

# Mortality

<b>An Overview: 2009</b>	
Total South Dakota Resident Deaths	6,913
Crude Death Rates per 100,000 Population	
South Dakota	915.8
United States (Provisional)	790.0
Age-Adjusted Death Rates per 100,000 Population	
South Dakota	795.2
United States	**N/A
Age-Adjusted YPLL Before Age 75 per 100,000 Population	
Whites	6,361
American Indians	21,776

In 2004, the South Dakota Department of Health implemented the new standard death certificate. Multiple races could be indicated on the certificate for the first time. Please see page 229 in the Technical Notes for a more in depth explanation.

In 1999, South Dakota along with the rest of the nation made two significant changes to the way mortality data were analyzed. These changes were the switch to using the 2000 U.S. Standard for age adjusting and using ICD-10 for disease classifications. As a result, comparison to reports prior to 1999 is not possible.

Table 52, below, displays the deaths, crude death rates, and age-adjusted death rates for the United States and South Dakota for the past 20 years.

**Table 52**  
**Resident Deaths, Crude Death Rates, and Age-Adjusted Death Rates,**  
**South Dakota and United States, 1990-2009**

Year	United States			South Dakota		
	Number	Crude Rate	Age-Adjusted Rate	Number	Crude Rate	Age-Adjusted Rate
2009	*2,426,000	*790.0	**NA	6,913	915.8	795.2
2008	*2,473,018	*813.3	*758.7	7,056	934.8	810.0
2007	2,423,712	803.6	760.2	6,800	900.8	780.9
2006	2,426,264	810.4	776.5	7,038	932.4	807.5
2005	2,448,017	825.9	798.8	7,074	937.1	816.2
2004	2,397,615	816.5	800.8	6,811	902.3	783.6
2003	2,448,288	841.9	832.7	7,109	941.8	819.2
2002	2,443,387	847.3	845.3	6,886	912.2	791.0
2001	2,416,425	848.5	854.5	6,915	916.1	796.3
2000	2,403,351	854.0	869.0	7,014	929.2	804.8
1999	2,391,399	857.0	875.6	6,941	997.3	799.1
1998	2,337,256	847.3	870.6	6,850	984.2	791.1
1997	2,314,245	848.8	878.1	6,855	984.9	790.2
1996	2,314,690	859.2	894.1	6,793	976.0	788.1
1995	2,312,132	868.3	909.8	6,901	991.5	798.0
1994	2,278,994	866.1	913.5	6,724	966.1	778.5
1993	2,268,000	872.8	926.1	6,774	973.3	787.1
1992	2,175,613	848.1	905.6	6,680	959.8	777.6
1991	2,169,518	857.6	922.3	6,636	953.4	768.9
1990	2,148,463	863.8	938.7	6,320	908.0	735.1

Note: \*U.S. 2008 and 2009 data are provisional  
 \*\*U.S. data is not available  
 Crude death rates are per 100,000 population.  
 Age-adjusted rates are computed with the 2000 standard.

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

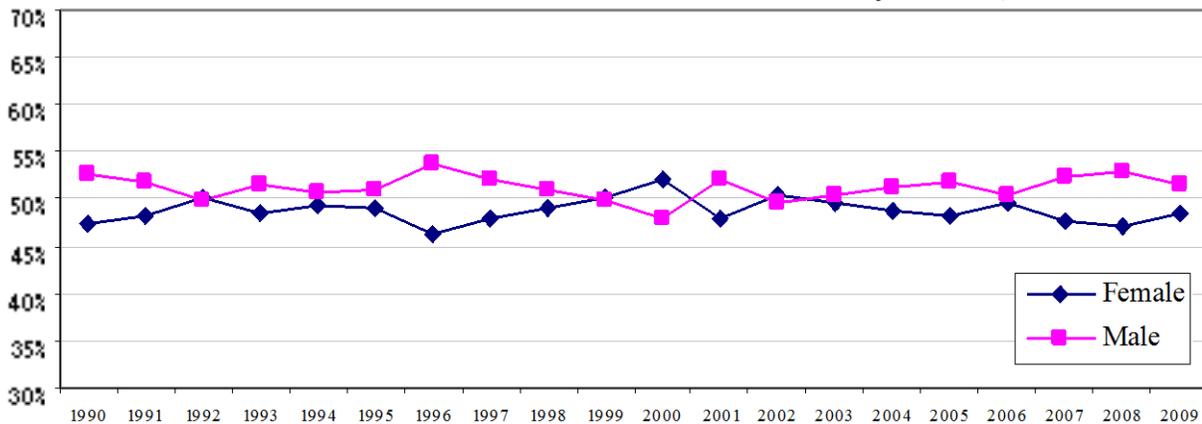
## Leading Causes of Death

The five leading causes of death in 2009 for South Dakota residents were heart disease, cancer, chronic lower respiratory diseases, cerebrovascular diseases, and Alzheimer's disease.

Heart disease accounted for 25.7 percent of South Dakota's 2009 resident deaths, an increase of 8.0 percent from 2008. Heart disease was the leading cause of death for all South Dakota residents, regardless of gender or race. Figure 11, below, illustrates by gender the percent of South Dakota resident heart disease deaths for the last 20 years. Over the past 20 years, the percent of deaths due to

heart disease for males usually fell between 50 to 55 percent while for the females the percent of deaths due to heart disease usually fell between 45 to 50 percent. The majority of years showed males having a higher percent of deaths due to heart disease than females. However, this was not the case in 1999, 2000, and 2002 when females had a higher percent of death due to heart disease than males. In 2009, males showed a decrease from 2008 in the percent of deaths due to heart disease while females showed an increase from 2008 in the percent of deaths due to heart disease.

**Figure 11**  
**Percent of South Dakota Resident Heart Disease Deaths by Gender, 1990 - 2009**



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

Cancer was the second leading cause of death and accounted for 21.8 percent of 2009 South Dakota resident deaths, a 4.1 percent decrease from 2008. Trachea, bronchus, and lung cancer were the leading cause of cancer deaths during the year, accounting for 25.7 percent of cancer deaths.

Chronic lower respiratory disease accounted for 6.4 percent of 2009 South Dakota resident deaths, a decrease of 7.2 percent from 2008. Chronic lower respiratory diseases include emphysema, asthma, and bronchitis.

Cerebrovascular diseases accounted for 6.0 percent of 2009 South Dakota resident deaths, an increase of 9.1 percent from 2008. Stroke, not specified as hemorrhage or infarction, caused the majority of the deaths for this type of disease.

