

mortality rate has consistently been higher than white neonatal mortality rates for each year since 2008. In Table 37b, below, neonatal mortality is grouped in five-year increments. The neonatal mortality rate has shown little change since 2005.

Table 37a
South Dakota Resident Neonatal Deaths and Mortality Rates by Infant's Race, 2008-2017

Year	Race of Infant								Total	
	White		American Indian		Black		Two or more races			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Rate	Rate
2017	48	5.33	10	5.38	6	14.63	2	4.55	67	5.52
2016	22	2.38	8	4.33	0	0.00	1	2.51	31	2.53
2015	38	4.19	15	7.55	3	11.11	2	4.52	59	4.79
2014	29	3.16	8	4.24	1	3.34	4	9.71	42	3.42
2013	32	3.50	9	4.60	4	14.13	2	5.48	48	3.92
2012	43	4.72	15	7.75	1	3.60	6	15.04	69	5.71
2011	30	3.36	10	5.12	2	8.33	3	8.82	46	3.89
2010	37	4.00	14	7.63	0	0.00	4	12.27	56	4.75
2009	34	3.64	7	3.71	2	9.17	2	5.87	45	3.77
2008	40	4.24	12	6.02	2	10.81	7	23.18	61	5.05

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 37b
South Dakota Resident Neonatal Deaths and Mortality Rates by Infant's Race, Five-Year Increments, 2005-2017

Year	Race of Infant								Total	
	White		American Indian		Black		Two or more races			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Rate	Rate
2013-2017	169	3.71	50	5.24	14	8.59	11	5.35	247	4.03
2012-2016	164	3.59	55	5.72	9	6.01	15	7.44	249	4.07
2011-2015	172	3.79	57	5.86	11	8.03	17	8.68	264	4.34
2010-2014	171	3.75	56	5.85	8	6.02	19	10.31	261	4.33
2009-2013	176	3.85	55	5.75	9	7.22	17	9.60	264	4.41
2008-2012	184	4.00	58	6.04	7	6.09	22	12.88	277	4.64
2007-2011	178	3.83	52	5.35	7	6.58	20	12.59	259	4.32
2006-2010	178	3.79	52	5.35	7	6.99	18	11.85	256	4.27
2005-2009	182	3.90	47	4.88	8	8.85	15	8.96	252	4.23

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 38a, below, indicates that the postneonatal mortality rate per 1,000 live births increased for white infants and infants of two or more races from 2016 to 2017. The black and American Indian postneonatal mortality rate decreased from 2016 to 2017. The American Indian

postneonatal mortality rate has been consistently higher than white for each year since 2008. When looking at the data in five-year increments as shown in Table 38b, below, the postneonatal mortality has remained steady.

Table 38a
South Dakota Resident Postneonatal Deaths and Mortality Rates by Infant's Race, 2008-2017

Year	Race of Infant								Total	
	White		American Indian		Black		Two or more races			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate
2017	15	1.67	6	3.23	1	2.44	4	9.09	27	2.23
2016	11	1.19	13	7.04	3	8.15	1	2.51	28	2.28
2015	16	1.77	10	5.03	0	0.0	5	11.31	31	2.52
2014	11	1.20	15	7.94	2	6.69	3	7.28	31	2.52
2013	16	1.75	13	6.65	0	0.0	3	8.22	32	2.61
2012	15	1.65	11	5.68	2	7.19	4	10.03	35	2.89
2011	13	1.46	14	7.17	1	4.17	1	2.94	29	2.45
2010	17	1.84	5	2.72	1	4.39	4	12.27	27	2.29
2009	22	2.36	12	6.37	1	4.59	0	0.00	35	2.93
2008	20	2.12	17	8.53	0	0.0	2	6.62	39	3.23

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 38b
South Dakota Resident Postneonatal Deaths and Mortality Rates by Infant's Race, Five-Year Increments, 2005-2017

Year	Race of Infant								Total	
	White		American Indian		Black		Two or more races			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Rate	Rate
2013-2017	69	1.51	57	5.98	6	3.68	16	7.78	149	2.43
2012-2016	69	1.51	62	6.45	7	4.67	16	7.94	157	2.56
2011-2015	71	1.56	63	6.48	5	3.65	16	8.17	158	2.60
2010-2014	72	1.58	58	6.06	6	4.52	15	8.14	154	2.56
2009-2013	83	1.81	55	5.75	5	4.01	12	6.78	158	2.64
2008-2012	87	1.89	59	6.15	5	4.35	11	6.44	165	2.76
2007-2011	86	1.85	60	6.17	3	2.82	9	5.66	158	2.64
2006-2010	93	1.98	62	6.38	4	4.00	9	5.92	168	2.80
2005-2009	90	1.93	73	7.59	3	3.32	5	2.99	171	2.87

