

Infant Mortality

An Overview: 2010

Infant Deaths	
Number	83
Rate per 1,000 Live Births	7.04
Neonatal Deaths	
Number	56
Rate per 1,000 Live Births	4.75
Postneonatal Death	
Number	27
Rate per 1,000 Live Births	2.29

During 2010, there were 83 South Dakota resident infant deaths reported for an infant mortality rate of 7.04 per 1,000 live births.

In comparison, there were 80 infant deaths in 2009, with the infant mortality rate of 6.71 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. For example, as Table 31, below, displays and Figure 5, page 38, illustrates, large downward spikes occurred in 1996 and 2000. Decreases of 39 infants from 1995 to 1996 and 37 infants from 1999 to 2000 caused large downward spikes in infant mortality rates. Therefore, infant mortality rates should be monitored over a period of time.

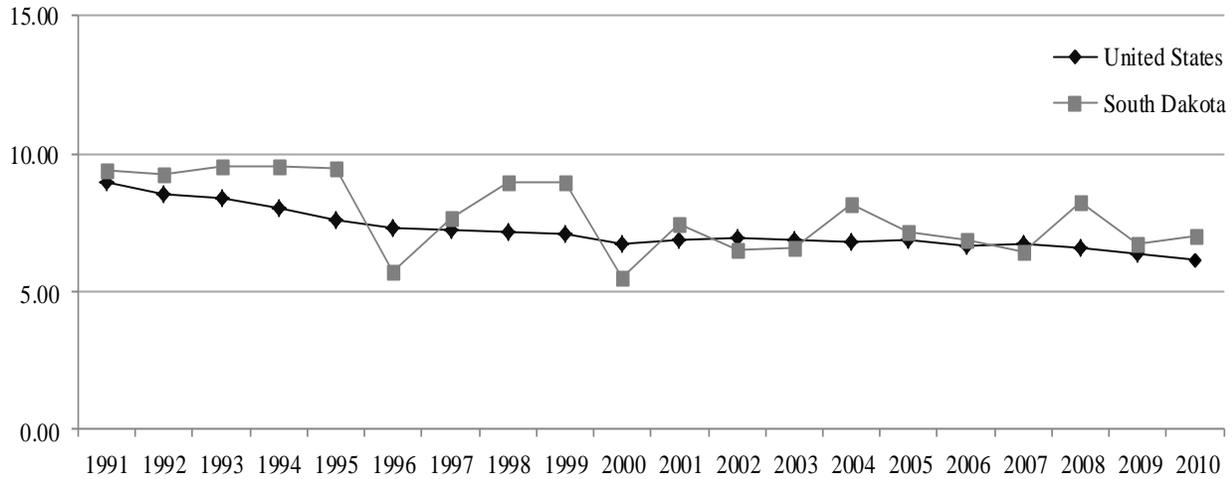
Table 31
Resident Infant Deaths and Infant Mortality Rates,
South Dakota and United States, 1991-2010

Year	United States		South Dakota	
	Number	Mortality Rate	Number	Mortality Rate
2010	*24,548	*6.14	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
1995	29,583	7.59	99	9.46
1994	31,710	8.02	100	9.52
1993	33,466	8.37	102	9.52
1992	34,628	8.52	102	9.27
1991	36,766	8.94	103	9.42

Note: * U.S. 2009 and 2010 data are provisional.
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 5
Resident Infant Mortality Rates, South Dakota and United States, 1991-2010

