Annual Report of the
Cancer Data Registry of Idaho

Cancer in Idaho – 2021

December 2023

CDRI Cancer Data Registry of Idaho

Idaho Hospital Association

IDAHO DEPARTMENT OF HEALTH & WELFARE

CANCER IN IDAHO – 2021

December 2023

**A Publication of the
Cancer Data Registry of Idaho**

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PREFACE

"Cancer in Idaho – 2021," the forty-fifth annual report of the Cancer Data Registry of Idaho (CDRI), describes the state of cancer among Idaho residents, with a focus on cancer cases diagnosed during 2021. The data can be used by public health and medical professionals, the Comprehensive Cancer Alliance for Idaho, and others to effectively plan services, appropriately allocate health resources, develop and measure prevention and intervention strategies, and identify high-risk populations in Idaho.

ACKNOWLEDGMENTS

SUGGESTED CITATION:
Johnson CJ, Morawski BM, Rycroft RK. *Cancer in Idaho – 2021*. Boise, ID: Cancer Data Registry of Idaho; December 2023.

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BACKGROUND

Introduction to the Cancer Data Registry of Idaho (CDRI)

Purpose of the Registry

Population-based cancer registries are essential for assessing the extent of cancer burden in a specified geographic area. The Cancer Data Registry of Idaho (CDRI) is a population-based cancer registry that collects incidence and survival data on all cancer patients who are Idaho residents and out-of-state patients who are diagnosed or treated for cancer in the state of Idaho. The goals of CDRI are to:

- determine the incidence of cancer in the state of Idaho with respect to geographic, demographic, and community characteristics;
- monitor trends and patterns of cancer incidence over time;
- identify high-risk populations;
- serve as a resource for conducting epidemiologic studies; and
- provide data to assist public health officials, hospital administrators, and physicians to effectively plan services, appropriately allocate health resources, and develop and measure prevention and intervention strategies.

CDRI works closely with the Comprehensive Cancer Alliance for Idaho (CCAI), the Idaho Comprehensive Cancer Control Program, and other organizations to lessen the burden of cancer in Idaho.

History and Funding of the Registry

CDRI was established in 1969 and became population-based in 1971. The Idaho State Legislature has provided guidelines for the establishment, requirements, and funding of the statewide cancer registry. The operations of the registry are mandated by Idaho Code 57-1703 through 57-1707. Funding is appropriated in Idaho Code 57-1701 and 63-2520, which delineates that a portion of the cigarette tax be dedicated to fund the statewide cancer registry. Through the National Program of Cancer Registries (NPCR), additional funding has been awarded to CDRI from the Centers for Disease Control and Prevention (CDC) to enhance

timely, complete, and accurate data collection, computerization, and reporting of reliable data since 1994. In May 2018, the National Cancer Institute (NCI) awarded the Idaho Hospital Association (IHA) a contract to operate CDRI as part of the Surveillance, Epidemiology and End Results (SEER) Program.

Collection of Data

Each Idaho hospital, outpatient surgery center, and pathology laboratory is responsible for the complete ascertainment and reporting of all data on cancer diagnoses and treatments provided in its facility within six months of diagnosis. Sources for identifying eligible cases include:

- hospitals;
- outpatient surgery centers;
- private pathology laboratories;
- free-standing radiation centers;
- physicians (for patients not receiving cancer diagnoses or treatment in the above sources);
- death certificates; and
- other state cancer registries reporting an Idaho resident with cancer (as negotiated).

When a cancer case is reported from more than one source, the information is consolidated into one record.

Reported cases contain the following data:

- patient demographics (including geographic place of residence at time of cancer diagnosis);
- description of cancer (including date of diagnosis, primary site, metastatic sites, histology, extent of disease, etc.);
- first course of treatment; and
- follow-up data for purpose of calculating survival rates.

Primary site, behavior, grade, and histology were coded according to the *International Classification of Diseases for Oncology, 3rd edition*.[1] Stage of disease variables were coded using SEER's *Summary Staging Manual 2018* and the *AJCC Manual for Staging of Cancer, 8th edition*.[2,3] All other variables were coded

following the rules of the North American Association of Central Cancer Registries (NAACCR), the National Cancer Institute's SEER program, and the American College of Surgeons Commission on Cancer.[4–6] Rules for coding multiple primary cases and hematopoietic and lymphoid neoplasms were applied based on the year of diagnosis.[7,8]

Behavior and Stage

Behavior refers to how a tumor acts within the body. Behavior is classified as follows:

◆ benign (tumor may grow in place without the potential for spread);
◆ borderline (uncertain whether benign or malignant, but low malignant potential);
◆ in situ (cancerous, but cells not yet grown beyond basement membrane);
◆ malignant (cells have invaded beyond the basement membrane).

Benign and borderline cases together may also be called "non-malignant."

Staging measures the extent of disease at the time of initial diagnosis. Summary staging attempts to group cases with similar prognoses into categories of:

◆ in situ (non-invasive);
◆ localized (cancer confined to the primary site);
◆ regional (direct extension of tumor to adjacent organs, tissues, or lymph nodes);
◆ distant (metastasis to tissues or lymph nodes remote from the primary site); or
◆ unstaged.

Reportable Cases

All in situ and malignant neoplasms are reportable to CDRI. The database includes all cases of carcinoma, sarcoma, melanoma, lymphoma, and leukemia diagnosed by histology/cytology, radiology, laboratory testing, clinical observation, and autopsy.

Benign tumors of the brain, meninges, spinal cord, any other part of the central nervous system, pineal gland, and pituitary gland are also reportable.

Basal and squamous cell carcinomas of the skin are excluded except when occurring on a mucous membrane.

Under Idaho Code and as recommended by NAACCR, cervix in situ cases are not currently reportable.

Confidentiality of Data

Idaho state law ensures the protection of confidential data and restricts the release of identifying data. Only aggregate data are published. The same law protects report sources from any liability for reporting confidential data to CDRI. Persons with access to confidential data are required to sign a pledge of confidentiality and are subject to penalty if they, through negligence or willful misconduct, disclose confidential data.

Quality Assurance

To assure validity and reliability of data presented, CDRI has many mechanisms in place to check data for quality and completeness. CDRI uses SEER*DMS, SEER*Edits, and GenEDITS Plus software, which apply algorithms that check the values of data fields against an encoded set of acceptable possible values and flags the acceptability of coded data. Edits include field edits, inter-field edits, and inter-record edits. Edits check for unlikely sex/ site, site/histology, and site/age combinations. Records are also routinely checked for duplicate entries using manual and probabilistic record linkage methods.

CDRI has met SEER and NPCR program standards and is recognized as a "gold standard registry" for data quality, completeness, and timeliness as designated by NAACCR. These designations allow Idaho data to be included in United States Cancer Statistics and all NAACCR volumes of "Cancer Incidence in North America." Idaho data have been included in SEER-21 statistics published by NCI since April 2019.

Executive Summary

Data Presentation

This report is composed of ten sections. Section I focuses on the 23 most common cancer sites and all sites combined and presents age-adjusted incidence rates, numbers of cases, numbers of deaths, case counts by county, stage of disease at time of diagnosis, risk factors, special notes, age-adjusted incidence rate comparisons by health district, and age-specific rates by gender. Comparison rates from United States Cancer Statistics (USCS) are provided, which are calculated from SEER and the Centers for Disease Control and Prevention's National Program of Cancer Registries (NPCR) data.[9] Only registries whose data meet specified data quality criteria are included in USCS statistics. For the comparison USCS data included in this report (2019 incidence), the District of Columbia and all U.S. states except Nevada are included. Section II describes incidence data by site, subsite, and gender for invasive and in situ cases. For completeness, site groups include categories for mesothelioma and Kaposi sarcoma histologies. Section III describes mortality data by site and gender. Section IV contains a table of age-specific cancer rates by site and gender for 2017–2021. Section V contains a table of observed versus expected numbers of cancer cases by health district.‡ Section VI contains tables of age-specific risks of being diagnosed with and dying from cancer for males and females. Section VII shows cancer incidence trends in Idaho for the period 1975–2021. Section VIII shows cancer incidence rates by race and ethnicity for the period 2017–2021. Section IX shows cancer survival statistics for Idahoans diagnosed during the period 2014–2020 with follow-up through 2021. Section X shows maps and figures of cancer incidence and mortality rates by county for the period 2017–2021.

Descriptive Summary by Gender and Race and Ethnicity

The data presented in this report cover cancer cases diagnosed among Idaho residents from January 1, 2021 to December 31, 2021, inclusive. During this period, there were 11,022 cases of in situ and invasive cancer diagnosed among Idaho residents (5,735 among males and 5,287 among females). By race and ethnicity, there were 10,019 cases among non-Hispanic Whites, 510 among Hispanic Whites, 43 cases among Blacks, 101 cases among Native Americans, 121 cases among Asians/Pacific Islanders, and 228 cases of other or unknown race. The number of cancer cases treated in outpatient settings and reported only by pathology laboratories has increased over time; these cases are more likely to have missing race and ethnicity information. To improve the accuracy of race information collected on Native Americans, CDRI has conducted matches with the Indian Health Service and Northwest Portland Area Indian Health Board. To improve the accuracy of ethnicity information, CDRI uses the NAACCR Hispanic Identification Algorithm to identify Hispanics by birthplace/race/surname. For more detailed statistics by race and ethnicity, see Section VIII of this report and *Cancer in North America (CiNA) Explorer*.[10]

Trends

From 2020 to 2021, there was a 3.9% increase in the age-adjusted cancer incidence rates in Idaho as published in CDRI's 2020 and 2021 annual reports. Disruptions caused by the

‡For more detailed statistics by county, see Section X and CDRI's *County Cancer Profiles* at https://www.idcancer.org/ContentFiles/special/CountyProfiles/CountyMap.htm.

COVID-19 pandemic greatly impacted cancer healthcare services and the cancer statistics in 2020 and possibly also 2021. Disruptions in access to care, including cancer screenings, resulted in decreases in timely diagnosis and thus 2020 incidence for several cancers amenable to screening, some of which rebounded in 2021. For example, colorectal cancer incidence increased 17.5% from 2020 to 2021. For cancer sites not amenable to screening, there may have been delayed diagnoses. For example, ovarian cancer increased 23.9% from 2020 to 2021. These impacts of the pandemic on cancer incidence are in addition to changes in health policy and screening recommendations that may have impacted cancer incidence since 2013. In May 2012, the United States Preventive Service Task Force issued a recommendation against Prostate Specific Antigen (PSA)-based screening for prostate cancer in all age groups. During 2007–2014, prostate cancer incidence rates decreased about 7% per year in Idaho — similar to national trends — but rebounded during 2015–2021. See <u>Section VII</u> for more detailed long-term trends in cancer incidence.

Population Description

The population of the state of Idaho on July 1, 2021, was estimated to be 1,904,314 (959,021 males and 945,293 females). Population estimates were obtained from the U.S. Census Bureau, Population Division.[11] Idaho is composed of 44 counties, which are grouped into seven health districts. The composition of the health districts and their population estimates by gender as used in this report are shown below:

<u>Health District</u>	<u>Counties</u>	<u>Male</u>	<u>Female</u>
District 1	Benewah, Bonner, Boundary, Kootenai, Shoshone	133,487	132,511
District 2	Clearwater, Latah, Lewis, Idaho, Nez Perce	57,605	54,980
District 3	Adams, Canyon, Gem, Owyhee, Payette, Washington	159,468	158,382
District 4	Ada, Boise, Elmore, Valley	284,863	277,377
District 5	Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka, Twin Falls	106,634	104,543
District 6	Bannock, Bear Lake, Bingham, Butte, Caribou, Franklin, Oneida, Power	91,199	89,590
District 7	Bonneville, Clark, Custer, Fremont, Jefferson, Lemhi, Madison, Teton	125,765	127,910

A map of Idaho counties and health districts can be found in **Appendix A**.

SUMMARY MEASURES OF CANCER BURDEN IN IDAHO — 2021

Primary Site	Incident Cases	Deaths	Median Age at Diagnosis	Median Age at Death	Estimated 10-Year Limited Duration Prevalence Count	Total Number of YPLL Before Age 75	Average Number of YPLL per Death, Persons Aged <75 Years	% Change Incidence Rate, 2020 to 2021
All Sites	9,972	3,126	68.0	73.0	50,000	18,632	10.4	3.9%
Bladder	436	102	74.0	79.5	2,600	244	6.2	2.4%
Brain	133	92	60.0	65.0	400	1,361	18.4	15.5%
Breast	1,478	241	66.0	72.0	10,100	1,760	12.0	-1.0%
Cervix	50	18	52.0	52.0	400	327	23.4	7.6%
Colorectal	837	305	66.0	73.0	3,800	2,080	12.0	17.5%
Corpus Uteri	286	31	65.0	72.0	2,000	188	9.4	1.2%
Esophagus	102	92	71.0	70.5	200	588	9.3	5.8%
Hodgkin Lymphoma	42	5	27.5	67	400	-	-	-12.8%
Kidney and Renal Pelvis	421	71	67.0	73.0	2,200	404	10.9	7.2%
Larynx	53	20	69.0	64.0	200	172	12.3	25.6%
Leukemia	354	145	69.0	77.0	1,800	746	10.8	-2.5%
Liver and Bile Duct	163	109	67.0	70.0	400	755	10.1	-15.3%
Lung and Bronchus	979	563	72.0	73.0	2,500	2,694	8.2	3.0%
Melanoma of Skin	728	63	68.0	73.0	4,300	396	9.2	9.6%
Myeloma	150	65	68.0	77.0	700	237	7.6	0.3%
Non-Hodgkin Lymphoma	433	129	69.0	77.0	2,300	531	9.2	2.7%
Oral Cavity and Pharynx	278	58	67.0	71.5	1,500	410	10.5	3.3%
Ovary	125	81	64.0	71.0	500	551	11.0	23.9%
Pancreas	311	257	70.0	71.0	400	1,516	9.2	-9.3%
Prostate	1,373	209	68.0	79.0	9,600	459	5.9	-2.2%
Stomach	98	43	71.0	66.0	300	502	16.7	-2.7%
Testis	68	4	33.0	46	500	-	-	34.4%
Thyroid	227	10	52.0	72.5	2,300	69	11.5	-13.9%

Notes:

Incident cases include all invasive and bladder in situ cases newly diagnosed among Idaho residents in 2021.

Years of potential life lost (YPLL) is a statistic used to measure the number of years of life lost in a population when persons in that population die prematurely (standard of 75 years of age used for this table).

Mortality-related statistics are suppressed for Hodgkin lymphoma and testis primary sites due to small number of deaths.

Technical Notes

National Program of Cancer Registries

The Centers for Disease Control and Prevention's National Program of Cancer Registries (NPCR) supports central cancer registries in 46 states (including Idaho), the District of Columbia, Puerto Rico, the U.S. Pacific Island Jurisdictions, and the U.S. Virgin Islands. These data represent 97% of the U.S. population.

Surveillance, Epidemiology and End Results Program

Part of the National Cancer Institute, the Surveillance, Epidemiology, and End Results (SEER) Program consists of several U.S. population-based cancer registries (including Idaho). SEER cancer statistics are designed to be representative of the U.S. population. SEER data used to calculate USCS statistics in Section I included data from 22 registries; statistics were calculated using SEER*Stat.[12]

Cancer Case Definition

A "cancer case" is defined as a primary cancer site (where the cancer started), not a metastatic cancer site (where the cancer spread to). Since an individual can have more than one primary cancer during their lifetime, the number of incident cancer cases is greater than the number of persons who are diagnosed with cancer.

Standard Site Analyses Categories

To facilitate interpretation of data and comparisons across registries, CDRI uses standardized groupings of site analysis categories. These groupings are consistent with those used by the SEER Program and NPCR, and are adopted by NAACCR.[4,5] Most neoplasms are grouped by the organ where they occur. Neoplasms of the lymphatic, hematopoietic, and reticuloendothelial systems are instead grouped by their histology (e.g. leukemias, lymphomas). Melanoma of the skin is a combination of both anatomic site and histologic type. See https://seer.cancer.gov/siterecode/ for groupings of codes. Gastrointestinal stromal tumors (GIST) became reportable beginning with cases diagnosed in 2021. There were 34 malignant GIST diagnosed in 2021 among Idaho residents. These cases were included in incidence statistics but excluded from trend analysis.

Age-adjusted Incidence Rates

Age-adjusted incidence rates published in this report were calculated using the direct method and standardized to the age distribution of the 2000 U.S. population (see **Appendix B**). Incidence rates represent the average number of new cases diagnosed annually per 100,000 persons. Age adjustment allows rates from one geographic area or time period to be compared with rates from other geographic areas or time periods that may have differences in age distributions. Any observed differences in age-adjusted incidence rates between populations are not due to differing age structures.

Because the 2000 U.S. standard population was used to age adjust rates, the age-adjusted rates published in this report are not comparable with age-adjusted rates published in CDRI annual reports for incident years prior to 1999.

Rate calculation requires reliable estimates of the population at risk by five-year age groups and gender during the time period being studied. Population figures used in this report

were obtained from the U.S. Census Bureau, Population Division (see **Appendix C**).[11] In conformity with NPCR and SEER Program guidelines, the incidence rates excluded the following:

◆ in situ cases, except bladder;
◆ basal and squamous cell skin cancers;
◆ cases with unknown age; and
◆ cases with unknown gender.

Of the total number of invasive and in situ cases for 2021 (11,022), 9,972 cases (9,749 invasive and 223 bladder in situ) were used to calculate age-adjusted incidence rates. Of the 9,972 cases, 5,295 occurred among males and 4,677 occurred among females.

Age-specific Incidence Rates

Age-specific rates are calculated by dividing the number of cases for a given age group by the total population of that age group and are expressed as an average annual rate per 100,000 population by age group. Age-specific rates exclude the same types of cases that are excluded from age-adjusted incidence rates.

Observed vs. Expected Numbers of Cases

The expected numbers of cases were calculated using the indirect method of age adjustment. For each health district, the expected numbers of cases were calculated using rates for the remainder of Idaho. The observed and expected numbers exclude in situ cases (except bladder), basal and squamous cell skin cancers, and cases with unknown age or sex. Cases with unknown county of residence are not included in these analyses; there were no cases with unknown county in 2021. Statistically significant differences between numbers of observed and expected cases (standardized incidence ratios) were marked (+) for $p < 0.05$ and (*) for $p < 0.01$. Because statistically significant

differences in observed versus expected cases can occur because of multiple factors, including chance, statistically significant differences do not necessarily imply that public or other health interventions are warranted.

Confidence Intervals

Confidence intervals, which are estimated from available data, provide a range of values that are likely to include the true and unknown population value. The width of a confidence interval is a measure of variability, with wider confidence intervals connoting less reliable estimates.

Mean/Median

Measures of central tendency are helpful to describe a group of individual values in a simple and concise manner.

Mean, also known as the arithmetic average, is the sum of all observations divided by the number of observations.

Median is the middle value when the observations are ranked in order from the smallest to the largest.

Factors Associated with Cancer Incidence

The "Factors Associated with Cancer Incidence" subsections in Section I were developed from extracts of *Cancer Epidemiology and Prevention*, cancer information from the National Cancer Institute, and the International Agency for Research on Cancer.[13-15]

Limitations to Data Interpretation and Comparison

Rates based on population estimates: In non-Census years, state and county population figures are estimates. Errors in these

Rate comparisons: Age-adjusted incidence rates and age-specific rates based on small numbers (< 16) of cases may be unstable. When comparing rates among geographic areas (counties, health districts, or states), factors such as the absolute numbers of cases and differences in demographics should be considered. Interpretations of rates without consideration of these factors may be misleading or inaccurate.

Misclassification of race and/or ethnicity: Many source documents used to report cancer misclassify or do not specify the race and/or ethnicity of the patient. For detailed statistics by race and ethnicity, see Section VIII and *CiNA Explorer*.[10]

Risks of Developing and Dying from Cancer

Cancer incidence and mortality risks were estimated using DEVCAN Version 6.7.5 software.[16] DEVCAN was used to calculate the probability of developing or dying of cancer using Idaho-specific cancer incidence and mortality data for the years 2017–2021. The estimates generated are similar to estimates derived using incidence data from the SEER Program, mortality data from the National Center for Health Statistics, and population estimates from Census data. DEVCAN was developed by Information Management Services, Inc., in consultation with the Applied Research Branch of the National Cancer Institute.

Prevalence

Cancer prevalence is an estimate of the number of persons with a history of cancer who are alive on a certain date. Ten-year limited-duration prevalence statistics in this report estimate the number of people alive on July 1, 2021, who had a cancer diagnosis within the past 10 years.

Trend Analyses

Joinpoint Version 5.0.2 software was used to model trends in age-adjusted cancer incidence rates.[17] For each joinpoint time segment, the estimated annual percent change was calculated by fitting a least squares regression line to the natural logarithm of the rates using calendar year as a covariate. The Weighted Bayesian Information Criterion was used to determine the number of joinpoints (0 to 5) per primary site category and sex. Trend analyses are limited to cases considered to be malignant in both ICD-O-2 and ICD-O-3, and exclude cases only defined as malignant in 2010 or later, including GIST.

Mortality

Idaho mortality data used throughout this report were provided by the Bureau of Vital Records and Health Statistics, Division of Public Health, Idaho Department of Health and Welfare.[18]

Survival

Two tables of survival estimates are included in this annual report: one table for actual prognosis, referred to as "crude" survival in the statistical literature; and one table for cancer survival, referred to as "net" survival in the statistical literature. Crude measures of survival include cancer and other competing causes of death, while net measures of cancer survival exclude competing causes of death. Both crude and net survival estimates may be calculated using either cause of death or expected survival information. Policy makers, cancer control planners, and others may be interested in net deaths from cancer where the confounding effects of death from other causes are removed, such as when comparing geographic areas or population subgroups that have different background mortality rates. Crude estimates of patient survival are useful for cancer patients and

survival are useful for cancer patients and health care providers who want to estimate a patient's chances of dying from cancer, dying from other competing causes of death, or surviving.[19] For younger and healthier patients, crude and net survival estimates are similar because competing causes of death are rare. Crude and net survival estimates may differ greatly for older and sicker patients.

Relative survival is a net measure of excess mortality experienced by cancer patients. It is calculated by dividing the observed survival from all causes of death for the patient cohort by the expected survival in a comparable group not diagnosed with cancer. Because information on cancer-free cohorts is not readily available, general population life tables are used to estimate expected survival. Relative survival based on general life tables, which include people previously diagnosed with cancer, may be overestimated for common cancers, in particular for all sites combined, breast, colorectal, and prostate cancers.[20]

The SEER cause-specific death classification variable, which provides guidance for which deaths should be attributable to a specific cancer diagnosis, was used to estimate the probabilities of dying of cancer, dying of other competing causes, and survival.[21]

Survival statistics published in this report include all invasive and bladder in situ cases diagnosed during 2014–2020 among patients aged 15–99 with follow-up/death ascertainment through December 31, 2021. (Cases were censored at an achieved age of 100 years.) Cases reported solely via death certificates or autopsy were excluded. Using solid tumor and hematopoietic and lymphoid multiple primary and histology coding rules,[7,8] multiple primary cancers could be included for each patient, but only one cancer per patient was included in each survival estimate.

SEER*Stat (version 8.4.2) was used to perform survival calculations. Survival duration was calculated from complete dates and alive patients were censored on December 31, 2021, or at their date of last contact if before December 31, 2021. Survival calculations were performed using the actuarial method on monthly intervals. Expected survival was estimated using the Ederer II method from life tables matched to the patients by age, sex, year, race/ethnicity, and county-level socioeconomic status.[22, 23]

Because excess mortality due to cancer is often age dependent, and age distributions of cancer patients may differ among comparison groups, net survival estimates were age standardized using the International Cancer Survival Standards (ICSS).[24] Crude survival estimates are not age standardized and reflect the actual prognosis of the cohort.

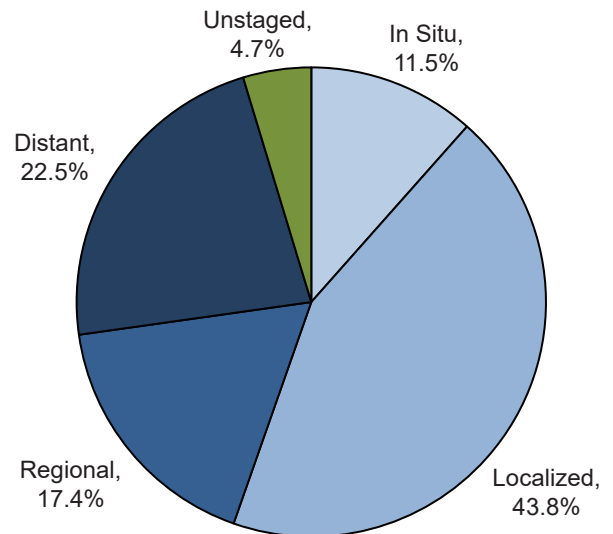**2021 SUMMARY ON ALL SITES COMBINED
AND
23 MOST COMMON SITES**

ALL SITES

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	435.7	471.0	410.0
# of new invasive cases	9,749	5,117	4,632
# of new in situ cases	1,273	618	655
# of deaths	3,126	1,668	1,458

Stage at Diagnosis - All Sites

Unstaged, 4.7%
In Situ, 11.5%
Distant, 22.5%
Regional, 17.4%
Localized, 43.8%

Total Cases by County

Ada	2,985	Cassia	131	Lewis	35
Adams	32	Clark	3	Lincoln	30
Bannock	450	Clearwater	78	Madison	119
Bear Lake	37	Custer	43	Minidoka	113
Benewah	75	Elmore	147	Nez Perce	283
Bingham	255	Franklin	62	Oneida	40
Blaine	182	Fremont	54	Owyhee	86
Boise	64	Gem	135	Payette	185
Bonner	381	Gooding	91	Power	52
Bonneville	574	Idaho	148	Shoshone	100
Boundary	111	Jefferson	145	Teton	80
Butte	27	Jerome	125	Twin Falls	516
Camas	4	Kootenai	1210	Valley	97
Canyon	1,307	Latah	212	Washington	85
Caribou	43	Lemhi	90		

Factors Associated with Cancer Incidence

Age & Sex	Rates usually increase with age. Approximately 50% of new cancer cases are diagnosed among people aged 66 and older. Males and females have similar cancer rates through early adulthood. Females have higher rates than males from ages 30 to 54; males have higher rates than females from age 55 onwards. Apart from breast and thyroid, males have higher rates than females for the 10 most common cancers of both sexes.
Race/Ethnicity	Rates among Whites are higher than among American Indians/Alaska Natives, Asians/Pacific Islanders, and Blacks. These rates may, however, be more indicative of access to care than actual risk. Hispanics have lower rates than non-Hispanic Whites.
Occupation	Increased cancer risk is associated with some workplace exposures, such as to vinyl chloride, respirable crystalline silica, asbestos, and radiation.
Diet	Specific dietary items, such as processed meats and alcohol, increase cancer risk.
Other	Tobacco use is the single most important risk factor for cancer incidence and mortality. Obesity, conditions of chronic inflammation, immunosuppression, and infection with certain infectious agents increases risk for certain cancers.

Data Summary

Mean age-adjusted incidence rate across health districts:	433.4
95% confidence interval on the mean age-adjusted incidence rate:	425.2–441.6
Median age-adjusted incidence rate of health districts:	432.2
Range of age-adjusted incidence rate for health districts:	416.2–453.1
USCS rate (2019, all races):	438.6

Incidence rates for all cancers combined are similar for males and females in Idaho until approximately age 60–64, after which rates for males rise dramatically. Rates peak for males and females after age 79. Health District 3 had statistically significantly more cases of cancer than expected based upon rates for the remainder of Idaho. (See Section V for data.)
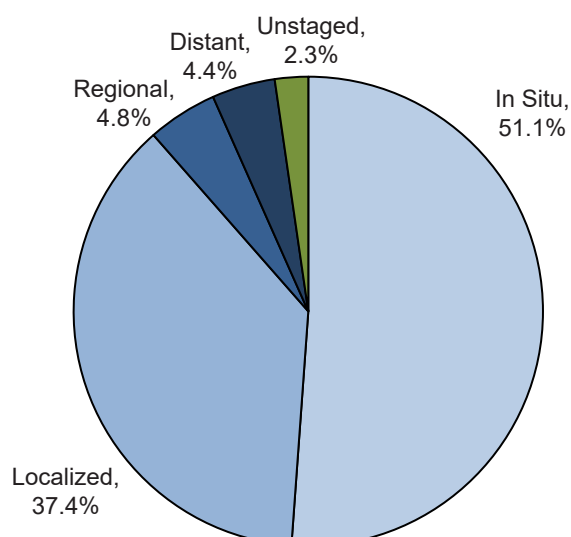
State All Cancer Sites Combined
Age-specific Rates 2017–2021

All Sites Combined Cancer Incidence
Age-adjusted Rates by Health District

Health District	Rate
State	435.7
HD1	435.8
HD2	432.0
HD3	453.1
HD4	436.9
HD5	432.2
HD6	427.9
HD7	416.2
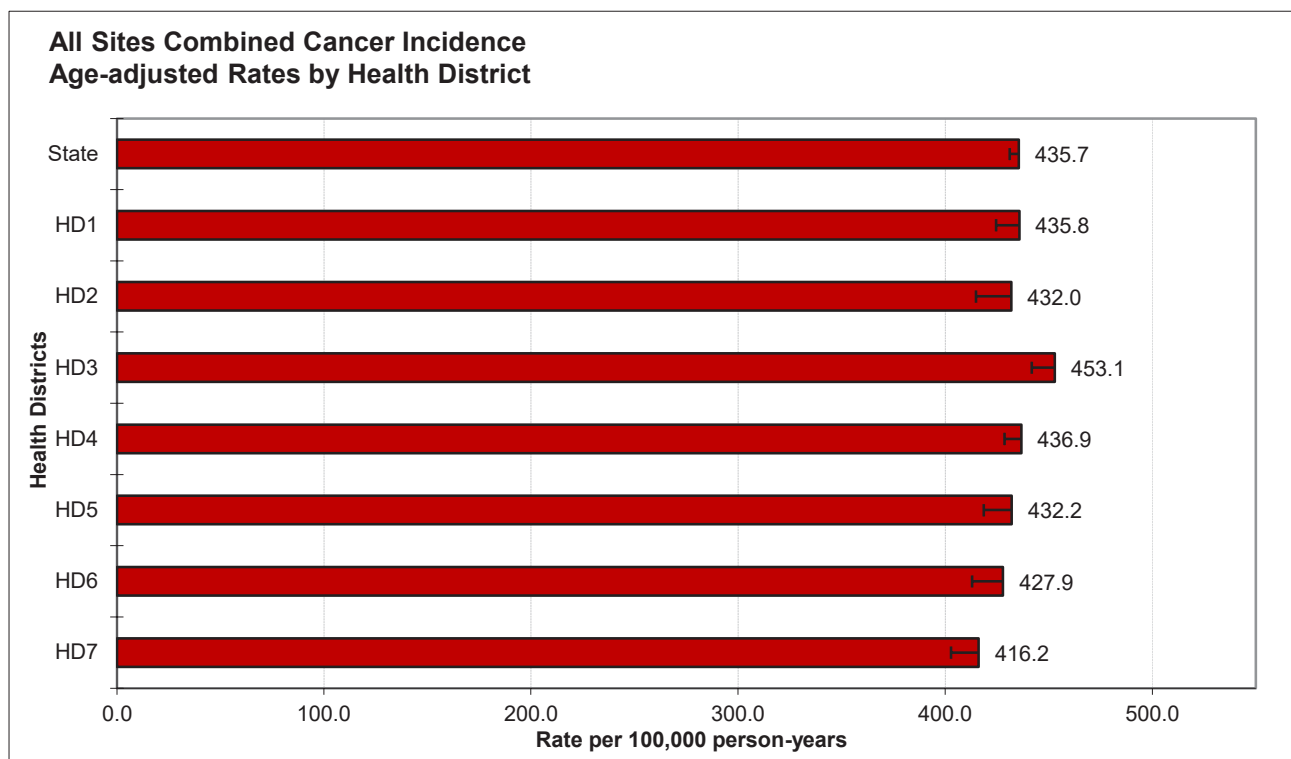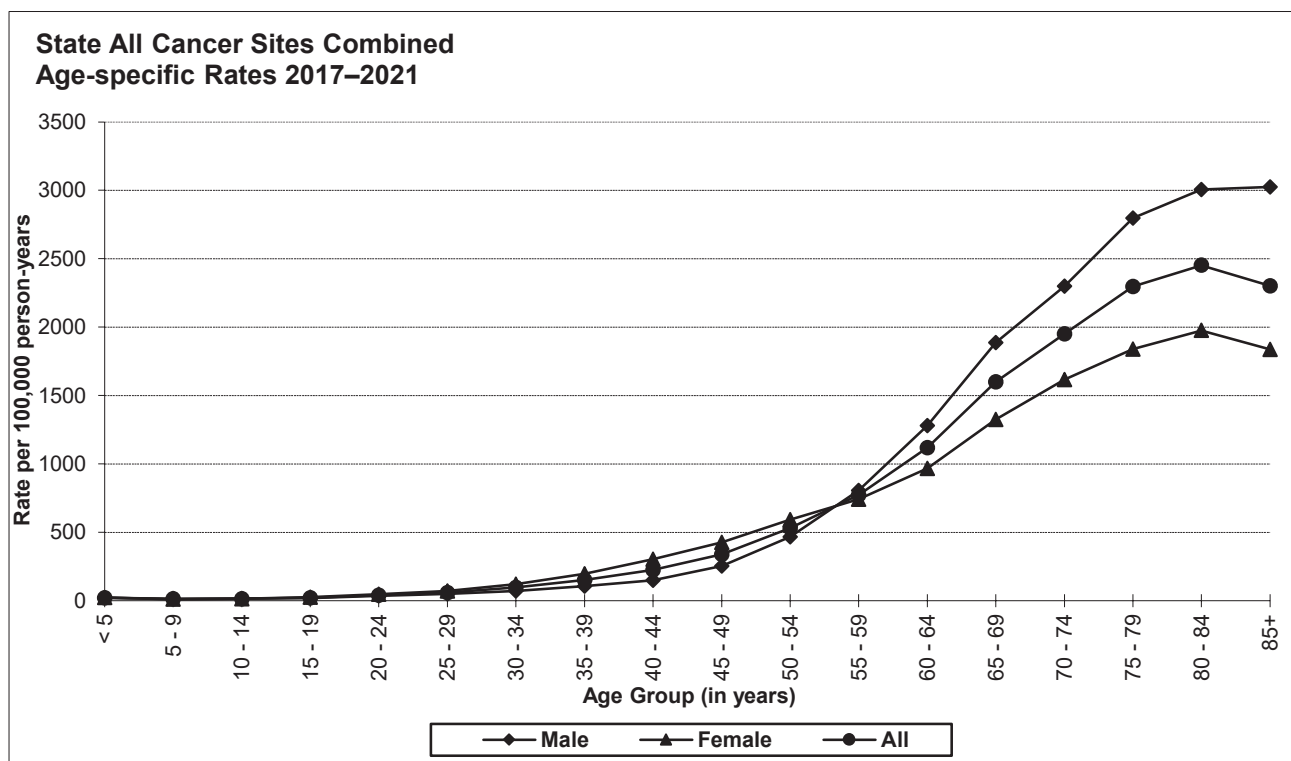
BLADDER

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	18.6	31.3	7.6
# of new invasive cases	213	165	48
# of new in situ cases	223	178	45
# of deaths	102	78	24

Total Cases by County

County		County		County	
Ada	96	Cassia	4	Lewis	1
Adams	-	Clark	-	Lincoln	2
Bannock	13	Clearwater	5	Madison	5
Bear Lake	5	Custer	3	Minidoka	6
Benewah	3	Elmore	5	Nez Perce	14
Bingham	15	Franklin	3	Oneida	6
Blaine	5	Fremont	-	Owyhee	2
Boise	4	Gem	5	Payette	3
Bonner	14	Gooding	2	Power	1
Bonneville	29	Idaho	3	Shoshone	3
Boundary	4	Jefferson	7	Teton	3
Butte	2	Jerome	4	Twin Falls	28
Camas	-	Kootenai	60	Valley	4
Canyon	55	Latah	11	Washington	1
Caribou	-	Lemhi	-		

Stage at Diagnosis - Bladder

- In Situ, 51.1%
- Localized, 37.4%
- Regional, 4.8%
- Distant, 4.4%
- Unstaged, 2.3%

Factors Associated with Cancer Incidence

Age — Rates usually increase steadily with age, with particularly marked increases among people 50 years old and older.

