

# Health Indicators

## Health

Internet site: <http://www.state.sd.us/doh>

Data Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records.

Data Indicator and Definition:

Infant mortality (rate): The number of deaths for infants under one year of age per 1,000 live births.

Child death (rate): The number of deaths for children ages 1-14 per 100,000, from all causes.

Low birth weight babies (percent): Low birth weight babies are those born weighing less than 2,500 grams (about 5 and one half pounds).

Teen violent death (rate): The number of deaths from homicides, suicides, and accidents to teens ages 15-19 years per 100,000 teens.

Births to single teens (percent): The percent of all live births to single females under the age of 20.

Women receiving prenatal care (percent): The number of live single births to women receiving prenatal care during the first trimester (first three months) of pregnancy, by county of residence.

## Immunizations

National Immunization Survey

Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Immunization Survey <http://www.cdc.gov/nis/>

Definition: The percentage of children ages 19-35 months who have received the full schedule of age-appropriate immunizations.

# Infant Mortality

The infant mortality rate reflects the number of infants who die before their first birthday, per 1,000 live births. Since the first year of life is more fragile than later years of childhood, negative social conditions such as poverty have a greater impact on this vulnerable group. Although infant mortality rates for the United States have been declining over the past several decades, the nation ranks poorly on an international level. Infant mortality has two components: neonatal mortality, deaths of infants younger than 28 days and post neonatal mortality or deaths between 28 days and one year old.

The five-year average infant mortality rate for 2002-06 in South Dakota was 7.1 per 1,000 live births; or for every 1,000 live births there were about 7 infant deaths. For the five-year period 2002-06 there was a total of 400 infant deaths. The graph on the left shows the infant mortality rate for the time periods 1998-02 through 2002-06. Infant mortality decreased slightly from the last (2001-05) time period. Prior to that there had been an increase in infant mortality.

Infant mortality rates vary by race. Of all Caucasian babies born in the 2002-06 time period, in South Dakota, there were 251 deaths for a rate of 5.6 per 1,000 live births.

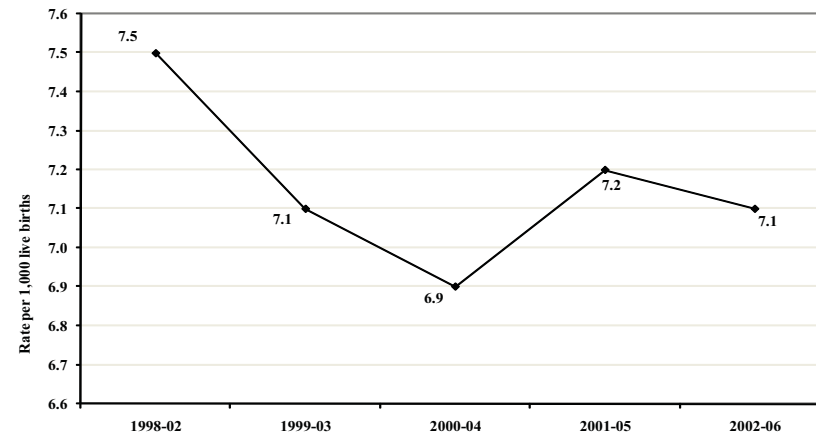
Of all American Indian babies born in the 2002-06 time period, in South Dakota, there were 132 deaths for a rate of 12.8 per 1,000 live births.

Of all other race babies born in the 2002-06 time period, in South Dakota, there were 17 deaths for a rate of 11.1 per 1,000 live births.

The infant mortality rate for the American Indian in South Dakota is significantly higher than for Caucasians in South Dakota.