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 39, below, shows the leading causes of infant death from 2013 to 2017. The overall leading cause of infant death for South Dakota residents was congenital malformations, deformations, and chromosomal abnormalities, which accounted for 24.2 percent of all infant deaths in South Dakota from 2013 to 2017. The second leading cause of death was extreme immaturity with 15.9 percent.

When analyzed by race, the leading cause of death for white infants was congenital malformations, deformations, and chromosomal abnormalities with 31.1 percent of all white infant deaths. The leading cause of death for American Indian infants was a tie with accidents and sudden infant death syndrome each with 15.9 percent of all American Indian infant deaths. The leading cause of death for black infants was extreme immaturity with 35.0 percent of all black infant deaths.

Table 39
South Dakota Resident Infant Deaths by Cause of Death and Race, 2013-2017

	Total		Race							
			White		American Indian		Black		Two or More Races	
	Num	Rate	Num	Rate	Num	Rate	Num	Rate	Num	Rate
Total Deaths	396	6.47	238	5.22	107	11.22	20	12.27	27	13.13
Congenital Malformations, Deformations, & Chromosomal Abnormality (Q00-Q99)	96	1.57	74	1.62	13	1.36	4	2.45	3	1.46
Chromosomal abnormalities (Q90-Q99)	27	0.44	24	0.53	0	0.00	1	0.61	1	0.49
Edward's syndrome (Q91.0-Q91.3)	15	0.24	13	0.29	0	0.00	1	0.61	1	0.49
Patau's syndrome (Q91.4-Q91.7)	5	0.08	5	0.11	0	0.00	0	0.00	0	0.00
Congenital malformations of the nervous system (Q00-Q07)	19	0.31	10	0.22	7	0.73	1	0.61	1	0.49
Congenital malformations of the heart (Q20-Q24)	13	0.21	9	0.20	2	0.21	1	0.61	0	0.00
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)	13	0.21	12	0.26	0	0.00	0	0.00	1	0.49
Congenital diaphragmatic hernia (Q79.0)	8	0.13	7	0.15	0	0.00	0	0.00	1	0.49
Congenital malformations of the urinary system (Q60-Q64)	5	0.08	3	0.07	2	0.21	0	0.00	0	0.00
Multiple congenital anomalies (Q89.7)	5	0.08	5	0.11	0	0.00	0	0.00	0	0.00
Extreme immaturity and other preterm infants (Less than 37 comp wks of gestation) (P07.2-P07.3)	63	1.03	40	0.88	12	1.26	7	4.29	3	1.46
Accidents (V01-X59, Y85-Y86)	44	0.72	22	0.48	17	1.78	0	0.00	5	2.43
Accidental suffocation and strangulation in bed (W75)	29	0.47	15	0.33	12	1.26	0	0.00	2	0.97
Unspecified threat to breathing (W84)	9	0.15	6	0.13	2	0.21	0	0.00	1	0.49
Sudden Infant Death Syndrome (R95)	34	0.56	13	0.29	17	1.78	1	0.61	3	1.46
Ill-Defined and Unknown Causes of Mortality (R96-R99)	21	0.34	10	0.22	9	0.94	1	0.61	1	0.49
Newborn affected by other forms of placental separation and hemorrhage (P02.1)	9	0.15	4	0.09	5	0.52	0	0.00	0	0.00
Assault (homicide) (X85-Y09, Y87.1)	9	0.15	2	0.04	5	0.52	0	0.00	2	0.97
Primary atelectasis of newborn (P28.0)	9	0.15	4	0.09	5	0.52	0	0.00	0	0.00
Neonatal cardiac dysrhythmia (P29.1)	8	0.13	6	0.13	1	0.10	1	0.61	0	0.00
Influenza and Pneumonia (J09-J18)	6	0.10	2	0.04	2	0.21	1	0.61	1	0.49
Bacterial sepsis of newborn, unspecified (P36.9)	5	0.08	3	0.07	0	0.00	0	0.00	2	0.97
All Other Causes	92	1.50	58	1.27	21	2.20	5	3.07	7	3.40

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 40, 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 459.46, a neonatal mortality rate of 435.81, and a postneonatal mortality rate of

23.65. 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 1.48.