Sex — Rates are substantially higher in males than females. Males have at least three times the rate of females from age 50 onwards.

Race/Ethnicity — Incidence rates are higher in Whites than in American Indians/Alaska Natives, Asians/Pacific Islanders, or Blacks. Non-Hispanic Whites have consistently higher rates that Hispanics.

Occupation — The following occupational activities or exposures have been linked to increased bladder cancer risk: painting; manufacturing of aluminum, rubber (4-aminobiphenyl, *ortho*-Toluidine), auramine, magenta, leather, cloth, and paper (benzidine), and certain dyes (*ortho*-Toluidine, 2-naphthylamine); X-radiation and gamma-radiation.

Other — Tobacco consumption has been associated with a 2- to 5-fold higher incidence of bladder cancer. Arsenic and arsenic compounds – particularly in drinking water – are associated with an increased risk of bladder cancer. The chemotherapeutic agent cyclophosphamide, and parasitic infection with Schistosoma haematobium are associated with an increased risk of bladder cancer.

Special Notes

Mean age-adjusted incidence rate across health districts:	19.3
95% confidence interval on the mean age-adjusted incidence rate:	17.7–20.8
Median age-adjusted incidence rate of health districts:	19.5
Range of age-adjusted incidence rate for health districts:	15.9–22.1
USCS rate (2019, all races):	18.3

There are few incident cases of bladder cancer among persons aged less than 50 years. Bladder cancer incidence rates increase with age, peaking in the age group 85+ for males and females. Health District 4 had statistically significantly fewer cases of bladder cancer than expected based upon rates for the remainder of Idaho. (See Section V for data.)

State Bladder Cancer Incidence
Age-specific Rates 2017–2021
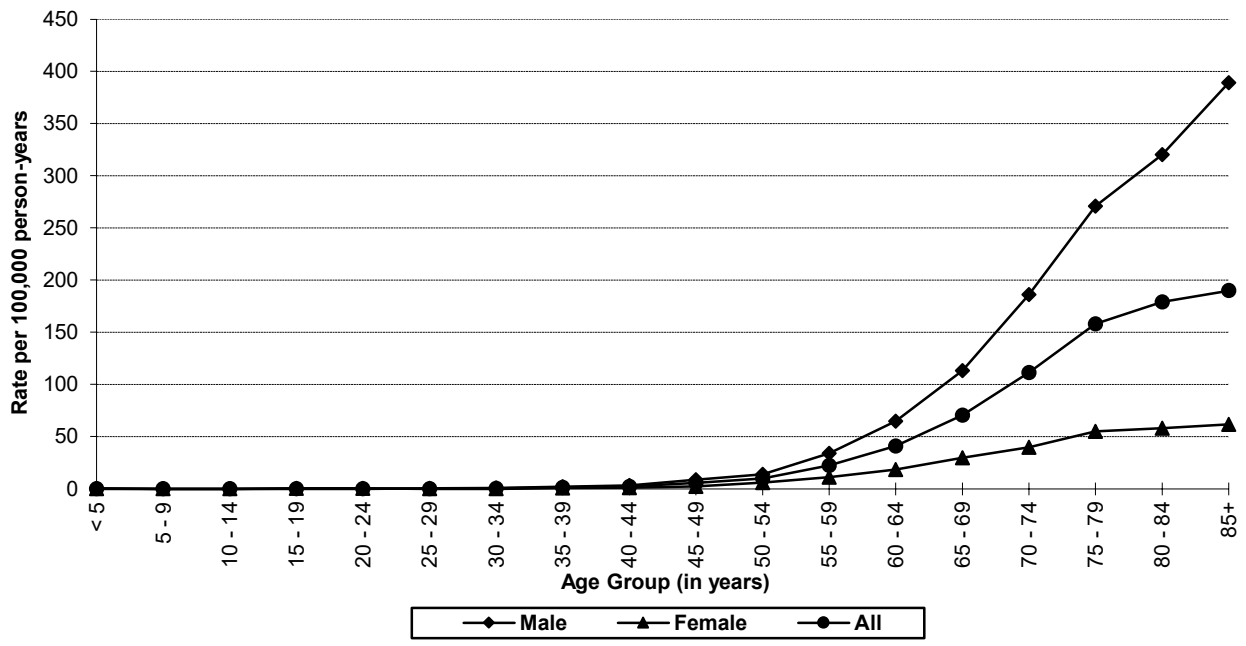
Bladder Cancer Incidence
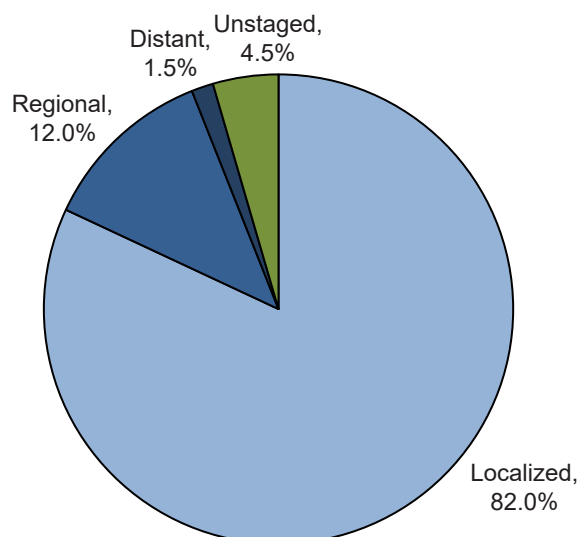## Age-adjusted Rates by Health District
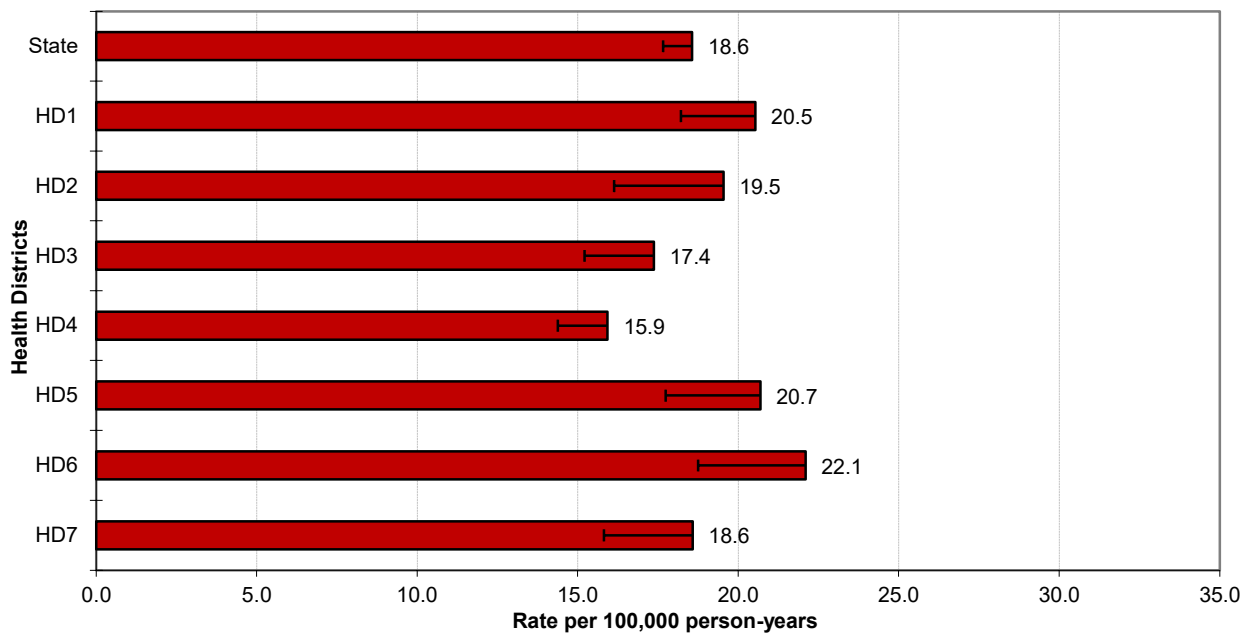
BRAIN

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	6.4	7.3	5.5
# of new invasive cases	133	75	58
# of new in situ cases	0	0	0
# of deaths	92	53	39

Total Cases by County

County		County		County	
Ada	42	Cassia	2	Lewis	-
Adams	2	Clark	-	Lincoln	-
Bannock	7	Clearwater	-	Madison	2
Bear Lake	-	Custer	1	Minidoka	-
Benewah	2	Elmore	5	Nez Perce	4
Bingham	-	Franklin	1	Oneida	-
Blaine	6	Fremont	-	Owyhee	-
Boise	-	Gem	1	Payette	2
Bonner	4	Gooding	2	Power	-
Bonneville	7	Idaho	2	Shoshone	1
Boundary	1	Jefferson	1	Teton	-
Butte	-	Jerome	1	Twin Falls	8
Camas	-	Kootenai	12	Valley	1
Canyon	11	Latah	4	Washington	1
Caribou	-	Lemhi	-		

Stage at Diagnosis - Brain

Localized, 82.0%
Regional, 12.0%
Distant, 1.5%
Unstaged, 4.5%

Factors Associated with Cancer Incidence

Age — Among children 0–14 years old, brain and central nervous system tumors are the second most common cancer. Incidence demonstrates a small peak in ages 1–9, a decrease and subsequent gradual rise through young adulthood, a steeper increase from age 50 onwards, and a second peak from ages 75–84.

Sex — Males and females have similar rates of brain cancer until age 25, after which males have higher rates than females.

Race/Ethnicity — Incidence is higher among Whites than American Indians/Alaska Natives, Asians/Pacific Islanders, and Blacks — all of which have similar incidence. Hispanics have a lower incidence than non-Hispanic Whites across the life course.

Genetics — Certain genetic syndromes are associated with increased risk for brain tumors, e.g. Li-Fraumeni syndrome, Turcot syndrome type 1 or 2.

Occupation — Vinyl chloride exposure is associated with increased risk for gliomas.

Other — X-radiation and gamma-radiation are both associated with increased risk for brain tumors. Having Epstein-Barr virus, AIDS, or immunosuppression related to organ transplant are associated with increased risk for CNS lymphoma.


Data Summary

Mean age-adjusted incidence rate across health districts:	6.1
95% confidence interval on the mean age-adjusted incidence rate:	5.0–7.2
Median age-adjusted incidence rate of health districts:	5.5
Range of age-adjusted incidence rate for health districts:	4.4–8.4
USCS rate (2019, all races):	5.8

No health district had statistically significantly more, or fewer, cases of brain cancer than expected based upon rates for the remainder of Idaho. (See Section V for data.)

State Brain Cancer Incidence
Age-specific Rates 2017–2021
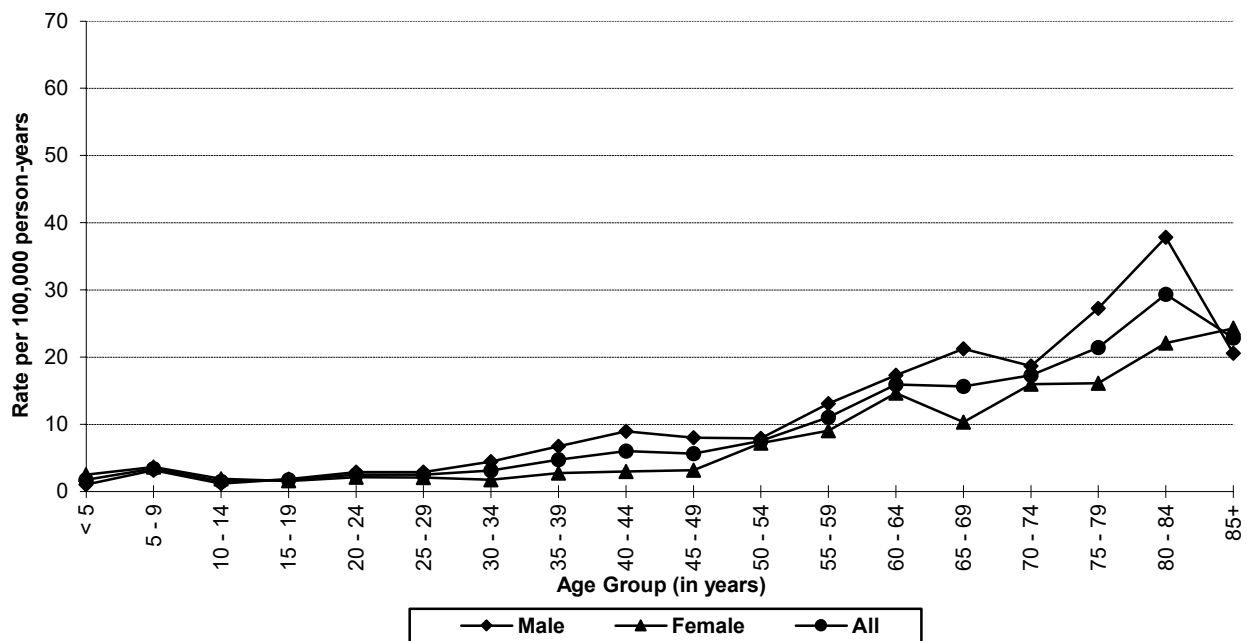
Brain Cancer Incidence
Age-adjusted Rates by Health District
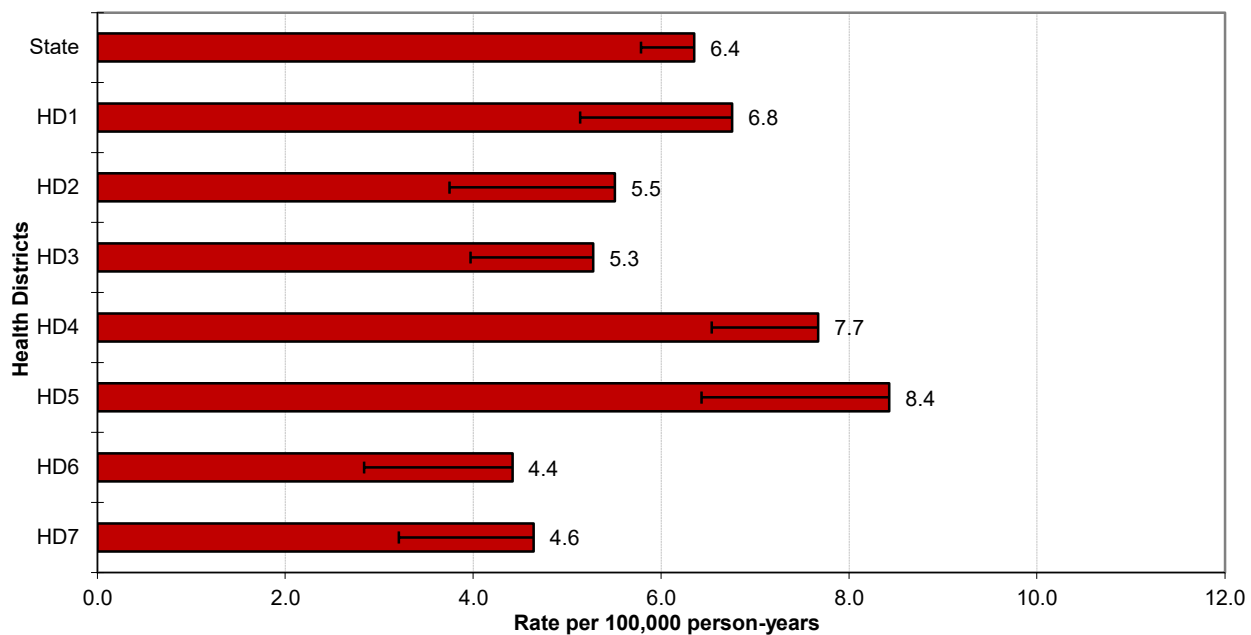
BRAIN & OTHER CNS NON-MALIGNANT

Incidence Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	14.2	7.7	20.6
# of new cases	309	81	228

Total Cases by County

County	Cases	County	Cases	County	Cases
Ada	82	Cassia	4	Lewis	2
Adams	-	Clark	-	Lincoln	-
Bannock	5	Clearwater	3	Madison	3
Bear Lake	2	Custer	1	Minidoka	5
Benewah	1	Elmore	5	Nez Perce	3
Bingham	10	Franklin	3	Oneida	-
Blaine	4	Fremont	2	Owyhee	1
Boise	1	Gem	4	Payette	7
Bonner	17	Gooding	4	Power	1
Bonneville	18	Idaho	2	Shoshone	-
Boundary	4	Jefferson	3	Teton	-
Butte	-	Jerome	-	Twin Falls	11
Camas	-	Kootenai	34	Valley	6
Canyon	50	Latah	7	Washington	-
Caribou	2	Lemhi	2		

Factors Associated with Cancer Incidence

Age	In general, incidence increases steadily throughout the life course.
Sex	Males and females have similar incidence rates of benign and borderline behavior brain tumors until age 25, after which males have higher rates than females.
Race/Ethnicity	There are no differences in incidence by race. Hispanics have a lower incidence than non-Hispanic Whites across the life course.

Special Notes

In 2007, as a result of Public Law 107-260, the publication *United States Cancer Statistics 2004 Incidence and Mortality* began to include tables for non-malignant brain tumors. Until this time, the only reference data were from the Central Brain Tumor Registry of the United States (CBTRUS; http://www.cbtrus.org), which has reported on data submitted from eighteen state central cancer registries, including Idaho.

Data Summary

Mean age-adjusted incidence rate across health districts:	13.4
95% confidence interval on the mean age-adjusted incidence rate:	11.5–15.3
Median age-adjusted incidence rate of health districts:	13.0
Range of age-adjusted incidence rate for health districts:	10.2–17.5
USCS rate (2019, all races):	12.7

Incidence rates of benign and borderline behavior brain and other central nervous system tumors increase with age, peaking in the age group 85+ for males and females. No health district had statistically significantly more, or fewer, cases of non-malignant brain and other central nervous system tumors than expected based upon rates for the remainder of Idaho. (See Section V for data.)

**State Brain & other CNS Non-Malignant Incidence
Age-specific Rates 2017–2021**
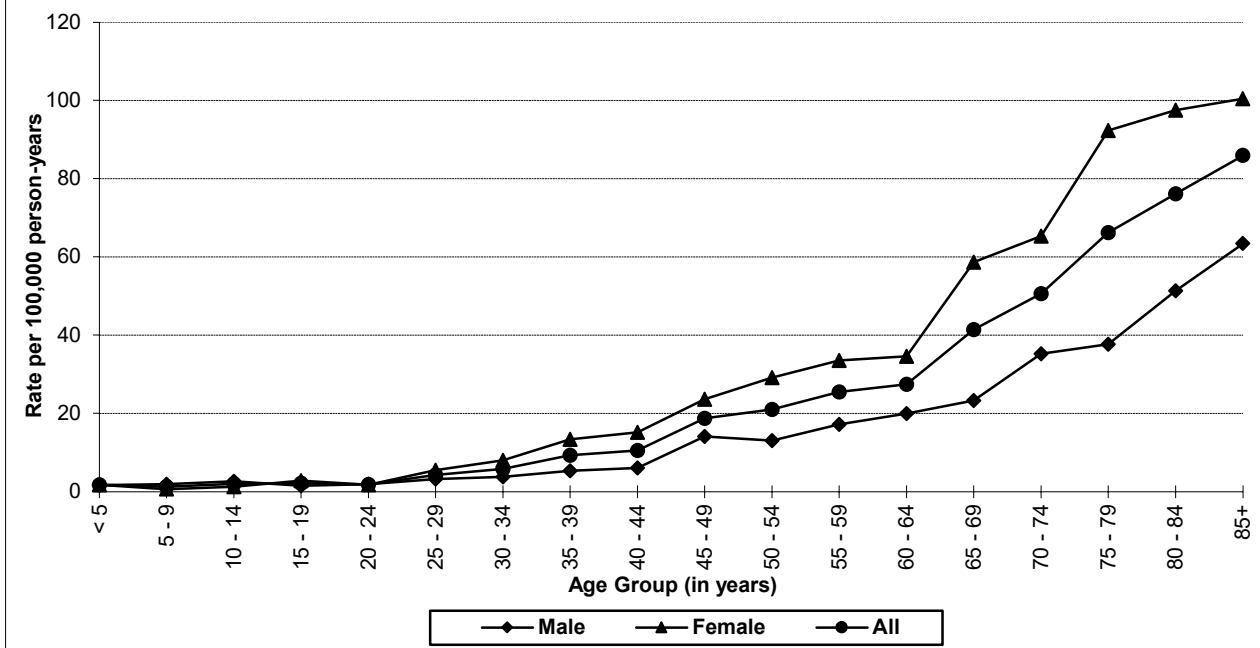
**Brain & other CNS non-Malignant Incidence
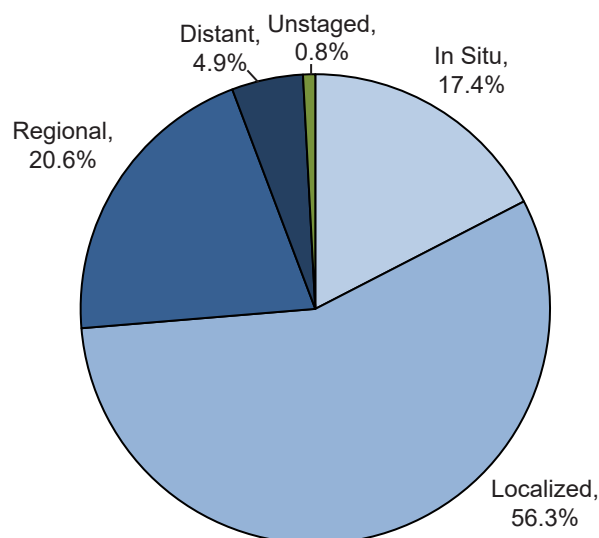Age-adjusted Rates by Health District**
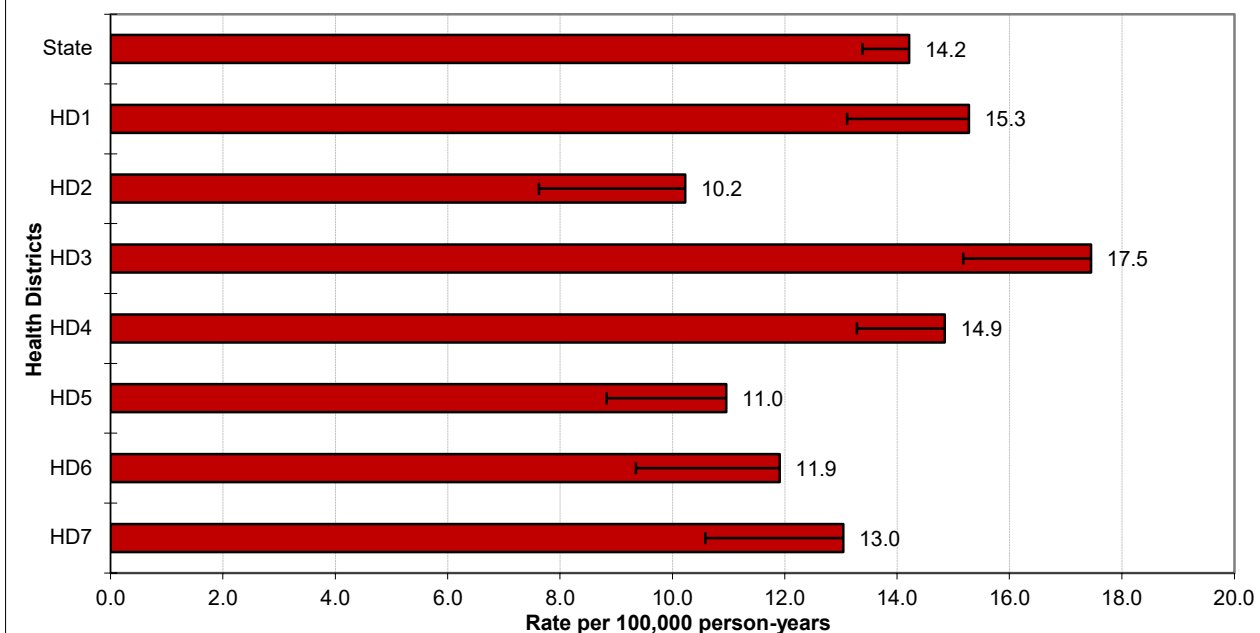
BREAST

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	66.6	1.7	129.7
# of new invasive cases	1,478	18	1,460
# of new in situ cases	312	0	312
# of deaths	241	6	235

Stage at Diagnosis - Breast

Distant, 4.9%
Unstaged, 0.8%
In Situ, 17.4%
Regional, 20.6%
Localized, 56.3%

Total Cases by County

County	Cases	County	Cases	County	Cases
Ada	534	Cassia	20	Lewis	6
Adams	4	Clark	1	Lincoln	2
Bannock	75	Clearwater	12	Madison	21
Bear Lake	4	Custer	4	Minidoka	9
Benewah	13	Elmore	28	Nez Perce	50
Bingham	38	Franklin	6	Oneida	4
Blaine	27	Fremont	13	Owyhee	9
Boise	10	Gem	15	Payette	36
Bonner	58	Gooding	11	Power	3
Bonneville	100	Idaho	15	Shoshone	11
Boundary	10	Jefferson	21	Teton	14
Butte	4	Jerome	18	Twin Falls	71
Camas	-	Kootenai	190	Valley	13
Canyon	238	Latah	38	Washington	15
Caribou	3	Lemhi	16		

Factors Associated with Cancer Incidence

Age — Age is the most important risk factor for female breast cancer. Luminal A, luminal B, and triple-negative breast cancer incidence increase with age and peak among ages 65–74. HER2-enriched tumor incidence has an earlier and sustained increase in incidence from 50 to 79.

Race/Ethnicity — Whites have the highest incidence rates. Whites, Blacks and Asians/Pacific Islanders have similar incidence of all breast cancers until the age of 50, when incidence for Whites and Blacks increases at a higher rate than for other races. American Indians/Alaska Natives have lower incidence than other races until age 60. Luminal A tumors, the most common breast cancer subtype, mirror breast cancer trends by race overall; triple-negative cancers are highest among Blacks across age groups; luminal B tumors have similar incidence across races; and HER2-enriched tumor incidence is highest among Blacks and Asians/Pacific Islanders.

Genetics — Only 5%–10% of breast cancers are attributable to highly penetrant pathogenic genetic mutations, e.g. BRCA1/2, CDH1, PALB2. However, lifetime cancer risk for individuals with these mutations can be over 50% versus 10% in low-risk individuals. Breast cancer risk is twice as high among those with a family history (mother, sister, other first degree relative). Women with higher breast density, largely an inherited trait, are also at increased risk.

Hormonal — Cumulative estrogen exposure, including use of combination hormone therapy (estrogen-progestin), early menarche, and late menopause, are associated with increased breast cancer risk.

Other — Heavy alcohol consumption, obesity in postmenopausal women, and exposure of breast tissue to ionizing radiation are associated with an increased risk of developing breast cancer.

Data Summary

Mean age-adjusted incidence rate across health districts:	126.4
95% confidence interval on the mean age-adjusted incidence rate:	116.1–136.6
Median age-adjusted incidence rate of health districts:	126.2
Range of age-adjusted incidence rate for health districts:	105.0–145.3
USCS rate (2018, female, all races):	129.7

During 2021, 99.0% of invasive breast cancer cases were diagnosed among females. Age-specific incidence rates of female breast cancer peaked among 70–74-year-olds. Health District 3 had statistically significantly more cases of invasive breast cancer than expected based upon rates for the remainder of Idaho and Health District 5 had statistically significantly fewer. (See Section V for data.)

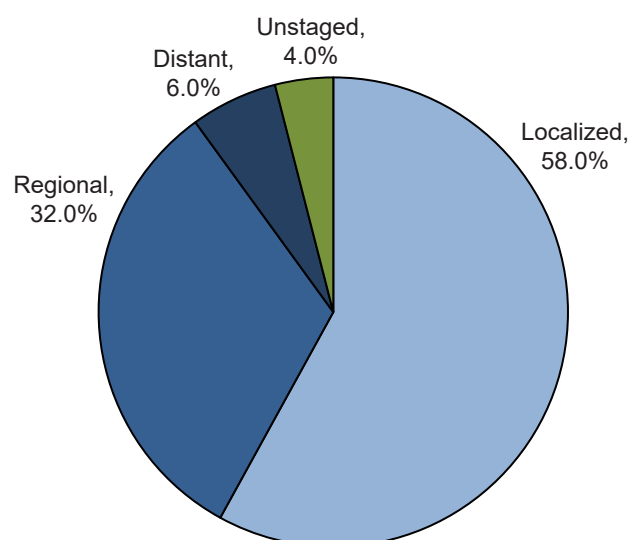**State Female Breast Cancer Incidence
Age-specific Rates 2017–2021**

**Female Breast Cancer Incidence
Age-adjusted Rates by Health District**
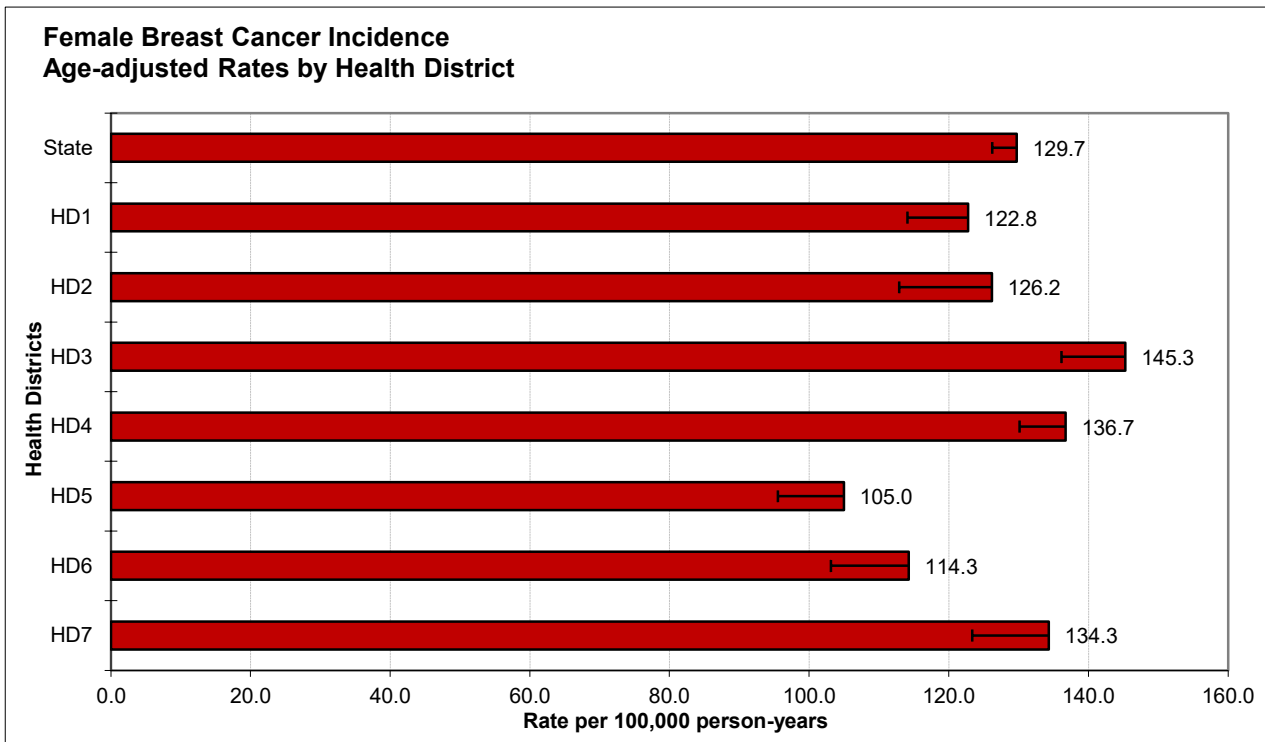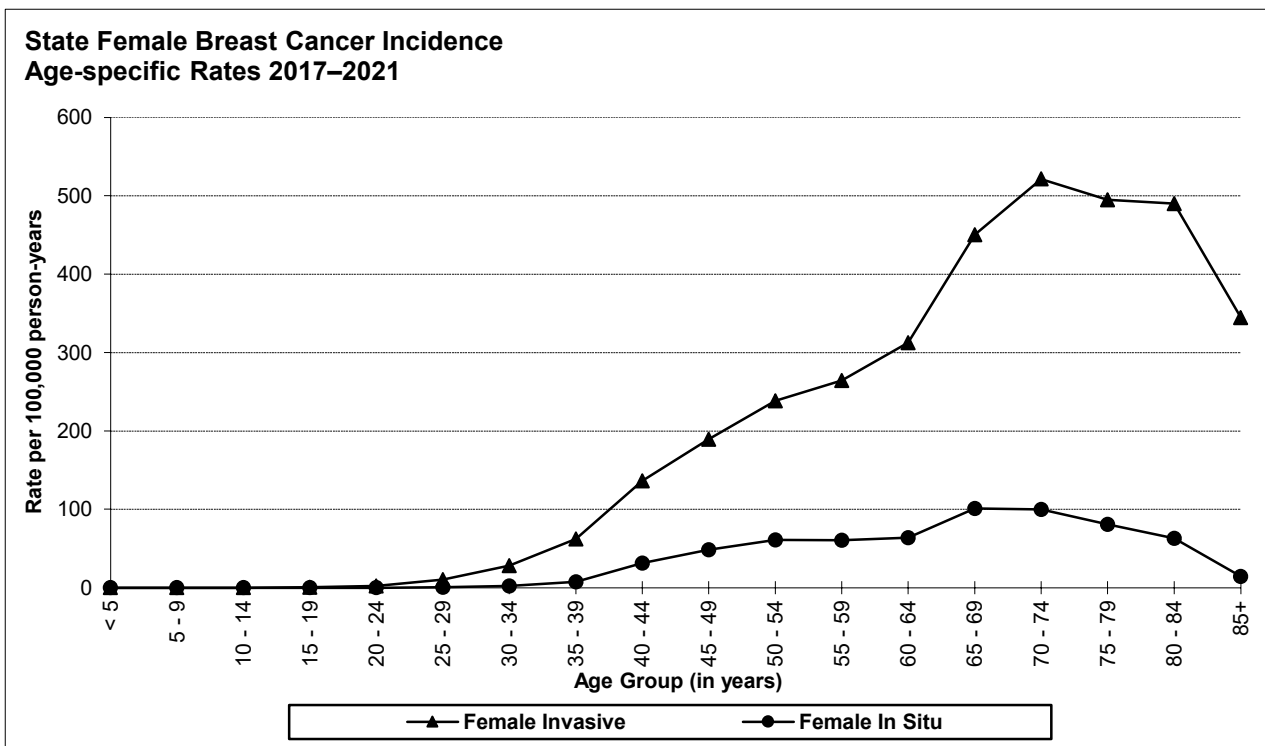
CERVIX

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	-	-	5.3
# of new invasive cases	-	-	50
# of new in-situ cases	-	-	n/a
# of deaths	-	-	18

Stage at Diagnosis - Cervix

- Unstaged, 4.0%
- Distant, 6.0%
- Regional, 32.0%
- Localized, 58.0%

Total Cases by County

County		County		County	
Ada	18	Cassia	1	Lewis	-
Adams	-	Clark	-	Lincoln	-
Bannock	1	Clearwater	-	Madison	-
Bear Lake	-	Custer	-	Minidoka	1
Benewah	-	Elmore	1	Nez Perce	1
Bingham	1	Franklin	-	Oneida	-
Blaine	-	Fremont	-	Owyhee	-
Boise	-	Gem	1	Payette	-
Bonner	1	Gooding	3	Power	-
Bonneville	3	Idaho	-	Shoshone	-
Boundary	-	Jefferson	1	Teton	-
Butte	1	Jerome	2	Twin Falls	1
Camas	-	Kootenai	4	Valley	1
Canyon	6	Latah	1	Washington	1
Caribou	-	Lemhi	-		

Factors Associated with Cancer Incidence

Age — Among women > 19 years, cervical cancer incidence increases sharply and steadily until it peaks among ages 45-49. In general, rates gradually decrease among older age groups. However, most invasive cases are diagnosed in older women.

