

**Table 1 : Cancer Cases and Incidence Rates by County
South Dakota, 2016 and 2012-2016 Average**

IV. CANCER INCIDENCE

South Dakota collected 4,650 new reportable cancer cases in 2016. Data at the county level ranged from a low incidence rate of 160.7 in Ziebach County to a high of 795.5 in Hanson County. There were seven counties with rates significantly lower than the state incidence rate of 448.3. Three counties had a significantly higher rate, compared to two counties in 2015.

The United States incidence rate for 2016 was 429.9 and the South Dakota incidence rate was 448.3 per 100,000 persons.

A map displaying the 2016 incidence rates by county can be located on page 14 of this report. On page 15 is a map displaying the mortality rates by county.

County	2016		2012-2016 [^]		
	Cases	Rate	Cases	Rate	
South Dakota	4,650	448.3	4,530	452.9	
Aurora	20	536.6	19	511.2	
Beadle	110	470.7	110	488.8	
Bennett	13	390.9	14	428.3	
Bon Homme	45	435.9	39	388.1	▼
Brookings	141	455.2	147	511.1	▲
Brown	223	472.5	215	460.1	
Brule	43	652.3	32	461.3	
Buffalo	9	512.6	6	403.9	
Butte	58	393.0	59	424.4	
Campbell	9	315.6	10	423.7	
Charles Mix	53	435.8	60	514.3	
Clark	21	345.4	23	440.5	
Clay	73	577.3	59	477.3	
Codington	172	491.4	162	476.1	
Corson	12	306.0	11	278.7	▼
Custer	58	337.3	52	373.8	▼
Davison	138	555.7	124	497.7	▲
Day	48	484.1	39	415.6	
Deuel	28	462.0	29	458.0	
Dewey	23	453.6	25	517.5	
Douglas	21	451.2	20	463.4	
Edmunds	35	584.3	29	492.1	
Fall River	49	345.1	59	490.8	
Faulk	13	408.0	18	457.4	
Grant	43	375.9	48	457.4	
Gregory	22	294.9	33	493.1	▼
Haakon	15	422.1	17	538.6	
Hamlin	32	453.5	31	428.0	
Hand	20	337.4	22	421.4	
Hanson	22	795.5	20	597.4	▲
Harding	8	491.9	5	333.7	
Hughes	93	426.5	98	464.5	
Hutchinson	53	464.6	48	426.3	
Hyde	13	495.0	11	510.0	
Jackson	9	331.7	12	348.5	▼
Jerauld	12	255.7	14	415.1	▼
Jones	7	599.7	7	478.6	
Kingsbury	38	482.0	45	595.8	▲
Lake	70	347.1	70	403.7	▼
Lawrence	125	357.1	126	384.4	▼
Lincoln	216	390.5	200	424.0	▼
Lyman	17	372.5	20	446.8	
McCook	32	436.5	39	543.4	▲
McPherson	19	446.6	19	374.9	▼
Marshall	32	491.3	26	418.6	
Meade	118	408.9	120	405.9	▼
Mellette	11	506.3	11	449.9	
Miner	14	354.5	20	552.6	
Minnehaha	966	500.2	971	523.5	▲
Moody	29	359.4	32	392.5	▼
Oglala Lakota	34	334.3	39	404.2	
Pennington	590	439.6	527	414.9	▼
Perkins	12	216.5	15	337.4	▼
Potter	27	602.1	22	520.9	
Roberts	57	449.0	51	400.0	▼
Sanborn	14	373.5	15	462.0	
Spink	50	467.6	46	509.9	
Stanley	24	601.8	20	507.0	
Sully	9	441.4	7	339.7	▼
Todd	28	390.3	25	389.5	▼
Tripp	42	462.0	38	436.2	
Turner	53	468.4	57	479.3	
Union	91	518.4	96	545.2	▲
Walworth	29	337.6	30	340.5	▼
Yankton	133	450.0	113	385.7	▼
Ziebach	4	160.7	3	134.6	▼