Table 40
South Dakota Resident Infant Mortality Rates by Birth Weight, 2013-2017

Birth Weight (in Grams)	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Total	61,245	396	6.47	4.03	2.43
<1,000	296	136	459.46	435.81	23.65
1,000-1,499	359	30	83.57	66.85	16.71
1,500-1,999	781	23	29.45	25.61	3.84
2,000-2,499	2,569	34	13.23	7.40	5.84
2,500-2,999	9,579	50	5.22	1.57	3.65
3,000-3,499	22,817	73	3.20	1.05	2.15
3,500-3,999	18,616	36	1.93	0.64	1.29
4,000-4,499	5,391	8	1.48	0.19	1.30
4,500+	828	2	2.42	0.00	2.42

Note: Infant, neonatal, and postneonatal mortality rates are per 1,000 live births.
Failure of births to add to total is due to not stated birth weights.

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

Infant Mortality and Prenatal Care

Table 41, below, displays infant mortality rates by prenatal care. The highest infant mortality rate, 27.72, occurred when mothers did not have prenatal care. This is

true for neonatal and postneonatal mortality rates. In comparison, when mothers received prenatal care in the first trimester the infant mortality rate was only 5.09.

Table 41
South Dakota Resident Infant Mortality Rates by Prenatal Care, 2013-2017

Trimester Prenatal Care Began	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Total	61,245	396	6.47	4.03	2.43
First Trimester	43,627	222	5.09	3.25	1.83
Second Trimester	12,963	113	8.72	5.01	3.70
Third Trimester	3,176	22	6.93	3.78	3.15
No Prenatal Care	505	14	27.72	23.76	3.96

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

Failure of births and infant deaths to add to the total is due to not stated trimester prenatal care began.

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

Infant Mortality and Gestation Period

Table 42, 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 762.24.

The highest neonatal mortality rate and postneonatal mortality rate both occurred at less than 25 weeks with a rate of 734.27 and 27.97, respectively.

Table 42
South Dakota Resident Infant Mortality Rates by Gestation Period, 2013-2017

Weeks of Gestation	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Total	61,245	396	6.47	4.03	2.43
<25 Weeks	143	109	762.24	734.27	27.97
25-29 Weeks	322	46	142.86	121.12	21.74
30-31 Weeks	271	7	25.83	22.14	3.69
32 Weeks	234	12	51.28	47.01	4.27
33 Weeks	316	11	34.81	25.32	9.49
34 Weeks	719	8	11.13	6.95	4.17
35 Weeks	1,077	12	11.14	7.43	3.71
36 Weeks	2,220	21	9.46	4.05	5.41
37 Weeks	5,038	35	6.95	2.58	4.37
38 Weeks	9,696	42	4.33	1.34	2.99
39 Weeks	21,612	58	2.68	0.93	1.76
40 Weeks	14,228	21	1.48	0.49	0.98
41 Weeks	4,791	11	2.30	0.42	1.88
42+ Weeks	475	2	4.21	2.11	2.11

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

Failure of births and infant deaths to add to the total is due to not stated weeks of gestation.

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

Infant Mortality and Tobacco Use

Table 43, below, displays infant mortality rates by tobacco use of the mother. Mothers who reported they used tobacco while pregnant had an infant mortality rate

of 11.35 while mothers who reported they did not use tobacco while pregnant had an infant mortality rate of 5.61.

Table 43
South Dakota Resident Infant Mortality Rates by Tobacco Use of Mother, 2013-2017

Tobacco Use of Mother	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Total	61,245	396	6.46	4.03	2.43
Yes	8,545	97	11.35	6.20	5.15
No	52,420	294	5.61	3.64	1.96

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

Failure of births to add to the total is due to not stated tobacco use of mother.

