CANCER COUNTY PROFILES
2014–2018 Incidence Years

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ADA COUNTY CANCER PROFILE

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Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 10,981 cases of invasive cancer were diagnosed among Ada County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Ada County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Ada County	State of Idaho
All Sites/Types	**10,981**	**42,577**
Female Breast	**1,804**	**6,210**
Prostate	**1,424**	**5,393**
Lung & Bronchus	**1,154**	**4,798**
Colorectal	**762**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Ada County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Ada County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Ada County was 492.8 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (509.2) gives an estimate of the relative burden of disease in Ada County.

The age- and sex-adjusted incidence rate of invasive cancer in Ada County, all sites combined, was 531.1 cases per 100,000 persons per year during 2014–2018. There were statistically significantly more cases of cancer in Ada County (10,981) than expected (10,529.2) based upon rates in the remainder of the state ($p<.001$).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 3,441 Ada County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Ada County and the State of Idaho, 2015–2019

Mortality 2015–2019	Ada County	State of Idaho
All Deaths	**15,518**	**69,101**
Cancer Deaths	**3,441**	**14,724**
% of All Deaths	*22.2%*	*21.3%*
Lung & Bronchus	**677**	**3,040**
Colorectal	**257**	**1,246**
Pancreas	**258**	**1,098**
Female Breast	**289**	**1,088**
Prostate	**187**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Ada County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Ada County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Ada County, all sites combined, was 167.0 deaths per 100,000 persons per year during 2015–2019, compared with 179.0 for the remainder of the state. There were statistically significantly fewer cancer deaths in Ada County (3,441) than expected (3,687.2) based upon rates in the remainder of the state ($p<.001$).

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014-2018
COMPARISON BETWEEN ADA COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Ada County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	10,981	2,228,131	492.8	531.1	10,529.2	0.000 >>	31,596	6,204,671	509.2
	Male	5,558	1,115,534	498.2	560.9	5,294.5	0.000 >>	16,612	3,109,235	534.3
	Female	5,423	1,112,597	487.4	506.9	5,178.8	0.001 >>	14,984	3,095,436	484.1
Bladder	Total	532	2,228,131	23.9	26.9	486.1	0.042 >>	1,526	6,204,671	24.6
	Male	393	1,115,534	35.2	41.4	369.2	0.228	1,209	3,109,235	38.9
	Female	139	1,112,597	12.5	13.5	105.5	0.002 >>	317	3,095,436	10.2
Brain - malignant	Total	168	2,228,131	7.5	7.8	159.9	0.540	463	6,204,671	7.5
	Male	102	1,115,534	9.1	9.6	95.4	0.527	280	3,109,235	9.0
	Female	66	1,112,597	5.9	6.1	63.6	0.800	183	3,095,436	5.9
Brain and other CNS - non-malignant	Total	322	2,228,131	14.5	15.1	301.2	0.244	878	6,204,671	14.2
	Male	94	1,115,534	8.4	8.9	102.3	0.443	301	3,109,235	9.7
	Female	228	1,112,597	20.5	21.2	200.6	0.061	577	3,095,436	18.6
Breast	Total	1,818	2,228,131	81.6	85.1	1,529.2	0.000 >>	4,440	6,204,671	71.6
	Male	14	1,115,534	1.3	1.4	10.6	0.368	34	3,109,235	1.1
	Female	1,804	1,112,597	162.1	166.4	1,543.3	0.000 >>	4,406	3,095,436	142.3
Breast - in situ	Total	343	2,228,131	15.4	15.7	268.0	0.000 >>	759	6,204,671	12.2
	Male	1	1,115,534	0.1	0.1	1.4	1.000	4	3,109,235	0.1
	Female	342	1,112,597	30.7	30.9	269.8	0.000 >>	755	3,095,436	24.4
Cervix	Female	60	1,112,597	5.4	5.0	87.8	0.002 <<	228	3,095,436	7.4
Colorectal	Total	762	2,228,131	34.2	36.7	859.7	0.001 <<	2,566	6,204,671	41.4
	Male	395	1,115,534	35.4	38.9	449.1	0.010 <<	1,376	3,109,235	44.3
	Female	367	1,112,597	33.0	34.6	407.9	0.043 <<	1,190	3,095,436	38.4
Corpus Uteri	Female	282	1,112,597	25.3	26.1	341.3	0.001 <<	976	3,095,436	31.5
Esophagus	Total	125	2,228,131	5.6	6.2	119.4	0.633	367	6,204,671	5.9
	Male	106	1,115,534	9.5	10.8	96.5	0.358	305	3,109,235	9.8
	Female	19	1,112,597	1.7	1.9	20.5	0.845	62	3,095,436	2.0
Hodgkin Lymphoma	Total	47	2,228,131	2.1	2.1	49.8	0.760	141	6,204,671	2.3
	Male	23	1,115,534	2.1	2.1	29.5	0.264	83	3,109,235	2.7
	Female	24	1,112,597	2.2	2.2	20.4	0.473	58	3,095,436	1.9
Kidney and Renal Pelvis	Total	365	2,228,131	16.4	17.5	411.0	0.023 <<	1,226	6,204,671	19.8
	Male	240	1,115,534	21.5	23.6	260.0	0.225	794	3,109,235	25.5
	Female	125	1,112,597	11.2	11.8	147.9	0.061	432	3,095,436	14.0
Larynx	Total	45	2,228,131	2.0	2.2	52.4	0.342	161	6,204,671	2.6
	Male	34	1,115,534	3.0	3.5	40.2	0.372	129	3,109,235	4.1
	Female	11	1,112,597	1.0	1.0	11.0	1.000	32	3,095,436	1.0
Leukemia	Total	365	2,228,131	16.4	18.0	377.2	0.550	1,152	6,204,671	18.6
	Male	214	1,115,534	19.2	21.6	220.1	0.714	690	3,109,235	22.2
	Female	151	1,112,597	13.6	14.6	154.8	0.801	462	3,095,436	14.9
Liver and Bile Duct	Total	222	2,228,131	10.0	10.8	185.7	0.010 >>	563	6,204,671	9.1
	Male	171	1,115,534	15.3	17.1	126.5	0.000 >>	394	3,109,235	12.7
	Female	51	1,112,597	4.6	4.9	57.2	0.456	169	3,095,436	5.5
Lung and Bronchus	Total	1,154	2,228,131	51.8	58.3	1,162.3	0.824	3,644	6,204,671	58.7
	Male	578	1,115,534	51.8	60.8	584.3	0.816	1,910	3,109,235	61.4
	Female	576	1,112,597	51.8	56.3	573.1	0.914	1,734	3,095,436	56.0
Melanoma of the Skin	Total	848	2,228,131	38.1	40.0	612.4	0.000 >>	1,791	6,204,671	28.9
	Male	492	1,115,534	44.1	48.5	351.8	0.000 >>	1,078	3,109,235	34.7
	Female	356	1,112,597	32.0	32.2	254.7	0.000 >>	713	3,095,436	23.0
Myeloma	Total	169	2,228,131	7.6	8.5	157.7	0.388	491	6,204,671	7.9
	Male	101	1,115,534	9.1	10.5	91.9	0.368	298	3,109,235	9.6
	Female	68	1,112,597	6.1	6.6	64.3	0.678	193	3,095,436	6.2
Non-Hodgkin Lymphoma	Total	457	2,228,131	20.5	22.4	456.9	1.000	1,387	6,204,671	22.4
	Male	259	1,115,534	23.2	26.0	258.2	0.976	807	3,109,235	26.0
	Female	198	1,112,597	17.8	18.9	196.1	0.909	580	3,095,436	18.7
Oral Cavity and Pharynx	Total	286	2,228,131	12.8	13.7	301.1	0.402	894	6,204,671	14.4
	Male	199	1,115,534	17.8	19.5	210.4	0.454	642	3,109,235	20.6
	Female	87	1,112,597	7.8	8.1	87.3	1.000	252	3,095,436	8.1
Ovary	Female	124	1,112,597	11.1	11.5	144.7	0.088	414	3,095,436	13.4
Pancreas	Total	324	2,228,131	14.5	16.1	315.4	0.645	973	6,204,671	15.7
	Male	160	1,115,534	14.3	16.4	175.4	0.259	558	3,109,235	17.9
	Female	164	1,112,597	14.7	15.9	138.3	0.036 >>	415	3,095,436	13.4
Prostate	Male	1,424	1,115,534	127.7	145.3	1,250.7	0.000 >>	3,969	3,109,235	127.7
Stomach	Total	123	2,228,131	5.5	6.0	126.6	0.795	383	6,204,671	6.2
	Male	82	1,115,534	7.4	8.2	81.4	0.977	254	3,109,235	8.2
	Female	41	1,112,597	3.7	3.9	43.9	0.738	129	3,095,436	4.2
Testis	Male	83	1,115,534	7.4	6.8	75.7	0.431	193	3,109,235	6.2
Thyroid	Total	344	2,228,131	15.4	15.0	336.4	0.691	912	6,204,671	14.7
	Male	88	1,115,534	7.9	8.0	85.9	0.851	242	3,109,235	7.8
	Female	256	1,112,597	23.0	22.2	250.0	0.719	670	3,095,436	21.6
Pediatric Age 0 to 19	Total	119	600,616	19.8	19.9	101.3	0.092	308	1,817,338	16.9
	Male	56	306,872	18.2	18.3	54.2	0.845	164	927,309	17.7
	Female	63	293,744	21.4	21.7	47.0	0.030 >>	144	890,029	16.2

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015-2019
COMPARISON BETWEEN ADA COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Ada County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	15,518	2,284,247	679.3	750.1	17,582.0	0.000 <<	53,582	6,304,508	849.9
	Male	7,861	1,143,508	687.4	781.0	9,036.7	0.000 <<	28,369	3,159,994	897.8
	Female	7,657	1,140,739	671.2	724.0	8,480.2	0.000 <<	25,213	3,144,514	801.8
All Malignant Cancers	Total	3,441	2,284,247	150.6	167.0	3,687.2	0.000 <<	11,283	6,304,508	179.0
	Male	1,798	1,143,508	157.2	181.8	1,933.9	0.002 <<	6,180	3,159,994	195.6
	Female	1,643	1,140,739	144.0	154.3	1,728.2	0.040 <<	5,103	3,144,514	162.3
Bladder	Total	111	2,284,247	4.9	5.5	113.0	0.898	355	6,304,508	5.6
	Male	79	1,143,508	6.9	8.2	82.3	0.770	271	3,159,994	8.6
	Female	32	1,140,739	2.8	3.1	27.8	0.468	84	3,144,514	2.7
Brain and Other Nervous System	Total	134	2,284,247	5.9	6.2	128.3	0.638	375	6,304,508	5.9
	Male	85	1,143,508	7.4	8.0	79.6	0.576	238	3,159,994	7.5
	Female	49	1,140,739	4.3	4.5	47.8	0.901	137	3,144,514	4.4
Breast	Total	290	2,284,247	12.7	13.7	271.1	0.265	809	6,304,508	12.8
	Male	1	1,143,508	0.1	0.1	3.1	0.375	10	3,159,994	0.3
	Female	289	1,140,739	25.3	26.7	274.8	0.405	799	3,144,514	25.4
Cervix	Female	20	1,140,739	1.8	1.7	22.5	0.694	61	3,144,514	1.9
Colorectal	Total	257	2,284,247	11.3	12.2	329.4	0.000 <<	989	6,304,508	15.7
	Male	143	1,143,508	12.5	14.0	173.7	0.019 <<	536	3,159,994	17.0
	Female	114	1,140,739	10.0	10.6	154.4	0.001 <<	453	3,144,514	14.4
Corpus Uteri	Female	48	1,140,739	4.2	4.6	38.9	0.174	116	3,144,514	3.7
Esophagus	Total	127	2,284,247	5.6	6.1	114.7	0.271	349	6,304,508	5.5
	Male	99	1,143,508	8.7	9.8	92.3	0.514	290	3,159,994	9.2
	Female	28	1,140,739	2.5	2.6	19.8	0.097	59	3,144,514	1.9
Hodgkin Lymphoma	Total	7	2,284,247	0.3	0.3	5.5	0.637	16	6,304,508	0.3
	Male	4	1,143,508	0.3	0.4	1.7	0.189	5	3,159,994	0.2
	Female	3	1,140,739	0.3	0.3	3.9	0.925	11	3,144,514	0.3
Kidney	Total	79	2,284,247	3.5	3.9	89.4	0.292	276	6,304,508	4.4
	Male	48	1,143,508	4.2	4.8	53.4	0.508	169	3,159,994	5.3
	Female	31	1,140,739	2.7	3.0	35.4	0.524	107	3,144,514	3.4
Larynx	Total	16	2,284,247	0.7	0.8	15.2	0.901	47	6,304,508	0.7
	Male	14	1,143,508	1.2	1.4	12.1	0.666	39	3,159,994	1.2
	Female	2	1,140,739	0.2	0.2	2.6	1.000	8	3,144,514	0.3
Leukemia	Total	156	2,284,247	6.8	7.6	151.4	0.731	468	6,304,508	7.4
	Male	81	1,143,508	7.1	8.3	87.8	0.510	283	3,159,994	9.0
	Female	75	1,140,739	6.6	7.1	62.1	0.121	185	3,144,514	5.9
Liver and Bile Duct	Total	151	2,284,247	6.6	7.3	152.1	0.969	462	6,304,508	7.3
	Male	111	1,143,508	9.7	11.0	98.8	0.243	310	3,159,994	9.8
	Female	40	1,140,739	3.5	3.8	51.5	0.115	152	3,144,514	4.8
Lung and Bronchus	Total	677	2,284,247	29.6	33.3	762.1	0.002 <<	2,363	6,304,508	37.5
	Male	350	1,143,508	30.6	35.9	391.4	0.036 <<	1,267	3,159,994	40.1
	Female	327	1,140,739	28.7	31.1	366.6	0.038 <<	1,096	3,144,514	34.9
Melanoma of the Skin	Total	85	2,284,247	3.7	4.0	64.4	0.016 >>	193	6,304,508	3.1
	Male	57	1,143,508	5.0	5.6	39.9	0.013 >>	125	3,159,994	4.0
	Female	28	1,140,739	2.5	2.6	23.6	0.417	68	3,144,514	2.2
Myeloma	Total	85	2,284,247	3.7	4.3	79.2	0.542	250	6,304,508	4.0
	Male	44	1,143,508	3.8	4.6	46.9	0.744	155	3,159,994	4.9
	Female	41	1,140,739	3.6	4.0	31.2	0.107	95	3,144,514	3.0
Non-Hodgkin Lymphoma	Total	122	2,284,247	5.3	6.1	138.9	0.159	435	6,304,508	6.9
	Male	70	1,143,508	6.1	7.2	71.8	0.889	233	3,159,994	7.4
	Female	52	1,140,739	4.6	5.0	66.6	0.077	202	3,144,514	6.4
Oral Cavity and Pharynx	Total	57	2,284,247	2.5	2.7	59.0	0.865	179	6,304,508	2.8
	Male	41	1,143,508	3.6	4.1	37.8	0.641	119	3,159,994	3.8
	Female	16	1,140,739	1.4	1.5	20.5	0.383	60	3,144,514	1.9
Ovary	Female	90	1,140,739	7.9	8.4	94.3	0.709	276	3,144,514	8.8
Pancreas	Total	258	2,284,247	11.3	12.6	273.0	0.383	840	6,304,508	13.3
	Male	133	1,143,508	11.6	13.4	148.5	0.214	473	3,159,994	15.0
	Female	125	1,140,739	11.0	11.9	122.9	0.874	367	3,144,514	11.7
Prostate	Male	187	1,143,508	16.4	19.7	221.6	0.019 <<	739	3,159,994	23.4
Stomach	Total	43	2,284,247	1.9	2.0	52.0	0.235	156	6,304,508	2.5
	Male	24	1,143,508	2.1	2.3	29.9	0.319	92	3,159,994	2.9
	Female	19	1,140,739	1.7	1.8	21.7	0.654	64	3,144,514	2.0

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Ada County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	84.4%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	13.7%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	72.2%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	73.0%
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	68.9%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	12.0%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	7.5%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	51.8%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	3.6%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	36.5%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	25.5%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	24.6%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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ADAMS COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 132 cases of invasive cancer were diagnosed among Adams County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Adams County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Adams County	State of Idaho
All Sites/Types	**132**	**42,577**
Female Breast	**14**	**6,210**
Prostate	**15**	**5,393**
Lung & Bronchus	**16**	**4,798**
Colorectal	**7**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Adams County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Adams County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Adams County was 657.5 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (504.5) gives an estimate of the relative burden of disease in Adams County.

The age- and sex-adjusted incidence rate of invasive cancer in Adams County, all sites combined, was 402.5 cases per 100,000 persons per year during 2014–2018. There were statistically significantly fewer cases of cancer in Adams County (132) than expected (165.5) based upon rates in the remainder of the state (p=.008).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 55 Adams County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Adams County and the State of Idaho, 2015–2019

Mortality 2015–2019	Adams County	State of Idaho
All Deaths	**210**	**69,101**
Cancer Deaths	**55**	**14,724**
% of All Deaths	*26.2%*	*21.3%*
Lung & Bronchus	**11**	**3,040**
Colorectal	**5**	**1,246**
Pancreas	**3**	**1,098**
Female Breast	**2**	**1,088**
Prostate	**3**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Adams County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Adams County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Adams County, all sites combined, was 159.1 deaths per 100,000 persons per year during 2015–2019, compared with 171.2 for the remainder of the state. There were fewer cancer deaths in Adams County (55) than expected (59.2) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN ADAMS COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Adams County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	132	20,076	657.5	402.5	165.5	0.008 <<	42,445	8,412,726	504.5
	Male	76	10,375	732.5	403.2	98.8	0.020 <<	22,094	4,214,394	524.3
	Female	56	9,701	577.3	389.1	69.8	0.105	20,351	4,198,332	484.7
Bladder	Total	7	20,076	34.9	20.1	8.5	0.774	2,051	8,412,726	24.4
	Male	6	10,375	57.8	30.2	7.5	0.748	1,596	4,214,394	37.9
	Female	1	9,701	10.3	6.6	1.6	1.000	455	4,198,332	10.8
Brain - malignant	Total	-	20,076	-	-	2.1	0.233	631	8,412,726	7.5
	Male	-	10,375	-	-	1.5	0.469	382	4,214,394	9.1
	Female	-	9,701	-	-	0.8	0.938	249	4,198,332	5.9
Brain and other CNS - non-malignant	Total	1	20,076	5.0	3.4	4.2	0.154	1,199	8,412,726	14.3
	Male	-	10,375	-	-	1.5	0.464	395	4,214,394	9.4
	Female	1	9,701	10.3	7.3	2.6	0.520	804	4,198,332	19.2
Breast	Total	14	20,076	69.7	44.2	23.5	0.050 <<	6,244	8,412,726	74.2
	Male	-	10,375	-	-	0.2	1.000	48	4,214,394	1.1
	Female	14	9,701	144.3	96.4	21.4	0.120	6,196	4,198,332	147.6
Breast - in situ	Total	3	20,076	14.9	9.7	4.0	0.851	1,099	8,412,726	13.1
	Male	-	10,375	-	-	0.0	1.000	5	4,214,394	0.1
	Female	3	9,701	30.9	20.9	3.7	0.973	1,094	4,198,332	26.1
Cervix	Female	-	9,701	-	-	0.8	0.937	288	4,198,332	6.9
Colorectal	Total	7	20,076	34.9	21.6	12.8	0.121	3,321	8,412,726	39.5
	Male	3	10,375	28.9	16.5	7.6	0.110	1,768	4,214,394	42.0
	Female	4	9,701	41.2	27.7	5.3	0.767	1,553	4,198,332	37.0
Corpus Uteri	Female	2	9,701	20.6	13.2	4.5	0.338	1,256	4,198,332	29.9
Esophagus	Total	-	20,076	-	-	2.0	0.261	492	8,412,726	5.8
	Male	-	10,375	-	-	1.9	0.302	411	4,214,394	9.8
	Female	-	9,701	-	-	0.3	1.000	81	4,198,332	1.9
Hodgkin Lymphoma	Total	2	20,076	10.0	9.2	0.5	0.169	186	8,412,726	2.2
	Male	2	10,375	19.3	17.6	0.3	0.066	104	4,214,394	2.5
	Female	-	9,701	-	-	0.2	1.000	82	4,198,332	2.0
Kidney and Renal Pelvis	Total	9	20,076	44.8	27.4	6.2	0.342	1,582	8,412,726	18.8
	Male	6	10,375	57.8	32.8	4.5	0.579	1,028	4,214,394	24.4
	Female	3	9,701	30.9	20.5	1.9	0.608	554	4,198,332	13.2
Larynx	Total	-	20,076	-	-	0.9	0.852	206	8,412,726	2.4
	Male	-	10,375	-	-	0.8	0.931	163	4,214,394	3.9
	Female	-	9,701	-	-	0.2	1.000	43	4,198,332	1.0
Leukemia	Total	2	20,076	10.0	6.4	5.7	0.159	1,515	8,412,726	18.0
	Male	1	10,375	9.6	5.6	3.8	0.214	903	4,214,394	21.4
	Female	1	9,701	10.3	7.3	2.0	0.813	612	4,198,332	14.6
Liver and Bile Duct	Total	2	20,076	10.0	5.7	3.3	0.737	783	8,412,726	9.3
	Male	1	10,375	9.6	5.2	2.6	0.538	564	4,214,394	13.4
	Female	1	9,701	10.3	6.5	0.8	1.000	219	4,198,332	5.2
Lung and Bronchus	Total	16	20,076	79.7	45.4	20.0	0.436	4,782	8,412,726	56.8
	Male	10	10,375	96.4	49.7	11.8	0.730	2,478	4,214,394	58.8
	Female	6	9,701	61.8	38.7	8.5	0.513	2,304	4,198,332	54.9
Melanoma of the Skin	Total	11	20,076	54.8	35.7	9.6	0.742	2,628	8,412,726	31.2
	Male	8	10,375	77.1	44.8	6.6	0.691	1,562	4,214,394	37.1
	Female	3	9,701	30.9	22.6	3.4	1.000	1,066	4,198,332	25.4
Myeloma	Total	4	20,076	19.9	11.5	2.7	0.573	656	8,412,726	7.8
	Male	3	10,375	28.9	15.1	1.9	0.574	396	4,214,394	9.4
	Female	1	9,701	10.3	6.6	0.9	1.000	260	4,198,332	6.2
Non-Hodgkin Lymphoma	Total	12	20,076	59.8	36.5	7.2	0.121	1,832	8,412,726	21.8
	Male	7	10,375	67.5	38.3	4.6	0.363	1,059	4,214,394	25.1
	Female	5	9,701	51.5	33.9	2.7	0.280	773	4,198,332	18.4
Oral Cavity and Pharynx	Total	6	20,076	29.9	18.0	4.7	0.648	1,174	8,412,726	14.0
	Male	4	10,375	38.6	21.6	3.7	1.000	837	4,214,394	19.9
	Female	2	9,701	20.6	13.6	1.2	0.658	337	4,198,332	8.0
Ovary	Female	1	9,701	10.3	7.0	1.8	0.910	537	4,198,332	12.8
Pancreas	Total	5	20,076	24.9	14.5	5.3	1.000	1,292	8,412,726	15.4
	Male	3	10,375	28.9	15.4	3.3	1.000	715	4,214,394	17.0
	Female	2	9,701	20.6	13.2	2.1	1.000	577	4,198,332	13.7
Prostate	Male	15	10,375	144.6	75.0	25.5	0.035 <<	5,378	4,214,394	127.6
Stomach	Total	-	20,076	-	-	2.0	0.274	506	8,412,726	6.0
	Male	-	10,375	-	-	1.5	0.451	336	4,214,394	8.0
	Female	-	9,701	-	-	0.6	1.000	170	4,198,332	4.0
Testis	Male	-	10,375	-	-	0.5	1.000	276	4,214,394	6.5
Thyroid	Total	5	20,076	24.9	20.2	3.7	0.618	1,251	8,412,726	14.9
	Male	1	10,375	9.6	7.0	1.1	1.000	329	4,214,394	7.8
	Female	4	9,701	41.2	35.0	2.5	0.488	922	4,198,332	22.0
Pediatric Age 0 to 19	Total	2	3,789	52.8	53.6	0.7	0.282	425	2,414,165	17.6
	Male	1	1,951	51.3	51.8	0.3	0.581	219	1,232,230	17.8
	Female	1	1,838	54.4	55.5	0.3	0.539	206	1,181,935	17.4

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN ADAMS COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Adams County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	210	20,487	1,025.0	650.4	259.6	0.002 <<	68,890	8,568,268	804.0
	Male	124	10,577	1,172.4	680.0	153.4	0.017 <<	36,106	4,292,925	841.1
	Female	86	9,910	867.8	599.4	110.0	0.021 <<	32,784	4,275,343	766.8
All Malignant Cancers	Total	55	20,487	268.5	159.1	59.2	0.643	14,669	8,568,268	171.2
	Male	35	10,577	330.9	178.0	36.4	0.904	7,943	4,292,925	185.0
	Female	20	9,910	201.8	130.7	24.1	0.477	6,726	4,275,343	157.3
Bladder	Total	2	20,487	9.8	5.9	1.9	1.000	464	8,568,268	5.4
	Male	2	10,577	18.9	10.2	1.6	0.942	348	4,292,925	8.1
	Female	-	9,910	-	-	0.4	1.000	116	4,275,343	2.7
Brain and Other Nervous System	Total	-	20,487	-	-	1.9	0.285	509	8,568,268	5.9
	Male	-	10,577	-	-	1.4	0.514	323	4,292,925	7.5
	Female	-	9,910	-	-	0.7	1.000	186	4,275,343	4.4
Breast	Total	2	20,487	9.8	6.0	4.3	0.397	1,097	8,568,268	12.8
	Male	-	10,577	-	-	0.1	1.000	11	4,292,925	0.3
	Female	2	9,910	20.2	13.2	3.8	0.522	1,086	4,275,343	25.4
Cervix	Female	-	9,910	-	-	0.3	1.000	81	4,275,343	1.9
Colorectal	Total	5	20,487	24.4	14.9	4.9	1.000	1,241	8,568,268	14.5
	Male	3	10,577	28.4	15.9	3.0	1.000	676	4,292,925	15.7
	Female	2	9,910	20.2	13.4	2.0	1.000	565	4,275,343	13.2
Corpus Uteri	Female	-	9,910	-	-	0.6	1.000	164	4,275,343	3.8
Esophagus	Total	1	20,487	4.9	2.8	1.9	0.840	475	8,568,268	5.5
	Male	1	10,577	9.5	5.1	1.8	0.940	388	4,292,925	9.0
	Female	-	9,910	-	-	0.3	1.000	87	4,275,343	2.0
Hodgkin Lymphoma	Total	-	20,487	-	-	0.1	1.000	23	8,568,268	0.3
	Male	-	10,577	-	-	0.0	1.000	9	4,292,925	0.2
	Female	-	9,910	-	-	0.0	1.000	14	4,275,343	0.3
Kidney	Total	1	20,487	4.9	2.8	1.5	1.000	354	8,568,268	4.1
	Male	1	10,577	9.5	5.0	1.0	1.000	216	4,292,925	5.0
	Female	-	9,910	-	-	0.5	1.000	138	4,275,343	3.2
Larynx	Total	-	20,487	-	-	0.3	1.000	63	8,568,268	0.7
	Male	-	10,577	-	-	0.2	1.000	53	4,292,925	1.2
	Female	-	9,910	-	-	0.0	1.000	10	4,275,343	0.2
Leukemia	Total	2	20,487	9.8	6.0	2.4	1.000	622	8,568,268	7.3
	Male	2	10,577	18.9	10.4	1.6	0.966	362	4,292,925	8.4
	Female	-	9,910	-	-	0.9	0.835	260	4,275,343	6.1
Liver and Bile Duct	Total	3	20,487	14.6	8.3	2.6	0.945	610	8,568,268	7.1
	Male	2	10,577	18.9	9.9	2.0	1.000	419	4,292,925	9.8
	Female	1	9,910	10.1	6.3	0.7	1.000	191	4,275,343	4.5
Lung and Bronchus	Total	11	20,487	53.7	30.7	12.7	0.779	3,029	8,568,268	35.4
	Male	8	10,577	75.6	39.2	7.7	0.997	1,609	4,292,925	37.5
	Female	3	9,910	30.3	19.1	5.2	0.471	1,420	4,275,343	33.2
Melanoma of the Skin	Total	3	20,487	14.6	9.0	1.1	0.188	275	8,568,268	3.2
	Male	2	10,577	18.9	10.5	0.8	0.379	180	4,292,925	4.2
	Female	1	9,910	10.1	6.9	0.3	0.550	95	4,275,343	2.2
Myeloma	Total	3	20,487	14.6	8.5	1.4	0.315	332	8,568,268	3.9
	Male	2	10,577	18.9	9.9	0.9	0.472	197	4,292,925	4.6
	Female	1	9,910	10.1	6.5	0.5	0.767	135	4,275,343	3.2
Non-Hodgkin Lymphoma	Total	3	20,487	14.6	8.7	2.2	0.776	554	8,568,268	6.5
	Male	2	10,577	18.9	10.2	1.4	0.800	301	4,292,925	7.0
	Female	1	9,910	10.1	6.6	0.9	1.000	253	4,275,343	5.9
Oral Cavity and Pharynx	Total	2	20,487	9.8	5.7	1.0	0.499	234	8,568,268	2.7
	Male	2	10,577	18.9	10.2	0.7	0.328	158	4,292,925	3.7
	Female	-	9,910	-	-	0.3	1.000	76	4,275,343	1.8
Ovary	Female	1	9,910	10.1	6.4	1.3	1.000	365	4,275,343	8.5
Pancreas	Total	3	20,487	14.6	8.4	4.6	0.668	1,095	8,568,268	12.8
	Male	1	10,577	9.5	5.0	2.8	0.455	605	4,292,925	14.1
	Female	2	9,910	20.2	12.7	1.8	1.000	490	4,275,343	11.5
Prostate	Male	3	10,577	28.4	15.0	4.3	0.758	923	4,292,925	21.5
Stomach	Total	-	20,487	-	-	0.8	0.919	199	8,568,268	2.3
	Male	-	10,577	-	-	0.5	1.000	116	4,292,925	2.7
	Female	-	9,910	-	-	0.3	1.000	83	4,275,343	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Adams County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	60.5%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	9.3%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	29.8%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	14.0%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	3.7%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	23.9%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	12.3%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	.

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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BANNOCK COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 1,672 cases of invasive cancer were diagnosed among Bannock County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Bannock County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Bannock County	State of Idaho
All Sites/Types	**1,672**	**42,577**
Female Breast	**253**	**6,210**
Prostate	**175**	**5,393**
Lung & Bronchus	**163**	**4,798**
Colorectal	**136**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Bannock County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Bannock County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Bannock County was 393.8 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (510.8) gives an estimate of the relative burden of disease in Bannock County.

The age- and sex-adjusted incidence rate of invasive cancer in Bannock County, all sites combined, was 431.1 cases per 100,000 persons per year during 2014–2018. There were statistically significantly fewer cases of cancer in Bannock County (1,672) than expected (1,981.2) based upon rates in the remainder of the state ($p<.001$).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 666 Bannock County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Bannock County and the State of Idaho, 2015–2019

Mortality 2015–2019	Bannock County	State of Idaho
All Deaths	**3,661**	**69,101**
Cancer Deaths	**666**	**14,724**
% of All Deaths	*18.2%*	*21.3%*
Lung & Bronchus	**119**	**3,040**
Colorectal	**65**	**1,246**
Pancreas	**63**	**1,098**
Female Breast	**44**	**1,088**
Prostate	**56**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Bannock County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Bannock County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Bannock County, all sites combined, was 172.1 deaths per 100,000 persons per year during 2015–2019, compared with 172.3 for the remainder of the state. There were fewer cancer deaths in Bannock County (666) than expected (666.7) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN BANNOCK COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Bannock County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	1,672	424,552	393.8	431.1	1,981.2	0.000 <<	40,905	8,008,250	510.8
	Male	839	211,258	397.1	441.0	1,011.2	0.000 <<	21,331	4,013,511	531.5
	Female	833	213,294	390.5	422.3	966.5	0.000 <<	19,574	3,994,739	490.0
Bladder	Total	57	424,552	13.4	14.9	95.6	0.000 <<	2,001	8,008,250	25.0
	Male	45	211,258	21.3	24.0	72.7	0.001 <<	1,557	4,013,511	38.8
	Female	12	213,294	5.6	6.2	21.6	0.036 <<	444	3,994,739	11.1
Brain - malignant	Total	35	424,552	8.2	8.8	29.8	0.380	596	8,008,250	7.4
	Male	21	211,258	9.9	10.7	17.7	0.486	361	4,013,511	9.0
	Female	14	213,294	6.6	6.9	12.0	0.629	235	3,994,739	5.9
Brain and other CNS - non-malignant	Total	38	424,552	9.0	9.6	57.2	0.009 <<	1,162	8,008,250	14.5
	Male	12	211,258	5.7	6.1	18.7	0.138	383	4,013,511	9.5
	Female	26	213,294	12.2	13.1	38.8	0.038 <<	779	3,994,739	19.5
Breast	Total	255	424,552	60.1	65.7	290.8	0.035 <<	6,003	8,008,250	75.0
	Male	2	211,258	0.9	1.1	2.2	1.000	46	4,013,511	1.1
	Female	253	213,294	118.6	128.8	293.0	0.019 <<	5,957	3,994,739	149.1
Breast - in situ	Total	41	424,552	9.7	10.6	51.2	0.167	1,061	8,008,250	13.2
	Male	1	211,258	0.5	0.5	0.2	0.356	4	4,013,511	0.1
	Female	40	213,294	18.8	20.4	51.8	0.108	1,057	3,994,739	26.5
Cervix	Female	20	213,294	9.4	9.6	13.9	0.147	268	3,994,739	6.7
Colorectal	Total	136	424,552	32.0	35.2	154.0	0.153	3,192	8,008,250	39.9
	Male	69	211,258	32.7	36.3	80.6	0.212	1,702	4,013,511	42.4
	Female	67	213,294	31.4	34.2	73.1	0.516	1,490	3,994,739	37.3
Corpus Uteri	Female	58	213,294	27.2	29.5	59.0	0.963	1,200	3,994,739	30.0
Esophagus	Total	21	424,552	4.9	5.5	22.6	0.845	471	8,008,250	5.9
	Male	16	211,258	7.6	8.5	18.6	0.647	395	4,013,511	9.8
	Female	5	213,294	2.3	2.6	3.7	0.626	76	3,994,739	1.9
Hodgkin Lymphoma	Total	12	424,552	2.8	2.8	9.3	0.464	176	8,008,250	2.2
	Male	7	211,258	3.3	3.3	5.2	0.534	99	4,013,511	2.5
	Female	5	213,294	2.3	2.3	4.1	0.796	77	3,994,739	1.9
Kidney and Renal Pelvis	Total	65	424,552	15.3	16.8	73.7	0.340	1,526	8,008,250	19.1
	Male	47	211,258	22.2	24.7	46.8	1.000	987	4,013,511	24.6
	Female	18	213,294	8.4	9.1	26.5	0.106	539	3,994,739	13.5
Larynx	Total	12	424,552	2.8	3.1	9.4	0.466	194	8,008,250	2.4
	Male	10	211,258	4.7	5.3	7.2	0.389	153	4,013,511	3.8
	Female	2	213,294	0.9	1.0	2.0	1.000	41	3,994,739	1.0
Leukemia	Total	61	424,552	14.4	15.6	71.0	0.257	1,456	8,008,250	18.2
	Male	40	211,258	18.9	20.8	41.3	0.920	864	4,013,511	21.5
	Female	21	213,294	9.8	10.6	29.4	0.134	592	3,994,739	14.8
Liver and Bile Duct	Total	31	424,552	7.3	8.0	36.5	0.416	754	8,008,250	9.4
	Male	18	211,258	8.5	9.4	26.1	0.125	547	4,013,511	13.6
	Female	13	213,294	6.1	6.7	10.1	0.441	207	3,994,739	5.2
Lung and Bronchus	Total	163	424,552	38.4	42.7	220.9	0.000 <<	4,635	8,008,250	57.9
	Male	95	211,258	45.0	50.8	111.5	0.124	2,393	4,013,511	59.6
	Female	68	213,294	31.9	35.0	109.0	0.000 <<	2,242	3,994,739	56.1
Melanoma of the Skin	Total	129	424,552	30.4	32.9	122.9	0.606	2,510	8,008,250	31.3
	Male	66	211,258	31.2	34.5	71.8	0.542	1,504	4,013,511	37.5
	Female	63	213,294	29.5	31.4	50.5	0.098	1,006	3,994,739	25.2
Myeloma	Total	28	424,552	6.6	7.3	30.1	0.791	632	8,008,250	7.9
	Male	14	211,258	6.6	7.5	17.9	0.429	385	4,013,511	9.6
	Female	14	213,294	6.6	7.2	12.0	0.646	247	3,994,739	6.2
Non-Hodgkin Lymphoma	Total	76	424,552	17.9	19.6	85.5	0.330	1,768	8,008,250	22.1
	Male	40	211,258	18.9	21.0	48.7	0.237	1,026	4,013,511	25.6
	Female	36	213,294	16.9	18.3	36.5	1.000	742	3,994,739	18.6
Oral Cavity and Pharynx	Total	46	424,552	10.8	11.9	54.8	0.259	1,134	8,008,250	14.2
	Male	33	211,258	15.6	17.3	38.4	0.433	808	4,013,511	20.1
	Female	13	213,294	6.1	6.6	16.0	0.546	326	3,994,739	8.2
Ovary	Female	29	213,294	13.6	14.7	25.2	0.497	509	3,994,739	12.7
Pancreas	Total	67	424,552	15.8	17.5	58.8	0.318	1,230	8,008,250	15.4
	Male	40	211,258	18.9	21.3	31.7	0.173	678	4,013,511	16.9
	Female	27	213,294	12.7	13.8	27.0	1.000	552	3,994,739	13.8
Prostate	Male	175	211,258	82.8	92.3	246.6	0.000 <<	5,218	4,013,511	130.0
Stomach	Total	19	424,552	4.5	4.9	23.4	0.426	487	8,008,250	6.1
	Male	14	211,258	6.6	7.4	15.2	0.892	322	4,013,511	8.0
	Female	5	213,294	2.3	2.6	8.1	0.373	165	3,994,739	4.1
Testis	Male	5	211,258	2.4	2.3	14.9	0.006 <<	271	4,013,511	6.8
Thyroid	Total	43	424,552	10.1	10.5	62.1	0.013 <<	1,213	8,008,250	15.1
	Male	14	211,258	6.6	7.0	15.8	0.782	316	4,013,511	7.9
	Female	29	213,294	13.6	13.9	46.7	0.007 <<	897	3,994,739	22.5
Pediatric Age 0 to 19	Total	21	125,996	16.7	16.5	22.5	0.858	406	2,291,958	17.7
	Male	14	64,590	21.7	21.5	11.5	0.530	206	1,169,591	17.6
	Female	7	61,406	11.4	11.3	11.0	0.283	200	1,122,367	17.8

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN BANNOCK COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Bannock County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	3,661	428,824	853.7	939.1	3,126.4	0.000 >>	65,439	8,159,931	802.0
	Male	1,898	213,297	889.8	990.2	1,608.9	0.000 >>	34,332	4,090,205	839.4
	Female	1,763	215,527	818.0	893.2	1,508.7	0.000 >>	31,107	4,069,726	764.4
All Malignant Cancers	Total	666	428,824	155.3	172.1	666.7	0.999	14,058	8,159,931	172.3
	Male	363	213,297	170.2	191.6	352.8	0.601	7,615	4,090,205	186.2
	Female	303	215,527	140.6	154.0	311.5	0.656	6,443	4,069,726	158.3
Bladder	Total	15	428,824	3.5	3.9	21.2	0.203	451	8,159,931	5.5
	Male	9	213,297	4.2	4.8	15.6	0.103	341	4,090,205	8.3
	Female	6	215,527	2.8	3.1	5.3	0.868	110	4,069,726	2.7
Brain and Other Nervous System	Total	32	428,824	7.5	8.1	23.1	0.092	477	8,159,931	5.8
	Male	19	213,297	8.9	9.8	14.5	0.291	304	4,090,205	7.4
	Female	13	215,527	6.0	6.5	8.5	0.183	173	4,069,726	4.3
Breast	Total	45	428,824	10.5	11.6	50.2	0.512	1,054	8,159,931	12.9
	Male	1	213,297	0.5	0.5	0.5	0.757	10	4,090,205	0.2
	Female	44	215,527	20.4	22.3	50.6	0.393	1,044	4,069,726	25.7
Cervix	Female	4	215,527	1.9	2.0	3.8	1.000	77	4,069,726	1.9
Colorectal	Total	65	428,824	15.2	16.7	56.2	0.269	1,181	8,159,931	14.5
	Male	36	213,297	16.9	18.9	30.0	0.312	643	4,090,205	15.7
	Female	29	215,527	13.5	14.8	26.0	0.605	538	4,069,726	13.2
Corpus Uteri	Female	5	215,527	2.3	2.6	7.7	0.449	159	4,069,726	3.9
Esophagus	Total	16	428,824	3.7	4.1	21.8	0.253	460	8,159,931	5.6
	Male	14	213,297	6.6	7.4	17.4	0.497	375	4,090,205	9.2
	Female	2	215,527	0.9	1.0	4.1	0.448	85	4,069,726	2.1
Hodgkin Lymphoma	Total	3	428,824	0.7	0.7	1.0	0.161	20	8,159,931	0.2
	Male	1	213,297	0.5	0.5	0.4	0.670	8	4,090,205	0.2
	Female	2	215,527	0.9	1.0	0.6	0.240	12	4,069,726	0.3
Kidney	Total	18	428,824	4.2	4.7	16.0	0.674	337	8,159,931	4.1
	Male	10	213,297	4.7	5.3	9.6	0.984	207	4,090,205	5.1
	Female	8	215,527	3.7	4.1	6.3	0.588	130	4,069,726	3.2
Larynx	Total	3	428,824	0.7	0.8	2.9	1.000	60	8,159,931	0.7
	Male	2	213,297	0.9	1.0	2.4	1.000	51	4,090,205	1.2
	Female	1	215,527	0.5	0.5	0.4	0.699	9	4,069,726	0.2
Leukemia	Total	22	428,824	5.1	5.7	28.6	0.247	602	8,159,931	7.4
	Male	14	213,297	6.6	7.4	16.2	0.693	350	4,090,205	8.6
	Female	8	215,527	3.7	4.0	12.2	0.279	252	4,069,726	6.2
Liver and Bile Duct	Total	27	428,824	6.3	7.0	27.9	0.970	586	8,159,931	7.2
	Male	18	213,297	8.4	9.4	18.9	0.962	403	4,090,205	9.9
	Female	9	215,527	4.2	4.6	8.8	1.000	183	4,069,726	4.5
Lung and Bronchus	Total	119	428,824	27.8	30.9	137.7	0.116	2,921	8,159,931	35.8
	Male	67	213,297	31.4	35.5	71.5	0.651	1,550	4,090,205	37.9
	Female	52	215,527	24.1	26.6	65.9	0.090	1,371	4,069,726	33.7
Melanoma of the Skin	Total	10	428,824	2.3	2.6	12.9	0.527	268	8,159,931	3.3
	Male	6	213,297	2.8	3.1	8.3	0.561	176	4,090,205	4.3
	Female	4	215,527	1.9	2.0	4.5	1.000	92	4,069,726	2.3
Myeloma	Total	21	428,824	4.9	5.5	14.7	0.146	314	8,159,931	3.8
	Male	11	213,297	5.2	5.9	8.6	0.493	188	4,090,205	4.6
	Female	10	215,527	4.6	5.1	6.1	0.175	126	4,069,726	3.1
Non-Hodgkin Lymphoma	Total	27	428,824	6.3	7.0	25.0	0.743	530	8,159,931	6.5
	Male	11	213,297	5.2	5.8	13.5	0.614	292	4,090,205	7.1
	Female	16	215,527	7.4	8.1	11.5	0.241	238	4,069,726	5.8
Oral Cavity and Pharynx	Total	6	428,824	1.4	1.5	10.9	0.163	230	8,159,931	2.8
	Male	5	213,297	2.3	2.6	7.2	0.548	155	4,090,205	3.8
	Female	1	215,527	0.5	0.5	3.6	0.243	75	4,069,726	1.8
Ovary	Female	21	215,527	9.7	10.7	16.7	0.350	345	4,069,726	8.5
Pancreas	Total	63	428,824	14.7	16.3	48.9	0.060	1,035	8,159,931	12.7
	Male	37	213,297	17.3	19.6	26.3	0.057	569	4,090,205	13.9
	Female	26	215,527	12.1	13.3	22.4	0.504	466	4,069,726	11.5
Prostate	Male	56	213,297	26.3	30.0	39.7	0.017 >>	870	4,090,205	21.3
Stomach	Total	8	428,824	1.9	2.1	9.1	0.882	191	8,159,931	2.3
	Male	7	213,297	3.3	3.7	5.1	0.503	109	4,090,205	2.7
	Female	1	215,527	0.5	0.5	4.0	0.186	82	4,069,726	2.0

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Bannock County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	85.1%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	13.1%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	67.0%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	76.9%
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	65.9%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	14.8%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	9.4%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	42.8%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	6.1%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	29.7%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	24.0%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	25.0%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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BEAR LAKE COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 160 cases of invasive cancer were diagnosed among Bear Lake County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Bear Lake County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Bear Lake County	State of Idaho
All Sites/Types	**160**	**42,577**
Female Breast	**19**	**6,210**
Prostate	**23**	**5,393**
Lung & Bronchus	**10**	**4,798**
Colorectal	**17**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Bear Lake County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Bear Lake County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Bear Lake County was 536.9 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (504.8) gives an estimate of the relative burden of disease in Bear Lake County.

The age- and sex-adjusted incidence rate of invasive cancer in Bear Lake County, all sites combined, was 441.4 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Bear Lake County (160) than expected (183.0) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 60 Bear Lake County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Bear Lake County and the State of Idaho, 2015–2019

Mortality 2015–2019	Bear Lake County	State of Idaho
All Deaths	**298**	**69,101**
Cancer Deaths	**60**	**14,724**
% of All Deaths	*20.1%*	*21.3%*
Lung & Bronchus	**8**	**3,040**
Colorectal	**10**	**1,246**
Pancreas	**2**	**1,098**
Female Breast	**4**	**1,088**
Prostate	**4**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Bear Lake County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Bear Lake County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Bear Lake County, all sites combined, was 156.1 deaths per 100,000 persons per year during 2015–2019, compared with 171.3 for the remainder of the state. There were fewer cancer deaths in Bear Lake County (60) than expected (65.8) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN BEAR LAKE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Bear Lake County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	160	29,799	536.9	441.4	183.0	0.092	42,417	8,403,003	504.8
	Male	100	14,786	676.3	531.8	98.6	0.913	22,070	4,209,983	524.2
	Female	60	15,013	399.7	342.5	85.0	0.005 <<	20,347	4,193,020	485.3
Bladder	Total	7	29,799	23.5	18.1	9.4	0.552	2,051	8,403,003	24.4
	Male	6	14,786	40.6	30.2	7.5	0.751	1,596	4,209,983	37.9
	Female	1	15,013	6.7	5.4	2.0	0.797	455	4,193,020	10.9
Brain - malignant	Total	3	29,799	10.1	8.8	2.5	0.930	628	8,403,003	7.5
	Male	1	14,786	6.8	5.8	1.6	1.000	381	4,209,983	9.0
	Female	2	15,013	13.3	12.0	1.0	0.516	247	4,193,020	5.9
Brain and other CNS - non-malignant	Total	4	29,799	13.4	11.6	4.9	0.910	1,196	8,403,003	14.2
	Male	2	14,786	13.5	11.5	1.6	0.961	393	4,209,983	9.3
	Female	2	15,013	13.3	11.6	3.3	0.722	803	4,193,020	19.2
Breast	Total	19	29,799	63.8	54.6	25.8	0.204	6,239	8,403,003	74.2
	Male	-	14,786	-	-	0.2	1.000	48	4,209,983	1.1
	Female	19	15,013	126.6	110.7	25.3	0.240	6,191	4,193,020	147.7
Breast - in situ	Total	3	29,799	10.1	8.9	4.4	0.719	1,099	8,403,003	13.1
	Male	-	14,786	-	-	0.0	1.000	5	4,209,983	0.1
	Female	3	15,013	20.0	18.0	4.4	0.736	1,094	4,193,020	26.1
Cervix	Female	2	15,013	13.3	13.7	1.0	0.528	286	4,193,020	6.8
Colorectal	Total	17	29,799	57.0	46.9	14.3	0.536	3,311	8,403,003	39.4
	Male	11	14,786	74.4	59.7	7.7	0.310	1,760	4,209,983	41.8
	Female	6	15,013	40.0	33.5	6.6	1.000	1,551	4,193,020	37.0
Corpus Uteri	Female	1	15,013	6.7	5.9	5.1	0.074	1,257	4,193,020	30.0
Esophagus	Total	2	29,799	6.7	5.4	2.2	1.000	490	8,403,003	5.8
	Male	2	14,786	13.5	10.6	1.8	1.000	409	4,209,983	9.7
	Female	-	15,013	-	-	0.4	1.000	81	4,193,020	1.9
Hodgkin Lymphoma	Total	1	29,799	3.4	3.4	0.7	0.968	187	8,403,003	2.2
	Male	-	14,786	-	-	0.4	1.000	106	4,209,983	2.5
	Female	1	15,013	6.7	6.6	0.3	0.506	81	4,193,020	1.9
Kidney and Renal Pelvis	Total	3	29,799	10.1	8.3	6.8	0.184	1,588	8,403,003	18.9
	Male	3	14,786	20.3	16.4	4.5	0.690	1,031	4,209,983	24.5
	Female	-	15,013	-	-	2.4	0.187	557	4,193,020	13.3
Larynx	Total	2	29,799	6.7	5.4	0.9	0.460	204	8,403,003	2.4
	Male	1	14,786	6.8	5.2	0.7	1.000	162	4,209,983	3.8
	Female	1	15,013	6.7	5.7	0.2	0.321	42	4,193,020	1.0
Leukemia	Total	7	29,799	23.5	19.0	6.6	0.984	1,510	8,403,003	18.0
	Male	6	14,786	40.6	32.1	4.0	0.427	898	4,209,983	21.3
	Female	1	15,013	6.7	5.5	2.7	0.511	612	4,193,020	14.6
Liver and Bile Duct	Total	3	29,799	10.1	8.2	3.4	1.000	782	8,403,003	9.3
	Male	3	14,786	20.3	16.1	2.5	0.902	562	4,209,983	13.3
	Female	-	15,013	-	-	1.0	0.773	220	4,193,020	5.2
Lung and Bronchus	Total	10	29,799	33.6	25.9	22.0	0.007 <<	4,788	8,403,003	57.0
	Male	6	14,786	40.6	30.3	11.7	0.110	2,482	4,209,983	59.0
	Female	4	15,013	26.6	21.2	10.4	0.046 <<	2,306	4,193,020	55.0
Melanoma of the Skin	Total	15	29,799	50.3	42.9	10.9	0.280	2,624	8,403,003	31.2
	Male	11	14,786	74.4	60.0	6.8	0.168	1,559	4,209,983	37.0
	Female	4	15,013	26.6	24.2	4.2	1.000	1,065	4,193,020	25.4
Myeloma	Total	2	29,799	6.7	5.2	3.0	0.839	658	8,403,003	7.8
	Male	2	14,786	13.5	10.1	1.9	1.000	397	4,209,983	9.4
	Female	-	15,013	-	-	1.2	0.619	261	4,193,020	6.2
Non-Hodgkin Lymphoma	Total	10	29,799	33.6	27.3	8.0	0.567	1,834	8,403,003	21.8
	Male	9	14,786	60.9	48.6	4.7	0.096	1,057	4,209,983	25.1
	Female	1	15,013	6.7	5.5	3.4	0.302	777	4,193,020	18.5
Oral Cavity and Pharynx	Total	4	29,799	13.4	11.2	5.0	0.888	1,176	8,403,003	14.0
	Male	3	14,786	20.3	16.5	3.6	1.000	838	4,209,983	19.9
	Female	1	15,013	6.7	5.7	1.4	1.000	338	4,193,020	8.1
Ovary	Female	1	15,013	6.7	5.8	2.2	0.705	537	4,193,020	12.8
Pancreas	Total	4	29,799	13.4	10.6	5.8	0.616	1,293	8,403,003	15.4
	Male	3	14,786	20.3	15.6	3.3	1.000	715	4,209,983	17.0
	Female	1	15,013	6.7	5.3	2.6	0.543	578	4,193,020	13.8
Prostate	Male	23	14,786	155.6	121.1	24.2	0.909	5,370	4,209,983	127.6
Stomach	Total	1	29,799	3.4	2.7	2.2	0.696	505	8,403,003	6.0
	Male	1	14,786	6.8	5.3	1.5	1.000	335	4,209,983	8.0
	Female	-	15,013	-	-	0.7	0.959	170	4,193,020	4.1
Testis	Male	1	14,786	6.8	7.8	0.8	1.000	275	4,209,983	6.5
Thyroid	Total	7	29,799	23.5	23.0	4.5	0.346	1,249	8,403,003	14.9
	Male	2	14,786	13.5	12.4	1.3	0.716	328	4,209,983	7.8
	Female	5	15,013	33.3	33.5	3.3	0.466	921	4,193,020	22.0
Pediatric Age 0 to 19	Total	3	8,838	33.9	34.0	1.6	0.410	424	2,409,116	17.6
	Male	2	4,401	45.4	45.3	0.8	0.370	218	1,229,780	17.7
	Female	1	4,437	22.5	22.7	0.8	1.000	206	1,179,336	17.5

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN BEAR LAKE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Bear Lake County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	298	29,998	993.4	772.7	310.0	0.517	68,802	8,558,757	803.9
	Male	155	14,914	1,039.3	792.1	164.6	0.481	36,075	4,288,588	841.2
	Female	143	15,084	948.0	751.6	145.8	0.859	32,727	4,270,169	766.4
All Malignant Cancers	Total	60	29,998	200.0	156.1	65.8	0.518	14,664	8,558,757	171.3
	Male	38	14,914	254.8	192.3	36.6	0.859	7,940	4,288,588	185.1
	Female	22	15,084	145.8	117.3	29.5	0.188	6,724	4,270,169	157.5
Bladder	Total	2	29,998	6.7	5.0	2.2	1.000	464	8,558,757	5.4
	Male	2	14,914	13.4	9.6	1.7	1.000	348	4,288,588	8.1
	Female	-	15,084	-	-	0.5	1.000	116	4,270,169	2.7
Brain and Other Nervous System	Total	2	29,998	6.7	5.6	2.1	1.000	507	8,558,757	5.9
	Male	1	14,914	6.7	5.6	1.3	1.000	322	4,288,588	7.5
	Female	1	15,084	6.6	5.7	0.8	1.000	185	4,270,169	4.3
Breast	Total	4	29,998	13.3	10.8	4.8	0.969	1,095	8,558,757	12.8
	Male	-	14,914	-	-	0.1	1.000	11	4,288,588	0.3
	Female	4	15,084	26.5	22.0	4.6	1.000	1,084	4,270,169	25.4
Cervix	Female	-	15,084	-	-	0.3	1.000	81	4,270,169	1.9
Colorectal	Total	10	29,998	33.3	26.5	5.4	0.102	1,236	8,558,757	14.4
	Male	4	14,914	26.8	21.0	3.0	0.703	675	4,288,588	15.7
	Female	6	15,084	39.8	32.2	2.4	0.077	561	4,270,169	13.1
Corpus Uteri	Female	1	15,084	6.6	5.3	0.7	1.000	163	4,270,169	3.8
Esophagus	Total	2	29,998	6.7	5.3	2.1	1.000	474	8,558,757	5.5
	Male	2	14,914	13.4	10.4	1.7	1.000	387	4,288,588	9.0
	Female	-	15,084	-	-	0.4	1.000	87	4,270,169	2.0
Hodgkin Lymphoma	Total	-	29,998	-	-	0.1	1.000	23	8,558,757	0.3
	Male	-	14,914	-	-	0.0	1.000	9	4,288,588	0.2
	Female	-	15,084	-	-	0.1	1.000	14	4,270,169	0.3
Kidney	Total	1	29,998	3.3	2.6	1.6	1.000	354	8,558,757	4.1
	Male	1	14,914	6.7	5.1	1.0	1.000	216	4,288,588	5.0
	Female	-	15,084	-	-	0.6	1.000	138	4,270,169	3.2
Larynx	Total	-	29,998	-	-	0.3	1.000	63	8,558,757	0.7
	Male	-	14,914	-	-	0.2	1.000	53	4,288,588	1.2
	Female	-	15,084	-	-	0.0	1.000	10	4,270,169	0.2
Leukemia	Total	4	29,998	13.3	10.2	2.8	0.630	620	8,558,757	7.2
	Male	3	14,914	20.1	15.0	1.7	0.476	361	4,288,588	8.4
	Female	1	15,084	6.6	5.2	1.2	1.000	259	4,270,169	6.1
Liver and Bile Duct	Total	-	29,998	-	-	2.7	0.135	613	8,558,757	7.2
	Male	-	14,914	-	-	1.9	0.305	421	4,288,588	9.8
	Female	-	15,084	-	-	0.8	0.863	192	4,270,169	4.5
Lung and Bronchus	Total	8	29,998	26.7	20.5	13.8	0.136	3,032	8,558,757	35.4
	Male	4	14,914	26.8	20.1	7.5	0.266	1,613	4,288,588	37.6
	Female	4	15,084	26.5	20.9	6.4	0.479	1,419	4,270,169	33.2
Melanoma of the Skin	Total	4	29,998	13.3	10.7	1.2	0.067	274	8,558,757	3.2
	Male	4	14,914	26.8	20.8	0.8	0.018 **>>**	178	4,288,588	4.2
	Female	-	15,084	-	-	0.4	1.000	96	4,270,169	2.2
Myeloma	Total	1	29,998	3.3	2.5	1.6	1.000	334	8,558,757	3.9
	Male	1	14,914	6.7	4.9	0.9	1.000	198	4,288,588	4.6
	Female	-	15,084	-	-	0.6	1.000	136	4,270,169	3.2
Non-Hodgkin Lymphoma	Total	3	29,998	10.0	7.6	2.6	0.945	554	8,558,757	6.5
	Male	3	14,914	20.1	15.0	1.4	0.333	300	4,288,588	7.0
	Female	-	15,084	-	-	1.2	0.619	254	4,270,169	5.9
Oral Cavity and Pharynx	Total	2	29,998	6.7	5.3	1.0	0.550	234	8,558,757	2.7
	Male	1	14,914	6.7	5.2	0.7	1.000	159	4,288,588	3.7
	Female	1	15,084	6.6	5.3	0.3	0.561	75	4,270,169	1.8
Ovary	Female	1	15,084	6.6	5.4	1.6	1.000	365	4,270,169	8.5
Pancreas	Total	2	29,998	6.7	5.2	4.9	0.260	1,096	8,558,757	12.8
	Male	1	14,914	6.7	5.1	2.8	0.479	605	4,288,588	14.1
	Female	1	15,084	6.6	5.2	2.2	0.713	491	4,270,169	11.5
Prostate	Male	4	14,914	26.8	18.9	4.5	1.000	922	4,288,588	21.5
Stomach	Total	-	29,998	-	-	0.9	0.822	199	8,558,757	2.3
	Male	-	14,914	-	-	0.5	1.000	116	4,288,588	2.7
	Female	-	15,084	-	-	0.4	1.000	83	4,270,169	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Bear Lake County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	82.3%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	9.9%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	11.0%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	11.0%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	8.9%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	33.3%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	18.7%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	.

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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BENEWAH COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 286 cases of invasive cancer were diagnosed among Benewah County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Benewah County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Benewah County	State of Idaho
All Sites/Types	**286**	**42,577**
Female Breast	**36**	**6,210**
Prostate	**28**	**5,393**
Lung & Bronchus	**44**	**4,798**
Colorectal	**25**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Benewah County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Benewah County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Benewah County was 629.6 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (504.2) gives an estimate of the relative burden of disease in Benewah County.

The age- and sex-adjusted incidence rate of invasive cancer in Benewah County, all sites combined, was 469.7 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Benewah County (286) than expected (307.0) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 133 Benewah County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Benewah County and the State of Idaho, 2015–2019

Mortality 2015–2019	Benewah County	State of Idaho
All Deaths	**648**	**69,101**
Cancer Deaths	**133**	**14,724**
% of All Deaths	*20.5%*	*21.3%*
Lung & Bronchus	**37**	**3,040**
Colorectal	**4**	**1,246**
Pancreas	**6**	**1,098**
Female Breast	**7**	**1,088**
Prostate	**9**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Benewah County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Benewah County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Benewah County, all sites combined, was 215.8 deaths per 100,000 persons per year during 2015–2019, compared with 170.8 for the remainder of the state. There were statistically significantly more cancer deaths in Benewah County (133) than expected (105.3) based upon rates in the remainder of the state (p=.010).

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN BENEWAH COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Benewah County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	286	45,424	629.6	469.7	307.0	0.240	42,291	8,387,378	504.2
	Male	154	23,117	666.2	464.2	173.9	0.138	22,016	4,201,652	524.0
	Female	132	22,307	591.7	468.3	136.5	0.739	20,275	4,185,726	484.4
Bladder	Total	11	45,424	24.2	17.4	15.4	0.320	2,047	8,387,378	24.4
	Male	7	23,117	30.3	20.3	13.1	0.103	1,595	4,201,652	38.0
	Female	4	22,307	17.9	13.9	3.1	0.755	452	4,185,726	10.8
Brain - malignant	Total	4	45,424	8.8	7.2	4.2	1.000	627	8,387,378	7.5
	Male	2	23,117	8.7	6.7	2.7	0.995	380	4,201,652	9.0
	Female	2	22,307	9.0	7.6	1.5	0.915	247	4,185,726	5.9
Brain and other CNS - non-malignant	Total	7	45,424	15.4	12.3	8.1	0.880	1,193	8,387,378	14.2
	Male	3	23,117	13.0	10.3	2.7	1.000	392	4,201,652	9.3
	Female	4	22,307	17.9	14.6	5.2	0.800	801	4,185,726	19.1
Breast	Total	37	45,424	81.5	61.9	44.4	0.302	6,221	8,387,378	74.2
	Male	1	23,117	4.3	3.0	0.4	0.617	47	4,201,652	1.1
	Female	36	22,307	161.4	126.2	42.1	0.394	6,174	4,185,726	147.5
Breast - in situ	Total	8	45,424	17.6	13.5	7.7	1.000	1,094	8,387,378	13.0
	Male	-	23,117	-	-	0.0	1.000	5	4,201,652	0.1
	Female	8	22,307	35.9	28.0	7.4	0.933	1,089	4,185,726	26.0
Cervix	Female	-	22,307	-	-	1.7	0.384	288	4,185,726	6.9
Colorectal	Total	25	45,424	55.0	41.4	23.8	0.858	3,303	8,387,378	39.4
	Male	13	23,117	56.2	40.0	13.6	1.000	1,758	4,201,652	41.8
	Female	12	22,307	53.8	42.7	10.4	0.695	1,545	4,185,726	36.9
Corpus Uteri	Female	9	22,307	40.3	30.9	8.7	1.000	1,249	4,185,726	29.8
Esophagus	Total	6	45,424	13.2	9.5	3.7	0.327	486	8,387,378	5.8
	Male	6	23,117	26.0	17.7	3.3	0.225	405	4,201,652	9.6
	Female	-	22,307	-	-	0.6	1.000	81	4,185,726	1.9
Hodgkin Lymphoma	Total	-	45,424	-	-	1.0	0.702	188	8,387,378	2.2
	Male	-	23,117	-	-	0.6	1.000	106	4,201,652	2.5
	Female	-	22,307	-	-	0.4	1.000	82	4,185,726	2.0
Kidney and Renal Pelvis	Total	14	45,424	30.8	22.9	11.5	0.537	1,577	8,387,378	18.8
	Male	10	23,117	43.3	30.7	7.9	0.553	1,024	4,201,652	24.4
	Female	4	22,307	17.9	14.0	3.8	1.000	553	4,185,726	13.2
Larynx	Total	2	45,424	4.4	3.2	1.5	0.909	204	8,387,378	2.4
	Male	2	23,117	8.7	5.8	1.3	0.754	161	4,201,652	3.8
	Female	-	22,307	-	-	0.3	1.000	43	4,185,726	1.0
Leukemia	Total	8	45,424	17.6	13.5	10.7	0.524	1,509	8,387,378	18.0
	Male	5	23,117	21.6	15.6	6.9	0.635	899	4,201,652	21.4
	Female	3	22,307	13.4	11.0	4.0	0.870	610	4,185,726	14.6
Liver and Bile Duct	Total	9	45,424	19.8	14.2	5.9	0.275	776	8,387,378	9.3
	Male	7	23,117	30.3	20.8	4.5	0.328	558	4,201,652	13.3
	Female	2	22,307	9.0	6.8	1.5	0.905	218	4,185,726	5.2
Lung and Bronchus	Total	44	45,424	96.9	68.8	36.3	0.234	4,754	8,387,378	56.7
	Male	20	23,117	86.5	57.5	20.4	1.000	2,468	4,201,652	58.7
	Female	24	22,307	107.6	80.9	16.2	0.082	2,286	4,185,726	54.6
Melanoma of the Skin	Total	9	45,424	19.8	15.4	18.3	0.026 <<	2,630	8,387,378	31.4
	Male	5	23,117	21.6	15.6	12.0	0.042 <<	1,565	4,201,652	37.2
	Female	4	22,307	17.9	15.0	6.8	0.383	1,065	4,185,726	25.4
Myeloma	Total	9	45,424	19.8	14.2	4.9	0.126	651	8,387,378	7.8
	Male	6	23,117	26.0	17.4	3.2	0.218	393	4,201,652	9.4
	Female	3	22,307	13.4	10.3	1.8	0.536	258	4,185,726	6.2
Non-Hodgkin Lymphoma	Total	10	45,424	22.0	16.4	13.4	0.443	1,834	8,387,378	21.9
	Male	8	23,117	34.6	24.5	8.2	1.000	1,058	4,201,652	25.2
	Female	2	22,307	9.0	7.0	5.3	0.202	776	4,185,726	18.5
Oral Cavity and Pharynx	Total	10	45,424	22.0	16.2	8.6	0.721	1,170	8,387,378	13.9
	Male	6	23,117	26.0	18.3	6.5	1.000	835	4,201,652	19.9
	Female	4	22,307	17.9	14.0	2.3	0.396	335	4,185,726	8.0
Ovary	Female	4	22,307	17.9	14.2	3.6	0.965	534	4,185,726	12.8
Pancreas	Total	6	45,424	13.2	9.6	9.6	0.308	1,291	8,387,378	15.4
	Male	2	23,117	8.7	5.9	5.8	0.142	716	4,201,652	17.0
	Female	4	22,307	17.9	14.0	3.9	1.000	575	4,185,726	13.7
Prostate	Male	28	23,117	121.1	81.6	43.8	0.015 <<	5,365	4,201,652	127.7
Stomach	Total	4	45,424	8.8	6.5	3.7	0.995	502	8,387,378	6.0
	Male	4	23,117	17.3	12.0	2.6	0.540	332	4,201,652	7.9
	Female	-	22,307	-	-	1.1	0.645	170	4,185,726	4.1
Testis	Male	3	23,117	13.0	15.5	1.3	0.265	273	4,201,652	6.5
Thyroid	Total	6	45,424	13.2	11.8	7.6	0.734	1,250	8,387,378	14.9
	Male	2	23,117	8.7	7.2	2.2	1.000	328	4,201,652	7.8
	Female	4	22,307	17.9	16.4	5.4	0.753	922	4,185,726	22.0
Pediatric Age 0 to 19	Total	1	11,097	9.0	9.1	2.0	0.836	426	2,406,857	17.7
	Male	1	5,738	17.4	17.5	1.0	1.000	219	1,228,443	17.8
	Female	-	5,359	-	-	0.9	0.782	207	1,178,414	17.6

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN BENEWAH COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Benewah County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	648	45,690	1,418.3	1,123.6	462.1	0.000 >>	68,452	8,543,065	801.3
	Male	356	23,303	1,527.7	1,101.9	270.8	0.000 >>	35,874	4,280,199	838.1
	Female	292	22,387	1,304.3	1,140.1	195.7	0.000 >>	32,578	4,262,866	764.2
All Malignant Cancers	Total	133	45,690	291.1	215.8	105.3	0.010 >>	14,591	8,543,065	170.8
	Male	83	23,303	356.2	244.2	62.7	0.016 >>	7,895	4,280,199	184.5
	Female	50	22,387	223.3	177.4	44.3	0.427	6,696	4,262,866	157.1
Bladder	Total	3	45,690	6.6	5.0	3.2	1.000	463	8,543,065	5.4
	Male	3	23,303	12.9	8.9	2.7	1.000	347	4,280,199	8.1
	Female	-	22,387	-	-	0.7	0.960	116	4,262,866	2.7
Brain and Other Nervous System	Total	4	45,690	8.8	6.6	3.6	0.951	505	8,543,065	5.9
	Male	2	23,303	8.6	6.3	2.4	1.000	321	4,280,199	7.5
	Female	2	22,387	8.9	7.0	1.2	0.699	184	4,262,866	4.3
Breast	Total	8	45,690	17.5	13.3	7.7	1.000	1,091	8,543,065	12.8
	Male	1	23,303	4.3	2.8	0.1	0.159	10	4,280,199	0.2
	Female	7	22,387	31.3	25.0	7.1	1.000	1,081	4,262,866	25.4
Cervix	Female	1	22,387	4.5	3.7	0.5	0.798	80	4,262,866	1.9
Colorectal	Total	4	45,690	8.8	6.6	8.8	0.127	1,242	8,543,065	14.5
	Male	3	23,303	12.9	9.1	5.2	0.471	676	4,280,199	15.8
	Female	1	22,387	4.5	3.7	3.6	0.249	566	4,262,866	13.3
Corpus Uteri	Female	1	22,387	4.5	3.4	1.1	1.000	163	4,262,866	3.8
Esophagus	Total	5	45,690	10.9	8.0	3.5	0.532	471	8,543,065	5.5
	Male	5	23,303	21.5	14.7	3.1	0.388	384	4,280,199	9.0
	Female	-	22,387	-	-	0.6	1.000	87	4,262,866	2.0
Hodgkin Lymphoma	Total	-	45,690	-	-	0.1	1.000	23	8,543,065	0.3
	Male	-	23,303	-	-	0.1	1.000	9	4,280,199	0.2
	Female	-	22,387	-	-	0.1	1.000	14	4,262,866	0.3
Kidney	Total	6	45,690	13.1	9.6	2.6	0.093	349	8,543,065	4.1
	Male	4	23,303	17.2	11.7	1.7	0.188	213	4,280,199	5.0
	Female	2	22,387	8.9	7.1	0.9	0.456	136	4,262,866	3.2
Larynx	Total	1	45,690	2.2	1.6	0.5	0.726	62	8,543,065	0.7
	Male	1	23,303	4.3	3.0	0.4	0.672	52	4,280,199	1.2
	Female	-	22,387	-	-	0.1	1.000	10	4,262,866	0.2
Leukemia	Total	4	45,690	8.8	6.6	4.4	1.000	620	8,543,065	7.3
	Male	2	23,303	8.6	5.9	2.8	0.918	362	4,280,199	8.5
	Female	2	22,387	8.9	7.4	1.6	0.969	258	4,262,866	6.1
Liver and Bile Duct	Total	6	45,690	13.1	9.4	4.5	0.609	607	8,543,065	7.1
	Male	5	23,303	21.5	14.6	3.3	0.487	416	4,280,199	9.7
	Female	1	22,387	4.5	3.4	1.3	1.000	191	4,262,866	4.5
Lung and Bronchus	Total	37	45,690	81.0	58.3	22.3	0.005 >>	3,003	8,543,065	35.2
	Male	19	23,303	81.5	54.5	13.0	0.141	1,598	4,280,199	37.3
	Female	18	22,387	80.4	62.0	9.6	0.019 >>	1,405	4,262,866	33.0
Melanoma of the Skin	Total	2	45,690	4.4	3.3	1.9	1.000	276	8,543,065	3.2
	Male	1	23,303	4.3	3.0	1.4	1.000	181	4,280,199	4.2
	Female	1	22,387	4.5	3.6	0.6	0.916	95	4,262,866	2.2
Myeloma	Total	6	45,690	13.1	9.5	2.4	0.074	329	8,543,065	3.9
	Male	3	23,303	12.9	8.6	1.6	0.431	196	4,280,199	4.6
	Female	3	22,387	13.4	10.5	0.9	0.123	133	4,262,866	3.1
Non-Hodgkin Lymphoma	Total	1	45,690	2.2	1.6	4.0	0.182	556	8,543,065	6.5
	Male	1	23,303	4.3	2.9	2.4	0.612	302	4,280,199	7.1
	Female	-	22,387	-	-	1.6	0.385	254	4,262,866	6.0
Oral Cavity and Pharynx	Total	2	45,690	4.4	3.2	1.7	1.000	234	8,543,065	2.7
	Male	2	23,303	8.6	5.9	1.3	0.714	158	4,280,199	3.7
	Female	-	22,387	-	-	0.5	1.000	76	4,262,866	1.8
Ovary	Female	-	22,387	-	-	2.5	0.165	366	4,262,866	8.6
Pancreas	Total	6	45,690	13.1	9.5	8.1	0.608	1,092	8,543,065	12.8
	Male	3	23,303	12.9	8.7	4.9	0.569	603	4,280,199	14.1
	Female	3	22,387	13.4	10.4	3.3	1.000	489	4,262,866	11.5
Prostate	Male	9	23,303	38.6	26.2	7.4	0.636	917	4,280,199	21.4
Stomach	Total	2	45,690	4.4	3.3	1.4	0.810	197	8,543,065	2.3
	Male	2	23,303	8.6	6.1	0.9	0.440	114	4,280,199	2.7
	Female	-	22,387	-	-	0.5	1.000	83	4,262,866	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Benewah County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	78.7%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	10.9%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	20.9%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	11.6%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	4.0%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	33.7%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	22.8%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	13.7%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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BINGHAM COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 987 cases of invasive cancer were diagnosed among Bingham County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Bingham County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Bingham County	State of Idaho
All Sites/Types	**987**	**42,577**
Female Breast	**114**	**6,210**
Prostate	**110**	**5,393**
Lung & Bronchus	**86**	**4,798**
Colorectal	**97**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Bingham County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Bingham County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Bingham County was 433.7 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (506.9) gives an estimate of the relative burden of disease in Bingham County.