Alzheimer's caused 5.8 percent of all South Dakota resident deaths in 2009. Alzheimer's was the fifth leading cause of death in 2009.

Table 53, below, displays the breakdown of accidental deaths, which were the sixth leading cause of deaths among South Dakotans. In 2009, 348 or 5.0 percent of deaths were due to accidents.

The highest type of motor vehicle death in 2009 was car occupant with 84 deaths. The highest death in the other causes of accidental death in 2009 was falls with 102 deaths.

**Table 53**  
**South Dakota Resident Leading Causes of Death Due to Accidents, 2005-2009**

	Total	Year of Death				
		2009	2008	2007	2006	2005
<b>Total Deaths</b>	<b>1,916</b>	<b>348</b>	<b>372</b>	<b>357</b>	<b>443</b>	<b>396</b>
Motor Vehicle Accidents	770	133	125	145	186	181
Car Occupant.....(V40-V49)	410	84	66	68	99	93
Occupant of Pick-Up Truck or Van.....(V50-V59)	130	16	16	26	39	33
Pedestrian.....(V01-V09)	70	6	15	17	12	20
Motorcycle Rider.....(V20-V29)	60	12	9	16	12	11
Occupant of Special All-Terrain Vehicle.....(V86)	26	4	6	7	4	5
Occupant of Heavy Transport Vehicle.....(V60-V69)	13	1	1	2	6	3
All Other Motor Vehicle Accidents	61	10	12	9	14	16
Other Causes of Accidental Death	1,146	215	247	212	257	215
Falls.....(W00-W19)	613	102	124	130	141	116
Accidental Poisoning.....(X40-X49)	145	34	41	20	29	21
Accidental Threats to Breathing (excl. drowning).....(W75-W84)	68	16	11	9	19	13
Exposure to Smoke, Fire, and Flames.....( X00-X09)	63	11	16	8	12	16
Accidental Drowning and Submersion.....(W65-W74, V90, V92)	45	8	8	7	12	10
Exposure to Excessive Natural Cold.....(X31)	38	8	9	6	6	9
Accidental Discharge of Firearms.....(W32-W34)	14	4	3	2	2	3
Air Transport Accidents...(V95.0-V95.3, V95.8-V95.9, & V96-V97)	10	3	1	3	1	2
Contact with Agricultural Machinery.....(W30)	6	0	1	1	3	1
Exposure to Excessive Natural Heat.....(X30)	6	0	0	4	1	1
All Other Causes of Accidents	138	29	33	22	31	23

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

Table 54, on the next page, lists South Dakota resident leading causes of death for the last five years. Heart disease and cancer have been the first and second cause of death for the past five years. In the past three years, chronic lower respiratory diseases have been in the number three spot; it was previously fourth or fifth in past years. In 2009, cerebrovascular disease deaths surpassed Alzheimer's disease as the fourth leading cause of death.

There has been an increase in deaths due to Alzheimer's disease since 2005, when there were 289 deaths, compared to 402 in 2009. Accidents remained as the sixth leading cause of death in 2009 followed by diabetes mellitus as the seventh leading cause of death. The remaining causes of death to round out the top ten were influenza and pneumonia, suicide, and nephritis, nephrotic syndrome, and nephrosis.

**Table 54**  
**South Dakota Resident Leading Causes of Death, 2005-2009**

Cause of Death	Total			2009			2008			2007			2006			2005		
	Rank	Deaths	Percent	Rank	Deaths	Percent	Rank	Deaths	Percent	Rank	Deaths	Percent	Rank	Deaths	Percent	Rank	Deaths	Percent
<b>South Dakota (All Deaths)</b>		<b>34,881</b>	<b>100.0</b>		<b>6,913</b>	<b>100.0</b>		<b>7,056</b>	<b>100.0</b>		<b>6,800</b>	<b>100.0</b>		<b>7,038</b>	<b>100.0</b>		<b>7,074</b>	<b>100.0</b>
Heart Disease .....(I00-I09, I11, I13, I20-I51)	1	8,585	24.6	1	1,778	25.7	1	1,677	23.8	1	1,623	23.9	1	1,743	24.8	1	1,764	24.9
Malignant Neoplasms (cancer).....(C00-C97)	2	7,844	22.5	2	1,506	21.8	2	1,561	22.1	2	1,606	23.6	2	1,561	22.2	2	1,610	22.8
Chronic Lower Respiratory Diseases.....(J40-J47)	3	2,199	6.2	3	440	6.0	3	486	6.9	3	458	6.7	5	375	5.3	4	440	6.2
Cerebrovascular Diseases .....(I60-I69)	4	2,164	6.3	4	417	6.4	5	391	5.5	4	408	6.0	4	437	6.2	3	511	7.2
Accidents .....(V01-X59, Y85-Y86)	5	1,916	5.5	6	348	5.0	6	372	5.3	5	357	5.3	3	443	6.3	5	396	5.6
Alzheimer's Disease .....(G30)	6	1,767	5.1	5	402	5.8	4	401	5.7	6	345	5.1	6	330	4.7	6	289	4.1
Diabetes Mellitus .....(E10-E14)	7	1,162	3.3	7	200	2.9	7	216	3.1	7	246	3.6	7	261	3.7	8	239	3.4
Influenza and Pneumonia .....(J09-J18)	8	925	2.7	8	135	2.0	8	186	2.6	8	189	2.8	8	173	2.5	7	242	3.4
Intentional Self-Harm (suicide) .....(*U03, X60-X84, Y87.0)	9	600	1.7	9	128	1.9	9	123	1.7	9	101	1.5	9	125	1.8	9	123	1.7
Chronic Liver Disease and Cirrhosis.....(K70 & K73-K74)	10	439	1.3	*	*	*	10	100	1.4	10	94	1.4	10	83	1.2	10	83	1.2
Essential (primary) Hypertension and Hypertensive Renal Disease .....(I10 & I12)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	10	83	1.2
Nephritis, Nephrotic Syndrome, and Nephrosis..... ... (N00-N07, N17-N19, N25-N27)	*	*	*	10	99	1.4	*	*	*	*	*	*	*	*	*	*	*	*
<b>All Other Causes</b>		<b>7,280</b>	<b>20.9</b>		<b>1,460</b>	<b>21.1</b>		<b>1,543</b>	<b>21.9</b>		<b>1,373</b>	<b>20.2</b>		<b>1,507</b>	<b>21.4</b>		<b>1,294</b>	<b>18.3</b>

Note: Letter/number combinations following cause of death are ICD-10 codes.