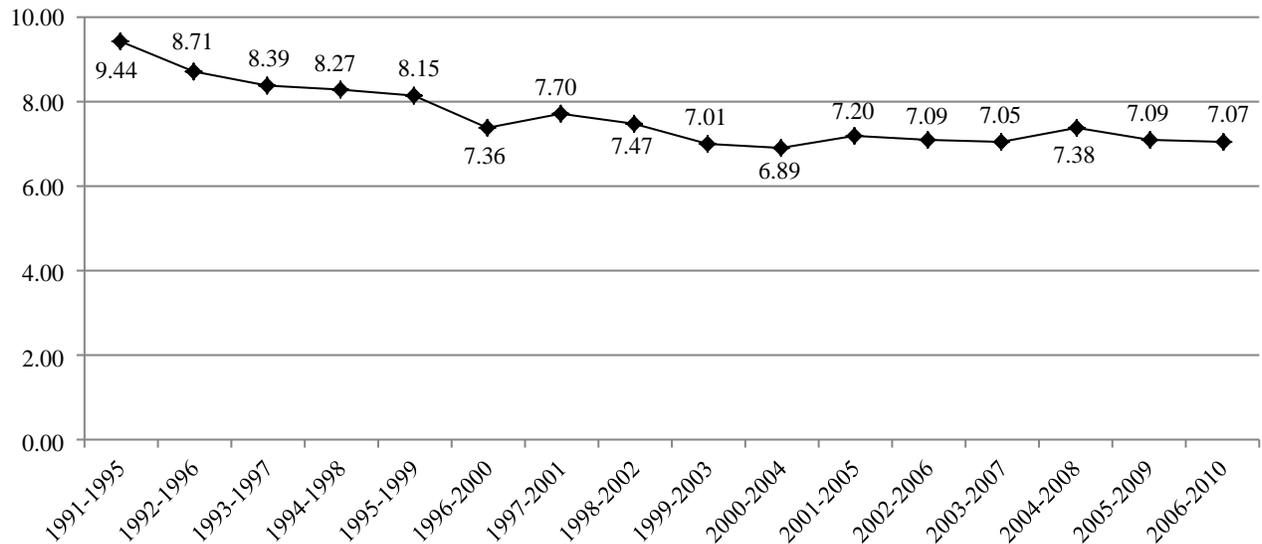


Note: Rate Per 1,000 Live Births. U.S. 2009 and 2010 data are provisional.
 Source: National Center for Health Statistics and South Dakota Department of Health, Office of Health Statistics

Figure 6, below, displays South Dakota's infant mortality rate grouped in five year increments. This graph shows that since the early 1990's South Dakota's infant mortality

rate has decreased slightly, but in more recent years, the infant mortality has remained steady.

Figure 6
Resident Infant Mortality Rates for South Dakota, 1991-2010



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

Table 32 lists the overall leading causes of infant death in 2006-2010. The leading causes of infant death in 2010 can be broken down as follows: certain conditions in

perinatal period, 43.4 percent; congenital malformations, 25.3 percent; sudden infant death syndrome, 8.4 percent; and accidents with 8.4 percent.

Table 32
South Dakota Resident Leading Causes of Infant Death, 2006-2010

	Total	2006	2007	2008	2009	2010
Total Deaths	424	82	79	100	80	83
Certain Conditions in the Perinatal Period (P00-P96)	156	21	33	34	32	36
Extreme immaturity (Less than 28 comp wks of gestation)(P07.2)	37	4	4	10	11	8
Other preterm infants (28 comp wks or more but less than 37 comp wks of gestations)(P07.3)	12	1	1	3	3	4
Neonatal cardiac failure(P29.0)	11	1	3	1	6	0
Primary atelectasis of newborn(P28.0)	7	1	2	0	2	2
Newborn affected by chorioamnionitis(P02.7)	7	1	2	2	0	2
Newborn affected by other forms of placental separation and hemorrhage(P02.1)	7	1	3	0	1	2
Newborn affected by premature rupture of membranes.....(P01.1)	7	3	1	0	0	3
Hypoxic ischemic encephalopathy of newborn(P91.6)	5	1	2	0	1	1
Hydrops fetalis not due to hemolytic disease(P83.2)	5	2	0	1	1	1
Respiratory distress syndrome of newborn(P22.0)	5	0	2	1	1	1
Congenital Malformations, Deformations, & Chromosomal Abnormalities (Q00-Q99)	115	28	24	24	18	21
Congenital malformations of the nervous system (Q00-Q07)	26	5	4	5	6	6
Anencephaly (Q00.0)	13	3	0	5	3	2
Chromosomal abnormalities (Q90-Q99)	25	6	5	7	2	5
Patau's syndrome.....(Q91.4-Q91.7)	11	2	2	3	1	3
Edward's syndrome(Q91.0-Q91.3)	8	3	2	3	0	0
Congenital malformations of the heart..... (Q20-Q24)	19	3	5	3	5	3
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)	13	3	3	3	2	2
Congenital malformations of the urinary system (Q60-Q64)	12	5	4	1	1	1
Congenital malformations of the respiratory system (Q30-Q34)	6	1	2	0	0	3
Hypoplasia and dysplasia of lung..... (Q33.6)	5	1	2	0	0	2
Sudden Infant Death Syndrome (R95)	52	12	8	12	13	7
Accidents (V01-X59, Y85-Y86)	31	7	4	7	6	7
Accidental suffocation and strangulation in bed(W75)	14	1	1	5	4	3
Unspecified threat to breathing(W84)	6	2	0	1	2	1
Symptoms, Signs, and Abnormal Clinical and Lab Findings.....(R00-R94)	16	2	4	8	2	0
Ill-Defined and Unknown Causes of Mortality.....(R96-R99)	13	2	2	6	1	2
Assault (homicide)(X85-Y09,Y87.1)	6	1	2	0	1	2
All Other Causes	35	9	2	9	7	8