* Counts less than three are suppressed. Incidence rates with counts less than 20 are generally considered unstable. ▲ Rate significantly higher. ▼ Rate significantly lower.
[^] Number of the cases and rates are averaged over the five-year period.
 Rates per 100,000 age-adjusted to 2000 US standard population and SD 2016 estimated population. Source: South Dakota Department of Health

Table 2: Age-adjusted Incidence Rates by County for Selected Sites, 2016

	Colorectal		Lung and Bronchus		Female Breast		Prostate		Bladder		NHL	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
South Dakota	406	39.3	625	57.9	571	110.9	620	112.3	220	20.5	185	18.7
Aurora	0	0.0	4	92.5	4	257.5	4	204.1	0	0.0	*	50.1
Beadle	7	25.9	11	41.1	12	114.5	26	211.5	4	19.0	6	32.0
Bennett	*	64.1	4	116.5	*	48.0	*	54.5	*	23.0	0	0.0
Bon Homme	4	37.0	3	36.8	*	44.2	6	109.4	5	35.6	*	8.1
Brookings	17	54.4	17	57.9	20	125.0	21	131.3	6	21.2	5	18.3
Brown	15	32.4	27	56.1	32	147.5	30	120.9	12	23.2	6	14.3
Brule	*	21.2	7	101.7	8	278.2	6	132.6	*	25.4	*	30.3
Buffalo	0	0.0	*	43.1	*	92.6	*	145.9	0	0.0	0	0.0
Butte	7	47.9	7	44.4	8	89.3	*	25.0	4	24.8	4	29.9
Campbell	*	57.7	*	78.7	*	96.3	0	0.0	*	29.8	0	0.0
Charles Mix	5	32.3	8	59.4	4	68.1	10	160.4	*	9.0	*	16.3
Clark	*	31.3	*	11.5	3	78.8	*	74.6	*	11.5	*	20.5
Clay	6	44.8	16	118.0	8	130.8	7	104.7	*	12.1	*	6.2
Codington	15	40.9	27	75.1	17	103.4	19	103.9	13	38.5	12	34.3
Corson	*	17.1	0	0.0	*	106.4	*	70.1	*	29.7	0	0.0
Custer	7	48.2	9	48.9	4	60.9	9	111.1	0	0.0	*	8.9
Davison	15	59.3	20	76.9	15	119.4	23	186.6	4	15.2	8	39.4
Day	4	64.0	6	63.6	8	144.0	4	63.8	3	20.7	*	8.7
Deuel	3	39.7	5	86.5	3	114.1	3	79.8	0	0.0	*	47.5
Dewey	*	15.8	4	89.1	4	137.9	*	52.9	0	0.0	*	30.7
Douglas	4	67.9	*	21.3	0	0.0	6	222.9	3	62.9	*	20.7
Edmunds	4	48.2	7	119.0	3	78.0	9	258.5	*	12.9	*	9.5
Fall River	4	27.1	11	80.2	7	99.2	7	97.6	0	0.0	0	0.0
Faulk	*	42.3	*	28.1	4	267.1	*	120.0	*	13.3	0	0.0
Grant	6	49.8	6	48.8	5	112.1	8	140.8	3	26.1	*	7.1
Gregory	*	12.2	3	45.8	*	25.2	6	156.7	0	0.0	*	26.8