Race/Ethnicity — Overall, Blacks and American Indians/Alaska Natives have higher rates of cervical cancer than Whites and Asians/Pacific Islanders, although rates among American Indians/Alaska Natives are less stable due to small case counts. From age 40 onwards, Hispanics have higher rates than non-Hispanic Whites.

Other — Human papillomavirus (HPV) is the cause of nearly all cases of cervical cancer. Of the over 100 known HPV types, types 16 and 18 are estimated to cause 70% of cervical cancers and pre-cancerous cervical lesions. Other risk factors that may be correlates or independent risk factors of HPV infection include: early age at first intercourse (< 16 years old) and a history of a higher number of lifetime sex partners. High parity and long-term oral contraceptive use are also associated with increased cervical cancer risk. Other risk factors include immunosuppression (e.g. HIV), exposure to cigarette smoke, and *in utero*-exposure to diethylstilbestrol (DES)..

Data Summary

Mean age-adjusted incidence rate across health districts:	4.8
95% confidence interval on the mean age-adjusted incidence rate:	3.7–5.9
Median age-adjusted incidence rate of health districts:	4.2
Range of age-adjusted incidence rate for health districts:	3.5–7.2
USCS rate (2019, all races):	7.5

Increased screening with Pap and other tests has increased diagnostic rates for pre-invasive cervical disease and helped to reduce the incidence of invasive cervical cancer. Today, most cases in younger women are diagnosed before the invasive stage, with cure rates approaching 100%. For invasive cases, rates peaked among 45–49-year-old females. No health district had statistically significantly more, or fewer, cases of cervical cancer than expected based upon rates for the remainder of Idaho. (See Section V for data.)
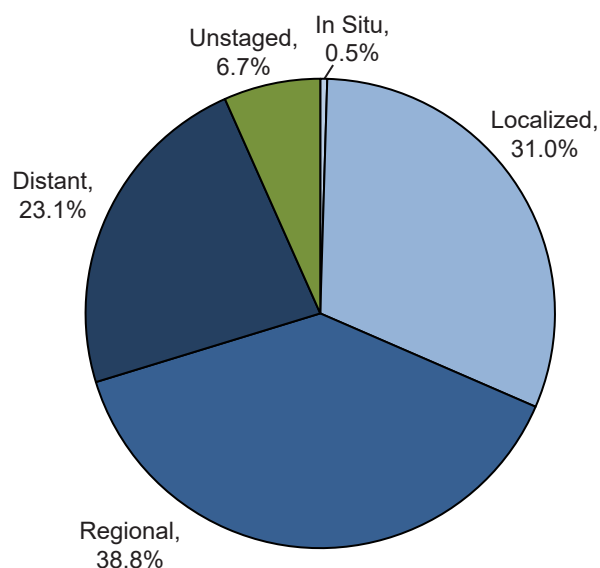

State Cervical Cancer Incidence
Age-specific Rates 2017–2021

Rate per 100,000 person-years vs. Age Group (in years)

Age Group	Rate
< 5	0
5 - 9	0.4
10 - 14	0.1
15 - 19	0.1
20 - 24	0.7
25 - 29	3.4
30 - 34	9.7
35 - 39	13.3
40 - 44	14.0
45 - 49	14.9
50 - 54	14.0
55 - 59	11.1
60 - 64	9.6
65 - 69	7.5
70 - 74	6.0
75 - 79	2.9
80 - 84	5.8
85+	5.5

Cervical Cancer Incidence
Age-adjusted Rates by Health District

Rate per 100,000 person-years by Health Districts

Health District	Rate
State	5.3
HD1	4.2
HD2	3.5
HD3	4.3
HD4	7.2
HD5	6.5
HD6	3.9
HD7	3.6

COLORECTAL

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	37.9	41.5	34.8
# of new invasive cases	837	444	393
# of new in situ cases	4	4	0
# of deaths	305	166	139

Total Cases by County

Ada	190	Cassia	15	Lewis	4
Adams	-	Clark	-	Lincoln	3
Bannock	38	Clearwater	9	Madison	10
Bear Lake	1	Custer	5	Minidoka	12
Benewah	9	Elmore	14	Nez Perce	17
Bingham	29	Franklin	7	Oneida	3
Blaine	9	Fremont	3	Owyhee	9
Boise	2	Gem	18	Payette	11
Bonner	23	Gooding	8	Power	10
Bonneville	49	Idaho	12	Shoshone	13
Boundary	7	Jefferson	11	Teton	5
Butte	4	Jerome	12	Twin Falls	37
Camas	1	Kootenai	100	Valley	8
Canyon	90	Latah	11	Washington	12
Caribou	6	Lemhi	4		

Stage at Diagnosis - Colorectal

Unstaged, 6.7%
In Situ, 0.5%
Localized, 31.0%
Distant, 23.1%
Regional, 38.8%

Factors Associated with Cancer Incidence

Age   Rates increase with age, and greatly increase from 50 years onwards.

Sex   Males and females have similar incidence through age 49, after which males have increasingly higher rates than females.

Race/Ethnicity   Blacks have higher incidence than Whites, particularly after age 50. American Indians/Alaska Natives have similar incidence to Whites and Asians/Pacific Islanders through age 69, at which point American Indians/Alaska Natives have similar incidence to Blacks. Asians/Pacific Islanders have the lowest incidence. Non-Hispanic Whites have similar incidence to Hispanics until age 70, when incidence among non-Hispanic Whites increases relative to Hispanics.

Genetics   Familial adenomatous polyposis and Lynch syndrome are two forms of hereditary colorectal cancer that are associated with approximately 5%–10% of colorectal cancers. Other familial aggregation of colorectal cancer without evidence of a specific hereditary syndrome accounts for up to 25% of cases.

Diet   Heavy alcohol consumption and processed meat consumption are both associated with an increased risk of colorectal cancer.

Other   Cigarette smoking is significantly associated with increased colorectal cancer incidence and mortality. A sedentary lifestyle and obesity (body mass index > 29) confer increased colorectal cancer risk; colorectal cancer risk and body mass index have a positive dose-response relationship. The use of NSAIDs, including aspirin, may help prevent colon cancer.


Data Summary

Mean age-adjusted incidence rate across health districts:	39.2
95% confidence interval on the mean age-adjusted incidence rate:	34.3–44.1
Median age-adjusted incidence rate of health districts:	38.4
Range of age-adjusted incidence rate for health districts:	32.0–51.7
USCS rate (2019, all races):	36.3

Although colorectal cancer rates are declining among adults 50 years and older, colorectal cancer rates are increasing among adults less than 50. Health District 6 had statistically significantly more cases of colorectal cancer than expected based upon rates for the remainder of Idaho and Health District 4 had significantly fewer. (See Section V for data.)

State Colorectal Cancer Incidence
Age-specific Rates 2017–2021
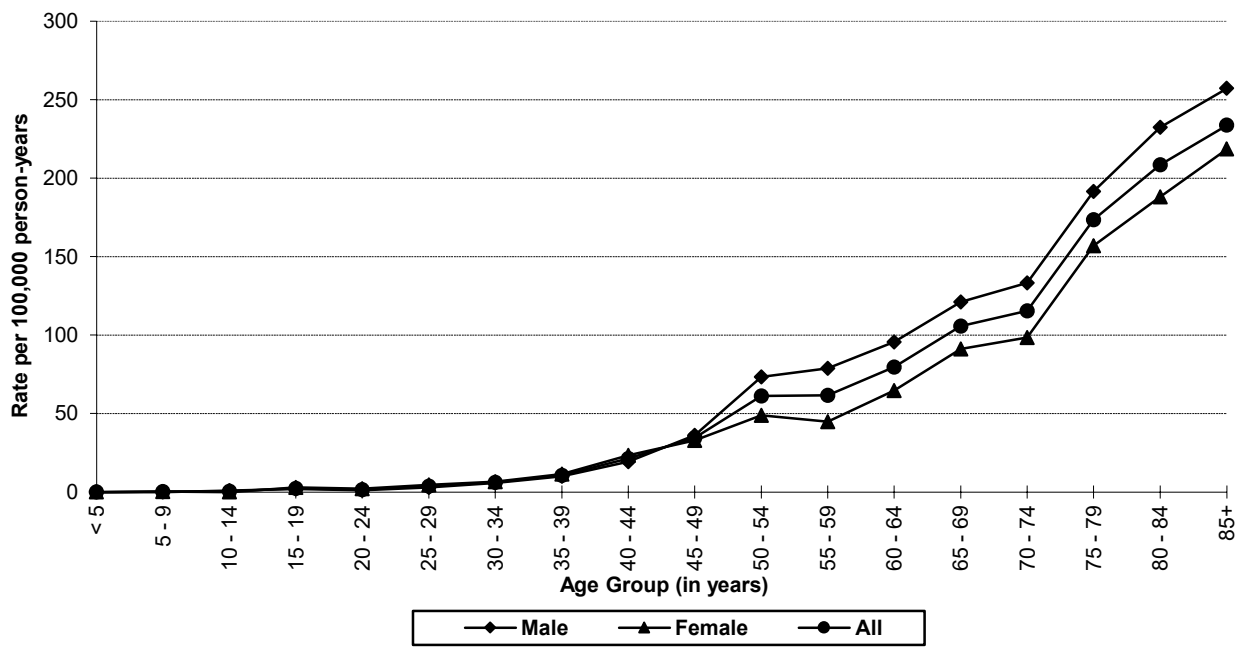
Colorectal Cancer Incidence
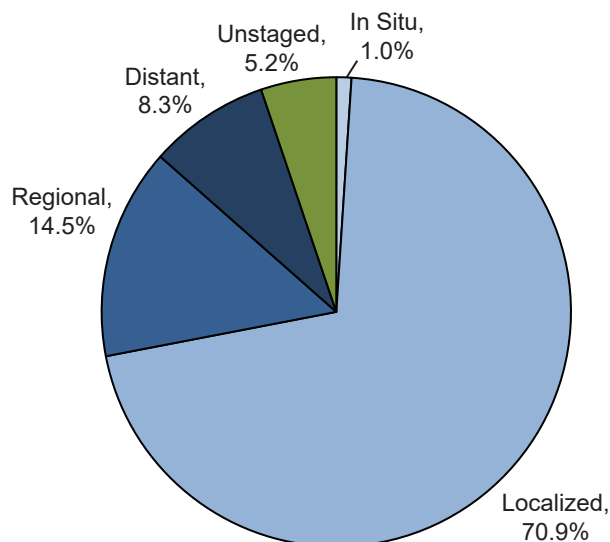**Age-adjusted Rates by Health District**
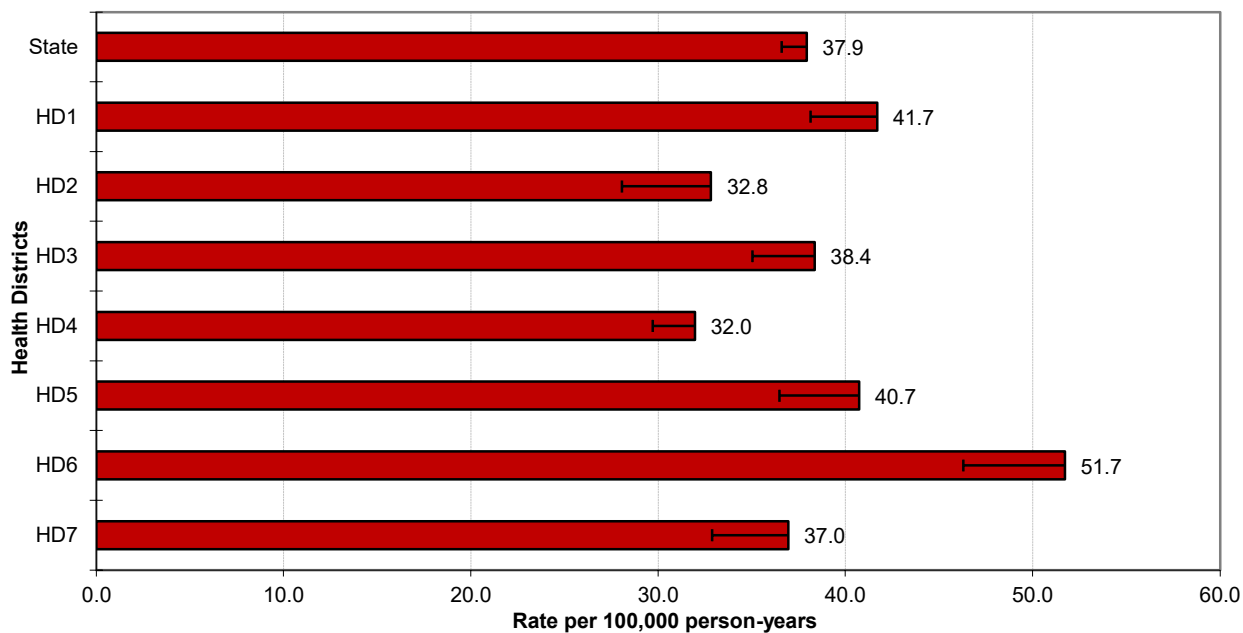
CORPUS UTERI

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	-	-	24.3
# of new invasive cases	-	-	286
# of new in situ cases	-	-	3
# of deaths	-	-	31

Stage at Diagnosis - Corpus Uteri

- In Situ, 1.0%
- Unstaged, 5.2%
- Distant, 8.3%
- Regional, 14.5%
- Localized, 70.9%

Total Cases by County

County		County		County	
Ada	55	Cassia	7	Lewis	3
Adams	1	Clark	-	Lincoln	1
Bannock	8	Clearwater	2	Madison	10
Bear Lake	-	Custer	2	Minidoka	5
Benewah	-	Elmore	5	Nez Perce	4
Bingham	14	Franklin	2	Oneida	2
Blaine	7	Fremont	2	Owyhee	-
Boise	3	Gem	2	Payette	4
Bonner	6	Gooding	1	Power	-
Bonneville	18	Idaho	4	Shoshone	4
Boundary	1	Jefferson	4	Teton	2
Butte	-	Jerome	1	Twin Falls	21
Camas	-	Kootenai	31	Valley	2
Canyon	45	Latah	4	Washington	1
Caribou	2	Lemhi	3		

Factors Associated with Cancer Incidence

|	
Age	Occurs predominantly after menopause, with incidence rates above 80 per 100,000 among persons aged 60–79.
Race/Ethnicity	Among adult females, Whites and Asians/Pacific Islanders have the highest incidence until age 54, when rates in Asians/Pacific Islanders decrease. Blacks have the highest incidence from age 60 through 84. American Indians/Alaska Native have the lowest rates among the race groups across age groups. Hispanics have higher rates than non-Hispanic Whites from ages 25–39, after which Non-Hispanic Whites have higher incidence than Hispanics.
Genetics	Hereditary syndromes, such as Lynch syndrome, polycystic ovarian syndrome, and Cowden syndrome, are associated with increased endometrial cancer risk. Endometrial cancer risk is also elevated for individuals with a family history (mother, sister, other first degree relative).
Hormonal	Hormone therapy with unopposed estrogen (versus combined estrogen and progestin), use of selective estrogen receptor modulators, e.g. tamoxifen, and factors contributing to increased endogenous estrogen exposure, e.g. nulliparity, early menarche, and late menopause, are associated with increased risk.
Other	Endometrial hyperplasia is a common pre-cursor or concurrent condition to endometrial cancer. Obesity, high body mass index, metabolic syndrome, and post-menopausal weight gain are all associated with increased risk. Regular physical activity is associated with decreased risk.

Data Summary

Mean age-adjusted incidence rate across health districts:	25.9
95% confidence interval on the mean age-adjusted incidence rate:	20.9–30.8
Median age-adjusted incidence rate of health districts:	25.5
Range of age-adjusted incidence rate for health districts:	17.6–34.6
USCS rate (2019, all races):	27.7

Few cases of endometrial cancer were diagnosed in persons less than 35 years of age. After age 44, there was a sharp increase in age-specific rates, peaking in the age group 65–69. Health District 5 had statistically significantly more cases of endometrial cancer than expected based upon rates for the remainder of Idaho and Health District 4 had significantly fewer.. (See Section V for data.)

State Corpus Uteri Cancer Incidence
Age-specific Rates 2017–2021
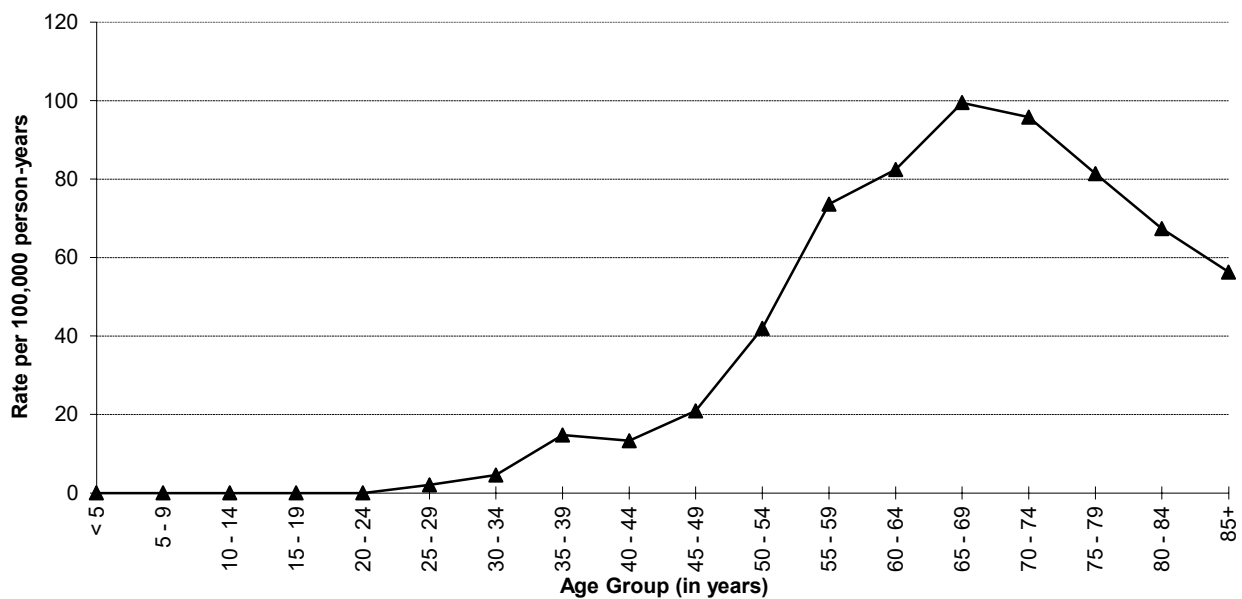
Corpus Uteri Cancer Incidence
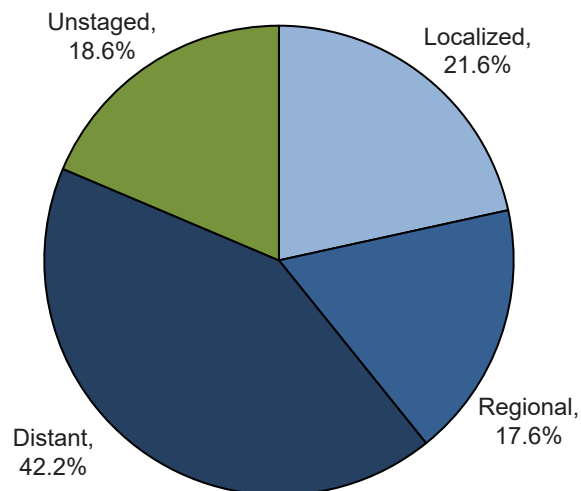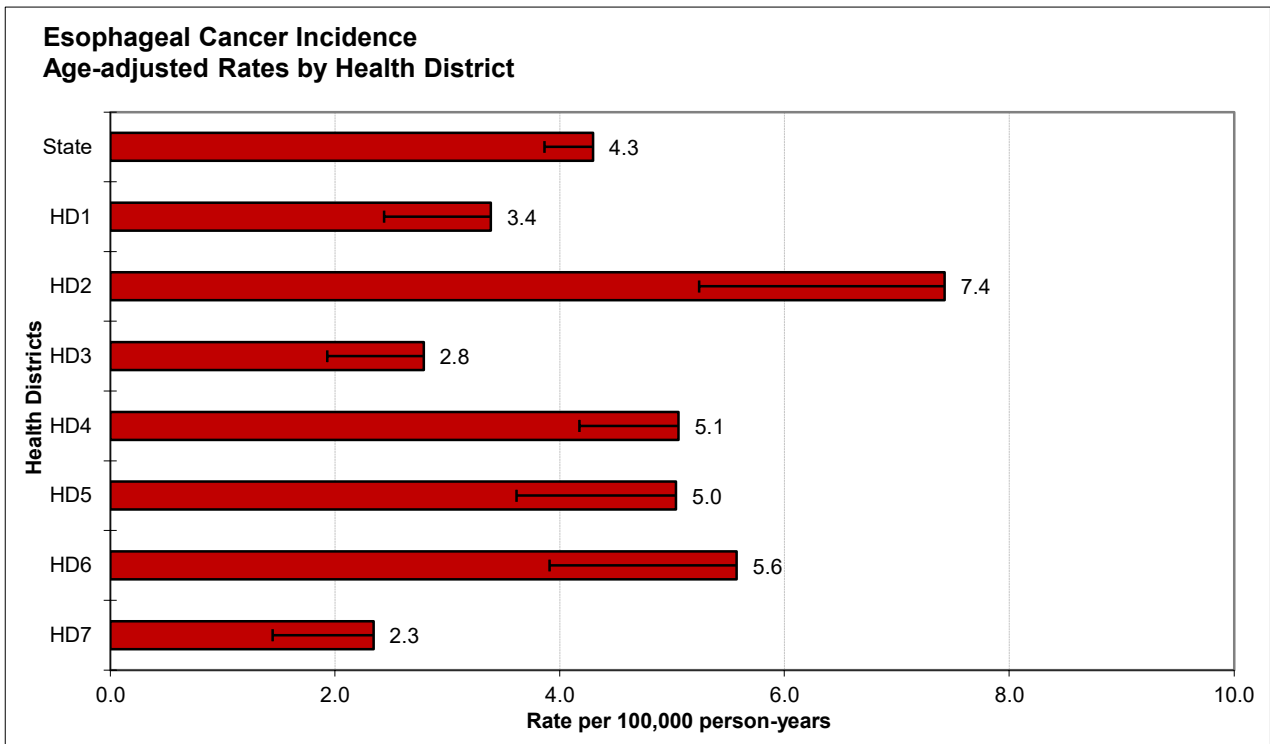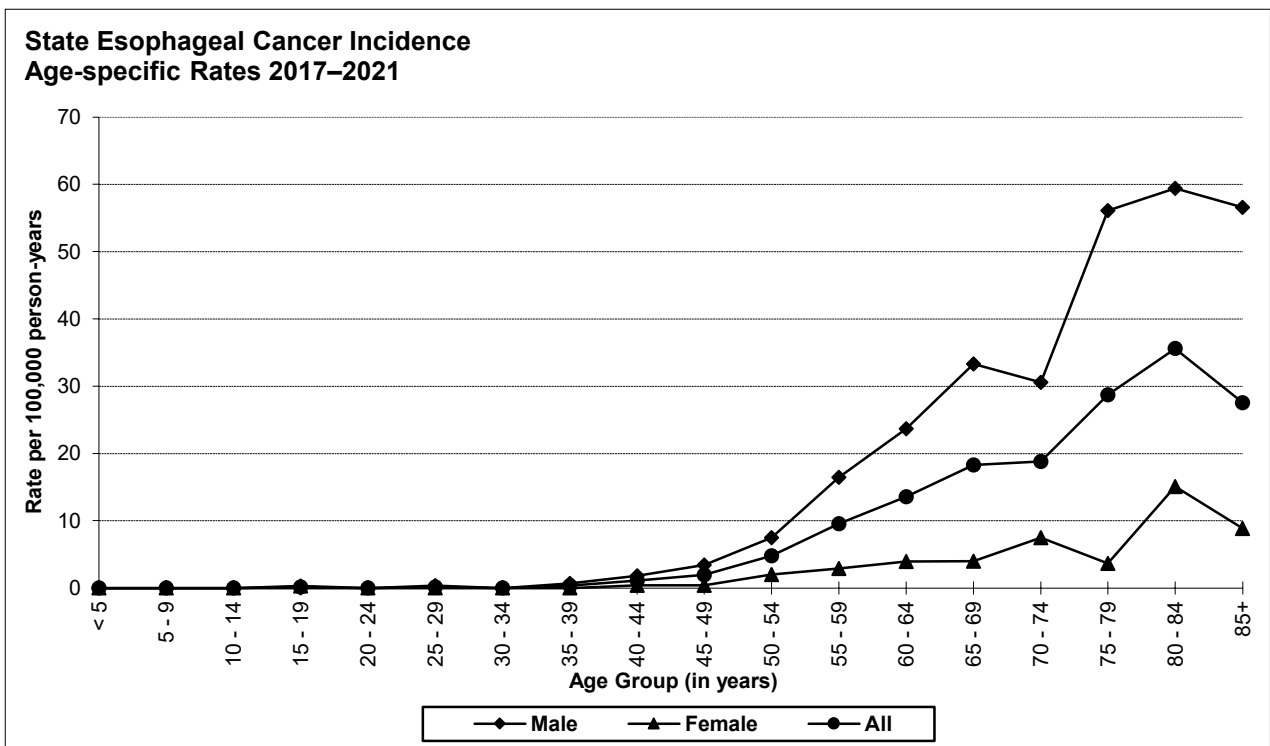## Age-adjusted Rates by Health District
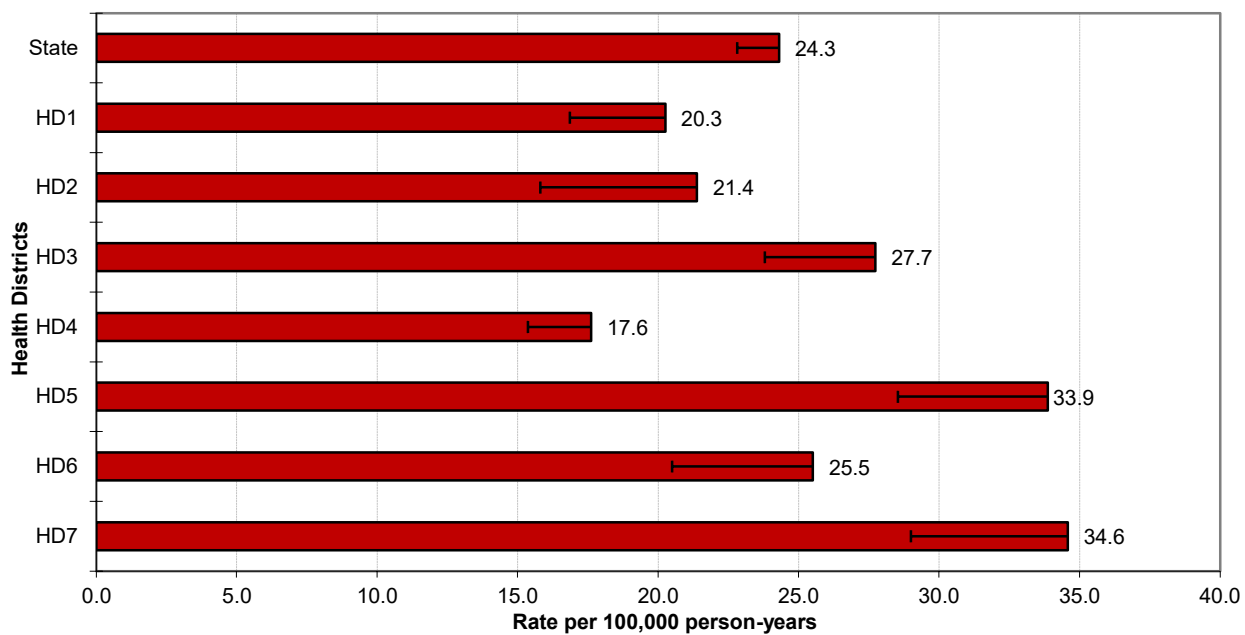
ESOPHAGUS

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	4.3	7.7	1.1
# of new invasive cases	102	89	13
# of new in situ cases	0	0	0
# of deaths	92	79	13

Total Cases by County

County	#	County	#	County	#
Ada	30	Cassia	2	Lewis	-
Adams	-	Clark	-	Lincoln	1
Bannock	7	Clearwater	2	Madison	-
Bear Lake	-	Custer	-	Minidoka	-
Benewah	1	Elmore	-	Nez Perce	3
Bingham	2	Franklin	2	Oneida	-
Blaine	3	Fremont	-	Owyhee	-
Boise	2	Gem	1	Payette	-
Bonner	4	Gooding	2	Power	-
Bonneville	-	Idaho	3	Shoshone	1
Boundary	1	Jefferson	4	Teton	2
Butte	-	Jerome	2	Twin Falls	3
Camas	-	Kootenai	6	Valley	2
Canyon	9	Latah	4	Washington	1
Caribou	1	Lemhi	1		

Stage at Diagnosis - Esophagus

Unstaged, 18.6%
Localized, 21.6%
Regional, 17.6%
Distant, 42.2%

Factors Associated with Cancer Incidence

Age	Incidence of esophageal cancer increases with age, peaking among ages 80–84.
Sex	Males have higher rates of esophageal cancer overall and adenocarcinoma and squamous cell carcinoma types; male-to-female incidence ratios are 3:1 or higher.
Race/Ethnicity	Whites and Blacks have similar rates through age 64, when rates in Whites demonstrate steeper increases until rates peak among ages 80–84. Blacks and Whites experience higher rates of squamous cell carcinoma and adenocarcinoma, respectively, across the life course relative to other races. Data are limited for American Indians/Alaska Natives. Incidence is higher in non-Hispanic Whites than Hispanics.
Occupation	Occupations with high levels of soot exposure are at higher risk.
Other	Tobacco use (cigarettes or spit tobacco) and heavy alcohol consumption are major risk factors for cancer of the esophagus, accounting for an estimated 90% of squamous cell carcinomas. Risk increases when both factors are present. Gastroesophageal reflux, and medications that predispose individuals to gastroesophageal reflux disease, e.g. anticholinergics, are associated with an increased risk of adenocarcinoma. Obesity is also associated with increased esophageal adenocarcinoma risk. Conversely, aspirin and nonsteroidal anti-inflammatory medications are associated with a small decrease in esophageal cancer risk.