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

There were 56 neonatal deaths (deaths occurring to infants from birth through 27 days old) for a rate of 4.75 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 2.29 deaths per 1,000 live births. In comparison, 2009 neonatal and postneonatal rates were 3.77 and 2.93 per 1,000 live births, respectively.

Infant Mortality by Race

Beginning with the 2010 data, race is now 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. Race is no longer allocated as it had been since the 2000 Census started allowing multiple races to be reported. All race data in this section are now categorized in the following manner:

Single-race White
 Single-race American Indian
 Two or more races

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

Table 33a, below, indicates that from 2009 to 2010, the number of South Dakota resident infant deaths decreased for whites and remained the same for American Indians. Table 33b, below, displays infant mortality grouped by five-year increments. In this table, the infant mortality decreases for both whites and American Indians.

Table 33a
South Dakota Resident Infant Deaths and Mortality Rates by
Infant's Race, 2004-2010

Year	Race of Infant						Total	
	White		American Indian		Two or more races			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate
2010	54	5.84	19	10.35	8	24.54	83	7.04
2009	56	6.00	19	10.08	2	5.87	80	6.71
2008	60	6.36	29	14.56	9	29.80	100	8.28
2007	51	5.33	21	10.22	6	21.43	79	6.45
2006	50	5.34	26	13.33	2	7.41	82	6.88
2005	55	6.13	25	14.36	1	2.07	82	7.15
2004	62	6.95	28	16.63	2	4.07	93	8.20

Note: Infant mortality rates are per 1,000 live births.
 Source: South Dakota Department of Health, Office of Health Statistics

Table 33b
South Dakota Resident Infant Deaths and Mortality Rates by
Infant's Race, Five-Year Increments, 2004-2010

Year	Race of Infant						Total	
	White		American Indian		Two or more races			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate
2006-2010	271	5.77	114	11.73	27	17.77	424	7.07
2005-2009	272	5.83	120	12.47	20	11.94	423	7.09
2004-2008	278	6.01	129	13.69	20	10.96	436	7.38

Note: Infant mortality rates are per 1,000 live births.
 Source: South Dakota Department of Health, Office of Health Statistics

When analyzed by race, Table 34a, below, indicates that the South Dakota resident neonatal mortality rate per 1,000 live births increased for both whites and American Indians from 2009 to 2010. The American Indian neonatal mortality rate has been

consistently higher than white neonatal mortality rates for each year since 2004. In Table 34b, below, the neonatal mortality is grouped in five-year increments. This indicates that the neonatal mortality rate has shown little change since 2004.