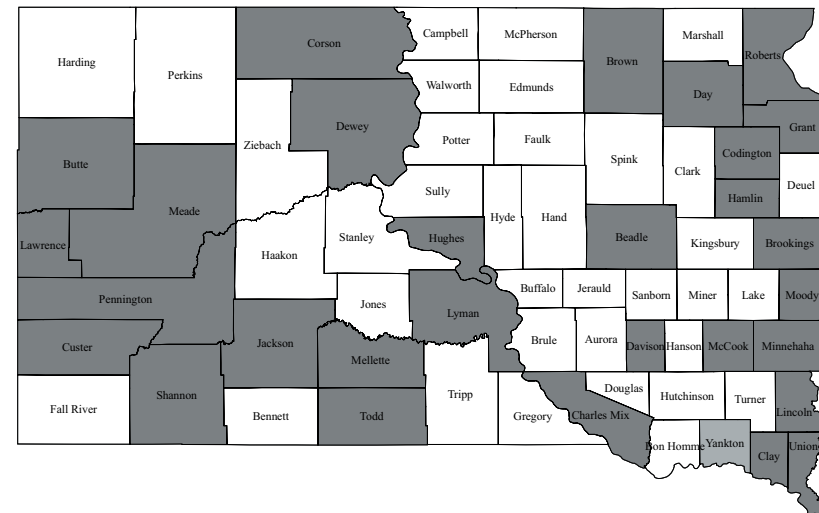
The map on the right shows the counties compared to the state confidence interval for infant mortality for the time period 2002-06. The standard error (SE) of a rate is used in health statistics when studying or comparing rates. The SE defines a rate's variability and can be used to calculate a confidence interval (CI) to determine the actual variance of a rate 95% of the time. Rates for two different populations are considered to be significantly different when their confidence intervals do not overlap. In other words, the number of events falls within the state's confidence interval. In this case, there are 30 counties with confidence intervals that overlap the state. There are 35 counties with a low number of events (LNE), which is anything less than 4 events, for which rates are not calculated. Yankton County had an infant mortality rate that was above or better than the state average for the 2002-06 time period. No county had an infant mortality rate below or worse than the state average.

Rates for infant mortality for five-year intervals  
1998-02 through 2002-06



Source: South Dakota Department of Health.

Infant Mortality- County comparisons to the State (2002-06)  
South Dakota rate = 7.1 per 1,000 live births



Counties compared to South Dakota average confidence interval

- Low Number of Events
- Rate Significantly Better than South Dakota Average
- Rate not Significantly Different than South Dakota Average

Map by: South Dakota KIDS COUNT - Business Research Bureau  
The University of South Dakota  
Data are from the South Dakota Department of Health

# Low Birth Weight Babies

Low birth weight is the percentage of infants born weighing less than 2,500 grams (about 5.5 pounds). A baby's birth weight is a key indicator of newborn health. It is directly related to infant survival and healthy development.

The percent of all live births that were low birth weight was 6.9% for the 2002-06 time period. This means that for every 100 live births, almost 7 babies were considered low birth weight. Out of the 56,419 live births from 2002-06, there were 3,885 born low birth weight. The percentage of low birth weight babies shows a steady increase for the past time periods. The graph at the left indicates the number of low birth weight babies for 1998-02 through 2002-06.

Of all Caucasian babies born in the 2002-06 time period in South Dakota, 6.7% (2,987 of 44,555) were low birth weight.

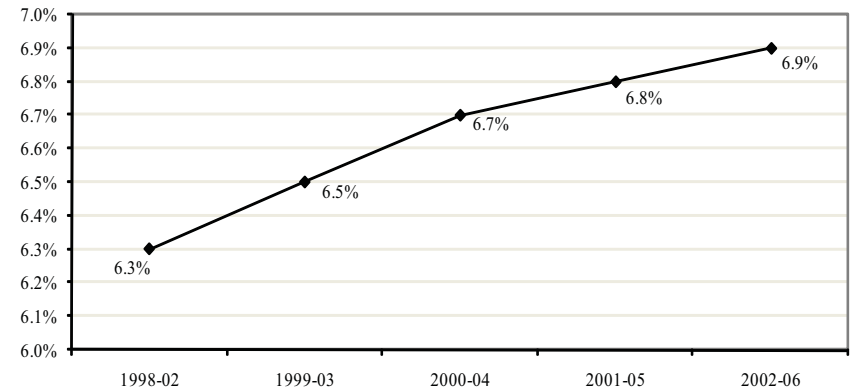
Of all American Indian babies born in the 2002-06 time period in South Dakota, 7.3% (751 of 10,298) were low birth weight.

Of all other race babies born in the 2002-06 time period in South Dakota, 9.4% (144 of 1,532) were low birth weight.

There was no significant differences between the Caucasians and American Indians in South Dakota for low birth weight babies.