Due to rounding disease-specific death rates may not sum to state death rate.

\*This cause was not one of the ten leading causes of death for that year.

The asterisks (\*) preceding the cause-of-death codes indicate that they are not part of the International Classification of Diseases, Tenth Revision.

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

## Race

Table 55, below, presents South Dakota resident leading causes of death by race. In 2009, patterns for the 10 leading causes of death varied by race. Eight of the 10 leading causes were the same for whites and American Indians, but they differed by rank. For example, accidents were the sixth leading cause of death at 4.1 percent for the white population, but the second leading cause of death for the American Indian population at 15.0 percent.

Alzheimer's disease was in the 10 leading causes of death for the white population, but not the American Indian population. Among the 10 leading causes of death for the American Indian population, but not for the white population were chronic liver disease and cirrhosis and assault (homicide).

**Table 55**  
**South Dakota Resident Leading Causes of Death by Race, 2009**

Cause of Death	All Races			White			American Indian		
	Rank	Deaths	Percent	Rank	Deaths	Percent	Rank	Deaths	Percent
<b>South Dakota (All Deaths)</b>		<b>6,913</b>	<b>100.0</b>		<b>6,340</b>	<b>100.0</b>		<b>540</b>	<b>100.0</b>
Heart Disease.....(I00-I09, I11, I13, I20-I51)	1	1,778	25.7	1	1,677	26.5	1	100	18.5
Malignant Neoplasms (cancer)....(C00-C97)	2	1,506	21.8	2	1,425	22.5	3	77	14.3
Chronic Lower Respiratory Diseases .....(J40-J47)	3	440	6.4	3	415	6.5	7	24	4.4
Cerebrovascular Diseases.....(I60-I69)	4	417	6.0	5	395	6.2	8	19	3.5
Alzheimer's Disease.....(G30)	5	402	5.8	4	399	6.3	*	*	*
Accidents..... (V01-X59, Y85-Y86)	6	348	5.0	6	258	4.1	2	81	15.0
Diabetes Mellitus.....(E10-E14)	7	200	2.9	7	172	2.7	6	28	5.2
Influenza and Pneumonia.....(J09-J18)	8	135	2.0	8	126	2.0	*	*	*
Intentional Self-Harm (suicide) .....(*U03, X60-X84, Y87.0)	9	128	1.9	9	93	1.5	4	34	6.3
Nephritis, Nephrotic Syndrome, and Nephrosis...(N00-N07, N17-N19, N25-N27)	10	99	1.4	10	88	1.4	10	11	2.0
Chronic Liver Disease and Cirrhosis .....(K70 & K73-K74)	*	*	*	*	*	*	5	32	5.9
Assault (homicide).....( X85-Y09, Y87.1)	*	*	*	*	*	*	9	16	3.0
All Other Causes	-	1,460	21.1	-	1,292	20.4	-	118	21.9

Note: Letter / number combinations following cause of death are ICD-10 codes.

Due to rounding, disease-specific death rates may not sum to state death rate.

\* This cause was not one of the ten leading causes of death for this race group.

The asterisks (\*) preceding the cause-of-death codes indicate that they are not part of the International Classification of Diseases, Tenth Revision.

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

## Gender

In 2009, patterns for the 10 leading causes of death also varied by gender in South Dakota (Table 56, on the next page). Eight of the 10 leading causes were the same for South Dakota's men

and women, but they differed in rank. Intentional self-harm (suicide) and chronic liver disease and cirrhosis were among the 10 leading causes of death for South Dakota's men, but not for women.

Likewise, unspecified dementia, and nephritis, nephrotic syndrome, and nephrosis were among the 10 leading causes of death for South Dakota's women, but not for South Dakota's men. Men were also more likely to die in accidents than women were, while women were more likely to die from

Alzheimer's disease than men. When ranked together, intentional self-harm (suicide) and chronic liver disease and cirrhosis were in the top 10 but when broken out by gender they were not included in women's top 10 leading causes of death.

**Table 56**  
**South Dakota Resident Leading Causes of Death by Gender, 2009**

Cause of Death	Total			Male			Female		
	Rank	Deaths	Percent	Rank	Deaths	Percent	Rank	Deaths	Percent
<b>South Dakota (All Deaths)</b>		<b>6,913</b>	<b>100.0</b>		<b>3,496</b>	<b>100.0</b>		<b>3,417</b>	<b>100.0</b>
Heart Disease.....(I00-I09, I11, I13, I20-I51)	1	1,778	25.7	1	918	26.3	1	860	25.2
Malignant Neoplasms (cancer)....(C00-C97)	2	1,506	21.8	2	774	22.1	2	732	21.4
Chronic Lower Respiratory Diseases .....(J40-J47)	3	440	6.4	3	237	6.8	5	203	5.9
Cerebrovascular Diseases.....(I60-I69)	4	417	6.0	5	160	4.6	4	257	7.5
Alzheimer's Disease.....(G30)	5	402	5.8	6	122	3.5	3	280	8.2
Accidents..... (V01-X59, Y85-Y86)	6	348	5.0	4	221	6.3	6	127	3.7
Diabetes Mellitus.....(E10-E14)	7	200	2.9	8	107	3.1	7	93	2.7
Influenza and Pneumonia.....(J09-J18)	8	135	2.0	9	65	1.9	9	70	2.0
Intentional Self-Harm (suicide) .....(*U03, X60-X84, Y87.0)	9	128	1.9	7	108	3.1	*	*	*
Nephritis, Nephrotic Syndrome, and Nephrosis... (N00-N07, N17-N19, N25-N27)	10	99	1.4	*	*	*	10	55	1.6
Chronic Liver Disease and Cirrhosis .....(K70 & K73-K74)	*	*	*	10	47	1.3	*	*	*
Unspecified Dementia.....(F03)	*	*	*	*	*	*	8	73	2.1
All Other Causes	-	1,460	21.1	-	737	21.1	-	667	19.5

Note: Letter / number combinations following cause of death are ICD-10 codes.  
Due to rounding, disease-specific death rates may not sum to state death rate.  
\* This cause was not one of the ten leading causes of death for this gender.  
The asterisks (\*) preceding the cause-of-death codes indicate that they are not part of the International Classification of Diseases, Tenth Revision.

