Methodology

Participating Agencies

The South Dakota Behavioral Risk Factor Surveillance System is a combined effort between the South Dakota Department of Health (DOH) and the Centers for Disease Control and Prevention (CDC). The DOH contracts with Personal Group, Inc. to collect the data through telephone interviews. However, the DOH continues to supervise the survey process, as well as design and distribute the report. The CDC provides financial and technical assistance, develops the questionnaire, designs the methodology, and processes the data.

Method of Surveillance

This study uses a telephone survey rather than other survey methods because of its low cost, ease of administration in reaching respondents, and reliability. Telephone surveys are less representative of areas where a significant portion of the population does not have telephones. Cell phones were first called in 2011. Twelve percent of all surveys were completed via cell phone in 2011 with intent to increase this percentage in the coming years. It was estimated that 20% of South Dakotans were cell phone only users in 2011. In other words, they had no landline telephone.

Questionnaire Development

The BRFSS is designed to collect information on the health behaviors of adults over time. For the 2011 survey (Appendix B), standard demographic questions were included along with sections on general health status, physical and mental health, health insurance, physical activity, diabetes, hypertension and high blood cholesterol, cardiovascular disease, asthma, chronic obstructive pulmonary disease (COPD), depressive disorder, vision impairment, kidney disease, tobacco use, disability, alcohol use, immunization, arthritis, nutrition, seat belt use, HIV/AIDS, and cancer. South Dakota also added several state-specific questions to the end of the core questionnaire including secondhand smoke, signs and symptoms of a heart attack, sunblock use, sweetened beverage consumption, television viewing, weight control, children's health insurance, and children's oral health.

Accuracy and Confidence Intervals

It is important to remember that this survey data are **self-reported**. Therefore, people may tend to report a more favorable lifestyle than actually practiced. The accuracy of self-reported data may also vary according to risk factors, i.e., self-reported smoking status is thought to be more accurate than self-reported eating habits. These limitations do not negate the survey's ability to identify high-risk groups and monitor long-term trends.

The standard error (SE) of a percentage is used in health statistics when studying or comparing percentages. The SE defines a percentage's variability and can be used to calculate a confidence interval (CI) to determine the actual variance of a percentage 95 percent of the time. Percentages for two different populations are significantly different when their confidence intervals do not overlap.

The DOH has calculated the standard error and confidence intervals differently for the complex sample designs used in BRFSS than simple random sample designs. Therefore, please note that the confidence intervals in this report were calculated using software specifically designed to handle these types of data. Given this, it could be stated with 95 percent certainty, that the actual data for South Dakota is represented within the given confidence intervals.

Eligible Respondent Selection

Eligible respondents for the landline survey were individuals 18 years of age or over who resided a majority of the time at the household contacted. In households with more than one eligible respondent, a random selection was made to determine the actual respondent. Data included in the children's sections of this report were estimated based on responses from the adult respondent regarding a randomly selected child in the household. Automated prescreening was done to eliminate business phones and non-working numbers. “No Answers” and “Busy Signals” were re-dialed a minimum of three times on five different days at different times before they were removed.

Eligible respondents for the cell phone survey were individuals 18 years of age or over who did not also have a landline phone. Data included in the children's sections of this report were estimated based on responses from the adult respondent regarding a randomly selected child in the adult’s household. Six attempts were made in order to complete a survey. After the sixth attempt the phone number was removed.

Data Collection Process

There were 8,259 interviews completed between January 1, 2011 and December 31, 2011, at an average of 688 interviews per month.

Data Processing

The DOH sent the data electronically to the CDC. The CDC then supplied a final data file with applicable data weights and several calculated variables included. The DOH used this file to calculate all the data presented in this report.

Weighting

Collecting data via telephone survey often produces an over-representation of certain demographic groups in the sample population. Therefore, the sample population may not be representative of the actual population. To account for this, the data are weighted in order to produce estimates that represent the actual population rather than the sample population.

Weighting Methodology Change

Beginning in 2011, the weighting procedure changed from post-stratification to Iterative Proportional Fitting (Raking). This change will allow for a better representation of certain demographic groups which were increasingly being left out of the BRFSS surveys. Four of the demographics that are now being used in the weighting process are cell phone status, home ownership status, marital status, and education level.

Due to these changes in methodology, the difference in estimates between 2010 and 2011 are likely due to these improved methods. It is important to note that beginning with the 2011 BRFSS data, a new trend line must be started for all risk factor and disease indicators.

More information on this new methodology can be found at the following CDC web address: http://www.cdc.gov/surveillancepractice/reports/brfss/brfss.html.

Sample Description

Survey interviewers collected demographic variables including age, gender, and race. Those interested can find a summary of the demographic results in a table displayed in Appendix A: Demographics.

Appendix A also summarizes the ethnicity, household income, education, employment status, marital status, phone status (landline v. cell), home ownership status, presence of children in the household, and pregnancy status of female respondents ages 18-44 years old.

Completion Rate

Table 3 shows the outcome of all telephone calls. The 8,259 completed interviews represented a completion rate of 8.9 percent. The refusal rate was 5.3 percent.

Table 3
Disposition of All Telephone Numbers in the Sample, 2011

Final Outcome	Number	Percent
Completed interview	8,259	8.9%
Refused interview	4,926	5.3%
Nonworking number	62,334	66.9%
Not a private residence	8,173	8.8%
Fast busy	2,381	2.6%
Telephone answering service (Multiple times)	2,038	2.2%
Fax line	1,587	1.7%
Respondent not available during the interviewing period	1,443	1.5%
No answer (Multiple times)	1,301	1.4%
Interview terminated within questionnaire	262	0.3%
Physical/mental impairment	247	0.3%
Technological barrier	104	0.1%
Line busy (Multiple times)	41	0.0%
Language barrier	34	0.0%
No eligible respondent at this number	17	0.0%
Total	**93,147**	**100%**

Source: The Behavioral Risk Factor Surveillance System, South Dakota Department of Health, 2011