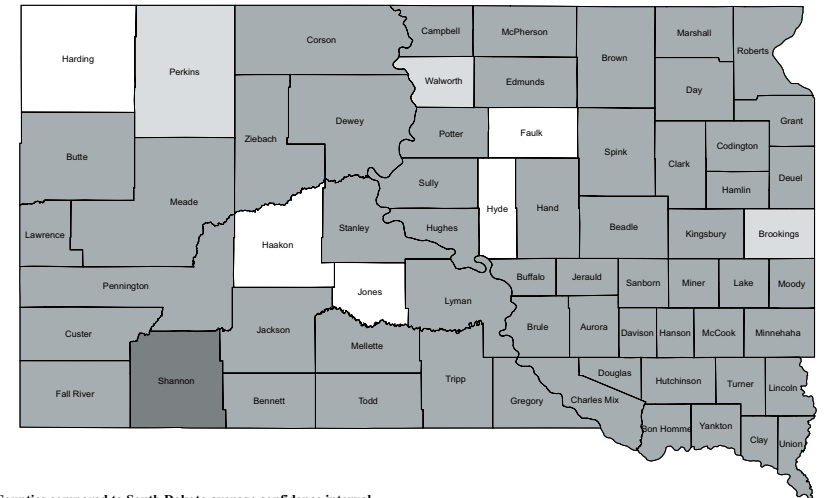
The map on the right shows the counties compared to the state confidence interval for the percent of low birth weight babies for the time period 2002-2006. The standard error (SE) of a rate is used in health statistics when studying or comparing rates. The SE defines a rate's variability and can be used to calculate a confidence interval (CI) to determine the actual variance of a rate 95% of the time. Rates for two different populations are considered to be significantly different when their confidence intervals do not overlap. In other words, the number of events falls within the state's confidence interval. In this case, there are 57 counties with confidence intervals that overlap the state. There are 5 counties (Faulk, Haakon, Harding, Hyde, and Jones) with a low number of events (LNE), which is anything less than 4 events, for which rates are not calculated. Three counties (Brookings, Perkins, and Walworth) had rates that were above or better than the state average meaning they had a lower percentage of low birth weight babies during the 2002-06 time period. One county (Shannon) had a rate below or worse than the state average.

Percentage of low birthweight babies for five-year intervals 1998-02 through 2002-06



Source: South Dakota Department of Health.

Low Birthweight- County comparisons to the State (2002-06)  
South Dakota rate = 6.9% of all live births



Counties compared to South Dakota average confidence interval

- Low Number of Events
- Rate Significantly Better than South Dakota Average
- Rate Not Significantly Different than South Dakota Average
- Rate Significantly Worse than South Dakota Average

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# Child Deaths

Once a child survives the first year of life, mortality drops sharply. Child deaths are the number of deaths from all causes per 100,000 children ages 1-14 years. The rate is a reflection of the physical, mental and emotional health of children. A significant cause of child deaths in South Dakota is motor vehicle crashes.

The rate of 29.7 per 100,000 children ages 1-14 is about 230 child deaths for the 2002-06 time period. The child death rate hovers between 40-50 deaths per year. The graph at the right shows the trend in the number of child deaths for 1998-02 through 2002-06. There has been a decrease in the rate of child deaths for the past three time periods.

Of all Caucasian children ages 1-14 in the 2002-06 time period in South Dakota, there were 143 child deaths for a rate of 22.8 per 100,000 children ages 1-14.

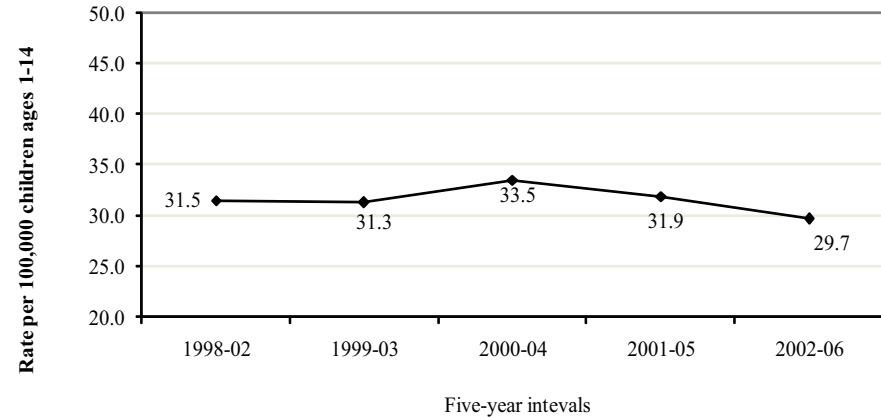
Of all American Indian children ages 1-14 in the 2002-06 time period in South Dakota, there were 81 child deaths for a rate of 67.2 per 100,000 children ages 1-14.

Of all children of other races ages 1-14 in the 2002-06 time period in South Dakota, there were 6 deaths for a rate of 22.6 deaths per 100,000 children ages 1-14.

The child death rate for the American Indian in South Dakota is significantly higher than for Caucasians in South Dakota.