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

## Age

Table 57, on the next page, lists the five leading causes of death by age group. Excluding infants, accidents were the leading cause of death for South Dakotans through age 44.

The leading cause of death for persons 45-84 was cancer. Heart disease was the leading cause of death for persons aged 85 and older.

**Table 57**  
**South Dakota Resident Five Leading Causes of Death by Age Group, 2009**

Rank	All Ages	1-24	25-34	35-44	45-54	55-64	65-74	75-84	85 & Over
1	Heart Disease 1,778	Accidents 73	Accidents 33	Accidents 43	Malignant Neoplasms (cancer) 120	Malignant Neoplasms (cancer) 235	Malignant Neoplasms (cancer) 327	Malignant Neoplasms (cancer) 472	Heart Disease 841
2	Malignant Neoplasms (cancer) 1,506	Intentional Self-Harm (suicide) 42	Intentional Self-Harm (suicide) 25	Malignant Neoplasms (cancer) 28	Heart Disease 77	Heart Disease 170	Heart Disease 215	Heart Disease 449	Malignant Neoplasms (cancer) 308
3	Chronic lower respiratory diseases 440	Assault (homicide) 13	Malignant Neoplasms (cancer) 9	Heart Disease 19	Accidents 36	Chronic lower respiratory diseases 44	Chronic lower respiratory diseases 90	Chronic lower respiratory diseases 157	Alzheimer's Disease 278
4	Cerebro-vascular diseases 417	Malignant Neoplasms (cancer) 7	Assault (homicide) 6	Intentional Self-Harm (suicide) 18	Chronic liver disease and cirrhosis 22	Accidents 38	Cerebro-vascular diseases 43	Cerebro-vascular diseases 111	Cerebro-vascular diseases 221
5	Alzheimer's Disease 402	Influenza and pneumonia 4	Heart disease/cerebral palsy 4	Events of undetermined intent 11	Intentional Self-Harm (suicide) 17	Chronic liver disease and cirrhosis 27	Accidents/Diabetes Mellitus 40	Alzheimer's Disease 105	Chronic lower respiratory diseases 137

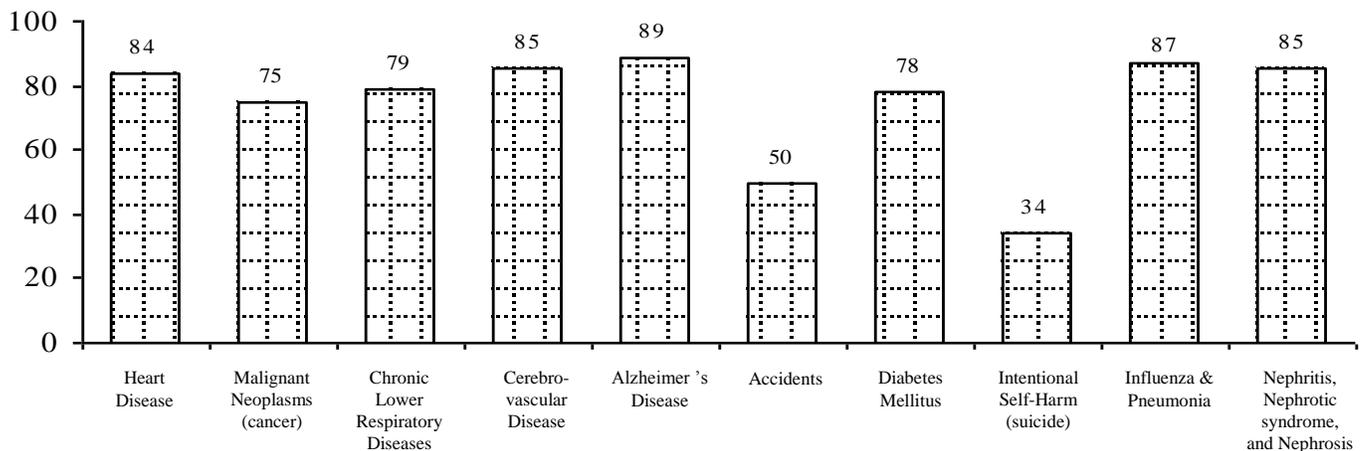
Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Median Age

Figure 12, below, presents data on the median age at death for the 10 leading causes of death for South Dakota residents in 2009.

causes of death for South Dakota residents in 2009.

**Figure 12**  
**Median Age at Death for South Dakota Residents for the Leading Causes of Death, 2009**



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

Table 58, below, shows the median age at death for South Dakota residents from the leading causes of death by race and gender. In 2009, the median age at death was 80 for all South Dakotans; for white residents the median age was 81, compared to 59 for American Indians. The overall median age at death stayed the same for whites and increased by one for American Indians when compared to

their overall median age at death in 2008. The median age at death in 2009 for South Dakota resident males and females was 76 and 83, respectively. For females, the median age at death did not change from 2008 to 2009, but the median age at death for males decreased by one year.

**Table 58**  
**Median Age at Death for South Dakota Residents for the Leading Causes of Death by Race and Gender, 2009**

Cause of Death	Median Age at Death in Years				
	All Total Deaths	Race		Gender	
		White	American Indian	Male	Female
<b>South Dakota (All Deaths)</b>	<b>80</b>	<b>81</b>	<b>59</b>	<b>76</b>	<b>83</b>
Heart Disease (I00-I09, I11, I13, I20-I51)	84	84	70	80	87
Malignant Neoplasms (cancer) (C00-C97)	75	76	67	75	76
Chronic Lower Respiratory Diseases (J40-J47)	79	80	66	79	80
Cerebrovascular Diseases (I60-I69)	85	86	68	83	86
Alzheimer's Disease (G30)	89	89	*	86	90
Accidents (V01-X59, Y85-Y86)	50	60	30	42	64
Diabetes Mellitus (E10-E14)	78	79	65	75	79
Influenza and Pneumonia (J09-J18)	86	87	58*	85	87
Intentional Self-Harm (suicide) (*U03, X60-X84, Y87.0)	34	39	22	34	*
Nephritis, Nephrotic Syndrome, and Nephrosis (N00-N07, N17-N19, N25-N27)	85	86	70	*	87
Chronic Liver Disease and Cirrhosis (K70 & K73-K74)	*	*	57	54	*
Unspecified Dementia (F03)	*	*	*	*	89
Assault (homicide)	*	*	33	*	*

Note: Letter / number combinations following cause of death are ICD-10 codes.