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

Infant Mortality and Mother Demographics

The following tables, 44a-44d, 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 44a
South Dakota Resident Infant Mortality Rates by Demographics of Mother, 2013-2017

	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Education					
11 years or less	7,862	74	9.41*	5.37*	4.09*
12+ years	51,268	275	5.34*	3.76*	1.62*
Marital Status					
Single	22,885	189	8.26*	5.16*	3.10*
Married	38,317	182	4.75*	3.37*	1.38*
Mother's WIC Status					
No WIC	40,640	214	5.27*	3.84	1.43*
WIC	20,135	152	7.55*	4.32	3.23*
Age					
<20	3,600	26	7.22*	4.44	2.78
20-24	13,517	101	7.47*	4.66	2.81
25-29	20,701	126	6.09*	4.25	1.84
30-34	16,316	74	4.54*	3.19	1.35
35+	7,099	45	6.34*	4.09	2.25
BMI					
Underweight (<18.5)	1,949	16	8.21*	6.16*	2.05
Recommended (18.5-24.9)	28,398	142	5.00*	3.35*	1.66
Overweight (25.0-29.9)	15,500	96	6.19*	4.39*	1.81
Obese (30.0-34.9)	8,095	47	5.81*	2.96*	2.84
Very Obese (35.0-39.9)	4,073	38	9.33*	6.38*	2.95
Morbidly Obese (40.0+)	2,580	26	10.08*	7.36*	2.71
Diabetes					
No Pre-Existing Diabetes	60,545	362	5.98*	4.03	1.95*
Pre-Existing Diabetes	586	9	15.36*	5.12	10.24*
Hepatitis C					
No Hepatitis C	60,988	366	6.00*	4.00*	2.00
Hepatitis C	153	4	26.14*	19.61*	6.54
Chlamydia					
No Chlamydia	59,590	349	5.86*	3.94*	1.91*
Chlamydia	1,551	21	13.54*	7.74*	5.80*
Hypertension - Pre-Pregnancy					
No Hypertension	60,326	363	6.01	3.98*	2.18
Hypertension	805	8	9.94	8.70*	1.24

Table 44a (continued)
South Dakota Resident Infant Mortality Rates by Demographics of Mother, 2013-2017

	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Hypertension - Eclampsia					
No Hypertension	60,876	369	6.06	4.06	2.00*
Hypertension	255	2	7.84	0.00	7.84*
Payment Source					
Medicaid	19,486	167	8.57*	4.82*	3.75
Private Insurance	35,666	164	4.60*	3.50*	1.09
Self-Pay	1,793	14	7.81*	5.58*	2.23
Indian Health Service	1,626	15	9.23*	5.54*	3.69
Champus/Tricare	1,824	4	2.19*	1.64*	0.55
Other Government	306	1	3.27*	3.27*	0.00
Other	274	2	7.30*	7.30*	0.00

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

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

Table 44b
South Dakota Resident Infant Mortality Rates by Previous Pregnancy History, 2013-2017

	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Number of Living Children					
0	20,626	115	5.58*	4.22	1.36*
1	18,991	98	5.16*	3.74	1.42*
2	11,752	76	6.47*	3.74	2.72*
3	5,402	43	7.96*	4.63	3.33*
4+	4,449	40	8.99*	4.72	4.27*
Number of Dead Children					
0	60,383	346	5.73*	3.71*	2.02
1+	826	26	31.48*	29.06*	2.42
Number of Previous Terminations					
0	43,985	234	5.32*	3.41*	1.91
1	11,674	82	7.02*	4.97*	2.06
2+	5,542	54	9.74*	7.04*	2.71
Number of Previous Pregnancies					
0	16,962	74	4.36*	2.89*	1.47*
1	16,373	94	5.74*	4.40*	1.34*
2	11,954	67	5.60*	3.68*	1.92*
3	7,131	55	7.71*	4.77*	2.94*
4	3,969	33	8.31*	5.04*	3.28*
5+	4,802	47	9.79*	5.83*	3.96*
Previous Pre-Term Infant					
No	59,285	349	5.89*	3.91*	1.97
Yes	1,846	22	11.92*	8.13*	3.79
Other Poor Previous Pregnancy Outcomes					
No	58,336	331	5.67*	3.65*	2.02
Yes	2,562	40	15.61*	13.27*	2.34
Infertility Treatment					
No	60,072	358	5.96*	3.90*	2.06
Yes	1,059	13	12.28*	12.28*	0.00
Infertility Treatment – Drugs, Insemination					
No	60,320	362	6.00	3.96*	2.06
Yes	811	9	11.10	11.10*	0.00
Infertility Treatment – Assisted Reproductive Technology					
No	60,851	365	6.00*	3.96*	2.04
Yes	280	6	21.43*	21.43*	0.00