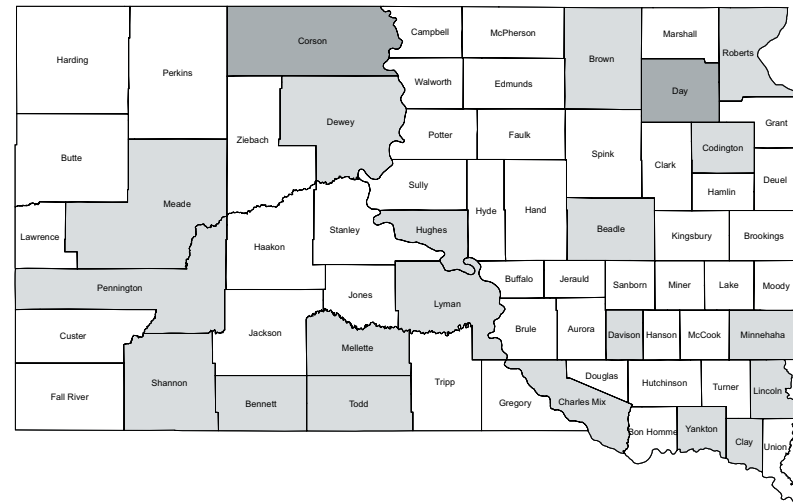
The map on the right shows the counties compared to the state confidence interval for the child death rate for the time period 2001-05. The standard error (SE) of a rate is used in health statistics when studying or comparing rates. The SE defines a rate's variability and can be used to calculate a confidence interval (CI) to determine the actual variance of a rate 95% of the time. Rates for two different populations are considered to be significantly different when their confidence intervals do not overlap. In other words, the number of events falls within the state's confidence interval. In this case, there are 19 counties that fall within the state confidence interval average and thus are not significantly different. There are 45 counties with zero child deaths or they have a low number of events (LNE), which is anything less than four events, for which rates are not calculated. Two counties, Corson and Day, have rates below or worse than the state average meaning those counties had a higher rate of child deaths compared to the state as a whole for the time period 2002-06. There were no counties that had a rate better than the state average.

Rates for child deaths for five-year intervals  
1998-02 through 2002-06



Source: South Dakota Department of Health.

Child Deaths - County comparisons to the State (2002-06)  
South Dakota rate = 29.7 per 100,000 children ages 1-14



Counties compared to South Dakota average confidence interval

- LNE - Low Number of Events
- Rate Not Significantly Different than South Dakota Average
- Rate Significantly Worse than South Dakota Average

Map by: South Dakota KIDS COUNT - Business Research Bureau  
The University of South Dakota  
Data are from the South Dakota Department of Health

# Teen Violent Deaths

This indicator is deaths caused by accidents, homicides, and suicides per 100,000 teens ages 15-19. As with child deaths, motor vehicle crashes make up the highest percentage of teen violent deaths.

The teen violent death rate for 2002-06 was 70.8 per 100,000 youth 15 through 19 years of age. This means that for every 100,000 youth in that age group, about 221 died from accidents, suicides, or homicides for the 2002-06 time period. The graph at the right indicates the number of teen violent deaths for 1998-02 through 2002-06.

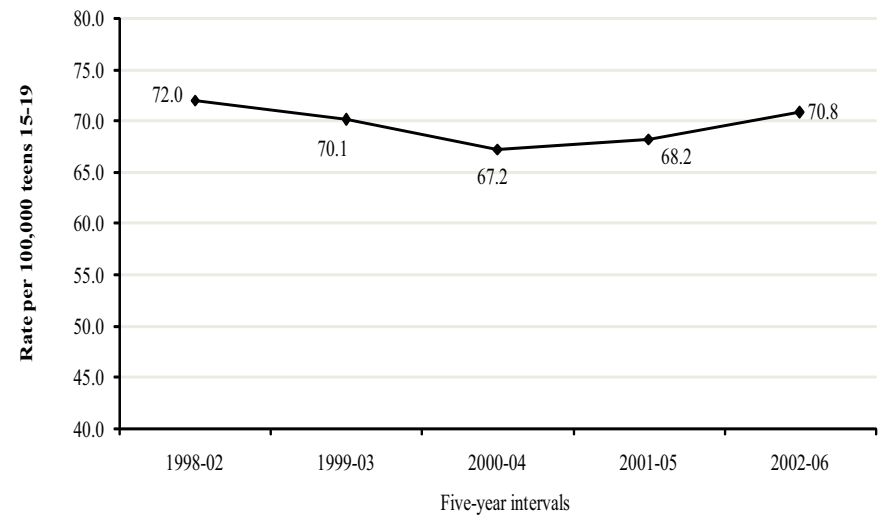
Of all Caucasian teens ages 15-19 in the 2002-06 time period in South Dakota, there were 138 teen violent deaths for a rate of 51.9 per 100,000 teens ages 15-19.