Table 34a
South Dakota Resident Neonatal Deaths and Mortality Rates
by Infant's Race, 2004-2010

Year	Race of Infant						Total	
	White		American Indian		Two or more races			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate
2010	37	4.00	14	7.63	4	12.27	56	4.75
2009	34	3.64	7	3.71	2	5.87	45	3.77
2008	40	4.24	12	6.02	7	23.18	61	5.05
2007	37	3.87	9	4.38	4	14.29	51	4.16
2006	30	3.20	10	5.13	1	3.70	43	3.61
2005	41	4.57	9	5.17	1	2.07	52	4.54
2004	44	4.93	12	7.13	1	2.04	57	5.03

Note: Neonatal mortality rates are per 1,000 live births.
Source: South Dakota Department of Health, Office of Health Statistics

Table 34b
South Dakota Resident Neonatal Deaths and Mortality Rates
by Infant's Race, Five-Year Increments, 2004-2010

Year	Race of Infant						Total	
	White		American Indian		Two or more races			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate
2006-2010	178	3.79	52	5.35	18	11.85	256	4.27
2005-2009	182	3.80	47	4.88	15	8.96	252	4.23
2004-2008	192	4.15	52	5.52	14	7.67	264	4.47

Note: Neonatal mortality rates are per 1,000 live births.
Source: South Dakota Department of Health, Office of Health Statistics

Table 35a, below, indicates that the postneonatal mortality rate per 1,000 live births decreased for both white and American Indian infants from 2009 to 2010. The American Indian postneonatal mortality rate has been consistently higher than white

postneonatal mortality rates for each year since 2004. When looking at the data in five-year increments as shown in Table 35b, below, the postneonatal mortality for whites has slightly increased while the rate for American Indians has decreased.

Table 35a
South Dakota Resident Postneonatal Deaths and Mortality
Rates by Infant's Race, 2004-2010

Year	Race of Infant						Total	
	White		American Indian		Two or more races			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate
2010	17	1.84	5	2.72	4	12.27	27	2.29
2009	22	2.36	12	6.37	0	0.00	35	2.93
2008	20	2.12	17	8.53	2	6.62	39	3.23
2007	14	1.46	12	5.84	2	7.14	28	2.29
2006	20	2.13	16	8.20	1	3.70	39	3.27
2005	14	1.56	16	9.19	0	0.00	30	2.62
2004	18	1.59	16	9.50	1	2.04	36	3.17

Note: Postneonatal mortality rates are per 1,000 live births.
Source: South Dakota Department of Health, Office of Health Statistics

Table 35b
South Dakota Resident Postneonatal Deaths and Mortality
Rates by Infant's Race, Five-Year Increments, 2004-2010

Year	Race of Infant						Total	
	White		American Indian		Two or more races			
	Num	Rate	Num	Rate	Num	Rate	Num	Rate
2006-2010	93	1.98	62	6.38	9	5.92	168	2.80
2005-2009	90	1.93	73	7.59	5	2.99	171	2.87
2004-2008	86	1.86	77	8.17	6	3.29	172	2.91

Note: Postneonatal mortality rates are per 1,000 live births.
Source: South Dakota Department of Health, Office of Health Statistics

Table 36, below, shows the leading causes of infant death from 2006 to 2010. The overall leading cause of infant death for South Dakota residents from 2006 to 2010 was certain conditions in perinatal period. Certain conditions in perinatal period accounted for 36.8 percent of all infant deaths in South Dakota from 2006 to 2010.

When analyzed by race, the leading cause of death for white infants was certain conditions in perinatal period with 105 white infant deaths or 38.7 percent of all white infant deaths. The leading cause of death for American Indian infants was certain conditions in the perinatal period with 33 American Indian infant deaths or 28.9 percent of all American Indian infant deaths.