Data Summary

Mean age-adjusted incidence rate across health districts:	4.5
95% confidence interval on the mean age-adjusted incidence rate:	3.2–5.8
Median age-adjusted incidence rate of health districts:	5.0
Range of age-adjusted incidence rate for health districts:	2.3–7.4
USCS rate (2019, all races):	4.6

Few cases of esophageal cancer were diagnosed in persons less than 50 years of age. The age-specific incidence rates peaked in the age group 80-84 for males and females. No health district had statistically significantly more, or fewer, cases of esophageal cancer than expected based upon rates for the remainder of Idaho. (See Section V for data.)
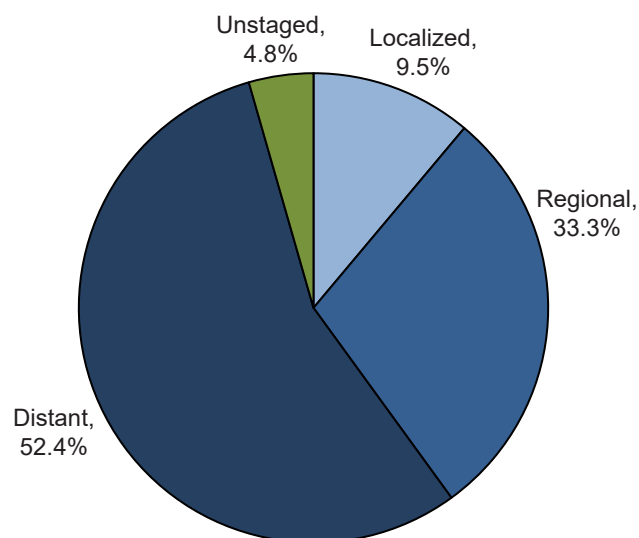
**State Esophageal Cancer Incidence
Age-specific Rates 2017–2021**

**Esophageal Cancer Incidence
Age-adjusted Rates by Health District**

HODGKIN LYMPHOMA

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	2.1	2.3	1.8
# of new invasive cases	42	24	18
# of new in situ cases	0	0	0
# of deaths	5	4	1

Stage at Diagnosis - Hodgkin Lymphoma

Unstaged, 4.8%
Localized, 9.5%
Regional, 33.3%
Distant, 52.4%

Total Cases by County

County	#	County	#	County	#
Ada	12	Cassia	1	Lewis	-
Adams	-	Clark	-	Lincoln	-
Bannock	4	Clearwater	-	Madison	1
Bear Lake	-	Custer	-	Minidoka	1
Benewah	-	Elmore	-	Nez Perce	1
Bingham	1	Franklin	-	Oneida	-
Blaine	-	Fremont	1	Owyhee	-
Boise	-	Gem	-	Payette	-
Bonner	-	Gooding	-	Power	-
Bonneville	2	Idaho	1	Shoshone	-
Boundary	-	Jefferson	1	Teton	-
Butte	-	Jerome	-	Twin Falls	2
Camas	-	Kootenai	3	Valley	-
Canyon	9	Latah	1	Washington	1
Caribou	-	Lemhi	-		

Factors Associated with Cancer Incidence

|	
Age & Sex	Hodgkin lymphoma rates are bimodal, with peaks for males and females aged 20–24 years and 75–84.
Race/Ethnicity	Whites have higher incidence of Hodgkin lymphoma than other races across the life course, except for Blacks from 35–54. Rates are similar to or lower among Asians/Pacific Islanders than other races. Non-Hispanic Whites have higher rates of Hodgkin Lymphoma through age 44, after which point incidence between Hispanic and Non-Hispanic Whites are similar, apart from higher incidence among Hispanics aged 75–79 years.
Genetics	Hodgkin lymphoma risk is elevated for individuals with a family history, e.g. a sibling, but reasons for this increased risk are not well understood.
Other	Epstein-Barr virus and immunosuppression (e.g. HIV infection, immunosuppressant medications related to organ transplant) are associated with increased risk of Hodgkin lymphoma.

Data Summary

Mean age-adjusted incidence rate across health districts:	2.1
95% confidence interval on the mean age-adjusted incidence rate:	1.7–2.5
Median age-adjusted incidence rate of health districts:	2.1
Range of age-adjusted incidence rate for health districts:	1.3–3.0
USCS rate (2019, all races):	2.5

The age-related incidence of Hodgkin lymphoma is typically bimodal, usually with a peak in the late 20s to early 30s, and another peak after age 74. No health district had statistically significantly more, or fewer, cases of Hodgkin lymphoma than expected based upon rates for the remainder of Idaho. (See Section V for data.)

**State Hodgkin Lymphoma Incidence
Age-specific Rates 2017–2021**
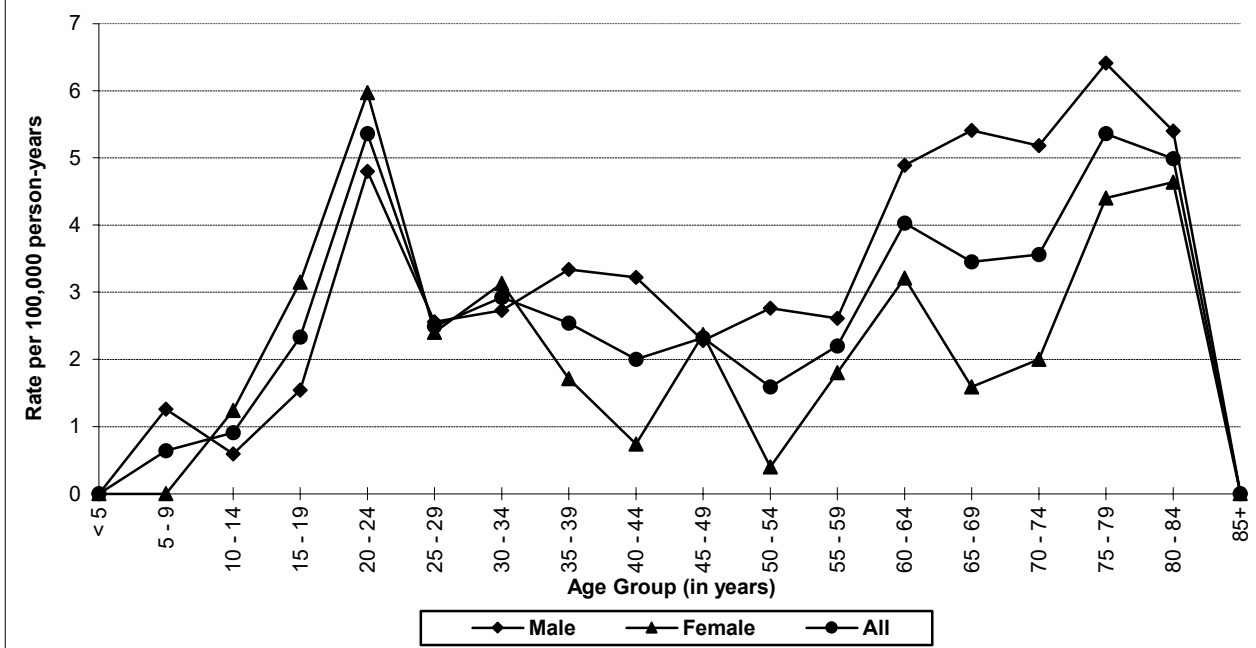
**Hodgkin Lymphoma Incidence
Age-adjusted Rates by Health District**
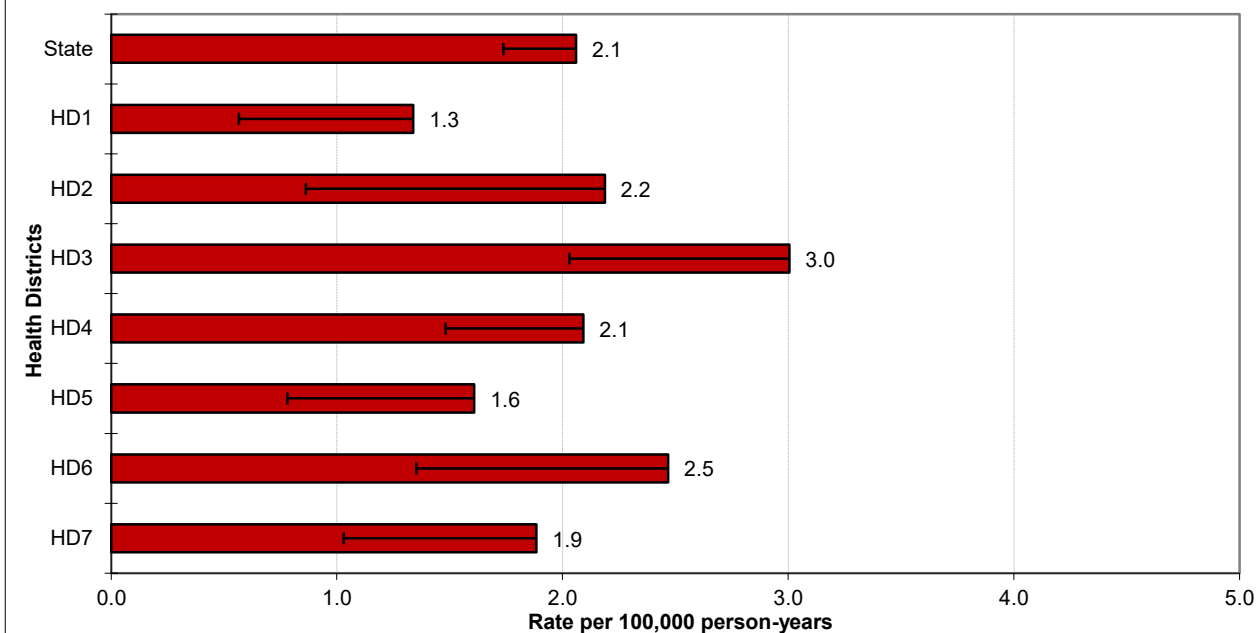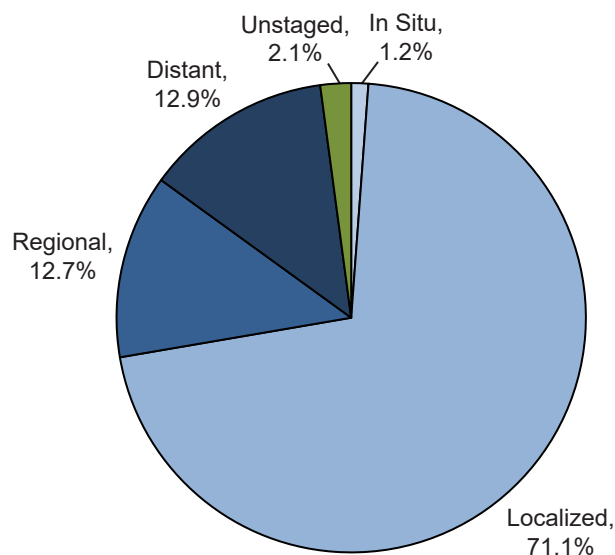
KIDNEY AND RENAL PELVIS

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	18.5	27.5	10.1
# of new invasive cases	421	307	114
# of new in situ cases	5	3	2
# of deaths	71	48	23

Total Cases by County

County		County		County	
Ada	105	Cassia	4	Lewis	-
Adams	2	Clark	-	Lincoln	2
Bannock	16	Clearwater	-	Madison	4
Bear Lake	-	Custer	1	Minidoka	4
Benewah	6	Elmore	4	Nez Perce	6
Bingham	14	Franklin	2	Oneida	1
Blaine	2	Fremont	-	Owyhee	6
Boise	2	Gem	6	Payette	10
Bonner	18	Gooding	6	Power	2
Bonneville	25	Idaho	5	Shoshone	5
Boundary	3	Jefferson	4	Teton	-
Butte	1	Jerome	3	Twin Falls	13
Camas	-	Kootenai	56	Valley	3
Canyon	68	Latah	6	Washington	4
Caribou	4	Lemhi	3		

Stage at Diagnosis - Kidney and Renal Pelvis

- Unstaged, 2.1%
- In Situ, 1.2%
- Distant, 12.9%
- Regional, 12.7%
- Localized, 71.1%

Factors Associated with Cancer Incidence

Age — Both adults and children are at risk for kidney cancer. Rates increase with age and peak during 75–84 years. 80% of all adult kidney cancers are renal cell carcinoma (RCC). Most pediatric kidney cancers are Wilms tumors, with a mean age at diagnosis of 31 or 44 months, depending on laterality.

Sex — RCC incidence is approximately twice as high in males versus females.

Race/Ethnicity — Asians/Pacific Islanders have lower rates of kidney and renal pelvis cancers than other races. Kidney and renal pelvis incidence is similar among Blacks, Whites, and American Indians/Alaska Natives across age groups. Incidence is similar among Hispanics and non-Hispanic Whites.

Genetics — Hippel-Lindau disease, hereditary leiomyomatosis and RCC (HLRCC), Birt-Hogg-Dubé syndrome, and hereditary papillary renal carcinoma are RCC-associated syndromes, and account for < 10% of RCC. Li-Fraumeni, Frasier, and Beckwith-Wiedemann are some of the numerous Wilms tumor-associated syndromes.

Occupation — Increased kidney cancer risk is associated with occupational cadmium exposure.

Other — Cigarette smoking, obesity, and hypertension are important risk factors. Products containing aristolochic acids, which are naturally found in some plant families, are linked to increased risk for kidney and renal pelvis cancers. Trichloroethylene exposure, commonly used as a solvent or in refrigerants, is associated with increased risk.

Data Summary

Mean age-adjusted incidence rate across health districts:	17.6
95% confidence interval on the mean age-adjusted incidence rate:	13.9–21.4
Median age-adjusted incidence rate of health districts:	16.8
Range of age-adjusted incidence rate for health districts:	10.8–25.5
USCS rate (2019, all races):	17.2

There were few cases of kidney or renal pelvis cancer among persons aged less than 40 years. The age-specific incidence rates peaked in the age group 80–84 for males and 75–79 for females. Health Districts 1 and 3 had statistically significantly more cases of kidney cancer than expected based upon rates for the remainder of Idaho and Health Districts 2 and 5 had significantly fewer. (See Section V for data.)

State Kidney & Renal Pelvis Cancer Incidence
Age-specific Rates 2017–2021
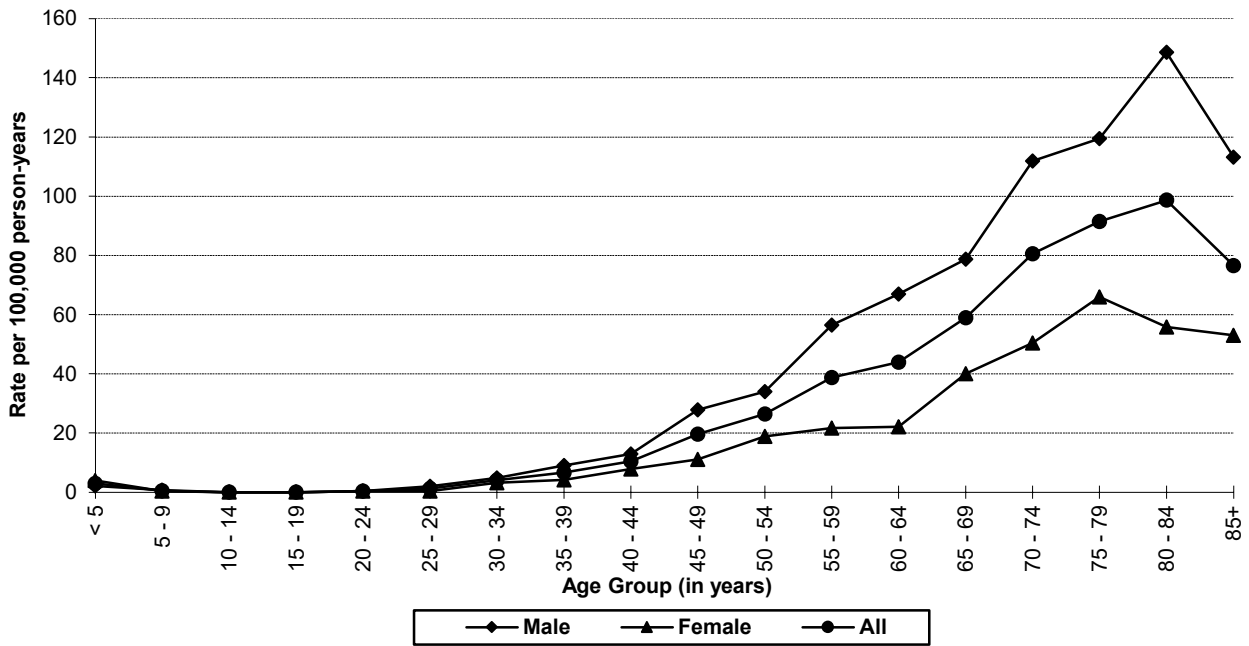
Kidney & Renal Pelvis Cancer Incidence
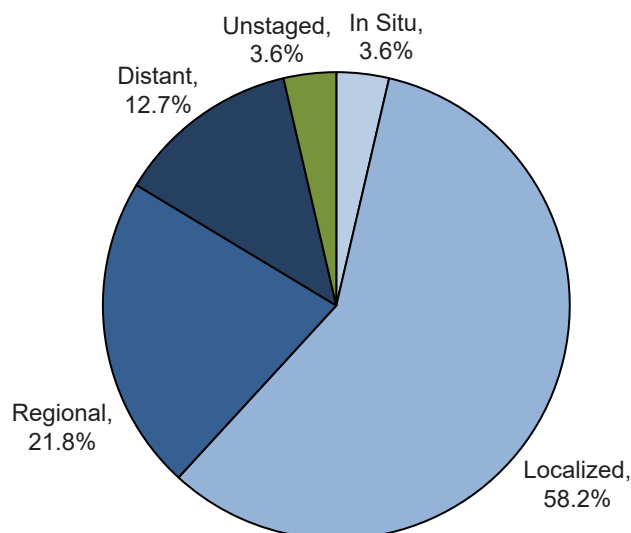## Age-adjusted Rates by Health District
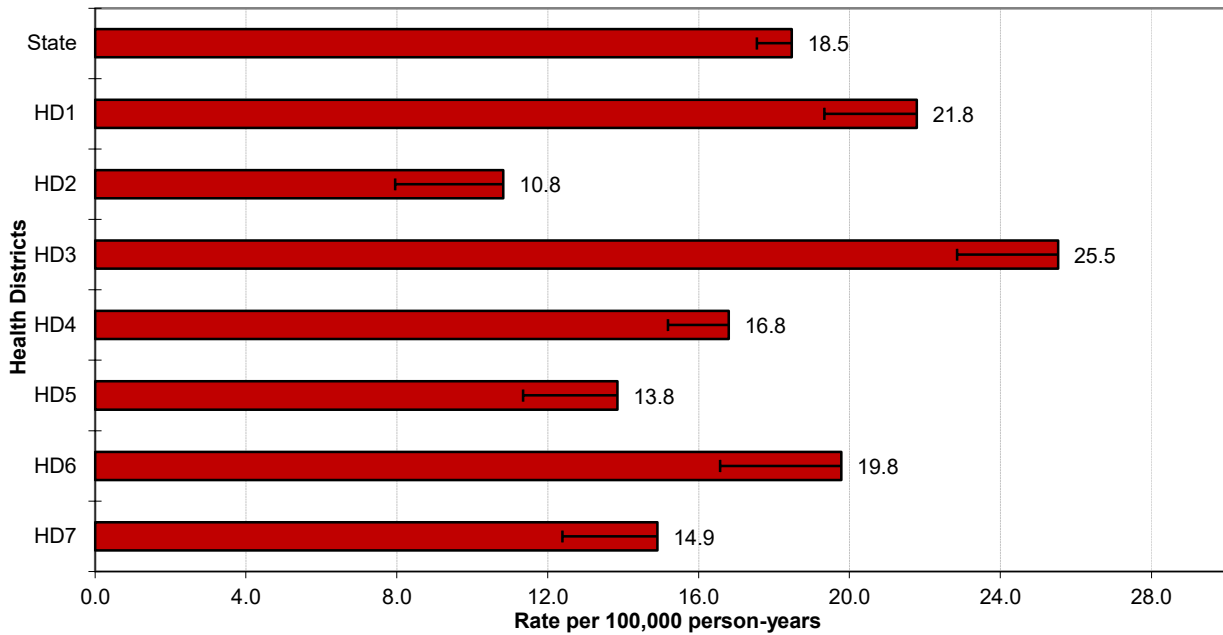
LARYNX

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	2.3	3.5	1.2
# of new invasive cases	53	38	15
# of new in situ cases	2	1	1
# of deaths	20	13	7

Stage at Diagnosis - Larynx

Unstaged, 3.6%
In Situ, 3.6%
Distant, 12.7%
Regional, 21.8%
Localized, 58.2%

Total Cases by County

County	#	County	#	County	#
Ada	14	Cassia	1	Lewis	-
Adams	-	Clark	-	Lincoln	-
Bannock	3	Clearwater	-	Madison	-
Bear Lake	-	Custer	-	Minidoka	3
Benewah	-	Elmore	1	Nez Perce	2
Bingham	-	Franklin	1	Oneida	-
Blaine	-	Fremont	-	Owyhee	-
Boise	-	Gem	1	Payette	-
Bonner	5	Gooding	1	Power	-
Bonneville	2	Idaho	-	Shoshone	3
Boundary	-	Jefferson	-	Teton	-
Butte	-	Jerome	1	Twin Falls	1
Camas	-	Kootenai	10	Valley	-
Canyon	4	Latah	1	Washington	1
Caribou	-	Lemhi	-		

Factors Associated with Cancer Incidence

|	
Age	Rates increase with age, with most cases occurring after age 54.
Sex	Laryngeal cancers are much more common in males than females.
Race/Ethnicity	Generally in the United States, Blacks have higher incidence rates than Whites and Hispanics have lower rates than non-Hispanic Whites.
Occupation	Laryngeal cancer has been associated with exposures to asbestos and wood dust.
Other	Cigarette smoking and excess alcohol use are both major risk factors. The combination of alcohol consumption and tobacco use (smoking or spit tobacco) acts greatly to increase the risk. A patient with a single laryngeal cancer who continues to smoke and drink alcohol has an enhanced risk of developing a second laryngeal tumor.

Data Summary

Mean age-adjusted incidence rate across health districts:	2.2
95% confidence interval on the mean age-adjusted incidence rate:	1.2–3.1
Median age-adjusted incidence rate of health districts:	2.0
Range of age-adjusted incidence rate for health districts:	0.5–4.5
USCS rate (2019, all races):	2.9

There were few cases of laryngeal cancer among persons aged less than 50 years. The age-specific incidence rates for males were more than twice those for females after age 59. The age-specific incidence rates peaked in the age group 80–84 for males and 70–74 for females. Health District 1 had statistically significantly more cases than expected based upon rates for the remainder of Idaho and Health District 7 had significantly fewer. (See Section V for data.)

State Laryngeal Cancer Incidence
Age-specific Rates 2017–2021
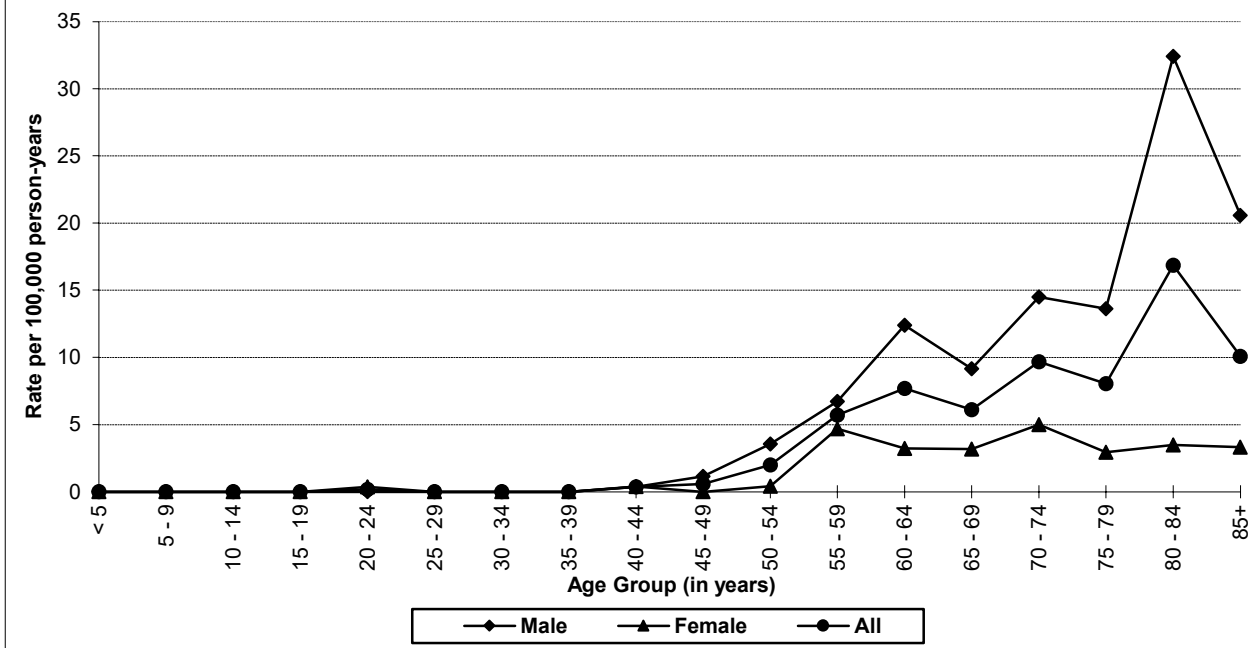
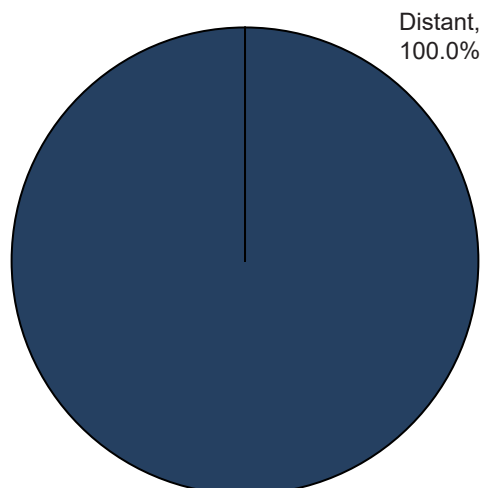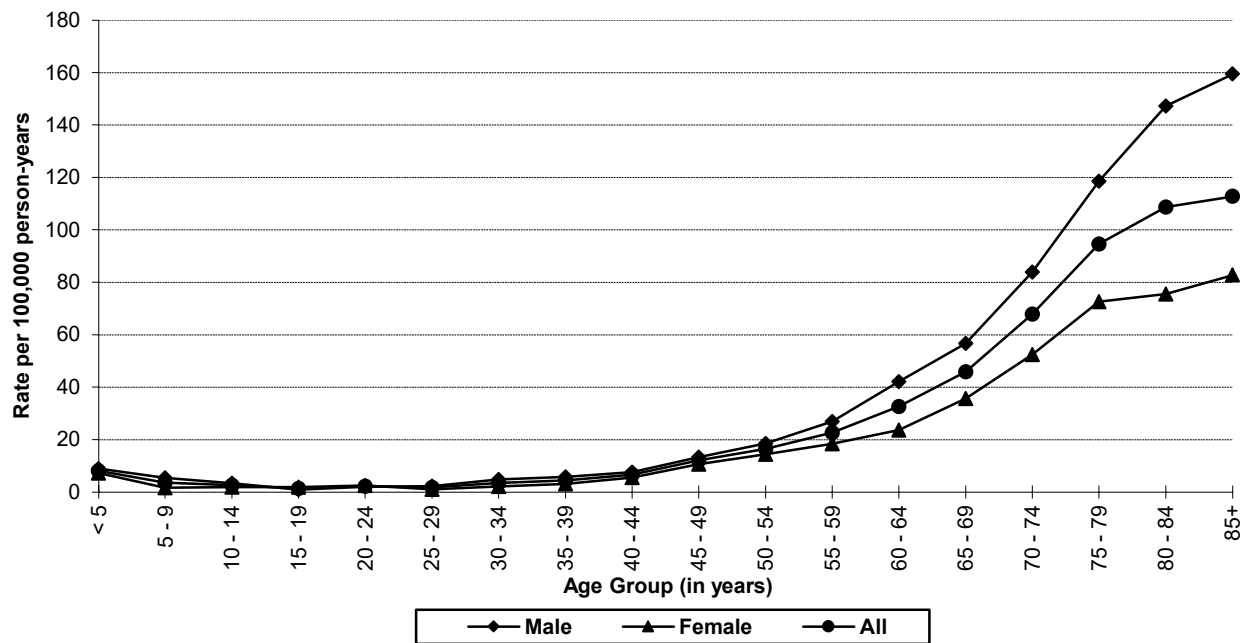## Laryngeal Cancer Incidence
Age-adjusted Rates by Health District
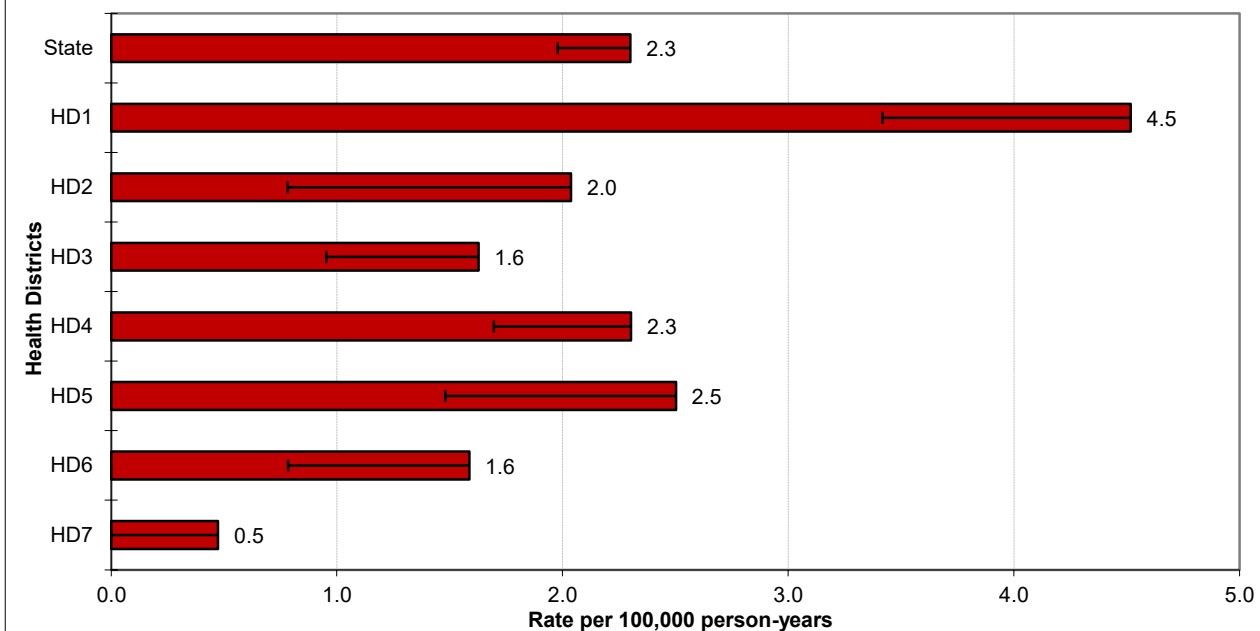
LEUKEMIA

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	15.8	19.7	12.3
# of new invasive cases	354	215	139
# of new in situ cases	0	0	0
# of deaths	145	89	56

Total Cases by County

County		County		County	
Ada	89	Cassia	2	Lewis	1
Adams	1	Clark	-	Lincoln	2
Bannock	10	Clearwater	3	Madison	4
Bear Lake	4	Custer	-	Minidoka	4
Benewah	2	Elmore	1	Nez Perce	6
Bingham	17	Franklin	1	Oneida	1
Blaine	8	Fremont	4	Owyhee	5
Boise	2	Gem	3	Payette	4
Bonner	17	Gooding	2	Power	4
Bonneville	20	Idaho	4	Shoshone	2
Boundary	2	Jefferson	4	Teton	2
Butte	1	Jerome	5	Twin Falls	29
Camas	-	Kootenai	31	Valley	1
Canyon	47	Latah	2	Washington	5
Caribou	2	Lemhi	-		

Stage at Diagnosis - Leukemia

Distant, 100.0%

Factors Associated with Cancer Incidence

Age	Leukemia is the most common form of cancer in children. Incidence usually increases with age in adults. The highest rates occur in individuals over age 60.
Sex	Males have higher incidence rates than females for acute lymphoblastic leukemia (ALL), chronic lymphocytic leukemia (CLL), acute myeloid leukemia (AML), chronic myeloid leukemia (CML), acute monocytic leukemia (AML-M5), and chronic myelomonocytic leukemia (CMML).
Race/Ethnicity	ALL is less common among Blacks. CLL is rare in Asian/Pacific Islanders. Hispanics and non-Hispanic Whites have higher rates of AML-M5 than other race/ethnic groups.
Genetics	Certain congenital defects (e.g. trisomy 21, Fanconi's anemia, Bloom syndrome, ataxia-telangiectasia) increase risk for various types of leukemia in children.
Other	Ionizing radiation exposure increases leukemia risk, except for CLL. Benzene is a known cause of leukemia (predominantly AML). Treatment with some chemotherapeutic agents for other cancers increases the risk of leukemia. Exposure to herbicides used during the Vietnam War, including Agent Orange, has been associated with increased incidence of CLL. Autoimmune diseases and several viruses, including HTLV-I and Epstein-Barr virus, are associated with certain types of leukemia.

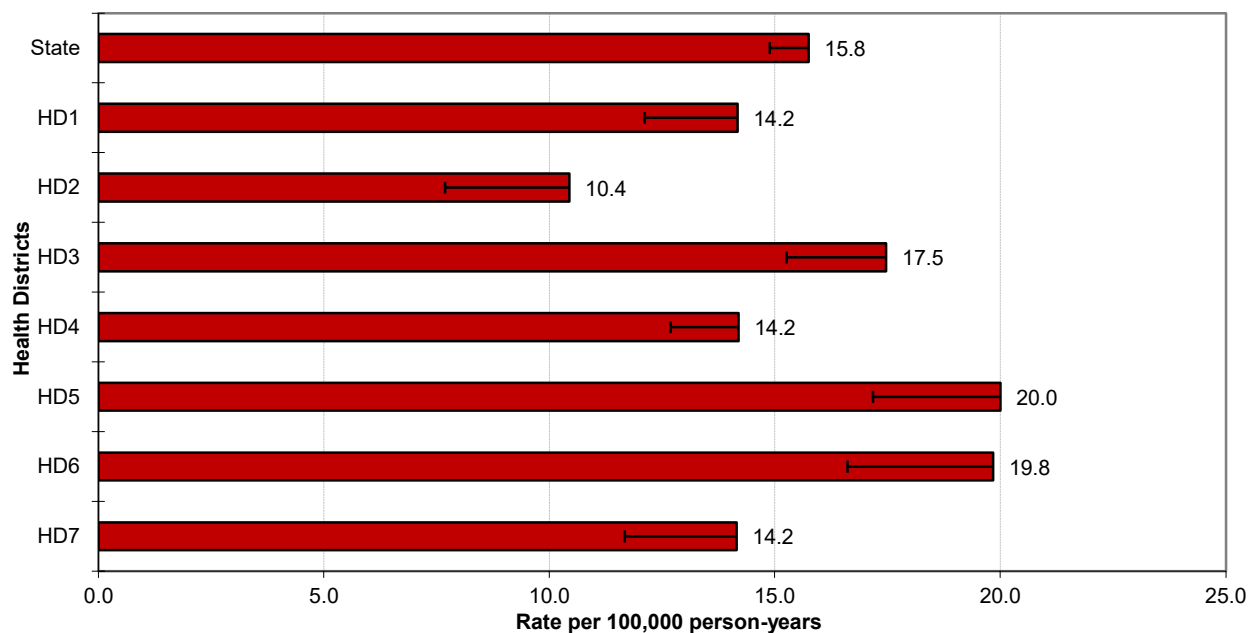## Data Summary

Mean age-adjusted incidence rate across health districts:	15.8
95% confidence interval on the mean age-adjusted incidence rate:	13.2–18.3
Median age-adjusted incidence rate of health districts:	14.2
Range of age-adjusted incidence rate for health districts:	10.4–20.0
USCS rate (2019, all races):	13.2

The age-specific incidence distribution of leukemia for Idaho is quite similar to the typical pattern seen in SEER or NPCR data. The rates are higher for males than females for all types of leukemia apart from AML, which has no predilection for age or sex. Health District 5 had statistically significantly more cases of leukemia than expected based upon rates for the remainder of Idaho. (See Section V for data.)