The age- and sex-adjusted incidence rate of invasive cancer in Bingham County, all sites combined, was 468.4 cases per 100,000 persons per year during 2014–2018. There were statistically significantly fewer cases of cancer in Bingham County (987) than expected (1,068.0) based upon rates in the remainder of the state (p=.013).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 364 Bingham County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Bingham County and the State of Idaho, 2015–2019

Mortality 2015–2019	Bingham County	State of Idaho
All Deaths	**1,955**	**69,101**
Cancer Deaths	**364**	**14,724**
% of All Deaths	*18.6%*	*21.3%*
Lung & Bronchus	**57**	**3,040**
Colorectal	**33**	**1,246**
Pancreas	**30**	**1,098**
Female Breast	**25**	**1,088**
Prostate	**29**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Bingham County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Bingham County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Bingham County, all sites combined, was 172.0 deaths per 100,000 persons per year during 2015–2019, compared with 171.8 for the remainder of the state. There were more cancer deaths in Bingham County (364) than expected (363.6) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN BINGHAM COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Bingham County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	987	227,599	433.7	468.4	1,068.0	0.013 <<	41,590	8,205,203	506.9
	Male	502	113,896	440.8	469.3	563.8	0.009 <<	21,668	4,110,873	527.1
	Female	485	113,703	426.5	465.3	507.2	0.335	19,922	4,094,330	486.6
Bladder	Total	47	227,599	20.7	22.4	51.5	0.590	2,011	8,205,203	24.5
	Male	38	113,896	33.4	35.4	40.9	0.725	1,564	4,110,873	38.0
	Female	9	113,703	7.9	8.7	11.2	0.629	447	4,094,330	10.9
Brain - malignant	Total	9	227,599	4.0	4.1	16.5	0.069	622	8,205,203	7.6
	Male	3	113,896	2.6	2.8	10.0	0.020 <<	379	4,110,873	9.2
	Female	6	113,703	5.3	5.5	6.5	1.000	243	4,094,330	5.9
Brain and other CNS - non-malignant	Total	28	227,599	12.3	13.2	30.3	0.760	1,172	8,205,203	14.3
	Male	11	113,896	9.7	10.2	10.1	0.861	384	4,110,873	9.3
	Female	17	113,703	15.0	16.3	20.1	0.576	788	4,094,330	19.2
Breast	Total	114	227,599	50.1	54.2	157.6	0.000 <<	6,144	8,205,203	74.9
	Male	-	113,896	-	-	1.2	0.574	48	4,110,873	1.2
	Female	114	113,703	100.3	109.6	154.9	0.001 <<	6,096	4,094,330	148.9
Breast - in situ	Total	24	227,599	10.5	11.4	27.5	0.577	1,078	8,205,203	13.1
	Male	-	113,896	-	-	0.1	1.000	5	4,110,873	0.1
	Female	24	113,703	21.1	23.1	27.2	0.620	1,073	4,094,330	26.2
Cervix	Female	6	113,703	5.3	5.6	7.4	0.794	282	4,094,330	6.9
Colorectal	Total	97	227,599	42.6	45.9	83.1	0.148	3,231	8,205,203	39.4
	Male	56	113,896	49.2	52.2	44.8	0.117	1,715	4,110,873	41.7
	Female	41	113,703	36.1	39.4	38.5	0.728	1,516	4,094,330	37.0
Corpus Uteri	Female	38	113,703	33.4	36.6	30.9	0.241	1,220	4,094,330	29.8
Esophagus	Total	3	227,599	1.3	1.4	12.5	0.003 <<	489	8,205,203	6.0
	Male	2	113,896	1.8	1.9	10.7	0.003 <<	409	4,110,873	9.9
	Female	1	113,703	0.9	1.0	2.0	0.803	80	4,094,330	2.0
Hodgkin Lymphoma	Total	4	227,599	1.8	1.8	4.9	0.917	184	8,205,203	2.2
	Male	1	113,896	0.9	0.9	2.8	0.474	105	4,110,873	2.6
	Female	3	113,703	2.6	2.7	2.1	0.715	79	4,094,330	1.9
Kidney and Renal Pelvis	Total	43	227,599	18.9	20.4	39.7	0.645	1,548	8,205,203	18.9
	Male	27	113,896	23.7	25.3	26.1	0.915	1,007	4,110,873	24.5
	Female	16	113,703	14.1	15.3	13.8	0.618	541	4,094,330	13.2
Larynx	Total	5	227,599	2.2	2.4	5.2	1.000	201	8,205,203	2.4
	Male	5	113,896	4.4	4.6	4.1	0.797	158	4,110,873	3.8
	Female	-	113,703	-	-	1.1	0.668	43	4,094,330	1.1
Leukemia	Total	36	227,599	15.8	16.8	38.8	0.734	1,481	8,205,203	18.0
	Male	18	113,896	15.8	16.5	23.5	0.304	886	4,110,873	21.6
	Female	18	113,703	15.8	16.9	15.4	0.578	595	4,094,330	14.5
Liver and Bile Duct	Total	22	227,599	9.7	10.5	19.5	0.632	763	8,205,203	9.3
	Male	13	113,896	11.4	12.2	14.4	0.854	552	4,110,873	13.4
	Female	9	113,703	7.9	8.7	5.3	0.180	211	4,094,330	5.2
Lung and Bronchus	Total	86	227,599	37.8	41.0	120.4	0.001 <<	4,712	8,205,203	57.4
	Male	55	113,896	48.3	51.4	63.3	0.326	2,433	4,110,873	59.2
	Female	31	113,703	27.3	30.1	57.4	0.000 <<	2,279	4,094,330	55.7
Melanoma of the Skin	Total	57	227,599	25.0	27.0	66.4	0.271	2,582	8,205,203	31.5
	Male	32	113,896	28.1	29.9	40.1	0.227	1,538	4,110,873	37.4
	Female	25	113,703	22.0	23.8	26.8	0.832	1,044	4,094,330	25.5
Myeloma	Total	13	227,599	5.7	6.2	16.5	0.468	647	8,205,203	7.9
	Male	7	113,896	6.1	6.6	10.2	0.413	392	4,110,873	9.5
	Female	6	113,703	5.3	5.8	6.4	1.000	255	4,094,330	6.2
Non-Hodgkin Lymphoma	Total	42	227,599	18.5	19.9	46.4	0.575	1,802	8,205,203	22.0
	Male	22	113,896	19.3	20.5	27.3	0.359	1,044	4,110,873	25.4
	Female	20	113,703	17.6	19.2	19.3	0.925	758	4,094,330	18.5
Oral Cavity and Pharynx	Total	22	227,599	9.7	10.5	29.6	0.183	1,158	8,205,203	14.1
	Male	12	113,896	10.5	11.3	21.5	0.039 <<	829	4,110,873	20.2
	Female	10	113,703	8.8	9.7	8.3	0.648	329	4,094,330	8.0
Ovary	Female	18	113,703	15.8	17.2	13.3	0.249	520	4,094,330	12.7
Pancreas	Total	36	227,599	15.8	17.1	32.4	0.571	1,261	8,205,203	15.4
	Male	25	113,896	21.9	23.3	18.1	0.142	693	4,110,873	16.9
	Female	11	113,703	9.7	10.6	14.4	0.458	568	4,094,330	13.9
Prostate	Male	110	113,896	96.6	104.0	135.9	0.025 <<	5,283	4,110,873	128.5
Stomach	Total	14	227,599	6.2	6.6	12.7	0.782	492	8,205,203	6.0
	Male	7	113,896	6.1	6.5	8.6	0.739	329	4,110,873	8.0
	Female	7	113,703	6.2	6.7	4.1	0.250	163	4,094,330	4.0
Testis	Male	4	113,896	3.5	3.8	6.9	0.356	272	4,110,873	6.6
Thyroid	Total	65	227,599	28.6	30.7	30.8	0.000 >>	1,191	8,205,203	14.5
	Male	12	113,896	10.5	11.3	8.2	0.257	318	4,110,873	7.7
	Female	53	113,703	46.6	49.9	22.6	0.000 >>	873	4,094,330	21.3
Pediatric Age 0 to 19	Total	11	77,090	14.3	14.4	13.5	0.602	416	2,340,864	17.8
	Male	7	39,495	17.7	17.9	7.0	1.000	213	1,194,686	17.8
	Female	4	37,595	10.6	10.8	6.6	0.435	203	1,146,178	17.7

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN BINGHAM COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Bingham County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	1,955	229,196	853.0	914.8	1,716.6	0.000 >>	67,145	8,359,559	803.2
	Male	1,057	114,504	923.1	966.9	917.9	0.000 >>	35,173	4,188,998	839.7
	Female	898	114,692	783.0	859.2	801.2	0.001 >>	31,972	4,170,561	766.6
All Malignant Cancers	Total	364	229,196	158.8	172.0	363.6	0.998	14,360	8,359,559	171.8
	Male	201	114,504	175.5	185.9	200.8	1.000	7,777	4,188,998	185.7
	Female	163	114,692	142.1	156.8	164.1	0.971	6,583	4,170,561	157.8
Bladder	Total	13	229,196	5.7	6.1	11.5	0.734	453	8,359,559	5.4
	Male	10	114,504	8.7	9.1	8.9	0.797	340	4,188,998	8.1
	Female	3	114,692	2.6	2.9	2.8	1.000	113	4,170,561	2.7
Brain and Other Nervous System	Total	10	229,196	4.4	4.7	12.7	0.552	499	8,359,559	6.0
	Male	6	114,504	5.2	5.6	8.2	0.591	317	4,188,998	7.6
	Female	4	114,692	3.5	3.8	4.6	1.000	182	4,170,561	4.4
Breast	Total	25	229,196	10.9	11.8	27.2	0.763	1,074	8,359,559	12.8
	Male	-	114,504	-	-	0.3	1.000	11	4,188,998	0.3
	Female	25	114,692	21.8	24.0	26.5	0.864	1,063	4,170,561	25.5
Cervix	Female	1	114,692	0.9	0.9	2.0	0.801	80	4,170,561	1.9
Colorectal	Total	33	229,196	14.4	15.5	30.8	0.742	1,213	8,359,559	14.5
	Male	23	114,504	20.1	21.2	17.0	0.188	656	4,188,998	15.7
	Female	10	114,692	8.7	9.6	13.9	0.366	557	4,170,561	13.4
Corpus Uteri	Female	4	114,692	3.5	3.9	4.0	1.000	160	4,170,561	3.8
Esophagus	Total	5	229,196	2.2	2.4	11.9	0.044 <<	471	8,359,559	5.6
	Male	4	114,504	3.5	3.7	9.9	0.063	385	4,188,998	9.2
	Female	1	114,692	0.9	1.0	2.1	0.735	86	4,170,561	2.1
Hodgkin Lymphoma	Total	2	229,196	0.9	0.9	0.5	0.204	21	8,359,559	0.3
	Male	1	114,504	0.9	0.9	0.2	0.369	8	4,188,998	0.2
	Female	1	114,692	0.9	0.9	0.3	0.564	13	4,170,561	0.3
Kidney	Total	12	229,196	5.2	5.7	8.7	0.335	343	8,359,559	4.1
	Male	8	114,504	7.0	7.4	5.4	0.350	209	4,188,998	5.0
	Female	4	114,692	3.5	3.9	3.3	0.855	134	4,170,561	3.2
Larynx	Total	-	229,196	-	-	1.6	0.398	63	8,359,559	0.8
	Male	-	114,504	-	-	1.4	0.496	53	4,188,998	1.3
	Female	-	114,692	-	-	0.2	1.000	10	4,170,561	0.2
Leukemia	Total	15	229,196	6.5	7.0	15.5	1.000	609	8,359,559	7.3
	Male	6	114,504	5.2	5.5	9.3	0.367	358	4,188,998	8.5
	Female	9	114,692	7.8	8.5	6.3	0.379	251	4,170,561	6.0
Liver and Bile Duct	Total	20	229,196	8.7	9.5	14.9	0.239	593	8,359,559	7.1
	Male	10	114,504	8.7	9.4	10.5	1.000	411	4,188,998	9.8
	Female	10	114,692	8.7	9.7	4.5	0.035 >>	182	4,170,561	4.4
Lung and Bronchus	Total	57	229,196	24.9	27.1	75.1	0.035 <<	2,983	8,359,559	35.7
	Male	35	114,504	30.6	32.6	40.5	0.434	1,582	4,188,998	37.8
	Female	22	114,692	19.2	21.2	34.8	0.028 <<	1,401	4,170,561	33.6
Melanoma of the Skin	Total	8	229,196	3.5	3.8	6.9	0.769	270	8,359,559	3.2
	Male	6	114,504	5.2	5.5	4.6	0.624	176	4,188,998	4.2
	Female	2	114,692	1.7	1.9	2.4	1.000	94	4,170,561	2.3
Myeloma	Total	7	229,196	3.1	3.3	8.3	0.820	328	8,359,559	3.9
	Male	4	114,504	3.5	3.7	5.1	0.857	195	4,188,998	4.7
	Female	3	114,692	2.6	2.9	3.3	1.000	133	4,170,561	3.2
Non-Hodgkin Lymphoma	Total	11	229,196	4.8	5.2	13.8	0.548	546	8,359,559	6.5
	Male	3	114,504	2.6	2.8	7.7	0.101	300	4,188,998	7.2
	Female	8	114,692	7.0	7.7	6.1	0.549	246	4,170,561	5.9
Oral Cavity and Pharynx	Total	6	229,196	2.6	2.8	5.8	1.000	230	8,359,559	2.8
	Male	4	114,504	3.5	3.7	4.0	1.000	156	4,188,998	3.7
	Female	2	114,692	1.7	1.9	1.9	1.000	74	4,170,561	1.8
Ovary	Female	14	114,692	12.2	13.4	8.8	0.127	352	4,170,561	8.4
Pancreas	Total	30	229,196	13.1	14.2	26.9	0.599	1,068	8,359,559	12.8
	Male	18	114,504	15.7	16.8	15.1	0.512	588	4,188,998	14.0
	Female	12	114,692	10.5	11.6	11.9	1.000	480	4,170,561	11.5
Prostate	Male	29	114,504	25.3	26.5	23.5	0.298	897	4,188,998	21.4
Stomach	Total	4	229,196	1.7	1.9	5.0	0.892	195	8,359,559	2.3
	Male	1	114,504	0.9	0.9	3.0	0.404	115	4,188,998	2.7
	Female	3	114,692	2.6	2.9	2.0	0.648	80	4,170,561	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Bingham County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	83.0%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	12.5%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	62.8%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	73.2%
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	50.7%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	15.6%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	9.6%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	59.8%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	5.5%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	27.4%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	18.9%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	24.2%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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BLAINE COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 588 cases of invasive cancer were diagnosed among Blaine County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Blaine County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Blaine County	State of Idaho
All Sites/Types	**588**	**42,577**
Female Breast	**103**	**6,210**
Prostate	**87**	**5,393**
Lung & Bronchus	**41**	**4,798**
Colorectal	**31**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Blaine County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Blaine County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Blaine County was 533.1 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (504.5) gives an estimate of the relative burden of disease in Blaine County.

The age- and sex-adjusted incidence rate of invasive cancer in Blaine County, all sites combined, was 457.6 cases per 100,000 persons per year during 2014–2018. There were statistically significantly fewer cases of cancer in Blaine County (588) than expected (648.3) based upon rates in the remainder of the state (p=.017).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 144 Blaine County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Blaine County and the State of Idaho, 2015–2019

Mortality 2015–2019	Blaine County	State of Idaho
All Deaths	**573**	**69,101**
Cancer Deaths	**144**	**14,724**
% of All Deaths	*25.1%*	*21.3%*
Lung & Bronchus	**22**	**3,040**
Colorectal	**8**	**1,246**
Pancreas	**9**	**1,098**
Female Breast	**10**	**1,088**
Prostate	**20**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Blaine County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Blaine County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Blaine County, all sites combined, was 112.3 deaths per 100,000 persons per year during 2015–2019, compared with 172.0 for the remainder of the state. There were statistically significantly fewer cancer deaths in Blaine County (144) than expected (220.5) based upon rates in the remainder of the state (p<.001).

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN BLAINE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Blaine County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	588	110,297	533.1	457.6	648.3	0.017 <<	41,989	8,322,505	504.5
	Male	317	55,725	568.9	472.4	351.7	0.065	21,853	4,169,044	524.2
	Female	271	54,572	496.6	436.3	301.1	0.084	20,136	4,153,461	484.8
Bladder	Total	25	110,297	22.7	19.8	30.9	0.331	2,033	8,322,505	24.4
	Male	22	55,725	39.5	32.9	25.4	0.586	1,580	4,169,044	37.9
	Female	3	54,572	5.5	5.0	6.6	0.212	453	4,153,461	10.9
Brain - malignant	Total	9	110,297	8.2	7.3	9.2	1.000	622	8,322,505	7.5
	Male	3	55,725	5.4	4.7	5.8	0.332	379	4,169,044	9.1
	Female	6	54,572	11.0	10.2	3.4	0.271	243	4,153,461	5.9
Brain and other CNS - non-malignant	Total	21	110,297	19.0	16.8	17.7	0.486	1,179	8,322,505	14.2
	Male	7	55,725	12.6	11.1	5.9	0.751	388	4,169,044	9.3
	Female	14	54,572	25.7	22.9	11.7	0.565	791	4,153,461	19.0
Breast	Total	104	110,297	94.3	79.6	96.6	0.477	6,154	8,322,505	73.9
	Male	1	55,725	1.8	1.5	0.7	1.000	47	4,169,044	1.1
	Female	103	54,572	188.7	160.6	94.3	0.396	6,107	4,153,461	147.0
Breast - in situ	Total	19	110,297	17.2	14.2	17.4	0.756	1,083	8,322,505	13.0
	Male	-	55,725	-	-	0.1	1.000	5	4,169,044	0.1
	Female	19	54,572	34.8	28.8	17.2	0.718	1,078	4,153,461	26.0
Cervix	Female	3	54,572	5.5	4.9	4.2	0.800	285	4,153,461	6.9
Colorectal	Total	31	110,297	28.1	24.3	50.5	0.004 <<	3,297	8,322,505	39.6
	Male	20	55,725	35.9	30.0	28.0	0.146	1,751	4,169,044	42.0
	Female	11	54,572	20.2	18.1	22.7	0.011 <<	1,546	4,153,461	37.2
Corpus Uteri	Female	17	54,572	31.2	25.9	19.6	0.650	1,241	4,153,461	29.9
Esophagus	Total	5	110,297	4.5	3.8	7.6	0.457	487	8,322,505	5.9
	Male	5	55,725	9.0	7.4	6.6	0.708	406	4,169,044	9.7
	Female	-	54,572	-	-	1.2	0.598	81	4,153,461	2.0
Hodgkin Lymphoma	Total	2	110,297	1.8	1.8	2.5	1.000	186	8,322,505	2.2
	Male	1	55,725	1.8	1.8	1.4	1.000	105	4,169,044	2.5
	Female	1	54,572	1.8	1.8	1.1	1.000	81	4,153,461	2.0
Kidney and Renal Pelvis	Total	16	110,297	14.5	12.3	24.6	0.089	1,575	8,322,505	18.9
	Male	9	55,725	16.2	13.4	16.6	0.065	1,025	4,169,044	24.6
	Female	7	54,572	12.8	11.3	8.2	0.843	550	4,153,461	13.2
Larynx	Total	2	110,297	1.8	1.5	3.2	0.758	204	8,322,505	2.5
	Male	1	55,725	1.8	1.5	2.6	0.517	162	4,169,044	3.9
	Female	1	54,572	1.8	1.6	0.6	0.937	42	4,153,461	1.0
Leukemia	Total	21	110,297	19.0	17.1	22.1	0.927	1,496	8,322,505	18.0
	Male	14	55,725	25.1	21.6	13.8	1.000	890	4,169,044	21.3
	Female	7	54,572	12.8	12.1	8.4	0.786	606	4,153,461	14.6
Liver and Bile Duct	Total	4	110,297	3.6	3.0	12.5	0.011 <<	781	8,322,505	9.4
	Male	4	55,725	7.2	5.8	9.3	0.094	561	4,169,044	13.5
	Female	-	54,572	-	-	3.3	0.070	220	4,153,461	5.3
Lung and Bronchus	Total	41	110,297	37.2	31.8	73.6	0.000 <<	4,757	8,322,505	57.2
	Male	24	55,725	43.1	35.4	40.1	0.009 <<	2,464	4,169,044	59.1
	Female	17	54,572	31.2	27.6	34.0	0.002 <<	2,293	4,153,461	55.2
Melanoma of the Skin	Total	63	110,297	57.1	49.7	39.2	0.001 >>	2,576	8,322,505	31.0
	Male	39	55,725	70.0	59.1	24.2	0.007 >>	1,531	4,169,044	36.7
	Female	24	54,572	44.0	39.0	15.5	0.053	1,045	4,153,461	25.2
Myeloma	Total	12	110,297	10.9	9.4	10.0	0.601	648	8,322,505	7.8
	Male	7	55,725	12.6	10.4	6.4	0.901	392	4,169,044	9.4
	Female	5	54,572	9.2	8.2	3.8	0.645	256	4,153,461	6.2
Non-Hodgkin Lymphoma	Total	25	110,297	22.7	19.6	27.9	0.673	1,819	8,322,505	21.9
	Male	16	55,725	28.7	24.1	16.8	0.983	1,050	4,169,044	25.2
	Female	9	54,572	16.5	14.7	11.3	0.613	769	4,153,461	18.5
Oral Cavity and Pharynx	Total	26	110,297	23.6	19.7	18.3	0.105	1,154	8,322,505	13.9
	Male	19	55,725	34.1	27.9	13.4	0.175	822	4,169,044	19.7
	Female	7	54,572	12.8	11.0	5.1	0.502	332	4,153,461	8.0
Ovary	Female	13	54,572	23.8	20.8	7.9	0.119	525	4,153,461	12.6
Pancreas	Total	15	110,297	13.6	11.7	19.7	0.348	1,282	8,322,505	15.4
	Male	7	55,725	12.6	10.3	11.6	0.221	711	4,169,044	17.1
	Female	8	54,572	14.7	13.4	8.2	1.000	571	4,153,461	13.7
Prostate	Male	87	55,725	156.1	125.6	88.2	0.957	5,306	4,169,044	127.3
Stomach	Total	3	110,297	2.7	2.4	7.7	0.106	503	8,322,505	6.0
	Male	1	55,725	1.8	1.5	5.4	0.060	335	4,169,044	8.0
	Female	2	54,572	3.7	3.4	2.4	1.000	168	4,153,461	4.0
Testis	Male	7	55,725	12.6	13.3	3.4	0.114	269	4,169,044	6.5
Thyroid	Total	11	110,297	10.0	9.0	18.2	0.099	1,245	8,322,505	15.0
	Male	2	55,725	3.6	3.2	4.9	0.259	328	4,169,044	7.9
	Female	9	54,572	16.5	15.0	13.2	0.303	917	4,153,461	22.1
Pediatric Age 0 to 19	Total	4	27,311	14.6	14.9	4.8	0.967	423	2,390,643	17.7
	Male	-	14,005	-	-	2.5	0.168	220	1,220,176	18.0
	Female	4	13,306	30.1	30.3	2.3	0.396	203	1,170,467	17.3

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN BLAINE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Blaine County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	573	111,863	512.2	480.2	964.5	0.000 <<	68,527	8,476,892	808.4
	Male	338	56,420	599.1	521.4	547.9	0.000 <<	35,892	4,247,082	845.1
	Female	235	55,443	423.9	429.7	422.0	0.000 <<	32,635	4,229,810	771.5
All Malignant Cancers	Total	144	111,863	128.7	112.3	220.5	0.000 <<	14,580	8,476,892	172.0
	Male	93	56,420	164.8	136.9	126.1	0.002 <<	7,885	4,247,082	185.7
	Female	51	55,443	92.0	83.5	96.7	0.000 <<	6,695	4,229,810	158.3
Bladder	Total	4	111,863	3.6	3.3	6.6	0.431	462	8,476,892	5.5
	Male	3	56,420	5.3	4.6	5.3	0.442	347	4,247,082	8.2
	Female	1	55,443	1.8	1.8	1.5	1.000	115	4,229,810	2.7
Brain and Other Nervous System	Total	6	111,863	5.4	4.6	7.8	0.677	503	8,476,892	5.9
	Male	2	56,420	3.5	2.9	5.1	0.228	321	4,247,082	7.6
	Female	4	55,443	7.2	6.2	2.8	0.597	182	4,229,810	4.3
Breast	Total	10	111,863	8.9	7.8	16.5	0.123	1,089	8,476,892	12.8
	Male	-	56,420	-	-	0.2	1.000	11	4,247,082	0.3
	Female	10	55,443	18.0	16.1	15.8	0.167	1,078	4,229,810	25.5
Cervix	Female	1	55,443	1.8	1.5	1.2	1.000	80	4,229,810	1.9
Colorectal	Total	8	111,863	7.2	6.3	18.5	0.010 <<	1,238	8,476,892	14.6
	Male	7	56,420	12.4	10.3	10.7	0.326	672	4,247,082	15.8
	Female	1	55,443	1.8	1.7	7.9	0.006 <<	566	4,229,810	13.4
Corpus Uteri	Female	3	55,443	5.4	4.8	2.4	0.862	161	4,229,810	3.8
Esophagus	Total	2	111,863	1.8	1.5	7.4	0.045 <<	474	8,476,892	5.6
	Male	2	56,420	3.5	2.9	6.3	0.100	387	4,247,082	9.1
	Female	-	55,443	-	-	1.3	0.559	87	4,229,810	2.1
Hodgkin Lymphoma	Total	-	111,863	-	-	0.3	1.000	23	8,476,892	0.3
	Male	-	56,420	-	-	0.1	1.000	9	4,247,082	0.2
	Female	-	55,443	-	-	0.2	1.000	14	4,229,810	0.3
Kidney	Total	1	111,863	0.9	0.8	5.4	0.058	354	8,476,892	4.2
	Male	1	56,420	1.8	1.5	3.5	0.271	216	4,247,082	5.1
	Female	-	55,443	-	-	1.9	0.292	138	4,229,810	3.3
Larynx	Total	-	111,863	-	-	0.9	0.777	63	8,476,892	0.7
	Male	-	56,420	-	-	0.8	0.867	53	4,247,082	1.2
	Female	-	55,443	-	-	0.1	1.000	10	4,229,810	0.2
Leukemia	Total	4	111,863	3.6	3.2	9.0	0.108	620	8,476,892	7.3
	Male	3	56,420	5.3	4.5	5.7	0.370	361	4,247,082	8.5
	Female	1	55,443	1.8	1.8	3.5	0.273	259	4,229,810	6.1
Liver and Bile Duct	Total	4	111,863	3.6	3.0	9.7	0.071	609	8,476,892	7.2
	Male	3	56,420	5.3	4.3	6.9	0.173	418	4,247,082	9.8
	Female	1	55,443	1.8	1.6	2.9	0.429	191	4,229,810	4.5
Lung and Bronchus	Total	22	111,863	19.7	16.8	46.6	0.000 <<	3,018	8,476,892	35.6
	Male	9	56,420	16.0	13.0	26.3	0.000 <<	1,608	4,247,082	37.9
	Female	13	55,443	23.4	21.0	20.7	0.100	1,410	4,229,810	33.3
Melanoma of the Skin	Total	6	111,863	5.4	4.7	4.1	0.461	272	8,476,892	3.2
	Male	6	56,420	10.6	8.9	2.8	0.128	176	4,247,082	4.1
	Female	-	55,443	-	-	1.4	0.495	96	4,229,810	2.3
Myeloma	Total	6	111,863	5.4	4.8	4.9	0.731	329	8,476,892	3.9
	Male	5	56,420	8.9	7.4	3.1	0.402	194	4,247,082	4.6
	Female	1	55,443	1.8	1.7	1.9	0.867	135	4,229,810	3.2
Non-Hodgkin Lymphoma	Total	5	111,863	4.5	4.0	8.2	0.352	552	8,476,892	6.5
	Male	5	56,420	8.9	7.4	4.7	1.000	298	4,247,082	7.0
	Female	-	55,443	-	-	3.4	0.064	254	4,229,810	6.0
Oral Cavity and Pharynx	Total	2	111,863	1.8	1.5	3.6	0.596	234	8,476,892	2.8
	Male	1	56,420	1.8	1.4	2.6	0.537	159	4,247,082	3.7
	Female	1	55,443	1.8	1.6	1.1	1.000	75	4,229,810	1.8
Ovary	Female	4	55,443	7.2	6.3	5.4	0.744	362	4,229,810	8.6
Pancreas	Total	9	111,863	8.0	6.8	16.9	0.055	1,089	8,476,892	12.8
	Male	6	56,420	10.6	8.6	9.8	0.281	600	4,247,082	14.1
	Female	3	55,443	5.4	4.9	7.1	0.149	489	4,229,810	11.6
Prostate	Male	20	56,420	35.4	30.6	14.0	0.150	906	4,247,082	21.3
Stomach	Total	-	111,863	-	-	3.0	0.103	199	8,476,892	2.3
	Male	-	56,420	-	-	1.8	0.320	116	4,247,082	2.7
	Female	-	55,443	-	-	1.2	0.631	83	4,229,810	2.0

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Blaine County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	74.8%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	12.7%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	68.0%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	75.3%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	10.5%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	11.4%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	44.3%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	6.4%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	51.0%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	30.5%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	57.7%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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BOISE COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 260 cases of invasive cancer were diagnosed among Boise County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Boise County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Boise County	State of Idaho
All Sites/Types	**260**	**42,577**
Female Breast	**39**	**6,210**
Prostate	**48**	**5,393**
Lung & Bronchus	**35**	**4,798**
Colorectal	**16**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Boise County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Boise County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Boise County was 725.5 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (504.0) gives an estimate of the relative burden of disease in Boise County.

The age- and sex-adjusted incidence rate of invasive cancer in Boise County, all sites combined, was 483.8 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Boise County (260) than expected (270.8) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 69 Boise County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Boise County and the State of Idaho, 2015–2019

Mortality 2015–2019	Boise County	State of Idaho
All Deaths	**280**	**69,101**
Cancer Deaths	**69**	**14,724**
% of All Deaths	*24.6%*	*21.3%*
Lung & Bronchus	**19**	**3,040**
Colorectal	**5**	**1,246**
Pancreas	**7**	**1,098**
Female Breast	**6**	**1,088**
Prostate	**2**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Boise County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Boise County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Boise County, all sites combined, was 128.4 deaths per 100,000 persons per year during 2015–2019, compared with 171.4 for the remainder of the state. There were statistically significantly fewer cancer deaths in Boise County (69) than expected (92.1) based upon rates in the remainder of the state (p=.015).

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN BOISE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Boise County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	260	35,839	725.5	483.8	270.8	0.535	42,317	8,396,963	504.0
	Male	148	18,571	796.9	480.5	161.3	0.314	22,022	4,206,198	523.6
	Female	112	17,268	648.6	471.8	115.0	0.831	20,295	4,190,765	484.3
Bladder	Total	19	35,839	53.0	35.2	13.1	0.148	2,039	8,396,963	24.3
	Male	13	18,571	70.0	41.8	11.7	0.789	1,589	4,206,198	37.8
	Female	6	17,268	34.7	25.6	2.5	0.087	450	4,190,765	10.7
Brain - malignant	Total	3	35,839	8.4	6.3	3.6	1.000	628	8,396,963	7.5
	Male	3	18,571	16.2	11.2	2.4	0.867	379	4,206,198	9.0
	Female	-	17,268	-	-	1.3	0.564	249	4,190,765	5.9
Brain and other CNS - non-malignant	Total	8	35,839	22.3	16.2	7.0	0.803	1,192	8,396,963	14.2
	Male	5	18,571	26.9	19.1	2.4	0.197	390	4,206,198	9.3
	Female	3	17,268	17.4	13.1	4.4	0.723	802	4,190,765	19.1
Breast	Total	39	35,839	108.8	72.3	40.0	0.964	6,219	8,396,963	74.1
	Male	-	18,571	-	-	0.3	1.000	48	4,206,198	1.1
	Female	39	17,268	225.9	157.8	36.4	0.709	6,171	4,190,765	147.3
Breast - in situ	Total	10	35,839	27.9	18.3	7.1	0.361	1,092	8,396,963	13.0
	Male	1	18,571	5.4	3.2	0.0	0.059	4	4,206,198	0.1
	Female	9	17,268	52.1	35.5	6.6	0.435	1,088	4,190,765	26.0
Cervix	Female	1	17,268	5.8	4.8	1.4	1.000	287	4,190,765	6.8
Colorectal	Total	16	35,839	44.6	30.3	20.8	0.344	3,312	8,396,963	39.4
	Male	10	18,571	53.8	33.5	12.5	0.596	1,761	4,206,198	41.9
	Female	6	17,268	34.7	25.8	8.6	0.487	1,551	4,190,765	37.0
Corpus Uteri	Female	4	17,268	23.2	15.2	7.9	0.215	1,254	4,190,765	29.9
Esophagus	Total	7	35,839	19.5	12.5	3.2	0.095	485	8,396,963	5.8
	Male	6	18,571	32.3	19.0	3.0	0.176	405	4,206,198	9.6
	Female	1	17,268	5.8	4.0	0.5	0.756	80	4,190,765	1.9
Hodgkin Lymphoma	Total	2	35,839	5.6	5.2	0.9	0.419	186	8,396,963	2.2
	Male	-	18,571	-	-	0.5	1.000	106	4,206,198	2.5
	Female	2	17,268	11.6	11.0	0.3	0.096	80	4,190,765	1.9
Kidney and Renal Pelvis	Total	4	35,839	11.2	7.3	10.3	0.048 <<	1,587	8,396,963	18.9
	Male	1	18,571	5.4	3.3	7.5	0.009 <<	1,033	4,206,198	24.6
	Female	3	17,268	17.4	12.6	3.1	1.000	554	4,190,765	13.2
Larynx	Total	-	35,839	-	-	1.4	0.494	206	8,396,963	2.5
	Male	-	18,571	-	-	1.3	0.569	163	4,206,198	3.9
	Female	-	17,268	-	-	0.2	1.000	43	4,190,765	1.0
Leukemia	Total	6	35,839	16.7	12.1	8.9	0.428	1,511	8,396,963	18.0
	Male	3	18,571	16.2	10.5	6.1	0.279	901	4,206,198	21.4
	Female	3	17,268	17.4	14.2	3.1	1.000	610	4,190,765	14.6
Liver and Bile Duct	Total	8	35,839	22.3	13.7	5.4	0.355	777	8,396,963	9.3
	Male	6	18,571	32.3	18.4	4.3	0.538	559	4,206,198	13.3
	Female	2	17,268	11.6	8.0	1.3	0.744	218	4,190,765	5.2
Lung and Bronchus	Total	35	35,839	97.7	63.2	31.4	0.567	4,763	8,396,963	56.7
	Male	19	18,571	102.3	59.5	18.7	1.000	2,469	4,206,198	58.7
	Female	16	17,268	92.7	66.6	13.1	0.499	2,294	4,190,765	54.7
Melanoma of the Skin	Total	14	35,839	39.1	27.3	16.0	0.728	2,625	8,396,963	31.3
	Male	6	18,571	32.3	20.5	10.9	0.167	1,564	4,206,198	37.2
	Female	8	17,268	46.3	35.1	5.8	0.450	1,061	4,190,765	25.3
Myeloma	Total	2	35,839	5.6	3.7	4.3	0.399	658	8,396,963	7.8
	Male	2	18,571	10.8	6.3	3.0	0.846	397	4,206,198	9.4
	Female	-	17,268	-	-	1.5	0.460	261	4,190,765	6.2
Non-Hodgkin Lymphoma	Total	15	35,839	41.9	28.3	11.6	0.380	1,829	8,396,963	21.8
	Male	8	18,571	43.1	26.8	7.5	0.957	1,058	4,206,198	25.2
	Female	7	17,268	40.5	29.8	4.3	0.295	771	4,190,765	18.4
Oral Cavity and Pharynx	Total	7	35,839	19.5	12.4	7.9	0.944	1,173	8,396,963	14.0
	Male	6	18,571	32.3	19.1	6.2	1.000	835	4,206,198	19.9
	Female	1	17,268	5.8	4.1	2.0	0.829	338	4,190,765	8.1
Ovary	Female	1	17,268	5.8	4.2	3.1	0.378	537	4,190,765	12.8
Pancreas	Total	11	35,839	30.7	20.3	8.3	0.433	1,286	8,396,963	15.3
	Male	7	18,571	37.7	22.2	5.3	0.575	711	4,206,198	16.9
	Female	4	17,268	23.2	17.3	3.2	0.782	575	4,190,765	13.7
Prostate	Male	48	18,571	258.5	144.1	42.3	0.421	5,345	4,206,198	127.1
Stomach	Total	1	35,839	2.8	1.9	3.2	0.347	505	8,396,963	6.0
	Male	1	18,571	5.4	3.3	2.4	0.609	335	4,206,198	8.0
	Female	-	17,268	-	-	0.9	0.801	170	4,190,765	4.1
Testis	Male	1	18,571	5.4	7.0	0.9	1.000	275	4,206,198	6.5
Thyroid	Total	6	35,839	16.7	13.5	6.6	1.000	1,250	8,396,963	14.9
	Male	3	18,571	16.2	12.0	2.0	0.620	327	4,206,198	7.8
	Female	3	17,268	17.4	14.4	4.6	0.659	923	4,190,765	22.0
Pediatric Age 0 to 19	Total	3	6,969	43.0	43.0	1.2	0.253	424	2,410,985	17.6
	Male	-	3,768	-	-	0.7	1.000	220	1,230,413	17.9
	Female	3	3,201	93.7	93.5	0.6	0.038 >>	204	1,180,572	17.3

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN BOISE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Boise County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	280	36,891	759.0	589.5	382.2	0.000 <<	68,820	8,551,864	804.7
	Male	166	19,140	867.3	589.0	237.3	0.000 <<	36,064	4,284,362	841.8
	Female	114	17,751	642.2	575.7	152.0	0.002 <<	32,756	4,267,502	767.6
All Malignant Cancers	Total	69	36,891	187.0	128.4	92.1	0.015 <<	14,655	8,551,864	171.4
	Male	33	19,140	172.4	105.8	57.9	0.001 <<	7,945	4,284,362	185.4
	Female	36	17,751	202.8	155.0	36.5	1.000	6,710	4,267,502	157.2
Bladder	Total	2	36,891	5.4	4.1	2.7	1.000	464	8,551,864	5.4
	Male	1	19,140	5.2	3.5	2.4	0.637	349	4,284,362	8.1
	Female	1	17,751	5.6	4.7	0.6	0.868	115	4,267,502	2.7
Brain and Other Nervous System	Total	3	36,891	8.1	5.5	3.2	1.000	506	8,551,864	5.9
	Male	3	19,140	15.7	9.9	2.3	0.791	320	4,284,362	7.5
	Female	-	17,751	-	-	1.1	0.672	186	4,267,502	4.4
Breast	Total	6	36,891	16.3	11.2	6.8	0.947	1,093	8,551,864	12.8
	Male	-	19,140	-	-	0.1	1.000	11	4,284,362	0.3
	Female	6	17,751	33.8	25.2	6.0	1.000	1,082	4,267,502	25.4
Cervix	Female	1	17,751	5.6	4.1	0.5	0.737	80	4,267,502	1.9
Colorectal	Total	5	36,891	13.6	9.5	7.6	0.456	1,241	8,551,864	14.5
	Male	3	19,140	15.7	9.8	4.8	0.586	676	4,284,362	15.8
	Female	2	17,751	11.3	9.0	3.0	0.866	565	4,267,502	13.2
Corpus Uteri	Female	-	17,751	-	-	1.0	0.762	164	4,267,502	3.8
Esophagus	Total	3	36,891	8.1	5.3	3.1	1.000	473	8,551,864	5.5
	Male	2	19,140	10.4	6.2	2.9	0.882	387	4,284,362	9.0
	Female	1	17,751	5.6	4.2	0.5	0.763	86	4,267,502	2.0
Hodgkin Lymphoma	Total	-	36,891	-	-	0.1	1.000	23	8,551,864	0.3
	Male	-	19,140	-	-	0.0	1.000	9	4,284,362	0.2
	Female	-	17,751	-	-	0.1	1.000	14	4,267,502	0.3
Kidney	Total	-	36,891	-	-	2.3	0.205	355	8,551,864	4.2
	Male	-	19,140	-	-	1.6	0.391	217	4,284,362	5.1
	Female	-	17,751	-	-	0.7	0.963	138	4,267,502	3.2
Larynx	Total	-	36,891	-	-	0.4	1.000	63	8,551,864	0.7
	Male	-	19,140	-	-	0.4	1.000	53	4,284,362	1.2
	Female	-	17,751	-	-	0.1	1.000	10	4,267,502	0.2
Leukemia	Total	2	36,891	5.4	4.0	3.6	0.598	622	8,551,864	7.3
	Male	2	19,140	10.4	6.7	2.5	1.000	362	4,284,362	8.4
	Female	-	17,751	-	-	1.2	0.578	260	4,267,502	6.1
Liver and Bile Duct	Total	6	36,891	16.3	10.2	4.2	0.489	607	8,551,864	7.1
	Male	4	19,140	20.9	11.9	3.3	0.833	417	4,284,362	9.7
	Female	2	17,751	11.3	8.0	1.1	0.610	190	4,267,502	4.5
Lung and Bronchus	Total	19	36,891	51.5	34.1	19.7	0.997	3,021	8,551,864	35.3
	Male	8	19,140	41.8	24.5	12.3	0.276	1,609	4,284,362	37.6
	Female	11	17,751	62.0	46.6	7.8	0.332	1,412	4,267,502	33.1
Melanoma of the Skin	Total	-	36,891	-	-	1.7	0.356	278	8,551,864	3.3
	Male	-	19,140	-	-	1.3	0.548	182	4,284,362	4.2
	Female	-	17,751	-	-	0.5	1.000	96	4,267,502	2.2
Myeloma	Total	1	36,891	2.7	1.9	2.0	0.793	334	8,551,864	3.9
	Male	1	19,140	5.2	3.3	1.4	1.000	198	4,284,362	4.6
	Female	-	17,751	-	-	0.7	1.000	136	4,267,502	3.2
Non-Hodgkin Lymphoma	Total	3	36,891	8.1	5.8	3.4	1.000	554	8,551,864	6.5
	Male	1	19,140	5.2	3.2	2.2	0.712	302	4,284,362	7.0
	Female	2	17,751	11.3	9.4	1.3	0.715	252	4,267,502	5.9
Oral Cavity and Pharynx	Total	1	36,891	2.7	1.8	1.5	1.000	235	8,551,864	2.7
	Male	1	19,140	5.2	3.1	1.2	1.000	159	4,284,362	3.7
	Female	-	17,751	-	-	0.4	1.000	76	4,267,502	1.8
Ovary	Female	1	17,751	5.6	4.0	2.1	0.750	365	4,267,502	8.6
Pancreas	Total	7	36,891	19.0	12.5	7.2	1.000	1,091	8,551,864	12.8
	Male	3	19,140	15.7	9.1	4.6	0.642	603	4,284,362	14.1
	Female	4	17,751	22.5	16.9	2.7	0.571	488	4,267,502	11.4
Prostate	Male	2	19,140	10.4	6.9	6.3	0.100	924	4,284,362	21.6
Stomach	Total	-	36,891	-	-	1.2	0.592	199	8,551,864	2.3
	Male	-	19,140	-	-	0.8	0.872	116	4,284,362	2.7
	Female	-	17,751	-	-	0.4	1.000	83	4,267,502	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Boise County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	81.0%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	9.9%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	12.7%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	7.9%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	4.0%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	31.1%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	22.4%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	26.9%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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BONNER COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 1,533 cases of invasive cancer were diagnosed among Bonner County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Bonner County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Bonner County	State of Idaho
All Sites/Types	**1,533**	**42,577**
Female Breast	**192**	**6,210**
Prostate	**215**	**5,393**
Lung & Bronchus	**189**	**4,798**
Colorectal	**150**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Bonner County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Bonner County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Bonner County was 717.7 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (499.4) gives an estimate of the relative burden of disease in Bonner County.

The age- and sex-adjusted incidence rate of invasive cancer in Bonner County, all sites combined, was 506.7 cases per 100,000 persons per year during 2014–2018. There were more cases of cancer in Bonner County (1,533) than expected (1,510.9) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 604 Bonner County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Bonner County and the State of Idaho, 2015–2019

Mortality 2015–2019	Bonner County	State of Idaho
All Deaths	**2,272**	**69,101**
Cancer Deaths	**604**	**14,724**
% of All Deaths	*26.6%*	*21.3%*
Lung & Bronchus	**136**	**3,040**
Colorectal	**60**	**1,246**
Pancreas	**44**	**1,098**
Female Breast	**41**	**1,088**
Prostate	**49**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Bonner County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Bonner County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Bonner County, all sites combined, was 191.2 deaths per 100,000 persons per year during 2015–2019, compared with 168.7 for the remainder of the state. There were statistically significantly more cancer deaths in Bonner County (604) than expected (532.8) based upon rates in the remainder of the state (p=.003).

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN BONNER COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Bonner County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	1,533	213,605	717.7	506.7	1,510.9	0.577	41,044	8,219,197	499.4
	Male	836	106,528	784.8	517.7	836.5	1.000	21,334	4,118,241	518.0
	Female	697	107,077	650.9	488.0	686.4	0.697	19,710	4,100,956	480.6
Bladder	Total	89	213,605	41.7	28.3	75.5	0.139	1,969	8,219,197	24.0
	Male	65	106,528	61.0	39.1	62.1	0.745	1,537	4,118,241	37.3
	Female	24	107,077	22.4	16.1	15.7	0.061	432	4,100,956	10.5
Brain - malignant	Total	25	213,605	11.7	9.2	20.1	0.324	606	8,219,197	7.4
	Male	16	106,528	15.0	11.2	12.7	0.420	366	4,118,241	8.9
	Female	9	107,077	8.4	6.9	7.6	0.703	240	4,100,956	5.9
Brain and other CNS - non-malignant	Total	37	213,605	17.3	13.1	39.8	0.729	1,163	8,219,197	14.1
	Male	14	106,528	13.1	9.9	13.1	0.867	381	4,118,241	9.3
	Female	23	107,077	21.5	16.6	26.4	0.589	782	4,100,956	19.1
Breast	Total	196	213,605	91.8	66.0	219.1	0.124	6,062	8,219,197	73.8
	Male	4	106,528	3.8	2.5	1.7	0.185	44	4,118,241	1.1
	Female	192	107,077	179.3	133.4	211.2	0.196	6,018	4,100,956	146.7
Breast - in situ	Total	42	213,605	19.7	14.3	37.9	0.551	1,060	8,219,197	12.9
	Male	-	106,528	-	-	0.2	1.000	5	4,118,241	0.1
	Female	42	107,077	39.2	29.4	36.8	0.430	1,055	4,100,956	25.7
Cervix	Female	9	107,077	8.4	7.5	8.1	0.856	279	4,100,956	6.8
Colorectal	Total	150	213,605	70.2	49.9	116.1	0.003 >>	3,178	8,219,197	38.7
	Male	76	106,528	71.3	48.3	64.7	0.185	1,695	4,118,241	41.2
	Female	74	107,077	69.1	51.5	52.0	0.005 >>	1,483	4,100,956	36.2
Corpus Uteri	Female	52	107,077	48.6	35.2	43.5	0.229	1,206	4,100,956	29.4
Esophagus	Total	27	213,605	12.6	8.6	17.9	0.052	465	8,219,197	5.7
	Male	22	106,528	20.7	13.3	15.6	0.144	389	4,118,241	9.4
	Female	5	107,077	4.7	3.3	2.8	0.312	76	4,100,956	1.9
Hodgkin Lymphoma	Total	4	213,605	1.9	1.8	5.0	0.879	184	8,219,197	2.2
	Male	2	106,528	1.9	1.8	2.8	0.920	104	4,118,241	2.5
	Female	2	107,077	1.9	1.8	2.2	1.000	80	4,100,956	2.0
Kidney and Renal Pelvis	Total	58	213,605	27.2	19.1	56.6	0.888	1,533	8,219,197	18.7
	Male	31	106,528	29.1	19.5	38.7	0.244	1,003	4,118,241	24.4
	Female	27	107,077	25.2	18.7	18.7	0.082	530	4,100,956	12.9
Larynx	Total	4	213,605	1.9	1.3	7.7	0.230	202	8,219,197	2.5
	Male	3	106,528	2.8	1.8	6.5	0.228	160	4,118,241	3.9
	Female	1	107,077	0.9	0.7	1.5	1.000	42	4,100,956	1.0
Leukemia	Total	49	213,605	22.9	16.8	52.1	0.738	1,468	8,219,197	17.9
	Male	32	106,528	30.0	20.8	32.5	1.000	872	4,118,241	21.2
	Female	17	107,077	15.9	12.3	20.1	0.577	596	4,100,956	14.5
Liver and Bile Duct	Total	30	213,605	14.0	9.4	29.2	0.928	755	8,219,197	9.2
	Male	22	106,528	20.7	13.3	21.9	1.000	543	4,118,241	13.2
	Female	8	107,077	7.5	5.3	7.7	1.000	212	4,100,956	5.2
Lung and Bronchus	Total	189	213,605	88.5	59.5	178.2	0.438	4,609	8,219,197	56.1
	Male	106	106,528	99.5	63.0	97.4	0.406	2,382	4,118,241	57.8
	Female	83	107,077	77.5	55.1	81.8	0.925	2,227	4,100,956	54.3
Melanoma of the Skin	Total	66	213,605	30.9	22.8	90.8	0.008 <<	2,573	8,219,197	31.3
	Male	44	106,528	41.3	28.3	57.6	0.075	1,526	4,118,241	37.1
	Female	22	107,077	20.5	16.3	34.4	0.032 <<	1,047	4,100,956	25.5
Myeloma	Total	18	213,605	8.4	5.7	24.6	0.210	642	8,219,197	7.8
	Male	11	106,528	10.3	6.6	15.8	0.276	388	4,118,241	9.4
	Female	7	107,077	6.5	4.7	9.2	0.598	254	4,100,956	6.2
Non-Hodgkin Lymphoma	Total	55	213,605	25.7	18.2	65.8	0.199	1,789	8,219,197	21.8
	Male	32	106,528	30.0	20.3	39.6	0.254	1,034	4,118,241	25.1
	Female	23	107,077	21.5	15.8	26.7	0.543	755	4,100,956	18.4
Oral Cavity and Pharynx	Total	49	213,605	22.9	15.9	42.3	0.340	1,131	8,219,197	13.8
	Male	33	106,528	31.0	20.5	31.7	0.858	808	4,118,241	19.6
	Female	16	107,077	14.9	11.1	11.4	0.226	323	4,100,956	7.9
Ovary	Female	23	107,077	21.5	16.3	17.8	0.265	515	4,100,956	12.6
Pancreas	Total	49	213,605	22.9	15.7	47.4	0.852	1,248	8,219,197	15.2
	Male	28	106,528	26.3	17.0	27.6	0.991	690	4,118,241	16.8
	Female	21	107,077	19.6	14.2	20.1	0.905	558	4,100,956	13.6
Prostate	Male	215	106,528	201.8	126.2	214.2	0.973	5,178	4,118,241	125.7
Stomach	Total	21	213,605	9.8	6.9	17.9	0.530	485	8,219,197	5.9
	Male	14	106,528	13.1	8.7	12.5	0.752	322	4,118,241	7.8
	Female	7	107,077	6.5	4.9	5.7	0.691	163	4,100,956	4.0
Testis	Male	7	106,528	6.6	7.8	5.9	0.746	269	4,118,241	6.5
Thyroid	Total	22	213,605	10.3	8.8	37.4	0.009 <<	1,234	8,219,197	15.0
	Male	6	106,528	5.6	4.5	10.5	0.198	324	4,118,241	7.9
	Female	16	107,077	14.9	13.2	26.8	0.035 <<	910	4,100,956	22.2
Pediatric Age 0 to 19	Total	4	46,903	8.5	8.5	8.4	0.160	423	2,371,051	17.8
	Male	2	23,622	8.5	8.5	4.2	0.412	218	1,210,559	18.0
	Female	2	23,281	8.6	8.5	4.1	0.434	205	1,160,492	17.7

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN BONNER COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Bonner County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	2,272	218,055	1,041.9	758.8	2,390.4	0.015 <<	66,828	8,370,700	798.4
	Male	1,208	108,739	1,110.9	767.9	1,313.4	0.003 <<	35,022	4,194,763	834.9
	Female	1,064	109,316	973.3	742.9	1,090.9	0.426	31,806	4,175,937	761.6
All Malignant Cancers	Total	604	218,055	277.0	191.2	532.8	0.003 >>	14,120	8,370,700	168.7
	Male	330	108,739	303.5	197.1	305.2	0.167	7,648	4,194,763	182.3
	Female	274	109,316	250.6	182.9	232.2	0.008 >>	6,472	4,175,937	155.0
Bladder	Total	21	218,055	9.6	6.7	16.6	0.340	445	8,370,700	5.3
	Male	17	108,739	15.6	10.3	13.1	0.346	333	4,194,763	7.9
	Female	4	109,316	3.7	2.7	4.0	1.000	112	4,175,937	2.7
Brain and Other Nervous System	Total	23	218,055	10.5	7.6	17.7	0.253	486	8,370,700	5.8
	Male	14	108,739	12.9	8.8	11.7	0.570	309	4,194,763	7.4
	Female	9	109,316	8.2	6.1	6.2	0.349	177	4,175,937	4.2
Breast	Total	41	218,055	18.8	13.2	39.1	0.805	1,058	8,370,700	12.6
	Male	-	108,739	-	-	0.5	1.000	11	4,194,763	0.3
	Female	41	109,316	37.5	27.6	37.3	0.584	1,047	4,175,937	25.1
Cervix	Female	3	109,316	2.7	2.1	2.6	0.967	78	4,175,937	1.9
Colorectal	Total	60	218,055	27.5	19.4	43.9	0.024 >>	1,186	8,370,700	14.2
	Male	33	108,739	30.3	20.3	25.1	0.146	646	4,194,763	15.4
	Female	27	109,316	24.7	18.3	19.1	0.102	540	4,175,937	12.9
Corpus Uteri	Female	7	109,316	6.4	4.5	5.8	0.738	157	4,175,937	3.8
Esophagus	Total	28	218,055	12.8	8.7	17.1	0.019 >>	448	8,370,700	5.4
	Male	22	108,739	20.2	13.0	14.8	0.092	367	4,194,763	8.7
	Female	6	109,316	5.5	4.0	2.9	0.153	81	4,175,937	1.9
Hodgkin Lymphoma	Total	-	218,055	-	-	0.7	0.951	23	8,370,700	0.3
	Male	-	108,739	-	-	0.3	1.000	9	4,194,763	0.2
	Female	-	109,316	-	-	0.4	1.000	14	4,175,937	0.3
Kidney	Total	12	218,055	5.5	3.7	13.2	0.887	343	8,370,700	4.1
	Male	4	108,739	3.7	2.4	8.6	0.140	213	4,194,763	5.1
	Female	8	109,316	7.3	5.2	4.8	0.218	130	4,175,937	3.1
Larynx	Total	-	218,055	-	-	2.4	0.178	63	8,370,700	0.8
	Male	-	108,739	-	-	2.1	0.243	53	4,194,763	1.3
	Female	-	109,316	-	-	0.4	1.000	10	4,175,937	0.2
Leukemia	Total	23	218,055	10.5	7.5	22.0	0.886	601	8,370,700	7.2
	Male	12	108,739	11.0	7.3	13.7	0.773	352	4,194,763	8.4
	Female	11	109,316	10.1	7.7	8.6	0.489	249	4,175,937	6.0
Liver and Bile Duct	Total	26	218,055	11.9	8.0	22.9	0.575	587	8,370,700	7.0
	Male	18	108,739	16.6	10.4	16.6	0.792	403	4,194,763	9.6
	Female	8	109,316	7.3	5.2	6.8	0.735	184	4,175,937	4.4
Lung and Bronchus	Total	136	218,055	62.4	42.0	112.5	0.034 >>	2,904	8,370,700	34.7
	Male	72	108,739	66.2	41.7	63.7	0.325	1,545	4,194,763	36.8
	Female	64	109,316	58.5	41.9	49.7	0.057	1,359	4,175,937	32.5
Melanoma of the Skin	Total	12	218,055	5.5	3.9	9.7	0.548	266	8,370,700	3.2
	Male	7	108,739	6.4	4.3	6.8	1.000	175	4,194,763	4.2
	Female	5	109,316	4.6	3.5	3.1	0.415	91	4,175,937	2.2
Myeloma	Total	5	218,055	2.3	1.6	12.6	0.029 <<	330	8,370,700	3.9
	Male	3	108,739	2.8	1.8	7.9	0.091	196	4,194,763	4.7
	Female	2	109,316	1.8	1.3	4.8	0.281	134	4,175,937	3.2
Non-Hodgkin Lymphoma	Total	16	218,055	7.3	5.1	20.4	0.389	541	8,370,700	6.5
	Male	8	108,739	7.4	4.8	11.8	0.339	295	4,194,763	7.0
	Female	8	109,316	7.3	5.3	8.8	0.962	246	4,175,937	5.9
Oral Cavity and Pharynx	Total	12	218,055	5.5	3.8	8.6	0.312	224	8,370,700	2.7
	Male	7	108,739	6.4	4.1	6.2	0.839	153	4,194,763	3.6
	Female	5	109,316	4.6	3.3	2.5	0.231	71	4,175,937	1.7
Ovary	Female	9	109,316	8.2	5.9	13.0	0.330	357	4,175,937	8.5
Pancreas	Total	44	218,055	20.2	13.6	40.7	0.642	1,054	8,370,700	12.6
	Male	21	108,739	19.3	12.3	23.8	0.657	585	4,194,763	13.9
	Female	23	109,316	21.0	15.0	17.2	0.205	469	4,175,937	11.2
Prostate	Male	49	108,739	45.1	29.4	34.9	0.027 >>	877	4,194,763	20.9
Stomach	Total	6	218,055	2.8	2.0	7.1	0.875	193	8,370,700	2.3
	Male	2	108,739	1.8	1.2	4.4	0.369	114	4,194,763	2.7
	Female	4	109,316	3.7	2.8	2.7	0.588	79	4,175,937	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Bonner County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	77.1%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	12.8%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	70.4%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	75.5%
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	57.0%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	17.8%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	7.7%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	51.3%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	4.5%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	36.8%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	22.3%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	19.9%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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BONNEVILLE COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 2,521 cases of invasive cancer were diagnosed among Bonneville County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Bonneville County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Bonneville County	State of Idaho
All Sites/Types	**2,521**	**42,577**
Female Breast	**346**	**6,210**
Prostate	**346**	**5,393**
Lung & Bronchus	**204**	**4,798**
Colorectal	**212**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Bonneville County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Bonneville County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Bonneville County was 449.3 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (508.9) gives an estimate of the relative burden of disease in Bonneville County.

The age- and sex-adjusted incidence rate of invasive cancer in Bonneville County, all sites combined, was 517.3 cases per 100,000 persons per year during 2014–2018. There were more cases of cancer in Bonneville County (2,521) than expected (2,479.7) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 796 Bonneville County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Bonneville County and the State of Idaho, 2015–2019

Mortality 2015–2019	Bonneville County	State of Idaho
All Deaths	**4,503**	**69,101**
Cancer Deaths	**796**	**14,724**
% of All Deaths	*17.7%*	*21.3%*
Lung & Bronchus	**123**	**3,040**
Colorectal	**85**	**1,246**
Pancreas	**67**	**1,098**
Female Breast	**72**	**1,088**
Prostate	**56**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Bonneville County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Bonneville County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Bonneville County, all sites combined, was 161.7 deaths per 100,000 persons per year during 2015–2019, compared with 173.7 for the remainder of the state. There were statistically significantly fewer cancer deaths in Bonneville County (796) than expected (855.1) based upon rates in the remainder of the state (p=.043).

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN BONNEVILLE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Bonneville County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	2,521	561,135	449.3	517.3	2,479.7	0.411	40,056	7,871,667	508.9
	Male	1,293	279,418	462.7	542.0	1,262.4	0.396	20,877	3,945,351	529.2
	Female	1,228	281,717	435.9	495.5	1,210.6	0.624	19,179	3,926,316	488.5
Bladder	Total	90	561,135	16.0	18.7	120.4	0.005 <<	1,968	7,871,667	25.0
	Male	70	279,418	25.1	29.6	91.7	0.022 <<	1,532	3,945,351	38.8
	Female	20	281,717	7.1	8.2	27.2	0.188	436	3,926,316	11.1
Brain - malignant	Total	37	561,135	6.6	7.2	38.7	0.869	594	7,871,667	7.5
	Male	25	279,418	8.9	10.0	22.7	0.681	357	3,945,351	9.0
	Female	12	281,717	4.3	4.6	15.9	0.405	237	3,926,316	6.0
Brain and other CNS - non-malignant	Total	82	561,135	14.6	16.4	71.1	0.219	1,118	7,871,667	14.2
	Male	29	279,418	10.4	11.5	23.3	0.287	366	3,945,351	9.3
	Female	53	281,717	18.8	21.2	48.0	0.503	752	3,926,316	19.2
Breast	Total	354	561,135	63.1	72.4	366.5	0.533	5,904	7,871,667	75.0
	Male	8	279,418	2.9	3.3	2.5	0.008 >>	40	3,945,351	1.0
	Female	346	281,717	122.8	140.6	367.6	0.271	5,864	3,926,316	149.4
Breast - in situ	Total	58	561,135	10.3	11.9	64.6	0.454	1,044	7,871,667	13.3
	Male	-	279,418	-	-	0.3	1.000	5	3,945,351	0.1
	Female	58	281,717	20.6	23.7	64.8	0.440	1,039	3,926,316	26.5
Cervix	Female	17	281,717	6.0	6.5	18.2	0.905	271	3,926,316	6.9
Colorectal	Total	212	561,135	37.8	43.4	193.3	0.194	3,116	7,871,667	39.6
	Male	99	279,418	35.4	41.1	102.1	0.810	1,672	3,945,351	42.4
	Female	113	281,717	40.1	45.7	91.0	0.028 >>	1,444	3,926,316	36.8
Corpus Uteri	Female	82	281,717	29.1	33.6	73.1	0.322	1,176	3,926,316	30.0
Esophagus	Total	21	561,135	3.7	4.4	28.7	0.168	471	7,871,667	6.0
	Male	17	279,418	6.1	7.2	23.6	0.198	394	3,945,351	10.0
	Female	4	281,717	1.4	1.6	4.8	0.966	77	3,926,316	2.0
Hodgkin Lymphoma	Total	15	561,135	2.7	2.8	11.7	0.406	173	7,871,667	2.2
	Male	11	279,418	3.9	4.2	6.3	0.117	95	3,945,351	2.4
	Female	4	281,717	1.4	1.5	5.3	0.764	78	3,926,316	2.0
Kidney and Renal Pelvis	Total	84	561,135	15.0	17.3	93.1	0.372	1,507	7,871,667	19.1
	Male	51	279,418	18.3	21.2	59.8	0.279	983	3,945,351	24.9
	Female	33	281,717	11.7	13.4	33.0	1.000	524	3,926,316	13.3
Larynx	Total	4	561,135	0.7	0.8	12.3	0.012 <<	202	7,871,667	2.6
	Male	2	279,418	0.7	0.8	9.6	0.007 <<	161	3,945,351	4.1
	Female	2	281,717	0.7	0.8	2.6	1.000	41	3,926,316	1.0
Leukemia	Total	89	561,135	15.9	17.8	90.8	0.901	1,428	7,871,667	18.1
	Male	54	279,418	19.3	21.9	53.0	0.932	850	3,945,351	21.5
	Female	35	281,717	12.4	13.8	37.4	0.770	578	3,926,316	14.7
Liver and Bile Duct	Total	26	561,135	4.6	5.4	46.3	0.002 <<	759	7,871,667	9.6
	Male	16	279,418	5.7	6.7	33.0	0.002 <<	549	3,945,351	13.9
	Female	10	281,717	3.5	4.1	13.1	0.490	210	3,926,316	5.3
Lung and Bronchus	Total	204	561,135	36.4	42.7	279.0	0.000 <<	4,594	7,871,667	58.4
	Male	103	279,418	36.9	44.0	141.6	0.001 <<	2,385	3,945,351	60.5
	Female	101	281,717	35.9	41.6	136.8	0.002 <<	2,209	3,926,316	56.3
Melanoma of the Skin	Total	194	561,135	34.6	39.3	153.5	0.002 >>	2,445	7,871,667	31.1
	Male	109	279,418	39.0	45.0	89.6	0.052	1,461	3,945,351	37.0
	Female	85	281,717	30.2	33.7	63.3	0.011 >>	984	3,926,316	25.1
Myeloma	Total	40	561,135	7.1	8.4	37.7	0.753	620	7,871,667	7.9
	Male	24	279,418	8.6	10.3	22.2	0.761	375	3,945,351	9.5
	Female	16	281,717	5.7	6.6	15.2	0.912	245	3,926,316	6.2
Non-Hodgkin Lymphoma	Total	102	561,135	18.2	20.9	108.0	0.608	1,742	7,871,667	22.1
	Male	56	279,418	20.0	23.3	61.5	0.531	1,010	3,945,351	25.6
	Female	46	281,717	16.3	18.6	46.0	1.000	732	3,926,316	18.6
Oral Cavity and Pharynx	Total	74	561,135	13.2	15.3	67.9	0.488	1,106	7,871,667	14.1
	Male	59	279,418	21.1	24.7	47.3	0.111	782	3,945,351	19.8
	Female	15	281,717	5.3	6.1	20.3	0.286	324	3,926,316	8.3
Ovary	Female	35	281,717	12.4	14.1	31.8	0.610	503	3,926,316	12.8
Pancreas	Total	71	561,135	12.7	14.7	75.2	0.683	1,226	7,871,667	15.6
	Male	41	279,418	14.7	17.3	40.6	0.986	677	3,945,351	17.2
	Female	30	281,717	10.6	12.2	34.4	0.517	549	3,926,316	14.0
Prostate	Male	346	279,418	123.8	148.2	298.7	0.008 >>	5,047	3,945,351	127.9
Stomach	Total	24	561,135	4.3	4.9	29.8	0.330	482	7,871,667	6.1
	Male	18	279,418	6.4	7.5	19.3	0.881	318	3,945,351	8.1
	Female	6	281,717	2.1	2.4	10.4	0.218	164	3,926,316	4.2
Testis	Male	23	279,418	8.2	8.5	17.4	0.228	253	3,945,351	6.4
Thyroid	Total	160	561,135	28.5	31.1	71.7	0.000 >>	1,096	7,871,667	13.9
	Male	43	279,418	15.4	17.2	18.2	0.000 >>	287	3,945,351	7.3
	Female	117	281,717	41.5	44.8	53.8	0.000 >>	809	3,926,316	20.6
Pediatric Age 0 to 19	Total	31	187,762	16.5	16.7	33.0	0.812	396	2,230,192	17.8
	Male	19	95,860	19.8	20.0	16.8	0.653	201	1,138,321	17.7
	Female	12	91,902	13.1	13.2	16.2	0.357	195	1,091,871	17.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN BONNEVILLE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Bonneville County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	4,503	571,961	787.3	889.3	4,080.3	0.000 >>	64,597	8,016,794	805.8
	Male	2,290	285,125	803.2	919.2	2,104.1	0.000 >>	33,940	4,018,377	844.6
	Female	2,213	286,836	771.5	862.4	1,967.4	0.000 >>	30,657	3,998,417	766.7
All Malignant Cancers	Total	796	571,961	139.2	161.7	855.1	0.043 <<	13,928	8,016,794	173.7
	Male	406	285,125	142.4	167.9	455.6	0.019 <<	7,572	4,018,377	188.4
	Female	390	286,836	136.0	156.1	397.1	0.745	6,356	3,998,417	159.0
Bladder	Total	23	571,961	4.0	4.6	27.5	0.454	443	8,016,794	5.5
	Male	18	285,125	6.3	7.3	20.3	0.711	332	4,018,377	8.3
	Female	5	286,836	1.7	2.0	7.0	0.607	111	3,998,417	2.8
Brain and Other Nervous System	Total	27	571,961	4.7	5.4	30.0	0.668	482	8,016,794	6.0
	Male	19	285,125	6.7	7.7	18.6	0.981	304	4,018,377	7.6
	Female	8	286,836	2.8	3.2	11.3	0.421	178	3,998,417	4.5
Breast	Total	74	571,961	12.9	14.9	63.4	0.211	1,025	8,016,794	12.8
	Male	2	285,125	0.7	0.8	0.5	0.200	9	4,018,377	0.2
	Female	72	286,836	25.1	28.8	63.6	0.321	1,016	3,998,417	25.4
Cervix	Female	5	286,836	1.7	2.0	4.8	1.000	76	3,998,417	1.9
Colorectal	Total	85	571,961	14.9	17.1	71.9	0.143	1,161	8,016,794	14.5
	Male	47	285,125	16.5	19.2	38.5	0.201	632	4,018,377	15.7
	Female	38	286,836	13.2	15.1	33.3	0.458	529	3,998,417	13.2
Corpus Uteri	Female	5	286,836	1.7	2.0	9.8	0.149	159	3,998,417	4.0
Esophagus	Total	18	571,961	3.1	3.7	27.9	0.063	458	8,016,794	5.7
	Male	15	285,125	5.3	6.3	22.3	0.136	374	4,018,377	9.3
	Female	3	286,836	1.0	1.2	5.2	0.474	84	3,998,417	2.1
Hodgkin Lymphoma	Total	3	571,961	0.5	0.6	1.3	0.278	20	8,016,794	0.2
	Male	1	285,125	0.4	0.4	0.5	0.810	8	4,018,377	0.2
	Female	2	286,836	0.7	0.8	0.8	0.359	12	3,998,417	0.3
Kidney	Total	21	571,961	3.7	4.3	20.4	0.953	334	8,016,794	4.2
	Male	11	285,125	3.9	4.6	12.3	0.845	206	4,018,377	5.1
	Female	10	286,836	3.5	4.0	8.0	0.563	128	3,998,417	3.2
Larynx	Total	4	571,961	0.7	0.8	3.6	0.977	59	8,016,794	0.7
	Male	3	285,125	1.1	1.2	3.1	1.000	50	4,018,377	1.2
	Female	1	286,836	0.3	0.4	0.6	0.856	9	3,998,417	0.2
Leukemia	Total	26	571,961	4.5	5.2	37.2	0.069	598	8,016,794	7.5
	Male	15	285,125	5.3	6.2	21.2	0.208	349	4,018,377	8.7
	Female	11	286,836	3.8	4.3	15.9	0.269	249	3,998,417	6.2
Liver and Bile Duct	Total	23	571,961	4.0	4.8	35.6	0.033 <<	590	8,016,794	7.4
	Male	10	285,125	3.5	4.2	24.3	0.002 <<	411	4,018,377	10.2
	Female	13	286,836	4.5	5.3	11.0	0.626	179	3,998,417	4.5
Lung and Bronchus	Total	123	571,961	21.5	25.3	176.8	0.000 <<	2,917	8,016,794	36.4
	Male	67	285,125	23.5	28.2	91.8	0.008 <<	1,550	4,018,377	38.6
	Female	56	286,836	19.5	22.6	84.6	0.001 <<	1,367	3,998,417	34.2
Melanoma of the Skin	Total	20	571,961	3.5	4.0	16.0	0.376	258	8,016,794	3.2
	Male	11	285,125	3.9	4.5	10.4	0.946	171	4,018,377	4.3
	Female	9	286,836	3.1	3.6	5.5	0.204	87	3,998,417	2.2
Myeloma	Total	26	571,961	4.5	5.3	18.9	0.138	309	8,016,794	3.9
	Male	13	285,125	4.6	5.4	11.1	0.653	186	4,018,377	4.6
	Female	13	286,836	4.5	5.2	7.6	0.096	123	3,998,417	3.1
Non-Hodgkin Lymphoma	Total	33	571,961	5.8	6.7	32.2	0.940	524	8,016,794	6.5
	Male	16	285,125	5.6	6.6	17.3	0.878	287	4,018,377	7.1
	Female	17	286,836	5.9	6.8	14.9	0.647	237	3,998,417	5.9
Oral Cavity and Pharynx	Total	8	571,961	1.4	1.6	13.9	0.128	228	8,016,794	2.8
	Male	4	285,125	1.4	1.7	9.4	0.088	156	4,018,377	3.9
	Female	4	286,836	1.4	1.6	4.5	1.000	72	3,998,417	1.8
Ovary	Female	32	286,836	11.2	12.9	20.7	0.025 >>	334	3,998,417	8.4
Pancreas	Total	67	571,961	11.7	13.8	62.6	0.612	1,031	8,016,794	12.9
	Male	34	285,125	11.9	14.3	33.9	1.000	572	4,018,377	14.2
	Female	33	286,836	11.5	13.3	28.5	0.445	459	3,998,417	11.5
Prostate	Male	56	285,125	19.6	22.9	53.0	0.712	870	4,018,377	21.7
Stomach	Total	6	571,961	1.0	1.2	11.9	0.095	193	8,016,794	2.4
	Male	3	285,125	1.1	1.2	6.9	0.175	113	4,018,377	2.8
	Female	3	286,836	1.0	1.2	5.0	0.517	80	3,998,417	2.0

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Bonneville County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	84.7%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	16.4%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	71.8%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	70.7%
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	67.8%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	12.5%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	5.6%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	51.4%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	7.2%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	31.4%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	21.0%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	21.6%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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BOUNDARY COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 384 cases of invasive cancer were diagnosed among Boundary County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Boundary County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Boundary County	State of Idaho
All Sites/Types	**384**	**42,577**
Female Breast	**53**	**6,210**
Prostate	**49**	**5,393**
Lung & Bronchus	**44**	**4,798**
Colorectal	**38**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Boundary County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Boundary County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Boundary County was 662.8 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (503.8) gives an estimate of the relative burden of disease in Boundary County.

The age- and sex-adjusted incidence rate of invasive cancer in Boundary County, all sites combined, was 512.1 cases per 100,000 persons per year during 2014–2018. There were more cases of cancer in Boundary County (384) than expected (377.8) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 129 Boundary County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Boundary County and the State of Idaho, 2015–2019

Mortality 2015–2019	Boundary County	State of Idaho
All Deaths	**567**	**69,101**
Cancer Deaths	**129**	**14,724**
% of All Deaths	*22.8%*	*21.3%*
Lung & Bronchus	**27**	**3,040**
Colorectal	**10**	**1,246**
Pancreas	**6**	**1,098**
Female Breast	**8**	**1,088**
Prostate	**7**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Boundary County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Boundary County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Boundary County, all sites combined, was 164.4 deaths per 100,000 persons per year during 2015–2019, compared with 171.1 for the remainder of the state. There were fewer cancer deaths in Boundary County (129) than expected (134.2) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN BOUNDARY COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Boundary County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	384	57,937	662.8	512.1	377.8	0.764	42,193	8,374,865	503.8
	Male	196	29,140	672.6	492.2	208.6	0.406	21,974	4,195,629	523.7
	Female	188	28,797	652.8	528.5	172.1	0.243	20,219	4,179,236	483.8
Bladder	Total	18	57,937	31.1	23.0	19.0	0.935	2,040	8,374,865	24.4
	Male	14	29,140	48.0	34.0	15.6	0.813	1,588	4,195,629	37.8
	Female	4	28,797	13.9	10.7	4.0	1.000	452	4,179,236	10.8
Brain - malignant	Total	8	57,937	13.8	11.6	5.1	0.296	623	8,374,865	7.4
	Male	5	29,140	17.2	13.9	3.2	0.452	377	4,195,629	9.0
	Female	3	28,797	10.4	9.0	2.0	0.621	246	4,179,236	5.9
Brain and other CNS - non-malignant	Total	10	57,937	17.3	14.1	10.1	1.000	1,190	8,374,865	14.2
	Male	3	29,140	10.3	8.4	3.3	1.000	392	4,195,629	9.3
	Female	7	28,797	24.3	20.1	6.6	0.990	798	4,179,236	19.1
Breast	Total	53	57,937	91.5	72.1	54.5	0.914	6,205	8,374,865	74.1
	Male	-	29,140	-	-	0.5	1.000	48	4,195,629	1.1
	Female	53	28,797	184.0	148.8	52.5	0.977	6,157	4,179,236	147.3
Breast - in situ	Total	8	57,937	13.8	11.0	9.5	0.790	1,094	8,374,865	13.1
	Male	-	29,140	-	-	0.0	1.000	5	4,195,629	0.1
	Female	8	28,797	27.8	22.7	9.2	0.864	1,089	4,179,236	26.1
Cervix	Female	2	28,797	6.9	6.5	2.1	1.000	286	4,179,236	6.8
Colorectal	Total	38	57,937	65.6	50.8	29.4	0.142	3,290	8,374,865	39.3
	Male	18	29,140	61.8	46.2	16.3	0.732	1,753	4,195,629	41.8
	Female	20	28,797	69.5	55.8	13.2	0.096	1,537	4,179,236	36.8
Corpus Uteri	Female	18	28,797	62.5	49.4	10.8	0.056	1,240	4,179,236	29.7
Esophagus	Total	7	57,937	12.1	9.0	4.5	0.336	485	8,374,865	5.8
	Male	6	29,140	20.6	14.8	3.9	0.400	405	4,195,629	9.7
	Female	1	28,797	3.5	2.7	0.7	1.000	80	4,179,236	1.9
Hodgkin Lymphoma	Total	1	57,937	1.7	1.7	1.3	1.000	187	8,374,865	2.2
	Male	-	29,140	-	-	0.8	0.935	106	4,195,629	2.5
	Female	1	28,797	3.5	3.4	0.6	0.873	81	4,179,236	1.9
Kidney and Renal Pelvis	Total	12	57,937	20.7	16.0	14.2	0.687	1,579	8,374,865	18.9
	Male	8	29,140	27.5	20.4	9.6	0.765	1,026	4,195,629	24.5
	Female	4	28,797	13.9	11.2	4.7	0.972	553	4,179,236	13.2
Larynx	Total	1	57,937	1.7	1.3	1.9	0.871	205	8,374,865	2.4
	Male	1	29,140	3.4	2.5	1.6	1.000	162	4,195,629	3.9
	Female	-	28,797	-	-	0.4	1.000	43	4,179,236	1.0
Leukemia	Total	16	57,937	27.6	21.7	13.2	0.509	1,501	8,374,865	17.9
	Male	7	29,140	24.0	18.1	8.2	0.838	897	4,195,629	21.4
	Female	9	28,797	31.3	25.6	5.1	0.147	604	4,179,236	14.5
Liver and Bile Duct	Total	4	57,937	6.9	5.2	7.2	0.307	781	8,374,865	9.3
	Male	2	29,140	6.9	5.0	5.4	0.190	563	4,195,629	13.4
	Female	2	28,797	6.9	5.4	1.9	1.000	218	4,179,236	5.2
Lung and Bronchus	Total	44	57,937	75.9	56.1	44.5	1.000	4,754	8,374,865	56.8
	Male	24	29,140	82.4	57.8	24.4	1.000	2,464	4,195,629	58.7
	Female	20	28,797	69.5	53.9	20.3	1.000	2,290	4,179,236	54.8
Melanoma of the Skin	Total	16	57,937	27.6	22.1	22.7	0.186	2,623	8,374,865	31.3
	Male	12	29,140	41.2	31.1	14.3	0.658	1,558	4,195,629	37.1
	Female	4	28,797	13.9	11.8	8.6	0.137	1,065	4,179,236	25.5
Myeloma	Total	4	57,937	6.9	5.1	6.1	0.544	656	8,374,865	7.8
	Male	4	29,140	13.7	9.7	3.9	1.000	395	4,195,629	9.4
	Female	-	28,797	-	-	2.3	0.197	261	4,179,236	6.2
Non-Hodgkin Lymphoma	Total	19	57,937	32.8	25.3	16.4	0.576	1,825	8,374,865	21.8
	Male	13	29,140	44.6	33.1	9.8	0.388	1,053	4,195,629	25.1
	Female	6	28,797	20.8	16.6	6.7	0.999	772	4,179,236	18.5
Oral Cavity and Pharynx	Total	6	57,937	10.4	7.9	10.6	0.195	1,174	8,374,865	14.0
	Male	6	29,140	20.6	15.2	7.8	0.669	835	4,195,629	19.9
	Female	-	28,797	-	-	2.9	0.109	339	4,179,236	8.1
Ovary	Female	12	28,797	41.7	33.9	4.5	0.004 >>	526	4,179,236	12.6
Pancreas	Total	8	57,937	13.8	10.3	11.9	0.324	1,289	8,374,865	15.4
	Male	4	29,140	13.7	9.8	6.9	0.362	714	4,195,629	17.0
	Female	4	28,797	13.9	10.8	5.1	0.850	575	4,179,236	13.8
Prostate	Male	49	29,140	168.2	118.7	52.6	0.686	5,344	4,195,629	127.4
Stomach	Total	7	57,937	12.1	9.2	4.5	0.341	499	8,374,865	6.0
	Male	5	29,140	17.2	12.6	3.1	0.412	331	4,195,629	7.9
	Female	2	28,797	6.9	5.5	1.5	0.851	168	4,179,236	4.0
Testis	Male	3	29,140	10.3	12.1	1.6	0.438	273	4,195,629	6.5
Thyroid	Total	4	57,937	6.9	6.3	9.5	0.081	1,252	8,374,865	14.9
	Male	-	29,140	-	-	2.7	0.139	330	4,195,629	7.9
	Female	4	28,797	13.9	13.0	6.8	0.385	922	4,179,236	22.1
Pediatric Age 0 to 19	Total	7	14,972	46.8	46.2	2.6	0.038 >>	420	2,402,982	17.5
	Male	4	7,707	51.9	51.2	1.4	0.102	216	1,226,474	17.6
	Female	3	7,265	41.3	40.9	1.3	0.273	204	1,176,508	17.3

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN BOUNDARY COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Boundary County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	567	59,226	957.3	741.0	614.8	0.054	68,533	8,529,529	803.5
	Male	316	29,757	1,061.9	805.3	329.8	0.468	35,914	4,273,745	840.3
	Female	251	29,469	851.7	667.0	288.4	0.027 <<	32,619	4,255,784	766.5
All Malignant Cancers	Total	129	59,226	217.8	164.4	134.2	0.692	14,595	8,529,529	171.1
	Male	70	29,757	235.2	170.2	76.1	0.528	7,908	4,273,745	185.0
	Female	59	29,469	200.2	157.1	59.0	1.000	6,687	4,255,784	157.1
Bladder	Total	4	59,226	6.8	5.0	4.3	1.000	462	8,529,529	5.4
	Male	4	29,757	13.4	9.8	3.3	0.849	346	4,273,745	8.1
	Female	-	29,469	-	-	1.0	0.704	116	4,255,784	2.7
Brain and Other Nervous System	Total	5	59,226	8.4	6.7	4.4	0.909	504	8,529,529	5.9
	Male	5	29,757	16.8	12.8	2.9	0.337	318	4,273,745	7.4
	Female	-	29,469	-	-	1.6	0.409	186	4,255,784	4.4
Breast	Total	9	59,226	15.2	11.7	9.8	0.955	1,090	8,529,529	12.8
	Male	1	29,757	3.4	2.3	0.1	0.191	10	4,273,745	0.2
	Female	8	29,469	27.1	21.5	9.5	0.794	1,080	4,255,784	25.4
Cervix	Female	1	29,469	3.4	2.9	0.7	0.960	80	4,255,784	1.9
Colorectal	Total	10	59,226	16.9	12.9	11.2	0.874	1,236	8,529,529	14.5
	Male	5	29,757	16.8	12.5	6.3	0.795	674	4,273,745	15.8
	Female	5	29,469	17.0	13.3	5.0	1.000	562	4,255,784	13.2
Corpus Uteri	Female	2	29,469	6.8	5.2	1.5	0.855	162	4,255,784	3.8
Esophagus	Total	7	59,226	11.8	8.9	4.3	0.297	469	8,529,529	5.5
	Male	6	29,757	20.2	14.6	3.7	0.336	383	4,273,745	9.0
	Female	1	29,469	3.4	2.6	0.8	1.000	86	4,255,784	2.0
Hodgkin Lymphoma	Total	-	59,226	-	-	0.2	1.000	23	8,529,529	0.3
	Male	-	29,757	-	-	0.1	1.000	9	4,273,745	0.2
	Female	-	29,469	-	-	0.1	1.000	14	4,255,784	0.3
Kidney	Total	2	59,226	3.4	2.5	3.3	0.726	353	8,529,529	4.1
	Male	2	29,757	6.7	4.8	2.1	1.000	215	4,273,745	5.0
	Female	-	29,469	-	-	1.2	0.580	138	4,255,784	3.2
Larynx	Total	-	59,226	-	-	0.6	1.000	63	8,529,529	0.7
	Male	-	29,757	-	-	0.5	1.000	53	4,273,745	1.2
	Female	-	29,469	-	-	0.1	1.000	10	4,255,784	0.2
Leukemia	Total	5	59,226	8.4	6.5	5.6	1.000	619	8,529,529	7.3
	Male	2	29,757	6.7	4.9	3.4	0.662	362	4,273,745	8.5
	Female	3	29,469	10.2	8.2	2.2	0.765	257	4,255,784	6.0
Liver and Bile Duct	Total	2	59,226	3.4	2.5	5.7	0.154	611	8,529,529	7.2
	Male	-	29,757	-	-	4.1	0.033 <<	421	4,273,745	9.9
	Female	2	29,469	6.8	5.3	1.7	0.999	190	4,255,784	4.5
Lung and Bronchus	Total	27	59,226	45.6	33.9	28.2	0.923	3,013	8,529,529	35.3
	Male	16	29,757	53.8	37.9	15.8	1.000	1,601	4,273,745	37.5
	Female	11	29,469	37.3	29.1	12.6	0.799	1,412	4,255,784	33.2
Melanoma of the Skin	Total	2	59,226	3.4	2.6	2.5	1.000	276	8,529,529	3.2
	Male	2	29,757	6.7	5.0	1.7	1.000	180	4,273,745	4.2
	Female	-	29,469	-	-	0.8	0.879	96	4,255,784	2.3
Myeloma	Total	2	59,226	3.4	2.5	3.1	0.802	333	8,529,529	3.9
	Male	2	29,757	6.7	4.8	1.9	1.000	197	4,273,745	4.6
	Female	-	29,469	-	-	1.2	0.599	136	4,255,784	3.2
Non-Hodgkin Lymphoma	Total	6	59,226	10.1	7.6	5.1	0.805	551	8,529,529	6.5
	Male	4	29,757	13.4	9.7	2.9	0.655	299	4,273,745	7.0
	Female	2	29,469	6.8	5.3	2.2	1.000	252	4,255,784	5.9
Oral Cavity and Pharynx	Total	2	59,226	3.4	2.5	2.2	1.000	234	8,529,529	2.7
	Male	1	29,757	3.4	2.4	1.5	1.000	159	4,273,745	3.7
	Female	1	29,469	3.4	2.7	0.7	0.968	75	4,255,784	1.8
Ovary	Female	7	29,469	23.8	18.6	3.2	0.087	359	4,255,784	8.4
Pancreas	Total	6	59,226	10.1	7.6	10.2	0.240	1,092	8,529,529	12.8
	Male	3	29,757	10.1	7.2	5.9	0.327	603	4,273,745	14.1
	Female	3	29,469	10.2	7.9	4.4	0.729	489	4,255,784	11.5
Prostate	Male	7	29,757	23.5	16.9	8.9	0.669	919	4,273,745	21.5
Stomach	Total	2	59,226	3.4	2.6	1.8	1.000	197	8,529,529	2.3
	Male	1	29,757	3.4	2.5	1.1	1.000	115	4,273,745	2.7
	Female	1	29,469	3.4	2.7	0.7	1.000	82	4,255,784	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Boundary County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	71.3%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	11.1%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	16.8%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	5.2%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	4.3%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	33.9%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	21.0%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	16.7%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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BUTTE COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 94 cases of invasive cancer were diagnosed among Butte County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Butte County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Butte County	State of Idaho
All Sites/Types	**94**	**42,577**
Female Breast	**10**	**6,210**
Prostate	**5**	**5,393**
Lung & Bronchus	**14**	**4,798**
Colorectal	**4**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Butte County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Butte County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Butte County was 724.9 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (504.6) gives an estimate of the relative burden of disease in Butte County.