**Table 36
South Dakota Resident Infant Deaths by Cause of Death and Race, 2006-2010**

	Total	Rate	Race			
			White	Rate	American Indian	Rate
Total Deaths	424	7.07	271	5.77	114	11.73
Certain Conditions in the Perinatal Period(P00-P96)	156	2.60	105	2.24	33	3.40
Extreme immaturity (Less than 28 comp wks of gestation).....(P07.2)	37	0.62	22	0.47	10	1.03
Other preterm infants (28 comp wks or more but less than 37 comp wks of gestation).(P07.3)	12	0.20	7	0.15	5	0.51
Neonatal cardiac failure.....(P29.0)	11	0.18	8	0.17	2	0.21
Primary atelectasis of newborn.....(P28.0)	7	0.12	7	0.15	0	0.00
Newborn affected by chorioamnionitis.....(P02.7)	7	0.12	1	0.02	3	0.31
Newborn affected by other forms of placental separation and hemorrhage.....(P02.1)	7	0.12	6	0.13	1	0.10
Newborn affected by premature rupture of membranes.....(P01.1)	7	0.12	6	0.13	1	0.10
Hypoxic ischemic encephalopathy of newborn.....(P91.6)	5	0.08	4	0.09	1	0.10
Hydrops fetalis not due to hemolytic disease.....(P83.2)	5	0.08	5	0.11	0	0.00
Respiratory distress syndrome of newborn.....(P22.0)	5	0.08	4	0.09	0	0.00
Congenital Malformations, Deformations, & Chromosomal Abnormality (Q00-Q99)	115	1.92	83	1.77	25	2.57
Congenital malformations of the nervous system.....(Q00-Q07)	26	0.43	19	0.40	6	0.62
Anencephaly.....(Q00.0)	13	0.22	11	0.23	2	0.21
Chromosomal abnormalities.....(Q90-Q99)	25	0.42	18	0.38	3	0.31
Patau's syndrome.....(Q91.4-Q91.7)	11	0.18	8	0.17	1	0.10
Edward's syndrome.....(Q91.0-Q91.3)	8	0.13	6	0.13	1	0.10
Congenital malformations of the heart.....(Q20-Q24)	19	0.32	16	0.34	3	0.31
Congenital malformations and deformations of the musculoskeletal system.....(Q65-Q79)	13	0.22	10	0.21	2	0.21
Congenital malformations of the urinary system.....(Q60-Q64)	12	0.20	10	0.21	1	0.10
Congenital malformations of the respiratory system.....(Q30-Q34)	6	0.10	3	0.06	3	0.31
Hypoplasia and dysplasia of lung.....(Q33.6)	5	0.08	3	0.06	2	0.21
Sudden Infant Death Syndrome.....(R95)	52	0.87	29	0.62	22	2.26
Accidents.....(V01-X59, Y85-Y86)	31	0.52	14	0.30	15	1.54
Accidental suffocation and strangulation in bed.....(W75)	14	0.23	7	0.15	6	0.62
Other accidental threats to breathing.....(W76-W84)	7	0.12	3	0.06	4	0.41
Symptoms, Signs, and Abnormal Clinical and Lab Findings.....(R00-R94)	16	0.27	9	0.19	4	0.41
Ill-Defined and Unknown Causes of Mortality.....(R96-R99)	13	0.22	6	0.13	6	0.62
Assault (homicide).....(X85-Y09, Y87.1)	6	0.10	4	0.09	0	0.00
All Other Causes	35	0.58	21	0.45	9	0.93

Note: Failure of the races to add to the total is due to other and unknown races.
Source: South Dakota Department of Health, Office of Health Statistics

Infant Mortality and Birth Weight

Table 37, 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 467.69, a neonatal mortality rate of

433.85, and a postneonatal mortality rate of 33.85. The highest rates occurred below 2,500 grams which is considered low birth weight babies.

Table 37
South Dakota Resident Infant Mortality Rates by Birth Weight, 2006-2010

Birth Weight (in Grams)	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Total	59,966	424	7.07	4.27	2.80
<1,000	325	152	467.69	433.85	33.85
1,000-1,499	353	20	56.66	39.66	17.00
1,500-1,999	786	32	40.71	30.53	10.18
2,000-2,499	2,521	37	14.68	9.12	5.55
2,500-2,999	9,722	54	5.55	2.88	2.67
3,000-3,499	23,436	75	3.20	0.64	2.56
3,500-3,999	17,537	36	2.05	0.17	1.88
4,000-4,499	4,577	12	2.62	0.87	1.75
4,500+	681	2	2.94	1.47	1.47

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.