Haakon	0	0.0	3	131.4	*	55.4	*	93.2	0	0.0	3	93.9
Hamlin	0	0.0	8	96.2	*	84.2	3	81.3	0	0.0	*	12.1
Hand	3	35.7	*	19.6	3	103.0	*	85.7	0	0.0	0	0.0
Hanson	3	198.2	3	163.1	4	263.6	*	30.3	0	0.0	*	22.7
Harding	*	68.6	0	0.0	4	427.9	*	142.1	0	0.0	0	0.0
Hughes	6	29.6	14	63.7	10	88.5	22	198.0	*	9.5	5	23.8
Hutchinson	7	48.6	7	51.4	9	128.1	5	87.7	*	18.7	*	27.9
Hyde	*	50.4	*	31.8	*	195.1	3	221.2	0	0.0	0	0.0
Jackson	*	31.0	0	0.0	*	51.0	0	0.0	0	0.0	*	44.8
Jerault	0	0.0	*	15.1	*	72.5	0	0.0	*	15.1	*	31.0
Jones	0	0.0	*	58.8	*	131.8	0	0.0	0	0.0	0	0.0
Kingsbury	8	115.1	5	57.1	7	170.0	*	18.7	*	7.5	*	13.9
Lake	9	47.1	18	86.0	4	32.0	10	88.8	*	2.9	3	14.5
Lawrence	19	53.1	11	27.7	19	96.0	9	39.2	5	14.6	5	16.6
Lincoln	14	26.5	25	44.8	28	102.1	37	134.6	7	11.2	7	11.0
Lyman	3	75.6	3	65.7	*	35.2	*	27.3	0	0.0	*	50.9
McCook	4	45.8	*	23.4	3	53.9	6	157.1	*	23.4	0	0.0
McPherson	*	40.5	*	51.7	3	117.4	3	121.3	*	25.5	0	0.0
Marshall	3	47.4	3	38.7	5	161.5	3	91.1	*	20.1	*	14.6
Meade	10	32.2	16	48.2	23	161.3	8	43.3	7	27.3	4	14.4
Mellette	0	0.0	*	65.7	3	240.3	0	0.0	*	66.2	0	0.0
Miner	5	124.3	*	15.2	*	74.3	*	45.6	0	0.0	*	47.0
Minnehaha	73	39.0	134	69.8	93	98.1	138	136.6	43	22.8	44	25.1
Moody	*	17.5	6	74.7	3	65.4	3	76.7	*	14.0	3	54.9
Oglala Lakota	6	57.6	5	57.6	*	34.3	*	33.8	*	16.0	0	0.0
Pennington	39	29.1	78	56.0	98	148.1	55	72.1	41	30.7	18	13.4
Perkins	3	46.7	4	77.9	*	33.9	*	71.8	*	15.5	0	0.0
Potter	*	27.0	5	116.5	3	120.4	4	172.7	*	27.0	*	23.5
Roberts	7	55.9	6	45.1	7	87.9	6	92.1	3	29.8	3	18.9
Sanborn	*	40.2	0	0.0	*	50.4	3	222.7	*	23.0	0	0.0
Spink	4	43.8	4	36.3	3	54.7	11	214.1	4	31.4	*	8.1
Stanley	3	100.7	3	67.4	*	61.5	4	182.8	*	17.6	*	28.8
Sully	0	0.0	*	40.6	*	182.3	0	0.0	*	36.5	0	0.0
Todd	4	45.6	3	56.6	3	73.5	*	66.2	*	17.0	0	0.0
Tripp	*	20.7	8	82.2	*	25.0	9	201.3	0	0.0	*	22.9
Turner	8	78.4	4	33.1	4	82.3	6	83.4	6	41.5	*	11.4
Union	8	51.4	9	61.8	11	106.7	13	136.3	*	10.0	5	24.6
Walworth	*	23.7	*	22.7	4	75.8	5	124.6	*	22.7	0	0.0
Yankton	7	32.3	17	51.0	20	143.9	23	153.4	9	28.5	5	17.2
Ziebach	*	29.6	0	0.0	0	0.0	*	142.1	0	0.0	0	0.0