The age- and sex-adjusted incidence rate of invasive cancer in Butte County, all sites combined, was 534.3 cases per 100,000 persons per year during 2014–2018. There were more cases of cancer in Butte County (94) than expected (88.8) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 33 Butte County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Butte County and the State of Idaho, 2015–2019

Mortality 2015–2019	Butte County	State of Idaho
All Deaths	**150**	**69,101**
Cancer Deaths	**33**	**14,724**
% of All Deaths	*22.0%*	*21.3%*
Lung & Bronchus	**9**	**3,040**
Colorectal	**2**	**1,246**
Pancreas	**1**	**1,098**
Female Breast	**2**	**1,088**
Prostate	**1**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Butte County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Butte County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Butte County, all sites combined, was 176.5 deaths per 100,000 persons per year during 2015–2019, compared with 171.3 for the remainder of the state. There were more cancer deaths in Butte County (33) than expected (32.0) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN BUTTE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Butte County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	94	12,968	724.9	534.3	88.8	0.606	42,483	8,419,834	504.6
	Male	49	6,591	743.4	509.6	50.4	0.915	22,121	4,218,178	524.4
	Female	45	6,377	705.7	555.1	39.3	0.401	20,362	4,201,656	484.6
Bladder	Total	7	12,968	54.0	36.9	4.6	0.369	2,051	8,419,834	24.4
	Male	7	6,591	106.2	68.6	3.9	0.193	1,595	4,218,178	37.8
	Female	-	6,377	-	-	0.9	0.774	456	4,201,656	10.9
Brain - malignant	Total	1	12,968	7.7	6.2	1.2	1.000	630	8,419,834	7.5
	Male	1	6,591	15.2	11.8	0.8	1.000	381	4,218,178	9.0
	Female	-	6,377	-	-	0.4	1.000	249	4,201,656	5.9
Brain and other CNS - non-malignant	Total	2	12,968	15.4	12.2	2.3	1.000	1,198	8,419,834	14.2
	Male	2	6,591	30.3	23.6	0.8	0.374	393	4,218,178	9.3
	Female	-	6,377	-	-	1.5	0.443	805	4,201,656	19.2
Breast	Total	10	12,968	77.1	59.4	12.5	0.596	6,248	8,419,834	74.2
	Male	-	6,591	-	-	0.1	1.000	48	4,218,178	1.1
	Female	10	6,377	156.8	125.8	11.7	0.752	6,200	4,201,656	147.6
Breast - in situ	Total	2	12,968	15.4	12.3	2.1	1.000	1,100	8,419,834	13.1
	Male	-	6,591	-	-	0.0	1.000	5	4,218,178	0.1
	Female	2	6,377	31.4	26.2	2.0	1.000	1,095	4,201,656	26.1
Cervix	Female	-	6,377	-	-	0.4	1.000	288	4,201,656	6.9
Colorectal	Total	4	12,968	30.8	22.7	6.9	0.357	3,324	8,419,834	39.5
	Male	4	6,591	60.7	43.0	3.9	1.000	1,767	4,218,178	41.9
	Female	-	6,377	-	-	3.1	0.091	1,557	4,201,656	37.1
Corpus Uteri	Female	1	6,377	15.7	12.5	2.4	0.621	1,257	4,201,656	29.9
Esophagus	Total	1	12,968	7.7	5.4	1.1	1.000	491	8,419,834	5.8
	Male	1	6,591	15.2	10.2	1.0	1.000	410	4,218,178	9.7
	Female	-	6,377	-	-	0.2	1.000	81	4,201,656	1.9
Hodgkin Lymphoma	Total	-	12,968	-	-	0.3	1.000	188	8,419,834	2.2
	Male	-	6,591	-	-	0.2	1.000	106	4,218,178	2.5
	Female	-	6,377	-	-	0.1	1.000	82	4,201,656	2.0
Kidney and Renal Pelvis	Total	3	12,968	23.1	17.2	3.3	1.000	1,588	8,419,834	18.9
	Male	2	6,591	30.3	21.5	2.3	1.000	1,032	4,218,178	24.5
	Female	1	6,377	15.7	12.1	1.1	1.000	556	4,201,656	13.2
Larynx	Total	1	12,968	7.7	5.5	0.4	0.718	205	8,419,834	2.4
	Male	-	6,591	-	-	0.4	1.000	163	4,218,178	3.9
	Female	1	6,377	15.7	12.1	0.1	0.158	42	4,201,656	1.0
Leukemia	Total	6	12,968	46.3	34.1	3.2	0.202	1,511	8,419,834	17.9
	Male	3	6,591	45.5	32.1	2.0	0.645	901	4,218,178	21.4
	Female	3	6,377	47.0	36.0	1.2	0.246	610	4,201,656	14.5
Liver and Bile Duct	Total	-	12,968	-	-	1.7	0.374	785	8,419,834	9.3
	Male	-	6,591	-	-	1.3	0.555	565	4,218,178	13.4
	Female	-	6,377	-	-	0.4	1.000	220	4,201,656	5.2
Lung and Bronchus	Total	14	12,968	108.0	73.9	10.8	0.395	4,784	8,419,834	56.8
	Male	8	6,591	121.4	78.2	6.0	0.517	2,480	4,218,178	58.8
	Female	6	6,377	94.1	68.2	4.8	0.706	2,304	4,201,656	54.8
Melanoma of the Skin	Total	9	12,968	69.4	53.7	5.2	0.169	2,630	8,419,834	31.2
	Male	3	6,591	45.5	32.6	3.4	1.000	1,567	4,218,178	37.1
	Female	6	6,377	94.1	79.6	1.9	0.027 >>	1,063	4,201,656	25.3
Myeloma	Total	5	12,968	38.6	26.7	1.5	0.033 >>	655	8,419,834	7.8
	Male	4	6,591	60.7	39.5	0.9	0.032 >>	395	4,218,178	9.4
	Female	1	6,377	15.7	11.5	0.5	0.834	260	4,201,656	6.2
Non-Hodgkin Lymphoma	Total	6	12,968	46.3	33.6	3.9	0.398	1,838	8,419,834	21.8
	Male	4	6,591	60.7	42.2	2.4	0.436	1,062	4,218,178	25.2
	Female	2	6,377	31.4	23.7	1.6	0.925	776	4,201,656	18.5
Oral Cavity and Pharynx	Total	2	12,968	15.4	11.5	2.4	1.000	1,178	8,419,834	14.0
	Male	-	6,591	-	-	1.9	0.312	841	4,218,178	19.9
	Female	2	6,377	31.4	24.8	0.6	0.275	337	4,201,656	8.0
Ovary	Female	1	6,377	15.7	12.5	1.0	1.000	537	4,201,656	12.8
Pancreas	Total	1	12,968	7.7	5.4	2.9	0.441	1,296	8,419,834	15.4
	Male	1	6,591	15.2	10.1	1.7	0.997	717	4,218,178	17.0
	Female	-	6,377	-	-	1.2	0.595	579	4,201,656	13.8
Prostate	Male	5	6,591	75.9	50.4	12.7	0.026 <<	5,388	4,218,178	127.7
Stomach	Total	2	12,968	15.4	11.1	1.1	0.589	504	8,419,834	6.0
	Male	1	6,591	15.2	10.4	0.8	1.000	335	4,218,178	7.9
	Female	1	6,377	15.7	11.7	0.3	0.582	169	4,201,656	4.0
Testis	Male	-	6,591	-	-	0.4	1.000	276	4,218,178	6.5
Thyroid	Total	4	12,968	30.8	28.7	2.1	0.313	1,252	8,419,834	14.9
	Male	-	6,591	-	-	0.6	1.000	330	4,218,178	7.8
	Female	4	6,377	62.7	60.8	1.4	0.117	922	4,201,656	21.9
Pediatric Age 0 to 19	Total	2	3,479	57.5	58.4	0.6	0.246	425	2,414,475	17.6
	Male	1	1,772	56.4	56.9	0.3	0.537	219	1,232,409	17.8
	Female	1	1,707	58.6	60.0	0.3	0.504	206	1,182,066	17.4

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN BUTTE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Butte County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	150	12,907	1,162.2	806.2	149.6	0.995	68,950	8,575,848	804.0
	Male	95	6,564	1,447.3	998.4	80.0	0.112	36,135	4,296,938	840.9
	Female	55	6,343	867.1	597.9	70.5	0.066	32,815	4,278,910	766.9
All Malignant Cancers	Total	33	12,907	255.7	176.5	32.0	0.912	14,691	8,575,848	171.3
	Male	21	6,564	319.9	211.6	18.4	0.600	7,957	4,296,938	185.2
	Female	12	6,343	189.2	135.9	13.9	0.738	6,734	4,278,910	157.4
Bladder	Total	1	12,907	7.7	5.1	1.1	1.000	465	8,575,848	5.4
	Male	1	6,564	15.2	9.8	0.8	1.000	349	4,296,938	8.1
	Female	-	6,343	-	-	0.3	1.000	116	4,278,910	2.7
Brain and Other Nervous System	Total	-	12,907	-	-	1.0	0.725	509	8,575,848	5.9
	Male	-	6,564	-	-	0.7	1.000	323	4,296,938	7.5
	Female	-	6,343	-	-	0.4	1.000	186	4,278,910	4.3
Breast	Total	3	12,907	23.2	16.6	2.3	0.812	1,096	8,575,848	12.8
	Male	1	6,564	15.2	9.8	0.0	0.047 >>	10	4,296,938	0.2
	Female	2	6,343	31.5	23.3	2.2	1.000	1,086	4,278,910	25.4
Cervix	Female	-	6,343	-	-	0.1	1.000	81	4,278,910	1.9
Colorectal	Total	2	12,907	15.5	10.9	2.7	1.000	1,244	8,575,848	14.5
	Male	1	6,564	15.2	10.6	1.5	1.000	678	4,296,938	15.8
	Female	1	6,343	15.8	11.2	1.2	1.000	566	4,278,910	13.2
Corpus Uteri	Female	-	6,343	-	-	0.3	1.000	164	4,278,910	3.8
Esophagus	Total	1	12,907	7.7	5.4	1.0	1.000	475	8,575,848	5.5
	Male	1	6,564	15.2	10.1	0.9	1.000	388	4,296,938	9.0
	Female	-	6,343	-	-	0.2	1.000	87	4,278,910	2.0
Hodgkin Lymphoma	Total	-	12,907	-	-	0.0	1.000	23	8,575,848	0.3
	Male	-	6,564	-	-	0.0	1.000	9	4,296,938	0.2
	Female	-	6,343	-	-	0.0	1.000	14	4,278,910	0.3
Kidney	Total	1	12,907	7.7	5.3	0.8	1.000	354	8,575,848	4.1
	Male	1	6,564	15.2	10.1	0.5	0.782	216	4,296,938	5.0
	Female	-	6,343	-	-	0.3	1.000	138	4,278,910	3.2
Larynx	Total	-	12,907	-	-	0.1	1.000	63	8,575,848	0.7
	Male	-	6,564	-	-	0.1	1.000	53	4,296,938	1.2
	Female	-	6,343	-	-	0.0	1.000	10	4,278,910	0.2
Leukemia	Total	2	12,907	15.5	10.6	1.4	0.791	622	8,575,848	7.3
	Male	1	6,564	15.2	10.1	0.8	1.000	363	4,296,938	8.4
	Female	1	6,343	15.8	11.1	0.5	0.838	259	4,278,910	6.1
Liver and Bile Duct	Total	1	12,907	7.7	5.4	1.3	1.000	612	8,575,848	7.1
	Male	1	6,564	15.2	10.2	1.0	1.000	420	4,296,938	9.8
	Female	-	6,343	-	-	0.4	1.000	192	4,278,910	4.5
Lung and Bronchus	Total	9	12,907	69.7	47.2	6.7	0.476	3,031	8,575,848	35.3
	Male	5	6,564	76.2	49.0	3.8	0.675	1,612	4,296,938	37.5
	Female	4	6,343	63.1	44.6	3.0	0.694	1,419	4,278,910	33.2
Melanoma of the Skin	Total	-	12,907	-	-	0.6	1.000	278	8,575,848	3.2
	Male	-	6,564	-	-	0.4	1.000	182	4,296,938	4.2
	Female	-	6,343	-	-	0.2	1.000	96	4,278,910	2.2
Myeloma	Total	2	12,907	15.5	10.3	0.8	0.352	333	8,575,848	3.9
	Male	2	6,564	30.5	19.6	0.5	0.161	197	4,296,938	4.6
	Female	-	6,343	-	-	0.3	1.000	136	4,278,910	3.2
Non-Hodgkin Lymphoma	Total	1	12,907	7.7	5.2	1.2	1.000	556	8,575,848	6.5
	Male	1	6,564	15.2	9.9	0.7	1.000	302	4,296,938	7.0
	Female	-	6,343	-	-	0.6	1.000	254	4,278,910	5.9
Oral Cavity and Pharynx	Total	2	12,907	15.5	10.8	0.5	0.184	234	8,575,848	2.7
	Male	1	6,564	15.2	10.2	0.4	0.609	159	4,296,938	3.7
	Female	1	6,343	15.8	11.3	0.2	0.288	75	4,278,910	1.8
Ovary	Female	-	6,343	-	-	0.7	0.951	366	4,278,910	8.6
Pancreas	Total	1	12,907	7.7	5.3	2.4	0.613	1,097	8,575,848	12.8
	Male	1	6,564	15.2	10.0	1.4	1.000	605	4,296,938	14.1
	Female	-	6,343	-	-	1.0	0.718	492	4,278,910	11.5
Prostate	Male	1	6,564	15.2	9.7	2.2	0.695	925	4,296,938	21.5
Stomach	Total	1	12,907	7.7	5.5	0.4	0.688	198	8,575,848	2.3
	Male	-	6,564	-	-	0.3	1.000	116	4,296,938	2.7
	Female	1	6,343	15.8	11.3	0.2	0.312	82	4,278,910	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Butte County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	80.6%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	7.2%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	8.9%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	14.4%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	7.3%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	30.9%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	17.4%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	.

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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CAMAS COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 34 cases of invasive cancer were diagnosed among Camas County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Camas County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Camas County	State of Idaho
All Sites/Types	**34**	**42,577**
Female Breast	**2**	**6,210**
Prostate	**4**	**5,393**
Lung & Bronchus	**5**	**4,798**
Colorectal	**3**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Camas County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Camas County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Camas County was 627.0 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (504.8) gives an estimate of the relative burden of disease in Camas County.

The age- and sex-adjusted incidence rate of invasive cancer in Camas County, all sites combined, was 481.1 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Camas County (34) than expected (35.7) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 19 Camas County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Camas County and the State of Idaho, 2015–2019

Mortality 2015–2019	Camas County	State of Idaho
All Deaths	**52**	**69,101**
Cancer Deaths	**19**	**14,724**
% of All Deaths	*36.5%*	*21.3%*
Lung & Bronchus	**2**	**3,040**
Colorectal	**4**	**1,246**
Pancreas	**0**	**1,098**
Female Breast	**0**	**1,088**
Prostate	**2**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Camas County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Camas County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Camas County, all sites combined, was 260.5 deaths per 100,000 persons per year during 2015–2019, compared with 171.3 for the remainder of the state. There were more cancer deaths in Camas County (19) than expected (12.5) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN CAMAS COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Camas County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	34	5,423	627.0	481.1	35.7	0.865	42,543	8,427,379	504.8
	Male	17	2,780	611.5	414.6	21.5	0.391	22,153	4,221,989	524.7
	Female	17	2,643	643.2	552.1	14.9	0.658	20,390	4,205,390	484.9
Bladder	Total	1	5,423	18.4	13.7	1.8	0.940	2,057	8,427,379	24.4
	Male	1	2,780	36.0	23.7	1.6	1.000	1,601	4,221,989	37.9
	Female	-	2,643	-	-	0.3	1.000	456	4,205,390	10.8
Brain - malignant	Total	-	5,423	-	-	0.5	1.000	631	8,427,379	7.5
	Male	-	2,780	-	-	0.3	1.000	382	4,221,989	9.0
	Female	-	2,643	-	-	0.2	1.000	249	4,205,390	5.9
Brain and other CNS - non-malignant	Total	2	5,423	36.9	29.6	1.0	0.499	1,198	8,427,379	14.2
	Male	1	2,780	36.0	27.1	0.3	0.582	394	4,221,989	9.3
	Female	1	2,643	37.8	32.6	0.6	0.887	804	4,205,390	19.1
Breast	Total	2	5,423	36.9	28.4	5.2	0.215	6,256	8,427,379	74.2
	Male	-	2,780	-	-	0.0	1.000	48	4,221,989	1.1
	Female	2	2,643	75.7	64.2	4.6	0.326	6,208	4,205,390	147.6
Breast - in situ	Total	-	5,423	-	-	0.9	0.797	1,102	8,427,379	13.1
	Male	-	2,780	-	-	0.0	1.000	5	4,221,989	0.1
	Female	-	2,643	-	-	0.8	0.881	1,097	4,205,390	26.1
Cervix	Female	-	2,643	-	-	0.2	1.000	288	4,205,390	6.8
Colorectal	Total	3	5,423	55.3	42.7	2.8	1.000	3,325	8,427,379	39.5
	Male	3	2,780	107.9	75.4	1.7	0.468	1,768	4,221,989	41.9
	Female	-	2,643	-	-	1.1	0.635	1,557	4,205,390	37.0
Corpus Uteri	Female	1	2,643	37.8	31.6	0.9	1.000	1,257	4,205,390	29.9
Esophagus	Total	-	5,423	-	-	0.4	1.000	492	8,427,379	5.8
	Male	-	2,780	-	-	0.4	1.000	411	4,221,989	9.7
	Female	-	2,643	-	-	0.1	1.000	81	4,205,390	1.9
Hodgkin Lymphoma	Total	-	5,423	-	-	0.1	1.000	188	8,427,379	2.2
	Male	-	2,780	-	-	0.1	1.000	106	4,221,989	2.5
	Female	-	2,643	-	-	0.0	1.000	82	4,205,390	1.9
Kidney and Renal Pelvis	Total	1	5,423	18.4	14.1	1.3	1.000	1,590	8,427,379	18.9
	Male	-	2,780	-	-	1.0	0.748	1,034	4,221,989	24.5
	Female	1	2,643	37.8	32.3	0.4	0.672	556	4,205,390	13.2
Larynx	Total	-	5,423	-	-	0.2	1.000	206	8,427,379	2.4
	Male	-	2,780	-	-	0.2	1.000	163	4,221,989	3.9
	Female	-	2,643	-	-	0.0	1.000	43	4,205,390	1.0
Leukemia	Total	2	5,423	36.9	29.4	1.2	0.691	1,515	8,427,379	18.0
	Male	2	2,780	71.9	51.4	0.8	0.405	902	4,221,989	21.4
	Female	-	2,643	-	-	0.4	1.000	613	4,205,390	14.6
Liver and Bile Duct	Total	3	5,423	55.3	40.9	0.7	0.064	782	8,427,379	9.3
	Male	1	2,780	36.0	24.0	0.6	0.855	564	4,221,989	13.4
	Female	2	2,643	75.7	62.7	0.2	0.025 >>	218	4,205,390	5.2
Lung and Bronchus	Total	5	5,423	92.2	68.5	4.2	0.801	4,793	8,427,379	56.9
	Male	2	2,780	71.9	46.9	2.5	1.000	2,486	4,221,989	58.9
	Female	3	2,643	113.5	96.4	1.7	0.489	2,307	4,205,390	54.9
Melanoma of the Skin	Total	1	5,423	18.4	14.6	2.1	0.738	2,638	8,427,379	31.3
	Male	-	2,780	-	-	1.5	0.468	1,570	4,221,989	37.2
	Female	1	2,643	37.8	33.2	0.8	1.000	1,068	4,205,390	25.4
Myeloma	Total	-	5,423	-	-	0.6	1.000	660	8,427,379	7.8
	Male	-	2,780	-	-	0.4	1.000	399	4,221,989	9.5
	Female	-	2,643	-	-	0.2	1.000	261	4,205,390	6.2
Non-Hodgkin Lymphoma	Total	1	5,423	18.4	14.2	1.5	1.000	1,843	8,427,379	21.9
	Male	-	2,780	-	-	1.0	0.728	1,066	4,221,989	25.2
	Female	1	2,643	37.8	32.5	0.6	0.868	777	4,205,390	18.5
Oral Cavity and Pharynx	Total	2	5,423	36.9	27.8	1.0	0.531	1,178	8,427,379	14.0
	Male	-	2,780	-	-	0.8	0.886	841	4,221,989	19.9
	Female	2	2,643	75.7	63.9	0.3	0.053	337	4,205,390	8.0
Ovary	Female	1	2,643	37.8	32.7	0.4	0.646	537	4,205,390	12.8
Pancreas	Total	-	5,423	-	-	1.1	0.663	1,297	8,427,379	15.4
	Male	-	2,780	-	-	0.7	0.981	718	4,221,989	17.0
	Female	-	2,643	-	-	0.4	1.000	579	4,205,390	13.8
Prostate	Male	4	2,780	143.9	92.0	5.6	0.699	5,389	4,221,989	127.6
Stomach	Total	-	5,423	-	-	0.4	1.000	506	8,427,379	6.0
	Male	-	2,780	-	-	0.3	1.000	336	4,221,989	8.0
	Female	-	2,643	-	-	0.1	1.000	170	4,205,390	4.0
Testis	Male	-	2,780	-	-	0.2	1.000	276	4,221,989	6.5
Thyroid	Total	2	5,423	36.9	32.8	0.9	0.461	1,254	8,427,379	14.9
	Male	-	2,780	-	-	0.3	1.000	330	4,221,989	7.8
	Female	2	2,643	75.7	71.1	0.6	0.256	924	4,205,390	22.0
Pediatric Age 0 to 19	Total	-	1,377	-	-	0.2	1.000	427	2,416,577	17.7
	Male	-	651	-	-	0.1	1.000	220	1,233,530	17.8
	Female	-	726	-	-	0.1	1.000	207	1,183,047	17.5

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN CAMAS COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Camas County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	52	5,475	949.8	735.4	56.9	0.571	69,048	8,583,280	804.4
	Male	37	2,803	1,320.0	957.6	32.5	0.475	36,193	4,300,699	841.6
	Female	15	2,672	561.4	455.9	25.2	0.040 <<	32,855	4,282,581	767.2
All Malignant Cancers	Total	19	5,475	347.0	260.5	12.5	0.103	14,705	8,583,280	171.3
	Male	15	2,803	535.1	364.5	7.6	0.023 >>	7,963	4,300,699	185.2
	Female	4	2,672	149.7	123.5	5.1	0.847	6,742	4,282,581	157.4
Bladder	Total	2	5,475	36.5	27.4	0.4	0.120	464	8,583,280	5.4
	Male	2	2,803	71.4	50.2	0.3	0.084	348	4,300,699	8.1
	Female	-	2,672	-	-	0.1	1.000	116	4,282,581	2.7
Brain and Other Nervous System	Total	1	5,475	18.3	14.1	0.4	0.686	508	8,583,280	5.9
	Male	1	2,803	35.7	25.1	0.3	0.516	322	4,300,699	7.5
	Female	-	2,672	-	-	0.1	1.000	186	4,282,581	4.3
Breast	Total	-	5,475	-	-	0.9	0.789	1,099	8,583,280	12.8
	Male	-	2,803	-	-	0.0	1.000	11	4,300,699	0.3
	Female	-	2,672	-	-	0.8	0.876	1,088	4,282,581	25.4
Cervix	Female	-	2,672	-	-	0.1	1.000	81	4,282,581	1.9
Colorectal	Total	4	5,475	73.1	55.7	1.0	0.043 >>	1,242	8,583,280	14.5
	Male	3	2,803	107.0	75.8	0.6	0.051	676	4,300,699	15.7
	Female	1	2,672	37.4	30.5	0.4	0.703	566	4,282,581	13.2
Corpus Uteri	Female	-	2,672	-	-	0.1	1.000	164	4,282,581	3.8
Esophagus	Total	-	5,475	-	-	0.4	1.000	476	8,583,280	5.5
	Male	-	2,803	-	-	0.4	1.000	389	4,300,699	9.0
	Female	-	2,672	-	-	0.1	1.000	87	4,282,581	2.0
Hodgkin Lymphoma	Total	-	5,475	-	-	0.0	1.000	23	8,583,280	0.3
	Male	-	2,803	-	-	0.0	1.000	9	4,300,699	0.2
	Female	-	2,672	-	-	0.0	1.000	14	4,282,581	0.3
Kidney	Total	-	5,475	-	-	0.3	1.000	355	8,583,280	4.1
	Male	-	2,803	-	-	0.2	1.000	217	4,300,699	5.0
	Female	-	2,672	-	-	0.1	1.000	138	4,282,581	3.2
Larynx	Total	1	5,475	18.3	14.1	0.1	0.100	62	8,583,280	0.7
	Male	1	2,803	35.7	27.0	0.0	0.087	52	4,300,699	1.2
	Female	-	2,672	-	-	0.0	1.000	10	4,282,581	0.2
Leukemia	Total	-	5,475	-	-	0.5	1.000	624	8,583,280	7.3
	Male	-	2,803	-	-	0.3	1.000	364	4,300,699	8.5
	Female	-	2,672	-	-	0.2	1.000	260	4,282,581	6.1
Liver and Bile Duct	Total	2	5,475	36.5	26.8	0.5	0.200	611	8,583,280	7.1
	Male	1	2,803	35.7	23.3	0.4	0.684	420	4,300,699	9.8
	Female	1	2,672	37.4	30.8	0.1	0.269	191	4,282,581	4.5
Lung and Bronchus	Total	2	5,475	36.5	27.0	2.6	1.000	3,038	8,583,280	35.4
	Male	1	2,803	35.7	23.4	1.6	1.000	1,616	4,300,699	37.6
	Female	1	2,672	37.4	31.1	1.1	1.000	1,422	4,282,581	33.2
Melanoma of the Skin	Total	-	5,475	-	-	0.2	1.000	278	8,583,280	3.2
	Male	-	2,803	-	-	0.2	1.000	182	4,300,699	4.2
	Female	-	2,672	-	-	0.1	1.000	96	4,282,581	2.2
Myeloma	Total	-	5,475	-	-	0.3	1.000	335	8,583,280	3.9
	Male	-	2,803	-	-	0.2	1.000	199	4,300,699	4.6
	Female	-	2,672	-	-	0.1	1.000	136	4,282,581	3.2
Non-Hodgkin Lymphoma	Total	-	5,475	-	-	0.5	1.000	557	8,583,280	6.5
	Male	-	2,803	-	-	0.3	1.000	303	4,300,699	7.0
	Female	-	2,672	-	-	0.2	1.000	254	4,282,581	5.9
Oral Cavity and Pharynx	Total	1	5,475	18.3	13.7	0.2	0.363	235	8,583,280	2.7
	Male	-	2,803	-	-	0.2	1.000	160	4,300,699	3.7
	Female	1	2,672	37.4	31.1	0.1	0.109	75	4,282,581	1.8
Ovary	Female	-	2,672	-	-	0.3	1.000	366	4,282,581	8.5
Pancreas	Total	-	5,475	-	-	0.9	0.774	1,098	8,583,280	12.8
	Male	-	2,803	-	-	0.6	1.000	606	4,300,699	14.1
	Female	-	2,672	-	-	0.4	1.000	492	4,282,581	11.5
Prostate	Male	2	2,803	71.4	49.5	0.9	0.432	924	4,300,699	21.5
Stomach	Total	-	5,475	-	-	0.2	1.000	199	8,583,280	2.3
	Male	-	2,803	-	-	0.1	1.000	116	4,300,699	2.7
	Female	-	2,672	-	-	0.1	1.000	83	4,282,581	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Camas County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	.
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	.
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	.
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	.
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	.
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	.
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	.
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	.

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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CANYON COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 5,006 cases of invasive cancer were diagnosed among Canyon County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Canyon County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Canyon County	State of Idaho
All Sites/Types	**5,006**	**42,577**
Female Breast	**775**	**6,210**
Prostate	**605**	**5,393**
Lung & Bronchus	**587**	**4,798**
Colorectal	**385**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Canyon County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Canyon County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Canyon County was 471.9 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (509.6) gives an estimate of the relative burden of disease in Canyon County.

The age- and sex-adjusted incidence rate of invasive cancer in Canyon County, all sites combined, was 539.1 cases per 100,000 persons per year during 2014–2018. There were statistically significantly more cases of cancer in Canyon County (5,006) than expected (4,732.2) based upon rates in the remainder of the state ($p<.001$).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 1,676 Canyon County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Canyon County and the State of Idaho, 2015–2019

Mortality 2015–2019	Canyon County	State of Idaho
All Deaths	**7,817**	**69,101**
Cancer Deaths	**1,676**	**14,724**
% of All Deaths	*21.4%*	*21.3%*
Lung & Bronchus	**355**	**3,040**
Colorectal	**153**	**1,246**
Pancreas	**121**	**1,098**
Female Breast	**136**	**1,088**
Prostate	**82**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Canyon County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Canyon County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Canyon County, all sites combined, was 180.7 deaths per 100,000 persons per year during 2015–2019, compared with 174.0 for the remainder of the state. There were more cancer deaths in Canyon County (1,676) than expected (1,613.8) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN CANYON COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Canyon County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	5,006	1,060,757	471.9	539.1	4,732.2	0.000 >>	37,571	7,372,045	509.6
	Male	2,534	525,139	482.5	561.0	2,397.2	0.006 >>	19,636	3,699,630	530.8
	Female	2,472	535,618	461.5	519.7	2,322.9	0.002 >>	17,935	3,672,415	488.4
Bladder	Total	224	1,060,757	21.1	24.8	225.1	0.977	1,834	7,372,045	24.9
	Male	176	525,139	33.5	39.8	170.3	0.684	1,426	3,699,630	38.5
	Female	48	535,618	9.0	10.4	51.2	0.720	408	3,672,415	11.1
Brain - malignant	Total	74	1,060,757	7.0	7.6	73.4	0.971	557	7,372,045	7.6
	Male	48	525,139	9.1	10.1	42.8	0.465	334	3,699,630	9.0
	Female	26	535,618	4.9	5.2	30.2	0.513	223	3,672,415	6.1
Brain and other CNS - non-malignant	Total	161	1,060,757	15.2	16.8	134.7	0.030 >>	1,039	7,372,045	14.1
	Male	53	525,139	10.1	11.1	44.2	0.216	342	3,699,630	9.2
	Female	108	535,618	20.2	22.4	91.4	0.097	697	3,672,415	19.0
Breast	Total	776	1,060,757	73.2	82.5	699.3	0.005 >>	5,482	7,372,045	74.4
	Male	1	525,139	0.2	0.2	5.7	0.044 <<	47	3,699,630	1.3
	Female	775	535,618	144.7	162.3	706.7	0.012 >>	5,435	3,672,415	148.0
Breast - in situ	Total	124	1,060,757	11.7	13.0	126.5	0.873	978	7,372,045	13.3
	Male	-	525,139	-	-	0.6	1.000	5	3,699,630	0.1
	Female	124	535,618	23.2	25.7	128.1	0.763	973	3,672,415	26.5
Cervix	Female	45	535,618	8.4	8.8	33.9	0.078	243	3,672,415	6.6
Colorectal	Total	385	1,060,757	36.3	41.6	369.7	0.438	2,943	7,372,045	39.9
	Male	196	525,139	37.3	43.1	193.5	0.875	1,575	3,699,630	42.6
	Female	189	535,618	35.3	40.2	175.3	0.320	1,368	3,672,415	37.3
Corpus Uteri	Female	142	535,618	26.5	30.0	143.8	0.925	1,116	3,672,415	30.4
Esophagus	Total	59	1,060,757	5.6	6.5	53.5	0.487	433	7,372,045	5.9
	Male	49	525,139	9.3	11.0	43.7	0.462	362	3,699,630	9.8
	Female	10	535,618	1.9	2.2	8.9	0.795	71	3,672,415	1.9
Hodgkin Lymphoma	Total	25	1,060,757	2.4	2.4	22.7	0.682	163	7,372,045	2.2
	Male	17	525,139	3.2	3.4	12.1	0.213	89	3,699,630	2.4
	Female	8	535,618	1.5	1.5	10.5	0.558	74	3,672,415	2.0
Kidney and Renal Pelvis	Total	218	1,060,757	20.6	23.5	172.8	0.001 >>	1,373	7,372,045	18.6
	Male	132	525,139	25.1	29.0	110.9	0.056	902	3,699,630	24.4
	Female	86	535,618	16.1	18.2	60.5	0.002 >>	471	3,672,415	12.8
Larynx	Total	25	1,060,757	2.4	2.8	22.3	0.623	181	7,372,045	2.5
	Male	20	525,139	3.8	4.5	17.2	0.552	143	3,699,630	3.9
	Female	5	535,618	0.9	1.1	4.9	1.000	38	3,672,415	1.0
Leukemia	Total	195	1,060,757	18.4	20.7	168.8	0.052	1,322	7,372,045	17.9
	Male	111	525,139	21.1	24.0	99.0	0.250	793	3,699,630	21.4
	Female	84	535,618	15.7	17.6	68.9	0.085	529	3,672,415	14.4
Liver and Bile Duct	Total	90	1,060,757	8.5	9.8	86.3	0.718	695	7,372,045	9.4
	Male	61	525,139	11.6	13.6	61.1	1.000	504	3,699,630	13.6
	Female	29	535,618	5.4	6.2	24.4	0.401	191	3,672,415	5.2
Lung and Bronchus	Total	587	1,060,757	55.3	64.7	518.3	0.003 >>	4,211	7,372,045	57.1
	Male	305	525,139	58.1	68.8	261.5	0.009 >>	2,183	3,699,630	59.0
	Female	282	535,618	52.6	61.0	255.4	0.106	2,028	3,672,415	55.2
Melanoma of the Skin	Total	228	1,060,757	21.5	24.2	307.9	0.000 <<	2,411	7,372,045	32.7
	Male	136	525,139	25.9	29.9	176.5	0.002 <<	1,434	3,699,630	38.8
	Female	92	535,618	17.2	18.8	129.8	0.001 <<	977	3,672,415	26.6
Myeloma	Total	69	1,060,757	6.5	7.6	73.1	0.686	591	7,372,045	8.0
	Male	36	525,139	6.9	8.0	43.9	0.260	363	3,699,630	9.8
	Female	33	535,618	6.2	7.1	28.7	0.470	228	3,672,415	6.2
Non-Hodgkin Lymphoma	Total	228	1,060,757	21.5	24.6	203.1	0.091	1,616	7,372,045	21.9
	Male	140	525,139	26.7	30.7	114.1	0.021 >>	926	3,699,630	25.0
	Female	88	535,618	16.4	18.8	88.1	1.000	690	3,672,415	18.8
Oral Cavity and Pharynx	Total	134	1,060,757	12.6	14.5	131.4	0.845	1,046	7,372,045	14.2
	Male	90	525,139	17.1	19.8	92.1	0.883	751	3,699,630	20.3
	Female	44	535,618	8.2	9.3	38.1	0.376	295	3,672,415	8.0
Ovary	Female	58	535,618	10.8	12.2	62.3	0.640	480	3,672,415	13.1
Pancreas	Total	147	1,060,757	13.9	16.1	142.0	0.698	1,150	7,372,045	15.6
	Male	79	525,139	15.0	17.6	77.3	0.881	639	3,699,630	17.3
	Female	68	535,618	12.7	14.7	64.2	0.671	511	3,672,415	13.9
Prostate	Male	605	525,139	115.2	135.5	578.0	0.271	4,788	3,699,630	129.4
Stomach	Total	72	1,060,757	6.8	7.8	54.0	0.022 >>	434	7,372,045	5.9
	Male	43	525,139	8.2	9.6	35.6	0.247	293	3,699,630	7.9
	Female	29	535,618	5.4	6.2	17.9	0.020 >>	141	3,672,415	3.8
Testis	Male	32	525,139	6.1	6.1	34.3	0.773	244	3,699,630	6.6
Thyroid	Total	127	1,060,757	12.0	12.7	152.6	0.038 <<	1,129	7,372,045	15.3
	Male	30	525,139	5.7	6.2	39.1	0.159	300	3,699,630	8.1
	Female	97	535,618	18.1	19.1	114.9	0.098	829	3,672,415	22.6
Pediatric Age 0 to 19	Total	54	340,939	15.8	15.9	61.0	0.410	373	2,077,015	18.0
	Male	30	173,827	17.3	17.3	31.0	0.949	190	1,060,354	17.9
	Female	24	167,112	14.4	14.4	30.0	0.318	183	1,016,661	18.0

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN CANYON COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Canyon County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	7,817	1,088,166	718.4	844.6	7,562.0	0.004 >>	61,283	7,500,589	817.0
	Male	4,093	539,119	759.2	897.6	3,892.9	0.001 >>	32,137	3,764,383	853.7
	Female	3,724	549,047	678.3	796.8	3,645.8	0.199	29,146	3,736,206	780.1
All Malignant Cancers	Total	1,676	1,088,166	154.0	180.7	1,613.8	0.126	13,048	7,500,589	174.0
	Male	886	539,119	164.3	195.7	853.0	0.266	7,092	3,764,383	188.4
	Female	790	549,047	143.9	167.0	754.2	0.200	5,956	3,736,206	159.4
Bladder	Total	43	1,088,166	4.0	4.7	51.1	0.283	423	7,500,589	5.6
	Male	32	539,119	5.9	7.3	37.2	0.449	318	3,764,383	8.4
	Female	11	549,047	2.0	2.4	13.1	0.696	105	3,736,206	2.8
Brain and Other Nervous System	Total	61	1,088,166	5.6	6.3	57.5	0.677	448	7,500,589	6.0
	Male	43	539,119	8.0	9.1	35.0	0.213	280	3,764,383	7.4
	Female	18	549,047	3.3	3.7	22.1	0.456	168	3,736,206	4.5
Breast	Total	136	1,088,166	12.5	14.5	120.3	0.171	963	7,500,589	12.8
	Male	-	539,119	-	-	1.3	0.541	11	3,764,383	0.3
	Female	136	549,047	24.8	28.5	121.5	0.207	952	3,736,206	25.5
Cervix	Female	14	549,047	2.5	2.8	9.0	0.147	67	3,736,206	1.8
Colorectal	Total	153	1,088,166	14.1	16.4	135.7	0.152	1,093	7,500,589	14.6
	Male	78	539,119	14.5	17.0	73.2	0.604	601	3,764,383	16.0
	Female	75	549,047	13.7	15.9	62.1	0.122	492	3,736,206	13.2
Corpus Uteri	Female	19	549,047	3.5	4.0	18.3	0.934	145	3,736,206	3.9
Esophagus	Total	60	1,088,166	5.5	6.5	51.5	0.270	416	7,500,589	5.5
	Male	48	539,119	8.9	10.5	41.3	0.330	341	3,764,383	9.1
	Female	12	549,047	2.2	2.6	9.4	0.481	75	3,736,206	2.0
Hodgkin Lymphoma	Total	3	1,088,166	0.3	0.3	2.7	0.988	20	7,500,589	0.3
	Male	1	539,119	0.2	0.2	1.0	1.000	8	3,764,383	0.2
	Female	2	549,047	0.4	0.4	1.6	0.953	12	3,736,206	0.3
Kidney	Total	52	1,088,166	4.8	5.6	37.2	0.025 >>	303	7,500,589	4.0
	Male	34	539,119	6.3	7.5	22.1	0.022 >>	183	3,764,383	4.9
	Female	18	549,047	3.3	3.9	14.9	0.484	120	3,736,206	3.2
Larynx	Total	10	1,088,166	0.9	1.1	6.4	0.223	53	7,500,589	0.7
	Male	8	539,119	1.5	1.8	5.3	0.325	45	3,764,383	1.2
	Female	2	549,047	0.4	0.4	1.0	0.519	8	3,736,206	0.2
Leukemia	Total	82	1,088,166	7.5	8.8	67.3	0.090	542	7,500,589	7.2
	Male	46	539,119	8.5	10.1	38.4	0.256	318	3,764,383	8.4
	Female	36	549,047	6.6	7.6	28.4	0.192	224	3,736,206	6.0
Liver and Bile Duct	Total	76	1,088,166	7.0	8.1	66.9	0.293	537	7,500,589	7.2
	Male	53	539,119	9.8	11.6	44.7	0.249	368	3,764,383	9.8
	Female	23	549,047	4.2	4.8	21.6	0.811	169	3,736,206	4.5
Lung and Bronchus	Total	355	1,088,166	32.6	38.4	330.9	0.196	2,685	7,500,589	35.8
	Male	198	539,119	36.7	43.8	170.3	0.041 >>	1,419	3,764,383	37.7
	Female	157	549,047	28.6	33.3	159.5	0.883	1,266	3,736,206	33.9
Melanoma of the Skin	Total	19	1,088,166	1.7	2.0	32.3	0.016 <<	259	7,500,589	3.5
	Male	11	539,119	2.0	2.4	20.7	0.029 <<	171	3,764,383	4.5
	Female	8	549,047	1.5	1.7	11.3	0.414	88	3,736,206	2.4
Myeloma	Total	29	1,088,166	2.7	3.2	37.4	0.192	306	7,500,589	4.1
	Male	15	539,119	2.8	3.4	21.8	0.164	184	3,764,383	4.9
	Female	14	549,047	2.5	3.0	15.3	0.879	122	3,736,206	3.3
Non-Hodgkin Lymphoma	Total	57	1,088,166	5.2	6.2	61.3	0.642	500	7,500,589	6.7
	Male	29	539,119	5.4	6.4	33.0	0.553	274	3,764,383	7.3
	Female	28	549,047	5.1	6.1	28.0	1.000	226	3,736,206	6.0
Oral Cavity and Pharynx	Total	18	1,088,166	1.7	1.9	27.0	0.091	218	7,500,589	2.9
	Male	10	539,119	1.9	2.2	18.1	0.057	150	3,764,383	4.0
	Female	8	549,047	1.5	1.7	8.5	1.000	68	3,736,206	1.8
Ovary	Female	40	549,047	7.3	8.5	41.3	0.925	326	3,736,206	8.7
Pancreas	Total	121	1,088,166	11.1	13.0	121.1	1.000	977	7,500,589	13.0
	Male	67	539,119	12.4	14.7	65.4	0.878	539	3,764,383	14.3
	Female	54	549,047	9.8	11.4	55.4	0.924	438	3,736,206	11.7
Prostate	Male	82	539,119	15.2	18.7	98.4	0.104	844	3,764,383	22.4
Stomach	Total	42	1,088,166	3.9	4.5	19.5	0.000 >>	157	7,500,589	2.1
	Male	24	539,119	4.5	5.2	11.2	0.001 >>	92	3,764,383	2.4
	Female	18	549,047	3.3	3.8	8.2	0.004 >>	65	3,736,206	1.7

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Canyon County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	74.1%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	17.1%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	62.9%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	72.9%
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	61.8%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	15.6%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	9.9%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	40.7%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	3.2%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	28.7%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	20.7%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	14.9%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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CARIBOU COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 178 cases of invasive cancer were diagnosed among Caribou County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Caribou County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Caribou County	State of Idaho
All Sites/Types	**178**	**42,577**
Female Breast	**22**	**6,210**
Prostate	**35**	**5,393**
Lung & Bronchus	**14**	**4,798**
Colorectal	**11**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Caribou County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Caribou County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Caribou County was 517.4 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (504.8) gives an estimate of the relative burden of disease in Caribou County.

The age- and sex-adjusted incidence rate of invasive cancer in Caribou County, all sites combined, was 469.3 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Caribou County (178) than expected (191.5) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 60 Caribou County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Caribou County and the State of Idaho, 2015–2019

Mortality 2015–2019	Caribou County	State of Idaho
All Deaths	**336**	**69,101**
Cancer Deaths	**60**	**14,724**
% of All Deaths	*17.9%*	*21.3%*
Lung & Bronchus	**7**	**3,040**
Colorectal	**4**	**1,246**
Pancreas	**7**	**1,098**
Female Breast	**5**	**1,088**
Prostate	**0**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Caribou County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Caribou County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Caribou County, all sites combined, was 153.1 deaths per 100,000 persons per year during 2015–2019, compared with 171.4 for the remainder of the state. There were fewer cancer deaths in Caribou County (60) than expected (67.2) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN CARIBOU COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Caribou County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	178	34,404	517.4	469.3	191.5	0.349	42,399	8,398,398	504.8
	Male	104	17,506	594.1	542.3	100.6	0.760	22,066	4,207,263	524.5
	Female	74	16,898	437.9	396.9	90.4	0.087	20,333	4,191,135	485.1
Bladder	Total	5	34,404	14.5	12.7	9.7	0.163	2,053	8,398,398	24.4
	Male	5	17,506	28.6	25.5	7.5	0.493	1,597	4,207,263	38.0
	Female	-	16,898	-	-	2.1	0.238	456	4,191,135	10.9
Brain - malignant	Total	5	34,404	14.5	13.6	2.7	0.287	626	8,398,398	7.5
	Male	3	17,506	17.1	16.1	1.7	0.472	379	4,207,263	9.0
	Female	2	16,898	11.8	11.0	1.1	0.580	247	4,191,135	5.9
Brain and other CNS - non-malignant	Total	7	34,404	20.3	19.0	5.2	0.548	1,193	8,398,398	14.2
	Male	2	17,506	11.4	10.8	1.7	1.000	393	4,207,263	9.3
	Female	5	16,898	29.6	27.3	3.5	0.550	800	4,191,135	19.1
Breast	Total	22	34,404	63.9	59.4	27.5	0.342	6,236	8,398,398	74.3
	Male	-	17,506	-	-	0.2	1.000	48	4,207,263	1.1
	Female	22	16,898	130.2	120.1	27.0	0.386	6,188	4,191,135	147.6
Breast - in situ	Total	3	34,404	8.7	8.3	4.7	0.612	1,099	8,398,398	13.1
	Male	-	17,506	-	-	0.0	1.000	5	4,207,263	0.1
	Female	3	16,898	17.8	16.9	4.6	0.636	1,094	4,191,135	26.1
Cervix	Female	3	16,898	17.8	18.0	1.1	0.213	285	4,191,135	6.8
Colorectal	Total	11	34,404	32.0	29.0	15.0	0.370	3,317	8,398,398	39.5
	Male	8	17,506	45.7	42.1	8.0	1.000	1,763	4,207,263	41.9
	Female	3	16,898	17.8	15.8	7.0	0.161	1,554	4,191,135	37.1
Corpus Uteri	Female	9	16,898	53.3	49.7	5.4	0.195	1,249	4,191,135	29.8
Esophagus	Total	-	34,404	-	-	2.3	0.208	492	8,398,398	5.9
	Male	-	17,506	-	-	1.9	0.304	411	4,207,263	9.8
	Female	-	16,898	-	-	0.4	1.000	81	4,191,135	1.9
Hodgkin Lymphoma	Total	2	34,404	5.8	5.9	0.7	0.344	186	8,398,398	2.2
	Male	1	17,506	5.7	5.9	0.4	0.694	105	4,207,263	2.5
	Female	1	16,898	5.9	5.9	0.3	0.555	81	4,191,135	1.9
Kidney and Renal Pelvis	Total	3	34,404	8.7	7.9	7.1	0.149	1,588	8,398,398	18.9
	Male	2	17,506	11.4	10.6	4.6	0.315	1,032	4,207,263	24.5
	Female	1	16,898	5.9	5.3	2.5	0.570	556	4,191,135	13.3
Larynx	Total	2	34,404	5.8	5.2	0.9	0.483	204	8,398,398	2.4
	Male	1	17,506	5.7	5.1	0.8	1.000	162	4,207,263	3.9
	Female	1	16,898	5.9	5.4	0.2	0.337	42	4,191,135	1.0
Leukemia	Total	3	34,404	8.7	7.8	6.9	0.169	1,514	8,398,398	18.0
	Male	1	17,506	5.7	5.2	4.1	0.167	903	4,207,263	21.5
	Female	2	16,898	11.8	10.3	2.8	0.928	611	4,191,135	14.6
Liver and Bile Duct	Total	3	34,404	8.7	7.9	3.5	1.000	782	8,398,398	9.3
	Male	3	17,506	17.1	15.6	2.6	0.948	562	4,207,263	13.4
	Female	-	16,898	-	-	1.0	0.739	220	4,191,135	5.2
Lung and Bronchus	Total	14	34,404	40.7	35.6	22.4	0.080	4,784	8,398,398	57.0
	Male	7	17,506	40.0	35.7	11.5	0.222	2,481	4,207,263	59.0
	Female	7	16,898	41.4	35.5	10.8	0.307	2,303	4,191,135	54.9
Melanoma of the Skin	Total	17	34,404	49.4	45.7	11.6	0.163	2,622	8,398,398	31.2
	Male	12	17,506	68.5	63.3	7.0	0.109	1,558	4,207,263	37.0
	Female	5	16,898	29.6	27.9	4.5	0.952	1,064	4,191,135	25.4
Myeloma	Total	2	34,404	5.8	5.1	3.1	0.812	658	8,398,398	7.8
	Male	2	17,506	11.4	10.3	1.8	1.000	397	4,207,263	9.4
	Female	-	16,898	-	-	1.2	0.588	261	4,191,135	6.2
Non-Hodgkin Lymphoma	Total	10	34,404	29.1	26.1	8.4	0.658	1,834	8,398,398	21.8
	Male	8	17,506	45.7	41.9	4.8	0.228	1,058	4,207,263	25.1
	Female	2	16,898	11.8	10.4	3.5	0.623	776	4,191,135	18.5
Oral Cavity and Pharynx	Total	1	34,404	2.9	2.7	5.3	0.065	1,179	8,398,398	14.0
	Male	1	17,506	5.7	5.3	3.8	0.218	840	4,207,263	20.0
	Female	-	16,898	-	-	1.5	0.446	339	4,191,135	8.1
Ovary	Female	1	16,898	5.9	5.4	2.4	0.635	537	4,191,135	12.8
Pancreas	Total	8	34,404	23.3	20.5	6.0	0.510	1,289	8,398,398	15.3
	Male	4	17,506	22.8	20.6	3.3	0.835	714	4,207,263	17.0
	Female	4	16,898	23.7	20.3	2.7	0.571	575	4,191,135	13.7
Prostate	Male	35	17,506	199.9	181.7	24.5	0.054	5,358	4,207,263	127.4
Stomach	Total	-	34,404	-	-	2.3	0.196	506	8,398,398	6.0
	Male	-	17,506	-	-	1.5	0.428	336	4,207,263	8.0
	Female	-	16,898	-	-	0.8	0.913	170	4,191,135	4.1
Testis	Male	1	17,506	5.7	6.3	1.0	1.000	275	4,207,263	6.5
Thyroid	Total	4	34,404	11.6	11.7	5.1	0.842	1,252	8,398,398	14.9
	Male	3	17,506	17.1	16.8	1.4	0.327	327	4,207,263	7.8
	Female	1	16,898	5.9	6.0	3.7	0.237	925	4,191,135	22.1
Pediatric Age 0 to 19	Total	1	10,677	9.4	9.5	1.9	0.886	426	2,407,277	17.7
	Male	-	5,556	-	-	1.0	0.742	220	1,228,625	17.9
	Female	1	5,121	19.5	19.9	0.9	1.000	206	1,178,652	17.5

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN CARIBOU COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Caribou County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	336	34,765	966.5	849.4	318.0	0.326	68,764	8,553,990	803.9
	Male	178	17,714	1,004.9	914.4	163.7	0.283	36,052	4,285,788	841.2
	Female	158	17,051	926.6	785.4	154.2	0.780	32,712	4,268,202	766.4
All Malignant Cancers	Total	60	34,765	172.6	153.1	67.2	0.419	14,664	8,553,990	171.4
	Male	31	17,714	175.0	158.8	36.2	0.441	7,947	4,285,788	185.4
	Female	29	17,051	170.1	148.1	30.8	0.834	6,717	4,268,202	157.4
Bladder	Total	1	34,765	2.9	2.5	2.2	0.710	465	8,553,990	5.4
	Male	1	17,714	5.6	5.0	1.6	1.000	349	4,285,788	8.1
	Female	-	17,051	-	-	0.6	1.000	116	4,268,202	2.7
Brain and Other Nervous System	Total	5	34,765	14.4	13.4	2.2	0.146	504	8,553,990	5.9
	Male	3	17,714	16.9	15.9	1.4	0.339	320	4,285,788	7.5
	Female	2	17,051	11.7	10.9	0.8	0.378	184	4,268,202	4.3
Breast	Total	5	34,765	14.4	13.0	4.9	1.000	1,094	8,553,990	12.8
	Male	-	17,714	-	-	0.1	1.000	11	4,285,788	0.3
	Female	5	17,051	29.3	26.1	4.9	1.000	1,083	4,268,202	25.4
Cervix	Female	-	17,051	-	-	0.3	1.000	81	4,268,202	1.9
Colorectal	Total	4	34,765	11.5	10.3	5.6	0.672	1,242	8,553,990	14.5
	Male	2	17,714	11.3	10.4	3.0	0.825	677	4,285,788	15.8
	Female	2	17,051	11.7	10.2	2.6	1.000	565	4,268,202	13.2
Corpus Uteri	Female	-	17,051	-	-	0.7	0.949	164	4,268,202	3.8
Esophagus	Total	1	34,765	2.9	2.6	2.2	0.732	475	8,553,990	5.6
	Male	1	17,714	5.6	5.2	1.8	0.954	388	4,285,788	9.1
	Female	-	17,051	-	-	0.4	1.000	87	4,268,202	2.0
Hodgkin Lymphoma	Total	-	34,765	-	-	0.1	1.000	23	8,553,990	0.3
	Male	-	17,714	-	-	0.0	1.000	9	4,285,788	0.2
	Female	-	17,051	-	-	0.1	1.000	14	4,268,202	0.3
Kidney	Total	2	34,765	5.8	5.1	1.6	0.966	353	8,553,990	4.1
	Male	2	17,714	11.3	10.3	1.0	0.509	215	4,285,788	5.0
	Female	-	17,051	-	-	0.7	1.000	138	4,268,202	3.2
Larynx	Total	-	34,765	-	-	0.3	1.000	63	8,553,990	0.7
	Male	-	17,714	-	-	0.2	1.000	53	4,285,788	1.2
	Female	-	17,051	-	-	0.0	1.000	10	4,268,202	0.2
Leukemia	Total	4	34,765	11.5	10.1	2.9	0.648	620	8,553,990	7.2
	Male	1	17,714	5.6	5.1	1.7	1.000	363	4,285,788	8.5
	Female	3	17,051	17.6	14.9	1.2	0.247	257	4,268,202	6.0
Liver and Bile Duct	Total	2	34,765	5.8	5.2	2.7	0.966	611	8,553,990	7.1
	Male	1	17,714	5.6	5.2	1.9	0.877	420	4,285,788	9.8
	Female	1	17,051	5.9	5.2	0.9	1.000	191	4,268,202	4.5
Lung and Bronchus	Total	7	34,765	20.1	17.8	14.0	0.064	3,033	8,553,990	35.5
	Male	3	17,714	16.9	15.4	7.4	0.130	1,614	4,285,788	37.7
	Female	4	17,051	23.5	20.1	6.6	0.425	1,419	4,268,202	33.2
Melanoma of the Skin	Total	1	34,765	2.9	2.6	1.2	1.000	277	8,553,990	3.2
	Male	1	17,714	5.6	5.1	0.8	1.000	181	4,285,788	4.2
	Female	-	17,051	-	-	0.4	1.000	96	4,268,202	2.2
Myeloma	Total	3	34,765	8.6	7.4	1.6	0.415	332	8,553,990	3.9
	Male	3	17,714	16.9	15.1	0.9	0.128	196	4,285,788	4.6
	Female	-	17,051	-	-	0.7	1.000	136	4,268,202	3.2
Non-Hodgkin Lymphoma	Total	8	34,765	23.0	20.1	2.6	0.010 >>	549	8,553,990	6.4
	Male	4	17,714	22.6	20.5	1.4	0.099	299	4,285,788	7.0
	Female	4	17,051	23.5	19.6	1.2	0.067	250	4,268,202	5.9
Oral Cavity and Pharynx	Total	1	34,765	2.9	2.6	1.1	1.000	235	8,553,990	2.7
	Male	1	17,714	5.6	5.1	0.7	1.000	159	4,285,788	3.7
	Female	-	17,051	-	-	0.3	1.000	76	4,268,202	1.8
Ovary	Female	2	17,051	11.7	10.4	1.6	0.978	364	4,268,202	8.5
Pancreas	Total	7	34,765	20.1	17.9	5.0	0.472	1,091	8,553,990	12.8
	Male	4	17,714	22.6	20.7	2.7	0.579	602	4,285,788	14.0
	Female	3	17,051	17.6	15.2	2.3	0.790	489	4,268,202	11.5
Prostate	Male	-	17,714	-	-	4.3	0.026 <<	926	4,285,788	21.6
Stomach	Total	-	34,765	-	-	0.9	0.807	199	8,553,990	2.3
	Male	-	17,714	-	-	0.5	1.000	116	4,285,788	2.7
	Female	-	17,051	-	-	0.4	1.000	83	4,268,202	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Caribou County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	86.4%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	11.0%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	19.8%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	14.7%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	3.8%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	22.2%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	17.5%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	.

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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CASSIA COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 472 cases of invasive cancer were diagnosed among Cassia County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Cassia County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Cassia County	State of Idaho
All Sites/Types	**472**	**42,577**
Female Breast	**76**	**6,210**
Prostate	**50**	**5,393**
Lung & Bronchus	**42**	**4,798**
Colorectal	**38**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Cassia County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Cassia County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Cassia County was 400.3 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (506.4) gives an estimate of the relative burden of disease in Cassia County.

The age- and sex-adjusted incidence rate of invasive cancer in Cassia County, all sites combined, was 436.4 cases per 100,000 persons per year during 2014–2018. There were statistically significantly fewer cases of cancer in Cassia County (472) than expected (547.7) based upon rates in the remainder of the state (p=.001).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 177 Cassia County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Cassia County and the State of Idaho, 2015–2019

Mortality 2015–2019	Cassia County	State of Idaho
All Deaths	**1,032**	**69,101**
Cancer Deaths	**177**	**14,724**
% of All Deaths	*17.2%*	*21.3%*
Lung & Bronchus	**30**	**3,040**
Colorectal	**17**	**1,246**
Pancreas	**15**	**1,098**
Female Breast	**13**	**1,088**
Prostate	**14**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Cassia County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Cassia County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Cassia County, all sites combined, was 160.1 deaths per 100,000 persons per year during 2015–2019, compared with 171.7 for the remainder of the state. There were fewer cancer deaths in Cassia County (177) than expected (189.9) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN CASSIA COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Cassia County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	472	117,922	400.3	436.4	547.7	0.001 <<	42,105	8,314,880	506.4
	Male	228	60,184	378.8	420.0	286.0	0.000 <<	21,942	4,164,585	526.9
	Female	244	57,738	422.6	455.0	260.5	0.320	20,163	4,150,295	485.8
Bladder	Total	23	117,922	19.5	21.0	26.8	0.534	2,035	8,314,880	24.5
	Male	16	60,184	26.6	29.5	20.7	0.359	1,586	4,164,585	38.1
	Female	7	57,738	12.1	12.8	5.9	0.765	449	4,150,295	10.8
Brain - malignant	Total	8	117,922	6.8	7.2	8.3	1.000	623	8,314,880	7.5
	Male	5	60,184	8.3	9.0	5.0	1.000	377	4,164,585	9.1
	Female	3	57,738	5.2	5.4	3.3	1.000	246	4,150,295	5.9
Brain and other CNS - non-malignant	Total	18	117,922	15.3	16.5	15.5	0.592	1,182	8,314,880	14.2
	Male	6	60,184	10.0	10.8	5.2	0.833	389	4,164,585	9.3
	Female	12	57,738	20.8	22.3	10.3	0.666	793	4,150,295	19.1
Breast	Total	77	117,922	65.3	72.1	79.4	0.843	6,181	8,314,880	74.3
	Male	1	60,184	1.7	1.9	0.6	0.912	47	4,164,585	1.1
	Female	76	57,738	131.6	144.2	77.9	0.890	6,134	4,150,295	147.8
Breast - in situ	Total	13	117,922	11.0	12.3	13.8	0.969	1,089	8,314,880	13.1
	Male	-	60,184	-	-	0.1	1.000	5	4,164,585	0.1
	Female	13	57,738	22.5	25.1	13.5	1.000	1,084	4,150,295	26.1
Cervix	Female	3	57,738	5.2	5.7	3.6	1.000	285	4,150,295	6.9
Colorectal	Total	38	117,922	32.2	35.0	42.9	0.509	3,290	8,314,880	39.6
	Male	18	60,184	29.9	33.1	22.9	0.364	1,753	4,164,585	42.1
	Female	20	57,738	34.6	36.9	20.1	1.000	1,537	4,150,295	37.0
Corpus Uteri	Female	16	57,738	27.7	30.8	15.5	0.973	1,242	4,150,295	29.9
Esophagus	Total	4	117,922	3.4	3.7	6.3	0.485	488	8,314,880	5.9
	Male	4	60,184	6.6	7.4	5.3	0.784	407	4,164,585	9.8
	Female	-	57,738	-	-	1.1	0.696	81	4,150,295	2.0
Hodgkin Lymphoma	Total	2	117,922	1.7	1.8	2.5	1.000	186	8,314,880	2.2
	Male	1	60,184	1.7	1.8	1.4	1.000	105	4,164,585	2.5
	Female	1	57,738	1.7	1.8	1.1	1.000	81	4,150,295	2.0
Kidney and Renal Pelvis	Total	20	117,922	17.0	18.6	20.3	1.000	1,571	8,314,880	18.9
	Male	12	60,184	19.9	22.2	13.3	0.866	1,022	4,164,585	24.5
	Female	8	57,738	13.9	14.8	7.1	0.841	549	4,150,295	13.2
Larynx	Total	2	117,922	1.7	1.8	2.7	1.000	204	8,314,880	2.5
	Male	1	60,184	1.7	1.8	2.1	0.752	162	4,164,585	3.9
	Female	1	57,738	1.7	1.9	0.5	0.836	42	4,150,295	1.0
Leukemia	Total	15	117,922	12.7	13.4	20.2	0.294	1,502	8,314,880	18.1
	Male	7	60,184	11.6	12.6	12.0	0.181	897	4,164,585	21.5
	Female	8	57,738	13.9	14.2	8.2	1.000	605	4,150,295	14.6
Liver and Bile Duct	Total	8	117,922	6.8	7.5	10.0	0.668	777	8,314,880	9.3
	Male	5	60,184	8.3	9.2	7.3	0.534	560	4,164,585	13.4
	Female	3	57,738	5.2	5.6	2.8	1.000	217	4,150,295	5.2
Lung and Bronchus	Total	42	117,922	35.6	38.6	62.3	0.008 <<	4,756	8,314,880	57.2
	Male	26	60,184	43.2	48.0	32.0	0.331	2,462	4,164,585	59.1
	Female	16	57,738	27.7	29.3	30.1	0.007 <<	2,294	4,150,295	55.3
Melanoma of the Skin	Total	31	117,922	26.3	28.7	33.9	0.703	2,608	8,314,880	31.4
	Male	19	60,184	31.6	35.0	20.2	0.899	1,551	4,164,585	37.2
	Female	12	57,738	20.8	22.6	13.5	0.810	1,057	4,150,295	25.5
Myeloma	Total	13	117,922	11.0	11.9	8.5	0.179	647	8,314,880	7.8
	Male	5	60,184	8.3	9.3	5.1	1.000	394	4,164,585	9.5
	Female	8	57,738	13.9	14.6	3.3	0.042 >>	253	4,150,295	6.1
Non-Hodgkin Lymphoma	Total	22	117,922	18.7	20.2	23.9	0.802	1,822	8,314,880	21.9
	Male	14	60,184	23.3	25.6	13.8	1.000	1,052	4,164,585	25.3
	Female	8	57,738	13.9	14.7	10.1	0.649	770	4,150,295	18.6
Oral Cavity and Pharynx	Total	11	117,922	9.3	10.3	15.0	0.370	1,169	8,314,880	14.1
	Male	9	60,184	15.0	16.7	10.8	0.728	832	4,164,585	20.0
	Female	2	57,738	3.5	3.8	4.3	0.394	337	4,150,295	8.1
Ovary	Female	4	57,738	6.9	7.5	6.9	0.374	534	4,150,295	12.9
Pancreas	Total	12	117,922	10.2	11.0	16.9	0.285	1,285	8,314,880	15.5
	Male	4	60,184	6.6	7.4	9.3	0.092	714	4,164,585	17.1
	Female	8	57,738	13.9	14.5	7.6	0.974	571	4,150,295	13.8
Prostate	Male	50	60,184	83.1	93.2	68.8	0.022 <<	5,343	4,164,585	128.3
Stomach	Total	7	117,922	5.9	6.4	6.6	0.964	499	8,314,880	6.0
	Male	2	60,184	3.3	3.7	4.4	0.377	334	4,164,585	8.0
	Female	5	57,738	8.7	9.1	2.2	0.142	165	4,150,295	4.0
Testis	Male	1	60,184	1.7	1.8	3.7	0.232	275	4,164,585	6.6
Thyroid	Total	19	117,922	16.1	17.7	16.0	0.510	1,237	8,314,880	14.9
	Male	4	60,184	6.6	7.3	4.3	1.000	326	4,164,585	7.8
	Female	15	57,738	26.0	28.6	11.5	0.374	911	4,150,295	22.0
Pediatric Age 0 to 19	Total	7	41,224	17.0	17.1	7.2	1.000	420	2,376,730	17.7
	Male	3	21,393	14.0	14.1	3.8	0.949	217	1,212,788	17.9
	Female	4	19,831	20.2	20.4	3.4	0.894	203	1,163,942	17.4

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN CASSIA COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Cassia County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	1,032	118,449	871.3	907.9	913.5	0.000 >>	68,068	8,470,306	803.6
	Male	516	60,426	853.9	932.7	465.6	0.023 >>	35,714	4,243,076	841.7
	Female	516	58,023	889.3	881.5	448.0	0.002 >>	32,354	4,227,230	765.4
All Malignant Cancers	Total	177	118,449	149.4	160.1	189.9	0.371	14,547	8,470,306	171.7
	Male	99	60,426	163.8	181.2	101.5	0.859	7,879	4,243,076	185.7
	Female	78	58,023	134.4	140.3	87.7	0.326	6,668	4,227,230	157.7
Bladder	Total	9	118,449	7.6	7.9	6.1	0.334	457	8,470,306	5.4
	Male	6	60,426	9.9	10.9	4.5	0.584	344	4,243,076	8.1
	Female	3	58,023	5.2	5.2	1.5	0.406	113	4,227,230	2.7
Brain and Other Nervous System	Total	5	118,449	4.2	4.6	6.5	0.748	504	8,470,306	6.0
	Male	4	60,426	6.6	7.3	4.1	1.000	319	4,243,076	7.5
	Female	1	58,023	1.7	1.9	2.4	0.636	185	4,227,230	4.4
Breast	Total	13	118,449	11.0	11.8	14.1	0.914	1,086	8,470,306	12.8
	Male	-	60,426	-	-	0.1	1.000	11	4,243,076	0.3
	Female	13	58,023	22.4	23.7	14.0	0.935	1,075	4,227,230	25.4
Cervix	Female	-	58,023	-	-	1.0	0.738	81	4,227,230	1.9
Colorectal	Total	17	118,449	14.4	15.4	16.0	0.877	1,229	8,470,306	14.5
	Male	6	60,426	9.9	11.0	8.7	0.477	673	4,243,076	15.9
	Female	11	58,023	19.0	19.6	7.4	0.259	556	4,227,230	13.2
Corpus Uteri	Female	3	58,023	5.2	5.5	2.1	0.685	161	4,227,230	3.8
Esophagus	Total	1	118,449	0.8	0.9	6.1	0.032 <<	475	8,470,306	5.6
	Male	1	60,426	1.7	1.8	5.0	0.084	388	4,243,076	9.1
	Female	-	58,023	-	-	1.1	0.640	87	4,227,230	2.1
Hodgkin Lymphoma	Total	-	118,449	-	-	0.3	1.000	23	8,470,306	0.3
	Male	-	60,426	-	-	0.1	1.000	9	4,243,076	0.2
	Female	-	58,023	-	-	0.2	1.000	14	4,227,230	0.3
Kidney	Total	4	118,449	3.4	3.6	4.6	1.000	351	8,470,306	4.1
	Male	3	60,426	5.0	5.5	2.7	1.000	214	4,243,076	5.0
	Female	1	58,023	1.7	1.8	1.8	0.904	137	4,227,230	3.2
Larynx	Total	-	118,449	-	-	0.8	0.872	63	8,470,306	0.7
	Male	-	60,426	-	-	0.7	0.998	53	4,243,076	1.2
	Female	-	58,023	-	-	0.1	1.000	10	4,227,230	0.2
Leukemia	Total	4	118,449	3.4	3.5	8.3	0.171	620	8,470,306	7.3
	Male	2	60,426	3.3	3.6	4.7	0.304	362	4,243,076	8.5
	Female	2	58,023	3.4	3.5	3.5	0.631	258	4,227,230	6.1
Liver and Bile Duct	Total	6	118,449	5.1	5.6	7.7	0.701	607	8,470,306	7.2
	Male	5	60,426	8.3	9.3	5.3	1.000	416	4,243,076	9.8
	Female	1	58,023	1.7	1.9	2.4	0.600	191	4,227,230	4.5
Lung and Bronchus	Total	30	118,449	25.3	27.3	39.0	0.163	3,010	8,470,306	35.5
	Male	21	60,426	34.8	38.7	20.4	0.955	1,596	4,243,076	37.6
	Female	9	58,023	15.5	16.2	18.6	0.023 <<	1,414	4,227,230	33.4
Melanoma of the Skin	Total	4	118,449	3.4	3.6	3.6	0.956	274	8,470,306	3.2
	Male	3	60,426	5.0	5.5	2.3	0.818	179	4,243,076	4.2
	Female	1	58,023	1.7	1.8	1.2	1.000	95	4,227,230	2.2
Myeloma	Total	7	118,449	5.9	6.2	4.4	0.302	328	8,470,306	3.9
	Male	3	60,426	5.0	5.4	2.5	0.936	196	4,243,076	4.6
	Female	4	58,023	6.9	7.0	1.8	0.211	132	4,227,230	3.1
Non-Hodgkin Lymphoma	Total	9	118,449	7.6	8.0	7.3	0.610	548	8,470,306	6.5
	Male	7	60,426	11.6	12.8	3.8	0.187	296	4,243,076	7.0
	Female	2	58,023	3.4	3.5	3.4	0.667	252	4,227,230	6.0
Oral Cavity and Pharynx	Total	1	118,449	0.8	0.9	3.0	0.388	235	8,470,306	2.8
	Male	1	60,426	1.7	1.8	2.0	0.792	159	4,243,076	3.7
	Female	-	58,023	-	-	1.0	0.738	76	4,227,230	1.8
Ovary	Female	4	58,023	6.9	7.4	4.7	1.000	362	4,227,230	8.6
Pancreas	Total	15	118,449	12.7	13.7	14.0	0.857	1,083	8,470,306	12.8
	Male	5	60,426	8.3	9.2	7.7	0.444	601	4,243,076	14.2
	Female	10	58,023	17.2	18.0	6.3	0.216	482	4,227,230	11.4
Prostate	Male	14	60,426	23.2	25.4	11.9	0.609	912	4,243,076	21.5
Stomach	Total	2	118,449	1.7	1.8	2.6	1.000	197	8,470,306	2.3
	Male	1	60,426	1.7	1.8	1.5	1.000	115	4,243,076	2.7
	Female	1	58,023	1.7	1.8	1.1	1.000	82	4,227,230	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Cassia County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	72.6%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	15.6%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	49.5%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	45.2%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	14.8%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	11.1%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	4.0%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	32.3%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	14.3%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	7.7%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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CLARK COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 14 cases of invasive cancer were diagnosed among Clark County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Clark County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Clark County	State of Idaho
All Sites/Types	**14**	**42,577**
Female Breast	**2**	**6,210**
Prostate	**1**	**5,393**
Lung & Bronchus	**1**	**4,798**
Colorectal	**1**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Clark County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Clark County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Clark County was 320.0 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (505.0) gives an estimate of the relative burden of disease in Clark County.

The age- and sex-adjusted incidence rate of invasive cancer in Clark County, all sites combined, was 306.3 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Clark County (14) than expected (23.1) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 4 Clark County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Clark County and the State of Idaho, 2015–2019

Mortality 2015–2019	Clark County	State of Idaho
All Deaths	**31**	**69,101**
Cancer Deaths	**4**	**14,724**
% of All Deaths	*12.9%*	*21.3%*
Lung & Bronchus	**1**	**3,040**
Colorectal	**0**	**1,246**
Pancreas	**0**	**1,098**
Female Breast	**0**	**1,088**
Prostate	**1**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Clark County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Clark County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Clark County, all sites combined, was 83.2 deaths per 100,000 persons per year during 2015–2019, compared with 171.5 for the remainder of the state. There were fewer cancer deaths in Clark County (4) than expected (8.2) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN CLARK COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Clark County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	14	4,375	320.0	306.3	23.1	0.060	42,563	8,428,427	505.0
	Male	7	2,294	305.1	273.8	13.4	0.087	22,163	4,222,475	524.9
	Female	7	2,081	336.4	339.6	10.0	0.441	20,400	4,205,952	485.0
Bladder	Total	-	4,375	-	-	1.1	0.639	2,058	8,428,427	24.4
	Male	-	2,294	-	-	1.0	0.728	1,602	4,222,475	37.9
	Female	-	2,081	-	-	0.2	1.000	456	4,205,952	10.8
Brain - malignant	Total	-	4,375	-	-	0.3	1.000	631	8,428,427	7.5
	Male	-	2,294	-	-	0.2	1.000	382	4,222,475	9.0
	Female	-	2,081	-	-	0.1	1.000	249	4,205,952	5.9
Brain and other CNS - non-malignant	Total	1	4,375	22.9	22.2	0.6	0.946	1,199	8,428,427	14.2
	Male	-	2,294	-	-	0.2	1.000	395	4,222,475	9.4
	Female	1	2,081	48.1	48.9	0.4	0.648	804	4,205,952	19.1
Breast	Total	2	4,375	45.7	44.2	3.4	0.697	6,256	8,428,427	74.2
	Male	-	2,294	-	-	0.0	1.000	48	4,222,475	1.1
	Female	2	2,081	96.1	97.1	3.0	0.829	6,208	4,205,952	147.6
Breast - in situ	Total	-	4,375	-	-	0.6	1.000	1,102	8,428,427	13.1
	Male	-	2,294	-	-	0.0	1.000	5	4,222,475	0.1
	Female	-	2,081	-	-	0.5	1.000	1,097	4,205,952	26.1
Cervix	Female	-	2,081	-	-	0.1	1.000	288	4,205,952	6.8
Colorectal	Total	1	4,375	22.9	21.8	1.8	0.918	3,327	8,428,427	39.5
	Male	1	2,294	43.6	39.2	1.1	1.000	1,770	4,222,475	41.9
	Female	-	2,081	-	-	0.8	0.932	1,557	4,205,952	37.0
Corpus Uteri	Female	2	2,081	96.1	99.2	0.6	0.245	1,256	4,205,952	29.9
Esophagus	Total	1	4,375	22.9	21.8	0.3	0.470	491	8,428,427	5.8
	Male	1	2,294	43.6	38.7	0.3	0.444	410	4,222,475	9.7
	Female	-	2,081	-	-	0.0	1.000	81	4,205,952	1.9
Hodgkin Lymphoma	Total	-	4,375	-	-	0.1	1.000	188	8,428,427	2.2
	Male	-	2,294	-	-	0.1	1.000	106	4,222,475	2.5
	Female	-	2,081	-	-	0.0	1.000	82	4,205,952	1.9
Kidney and Renal Pelvis	Total	-	4,375	-	-	0.9	0.845	1,591	8,428,427	18.9
	Male	-	2,294	-	-	0.6	1.000	1,034	4,222,475	24.5
	Female	-	2,081	-	-	0.3	1.000	557	4,205,952	13.2
Larynx	Total	-	4,375	-	-	0.1	1.000	206	8,428,427	2.4
	Male	-	2,294	-	-	0.1	1.000	163	4,222,475	3.9
	Female	-	2,081	-	-	0.0	1.000	43	4,205,952	1.0
Leukemia	Total	-	4,375	-	-	0.8	0.869	1,517	8,428,427	18.0
	Male	-	2,294	-	-	0.5	1.000	904	4,222,475	21.4
	Female	-	2,081	-	-	0.3	1.000	613	4,205,952	14.6
Liver and Bile Duct	Total	-	4,375	-	-	0.4	1.000	785	8,428,427	9.3
	Male	-	2,294	-	-	0.3	1.000	565	4,222,475	13.4
	Female	-	2,081	-	-	0.1	1.000	220	4,205,952	5.2
Lung and Bronchus	Total	1	4,375	22.9	21.3	2.7	0.508	4,797	8,428,427	56.9
	Male	1	2,294	43.6	38.0	1.6	1.000	2,487	4,222,475	58.9
	Female	-	2,081	-	-	1.2	0.628	2,310	4,205,952	54.9
Melanoma of the Skin	Total	2	4,375	45.7	44.1	1.4	0.830	2,637	8,428,427	31.3
	Male	2	2,294	87.2	78.1	1.0	0.492	1,568	4,222,475	37.1
	Female	-	2,081	-	-	0.5	1.000	1,069	4,205,952	25.4
Myeloma	Total	-	4,375	-	-	0.4	1.000	660	8,428,427	7.8
	Male	-	2,294	-	-	0.2	1.000	399	4,222,475	9.4
	Female	-	2,081	-	-	0.1	1.000	261	4,205,952	6.2
Non-Hodgkin Lymphoma	Total	2	4,375	45.7	43.2	1.0	0.538	1,842	8,428,427	21.9
	Male	1	2,294	43.6	38.8	0.6	0.956	1,065	4,222,475	25.2
	Female	1	2,081	48.1	48.3	0.4	0.636	777	4,205,952	18.5
Oral Cavity and Pharynx	Total	-	4,375	-	-	0.6	1.000	1,180	8,428,427	14.0
	Male	-	2,294	-	-	0.5	1.000	841	4,222,475	19.9
	Female	-	2,081	-	-	0.2	1.000	339	4,205,952	8.1
Ovary	Female	1	2,081	48.1	48.5	0.3	0.463	537	4,205,952	12.8
Pancreas	Total	-	4,375	-	-	0.7	0.975	1,297	8,428,427	15.4
	Male	-	2,294	-	-	0.4	1.000	718	4,222,475	17.0
	Female	-	2,081	-	-	0.3	1.000	579	4,205,952	13.8
Prostate	Male	1	2,294	43.6	39.9	3.2	0.342	5,392	4,222,475	127.7
Stomach	Total	-	4,375	-	-	0.3	1.000	506	8,428,427	6.0
	Male	-	2,294	-	-	0.2	1.000	336	4,222,475	8.0
	Female	-	2,081	-	-	0.1	1.000	170	4,205,952	4.0
Testis	Male	-	2,294	-	-	0.1	1.000	276	4,222,475	6.5
Thyroid	Total	1	4,375	22.9	22.9	0.7	0.957	1,255	8,428,427	14.9
	Male	-	2,294	-	-	0.2	1.000	330	4,222,475	7.8
	Female	1	2,081	48.1	48.9	0.4	0.725	925	4,205,952	22.0
Pediatric Age 0 to 19	Total	-	1,300	-	-	0.2	1.000	427	2,416,654	17.7
	Male	-	651	-	-	0.1	1.000	220	1,233,530	17.8
	Female	-	649	-	-	0.1	1.000	207	1,183,124	17.5

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN CLARK COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Clark County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	31	4,331	715.8	640.8	38.9	0.229	69,069	8,584,424	804.6
	Male	19	2,255	842.6	678.9	23.6	0.408	36,211	4,301,247	841.9
	Female	12	2,076	578.0	578.7	15.9	0.399	32,858	4,283,177	767.1
All Malignant Cancers	Total	4	4,331	92.4	83.2	8.2	0.173	14,720	8,584,424	171.5
	Male	3	2,255	133.0	108.7	5.1	0.498	7,975	4,301,247	185.4
	Female	1	2,076	48.2	47.3	3.3	0.311	6,745	4,283,177	157.5
Bladder	Total	-	4,331	-	-	0.3	1.000	466	8,584,424	5.4
	Male	-	2,255	-	-	0.2	1.000	350	4,301,247	8.1
	Female	-	2,076	-	-	0.1	1.000	116	4,283,177	2.7
Brain and Other Nervous System	Total	-	4,331	-	-	0.3	1.000	509	8,584,424	5.9
	Male	-	2,255	-	-	0.2	1.000	323	4,301,247	7.5
	Female	-	2,076	-	-	0.1	1.000	186	4,283,177	4.3
Breast	Total	-	4,331	-	-	0.6	1.000	1,099	8,584,424	12.8
	Male	-	2,255	-	-	0.0	1.000	11	4,301,247	0.3
	Female	-	2,076	-	-	0.5	1.000	1,088	4,283,177	25.4
Cervix	Female	-	2,076	-	-	0.0	1.000	81	4,283,177	1.9
Colorectal	Total	-	4,331	-	-	0.7	0.998	1,246	8,584,424	14.5
	Male	-	2,255	-	-	0.4	1.000	679	4,301,247	15.8
	Female	-	2,076	-	-	0.3	1.000	567	4,283,177	13.2
Corpus Uteri	Female	-	2,076	-	-	0.1	1.000	164	4,283,177	3.8
Esophagus	Total	-	4,331	-	-	0.3	1.000	476	8,584,424	5.5
	Male	-	2,255	-	-	0.2	1.000	389	4,301,247	9.0
	Female	-	2,076	-	-	0.0	1.000	87	4,283,177	2.0
Hodgkin Lymphoma	Total	-	4,331	-	-	0.0	1.000	23	8,584,424	0.3
	Male	-	2,255	-	-	0.0	1.000	9	4,301,247	0.2
	Female	-	2,076	-	-	0.0	1.000	14	4,283,177	0.3
Kidney	Total	1	4,331	23.1	20.7	0.2	0.361	354	8,584,424	4.1
	Male	1	2,255	44.3	37.3	0.1	0.252	216	4,301,247	5.0
	Female	-	2,076	-	-	0.1	1.000	138	4,283,177	3.2
Larynx	Total	-	4,331	-	-	0.0	1.000	63	8,584,424	0.7
	Male	-	2,255	-	-	0.0	1.000	53	4,301,247	1.2
	Female	-	2,076	-	-	0.0	1.000	10	4,283,177	0.2
Leukemia	Total	-	4,331	-	-	0.4	1.000	624	8,584,424	7.3
	Male	-	2,255	-	-	0.2	1.000	364	4,301,247	8.5
	Female	-	2,076	-	-	0.1	1.000	260	4,283,177	6.1
Liver and Bile Duct	Total	-	4,331	-	-	0.3	1.000	613	8,584,424	7.1
	Male	-	2,255	-	-	0.3	1.000	421	4,301,247	9.8
	Female	-	2,076	-	-	0.1	1.000	192	4,283,177	4.5
Lung and Bronchus	Total	1	4,331	23.1	20.7	1.7	0.979	3,039	8,584,424	35.4
	Male	1	2,255	44.3	36.6	1.0	1.000	1,616	4,301,247	37.6
	Female	-	2,076	-	-	0.7	0.980	1,423	4,283,177	33.2
Melanoma of the Skin	Total	-	4,331	-	-	0.2	1.000	278	8,584,424	3.2
	Male	-	2,255	-	-	0.1	1.000	182	4,301,247	4.2
	Female	-	2,076	-	-	0.0	1.000	96	4,283,177	2.2
Myeloma	Total	-	4,331	-	-	0.2	1.000	335	8,584,424	3.9
	Male	-	2,255	-	-	0.1	1.000	199	4,301,247	4.6
	Female	-	2,076	-	-	0.1	1.000	136	4,283,177	3.2
Non-Hodgkin Lymphoma	Total	-	4,331	-	-	0.3	1.000	557	8,584,424	6.5
	Male	-	2,255	-	-	0.2	1.000	303	4,301,247	7.0
	Female	-	2,076	-	-	0.1	1.000	254	4,283,177	5.9
Oral Cavity and Pharynx	Total	-	4,331	-	-	0.1	1.000	236	8,584,424	2.7
	Male	-	2,255	-	-	0.1	1.000	160	4,301,247	3.7
	Female	-	2,076	-	-	0.0	1.000	76	4,283,177	1.8
Ovary	Female	-	2,076	-	-	0.2	1.000	366	4,283,177	8.5
Pancreas	Total	-	4,331	-	-	0.6	1.000	1,098	8,584,424	12.8
	Male	-	2,255	-	-	0.4	1.000	606	4,301,247	14.1
	Female	-	2,076	-	-	0.2	1.000	492	4,283,177	11.5
Prostate	Male	1	2,255	44.3	33.6	0.6	0.945	925	4,301,247	21.5
Stomach	Total	-	4,331	-	-	0.1	1.000	199	8,584,424	2.3
	Male	-	2,255	-	-	0.1	1.000	116	4,301,247	2.7
	Female	-	2,076	-	-	0.0	1.000	83	4,283,177	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Clark County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	.
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	.
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	.
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	.
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	.
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	.
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	.
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	.