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

Infant Mortality and Prenatal Care

Table 38, below, displays infant mortality rates by prenatal care. The highest infant mortality rate, 46.36, 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 5.77.

Table 38
South Dakota Resident Infant Mortality Rates by Prenatal Care, 2006-2010

Trimester Prenatal Care Began	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Total	59,966	424	7.07	4.27	2.80
First Trimester	40,932	236	5.77	3.32	2.44
Second Trimester	14,333	109	7.60	4.60	3.00
Third Trimester	3,121	28	8.97	4.81	4.17
No Prenatal Care	453	21	46.36	35.32	11.04

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 trimester prenatal care began.

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

Infant Mortality and Gestation Period

Table 39, below, displays infant mortality rates by gestation period. The highest infant mortality rate occurred to those with less than 25 weeks with a rate of 737.50. The highest neonatal mortality rate occurred at

less than 25 weeks with a rate of 725.00. The highest postneonatal mortality rate occurred during 25 to 29 weeks with a rate of 29.15.

Table 39
South Dakota Resident Infant Mortality Rates by Gestation Period, 2006-2010

Weeks of Gestation	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Total	59,966	424	7.07	4.27	2.80
<25 Weeks	160	118	737.50	725.00	12.50
25-29 Weeks	343	41	119.53	90.38	29.15
30-31 Weeks	254	19	74.80	55.12	19.69
32 Weeks	276	8	28.99	25.36	3.62
33 Weeks	354	10	28.25	16.95	11.30
34 Weeks	596	15	25.17	13.42	11.74
35 Weeks	1,000	14	14.00	9.00	5.00
36 Weeks	2,281	16	7.01	3.51	3.51
37 Weeks	5,120	28	5.47	2.15	3.32
38 Weeks	10,625	41	3.86	0.85	3.01
39 Weeks	18,396	56	3.04	0.92	2.12
40 Weeks	15,237	33	2.17	0.72	1.44
41 Weeks	4,680	17	3.63	0.85	2.78
42+ Weeks	516	5	9.69	3.88	5.81

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 weeks of gestation.

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

Infant Mortality and Tobacco Use

Table 40, below, displays infant mortality rates by tobacco use of the mother. Mothers who reported they did use tobacco while pregnant had an infant mortality rate

of 10.54, while mothers who reported they did not use tobacco while pregnant had an infant mortality rate of 6.19.

Table 40
South Dakota Resident Infant Mortality Rates by Tobacco Use of Mother, 2006-2010

Tobacco Use of Mother	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Total	59,966	424	7.07	4.27	2.80
Yes	11,007	116	10.54	5.36	5.18
No	48,318	299	6.19	3.99	2.19

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

Failure of births to add to the total is due to unknown tobacco use of the mother.

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

Infant Mortality and Mother Demographics

The following tables, 41a-41d, 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 on pages 234-235.

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 41a
South Dakota Resident Infant Mortality Rates by Demographics of Mother, 2006-2010