State Leukemia Incidence
Age-specific Rates 2017–2021

Rate per 100,000 person-years vs **Age Group (in years)**

Legend: Male ◆, Female ▲, All ●

Leukemia Incidence
Age-adjusted Rates by Health District

Health Districts vs **Rate per 100,000 person-years**

Health District	Rate
State	15.8
HD1	14.2
HD2	10.4
HD3	17.5
HD4	14.2
HD5	20.0
HD6	19.8
HD7	14.2

LIVER AND BILE DUCT

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	6.6	9.5	3.8
# of new invasive cases	163	117	46
# of new in situ cases	0	0	0
# of deaths	109	72	37

Stage at Diagnosis - Liver and Bile Duct

Pie chart:
- Unstaged, 5.5%
- Distant, 20.9%
- Localized, 48.5%
- Regional, 25.2%

Total Cases by County

County	#	County	#	County	#
Ada	44	Cassia	2	Lewis	-
Adams	1	Clark	-	Lincoln	-
Bannock	8	Clearwater	-	Madison	2
Bear Lake	1	Custer	1	Minidoka	5
Benewah	2	Elmore	1	Nez Perce	2
Bingham	2	Franklin	-	Oneida	-
Blaine	-	Fremont	1	Owyhee	3
Boise	-	Gem	3	Payette	3
Bonner	5	Gooding	-	Power	-
Bonneville	5	Idaho	4	Shoshone	4
Boundary	2	Jefferson	5	Teton	1
Butte	-	Jerome	2	Twin Falls	10
Camas	-	Kootenai	16	Valley	-
Canyon	23	Latah	2	Washington	-
Caribou	-	Lemhi	3		

Factors Associated with Cancer Incidence

|	
Age	The incidence rate of liver cancer increases with age.
Sex	Rates are usually higher among males than females.
Race/Ethnicity	Incidence is higher among Asian/Pacific Islanders, American Indians/Alaska Natives, and Hispanics.
Diet	Aflatoxins, which are present in certain foods such as peanut butter, are classified as a known human carcinogen causing liver cancer.
Occupation	Thorium dioxide (an x-ray contrast medium) exposure increases liver cancer risk. Exposure to vinyl chloride used in plastic production is associated with an increased risk of angiosarcoma of the liver.
Other	Hepatitis B and Hepatitis C infections are significant causes of hepatocellular carcinoma. Cirrhosis of the liver due to viral hepatitis, alcoholism, or toxic chemical exposure accounts for 50–80% of liver cancer cases. Long-term use of estrogen-progestogen contraceptives increases risk of hepatocellular carcinoma.

Data Summary

Mean age-adjusted incidence rate across health districts:	6.6
95% confidence interval on the mean age-adjusted incidence rate:	5.8–7.4
Median age-adjusted incidence rate of health districts:	6.7
Range of age-adjusted incidence rate for health districts:	5.2–8.3
USCS rate (2019, all races):	8.4

There were few cases of liver and bile duct cancer among persons less than 55 years of age. Age-specific incidence rates generally increased with age, peaking in the age group 70–74 for males and 75–79 for females. No health district had statistically significantly more, or fewer, cases of liver and bile duct cancer than expected based upon rates for the remainder of Idaho. (See Section V for data.)

State Liver & Bile Duct Cancer Incidence
Age-specific Rates 2017–2021
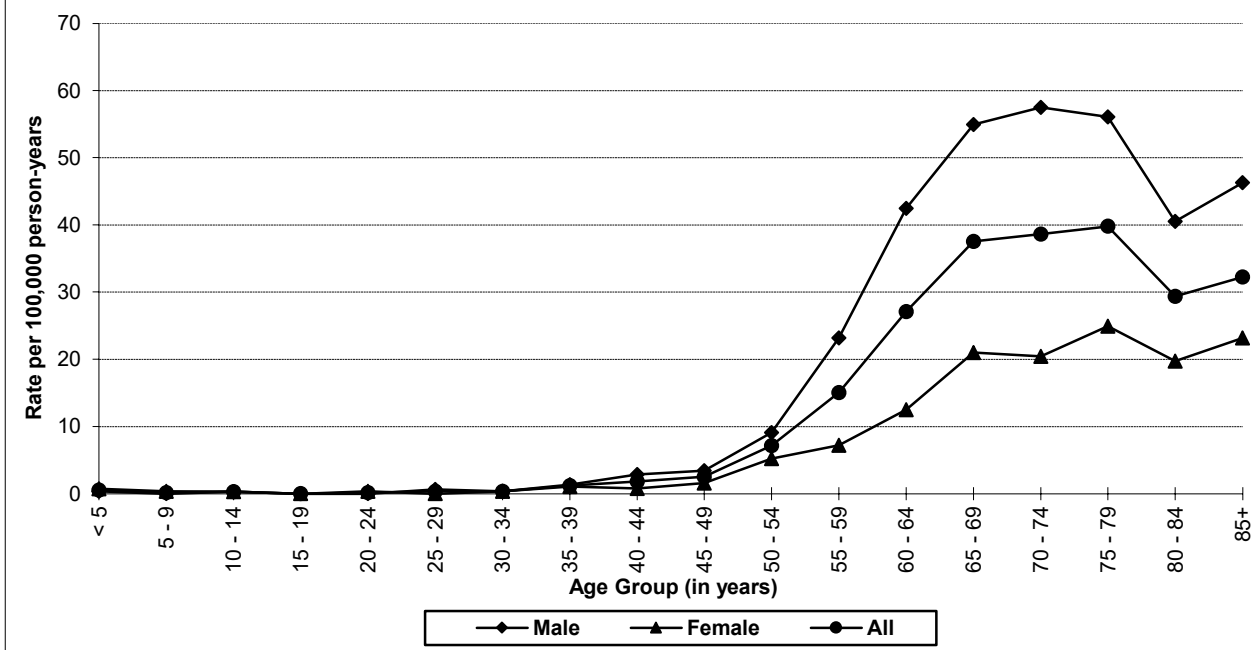
Liver and Bile Duct Cancer Incidence
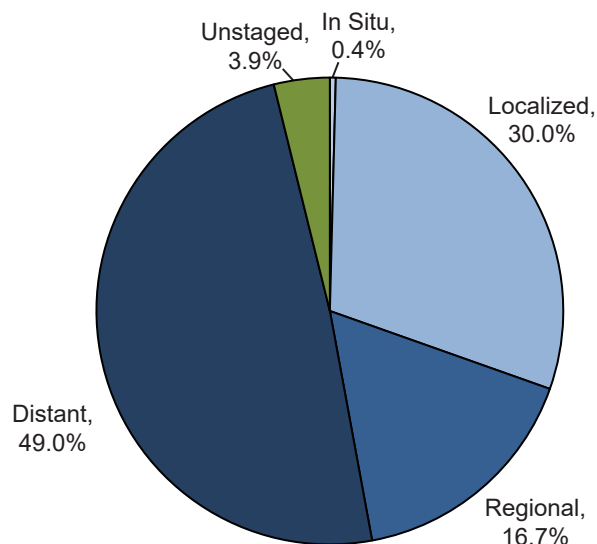## Age-adjusted Rates by Health District
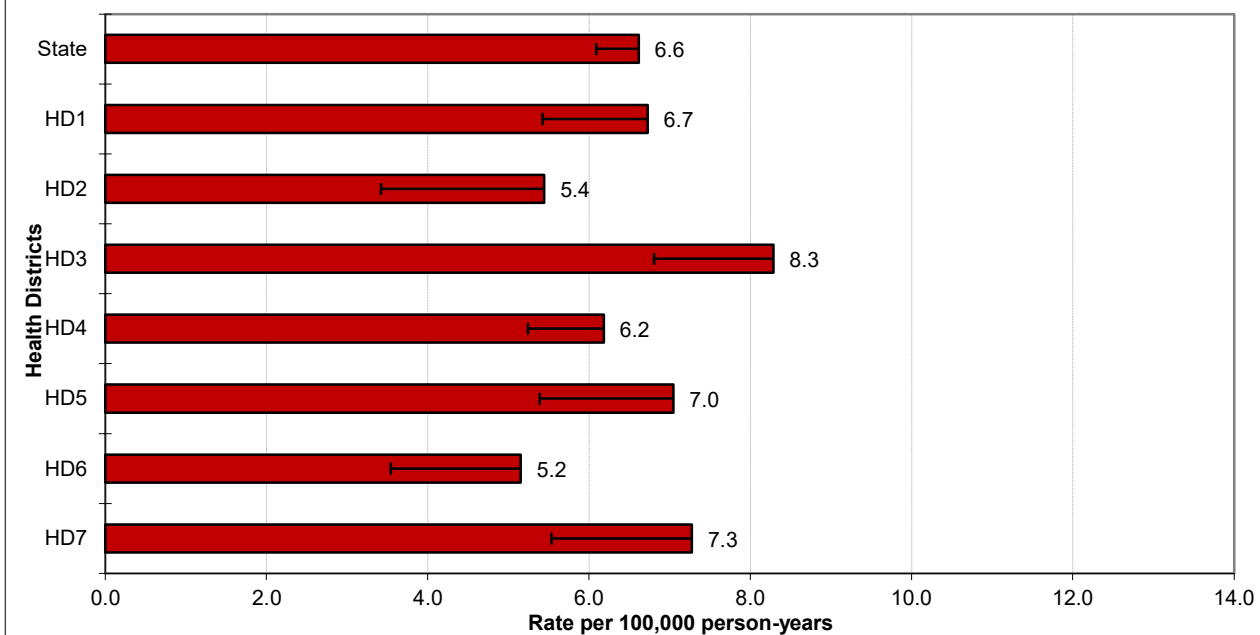
LUNG AND BRONCHUS

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	41.0	45.6	37.8
# of new invasive cases	979	510	469
# of new in situ cases	4	2	2
# of deaths	563	289	274

Total Cases by County

County	Cases	County	Cases	County	Cases
Ada	239	Cassia	6	Lewis	6
Adams	4	Clark	-	Lincoln	3
Bannock	45	Clearwater	12	Madison	4
Bear Lake	4	Custer	3	Minidoka	12
Benewah	10	Elmore	16	Nez Perce	38
Bingham	23	Franklin	2	Oneida	3
Blaine	4	Fremont	3	Owyhee	9
Boise	9	Gem	14	Payette	30
Bonner	38	Gooding	8	Power	9
Bonneville	35	Idaho	14	Shoshone	14
Boundary	11	Jefferson	9	Teton	4
Butte	4	Jerome	8	Twin Falls	43
Camas	-	Kootenai	123	Valley	4
Canyon	119	Latah	16	Washington	9
Caribou	4	Lemhi	12		

Stage at Diagnosis - Lung and Bronchus

- Unstaged, 3.9%
- In Situ, 0.4%
- Localized, 30.0%
- Regional, 16.7%
- Distant, 49.0%

Factors Associated with Cancer Incidence

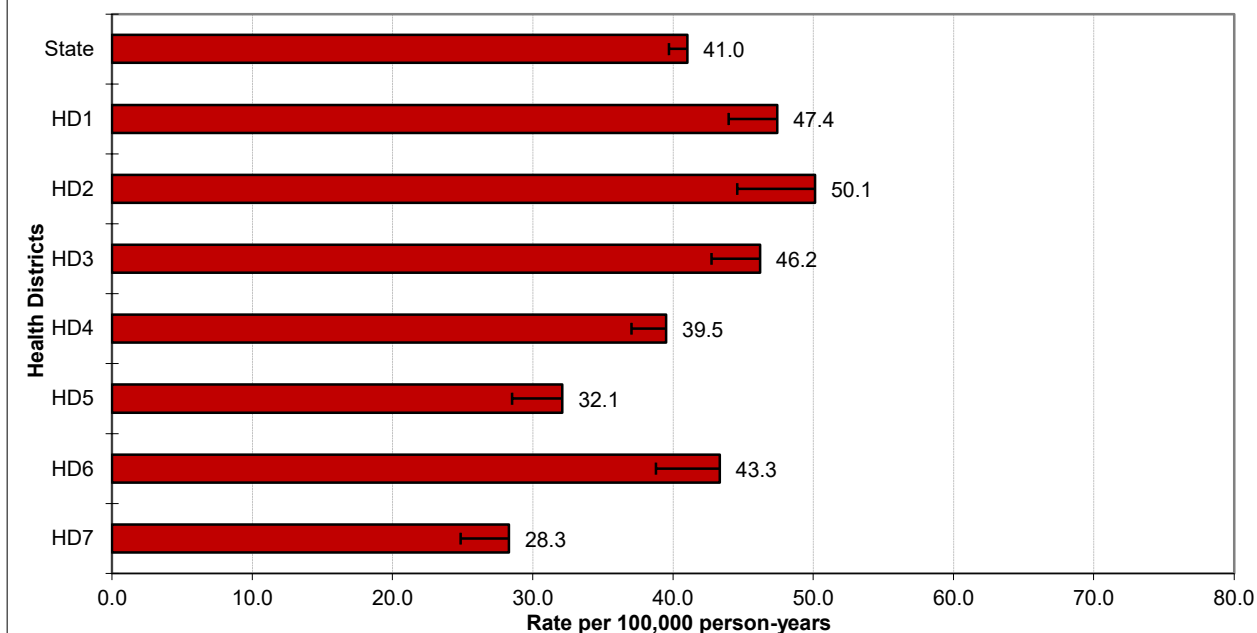|	
Age	Lung cancer incidence rates increase with age.
Sex	The incidence is currently higher in males than in females, but the gap is narrowing due to increased smoking rates among women in more recent decades.
Race/Ethnicity	Incidence is highest among non-Hispanic Whites and Blacks and lowest among Hispanics and Asian and Pacific Islanders.
Occupation	Occupational or environmental exposures to asbestos, cadmium, chromium, coal tars, crystalline silica dust, polycyclic aromatic hydrocarbons, radon, soot, chlorpyrifos insecticides, ionizing radiation, and other substances increase the risk.
Other	Cigarette smoking, including exposure to second-hand smoke, is the most important risk factor, accounting for about 80% of lung cancer deaths. Evidence exists that rates are about 1.3 times higher, adjusted for smoking, in urban areas than rural areas due to air pollution, mostly from motor vehicles.

Data Summary

Mean age-adjusted incidence rate across health districts:	41.0
95% confidence interval on the mean age-adjusted incidence rate:	35.0–47.1
Median age-adjusted incidence rate of health districts:	43.3
Range of age-adjusted incidence rate for health districts:	28.3–50.1
USCS rate (2019, all races):	52.9

There were few cases of lung cancer among persons less than 50 years of age. The age-specific incidence rates for males were uniformly higher than the rates for females after age 64. The incidence rates increased with age, peaking in the age group 75–79 for males and 80–84 for females. Health Districts 1 and 3 had statistically significantly more cases of lung cancer than expected based upon rates for the remainder of Idaho and Health Districts 5 and 7 had statistically significantly fewer. (See Section V for data.)

State Lung & Bronchus Cancer Incidence
Age-specific Rates 2017–2021

Rate per 100,000 person-years vs. Age Group (in years)

Legend: Male, Female, All

Lung & Bronchus Cancer Incidence
Age-adjusted Rates by Health District

Health District	Rate per 100,000 person-years
State	41.0
HD1	47.4
HD2	50.1
HD3	46.2
HD4	39.5
HD5	32.1
HD6	43.3
HD7	28.3
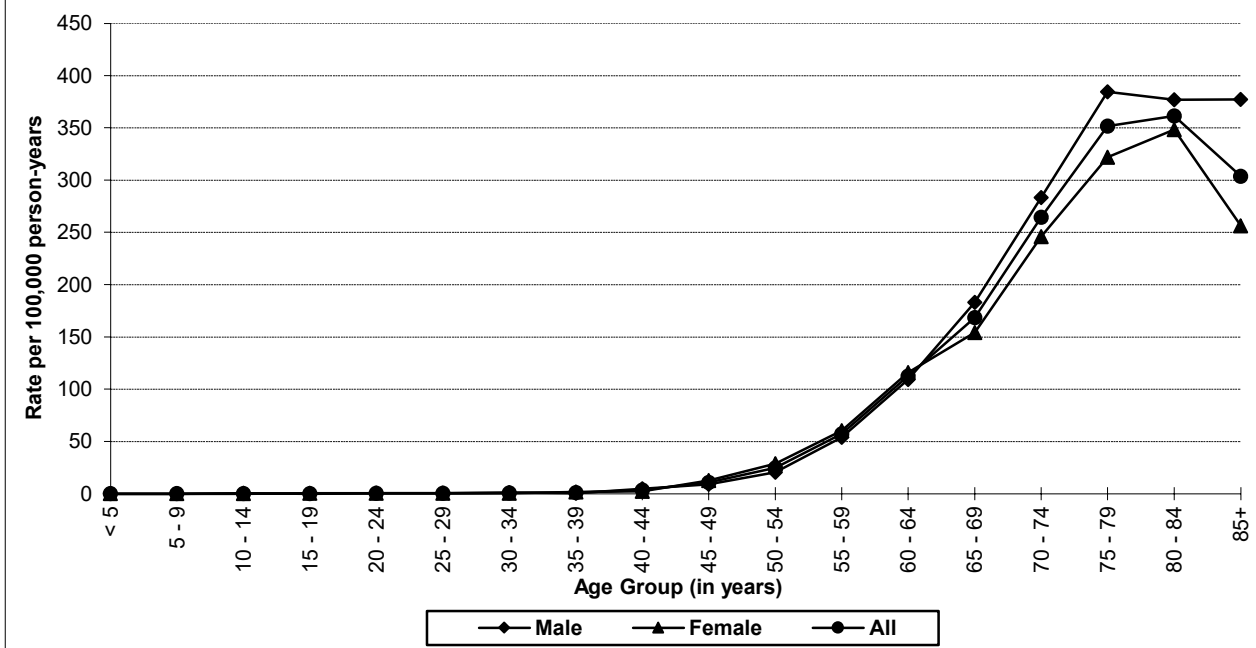
MELANOMA OF SKIN

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	33.0	40.5	27.1
# of new invasive cases	728	431	297
# of new in situ cases	690	415	275
# of deaths	63	45	18

Total Cases by County

Ada	400	Cassia	21	Lewis	2
Adams	2	Clark	-	Lincoln	2
Bannock	69	Clearwater	10	Madison	11
Bear Lake	4	Custer	5	Minidoka	7
Benewah	4	Elmore	12	Nez Perce	26
Bingham	23	Franklin	12	Oneida	5
Blaine	47	Fremont	7	Owyhee	12
Boise	8	Gem	13	Payette	13
Bonner	70	Gooding	12	Power	3
Bonneville	66	Idaho	10	Shoshone	9
Boundary	29	Jefferson	19	Teton	19
Butte	3	Jerome	15	Twin Falls	63
Camas	1	Kootenai	179	Valley	16
Canyon	148	Latah	24	Washington	5
Caribou	4	Lemhi	8		

Stage at Diagnosis - Melanoma of Skin

Distant, 2.1%
Unstaged, 1.0%
Regional, 3.5%
In Situ, 48.7%
Localized, 44.7%

Factors Associated with Cancer Incidence

|	
Age	Melanoma is extremely uncommon before puberty. Rates increase with age.
Sex	Incidence rates are higher among females than males in younger age groups, and higher in males than females in older age groups.
Race/Ethnicity	Incidence rates are over 5-fold higher for non-Hispanic Whites than American Indian/Alaska Natives or Hispanics and lowest among Asian/Pacific Islanders and Blacks.
Other	Ultraviolet light exposure, especially blistering sunburns during childhood and intermittent exposure of untanned skin to intense sunlight, is a major risk factor. Melanoma incidence rates are increasing around the world. Blue eyes, fair or red hair, and pale complexion are well-known risk factors for melanoma. Apart from race and age, the number of melanocytic nevi is the strongest known risk factor for melanoma.

Data Summary

Mean age-adjusted incidence rate across health districts:	32.7
95% confidence interval on the mean age-adjusted incidence rate:	29.8–35.5
Median age-adjusted incidence rate of health districts:	31.2
Range of age-adjusted incidence rate for health districts:	27.5–39.0
USCS rate (2019, all races):	22.7

There were few cases of melanoma of the skin among persons less than 25 years of age. The age-specific incidence rates were higher among males after age 54. Health District 1 had statistically significantly more cases of melanoma than expected based upon rates for the remainder of Idaho. (See Section V for data.)

State Melanoma of the Skin Incidence
Age-specific Rates 2017–2021

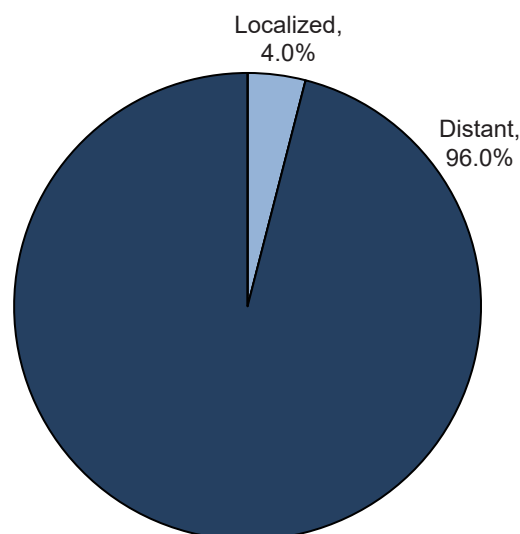**Melanoma of the Skin Incidence**
Age-adjusted Rates by Health District
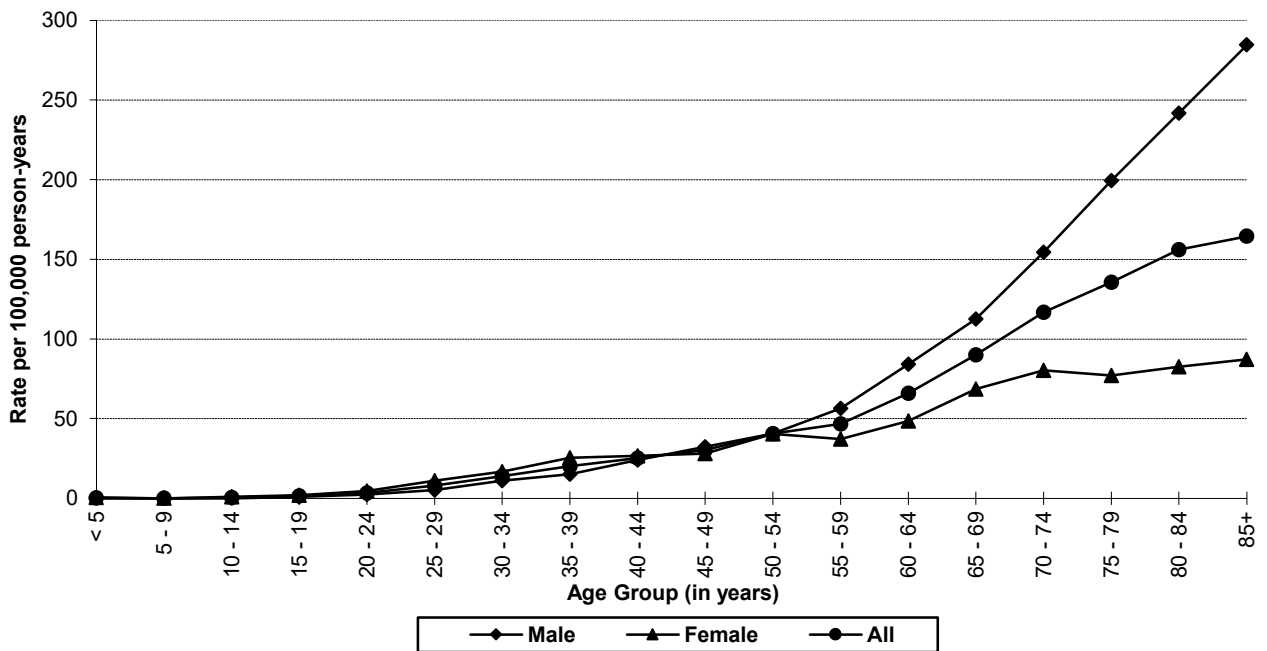
Health District	Rate
State	33.0
HD1	39.0
HD2	30.7
HD3	31.0
HD4	32.9
HD5	36.4
HD6	27.5
HD7	31.2
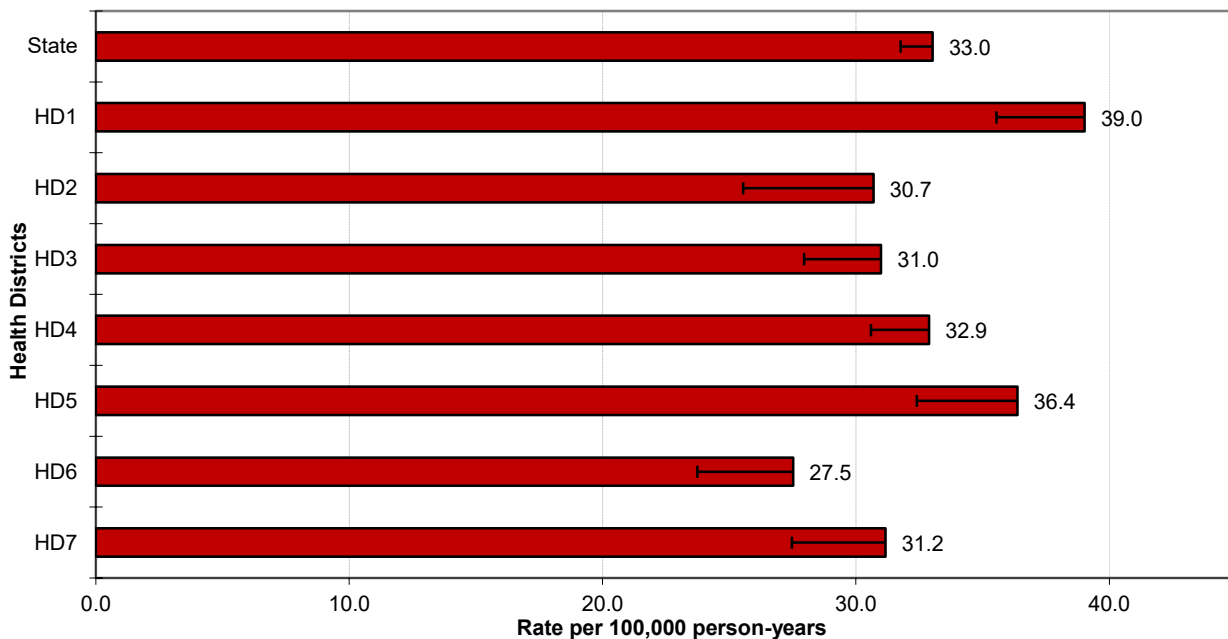
MYELOMA

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	6.5	8.2	4.8
# of new invasive cases	150	90	60
# of new in situ cases	0	0	0
# of deaths	65	32	33

Total Cases by County

County	Cases	County	Cases	County	Cases
Ada	41	Cassia	3	Lewis	-
Adams	-	Clark	1	Lincoln	2
Bannock	-	Clearwater	1	Madison	-
Bear Lake	-	Custer	-	Minidoka	2
Benewah	1	Elmore	2	Nez Perce	2
Bingham	3	Franklin	2	Oneida	-
Blaine	2	Fremont	1	Owyhee	2
Boise	1	Gem	3	Payette	6
Bonner	6	Gooding	-	Power	-
Bonneville	10	Idaho	1	Shoshone	-
Boundary	4	Jefferson	3	Teton	2
Butte	-	Jerome	-	Twin Falls	10
Camas	-	Kootenai	17	Valley	1
Canyon	14	Latah	3	Washington	2
Caribou	1	Lemhi	1		

Stage at Diagnosis - Myeloma

Localized, 4.0%

Distant, 96.0%

Factors Associated with Cancer Incidence

Age
Multiple myeloma is an age-dependent cancer; incidence rates increase with age, and it rarely occurs before age 40.

Sex
Rates for males are somewhat higher than for females.

Race/Ethnicity
Blacks have substantially higher incidence rates than other race/ethnicity groups and Hispanics have the second highest rates.

Genetics
There appears to be a slight increase in the incidence of the disease in first-degree relatives (parents or siblings) of people with multiple myeloma.

Other
Being overweight or obese increases a person's risk of developing myeloma. Several specific chemical and physical substances have been linked to myeloma risk in one or more studies. Truck drivers, painters, and agricultural workers are at increased risk for multiple myeloma. Individuals with monoclonal gammopathy of unknown significance or solitary plasmacytoma are at higher risk of developing multiple myeloma.

Data Summary

Mean age-adjusted incidence rate across health districts:	6.2
95% confidence interval on the mean age-adjusted incidence rate:	4.9–7.4
Median age-adjusted incidence rate of health districts:	6.7
Range of age-adjusted incidence rate for health districts:	3.3–7.8
USCS rate (2019, all races):	6.8

There were no cases of myeloma among persons less than 25 years of age. The age-specific incidence rates increased rapidly for males and females after age group 55–59. Health District 6 had statistically significantly fewer cases of myeloma than expected based upon rates for the remainder of Idaho. (See Section V for data.)