\*This cause was not one of the ten leading causes of death for this race or gender.

The asterisks (\*) preceding the cause-of-death codes indicate that they are not part of the International Classification of Diseases, Tenth Revision.

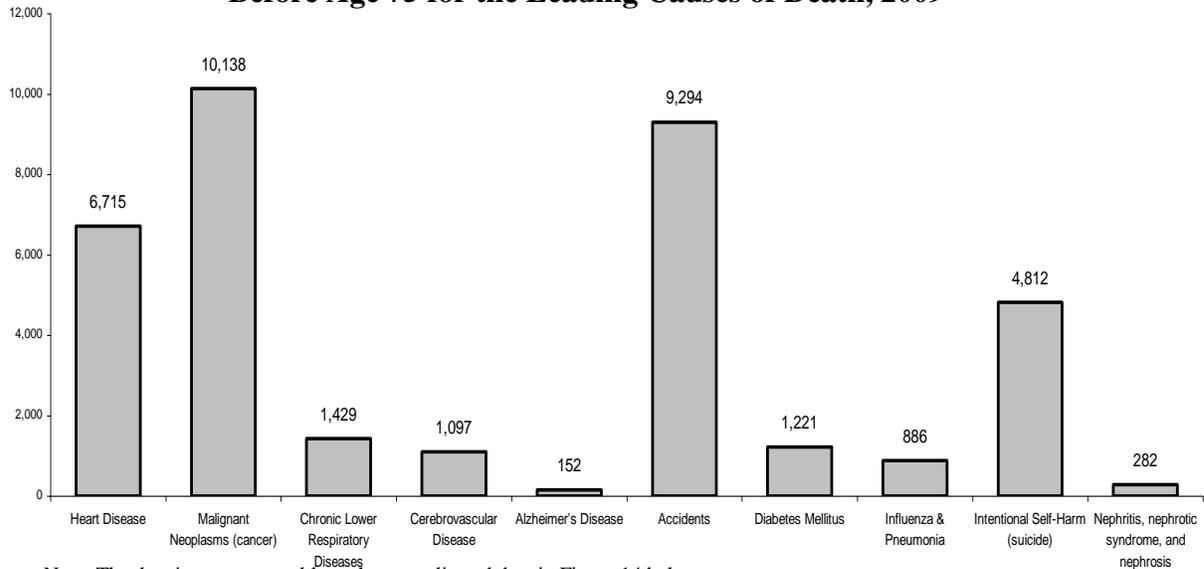
Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

### Years of Potential Life Lost

Figure 13, on the next page, depicts the years of potential life lost (YPLL) before age 75 for each of these causes. Please refer to page 232 of the technical notes section for an explanation of how

YPLL before age 75 is calculated. Cancer led in YPLL (10,138 years) because many of the decedents were at a relatively young age at the time of death.

**Figure 13**  
**South Dakota Resident Years of Potential Life Lost (YPLL)**  
**Before Age 75 for the Leading Causes of Death, 2009**



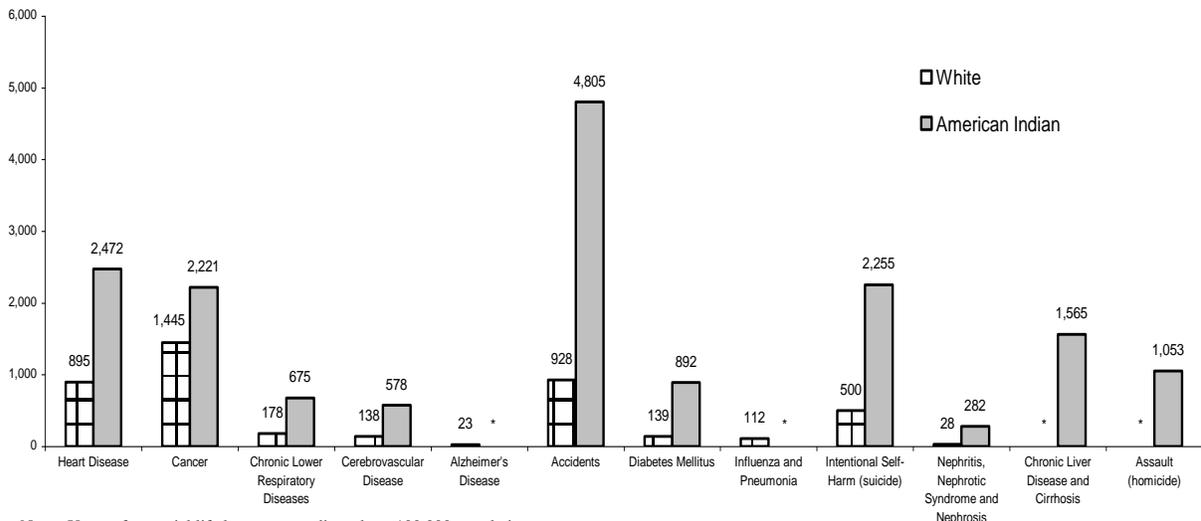
Note: The data is not comparable to the age-adjusted data in Figure 14 below.  
 Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Figure 14, below, illustrates the years of potential life lost (YPLL) before the age 75 per 100,000 population for the top 10 causes of death by race. When comparing YPLL by race, American Indians exceeded whites substantially in YPLL for the leading causes of death.

American Indians' largest YPLL was accidents with 4,805 years while whites' largest YPLL was cancer with

1,445 years. Whites' second largest YPLL was accidents with 928 years while American Indians' second largest YPLL was heart disease with 2,472 years. Whites' third largest YPLL was heart disease with 895 years. Suicide was the third largest YPLL for American Indians with 2,255 years, which still exceeded whites' largest YPLL (cancer with 1,445 years).

**Figure 14**  
**Age-Adjusted Years of Potential Life Lost (YPLL) Before Age 75 for the**  
**Leading Causes of Death by Race, 2009**



Note: Years of potential life lost are age-adjusted per 100,000 population.  
 \*This cause was not one of the ten leading causes of death for this race group.  
 Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

## Place of Death

Table 59, below, displays the 10 leading causes of death by place where death occurred in 2009. Overall, nursing home, long term

care, and hospice facility had the highest occurrence of deaths with 39.9 percent. Hospital followed closely with 37.8 percent.