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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CLEARWATER COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 340 cases of invasive cancer were diagnosed among Clearwater County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Clearwater County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Clearwater County	State of Idaho
All Sites/Types	**340**	**42,577**
Female Breast	**33**	**6,210**
Prostate	**37**	**5,393**
Lung & Bronchus	**61**	**4,798**
Colorectal	**33**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Clearwater County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Clearwater County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Clearwater County was 787.6 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (503.4) gives an estimate of the relative burden of disease in Clearwater County.

The age- and sex-adjusted incidence rate of invasive cancer in Clearwater County, all sites combined, was 509.3 cases per 100,000 persons per year during 2014–2018. There were more cases of cancer in Clearwater County (340) than expected (336.1) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 150 Clearwater County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Clearwater County and the State of Idaho, 2015–2019

Mortality 2015–2019	Clearwater County	State of Idaho
All Deaths	**543**	**69,101**
Cancer Deaths	**150**	**14,724**
% of All Deaths	*27.6%*	*21.3%*
Lung & Bronchus	**40**	**3,040**
Colorectal	**7**	**1,246**
Pancreas	**9**	**1,098**
Female Breast	**7**	**1,088**
Prostate	**10**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Clearwater County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Clearwater County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Clearwater County, all sites combined, was 209.2 deaths per 100,000 persons per year during 2015–2019, compared with 170.5 for the remainder of the state. There were statistically significantly more cancer deaths in Clearwater County (150) than expected (122.3) based upon rates in the remainder of the state (p=.017).

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN CLEARWATER COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Clearwater County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	340	43,170	787.6	509.3	336.1	0.844	42,237	8,389,632	503.4
	Male	205	23,807	861.1	552.6	194.0	0.447	21,965	4,200,962	522.9
	Female	135	19,363	697.2	451.6	144.7	0.449	20,272	4,188,670	484.0
Bladder	Total	16	43,170	37.1	22.2	17.6	0.829	2,042	8,389,632	24.3
	Male	14	23,807	58.8	35.8	14.8	0.976	1,588	4,200,962	37.8
	Female	2	19,363	10.3	6.0	3.6	0.611	454	4,188,670	10.8
Brain - malignant	Total	5	43,170	11.6	8.6	4.4	0.883	626	8,389,632	7.5
	Male	3	23,807	12.6	9.2	2.9	1.000	379	4,200,962	9.0
	Female	2	19,363	10.3	7.7	1.5	0.910	247	4,188,670	5.9
Brain and other CNS - non-malignant	Total	7	43,170	16.2	11.3	8.8	0.694	1,193	8,389,632	14.2
	Male	1	23,807	4.2	3.1	3.1	0.380	394	4,200,962	9.4
	Female	6	19,363	31.0	20.8	5.5	0.945	799	4,188,670	19.1
Breast	Total	34	43,170	78.8	53.1	47.5	0.050 <<	6,224	8,389,632	74.2
	Male	1	23,807	4.2	2.7	0.4	0.682	47	4,200,962	1.1
	Female	33	19,363	170.4	112.5	43.3	0.129	6,177	4,188,670	147.5
Breast - in situ	Total	4	43,170	9.3	6.4	8.1	0.185	1,098	8,389,632	13.1
	Male	-	23,807	-	-	0.0	1.000	5	4,200,962	0.1
	Female	4	19,363	20.7	14.1	7.4	0.282	1,093	4,188,670	26.1
Cervix	Female	1	19,363	5.2	4.5	1.5	1.000	287	4,188,670	6.9
Colorectal	Total	33	43,170	76.4	49.4	26.2	0.227	3,295	8,389,632	39.3
	Male	22	23,807	92.4	60.9	15.0	0.109	1,749	4,200,962	41.6
	Female	11	19,363	56.8	35.5	11.4	1.000	1,546	4,188,670	36.9
Corpus Uteri	Female	7	19,363	36.2	23.8	8.8	0.699	1,251	4,188,670	29.9
Esophagus	Total	10	43,170	23.2	14.3	4.0	0.016 >>	482	8,389,632	5.7
	Male	10	23,807	42.0	26.6	3.6	0.008 >>	401	4,200,962	9.5
	Female	-	19,363	-	-	0.6	1.000	81	4,188,670	1.9
Hodgkin Lymphoma	Total	1	43,170	2.3	2.1	1.0	1.000	187	8,389,632	2.2
	Male	1	23,807	4.2	3.8	0.7	0.957	105	4,200,962	2.5
	Female	-	19,363	-	-	0.4	1.000	82	4,188,670	2.0
Kidney and Renal Pelvis	Total	19	43,170	44.0	28.5	12.5	0.104	1,572	8,389,632	18.7
	Male	12	23,807	50.4	33.0	8.8	0.363	1,022	4,200,962	24.3
	Female	7	19,363	36.2	22.9	4.0	0.225	550	4,188,670	13.1
Larynx	Total	2	43,170	4.6	2.9	1.7	0.997	204	8,389,632	2.4
	Male	2	23,807	8.4	5.3	1.4	0.849	161	4,200,962	3.8
	Female	-	19,363	-	-	0.3	1.000	43	4,188,670	1.0
Leukemia	Total	13	43,170	30.1	19.7	11.8	0.804	1,504	8,389,632	17.9
	Male	8	23,807	33.6	22.4	7.6	0.986	896	4,200,962	21.3
	Female	5	19,363	25.8	16.4	4.4	0.906	608	4,188,670	14.5
Liver and Bile Duct	Total	4	43,170	9.3	5.9	6.3	0.484	781	8,389,632	9.3
	Male	4	23,807	16.8	10.9	4.9	0.913	561	4,200,962	13.4
	Female	-	19,363	-	-	1.7	0.381	220	4,188,670	5.3
Lung and Bronchus	Total	61	43,170	141.3	84.4	40.8	0.004 >>	4,737	8,389,632	56.5
	Male	31	23,807	130.2	78.7	23.0	0.130	2,457	4,200,962	58.5
	Female	30	19,363	154.9	90.5	18.0	0.012 >>	2,280	4,188,670	54.4
Melanoma of the Skin	Total	13	43,170	30.1	20.4	19.9	0.137	2,626	8,389,632	31.3
	Male	8	23,807	33.6	22.2	13.4	0.168	1,562	4,200,962	37.2
	Female	5	19,363	25.8	18.4	6.9	0.624	1,064	4,188,670	25.4
Myeloma	Total	4	43,170	9.3	5.6	5.6	0.679	656	8,389,632	7.8
	Male	2	23,807	8.4	5.1	3.7	0.567	397	4,200,962	9.5
	Female	2	19,363	10.3	6.1	2.0	1.000	259	4,188,670	6.2
Non-Hodgkin Lymphoma	Total	16	43,170	37.1	23.7	14.7	0.801	1,828	8,389,632	21.8
	Male	7	23,807	29.4	19.2	9.2	0.606	1,059	4,200,962	25.2
	Female	9	19,363	46.5	28.7	5.8	0.258	769	4,188,670	18.4
Oral Cavity and Pharynx	Total	13	43,170	30.1	19.6	9.2	0.282	1,167	8,389,632	13.9
	Male	9	23,807	37.8	24.9	7.2	0.582	832	4,200,962	19.8
	Female	4	19,363	20.7	13.3	2.4	0.444	335	4,188,670	8.0
Ovary	Female	4	19,363	20.7	13.6	3.8	1.000	534	4,188,670	12.7
Pancreas	Total	11	43,170	25.5	15.6	10.8	1.000	1,286	8,389,632	15.3
	Male	9	23,807	37.8	23.7	6.4	0.397	709	4,200,962	16.9
	Female	2	19,363	10.3	6.1	4.5	0.340	577	4,188,670	13.8
Prostate	Male	37	23,807	155.4	96.7	48.8	0.097	5,356	4,200,962	127.5
Stomach	Total	4	43,170	9.3	5.8	4.1	1.000	502	8,389,632	6.0
	Male	3	23,807	12.6	8.1	2.9	1.000	333	4,200,962	7.9
	Female	1	19,363	5.2	3.1	1.3	1.000	169	4,188,670	4.0
Testis	Male	1	23,807	4.2	4.5	1.4	1.000	275	4,200,962	6.5
Thyroid	Total	3	43,170	6.9	5.8	7.8	0.098	1,253	8,389,632	14.9
	Male	-	23,807	-	-	2.4	0.181	330	4,200,962	7.9
	Female	3	19,363	15.5	13.3	5.0	0.533	923	4,188,670	22.0
Pediatric Age 0 to 19	Total	2	7,841	25.5	25.3	1.4	0.812	425	2,410,113	17.6
	Male	-	4,408	-	-	0.8	0.897	220	1,229,773	17.9
	Female	2	3,433	58.3	58.6	0.6	0.239	205	1,180,340	17.4

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN CLEARWATER COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Clearwater County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	543	43,365	1,252.2	765.5	569.1	0.284	68,557	8,545,390	802.3
	Male	309	23,933	1,291.1	833.9	311.0	0.939	35,921	4,279,569	839.4
	Female	234	19,432	1,204.2	677.1	264.4	0.062	32,636	4,265,821	765.1
All Malignant Cancers	Total	150	43,365	345.9	209.2	122.3	0.017 >>	14,574	8,545,390	170.5
	Male	91	23,933	380.2	235.2	71.3	0.028 >>	7,887	4,279,569	184.3
	Female	59	19,432	303.6	177.5	52.1	0.372	6,687	4,265,821	156.8
Bladder	Total	2	43,365	4.6	2.7	4.1	0.451	464	8,545,390	5.4
	Male	2	23,933	8.4	5.0	3.2	0.746	348	4,279,569	8.1
	Female	-	19,432	-	-	1.0	0.766	116	4,265,821	2.7
Brain and Other Nervous System	Total	1	43,365	2.3	1.6	3.8	0.211	508	8,545,390	5.9
	Male	1	23,933	4.2	2.8	2.6	0.517	322	4,279,569	7.5
	Female	-	19,432	-	-	1.3	0.556	186	4,265,821	4.4
Breast	Total	8	43,365	18.4	11.6	8.8	0.961	1,091	8,545,390	12.8
	Male	1	23,933	4.2	2.5	0.1	0.177	10	4,279,569	0.2
	Female	7	19,432	36.0	21.8	8.2	0.863	1,081	4,265,821	25.3
Cervix	Female	1	19,432	5.1	3.7	0.5	0.795	80	4,265,821	1.9
Colorectal	Total	7	43,365	16.1	10.0	10.2	0.411	1,239	8,545,390	14.5
	Male	5	23,933	20.9	13.4	5.9	0.936	674	4,279,569	15.7
	Female	2	19,432	10.3	6.0	4.4	0.361	565	4,265,821	13.2
Corpus Uteri	Female	4	19,432	20.6	12.1	1.2	0.075	160	4,265,821	3.8
Esophagus	Total	5	43,365	11.5	7.0	3.9	0.708	471	8,545,390	5.5
	Male	5	23,933	20.9	13.1	3.4	0.520	384	4,279,569	9.0
	Female	-	19,432	-	-	0.7	1.000	87	4,265,821	2.0
Hodgkin Lymphoma	Total	1	43,365	2.3	1.6	0.2	0.299	22	8,545,390	0.3
	Male	-	23,933	-	-	0.1	1.000	9	4,279,569	0.2
	Female	1	19,432	5.1	3.3	0.1	0.177	13	4,265,821	0.3
Kidney	Total	8	43,365	18.4	11.0	3.0	0.022 >>	347	8,545,390	4.1
	Male	5	23,933	20.9	13.0	1.9	0.090	212	4,279,569	5.0
	Female	3	19,432	15.4	8.6	1.1	0.202	135	4,265,821	3.2
Larynx	Total	1	43,365	2.3	1.4	0.5	0.821	62	8,545,390	0.7
	Male	1	23,933	4.2	2.6	0.5	0.748	52	4,279,569	1.2
	Female	-	19,432	-	-	0.1	1.000	10	4,265,821	0.2
Leukemia	Total	5	43,365	11.5	6.9	5.2	1.000	619	8,545,390	7.2
	Male	3	23,933	12.5	7.7	3.3	1.000	361	4,279,569	8.4
	Female	2	19,432	10.3	5.9	2.0	1.000	258	4,265,821	6.0
Liver and Bile Duct	Total	7	43,365	16.1	9.9	5.0	0.477	606	8,545,390	7.1
	Male	5	23,933	20.9	13.1	3.7	0.634	416	4,279,569	9.7
	Female	2	19,432	10.3	6.1	1.5	0.857	190	4,265,821	4.5
Lung and Bronchus	Total	40	43,365	92.2	54.5	25.7	0.011 >>	3,000	8,545,390	35.1
	Male	21	23,933	87.7	52.9	14.8	0.150	1,596	4,279,569	37.3
	Female	19	19,432	97.8	55.8	11.2	0.042 >>	1,404	4,265,821	32.9
Melanoma of the Skin	Total	-	43,365	-	-	2.2	0.215	278	8,545,390	3.3
	Male	-	23,933	-	-	1.6	0.417	182	4,279,569	4.3
	Female	-	19,432	-	-	0.7	0.982	96	4,265,821	2.3
Myeloma	Total	2	43,365	4.6	2.6	2.9	0.873	333	8,545,390	3.9
	Male	-	23,933	-	-	1.9	0.309	199	4,279,569	4.7
	Female	2	19,432	10.3	5.6	1.1	0.612	134	4,265,821	3.1
Non-Hodgkin Lymphoma	Total	4	43,365	9.2	5.4	4.8	0.958	553	8,545,390	6.5
	Male	3	23,933	12.5	7.7	2.7	1.000	300	4,279,569	7.0
	Female	1	19,432	5.1	2.8	2.1	0.756	253	4,265,821	5.9
Oral Cavity and Pharynx	Total	5	43,365	11.5	7.1	1.9	0.088	231	8,545,390	2.7
	Male	4	23,933	16.7	10.6	1.4	0.101	156	4,279,569	3.6
	Female	1	19,432	5.1	3.0	0.6	0.883	75	4,265,821	1.8
Ovary	Female	3	19,432	15.4	9.2	2.8	1.000	363	4,265,821	8.5
Pancreas	Total	9	43,365	20.8	12.5	9.2	1.000	1,089	8,545,390	12.7
	Male	5	23,933	20.9	12.9	5.4	1.000	601	4,279,569	14.0
	Female	4	19,432	20.6	11.8	3.9	1.000	488	4,265,821	11.4
Prostate	Male	10	23,933	41.8	24.8	8.6	0.732	916	4,279,569	21.4
Stomach	Total	2	43,365	4.6	2.9	1.6	0.959	197	8,545,390	2.3
	Male	1	23,933	4.2	2.7	1.0	1.000	115	4,279,569	2.7
	Female	1	19,432	5.1	3.0	0.6	0.946	82	4,265,821	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Clearwater County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	82.8%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	15.9%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	61.4%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	74.7%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	22.0%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	11.0%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	1.5%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	29.8%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	16.3%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	16.1%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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CUSTER COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 156 cases of invasive cancer were diagnosed among Custer County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Custer County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Custer County	State of Idaho
All Sites/Types	**156**	**42,577**
Female Breast	**21**	**6,210**
Prostate	**21**	**5,393**
Lung & Bronchus	**17**	**4,798**
Colorectal	**11**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Custer County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Custer County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Custer County was 755.1 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (504.3) gives an estimate of the relative burden of disease in Custer County.

The age- and sex-adjusted incidence rate of invasive cancer in Custer County, all sites combined, was 478.6 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Custer County (156) than expected (164.4) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 66 Custer County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Custer County and the State of Idaho, 2015–2019

Mortality 2015–2019	Custer County	State of Idaho
All Deaths	**239**	**69,101**
Cancer Deaths	**66**	**14,724**
% of All Deaths	*27.6%*	*21.3%*
Lung & Bronchus	**18**	**3,040**
Colorectal	**5**	**1,246**
Pancreas	**5**	**1,098**
Female Breast	**3**	**1,088**
Prostate	**1**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Custer County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Custer County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Custer County, all sites combined, was 191.1 deaths per 100,000 persons per year during 2015–2019, compared with 171.1 for the remainder of the state. There were more cancer deaths in Custer County (66) than expected (59.1) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN CUSTER COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Custer County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	156	20,660	755.1	478.6	164.4	0.545	42,421	8,412,142	504.3
	Male	96	10,606	905.1	525.3	95.7	1.000	22,074	4,214,163	523.8
	Female	60	10,054	596.8	411.2	70.7	0.220	20,347	4,197,979	484.7
Bladder	Total	11	20,660	53.2	31.7	8.4	0.460	2,047	8,412,142	24.3
	Male	10	10,606	94.3	52.6	7.2	0.378	1,592	4,214,163	37.8
	Female	1	10,054	9.9	6.4	1.7	0.986	455	4,197,979	10.8
Brain - malignant	Total	3	20,660	14.5	10.5	2.1	0.717	628	8,412,142	7.5
	Male	2	10,606	18.9	12.7	1.4	0.828	380	4,214,163	9.0
	Female	1	10,054	9.9	7.7	0.8	1.000	248	4,197,979	5.9
Brain and other CNS - non-malignant	Total	7	20,660	33.9	23.4	4.2	0.274	1,193	8,412,142	14.2
	Male	4	10,606	37.7	25.9	1.4	0.115	391	4,214,163	9.3
	Female	3	10,054	29.8	21.2	2.7	1.000	802	4,197,979	19.1
Breast	Total	21	20,660	101.6	66.6	23.4	0.718	6,237	8,412,142	74.1
	Male	-	10,606	-	-	0.2	1.000	48	4,214,163	1.1
	Female	21	10,054	208.9	144.6	21.4	1.000	6,189	4,197,979	147.4
Breast - in situ	Total	3	20,660	14.5	9.7	4.0	0.851	1,099	8,412,142	13.1
	Male	-	10,606	-	-	0.0	1.000	5	4,214,163	0.1
	Female	3	10,054	29.8	21.1	3.7	0.985	1,094	4,197,979	26.1
Cervix	Female	-	10,054	-	-	0.8	0.921	288	4,197,979	6.9
Colorectal	Total	11	20,660	53.2	34.0	12.7	0.758	3,317	8,412,142	39.4
	Male	7	10,606	66.0	39.7	7.4	1.000	1,764	4,214,163	41.9
	Female	4	10,054	39.8	26.9	5.5	0.715	1,553	4,197,979	37.0
Corpus Uteri	Female	4	10,054	39.8	27.1	4.4	1.000	1,254	4,197,979	29.9
Esophagus	Total	2	20,660	9.7	5.8	2.0	1.000	490	8,412,142	5.8
	Male	1	10,606	9.4	5.3	1.8	0.914	410	4,214,163	9.7
	Female	1	10,054	9.9	6.3	0.3	0.520	80	4,197,979	1.9
Hodgkin Lymphoma	Total	-	20,660	-	-	0.5	1.000	188	8,412,142	2.2
	Male	-	10,606	-	-	0.3	1.000	106	4,214,163	2.5
	Female	-	10,054	-	-	0.2	1.000	82	4,197,979	2.0
Kidney and Renal Pelvis	Total	6	20,660	29.0	18.4	6.2	1.000	1,585	8,412,142	18.8
	Male	4	10,606	37.7	22.4	4.4	1.000	1,030	4,214,163	24.4
	Female	2	10,054	19.9	13.4	2.0	1.000	555	4,197,979	13.2
Larynx	Total	-	20,660	-	-	0.8	0.868	206	8,412,142	2.4
	Male	-	10,606	-	-	0.7	0.961	163	4,214,163	3.9
	Female	-	10,054	-	-	0.2	1.000	43	4,197,979	1.0
Leukemia	Total	7	20,660	33.9	22.2	5.6	0.675	1,510	8,412,142	18.0
	Male	7	10,606	66.0	40.8	3.7	0.155	897	4,214,163	21.3
	Female	-	10,054	-	-	2.1	0.241	613	4,197,979	14.6
Liver and Bile Duct	Total	5	20,660	24.2	14.6	3.2	0.430	780	8,412,142	9.3
	Male	4	10,606	37.7	21.3	2.5	0.487	561	4,214,163	13.3
	Female	1	10,054	9.9	6.5	0.8	1.000	219	4,197,979	5.2
Lung and Bronchus	Total	17	20,660	82.3	48.6	19.9	0.615	4,781	8,412,142	56.8
	Male	8	10,606	75.4	41.5	11.3	0.405	2,480	4,214,163	58.8
	Female	9	10,054	89.5	56.8	8.7	1.000	2,301	4,197,979	54.8
Melanoma of the Skin	Total	12	20,660	58.1	38.9	9.6	0.527	2,627	8,412,142	31.2
	Male	11	10,606	103.7	63.1	6.5	0.128	1,559	4,214,163	37.0
	Female	1	10,054	9.9	7.4	3.4	0.288	1,068	4,197,979	25.4
Myeloma	Total	1	20,660	4.8	2.9	2.7	0.493	659	8,412,142	7.8
	Male	1	10,606	9.4	5.2	1.8	0.923	398	4,214,163	9.4
	Female	-	10,054	-	-	1.0	0.751	261	4,197,979	6.2
Non-Hodgkin Lymphoma	Total	2	20,660	9.7	6.1	7.2	0.053	1,842	8,412,142	21.9
	Male	2	10,606	18.9	11.3	4.5	0.352	1,064	4,214,163	25.2
	Female	-	10,054	-	-	2.8	0.121	778	4,197,979	18.5
Oral Cavity and Pharynx	Total	8	20,660	38.7	24.3	4.6	0.189	1,172	8,412,142	13.9
	Male	7	10,606	66.0	38.6	3.6	0.145	834	4,214,163	19.8
	Female	1	10,054	9.9	6.8	1.2	1.000	338	4,197,979	8.1
Ovary	Female	2	10,054	19.9	13.9	1.8	1.000	536	4,197,979	12.8
Pancreas	Total	6	20,660	29.0	17.6	5.2	0.847	1,291	8,412,142	15.3
	Male	3	10,606	28.3	16.1	3.2	1.000	715	4,214,163	17.0
	Female	3	10,054	29.8	19.3	2.1	0.720	576	4,197,979	13.7
Prostate	Male	21	10,606	198.0	107.9	24.8	0.519	5,372	4,214,163	127.5
Stomach	Total	1	20,660	4.8	3.0	2.0	0.823	505	8,412,142	6.0
	Male	1	10,606	9.4	5.5	1.4	1.000	335	4,214,163	7.9
	Female	-	10,054	-	-	0.6	1.000	170	4,197,979	4.0
Testis	Male	-	10,606	-	-	0.6	1.000	276	4,214,163	6.5
Thyroid	Total	2	20,660	9.7	7.9	3.8	0.552	1,254	8,412,142	14.9
	Male	1	10,606	9.4	6.9	1.1	1.000	329	4,214,163	7.8
	Female	1	10,054	9.9	8.6	2.6	0.554	925	4,197,979	22.0
Pediatric Age 0 to 19	Total	-	3,885	-	-	0.7	1.000	427	2,414,069	17.7
	Male	-	1,945	-	-	0.4	1.000	220	1,232,236	17.9
	Female	-	1,940	-	-	0.3	1.000	207	1,181,833	17.5

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN CUSTER COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Custer County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	239	20,843	1,146.7	726.2	264.5	0.121	68,861	8,567,912	803.7
	Male	131	10,695	1,224.9	756.1	145.7	0.237	36,099	4,292,807	840.9
	Female	108	10,148	1,064.2	681.8	121.4	0.240	32,762	4,275,105	766.3
All Malignant Cancers	Total	66	20,843	316.7	191.1	59.1	0.401	14,658	8,567,912	171.1
	Male	36	10,695	336.6	192.4	34.6	0.859	7,942	4,292,807	185.0
	Female	30	10,148	295.6	187.9	25.1	0.373	6,716	4,275,105	157.1
Bladder	Total	3	20,843	14.4	8.6	1.9	0.585	463	8,567,912	5.4
	Male	2	10,695	18.7	10.9	1.5	0.880	348	4,292,807	8.1
	Female	1	10,148	9.9	6.1	0.4	0.713	115	4,275,105	2.7
Brain and Other Nervous System	Total	2	20,843	9.6	6.2	1.9	1.000	507	8,567,912	5.9
	Male	1	10,695	9.4	5.7	1.3	1.000	322	4,292,807	7.5
	Female	1	10,148	9.9	6.8	0.6	0.946	185	4,275,105	4.3
Breast	Total	3	20,843	14.4	9.0	4.3	0.763	1,096	8,567,912	12.8
	Male	-	10,695	-	-	0.1	1.000	11	4,292,807	0.3
	Female	3	10,148	29.6	19.2	4.0	0.884	1,085	4,275,105	25.4
Cervix	Female	-	10,148	-	-	0.3	1.000	81	4,275,105	1.9
Colorectal	Total	5	20,843	24.0	14.9	4.9	1.000	1,241	8,567,912	14.5
	Male	3	10,695	28.1	16.7	2.8	1.000	676	4,292,807	15.7
	Female	2	10,148	19.7	12.6	2.1	1.000	565	4,275,105	13.2
Corpus Uteri	Female	-	10,148	-	-	0.6	1.000	164	4,275,105	3.8
Esophagus	Total	1	20,843	4.8	2.9	1.9	0.850	475	8,567,912	5.5
	Male	-	10,695	-	-	1.7	0.361	389	4,292,807	9.1
	Female	1	10,148	9.9	6.2	0.3	0.552	86	4,275,105	2.0
Hodgkin Lymphoma	Total	-	20,843	-	-	0.1	1.000	23	8,567,912	0.3
	Male	-	10,695	-	-	0.0	1.000	9	4,292,807	0.2
	Female	-	10,148	-	-	0.0	1.000	14	4,275,105	0.3
Kidney	Total	1	20,843	4.8	2.8	1.5	1.000	354	8,567,912	4.1
	Male	1	10,695	9.4	5.3	1.0	1.000	216	4,292,807	5.0
	Female	-	10,148	-	-	0.5	1.000	138	4,275,105	3.2
Larynx	Total	-	20,843	-	-	0.3	1.000	63	8,567,912	0.7
	Male	-	10,695	-	-	0.2	1.000	53	4,292,807	1.2
	Female	-	10,148	-	-	0.0	1.000	10	4,275,105	0.2
Leukemia	Total	3	20,843	14.4	8.9	2.4	0.885	621	8,567,912	7.2
	Male	2	10,695	18.7	11.0	1.5	0.907	362	4,292,807	8.4
	Female	1	10,148	9.9	6.4	1.0	1.000	259	4,275,105	6.1
Liver and Bile Duct	Total	2	20,843	9.6	5.6	2.5	1.000	611	8,567,912	7.1
	Male	2	10,695	18.7	10.3	1.9	1.000	419	4,292,807	9.8
	Female	-	10,148	-	-	0.7	0.968	192	4,275,105	4.5
Lung and Bronchus	Total	18	20,843	86.4	50.5	12.6	0.175	3,022	8,567,912	35.3
	Male	9	10,695	84.2	46.2	7.3	0.620	1,608	4,292,807	37.5
	Female	9	10,148	88.7	54.9	5.4	0.198	1,414	4,275,105	33.1
Melanoma of the Skin	Total	2	20,843	9.6	6.0	1.1	0.577	276	8,567,912	3.2
	Male	2	10,695	18.7	11.2	0.8	0.348	180	4,292,807	4.2
	Female	-	10,148	-	-	0.3	1.000	96	4,275,105	2.2
Myeloma	Total	1	20,843	4.8	2.8	1.4	1.000	334	8,567,912	3.9
	Male	1	10,695	9.4	5.3	0.9	1.000	198	4,292,807	4.6
	Female	-	10,148	-	-	0.5	1.000	136	4,275,105	3.2
Non-Hodgkin Lymphoma	Total	2	20,843	9.6	5.7	2.3	1.000	555	8,567,912	6.5
	Male	2	10,695	18.7	10.7	1.3	0.756	301	4,292,807	7.0
	Female	-	10,148	-	-	1.0	0.748	254	4,275,105	5.9
Oral Cavity and Pharynx	Total	1	20,843	4.8	2.9	0.9	1.000	235	8,567,912	2.7
	Male	1	10,695	9.4	5.3	0.7	1.000	159	4,292,807	3.7
	Female	-	10,148	-	-	0.3	1.000	76	4,275,105	1.8
Ovary	Female	2	10,148	19.7	12.5	1.4	0.789	364	4,275,105	8.5
Pancreas	Total	5	20,843	24.0	14.2	4.5	0.937	1,093	8,567,912	12.8
	Male	2	10,695	18.7	10.4	2.7	0.990	604	4,292,807	14.1
	Female	3	10,148	29.6	18.4	1.9	0.575	489	4,275,105	11.4
Prostate	Male	1	10,695	9.4	5.4	4.0	0.180	925	4,292,807	21.5
Stomach	Total	1	20,843	4.8	3.0	0.8	1.000	198	8,567,912	2.3
	Male	1	10,695	9.4	5.6	0.5	0.761	115	4,292,807	2.7
	Female	-	10,148	-	-	0.3	1.000	83	4,275,105	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Custer County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	79.4%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	13.6%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	16.9%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	19.6%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	4.1%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	34.9%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	27.5%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	41.5%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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ELMORE COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 634 cases of invasive cancer were diagnosed among Elmore County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Elmore County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Elmore County	State of Idaho
All Sites/Types	**634**	**42,577**
Female Breast	**71**	**6,210**
Prostate	**76**	**5,393**
Lung & Bronchus	**97**	**4,798**
Colorectal	**57**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Elmore County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Elmore County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Elmore County was 478.7 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (505.3) gives an estimate of the relative burden of disease in Elmore County.

The age- and sex-adjusted incidence rate of invasive cancer in Elmore County, all sites combined, was 547.5 cases per 100,000 persons per year during 2014–2018. There were statistically significantly more cases of cancer in Elmore County (634) than expected (585.2) based upon rates in the remainder of the state (p=.048).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 245 Elmore County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Elmore County and the State of Idaho, 2015–2019

Mortality 2015–2019	Elmore County	State of Idaho
All Deaths	**1,024**	**69,101**
Cancer Deaths	**245**	**14,724**
% of All Deaths	*23.9%*	*21.3%*
Lung & Bronchus	**58**	**3,040**
Colorectal	**25**	**1,246**
Pancreas	**10**	**1,098**
Female Breast	**10**	**1,088**
Prostate	**14**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Elmore County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Elmore County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Elmore County, all sites combined, was 212.8 deaths per 100,000 persons per year during 2015–2019, compared with 171.2 for the remainder of the state. There were statistically significantly more cancer deaths in Elmore County (245) than expected (197.1) based upon rates in the remainder of the state (p=.001).

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN ELMORE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Elmore County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	634	132,432	478.7	547.5	585.2	0.048 >>	41,943	8,300,370	505.3
	Male	345	69,257	498.1	592.3	305.9	0.030 >>	21,825	4,155,512	525.2
	Female	289	63,175	457.5	503.7	278.5	0.545	20,118	4,144,858	485.4
Bladder	Total	33	132,432	24.9	29.2	27.5	0.341	2,025	8,300,370	24.4
	Male	30	69,257	43.3	52.9	21.5	0.094	1,572	4,155,512	37.8
	Female	3	63,175	4.7	5.4	6.1	0.288	453	4,144,858	10.9
Brain - malignant	Total	10	132,432	7.6	8.2	9.1	0.845	621	8,300,370	7.5
	Male	5	69,257	7.2	8.2	5.6	1.000	377	4,155,512	9.1
	Female	5	63,175	7.9	8.3	3.5	0.563	244	4,144,858	5.9
Brain and other CNS - non-malignant	Total	22	132,432	16.6	18.6	16.7	0.249	1,178	8,300,370	14.2
	Male	5	69,257	7.2	8.2	5.7	0.989	390	4,155,512	9.4
	Female	17	63,175	26.9	29.5	10.9	0.107	788	4,144,858	19.0
Breast	Total	72	132,432	54.4	62.2	86.3	0.131	6,186	8,300,370	74.5
	Male	1	69,257	1.4	1.8	0.6	0.941	47	4,155,512	1.1
	Female	71	63,175	112.4	124.0	84.8	0.142	6,139	4,144,858	148.1
Breast - in situ	Total	18	132,432	13.6	15.5	15.1	0.526	1,084	8,300,370	13.1
	Male	-	69,257	-	-	0.1	1.000	5	4,155,512	0.1
	Female	18	63,175	28.5	31.5	14.9	0.485	1,079	4,144,858	26.0
Cervix	Female	4	63,175	6.3	6.7	4.1	1.000	284	4,144,858	6.9
Colorectal	Total	57	132,432	43.0	49.6	45.3	0.105	3,271	8,300,370	39.4
	Male	35	69,257	50.5	60.2	24.3	0.048 >>	1,736	4,155,512	41.8
	Female	22	63,175	34.8	38.7	21.0	0.889	1,535	4,144,858	37.0
Corpus Uteri	Female	19	63,175	30.1	33.3	17.0	0.697	1,239	4,144,858	29.9
Esophagus	Total	10	132,432	7.6	8.8	6.6	0.266	482	8,300,370	5.8
	Male	10	69,257	14.4	17.4	5.5	0.112	401	4,155,512	9.6
	Female	-	63,175	-	-	1.1	0.670	81	4,144,858	2.0
Hodgkin Lymphoma	Total	4	132,432	3.0	3.0	3.0	0.701	184	8,300,370	2.2
	Male	2	69,257	2.9	2.8	1.8	1.000	104	4,155,512	2.5
	Female	2	63,175	3.2	3.1	1.2	0.696	80	4,144,858	1.9
Kidney and Renal Pelvis	Total	22	132,432	16.6	19.0	21.9	1.000	1,569	8,300,370	18.9
	Male	15	69,257	21.7	25.7	14.3	0.923	1,019	4,155,512	24.5
	Female	7	63,175	11.1	12.2	7.6	1.000	550	4,144,858	13.3
Larynx	Total	5	132,432	3.8	4.3	2.8	0.301	201	8,300,370	2.4
	Male	3	69,257	4.3	5.2	2.2	0.764	160	4,155,512	3.9
	Female	2	63,175	3.2	3.5	0.6	0.223	41	4,144,858	1.0
Leukemia	Total	23	132,432	17.4	19.6	21.2	0.745	1,494	8,300,370	18.0
	Male	15	69,257	21.7	25.2	12.7	0.592	889	4,155,512	21.4
	Female	8	63,175	12.7	13.8	8.5	1.000	605	4,144,858	14.6
Liver and Bile Duct	Total	14	132,432	10.6	12.2	10.6	0.372	771	8,300,370	9.3
	Male	8	69,257	11.6	13.8	7.8	1.000	557	4,155,512	13.4
	Female	6	63,175	9.5	10.6	2.9	0.152	214	4,144,858	5.2
Lung and Bronchus	Total	97	132,432	73.2	85.3	64.4	0.000 >>	4,701	8,300,370	56.6
	Male	49	69,257	70.8	86.1	33.4	0.013 >>	2,439	4,155,512	58.7
	Female	48	63,175	76.0	84.5	31.0	0.006 >>	2,262	4,144,858	54.6
Melanoma of the Skin	Total	31	132,432	23.4	26.4	36.9	0.380	2,608	8,300,370	31.4
	Male	16	69,257	23.1	27.2	22.0	0.234	1,554	4,155,512	37.4
	Female	15	63,175	23.7	25.7	14.8	1.000	1,054	4,144,858	25.4
Myeloma	Total	12	132,432	9.1	10.6	8.9	0.369	648	8,300,370	7.8
	Male	7	69,257	10.1	12.3	5.4	0.585	392	4,155,512	9.4
	Female	5	63,175	7.9	8.9	3.5	0.541	256	4,144,858	6.2
Non-Hodgkin Lymphoma	Total	19	132,432	14.3	16.3	25.6	0.223	1,825	8,300,370	22.0
	Male	11	69,257	15.9	18.7	15.0	0.374	1,055	4,155,512	25.4
	Female	8	63,175	12.7	14.0	10.6	0.534	770	4,144,858	18.6
Oral Cavity and Pharynx	Total	11	132,432	8.3	9.5	16.3	0.228	1,169	8,300,370	14.1
	Male	7	69,257	10.1	12.0	11.7	0.205	834	4,155,512	20.1
	Female	4	63,175	6.3	7.0	4.6	1.000	335	4,144,858	8.1
Ovary	Female	6	63,175	9.5	10.4	7.4	0.780	532	4,144,858	12.8
Pancreas	Total	16	132,432	12.1	14.1	17.6	0.830	1,281	8,300,370	15.4
	Male	10	69,257	14.4	17.5	9.8	1.000	708	4,155,512	17.0
	Female	6	63,175	9.5	10.7	7.8	0.685	573	4,144,858	13.8
Prostate	Male	76	69,257	109.7	132.6	73.3	0.787	5,317	4,155,512	128.0
Stomach	Total	8	132,432	6.0	7.0	6.9	0.761	498	8,300,370	6.0
	Male	6	69,257	8.7	10.4	4.6	0.624	330	4,155,512	7.9
	Female	2	63,175	3.2	3.5	2.3	1.000	168	4,144,858	4.1
Testis	Male	9	69,257	13.0	11.5	5.0	0.139	267	4,155,512	6.4
Thyroid	Total	14	132,432	10.6	11.1	18.9	0.308	1,242	8,300,370	15.0
	Male	3	69,257	4.3	4.7	5.0	0.517	327	4,155,512	7.9
	Female	11	63,175	17.4	18.0	13.5	0.611	915	4,144,858	22.1
Pediatric Age 0 to 19	Total	5	37,293	13.4	13.2	6.7	0.683	422	2,380,661	17.7
	Male	2	19,167	10.4	10.3	3.5	0.650	218	1,215,014	17.9
	Female	3	18,126	16.6	16.3	3.2	1.000	204	1,165,647	17.5

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN ELMORE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Elmore County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	1,024	133,717	765.8	896.3	919.8	0.001 >>	68,076	8,455,038	805.2
	Male	584	69,980	834.5	993.5	494.9	0.000 >>	35,646	4,233,522	842.0
	Female	440	63,737	690.3	791.1	427.2	0.550	32,430	4,221,516	768.2
All Malignant Cancers	Total	245	133,717	183.2	212.8	197.1	0.001 >>	14,479	8,455,038	171.2
	Male	147	69,980	210.1	253.7	107.2	0.000 >>	7,831	4,233,522	185.0
	Female	98	63,737	153.8	171.7	89.9	0.417	6,648	4,221,516	157.5
Bladder	Total	1	133,717	0.7	0.9	6.2	0.030 <<	465	8,455,038	5.5
	Male	1	69,980	1.4	1.8	4.6	0.109	349	4,233,522	8.2
	Female	-	63,737	-	-	1.5	0.435	116	4,221,516	2.7
Brain and Other Nervous System	Total	6	133,717	4.5	5.0	7.1	0.871	503	8,455,038	5.9
	Male	4	69,980	5.7	6.6	4.6	1.000	319	4,233,522	7.5
	Female	2	63,737	3.1	3.4	2.5	1.000	184	4,221,516	4.4
Breast	Total	10	133,717	7.5	8.7	14.8	0.255	1,089	8,455,038	12.9
	Male	-	69,980	-	-	0.2	1.000	11	4,233,522	0.3
	Female	10	63,737	15.7	17.5	14.6	0.281	1,078	4,221,516	25.5
Cervix	Female	3	63,737	4.7	5.2	1.1	0.188	78	4,221,516	1.8
Colorectal	Total	25	133,717	18.7	21.7	16.6	0.065	1,221	8,455,038	14.4
	Male	16	69,980	22.9	27.3	9.2	0.051	663	4,233,522	15.7
	Female	9	63,737	14.1	16.0	7.4	0.661	558	4,221,516	13.2
Corpus Uteri	Female	3	63,737	4.7	5.3	2.2	0.738	161	4,221,516	3.8
Esophagus	Total	8	133,717	6.0	6.9	6.4	0.624	468	8,455,038	5.5
	Male	8	69,980	11.4	13.8	5.2	0.317	381	4,233,522	9.0
	Female	-	63,737	-	-	1.2	0.612	87	4,221,516	2.1
Hodgkin Lymphoma	Total	1	133,717	0.7	0.8	0.3	0.549	22	8,455,038	0.3
	Male	1	69,980	1.4	1.6	0.1	0.225	8	4,233,522	0.2
	Female	-	63,737	-	-	0.2	1.000	14	4,221,516	0.3
Kidney	Total	4	133,717	3.0	3.5	4.8	0.960	351	8,455,038	4.2
	Male	1	69,980	1.4	1.7	3.0	0.405	216	4,233,522	5.1
	Female	3	63,737	4.7	5.3	1.8	0.541	135	4,221,516	3.2
Larynx	Total	2	133,717	1.5	1.7	0.8	0.405	61	8,455,038	0.7
	Male	1	69,980	1.4	1.7	0.7	1.000	52	4,233,522	1.2
	Female	1	63,737	1.6	1.8	0.1	0.218	9	4,221,516	0.2
Leukemia	Total	14	133,717	10.5	12.1	8.4	0.093	610	8,455,038	7.2
	Male	10	69,980	14.3	17.0	4.9	0.057	354	4,233,522	8.4
	Female	4	63,737	6.3	7.0	3.5	0.922	256	4,221,516	6.1
Liver and Bile Duct	Total	13	133,717	9.7	11.2	8.3	0.154	600	8,455,038	7.1
	Male	7	69,980	10.0	11.9	5.7	0.703	414	4,233,522	9.8
	Female	6	63,737	9.4	10.4	2.5	0.090	186	4,221,516	4.4
Lung and Bronchus	Total	58	133,717	43.4	50.3	40.7	0.012 >>	2,982	8,455,038	35.3
	Male	31	69,980	44.3	53.6	21.7	0.068	1,586	4,233,522	37.5
	Female	27	63,737	42.4	47.0	19.0	0.098	1,396	4,221,516	33.1
Melanoma of the Skin	Total	2	133,717	1.5	1.7	3.8	0.532	276	8,455,038	3.3
	Male	1	69,980	1.4	1.7	2.5	0.569	181	4,233,522	4.3
	Female	1	63,737	1.6	1.7	1.3	1.000	95	4,221,516	2.3
Myeloma	Total	8	133,717	6.0	7.0	4.4	0.165	327	8,455,038	3.9
	Male	4	69,980	5.7	7.0	2.6	0.549	195	4,233,522	4.6
	Female	4	63,737	6.3	6.9	1.8	0.220	132	4,221,516	3.1
Non-Hodgkin Lymphoma	Total	12	133,717	9.0	10.5	7.4	0.145	545	8,455,038	6.4
	Male	11	69,980	15.7	19.0	4.0	0.006 >>	292	4,233,522	6.9
	Female	1	63,737	1.6	1.8	3.4	0.295	253	4,221,516	6.0
Oral Cavity and Pharynx	Total	4	133,717	3.0	3.5	3.2	0.787	232	8,455,038	2.7
	Male	2	69,980	2.9	3.4	2.2	1.000	158	4,233,522	3.7
	Female	2	63,737	3.1	3.5	1.0	0.540	74	4,221,516	1.8
Ovary	Female	6	63,737	9.4	10.4	4.9	0.734	360	4,221,516	8.5
Pancreas	Total	10	133,717	7.5	8.7	14.8	0.253	1,088	8,455,038	12.9
	Male	7	69,980	10.0	12.0	8.2	0.841	599	4,233,522	14.1
	Female	3	63,737	4.7	5.3	6.6	0.211	489	4,221,516	11.6
Prostate	Male	14	69,980	20.0	25.0	12.1	0.654	912	4,233,522	21.5
Stomach	Total	5	133,717	3.7	4.3	2.7	0.261	194	8,455,038	2.3
	Male	5	69,980	7.1	8.5	1.5	0.041 >>	111	4,233,522	2.6
	Female	-	63,737	-	-	1.1	0.654	83	4,221,516	2.0

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Elmore County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	83.0%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	15.7%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	30.8%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	17.8%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	1.6%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	29.3%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	21.0%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	11.4%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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FRANKLIN COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 266 cases of invasive cancer were diagnosed among Franklin County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Franklin County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Franklin County	State of Idaho
All Sites/Types	**266**	**42,577**
Female Breast	**44**	**6,210**
Prostate	**37**	**5,393**
Lung & Bronchus	**12**	**4,798**
Colorectal	**24**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Franklin County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Franklin County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Franklin County was 400.9 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (505.7) gives an estimate of the relative burden of disease in Franklin County.

The age- and sex-adjusted incidence rate of invasive cancer in Franklin County, all sites combined, was 433.2 cases per 100,000 persons per year during 2014–2018. There were statistically significantly fewer cases of cancer in Franklin County (266) than expected (310.5) based upon rates in the remainder of the state (p=.011).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 83 Franklin County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Franklin County and the State of Idaho, 2015–2019

Mortality 2015–2019	Franklin County	State of Idaho
All Deaths	**529**	**69,101**
Cancer Deaths	**83**	**14,724**
% of All Deaths	*15.7%*	*21.3%*
Lung & Bronchus	**8**	**3,040**
Colorectal	**10**	**1,246**
Pancreas	**7**	**1,098**
Female Breast	**9**	**1,088**
Prostate	**5**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Franklin County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Franklin County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Franklin County, all sites combined, was 130.6 deaths per 100,000 persons per year during 2015–2019, compared with 171.8 for the remainder of the state. There were statistically significantly fewer cancer deaths in Franklin County (83) than expected (109.2) based upon rates in the remainder of the state (p=.011).

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN FRANKLIN COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Franklin County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	266	66,356	400.9	433.2	310.5	0.011 <<	42,311	8,366,446	505.7
	Male	142	33,842	419.6	447.5	166.8	0.055	22,028	4,190,927	525.6
	Female	124	32,514	381.4	414.7	145.2	0.080	20,283	4,175,519	485.8
Bladder	Total	18	66,356	27.1	28.8	15.2	0.541	2,040	8,366,446	24.4
	Male	15	33,842	44.3	46.2	12.3	0.510	1,587	4,190,927	37.9
	Female	3	32,514	9.2	9.9	3.3	1.000	453	4,175,519	10.8
Brain - malignant	Total	11	66,356	16.6	17.5	4.7	0.017 >>	620	8,366,446	7.4
	Male	7	33,842	20.7	21.9	2.9	0.054	375	4,190,927	8.9
	Female	4	32,514	12.3	12.9	1.8	0.225	245	4,175,519	5.9
Brain and other CNS - non-malignant	Total	6	66,356	9.0	9.7	8.9	0.439	1,194	8,366,446	14.3
	Male	2	33,842	5.9	6.2	3.0	0.839	393	4,190,927	9.4
	Female	4	32,514	12.3	13.3	5.8	0.636	801	4,175,519	19.2
Breast	Total	44	66,356	66.3	72.3	45.2	0.936	6,214	8,366,446	74.3
	Male	-	33,842	-	-	0.4	1.000	48	4,190,927	1.1
	Female	44	32,514	135.3	148.6	43.7	1.000	6,166	4,175,519	147.7
Breast - in situ	Total	2	66,356	3.0	3.3	7.9	0.030 <<	1,100	8,366,446	13.1
	Male	-	33,842	-	-	0.0	1.000	5	4,190,927	0.1
	Female	2	32,514	6.2	6.8	7.7	0.035 <<	1,095	4,175,519	26.2
Cervix	Female	1	32,514	3.1	3.3	2.1	0.773	287	4,175,519	6.9
Colorectal	Total	24	66,356	36.2	38.8	24.4	1.000	3,304	8,366,446	39.5
	Male	15	33,842	44.3	47.1	13.3	0.721	1,756	4,190,927	41.9
	Female	9	32,514	27.7	29.8	11.2	0.640	1,548	4,175,519	37.1
Corpus Uteri	Female	5	32,514	15.4	17.1	8.8	0.261	1,253	4,175,519	30.0
Esophagus	Total	2	66,356	3.0	3.3	3.6	0.608	490	8,366,446	5.9
	Male	1	33,842	3.0	3.2	3.1	0.370	410	4,190,927	9.8
	Female	1	32,514	3.1	3.3	0.6	0.873	80	4,175,519	1.9
Hodgkin Lymphoma	Total	1	66,356	1.5	1.6	1.4	1.000	187	8,366,446	2.2
	Male	-	33,842	-	-	0.8	0.897	106	4,190,927	2.5
	Female	1	32,514	3.1	3.2	0.6	0.910	81	4,175,519	1.9
Kidney and Renal Pelvis	Total	7	66,356	10.5	11.5	11.6	0.222	1,584	8,366,446	18.9
	Male	4	33,842	11.8	12.7	7.7	0.232	1,030	4,190,927	24.6
	Female	3	32,514	9.2	10.1	4.0	0.885	554	4,175,519	13.3
Larynx	Total	-	66,356	-	-	1.5	0.443	206	8,366,446	2.5
	Male	-	33,842	-	-	1.2	0.579	163	4,190,927	3.9
	Female	-	32,514	-	-	0.3	1.000	43	4,175,519	1.0
Leukemia	Total	16	66,356	24.1	25.3	11.4	0.227	1,501	8,366,446	17.9
	Male	12	33,842	35.5	36.8	6.9	0.101	892	4,190,927	21.3
	Female	4	32,514	12.3	12.9	4.5	1.000	609	4,175,519	14.6
Liver and Bile Duct	Total	2	66,356	3.0	3.3	5.7	0.159	783	8,366,446	9.4
	Male	-	33,842	-	-	4.2	0.030 <<	565	4,190,927	13.5
	Female	2	32,514	6.2	6.8	1.5	0.914	218	4,175,519	5.2
Lung and Bronchus	Total	12	66,356	18.1	19.4	35.3	0.000 <<	4,786	8,366,446	57.2
	Male	6	33,842	17.7	18.7	19.0	0.001 <<	2,482	4,190,927	59.2
	Female	6	32,514	18.5	20.1	16.4	0.006 <<	2,304	4,175,519	55.2
Melanoma of the Skin	Total	22	66,356	33.2	35.9	19.2	0.579	2,617	8,366,446	31.3
	Male	17	33,842	50.2	53.4	11.8	0.181	1,553	4,190,927	37.1
	Female	5	32,514	15.4	16.7	7.6	0.453	1,064	4,175,519	25.5
Myeloma	Total	5	66,356	7.5	8.1	4.8	1.000	655	8,366,446	7.8
	Male	4	33,842	11.8	12.5	3.0	0.712	395	4,190,927	9.4
	Female	1	32,514	3.1	3.3	1.9	0.885	260	4,175,519	6.2
Non-Hodgkin Lymphoma	Total	10	66,356	15.1	16.2	13.6	0.413	1,834	8,366,446	21.9
	Male	5	33,842	14.8	15.6	8.1	0.363	1,061	4,190,927	25.3
	Female	5	32,514	15.4	16.7	5.5	1.000	773	4,175,519	18.5
Oral Cavity and Pharynx	Total	2	66,356	3.0	3.3	8.5	0.018 <<	1,178	8,366,446	14.1
	Male	2	33,842	5.9	6.4	6.2	0.105	839	4,190,927	20.0
	Female	-	32,514	-	-	2.4	0.181	339	4,175,519	8.1
Ovary	Female	5	32,514	15.4	16.8	3.8	0.662	533	4,175,519	12.8
Pancreas	Total	9	66,356	13.6	14.5	9.6	1.000	1,288	8,366,446	15.4
	Male	3	33,842	8.9	9.4	5.5	0.414	715	4,190,927	17.1
	Female	6	32,514	18.5	19.8	4.2	0.481	573	4,175,519	13.7
Prostate	Male	37	33,842	109.3	119.4	39.6	0.757	5,356	4,190,927	127.8
Stomach	Total	-	66,356	-	-	3.8	0.046 <<	506	8,366,446	6.0
	Male	-	33,842	-	-	2.6	0.151	336	4,190,927	8.0
	Female	-	32,514	-	-	1.2	0.576	170	4,175,519	4.1
Testis	Male	-	33,842	-	-	2.0	0.274	276	4,190,927	6.6
Thyroid	Total	13	66,356	19.6	21.5	9.0	0.247	1,243	8,366,446	14.9
	Male	4	33,842	11.8	13.0	2.4	0.443	326	4,190,927	7.8
	Female	9	32,514	27.7	30.2	6.5	0.428	917	4,175,519	22.0
Pediatric Age 0 to 19	Total	13	23,828	54.6	55.1	4.1	0.001 >>	414	2,394,126	17.3
	Male	9	12,516	71.9	72.8	2.1	0.001 >>	211	1,221,665	17.3
	Female	4	11,312	35.4	35.7	1.9	0.265	203	1,172,461	17.3

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN FRANKLIN COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Franklin County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	529	67,322	785.8	803.8	529.6	1.000	68,571	8,521,433	804.7
	Male	270	34,420	784.4	794.1	286.4	0.348	35,960	4,269,082	842.3
	Female	259	32,902	787.2	807.2	246.1	0.426	32,611	4,252,351	766.9
All Malignant Cancers	Total	83	67,322	123.3	130.6	109.2	0.011 <<	14,641	8,521,433	171.8
	Male	42	34,420	122.0	126.2	61.9	0.010 <<	7,936	4,269,082	185.9
	Female	41	32,902	124.6	134.0	48.3	0.331	6,705	4,252,351	157.7
Bladder	Total	2	67,322	3.0	3.0	3.6	0.610	464	8,521,433	5.4
	Male	1	34,420	2.9	2.9	2.8	0.447	349	4,269,082	8.2
	Female	1	32,902	3.0	3.2	0.9	1.000	115	4,252,351	2.7
Brain and Other Nervous System	Total	6	67,322	8.9	9.6	3.7	0.332	503	8,521,433	5.9
	Male	3	34,420	8.7	9.3	2.4	0.866	320	4,269,082	7.5
	Female	3	32,902	9.1	9.9	1.3	0.287	183	4,252,351	4.3
Breast	Total	9	67,322	13.4	14.2	8.1	0.846	1,090	8,521,433	12.8
	Male	-	34,420	-	-	0.1	1.000	11	4,269,082	0.3
	Female	9	32,902	27.4	29.4	7.8	0.749	1,079	4,252,351	25.4
Cervix	Female	-	32,902	-	-	0.6	1.000	81	4,252,351	1.9
Colorectal	Total	10	67,322	14.9	15.7	9.3	0.895	1,236	8,521,433	14.5
	Male	7	34,420	20.3	21.1	5.2	0.541	672	4,269,082	15.7
	Female	3	32,902	9.1	9.6	4.1	0.818	564	4,252,351	13.3
Corpus Uteri	Female	-	32,902	-	-	1.2	0.629	164	4,252,351	3.9
Esophagus	Total	1	67,322	1.5	1.6	3.5	0.274	475	8,521,433	5.6
	Male	-	34,420	-	-	3.0	0.103	389	4,269,082	9.1
	Female	1	32,902	3.0	3.3	0.6	0.921	86	4,252,351	2.0
Hodgkin Lymphoma	Total	-	67,322	-	-	0.2	1.000	23	8,521,433	0.3
	Male	-	34,420	-	-	0.1	1.000	9	4,269,082	0.2
	Female	-	32,902	-	-	0.1	1.000	14	4,252,351	0.3
Kidney	Total	1	67,322	1.5	1.6	2.6	0.523	354	8,521,433	4.2
	Male	-	34,420	-	-	1.7	0.377	217	4,269,082	5.1
	Female	1	32,902	3.0	3.2	1.0	1.000	137	4,252,351	3.2
Larynx	Total	-	67,322	-	-	0.5	1.000	63	8,521,433	0.7
	Male	-	34,420	-	-	0.4	1.000	53	4,269,082	1.2
	Female	-	32,902	-	-	0.1	1.000	10	4,252,351	0.2
Leukemia	Total	5	67,322	7.4	7.7	4.7	1.000	619	8,521,433	7.3
	Male	3	34,420	8.7	8.9	2.9	1.000	361	4,269,082	8.5
	Female	2	32,902	6.1	6.4	1.9	1.000	258	4,252,351	6.1
Liver and Bile Duct	Total	1	67,322	1.5	1.6	4.4	0.132	612	8,521,433	7.2
	Male	-	34,420	-	-	3.1	0.086	421	4,269,082	9.9
	Female	1	32,902	3.0	3.4	1.3	1.000	191	4,252,351	4.5
Lung and Bronchus	Total	8	67,322	11.9	12.7	22.4	0.001 <<	3,032	8,521,433	35.6
	Male	6	34,420	17.4	18.3	12.4	0.073	1,611	4,269,082	37.7
	Female	2	32,902	6.1	6.6	10.1	0.005 <<	1,421	4,252,351	33.4
Melanoma of the Skin	Total	4	67,322	5.9	6.3	2.0	0.300	274	8,521,433	3.2
	Male	4	34,420	11.6	12.0	1.4	0.104	178	4,269,082	4.2
	Female	-	32,902	-	-	0.7	1.000	96	4,252,351	2.3
Myeloma	Total	2	67,322	3.0	3.1	2.5	1.000	333	8,521,433	3.9
	Male	1	34,420	2.9	2.9	1.6	1.000	198	4,269,082	4.6
	Female	1	32,902	3.0	3.3	1.0	1.000	135	4,252,351	3.2
Non-Hodgkin Lymphoma	Total	5	67,322	7.4	7.8	4.2	0.812	552	8,521,433	6.5
	Male	1	34,420	2.9	3.0	2.4	0.629	302	4,269,082	7.1
	Female	4	32,902	12.2	12.9	1.8	0.225	250	4,252,351	5.9
Oral Cavity and Pharynx	Total	-	67,322	-	-	1.7	0.351	236	8,521,433	2.8
	Male	-	34,420	-	-	1.2	0.589	160	4,269,082	3.7
	Female	-	32,902	-	-	0.5	1.000	76	4,252,351	1.8
Ovary	Female	1	32,902	3.0	3.3	2.6	0.544	365	4,252,351	8.6
Pancreas	Total	7	67,322	10.4	11.2	8.0	0.900	1,091	8,521,433	12.8
	Male	3	34,420	8.7	9.2	4.6	0.653	603	4,269,082	14.1
	Female	4	32,902	12.2	13.2	3.5	0.919	488	4,252,351	11.5
Prostate	Male	5	34,420	14.5	14.3	7.5	0.476	921	4,269,082	21.6
Stomach	Total	-	67,322	-	-	1.5	0.449	199	8,521,433	2.3
	Male	-	34,420	-	-	0.9	0.809	116	4,269,082	2.7
	Female	-	32,902	-	-	0.6	1.000	83	4,252,351	2.0

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Franklin County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	80.4%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	9.1%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	80.3%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	6.3%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	3.7%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	6.9%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	25.4%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	9.6%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	10.3%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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FREMONT COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 327 cases of invasive cancer were diagnosed among Fremont County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Fremont County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Fremont County	State of Idaho
All Sites/Types	**327**	**42,577**
Female Breast	**36**	**6,210**
Prostate	**46**	**5,393**
Lung & Bronchus	**36**	**4,798**
Colorectal	**29**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Fremont County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Fremont County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Fremont County was 504.6 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (504.9) gives an estimate of the relative burden of disease in Fremont County.

The age- and sex-adjusted incidence rate of invasive cancer in Fremont County, all sites combined, was 474.1 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Fremont County (327) than expected (348.2) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 114 Fremont County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Fremont County and the State of Idaho, 2015–2019

Mortality 2015–2019	Fremont County	State of Idaho
All Deaths	**546**	**69,101**
Cancer Deaths	**114**	**14,724**
% of All Deaths	*20.9%*	*21.3%*
Lung & Bronchus	**20**	**3,040**
Colorectal	**15**	**1,246**
Pancreas	**9**	**1,098**
Female Breast	**7**	**1,088**
Prostate	**13**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Fremont County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Fremont County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Fremont County, all sites combined, was 162.8 deaths per 100,000 persons per year during 2015–2019, compared with 171.4 for the remainder of the state. There were fewer cancer deaths in Fremont County (114) than expected (120.0) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN FREMONT COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Fremont County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	327	64,806	504.6	474.1	348.2	0.265	42,250	8,367,996	504.9
	Male	163	33,767	482.7	439.6	194.7	0.022 <<	22,007	4,191,002	525.1
	Female	164	31,039	528.4	509.6	156.0	0.540	20,243	4,176,994	484.6
Bladder	Total	15	64,806	23.1	21.4	17.1	0.723	2,043	8,367,996	24.4
	Male	12	33,767	35.5	31.6	14.4	0.638	1,590	4,191,002	37.9
	Female	3	31,039	9.7	9.3	3.5	1.000	453	4,176,994	10.8
Brain - malignant	Total	5	64,806	7.7	7.4	5.1	1.000	626	8,367,996	7.5
	Male	-	33,767	-	-	3.3	0.076	382	4,191,002	9.1
	Female	5	31,039	16.1	15.7	1.9	0.082	244	4,176,994	5.8
Brain and other CNS - non-malignant	Total	5	64,806	7.7	7.4	9.7	0.162	1,195	8,367,996	14.3
	Male	1	33,767	3.0	2.8	3.4	0.303	394	4,191,002	9.4
	Female	4	31,039	12.9	12.5	6.1	0.540	801	4,176,994	19.2
Breast	Total	36	64,806	55.6	52.7	50.8	0.036 <<	6,222	8,367,996	74.4
	Male	-	33,767	-	-	0.4	1.000	48	4,191,002	1.1
	Female	36	31,039	116.0	111.7	47.6	0.097	6,174	4,176,994	147.8
Breast - in situ	Total	7	64,806	10.8	10.3	8.9	0.674	1,095	8,367,996	13.1
	Male	-	33,767	-	-	0.0	1.000	5	4,191,002	0.1
	Female	7	31,039	22.6	21.7	8.4	0.794	1,090	4,176,994	26.1
Cervix	Female	2	31,039	6.4	6.5	2.1	1.000	286	4,176,994	6.8
Colorectal	Total	29	64,806	44.7	42.1	27.2	0.773	3,299	8,367,996	39.4
	Male	13	33,767	38.5	35.1	15.5	0.629	1,758	4,191,002	41.9
	Female	16	31,039	51.5	49.9	11.8	0.287	1,541	4,176,994	36.9
Corpus Uteri	Female	9	31,039	29.0	27.9	9.7	1.000	1,249	4,176,994	29.9
Esophagus	Total	1	64,806	1.5	1.4	4.1	0.170	491	8,367,996	5.9
	Male	1	33,767	3.0	2.7	3.7	0.240	410	4,191,002	9.8
	Female	-	31,039	-	-	0.6	1.000	81	4,176,994	1.9
Hodgkin Lymphoma	Total	1	64,806	1.5	1.5	1.5	1.000	187	8,367,996	2.2
	Male	-	33,767	-	-	0.9	0.845	106	4,191,002	2.5
	Female	1	31,039	3.2	3.2	0.6	0.906	81	4,176,994	1.9
Kidney and Renal Pelvis	Total	10	64,806	15.4	14.5	13.0	0.497	1,581	8,367,996	18.9
	Male	8	33,767	23.7	21.8	9.0	0.914	1,026	4,191,002	24.5
	Female	2	31,039	6.4	6.2	4.3	0.393	555	4,176,994	13.3
Larynx	Total	3	64,806	4.6	4.3	1.7	0.482	203	8,367,996	2.4
	Male	3	33,767	8.9	8.0	1.4	0.349	160	4,191,002	3.8
	Female	-	31,039	-	-	0.3	1.000	43	4,176,994	1.0
Leukemia	Total	9	64,806	13.9	13.0	12.5	0.410	1,508	8,367,996	18.0
	Male	4	33,767	11.8	10.8	7.9	0.206	900	4,191,002	21.5
	Female	5	31,039	16.1	15.5	4.7	1.000	608	4,176,994	14.6
Liver and Bile Duct	Total	8	64,806	12.3	11.6	6.4	0.634	777	8,367,996	9.3
	Male	7	33,767	20.7	19.0	4.9	0.446	558	4,191,002	13.3
	Female	1	31,039	3.2	3.1	1.7	0.982	219	4,176,994	5.2
Lung and Bronchus	Total	36	64,806	55.6	51.1	40.1	0.584	4,762	8,367,996	56.9
	Male	15	33,767	44.4	39.6	22.4	0.134	2,473	4,191,002	59.0
	Female	21	31,039	67.7	63.8	18.0	0.545	2,289	4,176,994	54.8
Melanoma of the Skin	Total	20	64,806	30.9	29.4	21.3	0.891	2,619	8,367,996	31.3
	Male	14	33,767	41.5	38.1	13.7	0.997	1,556	4,191,002	37.1
	Female	6	31,039	19.3	19.0	8.0	0.616	1,063	4,176,994	25.4
Myeloma	Total	8	64,806	12.3	11.4	5.5	0.373	652	8,367,996	7.8
	Male	4	33,767	11.8	10.6	3.6	0.952	395	4,191,002	9.4
	Female	4	31,039	12.9	12.3	2.0	0.288	257	4,176,994	6.2
Non-Hodgkin Lymphoma	Total	15	64,806	23.1	21.6	15.2	1.000	1,829	8,367,996	21.9
	Male	7	33,767	20.7	18.8	9.4	0.561	1,059	4,191,002	25.3
	Female	8	31,039	25.8	24.7	6.0	0.504	770	4,176,994	18.4
Oral Cavity and Pharynx	Total	10	64,806	15.4	14.5	9.6	0.987	1,170	8,367,996	14.0
	Male	9	33,767	26.7	24.6	7.3	0.614	832	4,191,002	19.9
	Female	1	31,039	3.2	3.1	2.6	0.530	338	4,176,994	8.1
Ovary	Female	5	31,039	16.1	15.6	4.1	0.777	533	4,176,994	12.8
Pancreas	Total	8	64,806	12.3	11.4	10.8	0.504	1,289	8,367,996	15.4
	Male	3	33,767	8.9	8.0	6.4	0.233	715	4,191,002	17.1
	Female	5	31,039	16.1	15.4	4.5	0.920	574	4,176,994	13.7
Prostate	Male	46	33,767	136.2	124.6	47.1	0.949	5,347	4,191,002	127.6
Stomach	Total	3	64,806	4.6	4.3	4.2	0.803	503	8,367,996	6.0
	Male	2	33,767	5.9	5.3	3.0	0.854	334	4,191,002	8.0
	Female	1	31,039	3.2	3.1	1.3	1.000	169	4,176,994	4.0
Testis	Male	1	33,767	3.0	3.1	2.1	0.766	275	4,191,002	6.6
Thyroid	Total	15	64,806	23.1	23.0	9.7	0.135	1,241	8,367,996	14.8
	Male	4	33,767	11.8	11.5	2.7	0.575	326	4,191,002	7.8
	Female	11	31,039	35.4	35.7	6.7	0.163	915	4,176,994	21.9
Pediatric Age 0 to 19	Total	8	19,331	41.4	41.1	3.4	0.046 >>	419	2,398,623	17.5
	Male	3	10,090	29.7	29.3	1.8	0.546	217	1,224,091	17.7
	Female	5	9,241	54.1	54.3	1.6	0.046 >>	202	1,174,532	17.2

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN FREMONT COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Fremont County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	546	65,102	838.7	792.2	554.3	0.744	68,554	8,523,653	804.3
	Male	279	33,941	822.0	732.1	320.9	0.019 <<	35,951	4,269,561	842.0
	Female	267	31,161	856.8	857.0	238.8	0.076	32,603	4,254,092	766.4
All Malignant Cancers	Total	114	65,102	175.1	162.8	120.0	0.622	14,610	8,523,653	171.4
	Male	55	33,941	162.0	143.9	70.9	0.059	7,923	4,269,561	185.6
	Female	59	31,161	189.3	182.5	50.8	0.283	6,687	4,254,092	157.2
Bladder	Total	4	65,102	6.1	5.7	3.8	1.000	462	8,523,653	5.4
	Male	2	33,941	5.9	5.1	3.2	0.766	348	4,269,561	8.2
	Female	2	31,161	6.4	6.3	0.9	0.421	114	4,254,092	2.7
Brain and Other Nervous System	Total	4	65,102	6.1	5.8	4.1	1.000	505	8,523,653	5.9
	Male	1	33,941	2.9	2.7	2.8	0.470	322	4,269,561	7.5
	Female	3	31,161	9.6	9.2	1.4	0.332	183	4,254,092	4.3
Breast	Total	7	65,102	10.8	10.1	8.9	0.675	1,092	8,523,653	12.8
	Male	-	33,941	-	-	0.1	1.000	11	4,269,561	0.3
	Female	7	31,161	22.5	21.7	8.2	0.856	1,081	4,254,092	25.4
Cervix	Female	1	31,161	3.2	3.1	0.6	0.899	80	4,254,092	1.9
Colorectal	Total	15	65,102	23.0	21.6	10.0	0.171	1,231	8,523,653	14.4
	Male	9	33,941	26.5	23.7	5.9	0.295	670	4,269,561	15.7
	Female	6	31,161	19.3	18.9	4.2	0.491	561	4,254,092	13.2
Corpus Uteri	Female	1	31,161	3.2	3.1	1.3	1.000	163	4,254,092	3.8
Esophagus	Total	3	65,102	4.6	4.3	3.9	0.908	473	8,523,653	5.5
	Male	3	33,941	8.8	7.9	3.4	1.000	386	4,269,561	9.0
	Female	-	31,161	-	-	0.7	1.000	87	4,254,092	2.0
Hodgkin Lymphoma	Total	-	65,102	-	-	0.2	1.000	23	8,523,653	0.3
	Male	-	33,941	-	-	0.1	1.000	9	4,269,561	0.2
	Female	-	31,161	-	-	0.1	1.000	14	4,254,092	0.3
Kidney	Total	3	65,102	4.6	4.3	2.9	1.000	352	8,523,653	4.1
	Male	2	33,941	5.9	5.3	1.9	1.000	215	4,269,561	5.0
	Female	1	31,161	3.2	3.1	1.0	1.000	137	4,254,092	3.2
Larynx	Total	1	65,102	1.5	1.4	0.5	0.796	62	8,523,653	0.7
	Male	1	33,941	2.9	2.6	0.5	0.747	52	4,269,561	1.2
	Female	-	31,161	-	-	0.1	1.000	10	4,254,092	0.2
Leukemia	Total	2	65,102	3.1	2.9	5.1	0.232	622	8,523,653	7.3
	Male	1	33,941	2.9	2.6	3.3	0.328	363	4,269,561	8.5
	Female	1	31,161	3.2	3.1	2.0	0.835	259	4,254,092	6.1
Liver and Bile Duct	Total	9	65,102	13.8	12.8	5.0	0.133	604	8,523,653	7.1
	Male	6	33,941	17.7	16.1	3.6	0.320	415	4,269,561	9.7
	Female	3	31,161	9.6	9.1	1.5	0.362	189	4,254,092	4.4
Lung and Bronchus	Total	20	65,102	30.7	28.3	25.1	0.366	3,020	8,523,653	35.4
	Male	7	33,941	20.6	18.3	14.4	0.050 <<	1,610	4,269,561	37.7
	Female	13	31,161	41.7	39.7	10.9	0.593	1,410	4,254,092	33.1
Melanoma of the Skin	Total	1	65,102	1.5	1.4	2.3	0.680	277	8,523,653	3.2
	Male	1	33,941	2.9	2.6	1.6	1.000	181	4,269,561	4.2
	Female	-	31,161	-	-	0.7	0.971	96	4,254,092	2.3
Myeloma	Total	3	65,102	4.6	4.2	2.8	1.000	332	8,523,653	3.9
	Male	-	33,941	-	-	1.8	0.324	199	4,269,561	4.7
	Female	3	31,161	9.6	9.2	1.0	0.170	133	4,254,092	3.1
Non-Hodgkin Lymphoma	Total	2	65,102	3.1	2.8	4.6	0.331	555	8,523,653	6.5
	Male	-	33,941	-	-	2.7	0.132	303	4,269,561	7.1
	Female	2	31,161	6.4	6.2	1.9	1.000	252	4,254,092	5.9
Oral Cavity and Pharynx	Total	1	65,102	1.5	1.4	1.9	0.846	235	8,523,653	2.8
	Male	1	33,941	2.9	2.6	1.4	1.000	159	4,269,561	3.7
	Female	-	31,161	-	-	0.6	1.000	76	4,254,092	1.8
Ovary	Female	4	31,161	12.8	12.3	2.8	0.603	362	4,254,092	8.5
Pancreas	Total	9	65,102	13.8	12.8	9.0	1.000	1,089	8,523,653	12.8
	Male	5	33,941	14.7	13.1	5.4	1.000	601	4,269,561	14.1
	Female	4	31,161	12.8	12.2	3.8	1.000	488	4,254,092	11.5
Prostate	Male	13	33,941	38.3	33.1	8.4	0.170	913	4,269,561	21.4
Stomach	Total	1	65,102	1.5	1.4	1.6	1.000	198	8,523,653	2.3
	Male	-	33,941	-	-	1.0	0.716	116	4,269,561	2.7
	Female	1	31,161	3.2	3.1	0.6	0.921	82	4,254,092	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Fremont County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	77.5%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	8.6%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	62.2%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	11.9%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	7.0%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	11.6%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	25.3%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	14.4%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	18.5%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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GEM COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 627 cases of invasive cancer were diagnosed among Gem County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Gem County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Gem County	State of Idaho
All Sites/Types	**627**	**42,577**
Female Breast	**74**	**6,210**
Prostate	**82**	**5,393**
Lung & Bronchus	**71**	**4,798**
Colorectal	**58**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Gem County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Gem County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Gem County was 736.0 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (502.5) gives an estimate of the relative burden of disease in Gem County.