Of all American Indian teens ages 15-19 in the 2002-06 time period in South Dakota, there were 80 teen violent deaths for a rate of 207.0 per 100,000 teens ages 15-19.

The teen violent death rate for the American Indian in South Dakota is significantly higher than for Caucasians in South Dakota.

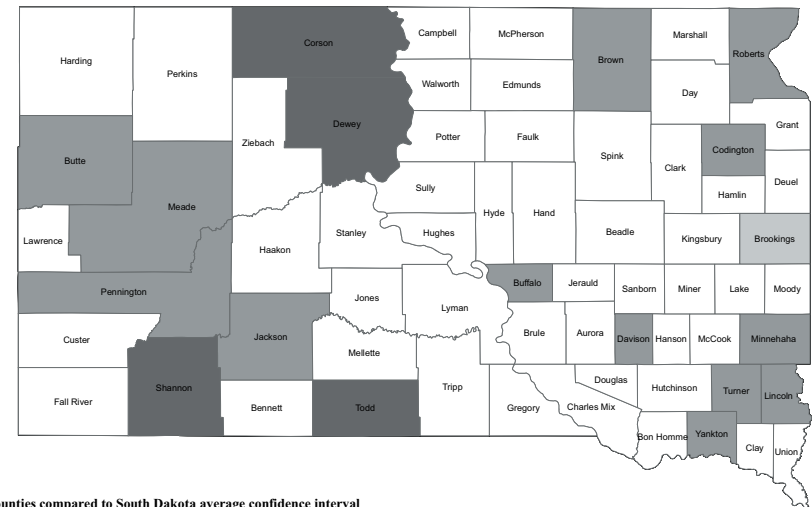
The map on the right shows the counties compared to the state confidence interval for the teen violent death rate for the time period 2001-05. The standard error (SE) of a rate is used in health statistics when studying or comparing rates. The SE defines a rate's variability and can be used to calculate a confidence interval (CI) to determine the actual variance of a rate 95% of the time. Rates for two different populations are considered to be significantly different when their confidence intervals do not overlap. In other words, the number of events falls within the state's confidence interval. In this case, 13 counties fall within the state confidence interval average and thus are not significantly different. The majority of the counties (48) have zero teen violent deaths or they have a low number of events (LNE), which is anything less than four events, for which rates are not calculated. Four counties, Corson, Dewey, Shannon, and Todd have a rate below or worse than the state average meaning they had a higher rate of teen violent deaths as compared to the state as a whole for the time period 2002-06. One county, Brookings, had a rate better than the state average.

Rates for teen violent deaths for five-year intervals  
1998-02 through 2002-06



Source: South Dakota Department of Health.

Teen Violent Deaths - County comparisons to the State (2002-06)  
South Dakota rate = 70.8 per 100,000 teens ages 15 - 19



Counties compared to South Dakota average confidence interval

- Low Number of Events
- Rate Significantly Better than South Dakota Average
- Rate Not Significantly Different than South Dakota Average
- Rate Significantly Worse than South Dakota Average

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# Births to Single Teens

This is the percentage of all births to single teens under age 20. The indicator is included because teen childbearing has been shown to diminish the opportunities of both the child and the mother. Births to females under age 18 are particularly problematic because most of the teens are not married and have not completed high school. Children of teen mothers are more likely to be born low birth weight, have health problems, and need hospitalization.

Births to single teens made up 8.7% of all births from 2002-06. This means that for every 100 births, about 9 occurred to single mothers under the age of 20. Of the 56,439 births from 2002-06, 4,902 were to teens under age 20. The graph at the left indicates the number of births to single teens has been declining from the 1998-02 through 2002-06 time periods.

Of all Caucasian births in the 2002-06 time period in South Dakota, 5.8% (2,586 of 44,559) were to single teens (single Caucasian females under age 20).