State Myeloma Incidence
Age-specific Rates 2017–2021
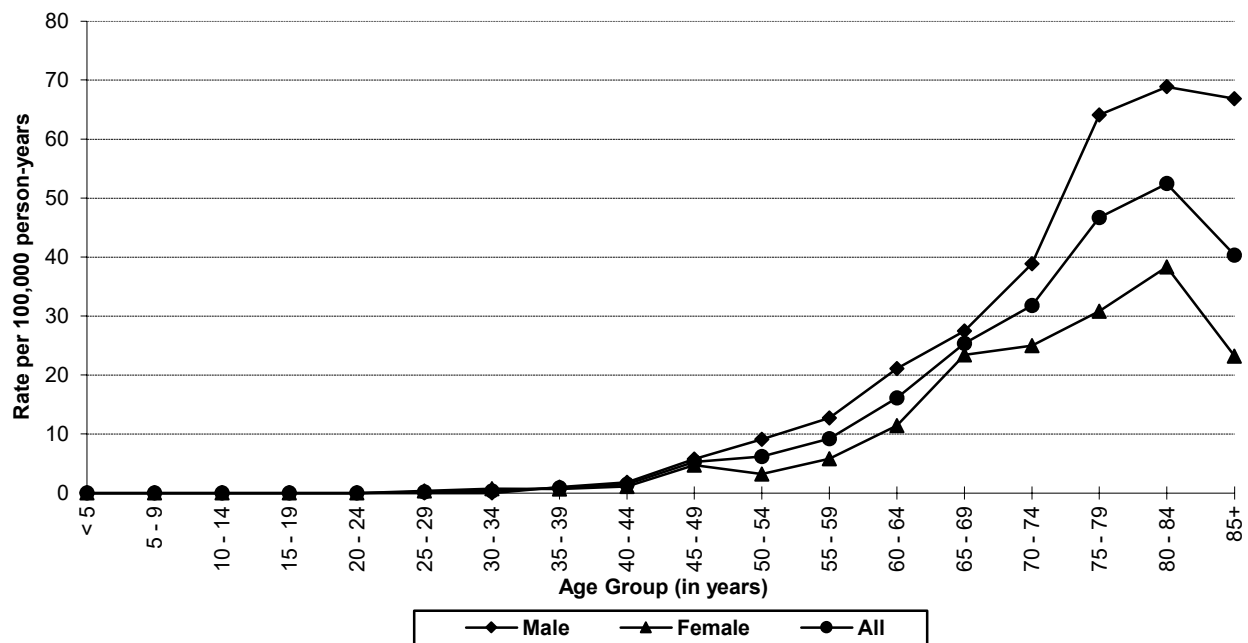
Myeloma Incidence
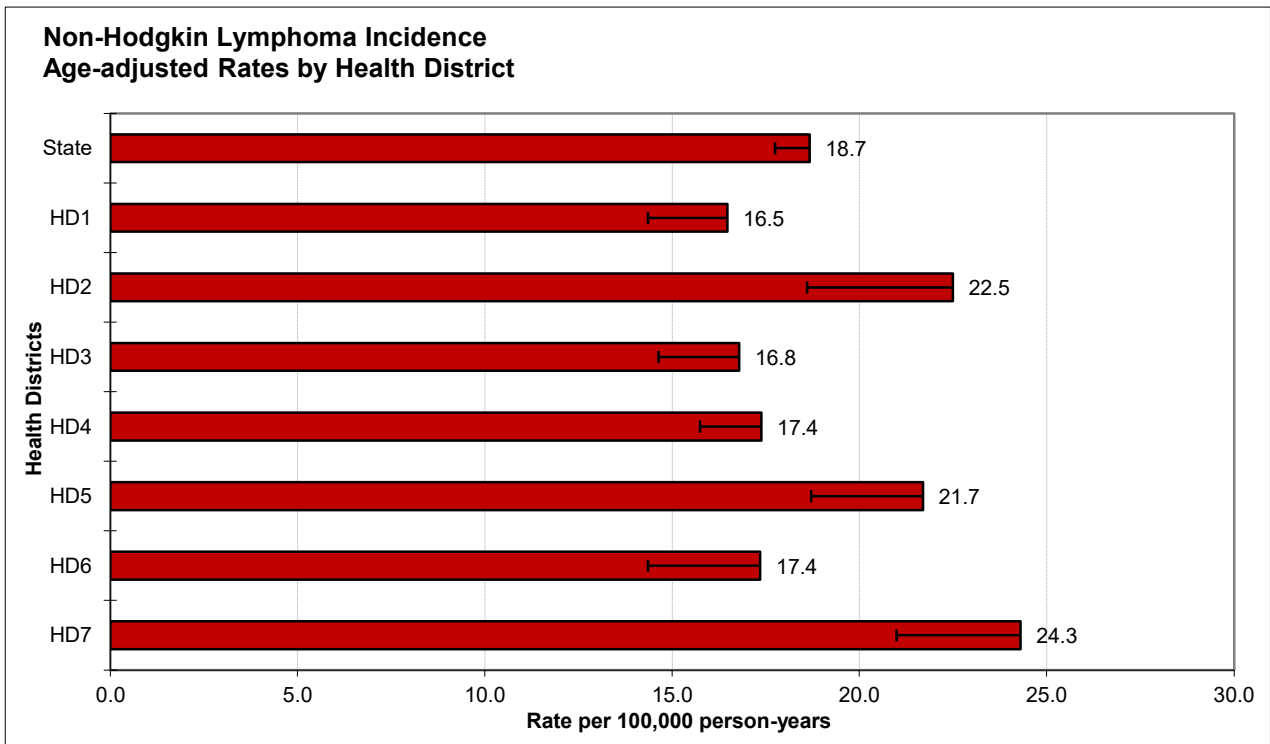## Age-adjusted Rates by Health District
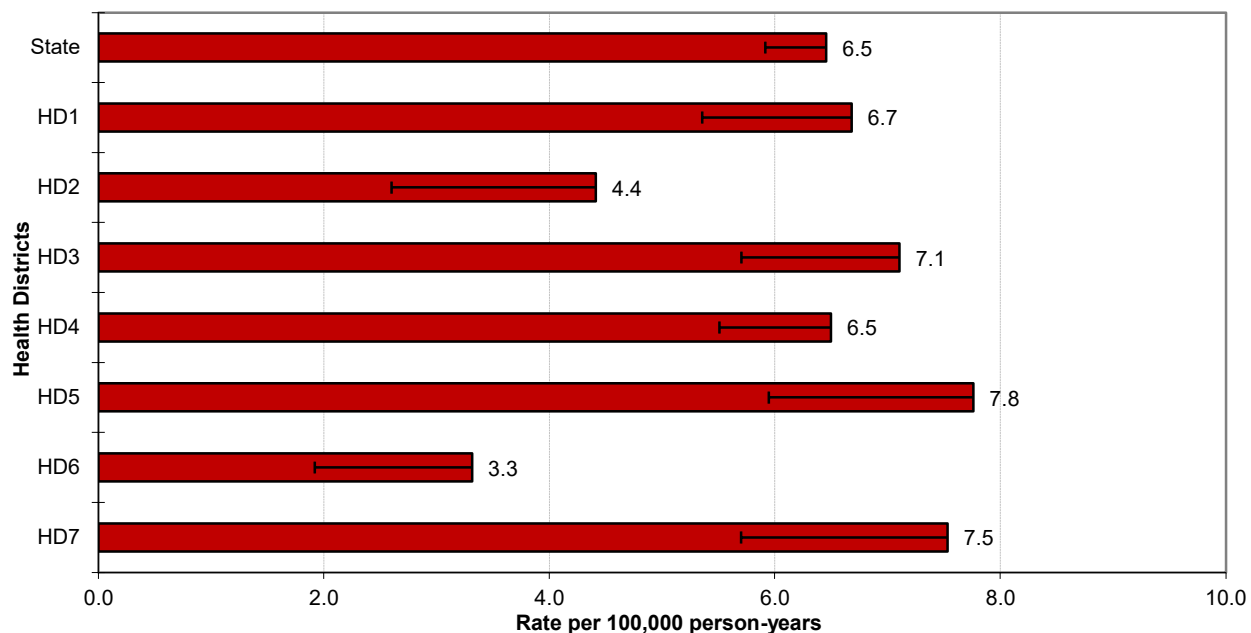
Health District	Rate
State	6.5
HD1	6.7
HD2	4.4
HD3	7.1
HD4	6.5
HD5	7.8
HD6	3.3
HD7	7.5

NON-HODGKIN LYMPHOMA

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	18.7	20.7	16.6
# of new invasive cases	433	233	200
# of new in situ cases	0	0	0
# of deaths	129	65	64

Total Cases by County

County		County		County	
Ada	108	Cassia	5	Lewis	1
Adams	-	Clark	1	Lincoln	1
Bannock	13	Clearwater	6	Madison	8
Bear Lake	2	Custer	2	Minidoka	9
Benewah	1	Elmore	6	Nez Perce	12
Bingham	11	Franklin	2	Oneida	2
Blaine	11	Fremont	2	Owyhee	2
Boise	1	Gem	3	Payette	8
Bonner	9	Gooding	3	Power	3
Bonneville	29	Idaho	8	Shoshone	4
Boundary	6	Jefferson	8	Teton	2
Butte	2	Jerome	6	Twin Falls	21
Camas	-	Kootenai	46	Valley	3
Canyon	49	Latah	10	Washington	2
Caribou	1	Lemhi	4		

Stage at Diagnosis - Non-Hodgkin Lymphoma

Unstaged, 8.3%
Localized, 25.4%
Regional, 13.4%
Distant, 52.9%
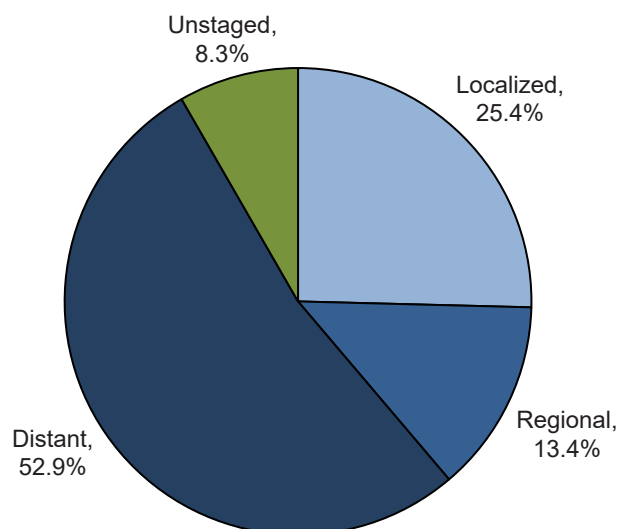
Factors Associated with Cancer Incidence

Age	Rates increase with age, reaching the highest levels in the eighth and ninth decades of life.
Sex	Males have higher rates than females.
Race/Ethnicity	In the United States, incidence rates are generally higher for non-Hispanic Whites and Hispanics than for other race/ethnicity groups.
Occupation	Exposure to ethylene oxide, such as through commercial production or use as a sterilant in the manufacture of medical and pharmaceutical products or production of food spices, has been identified as a risk factor.
Other	Non-Hodgkin lymphoma (NHL) develops with increased frequency in individuals infected with certain viruses, including HTLV-I, HIV, and Epstein-Barr virus. Treatment with some immunosuppressants increases the risk of NHL among organ transplant patients.

Data Summary

Mean age-adjusted incidence rate across health districts:	19.5
95% confidence interval on the mean age-adjusted incidence rate:	17.1–21.9
Median age-adjusted incidence rate of health districts:	17.4
Range of age-adjusted incidence rate for health districts:	16.5–24.3
USCS rate (2019, all races):	18.2

The age-specific incidence rates of NHL increased with age, peaking in the age group 75–79 for males and 80–84 for females. No health district had statistically significantly more, or fewer, cases than expected based upon rates for the remainder of Idaho. (See Section V for data.)

**State Non-Hodgkin Lymphoma Incidence
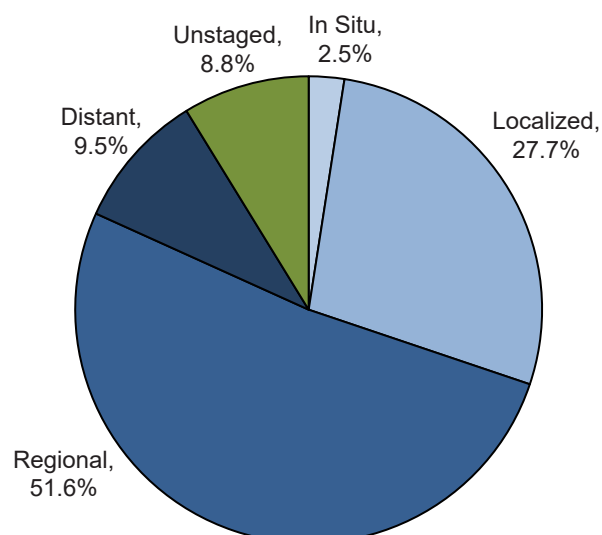Age-specific Rates 2017–2021**

**Non-Hodgkin Lymphoma Incidence
Age-adjusted Rates by Health District**
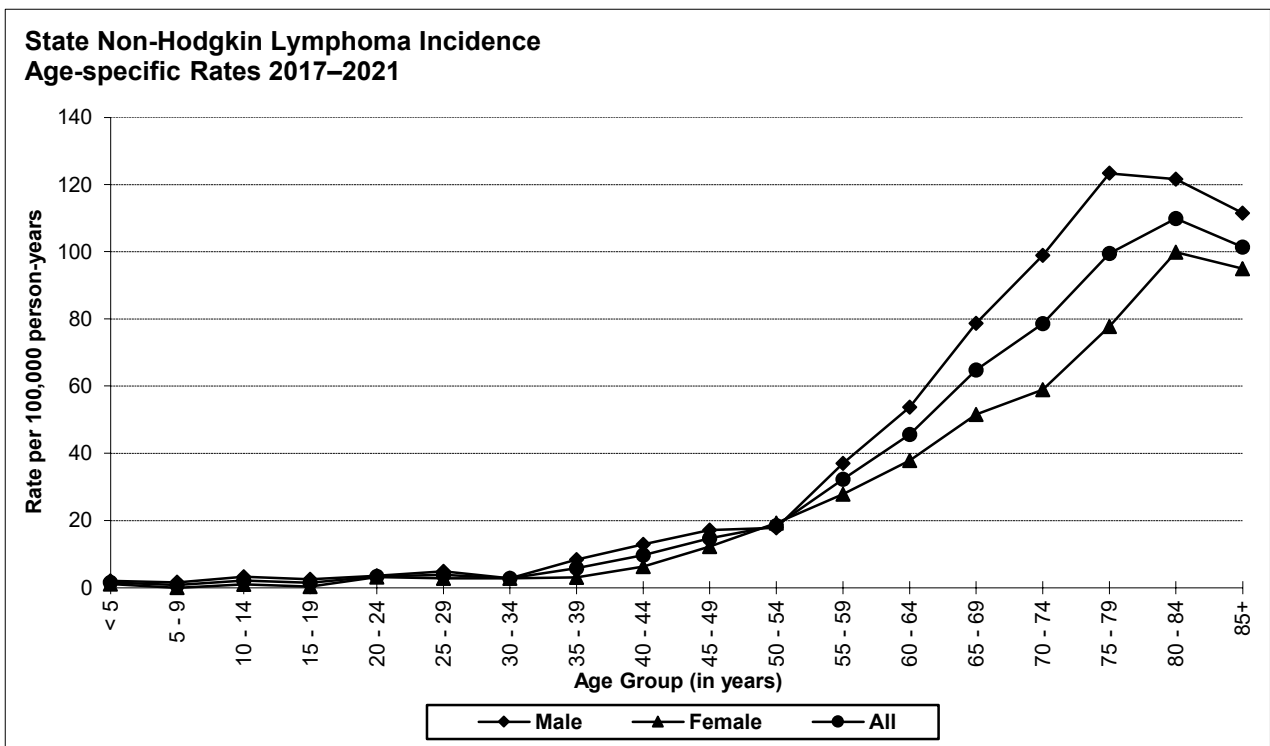
ORAL CAVITY AND PHARYNX

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	11.8	16.8	7.1
# of new invasive cases	278	195	83
# of new in situ cases	7	4	3
# of deaths	58	39	19

Stage at Diagnosis - Oral Cavity and Pharynx

Unstaged, 8.8%
In Situ, 2.5%
Localized, 27.7%
Distant, 9.5%
Regional, 51.6%

Total Cases by County

County		County		County	
Ada	75	Cassia	6	Lewis	-
Adams	1	Clark	-	Lincoln	-
Bannock	11	Clearwater	5	Madison	1
Bear Lake	-	Custer	3	Minidoka	2
Benewah	2	Elmore	2	Nez Perce	9
Bingham	4	Franklin	-	Oneida	-
Blaine	6	Fremont	2	Owyhee	3
Boise	4	Gem	6	Payette	2
Bonner	12	Gooding	3	Power	-
Bonneville	16	Idaho	2	Shoshone	4
Boundary	4	Jefferson	3	Teton	1
Butte	-	Jerome	3	Twin Falls	15
Camas	-	Kootenai	33	Valley	1
Canyon	32	Latah	7	Washington	1
Caribou	2	Lemhi	2		

Factors Associated with Cancer Incidence

|	
Age	Incidence rates increase with age, markedly after age 44.
Sex	Males have higher incidence rates than females, 2–6 times higher in most parts of the world.
Race/Ethnicity	Rates are highest for non-Hispanic Whites and lowest for Hispanics.
Diet	Diets low in fresh fruit and vegetable consumption are associated with increased risk.
Other	Smoking and spit tobacco use are major risk factors for cancers of the oral cavity and pharynx. Alcohol use, especially excessive, is a major risk factor. Combined exposure to tobacco and alcohol multiply the risks of each other. Smoking and drinking are estimated to account for 75% of all oral cancers in the United States. Approximately 15% of oral cavity and pharyngeal cancers in the United States are attributable to infection with oncogenic human papillomavirus (HPV) types. Patients with late stage oropharyngeal cancer have better outcomes if their tumors were linked to HPV versus tobacco and alcohol.

Data Summary

Mean age-adjusted incidence rate across health districts:	11.8
95% confidence interval on the mean age-adjusted incidence rate:	10.0–13.6
Median age-adjusted incidence rate of health districts:	12.1
Range of age-adjusted incidence rate for health districts:	7.4–14.4
USCS rate (2019, all races):	11.8

There were few cases of oral cavity and pharyngeal cancers among persons less than 45 years of age. The age-specific incidence rates generally increased with age after age 44, peaking in the age group 65–69 for males and 85+ for females. No health district had statistically significantly more, or fewer, cases than expected based upon rates for the remainder of Idaho. (See Section V for data.)

State Oral Cavity & Pharyngeal Cancer Incidence
Age-specific Rates 2017–2021
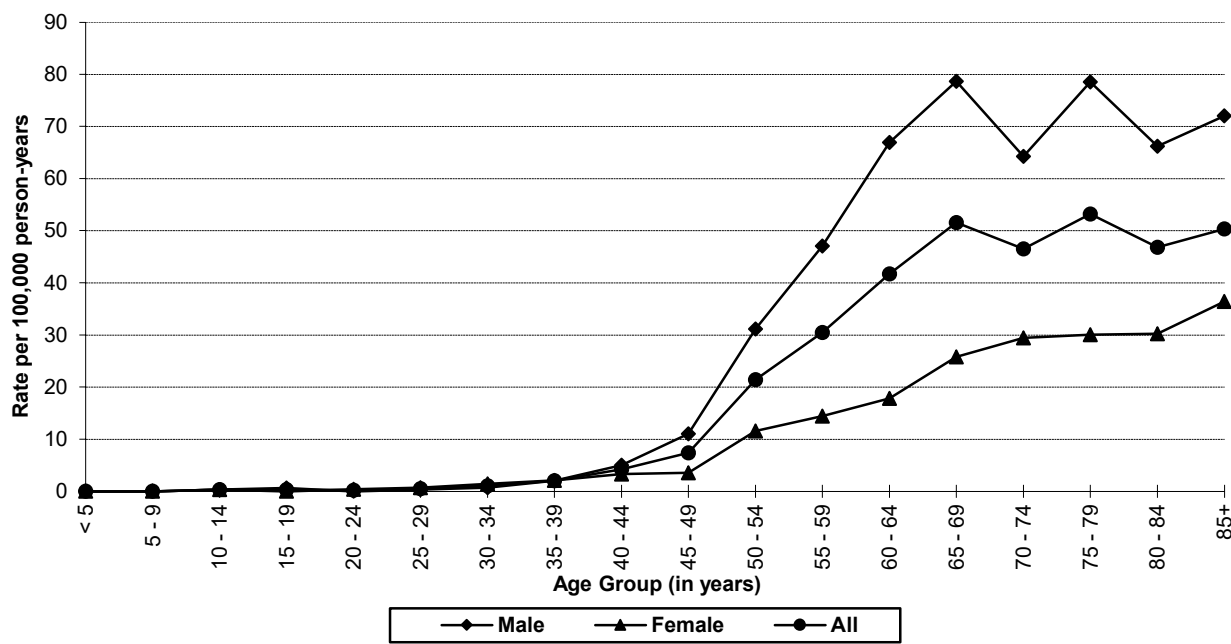
Oral Cavity & Pharyngeal Cancer Incidence
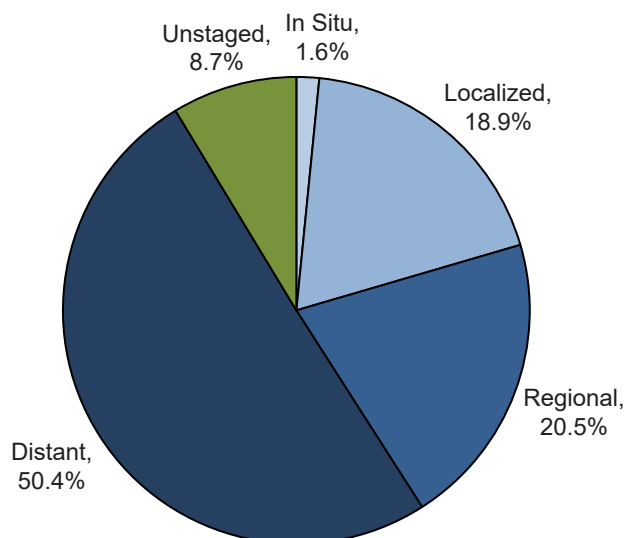## Age-adjusted Rates by Health District
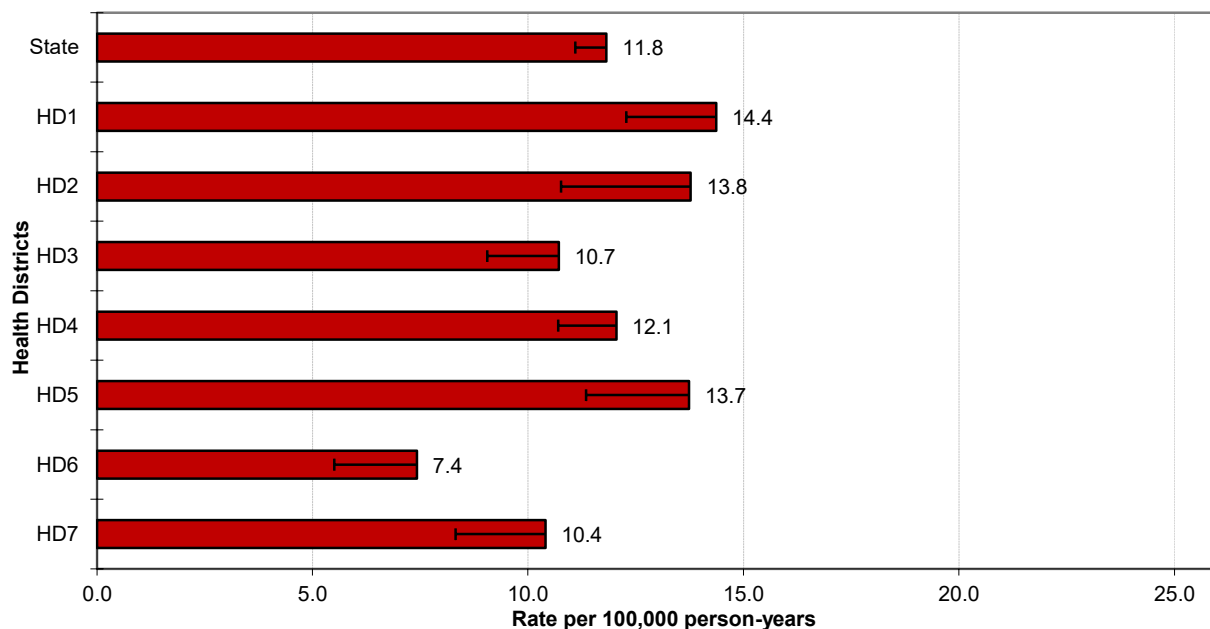
OVARY

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	-	-	11.3
# of new invasive cases	-	-	125
# of new in situ cases	-	-	2
# of deaths	-	-	81

Total Cases by County

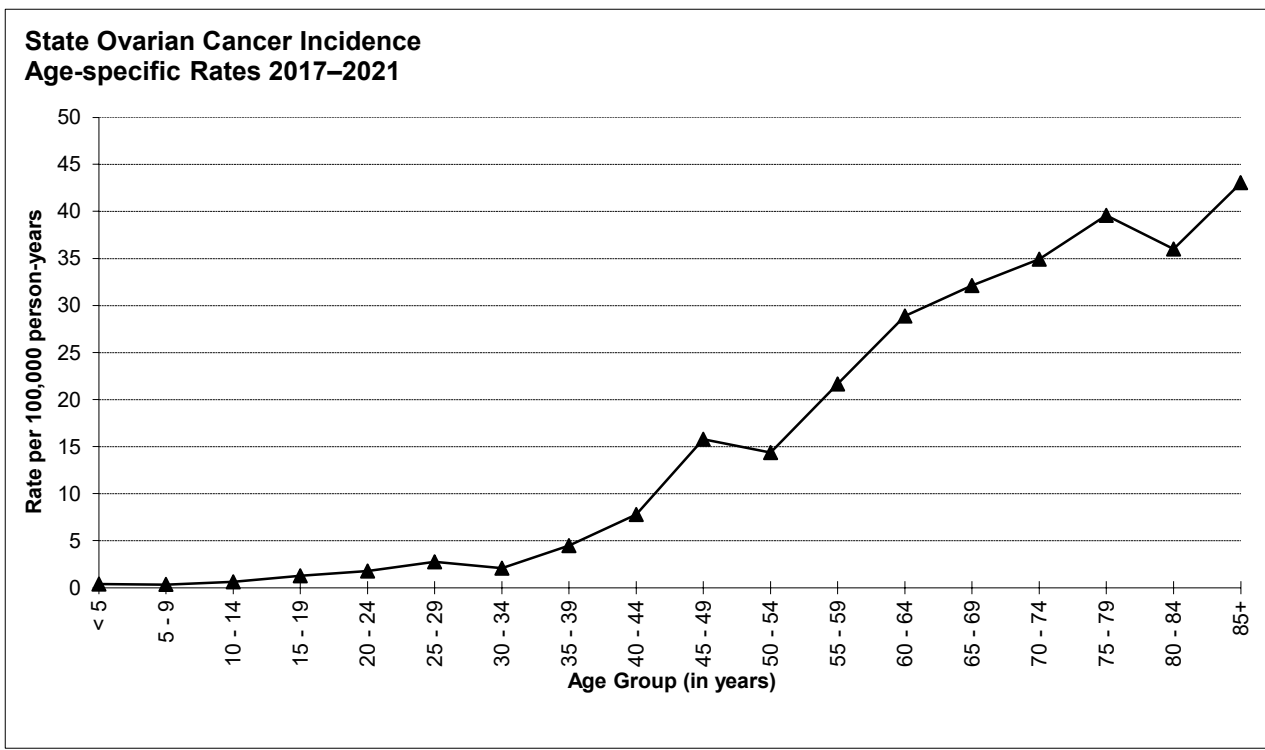| County		County		County	
Ada	38	Cassia	2	Lewis	-
Adams	-	Clark	-	Lincoln	-
Bannock	3	Clearwater	-	Madison	1
Bear Lake	-	Custer	-	Minidoka	-
Benewah	1	Elmore	3	Nez Perce	4
Bingham	3	Franklin	1	Oneida	1
Blaine	3	Fremont	-	Owyhee	1
Boise	1	Gem	2	Payette	4
Bonner	3	Gooding	-	Power	3
Bonneville	6	Idaho	-	Shoshone	-
Boundary	1	Jefferson	-	Teton	3
Butte	1	Jerome	3	Twin Falls	12
Camas	-	Kootenai	12	Valley	1
Canyon	10	Latah	2	Washington	-
Caribou	-	Lemhi	2		

Stage at Diagnosis - Ovary

- Unstaged, 8.7%
- In Situ, 1.6%
- Localized, 18.9%
- Regional, 20.5%
- Distant, 50.4%

Factors Associated with Cancer Incidence

Age — The rate of ovarian cancer increases with age, markedly after age 39.

Race/Ethnicity — Incidence rates are slightly higher among non-Hispanic Whites and Hispanics than other race/ethnicity groups.

Genetics — The most important risk factor for ovarian cancer is a family history of a first-degree relative (mother, daughter, or sister) with the disease. The risk is higher still in women with two or more first-degree relatives with ovarian cancer. The lifetime ovarian cancer risk for women with a BRCA1 mutation is estimated to be between 35% and 70%.

Hormonal — Ovarian cancer is most frequently diagnosed in post-menopausal women. However, the strongest predictors of reduced ovarian cancer risk occur in pre-menopausal women, specifically suppression of ovulation through pregnancy or oral contraceptive use. Hormone replacement therapy is associated with increased ovarian cancer risk.

Other — Exposure to asbestos and tobacco smoking increase ovarian cancer risk. Other risk factors for ovarian cancer include obesity, tall height, and endometriosis.

Data Summary

Mean age-adjusted incidence rate across health districts:	10.9
95% confidence interval on the mean age-adjusted incidence rate:	9.2–12.7
Median age-adjusted incidence rate of health districts:	9.9
Range of age-adjusted incidence rate for health districts:	8.3–14.6
USCS rate (2019, all races):	9.6

There were few cases of ovarian cancer among females aged less than 40 years. The age-specific incidence rates of ovarian cancer generally increased with age, peaking for women aged 85+. No health district had statistically significantly more, or fewer, cases of ovarian cancer than expected based upon rates for the remainder of Idaho. (See Section V for data.)
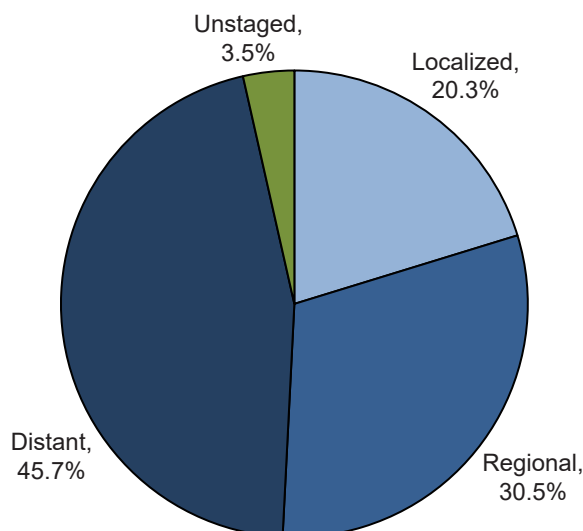
State Ovarian Cancer Incidence
Age-specific Rates 2017–2021

Ovarian Cancer Incidence
Age-adjusted Rates by Health District
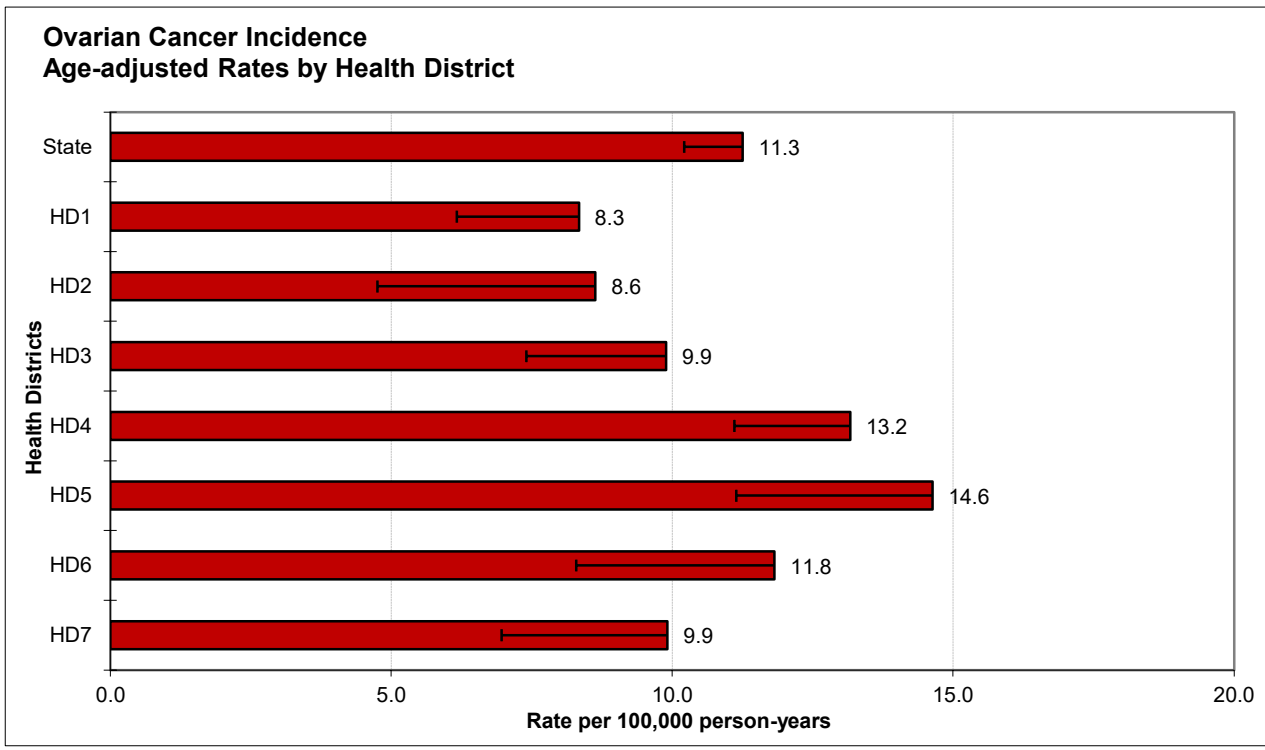
PANCREAS

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	13.2	14.3	12.4
# of new invasive cases	311	160	151
# of new in situ cases	0	0	0
# of deaths	257	132	125

Total Cases by County

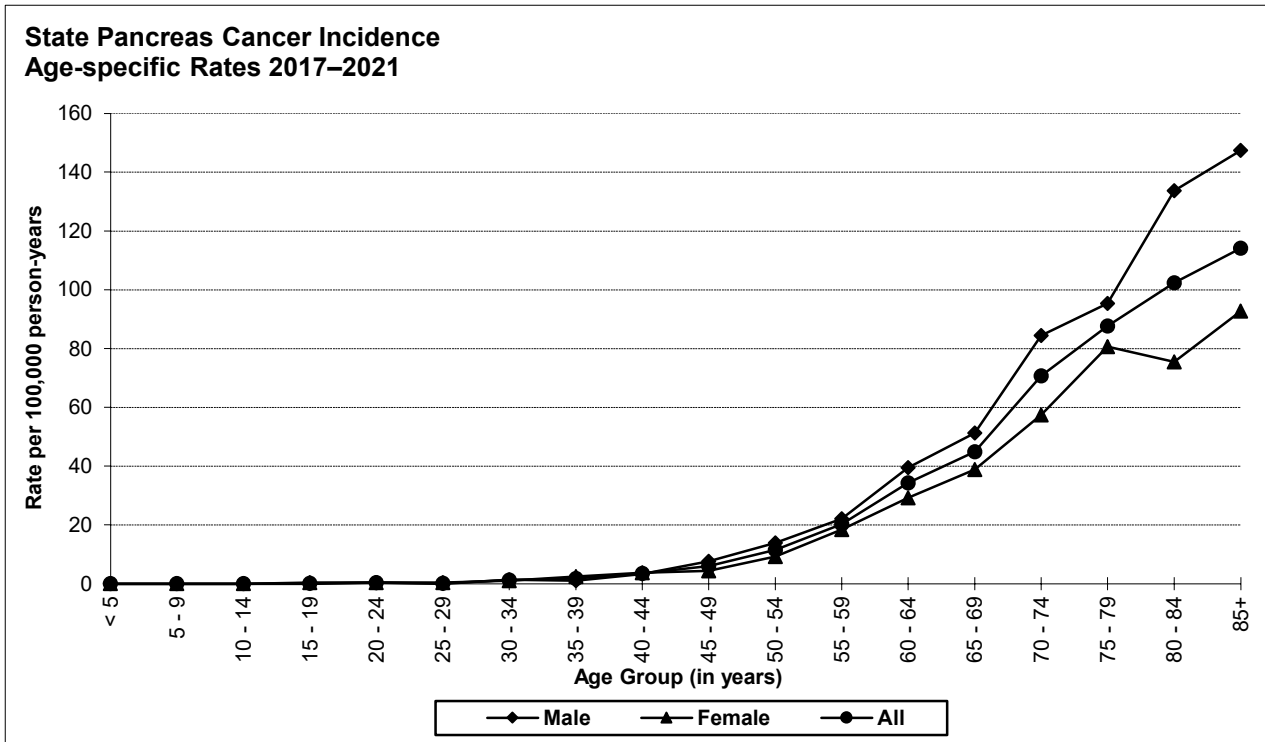| County		County		County	
Ada	85	Cassia	2	Lewis	2
Adams	-	Clark	-	Lincoln	1
Bannock	6	Clearwater	1	Madison	2
Bear Lake	1	Custer	2	Minidoka	4
Benewah	5	Elmore	7	Nez Perce	10
Bingham	5	Franklin	4	Oneida	2
Blaine	1	Fremont	5	Owyhee	5
Boise	3	Gem	5	Payette	4
Bonner	8	Gooding	2	Power	1
Bonneville	12	Idaho	4	Shoshone	2
Boundary	-	Jefferson	4	Teton	2
Butte	-	Jerome	5	Twin Falls	19
Camas	-	Kootenai	45	Valley	3
Canyon	28	Latah	9	Washington	1
Caribou	-	Lemhi	4		

Stage at Diagnosis - Pancreas

Unstaged, 3.5%
Localized, 20.3%
Regional, 30.5%
Distant, 45.7%

Factors Associated with Cancer Incidence

Age	Pancreatic cancer incidence increases with age, with rates notably increasing at age 50 and a median age at diagnosis ranging from 68–72.
Sex	Incidence is approximately 20%–30% higher in males than females among people aged 55 to 84 years.
Race/Ethnicity	Incidence is highest among Blacks, followed by Whites. Asians/Pacific Islanders and American Indians/ Alaska Natives have similar and the lowest incidence rates in the United States. Hispanics have lower incidence than non-Hispanic Whites.
Diet	Heavy alcohol consumption is an important risk factor for pancreatic cancer.
Occupation	Occupational exposures to chlorinated hydrocarbon solvents as used in dry cleaning, nickel and nickel compounds, benzene, asbestos, and pesticides are associated with increased risk.
Other	Smoking is the most important risk factor for pancreatic cancer. Hereditary and genetic factors, such as family history of pancreatic cancer, gene mutations (e.g. BRCA2, p16/CDKN2A gene), and inherited genetic syndromes (e.g. familial pancreatitis, Lynch syndrome) are associated with increased risk. Co-morbidities such as obesity, diabetes, and chronic pancreatitis also confer increased risk.