**Table 59**  
**South Dakota Resident Deaths by Cause of Death and Place of Death, 2009**

Cause of Death	Total		Hospital		Nursing Home/Long Term Care/Hospice Facility		Residence		All Other Reported Entries	
	Num	%	Num	%	Num	%	Num	%	Num	%
<b>South Dakota (All Deaths)</b>	<b>6,913</b>	<b>100.0</b>	<b>2,616</b>	<b>37.8</b>	<b>2,756</b>	<b>39.9</b>	<b>1,232</b>	<b>17.8</b>	<b>304</b>	<b>4.4</b>
Heart Disease.....(I00-I09, I11, I13, I20-I51)	1,778	100.0	628	35.3	660	37.1	430	24.2	60	3.4
Malignant Neoplasms (cancer).....(C00-C97)	1,506	100.0	508	33.7	585	38.8	369	24.5	44	2.9
Chronic Lower Respiratory Diseases.....(J40-J47)	440	100.0	189	43.0	179	40.7	64	14.5	8	1.8
Cerebrovascular Diseases.....(I60-I69)	417	100.0	185	44.4	209	50.1	20	4.8	3	0.7
Alzheimer's Disease.....(G30)	402	100.0	19	4.7	369	91.8	11	2.7	3	0.7
Accidents.....(V01-X59, Y85-Y86)	348	100.0	140	40.2	37	10.6	49	14.1	120	34.5
Diabetes Mellitus.....(E10-E14)	200	100.0	71	35.5	90	45.0	36	18.0	3	1.5
Influenza and Pneumonia .....(J09-J18)	135	100.0	101	74.8	32	23.7	1	0.7	1	0.7
Intentional Self-Harm (suicide) .....(*U03, X60-X84, Y87.0)	128	100.0	27	21.1	0	0.0	75	58.6	26	20.3
Nephritis, Nephrotic Syndrome, and Nephrosis... (N00-N07, N17-N19, N25-N27)	99	100.0	36	36.4	46	46.5	15	15.2	2	2.0
All Other Causes	1,460	100.0	712	48.8	549	37.6	162	11.1	34	2.3

Note: The asterisks (\*) preceding the cause of death codes indicate they are not part of the International Classification of Diseases, Tenth Revision.  
Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

## Tobacco Use

On the death certificate, the certifier was instructed to check “yes” or “probably” if in their opinion, the use of tobacco contributed to death or check “no” if in their clinical judgment tobacco use did not contribute to the death. There was also the option of “unknown” if the certifier was unsure if tobacco use contributed to death. On 1,216

deaths, or 17.6 percent, the certifier indicated “yes” or “probably” that tobacco use contributed to the death. Conversely, on 3,866 deaths, or 55.9 percent, the certifier indicated that tobacco use did not contribute to the death.

In the remaining 1,831 deaths, or 26.5 percent, the certifier was unsure if tobacco use contributed to the death.

Table 60, below, displays the 10 leading causes of death where the certifier said “yes” or “probably” that tobacco use contributed to the death. Tobacco use contributed to death in 76.2 percent, or 295 out of the 387

trachea, bronchus, and lung deaths in 2009. In 66.8 percent, or 294 chronic lower respiratory disease deaths the certifier said “yes” or “probably” that tobacco use contributed to the death.

**Table 60**  
**South Dakota Resident Leading Causes of Death as They Relate to Tobacco Use, 2009**  
**(Did Tobacco Use Contribute to Death)**

Cause of Death	Yes/Probably		Total Deaths	
	Number	Percent	Number	Percent
<b>Total</b>	<b>1,216</b>	<b>17.6</b>	<b>6,913</b>	<b>100.0</b>
<b>Malignant Neoplasms (cancer).....(C00-C97)</b>	<b>417</b>	<b>27.7</b>	<b>1,506</b>	<b>100.0</b>
Trachea, Bronchus, and Lung.....(C33-C34)	295	76.2	387	100.0
Esophagus.....(C15)	20	40.8	49	100.0
Lip, Oral Cavity, and Pharynx.....(C00-C14)	13	81.3	16	100.0
Colon, rectum, anus.....(C18-C21)	11	7.0	157	100.0
Bladder.....(C67)	9	30.0	30	100.0
<b>Chronic Lower Respiratory Diseases.....(J40-J47)</b>	<b>294</b>	<b>66.8</b>	<b>440</b>	<b>100.0</b>
Emphysema.....(J43)	24	82.8	29	100.0
<b>Heart Disease.....(I00-I09, I11, I13, I20-I51)</b>	<b>276</b>	<b>15.5</b>	<b>1,778</b>	<b>100.0</b>
Atherosclerotic Heart Disease.....(I25.1)	95	17.3	549	100.0
Acute Myocardial Infarction.....(I21-I22)	87	15.3	568	100.0
Atherosclerotic Cardiovascular Disease.....(I25.0)	18	22.8	79	100.0
Heart Failure.....(I50)	10	9.1	110	100.0
Hypertensive heart disease.....(I11)	5	9.1	55	100.0
<b>Cerebrovascular Diseases.....(I60-I69)</b>	<b>31</b>	<b>7.4</b>	<b>417</b>	<b>100.0</b>
<b>Diabetes Mellitus.....(E10-E14)</b>	<b>28</b>	<b>14.0</b>	<b>200</b>	<b>100.0</b>
<b>Chronic Liver Disease and Cirrhosis....(K70 &amp; K73-K74)</b>	<b>16</b>	<b>20.3</b>	<b>79</b>	<b>100.0</b>
Alcoholic Liver Disease.....(K70)	13	24.1	54	100.0
<b>Alzheimer’s disease.....(G30)</b>	<b>14</b>	<b>3.5</b>	<b>402</b>	<b>100.0</b>
<b>Influenza and Pneumonia.....(J09-J18)</b>	<b>13</b>	<b>9.6</b>	<b>135</b>	<b>100.0</b>
Pneumonia.....(J12-J18)	12	10.3	116	100.0
<b>Disorders of lipoprotein metabolism and other lipedemias.....(E78)</b>	<b>9</b>	<b>29.0</b>	<b>31</b>	<b>100.0</b>
<b>Mental and behavioral disorders due to use of alcohol.....(F10)</b>	<b>9</b>	<b>36.0</b>	<b>25</b>	<b>100.0</b>
<b>Nephritis, nephrotic syndrome, and nephrosis.....(N00-N07, N17-N19, N25-N27)</b>	<b>8</b>	<b>8.1</b>	<b>99</b>	<b>100.0</b>
Renal Failure.....(N17-N19)	7	8.5	82	100.0
<b>Essential (primary) Hypertension and hypertensive renal disease.....(I10 &amp; I12)</b>	<b>8</b>	<b>15.4</b>	<b>52</b>	<b>100.0</b>

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

Method of Disposition

Table 61, on the next page, displays the different methods of disposition for the last 10 years. The top disposition in 2009 was burial with 4,545 deaths. The second highest method of disposition in 2009 was cremation with 1,855 deaths.