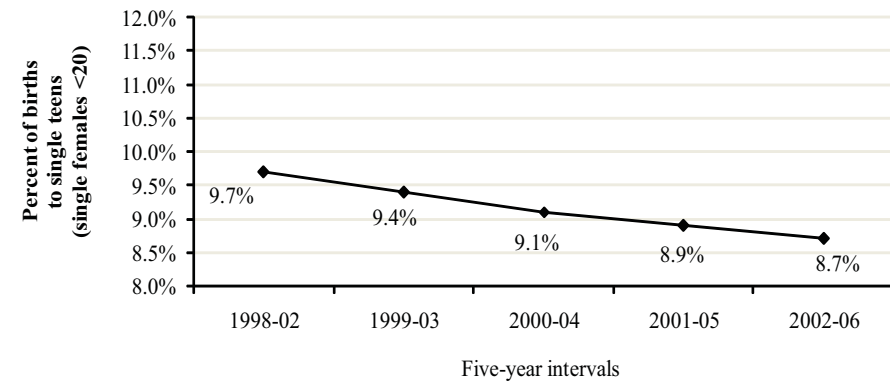
Of all American Indian births in the 2002-06 time period in South Dakota, 21.2% (2,188 of 10,311) were to single teens (single American Indian females under age 20).

Of all births to other races in the 2002-06 time period in South Dakota, 8.3% (127 of 1,533) were to single teens (single females of other races under age 20).

The births to single teens rate for the American Indian in South Dakota is significantly higher than for Caucasians in South Dakota.

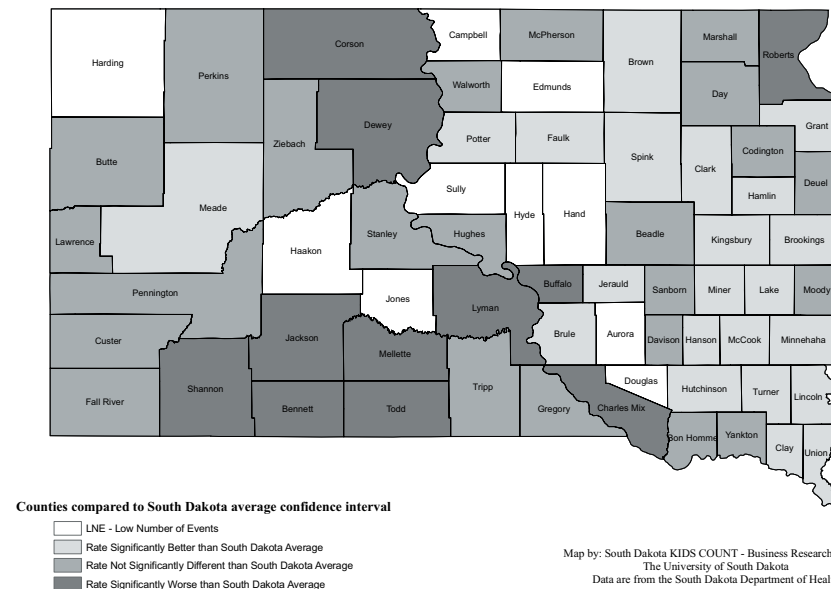
The map on the right shows the counties compared to the state confidence interval for percent of births to single teens for the time period 2002-06. The standard error (SE) of a rate is used in health statistics when studying or comparing rates. The SE defines a rate's variability and can be used to calculate a confidence interval (CI) to determine the actual variance of a rate 95% of the time. Rates for two different populations are considered to be significantly different when their confidence intervals do not overlap. In other words, the number of events falls within the state's confidence interval. In this case, there are 23 counties that fall within the state confidence interval average and thus are not significantly different. There are ten counties with low number of events (LNE), which is anything less than 4 events, and rates are not calculated. Twenty-two counties have percentages that are above or better than the state as a whole. The remaining counties (11) have a percentage of births to single teens below or worse than the state average meaning those counties had a higher percentage of births to single teens compared to the state as a whole for the time period 2002-06.

Percentage for births to single teens (single females <20) for five-year intervals 1998-02 through 2002-06



Source: South Dakota Department of Health.

Births to Single Teens - County comparisons to the State (2002-06)  
South Dakota rate = 8.7% of single females under age 20



# Prenatal Care

*Prenatal care (first trimester) helps to promote healthier births. Prenatal care for the mother addresses such issues as inadequate nutrition, smoking, anemia, and diabetes. For babies, prenatal care (first trimester) is associated with less likelihood of being born low birth weight, being stillborn, or dying within the first year of life.*

The graph at the left indicates the number of women receiving prenatal care during the first trimester for the time periods 1998-02 through 2002-06. The percent of women receiving prenatal care in their first trimester of pregnancy was 76.6% [42,246 women] for the time period 2002-06. The percentage of women receiving prenatal care in the first trimester shows a decrease from the 2001-05 time period.