Note: * Counts less than 3 are suppressed. Incidence rates with counts less than 20 are generally considered unstable.
 Rates per 100,000 age-adjusted to the 2000 US standard population and 2016 SD estimated population.
 Source: South Dakota Department of Health.

Table 3: Age-adjusted Incidence Rates by Site, Gender and Race, South Dakota, 2016

	TOTAL		MALE		FEMALE		WHITE		AMERICAN INDIAN	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Total	4,650	448.3	2,434	486.4	2,216	422.8	4,321	448.4	244	502.5
Oral Cavity	136	12.9	103	20.4	33	6.0	127	12.9	7	15.6
Lip	19	2.0	16	3.7	3	0.7	19	2.1	0	0.0
Tongue	42	4.0	31	6.1	11	1.9	38	3.8	4	10.8
Salivary Gland	13	1.2	9	1.8	4	0.7	13	1.4	0	0.0
Floor of Mouth	10	0.9	9	1.6	1	0.2	8	0.8	1	1.7
Gum and Other Mouth	11	0.9	5	0.8	6	0.9	11	1.0	0	0.0
Nasopharynx	2	0.2	2	0.3	0	0.0	2	0.2	0	0.0
Tonsil	21	2.0	17	3.2	4	0.8	21	2.2	0	0.0
Oropharynx	6	0.5	5	0.9	1	0.2	5	0.5	1	1.4
Hypopharynx	8	0.9	6	1.3	2	0.5	6	0.7	1	1.7
Other Oral Cavity & Pharynx	4	0.3	3	0.5	1	0.1	4	0.3	0	0.0
Digestive System	799	76.3	440	89.5	359	65.1	722	73.3	57	115.5
Esophagus	46	4.1	31	5.8	15	2.6	42	4.0	3	4.8
Stomach	40	4.1	27	6.1	13	2.3	34	3.6	4	7.5
Small Intestine	26	2.5	17	3.4	9	1.6	25	2.7	0	0.0
Colorectal	406	39.3	213	43.9	193	35.9	369	38.0	29	55.5
Colon Excluding Rectum	299	28.5	151	30.9	148	26.6	274	27.6	19	38.7
Rectum and Rectosigmoid	107	10.9	62	13.0	45	9.3	95	10.4	10	16.8
Anus, Anal Canal and Anorectum	14	1.4	5	1.1	9	1.6	12	1.3	2	3.3
Liver & Intrahepatic Bile Duct	75	6.9	52	10.2	23	3.8	60	5.8	10	23.8
Gallbladder	8	0.9	1	0.2	7	1.5	5	0.6	2	5.6
Other Biliary	13	1.2	10	2.3	3	0.4	13	1.3	0	0.0
Pancreas	152	14.0	79	15.4	73	12.9	145	14.3	5	10.0
Retroperitoneum	6	0.6	3	0.6	3	0.6	6	0.6	0	0.0
Peritoneum, Omentum and Mesentery	13	1.2	2	0.5	11	1.8	11	1.1	2	5.0
Respiratory	658	61.2	333	67.5	325	57.0	609	60.3	39	92.9
Nose, Nasal Cavity and Middle Ear	9	0.9	6	1.1	3	0.7	7	0.7	1	1.9
Larynx	23	2.3	19	4.2	4	0.6	21	2.2	2	5.2
Lung and Bronchus	625	57.9	307	61.9	318	55.6	581	57.3	35	82.1
Pleura	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mediastinum and Other Resp Organs	1	0.1	1	0.3	0	0.0	0	0.0	1	3.6
Bones and Joints	7	0.8	7	1.6	0	0.0	6	0.8	1	1.0
Soft Tissue (Including Heart)	28	2.9	13	2.8	15	3.0	26	3.1	1	1.4
Skin	248	25.7	143	30.7	105	22.4	245	27.8	1	1.8
Melanomas of the Skin	232	24.1	131	28.0	101	21.6	229	26.1	1	1.8
Other Skin	16	1.6	12	2.8	4	0.8	16	1.7	0	0.0
Breast	575	57.1	4	0.8	571	110.9	536	57.7	29	53.2
Breast, Female	571	110.9	0	0.0	571	110.9	532	112.5	29	96.2
Breast, Male	4	0.8	4	0.8	0	0.0	4	0.9	0	0.0
Female	265	51.6			265	51.6	250	52.6	12	44.9
Vulva	26	5.1			26	5.1	25	5.2	1	3.5
Vagina	4	0.7			4	0.7	4	0.7	0	0.0
Cervix Uteri	28	6.7			28	6.7	25	7.1	3	10.4
Corpus and Uterus, NOS	147	27.4			147	27.4	142	28.3	4	14.5
Corpus Uteri	146	27.2			146	27.2	141	28.2	4	14.5
Uterus, NOS	1	0.1			1	0.1	1	0.1	0	0.0
Ovary	55	10.7			55	10.7	50	10.3	4	16.6
Other Female Genital Organs	5	1.1			5	1.1	4	1.0	0	0.0