	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Education					
11 years or less	7,398	81	10.95*	6.22*	4.73*
12+ years	49,199	275	5.59*	3.66*	1.89*
Marital Status					
Single	22,744	209	9.19*	5.41*	3.74*
Married	37,163	191	5.14*	3.53*	1.59*
Mother's WIC Status					
No WIC	35,452	200	5.64*	4.17	1.41*
WIC	23,200	176	7.59*	3.75	3.84*
Age					
<20	5,543	59	10.64*	6.31	4.33*
20-24	15,980	121	7.57*	4.01	3.50*
25-29	19,895	115	5.78*	3.77	2.01*
30-34	12,676	72	5.68*	4.34	1.26*
35+	5,856	33	5.64*	4.27	1.37*
BMI					
Underweight (< 18.5)	2,062	13	6.30*	2.42*	3.88
Recommended (18.5-24.9)	29,034	164	5.65*	3.55*	2.03
Overweight (25.0-29.9)	14,771	94	6.36*	3.72*	2.64
Obese (30.0-34.9)	7,417	66	8.90*	6.20*	2.70
Very Obese (35.0-39.9)	3,387	21	6.20*	4.43*	1.77
Morbidly Obese (40.0+)	2,017	21	10.41*	7.44*	2.97
Diabetes					
No Pre-Existing Diabetes	59,229	389	6.57*	4.14*	2.40
Pre-Existing Diabetes	428	9	21.03*	16.36*	4.67
Payment Source					
Medicaid	20,964	183	8.73*	4.87*	3.86*
Private Insurance	32,321	156	4.83*	3.50*	1.30*
Self-Pay	1,466	19	12.96*	8.19*	4.09*
Indian Health Service	1,559	21	13.47*	5.13*	8.34*
Champus/Tricare	1,577	6	3.80*	3.80*	0.00*
Other Government	426	3	7.04*	4.69*	2.35*
Other	766	2	2.61*	2.61*	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 41b
South Dakota Resident Infant Mortality Rates by Previous Pregnancy History, 2006-2010

	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Number of Living Children					
0	22,068	138	6.25*	4.58*	1.68*
1	18,837	122	6.48*	3.50*	2.92*
2	10,823	70	6.47*	4.25*	2.22*
3	4,764	27	5.67*	2.52*	2.94*
4+	3,426	42	12.26*	8.17*	4.09*
Number of Dead Children					
0	59,025	372	6.30*	4.00*	2.27*
1+	873	25	28.64*	18.33*	10.31*
Previous Pre-Term Infant					
No	57,516	376	6.54*	4.09*	2.42
Yes	2,141	22	10.28*	7.94*	2.34
Number of Previous Pregnancies					
0	18,222	110	6.04*	4.50*	1.54*
1	16,609	102	6.14*	3.31*	2.77*
2	11,499	70	6.09*	3.74*	2.35*
3	6,462	40	6.19*	4.02*	2.17*
4	3,321	32	9.64*	5.12*	4.52*
5+	3,735	42	11.24*	7.76*	3.21*
Other Poor Previous Pregnancy Outcomes					
No	57,815	368	6.37*	3.98*	2.35
Yes	1,842	30	16.29*	11.94*	4.34
Infertility Treatment					
No	58,956	384	6.51*	4.04*	2.44
Yes	701	14	19.97*	19.97*	0.00
Infertility Treatment – Drugs, Insemination					
No	59,166	388	6.56*	4.09*	2.43
Yes	490	10	20.41*	20.41*	0.00
Infertility Treatment – Assisted Reproductive Technology					
No	59,471	395	6.64	4.19*	2.42
Yes	185	3	16.22	16.22*	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 41c
South Dakota Resident Infant Mortality Rates by Labor and Delivery, 2006-2010

	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Tocolysis					
No	58,238	365	6.27*	3.90*	2.34*
Yes	1,350	32	23.70*	17.78*	5.93*
Cervical Cerclage					
No	59,396	392	6.60*	4.14*	2.42
Yes	192	5	26.04*	26.04*	0.00
Premature Rupture of Membranes					
No	56,737	344	6.06*	3.67*	2.36
Yes	2,878	54	18.76*	15.29*	3.47
Antibiotics Received by the Mother During Labor					
No	46,064	294	6.38	3.86*	2.50
Yes	13,698	103	7.52	5.33*	2.12

Table 41c (continued)
South Dakota Resident Infant Mortality Rates by Labor and Delivery, 2006-2010