Since 2000, burial has been the highest method of disposition chosen and cremation has been the second highest method of disposition chosen.

**Table 61**  
**South Dakota Resident Deaths by Disposition, 2000-2009**

Year	Type of Disposition						
	Total Deaths	Burial	Cremation	Removal from State	Donation	Entombment	Other
2009	6,913	4,545	1,855	464	34	8	0
2008	7,056	4,857	1,662	485	35	9	0
2007	6,800	4,775	1,474	481	46	18	0
2006	7,038	5,127	1,440	431	30	6	0
2005	7,074	5,373	1,515	151	27	7	0
2004	6,811	5,305	1,348	120	22	12	0
2003	7,109	5,675	1,321	76	26	**	8
2002	6,886	5,627	1,148	72	24	**	11
2001	6,915	5,700	1,102	79	20	**	10
2000	7,014	5,859	1,038	86	20	**	8

Note: Failure of deaths to add to total is due to the disposition not stated.

\*\* Prior to 2004 entombment was included in the other category.

Sharp increase in removal from state from 2005 to 2006 due to clarification of reporting process.

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

### Leading Causes and Selected Components

Table 62, pages 69 through 71, displays South Dakota resident deaths, the crude death rate, and the age-adjusted death rate for 15 leading causes and selected components from 2005 to 2009.

The crude and age-adjusted rates for all causes in 2009 were 915.8 and 795.2 respectively, which are down from the crude and age-adjusted rates in 2008 of 934.8 and 810.0, respectively.

Table 62

## South Dakota Resident Deaths, Crude, and Age-Adjusted Death Rates for 15 Leading Causes and Selected Components, 2005-2009

Cause of Death	Number						Crude Death Rates						Age-Adjusted Death Rates					
	Total	2009	2008	2007	2006	2005	Total	2009	2008	2007	2006	2005	Total	2009	2008	2007	2006	2005
<b>All Causes</b>	<b>34,881</b>	<b>6,913</b>	<b>7,056</b>	<b>6,800</b>	<b>7,038</b>	<b>7,074</b>	<b>924.2</b>	<b>915.8</b>	<b>934.8</b>	<b>900.8</b>	<b>932.4</b>	<b>937.1</b>	<b>802.0</b>	<b>795.2</b>	<b>810.0</b>	<b>780.9</b>	<b>807.5</b>	<b>816.2</b>
<b>Heart Disease</b>	8,585	1,778	1,677	1,623	1,743	1,764	227.5	235.5	222.2	215.0	230.9	233.7	191.3	197.6	186.8	180.3	194.6	196.9
Acute Myocardial Infarction	2,933	568	569	550	636	610	77.7	75.2	75.4	72.9	84.3	80.8	67.3	64.8	65.3	62.9	73.1	70.2
Atherosclerotic Heart Disease	2,745	549	527	511	567	591	72.7	72.7	69.8	67.7	75.1	78.3	60.7	60.9	57.8	56.4	63.1	65.3
Atherosclerotic Cardiovascular Disease	429	79	58	83	92	117	11.4	10.5	7.7	11.0	12.2	15.5	9.1	8.3	6.0	8.9	9.7	12.5
Heart Failure	391	110	102	63	62	54	10.4	14.6	13.5	8.3	8.2	7.2	8.3	11.6	10.9	6.8	6.5	5.5
All Other Forms of Chronic Ischemic Heart Disease	386	89	59	80	83	75	10.2	11.8	7.8	10.6	11.0	9.9	8.3	9.6	6.4	8.4	8.9	8.1
Hypertensive Heart Disease	257	55	49	48	52	53	6.8	7.3	6.5	6.4	6.9	7.0	5.2	5.7	5.1	4.8	5.3	5.4
Acute Rheumatic Fever & Chronic Rheumatic Heart Diseases	61	11	7	17	18	8	1.6	1.5	0.9	2.3	2.4	1.1	1.4	1.3	0.7	1.9	2.1	0.8
Hypertensive Heart and Renal Disease	46	10	8	10	9	9	1.2	1.3	1.1	1.3	1.2	1.2	0.9	1.0	0.8	1.1	0.9	0.9
Acute and Subacute Endocarditis	17	6	2	3	2	4	0.5	0.8	0.3	0.4	0.3	0.5	0.4	0.7	0.2	0.3	0.3	0.4
Diseases of Pericardium and Acute Myocarditis	12	3	3	2	2	2	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.2
<b>Malignant Neoplasms (cancer)</b>	<b>7,844</b>	<b>1,506</b>	<b>1,561</b>	<b>1,606</b>	<b>1,561</b>	<b>1,610</b>	<b>207.8</b>	<b>199.5</b>	<b>206.8</b>	<b>212.8</b>	<b>206.8</b>	<b>213.3</b>	<b>188.1</b>	<b>180.3</b>	<b>187.0</b>	<b>192.2</b>	<b>186.1</b>	<b>194.9</b>
Trachea, Bronchus, and Lung	2,159	387	445	425	435	467	57.2	51.3	59.0	56.3	57.6	61.9	52.6	46.8	53.9	51.9	52.9	57.2
Colon, Rectum, and Anus	800	157	152	165	150	176	21.2	20.8	20.1	21.9	19.9	23.3	18.9	18.4	18.2	19.4	17.5	20.8
Female Breast	538	95	118	113	95	117	28.3	25.0	31.0	29.7	25.0	30.8	23.5	20.5	26.4	23.3	21.3	25.8
Pancreas	469	110	87	93	89	90	12.4	14.6	11.5	12.3	11.8	11.9	11.2	13.0	10.4	11.2	10.5	11.1
Prostate	453	84	78	94	103	94	24.2	22.4	20.8	25.1	27.5	25.1	26.7	25.4	22.7	28.0	30.0	27.2
Leukemia	322	57	60	76	66	63	8.5	7.6	7.9	10.1	8.7	8.3	7.5	6.6	7.0	8.9	7.7	7.4
Non-Hogkin's Lymphoma	303	47	68	69	63	56	8.0	6.2	9.0	9.1	8.3	7.4	7.0	5.4	7.7	8.1	7.4	6.6
Esophagus	215	49	40	43	44	39	5.7	6.5	5.3	5.7	5.8	3.7	5.3	6.1	4.8	5.4	5.3	4.9
Ovary	210	43	33	43	49	42	11.0	11.3	8.7	11.3	12.9	11.0	9.3	10.1	7.2	9.6	10.4	9.3
Meninges, Brain, and Other Parts of Central Nervous System	209	53	42	44	36	34	5.5	7.0	5.6	5.8	4.8	4.5	5.3	6.9	5.3	5.6	4.5	4.3
Kidney and Renal Pelvis	206	41	33	43	46	43	5.5	5.4	4.4	5.7	6.1	5.7	5.0	4.9	4.0	5.2	5.7	5.3