In the 2002-06 time period in South Dakota, 81.6% (35,505 of 43,532) of Caucasian women received prenatal care during their first trimester of pregnancy.

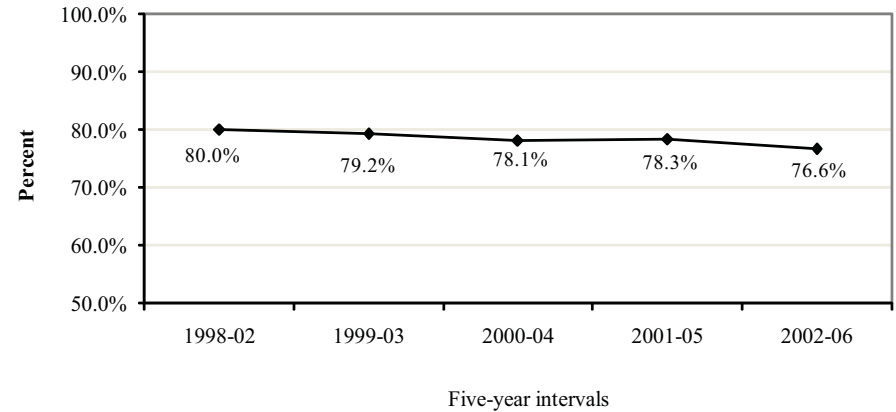
In the 2002-06 time period in South Dakota, 57.1% (5,768 of 10,093) of American Indian women received prenatal care during their first trimester of pregnancy.

In the 2002-06 time period in South Dakota, 64% (953 of 1,488) of women of other races received prenatal care during their first trimester of pregnancy.

The rate of prenatal care for Caucasian women in South Dakota is significantly higher than for the American Indian women in South Dakota.

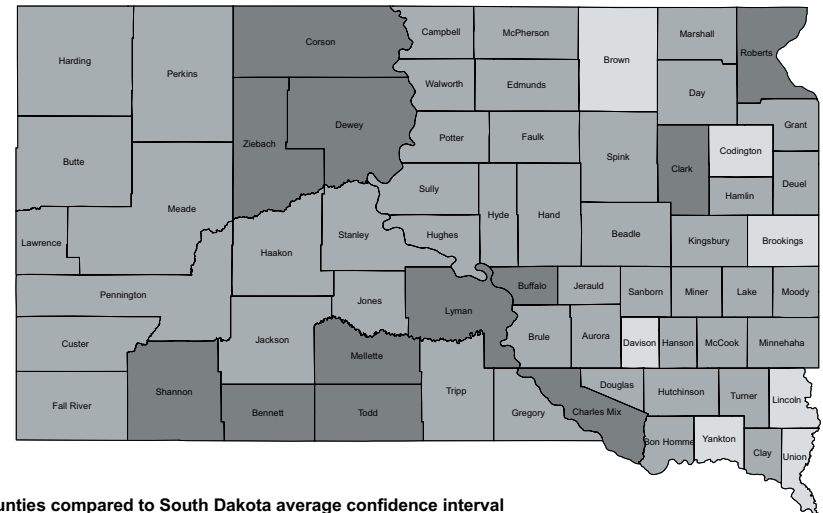
The map on the right shows the counties compared to the state confidence interval for the percent of women receiving prenatal care (first trimester) for the time period 2002-06. The standard error (SE) of a rate is used in health statistics when studying or comparing rates. The SE defines a rate's variability and can be used to calculate a confidence interval (CI) to determine the actual variance of a rate 95% of the time. Rates for two different populations are considered to be significantly different when their confidence intervals do not overlap. In other words, the number of events falls within the state's confidence interval. In this case, the vast majority of counties (47) have confidence intervals that overlap the state and are not significantly different. Seven counties had confidence intervals above or better than the state as a whole; while 12 counties have confidence intervals below or worse than the state average meaning they had a lower percentage of women receiving prenatal care as compared to the state as a whole for the time period 2002-06.

**Percentage for first trimester prenatal care for five-year intervals 1998-02 through 2002-06**



Source: South Dakota Department of Health.