The age- and sex-adjusted incidence rate of invasive cancer in Gem County, all sites combined, was 561.7 cases per 100,000 persons per year during 2014–2018. There were statistically significantly more cases of cancer in Gem County (627) than expected (561.0) based upon rates in the remainder of the state (p=.007).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 210 Gem County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Gem County and the State of Idaho, 2015–2019

Mortality 2015–2019	Gem County	State of Idaho
All Deaths	**1,074**	**69,101**
Cancer Deaths	**210**	**14,724**
% of All Deaths	*19.6%*	*21.3%*
Lung & Bronchus	**53**	**3,040**
Colorectal	**20**	**1,246**
Pancreas	**14**	**1,098**
Female Breast	**9**	**1,088**
Prostate	**7**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Gem County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Gem County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Gem County, all sites combined, was 178.0 deaths per 100,000 persons per year during 2015–2019, compared with 170.7 for the remainder of the state. There were more cancer deaths in Gem County (210) than expected (201.4) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018

Cancer Site/Type	Sex	Gem County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	627	85,188	736.0	561.7	561.0	0.007 >>	41,950	8,347,614	502.5
	Male	348	42,529	818.3	594.4	305.5	0.018 >>	21,822	4,182,240	521.8
	Female	279	42,659	654.0	519.8	259.4	0.237	20,128	4,165,374	483.2
Bladder	Total	36	85,188	42.3	30.4	28.7	0.207	2,022	8,347,614	24.2
	Male	29	42,529	68.2	46.7	23.4	0.289	1,573	4,182,240	37.6
	Female	7	42,659	16.4	12.4	6.1	0.814	449	4,165,374	10.8
Brain - malignant	Total	13	85,188	15.3	12.7	7.6	0.089	618	8,347,614	7.4
	Male	6	42,529	14.1	11.5	4.7	0.665	376	4,182,240	9.0
	Female	7	42,659	16.4	14.1	2.9	0.055	242	4,165,374	5.8
Brain and other CNS - non-malignant	Total	19	85,188	22.3	18.0	14.9	0.354	1,181	8,347,614	14.1
	Male	6	42,529	14.1	11.3	4.9	0.740	389	4,182,240	9.3
	Female	13	42,659	30.5	24.8	10.0	0.409	792	4,165,374	19.0
Breast	Total	74	85,188	86.9	68.3	80.2	0.529	6,184	8,347,614	74.1
	Male	-	42,529	-	-	0.7	1.000	48	4,182,240	1.1
	Female	74	42,659	173.5	138.6	78.7	0.650	6,136	4,165,374	147.3
Breast - in situ	Total	9	85,188	10.6	8.5	13.9	0.233	1,093	8,347,614	13.1
	Male	-	42,529	-	-	0.1	1.000	5	4,182,240	0.1
	Female	9	42,659	21.1	17.1	13.7	0.245	1,088	4,165,374	26.1
Cervix	Female	5	42,659	11.7	11.0	3.1	0.399	283	4,165,374	6.8
Colorectal	Total	58	85,188	68.1	51.8	43.9	0.047 >>	3,270	8,347,614	39.2
	Male	29	42,529	68.2	50.3	24.0	0.356	1,742	4,182,240	41.7
	Female	29	42,659	68.0	53.2	20.0	0.069	1,528	4,165,374	36.7
Corpus Uteri	Female	19	42,659	44.5	35.5	15.9	0.503	1,239	4,165,374	29.7
Esophagus	Total	7	85,188	8.2	6.1	6.7	1.000	485	8,347,614	5.8
	Male	5	42,529	11.8	8.4	5.8	0.955	406	4,182,240	9.7
	Female	2	42,659	4.7	3.6	1.1	0.578	79	4,165,374	1.9
Hodgkin Lymphoma	Total	2	85,188	2.3	2.3	2.0	1.000	186	8,347,614	2.2
	Male	1	42,529	2.4	2.3	1.1	1.000	105	4,182,240	2.5
	Female	1	42,659	2.3	2.3	0.9	1.000	81	4,165,374	1.9
Kidney and Renal Pelvis	Total	24	85,188	28.2	21.5	20.9	0.559	1,567	8,347,614	18.8
	Male	17	42,529	40.0	29.7	13.9	0.473	1,017	4,182,240	24.3
	Female	7	42,659	16.4	12.9	7.2	1.000	550	4,165,374	13.2
Larynx	Total	2	85,188	2.3	1.7	2.8	0.936	204	8,347,614	2.4
	Male	2	42,529	4.7	3.3	2.3	1.000	161	4,182,240	3.8
	Female	-	42,659	-	-	0.6	1.000	43	4,165,374	1.0
Leukemia	Total	17	85,188	20.0	15.3	20.0	0.590	1,500	8,347,614	18.0
	Male	10	42,529	23.5	17.4	12.3	0.632	894	4,182,240	21.4
	Female	7	42,659	16.4	13.0	7.9	0.945	606	4,165,374	14.5
Liver and Bile Duct	Total	17	85,188	20.0	15.0	10.4	0.074	768	8,347,614	9.2
	Male	16	42,529	37.6	27.7	7.6	0.010 >>	549	4,182,240	13.1
	Female	1	42,659	2.3	1.8	2.9	0.425	219	4,165,374	5.3
Lung and Bronchus	Total	71	85,188	83.3	59.9	67.1	0.665	4,727	8,347,614	56.6
	Male	40	42,529	94.1	64.6	36.2	0.572	2,448	4,182,240	58.5
	Female	31	42,659	72.7	54.3	31.2	1.000	2,279	4,165,374	54.7
Melanoma of the Skin	Total	33	85,188	38.7	30.7	33.5	1.000	2,606	8,347,614	31.2
	Male	21	42,529	49.4	36.8	21.1	1.000	1,549	4,182,240	37.0
	Female	12	42,659	28.1	23.6	12.9	0.951	1,057	4,165,374	25.4
Myeloma	Total	7	85,188	8.2	5.9	9.2	0.597	653	8,347,614	7.8
	Male	4	42,529	9.4	6.5	5.8	0.627	395	4,182,240	9.4
	Female	3	42,659	7.0	5.3	3.5	1.000	258	4,165,374	6.2
Non-Hodgkin Lymphoma	Total	18	85,188	21.1	16.0	24.7	0.207	1,826	8,347,614	21.9
	Male	12	42,529	28.2	20.7	14.6	0.605	1,054	4,182,240	25.2
	Female	6	42,659	14.1	10.9	10.2	0.236	772	4,165,374	18.5
Oral Cavity and Pharynx	Total	18	85,188	21.1	16.2	15.4	0.580	1,162	8,347,614	13.9
	Male	11	42,529	25.9	19.3	11.3	1.000	830	4,182,240	19.8
	Female	7	42,659	16.4	13.0	4.3	0.289	332	4,165,374	8.0
Ovary	Female	8	42,659	18.8	15.0	6.8	0.737	530	4,165,374	12.7
Pancreas	Total	20	85,188	23.5	17.1	17.9	0.672	1,277	8,347,614	15.3
	Male	14	42,529	32.9	23.2	10.2	0.295	704	4,182,240	16.8
	Female	6	42,659	14.1	10.6	7.8	0.688	573	4,165,374	13.8
Prostate	Male	82	42,529	192.8	138.6	75.1	0.458	5,311	4,182,240	127.0
Stomach	Total	12	85,188	14.1	10.5	6.8	0.087	494	8,347,614	5.9
	Male	8	42,529	18.8	13.5	4.6	0.196	328	4,182,240	7.8
	Female	4	42,659	9.4	7.2	2.2	0.361	166	4,165,374	4.0
Testis	Male	3	42,529	7.1	8.3	2.4	0.842	273	4,182,240	6.5
Thyroid	Total	23	85,188	27.0	24.8	13.7	0.027 >>	1,233	8,347,614	14.8
	Male	8	42,529	18.8	16.5	3.7	0.075	322	4,182,240	7.7
	Female	15	42,659	35.2	32.7	10.0	0.171	911	4,165,374	21.9
Pediatric Age 0 to 19	Total	6	21,652	27.7	27.7	3.8	0.369	421	2,396,302	17.6
	Male	4	11,281	35.5	35.6	2.0	0.280	216	1,222,900	17.7
	Female	2	10,371	19.3	19.3	1.8	1.000	205	1,173,402	17.5

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN GEM COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Gem County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	1,074	86,654	1,239.4	922.0	932.0	0.000 >>	68,026	8,502,101	800.1
	Male	575	43,338	1,326.8	942.4	510.7	0.005 >>	35,655	4,260,164	836.9
	Female	499	43,316	1,152.0	895.2	425.4	0.001 >>	32,371	4,241,937	763.1
All Malignant Cancers	Total	210	86,654	242.3	178.0	201.4	0.561	14,514	8,502,101	170.7
	Male	118	43,338	272.3	189.5	114.9	0.796	7,860	4,260,164	184.5
	Female	92	43,316	212.4	163.2	88.4	0.733	6,654	4,241,937	156.9
Bladder	Total	12	86,654	13.8	9.9	6.5	0.066	454	8,502,101	5.3
	Male	10	43,338	23.1	15.3	5.2	0.080	340	4,260,164	8.0
	Female	2	43,316	4.6	3.5	1.5	0.912	114	4,241,937	2.7
Brain and Other Nervous System	Total	10	86,654	11.5	9.1	6.4	0.235	499	8,502,101	5.9
	Male	5	43,338	11.5	8.9	4.2	0.824	318	4,260,164	7.5
	Female	5	43,316	11.5	9.3	2.3	0.164	181	4,241,937	4.3
Breast	Total	9	86,654	10.4	7.8	14.7	0.158	1,090	8,502,101	12.8
	Male	-	43,338	-	-	0.2	1.000	11	4,260,164	0.3
	Female	9	43,316	20.8	16.2	14.1	0.207	1,079	4,241,937	25.4
Cervix	Female	1	43,316	2.3	2.0	1.0	1.000	80	4,241,937	1.9
Colorectal	Total	20	86,654	23.1	17.2	16.7	0.484	1,226	8,502,101	14.4
	Male	9	43,338	20.8	14.9	9.5	1.000	670	4,260,164	15.7
	Female	11	43,316	25.4	19.7	7.3	0.247	556	4,241,937	13.1
Corpus Uteri	Female	2	43,316	4.6	3.5	2.2	1.000	162	4,241,937	3.8
Esophagus	Total	11	86,654	12.7	9.4	6.4	0.126	465	8,502,101	5.5
	Male	10	43,338	23.1	16.3	5.4	0.102	379	4,260,164	8.9
	Female	1	43,316	2.3	1.8	1.2	1.000	86	4,241,937	2.0
Hodgkin Lymphoma	Total	-	86,654	-	-	0.3	1.000	23	8,502,101	0.3
	Male	-	43,338	-	-	0.1	1.000	9	4,260,164	0.2
	Female	-	43,316	-	-	0.2	1.000	14	4,241,937	0.3
Kidney	Total	2	86,654	2.3	1.7	4.9	0.259	353	8,502,101	4.2
	Male	1	43,338	2.3	1.6	3.1	0.364	216	4,260,164	5.1
	Female	1	43,316	2.3	1.7	1.8	0.896	137	4,241,937	3.2
Larynx	Total	-	86,654	-	-	0.9	0.832	63	8,502,101	0.7
	Male	-	43,338	-	-	0.8	0.921	53	4,260,164	1.2
	Female	-	43,316	-	-	0.1	1.000	10	4,241,937	0.2
Leukemia	Total	8	86,654	9.2	6.8	8.6	1.000	616	8,502,101	7.2
	Male	6	43,338	13.8	9.6	5.3	0.860	358	4,260,164	8.4
	Female	2	43,316	4.6	3.6	3.4	0.673	258	4,241,937	6.1
Liver and Bile Duct	Total	13	86,654	15.0	11.1	8.3	0.154	600	8,502,101	7.1
	Male	10	43,338	23.1	16.6	5.8	0.143	411	4,260,164	9.6
	Female	3	43,316	6.9	5.3	2.5	0.927	189	4,241,937	4.5
Lung and Bronchus	Total	53	86,654	61.2	44.2	42.2	0.120	2,987	8,502,101	35.1
	Male	28	43,338	64.6	44.4	23.5	0.403	1,589	4,260,164	37.3
	Female	25	43,316	57.7	43.5	18.9	0.209	1,398	4,241,937	33.0
Melanoma of the Skin	Total	2	86,654	2.3	1.7	3.7	0.566	276	8,502,101	3.2
	Male	2	43,338	4.6	3.3	2.5	1.000	180	4,260,164	4.2
	Female	-	43,316	-	-	1.2	0.580	96	4,241,937	2.3
Myeloma	Total	2	86,654	2.3	1.6	4.8	0.288	333	8,502,101	3.9
	Male	-	43,338	-	-	3.0	0.097	199	4,260,164	4.7
	Female	2	43,316	4.6	3.4	1.8	1.000	134	4,241,937	3.2
Non-Hodgkin Lymphoma	Total	5	86,654	5.8	4.2	7.8	0.418	552	8,502,101	6.5
	Male	4	43,338	9.2	6.4	4.4	1.000	299	4,260,164	7.0
	Female	1	43,316	2.3	1.7	3.4	0.287	253	4,241,937	6.0
Oral Cavity and Pharynx	Total	1	86,654	1.2	0.9	3.2	0.333	235	8,502,101	2.8
	Male	1	43,338	2.3	1.6	2.3	0.673	159	4,260,164	3.7
	Female	-	43,316	-	-	1.0	0.728	76	4,241,937	1.8
Ovary	Female	6	43,316	13.9	10.7	4.8	0.690	360	4,241,937	8.5
Pancreas	Total	14	86,654	16.2	11.8	15.1	0.901	1,084	8,502,101	12.7
	Male	10	43,338	23.1	16.2	8.6	0.728	596	4,260,164	14.0
	Female	4	43,316	9.2	7.0	6.6	0.428	488	4,241,937	11.5
Prostate	Male	7	43,338	16.2	10.6	14.3	0.055	919	4,260,164	21.6
Stomach	Total	2	86,654	2.3	1.7	2.7	0.990	197	8,502,101	2.3
	Male	1	43,338	2.3	1.7	1.6	1.000	115	4,260,164	2.7
	Female	1	43,316	2.3	1.8	1.1	1.000	82	4,241,937	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Gem County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	80.0%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	18.2%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	61.4%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	55.2%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	14.1%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	13.7%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	2.6%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	22.2%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	16.5%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	27.0%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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GOODING COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 420 cases of invasive cancer were diagnosed among Gooding County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Gooding County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Gooding County	State of Idaho
All Sites/Types	**420**	**42,577**
Female Breast	**45**	**6,210**
Prostate	**54**	**5,393**
Lung & Bronchus	**50**	**4,798**
Colorectal	**35**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Gooding County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Gooding County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Gooding County was 555.2 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (504.4) gives an estimate of the relative burden of disease in Gooding County.

The age- and sex-adjusted incidence rate of invasive cancer in Gooding County, all sites combined, was 516.4 cases per 100,000 persons per year during 2014–2018. There were more cases of cancer in Gooding County (420) than expected (410.3) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 146 Gooding County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Gooding County and the State of Idaho, 2015–2019

Mortality 2015–2019	Gooding County	State of Idaho
All Deaths	**691**	**69,101**
Cancer Deaths	**146**	**14,724**
% of All Deaths	*21.1%*	*21.3%*
Lung & Bronchus	**36**	**3,040**
Colorectal	**9**	**1,246**
Pancreas	**12**	**1,098**
Female Breast	**13**	**1,088**
Prostate	**13**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Gooding County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Gooding County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Gooding County, all sites combined, was 170.2 deaths per 100,000 persons per year during 2015–2019, compared with 171.2 for the remainder of the state. There were fewer cancer deaths in Gooding County (146) than expected (146.9) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN GOODING COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Gooding County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	420	75,646	555.2	516.4	410.3	0.643	42,157	8,357,156	504.4
	Male	229	38,610	593.1	541.1	221.8	0.647	21,941	4,186,159	524.1
	Female	191	37,036	515.7	488.1	189.7	0.942	20,216	4,170,997	484.7
Bladder	Total	30	75,646	39.7	35.3	20.6	0.062	2,028	8,357,156	24.3
	Male	22	38,610	57.0	49.6	16.7	0.248	1,580	4,186,159	37.7
	Female	8	37,036	21.6	19.6	4.4	0.154	448	4,170,997	10.7
Brain - malignant	Total	9	75,646	11.9	11.4	5.9	0.280	622	8,357,156	7.4
	Male	7	38,610	18.1	17.3	3.6	0.150	375	4,186,159	9.0
	Female	2	37,036	5.4	5.2	2.3	1.000	247	4,170,997	5.9
Brain and other CNS - non-malignant	Total	10	75,646	13.2	12.5	11.4	0.829	1,190	8,357,156	14.2
	Male	3	38,610	7.8	7.3	3.9	0.918	392	4,186,159	9.4
	Female	7	37,036	18.9	18.1	7.4	1.000	798	4,170,997	19.1
Breast	Total	46	75,646	60.8	57.9	59.0	0.095	6,212	8,357,156	74.3
	Male	1	38,610	2.6	2.3	0.5	0.774	47	4,186,159	1.1
	Female	45	37,036	121.5	116.9	56.9	0.123	6,165	4,170,997	147.8
Breast - in situ	Total	9	75,646	11.9	11.6	10.1	0.879	1,093	8,357,156	13.1
	Male	-	38,610	-	-	0.0	1.000	5	4,186,159	0.1
	Female	9	37,036	24.3	23.9	9.8	0.959	1,088	4,170,997	26.1
Cervix	Female	1	37,036	2.7	2.8	2.5	0.594	287	4,170,997	6.9
Colorectal	Total	35	75,646	46.3	42.7	32.3	0.679	3,293	8,357,156	39.4
	Male	19	38,610	49.2	44.9	17.7	0.820	1,752	4,186,159	41.9
	Female	16	37,036	43.2	40.3	14.7	0.799	1,541	4,170,997	36.9
Corpus Uteri	Female	11	37,036	29.7	29.0	11.4	1.000	1,247	4,170,997	29.9
Esophagus	Total	8	75,646	10.6	9.7	4.8	0.223	484	8,357,156	5.8
	Male	7	38,610	18.1	16.4	4.1	0.249	404	4,186,159	9.7
	Female	1	37,036	2.7	2.5	0.8	1.000	80	4,170,997	1.9
Hodgkin Lymphoma	Total	2	75,646	2.6	2.7	1.7	0.994	186	8,357,156	2.2
	Male	1	38,610	2.6	2.6	1.0	1.000	105	4,186,159	2.5
	Female	1	37,036	2.7	2.7	0.7	1.000	81	4,170,997	1.9
Kidney and Renal Pelvis	Total	16	75,646	21.2	19.8	15.2	0.914	1,575	8,357,156	18.8
	Male	7	38,610	18.1	16.8	10.2	0.405	1,027	4,186,159	24.5
	Female	9	37,036	24.3	22.7	5.2	0.164	548	4,170,997	13.1
Larynx	Total	5	75,646	6.6	6.1	2.0	0.099	201	8,357,156	2.4
	Male	4	38,610	10.4	9.5	1.6	0.158	159	4,186,159	3.8
	Female	1	37,036	2.7	2.5	0.4	0.654	42	4,170,997	1.0
Leukemia	Total	12	75,646	15.9	14.4	15.0	0.539	1,505	8,357,156	18.0
	Male	9	38,610	23.3	21.1	9.1	1.000	895	4,186,159	21.4
	Female	3	37,036	8.1	7.4	6.0	0.311	610	4,170,997	14.6
Liver and Bile Duct	Total	7	75,646	9.3	8.7	7.5	1.000	778	8,357,156	9.3
	Male	6	38,610	15.5	14.6	5.5	0.942	559	4,186,159	13.4
	Female	1	37,036	2.7	2.5	2.1	0.776	219	4,170,997	5.3
Lung and Bronchus	Total	50	75,646	66.1	59.3	47.9	0.797	4,748	8,357,156	56.8
	Male	26	38,610	67.3	59.6	25.6	0.997	2,462	4,186,159	58.8
	Female	24	37,036	64.8	58.6	22.4	0.796	2,286	4,170,997	54.8
Melanoma of the Skin	Total	16	75,646	21.2	20.0	25.1	0.072	2,623	8,357,156	31.4
	Male	8	38,610	20.7	19.0	15.7	0.052	1,562	4,186,159	37.3
	Female	8	37,036	21.6	21.1	9.6	0.749	1,061	4,170,997	25.4
Myeloma	Total	10	75,646	13.2	11.9	6.6	0.255	650	8,357,156	7.8
	Male	5	38,610	13.0	11.5	4.1	0.776	394	4,186,159	9.4
	Female	5	37,036	13.5	12.2	2.5	0.221	256	4,170,997	6.1
Non-Hodgkin Lymphoma	Total	18	75,646	23.8	21.9	17.9	1.000	1,826	8,357,156	21.8
	Male	10	38,610	25.9	23.7	10.6	1.000	1,056	4,186,159	25.2
	Female	8	37,036	21.6	20.0	7.4	0.920	770	4,170,997	18.5
Oral Cavity and Pharynx	Total	15	75,646	19.8	18.8	11.1	0.311	1,165	8,357,156	13.9
	Male	12	38,610	31.1	29.1	8.2	0.247	829	4,186,159	19.8
	Female	3	37,036	8.1	7.7	3.1	1.000	336	4,170,997	8.1
Ovary	Female	5	37,036	13.5	12.9	5.0	1.000	533	4,170,997	12.8
Pancreas	Total	14	75,646	18.5	16.7	12.9	0.830	1,283	8,357,156	15.4
	Male	5	38,610	13.0	11.6	7.3	0.523	713	4,186,159	17.0
	Female	9	37,036	24.3	21.9	5.6	0.230	570	4,170,997	13.7
Prostate	Male	54	38,610	139.9	129.6	53.2	0.944	5,339	4,186,159	127.5
Stomach	Total	4	75,646	5.3	4.8	5.0	0.881	502	8,357,156	6.0
	Male	2	38,610	5.2	4.7	3.4	0.668	334	4,186,159	8.0
	Female	2	37,036	5.4	4.9	1.6	0.969	168	4,170,997	4.0
Testis	Male	4	38,610	10.4	11.1	2.4	0.422	272	4,186,159	6.5
Thyroid	Total	7	75,646	9.3	9.4	11.1	0.268	1,249	8,357,156	14.9
	Male	3	38,610	7.8	7.7	3.1	1.000	327	4,186,159	7.8
	Female	4	37,036	10.8	11.1	7.9	0.205	922	4,170,997	22.1
Pediatric Age 0 to 19	Total	4	23,020	17.4	17.5	4.0	1.000	423	2,394,934	17.7
	Male	3	11,713	25.6	25.8	2.1	0.683	217	1,222,468	17.8
	Female	1	11,307	8.8	9.0	2.0	0.834	206	1,172,466	17.6

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN GOODING COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Gooding County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	691	75,739	912.3	778.8	713.0	0.422	68,409	8,513,016	803.6
	Male	386	38,628	999.3	838.4	386.9	0.990	35,844	4,264,874	840.4
	Female	305	37,111	821.9	710.7	329.0	0.194	32,565	4,248,142	766.6
All Malignant Cancers	Total	146	75,739	192.8	170.2	146.9	0.983	14,578	8,513,016	171.2
	Male	80	38,628	207.1	178.1	83.2	0.781	7,898	4,264,874	185.2
	Female	66	37,111	177.8	159.9	64.9	0.924	6,680	4,248,142	157.2
Bladder	Total	3	75,739	4.0	3.3	4.9	0.550	463	8,513,016	5.4
	Male	2	38,628	5.2	4.1	4.0	0.486	348	4,264,874	8.2
	Female	1	37,111	2.7	2.3	1.2	1.000	115	4,248,142	2.7
Brain and Other Nervous System	Total	2	75,739	2.6	2.5	4.8	0.288	507	8,513,016	6.0
	Male	2	38,628	5.2	4.8	3.1	0.793	321	4,264,874	7.5
	Female	-	37,111	-	-	1.7	0.363	186	4,248,142	4.4
Breast	Total	13	75,739	17.2	15.4	10.8	0.572	1,086	8,513,016	12.8
	Male	-	38,628	-	-	0.1	1.000	11	4,264,874	0.3
	Female	13	37,111	35.0	32.1	10.3	0.467	1,075	4,248,142	25.3
Cervix	Female	2	37,111	5.4	5.4	0.7	0.304	79	4,248,142	1.9
Colorectal	Total	9	75,739	11.9	10.5	12.4	0.415	1,237	8,513,016	14.5
	Male	6	38,628	15.5	13.7	6.9	0.919	673	4,264,874	15.8
	Female	3	37,111	8.1	7.2	5.5	0.399	564	4,248,142	13.3
Corpus Uteri	Female	-	37,111	-	-	1.6	0.417	164	4,248,142	3.9
Esophagus	Total	7	75,739	9.2	8.3	4.6	0.376	469	8,513,016	5.5
	Male	6	38,628	15.5	13.7	3.9	0.410	383	4,264,874	9.0
	Female	1	37,111	2.7	2.4	0.8	1.000	86	4,248,142	2.0
Hodgkin Lymphoma	Total	-	75,739	-	-	0.2	1.000	23	8,513,016	0.3
	Male	-	38,628	-	-	0.1	1.000	9	4,264,874	0.2
	Female	-	37,111	-	-	0.1	1.000	14	4,248,142	0.3
Kidney	Total	3	75,739	4.0	3.5	3.5	1.000	352	8,513,016	4.1
	Male	-	38,628	-	-	2.2	0.216	217	4,264,874	5.1
	Female	3	37,111	8.1	7.1	1.3	0.306	135	4,248,142	3.2
Larynx	Total	2	75,739	2.6	2.3	0.6	0.252	61	8,513,016	0.7
	Male	2	38,628	5.2	4.4	0.5	0.204	51	4,264,874	1.2
	Female	-	37,111	-	-	0.1	1.000	10	4,248,142	0.2
Leukemia	Total	6	75,739	7.9	6.8	6.4	1.000	618	8,513,016	7.3
	Male	2	38,628	5.2	4.4	3.9	0.514	362	4,264,874	8.5
	Female	4	37,111	10.8	9.4	2.6	0.516	256	4,248,142	6.0
Liver and Bile Duct	Total	5	75,739	6.6	6.1	5.9	0.931	608	8,513,016	7.1
	Male	4	38,628	10.4	9.5	4.1	1.000	417	4,264,874	9.8
	Female	1	37,111	2.7	2.5	1.8	0.918	191	4,248,142	4.5
Lung and Bronchus	Total	36	75,739	47.5	42.0	30.2	0.336	3,004	8,513,016	35.3
	Male	22	38,628	57.0	49.6	16.6	0.234	1,595	4,264,874	37.4
	Female	14	37,111	37.7	33.6	13.8	1.000	1,409	4,248,142	33.2
Melanoma of the Skin	Total	-	75,739	-	-	2.7	0.128	278	8,513,016	3.3
	Male	-	38,628	-	-	1.9	0.304	182	4,264,874	4.3
	Female	-	37,111	-	-	0.9	0.803	96	4,248,142	2.3
Myeloma	Total	1	75,739	1.3	1.1	3.5	0.278	334	8,513,016	3.9
	Male	1	38,628	2.6	2.2	2.1	0.734	198	4,264,874	4.6
	Female	-	37,111	-	-	1.4	0.505	136	4,248,142	3.2
Non-Hodgkin Lymphoma	Total	3	75,739	4.0	3.4	5.7	0.354	554	8,513,016	6.5
	Male	1	38,628	2.6	2.2	3.2	0.342	302	4,264,874	7.1
	Female	2	37,111	5.4	4.6	2.6	1.000	252	4,248,142	5.9
Oral Cavity and Pharynx	Total	2	75,739	2.6	2.4	2.3	1.000	234	8,513,016	2.7
	Male	2	38,628	5.2	4.6	1.6	0.964	158	4,264,874	3.7
	Female	-	37,111	-	-	0.7	0.959	76	4,248,142	1.8
Ovary	Female	3	37,111	8.1	7.4	3.5	1.000	363	4,248,142	8.5
Pancreas	Total	12	75,739	15.8	14.1	10.8	0.800	1,086	8,513,016	12.8
	Male	6	38,628	15.5	13.8	6.1	1.000	600	4,264,874	14.1
	Female	6	37,111	16.2	14.5	4.7	0.680	486	4,248,142	11.4
Prostate	Male	13	38,628	33.7	26.6	10.5	0.508	913	4,264,874	21.4
Stomach	Total	-	75,739	-	-	2.0	0.271	199	8,513,016	2.3
	Male	-	38,628	-	-	1.2	0.606	116	4,264,874	2.7
	Female	-	37,111	-	-	0.8	0.879	83	4,248,142	2.0

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Gooding County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	72.1%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	16.4%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	47.3%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	18.8%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	6.4%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	4.6%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	27.3%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	16.8%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	14.0%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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IDAHO COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 585 cases of invasive cancer were diagnosed among Idaho County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Idaho County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Idaho County	State of Idaho
All Sites/Types	**585**	**42,577**
Female Breast	**68**	**6,210**
Prostate	**69**	**5,393**
Lung & Bronchus	**70**	**4,798**
Colorectal	**53**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Idaho County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Idaho County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Idaho County was 716.4 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (502.8) gives an estimate of the relative burden of disease in Idaho County.

The age- and sex-adjusted incidence rate of invasive cancer in Idaho County, all sites combined, was 469.5 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Idaho County (585) than expected (626.5) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 216 Idaho County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Idaho County and the State of Idaho, 2015–2019

Mortality 2015–2019	Idaho County	State of Idaho
All Deaths	**955**	**69,101**
Cancer Deaths	**216**	**14,724**
% of All Deaths	*22.6%*	*21.3%*
Lung & Bronchus	**43**	**3,040**
Colorectal	**22**	**1,246**
Pancreas	**21**	**1,098**
Female Breast	**8**	**1,088**
Prostate	**11**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Idaho County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Idaho County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Idaho County, all sites combined, was 160.1 deaths per 100,000 persons per year during 2015–2019, compared with 170.5 for the remainder of the state. There were fewer cancer deaths in Idaho County (216) than expected (230.1) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN IDAHO COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Idaho County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	585	81,661	716.4	469.5	626.5	0.099	41,992	8,351,141	502.8
	Male	330	42,814	770.8	474.7	363.1	0.084	21,840	4,181,955	522.2
	Female	255	38,847	656.4	453.7	271.6	0.327	20,152	4,169,186	483.4
Bladder	Total	38	81,661	46.5	28.1	32.7	0.399	2,020	8,351,141	24.2
	Male	32	42,814	74.7	42.8	28.1	0.507	1,570	4,181,955	37.5
	Female	6	38,847	15.4	9.8	6.6	1.000	450	4,169,186	10.8
Brain - malignant	Total	7	81,661	8.6	6.4	8.2	0.858	624	8,351,141	7.5
	Male	6	42,814	14.0	10.1	5.4	0.893	376	4,181,955	9.0
	Female	1	38,847	2.6	2.0	3.0	0.405	248	4,169,186	5.9
Brain and other CNS - non-malignant	Total	12	81,661	14.7	10.5	16.3	0.349	1,188	8,351,141	14.2
	Male	3	42,814	7.0	5.0	5.6	0.381	392	4,181,955	9.4
	Female	9	38,847	23.2	16.7	10.3	0.837	796	4,169,186	19.1
Breast	Total	69	81,661	84.5	58.0	88.1	0.041 <<	6,189	8,351,141	74.1
	Male	1	42,814	2.3	1.4	0.8	1.000	47	4,181,955	1.1
	Female	68	38,847	175.0	122.3	81.9	0.132	6,142	4,169,186	147.3
Breast - in situ	Total	7	81,661	8.6	6.1	15.0	0.036 <<	1,095	8,351,141	13.1
	Male	-	42,814	-	-	0.1	1.000	5	4,181,955	0.1
	Female	7	38,847	18.0	13.0	14.1	0.060	1,090	4,169,186	26.1
Cervix	Female	4	38,847	10.3	9.5	2.9	0.645	284	4,169,186	6.8
Colorectal	Total	53	81,661	64.9	42.7	48.7	0.577	3,275	8,351,141	39.2
	Male	23	42,814	53.7	34.2	28.1	0.386	1,748	4,181,955	41.8
	Female	30	38,847	77.2	52.3	21.0	0.076	1,527	4,169,186	36.6
Corpus Uteri	Female	16	38,847	41.2	28.4	16.8	0.974	1,242	4,169,186	29.8
Esophagus	Total	11	81,661	13.5	8.4	7.6	0.287	481	8,351,141	5.8
	Male	10	42,814	23.4	14.0	6.8	0.305	401	4,181,955	9.6
	Female	1	38,847	2.6	1.6	1.2	1.000	80	4,169,186	1.9
Hodgkin Lymphoma	Total	1	81,661	1.2	1.1	2.0	0.834	187	8,351,141	2.2
	Male	1	42,814	2.3	2.2	1.2	1.000	105	4,181,955	2.5
	Female	-	38,847	-	-	0.8	0.888	82	4,169,186	2.0
Kidney and Renal Pelvis	Total	26	81,661	31.8	21.0	23.2	0.619	1,565	8,351,141	18.7
	Male	17	42,814	39.7	25.4	16.3	0.926	1,017	4,181,955	24.3
	Female	9	38,847	23.2	15.7	7.5	0.681	548	4,169,186	13.1
Larynx	Total	4	81,661	4.9	3.1	3.1	0.772	202	8,351,141	2.4
	Male	3	42,814	7.0	4.2	2.7	1.000	160	4,181,955	3.8
	Female	1	38,847	2.6	1.8	0.6	0.871	42	4,169,186	1.0
Leukemia	Total	25	81,661	30.6	20.3	22.0	0.579	1,492	8,351,141	17.9
	Male	13	42,814	30.4	19.3	14.3	0.862	891	4,181,955	21.3
	Female	12	38,847	30.9	21.2	8.2	0.247	601	4,169,186	14.4
Liver and Bile Duct	Total	16	81,661	19.6	12.5	11.8	0.287	769	8,351,141	9.2
	Male	13	42,814	30.4	18.9	9.1	0.263	552	4,181,955	13.2
	Female	3	38,847	7.7	5.0	3.1	1.000	217	4,169,186	5.2
Lung and Bronchus	Total	70	81,661	85.7	51.7	76.7	0.488	4,728	8,351,141	56.6
	Male	43	42,814	100.4	57.6	43.7	1.000	2,445	4,181,955	58.5
	Female	27	38,847	69.5	43.7	33.8	0.274	2,283	4,169,186	54.8
Melanoma of the Skin	Total	39	81,661	47.8	33.1	36.7	0.744	2,600	8,351,141	31.1
	Male	25	42,814	58.4	37.4	24.7	1.000	1,545	4,181,955	36.9
	Female	14	38,847	36.0	27.2	13.0	0.858	1,055	4,169,186	25.3
Myeloma	Total	6	81,661	7.3	4.5	10.5	0.202	654	8,351,141	7.8
	Male	3	42,814	7.0	4.1	7.0	0.164	396	4,181,955	9.5
	Female	3	38,847	7.7	4.9	3.8	0.953	258	4,169,186	6.2
Non-Hodgkin Lymphoma	Total	26	81,661	31.8	20.7	27.4	0.890	1,818	8,351,141	21.8
	Male	15	42,814	35.0	22.0	17.1	0.724	1,051	4,181,955	25.1
	Female	11	38,847	28.3	18.8	10.8	1.000	767	4,169,186	18.4
Oral Cavity and Pharynx	Total	19	81,661	23.3	15.3	17.3	0.737	1,161	8,351,141	13.9
	Male	15	42,814	35.0	22.4	13.3	0.702	826	4,181,955	19.8
	Female	4	38,847	10.3	7.1	4.6	1.000	335	4,169,186	8.0
Ovary	Female	5	38,847	12.9	9.0	7.1	0.582	533	4,169,186	12.8
Pancreas	Total	21	81,661	25.7	15.9	20.2	0.918	1,276	8,351,141	15.3
	Male	16	42,814	37.4	22.3	12.1	0.319	702	4,181,955	16.8
	Female	5	38,847	12.9	8.2	8.4	0.316	574	4,169,186	13.8
Prostate	Male	69	42,814	161.2	96.4	91.2	0.019 <<	5,324	4,181,955	127.3
Stomach	Total	4	81,661	4.9	3.1	7.7	0.238	502	8,351,141	6.0
	Male	3	42,814	7.0	4.3	5.6	0.389	333	4,181,955	8.0
	Female	1	38,847	2.6	1.7	2.4	0.629	169	4,169,186	4.1
Testis	Male	5	42,814	11.7	14.0	2.3	0.170	271	4,181,955	6.5
Thyroid	Total	7	81,661	8.6	7.4	14.2	0.058	1,249	8,351,141	15.0
	Male	1	42,814	2.3	1.8	4.3	0.148	329	4,181,955	7.9
	Female	6	38,847	15.4	13.8	9.6	0.317	920	4,169,186	22.1
Pediatric Age 0 to 19	Total	1	17,863	5.6	5.6	3.2	0.347	426	2,400,091	17.7
	Male	-	9,448	-	-	1.7	0.360	220	1,224,733	18.0
	Female	1	8,415	11.9	11.9	1.5	1.000	206	1,175,358	17.5

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN IDAHO COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Idaho County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	955	82,053	1,163.9	717.0	1,067.0	0.001 <<	68,145	8,506,702	801.1
	Male	558	43,005	1,297.5	770.1	606.7	0.048 <<	35,672	4,260,497	837.3
	Female	397	39,048	1,016.7	643.1	472.1	0.000 <<	32,473	4,246,205	764.8
All Malignant Cancers	Total	216	82,053	263.2	160.1	230.1	0.371	14,508	8,506,702	170.5
	Male	120	43,005	279.0	160.4	137.9	0.133	7,858	4,260,497	184.4
	Female	96	39,048	245.9	156.4	96.2	1.000	6,650	4,246,205	156.6
Bladder	Total	14	82,053	17.1	9.9	7.5	0.044 >>	452	8,506,702	5.3
	Male	9	43,005	20.9	11.3	6.4	0.383	341	4,260,497	8.0
	Female	5	39,048	12.8	7.8	1.7	0.056	111	4,246,205	2.6
Brain and Other Nervous System	Total	7	82,053	8.5	5.8	7.2	1.000	502	8,506,702	5.9
	Male	6	43,005	14.0	9.2	4.9	0.725	317	4,260,497	7.4
	Female	1	39,048	2.6	1.8	2.5	0.592	185	4,246,205	4.4
Breast	Total	8	82,053	9.7	6.2	16.6	0.031 <<	1,091	8,506,702	12.8
	Male	-	43,005	-	-	0.2	1.000	11	4,260,497	0.3
	Female	8	39,048	20.5	13.4	15.2	0.067	1,080	4,246,205	25.4
Cervix	Female	1	39,048	2.6	2.0	1.0	1.000	80	4,246,205	1.9
Colorectal	Total	22	82,053	26.8	16.8	18.9	0.532	1,224	8,506,702	14.4
	Male	5	43,005	11.6	7.0	11.2	0.066	674	4,260,497	15.8
	Female	17	39,048	43.5	27.9	7.9	0.007 >>	550	4,246,205	13.0
Corpus Uteri	Female	4	39,048	10.2	6.4	2.4	0.426	160	4,246,205	3.8
Esophagus	Total	7	82,053	8.5	5.2	7.4	1.000	469	8,506,702	5.5
	Male	5	43,005	11.6	6.8	6.6	0.712	384	4,260,497	9.0
	Female	2	39,048	5.1	3.2	1.2	0.701	85	4,246,205	2.0
Hodgkin Lymphoma	Total	-	82,053	-	-	0.3	1.000	23	8,506,702	0.3
	Male	-	43,005	-	-	0.1	1.000	9	4,260,497	0.2
	Female	-	39,048	-	-	0.2	1.000	14	4,246,205	0.3
Kidney	Total	6	82,053	7.3	4.4	5.6	0.983	349	8,506,702	4.1
	Male	4	43,005	9.3	5.4	3.7	1.000	213	4,260,497	5.0
	Female	2	39,048	5.1	3.1	2.0	1.000	136	4,246,205	3.2
Larynx	Total	2	82,053	2.4	1.5	1.0	0.518	61	8,506,702	0.7
	Male	2	43,005	4.7	2.7	0.9	0.455	51	4,260,497	1.2
	Female	-	39,048	-	-	0.2	1.000	10	4,246,205	0.2
Leukemia	Total	11	82,053	13.4	8.1	9.8	0.772	613	8,506,702	7.2
	Male	9	43,005	20.9	11.9	6.3	0.365	355	4,260,497	8.3
	Female	2	39,048	5.1	3.3	3.7	0.565	258	4,246,205	6.1
Liver and Bile Duct	Total	10	82,053	12.2	7.5	9.5	0.949	603	8,506,702	7.1
	Male	6	43,005	14.0	8.3	7.0	0.887	415	4,260,497	9.7
	Female	4	39,048	10.2	6.5	2.7	0.582	188	4,246,205	4.4
Lung and Bronchus	Total	43	82,053	52.4	31.1	48.7	0.460	2,997	8,506,702	35.2
	Male	27	43,005	62.8	35.4	28.5	0.876	1,590	4,260,497	37.3
	Female	16	39,048	41.0	25.4	20.9	0.340	1,407	4,246,205	33.1
Melanoma of the Skin	Total	2	82,053	2.4	1.6	4.2	0.426	276	8,506,702	3.2
	Male	1	43,005	2.3	1.4	3.0	0.390	181	4,260,497	4.2
	Female	1	39,048	2.6	1.7	1.3	1.000	95	4,246,205	2.2
Myeloma	Total	5	82,053	6.1	3.5	5.5	1.000	330	8,506,702	3.9
	Male	2	43,005	4.7	2.6	3.6	0.599	197	4,260,497	4.6
	Female	3	39,048	7.7	4.7	2.0	0.656	133	4,246,205	3.1
Non-Hodgkin Lymphoma	Total	12	82,053	14.6	8.6	8.9	0.376	545	8,506,702	6.4
	Male	2	43,005	4.7	2.6	5.4	0.196	301	4,260,497	7.1
	Female	10	39,048	25.6	15.6	3.7	0.009 >>	244	4,246,205	5.7
Oral Cavity and Pharynx	Total	3	82,053	3.7	2.3	3.6	1.000	233	8,506,702	2.7
	Male	2	43,005	4.7	2.8	2.7	0.993	158	4,260,497	3.7
	Female	1	39,048	2.6	1.6	1.1	1.000	75	4,246,205	1.8
Ovary	Female	3	39,048	7.7	4.9	5.2	0.472	363	4,246,205	8.5
Pancreas	Total	21	82,053	25.6	15.4	17.3	0.427	1,077	8,506,702	12.7
	Male	14	43,005	32.6	19.0	10.3	0.311	592	4,260,497	13.9
	Female	7	39,048	17.9	11.1	7.2	1.000	485	4,246,205	11.4
Prostate	Male	11	43,005	25.6	13.6	17.4	0.144	915	4,260,497	21.5
Stomach	Total	-	82,053	-	-	3.1	0.092	199	8,506,702	2.3
	Male	-	43,005	-	-	1.9	0.291	116	4,260,497	2.7
	Female	-	39,048	-	-	1.2	0.607	83	4,246,205	2.0

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Idaho County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	65.9%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	14.7%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	73.1%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	62.4%
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	56.4%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	14.5%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	19.6%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	36.6%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	1.2%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	30.9%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	14.3%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	10.8%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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JEFFERSON COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 535 cases of invasive cancer were diagnosed among Jefferson County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Jefferson County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Jefferson County	State of Idaho
All Sites/Types	**535**	**42,577**
Female Breast	**60**	**6,210**
Prostate	**88**	**5,393**
Lung & Bronchus	**44**	**4,798**
Colorectal	**45**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Jefferson County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Jefferson County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Jefferson County was 382.8 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (507.0) gives an estimate of the relative burden of disease in Jefferson County.

The age- and sex-adjusted incidence rate of invasive cancer in Jefferson County, all sites combined, was 475.5 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Jefferson County (535) than expected (570.4) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 170 Jefferson County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Jefferson County and the State of Idaho, 2015–2019

Mortality 2015–2019	Jefferson County	State of Idaho
All Deaths	**864**	**69,101**
Cancer Deaths	**170**	**14,724**
% of All Deaths	*19.7%*	*21.3%*
Lung & Bronchus	**27**	**3,040**
Colorectal	**18**	**1,246**
Pancreas	**14**	**1,098**
Female Breast	**11**	**1,088**
Prostate	**14**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Jefferson County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Jefferson County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Jefferson County, all sites combined, was 156.9 deaths per 100,000 persons per year during 2015–2019, compared with 172.3 for the remainder of the state. There were fewer cancer deaths in Jefferson County (170) than expected (186.7) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN JEFFERSON COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Jefferson County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	535	139,745	382.8	475.5	570.4	0.141	42,042	8,293,057	507.0
	Male	287	70,804	405.3	500.8	301.9	0.409	21,883	4,153,965	526.8
	Female	248	68,941	359.7	447.9	269.6	0.195	20,159	4,139,092	487.0
Bladder	Total	24	139,745	17.2	22.4	26.3	0.752	2,034	8,293,057	24.5
	Male	21	70,804	29.7	38.1	21.0	1.000	1,581	4,153,965	38.1
	Female	3	68,941	4.4	5.7	5.7	0.357	453	4,139,092	10.9
Brain - malignant	Total	7	139,745	5.0	5.7	9.2	0.596	624	8,293,057	7.5
	Male	5	70,804	7.1	8.1	5.6	1.000	377	4,153,965	9.1
	Female	2	68,941	2.9	3.3	3.7	0.581	247	4,139,092	6.0
Brain and other CNS - non-malignant	Total	22	139,745	15.7	18.8	16.6	0.237	1,178	8,293,057	14.2
	Male	8	70,804	11.3	13.1	5.7	0.432	387	4,153,965	9.3
	Female	14	68,941	20.3	24.8	10.8	0.398	791	4,139,092	19.1
Breast	Total	61	139,745	43.7	53.0	85.9	0.006 <<	6,197	8,293,057	74.7
	Male	1	70,804	1.4	1.8	0.6	0.945	47	4,153,965	1.1
	Female	60	68,941	87.0	107.5	82.9	0.010 <<	6,150	4,139,092	148.6
Breast - in situ	Total	15	139,745	10.7	12.8	15.3	1.000	1,087	8,293,057	13.1
	Male	-	70,804	-	-	0.1	1.000	5	4,153,965	0.1
	Female	15	68,941	21.8	26.5	14.8	1.000	1,082	4,139,092	26.1
Cervix	Female	4	68,941	5.8	6.4	4.3	1.000	284	4,139,092	6.9
Colorectal	Total	45	139,745	32.2	40.2	44.3	0.956	3,283	8,293,057	39.6
	Male	25	70,804	35.3	43.3	24.3	0.939	1,746	4,153,965	42.0
	Female	20	68,941	29.0	36.9	20.1	1.000	1,537	4,139,092	37.1
Corpus Uteri	Female	20	68,941	29.0	35.9	16.6	0.471	1,238	4,139,092	29.9
Esophagus	Total	3	139,745	2.1	2.7	6.5	0.231	489	8,293,057	5.9
	Male	1	70,804	1.4	1.8	5.6	0.049 <<	410	4,153,965	9.9
	Female	2	68,941	2.9	3.8	1.0	0.526	79	4,139,092	1.9
Hodgkin Lymphoma	Total	3	139,745	2.1	2.3	2.9	1.000	185	8,293,057	2.2
	Male	1	70,804	1.4	1.5	1.7	1.000	105	4,153,965	2.5
	Female	2	68,941	2.9	3.1	1.2	0.696	80	4,139,092	1.9
Kidney and Renal Pelvis	Total	16	139,745	11.4	14.1	21.5	0.278	1,575	8,293,057	19.0
	Male	11	70,804	15.5	18.9	14.3	0.469	1,023	4,153,965	24.6
	Female	5	68,941	7.3	9.1	7.4	0.513	552	4,139,092	13.3
Larynx	Total	1	139,745	0.7	0.9	2.7	0.486	205	8,293,057	2.5
	Male	1	70,804	1.4	1.8	2.2	0.702	162	4,153,965	3.9
	Female	-	68,941	-	-	0.6	1.000	43	4,139,092	1.0
Leukemia	Total	13	139,745	9.3	11.3	20.8	0.094	1,504	8,293,057	18.1
	Male	11	70,804	15.5	18.7	12.7	0.774	893	4,153,965	21.5
	Female	2	68,941	2.9	3.6	8.3	0.022 <<	611	4,139,092	14.8
Liver and Bile Duct	Total	7	139,745	5.0	6.2	10.5	0.355	778	8,293,057	9.4
	Male	5	70,804	7.1	8.6	7.8	0.414	560	4,153,965	13.5
	Female	2	68,941	2.9	3.7	2.8	0.918	218	4,139,092	5.3
Lung and Bronchus	Total	44	139,745	31.5	40.9	61.7	0.022 <<	4,754	8,293,057	57.3
	Male	23	70,804	32.5	41.6	32.8	0.092	2,465	4,153,965	59.3
	Female	21	68,941	30.5	40.0	29.0	0.152	2,289	4,139,092	55.3
Melanoma of the Skin	Total	40	139,745	28.6	34.8	36.0	0.548	2,599	8,293,057	31.3
	Male	18	70,804	25.4	31.0	21.7	0.509	1,552	4,153,965	37.4
	Female	22	68,941	31.9	38.3	14.5	0.081	1,047	4,139,092	25.3
Myeloma	Total	4	139,745	2.9	3.7	8.5	0.145	656	8,293,057	7.9
	Male	2	70,804	2.8	3.6	5.3	0.204	397	4,153,965	9.6
	Female	2	68,941	2.9	3.8	3.3	0.720	259	4,139,092	6.3
Non-Hodgkin Lymphoma	Total	23	139,745	16.5	20.5	24.7	0.838	1,821	8,293,057	22.0
	Male	12	70,804	16.9	20.6	14.8	0.575	1,054	4,153,965	25.4
	Female	11	68,941	16.0	20.3	10.0	0.843	767	4,139,092	18.5
Oral Cavity and Pharynx	Total	14	139,745	10.0	12.4	15.9	0.753	1,166	8,293,057	14.1
	Male	11	70,804	15.5	18.9	11.6	1.000	830	4,153,965	20.0
	Female	3	68,941	4.4	5.4	4.5	0.691	336	4,139,092	8.1
Ovary	Female	-	68,941	-	-	7.2	0.001 <<	538	4,139,092	13.0
Pancreas	Total	10	139,745	7.2	9.2	16.8	0.106	1,287	8,293,057	15.5
	Male	5	70,804	7.1	8.9	9.7	0.161	713	4,153,965	17.2
	Female	5	68,941	7.3	9.6	7.2	0.540	574	4,139,092	13.9
Prostate	Male	88	70,804	124.3	154.8	72.6	0.087	5,305	4,153,965	127.7
Stomach	Total	12	139,745	8.6	10.9	6.6	0.073	494	8,293,057	6.0
	Male	5	70,804	7.1	8.7	4.6	0.956	331	4,153,965	8.0
	Female	7	68,941	10.2	13.2	2.1	0.012 >>	163	4,139,092	3.9
Testis	Male	6	70,804	8.5	9.0	4.3	0.537	270	4,153,965	6.5
Thyroid	Total	36	139,745	25.8	29.0	18.3	0.000 >>	1,220	8,293,057	14.7
	Male	11	70,804	15.5	17.7	4.8	0.020 >>	319	4,153,965	7.7
	Female	25	68,941	36.3	40.7	13.4	0.006 >>	901	4,139,092	21.8
Pediatric Age 0 to 19	Total	6	51,735	11.6	11.8	9.1	0.400	421	2,366,219	17.8
	Male	4	26,298	15.2	15.3	4.7	1.000	216	1,207,883	17.9
	Female	2	25,437	7.9	8.0	4.4	0.367	205	1,158,336	17.7

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN JEFFERSON COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Jefferson County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	864	142,672	605.6	806.5	865.5	0.978	68,236	8,446,083	807.9
	Male	467	72,517	644.0	832.2	474.3	0.759	35,763	4,230,985	845.3
	Female	397	70,155	565.9	775.9	394.2	0.901	32,473	4,215,098	770.4
All Malignant Cancers	Total	170	142,672	119.2	156.9	186.7	0.234	14,554	8,446,083	172.3
	Male	103	72,517	142.0	184.9	103.7	0.998	7,875	4,230,985	186.1
	Female	67	70,155	95.5	127.0	83.6	0.071	6,679	4,215,098	158.5
Bladder	Total	8	142,672	5.6	7.8	5.6	0.400	458	8,446,083	5.4
	Male	8	72,517	11.0	15.2	4.3	0.137	342	4,230,985	8.1
	Female	-	70,155	-	-	1.4	0.503	116	4,215,098	2.8
Brain and Other Nervous System	Total	8	142,672	5.6	6.8	6.9	0.786	501	8,446,083	5.9
	Male	6	72,517	8.3	10.0	4.5	0.598	317	4,230,985	7.5
	Female	2	70,155	2.9	3.5	2.5	1.000	184	4,215,098	4.4
Breast	Total	11	142,672	7.7	9.9	14.3	0.477	1,088	8,446,083	12.9
	Male	-	72,517	-	-	0.1	1.000	11	4,230,985	0.3
	Female	11	70,155	15.7	20.5	13.7	0.569	1,077	4,215,098	25.6
Cervix	Female	1	70,155	1.4	1.7	1.1	1.000	80	4,215,098	1.9
Colorectal	Total	18	142,672	12.6	16.5	15.9	0.663	1,228	8,446,083	14.5
	Male	10	72,517	13.8	17.5	9.0	0.838	669	4,230,985	15.8
	Female	8	70,155	11.4	15.3	6.9	0.779	559	4,215,098	13.3
Corpus Uteri	Female	1	70,155	1.4	1.9	2.0	0.798	163	4,215,098	3.9
Esophagus	Total	4	142,672	2.8	3.7	6.1	0.540	472	8,446,083	5.6
	Male	4	72,517	5.5	7.1	5.2	0.827	385	4,230,985	9.1
	Female	-	70,155	-	-	1.1	0.675	87	4,215,098	2.1
Hodgkin Lymphoma	Total	1	142,672	0.7	0.9	0.3	0.512	22	8,446,083	0.3
	Male	-	72,517	-	-	0.1	1.000	9	4,230,985	0.2
	Female	1	70,155	1.4	1.8	0.2	0.309	13	4,215,098	0.3
Kidney	Total	2	142,672	1.4	1.8	4.5	0.342	353	8,446,083	4.2
	Male	1	72,517	1.4	1.8	2.9	0.430	216	4,230,985	5.1
	Female	1	70,155	1.4	2.0	1.7	1.000	137	4,215,098	3.3
Larynx	Total	1	142,672	0.7	0.9	0.8	1.000	62	8,446,083	0.7
	Male	1	72,517	1.4	1.8	0.7	0.996	52	4,230,985	1.2
	Female	-	70,155	-	-	0.1	1.000	10	4,215,098	0.2
Leukemia	Total	8	142,672	5.6	7.4	7.9	1.000	616	8,446,083	7.3
	Male	6	72,517	8.3	10.9	4.7	0.653	358	4,230,985	8.5
	Female	2	70,155	2.9	3.8	3.2	0.743	258	4,215,098	6.1
Liver and Bile Duct	Total	5	142,672	3.5	4.5	8.0	0.389	608	8,446,083	7.2
	Male	4	72,517	5.5	7.0	5.7	0.669	417	4,230,985	9.9
	Female	1	70,155	1.4	1.9	2.4	0.608	191	4,215,098	4.5
Lung and Bronchus	Total	27	142,672	18.9	25.1	38.3	0.070	3,013	8,446,083	35.7
	Male	17	72,517	23.4	30.7	20.9	0.464	1,600	4,230,985	37.8
	Female	10	70,155	14.3	19.2	17.5	0.077	1,413	4,215,098	33.5
Melanoma of the Skin	Total	2	142,672	1.4	1.8	3.7	0.586	276	8,446,083	3.3
	Male	1	72,517	1.4	1.7	2.5	0.589	181	4,230,985	4.3
	Female	1	70,155	1.4	1.8	1.2	1.000	95	4,215,098	2.3
Myeloma	Total	3	142,672	2.1	2.8	4.1	0.813	332	8,446,083	3.9
	Male	2	72,517	2.8	3.7	2.5	1.000	197	4,230,985	4.7
	Female	1	70,155	1.4	2.0	1.6	1.000	135	4,215,098	3.2
Non-Hodgkin Lymphoma	Total	10	142,672	7.0	9.4	6.9	0.313	547	8,446,083	6.5
	Male	7	72,517	9.7	12.6	3.9	0.197	296	4,230,985	7.0
	Female	3	70,155	4.3	5.9	3.0	1.000	251	4,215,098	6.0
Oral Cavity and Pharynx	Total	2	142,672	1.4	1.8	3.1	0.823	234	8,446,083	2.8
	Male	1	72,517	1.4	1.7	2.1	0.735	159	4,230,985	3.8
	Female	1	70,155	1.4	1.9	0.9	1.000	75	4,215,098	1.8
Ovary	Female	2	70,155	2.9	3.7	4.6	0.321	364	4,215,098	8.6
Pancreas	Total	14	142,672	9.8	12.9	13.9	1.000	1,084	8,446,083	12.8
	Male	8	72,517	11.0	14.2	8.0	1.000	598	4,230,985	14.1
	Female	6	70,155	8.6	11.5	6.0	1.000	486	4,215,098	11.5
Prostate	Male	14	72,517	19.3	26.8	11.3	0.490	912	4,230,985	21.6
Stomach	Total	3	142,672	2.1	2.7	2.5	0.932	196	8,446,083	2.3
	Male	1	72,517	1.4	1.8	1.6	1.000	115	4,230,985	2.7
	Female	2	70,155	2.9	3.8	1.0	0.532	81	4,215,098	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Jefferson County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	82.6%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	14.5%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	69.4%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	64.6%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	8.4%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	8.9%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	51.5%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	3.0%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	28.0%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	16.9%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	19.2%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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JEROME COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 462 cases of invasive cancer were diagnosed among Jerome County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Jerome County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Jerome County	State of Idaho
All Sites/Types	**462**	**42,577**
Female Breast	**59**	**6,210**
Prostate	**51**	**5,393**
Lung & Bronchus	**57**	**4,798**
Colorectal	**38**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Jerome County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Jerome County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Jerome County was 394.3 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (506.5) gives an estimate of the relative burden of disease in Jerome County.

The age- and sex-adjusted incidence rate of invasive cancer in Jerome County, all sites combined, was 450.4 cases per 100,000 persons per year during 2014–2018. There were statistically significantly fewer cases of cancer in Jerome County (462) than expected (519.5) based upon rates in the remainder of the state (p=.011).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 155 Jerome County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Jerome County and the State of Idaho, 2015–2019

Mortality 2015–2019	Jerome County	State of Idaho
All Deaths	**841**	**69,101**
Cancer Deaths	**155**	**14,724**
% of All Deaths	*18.4%*	*21.3%*
Lung & Bronchus	**27**	**3,040**
Colorectal	**16**	**1,246**
Pancreas	**13**	**1,098**
Female Breast	**7**	**1,088**
Prostate	**15**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Jerome County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Jerome County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Jerome County, all sites combined, was 154.2 deaths per 100,000 persons per year during 2015–2019, compared with 172.0 for the remainder of the state. There were fewer cancer deaths in Jerome County (155) than expected (172.9) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN JEROME COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Jerome County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	462	117,164	394.3	450.4	519.5	0.011 <<	42,115	8,315,638	506.5
	Male	236	59,695	395.3	456.2	272.4	0.027 <<	21,934	4,165,074	526.6
	Female	226	57,469	393.3	446.1	246.3	0.204	20,181	4,150,564	486.2
Bladder	Total	16	117,164	13.7	16.0	24.5	0.092	2,042	8,315,638	24.6
	Male	13	59,695	21.8	25.8	19.2	0.182	1,589	4,165,074	38.2
	Female	3	57,469	5.2	6.1	5.4	0.433	453	4,150,564	10.9
Brain - malignant	Total	5	117,164	4.3	4.6	8.1	0.356	626	8,315,638	7.5
	Male	1	59,695	1.7	1.8	5.0	0.081	381	4,165,074	9.1
	Female	4	57,469	7.0	7.4	3.2	0.792	245	4,150,564	5.9
Brain and other CNS - non-malignant	Total	4	117,164	3.4	3.8	15.0	0.002 <<	1,196	8,315,638	14.4
	Male	3	59,695	5.0	5.6	5.1	0.509	392	4,165,074	9.4
	Female	1	57,469	1.7	2.0	9.9	0.001 <<	804	4,150,564	19.4
Breast	Total	59	117,164	50.4	57.0	77.2	0.038 <<	6,199	8,315,638	74.5
	Male	-	59,695	-	-	0.6	1.000	48	4,165,074	1.2
	Female	59	57,469	102.7	116.4	75.1	0.064	6,151	4,150,564	148.2
Breast - in situ	Total	10	117,164	8.5	9.6	13.7	0.395	1,092	8,315,638	13.1
	Male	-	59,695	-	-	0.1	1.000	5	4,165,074	0.1
	Female	10	57,469	17.4	19.7	13.3	0.450	1,087	4,150,564	26.2
Cervix	Female	3	57,469	5.2	5.6	3.6	1.000	285	4,150,564	6.9
Colorectal	Total	38	117,164	32.4	37.1	40.5	0.772	3,290	8,315,638	39.6
	Male	22	59,695	36.9	42.1	21.9	1.000	1,749	4,165,074	42.0
	Female	16	57,469	27.8	31.9	18.6	0.644	1,541	4,150,564	37.1
Corpus Uteri	Female	16	57,469	27.8	31.7	15.1	0.886	1,242	4,150,564	29.9
Esophagus	Total	6	117,164	5.1	5.9	5.9	1.000	486	8,315,638	5.8
	Male	5	59,695	8.4	9.8	5.0	1.000	406	4,165,074	9.7
	Female	1	57,469	1.7	2.0	1.0	1.000	80	4,150,564	1.9
Hodgkin Lymphoma	Total	2	117,164	1.7	1.8	2.5	1.000	186	8,315,638	2.2
	Male	1	59,695	1.7	1.8	1.4	1.000	105	4,165,074	2.5
	Female	1	57,469	1.7	1.8	1.1	1.000	81	4,150,564	2.0
Kidney and Renal Pelvis	Total	24	117,164	20.5	23.3	19.4	0.352	1,567	8,315,638	18.8
	Male	16	59,695	26.8	30.5	12.8	0.442	1,018	4,165,074	24.4
	Female	8	57,469	13.9	15.7	6.7	0.719	549	4,150,564	13.2
Larynx	Total	6	117,164	5.1	5.9	2.5	0.079	200	8,315,638	2.4
	Male	5	59,695	8.4	9.6	2.0	0.100	158	4,165,074	3.8
	Female	1	57,469	1.7	2.0	0.5	0.800	42	4,150,564	1.0
Leukemia	Total	12	117,164	10.2	11.5	18.9	0.125	1,505	8,315,638	18.1
	Male	7	59,695	11.7	13.2	11.4	0.238	897	4,165,074	21.5
	Female	5	57,469	8.7	9.7	7.6	0.468	608	4,150,564	14.6
Liver and Bile Duct	Total	12	117,164	10.2	11.8	9.5	0.489	773	8,315,638	9.3
	Male	10	59,695	16.8	19.2	6.9	0.325	555	4,165,074	13.3
	Female	2	57,469	3.5	4.0	2.6	1.000	218	4,150,564	5.3
Lung and Bronchus	Total	57	117,164	48.6	56.8	57.2	1.000	4,741	8,315,638	57.0
	Male	26	59,695	43.6	51.4	29.9	0.547	2,462	4,165,074	59.1
	Female	31	57,469	53.9	62.3	27.3	0.530	2,279	4,150,564	54.9
Melanoma of the Skin	Total	36	117,164	30.7	34.7	32.5	0.584	2,603	8,315,638	31.3
	Male	26	59,695	43.6	49.7	19.4	0.175	1,544	4,165,074	37.1
	Female	10	57,469	17.4	19.5	13.1	0.485	1,059	4,150,564	25.5
Myeloma	Total	10	117,164	8.5	9.9	7.9	0.532	650	8,315,638	7.8
	Male	6	59,695	10.1	11.8	4.8	0.694	393	4,165,074	9.4
	Female	4	57,469	7.0	8.1	3.1	0.737	257	4,150,564	6.2
Non-Hodgkin Lymphoma	Total	23	117,164	19.6	22.4	22.5	0.971	1,821	8,315,638	21.9
	Male	12	59,695	20.1	23.0	13.2	0.876	1,054	4,165,074	25.3
	Female	11	57,469	19.1	21.8	9.3	0.662	767	4,150,564	18.5
Oral Cavity and Pharynx	Total	10	117,164	8.5	9.7	14.4	0.296	1,170	8,315,638	14.1
	Male	5	59,695	8.4	9.6	10.5	0.100	836	4,165,074	20.1
	Female	5	57,469	8.7	9.9	4.1	0.764	334	4,150,564	8.0
Ovary	Female	8	57,469	13.9	15.7	6.5	0.653	530	4,150,564	12.8
Pancreas	Total	19	117,164	16.2	18.8	15.5	0.437	1,278	8,315,638	15.4
	Male	8	59,695	13.4	15.6	8.8	0.975	710	4,165,074	17.0
	Female	11	57,469	19.1	22.2	6.8	0.168	568	4,150,564	13.7
Prostate	Male	51	59,695	85.4	100.0	65.4	0.077	5,342	4,165,074	128.3
Stomach	Total	4	117,164	3.4	3.9	6.1	0.534	502	8,315,638	6.0
	Male	4	59,695	6.7	7.7	4.1	1.000	332	4,165,074	8.0
	Female	-	57,469	-	-	2.0	0.258	170	4,150,564	4.1
Testis	Male	2	59,695	3.4	3.4	3.9	0.518	274	4,165,074	6.6
Thyroid	Total	9	117,164	7.7	8.3	16.3	0.074	1,247	8,315,638	15.0
	Male	1	59,695	1.7	1.8	4.3	0.139	329	4,165,074	7.9
	Female	8	57,469	13.9	15.1	11.7	0.347	918	4,150,564	22.1
Pediatric Age 0 to 19	Total	3	39,048	7.7	7.8	6.9	0.176	424	2,378,906	17.8
	Male	1	19,713	5.1	5.1	3.5	0.267	219	1,214,468	18.0
	Female	2	19,335	10.3	10.5	3.4	0.696	205	1,164,438	17.6

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN JEROME COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Jerome County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	841	118,650	708.8	843.3	803.7	0.196	68,259	8,470,105	805.9
	Male	455	60,612	750.7	894.3	429.0	0.220	35,775	4,242,890	843.2
	Female	386	58,038	665.1	788.3	376.3	0.630	32,484	4,227,215	768.4
All Malignant Cancers	Total	155	118,650	130.6	154.2	172.9	0.183	14,569	8,470,105	172.0
	Male	72	60,612	118.8	142.2	94.3	0.020 <<	7,906	4,242,890	186.3
	Female	83	58,038	143.0	166.8	78.4	0.635	6,663	4,227,215	157.6
Bladder	Total	7	118,650	5.9	7.2	5.3	0.559	459	8,470,105	5.4
	Male	5	60,612	8.2	10.3	4.0	0.725	345	4,242,890	8.1
	Female	2	58,038	3.4	4.1	1.3	0.751	114	4,227,215	2.7
Brain and Other Nervous System	Total	3	118,650	2.5	2.9	6.3	0.259	506	8,470,105	6.0
	Male	1	60,612	1.6	1.9	4.0	0.177	322	4,242,890	7.6
	Female	2	58,038	3.4	3.9	2.2	1.000	184	4,227,215	4.4
Breast	Total	7	118,650	5.9	6.9	13.1	0.104	1,092	8,470,105	12.9
	Male	-	60,612	-	-	0.1	1.000	11	4,242,890	0.3
	Female	7	58,038	12.1	14.0	12.8	0.121	1,081	4,227,215	25.6
Cervix	Female	-	58,038	-	-	1.0	0.742	81	4,227,215	1.9
Colorectal	Total	16	118,650	13.5	15.8	14.7	0.798	1,230	8,470,105	14.5
	Male	8	60,612	13.2	15.4	8.2	1.000	671	4,242,890	15.8
	Female	8	58,038	13.8	16.2	6.5	0.664	559	4,227,215	13.2
Corpus Uteri	Female	4	58,038	6.9	8.1	1.9	0.240	160	4,227,215	3.8
Esophagus	Total	5	118,650	4.2	5.0	5.6	1.000	471	8,470,105	5.6
	Male	5	60,612	8.2	9.8	4.6	0.983	384	4,242,890	9.1
	Female	-	58,038	-	-	1.0	0.719	87	4,227,215	2.1
Hodgkin Lymphoma	Total	1	118,650	0.8	0.9	0.3	0.484	22	8,470,105	0.3
	Male	-	60,612	-	-	0.1	1.000	9	4,242,890	0.2
	Female	1	58,038	1.7	1.9	0.2	0.294	13	4,227,215	0.3
Kidney	Total	3	118,650	2.5	3.0	4.2	0.802	352	8,470,105	4.2
	Male	1	60,612	1.6	2.0	2.6	0.532	216	4,242,890	5.1
	Female	2	58,038	3.4	4.1	1.6	0.938	136	4,227,215	3.2
Larynx	Total	-	118,650	-	-	0.7	0.947	63	8,470,105	0.7
	Male	-	60,612	-	-	0.6	1.000	53	4,242,890	1.2
	Female	-	58,038	-	-	0.1	1.000	10	4,227,215	0.2
Leukemia	Total	2	118,650	1.7	2.0	7.4	0.044 <<	622	8,470,105	7.3
	Male	2	60,612	3.3	4.0	4.3	0.391	362	4,242,890	8.5
	Female	-	58,038	-	-	3.1	0.091	260	4,227,215	6.2
Liver and Bile Duct	Total	5	118,650	4.2	4.9	7.3	0.533	608	8,470,105	7.2
	Male	5	60,612	8.2	9.7	5.0	1.000	416	4,242,890	9.8
	Female	-	58,038	-	-	2.3	0.206	192	4,227,215	4.5
Lung and Bronchus	Total	27	118,650	22.8	27.0	35.6	0.164	3,013	8,470,105	35.6
	Male	9	60,612	14.8	17.9	19.1	0.017 <<	1,608	4,242,890	37.9
	Female	18	58,038	31.0	36.2	16.5	0.782	1,405	4,227,215	33.2
Melanoma of the Skin	Total	4	118,650	3.4	3.9	3.3	0.847	274	8,470,105	3.2
	Male	2	60,612	3.3	3.9	2.2	1.000	180	4,242,890	4.2
	Female	2	58,038	3.4	4.0	1.1	0.620	94	4,227,215	2.2
Myeloma	Total	5	118,650	4.2	5.0	3.9	0.697	330	8,470,105	3.9
	Male	3	60,612	4.9	6.0	2.3	0.815	196	4,242,890	4.6
	Female	2	58,038	3.4	4.0	1.6	0.931	134	4,227,215	3.2
Non-Hodgkin Lymphoma	Total	7	118,650	5.9	7.0	6.5	0.932	550	8,470,105	6.5
	Male	2	60,612	3.3	4.0	3.6	0.613	301	4,242,890	7.1
	Female	5	58,038	8.6	10.2	2.9	0.333	249	4,227,215	5.9
Oral Cavity and Pharynx	Total	3	118,650	2.5	3.0	2.8	1.000	233	8,470,105	2.8
	Male	1	60,612	1.6	1.9	1.9	0.853	159	4,242,890	3.7
	Female	2	58,038	3.4	4.0	0.9	0.437	74	4,227,215	1.8
Ovary	Female	5	58,038	8.6	10.0	4.3	0.848	361	4,227,215	8.5
Pancreas	Total	13	118,650	11.0	12.9	12.9	1.000	1,085	8,470,105	12.8
	Male	3	60,612	4.9	5.9	7.3	0.137	603	4,242,890	14.2
	Female	10	58,038	17.2	20.2	5.6	0.122	482	4,227,215	11.4
Prostate	Male	15	60,612	24.7	31.0	10.4	0.211	911	4,242,890	21.5
Stomach	Total	1	118,650	0.8	1.0	2.4	0.629	198	8,470,105	2.3
	Male	1	60,612	1.6	1.9	1.4	1.000	115	4,242,890	2.7
	Female	-	58,038	-	-	1.0	0.754	83	4,227,215	2.0

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Jerome County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	70.2%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	18.5%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	63.8%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	52.8%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	20.0%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	9.4%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	2.5%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	29.8%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	14.3%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	12.7%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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KOOTENAI COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 4,784 cases of invasive cancer were diagnosed among Kootenai County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Kootenai County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Kootenai County	State of Idaho
All Sites/Types	**4,784**	**42,577**
Female Breast	**682**	**6,210**
Prostate	**580**	**5,393**
Lung & Bronchus	**661**	**4,798**
Colorectal	**355**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Kootenai County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Kootenai County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Kootenai County was 623.4 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (493.0) gives an estimate of the relative burden of disease in Kootenai County.

The age- and sex-adjusted incidence rate of invasive cancer in Kootenai County, all sites combined, was 536.7 cases per 100,000 persons per year during 2014–2018. There were statistically significantly more cases of cancer in Kootenai County (4,784) than expected (4,394.5) based upon rates in the remainder of the state ($p<.001$).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 1,746 Kootenai County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Kootenai County and the State of Idaho, 2015–2019

Mortality 2015–2019	Kootenai County	State of Idaho
All Deaths	**7,368**	**69,101**
Cancer Deaths	**1,746**	**14,724**
% of All Deaths	*23.7%*	*21.3%*
Lung & Bronchus	**416**	**3,040**
Colorectal	**125**	**1,246**
Pancreas	**127**	**1,098**
Female Breast	**144**	**1,088**
Prostate	**110**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Kootenai County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Kootenai County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Kootenai County, all sites combined, was 188.1 deaths per 100,000 persons per year during 2015–2019, compared with 166.3 for the remainder of the state. There were statistically significantly more cancer deaths in Kootenai County (1,746) than expected (1,544.3) based upon rates in the remainder of the state ($p<.001$).

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN KOOTENAI COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Kootenai County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	4,784	767,444	623.4	536.7	4,394.5	0.000 >>	37,793	7,665,358	493.0
	Male	2,473	378,778	652.9	558.3	2,268.5	0.000 >>	19,697	3,845,991	512.1
	Female	2,311	388,666	594.6	516.0	2,122.0	0.000 >>	18,096	3,819,367	473.8
Bladder	Total	247	767,444	32.2	27.1	215.4	0.037 >>	1,811	7,665,358	23.6
	Male	190	378,778	50.2	42.1	165.8	0.070	1,412	3,845,991	36.7
	Female	57	388,666	14.7	12.4	47.9	0.216	399	3,819,367	10.4
Brain - malignant	Total	54	767,444	7.0	6.3	64.0	0.229	577	7,665,358	7.5
	Male	30	378,778	7.9	7.1	38.6	0.183	352	3,845,991	9.2
	Female	24	388,666	6.2	5.6	25.1	0.929	225	3,819,367	5.9
Brain and other CNS - non-malignant	Total	114	767,444	14.9	13.2	122.4	0.478	1,086	7,665,358	14.2
	Male	35	378,778	9.2	8.3	39.2	0.562	360	3,845,991	9.4
	Female	79	388,666	20.3	17.9	84.0	0.636	726	3,819,367	19.0
Breast	Total	686	767,444	89.4	77.7	642.0	0.088	5,572	7,665,358	72.7
	Male	4	378,778	1.1	0.9	5.0	0.865	44	3,845,991	1.1
	Female	682	388,666	175.5	152.0	649.3	0.208	5,528	3,819,367	144.7
Breast - in situ	Total	146	767,444	19.0	16.6	109.6	0.001 >>	956	7,665,358	12.5
	Male	1	378,778	0.3	0.2	0.4	0.718	4	3,845,991	0.1
	Female	145	388,666	37.3	32.4	111.4	0.003 >>	952	3,819,367	24.9
Cervix	Female	40	388,666	10.3	9.7	26.8	0.020 >>	248	3,819,367	6.5
Colorectal	Total	355	767,444	46.3	39.8	345.6	0.628	2,973	7,665,358	38.8
	Male	188	378,778	49.6	42.8	180.8	0.612	1,583	3,845,991	41.2
	Female	167	388,666	43.0	37.0	164.1	0.841	1,390	3,819,367	36.4
Corpus Uteri	Female	150	388,666	38.6	33.2	131.0	0.110	1,108	3,819,367	29.0
Esophagus	Total	54	767,444	7.0	6.0	51.8	0.798	438	7,665,358	5.7
	Male	45	378,778	11.9	10.1	42.5	0.745	366	3,845,991	9.5
	Female	9	388,666	2.3	2.0	8.7	0.997	72	3,819,367	1.9
Hodgkin Lymphoma	Total	20	767,444	2.6	2.6	17.1	0.543	168	7,665,358	2.2
	Male	11	378,778	2.9	2.9	9.5	0.713	95	3,845,991	2.5
	Female	9	388,666	2.3	2.3	7.5	0.680	73	3,819,367	1.9
Kidney and Renal Pelvis	Total	204	767,444	26.6	22.9	161.3	0.001 >>	1,387	7,665,358	18.1
	Male	136	378,778	35.9	31.0	102.6	0.002 >>	898	3,845,991	23.3
	Female	68	388,666	17.5	15.1	57.6	0.199	489	3,819,367	12.8
Larynx	Total	26	767,444	3.4	2.9	21.2	0.348	180	7,665,358	2.3
	Male	22	378,778	5.8	4.9	16.4	0.219	141	3,845,991	3.7
	Female	4	388,666	1.0	0.9	4.5	1.000	39	3,819,367	1.0
Leukemia	Total	182	767,444	23.7	20.7	153.1	0.025 >>	1,335	7,665,358	17.4
	Male	112	378,778	29.6	25.7	89.6	0.025 >>	792	3,845,991	20.6
	Female	70	388,666	18.0	15.8	63.0	0.410	543	3,819,367	14.2
Liver and Bile Duct	Total	85	767,444	11.1	9.4	82.5	0.812	700	7,665,358	9.1
	Male	59	378,778	15.6	13.3	58.4	0.972	506	3,845,991	13.2
	Female	26	388,666	6.7	5.7	23.3	0.624	194	3,819,367	5.1
Lung and Bronchus	Total	661	767,444	86.1	72.2	493.8	0.000 >>	4,137	7,665,358	54.0
	Male	325	378,778	85.8	71.7	254.7	0.000 >>	2,163	3,845,991	56.2
	Female	336	388,666	86.4	72.8	238.6	0.000 >>	1,974	3,819,367	51.7
Melanoma of the Skin	Total	245	767,444	31.9	27.9	273.9	0.083	2,394	7,665,358	31.2
	Male	156	378,778	41.2	35.6	160.9	0.735	1,414	3,845,991	36.8
	Female	89	388,666	22.9	20.4	112.2	0.028 <<	980	3,819,367	25.7
Myeloma	Total	77	767,444	10.0	8.5	69.3	0.383	583	7,665,358	7.6
	Male	47	378,778	12.4	10.4	41.3	0.413	352	3,845,991	9.2
	Female	30	388,666	7.7	6.5	27.7	0.716	231	3,819,367	6.0
Non-Hodgkin Lymphoma	Total	210	767,444	27.4	23.6	190.0	0.161	1,634	7,665,358	21.3
	Male	119	378,778	31.4	27.1	108.2	0.321	947	3,845,991	24.6
	Female	91	388,666	23.4	20.1	81.3	0.308	687	3,819,367	18.0
Oral Cavity and Pharynx	Total	124	767,444	16.2	13.9	123.3	0.971	1,056	7,665,358	13.8
	Male	89	378,778	23.5	20.2	86.3	0.797	752	3,845,991	19.6
	Female	35	388,666	9.0	7.8	35.8	0.983	304	3,819,367	8.0
Ovary	Female	63	388,666	16.2	14.1	55.6	0.354	475	3,819,367	12.4
Pancreas	Total	144	767,444	18.8	15.9	136.3	0.532	1,153	7,665,358	15.0
	Male	75	378,778	19.8	16.7	74.9	1.000	643	3,845,991	16.7
	Female	69	388,666	17.8	15.1	61.0	0.339	510	3,819,367	13.4
Prostate	Male	580	378,778	153.1	129.1	562.1	0.461	4,813	3,845,991	125.1
Stomach	Total	56	767,444	7.3	6.2	52.6	0.677	450	7,665,358	5.9
	Male	44	378,778	11.6	9.9	33.7	0.100	292	3,845,991	7.6
	Female	12	388,666	3.1	2.7	18.7	0.140	158	3,819,367	4.1
Testis	Male	23	378,778	6.1	6.3	24.1	0.925	253	3,845,991	6.6
Thyroid	Total	102	767,444	13.3	12.4	123.8	0.050	1,154	7,665,358	15.1
	Male	29	378,778	7.7	7.1	32.2	0.654	301	3,845,991	7.8
	Female	73	388,666	18.8	17.6	92.9	0.039 <<	853	3,819,367	22.3
Pediatric Age 0 to 19	Total	31	194,881	15.9	15.9	34.7	0.600	396	2,223,073	17.8
	Male	14	100,271	14.0	14.0	18.2	0.389	206	1,133,910	18.2
	Female	17	94,610	18.0	18.0	16.5	0.968	190	1,089,163	17.4

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN KOOTENAI COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Kootenai County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	7,368	786,612	936.7	808.0	7,215.3	0.074	61,732	7,802,143	791.2
	Male	3,805	388,467	979.5	844.6	3,731.2	0.231	32,425	3,915,035	828.2
	Female	3,563	398,145	894.9	774.2	3,469.7	0.116	29,307	3,887,108	754.0
All Malignant Cancers	Total	1,746	786,612	222.0	188.1	1,544.3	0.000 >>	12,978	7,802,143	166.3
	Male	936	388,467	240.9	203.3	828.1	0.000 >>	7,042	3,915,035	179.9
	Female	810	398,145	203.4	173.3	713.8	0.000 >>	5,936	3,887,108	152.7
Bladder	Total	57	786,612	7.2	6.1	48.8	0.274	409	7,802,143	5.2
	Male	42	388,467	10.8	9.1	36.3	0.387	308	3,915,035	7.9
	Female	15	398,145	3.8	3.2	12.2	0.486	101	3,887,108	2.6
Brain and Other Nervous System	Total	48	786,612	6.1	5.3	53.4	0.510	461	7,802,143	5.9
	Male	31	388,467	8.0	7.0	33.2	0.783	292	3,915,035	7.5
	Female	17	398,145	4.3	3.7	19.9	0.607	169	3,887,108	4.3
Breast	Total	144	786,612	18.3	15.7	112.4	0.005 >>	955	7,802,143	12.2
	Male	-	388,467	-	-	1.3	0.544	11	3,915,035	0.3
	Female	144	398,145	36.2	31.0	112.8	0.005 >>	944	3,887,108	24.3
Cervix	Female	8	398,145	2.0	1.8	8.5	1.000	73	3,887,108	1.9
Colorectal	Total	125	786,612	15.9	13.6	132.2	0.569	1,121	7,802,143	14.4
	Male	68	388,467	17.5	15.0	70.9	0.787	611	3,915,035	15.6
	Female	57	398,145	14.3	12.3	60.9	0.674	510	3,887,108	13.1
Corpus Uteri	Female	19	398,145	4.8	4.0	17.7	0.817	145	3,887,108	3.7
Esophagus	Total	61	786,612	7.8	6.5	49.6	0.129	415	7,802,143	5.3
	Male	56	388,467	14.4	12.2	39.2	0.013 >>	333	3,915,035	8.5
	Female	5	398,145	1.3	1.1	9.9	0.145	82	3,887,108	2.1
Hodgkin Lymphoma	Total	-	786,612	-	-	2.6	0.151	23	7,802,143	0.3
	Male	-	388,467	-	-	1.0	0.744	9	3,915,035	0.2
	Female	-	398,145	-	-	1.6	0.406	14	3,887,108	0.4
Kidney	Total	36	786,612	4.6	3.9	38.2	0.807	319	7,802,143	4.1
	Male	21	388,467	5.4	4.6	23.0	0.774	196	3,915,035	5.0
	Female	15	398,145	3.8	3.2	14.9	1.000	123	3,887,108	3.2
Larynx	Total	6	786,612	0.8	0.6	6.8	0.966	57	7,802,143	0.7
	Male	5	388,467	1.3	1.1	5.6	1.000	48	3,915,035	1.2
	Female	1	398,145	0.3	0.2	1.1	1.000	9	3,887,108	0.2
Leukemia	Total	73	786,612	9.3	7.9	65.2	0.363	551	7,802,143	7.1
	Male	43	388,467	11.1	9.4	37.7	0.424	321	3,915,035	8.2
	Female	30	398,145	7.5	6.5	27.3	0.656	230	3,887,108	5.9
Liver and Bile Duct	Total	70	786,612	8.9	7.5	65.0	0.570	543	7,802,143	7.0
	Male	49	388,467	12.6	10.6	43.8	0.465	372	3,915,035	9.5
	Female	21	398,145	5.3	4.4	20.8	1.000	171	3,887,108	4.4
Lung and Bronchus	Total	416	786,612	52.9	44.3	315.8	0.000 >>	2,624	7,802,143	33.6
	Male	206	388,467	53.0	44.2	167.8	0.005 >>	1,411	3,915,035	36.0
	Female	210	398,145	52.7	44.5	147.4	0.000 >>	1,213	3,887,108	31.2
Melanoma of the Skin	Total	34	786,612	4.3	3.7	28.6	0.355	244	7,802,143	3.1
	Male	24	388,467	6.2	5.3	18.3	0.231	158	3,915,035	4.0
	Female	10	398,145	2.5	2.2	10.2	1.000	86	3,887,108	2.2
Myeloma	Total	30	786,612	3.8	3.2	36.7	0.303	305	7,802,143	3.9
	Male	23	388,467	5.9	4.9	20.9	0.703	176	3,915,035	4.5
	Female	7	398,145	1.8	1.5	15.7	0.024 <<	129	3,887,108	3.3
Non-Hodgkin Lymphoma	Total	57	786,612	7.2	6.1	59.8	0.785	500	7,802,143	6.4
	Male	37	388,467	9.5	8.0	31.4	0.356	266	3,915,035	6.8
	Female	20	398,145	5.0	4.3	28.3	0.132	234	3,887,108	6.0
Oral Cavity and Pharynx	Total	31	786,612	3.9	3.3	24.4	0.222	205	7,802,143	2.6
	Male	26	388,467	6.7	5.7	15.7	0.021 >>	134	3,915,035	3.4
	Female	5	398,145	1.3	1.1	8.5	0.293	71	3,887,108	1.8
Ovary	Female	39	398,145	9.8	8.3	39.5	1.000	327	3,887,108	8.4
Pancreas	Total	127	786,612	16.1	13.6	116.4	0.347	971	7,802,143	12.4
	Male	70	388,467	18.0	15.1	63.3	0.429	536	3,915,035	13.7
	Female	57	398,145	14.3	12.1	52.9	0.605	435	3,887,108	11.2
Prostate	Male	110	388,467	28.3	23.7	96.9	0.204	816	3,915,035	20.8
Stomach	Total	20	786,612	2.5	2.2	21.1	0.928	179	7,802,143	2.3
	Male	12	388,467	3.1	2.6	12.1	1.000	104	3,915,035	2.7
	Female	8	398,145	2.0	1.7	8.9	0.936	75	3,887,108	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Kootenai County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	81.7%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	13.2%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	70.1%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	77.7%
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	70.9%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	17.8%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	10.9%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	42.0%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	5.9%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	34.1%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	23.3%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	33.0%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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LATAH COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 794 cases of invasive cancer were diagnosed among Latah County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Latah County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Latah County	State of Idaho
All Sites/Types	**794**	**42,577**
Female Breast	**138**	**6,210**
Prostate	**118**	**5,393**
Lung & Bronchus	**91**	**4,798**
Colorectal	**45**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Latah County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Latah County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Latah County was 405.2 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (507.3) gives an estimate of the relative burden of disease in Latah County.