Table 3: Age-adjusted Incidence Rates by Site, Gender and Race, South Dakota, 2016 (continued)

	TOTAL		MALE		FEMALE		WHITE		AMERICAN INDIAN	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Male	645	118.4	645	118.4			604	117.8	27	126.9
Penis	5	1.3	5	1.3			3	0.7	1	4.3
Prostate	620	112.3	620	112.3			585	112.5	23	114.0
Testis	18	4.4	18	4.4			15	4.3	3	8.7
Other Male Genital Organs	2	0.4	2	0.4			1	0.2	0	0.0
Urinary	429	40.4	288	57.4	141	26.3	390	39.0	30	65.1
Bladder	220	20.5	160	32.8	60	10.6	212	20.9	6	15.9
Kidney and Renal Pelvis	197	18.8	118	22.4	79	15.4	167	17.1	23	45.6
Ureter	8	0.7	7	1.4	1	0.1	7	0.6	1	3.6
Other Urinary Organs	4	0.4	3	0.7	1	0.1	4	0.4	0	0.0
Eye and Orbit	6	0.7	3	0.7	3	0.6	6	0.7	0	0.0
Brain and CNS	66	6.9	41	8.7	25	5.1	63	7.3	1	1.3
Brain	64	6.6	40	8.4	24	4.8	61	7.0	1	1.3
Meninges and CNS	2	0.3	1	0.3	1	0.2	2	0.3	0	0.0
Endocrine	137	15.9	40	9.0	97	23.1	127	16.9	7	15.0
Thyroid	130	15.1	38	8.4	92	22.0	121	16.0	7	15.0
Other Endocrine	7	0.8	2	0.6	5	1.0	6	0.8	0	0.0
Lymphomas	209	21.5	106	22.9	103	20.1	198	22.1	6	11.5
Hodgkin's Lymphoma	24	2.8	13	2.9	11	2.7	22	2.9	1	0.9
Non-Hodgkin's Lymphoma	185	18.7	93	20.1	92	17.4	176	19.2	5	10.6
Multiple Myeloma	76	7.3	43	9.0	33	6.1	70	7.2	5	10.2
Leukemia	184	18.3	122	25.6	62	12.1	173	18.7	9	12.3
Acute Lymphocytic	15	1.7	6	1.3	9	2.2	10	1.4	4	4.6
Chronic Lymphocytic	80	7.6	50	10.5	30	5.3	79	8.0	1	1.4
Other Lymphocytic	3	0.4	3	0.8	0	0.0	3	0.4	0	0.0
Acute Myeloid	48	4.8	34	6.9	14	3.0	45	5.0	2	2.6
Acute Monocytic	3	0.2	2	0.3	1	0.1	3	0.2	0	0.0
Chronic Myeloid	27	2.7	21	4.6	6	1.0	25	2.7	2	3.6
Other Myeloid/Monocytic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Acute Leukemia	4	0.4	3	0.6	1	0.4	4	0.5	0	0.0
Other Leukemia	4	0.4	3	0.6	1	0.2	4	0.5	0	0.0
Myeloproliferative Myelodysplastic	91	8.4	52	11.0	39	6.6	87	8.5	3	9.2
Mesothelioma	7	0.6	6	1.1	1	0.1	7	0.6	0	0.0
Other Sites	84	7.8	45	9.2	39	6.7	75	7.4	9	16.5

Rates per 100,000 age-adjusted to the 2000 US standard population and 2016 SD estimated population.
Source: South Dakota Department of Health

Table 3 above shows incidence and age-adjusted incidence rates for South Dakota in 2016 by primary sites, gender, and race according to SEER site category recodes (Appendix C).