**Prenatal Care- County comparisons to the State (2002-06)  
South Dakota rate = 76.6% received care during first trimester**



**Counties compared to South Dakota average confidence interval**

- Rate Significantly Better than South Dakota Average
- Rate Not Significantly Different than South Dakota Average
- Rate Significantly Worse than South Dakota Average

Map by: South Dakota KIDS COUNT - Business Research Bureau  
The University of South Dakota  
Data are from the South Dakota Department of Health

# Immunization

This indicator is defined as the percentage of children ages 19-35 months who have received the full schedule of age-appropriate immunizations. Young children are vulnerable to the spread of diseases. The opportunity for the spreading of diseases is minimized by immunizing children early in life. Immunizing young children also provides a measure of protection for the entire community. Most schools require that children be fully immunized when enrolling. Child care centers are also requiring children have certain vaccinations.

The state of South Dakota uses immunization rates from the National Immunization Survey (NIS). These rates are determined by a sample telephone survey. The National Immunization Survey (NIS) is sponsored by the National Immunization Program (NIP) and conducted jointly by NIP and the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention. The NIS is a list-assisted random-digit-dialing telephone survey followed by a mailed survey to children's immunization providers, which began data collection in April 1994 to monitor childhood immunization coverage.

The target population for the NIS is children between the ages of 19 and 35 months living in the United States at the time of the interview. Data from the NIS are used to produce timely estimates of vaccination coverage rates for all childhood vaccinations recommended by the Advisory Committee on Immunization Practices (ACIP). Estimates are produced for the nation and for each of 78 Immunization Action Plan (IAP) areas, consisting of the 50 states, the District of Columbia, and 27 large urban areas. The official estimates of vaccination coverage rates from the NIS are rates of being up-to-date with respect to the ACIP recommended numbers of doses of vaccines. Vaccinations included in the survey are: diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP); poliovirus vaccine (polio); measles-containing vaccine (MCV); Haemophilus influenzae type b vaccine (Hib); hepatitis B vaccine (Hep B); varicella zoster vaccine, pneumococcal conjugate vaccine (PCV), hepatitis A vaccine (Hep A), and influenza vaccine (FLU).

South Dakota uses the 4:3:1 vaccine series. This series is greater than or equal to four doses of diphtheria, tetanus toxoids and pertussis vaccines, diphtheria and tetanus toxoids, and diphtheria, tetanus toxoids and any acellular pertussis vaccine (DTP/DT/DTaP); greater than or equal to three doses of poliovirus vaccine; and greater than or equal to one dose of any measles-containing vaccine.

South Dakota's rate for the 4:3:1 series for 2005 (July 2005-June 2006) was 87% ( $\pm 4.2$ ). Only Massachusetts - 92% ( $\pm 3.3$ ), Kentucky - 89% ( $\pm 4.3$ ), Connecticut - 88.9% ( $\pm 4.5$ ), Alabama - 88.1% ( $\pm 4.9$ ), and Delaware - 87.3% ( $\pm 5.4$ ) had higher rates. The national rate was 82.9% ( $\pm 0.9$ ).

For additional information please see this website:

[http://www.cdc.gov/vaccines/stats-surv/nis/data/tables\\_0506.htm](http://www.cdc.gov/vaccines/stats-surv/nis/data/tables_0506.htm)

The Recommended Childhood and Adolescent Immunization Schedule, United States, 2007 can be accessed at this website:

<http://www.cdc.gov/vaccines/recs/schedules/default.htm>

Immunizations Required for School Entry in South Dakota

**Information from South Dakota Department of Health website:**

**<http://doh.sd.gov/Immunize/School.aspx>**

South Dakota law (SDCL 13-28-7.1) requires students entering school or early childhood programs to present certification that they have been adequately immunized, according to the recommendations of the Department of Health. The law applies to all children entering school for the first time, including transfer students. Minimum immunization requirements are defined as:

1. At least 4 doses of diphtheria, tetanus, and pertussis containing vaccine, at least 1 dose on or after 4th birthday. Children who are 7 years of age or older should receive adult-type-Td vaccine.
2. Three (3) or more doses of poliovirus vaccine, at least 1 dose on or after age 4; or four (4) or more doses of any combination of OPV/IPV given by 4 years of age.
3. At least 2 doses of a measles-containing vaccine separated by at least 28 days, on or after 1st birthday. 2nd dose usually given as a measles/mumps/rubella vaccination. Hepatitis B and Haemophilus Influenzae B recommended at this time, but not required.
4. At least 2 doses of a rubella-containing vaccine, separated by at least 28 days, on or after 1st birthday.
5. At least 2 doses of a mumps-containing vaccine, separated by at least 28 days, on or after 1st birthday.
6. NOTE: Additional immunization requirement for kindergarten entry only: Effective August 2007, two doses of varicella (chickenpox) vaccine administered after the age of 12 months, or history of disease. Parental history is acceptable, and physician documentation is not necessary.