The age- and sex-adjusted incidence rate of invasive cancer in Latah County, all sites combined, was 476.3 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Latah County (794) than expected (845.6) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 260 Latah County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Latah County and the State of Idaho, 2015–2019

Mortality 2015–2019	Latah County	State of Idaho
All Deaths	**1,084**	**69,101**
Cancer Deaths	**260**	**14,724**
% of All Deaths	*24.0%*	*21.3%*
Lung & Bronchus	**65**	**3,040**
Colorectal	**17**	**1,246**
Pancreas	**14**	**1,098**
Female Breast	**18**	**1,088**
Prostate	**18**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Latah County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Latah County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Latah County, all sites combined, was 154.9 deaths per 100,000 persons per year during 2015–2019, compared with 172.4 for the remainder of the state. There were fewer cancer deaths in Latah County (260) than expected (289.3) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN LATAH COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Latah County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	794	195,933	405.2	476.3	845.6	0.077	41,783	8,236,869	507.3
	Male	397	100,248	396.0	472.1	443.9	0.025 <<	21,773	4,124,521	527.9
	Female	397	95,685	414.9	480.3	402.2	0.820	20,010	4,112,348	486.6
Bladder	Total	43	195,933	21.9	26.2	40.2	0.697	2,015	8,236,869	24.5
	Male	35	100,248	34.9	42.4	31.4	0.564	1,567	4,124,521	38.0
	Female	8	95,685	8.4	9.8	8.9	0.934	448	4,112,348	10.9
Brain - malignant	Total	12	195,933	6.1	7.0	13.0	0.935	619	8,236,869	7.5
	Male	9	100,248	9.0	10.4	7.8	0.767	373	4,124,521	9.0
	Female	3	95,685	3.1	3.5	5.2	0.480	246	4,112,348	6.0
Brain and other CNS - non-malignant	Total	23	195,933	11.7	13.4	24.5	0.865	1,177	8,236,869	14.3
	Male	10	100,248	10.0	11.5	8.1	0.589	385	4,124,521	9.3
	Female	13	95,685	13.6	15.3	16.3	0.499	792	4,112,348	19.3
Breast	Total	139	195,933	70.9	84.8	121.8	0.135	6,119	8,236,869	74.3
	Male	1	100,248	1.0	1.2	0.9	1.000	47	4,124,521	1.1
	Female	138	95,685	144.2	169.9	119.9	0.113	6,072	4,112,348	147.7
Breast - in situ	Total	22	195,933	11.2	13.5	21.4	0.945	1,080	8,236,869	13.1
	Male	1	100,248	1.0	1.2	0.1	0.159	4	4,124,521	0.1
	Female	21	95,685	21.9	26.1	21.1	1.000	1,076	4,112,348	26.2
Cervix	Female	7	95,685	7.3	8.3	5.8	0.711	281	4,112,348	6.8
Colorectal	Total	45	195,933	23.0	27.2	65.9	0.008 <<	3,283	8,236,869	39.9
	Male	22	100,248	21.9	26.5	35.2	0.024 <<	1,749	4,124,521	42.4
	Female	23	95,685	24.0	28.0	30.7	0.186	1,534	4,112,348	37.3
Corpus Uteri	Female	26	95,685	27.2	31.9	24.4	0.804	1,232	4,112,348	30.0
Esophagus	Total	9	195,933	4.6	5.5	9.6	1.000	483	8,236,869	5.9
	Male	7	100,248	7.0	8.5	8.1	0.878	404	4,124,521	9.8
	Female	2	95,685	2.1	2.4	1.6	0.933	79	4,112,348	1.9
Hodgkin Lymphoma	Total	3	195,933	1.5	1.3	5.0	0.522	185	8,236,869	2.2
	Male	2	100,248	2.0	1.7	2.9	0.900	104	4,124,521	2.5
	Female	1	95,685	1.0	0.9	2.2	0.725	81	4,112,348	2.0
Kidney and Renal Pelvis	Total	25	195,933	12.8	15.2	31.2	0.303	1,566	8,236,869	19.0
	Male	18	100,248	18.0	21.7	20.4	0.699	1,016	4,124,521	24.6
	Female	7	95,685	7.3	8.6	10.9	0.297	550	4,112,348	13.4
Larynx	Total	3	195,933	1.5	1.8	4.1	0.810	203	8,236,869	2.5
	Male	2	100,248	2.0	2.4	3.2	0.745	161	4,124,521	3.9
	Female	1	95,685	1.0	1.1	0.9	1.000	42	4,112,348	1.0
Leukemia	Total	24	195,933	12.2	14.2	30.6	0.268	1,493	8,236,869	18.1
	Male	12	100,248	12.0	14.1	18.4	0.157	892	4,124,521	21.6
	Female	12	95,685	12.5	14.3	12.2	1.000	601	4,112,348	14.6
Liver and Bile Duct	Total	9	195,933	4.6	5.5	15.5	0.110	776	8,236,869	9.4
	Male	6	100,248	6.0	7.2	11.3	0.136	559	4,124,521	13.6
	Female	3	95,685	3.1	3.7	4.3	0.759	217	4,112,348	5.3
Lung and Bronchus	Total	91	195,933	46.4	55.6	93.5	0.845	4,707	8,236,869	57.1
	Male	39	100,248	38.9	47.2	49.1	0.164	2,449	4,124,521	59.4
	Female	52	95,685	54.3	64.2	44.5	0.291	2,258	4,112,348	54.9
Melanoma of the Skin	Total	33	195,933	16.8	19.6	53.4	0.004 <<	2,606	8,236,869	31.6
	Male	14	100,248	14.0	16.6	31.8	0.001 <<	1,556	4,124,521	37.7
	Female	19	95,685	19.9	22.5	21.6	0.677	1,050	4,112,348	25.5
Myeloma	Total	15	195,933	7.7	9.2	12.8	0.613	645	8,236,869	7.8
	Male	9	100,248	9.0	10.9	7.8	0.756	390	4,124,521	9.5
	Female	6	95,685	6.3	7.3	5.1	0.790	255	4,112,348	6.2
Non-Hodgkin Lymphoma	Total	54	195,933	27.6	32.3	36.3	0.007 >>	1,790	8,236,869	21.7
	Male	34	100,248	33.9	40.1	21.2	0.013 >>	1,032	4,124,521	25.0
	Female	20	95,685	20.9	24.3	15.2	0.270	758	4,112,348	18.4
Oral Cavity and Pharynx	Total	25	195,933	12.8	15.2	23.1	0.751	1,155	8,236,869	14.0
	Male	19	100,248	19.0	22.9	16.6	0.611	822	4,124,521	19.9
	Female	6	95,685	6.3	7.3	6.6	1.000	333	4,112,348	8.1
Ovary	Female	8	95,685	8.4	9.6	10.8	0.507	530	4,112,348	12.9
Pancreas	Total	17	195,933	8.7	10.4	25.5	0.099	1,280	8,236,869	15.5
	Male	9	100,248	9.0	10.9	14.2	0.204	709	4,124,521	17.2
	Female	8	95,685	8.4	9.7	11.4	0.395	571	4,112,348	13.9
Prostate	Male	118	100,248	117.7	141.9	106.4	0.281	5,275	4,124,521	127.9
Stomach	Total	9	195,933	4.6	5.5	9.9	0.936	497	8,236,869	6.0
	Male	6	100,248	6.0	7.3	6.6	1.000	330	4,124,521	8.0
	Female	3	95,685	3.1	3.7	3.3	1.000	167	4,112,348	4.1
Testis	Male	4	100,248	4.0	3.3	7.9	0.208	272	4,124,521	6.6
Thyroid	Total	16	195,933	8.2	8.6	28.0	0.021 <<	1,240	8,236,869	15.1
	Male	3	100,248	3.0	3.2	7.3	0.132	327	4,124,521	7.9
	Female	13	95,685	13.6	14.2	20.4	0.114	913	4,112,348	22.2
Pediatric Age 0 to 19	Total	8	49,705	16.1	15.0	9.4	0.804	419	2,368,249	17.7
	Male	6	25,169	23.8	22.4	4.7	0.678	214	1,209,012	17.7
	Female	2	24,536	8.2	7.6	4.7	0.309	205	1,159,237	17.7

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN LATAH COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Latah County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	1,084	197,524	548.8	626.7	1,401.9	0.000 <<	68,016	8,391,231	810.6
	Male	563	100,812	558.5	650.8	734.2	0.000 <<	35,667	4,202,690	848.7
	Female	521	96,712	538.7	600.1	670.5	0.000 <<	32,349	4,188,541	772.3
All Malignant Cancers	Total	260	197,524	131.6	154.9	289.3	0.087	14,464	8,391,231	172.4
	Male	140	100,812	138.9	166.2	157.1	0.183	7,838	4,202,690	186.5
	Female	120	96,712	124.1	143.7	132.1	0.311	6,626	4,188,541	158.2
Bladder	Total	5	197,524	2.5	3.0	9.3	0.198	461	8,391,231	5.5
	Male	4	100,812	4.0	4.8	6.9	0.368	346	4,202,690	8.2
	Female	1	96,712	1.0	1.2	2.3	0.647	115	4,188,541	2.7
Brain and Other Nervous System	Total	10	197,524	5.1	5.9	10.2	1.000	499	8,391,231	5.9
	Male	7	100,812	6.9	8.1	6.5	0.956	316	4,202,690	7.5
	Female	3	96,712	3.1	3.6	3.7	0.997	183	4,188,541	4.4
Breast	Total	18	197,524	9.1	10.8	21.5	0.527	1,081	8,391,231	12.9
	Male	-	100,812	-	-	0.2	1.000	11	4,202,690	0.3
	Female	18	96,712	18.6	21.6	21.3	0.563	1,070	4,188,541	25.5
Cervix	Female	1	96,712	1.0	1.2	1.6	1.000	80	4,188,541	1.9
Colorectal	Total	17	197,524	8.6	10.1	24.5	0.143	1,229	8,391,231	14.6
	Male	9	100,812	8.9	10.7	13.4	0.286	670	4,202,690	15.9
	Female	8	96,712	8.3	9.5	11.3	0.421	559	4,188,541	13.3
Corpus Uteri	Female	3	96,712	3.1	3.6	3.2	1.000	161	4,188,541	3.8
Esophagus	Total	11	197,524	5.6	6.6	9.2	0.641	465	8,391,231	5.5
	Male	8	100,812	7.9	9.6	7.6	0.971	381	4,202,690	9.1
	Female	3	96,712	3.1	3.6	1.7	0.471	84	4,188,541	2.0
Hodgkin Lymphoma	Total	-	197,524	-	-	0.5	1.000	23	8,391,231	0.3
	Male	-	100,812	-	-	0.2	1.000	9	4,202,690	0.2
	Female	-	96,712	-	-	0.3	1.000	14	4,188,541	0.3
Kidney	Total	3	197,524	1.5	1.8	7.0	0.163	352	8,391,231	4.2
	Male	2	100,812	2.0	2.4	4.3	0.398	215	4,202,690	5.1
	Female	1	96,712	1.0	1.2	2.7	0.482	137	4,188,541	3.3
Larynx	Total	-	197,524	-	-	1.3	0.560	63	8,391,231	0.8
	Male	-	100,812	-	-	1.1	0.684	53	4,202,690	1.3
	Female	-	96,712	-	-	0.2	1.000	10	4,188,541	0.2
Leukemia	Total	16	197,524	8.1	9.4	12.4	0.366	608	8,391,231	7.2
	Male	8	100,812	7.9	9.3	7.3	0.892	356	4,202,690	8.5
	Female	8	96,712	8.3	9.5	5.1	0.280	252	4,188,541	6.0
Liver and Bile Duct	Total	12	197,524	6.1	7.2	11.9	1.000	601	8,391,231	7.2
	Male	8	100,812	7.9	9.5	8.3	1.000	413	4,202,690	9.8
	Female	4	96,712	4.1	4.9	3.7	1.000	188	4,188,541	4.5
Lung and Bronchus	Total	65	197,524	32.9	39.1	59.0	0.467	2,975	8,391,231	35.5
	Male	32	100,812	31.7	38.1	31.6	0.996	1,585	4,202,690	37.7
	Female	33	96,712	34.1	40.0	27.4	0.329	1,390	4,188,541	33.2
Melanoma of the Skin	Total	6	197,524	3.0	3.6	5.5	0.933	272	8,391,231	3.2
	Male	3	100,812	3.0	3.6	3.6	1.000	179	4,202,690	4.3
	Female	3	96,712	3.1	3.5	1.9	0.584	93	4,188,541	2.2
Myeloma	Total	11	197,524	5.6	6.6	6.4	0.126	324	8,391,231	3.9
	Male	9	100,812	8.9	10.8	3.8	0.031 >>	190	4,202,690	4.5
	Female	2	96,712	2.1	2.4	2.6	1.000	134	4,188,541	3.2
Non-Hodgkin Lymphoma	Total	11	197,524	5.6	6.5	11.0	1.000	546	8,391,231	6.5
	Male	4	100,812	4.0	4.7	6.0	0.561	299	4,202,690	7.1
	Female	7	96,712	7.2	8.3	5.0	0.464	247	4,188,541	5.9
Oral Cavity and Pharynx	Total	6	197,524	3.0	3.6	4.6	0.618	230	8,391,231	2.7
	Male	6	100,812	6.0	7.2	3.1	0.181	154	4,202,690	3.7
	Female	-	96,712	-	-	1.5	0.444	76	4,188,541	1.8
Ovary	Female	4	96,712	4.1	4.8	7.2	0.317	362	4,188,541	8.6
Pancreas	Total	14	197,524	7.1	8.4	21.5	0.117	1,084	8,391,231	12.9
	Male	6	100,812	6.0	7.2	11.9	0.095	600	4,202,690	14.3
	Female	8	96,712	8.3	9.6	9.6	0.759	484	4,188,541	11.6
Prostate	Male	18	100,812	17.9	21.5	18.1	1.000	908	4,202,690	21.6
Stomach	Total	3	197,524	1.5	1.8	3.9	0.903	196	8,391,231	2.3
	Male	1	100,812	1.0	1.2	2.3	0.664	115	4,202,690	2.7
	Female	2	96,712	2.1	2.4	1.6	0.964	81	4,188,541	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Latah County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	90.2%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	11.6%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	70.0%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	78.8%
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	74.7%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	11.7%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	11.9%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	56.7%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	2.7%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	37.3%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	23.5%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	23.9%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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LEMHI COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 322 cases of invasive cancer were diagnosed among Lemhi County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Lemhi County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Lemhi County	State of Idaho
All Sites/Types	**322**	**42,577**
Female Breast	**40**	**6,210**
Prostate	**62**	**5,393**
Lung & Bronchus	**40**	**4,798**
Colorectal	**31**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Lemhi County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Lemhi County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Lemhi County was 827.1 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (503.4) gives an estimate of the relative burden of disease in Lemhi County.

The age- and sex-adjusted incidence rate of invasive cancer in Lemhi County, all sites combined, was 504.8 cases per 100,000 persons per year during 2014–2018. There were more cases of cancer in Lemhi County (322) than expected (321.1) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 126 Lemhi County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Lemhi County and the State of Idaho, 2015–2019

Mortality 2015–2019	Lemhi County	State of Idaho
All Deaths	**537**	**69,101**
Cancer Deaths	**126**	**14,724**
% of All Deaths	*23.5%*	*21.3%*
Lung & Bronchus	**36**	**3,040**
Colorectal	**10**	**1,246**
Pancreas	**6**	**1,098**
Female Breast	**8**	**1,088**
Prostate	**10**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Lemhi County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Lemhi County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Lemhi County, all sites combined, was 180.0 deaths per 100,000 persons per year during 2015–2019, compared with 170.7 for the remainder of the state. There were more cancer deaths in Lemhi County (126) than expected (119.5) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN LEMHI COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Lemhi County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	322	38,931	827.1	504.8	321.1	0.974	42,255	8,393,871	503.4
	Male	200	19,767	1,011.8	564.3	185.2	0.293	21,970	4,205,002	522.5
	Female	122	19,164	636.6	421.3	140.2	0.129	20,285	4,188,869	484.3
Bladder	Total	21	38,931	53.9	29.8	17.1	0.402	2,037	8,393,871	24.3
	Male	17	19,767	86.0	44.0	14.6	0.592	1,585	4,205,002	37.7
	Female	4	19,164	20.9	12.5	3.5	0.910	452	4,188,869	10.8
Brain - malignant	Total	5	38,931	12.8	9.1	4.1	0.779	626	8,393,871	7.5
	Male	4	19,767	20.2	13.5	2.7	0.553	378	4,205,002	9.0
	Female	1	19,164	5.2	3.9	1.5	1.000	248	4,188,869	5.9
Brain and other CNS - non-malignant	Total	9	38,931	23.1	15.5	8.2	0.884	1,191	8,393,871	14.2
	Male	4	19,767	20.2	13.4	2.8	0.609	391	4,205,002	9.3
	Female	5	19,164	26.1	18.0	5.3	1.000	800	4,188,869	19.1
Breast	Total	40	38,931	102.7	66.4	44.6	0.550	6,218	8,393,871	74.1
	Male	-	19,767	-	-	0.4	1.000	48	4,205,002	1.1
	Female	40	19,164	208.7	140.5	41.9	0.846	6,170	4,188,869	147.3
Breast - in situ	Total	6	38,931	15.4	10.5	7.5	0.758	1,096	8,393,871	13.1
	Male	-	19,767	-	-	0.0	1.000	5	4,205,002	0.1
	Female	6	19,164	31.3	21.9	7.1	0.860	1,091	4,188,869	26.0
Cervix	Female	1	19,164	5.2	4.7	1.4	1.000	287	4,188,869	6.9
Colorectal	Total	31	38,931	79.6	48.8	25.0	0.270	3,297	8,393,871	39.3
	Male	19	19,767	96.1	55.8	14.2	0.256	1,752	4,205,002	41.7
	Female	12	19,164	62.6	40.3	11.0	0.835	1,545	4,188,869	36.9
Corpus Uteri	Female	6	19,164	31.3	20.7	8.6	0.482	1,252	4,188,869	29.9
Esophagus	Total	6	38,931	15.4	8.8	3.9	0.408	486	8,393,871	5.8
	Male	5	19,767	25.3	13.7	3.5	0.555	406	4,205,002	9.7
	Female	1	19,164	5.2	3.1	0.6	0.918	80	4,188,869	1.9
Hodgkin Lymphoma	Total	-	38,931	-	-	0.9	0.779	188	8,393,871	2.2
	Male	-	19,767	-	-	0.5	1.000	106	4,205,002	2.5
	Female	-	19,164	-	-	0.4	1.000	82	4,188,869	2.0
Kidney and Renal Pelvis	Total	10	38,931	25.7	15.8	11.9	0.711	1,581	8,393,871	18.8
	Male	7	19,767	35.4	20.6	8.3	0.826	1,027	4,205,002	24.4
	Female	3	19,164	15.7	10.2	3.9	0.905	554	4,188,869	13.2
Larynx	Total	2	38,931	5.1	3.0	1.6	0.958	204	8,393,871	2.4
	Male	2	19,767	10.1	5.5	1.4	0.812	161	4,205,002	3.8
	Female	-	19,164	-	-	0.3	1.000	43	4,188,869	1.0
Leukemia	Total	7	38,931	18.0	11.1	11.4	0.241	1,510	8,393,871	18.0
	Male	5	19,767	25.3	14.6	7.3	0.521	899	4,205,002	21.4
	Female	2	19,164	10.4	6.8	4.3	0.405	611	4,188,869	14.6
Liver and Bile Duct	Total	6	38,931	15.4	9.1	6.1	1.000	779	8,393,871	9.3
	Male	3	19,767	15.2	8.6	4.7	0.632	562	4,205,002	13.4
	Female	3	19,164	15.7	9.7	1.6	0.436	217	4,188,869	5.2
Lung and Bronchus	Total	40	38,931	102.7	56.9	39.8	1.000	4,758	8,393,871	56.7
	Male	28	19,767	141.7	72.5	22.6	0.302	2,460	4,205,002	58.5
	Female	12	19,164	62.6	37.3	17.6	0.212	2,298	4,188,869	54.9
Melanoma of the Skin	Total	14	38,931	36.0	23.4	18.7	0.332	2,625	8,393,871	31.3
	Male	9	19,767	45.5	26.7	12.5	0.398	1,561	4,205,002	37.1
	Female	5	19,164	26.1	19.0	6.7	0.684	1,064	4,188,869	25.4
Myeloma	Total	3	38,931	7.7	4.3	5.4	0.417	657	8,393,871	7.8
	Male	3	19,767	15.2	7.8	3.6	1.000	396	4,205,002	9.4
	Female	-	19,164	-	-	2.0	0.278	261	4,188,869	6.2
Non-Hodgkin Lymphoma	Total	11	38,931	28.3	17.0	14.1	0.505	1,833	8,393,871	21.8
	Male	8	19,767	40.5	23.1	8.7	0.993	1,058	4,205,002	25.2
	Female	3	19,164	15.7	9.9	5.6	0.380	775	4,188,869	18.5
Oral Cavity and Pharynx	Total	13	38,931	33.4	20.6	8.8	0.217	1,167	8,393,871	13.9
	Male	12	19,767	60.7	35.6	6.7	0.079	829	4,205,002	19.7
	Female	1	19,164	5.2	3.4	2.4	0.636	338	4,188,869	8.1
Ovary	Female	5	19,164	26.1	17.6	3.6	0.591	533	4,188,869	12.7
Pancreas	Total	9	38,931	23.1	13.2	10.5	0.797	1,288	8,393,871	15.3
	Male	7	19,767	35.4	19.0	6.2	0.857	711	4,205,002	16.9
	Female	2	19,164	10.4	6.3	4.4	0.374	577	4,188,869	13.8
Prostate	Male	62	19,767	313.7	169.2	46.5	0.034 >>	5,331	4,205,002	126.8
Stomach	Total	5	38,931	12.8	7.6	3.9	0.717	501	8,393,871	6.0
	Male	3	19,767	15.2	8.4	2.8	1.000	333	4,205,002	7.9
	Female	2	19,164	10.4	6.5	1.2	0.695	168	4,188,869	4.0
Testis	Male	-	19,767	-	-	1.0	0.734	276	4,205,002	6.6
Thyroid	Total	6	38,931	15.4	12.9	6.9	0.918	1,250	8,393,871	14.9
	Male	-	19,767	-	-	2.1	0.250	330	4,205,002	7.8
	Female	6	19,164	31.3	27.3	4.8	0.708	920	4,188,869	22.0
Pediatric Age 0 to 19	Total	1	7,838	12.8	12.8	1.4	1.000	426	2,410,116	17.7
	Male	-	4,124	-	-	0.7	0.958	220	1,230,057	17.9
	Female	1	3,714	26.9	27.0	0.6	0.952	206	1,180,059	17.5

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN LEMHI COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Lemhi County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	537	39,234	1,368.7	770.0	559.3	0.357	68,563	8,549,521	802.0
	Male	310	19,873	1,559.9	833.7	311.8	0.948	35,920	4,283,629	838.5
	Female	227	19,361	1,172.5	687.7	252.6	0.111	32,643	4,265,892	765.2
All Malignant Cancers	Total	126	39,234	321.2	180.0	119.5	0.576	14,598	8,549,521	170.7
	Male	79	19,873	397.5	205.5	70.9	0.363	7,899	4,283,629	184.4
	Female	47	19,361	242.8	146.1	50.5	0.685	6,699	4,265,892	157.0
Bladder	Total	5	39,234	12.7	6.7	4.0	0.750	461	8,549,521	5.4
	Male	4	19,873	20.1	9.7	3.3	0.858	346	4,283,629	8.1
	Female	1	19,361	5.2	2.9	0.9	1.000	115	4,265,892	2.7
Brain and Other Nervous System	Total	4	39,234	10.2	6.5	3.6	0.985	505	8,549,521	5.9
	Male	3	19,873	15.1	9.1	2.5	0.889	320	4,283,629	7.5
	Female	1	19,361	5.2	3.5	1.3	1.000	185	4,265,892	4.3
Breast	Total	8	39,234	20.4	12.0	8.5	1.000	1,091	8,549,521	12.8
	Male	-	19,873	-	-	0.1	1.000	11	4,283,629	0.3
	Female	8	19,361	41.3	25.6	7.9	1.000	1,080	4,265,892	25.3
Cervix	Female	-	19,361	-	-	0.5	1.000	81	4,265,892	1.9
Colorectal	Total	10	39,234	25.5	14.7	9.8	1.000	1,236	8,549,521	14.5
	Male	6	19,873	30.2	16.7	5.7	0.996	673	4,283,629	15.7
	Female	4	19,361	20.7	12.4	4.3	1.000	563	4,265,892	13.2
Corpus Uteri	Female	-	19,361	-	-	1.3	0.565	164	4,265,892	3.8
Esophagus	Total	3	39,234	7.6	4.3	3.8	0.933	473	8,549,521	5.5
	Male	3	19,873	15.1	8.0	3.4	1.000	386	4,283,629	9.0
	Female	-	19,361	-	-	0.7	1.000	87	4,265,892	2.0
Hodgkin Lymphoma	Total	-	39,234	-	-	0.2	1.000	23	8,549,521	0.3
	Male	-	19,873	-	-	0.1	1.000	9	4,283,629	0.2
	Female	-	19,361	-	-	0.1	1.000	14	4,265,892	0.3
Kidney	Total	4	39,234	10.2	5.6	2.9	0.668	351	8,549,521	4.1
	Male	2	19,873	10.1	5.3	1.9	1.000	215	4,283,629	5.0
	Female	2	19,361	10.3	5.9	1.1	0.587	136	4,265,892	3.2
Larynx	Total	-	39,234	-	-	0.5	1.000	63	8,549,521	0.7
	Male	-	19,873	-	-	0.5	1.000	53	4,283,629	1.2
	Female	-	19,361	-	-	0.1	1.000	10	4,265,892	0.2
Leukemia	Total	5	39,234	12.7	7.1	5.1	1.000	619	8,549,521	7.2
	Male	3	19,873	15.1	7.7	3.3	1.000	361	4,283,629	8.4
	Female	2	19,361	10.3	6.2	1.9	1.000	258	4,265,892	6.0
Liver and Bile Duct	Total	3	39,234	7.6	4.4	4.9	0.562	610	8,549,521	7.1
	Male	1	19,873	5.0	2.7	3.6	0.250	420	4,283,629	9.8
	Female	2	19,361	10.3	6.3	1.4	0.831	190	4,265,892	4.5
Lung and Bronchus	Total	36	39,234	91.8	50.1	25.2	0.051	3,004	8,549,521	35.1
	Male	24	19,873	120.8	61.0	14.6	0.030 >>	1,593	4,283,629	37.2
	Female	12	19,361	62.0	36.4	10.9	0.822	1,411	4,265,892	33.1
Melanoma of the Skin	Total	2	39,234	5.1	3.0	2.1	1.000	276	8,549,521	3.2
	Male	2	19,873	10.1	5.5	1.5	0.895	180	4,283,629	4.2
	Female	-	19,361	-	-	0.7	1.000	96	4,265,892	2.3
Myeloma	Total	-	39,234	-	-	2.9	0.111	335	8,549,521	3.9
	Male	-	19,873	-	-	1.9	0.305	199	4,283,629	4.6
	Female	-	19,361	-	-	1.1	0.683	136	4,265,892	3.2
Non-Hodgkin Lymphoma	Total	3	39,234	7.6	4.1	4.7	0.618	554	8,549,521	6.5
	Male	3	19,873	15.1	7.7	2.7	1.000	300	4,283,629	7.0
	Female	-	19,361	-	-	2.0	0.266	254	4,265,892	6.0
Oral Cavity and Pharynx	Total	4	39,234	10.2	5.8	1.9	0.238	232	8,549,521	2.7
	Male	3	19,873	15.1	8.1	1.4	0.312	157	4,283,629	3.7
	Female	1	19,361	5.2	3.1	0.6	0.856	75	4,265,892	1.8
Ovary	Female	4	19,361	20.7	12.7	2.7	0.563	362	4,265,892	8.5
Pancreas	Total	6	39,234	15.3	8.5	9.0	0.409	1,092	8,549,521	12.8
	Male	5	19,873	25.2	13.2	5.3	1.000	601	4,283,629	14.0
	Female	1	19,361	5.2	3.0	3.8	0.215	491	4,265,892	11.5
Prostate	Male	10	19,873	50.3	23.6	9.0	0.837	916	4,283,629	21.4
Stomach	Total	5	39,234	12.7	7.4	1.5	0.040 >>	194	8,549,521	2.3
	Male	1	19,873	5.0	2.8	1.0	1.000	115	4,283,629	2.7
	Female	4	19,361	20.7	12.6	0.6	0.006 >>	79	4,265,892	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Lemhi County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	78.3%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	12.4%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	50.4%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	53.1%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	19.6%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	12.5%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	3.9%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	37.8%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	19.0%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	22.0%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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LEWIS COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 139 cases of invasive cancer were diagnosed among Lewis County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Lewis County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Lewis County	State of Idaho
All Sites/Types	**139**	**42,577**
Female Breast	**18**	**6,210**
Prostate	**15**	**5,393**
Lung & Bronchus	**25**	**4,798**
Colorectal	**10**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Lewis County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Lewis County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Lewis County was 725.2 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (504.4) gives an estimate of the relative burden of disease in Lewis County.

The age- and sex-adjusted incidence rate of invasive cancer in Lewis County, all sites combined, was 494.3 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Lewis County (139) than expected (141.8) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 50 Lewis County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Lewis County and the State of Idaho, 2015–2019

Mortality 2015–2019	Lewis County	State of Idaho
All Deaths	**235**	**69,101**
Cancer Deaths	**50**	**14,724**
% of All Deaths	*21.3%*	*21.3%*
Lung & Bronchus	**12**	**3,040**
Colorectal	**4**	**1,246**
Pancreas	**4**	**1,098**
Female Breast	**0**	**1,088**
Prostate	**7**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Lewis County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Lewis County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Lewis County, all sites combined, was 163.2 deaths per 100,000 persons per year during 2015–2019, compared with 171.2 for the remainder of the state. There were fewer cancer deaths in Lewis County (50) than expected (52.5) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN LEWIS COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Lewis County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	139	19,166	725.2	494.3	141.8	0.855	42,438	8,413,636	504.4
	Male	86	9,610	894.9	568.9	79.2	0.474	22,084	4,215,159	523.9
	Female	53	9,556	554.6	403.4	63.7	0.196	20,354	4,198,477	484.8
Bladder	Total	6	19,166	31.3	19.5	7.5	0.753	2,052	8,413,636	24.4
	Male	4	9,610	41.6	24.5	6.2	0.522	1,598	4,215,159	37.9
	Female	2	9,556	20.9	13.9	1.6	0.923	454	4,198,477	10.8
Brain - malignant	Total	1	19,166	5.2	4.0	1.9	0.884	630	8,413,636	7.5
	Male	1	9,610	10.4	7.7	1.2	1.000	381	4,215,159	9.0
	Female	-	9,556	-	-	0.7	0.985	249	4,198,477	5.9
Brain and other CNS - non-malignant	Total	2	19,166	10.4	7.7	3.7	0.573	1,198	8,413,636	14.2
	Male	1	9,610	10.4	7.7	1.2	1.000	394	4,215,159	9.3
	Female	1	9,556	10.5	7.9	2.4	0.601	804	4,198,477	19.1
Breast	Total	18	19,166	93.9	67.6	19.8	0.804	6,240	8,413,636	74.2
	Male	-	9,610	-	-	0.2	1.000	48	4,215,159	1.1
	Female	18	9,556	188.4	140.2	18.9	0.952	6,192	4,198,477	147.5
Breast - in situ	Total	2	19,166	10.4	7.9	3.3	0.708	1,100	8,413,636	13.1
	Male	-	9,610	-	-	0.0	1.000	5	4,215,159	0.1
	Female	2	9,556	20.9	16.2	3.2	0.751	1,095	4,198,477	26.1
Cervix	Female	-	9,556	-	-	0.7	1.000	288	4,198,477	6.9
Colorectal	Total	10	19,166	52.2	35.5	11.1	0.897	3,318	8,413,636	39.4
	Male	8	9,610	83.2	54.4	6.1	0.553	1,763	4,215,159	41.8
	Female	2	9,556	20.9	14.8	5.0	0.249	1,555	4,198,477	37.0
Corpus Uteri	Female	2	9,556	20.9	15.6	3.8	0.530	1,256	4,198,477	29.9
Esophagus	Total	2	19,166	10.4	6.8	1.7	1.000	490	8,413,636	5.8
	Male	1	9,610	10.4	6.4	1.5	1.000	410	4,215,159	9.7
	Female	1	9,556	10.5	7.0	0.3	0.474	80	4,198,477	1.9
Hodgkin Lymphoma	Total	-	19,166	-	-	0.4	1.000	188	8,413,636	2.2
	Male	-	9,610	-	-	0.3	1.000	106	4,215,159	2.5
	Female	-	9,556	-	-	0.2	1.000	82	4,198,477	2.0
Kidney and Renal Pelvis	Total	6	19,166	31.3	21.4	5.3	0.864	1,585	8,413,636	18.8
	Male	4	9,610	41.6	27.4	3.6	0.953	1,030	4,215,159	24.4
	Female	2	9,556	20.9	14.8	1.8	1.000	555	4,198,477	13.2
Larynx	Total	1	19,166	5.2	3.4	0.7	1.000	205	8,413,636	2.4
	Male	1	9,610	10.4	6.4	0.6	0.901	162	4,215,159	3.8
	Female	-	9,556	-	-	0.1	1.000	43	4,198,477	1.0
Leukemia	Total	5	19,166	26.1	17.7	5.1	1.000	1,512	8,413,636	18.0
	Male	3	9,610	31.2	20.4	3.2	1.000	901	4,215,159	21.4
	Female	2	9,556	20.9	14.7	2.0	1.000	611	4,198,477	14.6
Liver and Bile Duct	Total	7	19,166	36.5	24.4	2.6	0.038 >>	778	8,413,636	9.2
	Male	7	9,610	72.8	46.7	2.0	0.009 >>	558	4,215,159	13.2
	Female	-	9,556	-	-	0.7	0.972	220	4,198,477	5.2
Lung and Bronchus	Total	25	19,166	130.4	81.3	17.4	0.103	4,773	8,413,636	56.7
	Male	15	9,610	156.1	92.3	9.5	0.123	2,473	4,215,159	58.7
	Female	10	9,556	104.6	68.5	8.0	0.567	2,300	4,198,477	54.8
Melanoma of the Skin	Total	7	19,166	36.5	26.3	8.3	0.819	2,632	8,413,636	31.3
	Male	5	9,610	52.0	34.4	5.4	1.000	1,565	4,215,159	37.1
	Female	2	9,556	20.9	16.7	3.0	0.826	1,067	4,198,477	25.4
Myeloma	Total	5	19,166	26.1	16.4	2.4	0.184	655	8,413,636	7.8
	Male	3	9,610	31.2	18.7	1.5	0.385	396	4,215,159	9.4
	Female	2	9,556	20.9	13.8	0.9	0.449	259	4,198,477	6.2
Non-Hodgkin Lymphoma	Total	4	19,166	20.9	14.0	6.3	0.502	1,840	8,413,636	21.9
	Male	2	9,610	20.8	13.4	3.8	0.551	1,064	4,215,159	25.2
	Female	2	9,556	20.9	14.5	2.6	1.000	776	4,198,477	18.5
Oral Cavity and Pharynx	Total	4	19,166	20.9	14.4	3.9	1.000	1,176	8,413,636	14.0
	Male	3	9,610	31.2	20.6	2.9	1.000	838	4,215,159	19.9
	Female	1	9,556	10.5	7.6	1.1	1.000	338	4,198,477	8.1
Ovary	Female	1	9,556	10.5	7.7	1.7	1.000	537	4,198,477	12.8
Pancreas	Total	5	19,166	26.1	16.6	4.6	0.980	1,292	8,413,636	15.4
	Male	4	9,610	41.6	25.5	2.7	0.555	714	4,215,159	16.9
	Female	1	9,556	10.5	6.9	2.0	0.819	578	4,198,477	13.8
Prostate	Male	15	9,610	156.1	97.2	19.7	0.346	5,378	4,215,159	127.6
Stomach	Total	-	19,166	-	-	1.8	0.346	506	8,413,636	6.0
	Male	-	9,610	-	-	1.2	0.590	336	4,215,159	8.0
	Female	-	9,556	-	-	0.6	1.000	170	4,198,477	4.0
Testis	Male	-	9,610	-	-	0.5	1.000	276	4,215,159	6.5
Thyroid	Total	6	19,166	31.3	28.2	3.2	0.202	1,250	8,413,636	14.9
	Male	3	9,610	31.2	25.7	0.9	0.127	327	4,215,159	7.8
	Female	3	9,556	31.4	29.3	2.3	0.782	923	4,198,477	22.0
Pediatric Age 0 to 19	Total	-	4,797	-	-	0.8	0.866	427	2,413,157	17.7
	Male	-	2,474	-	-	0.4	1.000	220	1,231,707	17.9
	Female	-	2,323	-	-	0.4	1.000	207	1,181,450	17.5

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN LEWIS COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Lewis County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	235	19,191	1,224.5	771.3	244.9	0.554	68,865	8,569,564	803.6
	Male	129	9,667	1,334.4	803.5	135.0	0.645	36,101	4,293,835	840.8
	Female	106	9,524	1,113.0	728.5	111.5	0.645	32,764	4,275,729	766.3
All Malignant Cancers	Total	50	19,191	260.5	163.2	52.5	0.804	14,674	8,569,564	171.2
	Male	34	9,667	351.7	205.9	30.6	0.579	7,944	4,293,835	185.0
	Female	16	9,524	168.0	111.8	22.5	0.195	6,730	4,275,729	157.4
Bladder	Total	3	19,191	15.6	9.3	1.7	0.511	463	8,569,564	5.4
	Male	2	9,667	20.7	11.4	1.4	0.836	348	4,293,835	8.1
	Female	1	9,524	10.5	6.7	0.4	0.663	115	4,275,729	2.7
Brain and Other Nervous System	Total	3	19,191	15.6	11.0	1.6	0.440	506	8,569,564	5.9
	Male	3	9,667	31.0	20.8	1.1	0.190	320	4,293,835	7.5
	Female	-	9,524	-	-	0.6	1.000	186	4,275,729	4.4
Breast	Total	-	19,191	-	-	3.8	0.047 <<	1,099	8,569,564	12.8
	Male	-	9,667	-	-	0.0	1.000	11	4,293,835	0.3
	Female	-	9,524	-	-	3.5	0.059	1,088	4,275,729	25.4
Cervix	Female	-	9,524	-	-	0.2	1.000	81	4,275,729	1.9
Colorectal	Total	4	19,191	20.8	13.4	4.3	1.000	1,242	8,569,564	14.5
	Male	3	9,667	31.0	19.1	2.5	0.896	676	4,293,835	15.7
	Female	1	9,524	10.5	7.0	1.9	0.875	566	4,275,729	13.2
Corpus Uteri	Female	-	9,524	-	-	0.5	1.000	164	4,275,729	3.8
Esophagus	Total	2	19,191	10.4	6.6	1.7	0.998	474	8,569,564	5.5
	Male	1	9,667	10.3	6.2	1.5	1.000	388	4,293,835	9.0
	Female	1	9,524	10.5	7.0	0.3	0.500	86	4,275,729	2.0
Hodgkin Lymphoma	Total	-	19,191	-	-	0.1	1.000	23	8,569,564	0.3
	Male	-	9,667	-	-	0.0	1.000	9	4,293,835	0.2
	Female	-	9,524	-	-	0.0	1.000	14	4,275,729	0.3
Kidney	Total	1	19,191	5.2	3.2	1.3	1.000	354	8,569,564	4.1
	Male	1	9,667	10.3	6.2	0.8	1.000	216	4,293,835	5.0
	Female	-	9,524	-	-	0.5	1.000	138	4,275,729	3.2
Larynx	Total	1	19,191	5.2	3.2	0.2	0.403	62	8,569,564	0.7
	Male	-	9,667	-	-	0.2	1.000	53	4,293,835	1.2
	Female	1	9,524	10.5	6.7	0.0	0.062	9	4,275,729	0.2
Leukemia	Total	1	19,191	5.2	3.2	2.3	0.682	623	8,569,564	7.3
	Male	-	9,667	-	-	1.4	0.489	364	4,293,835	8.5
	Female	1	9,524	10.5	6.8	0.9	1.000	259	4,275,729	6.1
Liver and Bile Duct	Total	4	19,191	20.8	13.4	2.1	0.331	609	8,569,564	7.1
	Male	4	9,667	41.4	25.3	1.5	0.141	417	4,293,835	9.7
	Female	-	9,524	-	-	0.6	1.000	192	4,275,729	4.5
Lung and Bronchus	Total	12	19,191	62.5	38.2	11.1	0.863	3,028	8,569,564	35.3
	Male	5	9,667	51.7	29.7	6.3	0.795	1,612	4,293,835	37.5
	Female	7	9,524	73.5	47.4	4.9	0.443	1,416	4,275,729	33.1
Melanoma of the Skin	Total	-	19,191	-	-	0.9	0.774	278	8,569,564	3.2
	Male	-	9,667	-	-	0.7	1.000	182	4,293,835	4.2
	Female	-	9,524	-	-	0.3	1.000	96	4,275,729	2.2
Myeloma	Total	2	19,191	10.4	6.2	1.3	0.719	333	8,569,564	3.9
	Male	2	9,667	20.7	11.5	0.8	0.380	197	4,293,835	4.6
	Female	-	9,524	-	-	0.5	1.000	136	4,275,729	3.2
Non-Hodgkin Lymphoma	Total	1	19,191	5.2	3.2	2.1	0.780	556	8,569,564	6.5
	Male	-	9,667	-	-	1.2	0.615	303	4,293,835	7.1
	Female	1	9,524	10.5	6.6	0.9	1.000	253	4,275,729	5.9
Oral Cavity and Pharynx	Total	-	19,191	-	-	0.8	0.871	236	8,569,564	2.8
	Male	-	9,667	-	-	0.6	1.000	160	4,293,835	3.7
	Female	-	9,524	-	-	0.3	1.000	76	4,275,729	1.8
Ovary	Female	1	9,524	10.5	7.1	1.2	1.000	365	4,275,729	8.5
Pancreas	Total	4	19,191	20.8	13.0	3.9	1.000	1,094	8,569,564	12.8
	Male	4	9,667	41.4	24.5	2.3	0.396	602	4,293,835	14.0
	Female	-	9,524	-	-	1.7	0.371	492	4,275,729	11.5
Prostate	Male	7	9,667	72.4	39.0	3.8	0.189	919	4,293,835	21.4
Stomach	Total	-	19,191	-	-	0.7	1.000	199	8,569,564	2.3
	Male	-	9,667	-	-	0.4	1.000	116	4,293,835	2.7
	Female	-	9,524	-	-	0.3	1.000	83	4,275,729	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Lewis County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	85.2%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	10.7%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	21.0%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	18.3%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	3.9%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	24.1%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	15.4%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	15.7%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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LINCOLN COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 113 cases of invasive cancer were diagnosed among Lincoln County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Lincoln County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Lincoln County	State of Idaho
All Sites/Types	**113**	**42,577**
Female Breast	**17**	**6,210**
Prostate	**18**	**5,393**
Lung & Bronchus	**14**	**4,798**
Colorectal	**10**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Lincoln County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Lincoln County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Lincoln County was 423.0 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (505.2) gives an estimate of the relative burden of disease in Lincoln County.

The age- and sex-adjusted incidence rate of invasive cancer in Lincoln County, all sites combined, was 471.0 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Lincoln County (113) than expected (121.2) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 44 Lincoln County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Lincoln County and the State of Idaho, 2015–2019

Mortality 2015–2019	Lincoln County	State of Idaho
All Deaths	**198**	**69,101**
Cancer Deaths	**44**	**14,724**
% of All Deaths	*22.2%*	*21.3%*
Lung & Bronchus	**12**	**3,040**
Colorectal	**3**	**1,246**
Pancreas	**1**	**1,098**
Female Breast	**4**	**1,088**
Prostate	**2**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Lincoln County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Lincoln County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Lincoln County, all sites combined, was 185.4 deaths per 100,000 persons per year during 2015–2019, compared with 171.5 for the remainder of the state. There were more cancer deaths in Lincoln County (44) than expected (40.7) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN LINCOLN COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Lincoln County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	113	26,715	423.0	471.0	121.2	0.490	42,464	8,406,087	505.2
	Male	61	13,873	439.7	478.5	66.9	0.514	22,109	4,210,896	525.0
	Female	52	12,842	404.9	457.8	55.1	0.739	20,355	4,195,191	485.2
Bladder	Total	4	26,715	15.0	17.2	5.7	0.655	2,054	8,406,087	24.4
	Male	4	13,873	28.8	31.7	4.8	0.956	1,598	4,210,896	37.9
	Female	-	12,842	-	-	1.2	0.614	456	4,195,191	10.9
Brain - malignant	Total	1	26,715	3.7	4.0	1.9	0.881	630	8,406,087	7.5
	Male	1	13,873	7.2	7.6	1.2	1.000	381	4,210,896	9.0
	Female	-	12,842	-	-	0.7	0.986	249	4,195,191	5.9
Brain and other CNS - non-malignant	Total	2	26,715	7.5	8.1	3.5	0.641	1,198	8,406,087	14.3
	Male	1	13,873	7.2	7.6	1.2	1.000	394	4,210,896	9.4
	Female	1	12,842	7.8	8.7	2.2	0.710	804	4,195,191	19.2
Breast	Total	17	26,715	63.6	69.8	18.1	0.921	6,241	8,406,087	74.2
	Male	-	13,873	-	-	0.1	1.000	48	4,210,896	1.1
	Female	17	12,842	132.4	148.4	16.9	1.000	6,193	4,195,191	147.6
Breast - in situ	Total	1	26,715	3.7	4.1	3.2	0.337	1,101	8,406,087	13.1
	Male	-	13,873	-	-	0.0	1.000	5	4,210,896	0.1
	Female	1	12,842	7.8	8.6	3.0	0.391	1,096	4,195,191	26.1
Cervix	Female	1	12,842	7.8	8.0	0.9	1.000	287	4,195,191	6.8
Colorectal	Total	10	26,715	37.4	41.6	9.5	0.955	3,318	8,406,087	39.5
	Male	8	13,873	57.7	62.0	5.4	0.356	1,763	4,210,896	41.9
	Female	2	12,842	15.6	17.8	4.2	0.432	1,555	4,195,191	37.1
Corpus Uteri	Female	5	12,842	38.9	43.5	3.4	0.523	1,253	4,195,191	29.9
Esophagus	Total	1	26,715	3.7	4.3	1.4	1.000	491	8,406,087	5.8
	Male	1	13,873	7.2	7.9	1.2	1.000	410	4,210,896	9.7
	Female	-	12,842	-	-	0.2	1.000	81	4,195,191	1.9
Hodgkin Lymphoma	Total	-	26,715	-	-	0.6	1.000	188	8,406,087	2.2
	Male	-	13,873	-	-	0.3	1.000	106	4,210,896	2.5
	Female	-	12,842	-	-	0.2	1.000	82	4,195,191	2.0
Kidney and Renal Pelvis	Total	4	26,715	15.0	16.6	4.5	1.000	1,587	8,406,087	18.9
	Male	3	13,873	21.6	23.3	3.1	1.000	1,031	4,210,896	24.5
	Female	1	12,842	7.8	8.9	1.5	1.000	556	4,195,191	13.3
Larynx	Total	-	26,715	-	-	0.6	1.000	206	8,406,087	2.5
	Male	-	13,873	-	-	0.5	1.000	163	4,210,896	3.9
	Female	-	12,842	-	-	0.1	1.000	43	4,195,191	1.0
Leukemia	Total	4	26,715	15.0	16.6	4.3	1.000	1,513	8,406,087	18.0
	Male	4	13,873	28.8	31.1	2.8	0.595	900	4,210,896	21.4
	Female	-	12,842	-	-	1.7	0.384	613	4,195,191	14.6
Liver and Bile Duct	Total	3	26,715	11.2	12.5	2.2	0.768	782	8,406,087	9.3
	Male	1	13,873	7.2	7.8	1.7	0.980	564	4,210,896	13.4
	Female	2	12,842	15.6	18.1	0.6	0.227	218	4,195,191	5.2
Lung and Bronchus	Total	14	26,715	52.4	60.0	13.3	0.915	4,784	8,406,087	56.9
	Male	7	13,873	50.5	55.8	7.4	1.000	2,481	4,210,896	58.9
	Female	7	12,842	54.5	64.2	6.0	0.784	2,303	4,195,191	54.9
Melanoma of the Skin	Total	7	26,715	26.2	28.7	7.6	1.000	2,632	8,406,087	31.3
	Male	4	13,873	28.8	31.0	4.8	0.955	1,566	4,210,896	37.2
	Female	3	12,842	23.4	25.7	3.0	1.000	1,066	4,195,191	25.4
Myeloma	Total	-	26,715	-	-	1.8	0.316	660	8,406,087	7.9
	Male	-	13,873	-	-	1.2	0.608	399	4,210,896	9.5
	Female	-	12,842	-	-	0.7	1.000	261	4,195,191	6.2
Non-Hodgkin Lymphoma	Total	3	26,715	11.2	12.6	5.2	0.469	1,841	8,406,087	21.9
	Male	2	13,873	14.4	15.7	3.2	0.749	1,064	4,210,896	25.3
	Female	1	12,842	7.8	9.0	2.1	0.778	777	4,195,191	18.5
Oral Cavity and Pharynx	Total	5	26,715	18.7	20.8	3.4	0.497	1,175	8,406,087	14.0
	Male	3	13,873	21.6	23.4	2.6	0.938	838	4,210,896	19.9
	Female	2	12,842	15.6	17.7	0.9	0.460	337	4,195,191	8.0
Ovary	Female	3	12,842	23.4	26.3	1.5	0.360	535	4,195,191	12.8
Pancreas	Total	2	26,715	7.5	8.5	3.6	0.599	1,295	8,406,087	15.4
	Male	-	13,873	-	-	2.1	0.234	718	4,210,896	17.1
	Female	2	12,842	15.6	18.3	1.5	0.888	577	4,195,191	13.8
Prostate	Male	18	13,873	129.7	142.4	16.1	0.706	5,375	4,210,896	127.6
Stomach	Total	2	26,715	7.5	8.4	1.4	0.833	504	8,406,087	6.0
	Male	1	13,873	7.2	7.8	1.0	1.000	335	4,210,896	8.0
	Female	1	12,842	7.8	9.1	0.4	0.717	169	4,195,191	4.0
Testis	Male	-	13,873	-	-	0.9	0.840	276	4,210,896	6.6
Thyroid	Total	2	26,715	7.5	7.9	3.8	0.545	1,254	8,406,087	14.9
	Male	-	13,873	-	-	1.0	0.712	330	4,210,896	7.8
	Female	2	12,842	15.6	16.4	2.7	0.995	924	4,195,191	22.0
Pediatric Age 0 to 19	Total	-	8,807	-	-	1.5	0.429	427	2,409,147	17.7
	Male	-	4,606	-	-	0.8	0.889	220	1,229,575	17.9
	Female	-	4,201	-	-	0.7	0.964	207	1,179,572	17.5

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN LINCOLN COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Lincoln County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	198	26,750	740.2	831.5	191.6	0.664	68,902	8,562,005	804.7
	Male	97	13,861	699.8	735.5	111.1	0.193	36,133	4,289,641	842.3
	Female	101	12,889	783.6	942.2	82.2	0.049 >>	32,769	4,272,364	767.0
All Malignant Cancers	Total	44	26,750	164.5	185.4	40.7	0.645	14,680	8,562,005	171.5
	Male	19	13,861	137.1	147.0	24.0	0.363	7,959	4,289,641	185.5
	Female	25	12,889	194.0	227.5	17.3	0.095	6,721	4,272,364	157.3
Bladder	Total	-	26,750	-	-	1.3	0.559	466	8,562,005	5.4
	Male	-	13,861	-	-	1.1	0.682	350	4,289,641	8.2
	Female	-	12,889	-	-	0.3	1.000	116	4,272,364	2.7
Brain and Other Nervous System	Total	1	26,750	3.7	4.1	1.5	1.000	508	8,562,005	5.9
	Male	-	13,861	-	-	1.0	0.753	323	4,289,641	7.5
	Female	1	12,889	7.8	8.6	0.5	0.790	185	4,272,364	4.3
Breast	Total	4	26,750	15.0	16.6	3.1	0.741	1,095	8,562,005	12.8
	Male	-	13,861	-	-	0.0	1.000	11	4,289,641	0.3
	Female	4	12,889	31.0	35.8	2.8	0.630	1,084	4,272,364	25.4
Cervix	Female	-	12,889	-	-	0.2	1.000	81	4,272,364	1.9
Colorectal	Total	3	26,750	11.2	12.5	3.5	1.000	1,243	8,562,005	14.5
	Male	1	13,861	7.2	7.7	2.1	0.777	678	4,289,641	15.8
	Female	2	12,889	15.5	18.3	1.4	0.845	565	4,272,364	13.2
Corpus Uteri	Female	1	12,889	7.8	9.1	0.4	0.686	163	4,272,364	3.8
Esophagus	Total	-	26,750	-	-	1.3	0.536	476	8,562,005	5.6
	Male	-	13,861	-	-	1.2	0.626	389	4,289,641	9.1
	Female	-	12,889	-	-	0.2	1.000	87	4,272,364	2.0
Hodgkin Lymphoma	Total	-	26,750	-	-	0.1	1.000	23	8,562,005	0.3
	Male	-	13,861	-	-	0.0	1.000	9	4,289,641	0.2
	Female	-	12,889	-	-	0.0	1.000	14	4,272,364	0.3
Kidney	Total	1	26,750	3.7	4.2	1.0	1.000	354	8,562,005	4.1
	Male	1	13,861	7.2	7.8	0.6	0.953	216	4,289,641	5.0
	Female	-	12,889	-	-	0.3	1.000	138	4,272,364	3.2
Larynx	Total	-	26,750	-	-	0.2	1.000	63	8,562,005	0.7
	Male	-	13,861	-	-	0.2	1.000	53	4,289,641	1.2
	Female	-	12,889	-	-	0.0	1.000	10	4,272,364	0.2
Leukemia	Total	1	26,750	3.7	4.2	1.7	0.972	623	8,562,005	7.3
	Male	1	13,861	7.2	7.7	1.1	1.000	363	4,289,641	8.5
	Female	-	12,889	-	-	0.7	1.000	260	4,272,364	6.1
Liver and Bile Duct	Total	1	26,750	3.7	4.2	1.7	0.981	612	8,562,005	7.1
	Male	-	13,861	-	-	1.3	0.570	421	4,289,641	9.8
	Female	1	12,889	7.8	9.1	0.5	0.779	191	4,272,364	4.5
Lung and Bronchus	Total	12	26,750	44.9	51.2	8.3	0.269	3,028	8,562,005	35.4
	Male	7	13,861	50.5	55.0	4.8	0.411	1,610	4,289,641	37.5
	Female	5	12,889	38.8	46.1	3.6	0.588	1,418	4,272,364	33.2
Melanoma of the Skin	Total	-	26,750	-	-	0.8	0.913	278	8,562,005	3.2
	Male	-	13,861	-	-	0.6	1.000	182	4,289,641	4.2
	Female	-	12,889	-	-	0.3	1.000	96	4,272,364	2.2
Myeloma	Total	-	26,750	-	-	0.9	0.801	335	8,562,005	3.9
	Male	-	13,861	-	-	0.6	1.000	199	4,289,641	4.6
	Female	-	12,889	-	-	0.3	1.000	136	4,272,364	3.2
Non-Hodgkin Lymphoma	Total	4	26,750	15.0	17.0	1.5	0.136	553	8,562,005	6.5
	Male	3	13,861	21.6	23.2	0.9	0.127	300	4,289,641	7.0
	Female	1	12,889	7.8	9.4	0.6	0.938	253	4,272,364	5.9
Oral Cavity and Pharynx	Total	1	26,750	3.7	4.2	0.7	0.961	235	8,562,005	2.7
	Male	-	13,861	-	-	0.5	1.000	160	4,289,641	3.7
	Female	1	12,889	7.8	8.9	0.2	0.357	75	4,272,364	1.8
Ovary	Female	1	12,889	7.8	8.9	1.0	1.000	365	4,272,364	8.5
Pancreas	Total	1	26,750	3.7	4.2	3.0	0.392	1,097	8,562,005	12.8
	Male	-	13,861	-	-	1.8	0.333	606	4,289,641	14.1
	Female	1	12,889	7.8	9.2	1.3	1.000	491	4,272,364	11.5
Prostate	Male	2	13,861	14.4	15.2	2.8	0.925	924	4,289,641	21.5
Stomach	Total	1	26,750	3.7	4.1	0.6	0.858	198	8,562,005	2.3
	Male	-	13,861	-	-	0.4	1.000	116	4,289,641	2.7
	Female	1	12,889	7.8	9.1	0.2	0.379	82	4,272,364	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Lincoln County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	73.0%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	13.1%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	13.4%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	5.5%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	6.2%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	28.8%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	18.4%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	.

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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MADISON COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 427 cases of invasive cancer were diagnosed among Madison County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Madison County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Madison County	State of Idaho
All Sites/Types	**427**	**42,577**
Female Breast	**58**	**6,210**
Prostate	**60**	**5,393**
Lung & Bronchus	**9**	**4,798**
Colorectal	**41**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Madison County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Madison County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Madison County was 220.7 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (511.6) gives an estimate of the relative burden of disease in Madison County.

The age- and sex-adjusted incidence rate of invasive cancer in Madison County, all sites combined, was 441.0 cases per 100,000 persons per year during 2014–2018. There were statistically significantly fewer cases of cancer in Madison County (427) than expected (495.3) based upon rates in the remainder of the state (p=.002).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 101 Madison County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Madison County and the State of Idaho, 2015–2019

Mortality 2015–2019	Madison County	State of Idaho
All Deaths	**734**	**69,101**
Cancer Deaths	**101**	**14,724**
% of All Deaths	*13.8%*	*21.3%*
Lung & Bronchus	**6**	**3,040**
Colorectal	**12**	**1,246**
Pancreas	**10**	**1,098**
Female Breast	**9**	**1,088**
Prostate	**9**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Madison County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Madison County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Madison County, all sites combined, was 111.2 deaths per 100,000 persons per year during 2015–2019, compared with 174.2 for the remainder of the state. There were statistically significantly fewer cancer deaths in Madison County (101) than expected (158.2) based upon rates in the remainder of the state (p<.001).

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN MADISON COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Madison County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	427	193,492	220.7	441.0	495.3	0.002 <<	42,150	8,239,310	511.6
	Male	218	97,507	223.6	464.2	249.8	0.044 <<	21,952	4,127,262	531.9
	Female	209	95,985	217.7	420.1	244.4	0.023 <<	20,198	4,112,048	491.2
Bladder	Total	10	193,492	5.2	11.4	21.8	0.008 <<	2,048	8,239,310	24.9
	Male	9	97,507	9.2	20.9	16.6	0.063	1,593	4,127,262	38.6
	Female	1	95,985	1.0	2.3	4.9	0.087	455	4,112,048	11.1
Brain - malignant	Total	5	193,492	2.6	4.0	9.4	0.188	626	8,239,310	7.6
	Male	3	97,507	3.1	5.2	5.3	0.444	379	4,127,262	9.2
	Female	2	95,985	2.1	3.0	4.0	0.463	247	4,112,048	6.0
Brain and other CNS - non-malignant	Total	17	193,492	8.8	15.2	16.0	0.870	1,183	8,239,310	14.4
	Male	7	97,507	7.2	12.0	5.5	0.617	388	4,127,262	9.4
	Female	10	95,985	10.4	18.2	10.6	1.000	795	4,112,048	19.3
Breast	Total	59	193,492	30.5	63.0	70.5	0.184	6,199	8,239,310	75.2
	Male	1	97,507	1.0	2.3	0.5	0.783	47	4,127,262	1.1
	Female	58	95,985	60.4	122.6	70.8	0.138	6,152	4,112,048	149.6
Breast - in situ	Total	5	193,492	2.6	5.3	12.5	0.030 <<	1,097	8,239,310	13.3
	Male	-	97,507	-	-	0.1	1.000	5	4,127,262	0.1
	Female	5	95,985	5.2	10.5	12.6	0.027 <<	1,092	4,112,048	26.6
Cervix	Female	2	95,985	2.1	3.4	4.1	0.437	286	4,112,048	7.0
Colorectal	Total	41	193,492	21.2	43.6	37.5	0.610	3,287	8,239,310	39.9
	Male	20	97,507	20.5	43.5	19.5	0.968	1,751	4,127,262	42.4
	Female	21	95,985	21.9	43.5	18.0	0.541	1,536	4,112,048	37.4
Corpus Uteri	Female	14	95,985	14.6	30.0	14.1	1.000	1,244	4,112,048	30.3
Esophagus	Total	3	193,492	1.6	3.4	5.3	0.458	489	8,239,310	5.9
	Male	3	97,507	3.1	6.8	4.4	0.736	408	4,127,262	9.9
	Female	-	95,985	-	-	0.9	0.838	81	4,112,048	2.0
Hodgkin Lymphoma	Total	2	193,492	1.0	0.9	4.9	0.269	186	8,239,310	2.3
	Male	1	97,507	1.0	0.9	2.8	0.478	105	4,127,262	2.5
	Female	1	95,985	1.0	0.9	2.2	0.733	81	4,112,048	2.0
Kidney and Renal Pelvis	Total	19	193,492	9.8	20.3	17.9	0.848	1,572	8,239,310	19.1
	Male	12	97,507	12.3	26.4	11.3	0.901	1,022	4,127,262	24.8
	Female	7	95,985	7.3	14.4	6.5	0.949	550	4,112,048	13.4
Larynx	Total	1	193,492	0.5	1.1	2.4	0.636	205	8,239,310	2.5
	Male	1	97,507	1.0	2.3	1.7	0.976	162	4,127,262	3.9
	Female	-	95,985	-	-	0.6	1.000	43	4,112,048	1.0
Leukemia	Total	19	193,492	9.8	17.3	19.9	0.956	1,498	8,239,310	18.2
	Male	15	97,507	15.4	27.9	11.6	0.385	889	4,127,262	21.5
	Female	4	95,985	4.2	7.1	8.3	0.163	609	4,112,048	14.8
Liver and Bile Duct	Total	4	193,492	2.1	4.4	8.5	0.147	781	8,239,310	9.5
	Male	2	97,507	2.1	4.5	6.0	0.122	563	4,127,262	13.6
	Female	2	95,985	2.1	4.3	2.4	1.000	218	4,112,048	5.3
Lung and Bronchus	Total	9	193,492	4.7	10.3	50.8	0.000 <<	4,789	8,239,310	58.1
	Male	5	97,507	5.1	11.7	25.8	0.000 <<	2,483	4,127,262	60.2
	Female	4	95,985	4.2	9.0	24.9	0.000 <<	2,306	4,112,048	56.1
Melanoma of the Skin	Total	28	193,492	14.5	27.4	32.3	0.510	2,611	8,239,310	31.7
	Male	14	97,507	14.4	29.3	18.0	0.412	1,556	4,127,262	37.7
	Female	14	95,985	14.6	25.5	14.1	1.000	1,055	4,112,048	25.7
Myeloma	Total	6	193,492	3.1	6.9	6.9	0.926	654	8,239,310	7.9
	Male	4	97,507	4.1	9.4	4.1	1.000	395	4,127,262	9.6
	Female	2	95,985	2.1	4.5	2.8	0.941	259	4,112,048	6.3
Non-Hodgkin Lymphoma	Total	23	193,492	11.9	23.4	21.7	0.843	1,821	8,239,310	22.1
	Male	12	97,507	12.3	24.3	12.6	1.000	1,054	4,127,262	25.5
	Female	11	95,985	11.5	22.8	9.0	0.585	767	4,112,048	18.7
Oral Cavity and Pharynx	Total	10	193,492	5.2	10.8	13.1	0.483	1,170	8,239,310	14.2
	Male	8	97,507	8.2	17.7	9.1	0.884	833	4,127,262	20.2
	Female	2	95,985	2.1	4.2	3.9	0.494	337	4,112,048	8.2
Ovary	Female	7	95,985	7.3	13.6	6.7	0.995	531	4,112,048	12.9
Pancreas	Total	9	193,492	4.7	10.1	13.9	0.230	1,288	8,239,310	15.6
	Male	5	97,507	5.1	11.5	7.5	0.483	713	4,127,262	17.3
	Female	4	95,985	4.2	8.8	6.3	0.487	575	4,112,048	14.0
Prostate	Male	60	97,507	61.5	140.7	55.1	0.544	5,333	4,127,262	129.2
Stomach	Total	4	193,492	2.1	4.4	5.5	0.702	502	8,239,310	6.1
	Male	4	97,507	4.1	8.9	3.6	0.970	332	4,127,262	8.0
	Female	-	95,985	-	-	1.9	0.302	170	4,112,048	4.1
Testis	Male	7	97,507	7.2	5.6	8.2	0.858	269	4,127,262	6.5
Thyroid	Total	37	193,492	19.1	25.8	21.3	0.002 >>	1,219	8,239,310	14.8
	Male	9	97,507	9.2	13.3	5.3	0.176	321	4,127,262	7.8
	Female	28	95,985	29.2	38.9	15.7	0.007 >>	898	4,112,048	21.8
Pediatric Age 0 to 19	Total	8	67,467	11.9	11.0	13.0	0.200	419	2,350,487	17.8
	Male	4	30,974	12.9	12.3	5.8	0.613	216	1,203,207	18.0
	Female	4	36,493	11.0	9.9	7.2	0.317	203	1,147,280	17.7

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN MADISON COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Madison County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	734	195,499	375.4	735.0	813.4	0.005 <<	68,366	8,393,256	814.5
	Male	355	98,772	359.4	685.6	441.8	0.000 <<	35,875	4,204,730	853.2
	Female	379	96,727	391.8	791.8	371.3	0.704	32,491	4,188,526	775.7
All Malignant Cancers	Total	101	195,499	51.7	111.2	158.2	0.000 <<	14,623	8,393,256	174.2
	Male	56	98,772	56.7	124.7	84.6	0.001 <<	7,922	4,204,730	188.4
	Female	45	96,727	46.5	98.0	73.4	0.000 <<	6,701	4,188,526	160.0
Bladder	Total	6	195,499	3.1	6.8	4.8	0.700	460	8,393,256	5.5
	Male	6	98,772	6.1	13.8	3.6	0.301	344	4,204,730	8.2
	Female	-	96,727	-	-	1.2	0.591	116	4,188,526	2.8
Brain and Other Nervous System	Total	4	195,499	2.0	3.8	6.4	0.476	505	8,393,256	6.0
	Male	2	98,772	2.0	3.8	4.0	0.465	321	4,204,730	7.6
	Female	2	96,727	2.1	3.8	2.3	1.000	184	4,188,526	4.4
Breast	Total	10	195,499	5.1	11.0	11.8	0.744	1,089	8,393,256	13.0
	Male	1	98,772	1.0	2.3	0.1	0.193	10	4,204,730	0.2
	Female	9	96,727	9.3	19.7	11.8	0.521	1,079	4,188,526	25.8
Cervix	Female	-	96,727	-	-	1.0	0.723	81	4,188,526	1.9
Colorectal	Total	12	195,499	6.1	13.2	13.4	0.848	1,234	8,393,256	14.7
	Male	6	98,772	6.1	13.2	7.2	0.827	673	4,204,730	16.0
	Female	6	96,727	6.2	13.2	6.1	1.000	561	4,188,526	13.4
Corpus Uteri	Female	1	96,727	1.0	2.3	1.7	0.971	163	4,188,526	3.9
Esophagus	Total	1	195,499	0.5	1.1	5.0	0.080	475	8,393,256	5.7
	Male	1	98,772	1.0	2.3	4.0	0.178	388	4,204,730	9.2
	Female	-	96,727	-	-	0.9	0.785	87	4,188,526	2.1
Hodgkin Lymphoma	Total	-	195,499	-	-	0.4	1.000	23	8,393,256	0.3
	Male	-	98,772	-	-	0.1	1.000	9	4,204,730	0.2
	Female	-	96,727	-	-	0.3	1.000	14	4,188,526	0.3
Kidney	Total	2	195,499	1.0	2.2	3.8	0.554	353	8,393,256	4.2
	Male	1	98,772	1.0	2.3	2.3	0.672	216	4,204,730	5.1
	Female	1	96,727	1.0	2.2	1.5	1.000	137	4,188,526	3.3
Larynx	Total	-	195,499	-	-	0.7	1.000	63	8,393,256	0.8
	Male	-	98,772	-	-	0.6	1.000	53	4,204,730	1.3
	Female	-	96,727	-	-	0.1	1.000	10	4,188,526	0.2
Leukemia	Total	8	195,499	4.1	8.1	7.3	0.879	616	8,393,256	7.3
	Male	7	98,772	7.1	14.0	4.3	0.279	357	4,204,730	8.5
	Female	1	96,727	1.0	2.0	3.1	0.381	259	4,188,526	6.2
Liver and Bile Duct	Total	7	195,499	3.6	7.9	6.4	0.913	606	8,393,256	7.2
	Male	5	98,772	5.1	11.5	4.3	0.866	416	4,204,730	9.9
	Female	2	96,727	2.1	4.4	2.0	1.000	190	4,188,526	4.5
Lung and Bronchus	Total	6	195,499	3.1	6.8	31.7	0.000 <<	3,034	8,393,256	36.1
	Male	3	98,772	3.0	7.0	16.6	0.000 <<	1,614	4,204,730	38.4
	Female	3	96,727	3.1	6.7	15.1	0.000 <<	1,420	4,188,526	33.9
Melanoma of the Skin	Total	-	195,499	-	-	3.2	0.084	278	8,393,256	3.3
	Male	-	98,772	-	-	2.0	0.264	182	4,204,730	4.3
	Female	-	96,727	-	-	1.1	0.637	96	4,188,526	2.3
Myeloma	Total	6	195,499	3.1	6.8	3.5	0.273	329	8,393,256	3.9
	Male	4	98,772	4.0	9.1	2.0	0.296	195	4,204,730	4.6
	Female	2	96,727	2.1	4.5	1.4	0.829	134	4,188,526	3.2
Non-Hodgkin Lymphoma	Total	6	195,499	3.1	6.6	5.9	1.000	551	8,393,256	6.6
	Male	3	98,772	3.0	6.7	3.2	1.000	300	4,204,730	7.1
	Female	3	96,727	3.1	6.7	2.7	1.000	251	4,188,526	6.0
Oral Cavity and Pharynx	Total	1	195,499	0.5	1.1	2.5	0.570	235	8,393,256	2.8
	Male	-	98,772	-	-	1.7	0.372	160	4,204,730	3.8
	Female	1	96,727	1.0	2.2	0.8	1.000	75	4,188,526	1.8
Ovary	Female	3	96,727	3.1	6.6	3.9	0.895	363	4,188,526	8.7
Pancreas	Total	10	195,499	5.1	11.3	11.4	0.816	1,088	8,393,256	13.0
	Male	4	98,772	4.0	9.2	6.2	0.507	602	4,204,730	14.3
	Female	6	96,727	6.2	13.5	5.2	0.825	486	4,188,526	11.6
Prostate	Male	9	98,772	9.1	20.8	9.4	1.000	917	4,204,730	21.8
Stomach	Total	-	195,499	-	-	2.2	0.232	199	8,393,256	2.4
	Male	-	98,772	-	-	1.2	0.575	116	4,204,730	2.8
	Female	-	96,727	-	-	0.9	0.809	83	4,188,526	2.0

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Madison County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	87.5%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	10.2%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	63.8%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	59.0%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	3.6%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	4.1%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	72.8%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	8.9%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	38.8%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	21.4%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	16.9%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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MINIDOKA COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 476 cases of invasive cancer were diagnosed among Minidoka County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Minidoka County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Minidoka County	State of Idaho
All Sites/Types	**476**	**42,577**
Female Breast	**70**	**6,210**
Prostate	**54**	**5,393**
Lung & Bronchus	**42**	**4,798**
Colorectal	**36**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Minidoka County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Minidoka County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Minidoka County was 462.9 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (505.4) gives an estimate of the relative burden of disease in Minidoka County.

The age- and sex-adjusted incidence rate of invasive cancer in Minidoka County, all sites combined, was 447.1 cases per 100,000 persons per year during 2014–2018. There were statistically significantly fewer cases of cancer in Minidoka County (476) than expected (538.1) based upon rates in the remainder of the state (p=.007).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 183 Minidoka County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Minidoka County and the State of Idaho, 2015–2019

Mortality 2015–2019	Minidoka County	State of Idaho
All Deaths	**938**	**69,101**
Cancer Deaths	**183**	**14,724**
% of All Deaths	*19.5%*	*21.3%*
Lung & Bronchus	**26**	**3,040**
Colorectal	**14**	**1,246**
Pancreas	**15**	**1,098**
Female Breast	**14**	**1,088**
Prostate	**16**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Minidoka County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Minidoka County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Minidoka County, all sites combined, was 164.0 deaths per 100,000 persons per year during 2015–2019, compared with 171.4 for the remainder of the state. There were fewer cancer deaths in Minidoka County (183) than expected (191.3) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN MINIDOKA COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Minidoka County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	476	102,823	462.9	447.1	538.1	0.007 <<	42,101	8,329,979	505.4
	Male	260	51,665	503.2	482.3	283.0	0.178	21,910	4,173,104	525.0
	Female	216	51,158	422.2	410.9	255.3	0.013 <<	20,191	4,156,875	485.7
Bladder	Total	28	102,823	27.2	25.3	27.0	0.900	2,030	8,329,979	24.4
	Male	22	51,665	42.6	39.3	21.2	0.919	1,580	4,173,104	37.9
	Female	6	51,158	11.7	10.9	6.0	1.000	450	4,156,875	10.8
Brain - malignant	Total	9	102,823	8.8	8.6	7.8	0.764	622	8,329,979	7.5
	Male	7	51,665	13.5	13.4	4.7	0.391	375	4,173,104	9.0
	Female	2	51,158	3.9	3.8	3.1	0.788	247	4,156,875	5.9
Brain and other CNS - non-malignant	Total	20	102,823	19.5	19.0	14.9	0.241	1,180	8,329,979	14.2
	Male	5	51,665	9.7	9.4	5.0	1.000	390	4,173,104	9.3
	Female	15	51,158	29.3	28.8	9.9	0.158	790	4,156,875	19.0
Breast	Total	70	102,823	68.1	67.3	77.3	0.443	6,188	8,329,979	74.3
	Male	-	51,665	-	-	0.6	1.000	48	4,173,104	1.2
	Female	70	51,158	136.8	135.7	76.2	0.522	6,140	4,156,875	147.7
Breast - in situ	Total	18	102,823	17.5	17.7	13.2	0.242	1,084	8,329,979	13.0
	Male	-	51,665	-	-	0.1	1.000	5	4,173,104	0.1
	Female	18	51,158	35.2	35.8	13.1	0.227	1,079	4,156,875	26.0
Cervix	Female	6	51,158	11.7	12.5	3.3	0.224	282	4,156,875	6.8
Colorectal	Total	36	102,823	35.0	33.5	42.4	0.365	3,292	8,329,979	39.5
	Male	25	51,665	48.4	46.4	22.5	0.657	1,746	4,173,104	41.8
	Female	11	51,158	21.5	20.5	19.9	0.044 <<	1,546	4,156,875	37.2
Corpus Uteri	Female	22	51,158	43.0	43.2	15.2	0.116	1,236	4,156,875	29.7
Esophagus	Total	5	102,823	4.9	4.6	6.3	0.796	487	8,329,979	5.8
	Male	4	51,665	7.7	7.4	5.3	0.781	407	4,173,104	9.8
	Female	1	51,158	2.0	1.8	1.0	1.000	80	4,156,875	1.9
Hodgkin Lymphoma	Total	4	102,823	3.9	4.0	2.2	0.372	184	8,329,979	2.2
	Male	1	51,665	1.9	2.0	1.3	1.000	105	4,173,104	2.5
	Female	3	51,158	5.9	5.9	1.0	0.148	79	4,156,875	1.9
Kidney and Renal Pelvis	Total	28	102,823	27.2	26.4	19.9	0.098	1,563	8,329,979	18.8
	Male	18	51,665	34.8	33.9	12.9	0.212	1,016	4,173,104	24.3
	Female	10	51,158	19.5	18.9	7.0	0.334	547	4,156,875	13.2
Larynx	Total	4	102,823	3.9	3.7	2.6	0.529	202	8,329,979	2.4
	Male	3	51,665	5.8	5.5	2.1	0.687	160	4,173,104	3.8
	Female	1	51,158	2.0	1.9	0.5	0.833	42	4,156,875	1.0
Leukemia	Total	14	102,823	13.6	12.8	19.7	0.230	1,503	8,329,979	18.0
	Male	9	51,665	17.4	16.4	11.7	0.532	895	4,173,104	21.4
	Female	5	51,158	9.8	9.1	8.0	0.375	608	4,156,875	14.6
Liver and Bile Duct	Total	10	102,823	9.7	9.5	9.8	1.000	775	8,329,979	9.3
	Male	9	51,665	17.4	17.0	7.0	0.552	556	4,173,104	13.3
	Female	1	51,158	2.0	1.9	2.8	0.466	219	4,156,875	5.3
Lung and Bronchus	Total	42	102,823	40.8	38.4	62.5	0.008 <<	4,756	8,329,979	57.1
	Male	25	51,665	48.4	45.3	32.6	0.210	2,463	4,173,104	59.0
	Female	17	51,158	33.2	31.3	30.0	0.015 <<	2,293	4,156,875	55.2
Melanoma of the Skin	Total	29	102,823	28.2	27.6	32.9	0.561	2,610	8,329,979	31.3
	Male	19	51,665	36.8	35.3	20.0	0.943	1,551	4,173,104	37.2
	Female	10	51,158	19.5	19.6	13.0	0.499	1,059	4,156,875	25.5
Myeloma	Total	5	102,823	4.9	4.6	8.6	0.282	655	8,329,979	7.9
	Male	3	51,665	5.8	5.5	5.2	0.475	396	4,173,104	9.5
	Female	2	51,158	3.9	3.6	3.4	0.674	259	4,156,875	6.2
Non-Hodgkin Lymphoma	Total	17	102,823	16.5	15.8	23.5	0.204	1,827	8,329,979	21.9
	Male	13	51,665	25.2	24.2	13.6	1.000	1,053	4,173,104	25.2
	Female	4	51,158	7.8	7.5	10.0	0.059	774	4,156,875	18.6
Oral Cavity and Pharynx	Total	12	102,823	11.7	11.5	14.7	0.591	1,168	8,329,979	14.0
	Male	7	51,665	13.5	13.3	10.5	0.352	834	4,173,104	20.0
	Female	5	51,158	9.8	9.6	4.2	0.817	334	4,156,875	8.0
Ovary	Female	8	51,158	15.6	15.3	6.7	0.699	530	4,156,875	12.7
Pancreas	Total	15	102,823	14.6	13.7	16.9	0.769	1,282	8,329,979	15.4
	Male	12	51,665	23.2	22.0	9.2	0.438	706	4,173,104	16.9
	Female	3	51,158	5.9	5.4	7.6	0.108	576	4,156,875	13.9
Prostate	Male	54	51,665	104.5	102.0	67.8	0.099	5,339	4,173,104	127.9
Stomach	Total	6	102,823	5.8	5.5	6.6	1.000	500	8,329,979	6.0
	Male	2	51,665	3.9	3.6	4.4	0.372	334	4,173,104	8.0
	Female	4	51,158	7.8	7.3	2.2	0.358	166	4,156,875	4.0
Testis	Male	4	51,665	7.7	8.2	3.2	0.778	272	4,173,104	6.5
Thyroid	Total	7	102,823	6.8	7.1	14.9	0.039 <<	1,249	8,329,979	15.0
	Male	4	51,665	7.7	7.9	4.0	1.000	326	4,173,104	7.8
	Female	3	51,158	5.9	6.2	10.8	0.011 <<	923	4,156,875	22.2
Pediatric Age 0 to 19	Total	1	31,971	3.1	3.1	5.7	0.045 <<	426	2,385,983	17.9
	Male	-	16,291	-	-	2.9	0.106	220	1,217,890	18.1
	Female	1	15,680	6.4	6.4	2.7	0.479	206	1,168,093	17.6

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN MINIDOKA COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Minidoka County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	938	103,523	906.1	802.6	938.8	0.997	68,162	8,485,232	803.3
	Male	515	51,887	992.5	890.8	485.7	0.193	35,715	4,251,615	840.0
	Female	423	51,636	819.2	714.8	453.5	0.156	32,447	4,233,617	766.4
All Malignant Cancers	Total	183	103,523	176.8	164.0	191.3	0.580	14,541	8,485,232	171.4
	Male	106	51,887	204.3	188.5	104.1	0.879	7,872	4,251,615	185.2
	Female	77	51,636	149.1	138.8	87.4	0.288	6,669	4,233,617	157.5
Bladder	Total	9	103,523	8.7	7.6	6.4	0.393	457	8,485,232	5.4
	Male	8	51,887	15.4	13.2	4.9	0.240	342	4,251,615	8.0
	Female	1	51,636	1.9	1.7	1.6	1.000	115	4,233,617	2.7
Brain and Other Nervous System	Total	9	103,523	8.7	8.6	6.2	0.343	500	8,485,232	5.9
	Male	7	51,887	13.5	13.3	3.9	0.203	316	4,251,615	7.4
	Female	2	51,636	3.9	3.8	2.3	1.000	184	4,233,617	4.3
Breast	Total	14	103,523	13.5	12.7	14.1	1.000	1,085	8,485,232	12.8
	Male	-	51,887	-	-	0.1	1.000	11	4,251,615	0.3
	Female	14	51,636	27.1	25.6	13.8	1.000	1,074	4,233,617	25.4
Cervix	Female	-	51,636	-	-	1.0	0.765	81	4,233,617	1.9
Colorectal	Total	14	103,523	13.5	12.5	16.2	0.696	1,232	8,485,232	14.5
	Male	6	51,887	11.6	10.9	8.7	0.462	673	4,251,615	15.8
	Female	8	51,636	15.5	14.1	7.5	0.943	559	4,233,617	13.2
Corpus Uteri	Female	1	51,636	1.9	1.8	2.1	0.767	163	4,233,617	3.9
Esophagus	Total	5	103,523	4.8	4.6	6.1	0.867	471	8,485,232	5.6
	Male	5	51,887	9.6	9.1	5.0	1.000	384	4,251,615	9.0
	Female	-	51,636	-	-	1.1	0.639	87	4,233,617	2.1
Hodgkin Lymphoma	Total	-	103,523	-	-	0.3	1.000	23	8,485,232	0.3
	Male	-	51,887	-	-	0.1	1.000	9	4,251,615	0.2
	Female	-	51,636	-	-	0.2	1.000	14	4,233,617	0.3
Kidney	Total	3	103,523	2.9	2.7	4.6	0.645	352	8,485,232	4.1
	Male	2	51,887	3.9	3.6	2.8	0.951	215	4,251,615	5.1
	Female	1	51,636	1.9	1.8	1.8	0.898	137	4,233,617	3.2
Larynx	Total	1	103,523	1.0	0.9	0.8	1.000	62	8,485,232	0.7
	Male	1	51,887	1.9	1.8	0.7	1.000	52	4,251,615	1.2
	Female	-	51,636	-	-	0.1	1.000	10	4,233,617	0.2
Leukemia	Total	7	103,523	6.8	6.1	8.3	0.819	617	8,485,232	7.3
	Male	3	51,887	5.8	5.2	4.9	0.570	361	4,251,615	8.5
	Female	4	51,636	7.7	7.0	3.5	0.914	256	4,233,617	6.0
Liver and Bile Duct	Total	6	103,523	5.8	5.6	7.6	0.726	607	8,485,232	7.2
	Male	5	51,887	9.6	9.4	5.2	1.000	416	4,251,615	9.8
	Female	1	51,636	1.9	1.9	2.4	0.605	191	4,233,617	4.5
Lung and Bronchus	Total	26	103,523	25.1	23.5	39.4	0.031 <<	3,014	8,485,232	35.5
	Male	13	51,887	25.1	23.4	20.9	0.089	1,604	4,251,615	37.7
	Female	13	51,636	25.2	23.4	18.5	0.240	1,410	4,233,617	33.3
Melanoma of the Skin	Total	5	103,523	4.8	4.6	3.5	0.560	273	8,485,232	3.2
	Male	2	51,887	3.9	3.6	2.4	1.000	180	4,251,615	4.2
	Female	3	51,636	5.8	5.5	1.2	0.238	93	4,233,617	2.2
Myeloma	Total	3	103,523	2.9	2.6	4.5	0.687	332	8,485,232	3.9
	Male	2	51,887	3.9	3.5	2.7	0.997	197	4,251,615	4.6
	Female	1	51,636	1.9	1.7	1.8	0.911	135	4,233,617	3.2
Non-Hodgkin Lymphoma	Total	8	103,523	7.7	7.0	7.4	0.923	549	8,485,232	6.5
	Male	6	51,887	11.6	10.6	4.0	0.416	297	4,251,615	7.0
	Female	2	51,636	3.9	3.4	3.5	0.658	252	4,233,617	6.0
Oral Cavity and Pharynx	Total	1	103,523	1.0	0.9	3.0	0.389	235	8,485,232	2.8
	Male	-	51,887	-	-	2.1	0.254	160	4,251,615	3.8
	Female	1	51,636	1.9	1.8	1.0	1.000	75	4,233,617	1.8
Ovary	Female	3	51,636	5.8	5.5	4.6	0.637	363	4,233,617	8.6
Pancreas	Total	15	103,523	14.5	13.7	14.0	0.861	1,083	8,485,232	12.8
	Male	11	51,887	21.2	20.2	7.6	0.298	595	4,251,615	14.0
	Female	4	51,636	7.7	7.2	6.4	0.475	488	4,233,617	11.5
Prostate	Male	16	51,887	30.8	26.4	13.0	0.466	910	4,251,615	21.4
Stomach	Total	3	103,523	2.9	2.7	2.6	0.956	196	8,485,232	2.3
	Male	1	51,887	1.9	1.8	1.5	1.000	115	4,251,615	2.7
	Female	2	51,636	3.9	3.5	1.1	0.593	81	4,233,617	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Minidoka County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	73.2%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	8.6%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	56.9%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	60.9%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	13.2%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	8.1%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	39.6%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	2.6%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	21.1%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	13.9%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	18.5%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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NEZ PERCE COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 1,235 cases of invasive cancer were diagnosed among Nez Perce County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Nez Perce County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Nez Perce County	State of Idaho
All Sites/Types	**1,235**	**42,577**
Female Breast	**205**	**6,210**
Prostate	**131**	**5,393**
Lung & Bronchus	**198**	**4,798**
Colorectal	**97**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Nez Perce County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Nez Perce County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Nez Perce County was 615.9 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (502.2) gives an estimate of the relative burden of disease in Nez Perce County.