Data Summary

Mean age-adjusted incidence rate across health districts:	12.9
95% confidence interval on the mean age-adjusted incidence rate:	11.3–14.5
Median age-adjusted incidence rate of health districts:	13.5
Range of age-adjusted incidence rate for health districts:	8.9–15.0
USCS rate (2019, all races):	13.2

There were few cases of pancreatic cancer among persons aged less than 45 years. The age-specific incidence rates of pancreatic cancer generally increased after age 44, peaking in the age group 85+ for males and females. No health district had statistically significantly more, or fewer, cases of pancreatic cancer than expected based upon rates for the remainder of Idaho. (See Section V for data.)

State Pancreas Cancer Incidence
Age-specific Rates 2017–2021

Pancreas Cancer Incidence
Age-adjusted Rates by Health District
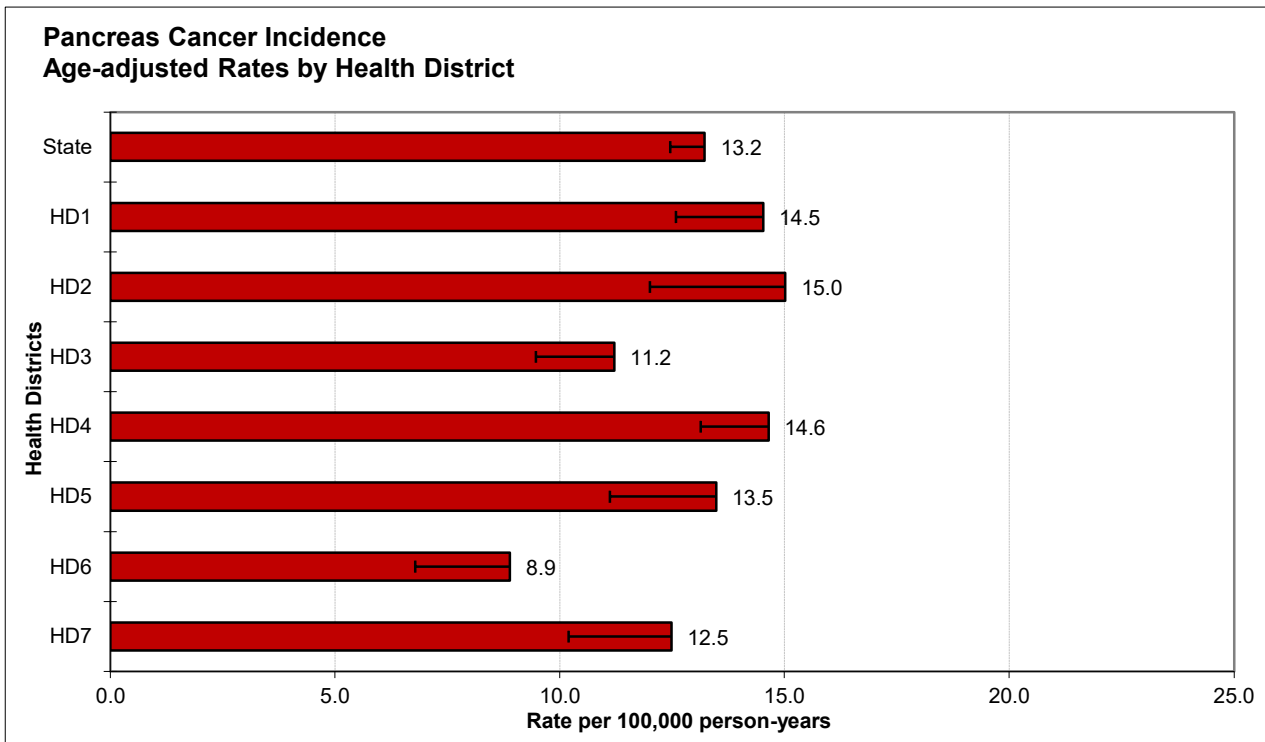
PROSTATE

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	-	112.1	-
# of new invasive cases	-	1,373	-
# of new in situ cases	-	0	-
# of deaths	-	209	-

Total Cases by County

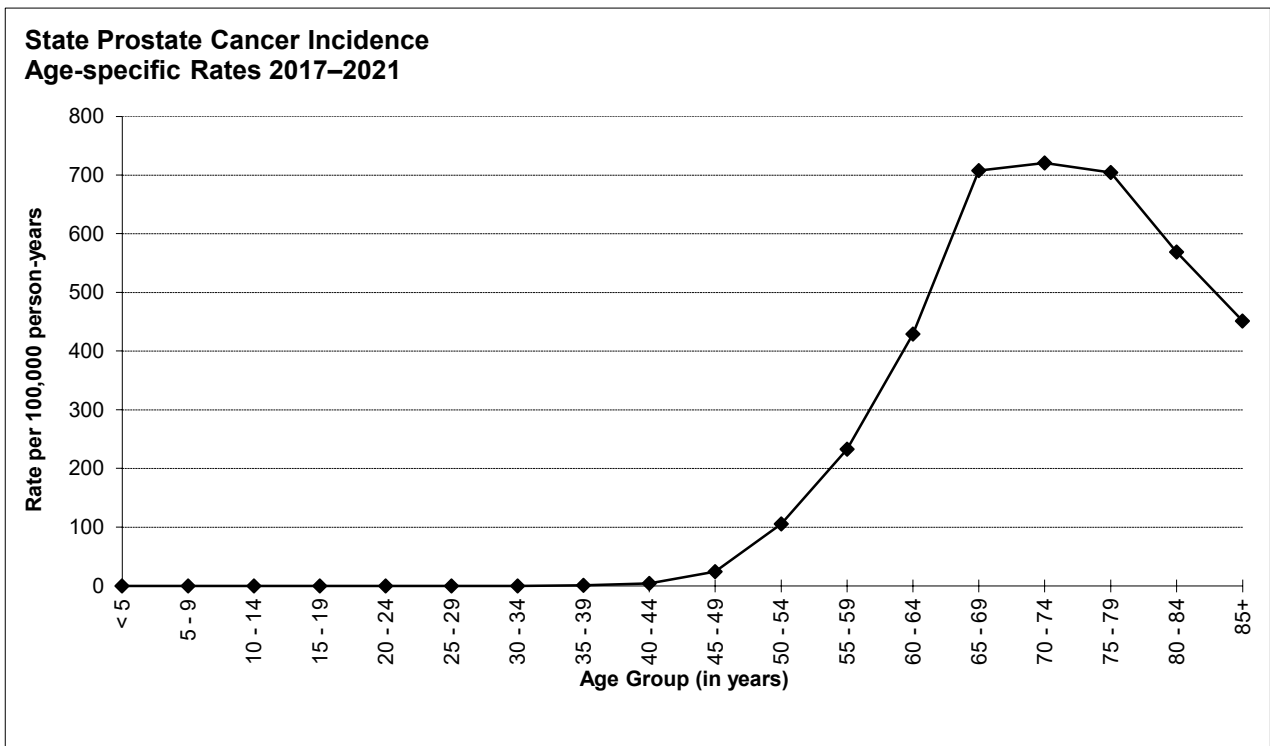| County	Cases	County	Cases	County	Cases
Ada	443	Cassia	11	Lewis	6
Adams	7	Clark	-	Lincoln	3
Bannock	54	Clearwater	6	Madison	18
Bear Lake	6	Custer	6	Minidoka	12
Benewah	7	Elmore	15	Nez Perce	47
Bingham	22	Franklin	6	Oneida	6
Blaine	24	Fremont	3	Owyhee	11
Boise	7	Gem	17	Payette	23
Bonner	33	Gooding	13	Power	10
Bonneville	65	Idaho	29	Shoshone	6
Boundary	11	Jefferson	17	Teton	6
Butte	3	Jerome	19	Twin Falls	55
Camas	2	Kootenai	86	Valley	29
Canyon	159	Latah	34	Washington	11
Caribou	9	Lemhi	16		

Stage at Diagnosis - Prostate

- Unstaged, 3.8%
- Distant, 10.5%
- Regional, 15.9%
- Localized, 69.8%
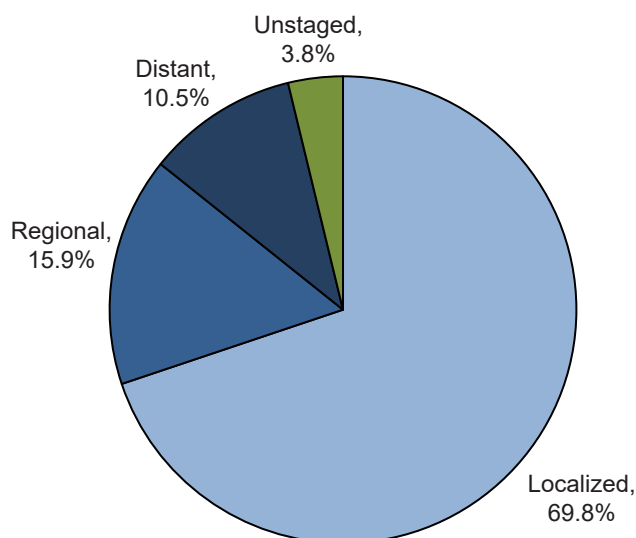
Factors Associated with Cancer Incidence

Age — Prostate cancer is primarily a disease of older males, and is rarely diagnosed before age 50.

Race/Ethnicity — Black males have substantially higher incidence and mortality rates than other race/ethnicity groups, with non-Hispanic Whites and Hispanic males having higher rates than American Indian/Alaska Natives or Asian and Pacific Islanders.

Genetics — A family history of prostate cancer is associated with increased risk.

Diet — Dietary fat has been implicated in several international, regional, and case-control studies.

Other — Prostate cancer is most common in North America, northwestern Europe, Australia, and on Caribbean islands. It is less common in Asia, Africa, Central America, and South America.

Data Summary

Mean age-adjusted incidence rate across health districts:	109.6
95% confidence interval on the mean age-adjusted incidence rate:	91.4–127.9
Median age-adjusted incidence rate of health districts:	108.5
Range of age-adjusted incidence rate for health districts:	66.4–140.9
USCS rate (2019, all races):	111.6

There were few cases of prostate cancer among men aged less than 50 years. The age-specific incidence rates of prostate cancer increased with age, peaking in the 70–74 age group. Health Districts 2 and 4 had statistically significantly more cases than expected based upon rates for the remainder of Idaho and Health District 1 had statistically significantly fewer. (See Section V for data.)
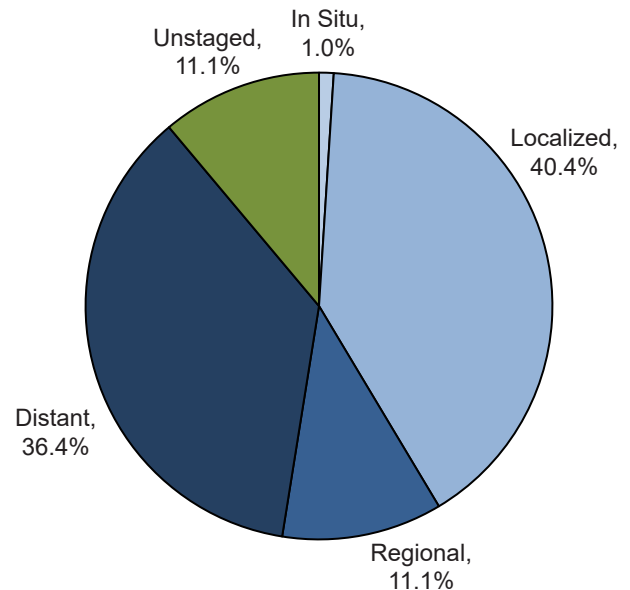
State Prostate Cancer Incidence
Age-specific Rates 2017–2021

Prostate Cancer Incidence
Age-adjusted Rates by Health District

Health District	Rate per 100,000 person-years
State	112.1
HD1	66.4
HD2	133.8
HD3	114.7
HD4	140.9
HD5	106.9
HD6	108.5
HD7	96.0
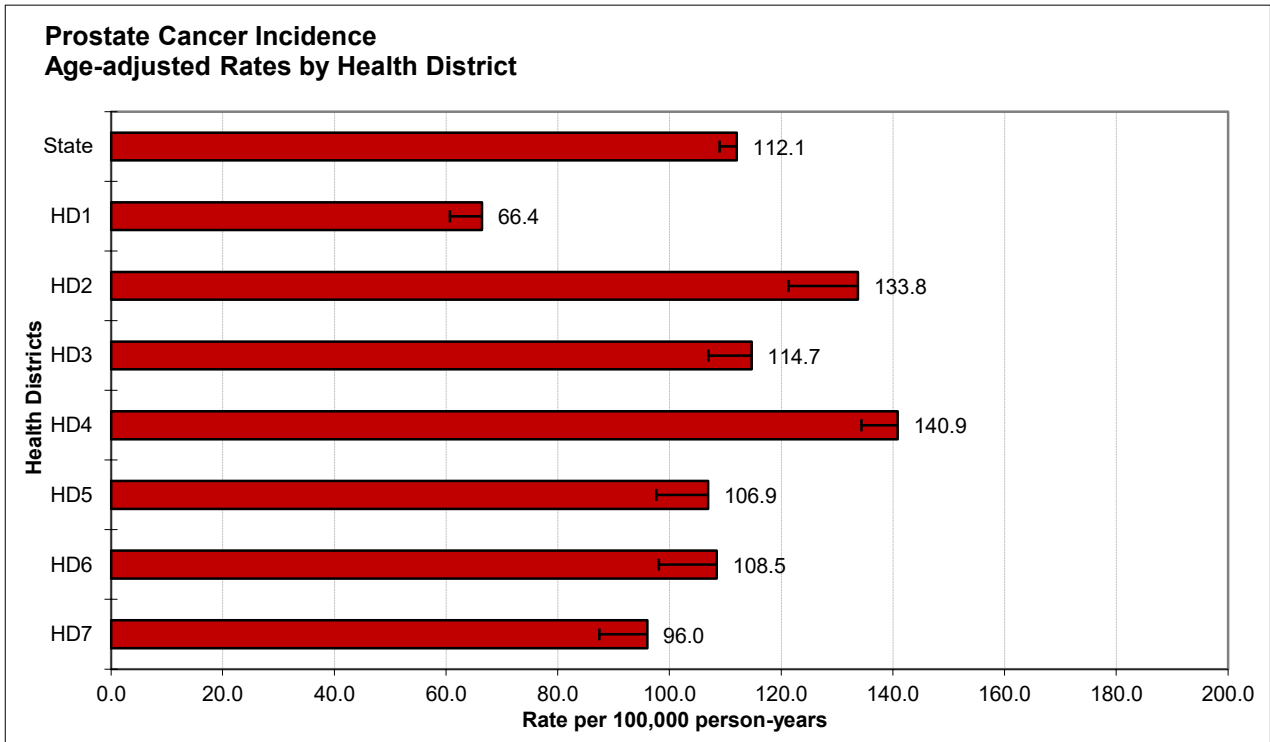
STOMACH

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	4.5	5.0	4.0
# of new invasive cases	98	54	44
# of new in situ cases	1	0	1
# of deaths	43	29	14

Total Cases by County

County		County		County	
Ada	19	Cassia	2	Lewis	-
Adams	1	Clark	-	Lincoln	-
Bannock	5	Clearwater	3	Madison	3
Bear Lake	-	Custer	1	Minidoka	4
Benewah	-	Elmore	2	Nez Perce	2
Bingham	3	Franklin	-	Oneida	-
Blaine	-	Fremont	1	Owyhee	2
Boise	-	Gem	1	Payette	3
Bonner	5	Gooding	2	Power	-
Bonneville	5	Idaho	1	Shoshone	-
Boundary	-	Jefferson	3	Teton	1
Butte	-	Jerome	1	Twin Falls	2
Camas	-	Kootenai	14	Valley	-
Canyon	10	Latah	2	Washington	1
Caribou	-	Lemhi	-		

Stage at Diagnosis - Stomach

- In Situ, 1.0%
- Localized, 40.4%
- Regional, 11.1%
- Distant, 36.4%
- Unstaged, 11.1%

Factors Associated with Cancer Incidence

|	
Age	Stomach cancer incidence rates increase with age.
Sex	Incidence rates for males are about twice as high as for females.
Race/Ethnicity	Incidence rates are highest among Asian and Pacific Islanders and lowest among non-Hispanic Whites.
Diet	Dietary risk factors include low consumption of fruits and vegetables and consumption of salted, smoked, or poorly preserved foods.
Occupation	Workers in the rubber and coal industries are at increased risk of stomach cancer.
Other	*Helicobacter pylori* infection and smoking are associated with increased risk of stomach cancer. Genetic risk factors include a family history of stomach cancer, Li Fraumeni syndrome, and type A blood type. Worldwide, stomach cancer is more common in Japan, China, Southern and Eastern Europe, and South and Central America.

Data Summary

Mean age-adjusted incidence rate across health districts:	4.8
95% confidence interval on the mean age-adjusted incidence rate:	4.0–5.6
Median age-adjusted incidence rate of health districts:	4.9
Range of age-adjusted incidence rate for health districts:	3.0–6.5
USCS rate (2019, all races):	6.1

There were few cases of stomach cancer among persons aged less than 50 years. The age-specific incidence rates of stomach cancer increased with age, peaking in the 85+ age group for males and females. Health District 4 had statistically significantly fewer cases of stomach cancer than expected based upon rates for the remainder of Idaho. (See Section V for data.)

**State Stomach Cancer Incidence
Age-specific Rates 2017–2021**
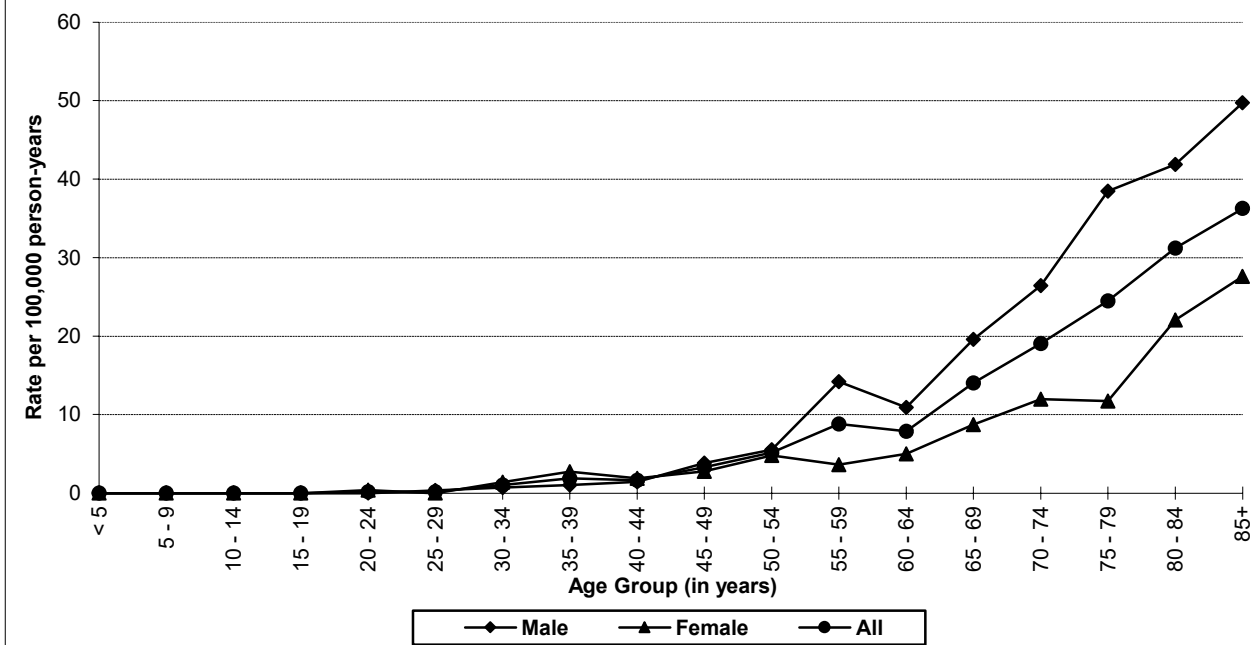
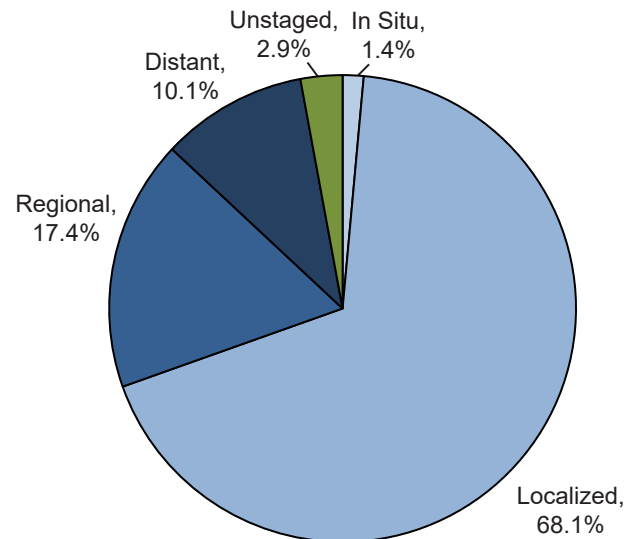**Stomach Cancer Incidence
Age-adjusted Rates by Health District**
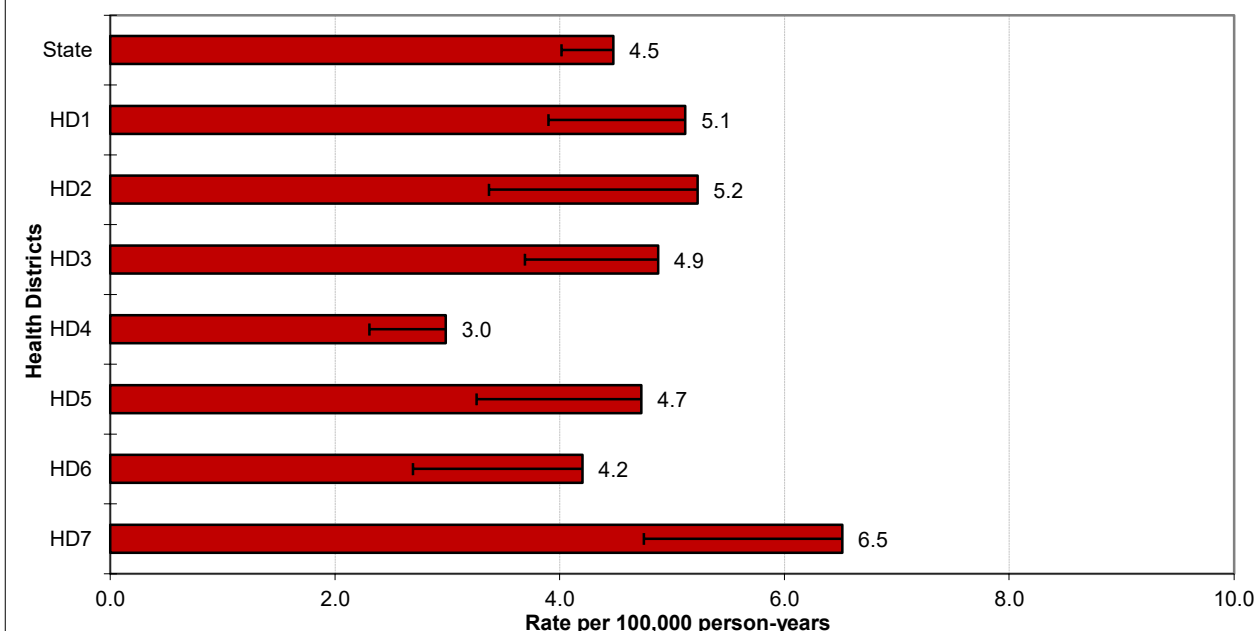
TESTIS

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	-	7.4	-
# of new invasive cases	-	68	-
# of new in situ cases	-	1	-
# of deaths	-	4	-

Stage at Diagnosis - Testis

Unstaged, 2.9%
In Situ, 1.4%
Distant, 10.1%
Regional, 17.4%
Localized, 68.1%

Total Cases by County

Ada	24	Cassia	-	Lewis	-
Adams	-	Clark	-	Lincoln	-
Bannock	5	Clearwater	-	Madison	1
Bear Lake	1	Custer	-	Minidoka	-
Benewah	-	Elmore	2	Nez Perce	-
Bingham	1	Franklin	-	Oneida	-
Blaine	-	Fremont	-	Owyhee	-
Boise	-	Gem	3	Payette	1
Bonner	1	Gooding	-	Power	-
Bonneville	6	Idaho	-	Shoshone	-
Boundary	-	Jefferson	-	Teton	-
Butte	-	Jerome	1	Twin Falls	5
Camas	-	Kootenai	10	Valley	-
Canyon	5	Latah	1	Washington	1
Caribou	-	Lemhi	1		

Factors Associated with Cancer Incidence

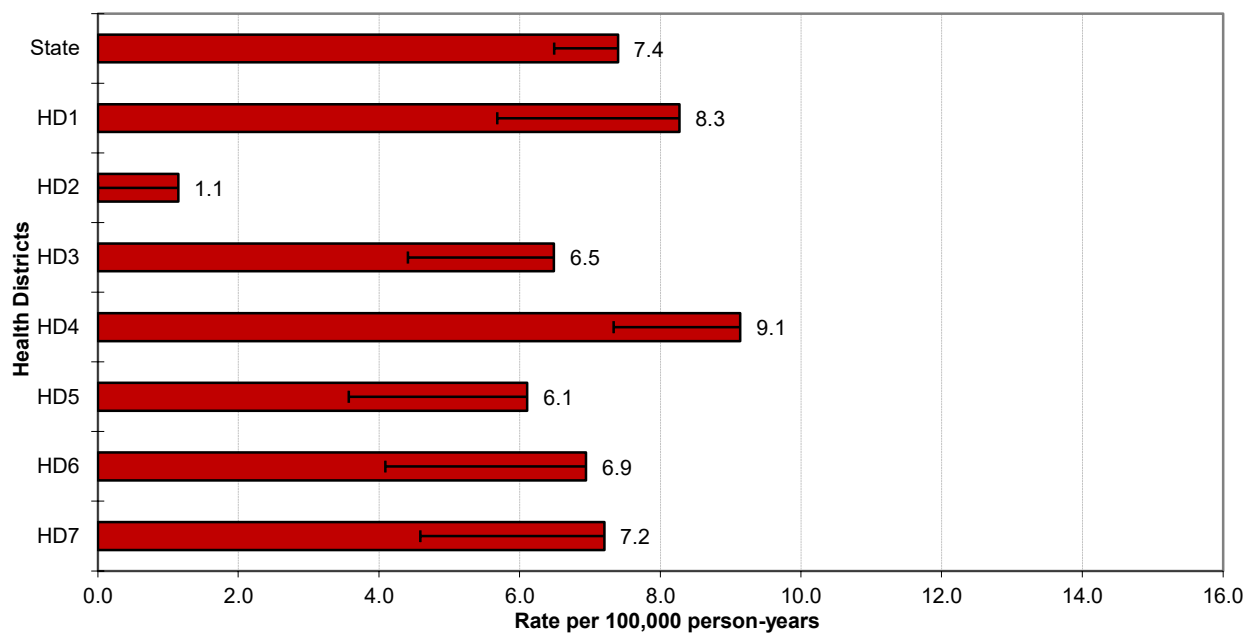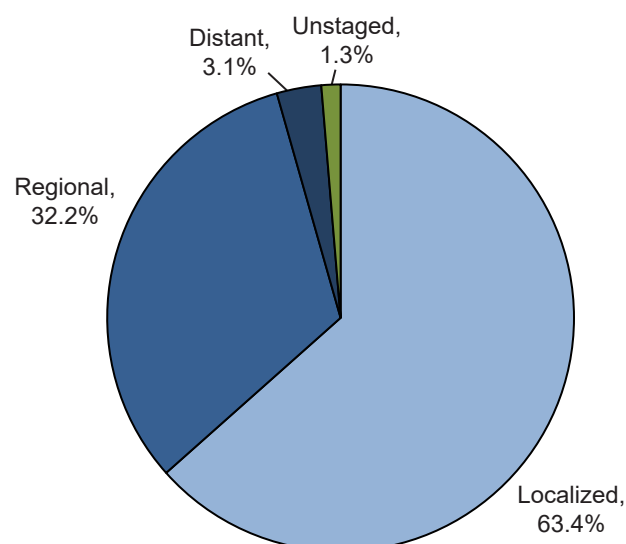|	
Age	Testicular cancer is the most common cancer in young males, especially males between the ages of 20 and 34.
Race/Ethnicity	Incidence rates are higher in non-Hispanic Whites, Hispanics, and American Indian/Alaska Natives and lower in Asian and Pacific Islanders and Blacks.
Other	Undescended testis, a minor abnormality that can usually be detected and corrected with surgery in childhood, is responsible for a substantially higher risk for testicular cancer when uncorrected. With current treatment, long term survival rates for testicular cancer are about 95%.

Data Summary

Mean age-adjusted incidence rate across health districts:	6.5
95% confidence interval on the mean age-adjusted incidence rate:	4.6–8.4
Median age-adjusted incidence rate of health districts:	6.9
Range of age-adjusted incidence rate for health districts:	1.1–9.1
USCS rate (2019, all races):	5.6

The highest age-specific incidence rates were in the 20–44 age range. No health district had statistically significantly more, or fewer, cases than expected based upon rates for the remainder of Idaho. (See Section V for data.)

State Testis Cancer Incidence
Age-specific Rates 2017–2021

Rate per 100,000 person-years

Age Group (in years)	Rate
< 5	0
5 - 9	0
10 - 14	0.3
15 - 19	2.5
20 - 24	10.2
25 - 29	16.0
30 - 34	16.3
35 - 39	14.6
40 - 44	10.7
45 - 49	6.4
50 - 54	4.3
55 - 59	6.0
60 - 64	2.2
65 - 69	2.1
70 - 74	2.1
75 - 79	0.8
80 - 84	0
85+	1.7

Testis Cancer Incidence
Age-adjusted Rates by Health District

Health Districts — Rate per 100,000 person-years
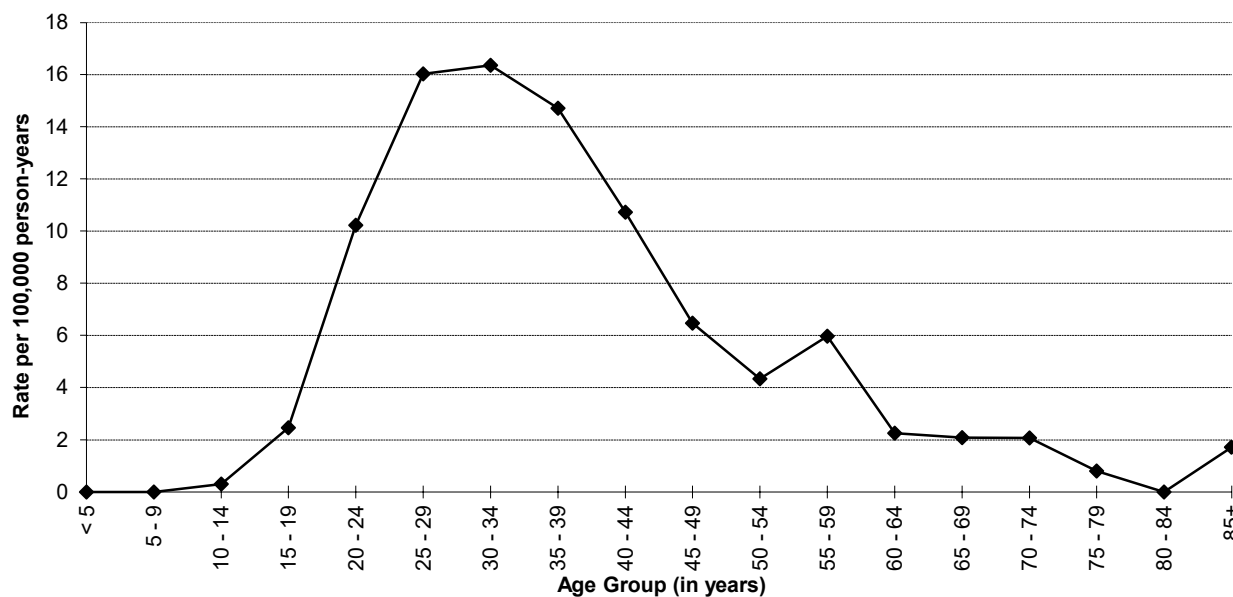
Health District	Rate
State	7.4
HD1	8.3
HD2	1.1
HD3	6.5
HD4	9.1
HD5	6.1
HD6	6.9
HD7	7.2

THYROID

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	11.4	8.3	14.8
# of new invasive cases	227	88	139
# of new in situ cases	0	0	0
# of deaths	10	5	5

Total Cases by County

County		County		County	
Ada	54	Cassia	1	Lewis	1
Adams	1	Clark	-	Lincoln	1
Bannock	14	Clearwater	-	Madison	5
Bear Lake	-	Custer	-	Minidoka	4
Benewah	2	Elmore	4	Nez Perce	6
Bingham	11	Franklin	3	Oneida	1
Blaine	2	Fremont	3	Owyhee	1
Boise	1	Gem	2	Payette	3
Bonner	6	Gooding	1	Power	-
Bonneville	20	Idaho	6	Shoshone	3
Boundary	2	Jefferson	5	Teton	2
Butte	-	Jerome	-	Twin Falls	13
Camas	-	Kootenai	20	Valley	-
Canyon	24	Latah	2	Washington	2
Caribou	-	Lemhi	1		

Stage at Diagnosis - Thyroid

- Distant, 3.1%
- Unstaged, 1.3%
- Regional, 32.2%
- Localized, 63.4%

Factors Associated with Cancer Incidence

Age — Thyroid cancer is one of the most common malignancies affecting adolescents and adults up to 50 years of age.

Sex — Incidence rates are nearly three times higher among females than males.

Race/Ethnicity — Incidence rates are higher among non-Hispanic Whites, Asian and Pacific Islanders, and Hispanics and lower among American Indian/Alaska Natives and Blacks.