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

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

Table 44c
South Dakota Resident Infant Mortality Rates by Labor and Delivery, 2013-2017

	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Tocolysis					
No	60,415	347	5.74*	3.81*	1.94*
Yes	733	23	31.38*	23.19*	8.19*
Cervical Cerclage					
No	60,954	356	5.84*	3.82*	2.02
Yes	194	14	72.16*	72.16*	0.00
Premature Rupture of Membranes					
No	59,369	303	5.10*	3.12*	1.99
Yes	1,818	68	37.40*	34.10*	3.30
Antibiotics Received by the Mother During Labor					
No	44,261	223	5.04*	3.30*	1.74*
Yes	16,932	149	8.80*	6.02*	2.78*
Precipitous Labor					
No	57,772	339	5.87*	3.76*	2.11
Yes	3,415	32	9.37*	8.78*	0.59
Induction of Labor					
No	44,347	302	6.81*	4.74*	2.07
Yes	16,846	70	4.15*	2.26*	1.90
Augmentation of Labor					
No	42,846	316	7.38*	5.20*	2.17
Yes	18,347	56	3.05*	1.36*	1.69
Non-Vertex Presentation					
No	58,371	291	4.99*	2.98*	2.00
Yes	2,591	81	31.26*	28.56*	2.70
Steroids for Fetal Lung Maturation Received by the Mother Prior to Delivery					
No	59,002	317	5.37*	3.53*	1.85*
Yes	2,191	55	25.10*	18.26*	6.85*
Clinical Chorioamnionitis Diagnosed During Labor – Maternal Temp $\geq 38^{\circ}\text{C}$					
No	60,497	361	5.97*	3.92*	2.05
Yes	696	11	15.80*	15.80*	0.00
Epidural or Spinal Anesthesia During Labor					
No	17,602	160	9.09*	7.10*	1.99
Yes	33,143	112	3.38*	1.63*	1.75
Fetal Presentation					
Cephalic	58,052	273	4.70*	2.76*	1.95
Breech	2,318	79	34.08*	31.49*	2.59
Method of Delivery					
Vaginal	44,140	232	5.26*	3.44*	1.81
Vaginal after previous C-section	1,615	16	9.91*	7.43*	2.48
Primary C-section	8,405	83	9.88*	7.14*	2.74
Repeat C-section	6,996	40	5.72*	3.29*	2.43
Maternal Transfusion					
No	60,960	365	5.99*	4.00*	1.98*
Yes	245	7	28.57*	16.33*	12.24*
Unplanned Operating Procedure Following Delivery					
No	61,013	361	5.92*	3.88*	2.03
Yes	192	11	57.29*	57.29*	0.00

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

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

Table 44d
South Dakota Resident Infant Mortality Rates by Post Delivery Conditions, 2013-2017

	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Five Minute APGAR Score					
0-7	2,421	213	87.98*	82.20*	5.78*
8	5,640	38	6.74*	3.19*	3.55*
9	49,354	106	2.15*	0.47*	1.68*
10	3,605	7	1.94*	0.28*	1.66*
Ten Minute APGAR Score					
0-2	135	115	851.85*	851.85*	0.00
3-7	327	35	107.03*	100.92*	6.12
8-10	201	3	14.93*	9.95*	4.98
Plurality					
1	59,179	328	5.54*	3.57*	1.98
2+	2,054	44	21.42*	18.01*	3.41
Breastfeeding at the Time of Discharge					
No	12,397	90	7.26*	3.71*	3.55*
Yes	48,421	104	2.15*	0.54*	1.61*
Assisted Ventilation Required Immediately Following Delivery					
No	57,241	255	4.45*	2.66*	1.80*
Yes	3,979	116	29.15*	23.88*	5.28*
Assisted Ventilation for More than Six Hours					
No	59,780	303	5.07*	3.28*	1.79*
Yes	1,440	68	47.22*	35.42*	11.81*
Neonatal Intensive Care Unit Admission					
No	55,082	242	4.39*	2.94*	1.45*
Yes	6,138	129	21.02*	13.85*	7.17*
Newborn Given Surfactant Replacement Therapy					
No	60,769	325	5.35*	3.44*	1.91*
Yes	451	46	102.00*	84.26*	17.74*
Antibiotics Received by the Newborn for Suspected Neonatal Sepsis					
No	58,152	303	5.21*	3.42*	1.79*
Yes	3,068	68	22.16*	15.65*	6.52*

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

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