Table 4: Percentage of Selected Cancers by Age Groups in South Dakota, 2016

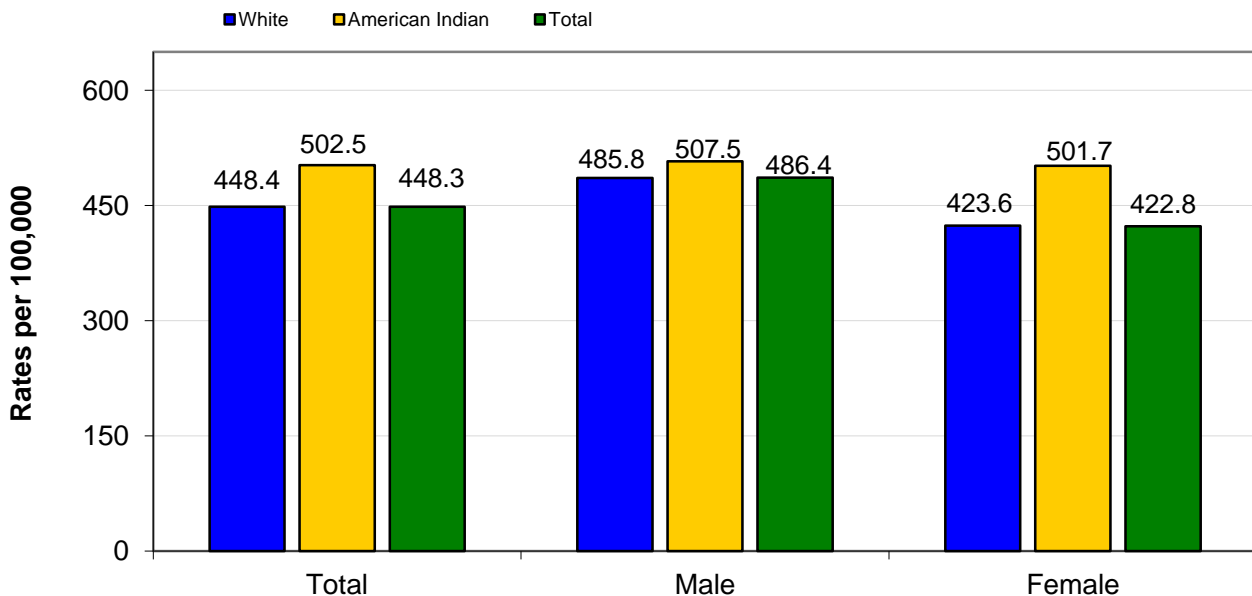
	0-19	20-34	35-49	50-64	65-74	75-84	85+
All Sites	1%	2%	8%	30%	29%	21%	9%
Bladder	0%	0%	4%	20%	32%	28%	17%
Breast, Female	0%	2%	12%	32%	32%	16%	5%
Colorectal	0%	1%	7%	27%	26%	23%	15%
Corpus and Uterus, NOS	0%	1%	8%	39%	28%	19%	5%
Hodgkin's Lymphoma	13%	25%	21%	21%	8%	4%	8%
Kidney and Renal Pelvis	0%	2%	10%	40%	32%	14%	3%
Leukemia	9%	4%	8%	27%	17%	25%	11%
Lung and Bronchus	0%	0%	1%	25%	37%	28%	9%
Melanomas of the Skin	0%	7%	16%	30%	20%	16%	12%
Non-Hodgkin's Lymphoma	2%	1%	11%	21%	31%	26%	8%
Pancreas	1%	0%	3%	27%	32%	24%	14%
Prostate	0%	0%	1%	39%	41%	15%	4%
Thyroid	1%	16%	31%	31%	11%	10%	1%

Source: South Dakota Department of Health

In 2016, 59% of all cancers were diagnosed between ages 50 to 74 (Table 4). Notable were the 12% of female breast and 16% of melanomas of the skin cancers diagnosed between the ages of 35 to 49. In 2016, 38% of the Hodgkin's lymphoma cases were diagnosed in persons under 35 years old, compared to 47% in 2014.

Figure 1 below shows that incidence rates for American Indians in South Dakota were higher than those for whites in 2016. Of the 4,650 newly diagnosed cases in 2016, 244 or 5.2% were American Indians, 110 males, and 134 females.

Figure 1: All Sites Cancer Incidence Rates by Race and Gender, South Dakota, 2016



Note: Rates per 100,000 age-adjusted to the 2000 US standard population and 2016 SD estimated population.
Source: South Dakota Department of Health