**Table 62 (continued)**  
**South Dakota Resident Deaths, Crude, and Age-Adjusted Death Rates for 15 Leading Causes and Selected Components, 2005-2009**

Cause of Death	Number						Crude Death Rates						Age-Adjusted Death Rates					
	Total	2009	2008	2007	2006	2005	Total	2009	2008	2007	2006	2005	Total	2009	2008	2007	2006	2005
Bladder	196	30	47	33	40	46	5.2	4.0	6.2	4.4	5.3	6.1	4.4	3.4	5.3	3.8	4.5	5.2
Liver and Intrahepatic Bile Ducts	186	40	35	36	32	43	4.9	5.3	4.6	4.8	4.2	5.7	4.6	5.0	4.2	4.5	3.9	5.3
Stomach	162	25	30	35	37	35	4.3	3.3	4.0	4.6	4.9	4.6	3.9	3.0	3.6	4.1	4.4	4.3
Multiple Myeloma and Immunoproliferative	159	38	33	24	36	28	4.2	5.0	4.4	3.2	4.8	3.7	3.8	4.5	4.0	2.8	4.3	3.2
Melanoma of Skin	115	19	23	34	23	16	3.0	2.5	3.0	4.5	3.0	2.1	2.9	2.3	2.9	4.3	2.9	2.2
Corpus Uteri and Uterus, Part Unspecified	108	23	23	25	19	18	5.7	6.0	6.0	6.6	5.0	4.7	4.6	5.2	4.9	5.2	4.0	3.9
Lip, Oral Cavity, and Pharynx	89	16	16	16	20	21	2.4	2.1	2.1	2.1	2.6	2.8	2.2	2.0	1.9	2.0	2.3	2.7
Cervix Uteri	44	12	15	9	1	7	2.3	3.2	3.9	2.4	0.3	1.8	2.2	3.1	3.3	2.2	0.3	1.9
Larynx	31	2	9	13	3	4	0.8	0.3	1.2	1.7	0.4	0.5	0.8	0.2	1.1	1.6	0.4	0.5
Hodgkin's Disease	13	3	2	3	2	3	0.3	0.4	0.3	0.4	0.3	0.4	0.3	0.4	0.2	0.4	0.3	0.4
<b>Chronic Lower Respiratory Diseases</b>	2,199	440	486	458	375	440	58.3	58.3	64.4	60.7	49.7	58.3	50.1	50.3	55.0	52.0	42.8	50.4
<b>Cerebrovascular Diseases</b>	2,164	417	391	408	437	511	57.3	55.2	51.8	54.1	57.9	67.7	47.0	45.3	42.8	44.2	47.0	56.0
<b>Accidents</b>	1,916	348	372	357	443	396	50.8	46.1	49.3	47.3	58.7	52.5	47.8	43.7	46.0	44.5	55.4	49.5
Motor Vehicle Accidents	770	133	125	145	186	181	20.4	17.6	16.6	19.2	24.6	24.0	20.3	17.6	16.5	18.9	24.6	23.4
<b>Alzheimer's Disease</b>	1,767	402	401	345	330	289	46.8	53.3	53.1	45.7	43.7	38.3	36.3	41.3	41.4	35.3	33.7	29.9
<b>Diabetes Mellitus</b>	1,162	200	216	246	261	239	30.8	26.5	28.6	32.6	34.6	31.7	26.9	23.4	25.2	28.7	29.8	27.7
<b>Influenza and Pneumonia</b>	925	135	186	189	173	242	24.5	17.9	24.6	25.0	22.9	32.1	19.9	14.8	20.1	20.3	18.3	25.8
<b>Intentional Self-Harm (suicide)</b>	600	128	123	101	125	123	15.9	17.0	16.3	13.4	16.6	16.3	16.0	17.0	16.4	13.5	16.7	16.2
<b>Chronic Liver Disease and Cirrhosis</b>	439	79	100	94	83	83	11.6	10.5	13.2	12.5	11.0	11.0	11.7	10.6	13.3	12.7	11.1	11.0
<b>Nephritis, Nephrotic Syndrome, and Nephrosis</b>	377	99	90	74	60	54	10.0	13.1	11.9	9.8	7.9	7.2	8.3	10.8	9.9	8.2	6.8	6.0

**Table 62 (continued)**

**South Dakota Resident Deaths, Crude, and Age-Adjusted Death Rates for 15 Leading Causes and Selected Components, 2005-2009**

Cause of Death	Number						Crude Death Rates						Age-Adjusted Death Rates					
	Total	2009	2008	2007	2006	2005	Total	2009	2008	2007	2006	2005	Total	2009	2008	2007	2006	2005
<b>Essential (primary) Hypertension and Hypertensive Renal Disease</b>	349	*	65	70	79	83	9.2	*	8.6	9.3	10.5	11.0	7.4	*	7.1	7.5	8.2	8.7
<b>Unspecified Dementia</b>	344	90	80	70	74	30	9.1	11.9	10.6	9.3	9.8	4.0	7.0	9.2	8.1	7.1	7.5	3.0
<b>Parkinson's Disease</b>	331	65	69	62	75	60	8.8	8.6	9.1	8.2	9.9	7.9	7.2	7.0	7.5	6.7	8.1	6.6
<b>Septicemia</b>	298	63	54	64	65	*	7.9	8.3	7.2	8.5	8.6	*	6.9	7.3	6.2	7.4	7.7	*

Note: \*This cause was not one of the fifteen leading causes or death for that year.

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