	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Precipitous Labor					
No	57,224	365	6.38*	3.95*	2.39
Yes	2,391	33	13.80*	10.87*	2.93
Induction of Labor					
No	41,093	313	7.62*	4.77*	2.80*
Yes	18,669	84	4.50*	2.95*	1.55*
Augmentation of Labor					
No	44,314	332	7.49*	4.90*	2.55
Yes	15,448	65	4.21*	2.20*	2.01
Non-Vertex Presentation					
No	57,982	352	6.07*	3.60*	2.43
Yes	1,780	45	25.28*	23.60*	1.69
Moderate/Heavy Meconium Staining of The Amniotic Fluid					
No	55,506	382	6.88*	4.38*	2.47
Yes	4,256	15	3.52*	1.88*	1.64
Third or Fourth Degree Perineal Laceration					
No	58,470	395	6.76*	4.28	2.45
Yes	1,122	2	1.78*	0.89	0.89
Steroids for Fetal Lung Maturation Received by the Mother Prior to Delivery					
No	58,830	372	6.32*	4.01*	2.28*
Yes	932	25	26.82*	16.09*	10.73*
Clinical Chorioamnionitis Diagnosed During Labor – Maternal Temp >=38°C					
No	59,449	385	6.48*	4.05*	2.39
Yes	313	12	38.34*	31.95*	6.39
Fetal Intolerance of Labor Requiring In-Utero Resuscitative Measures, Further Fetal Assessment or Operative Delivery					
No	55,646	352	6.33*	3.94*	2.37
Yes	4,116	45	10.93*	7.77*	2.97
Epidural or Spinal Anesthesia During Labor					
No	19,083	157	8.23*	5.55*	2.62
Yes	29,853	124	4.15*	2.31*	1.84
Fetal Presentation					
Cephalic	56,969	324	5.69*	3.23*	2.42
Breech	2,231	66	29.58*	27.34*	2.24
Method of Delivery					
Vaginal	42,741	241	5.64*	3.49*	2.13
Vaginal after previous C-section	1,094	13	11.88*	9.14*	2.74
Primary C-section	9,580	100	10.44*	6.99*	3.44
Repeat C-section	6,332	45	7.11*	4.26*	2.68
Maternal Transfusion					
No	59,328	389	6.56*	4.10*	2.43
Yes	264	8	30.30*	30.30*	0.00
Unplanned Operating Procedure Following Delivery					
No	59,395	388	6.53*	4.09*	2.41
Yes	197	9	45.69*	40.61*	5.08

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

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

Table 41d
South Dakota Resident Infant Mortality Rates by Post Delivery Conditions, 2006-2010

	Births	Infant Deaths	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate
Five Minute APGAR Score					
0-7	2,740	239	87.23*	78.10*	8.39*
8	7,759	37	4.77*	1.29*	3.48*
9	45,341	104	2.29*	0.46*	1.83*
10	3,938	9	2.29*	0.25*	2.03*
Ten Minute APGAR Score					
0-2	146	123	842.47*	828.77*	6.85
3-6	130	24	184.62*	176.92*	7.69
7	123	9	73.17*	73.17*	0.00
8	115	4	34.78*	34.78*	0.00
9-10	125	1	8.00*	0.00*	8.00
Plurality					
1	58,081	368	6.34*	3.91*	2.39
2+	1,870	32	17.11*	14.44*	2.67
Breastfeeding at the Time of Discharge					
No	15,340	85	5.54*	2.22*	3.32*
Yes	43,453	117	2.69*	0.62*	2.05*
Assisted Ventilation Required Immediately Following Delivery					
No	56,500	299	5.29*	3.10*	2.16*
Yes	3,149	96	30.49*	23.50*	6.99*
Assisted Ventilation for More than Six Hours					
No	58,291	331	5.68*	3.47*	2.18*
Yes	1,358	64	47.13*	34.61*	12.52*
Neonatal Intensive Care Unit Admission					
No	54,482	281	5.16*	3.12*	2.02*
Yes	5,167	114	22.06*	15.29*	6.58*
Newborn Given Surfactant Replacement Therapy					
No	59,203	357	6.03*	3.77*	2.23*
Yes	446	38	85.20*	58.30*	26.91*
Antibiotics Received by the Newborn for Suspected Neonatal Sepsis					
No	56,828	339	5.97*	3.77*	2.16*
Yes	2,821	56	19.85*	12.41*	7.44*
Suspected chromosomal disorder					
No	59,532	359	6.03*	3.63*	2.37*
Yes	103	37	359.22*	330.10*	29.13*

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

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