The age- and sex-adjusted incidence rate of invasive cancer in Nez Perce County, all sites combined, was 505.4 cases per 100,000 persons per year during 2014–2018. There were more cases of cancer in Nez Perce County (1,235) than expected (1,227.0) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 519 Nez Perce County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Nez Perce County and the State of Idaho, 2015–2019

Mortality 2015–2019	Nez Perce County	State of Idaho
All Deaths	**2,567**	**69,101**
Cancer Deaths	**519**	**14,724**
% of All Deaths	*20.2%*	*21.3%*
Lung & Bronchus	**130**	**3,040**
Colorectal	**45**	**1,246**
Pancreas	**40**	**1,098**
Female Breast	**32**	**1,088**
Prostate	**33**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Nez Perce County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Nez Perce County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Nez Perce County, all sites combined, was 196.6 deaths per 100,000 persons per year during 2015–2019, compared with 169.4 for the remainder of the state. There were statistically significantly more cancer deaths in Nez Perce County (519) than expected (447.2) based upon rates in the remainder of the state ($p<.001$).

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN NEZ PERCE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Nez Perce County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	1,235	200,517	615.9	505.4	1,227.0	0.828	41,342	8,232,285	502.2
	Male	620	99,194	625.0	510.8	634.0	0.596	21,550	4,125,575	522.4
	Female	615	101,323	607.0	502.1	590.4	0.320	19,792	4,106,710	481.9
Bladder	Total	50	200,517	24.9	19.1	63.8	0.088	2,008	8,232,285	24.4
	Male	40	99,194	40.3	31.2	48.6	0.241	1,562	4,125,575	37.9
	Female	10	101,323	9.9	7.5	14.5	0.294	446	4,106,710	10.9
Brain - malignant	Total	17	200,517	8.5	7.5	17.0	1.000	614	8,232,285	7.5
	Male	11	99,194	11.1	9.7	10.2	0.873	371	4,125,575	9.0
	Female	6	101,323	5.9	5.2	6.8	0.965	243	4,106,710	5.9
Brain and other CNS - non-malignant	Total	29	200,517	14.5	12.2	33.8	0.472	1,171	8,232,285	14.2
	Male	8	99,194	8.1	7.0	10.8	0.509	387	4,125,575	9.4
	Female	21	101,323	20.7	17.3	23.1	0.757	784	4,106,710	19.1
Breast	Total	206	200,517	102.7	87.3	173.4	0.017 >>	6,052	8,232,285	73.5
	Male	1	99,194	1.0	0.8	1.4	1.000	47	4,125,575	1.1
	Female	205	101,323	202.3	172.2	174.1	0.024 >>	6,005	4,106,710	146.2
Breast - in situ	Total	31	200,517	15.5	13.6	29.6	0.845	1,071	8,232,285	13.0
	Male	-	99,194	-	-	0.1	1.000	5	4,125,575	0.1
	Female	31	101,323	30.6	27.0	29.8	0.879	1,066	4,106,710	26.0
Cervix	Female	6	101,323	5.9	5.7	7.2	0.845	282	4,106,710	6.9
Colorectal	Total	97	200,517	48.4	39.1	97.4	1.000	3,231	8,232,285	39.2
	Male	54	99,194	54.4	44.6	50.4	0.652	1,717	4,125,575	41.6
	Female	43	101,323	42.4	33.8	46.9	0.637	1,514	4,106,710	36.9
Corpus Uteri	Female	29	101,323	28.6	24.7	35.1	0.346	1,229	4,106,710	29.9
Esophagus	Total	14	200,517	7.0	5.6	14.5	1.000	478	8,232,285	5.8
	Male	12	99,194	12.1	9.8	11.9	1.000	399	4,125,575	9.7
	Female	2	101,323	2.0	1.5	2.5	1.000	79	4,106,710	1.9
Hodgkin Lymphoma	Total	5	200,517	2.5	2.4	4.6	0.980	183	8,232,285	2.2
	Male	3	99,194	3.0	3.0	2.5	0.930	103	4,125,575	2.5
	Female	2	101,323	2.0	1.9	2.1	1.000	80	4,106,710	1.9
Kidney and Renal Pelvis	Total	51	200,517	25.4	21.1	45.3	0.430	1,540	8,232,285	18.7
	Male	33	99,194	33.3	27.7	28.9	0.488	1,001	4,125,575	24.3
	Female	18	101,323	17.8	14.6	16.2	0.713	539	4,106,710	13.1
Larynx	Total	7	200,517	3.5	2.8	6.0	0.784	199	8,232,285	2.4
	Male	5	99,194	5.0	4.1	4.7	1.000	158	4,125,575	3.8
	Female	2	101,323	2.0	1.6	1.2	0.700	41	4,106,710	1.0
Leukemia	Total	39	200,517	19.4	15.7	44.5	0.456	1,478	8,232,285	18.0
	Male	23	99,194	23.2	19.0	25.8	0.669	881	4,125,575	21.4
	Female	16	101,323	15.8	12.5	18.6	0.653	597	4,106,710	14.5
Liver and Bile Duct	Total	16	200,517	8.0	6.6	22.6	0.190	769	8,232,285	9.3
	Male	12	99,194	12.1	10.1	15.9	0.395	553	4,125,575	13.4
	Female	4	101,323	3.9	3.2	6.6	0.431	216	4,106,710	5.3
Lung and Bronchus	Total	198	200,517	98.7	77.1	143.4	0.000 >>	4,600	8,232,285	55.9
	Male	94	99,194	94.8	74.6	73.1	0.021 >>	2,394	4,125,575	58.0
	Female	104	101,323	102.6	79.8	70.0	0.000 >>	2,206	4,106,710	53.7
Melanoma of the Skin	Total	63	200,517	31.4	26.3	74.8	0.184	2,576	8,232,285	31.3
	Male	31	99,194	31.3	25.6	45.1	0.034 <<	1,539	4,125,575	37.3
	Female	32	101,323	31.6	27.4	29.4	0.684	1,037	4,106,710	25.3
Myeloma	Total	20	200,517	10.0	7.8	20.0	1.000	640	8,232,285	7.8
	Male	14	99,194	14.1	11.2	11.7	0.565	385	4,125,575	9.3
	Female	6	101,323	5.9	4.6	8.2	0.583	255	4,106,710	6.2
Non-Hodgkin Lymphoma	Total	48	200,517	23.9	19.5	53.8	0.474	1,796	8,232,285	21.8
	Male	29	99,194	29.2	24.1	30.2	0.922	1,037	4,125,575	25.1
	Female	19	101,323	18.8	15.0	23.4	0.421	759	4,106,710	18.5
Oral Cavity and Pharynx	Total	36	200,517	18.0	15.0	33.3	0.685	1,144	8,232,285	13.9
	Male	23	99,194	23.2	19.5	23.4	1.000	818	4,125,575	19.8
	Female	13	101,323	12.8	10.7	9.7	0.356	326	4,106,710	7.9
Ovary	Female	7	101,323	6.9	5.8	15.7	0.024 <<	531	4,106,710	12.9
Pancreas	Total	49	200,517	24.4	19.1	38.9	0.131	1,248	8,232,285	15.2
	Male	28	99,194	28.2	22.6	20.7	0.146	690	4,125,575	16.7
	Female	21	101,323	20.7	15.8	18.1	0.550	558	4,106,710	13.6
Prostate	Male	131	99,194	132.1	109.4	152.7	0.081	5,262	4,125,575	127.5
Stomach	Total	18	200,517	9.0	7.1	15.0	0.507	488	8,232,285	5.9
	Male	13	99,194	13.1	10.5	9.7	0.356	323	4,125,575	7.8
	Female	5	101,323	4.9	3.8	5.3	1.000	165	4,106,710	4.0
Testis	Male	4	99,194	4.0	4.1	6.4	0.463	272	4,125,575	6.6
Thyroid	Total	20	200,517	10.0	9.4	32.1	0.030 <<	1,236	8,232,285	15.0
	Male	5	99,194	5.0	4.6	8.6	0.290	325	4,125,575	7.9
	Female	15	101,323	14.8	14.0	23.7	0.078	911	4,106,710	22.2
Pediatric Age 0 to 19	Total	6	47,950	12.5	12.4	8.6	0.487	421	2,370,004	17.8
	Male	1	24,662	4.1	4.0	4.5	0.122	219	1,209,519	18.1
	Female	5	23,288	21.5	21.1	4.1	0.791	202	1,160,485	17.4

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN NEZ PERCE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Nez Perce County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	2,567	201,084	1,276.6	919.1	2,215.4	0.000 >>	66,533	8,387,671	793.2
	Male	1,333	99,393	1,341.1	1,007.1	1,098.7	0.000 >>	34,897	4,204,109	830.1
	Female	1,234	101,691	1,213.5	838.8	1,112.5	0.000 >>	31,636	4,183,562	756.2
All Malignant Cancers	Total	519	201,084	258.1	196.6	447.2	0.001 >>	14,205	8,387,671	169.4
	Male	290	99,393	291.8	224.0	236.8	0.001 >>	7,688	4,204,109	182.9
	Female	229	101,691	225.2	170.6	209.1	0.182	6,517	4,183,562	155.8
Bladder	Total	15	201,084	7.5	5.2	15.6	1.000	451	8,387,671	5.4
	Male	10	99,393	10.1	7.0	11.5	0.807	340	4,204,109	8.1
	Female	5	101,691	4.9	3.4	3.9	0.699	111	4,183,562	2.7
Brain and Other Nervous System	Total	18	201,084	9.0	7.6	13.9	0.327	491	8,387,671	5.9
	Male	13	99,393	13.1	11.1	8.6	0.197	310	4,204,109	7.4
	Female	5	101,691	4.9	4.2	5.2	1.000	181	4,183,562	4.3
Breast	Total	32	201,084	15.9	12.4	32.8	0.976	1,067	8,387,671	12.7
	Male	-	99,393	-	-	0.3	1.000	11	4,204,109	0.3
	Female	32	101,691	31.5	24.5	33.0	0.956	1,056	4,183,562	25.2
Cervix	Female	3	101,691	3.0	2.6	2.1	0.713	78	4,183,562	1.9
Colorectal	Total	45	201,084	22.4	17.1	37.8	0.276	1,201	8,387,671	14.3
	Male	25	99,393	25.2	19.8	19.6	0.275	654	4,204,109	15.6
	Female	20	101,691	19.7	14.5	18.1	0.715	547	4,183,562	13.1
Corpus Uteri	Female	5	101,691	4.9	3.8	5.0	1.000	159	4,183,562	3.8
Esophagus	Total	17	201,084	8.5	6.6	14.0	0.493	459	8,387,671	5.5
	Male	12	99,393	12.1	9.6	11.2	0.896	377	4,204,109	9.0
	Female	5	101,691	4.9	3.7	2.6	0.252	82	4,183,562	2.0
Hodgkin Lymphoma	Total	-	201,084	-	-	0.7	1.000	23	8,387,671	0.3
	Male	-	99,393	-	-	0.3	1.000	9	4,204,109	0.2
	Female	-	101,691	-	-	0.4	1.000	14	4,183,562	0.3
Kidney	Total	14	201,084	7.0	5.3	10.7	0.389	341	8,387,671	4.1
	Male	10	99,393	10.1	8.0	6.2	0.194	207	4,204,109	4.9
	Female	4	101,691	3.9	2.8	4.5	1.000	134	4,183,562	3.2
Larynx	Total	1	201,084	0.5	0.4	2.0	0.812	62	8,387,671	0.7
	Male	1	99,393	1.0	0.7	1.7	1.000	52	4,204,109	1.2
	Female	-	101,691	-	-	0.3	1.000	10	4,183,562	0.2
Leukemia	Total	16	201,084	8.0	5.9	19.6	0.491	608	8,387,671	7.2
	Male	13	99,393	13.1	9.9	11.0	0.624	351	4,204,109	8.3
	Female	3	101,691	3.0	2.2	8.5	0.058	257	4,183,562	6.1
Liver and Bile Duct	Total	15	201,084	7.5	6.1	17.7	0.629	598	8,387,671	7.1
	Male	10	99,393	10.1	8.3	11.8	0.731	411	4,204,109	9.8
	Female	5	101,691	4.9	3.9	5.7	0.977	187	4,183,562	4.5
Lung and Bronchus	Total	130	201,084	64.6	49.5	91.1	0.000 >>	2,910	8,387,671	34.7
	Male	68	99,393	68.4	53.2	47.1	0.005 >>	1,549	4,204,109	36.8
	Female	62	101,691	61.0	46.1	43.7	0.011 >>	1,361	4,183,562	32.5
Melanoma of the Skin	Total	7	201,084	3.5	2.7	8.3	0.830	271	8,387,671	3.2
	Male	1	99,393	1.0	0.8	5.5	0.054	181	4,204,109	4.3
	Female	6	101,691	5.9	4.7	2.8	0.123	90	4,183,562	2.2
Myeloma	Total	11	201,084	5.5	4.0	10.6	0.995	324	8,387,671	3.9
	Male	11	99,393	11.1	8.1	6.0	0.089	188	4,204,109	4.5
	Female	-	101,691	-	-	4.6	0.021 <<	136	4,183,562	3.3
Non-Hodgkin Lymphoma	Total	16	201,084	8.0	5.8	17.7	0.810	541	8,387,671	6.4
	Male	6	99,393	6.0	4.6	9.2	0.383	297	4,204,109	7.1
	Female	10	101,691	9.8	6.9	8.4	0.677	244	4,183,562	5.8
Oral Cavity and Pharynx	Total	13	201,084	6.5	5.1	6.8	0.046 >>	223	8,387,671	2.7
	Male	7	99,393	7.0	5.6	4.6	0.354	153	4,204,109	3.6
	Female	6	101,691	5.9	4.5	2.2	0.053	70	4,183,562	1.7
Ovary	Female	9	101,691	8.9	6.9	11.1	0.663	357	4,183,562	8.5
Pancreas	Total	40	201,084	19.9	15.5	32.6	0.234	1,058	8,387,671	12.6
	Male	22	99,393	22.1	17.6	17.3	0.314	584	4,204,109	13.9
	Female	18	101,691	17.7	13.4	15.2	0.543	474	4,183,562	11.3
Prostate	Male	33	99,393	33.2	23.1	30.3	0.672	893	4,204,109	21.2
Stomach	Total	13	201,084	6.5	5.0	5.8	0.014 >>	186	8,387,671	2.2
	Male	10	99,393	10.1	8.0	3.2	0.003 >>	106	4,204,109	2.5
	Female	3	101,691	3.0	2.2	2.6	0.979	80	4,183,562	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Nez Perce County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	85.1%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	12.5%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	77.2%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	76.1%
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	73.7%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	16.3%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	14.5%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	45.0%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	5.1%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	30.1%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	18.5%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	18.5%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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ONEIDA COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 99 cases of invasive cancer were diagnosed among Oneida County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Oneida County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Oneida County	State of Idaho
All Sites/Types	**99**	**42,577**
Female Breast	**13**	**6,210**
Prostate	**10**	**5,393**
Lung & Bronchus	**10**	**4,798**
Colorectal	**6**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Oneida County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Oneida County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Oneida County was 458.9 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (505.0) gives an estimate of the relative burden of disease in Oneida County.

The age- and sex-adjusted incidence rate of invasive cancer in Oneida County, all sites combined, was 380.4 cases per 100,000 persons per year during 2014–2018. There were statistically significantly fewer cases of cancer in Oneida County (99) than expected (131.4) based upon rates in the remainder of the state (p=.004).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 29 Oneida County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Oneida County and the State of Idaho, 2015–2019

Mortality 2015–2019	Oneida County	State of Idaho
All Deaths	**217**	**69,101**
Cancer Deaths	**29**	**14,724**
% of All Deaths	*13.4%*	*21.3%*
Lung & Bronchus	**4**	**3,040**
Colorectal	**1**	**1,246**
Pancreas	**1**	**1,098**
Female Breast	**1**	**1,088**
Prostate	**5**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Oneida County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Oneida County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Oneida County, all sites combined, was 101.8 deaths per 100,000 persons per year during 2015–2019, compared with 171.5 for the remainder of the state. There were statistically significantly fewer cancer deaths in Oneida County (29) than expected (48.9) based upon rates in the remainder of the state (p=.003).

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN ONEIDA COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Oneida County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	99	21,573	458.9	380.4	131.4	0.004 <<	42,478	8,411,229	505.0
	Male	52	10,803	481.3	383.4	71.2	0.021 <<	22,118	4,213,966	524.9
	Female	47	10,770	436.4	374.8	60.8	0.079	20,360	4,197,263	485.1
Bladder	Total	4	21,573	18.5	14.3	6.8	0.379	2,054	8,411,229	24.4
	Male	4	10,803	37.0	27.7	5.5	0.725	1,598	4,213,966	37.9
	Female	-	10,770	-	-	1.5	0.458	456	4,197,263	10.9
Brain - malignant	Total	2	21,573	9.3	8.2	1.8	1.000	629	8,411,229	7.5
	Male	1	10,803	9.3	8.0	1.1	1.000	381	4,213,966	9.0
	Female	1	10,770	9.3	8.3	0.7	1.000	248	4,197,263	5.9
Brain and other CNS - non-malignant	Total	4	21,573	18.5	16.0	3.6	0.951	1,196	8,411,229	14.2
	Male	1	10,803	9.3	8.0	1.2	1.000	394	4,213,966	9.3
	Female	3	10,770	27.9	24.3	2.4	0.839	802	4,197,263	19.1
Breast	Total	13	21,573	60.3	51.9	18.6	0.229	6,245	8,411,229	74.2
	Male	-	10,803	-	-	0.2	1.000	48	4,213,966	1.1
	Female	13	10,770	120.7	106.5	18.0	0.282	6,197	4,197,263	147.6
Breast - in situ	Total	1	21,573	4.6	4.2	3.1	0.356	1,101	8,411,229	13.1
	Male	-	10,803	-	-	0.0	1.000	5	4,213,966	0.1
	Female	1	10,770	9.3	8.5	3.1	0.379	1,096	4,197,263	26.1
Cervix	Female	1	10,770	9.3	9.4	0.7	1.000	287	4,197,263	6.8
Colorectal	Total	6	21,573	27.8	22.8	10.4	0.215	3,322	8,411,229	39.5
	Male	3	10,803	27.8	22.4	5.6	0.375	1,768	4,213,966	42.0
	Female	3	10,770	27.9	23.2	4.8	0.589	1,554	4,197,263	37.0
Corpus Uteri	Female	1	10,770	9.3	8.3	3.6	0.248	1,257	4,197,263	29.9
Esophagus	Total	-	21,573	-	-	1.6	0.415	492	8,411,229	5.8
	Male	-	10,803	-	-	1.4	0.517	411	4,213,966	9.8
	Female	-	10,770	-	-	0.3	1.000	81	4,197,263	1.9
Hodgkin Lymphoma	Total	-	21,573	-	-	0.5	1.000	188	8,411,229	2.2
	Male	-	10,803	-	-	0.3	1.000	106	4,213,966	2.5
	Female	-	10,770	-	-	0.2	1.000	82	4,197,263	2.0
Kidney and Renal Pelvis	Total	4	21,573	18.5	15.5	4.9	0.927	1,587	8,411,229	18.9
	Male	3	10,803	27.8	22.8	3.2	1.000	1,031	4,213,966	24.5
	Female	1	10,770	9.3	7.9	1.7	0.995	556	4,197,263	13.2
Larynx	Total	-	21,573	-	-	0.7	1.000	206	8,411,229	2.4
	Male	-	10,803	-	-	0.5	1.000	163	4,213,966	3.9
	Female	-	10,770	-	-	0.1	1.000	43	4,197,263	1.0
Leukemia	Total	11	21,573	51.0	41.4	4.8	0.019 >>	1,506	8,411,229	17.9
	Male	8	10,803	74.1	59.5	2.9	0.018 >>	896	4,213,966	21.3
	Female	3	10,770	27.9	22.6	1.9	0.606	610	4,197,263	14.5
Liver and Bile Duct	Total	2	21,573	9.3	7.7	2.4	1.000	783	8,411,229	9.3
	Male	1	10,803	9.3	7.4	1.8	0.921	564	4,213,966	13.4
	Female	1	10,770	9.3	7.8	0.7	0.975	219	4,197,263	5.2
Lung and Bronchus	Total	10	21,573	46.4	36.3	15.7	0.179	4,788	8,411,229	56.9
	Male	6	10,803	55.5	42.3	8.4	0.542	2,482	4,213,966	58.9
	Female	4	10,770	37.1	29.9	7.4	0.286	2,306	4,197,263	54.9
Melanoma of the Skin	Total	8	21,573	37.1	31.7	7.9	1.000	2,631	8,411,229	31.3
	Male	3	10,803	27.8	22.5	4.9	0.544	1,567	4,213,966	37.2
	Female	5	10,770	46.4	42.2	3.0	0.372	1,064	4,197,263	25.3
Myeloma	Total	1	21,573	4.6	3.6	2.1	0.735	659	8,411,229	7.8
	Male	-	10,803	-	-	1.3	0.534	399	4,213,966	9.5
	Female	1	10,770	9.3	7.4	0.8	1.000	260	4,197,263	6.2
Non-Hodgkin Lymphoma	Total	5	21,573	23.2	19.0	5.8	0.972	1,839	8,411,229	21.9
	Male	2	10,803	18.5	14.9	3.4	0.684	1,064	4,213,966	25.2
	Female	3	10,770	27.9	23.1	2.4	0.859	775	4,197,263	18.5
Oral Cavity and Pharynx	Total	1	21,573	4.6	3.9	3.6	0.255	1,179	8,411,229	14.0
	Male	1	10,803	9.3	7.6	2.6	0.523	840	4,213,966	19.9
	Female	-	10,770	-	-	1.0	0.733	339	4,197,263	8.1
Ovary	Female	2	10,770	18.6	16.2	1.6	0.936	536	4,197,263	12.8
Pancreas	Total	3	21,573	13.9	11.0	4.2	0.785	1,294	8,411,229	15.4
	Male	3	10,803	27.8	21.6	2.4	0.840	715	4,213,966	17.0
	Female	-	10,770	-	-	1.9	0.307	579	4,197,263	13.8
Prostate	Male	10	10,803	92.6	73.5	17.4	0.082	5,383	4,213,966	127.7
Stomach	Total	2	21,573	9.3	7.4	1.6	0.962	504	8,411,229	6.0
	Male	2	10,803	18.5	14.5	1.1	0.598	334	4,213,966	7.9
	Female	-	10,770	-	-	0.5	1.000	170	4,197,263	4.1
Testis	Male	-	10,803	-	-	0.6	1.000	276	4,213,966	6.5
Thyroid	Total	-	21,573	-	-	3.2	0.078	1,256	8,411,229	14.9
	Male	-	10,803	-	-	0.9	0.812	330	4,213,966	7.8
	Female	-	10,770	-	-	2.3	0.192	926	4,197,263	22.1
Pediatric Age 0 to 19	Total	2	6,676	30.0	30.5	1.2	0.642	425	2,411,278	17.6
	Male	-	3,427	-	-	0.6	1.000	220	1,230,754	17.9
	Female	2	3,249	61.6	62.6	0.6	0.214	205	1,180,524	17.4

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN ONEIDA COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Oneida County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	217	21,926	989.7	729.2	239.3	0.156	68,883	8,566,829	804.1
	Male	132	10,980	1,202.2	903.1	122.9	0.435	36,098	4,292,522	841.0
	Female	85	10,946	776.5	557.9	116.9	0.002 <<	32,785	4,274,307	767.0
All Malignant Cancers	Total	29	21,926	132.3	101.8	48.9	0.003 <<	14,695	8,566,829	171.5
	Male	18	10,980	163.9	123.7	27.0	0.089	7,960	4,292,522	185.4
	Female	11	10,946	100.5	78.7	22.0	0.015 <<	6,735	4,274,307	157.6
Bladder	Total	1	21,926	4.6	3.2	1.7	1.000	465	8,566,829	5.4
	Male	1	10,980	9.1	6.4	1.3	1.000	349	4,292,522	8.1
	Female	-	10,946	-	-	0.4	1.000	116	4,274,307	2.7
Brain and Other Nervous System	Total	-	21,926	-	-	1.5	0.435	509	8,566,829	5.9
	Male	-	10,980	-	-	1.0	0.742	323	4,292,522	7.5
	Female	-	10,946	-	-	0.5	1.000	186	4,274,307	4.4
Breast	Total	1	21,926	4.6	3.6	3.6	0.259	1,098	8,566,829	12.8
	Male	-	10,980	-	-	0.0	1.000	11	4,292,522	0.3
	Female	1	10,946	9.1	7.4	3.5	0.281	1,087	4,274,307	25.4
Cervix	Female	-	10,946	-	-	0.2	1.000	81	4,274,307	1.9
Colorectal	Total	1	21,926	4.6	3.5	4.1	0.167	1,245	8,566,829	14.5
	Male	-	10,980	-	-	2.2	0.215	679	4,292,522	15.8
	Female	1	10,946	9.1	7.0	1.9	0.870	566	4,274,307	13.2
Corpus Uteri	Female	-	10,946	-	-	0.5	1.000	164	4,274,307	3.8
Esophagus	Total	-	21,926	-	-	1.5	0.427	476	8,566,829	5.6
	Male	-	10,980	-	-	1.3	0.551	389	4,292,522	9.1
	Female	-	10,946	-	-	0.3	1.000	87	4,274,307	2.0
Hodgkin Lymphoma	Total	-	21,926	-	-	0.1	1.000	23	8,566,829	0.3
	Male	-	10,980	-	-	0.0	1.000	9	4,292,522	0.2
	Female	-	10,946	-	-	0.0	1.000	14	4,274,307	0.3
Kidney	Total	2	21,926	9.1	7.0	1.2	0.659	353	8,566,829	4.1
	Male	2	10,980	18.2	14.1	0.7	0.319	215	4,292,522	5.0
	Female	-	10,946	-	-	0.5	1.000	138	4,274,307	3.2
Larynx	Total	-	21,926	-	-	0.2	1.000	63	8,566,829	0.7
	Male	-	10,980	-	-	0.2	1.000	53	4,292,522	1.2
	Female	-	10,946	-	-	0.0	1.000	10	4,274,307	0.2
Leukemia	Total	3	21,926	13.7	10.3	2.1	0.708	621	8,566,829	7.2
	Male	2	10,980	18.2	13.7	1.2	0.700	362	4,292,522	8.4
	Female	1	10,946	9.1	6.8	0.9	1.000	259	4,274,307	6.1
Liver and Bile Duct	Total	2	21,926	9.1	7.4	1.9	1.000	611	8,566,829	7.1
	Male	1	10,980	9.1	7.2	1.4	1.000	420	4,292,522	9.8
	Female	1	10,946	9.1	7.5	0.6	0.900	191	4,274,307	4.5
Lung and Bronchus	Total	4	21,926	18.2	14.1	10.1	0.055	3,036	8,566,829	35.4
	Male	3	10,980	27.3	20.7	5.5	0.414	1,614	4,292,522	37.6
	Female	1	10,946	9.1	7.1	4.7	0.107	1,422	4,274,307	33.3
Melanoma of the Skin	Total	1	21,926	4.6	3.6	0.9	1.000	277	8,566,829	3.2
	Male	1	10,980	9.1	7.0	0.6	0.908	181	4,292,522	4.2
	Female	-	10,946	-	-	0.3	1.000	96	4,274,307	2.2
Myeloma	Total	1	21,926	4.6	3.4	1.2	1.000	334	8,566,829	3.9
	Male	1	10,980	9.1	6.6	0.7	1.000	198	4,292,522	4.6
	Female	-	10,946	-	-	0.5	1.000	136	4,274,307	3.2
Non-Hodgkin Lymphoma	Total	4	21,926	18.2	13.5	1.9	0.253	553	8,566,829	6.5
	Male	-	10,980	-	-	1.0	0.713	303	4,292,522	7.1
	Female	4	10,946	36.5	26.6	0.9	0.025 >>	250	4,274,307	5.8
Oral Cavity and Pharynx	Total	-	21,926	-	-	0.8	0.928	236	8,566,829	2.8
	Male	-	10,980	-	-	0.5	1.000	160	4,292,522	3.7
	Female	-	10,946	-	-	0.2	1.000	76	4,274,307	1.8
Ovary	Female	-	10,946	-	-	1.2	0.627	366	4,274,307	8.6
Pancreas	Total	1	21,926	4.6	3.6	3.6	0.252	1,097	8,566,829	12.8
	Male	1	10,980	9.1	7.0	2.0	0.812	605	4,292,522	14.1
	Female	-	10,946	-	-	1.6	0.397	492	4,274,307	11.5
Prostate	Male	5	10,980	45.5	31.6	3.4	0.510	921	4,292,522	21.5
Stomach	Total	-	21,926	-	-	0.7	1.000	199	8,566,829	2.3
	Male	-	10,980	-	-	0.4	1.000	116	4,292,522	2.7
	Female	-	10,946	-	-	0.3	1.000	83	4,274,307	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Oneida County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	91.8%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	15.9%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	13.2%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	10.7%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	0.5%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	28.0%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	11.0%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	.

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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OWYHEE COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 300 cases of invasive cancer were diagnosed among Owyhee County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Owyhee County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Owyhee County	State of Idaho
All Sites/Types	**300**	**42,577**
Female Breast	**53**	**6,210**
Prostate	**34**	**5,393**
Lung & Bronchus	**26**	**4,798**
Colorectal	**30**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Owyhee County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Owyhee County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Owyhee County was 524.2 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (504.8) gives an estimate of the relative burden of disease in Owyhee County.

The age- and sex-adjusted incidence rate of invasive cancer in Owyhee County, all sites combined, was 476.4 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Owyhee County (300) than expected (317.9) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 115 Owyhee County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Owyhee County and the State of Idaho, 2015–2019

Mortality 2015–2019	Owyhee County	State of Idaho
All Deaths	**508**	**69,101**
Cancer Deaths	**115**	**14,724**
% of All Deaths	*22.6%*	*21.3%*
Lung & Bronchus	**16**	**3,040**
Colorectal	**16**	**1,246**
Pancreas	**17**	**1,098**
Female Breast	**7**	**1,088**
Prostate	**6**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Owyhee County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Owyhee County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Owyhee County, all sites combined, was 178.6 deaths per 100,000 persons per year during 2015–2019, compared with 171.2 for the remainder of the state. There were more cancer deaths in Owyhee County (115) than expected (110.2) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN OWYHEE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Owyhee County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	300	57,227	524.2	476.4	317.9	0.330	42,277	8,375,575	504.8
	Male	161	29,240	550.6	475.5	177.6	0.224	22,009	4,195,529	524.6
	Female	139	27,987	496.7	470.3	143.3	0.760	20,268	4,180,046	484.9
Bladder	Total	14	57,227	24.5	21.8	15.6	0.804	2,044	8,375,575	24.4
	Male	12	29,240	41.0	34.6	13.1	0.894	1,590	4,195,529	37.9
	Female	2	27,987	7.1	6.7	3.2	0.749	454	4,180,046	10.9
Brain - malignant	Total	2	57,227	3.5	3.3	4.6	0.329	629	8,375,575	7.5
	Male	1	29,240	3.4	3.1	2.9	0.422	381	4,195,529	9.1
	Female	1	27,987	3.6	3.4	1.7	0.973	248	4,180,046	5.9
Brain and other CNS - non-malignant	Total	4	57,227	7.0	6.5	8.8	0.125	1,196	8,375,575	14.3
	Male	2	29,240	6.8	6.2	3.0	0.845	393	4,195,529	9.4
	Female	2	27,987	7.1	6.8	5.6	0.161	803	4,180,046	19.2
Breast	Total	53	57,227	92.6	84.8	46.3	0.358	6,205	8,375,575	74.1
	Male	-	29,240	-	-	0.4	1.000	48	4,195,529	1.1
	Female	53	27,987	189.4	178.2	43.8	0.194	6,157	4,180,046	147.3
Breast - in situ	Total	5	57,227	8.7	8.0	8.2	0.353	1,097	8,375,575	13.1
	Male	-	29,240	-	-	0.0	1.000	5	4,195,529	0.1
	Female	5	27,987	17.9	16.7	7.8	0.418	1,092	4,180,046	26.1
Cervix	Female	1	27,987	3.6	3.6	1.9	0.854	287	4,180,046	6.9
Colorectal	Total	30	57,227	52.4	47.6	24.8	0.343	3,298	8,375,575	39.4
	Male	19	29,240	65.0	56.4	14.1	0.242	1,752	4,195,529	41.8
	Female	11	27,987	39.3	37.2	10.9	1.000	1,546	4,180,046	37.0
Corpus Uteri	Female	8	27,987	28.6	26.8	8.9	0.931	1,250	4,180,046	29.9
Esophagus	Total	3	57,227	5.2	4.7	3.7	0.980	489	8,375,575	5.8
	Male	3	29,240	10.3	8.8	3.3	1.000	408	4,195,529	9.7
	Female	-	27,987	-	-	0.6	1.000	81	4,180,046	1.9
Hodgkin Lymphoma	Total	1	57,227	1.7	1.7	1.3	1.000	187	8,375,575	2.2
	Male	1	29,240	3.4	3.4	0.7	1.000	105	4,195,529	2.5
	Female	-	27,987	-	-	0.6	1.000	82	4,180,046	2.0
Kidney and Renal Pelvis	Total	14	57,227	24.5	22.2	11.9	0.615	1,577	8,375,575	18.8
	Male	12	29,240	41.0	35.7	8.2	0.253	1,022	4,195,529	24.4
	Female	2	27,987	7.1	6.7	3.9	0.493	555	4,180,046	13.3
Larynx	Total	-	57,227	-	-	1.6	0.415	206	8,375,575	2.5
	Male	-	29,240	-	-	1.3	0.523	163	4,195,529	3.9
	Female	-	27,987	-	-	0.3	1.000	43	4,180,046	1.0
Leukemia	Total	9	57,227	15.7	14.3	11.3	0.616	1,508	8,375,575	18.0
	Male	4	29,240	13.7	11.9	7.2	0.310	900	4,195,529	21.5
	Female	5	27,987	17.9	17.1	4.3	0.845	608	4,180,046	14.5
Liver and Bile Duct	Total	8	57,227	14.0	12.6	5.9	0.486	777	8,375,575	9.3
	Male	4	29,240	13.7	11.8	4.5	1.000	561	4,195,529	13.4
	Female	4	27,987	14.3	13.4	1.5	0.143	216	4,180,046	5.2
Lung and Bronchus	Total	26	57,227	45.4	40.4	36.7	0.081	4,772	8,375,575	57.0
	Male	15	29,240	51.3	43.2	20.5	0.266	2,473	4,195,529	58.9
	Female	11	27,987	39.3	36.6	16.5	0.206	2,299	4,180,046	55.0
Melanoma of the Skin	Total	13	57,227	22.7	21.0	19.4	0.167	2,626	8,375,575	31.4
	Male	9	29,240	30.8	26.8	12.5	0.406	1,561	4,195,529	37.2
	Female	4	27,987	14.3	13.8	7.4	0.279	1,065	4,180,046	25.5
Myeloma	Total	2	57,227	3.5	3.1	5.0	0.241	658	8,375,575	7.9
	Male	2	29,240	6.8	5.8	3.3	0.728	397	4,195,529	9.5
	Female	-	27,987	-	-	1.9	0.313	261	4,180,046	6.2
Non-Hodgkin Lymphoma	Total	17	57,227	29.7	26.9	13.8	0.453	1,827	8,375,575	21.8
	Male	7	29,240	23.9	20.8	8.5	0.771	1,059	4,195,529	25.2
	Female	10	27,987	35.7	33.7	5.5	0.103	768	4,180,046	18.4
Oral Cavity and Pharynx	Total	6	57,227	10.5	9.5	8.9	0.441	1,174	8,375,575	14.0
	Male	6	29,240	20.5	17.9	6.7	1.000	835	4,195,529	19.9
	Female	-	27,987	-	-	2.4	0.179	339	4,180,046	8.1
Ovary	Female	5	27,987	17.9	16.9	3.8	0.653	533	4,180,046	12.8
Pancreas	Total	15	57,227	26.2	23.5	9.8	0.145	1,282	8,375,575	15.3
	Male	10	29,240	34.2	29.1	5.8	0.141	708	4,195,529	16.9
	Female	5	27,987	17.9	16.9	4.1	0.768	574	4,180,046	13.7
Prostate	Male	34	29,240	116.3	99.8	43.5	0.164	5,359	4,195,529	127.7
Stomach	Total	6	57,227	10.5	9.5	3.8	0.364	500	8,375,575	6.0
	Male	6	29,240	20.5	17.6	2.7	0.111	330	4,195,529	7.9
	Female	-	27,987	-	-	1.2	0.601	170	4,180,046	4.1
Testis	Male	-	29,240	-	-	1.7	0.349	276	4,195,529	6.6
Thyroid	Total	4	57,227	7.0	6.9	8.7	0.131	1,252	8,375,575	14.9
	Male	1	29,240	3.4	3.2	2.4	0.608	329	4,195,529	7.8
	Female	3	27,987	10.7	10.7	6.2	0.267	923	4,180,046	22.1
Pediatric Age 0 to 19	Total	2	16,638	12.0	12.1	2.9	0.878	425	2,401,316	17.7
	Male	2	8,525	23.5	23.5	1.5	0.896	218	1,225,656	17.8
	Female	-	8,113	-	-	1.4	0.487	207	1,175,660	17.6

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN OWYHEE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Owyhee County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	508	57,762	879.5	803.1	508.6	1.000	68,592	8,530,993	804.0
	Male	284	29,485	963.2	814.7	293.2	0.618	35,946	4,274,017	841.0
	Female	224	28,277	792.2	779.8	220.3	0.821	32,646	4,256,976	766.9
All Malignant Cancers	Total	115	57,762	199.1	178.6	110.2	0.676	14,609	8,530,993	171.2
	Male	62	29,485	210.3	175.9	65.3	0.743	7,916	4,274,017	185.2
	Female	53	28,277	187.4	178.2	46.7	0.396	6,693	4,256,976	157.2
Bladder	Total	3	57,762	5.2	4.7	3.5	1.000	463	8,530,993	5.4
	Male	2	29,485	6.8	5.5	3.0	0.869	348	4,274,017	8.1
	Female	1	28,277	3.5	3.4	0.8	1.000	115	4,256,976	2.7
Brain and Other Nervous System	Total	1	57,762	1.7	1.6	3.8	0.222	508	8,530,993	6.0
	Male	-	29,485	-	-	2.5	0.161	323	4,274,017	7.6
	Female	1	28,277	3.5	3.3	1.3	1.000	185	4,256,976	4.3
Breast	Total	7	57,762	12.1	11.0	8.1	0.865	1,092	8,530,993	12.8
	Male	-	29,485	-	-	0.1	1.000	11	4,274,017	0.3
	Female	7	28,277	24.8	23.6	7.5	1.000	1,081	4,256,976	25.4
Cervix	Female	1	28,277	3.5	3.4	0.6	0.854	80	4,256,976	1.9
Colorectal	Total	16	57,762	27.7	25.0	9.2	0.053	1,230	8,530,993	14.4
	Male	13	29,485	44.1	37.3	5.4	0.008 >>	666	4,274,017	15.6
	Female	3	28,277	10.6	10.2	3.9	0.907	564	4,256,976	13.2
Corpus Uteri	Female	2	28,277	7.1	6.6	1.1	0.635	162	4,256,976	3.8
Esophagus	Total	2	57,762	3.5	3.1	3.6	0.612	474	8,530,993	5.6
	Male	2	29,485	6.8	5.8	3.1	0.784	387	4,274,017	9.1
	Female	-	28,277	-	-	0.6	1.000	87	4,256,976	2.0
Hodgkin Lymphoma	Total	-	57,762	-	-	0.2	1.000	23	8,530,993	0.3
	Male	-	29,485	-	-	0.1	1.000	9	4,274,017	0.2
	Female	-	28,277	-	-	0.1	1.000	14	4,256,976	0.3
Kidney	Total	6	57,762	10.4	9.3	2.7	0.106	349	8,530,993	4.1
	Male	2	29,485	6.8	5.7	1.8	1.000	215	4,274,017	5.0
	Female	4	28,277	14.1	13.5	0.9	0.030 >>	134	4,256,976	3.1
Larynx	Total	-	57,762	-	-	0.5	1.000	63	8,530,993	0.7
	Male	-	29,485	-	-	0.5	1.000	53	4,274,017	1.2
	Female	-	28,277	-	-	0.1	1.000	10	4,256,976	0.2
Leukemia	Total	1	57,762	1.7	1.6	4.7	0.104	623	8,530,993	7.3
	Male	-	29,485	-	-	3.0	0.098	364	4,274,017	8.5
	Female	1	28,277	3.5	3.4	1.8	0.932	259	4,256,976	6.1
Liver and Bile Duct	Total	2	57,762	3.5	3.1	4.6	0.318	611	8,530,993	7.2
	Male	1	29,485	3.4	2.9	3.4	0.291	420	4,274,017	9.8
	Female	1	28,277	3.5	3.3	1.4	1.000	191	4,256,976	4.5
Lung and Bronchus	Total	16	57,762	27.7	24.6	23.0	0.162	3,024	8,530,993	35.4
	Male	8	29,485	27.1	22.6	13.3	0.173	1,609	4,274,017	37.6
	Female	8	28,277	28.3	26.6	10.0	0.666	1,415	4,256,976	33.2
Melanoma of the Skin	Total	2	57,762	3.5	3.1	2.1	1.000	276	8,530,993	3.2
	Male	1	29,485	3.4	2.9	1.5	1.000	181	4,274,017	4.2
	Female	1	28,277	3.5	3.4	0.7	0.967	95	4,256,976	2.2
Myeloma	Total	1	57,762	1.7	1.5	2.6	0.551	334	8,530,993	3.9
	Male	1	29,485	3.4	2.8	1.7	1.000	198	4,274,017	4.6
	Female	-	28,277	-	-	1.0	0.771	136	4,256,976	3.2
Non-Hodgkin Lymphoma	Total	7	57,762	12.1	10.8	4.2	0.259	550	8,530,993	6.4
	Male	2	29,485	6.8	5.6	2.5	1.000	301	4,274,017	7.0
	Female	5	28,277	17.7	17.0	1.7	0.062	249	4,256,976	5.8
Oral Cavity and Pharynx	Total	1	57,762	1.7	1.5	1.8	0.939	235	8,530,993	2.8
	Male	-	29,485	-	-	1.3	0.546	160	4,274,017	3.7
	Female	1	28,277	3.5	3.4	0.5	0.817	75	4,256,976	1.8
Ovary	Female	2	28,277	7.1	6.7	2.6	1.000	364	4,256,976	8.6
Pancreas	Total	17	57,762	29.4	26.3	8.2	0.009 >>	1,081	8,530,993	12.7
	Male	10	29,485	33.9	28.6	4.9	0.055	596	4,274,017	13.9
	Female	7	28,277	24.8	23.5	3.4	0.115	485	4,256,976	11.4
Prostate	Male	6	29,485	20.3	16.5	7.8	0.664	920	4,274,017	21.5
Stomach	Total	5	57,762	8.7	7.8	1.5	0.033 >>	194	8,530,993	2.3
	Male	5	29,485	17.0	14.1	0.9	0.005 >>	111	4,274,017	2.6
	Female	-	28,277	-	-	0.6	1.000	83	4,256,976	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Owyhee County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	67.2%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	13.2%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	15.9%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	13.0%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	7.1%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	22.3%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	25.7%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	21.4%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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PAYETTE COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 685 cases of invasive cancer were diagnosed among Payette County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Payette County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Payette County	State of Idaho
All Sites/Types	**685**	**42,577**
Female Breast	**100**	**6,210**
Prostate	**76**	**5,393**
Lung & Bronchus	**96**	**4,798**
Colorectal	**63**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Payette County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Payette County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Payette County was 595.1 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (503.6) gives an estimate of the relative burden of disease in Payette County.

The age- and sex-adjusted incidence rate of invasive cancer in Payette County, all sites combined, was 531.6 cases per 100,000 persons per year during 2014–2018. There were more cases of cancer in Payette County (685) than expected (649.0) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 245 Payette County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Payette County and the State of Idaho, 2015–2019

Mortality 2015–2019	Payette County	State of Idaho
All Deaths	**1,167**	**69,101**
Cancer Deaths	**245**	**14,724**
% of All Deaths	*21.0%*	*21.3%*
Lung & Bronchus	**63**	**3,040**
Colorectal	**22**	**1,246**
Pancreas	**17**	**1,098**
Female Breast	**16**	**1,088**
Prostate	**10**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Payette County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Payette County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Payette County, all sites combined, was 183.2 deaths per 100,000 persons per year during 2015–2019, compared with 170.9 for the remainder of the state. There were more cancer deaths in Payette County (245) than expected (228.5) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN PAYETTE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Payette County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	685	115,102	595.1	531.6	649.0	0.165	41,892	8,317,700	503.6
	Male	380	57,353	662.6	575.6	345.2	0.068	21,790	4,167,416	522.9
	Female	305	57,749	528.1	482.0	306.5	0.963	20,102	4,150,284	484.4
Bladder	Total	32	115,102	27.8	24.0	32.5	1.000	2,026	8,317,700	24.4
	Male	26	57,353	45.3	37.7	26.1	1.000	1,576	4,167,416	37.8
	Female	6	57,749	10.4	9.3	7.0	0.907	450	4,150,284	10.8
Brain - malignant	Total	10	115,102	8.7	8.1	9.3	0.894	621	8,317,700	7.5
	Male	5	57,353	8.7	8.0	5.7	1.000	377	4,167,416	9.0
	Female	5	57,749	8.7	8.2	3.6	0.589	244	4,150,284	5.9
Brain and other CNS - non-malignant	Total	11	115,102	9.6	8.8	17.9	0.114	1,189	8,317,700	14.3
	Male	2	57,353	3.5	3.2	5.9	0.131	393	4,167,416	9.4
	Female	9	57,749	15.6	14.4	12.0	0.487	796	4,150,284	19.2
Breast	Total	101	115,102	87.7	79.7	93.7	0.480	6,157	8,317,700	74.0
	Male	1	57,353	1.7	1.5	0.7	1.000	47	4,167,416	1.1
	Female	100	57,749	173.2	158.2	93.1	0.498	6,110	4,150,284	147.2
Breast - in situ	Total	17	115,102	14.8	13.5	16.4	0.941	1,085	8,317,700	13.0
	Male	-	57,353	-	-	0.1	1.000	5	4,167,416	0.1
	Female	17	57,749	29.4	26.9	16.4	0.952	1,080	4,150,284	26.0
Cervix	Female	8	57,749	13.9	13.6	4.0	0.097	280	4,150,284	6.7
Colorectal	Total	63	115,102	54.7	48.8	50.7	0.105	3,265	8,317,700	39.3
	Male	45	57,353	78.5	68.6	27.2	0.002 >>	1,726	4,167,416	41.4
	Female	18	57,749	31.2	28.3	23.6	0.289	1,539	4,150,284	37.1
Corpus Uteri	Female	19	57,749	32.9	30.3	18.7	1.000	1,239	4,150,284	29.9
Esophagus	Total	5	115,102	4.3	3.8	7.7	0.447	487	8,317,700	5.9
	Male	4	57,353	7.0	6.0	6.5	0.446	407	4,167,416	9.8
	Female	1	57,749	1.7	1.6	1.2	1.000	80	4,150,284	1.9
Hodgkin Lymphoma	Total	1	115,102	0.9	0.9	2.6	0.538	187	8,317,700	2.2
	Male	1	57,353	1.7	1.8	1.4	1.000	105	4,167,416	2.5
	Female	-	57,749	-	-	1.1	0.634	82	4,150,284	2.0
Kidney and Renal Pelvis	Total	20	115,102	17.4	15.5	24.4	0.442	1,571	8,317,700	18.9
	Male	19	57,353	33.1	29.2	15.8	0.489	1,015	4,167,416	24.4
	Female	1	57,749	1.7	1.6	8.6	0.004 <<	556	4,150,284	13.4
Larynx	Total	5	115,102	4.3	3.9	3.1	0.412	201	8,317,700	2.4
	Male	5	57,353	8.7	7.5	2.5	0.221	158	4,167,416	3.8
	Female	-	57,749	-	-	0.6	1.000	43	4,150,284	1.0
Leukemia	Total	21	115,102	18.2	16.1	23.4	0.714	1,496	8,317,700	18.0
	Male	16	57,353	27.9	24.1	14.1	0.690	888	4,167,416	21.3
	Female	5	57,749	8.7	7.8	9.3	0.192	608	4,150,284	14.6
Liver and Bile Duct	Total	18	115,102	15.6	14.0	11.8	0.113	767	8,317,700	9.2
	Male	16	57,353	27.9	24.8	8.5	0.027 >>	549	4,167,416	13.2
	Female	2	57,749	3.5	3.1	3.4	0.692	218	4,150,284	5.3
Lung and Bronchus	Total	96	115,102	83.4	71.7	75.7	0.027 >>	4,702	8,317,700	56.5
	Male	56	57,353	97.6	81.5	40.1	0.020 >>	2,432	4,167,416	58.4
	Female	40	57,749	69.3	60.9	35.9	0.538	2,270	4,150,284	54.7
Melanoma of the Skin	Total	18	115,102	15.6	14.3	39.8	0.000 <<	2,621	8,317,700	31.5
	Male	11	57,353	19.2	16.9	24.4	0.004 <<	1,559	4,167,416	37.4
	Female	7	57,749	12.1	11.4	15.8	0.023 <<	1,062	4,150,284	25.6
Myeloma	Total	11	115,102	9.6	8.2	10.4	0.936	649	8,317,700	7.8
	Male	9	57,353	15.7	13.1	6.4	0.397	390	4,167,416	9.4
	Female	2	57,749	3.5	3.1	4.0	0.465	259	4,150,284	6.2
Non-Hodgkin Lymphoma	Total	30	115,102	26.1	23.0	28.4	0.814	1,814	8,317,700	21.8
	Male	13	57,353	22.7	19.7	16.7	0.442	1,053	4,167,416	25.3
	Female	17	57,749	29.4	26.5	11.8	0.178	761	4,150,284	18.3
Oral Cavity and Pharynx	Total	21	115,102	18.2	16.5	17.8	0.503	1,159	8,317,700	13.9
	Male	15	57,353	26.2	23.3	12.7	0.596	826	4,167,416	19.8
	Female	6	57,749	10.4	9.5	5.1	0.799	333	4,150,284	8.0
Ovary	Female	7	57,749	12.1	11.1	8.1	0.890	531	4,150,284	12.8
Pancreas	Total	23	115,102	20.0	17.4	20.3	0.599	1,274	8,317,700	15.3
	Male	12	57,353	20.9	17.8	11.5	0.949	706	4,167,416	16.9
	Female	11	57,749	19.0	17.1	8.8	0.544	568	4,150,284	13.7
Prostate	Male	76	57,353	132.5	116.1	83.5	0.447	5,317	4,167,416	127.6
Stomach	Total	7	115,102	6.1	5.4	7.8	0.951	499	8,317,700	6.0
	Male	4	57,353	7.0	6.0	5.3	0.774	332	4,167,416	8.0
	Female	3	57,749	5.2	4.7	2.6	0.952	167	4,150,284	4.0
Testis	Male	5	57,353	8.7	9.6	3.4	0.502	271	4,167,416	6.5
Thyroid	Total	25	115,102	21.7	21.3	17.3	0.098	1,231	8,317,700	14.8
	Male	8	57,353	13.9	13.4	4.6	0.190	322	4,167,416	7.7
	Female	17	57,749	29.4	28.8	12.9	0.316	909	4,150,284	21.9
Pediatric Age 0 to 19	Total	7	33,434	20.9	21.1	5.8	0.739	420	2,384,520	17.6
	Male	3	17,355	17.3	17.4	3.1	1.000	217	1,216,826	17.8
	Female	4	16,079	24.9	25.1	2.8	0.603	203	1,167,694	17.4

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN PAYETTE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Payette County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	1,167	116,299	1,003.4	883.6	1,059.0	0.001 >>	67,933	8,472,456	801.8
	Male	640	58,038	1,102.7	923.4	581.0	0.017 >>	35,590	4,245,464	838.3
	Female	527	58,261	904.6	839.4	480.4	0.038 >>	32,343	4,226,992	765.2
All Malignant Cancers	Total	245	116,299	210.7	183.2	228.5	0.290	14,479	8,472,456	170.9
	Male	138	58,038	237.8	198.1	128.6	0.430	7,840	4,245,464	184.7
	Female	107	58,261	183.7	165.2	101.7	0.625	6,639	4,226,992	157.1
Bladder	Total	6	116,299	5.2	4.4	7.3	0.798	460	8,472,456	5.4
	Male	6	58,038	10.3	8.3	5.9	1.000	344	4,245,464	8.1
	Female	-	58,261	-	-	1.8	0.343	116	4,226,992	2.7
Brain and Other Nervous System	Total	6	116,299	5.2	4.7	7.6	0.726	503	8,472,456	5.9
	Male	2	58,038	3.4	3.1	4.9	0.265	321	4,245,464	7.6
	Female	4	58,261	6.9	6.3	2.7	0.583	182	4,226,992	4.3
Breast	Total	16	116,299	13.8	12.2	16.7	0.987	1,083	8,472,456	12.8
	Male	-	58,038	-	-	0.2	1.000	11	4,245,464	0.3
	Female	16	58,261	27.5	25.0	16.2	1.000	1,072	4,226,992	25.4
Cervix	Female	-	58,261	-	-	1.2	0.610	81	4,226,992	1.9
Colorectal	Total	22	116,299	18.9	16.7	19.1	0.562	1,224	8,472,456	14.4
	Male	12	58,038	20.7	17.6	10.7	0.769	667	4,245,464	15.7
	Female	10	58,261	17.2	15.7	8.4	0.672	557	4,226,992	13.2
Corpus Uteri	Female	2	58,261	3.4	3.1	2.5	1.000	162	4,226,992	3.8
Esophagus	Total	10	116,299	8.6	7.5	7.3	0.408	466	8,472,456	5.5
	Male	8	58,038	13.8	11.7	6.1	0.547	381	4,245,464	9.0
	Female	2	58,261	3.4	3.1	1.3	0.748	85	4,226,992	2.0
Hodgkin Lymphoma	Total	-	116,299	-	-	0.3	1.000	23	8,472,456	0.3
	Male	-	58,038	-	-	0.1	1.000	9	4,245,464	0.2
	Female	-	58,261	-	-	0.2	1.000	14	4,226,992	0.3
Kidney	Total	3	116,299	2.6	2.2	5.6	0.383	352	8,472,456	4.2
	Male	2	58,038	3.4	2.9	3.5	0.648	215	4,245,464	5.1
	Female	1	58,261	1.7	1.5	2.1	0.752	137	4,226,992	3.2
Larynx	Total	1	116,299	0.9	0.8	1.0	1.000	62	8,472,456	0.7
	Male	1	58,038	1.7	1.4	0.8	1.000	52	4,245,464	1.2
	Female	-	58,261	-	-	0.2	1.000	10	4,226,992	0.2
Leukemia	Total	12	116,299	10.3	8.9	9.8	0.558	612	8,472,456	7.2
	Male	8	58,038	13.8	11.3	5.9	0.493	356	4,245,464	8.4
	Female	4	58,261	6.9	6.1	4.0	1.000	256	4,226,992	6.1
Liver and Bile Duct	Total	9	116,299	7.7	6.8	9.4	1.000	604	8,472,456	7.1
	Male	8	58,038	13.8	12.0	6.5	0.657	413	4,245,464	9.7
	Female	1	58,261	1.7	1.5	3.0	0.410	191	4,226,992	4.5
Lung and Bronchus	Total	63	116,299	54.2	46.4	47.7	0.039 >>	2,977	8,472,456	35.1
	Male	35	58,038	60.3	50.0	26.1	0.109	1,582	4,245,464	37.3
	Female	28	58,261	48.1	42.3	21.8	0.231	1,395	4,226,992	33.0
Melanoma of the Skin	Total	1	116,299	0.9	0.8	4.3	0.146	277	8,472,456	3.3
	Male	1	58,038	1.7	1.5	2.9	0.432	181	4,245,464	4.3
	Female	-	58,261	-	-	1.5	0.468	96	4,226,992	2.3
Myeloma	Total	6	116,299	5.2	4.3	5.4	0.899	329	8,472,456	3.9
	Male	6	58,038	10.3	8.3	3.3	0.232	193	4,245,464	4.5
	Female	-	58,261	-	-	2.2	0.230	136	4,226,992	3.2
Non-Hodgkin Lymphoma	Total	12	116,299	10.3	8.8	8.7	0.343	545	8,472,456	6.4
	Male	5	58,038	8.6	7.1	4.9	1.000	298	4,245,464	7.0
	Female	7	58,261	12.0	10.8	3.8	0.182	247	4,226,992	5.8
Oral Cavity and Pharynx	Total	7	116,299	6.0	5.3	3.6	0.143	229	8,472,456	2.7
	Male	5	58,038	8.6	7.4	2.5	0.211	155	4,245,464	3.7
	Female	2	58,261	3.4	3.1	1.1	0.624	74	4,226,992	1.8
Ovary	Female	11	58,261	18.9	17.0	5.4	0.046 >>	355	4,226,992	8.4
Pancreas	Total	17	116,299	14.6	12.6	17.2	1.000	1,081	8,472,456	12.8
	Male	11	58,038	19.0	16.0	9.6	0.746	595	4,245,464	14.0
	Female	6	58,261	10.3	9.2	7.5	0.752	486	4,226,992	11.5
Prostate	Male	10	58,038	17.2	13.6	15.9	0.165	916	4,245,464	21.6
Stomach	Total	-	116,299	-	-	3.1	0.089	199	8,472,456	2.3
	Male	-	58,038	-	-	1.9	0.311	116	4,245,464	2.7
	Female	-	58,261	-	-	1.3	0.564	83	4,226,992	2.0

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Payette County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	77.6%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	17.9%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	73.2%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	79.2%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	20.5%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	11.1%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	46.0%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	2.2%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	28.3%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	14.1%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	14.9%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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POWER COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 155 cases of invasive cancer were diagnosed among Power County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Power County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Power County	State of Idaho
All Sites/Types	**155**	**42,577**
Female Breast	**27**	**6,210**
Prostate	**20**	**5,393**
Lung & Bronchus	**17**	**4,798**
Colorectal	**11**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Power County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Power County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Power County was 403.6 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (505.4) gives an estimate of the relative burden of disease in Power County.

The age- and sex-adjusted incidence rate of invasive cancer in Power County, all sites combined, was 412.0 cases per 100,000 persons per year during 2014–2018. There were statistically significantly fewer cases of cancer in Power County (155) than expected (190.1) based upon rates in the remainder of the state (p=.010).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 53 Power County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Power County and the State of Idaho, 2015–2019

Mortality 2015–2019	Power County	State of Idaho
All Deaths	**314**	**69,101**
Cancer Deaths	**53**	**14,724**
% of All Deaths	*16.9%*	*21.3%*
Lung & Bronchus	**14**	**3,040**
Colorectal	**6**	**1,246**
Pancreas	**6**	**1,098**
Female Breast	**4**	**1,088**
Prostate	**1**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Power County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Power County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Power County, all sites combined, was 141.0 deaths per 100,000 persons per year during 2015–2019, compared with 171.6 for the remainder of the state. There were fewer cancer deaths in Power County (53) than expected (64.5) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN POWER COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Power County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	155	38,403	403.6	412.0	190.1	0.010 <<	42,422	8,394,399	505.4
	Male	80	19,525	409.7	404.9	103.8	0.018 <<	22,090	4,205,244	525.3
	Female	75	18,878	397.3	417.0	87.3	0.202	20,332	4,189,155	485.3
Bladder	Total	4	38,403	10.4	10.6	9.2	0.094	2,054	8,394,399	24.5
	Male	2	19,525	10.2	10.1	7.5	0.039 <<	1,600	4,205,244	38.0
	Female	2	18,878	10.6	11.1	2.0	1.000	454	4,189,155	10.8
Brain - malignant	Total	-	38,403	-	-	2.9	0.115	631	8,394,399	7.5
	Male	-	19,525	-	-	1.8	0.338	382	4,205,244	9.1
	Female	-	18,878	-	-	1.1	0.661	249	4,189,155	5.9
Brain and other CNS - non-malignant	Total	4	38,403	10.4	10.8	5.3	0.781	1,196	8,394,399	14.2
	Male	1	19,525	5.1	5.2	1.8	0.929	394	4,205,244	9.4
	Female	3	18,878	15.9	16.7	3.4	1.000	802	4,189,155	19.1
Breast	Total	27	38,403	70.3	72.3	27.7	0.994	6,231	8,394,399	74.2
	Male	-	19,525	-	-	0.2	1.000	48	4,205,244	1.1
	Female	27	18,878	143.0	150.5	26.5	0.971	6,183	4,189,155	147.6
Breast - in situ	Total	4	38,403	10.4	10.8	4.9	0.930	1,098	8,394,399	13.1
	Male	-	19,525	-	-	0.0	1.000	5	4,205,244	0.1
	Female	4	18,878	21.2	22.4	4.7	1.000	1,093	4,189,155	26.1
Cervix	Female	-	18,878	-	-	1.2	0.615	288	4,189,155	6.9
Colorectal	Total	11	38,403	28.6	29.3	14.8	0.392	3,317	8,394,399	39.5
	Male	7	19,525	35.9	35.6	8.2	0.839	1,764	4,205,244	41.9
	Female	4	18,878	21.2	22.2	6.7	0.410	1,553	4,189,155	37.1
Corpus Uteri	Female	5	18,878	26.5	27.7	5.4	1.000	1,253	4,189,155	29.9
Esophagus	Total	2	38,403	5.2	5.3	2.2	1.000	490	8,394,399	5.8
	Male	2	19,525	10.2	10.1	1.9	1.000	409	4,205,244	9.7
	Female	-	18,878	-	-	0.4	1.000	81	4,189,155	1.9
Hodgkin Lymphoma	Total	1	38,403	2.6	2.7	0.8	1.000	187	8,394,399	2.2
	Male	1	19,525	5.1	5.4	0.5	0.745	105	4,205,244	2.5
	Female	-	18,878	-	-	0.4	1.000	82	4,189,155	2.0
Kidney and Renal Pelvis	Total	3	38,403	7.8	7.9	7.1	0.149	1,588	8,394,399	18.9
	Male	3	19,525	15.4	15.2	4.8	0.579	1,031	4,205,244	24.5
	Female	-	18,878	-	-	2.4	0.180	557	4,189,155	13.3
Larynx	Total	2	38,403	5.2	5.2	0.9	0.476	204	8,394,399	2.4
	Male	2	19,525	10.2	9.9	0.8	0.363	161	4,205,244	3.8
	Female	-	18,878	-	-	0.2	1.000	43	4,189,155	1.0
Leukemia	Total	9	38,403	23.4	23.6	6.8	0.503	1,508	8,394,399	18.0
	Male	3	19,525	15.4	15.1	4.3	0.772	901	4,205,244	21.4
	Female	6	18,878	31.8	32.7	2.7	0.107	607	4,189,155	14.5
Liver and Bile Duct	Total	1	38,403	2.6	2.6	3.6	0.260	784	8,394,399	9.3
	Male	1	19,525	5.1	5.0	2.7	0.502	564	4,205,244	13.4
	Female	-	18,878	-	-	1.0	0.770	220	4,189,155	5.3
Lung and Bronchus	Total	17	38,403	44.3	44.7	21.6	0.377	4,781	8,394,399	57.0
	Male	9	19,525	46.1	45.2	11.7	0.531	2,479	4,205,244	59.0
	Female	8	18,878	42.4	44.1	10.0	0.671	2,302	4,189,155	55.0
Melanoma of the Skin	Total	10	38,403	26.0	26.9	11.6	0.772	2,629	8,394,399	31.3
	Male	5	19,525	25.6	25.5	7.3	0.531	1,565	4,205,244	37.2
	Female	5	18,878	26.5	28.2	4.5	0.937	1,064	4,189,155	25.4
Myeloma	Total	-	38,403	-	-	3.0	0.102	660	8,394,399	7.9
	Male	-	19,525	-	-	1.9	0.306	399	4,205,244	9.5
	Female	-	18,878	-	-	1.1	0.646	261	4,189,155	6.2
Non-Hodgkin Lymphoma	Total	6	38,403	15.6	15.9	8.3	0.562	1,838	8,394,399	21.9
	Male	4	19,525	20.5	20.2	5.0	0.882	1,062	4,205,244	25.3
	Female	2	18,878	10.6	11.1	3.4	0.699	776	4,189,155	18.5
Oral Cavity and Pharynx	Total	3	38,403	7.8	8.0	5.3	0.453	1,177	8,394,399	14.0
	Male	1	19,525	5.1	5.0	4.0	0.190	840	4,205,244	20.0
	Female	2	18,878	10.6	11.1	1.4	0.848	337	4,189,155	8.0
Ovary	Female	4	18,878	21.2	22.2	2.3	0.401	534	4,189,155	12.7
Pancreas	Total	6	38,403	15.6	15.9	5.8	1.000	1,291	8,394,399	15.4
	Male	4	19,525	20.5	20.1	3.4	0.875	714	4,205,244	17.0
	Female	2	18,878	10.6	11.1	2.5	1.000	577	4,189,155	13.8
Prostate	Male	20	19,525	102.4	100.6	25.4	0.330	5,373	4,205,244	127.8
Stomach	Total	3	38,403	7.8	8.0	2.3	0.785	503	8,394,399	6.0
	Male	1	19,525	5.1	5.1	1.6	1.000	335	4,205,244	8.0
	Female	2	18,878	10.6	11.1	0.7	0.327	168	4,189,155	4.0
Testis	Male	-	19,525	-	-	1.1	0.635	276	4,205,244	6.6
Thyroid	Total	1	38,403	2.6	2.8	5.4	0.059	1,255	8,394,399	15.0
	Male	1	19,525	5.1	5.3	1.5	1.000	329	4,205,244	7.8
	Female	-	18,878	-	-	3.9	0.042 <<	926	4,189,155	22.1
Pediatric Age 0 to 19	Total	3	12,965	23.1	23.2	2.3	0.796	424	2,404,989	17.6
	Male	-	6,633	-	-	1.2	0.609	220	1,227,548	17.9
	Female	3	6,332	47.4	47.7	1.1	0.195	204	1,177,441	17.3

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN POWER COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Power County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	314	38,355	818.7	845.6	298.7	0.391	68,786	8,550,400	804.5
	Male	166	19,432	854.3	858.3	162.8	0.823	36,064	4,284,070	841.8
	Female	148	18,923	782.1	825.6	137.5	0.391	32,722	4,266,330	767.0
All Malignant Cancers	Total	53	38,355	138.2	141.0	64.5	0.165	14,671	8,550,400	171.6
	Male	34	19,432	175.0	173.0	36.4	0.767	7,944	4,284,070	185.4
	Female	19	18,923	100.4	105.3	28.5	0.081	6,727	4,266,330	157.7
Bladder	Total	1	38,355	2.6	2.7	2.0	0.798	465	8,550,400	5.4
	Male	1	19,432	5.1	5.2	1.6	1.000	349	4,284,070	8.1
	Female	-	18,923	-	-	0.5	1.000	116	4,266,330	2.7
Brain and Other Nervous System	Total	-	38,355	-	-	2.2	0.212	509	8,550,400	6.0
	Male	-	19,432	-	-	1.5	0.457	323	4,284,070	7.5
	Female	-	18,923	-	-	0.8	0.903	186	4,266,330	4.4
Breast	Total	4	38,355	10.4	10.7	4.8	0.963	1,095	8,550,400	12.8
	Male	-	19,432	-	-	0.1	1.000	11	4,284,070	0.3
	Female	4	18,923	21.1	22.3	4.6	1.000	1,084	4,266,330	25.4
Cervix	Female	1	18,923	5.3	5.7	0.3	0.562	80	4,266,330	1.9
Colorectal	Total	6	38,355	15.6	16.0	5.4	0.916	1,240	8,550,400	14.5
	Male	3	19,432	15.4	15.3	3.1	1.000	676	4,284,070	15.8
	Female	3	18,923	15.9	16.7	2.4	0.846	564	4,266,330	13.2
Corpus Uteri	Female	1	18,923	5.3	5.5	0.7	0.998	163	4,266,330	3.8
Esophagus	Total	-	38,355	-	-	2.1	0.245	476	8,550,400	5.6
	Male	-	19,432	-	-	1.8	0.336	389	4,284,070	9.1
	Female	-	18,923	-	-	0.4	1.000	87	4,266,330	2.0
Hodgkin Lymphoma	Total	-	38,355	-	-	0.1	1.000	23	8,550,400	0.3
	Male	-	19,432	-	-	0.0	1.000	9	4,284,070	0.2
	Female	-	18,923	-	-	0.1	1.000	14	4,266,330	0.3
Kidney	Total	1	38,355	2.6	2.6	1.6	1.000	354	8,550,400	4.1
	Male	1	19,432	5.1	5.1	1.0	1.000	216	4,284,070	5.0
	Female	-	18,923	-	-	0.6	1.000	138	4,266,330	3.2
Larynx	Total	-	38,355	-	-	0.3	1.000	63	8,550,400	0.7
	Male	-	19,432	-	-	0.2	1.000	53	4,284,070	1.2
	Female	-	18,923	-	-	0.0	1.000	10	4,266,330	0.2
Leukemia	Total	2	38,355	5.2	5.3	2.7	0.970	622	8,550,400	7.3
	Male	2	19,432	10.3	10.2	1.7	0.985	362	4,284,070	8.4
	Female	-	18,923	-	-	1.1	0.665	260	4,266,330	6.1
Liver and Bile Duct	Total	1	38,355	2.6	2.6	2.7	0.494	612	8,550,400	7.2
	Male	-	19,432	-	-	1.9	0.286	421	4,284,070	9.8
	Female	1	18,923	5.3	5.5	0.8	1.000	191	4,266,330	4.5
Lung and Bronchus	Total	14	38,355	36.5	37.0	13.4	0.939	3,026	8,550,400	35.4
	Male	10	19,432	51.5	50.5	7.4	0.430	1,607	4,284,070	37.5
	Female	4	18,923	21.1	22.0	6.0	0.560	1,419	4,266,330	33.3
Melanoma of the Skin	Total	-	38,355	-	-	1.2	0.590	278	8,550,400	3.3
	Male	-	19,432	-	-	0.8	0.864	182	4,284,070	4.2
	Female	-	18,923	-	-	0.4	1.000	96	4,266,330	2.3
Myeloma	Total	-	38,355	-	-	1.5	0.453	335	8,550,400	3.9
	Male	-	19,432	-	-	0.9	0.794	199	4,284,070	4.6
	Female	-	18,923	-	-	0.6	1.000	136	4,266,330	3.2
Non-Hodgkin Lymphoma	Total	3	38,355	7.8	8.0	2.4	0.880	554	8,550,400	6.5
	Male	1	19,432	5.1	5.1	1.4	1.000	302	4,284,070	7.0
	Female	2	18,923	10.6	11.1	1.1	0.578	252	4,266,330	5.9
Oral Cavity and Pharynx	Total	2	38,355	5.2	5.3	1.0	0.556	234	8,550,400	2.7
	Male	1	19,432	5.1	5.0	0.7	1.000	159	4,284,070	3.7
	Female	1	18,923	5.3	5.5	0.3	0.546	75	4,266,330	1.8
Ovary	Female	1	18,923	5.3	5.5	1.5	1.000	365	4,266,330	8.6
Pancreas	Total	6	38,355	15.6	15.9	4.8	0.701	1,092	8,550,400	12.8
	Male	6	19,432	30.9	30.4	2.8	0.124	600	4,284,070	14.0
	Female	-	18,923	-	-	2.1	0.250	492	4,266,330	11.5
Prostate	Male	1	19,432	5.1	5.1	4.2	0.156	925	4,284,070	21.6
Stomach	Total	-	38,355	-	-	0.9	0.840	199	8,550,400	2.3
	Male	-	19,432	-	-	0.5	1.000	116	4,284,070	2.7
	Female	-	18,923	-	-	0.3	1.000	83	4,266,330	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Power County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	70.9%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	22.0%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	16.8%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	4.3%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	0.1%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	25.0%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	16.0%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	16.2%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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SHOSHONE COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 476 cases of invasive cancer were diagnosed among Shoshone County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Shoshone County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Shoshone County	State of Idaho
All Sites/Types	**476**	**42,577**
Female Breast	**46**	**6,210**
Prostate	**62**	**5,393**
Lung & Bronchus	**86**	**4,798**
Colorectal	**49**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Shoshone County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Shoshone County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Shoshone County was 761.1 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (503.0) gives an estimate of the relative burden of disease in Shoshone County.

The age- and sex-adjusted incidence rate of invasive cancer in Shoshone County, all sites combined, was 552.7 cases per 100,000 persons per year during 2014–2018. There were statistically significantly more cases of cancer in Shoshone County (476) than expected (433.2) based upon rates in the remainder of the state (p=.045).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 199 Shoshone County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Shoshone County and the State of Idaho, 2015–2019

Mortality 2015–2019	Shoshone County	State of Idaho
All Deaths	**917**	**69,101**
Cancer Deaths	**199**	**14,724**
% of All Deaths	*21.7%*	*21.3%*
Lung & Bronchus	**67**	**3,040**
Colorectal	**18**	**1,246**
Pancreas	**10**	**1,098**
Female Breast	**11**	**1,088**
Prostate	**14**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Shoshone County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Shoshone County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Shoshone County, all sites combined, was 222.0 deaths per 100,000 persons per year during 2015–2019, compared with 170.4 for the remainder of the state. There were statistically significantly more cancer deaths in Shoshone County (199) than expected (152.7) based upon rates in the remainder of the state (p<.001).

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN SHOSHONE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Shoshone County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	476	62,540	761.1	552.7	433.2	0.045 >>	42,101	8,370,262	503.0
	Male	268	31,459	851.9	602.6	232.3	0.023 >>	21,902	4,193,310	522.3
	Female	208	31,081	669.2	499.5	201.4	0.658	20,199	4,176,952	483.6
Bladder	Total	22	62,540	35.2	24.2	22.1	1.000	2,036	8,370,262	24.3
	Male	19	31,459	60.4	41.3	17.3	0.754	1,583	4,193,310	37.8
	Female	3	31,081	9.7	6.8	4.8	0.585	453	4,176,952	10.8
Brain - malignant	Total	9	62,540	14.4	11.5	5.8	0.266	622	8,370,262	7.4
	Male	4	31,459	12.7	10.0	3.6	0.972	378	4,193,310	9.0
	Female	5	31,081	16.1	13.2	2.2	0.147	244	4,176,952	5.8
Brain and other CNS - non-malignant	Total	11	62,540	17.6	13.6	11.5	1.000	1,189	8,370,262	14.2
	Male	3	31,459	9.5	7.6	3.7	0.984	392	4,193,310	9.3
	Female	8	31,081	25.7	19.7	7.7	1.000	797	4,176,952	19.1
Breast	Total	47	62,540	75.2	56.0	62.3	0.054	6,211	8,370,262	74.2
	Male	1	31,459	3.2	2.3	0.5	0.780	47	4,193,310	1.1
	Female	46	31,081	148.0	111.5	60.9	0.057	6,164	4,176,952	147.6
Breast - in situ	Total	9	62,540	14.4	10.9	10.8	0.734	1,093	8,370,262	13.1
	Male	-	31,459	-	-	0.1	1.000	5	4,193,310	0.1
	Female	9	31,081	29.0	22.3	10.5	0.788	1,088	4,176,952	26.0
Cervix	Female	4	31,081	12.9	11.8	2.3	0.401	284	4,176,952	6.8
Colorectal	Total	49	62,540	78.3	56.8	33.8	0.016 >>	3,279	8,370,262	39.2
	Male	26	31,459	82.6	59.5	18.2	0.099	1,745	4,193,310	41.6
	Female	23	31,081	74.0	54.0	15.6	0.095	1,534	4,176,952	36.7
Corpus Uteri	Female	16	31,081	51.5	38.5	12.4	0.366	1,242	4,176,952	29.7
Esophagus	Total	4	62,540	6.4	4.5	5.2	0.807	488	8,370,262	5.8
	Male	3	31,459	9.5	6.6	4.4	0.715	408	4,193,310	9.7
	Female	1	31,081	3.2	2.3	0.9	1.000	80	4,176,952	1.9
Hodgkin Lymphoma	Total	-	62,540	-	-	1.5	0.460	188	8,370,262	2.2
	Male	-	31,459	-	-	0.8	0.870	106	4,193,310	2.5
	Female	-	31,081	-	-	0.6	1.000	82	4,176,952	2.0
Kidney and Renal Pelvis	Total	20	62,540	32.0	23.2	16.2	0.405	1,571	8,370,262	18.8
	Male	10	31,459	31.8	22.8	10.7	0.986	1,024	4,193,310	24.4
	Female	10	31,081	32.2	23.6	5.6	0.114	547	4,176,952	13.1
Larynx	Total	2	62,540	3.2	2.3	2.2	1.000	204	8,370,262	2.4
	Male	2	31,459	6.4	4.4	1.7	1.000	161	4,193,310	3.8
	Female	-	31,081	-	-	0.4	1.000	43	4,176,952	1.0
Leukemia	Total	13	62,540	20.8	15.4	15.2	0.686	1,504	8,370,262	18.0
	Male	6	31,459	19.1	14.0	9.2	0.382	898	4,193,310	21.4
	Female	7	31,081	22.5	16.7	6.1	0.814	606	4,176,952	14.5
Liver and Bile Duct	Total	16	62,540	25.6	18.1	8.1	0.019 >>	769	8,370,262	9.2
	Male	11	31,459	35.0	24.4	6.0	0.082	554	4,193,310	13.2
	Female	5	31,081	16.1	11.5	2.2	0.152	215	4,176,952	5.1
Lung and Bronchus	Total	86	62,540	137.5	94.5	51.2	0.000 >>	4,712	8,370,262	56.3
	Male	51	31,459	162.1	110.3	26.9	0.000 >>	2,437	4,193,310	58.1
	Female	35	31,081	112.6	78.3	24.3	0.049 >>	2,275	4,176,952	54.5
Melanoma of the Skin	Total	10	62,540	16.0	12.1	26.1	0.001 <<	2,629	8,370,262	31.4
	Male	8	31,459	25.4	18.5	16.1	0.041 <<	1,562	4,193,310	37.2
	Female	2	31,081	6.4	5.1	10.0	0.006 <<	1,067	4,176,952	25.5
Myeloma	Total	6	62,540	9.6	6.6	7.1	0.884	654	8,370,262	7.8
	Male	2	31,459	6.4	4.4	4.3	0.384	397	4,193,310	9.5
	Female	4	31,081	12.9	9.0	2.7	0.589	257	4,176,952	6.2
Non-Hodgkin Lymphoma	Total	20	62,540	32.0	23.1	18.9	0.857	1,824	8,370,262	21.8
	Male	10	31,459	31.8	22.9	11.0	0.917	1,056	4,193,310	25.2
	Female	10	31,081	32.2	23.2	7.9	0.544	768	4,176,952	18.4
Oral Cavity and Pharynx	Total	14	62,540	22.4	16.2	12.1	0.648	1,166	8,370,262	13.9
	Male	11	31,459	35.0	24.8	8.8	0.534	830	4,193,310	19.8
	Female	3	31,081	9.7	7.2	3.4	1.000	336	4,176,952	8.0
Ovary	Female	4	31,081	12.9	9.7	5.3	0.787	534	4,176,952	12.8
Pancreas	Total	11	62,540	17.6	12.3	13.8	0.562	1,286	8,370,262	15.4
	Male	6	31,459	19.1	13.2	7.7	0.701	712	4,193,310	17.0
	Female	5	31,081	16.1	11.3	6.1	0.862	574	4,176,952	13.7
Prostate	Male	62	31,459	197.1	134.8	58.5	0.678	5,331	4,193,310	127.1
Stomach	Total	5	62,540	8.0	5.7	5.3	1.000	501	8,370,262	6.0
	Male	4	31,459	12.7	9.0	3.5	0.936	332	4,193,310	7.9
	Female	1	31,081	3.2	2.3	1.7	0.958	169	4,176,952	4.0
Testis	Male	4	31,459	12.7	14.3	1.8	0.221	272	4,193,310	6.5
Thyroid	Total	9	62,540	14.4	12.6	10.6	0.771	1,247	8,370,262	14.9
	Male	3	31,459	9.5	7.9	3.0	1.000	327	4,193,310	7.8
	Female	6	31,081	19.3	17.4	7.6	0.733	920	4,176,952	22.0
Pediatric Age 0 to 19	Total	4	13,806	29.0	28.7	2.5	0.465	423	2,404,148	17.6
	Male	2	7,116	28.1	27.8	1.3	0.730	218	1,227,065	17.8
	Female	2	6,690	29.9	29.7	1.2	0.656	205	1,177,083	17.4

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN SHOSHONE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Shoshone County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	917	63,047	1,454.5	1,045.3	701.6	0.000 >>	68,183	8,525,708	799.7
	Male	514	31,746	1,619.1	1,190.9	360.9	0.000 >>	35,716	4,271,756	836.1
	Female	403	31,301	1,287.5	900.5	341.5	0.001 >>	32,467	4,253,952	763.2
All Malignant Cancers	Total	199	63,047	315.6	222.0	152.7	0.000 >>	14,525	8,525,708	170.4
	Male	111	31,746	349.7	245.8	83.2	0.004 >>	7,867	4,271,756	184.2
	Female	88	31,301	281.1	198.6	69.4	0.035 >>	6,658	4,253,952	156.5
Bladder	Total	3	63,047	4.8	3.3	5.0	0.539	463	8,525,708	5.4
	Male	3	31,746	9.5	6.7	3.7	1.000	347	4,271,756	8.1
	Female	-	31,301	-	-	1.2	0.576	116	4,253,952	2.7
Brain and Other Nervous System	Total	3	63,047	4.8	3.6	5.0	0.532	506	8,525,708	5.9
	Male	1	31,746	3.2	2.3	3.2	0.336	322	4,271,756	7.5
	Female	2	31,301	6.4	4.8	1.8	1.000	184	4,253,952	4.3
Breast	Total	12	63,047	19.0	13.7	11.2	0.878	1,087	8,525,708	12.7
	Male	1	31,746	3.2	2.1	0.1	0.206	10	4,271,756	0.2
	Female	11	31,301	35.1	25.3	11.0	1.000	1,077	4,253,952	25.3
Cervix	Female	1	31,301	3.2	2.6	0.7	1.000	80	4,253,952	1.9
Colorectal	Total	18	63,047	28.6	20.4	12.7	0.190	1,228	8,525,708	14.4
	Male	10	31,746	31.5	22.6	6.9	0.322	669	4,271,756	15.7
	Female	8	31,301	25.6	18.0	5.8	0.465	559	4,253,952	13.1
Corpus Uteri	Female	2	31,301	6.4	4.5	1.7	1.000	162	4,253,952	3.8
Esophagus	Total	6	63,047	9.5	6.7	4.9	0.748	470	8,525,708	5.5
	Male	5	31,746	15.8	11.0	4.1	0.771	384	4,271,756	9.0
	Female	1	31,301	3.2	2.2	0.9	1.000	86	4,253,952	2.0
Hodgkin Lymphoma	Total	-	63,047	-	-	0.2	1.000	23	8,525,708	0.3
	Male	-	31,746	-	-	0.1	1.000	9	4,271,756	0.2
	Female	-	31,301	-	-	0.1	1.000	14	4,253,952	0.3
Kidney	Total	5	63,047	7.9	5.5	3.7	0.638	350	8,525,708	4.1
	Male	4	31,746	12.6	8.8	2.3	0.389	213	4,271,756	5.0
	Female	1	31,301	3.2	2.2	1.5	1.000	137	4,253,952	3.2
Larynx	Total	1	63,047	1.6	1.1	0.7	0.973	62	8,525,708	0.7
	Male	1	31,746	3.2	2.2	0.6	0.846	52	4,271,756	1.2
	Female	-	31,301	-	-	0.1	1.000	10	4,253,952	0.2
Leukemia	Total	6	63,047	9.5	6.7	6.4	1.000	618	8,525,708	7.2
	Male	4	31,746	12.6	9.0	3.8	1.000	360	4,271,756	8.4
	Female	2	31,301	6.4	4.5	2.7	0.992	258	4,253,952	6.1
Liver and Bile Duct	Total	13	63,047	20.6	14.5	6.3	0.026 >>	600	8,525,708	7.0
	Male	9	31,746	28.4	19.7	4.4	0.073	412	4,271,756	9.6
	Female	4	31,301	12.8	9.1	2.0	0.269	188	4,253,952	4.4
Lung and Bronchus	Total	67	63,047	106.3	73.4	31.8	0.000 >>	2,973	8,525,708	34.9
	Male	33	31,746	104.0	71.5	17.1	0.001 >>	1,584	4,271,756	37.1
	Female	34	31,301	108.6	75.4	14.7	0.000 >>	1,389	4,253,952	32.7
Melanoma of the Skin	Total	2	63,047	3.2	2.3	2.8	0.924	276	8,525,708	3.2
	Male	1	31,746	3.2	2.3	1.9	0.887	181	4,271,756	4.2
	Female	1	31,301	3.2	2.3	1.0	1.000	95	4,253,952	2.2
Myeloma	Total	3	63,047	4.8	3.3	3.6	1.000	332	8,525,708	3.9
	Male	1	31,746	3.2	2.2	2.1	0.747	198	4,271,756	4.6
	Female	2	31,301	6.4	4.3	1.5	0.851	134	4,253,952	3.2
Non-Hodgkin Lymphoma	Total	3	63,047	4.8	3.3	5.9	0.320	554	8,525,708	6.5
	Male	2	31,746	6.3	4.4	3.2	0.768	301	4,271,756	7.0
	Female	1	31,301	3.2	2.2	2.7	0.482	253	4,253,952	5.9
Oral Cavity and Pharynx	Total	3	63,047	4.8	3.3	2.4	0.886	233	8,525,708	2.7
	Male	3	31,746	9.5	6.6	1.7	0.466	157	4,271,756	3.7
	Female	-	31,301	-	-	0.8	0.901	76	4,253,952	1.8
Ovary	Female	4	31,301	12.8	9.1	3.8	1.000	362	4,253,952	8.5
Pancreas	Total	10	63,047	15.9	11.1	11.5	0.794	1,088	8,525,708	12.8
	Male	5	31,746	15.8	10.9	6.4	0.758	601	4,271,756	14.1
	Female	5	31,301	16.0	11.1	5.1	1.000	487	4,253,952	11.4
Prostate	Male	14	31,746	44.1	30.8	9.7	0.229	912	4,271,756	21.3
Stomach	Total	3	63,047	4.8	3.4	2.0	0.663	196	8,525,708	2.3
	Male	3	31,746	9.5	6.8	1.2	0.227	113	4,271,756	2.6
	Female	-	31,301	-	-	0.9	0.846	83	4,253,952	2.0

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Shoshone County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	80.3%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	14.4%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	20.3%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	22.2%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	5.3%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	29.3%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	18.8%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	31.9%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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TETON COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 201 cases of invasive cancer were diagnosed among Teton County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Teton County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Teton County	State of Idaho
All Sites/Types	**201**	**42,577**
Female Breast	**36**	**6,210**
Prostate	**31**	**5,393**
Lung & Bronchus	**15**	**4,798**
Colorectal	**13**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Teton County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Teton County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Teton County was 362.7 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (505.8) gives an estimate of the relative burden of disease in Teton County.

The age- and sex-adjusted incidence rate of invasive cancer in Teton County, all sites combined, was 430.8 cases per 100,000 persons per year during 2014–2018. There were statistically significantly fewer cases of cancer in Teton County (201) than expected (236.0) based upon rates in the remainder of the state (p=.022).

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 56 Teton County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Teton County and the State of Idaho, 2015–2019

Mortality 2015–2019	Teton County	State of Idaho
All Deaths	**235**	**69,101**
Cancer Deaths	**56**	**14,724**
% of All Deaths	*23.8%*	*21.3%*
Lung & Bronchus	**8**	**3,040**
Colorectal	**7**	**1,246**
Pancreas	**5**	**1,098**
Female Breast	**3**	**1,088**
Prostate	**2**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Teton County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Teton County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Teton County, all sites combined, was 128.0 deaths per 100,000 persons per year during 2015–2019, compared with 171.9 for the remainder of the state. There were statistically significantly fewer cancer deaths in Teton County (56) than expected (75.2) based upon rates in the remainder of the state (p=.025).

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN TETON COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Teton County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	201	55,422	362.7	430.8	236.0	0.022 <<	42,376	8,377,380	505.8
	Male	116	29,030	399.6	474.8	128.4	0.292	22,054	4,195,739	525.6
	Female	85	26,392	322.1	378.6	109.1	0.020 <<	20,322	4,181,641	486.0
Bladder	Total	4	55,422	7.2	9.7	10.1	0.053	2,054	8,377,380	24.5
	Male	4	29,030	13.8	18.0	8.5	0.151	1,598	4,195,739	38.1
	Female	-	26,392	-	-	2.1	0.234	456	4,181,641	10.9
Brain - malignant	Total	5	55,422	9.0	9.9	3.8	0.660	626	8,377,380	7.5
	Male	4	29,030	13.8	14.8	2.4	0.458	378	4,195,739	9.0
	Female	1	26,392	3.8	4.2	1.4	1.000	248	4,181,641	5.9
Brain and other CNS - non-malignant	Total	6	55,422	10.8	12.1	7.1	0.881	1,194	8,377,380	14.3
	Male	4	29,030	13.8	15.0	2.5	0.479	391	4,195,739	9.3
	Female	2	26,392	7.6	8.7	4.4	0.364	803	4,181,641	19.2
Breast	Total	37	55,422	66.8	73.5	37.4	1.000	6,221	8,377,380	74.3
	Male	1	29,030	3.4	4.2	0.3	0.465	47	4,195,739	1.1
	Female	36	26,392	136.4	153.3	34.7	0.866	6,174	4,181,641	147.6
Breast - in situ	Total	4	55,422	7.2	7.5	7.0	0.345	1,098	8,377,380	13.1
	Male	-	29,030	-	-	0.0	1.000	5	4,195,739	0.1
	Female	4	26,392	15.2	16.1	6.5	0.448	1,093	4,181,641	26.1
Cervix	Female	1	26,392	3.8	3.4	2.0	0.795	287	4,181,641	6.9
Colorectal	Total	13	55,422	23.5	27.8	18.5	0.240	3,315	8,377,380	39.6
	Male	6	29,030	20.7	23.8	10.6	0.191	1,765	4,195,739	42.1
	Female	7	26,392	26.5	32.4	8.0	0.903	1,550	4,181,641	37.1
Corpus Uteri	Female	3	26,392	11.4	12.6	7.1	0.150	1,255	4,181,641	30.0
Esophagus	Total	3	55,422	5.4	6.8	2.6	0.953	489	8,377,380	5.8
	Male	3	29,030	10.3	12.5	2.3	0.824	408	4,195,739	9.7
	Female	-	26,392	-	-	0.4	1.000	81	4,181,641	1.9
Hodgkin Lymphoma	Total	-	55,422	-	-	1.2	0.615	188	8,377,380	2.2
	Male	-	29,030	-	-	0.7	0.979	106	4,195,739	2.5
	Female	-	26,392	-	-	0.5	1.000	82	4,181,641	2.0
Kidney and Renal Pelvis	Total	3	55,422	5.4	6.3	9.0	0.042 <<	1,588	8,377,380	19.0
	Male	1	29,030	3.4	3.9	6.3	0.026 <<	1,033	4,195,739	24.6
	Female	2	26,392	7.6	9.1	2.9	0.885	555	4,181,641	13.3
Larynx	Total	2	55,422	3.6	4.4	1.1	0.598	204	8,377,380	2.4
	Male	2	29,030	6.9	8.3	0.9	0.474	161	4,195,739	3.8
	Female	-	26,392	-	-	0.2	1.000	43	4,181,641	1.0
Leukemia	Total	13	55,422	23.5	29.1	8.0	0.131	1,504	8,377,380	18.0
	Male	10	29,030	34.4	41.4	5.1	0.075	894	4,195,739	21.3
	Female	3	26,392	11.4	14.4	3.0	1.000	610	4,181,641	14.6
Liver and Bile Duct	Total	3	55,422	5.4	6.4	4.4	0.732	782	8,377,380	9.3
	Male	1	29,030	3.4	3.9	3.4	0.287	564	4,195,739	13.4
	Female	2	26,392	7.6	9.5	1.1	0.600	218	4,181,641	5.2
Lung and Bronchus	Total	15	55,422	27.1	35.9	23.9	0.073	4,783	8,377,380	57.1
	Male	7	29,030	24.1	31.0	13.3	0.090	2,481	4,195,739	59.1
	Female	8	26,392	30.3	41.3	10.7	0.524	2,302	4,181,641	55.1
Melanoma of the Skin	Total	17	55,422	30.7	34.4	15.5	0.761	2,622	8,377,380	31.3
	Male	11	29,030	37.9	43.5	9.4	0.685	1,559	4,195,739	37.2
	Female	6	26,392	22.7	24.3	6.3	1.000	1,063	4,181,641	25.4
Myeloma	Total	2	55,422	3.6	4.7	3.3	0.711	658	8,377,380	7.9
	Male	1	29,030	3.4	4.4	2.2	0.723	398	4,195,739	9.5
	Female	1	26,392	3.8	5.1	1.2	1.000	260	4,181,641	6.2
Non-Hodgkin Lymphoma	Total	10	55,422	18.0	22.0	9.9	1.000	1,834	8,377,380	21.9
	Male	7	29,030	24.1	28.5	6.2	0.854	1,059	4,195,739	25.2
	Female	3	26,392	11.4	14.4	3.9	0.918	775	4,181,641	18.5
Oral Cavity and Pharynx	Total	11	55,422	19.8	22.8	6.7	0.162	1,169	8,377,380	14.0
	Male	10	29,030	34.4	38.6	5.1	0.074	831	4,195,739	19.8
	Female	1	26,392	3.8	4.4	1.8	0.913	338	4,181,641	8.1
Ovary	Female	-	26,392	-	-	2.9	0.106	538	4,181,641	12.9
Pancreas	Total	6	55,422	10.8	13.9	6.6	1.000	1,291	8,377,380	15.4
	Male	4	29,030	13.8	16.9	4.0	1.000	714	4,195,739	17.0
	Female	2	26,392	7.6	10.2	2.7	0.984	577	4,181,641	13.8
Prostate	Male	31	29,030	106.8	126.1	31.4	1.000	5,362	4,195,739	127.8
Stomach	Total	1	55,422	1.8	2.2	2.7	0.499	505	8,377,380	6.0
	Male	-	29,030	-	-	1.9	0.289	336	4,195,739	8.0
	Female	1	26,392	3.8	4.8	0.8	1.000	169	4,181,641	4.0
Testis	Male	2	29,030	6.9	6.4	2.0	1.000	274	4,195,739	6.5
Thyroid	Total	9	55,422	16.2	15.9	8.4	0.934	1,247	8,377,380	14.9
	Male	3	29,030	10.3	10.4	2.2	0.780	327	4,195,739	7.8
	Female	6	26,392	22.7	22.1	6.0	1.000	920	4,181,641	22.0
Pediatric Age 0 to 19	Total	7	15,584	44.9	45.5	2.7	0.041 >>	420	2,402,370	17.5
	Male	3	8,064	37.2	37.6	1.4	0.338	217	1,226,117	17.7
	Female	4	7,520	53.2	53.9	1.3	0.082	203	1,176,253	17.3

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN TETON COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Teton County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	235	57,128	411.4	560.7	338.3	0.000 <<	68,865	8,531,627	807.2
	Male	125	29,937	417.5	532.6	198.3	0.000 <<	36,105	4,273,565	844.8
	Female	110	27,191	404.5	587.2	144.1	0.004 <<	32,760	4,258,062	769.4
All Malignant Cancers	Total	56	57,128	98.0	128.0	75.2	0.025 <<	14,668	8,531,627	171.9
	Male	33	29,937	110.2	139.5	44.0	0.104	7,945	4,273,565	185.9
	Female	23	27,191	84.6	113.1	32.1	0.117	6,723	4,258,062	157.9
Bladder	Total	1	57,128	1.8	2.6	2.1	0.748	465	8,531,627	5.5
	Male	1	29,937	3.3	4.7	1.7	0.970	349	4,273,565	8.2
	Female	-	27,191	-	-	0.5	1.000	116	4,258,062	2.7
Brain and Other Nervous System	Total	2	57,128	3.5	3.9	3.0	0.841	507	8,531,627	5.9
	Male	2	29,937	6.7	7.4	2.0	1.000	321	4,273,565	7.5
	Female	-	27,191	-	-	1.0	0.712	186	4,258,062	4.4
Breast	Total	4	57,128	7.0	8.5	6.0	0.569	1,095	8,531,627	12.8
	Male	1	29,937	3.3	4.1	0.1	0.111	10	4,273,565	0.2
	Female	3	27,191	11.0	13.8	5.5	0.397	1,085	4,258,062	25.5
Cervix	Female	-	27,191	-	-	0.5	1.000	81	4,258,062	1.9
Colorectal	Total	7	57,128	12.3	15.4	6.6	0.976	1,239	8,531,627	14.5
	Male	2	29,937	6.7	7.9	4.0	0.477	677	4,273,565	15.8
	Female	5	27,191	18.4	24.6	2.7	0.269	562	4,258,062	13.2
Corpus Uteri	Female	-	27,191	-	-	0.8	0.902	164	4,258,062	3.9
Esophagus	Total	1	57,128	1.8	2.2	2.5	0.568	475	8,531,627	5.6
	Male	1	29,937	3.3	4.0	2.2	0.688	388	4,273,565	9.1
	Female	-	27,191	-	-	0.4	1.000	87	4,258,062	2.0
Hodgkin Lymphoma	Total	1	57,128	1.8	2.2	0.1	0.224	22	8,531,627	0.3
	Male	-	29,937	-	-	0.1	1.000	9	4,273,565	0.2
	Female	1	27,191	3.7	4.9	0.1	0.122	13	4,258,062	0.3
Kidney	Total	2	57,128	3.5	4.6	1.8	1.000	353	8,531,627	4.1
	Male	-	29,937	-	-	1.2	0.578	217	4,273,565	5.1
	Female	2	27,191	7.4	10.6	0.6	0.244	136	4,258,062	3.2
Larynx	Total	-	57,128	-	-	0.3	1.000	63	8,531,627	0.7
	Male	-	29,937	-	-	0.3	1.000	53	4,273,565	1.2
	Female	-	27,191	-	-	0.0	1.000	10	4,258,062	0.2
Leukemia	Total	2	57,128	3.5	4.8	3.0	0.840	622	8,531,627	7.3
	Male	2	29,937	6.7	8.8	1.9	1.000	362	4,273,565	8.5
	Female	-	27,191	-	-	1.2	0.627	260	4,258,062	6.1
Liver and Bile Duct	Total	3	57,128	5.3	6.4	3.3	1.000	610	8,531,627	7.1
	Male	1	29,937	3.3	3.9	2.5	0.561	420	4,273,565	9.8
	Female	2	27,191	7.4	9.6	0.9	0.478	190	4,258,062	4.5
Lung and Bronchus	Total	8	57,128	14.0	18.7	15.2	0.068	3,032	8,531,627	35.5
	Male	7	29,937	23.4	29.8	8.8	0.684	1,610	4,273,565	37.7
	Female	1	27,191	3.7	5.1	6.5	0.022 <<	1,422	4,258,062	33.4
Melanoma of the Skin	Total	-	57,128	-	-	1.5	0.438	278	8,531,627	3.3
	Male	-	29,937	-	-	1.1	0.693	182	4,273,565	4.3
	Female	-	27,191	-	-	0.5	1.000	96	4,258,062	2.3
Myeloma	Total	3	57,128	5.3	7.6	1.5	0.403	332	8,531,627	3.9
	Male	-	29,937	-	-	1.0	0.722	199	4,273,565	4.7
	Female	3	27,191	11.0	17.0	0.6	0.037 >>	133	4,258,062	3.1
Non-Hodgkin Lymphoma	Total	3	57,128	5.3	7.4	2.6	0.984	554	8,531,627	6.5
	Male	2	29,937	6.7	8.7	1.6	0.965	301	4,273,565	7.0
	Female	1	27,191	3.7	5.6	1.1	1.000	253	4,258,062	5.9
Oral Cavity and Pharynx	Total	2	57,128	3.5	4.4	1.2	0.710	234	8,531,627	2.7
	Male	1	29,937	3.3	4.0	0.9	1.000	159	4,273,565	3.7
	Female	1	27,191	3.7	4.9	0.4	0.605	75	4,258,062	1.8
Ovary	Female	1	27,191	3.7	4.7	1.8	0.910	365	4,258,062	8.6
Pancreas	Total	5	57,128	8.8	11.4	5.6	1.000	1,093	8,531,627	12.8
	Male	4	29,937	13.4	16.3	3.5	0.906	602	4,273,565	14.1
	Female	1	27,191	3.7	5.1	2.3	0.679	491	4,258,062	11.5
Prostate	Male	2	29,937	6.7	9.7	4.4	0.361	924	4,273,565	21.6
Stomach	Total	-	57,128	-	-	1.1	0.697	199	8,531,627	2.3
	Male	-	29,937	-	-	0.7	1.000	116	4,273,565	2.7
	Female	-	27,191	-	-	0.4	1.000	83	4,258,062	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Teton County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	74.3%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	14.4%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	12.4%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	11.7%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	2.9%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	49.1%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	20.6%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	.

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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TWIN FALLS COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 1,991 cases of invasive cancer were diagnosed among Twin Falls County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Twin Falls County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Twin Falls County	State of Idaho
All Sites/Types	**1,991**	**42,577**
Female Breast	**249**	**6,210**
Prostate	**224**	**5,393**
Lung & Bronchus	**236**	**4,798**
Colorectal	**153**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Twin Falls County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Twin Falls County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Twin Falls County was 475.8 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (506.4) gives an estimate of the relative burden of disease in Twin Falls County.

The age- and sex-adjusted incidence rate of invasive cancer in Twin Falls County, all sites combined, was 485.5 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Twin Falls County (1,991) than expected (2,076.7) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 769 Twin Falls County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Twin Falls County and the State of Idaho, 2015–2019

Mortality 2015–2019	Twin Falls County	State of Idaho
All Deaths	**3,860**	**69,101**
Cancer Deaths	**769**	**14,724**
% of All Deaths	*19.9%*	*21.3%*
Lung & Bronchus	**149**	**3,040**
Colorectal	**61**	**1,246**
Pancreas	**49**	**1,098**
Female Breast	**54**	**1,088**
Prostate	**47**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Twin Falls County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Twin Falls County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Twin Falls County, all sites combined, was 181.3 deaths per 100,000 persons per year during 2015–2019, compared with 170.9 for the remainder of the state. There were more cancer deaths in Twin Falls County (769) than expected (725.0) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN TWIN FALLS COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Twin Falls County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	1,991	418,453	475.8	485.5	2,076.7	0.060	40,586	8,014,349	506.4
	Male	1,032	206,264	500.3	517.3	1,049.4	0.605	21,138	4,018,505	526.0
	Female	959	212,189	452.0	458.7	1,017.5	0.067	19,448	3,995,844	486.7
Bladder	Total	132	418,453	31.5	31.5	100.6	0.003 >>	1,926	8,014,349	24.0
	Male	104	206,264	50.4	51.4	75.5	0.002 >>	1,498	4,018,505	37.3
	Female	28	212,189	13.2	13.1	23.0	0.341	428	3,995,844	10.7
Brain - malignant	Total	27	418,453	6.5	6.5	31.1	0.526	604	8,014,349	7.5
	Male	14	206,264	6.8	7.0	18.4	0.363	368	4,018,505	9.2
	Female	13	212,189	6.1	6.1	12.5	0.967	236	3,995,844	5.9
Brain and other CNS - non-malignant	Total	65	418,453	15.5	15.8	58.2	0.406	1,135	8,014,349	14.2
	Male	22	206,264	10.7	10.9	18.8	0.511	373	4,018,505	9.3
	Female	43	212,189	20.3	20.5	39.9	0.665	762	3,995,844	19.1
Breast	Total	250	418,453	59.7	61.9	302.9	0.002 <<	6,008	8,014,349	75.0
	Male	1	206,264	0.5	0.5	2.4	0.634	47	4,018,505	1.2
	Female	249	212,189	117.3	121.2	306.5	0.001 <<	5,961	3,995,844	149.2
Breast - in situ	Total	32	418,453	7.6	8.1	53.0	0.003 <<	1,070	8,014,349	13.4
	Male	-	206,264	-	-	0.2	1.000	5	4,018,505	0.1
	Female	32	212,189	15.1	15.9	53.6	0.002 <<	1,065	3,995,844	26.7
Cervix	Female	9	212,189	4.2	4.4	14.3	0.193	279	3,995,844	7.0
Colorectal	Total	153	418,453	36.6	37.2	163.1	0.456	3,175	8,014,349	39.6
	Male	76	206,264	36.8	38.0	84.3	0.399	1,695	4,018,505	42.2
	Female	77	212,189	36.3	36.4	78.3	0.942	1,480	3,995,844	37.0
Corpus Uteri	Female	78	212,189	36.8	38.5	59.9	0.028 >>	1,180	3,995,844	29.5
Esophagus	Total	16	418,453	3.8	3.9	24.4	0.097	476	8,014,349	5.9
	Male	13	206,264	6.3	6.5	19.7	0.147	398	4,018,505	9.9
	Female	3	212,189	1.4	1.4	4.1	0.820	78	3,995,844	2.0
Hodgkin Lymphoma	Total	12	418,453	2.9	2.9	9.0	0.404	176	8,014,349	2.2
	Male	9	206,264	4.4	4.5	4.9	0.121	97	4,018,505	2.4
	Female	3	212,189	1.4	1.4	4.2	0.805	79	3,995,844	2.0
Kidney and Renal Pelvis	Total	65	418,453	15.5	15.9	77.7	0.161	1,526	8,014,349	19.0
	Male	44	206,264	21.3	22.2	48.8	0.546	990	4,018,505	24.6
	Female	21	212,189	9.9	10.0	28.2	0.199	536	3,995,844	13.4
Larynx	Total	12	418,453	2.9	2.9	9.9	0.585	194	8,014,349	2.4
	Male	9	206,264	4.4	4.5	7.6	0.712	154	4,018,505	3.8
	Female	3	212,189	1.4	1.4	2.1	0.695	40	3,995,844	1.0
Leukemia	Total	92	418,453	22.0	21.9	74.6	0.057	1,425	8,014,349	17.8
	Male	47	206,264	22.8	23.1	43.3	0.615	857	4,018,505	21.3
	Female	45	212,189	21.2	20.8	30.7	0.019 >>	568	3,995,844	14.2
Liver and Bile Duct	Total	28	418,453	6.7	6.9	38.1	0.108	757	8,014,349	9.4
	Male	17	206,264	8.2	8.7	26.7	0.062	548	4,018,505	13.6
	Female	11	212,189	5.2	5.2	11.0	1.000	209	3,995,844	5.2
Lung and Bronchus	Total	236	418,453	56.4	56.8	236.7	0.998	4,562	8,014,349	56.9
	Male	116	206,264	56.2	57.7	118.7	0.849	2,372	4,018,505	59.0
	Female	120	212,189	56.6	56.2	117.1	0.810	2,190	3,995,844	54.8
Melanoma of the Skin	Total	122	418,453	29.2	29.8	128.8	0.588	2,517	8,014,349	31.4
	Male	82	206,264	39.8	40.9	74.2	0.394	1,488	4,018,505	37.0
	Female	40	212,189	18.9	19.3	53.4	0.069	1,029	3,995,844	25.8
Myeloma	Total	31	418,453	7.4	7.4	32.7	0.861	629	8,014,349	7.8
	Male	21	206,264	10.2	10.4	18.9	0.692	378	4,018,505	9.4
	Female	10	212,189	4.7	4.7	13.5	0.429	251	3,995,844	6.3
Non-Hodgkin Lymphoma	Total	88	418,453	21.0	21.3	90.5	0.850	1,756	8,014,349	21.9
	Male	48	206,264	23.3	24.0	50.8	0.767	1,018	4,018,505	25.3
	Female	40	212,189	18.9	18.9	39.2	0.940	738	3,995,844	18.5
Oral Cavity and Pharynx	Total	63	418,453	15.1	15.6	56.2	0.400	1,117	8,014,349	13.9
	Male	43	206,264	20.8	21.9	39.0	0.563	798	4,018,505	19.9
	Female	20	212,189	9.4	9.6	16.6	0.459	319	3,995,844	8.0
Ovary	Female	27	212,189	12.7	13.0	26.6	0.983	511	3,995,844	12.8
Pancreas	Total	60	418,453	14.3	14.4	64.2	0.659	1,237	8,014,349	15.4
	Male	40	206,264	19.4	20.0	33.8	0.325	678	4,018,505	16.9
	Female	20	212,189	9.4	9.3	30.1	0.067	559	3,995,844	14.0
Prostate	Male	224	206,264	108.6	114.4	251.9	0.081	5,169	4,018,505	128.6
Stomach	Total	27	418,453	6.5	6.5	24.8	0.710	479	8,014,349	6.0
	Male	15	206,264	7.3	7.5	16.1	0.922	321	4,018,505	8.0
	Female	12	212,189	5.7	5.6	8.4	0.291	158	3,995,844	4.0
Testis	Male	16	206,264	7.8	7.8	13.2	0.516	260	4,018,505	6.5
Thyroid	Total	43	418,453	10.3	10.6	61.4	0.017 <<	1,213	8,014,349	15.1
	Male	11	206,264	5.3	5.5	15.8	0.271	319	4,018,505	7.9
	Female	32	212,189	15.1	15.6	46.0	0.038 <<	894	3,995,844	22.4
Pediatric Age 0 to 19	Total	25	126,405	19.8	19.9	22.0	0.575	402	2,291,549	17.5
	Male	16	64,134	24.9	25.1	11.1	0.197	204	1,170,047	17.4
	Female	9	62,271	14.5	14.6	10.9	0.708	198	1,121,502	17.7

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN TWIN FALLS COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Twin Falls County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	3,860	424,345	909.6	884.9	3,485.6	0.000 >>	65,240	8,164,410	799.1
	Male	1,996	209,123	954.5	959.2	1,740.0	0.000 >>	34,234	4,094,379	836.1
	Female	1,864	215,222	866.1	820.1	1,731.5	0.002 >>	31,006	4,070,031	761.8
All Malignant Cancers	Total	769	424,345	181.2	181.3	725.0	0.108	13,955	8,164,410	170.9
	Male	423	209,123	202.3	206.7	377.7	0.023 >>	7,555	4,094,379	184.5
	Female	346	215,222	160.8	158.8	342.7	0.874	6,400	4,070,031	157.2
Bladder	Total	27	424,345	6.4	6.2	23.6	0.537	439	8,164,410	5.4
	Male	22	209,123	10.5	10.4	16.9	0.262	328	4,094,379	8.0
	Female	5	215,222	2.3	2.2	6.1	0.845	111	4,070,031	2.7
Brain and Other Nervous System	Total	28	424,345	6.6	6.8	24.3	0.499	481	8,164,410	5.9
	Male	11	209,123	5.3	5.5	15.3	0.328	312	4,094,379	7.6
	Female	17	215,222	7.9	8.1	8.7	0.017 >>	169	4,070,031	4.2
Breast	Total	54	424,345	12.7	12.8	53.9	1.000	1,045	8,164,410	12.8
	Male	-	209,123	-	-	0.5	1.000	11	4,094,379	0.3
	Female	54	215,222	25.1	25.1	54.7	0.997	1,034	4,070,031	25.4
Cervix	Female	4	215,222	1.9	2.0	3.9	1.000	77	4,070,031	1.9
Colorectal	Total	61	424,345	14.4	14.4	61.5	1.000	1,185	8,164,410	14.5
	Male	34	209,123	16.3	16.7	32.1	0.785	645	4,094,379	15.8
	Female	27	215,222	12.5	12.3	29.1	0.783	540	4,070,031	13.3
Corpus Uteri	Female	8	215,222	3.7	3.7	8.2	1.000	156	4,070,031	3.8
Esophagus	Total	18	424,345	4.2	4.3	23.4	0.308	458	8,164,410	5.6
	Male	11	209,123	5.3	5.4	18.7	0.081	378	4,094,379	9.2
	Female	7	215,222	3.3	3.2	4.2	0.274	80	4,070,031	2.0
Hodgkin Lymphoma	Total	-	424,345	-	-	1.2	0.597	23	8,164,410	0.3
	Male	-	209,123	-	-	0.5	1.000	9	4,094,379	0.2
	Female	-	215,222	-	-	0.7	0.950	14	4,070,031	0.3
Kidney	Total	20	424,345	4.7	4.7	17.4	0.587	335	8,164,410	4.1
	Male	15	209,123	7.2	7.4	10.0	0.164	202	4,094,379	4.9
	Female	5	215,222	2.3	2.2	7.3	0.535	133	4,070,031	3.3
Larynx	Total	5	424,345	1.2	1.2	3.0	0.379	58	8,164,410	0.7
	Male	4	209,123	1.9	1.9	2.5	0.467	49	4,094,379	1.2
	Female	1	215,222	0.5	0.5	0.5	0.770	9	4,070,031	0.2
Leukemia	Total	45	424,345	10.6	10.4	30.7	0.018 >>	579	8,164,410	7.1
	Male	28	209,123	13.4	13.5	17.0	0.017 >>	336	4,094,379	8.2
	Female	17	215,222	7.9	7.6	13.4	0.393	243	4,070,031	6.0
Liver and Bile Duct	Total	29	424,345	6.8	7.0	29.4	1.000	584	8,164,410	7.2
	Male	22	209,123	10.5	11.1	19.4	0.612	399	4,094,379	9.7
	Female	7	215,222	3.3	3.3	9.7	0.496	185	4,070,031	4.5
Lung and Bronchus	Total	149	424,345	35.1	35.3	149.7	1.000	2,891	8,164,410	35.4
	Male	79	209,123	37.8	38.9	76.3	0.790	1,538	4,094,379	37.6
	Female	70	215,222	32.5	32.1	72.6	0.820	1,353	4,070,031	33.2
Melanoma of the Skin	Total	18	424,345	4.2	4.3	13.4	0.270	260	8,164,410	3.2
	Male	13	209,123	6.2	6.4	8.4	0.175	169	4,094,379	4.1
	Female	5	215,222	2.3	2.3	4.8	1.000	91	4,070,031	2.2
Myeloma	Total	16	424,345	3.8	3.7	16.9	0.949	319	8,164,410	3.9
	Male	10	209,123	4.8	4.8	9.6	0.982	189	4,094,379	4.6
	Female	6	215,222	2.8	2.7	7.2	0.854	130	4,070,031	3.2
Non-Hodgkin Lymphoma	Total	35	424,345	8.2	8.1	27.5	0.191	522	8,164,410	6.4
	Male	20	209,123	9.6	9.8	14.2	0.167	283	4,094,379	6.9
	Female	15	215,222	7.0	6.6	13.3	0.702	239	4,070,031	5.9
Oral Cavity and Pharynx	Total	16	424,345	3.8	3.8	11.3	0.219	220	8,164,410	2.7
	Male	9	209,123	4.3	4.5	7.5	0.665	151	4,094,379	3.7
	Female	7	215,222	3.3	3.2	3.7	0.163	69	4,070,031	1.7
Ovary	Female	16	215,222	7.4	7.5	18.4	0.678	350	4,070,031	8.6
Pancreas	Total	49	424,345	11.5	11.7	53.9	0.558	1,049	8,164,410	12.8
	Male	31	209,123	14.8	15.4	28.3	0.667	575	4,094,379	14.0
	Female	18	215,222	8.4	8.3	25.4	0.163	474	4,070,031	11.6
Prostate	Male	47	209,123	22.5	22.3	45.3	0.842	879	4,094,379	21.5
Stomach	Total	10	424,345	2.4	2.4	9.8	1.000	189	8,164,410	2.3
	Male	5	209,123	2.4	2.4	5.5	1.000	111	4,094,379	2.7
	Female	5	215,222	2.3	2.3	4.2	0.835	78	4,070,031	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Twin Falls County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	77.9%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	12.8%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	64.6%
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	67.0%
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	65.8%
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	17.6%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	7.5%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	46.7%
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	4.4%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	28.1%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	20.9%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	15.6%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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VALLEY COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 344 cases of invasive cancer were diagnosed among Valley County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Valley County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Valley County	State of Idaho
All Sites/Types	**344**	**42,577**
Female Breast	**43**	**6,210**
Prostate	**56**	**5,393**
Lung & Bronchus	**23**	**4,798**
Colorectal	**24**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Valley County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Valley County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Valley County was 662.2 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (503.9) gives an estimate of the relative burden of disease in Valley County.

The age- and sex-adjusted incidence rate of invasive cancer in Valley County, all sites combined, was 462.4 cases per 100,000 persons per year during 2014–2018. There were fewer cases of cancer in Valley County (344) than expected (374.9) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 109 Valley County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Valley County and the State of Idaho, 2015–2019

Mortality 2015–2019	Valley County	State of Idaho
All Deaths	**401**	**69,101**
Cancer Deaths	**109**	**14,724**
% of All Deaths	*27.2%*	*21.3%*
Lung & Bronchus	**17**	**3,040**
Colorectal	**3**	**1,246**
Pancreas	**8**	**1,098**
Female Breast	**9**	**1,088**
Prostate	**8**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Valley County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Valley County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Valley County, all sites combined, was 144.4 deaths per 100,000 persons per year during 2015–2019, compared with 171.2 for the remainder of the state. There were fewer cancer deaths in Valley County (109) than expected (129.3) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN VALLEY COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Valley County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	344	51,946	662.2	462.4	374.9	0.113	42,233	8,380,856	503.9
	Male	205	26,966	760.2	489.3	219.2	0.354	21,965	4,197,803	523.2
	Female	139	24,980	556.4	417.2	161.4	0.079	20,268	4,183,053	484.5
Bladder	Total	22	51,946	42.4	29.0	18.5	0.466	2,036	8,380,856	24.3
	Male	16	26,966	59.3	37.4	16.2	1.000	1,586	4,197,803	37.8
	Female	6	24,980	24.0	17.8	3.6	0.319	450	4,183,053	10.8
Brain - malignant	Total	5	51,946	9.6	7.4	5.0	1.000	626	8,380,856	7.5
	Male	4	26,966	14.8	10.7	3.4	0.863	378	4,197,803	9.0
	Female	1	24,980	4.0	3.3	1.8	0.929	248	4,183,053	5.9
Brain and other CNS - non-malignant	Total	2	51,946	3.9	2.9	9.9	0.006 <<	1,198	8,380,856	14.3
	Male	-	26,966	-	-	3.4	0.064	395	4,197,803	9.4
	Female	2	24,980	8.0	6.2	6.2	0.109	803	4,183,053	19.2
Breast	Total	43	51,946	82.8	58.3	54.7	0.121	6,215	8,380,856	74.2
	Male	-	26,966	-	-	0.5	1.000	48	4,197,803	1.1
	Female	43	24,980	172.1	126.0	50.3	0.337	6,167	4,183,053	147.4
Breast - in situ	Total	4	51,946	7.7	5.4	9.7	0.072	1,098	8,380,856	13.1
	Male	-	26,966	-	-	0.1	1.000	5	4,197,803	0.1
	Female	4	24,980	16.0	11.6	9.0	0.111	1,093	4,183,053	26.1
Cervix	Female	3	24,980	12.0	10.3	2.0	0.641	285	4,183,053	6.8
Colorectal	Total	24	51,946	46.2	32.8	28.9	0.424	3,304	8,380,856	39.4
	Male	17	26,966	63.0	41.8	17.0	1.000	1,754	4,197,803	41.8
	Female	7	24,980	28.0	21.3	12.1	0.166	1,550	4,183,053	37.1
Corpus Uteri	Female	7	24,980	28.0	19.6	10.7	0.330	1,251	4,183,053	29.9
Esophagus	Total	5	51,946	9.6	6.5	4.5	0.936	487	8,380,856	5.8
	Male	3	26,966	11.1	7.0	4.1	0.811	408	4,197,803	9.7
	Female	2	24,980	8.0	5.7	0.7	0.288	79	4,183,053	1.9
Hodgkin Lymphoma	Total	2	51,946	3.9	3.7	1.2	0.682	186	8,380,856	2.2
	Male	2	26,966	7.4	6.9	0.7	0.326	104	4,197,803	2.5
	Female	-	24,980	-	-	0.5	1.000	82	4,183,053	2.0
Kidney and Renal Pelvis	Total	14	51,946	27.0	18.7	14.1	1.000	1,577	8,380,856	18.8
	Male	9	26,966	33.4	21.8	10.1	0.896	1,025	4,197,803	24.4
	Female	5	24,980	20.0	14.9	4.4	0.908	552	4,183,053	13.2
Larynx	Total	-	51,946	-	-	1.9	0.298	206	8,380,856	2.5
	Male	-	26,966	-	-	1.7	0.374	163	4,197,803	3.9
	Female	-	24,980	-	-	0.3	1.000	43	4,183,053	1.0
Leukemia	Total	12	51,946	23.1	17.1	12.6	1.000	1,505	8,380,856	18.0
	Male	6	26,966	22.3	15.3	8.4	0.533	898	4,197,803	21.4
	Female	6	24,980	24.0	19.4	4.5	0.592	607	4,183,053	14.5
Liver and Bile Duct	Total	5	51,946	9.6	6.3	7.4	0.512	780	8,380,856	9.3
	Male	5	26,966	18.5	11.5	5.8	0.957	560	4,197,803	13.3
	Female	-	24,980	-	-	1.8	0.317	220	4,183,053	5.3
Lung and Bronchus	Total	23	51,946	44.3	29.8	44.0	0.001 <<	4,775	8,380,856	57.0
	Male	13	26,966	48.2	29.9	25.6	0.009 <<	2,475	4,197,803	59.0
	Female	10	24,980	40.0	29.0	19.0	0.037 <<	2,300	4,183,053	55.0
Melanoma of the Skin	Total	29	51,946	55.8	40.7	22.2	0.190	2,610	8,380,856	31.1
	Male	18	26,966	66.8	44.8	14.9	0.479	1,552	4,197,803	37.0
	Female	11	24,980	44.0	34.5	8.1	0.382	1,058	4,183,053	25.3
Myeloma	Total	9	51,946	17.3	11.8	5.9	0.291	651	8,380,856	7.8
	Male	6	26,966	22.3	13.9	4.0	0.443	393	4,197,803	9.4
	Female	3	24,980	12.0	8.9	2.1	0.685	258	4,183,053	6.2
Non-Hodgkin Lymphoma	Total	14	51,946	27.0	19.0	16.1	0.719	1,830	8,380,856	21.8
	Male	11	26,966	40.8	27.1	10.2	0.888	1,055	4,197,803	25.1
	Female	3	24,980	12.0	9.0	6.2	0.272	775	4,183,053	18.5
Oral Cavity and Pharynx	Total	16	51,946	30.8	20.9	10.6	0.147	1,164	8,380,856	13.9
	Male	15	26,966	55.6	35.7	8.3	0.045 >>	826	4,197,803	19.7
	Female	1	24,980	4.0	2.9	2.8	0.478	338	4,183,053	8.1
Ovary	Female	6	24,980	24.0	18.1	4.2	0.499	532	4,183,053	12.7
Pancreas	Total	8	51,946	15.4	10.6	11.6	0.362	1,289	8,380,856	15.4
	Male	4	26,966	14.8	9.4	7.2	0.309	714	4,197,803	17.0
	Female	4	24,980	16.0	12.0	4.6	1.000	575	4,183,053	13.7
Prostate	Male	56	26,966	207.7	125.1	56.9	0.972	5,337	4,197,803	127.1
Stomach	Total	2	51,946	3.9	2.7	4.4	0.367	504	8,380,856	6.0
	Male	2	26,966	7.4	4.9	3.3	0.730	334	4,197,803	8.0
	Female	-	24,980	-	-	1.3	0.539	170	4,183,053	4.1
Testis	Male	3	26,966	11.1	12.8	1.5	0.393	273	4,197,803	6.5
Thyroid	Total	7	51,946	13.5	11.2	9.3	0.571	1,249	8,380,856	14.9
	Male	2	26,966	7.4	5.7	2.7	0.967	328	4,197,803	7.8
	Female	5	24,980	20.0	17.1	6.4	0.753	921	4,183,053	22.0
Pediatric Age 0 to 19	Total	2	10,269	19.5	19.6	1.8	1.000	425	2,407,685	17.7
	Male	1	5,353	18.7	18.7	1.0	1.000	219	1,228,828	17.8
	Female	1	4,916	20.3	20.6	0.8	1.000	206	1,178,857	17.5

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN VALLEY COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Valley County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	401	53,545	748.9	580.0	556.5	0.000 <<	68,699	8,535,210	804.9
	Male	223	27,762	803.3	561.8	334.3	0.000 <<	36,007	4,275,740	842.1
	Female	178	25,783	690.4	593.4	230.2	0.000 <<	32,692	4,259,470	767.5
All Malignant Cancers	Total	109	53,545	203.6	144.4	129.3	0.076	14,615	8,535,210	171.2
	Male	59	27,762	212.5	138.0	79.2	0.022 <<	7,919	4,275,740	185.2
	Female	50	25,783	193.9	148.9	52.8	0.768	6,696	4,259,470	157.2
Bladder	Total	6	53,545	11.2	8.4	3.9	0.386	460	8,535,210	5.4
	Male	4	27,762	14.4	9.7	3.3	0.855	346	4,275,740	8.1
	Female	2	25,783	7.8	6.3	0.8	0.417	114	4,259,470	2.7
Brain and Other Nervous System	Total	3	53,545	5.6	4.0	4.5	0.691	506	8,535,210	5.9
	Male	2	27,762	7.2	4.8	3.1	0.802	321	4,275,740	7.5
	Female	1	25,783	3.9	2.9	1.5	1.000	185	4,259,470	4.3
Breast	Total	9	53,545	16.8	12.0	9.5	1.000	1,090	8,535,210	12.8
	Male	-	27,762	-	-	0.1	1.000	11	4,275,740	0.3
	Female	9	25,783	34.9	26.6	8.6	0.975	1,079	4,259,470	25.3
Cervix	Female	1	25,783	3.9	3.0	0.6	0.937	80	4,259,470	1.9
Colorectal	Total	3	53,545	5.6	4.1	10.7	0.012 <<	1,243	8,535,210	14.6
	Male	1	27,762	3.6	2.4	6.6	0.021 <<	678	4,275,740	15.9
	Female	2	25,783	7.8	6.2	4.3	0.397	565	4,259,470	13.3
Corpus Uteri	Female	1	25,783	3.9	2.8	1.4	1.000	163	4,259,470	3.8
Esophagus	Total	3	53,545	5.6	3.9	4.3	0.752	473	8,535,210	5.5
	Male	2	27,762	7.2	4.6	3.9	0.500	387	4,275,740	9.1
	Female	1	25,783	3.9	2.9	0.7	0.993	86	4,259,470	2.0
Hodgkin Lymphoma	Total	-	53,545	-	-	0.2	1.000	23	8,535,210	0.3
	Male	-	27,762	-	-	0.1	1.000	9	4,275,740	0.2
	Female	-	25,783	-	-	0.1	1.000	14	4,259,470	0.3
Kidney	Total	3	53,545	5.6	3.9	3.2	1.000	352	8,535,210	4.1
	Male	1	27,762	3.6	2.3	2.2	0.710	216	4,275,740	5.1
	Female	2	25,783	7.8	6.0	1.1	0.575	136	4,259,470	3.2
Larynx	Total	-	53,545	-	-	0.6	1.000	63	8,535,210	0.7
	Male	-	27,762	-	-	0.5	1.000	53	4,275,740	1.2
	Female	-	25,783	-	-	0.1	1.000	10	4,259,470	0.2
Leukemia	Total	5	53,545	9.3	7.0	5.2	1.000	619	8,535,210	7.3
	Male	4	27,762	14.4	9.7	3.5	0.920	360	4,275,740	8.4
	Female	1	25,783	3.9	3.3	1.9	0.885	259	4,259,470	6.1
Liver and Bile Duct	Total	5	53,545	9.3	6.2	5.8	0.970	608	8,535,210	7.1
	Male	4	27,762	14.4	8.9	4.4	1.000	417	4,275,740	9.8
	Female	1	25,783	3.9	2.8	1.6	1.000	191	4,259,470	4.5
Lung and Bronchus	Total	17	53,545	31.7	21.8	27.6	0.043 <<	3,023	8,535,210	35.4
	Male	10	27,762	36.0	22.6	16.7	0.115	1,607	4,275,740	37.6
	Female	7	25,783	27.1	20.4	11.4	0.239	1,416	4,259,470	33.2
Melanoma of the Skin	Total	3	53,545	5.6	4.1	2.4	0.851	275	8,535,210	3.2
	Male	1	27,762	3.6	2.4	1.8	0.948	181	4,275,740	4.2
	Female	2	25,783	7.8	6.1	0.7	0.325	94	4,259,470	2.2
Myeloma	Total	3	53,545	5.6	4.0	2.9	1.000	332	8,535,210	3.9
	Male	1	27,762	3.6	2.4	2.0	0.829	198	4,275,740	4.6
	Female	2	25,783	7.8	6.1	1.0	0.546	134	4,259,470	3.1
Non-Hodgkin Lymphoma	Total	7	53,545	13.1	9.4	4.8	0.412	550	8,535,210	6.4
	Male	5	27,762	18.0	11.8	3.0	0.356	298	4,275,740	7.0
	Female	2	25,783	7.8	6.3	1.9	1.000	252	4,259,470	5.9
Oral Cavity and Pharynx	Total	2	53,545	3.7	2.6	2.1	1.000	234	8,535,210	2.7
	Male	1	27,762	3.6	2.3	1.6	1.000	159	4,275,740	3.7
	Female	1	25,783	3.9	3.0	0.6	0.896	75	4,259,470	1.8
Ovary	Female	2	25,783	7.8	5.7	3.0	0.852	364	4,259,470	8.5
Pancreas	Total	8	53,545	14.9	10.2	10.0	0.670	1,090	8,535,210	12.8
	Male	4	27,762	14.4	9.1	6.2	0.525	602	4,275,740	14.1
	Female	4	25,783	15.5	11.6	3.9	1.000	488	4,259,470	11.5
Prostate	Male	8	27,762	28.8	19.2	8.9	0.926	918	4,275,740	21.5
Stomach	Total	2	53,545	3.7	2.7	1.7	1.000	197	8,535,210	2.3
	Male	2	27,762	7.2	4.8	1.1	0.614	114	4,275,740	2.7
	Female	-	25,783	-	-	0.6	1.000	83	4,259,470	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Valley County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	78.2%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	14.0%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	17.1%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	14.0%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	0.0%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	45.4%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	26.4%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	.

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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WASHINGTON COUNTY CANCER PROFILE

A publication from the Cancer Data Registry of Idaho, Idaho Hospital Association.

Cancer Incidence 2014–2018
Cancer Mortality 2015–2019
BRFSS 2011–2019

CANCER

Cancer is a group of over 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. Cancer risk increases with age and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

An estimated 42% of all cancers in the United States are due to personal lifestyle factors, such as smoking and sedentary lifestyle, and are preventable (10.3322/caac.21440). Cancers are also attributable to environmental factors and gene-environment interactions. Other non-modifiable factors, such as age, sex, and family history of specific cancers, are also associated with cancer risk and can help identify people at elevated risk for developing cancer.

For some cancers, early detection can save lives. For example, colorectal cancer screening reduces mortality in adults aged 50–75 years (10.1001/jama.2016.3332). Improved primary prevention, early detection, and effective treatment can reduce the burden of cancer in Idaho.

RISK FACTORS AND INTERVENTIONS

Aging:
As the population ages, the number of new cancer cases and cancer deaths that occur each year will continue to increase. This trend could be reversed through significant improvements in primary prevention, early detection, and treatment.

Smoking:

Smoking and the use of smokeless tobacco are responsible for most cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States (PMID: 24455788).

Diet:
The U.S. Departments of Agriculture and Health and Human Services recommend the following dietary guidelines: eat a variety of foods; choose a diet with plenty of fruits, vegetables, and whole-grain products; limit the use of sugar, salt, and solid fats; and minimize alcoholic beverage consumption. For details, see https://www.dietaryguidelines.gov

Screening:
Early detection through screening reduces morbidity and mortality for cancers that can be diagnosed early and treated.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701
208-489-1380
https://www.idcancer.org

National Cancer Institute
Cancer Information Services
1-800-4CANCER
https://www.cancer.gov/contact/contact-center

American Cancer Society
https://www.cancer.org

CANCER INCIDENCE 2014–2018

Nearly one in two Idahoans are estimated to develop cancer during their lifetime. During 2014–2018, 42,577 cases of invasive cancer were diagnosed among Idaho residents, and 380 cases of invasive cancer were diagnosed among Washington County residents (Table 1).

Table 1: Incidence of All Cancers, Female Breast, Prostate, Lung and Bronchus, and Colorectal Cancers in Washington County and the State of Idaho, 2014–2018

Cancer Incidence 2014–2018	Washington County	State of Idaho
All Sites/Types	**380**	**42,577**
Female Breast	**44**	**6,210**
Prostate	**60**	**5,393**
Lung & Bronchus	**44**	**4,798**
Colorectal	**38**	**3,328**

Table 3 (*Cancer Incidence 2014–2018, Comparison between Washington County and the Remainder of the State of Idaho*) shows the number of observed cases, person-years, crude rates, age- and sex-adjusted rates, expected number of cases based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases in Washington County. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all cancers combined, 23 invasive cancer types, in situ breast cancer, non-malignant brain and other central nervous system tumors, and pediatric (0–19 years) cancer. Separate comparisons for males, females, and both sexes combined are included.

As shown in Table 3, the crude incidence rate of invasive cancer in Washington County was 759.3 cases per 100,000 person-years per year during 2014–2018. Comparing this crude rate with the crude rate for the remainder of Idaho (503.4) gives an estimate of the relative burden of disease in Washington County.

The age- and sex-adjusted incidence rate of invasive cancer in Washington County, all sites combined, was 545.1 cases per 100,000 persons per year during 2014–2018. There were more cases of cancer in Washington County (380) than expected (350.9) based upon rates in the remainder of the state, but the difference was not statistically significant.

There are many reasons why cancer incidence rates differ by county, such as the prevalence of smoking and other lifestyle factors, and access to healthcare.

CANCER MORTALITY 2015–2019

During 2015–2019, cancer was the second leading cause of death in Idaho; 14,724 Idaho residents and 135 Washington County residents died from cancer during this period. Most cancer deaths are from five primary sites: lung, colon, pancreas, female breast, and prostate (Table 2).

Table 2: Overall and Cancer Mortality in Washington County and the State of Idaho, 2015–2019

Mortality 2015–2019	Washington County	State of Idaho
All Deaths	**611**	**69,101**
Cancer Deaths	**135**	**14,724**
% of All Deaths	*22.1%*	*21.3%*
Lung & Bronchus	**29**	**3,040**
Colorectal	**13**	**1,246**
Pancreas	**15**	**1,098**
Female Breast	**6**	**1,088**
Prostate	**3**	**926**

Table 4 (*Cancer Mortality 2015–2019, Comparison between Washington County and the Remainder of the State of Idaho*) shows the number of observed deaths, person-years, crude rates, age- and sex-adjusted rates, expected number of deaths based upon age- and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected deaths for Washington County. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons between the county and the remainder of the state were made for all deaths, all cancer deaths, and 21 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Washington County, all sites combined, was 177.2 deaths per 100,000 persons per year during 2015–2019, compared with 170.9 for the remainder of the state. There were more cancer deaths in Washington County (135) than expected (130.2) based upon rates in the remainder of the state, but the difference was not statistically significant.

Statistical Note: Rates and percentages based upon 12 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Bureau of Vital Records and Health Statistics.

TABLE 3: CANCER INCIDENCE 2014–2018
COMPARISON BETWEEN WASHINGTON COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Washington County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All Sites Combined	Total	380	50,044	759.3	545.1	350.9	0.130	42,197	8,382,758	503.4
	Male	220	24,914	883.0	600.4	191.5	0.047 >>	21,950	4,199,855	522.6
	Female	160	25,130	636.7	480.1	161.3	0.959	20,247	4,182,903	484.0
Bladder	Total	16	50,044	32.0	21.0	18.5	0.661	2,042	8,382,758	24.4
	Male	12	24,914	48.2	30.4	15.0	0.543	1,590	4,199,855	37.9
	Female	4	25,130	15.9	11.0	3.9	1.000	452	4,182,903	10.8
Brain - malignant	Total	3	50,044	6.0	4.8	4.7	0.623	628	8,382,758	7.5
	Male	3	24,914	12.0	9.3	2.9	1.000	379	4,199,855	9.0
	Female	-	25,130	-	-	1.8	0.329	249	4,182,903	6.0
Brain and other CNS - non-malignant	Total	14	50,044	28.0	21.5	9.2	0.170	1,186	8,382,758	14.1
	Male	9	24,914	36.1	27.9	3.0	0.007 >>	386	4,199,855	9.2
	Female	5	25,130	19.9	15.5	6.2	0.833	800	4,182,903	19.1
Breast	Total	44	50,044	87.9	66.2	49.2	0.507	6,214	8,382,758	74.1
	Male	-	24,914	-	-	0.4	1.000	48	4,199,855	1.1
	Female	44	25,130	175.1	134.9	48.1	0.618	6,166	4,182,903	147.4
Breast - in situ	Total	10	50,044	20.0	15.6	8.3	0.651	1,092	8,382,758	13.0
	Male	-	24,914	-	-	0.0	1.000	5	4,199,855	0.1
	Female	10	25,130	39.8	31.7	8.2	0.614	1,087	4,182,903	26.0
Cervix	Female	2	25,130	8.0	7.7	1.8	1.000	286	4,182,903	6.8
Colorectal	Total	38	50,044	75.9	54.3	27.5	0.065	3,290	8,382,758	39.2
	Male	18	24,914	72.2	50.5	14.9	0.483	1,753	4,199,855	41.7
	Female	20	25,130	79.6	58.2	12.6	0.066	1,537	4,182,903	36.7
Corpus Uteri	Female	7	25,130	27.9	21.6	9.7	0.496	1,251	4,182,903	29.9
Esophagus	Total	11	50,044	22.0	15.1	4.2	0.008 >>	481	8,382,758	5.7
	Male	8	24,914	32.1	21.4	3.6	0.060	403	4,199,855	9.6
	Female	3	25,130	11.9	8.3	0.7	0.062	78	4,182,903	1.9
Hodgkin Lymphoma	Total	1	50,044	2.0	1.9	1.2	1.000	187	8,382,758	2.2
	Male	-	24,914	-	-	0.7	1.000	106	4,199,855	2.5
	Female	1	25,130	4.0	3.7	0.5	0.808	81	4,182,903	1.9
Kidney and Renal Pelvis	Total	13	50,044	26.0	18.8	13.0	1.000	1,578	8,382,758	18.8
	Male	10	24,914	40.1	28.3	8.6	0.725	1,024	4,199,855	24.4
	Female	3	25,130	11.9	8.8	4.5	0.688	554	4,182,903	13.2
Larynx	Total	4	50,044	8.0	5.6	1.7	0.194	202	8,382,758	2.4
	Male	3	24,914	12.0	8.1	1.4	0.340	160	4,199,855	3.8
	Female	1	25,130	4.0	3.0	0.3	0.573	42	4,182,903	1.0
Leukemia	Total	15	50,044	30.0	21.3	12.6	0.573	1,502	8,382,758	17.9
	Male	7	24,914	28.1	19.4	7.7	0.992	897	4,199,855	21.4
	Female	8	25,130	31.8	23.2	5.0	0.266	605	4,182,903	14.5
Liver and Bile Duct	Total	7	50,044	14.0	10.0	6.5	0.953	778	8,382,758	9.3
	Male	4	24,914	16.1	11.2	4.8	0.963	561	4,199,855	13.4
	Female	3	25,130	11.9	8.7	1.8	0.538	217	4,182,903	5.2
Lung and Bronchus	Total	44	50,044	87.9	58.1	42.9	0.911	4,754	8,382,758	56.7
	Male	20	24,914	80.3	50.8	23.1	0.603	2,468	4,199,855	58.8
	Female	24	25,130	95.5	65.7	20.0	0.421	2,286	4,182,903	54.7
Melanoma of the Skin	Total	14	50,044	28.0	21.1	20.8	0.155	2,625	8,382,758	31.3
	Male	11	24,914	44.2	31.1	13.1	0.681	1,559	4,199,855	37.1
	Female	3	25,130	11.9	9.7	7.9	0.093	1,066	4,182,903	25.5
Myeloma	Total	10	50,044	20.0	13.3	5.8	0.145	650	8,382,758	7.8
	Male	9	24,914	36.1	23.1	3.6	0.024 >>	390	4,199,855	9.3
	Female	1	25,130	4.0	2.8	2.3	0.681	260	4,182,903	6.2
Non-Hodgkin Lymphoma	Total	22	50,044	44.0	31.1	15.4	0.131	1,822	8,382,758	21.7
	Male	15	24,914	60.2	41.4	9.1	0.088	1,051	4,199,855	25.0
	Female	7	25,130	27.9	20.1	6.4	0.917	771	4,182,903	18.4
Oral Cavity and Pharynx	Total	10	50,044	20.0	14.6	9.5	0.966	1,170	8,382,758	14.0
	Male	7	24,914	28.1	20.0	7.0	1.000	834	4,199,855	19.9
	Female	3	25,130	11.9	9.0	2.7	0.998	336	4,182,903	8.0
Ovary	Female	6	25,130	23.9	18.3	4.2	0.482	532	4,182,903	12.7
Pancreas	Total	17	50,044	34.0	22.9	11.3	0.137	1,280	8,382,758	15.3
	Male	11	24,914	44.2	29.0	6.4	0.121	707	4,199,855	16.8
	Female	6	25,130	23.9	16.5	5.0	0.766	573	4,182,903	13.7
Prostate	Male	60	24,914	240.8	161.3	47.2	0.082	5,333	4,199,855	127.0
Stomach	Total	3	50,044	6.0	4.2	4.3	0.746	503	8,382,758	6.0
	Male	2	24,914	8.0	5.4	2.9	0.874	334	4,199,855	8.0
	Female	1	25,130	4.0	2.8	1.4	1.000	169	4,182,903	4.0
Testis	Male	2	24,914	8.0	9.6	1.4	0.784	274	4,199,855	6.5
Thyroid	Total	3	50,044	6.0	5.5	8.2	0.076	1,253	8,382,758	14.9
	Male	2	24,914	8.0	6.8	2.3	1.000	328	4,199,855	7.8
	Female	1	25,130	4.0	3.8	5.9	0.039 <<	925	4,182,903	22.1
Pediatric Age 0 to 19	Total	2	12,926	15.5	15.4	2.3	1.000	425	2,405,028	17.7
	Male	2	6,565	30.5	30.2	1.2	0.656	218	1,227,616	17.8
	Female	-	6,361	-	-	1.1	0.656	207	1,177,412	17.6

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.

TABLE 4: CANCER MORTALITY 2015–2019
COMPARISON BETWEEN WASHINGTON COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Washington County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	611	50,283	1,215.1	798.5	613.8	0.932	68,489	8,538,472	802.1
	Male	322	25,033	1,286.3	836.9	322.9	0.989	35,908	4,278,469	839.3
	Female	289	25,250	1,144.6	754.0	293.1	0.839	32,581	4,260,003	764.8
All Malignant Cancers	Total	135	50,283	268.5	177.2	130.2	0.697	14,589	8,538,472	170.9
	Male	71	25,033	283.6	179.3	73.2	0.859	7,907	4,278,469	184.8
	Female	64	25,250	253.5	173.8	57.7	0.443	6,682	4,260,003	156.9
Bladder	Total	6	50,283	11.9	7.4	4.4	0.547	460	8,538,472	5.4
	Male	2	25,033	8.0	4.8	3.4	0.676	348	4,278,469	8.1
	Female	4	25,250	15.8	10.2	1.0	0.042 >>	112	4,260,003	2.6
Brain and Other Nervous System	Total	2	50,283	4.0	2.9	4.0	0.463	507	8,538,472	5.9
	Male	2	25,033	8.0	5.7	2.6	1.000	321	4,278,469	7.5
	Female	-	25,250	-	-	1.4	0.470	186	4,260,003	4.4
Breast	Total	6	50,283	11.9	8.2	9.4	0.351	1,093	8,538,472	12.8
	Male	-	25,033	-	-	0.1	1.000	11	4,278,469	0.3
	Female	6	25,250	23.8	16.8	9.1	0.401	1,082	4,260,003	25.4
Cervix	Female	-	25,250	-	-	0.6	1.000	81	4,260,003	1.9
Colorectal	Total	13	50,283	25.9	17.5	10.7	0.567	1,233	8,538,472	14.4
	Male	5	25,033	20.0	13.3	5.9	0.911	674	4,278,469	15.8
	Female	8	25,250	31.7	21.6	4.9	0.237	559	4,260,003	13.1
Corpus Uteri	Female	1	25,250	4.0	2.7	1.4	1.000	163	4,260,003	3.8
Esophagus	Total	7	50,283	13.9	9.3	4.1	0.246	469	8,538,472	5.5
	Male	5	25,033	20.0	13.0	3.5	0.534	384	4,278,469	9.0
	Female	2	25,250	7.9	5.4	0.7	0.336	85	4,260,003	2.0
Hodgkin Lymphoma	Total	-	50,283	-	-	0.2	1.000	23	8,538,472	0.3
	Male	-	25,033	-	-	0.1	1.000	9	4,278,469	0.2
	Female	-	25,250	-	-	0.1	1.000	14	4,260,003	0.3
Kidney	Total	3	50,283	6.0	3.9	3.2	1.000	352	8,538,472	4.1
	Male	3	25,033	12.0	7.7	2.0	0.621	214	4,278,469	5.0
	Female	-	25,250	-	-	1.2	0.574	138	4,260,003	3.2
Larynx	Total	3	50,283	6.0	3.9	0.5	0.035 >>	60	8,538,472	0.7
	Male	3	25,033	12.0	7.7	0.5	0.023 >>	50	4,278,469	1.2
	Female	-	25,250	-	-	0.1	1.000	10	4,260,003	0.2
Leukemia	Total	2	50,283	4.0	2.6	5.6	0.159	622	8,538,472	7.3
	Male	-	25,033	-	-	3.4	0.066	364	4,278,469	8.5
	Female	2	25,250	7.9	5.3	2.3	1.000	258	4,260,003	6.1
Liver and Bile Duct	Total	6	50,283	11.9	8.1	5.3	0.858	607	8,538,472	7.1
	Male	2	25,033	8.0	5.3	3.7	0.563	419	4,278,469	9.8
	Female	4	25,250	15.8	11.1	1.6	0.156	188	4,260,003	4.4
Lung and Bronchus	Total	29	50,283	57.7	37.3	27.4	0.813	3,011	8,538,472	35.3
	Male	13	25,033	51.9	32.2	15.1	0.700	1,604	4,278,469	37.5
	Female	16	25,250	63.4	42.6	12.4	0.373	1,407	4,260,003	33.0
Melanoma of the Skin	Total	2	50,283	4.0	2.8	2.3	1.000	276	8,538,472	3.2
	Male	1	25,033	4.0	2.7	1.6	1.000	181	4,278,469	4.2
	Female	1	25,250	4.0	2.9	0.8	1.000	95	4,260,003	2.2
Myeloma	Total	3	50,283	6.0	3.7	3.1	1.000	332	8,538,472	3.9
	Male	2	25,033	8.0	4.8	1.9	1.000	197	4,278,469	4.6
	Female	1	25,250	4.0	2.6	1.2	1.000	135	4,260,003	3.2
Non-Hodgkin Lymphoma	Total	10	50,283	19.9	12.6	5.1	0.068	547	8,538,472	6.4
	Male	6	25,033	24.0	14.9	2.8	0.128	297	4,278,469	6.9
	Female	4	25,250	15.8	10.2	2.3	0.399	250	4,260,003	5.9
Oral Cavity and Pharynx	Total	1	50,283	2.0	1.3	2.1	0.783	235	8,538,472	2.8
	Male	1	25,033	4.0	2.6	1.4	1.000	159	4,278,469	3.7
	Female	-	25,250	-	-	0.7	1.000	76	4,260,003	1.8
Ovary	Female	4	25,250	15.8	11.1	3.1	0.730	362	4,260,003	8.5
Pancreas	Total	15	50,283	29.8	19.6	9.7	0.137	1,083	8,538,472	12.7
	Male	12	25,033	47.9	30.7	5.4	0.020 >>	594	4,278,469	13.9
	Female	3	25,250	11.9	8.0	4.3	0.750	489	4,260,003	11.5
Prostate	Male	3	25,033	12.0	7.0	9.2	0.036 <<	923	4,278,469	21.6
Stomach	Total	3	50,283	6.0	4.0	1.7	0.490	196	8,538,472	2.3
	Male	1	25,033	4.0	2.7	1.0	1.000	115	4,278,469	2.7
	Female	2	25,250	7.9	5.4	0.7	0.316	81	4,260,003	1.9

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county use age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 12 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from BVRHS official statistics due to differences in methodology.

Data Source: Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, 2020.

Cancer Screening and Risk Factors

The Bureau of Vital Records and Health Statistics (BVRHS), Division of Public Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys (BRFS) since 1984. These surveys are conducted with randomly selected adult Idahoans to measure population prevalences of risk factors for the major causes of death, including cancer. BVRHS provided data sets containing Behavioral Risk Factor Surveillance System (BRFSS) data from 2011 through 2019 to CDRI staff, who performed the analyses reported in these *County Profiles*. Analysis weights were poststratified to 2019 population estimates by age group, sex, and county, beginning with the BRFSS raked weights. Not all questions were asked in all years. A minimum of 50 respondents was required to generate county-level statistics. Results may differ from IDHW reports due to differences in methods. Cancer screening and risk factor measures were selected to assist in monitoring *Comprehensive Cancer Alliance for Idaho* objectives. Wald log-linear chi-square statistics were used to test for independence of the selected measures and other variables, such as age and race, taking the complex survey design into account.

Cancer Screening and Risk Factor Prevalence Estimates, 2011–2019

Measure	State of Idaho	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	Washington County
Access to Care									
Have Health Insurance, Age <65 (2014–2019)	80.9%	80.2%	84.5%	74.3%	84.1%	74.9%	83.7%	83.7%	76.8%
Not See Doctor Due to Cost in Past Year (2015–2019)	14.1%	13.0%	12.7%	16.9%	13.8%	13.7%	12.8%	14.2%	16.6%
Cancer Screening									
Mammogram Past 2 Years, Age 50–74 (2014, 2016, 2018)	67.5%	66.9%	71.8%	63.4%	72.6%	61.3%	64.3%	67.0%	.
Pap Test Past 3 Years, Cervix Intact Age 21–65 (2016, 2018)	72.7%	74.7%	75.2%	72.2%	73.5%	71.3%	72.9%	68.7%	.
Colorectal Cancer Screening, Age 50–75 (2016, 2018)	65.2%	65.3%	70.8%	62.0%	68.1%	60.5%	62.1%	65.3%	.
Tobacco Use									
Current Smoker (2014–2019)	14.6%	18.0%	15.0%	16.5%	13.1%	16.2%	14.4%	10.7%	24.0%
Current Smokeless Tobacco User, Males (2014–2019)	9.3%	10.7%	14.1%	10.5%	8.2%	8.6%	9.2%	6.8%	10.7%
Other Cancer-Related									
Sunburn in Previous 12 Months (2018)	47.6%	42.2%	48.7%	41.5%	50.7%	42.7%	49.8%	56.5%	.
Artificial Tanning Appliance Use (2011, 2014, 2016)	4.4%	5.5%	3.3%	3.3%	3.4%	4.3%	5.7%	6.8%	5.3%
Healthy Weight by Body Mass Index, Age 20+ (2014–2019)	32.7%	34.3%	32.6%	27.8%	36.3%	30.9%	28.4%	33.1%	25.5%
Meet Physical Activity Guidelines (2011, 2013, 2015, 2017, 2019)	21.9%	22.8%	19.4%	20.0%	25.2%	19.4%	20.4%	20.2%	23.1%
Home Ever Tested for Radon (2016, 2018)	22.3%	28.9%	19.0%	16.1%	24.1%	19.8%	23.1%	22.1%	16.3%

Access to Care

Have Health Insurance – 2014–2019
Statewide, 80.9% of adults aged 18–64 reported having health care coverage. Health care coverage differed significantly by race/ethnicity, with 84.3% of white non-Hispanics, compared to 59.0% of Hispanics and 80.4% of Native Americans, having health insurance. Spanish-speaking respondents were significantly less likely to be insured (32.4%) than English-speaking respondents (82.6%). Health care coverage differed significantly by age of respondent, with 76.0% of persons aged 30–39, and 86.6% of persons aged 50–64, having health insurance. Health care coverage differed significantly by county, with a range of 60.5% in Adams County to 91.8% in Oneida County having health insurance.

Not See Doctor Due to Cost in Past Year – 2015–2019
Statewide, 14.1% of adults aged 18+ reported they needed to see a doctor but could not because of cost sometime in the past 12 months. Inability to see a doctor due to cost differed significantly by race/ethnicity (12.9% of white non-Hispanics, 21.2% of Hispanics, and 23.3% of Native Americans). Inability to see a doctor due to cost differed significantly by annual household income (26.6% for less than $15,000, 6.6% for greater than $50,000). Inability to see a doctor due to cost differed significantly by county, with a range of 7.2% in Butte County to 22.0% in Power County.

Cancer Screening

Mammogram – 2014, 2016, 2018
Statewide, 67.5% of women aged 50–74 reported having a mammogram in the past 2 years. Insured women were about twice as likely to have had a mammogram in the past 2 years (70.7% versus 33.8%). Mammography rates differed significantly by county, with a range in screening of 47.3% in Gooding County to 77.2% in Nez Perce County. In 2018, Idaho ranked 49th among states and the District of Columbia for mammography screening rates among women aged 50–74 and 50th among ages 40+.

Pap Test – 2016, 2018
Statewide, 72.7% of women with an intact cervix and aged 21–65 reported having a Pap test in the past 3 years. Women with health insurance were significantly more likely to have timely Pap screening than uninsured women (77.4% versus 54.5% screened in the past 3 years). Pap screening differed significantly by county, with a range of 62.4% in Idaho County to 78.8% in Latah County. In 2018, Idaho ranked 51st among states and the District of Columbia for Pap screening rate.

Colorectal Cancer Screening – 2016, 2018
Statewide, 65.2% of adults aged 50–75 reported receiving colorectal cancer screening based on the most recent guidelines.** Persons with health insurance were over twice as likely to be current for colorectal cancer screening. In 2018, Idaho ranked 41st among states and the District of Columbia in the percentage of adults aged 50–75 and older who reported being up-to-date for colorectal cancer screening.

** Current for colorectal cancer screening means a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

Cancer Screening and Risk Factors

Tobacco Use

Current Smoking – 2014–2019
Statewide, 14.6% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 19.6% of persons aged 30–39, and 8.2% of persons aged 65 and older reporting current smoking. Smoking prevalence was lower among white non-Hispanics (14.7%) than among Native Americans (31.6%). Smoking prevalence differed significantly by county, with a range of 3.6% in Madison County to 30.8% in Elmore County. Counties with higher rates of current smoking had higher rates of lung cancer.

Smokeless Tobacco Use, Males – 2014–2019
Statewide, 9.3% of males aged 18 and older were current users of smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 12.3% of males aged 30–39 to 4.1% of males aged 65 and older. Smokeless tobacco use differed significantly by county, with a range of 3.7% in Franklin County to 22.2% in Shoshone County. Counties with higher rates of smokeless tobacco use had higher rates of oral cavity & pharynx cancer.

Other Cancer-Related

Sun Exposure – 2018
Statewide, 47.6% of adults aged 18 and older reported having sunburn in the past 12 months. Sunburn rates were higher for white non-Hispanics (49.4%) and Native Americans (48.4%) than for Hispanics (35.3%). Sunburn rates differed significantly by age group, with 67.2% of persons aged 30–39 and 17.9% of persons aged 65 and older having sunburn in the past 12 months. Sunburn rates differed significantly by county, with a range of 36.6% in Idaho County to 72.8% in Madison County having sunburn in the past 12 months.

Artificial Tanning Appliance Use – 2011, 2014, 2016
Statewide, 4.4% of adults aged 18 and older reported using an artificial tanning appliance, such as a tanning bed, in the past 12 months. Females (6.7%) were significantly more likely than males (2.1%) to have used an artificial tanning appliance in the past 12 months. Tanning appliance use differed significantly by age group, with 8.7% of persons aged 18–29 and 0.9% of persons aged 65 and older, using an appliance in the past 12 months. Tanning appliance use differed by county, with a range of less than 1% in Oneida, Power, and Valley Counties to over 8% in Bear Lake, Fremont, and Madison Counties using an artificial tanning appliance in the past 12 months.

Healthy Weight by Body Mass Index – 2014–2019
Statewide, 32.7% of adults aged 20 and older were in the healthy weight range as measured by body mass index (BMI 18.5–24.9). BMI differed significantly by race/ethnicity, with 33.2% of white non-Hispanics, compared to 27.8% of Hispanics and 26.7% of Native Americans, being in the healthy weight range. Males (26.0%) were significantly less likely to be in the healthy weight range than females (39.3%). BMI differed significantly by age of respondent, with 44.6% of persons aged 18–29, and 27.3% of persons aged 50–64, being in the healthy weight range. BMI differed significantly by county, with a range of 21.1% in Minidoka County to 51.0% in Blaine County of adults being in the healthy weight range.

Physical Activity – 2011, 2013, 2015, 2017, 2019
Statewide, 21.9% of adults aged 18 and older met aerobic and strength physical activity guidelines during the past month or week. Physical activity differed significantly by age of respondent, with 26.3% of persons aged 18–29, and 19.1% of persons aged 50–64, meeting guidelines. The percentage of adults meeting physical activity guidelines differed significantly by county, with a range of 9.6% in Franklin County to 30.5% in Blaine County.

Home Radon Testing – 2016, 2018
Statewide, 22.3% of adults have ever tested their house for radon. Radon test usage varied significantly by race/ethnicity, with 24.4% of white non-Hispanics, 5.2% of Hispanics, and 26.2% of Native Americans having ever tested their house for radon. Radon test usage was higher for persons aged 50+ than for younger persons. Home radon testing differed significantly by county, with a range of 7.7% in Cassia County to 57.7% in Blaine County.

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