Other — Occupational and environmental exposures to ionizing radiation have been associated with higher rates of thyroid cancer. Radiation exposure to the head and neck in childhood is a well-known risk factor. About 2 out of 10 medullary thyroid carcinomas result from inheriting an abnormal gene. Thyroid cancer prognosis worsens with each decade of age over 50, partially because anaplastic thyroid cancer, which has a higher fatality rate, occurs more often among older patients. In the U.S., thyroid cancer incidence rates have tripled in the past 30 years. Some clinicians believe that use of imaging technologies such as ultrasound, CT, and MRI scanning is fueling an epidemic in diagnosis of thyroid cancers that are unlikely to progress to cause symptoms or death, while others argue that the trend is in part real and involves both small and large tumors.

Data Summary

Mean age-adjusted incidence rate across health districts:	12.0
95% confidence interval on the mean age-adjusted incidence rate:	10.0–14.1
Median age-adjusted incidence rate of health districts:	11.1
Range of age-adjusted incidence rate for health districts:	9.4–15.9
USCS rate (2019, all races):	13.1

The age-specific incidence rates of thyroid cancer were typically higher for females than males. No health district had statistically significantly more, or fewer, cases of thyroid cancer than expected based upon rates for the remainder of Idaho. (See Section V for data.)

**State Thyroid Cancer Incidence
Age-specific Rates 2017–2021**

**Thyroid Cancer Incidence
Age-adjusted Rates by Health District**
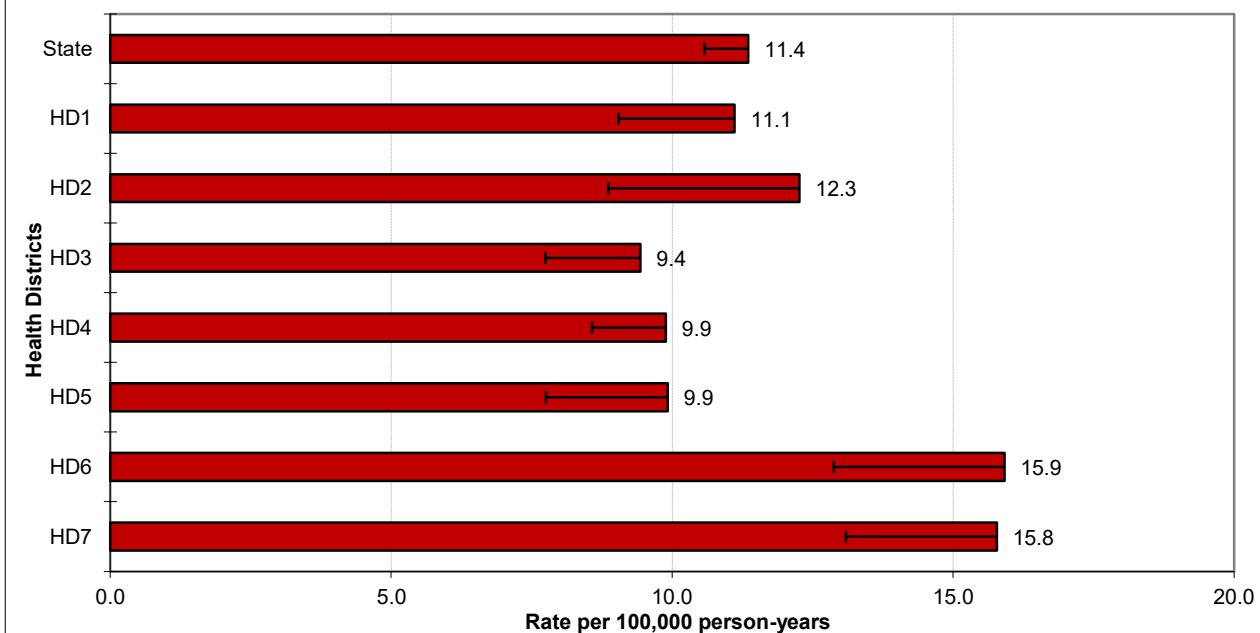
**INCIDENCE DATA BY SITE AND GENDER
– STATE OF IDAHO, 2021**

Primary Site of Cancer	Invasive			In situ		
	Total	Male	Female	Total	Male	Female
All Sites	9,749	5,117	4,632	1,273	618	655
Oral Cavity and Pharynx	278	195	83	7	4	3
Lip	8	7	1	2	2	-
Tongue	85	59	26	3	2	1
Salivary Gland	31	18	13	-	-	-
Floor of Mouth	10	9	1	-	-	-
Gum and Other Mouth	48	26	22	2	-	2
Nasopharynx	9	8	1	-	-	-
Tonsil	47	33	14	-	-	-
Oropharynx	24	21	3	-	-	-
Hypopharynx	15	13	2	-	-	-
Other Oral Cavity and Pharynx	1	1	-	-	-	-
Digestive System	1,718	959	759	8	5	3
Esophagus	102	89	13	-	-	-
Stomach	98	54	44	1	-	1
Small Intestine	70	37	33	-	-	-
Colon and Rectum	837	444	393	4	4	-
Colon excluding Rectum	547	281	266	3	3	-
Cecum	103	43	60	-	-	-
Appendix	44	14	30	-	-	-
Ascending Colon	100	52	48	1	1	-
Hepatic Flexure	21	11	10	1	1	-
Transverse Colon	45	26	19	-	-	-
Splenic Flexure	18	10	8	-	-	-
Descending Colon	32	18	14	-	-	-
Sigmoid Colon	158	88	70	1	1	-
Large Intestine, NOS	26	19	7	-	-	-
Rectum and Rectosigmoid Junction	290	163	127	1	1	-
Rectosigmoid Junction	48	26	22	-	-	-
Rectum	242	137	105	1	1	-
Anus, Anal Canal and Anorectum	53	15	38	1	-	1
Liver and Intrahepatic Bile Duct	163	117	46	-	-	-
Liver	135	107	28	-	-	-
Intrahepatic Bile Duct	28	10	18	-	-	-
Gallbladder	10	5	5	1	-	1
Other Biliary	32	16	16	1	1	-
Pancreas	311	160	151	-	-	-
Retroperitoneum	11	8	3	-	-	-
Peritoneum, Omentum and Mesentery	18	4	14	-	-	-
Other Digestive Organs	13	10	3	-	-	-
Respiratory System	1,044	553	491	6	3	3
Nose, Nasal Cavity and Middle Ear	11	4	7	-	-	-
Larynx	53	38	15	2	1	1
Lung and Bronchus	979	510	469	4	2	2
Pleura	-	-	-	-	-	-
Trachea, Mediastinum and Other Respiratory Organs	1	1	-	-	-	-
Skin excluding Basal and Squamous	760	451	309	690	415	275
Melanoma of the Skin	728	431	297	690	415	275
Other Non-Epithelial Skin	32	20	12	-	-	-
Breast	1,478	18	1,460	312	-	312

Primary Site of Cancer	Invasive			In situ		
	Total	Male	Female	Total	Male	Female
Female Genital System	519	-	519	11	-	11
Cervix Uteri	50	-	50	-	-	-
Corpus and Uterus, NOS	295	-	295	3	-	3
Corpus Uteri	286	-	286	3	-	3
Uterus, NOS	9	-	9	-	-	-
Ovary	125	-	125	2	-	2
Vagina	8	-	8	-	-	-
Vulva	24	-	24	5	-	5
Other Female Genital Organs	17	-	17	1	-	1
Male Genital System	1,450	1,450	-	6	6	-
Prostate	1,373	1,373	-	-	-	-
Testis	68	68	-	1	1	-
Penis	8	8	-	4	4	-
Other Male Genital Organs	1	1	-	1	1	-
Urinary System	660	493	167	233	185	48
Urinary Bladder	213	165	48	223	178	45
Kidney and Renal Pelvis	421	307	114	5	3	2
Ureter	17	14	3	3	2	1
Other Urinary Organs	9	7	2	2	2	-
Brain and Other Nervous System	137	77	60	-	-	-
Brain	133	75	58	-	-	-
Cranial Nerves Other Nervous System	4	2	2	-	-	-
Endocrine System	259	105	154	-	-	-
Thyroid	227	88	139	-	-	-
Other Endocrine including Thymus	32	17	15	-	-	-
Lymphoma	475	257	218	-	-	-
Hodgkin Lymphoma	42	24	18	-	-	-
Non-Hodgkin Lymphoma	433	233	200	-	-	-
Myeloma	150	90	60	-	-	-
Leukemia	354	215	139	-	-	-
Lymphocytic Leukemia	192	114	78	-	-	-
Acute Lymphocytic Leukemia	24	11	13	-	-	-
Chronic Lymphocytic Leukemia	153	91	62	-	-	-
Other Lymphocytic Leukemia	15	12	3	-	-	-
Myeloid and Monocytic Leukemia	151	95	56	-	-	-
Acute Myeloid Leukemia	95	57	38	-	-	-
Acute Monocytic Leukemia	5	4	1	-	-	-
Chronic Myeloid Leukemia	48	32	16	-	-	-
Other Myeloid/Monocytic Leukemia	3	2	1	-	-	-
Other Leukemia	11	6	5	-	-	-
Other Acute Leukemia	4	2	2	-	-	-
Aleukemic, Subleukemic and NOS	7	4	3	-	-	-
Other or Unknown Sites	467	254	213	-	-	-
Bones and Joints	18	9	9	-	-	-
Soft Tissue including Heart	78	39	39	-	-	-
Eye and Orbit	23	9	14	-	-	-
Mesothelioma	21	16	5	-	-	-
Kaposi Sarcoma	6	6	-	-	-	-
Miscellaneous	321	175	146	-	-	-

SECTION III

**MORTALITY RATES BY SITE AND GENDER
– STATE OF IDAHO, 2021**

Idaho Resident Cancer Mortality Rates – 2021

Cause of Death	Total			Male			Female		
	Rate	Deaths	Pop	Rate	Deaths	Pop	Rate	Deaths	Pop
All Causes of Death	847.0	18,334	1,904,314	988.5	9,859	959,021	716.8	8,475	945,293
All Malignant Cancers	136.7	3,126	1,904,314	156.6	1,668	959,021	120.8	1,458	945,293
Bladder	4.5	102	1,904,314	7.8	78	959,021	1.9	24	945,293
Brain and Other Nervous System	4.3	94	1,904,314	5.3	55	959,021	3.3	39	945,293
Breast	10.8	241	1,904,314	0.6	6	959,021	19.9	235	945,293
Cervix	1.0	18	1,904,314	-	-	959,021	2.0	18	945,293
Colorectal	13.6	305	1,904,314	15.5	166	959,021	11.8	139	945,293
Corpus Uteri	1.3	31	1,904,314	-	-	959,021	2.5	31	945,293
Esophagus	3.8	92	1,904,314	6.7	79	959,021	1.1	13	945,293
Hodgkin Lymphoma	0.2	5	1,904,314	0.3	4	959,021	0.1	1	945,293
Kidney	3.1	71	1,904,314	4.6	48	959,021	1.9	23	945,293
Larynx	0.8	20	1,904,314	1.2	13	959,021	0.5	7	945,293
Leukemia	6.5	145	1,904,314	8.5	89	959,021	4.8	56	945,293
Liver and Bile Duct	4.5	109	1,904,314	6.2	72	959,021	3.0	37	945,293
Lung and Bronchus	23.8	563	1,904,314	26.2	289	959,021	21.9	274	945,293
Melanoma of the Skin	2.8	63	1,904,314	4.1	45	959,021	1.6	18	945,293
Myeloma	2.9	65	1,904,314	3.0	32	959,021	2.8	33	945,293
Non-Hodgkin Lymphoma	5.8	129	1,904,314	6.4	65	959,021	5.2	64	945,293
Oral Cavity and Pharynx	2.4	58	1,904,314	3.4	39	959,021	1.6	19	945,293
Ovary	3.5	81	1,904,314	-	-	959,021	6.6	81	945,293
Pancreas	10.9	257	1,904,314	12.1	132	959,021	10.0	125	945,293
Prostate	9.3	209	1,904,314	21.1	209	959,021	-	-	945,293
Stomach	2.1	43	1,904,314	2.9	29	959,021	1.3	14	945,293
Testis	0.2	4	1,904,314	0.5	4	959,021	-	-	945,293
Thyroid	0.5	10	1,904,314	0.4	5	959,021	0.5	5	945,293

Data source: Bureau of Vital Records and Health Statistics (BVRHS), Idaho Department of Health and Welfare, 2022.[19]

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

Cause of death categories are based on SEER cause of death recodes (https://seer.cancer.gov/codrecode/), which differ from official BVRHS cancer mortality categories. Death counts may differ from official BVRHS statistics due to late filings.

SECTION IV

**2017–2021 AGE-SPECIFIC INCIDENCE RATES
PER 100,000 POPULATION
BY SITE AND GENDER**

Age (years)	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
All Cancers																		
All	21.1	12.4	13.8	21.2	40.2	58.8	95.1	150.0	224.8	337.4	528.9	772.6	1118.6	1598.4	1950.2	2295.6	2452.4	2301.9
Male	20.1	14.8	15.1	17.5	34.2	48.1	70.9	104.7	149.3	253.3	466.1	805.5	1279.7	1887.0	2297.8	2795.9	3006.3	3024.3
Female	22.1	9.9	12.4	24.9	46.7	70.3	119.8	196.3	302.9	424.6	592.5	740.9	965.8	1323.6	1615.4	1838.0	1976.2	1836.8
Bladder																		
All	0.2	0.0	0.0	0.2	0.2	0.2	0.3	1.4	2.2	5.6	9.9	22.4	41.0	70.4	111.6	158.1	179.2	190.0
Male	0.3	0.0	0.0	0.0	0.0	0.3	0.7	2.0	3.2	8.8	13.8	34.0	64.6	113.2	186.0	270.8	320.1	389.2
Female	0.0	0.0	0.0	0.3	0.4	0.0	0.0	0.7	1.1	2.4	6.0	11.2	18.6	29.7	39.9	55.0	58.1	61.8
Brain																		
All	1.7	3.4	1.5	1.7	2.5	2.5	3.1	4.7	6.0	5.6	7.5	11.0	15.9	15.6	17.3	21.4	29.3	22.8
Male	1.0	3.2	1.2	1.9	2.9	2.9	4.4	6.7	8.9	8.0	7.9	13.1	17.3	21.2	18.7	27.2	37.8	20.6
Female	2.5	3.6	1.9	1.6	2.1	2.1	1.7	2.7	3.0	3.2	7.2	9.0	14.6	10.3	16.0	16.1	22.1	24.3
Brain & Other Central Nervous System (Non-Malignant)																		
All	1.7	1.3	2.0	2.2	1.8	4.3	5.9	9.3	10.5	18.8	21.0	25.5	27.5	41.4	50.6	66.2	76.2	86.0
Male	1.7	1.9	2.7	1.5	1.9	3.2	3.8	5.4	6.1	14.1	13.0	17.2	19.9	23.3	35.2	37.7	51.3	63.4
Female	1.8	0.7	1.2	2.8	1.8	5.5	8.0	13.3	15.1	23.7	29.2	33.6	34.6	58.7	65.4	92.3	97.5	100.5
Breast																		
Female Invasive	0.0	0.0	0.0	0.3	2.1	10.3	28.1	61.9	136.3	189.2	238.4	264.0	312.4	450.2	521.3	494.7	490.0	344.4
Female In Situ	0.0	0.0	0.0	0.0	0.0	0.3	2.1	7.5	31.4	48.1	60.7	60.2	63.5	101.1	99.8	80.6	62.7	14.4
Cervix																		
Female	0.0	0.3	0.0	0.0	0.7	3.4	9.7	13.3	14.0	15.0	14.0	11.2	9.6	7.5	6.0	2.9	5.8	5.5
Colorectal																		
All	0.0	0.2	0.5	2.3	1.5	3.7	6.2	10.7	21.3	34.5	61.1	61.5	79.6	105.8	115.4	173.4	208.5	233.7
Male	0.0	0.0	0.9	1.9	1.0	2.9	5.8	10.0	19.3	36.1	73.4	78.8	95.5	121.1	133.1	191.5	232.3	257.2
Female	0.0	0.3	0.0	2.8	2.1	4.5	6.6	11.3	23.3	32.7	48.7	44.7	64.6	91.2	98.3	156.8	188.1	218.6
Corpus Uteri																		
Female	0.0	0.0	0.0	0.0	0.0	2.1	4.5	14.7	13.3	20.9	41.9	73.6	82.4	99.5	95.8	81.4	67.3	56.3
Esophagus																		
All	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.3	1.1	1.9	4.8	9.5	13.5	18.3	18.8	28.7	35.6	27.5
Male	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.7	1.8	3.4	7.5	16.4	23.7	33.3	30.6	56.1	59.4	56.6
Female	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.4	0.4	2.0	2.9	3.9	4.0	7.5	3.7	15.1	8.8

Age (years)	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Hodgkin Lymphoma																		
All	0.0	0.6	0.9	2.3	5.4	2.5	2.9	2.5	2.0	2.3	1.6	2.2	4.0	3.5	3.6	5.4	5.0	0.0
Male	0.0	1.3	0.6	1.5	4.8	2.6	2.7	3.3	3.2	2.3	2.8	2.6	4.9	5.4	5.2	6.4	5.4	0.0
Female	0.0	0.0	1.2	3.2	6.0	2.4	3.1	1.7	0.7	2.4	0.4	1.8	3.2	1.6	2.0	4.4	4.6	0.0
Kidney & Renal Pelvis																		
All	3.0	0.5	0.0	0.0	0.3	1.2	4.0	6.6	10.4	19.6	26.4	38.7	43.9	58.9	80.6	91.5	98.6	76.6
Male	2.0	0.6	0.0	0.0	0.3	1.9	4.8	9.0	12.9	27.8	33.9	56.4	66.9	78.7	111.9	119.4	148.6	113.2
Female	3.9	0.3	0.0	0.0	0.4	0.3	3.1	4.1	7.8	11.0	18.8	21.6	22.1	40.0	50.4	66.0	55.7	53.0
Larynx																		
All	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.4	0.6	2.0	5.7	7.7	6.1	9.7	8.0	16.9	10.1
Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.1	3.6	6.7	12.4	9.2	14.5	13.6	32.4	20.6
Female	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.4	4.7	3.2	3.2	5.0	2.9	3.5	3.3
Leukemia																		
All	8.0	3.5	2.6	1.4	2.2	1.7	3.4	4.4	6.5	12.0	16.5	22.6	32.6	45.9	67.9	94.5	108.6	112.8
Male	8.9	5.4	3.3	0.9	1.9	2.2	4.8	5.7	7.5	13.3	18.5	26.9	42.1	56.6	83.9	118.6	147.2	159.5
Female	7.1	1.6	1.9	1.9	2.5	1.0	2.1	3.1	5.5	10.6	14.4	18.4	23.5	35.7	52.4	72.6	75.5	82.8
Liver & Bile Duct																		
All	0.5	0.2	0.3	0.0	0.2	0.3	0.3	1.2	1.8	2.5	7.1	15.1	27.1	37.6	38.6	39.8	29.3	32.2
Male	0.3	0.0	0.3	0.0	0.0	0.6	0.3	1.3	2.9	3.4	9.1	23.2	42.5	54.9	57.5	56.1	40.5	46.3
Female	0.7	0.3	0.0	0.0	0.4	0.0	0.4	1.0	0.7	1.6	5.2	7.2	12.5	21.0	20.5	24.9	19.7	23.2
Lung & Bronchus																		
All	0.0	0.0	0.2	0.2	0.3	0.3	0.7	1.0	3.5	10.7	24.6	57.1	112.5	168.3	264.3	351.7	361.5	303.5
Male	0.0	0.0	0.3	0.0	0.3	0.3	1.0	0.3	4.6	8.8	20.5	53.8	109.0	183.1	283.3	384.5	376.8	377.2
Female	0.0	0.0	0.0	0.3	0.4	0.3	0.4	1.7	2.2	12.6	28.8	60.2	115.9	154.2	246.0	321.7	348.3	256.1
Melanoma of the Skin																		
All	0.2	0.0	0.5	1.4	3.4	8.0	13.8	20.1	25.2	30.2	40.5	46.6	65.9	89.9	116.6	135.5	156.1	164.5
Male	0.0	0.0	0.0	0.9	2.2	5.1	10.9	15.1	23.9	32.3	40.6	56.4	84.2	112.4	154.4	199.5	241.8	284.6
Female	0.4	0.0	0.9	1.9	4.6	11.0	16.7	25.3	26.6	28.0	40.3	37.2	48.5	68.6	80.3	77.0	82.4	87.2
Myeloma																		
All	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.9	1.5	5.2	6.2	9.2	16.1	25.4	31.8	46.7	52.4	40.3
Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.8	5.7	9.1	12.7	21.1	27.5	38.9	64.1	68.9	66.9
Female	0.0	0.0	0.0	0.0	0.0	0.3	0.7	0.7	1.1	4.7	3.2	5.8	11.4	23.4	24.9	30.8	38.3	23.2

Age (years)	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Non-Hodgkin Lymphoma																		
All	1.6	0.8	2.1	1.4	3.4	3.8	2.8	5.8	9.6	14.7	18.5	32.3	45.6	64.8	78.5	99.5	109.9	101.4
Male	2.0	1.6	3.3	2.5	3.5	4.8	2.7	8.4	12.9	17.1	17.8	37.0	53.7	78.7	98.9	123.4	121.6	111.4
Female	1.1	0.0	0.9	0.3	3.2	2.7	2.8	3.1	6.3	12.2	19.2	27.8	37.8	51.5	58.9	77.7	99.9	94.9
Oral Cavity & Pharynx																		
All	0.0	0.0	0.3	0.3	0.2	0.5	1.0	2.0	4.2	7.4	21.4	30.5	41.7	51.6	46.5	53.2	46.8	50.4
Male	0.0	0.0	0.3	0.6	0.0	0.3	0.7	2.0	5.0	11.0	31.2	47.1	66.9	78.7	64.2	78.5	66.2	72.0
Female	0.0	0.0	0.3	0.0	0.4	0.7	1.4	2.1	3.3	3.6	11.6	14.4	17.8	25.8	29.4	30.1	30.2	36.4
Ovary																		
Female	0.4	0.3	0.6	1.3	1.8	2.7	2.1	4.5	7.8	15.8	14.4	21.6	28.9	32.1	34.9	39.6	36.0	43.1
Pancreas																		
All	0.0	0.0	0.0	0.2	0.3	0.2	1.2	1.7	3.5	6.0	11.5	20.2	34.2	44.9	70.7	87.7	102.4	114.2
Male	0.0	0.0	0.0	0.0	0.3	0.0	1.4	1.0	3.2	7.6	13.8	22.0	39.5	51.2	84.4	95.3	133.7	147.4
Female	0.0	0.0	0.0	0.3	0.4	0.3	1.0	2.4	3.7	4.3	9.2	18.4	29.2	38.8	57.4	80.6	75.5	92.7
Prostate																		
Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	4.3	24.3	105.7	233.0	429.2	707.5	720.5	704.2	568.6	450.9
Stomach																		
All	0.0	0.0	0.0	0.0	0.2	0.2	1.0	1.9	1.6	3.3	5.2	8.8	7.9	14.0	19.1	24.5	31.2	36.3
Male	0.0	0.0	0.0	0.0	0.0	0.3	0.7	1.0	1.4	3.8	5.5	14.2	10.9	19.6	26.4	38.5	41.9	49.7
Female	0.0	0.0	0.0	0.0	0.4	0.0	1.4	2.7	1.9	2.8	4.8	3.6	5.0	8.7	12.0	11.7	22.1	27.6
Testis																		
Male	0.0	0.0	0.3	2.5	10.2	16.0	16.4	14.7	10.7	6.5	4.3	6.0	2.3	2.1	2.1	0.8	0.0	1.7
Thyroid																		
All	0.0	0.2	1.1	3.4	8.7	12.8	16.5	17.4	18.7	18.8	22.0	18.4	22.0	20.9	24.7	19.9	18.7	9.4
Male	0.0	0.0	0.9	0.9	2.2	3.5	8.2	7.4	10.7	11.8	10.7	10.8	18.4	15.4	24.9	18.4	25.7	15.4
Female	0.0	0.3	1.2	6.0	15.8	22.7	25.0	27.7	27.0	26.0	33.5	25.6	25.3	26.2	24.5	21.3	12.8	5.5

2021 OBSERVED VS. EXPECTED NUMBERS BY HEALTH DISTRICT

MALES AND FEMALES

	HD 1		HD 2		HD 3		HD 4		HD 5		HD 6		HD 7	
	OBS	EXP	OBS	EXP	OBS	EXP	OBS	EXP	OBS	EXP	OBS	EXP	OBS	EXP
All Sites	1,675	1,691.2	703	682.8	1,696	1,603.0 +	2,933	2,931.1	1,081	1,096.7	871	895.8	1,013	1,068.0
Bladder	84	74.6	34	31.5	66	71.2	109	132.3 +	51	47.9	45	38.2	47	45.0
Brain	20	21.3	10	8.4	17	22.8	48	36.1	19	14.1	8	12.6	11	16.2
Brain & CNS non-Malignant	56	50.2	17	21.0	62	48.0	94	89.9	28	34.8	23	28.2	29	34.1
Breast	237	249.0	101	97.8	272	234.3 +	458	433.3	134	164.8 +	115	134.2	161	157.0
Breast (in situ)	45	52.3	20	20.0	45	52.1	127	80.3 *	24	35.1	22	28.6	29	34.2
Cervix	5	8.1	2	3.0	8	8.4	20	13.5	8	5.1	3	4.7	4	5.7
Colorectal	152	137.8	53	57.1	140	135.2	211	264.2 *	97	91.5	97	72.8 *	87	89.5
Corpus Uteri	40	50.0	17	18.8	53	45.6	65	94.5 *	43	29.7 +	28	25.3	40	28.7
Esophagus	13	18.7	12	6.9	11	17.6	34	27.7	13	11.1	12	8.8	7	11.1
Hodgkin lymphoma	3	6.0	3	2.7	10	6.3	12	12.4	4	4.6	5	3.8	5	6.5
Kidney & renal pelvis	86	67.9 +	16	29.6 *	96	63.2 *	113	128.8	33	47.8 +	40	37.4	37	45.4
Larynx	18	7.2 *	3	3.8	6	9.1	15	15.8	6	5.8	4	4.8	1	6.1 +
Leukemia	54	60.5	16	24.9	65	56.2	93	107.4	52	37.5 +	40	31.1	34	38.5
Liver & bile duct	29	27.9	8	11.4	33	25.1	45	49.4	19	17.7	11	14.9	18	17.1
Lung & bronchus	196	166.4 +	86	69.1	185	153.4 +	265	289.2	83	111.3 *	94	86.4	70	105.0 *
Melanoma of skin	143	117.2 +	41	50.4	110	119.6	215	215.5	88	79.1	56	66.3	75	78.4
Myeloma	28	25.0	7	10.6	27	23.8	45	43.7	19	16.2	6	14.2 +	18	15.5
N-H Lymphoma	66	74.7	37	29.5	64	71.3	118	130.2	56	46.5	36	39.1	56	45.5
Oral cavity & pharynx	53	46.4	23	18.6	43	45.6	82	82.1	35	29.9	16	25.6	26	29.9
Ovary	16	21.5	6	8.3	17	21.2	43	35.4	19	13.1	12	11.1	12	13.4
Pancreas	60	52.4	26	21.6	43	51.8	98	87.6	34	34.3	19	28.6	31	32.7
Prostate	143	261.8 *	122	96.5 +	228	218.8	494	353.1 *	139	151.5	116	124.7	131	146.6
Stomach	19	16.0	8	6.7	18	15.6	20	32.9 +	11	10.8	8	8.8	14	9.8
Testis	11	8.6	1	4.3	10	11.3	26	19.2	6	7.5	6	6.3	8	9.1
Thyroid	33	34.8	15	14.0	33	38.1	59	73.5	22	25.0	29	19.9	36	25.5
Pediatric (age 0-19)	9	11.1	3	4.6	17	15.4	29	22.0	9	10.7	13	8.9	10	16.6

Notes:
+ Statistically significant difference at p<.05.
* Statistically significant difference at p<.01.

Observed and expected numbers exclude in situ cases, basal/squamous skin cases, and cases with unknown age or sex.

MALES

	HD 1		HD 2		HD 3		HD 4		HD 5		HD 6		HD 7	
	OBS	EXP	OBS	EXP	OBS	EXP	OBS	EXP	OBS	EXP	OBS	EXP	OBS	EXP
All Sites	895	910.0	387	377.2	872	850.2	1,582	1,511.7	568	582.9	478	476.1	513	572.7 +
Bladder	69	58.5	30	25.6	47	56.8	85	102.2	35	38.1	39	29.8	38	35.6
Brain	15	11.2	6	4.8	11	12.4	21	23.3	12	7.8	1	7.4 +	9	8.6
Brain & CNS non-Malignant	23	11.5 *	2	6.0	13	13.1	23	23.5	8	9.1	7	7.3	5	9.2
Breast	6	2.4	0	1.4	4	2.7	4	5.7	1	2.1	2	1.6	1	2.0
Breast (in situ)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Colorectal	81	73.3	31	30.8	70	72.1	110	139.5 +	51	48.5	53	38.5 +	48	47.6
Esophagus	10	16.9	11	6.1	9	15.4	29	24.2	11	9.6	12	7.6	7	9.6
Hodgkin lymphoma	3	3.5	2	1.6	5	3.7	7	7.1	2	2.6	1	2.4	4	3.1
Kidney & renal pelvis	65	49.2 +	11	22.2 +	70	45.6 *	79	94.1	26	34.7	27	27.6	29	33.4
Larynx	13	5.2 *	3	2.7	4	6.6	12	10.7	3	4.4	2	3.5	1	4.4
Leukemia	35	36.5	12	15.4	34	35.0	60	62.8	33	22.6 +	20	19.4	21	23.3
Liver & bile duct	22	19.8	6	8.4	25	17.6	29	36.3	16	12.4	8	10.8	11	12.7
Lung & bronchus	107	86.4 +	43	37.7	87	81.4	139	147.1	42	57.9 +	58	44.4	34	55.5 *
Melanoma of skin	87	69.8	20	31.7 +	61	71.2	127	124.4	52	46.9	33	39.2	51	45.5
Myeloma	22	13.8	5	6.4	17	14.0	23	27.7	10	9.9	5	8.4	8	9.8
N-H Lymphoma	32	40.7	21	16.1	33	38.4	72	65.8	26	25.5	23	20.9	26	25.4
Oral cavity & pharynx	38	32.3	16	13.3	29	32.0	65	53.8	20	21.5	10	18.3	17	21.5
Pancreas	36	26.2	9	11.9	24	26.2	44	46.9	21	17.2	13	14.4	13	17.3
Prostate	143	261.8 *	122	96.5 +	228	218.8	494	353.1 *	139	151.5	116	124.7	131	146.6
Stomach	12	8.6	5	3.8	12	8.2	11	17.9	5	6.0	4	4.9	5	5.8
Testis	11	8.6	1	4.3	10	11.3	26	19.2	6	7.5	6	6.3	8	9.1
Thyroid	15	14.0	6	5.9	15	14.1	20	28.9	12	9.4	11	7.7	9	10.1
Pediatric (age 0-19)	3	4.9	0	2.0	8	6.4	12	9.6	4	4.6	6	3.8	5	6.0

Notes:
+ Statistically significant difference at p<.05.
* Statistically significant difference at p<.01.

Observed and expected numbers exclude in situ cases, basal/squamous skin cases, and cases with unknown age or sex.

2021 OBSERVED VERSUS EXPECTED NUMBERS
BY
HEALTH DISTRICT

FEMALES

	HD 1		HD 2		HD 3		HD 4		HD 5		HD 6		HD 7	
	OBS	EXP	OBS	EXP	OBS	EXP	OBS	EXP	OBS	EXP	OBS	EXP	OBS	EXP
All Sites	780	783.2	316	309.0	824	753.7 +	1,351	1,410.4	513	512.3	393	420.9	500	497.2
Bladder	15	16.3	4	6.7	19	14.3	24	28.6	16	9.6	6	8.4	9	9.7
Brain	5	10.0	4	3.7	6	10.3	27	12.8 *	7	6.4	7	5.2	2	7.7 +
Brain & CNS non-Malignant	33	38.7	15	14.8	49	35.1 +	71	66.5	20	25.7	16	20.9	24	24.9
Breast	231	247.4	101	94.3	268	234.0 +	454	430.9	133	161.9 +	113	132.2	160	152.9
Breast (in situ)	45	52.5	20	19.6	45	52.7	127	80.7 *	24	34.8	22	28.5	29	33.7
Cervix	5	8.1	2	3.0	8	8.4	20	13.5	8	5.1	3	4.7	4	5.7
Colorectal	71	64.5	22	26.4	70	63.0	101	124.3 +	46	42.9	44	34.3	39	42.2
Corpus Uteri	40	50.0	17	18.8	53	45.6	65	94.5 *	43	29.7 +	28	25.3	40	28.7
Esophagus	3	1.9	1	0.9	2	2.1	5	3.2	2	1.4	0	1.3	0	1.7
Hodgkin lymphoma	0	2.5	1	1.1	5	2.6	5	5.2	2	1.9	4	1.5	1	3.5
Kidney & renal pelvis	21	18.7	5	7.8	26	17.3	34	34.0	7	13.1	13	9.9	8	12.4
Larynx	5	2.0	0	1.1	2	2.5	3	5.1	3	1.5	2	1.3	0	1.7
Leukemia	19	24.0	4	9.7	31	21.1	33	44.2	19	14.9	20	11.8 +	13	15.3
Liver & bile duct	7	8.1	2	3.2	8	7.4	16	12.8	3	5.3	3	4.2	7	4.5
Lung & bronchus	89	80.0	43	31.8	98	72.2 *	126	141.6	41	53.0	36	42.0	36	49.7
Melanoma of skin	56	47.4	21	19.2	49	48.5	88	90.0	36	32.0	23	27.1	24	33.2
Myeloma	6	11.2	2	4.2	10	9.7	22	15.9	9	6.2	1	5.8 +	10	5.8
N-H Lymphoma	34	34.0	16	13.5	31	32.8	46	64.2 +	30	21.1	13	18.3	30	20.0 +
Oral cavity & pharynx	15	14.0	7	5.5	14	13.5	17	27.9 +	15	8.4 +	6	7.5	9	8.6
Ovary	16	21.5	6	8.3	17	21.2	43	35.4	19	13.1	12	11.1	12	13.4
Pancreas	24	26.3	17	9.8 +	19	25.7	54	40.4 +	13	17.1	6	14.1 +	18	15.4
Stomach	7	7.4	3	3.0	6	7.4	9	14.9	6	4.7	4	3.9	9	4.1 +
Thyroid	18	21.0	9	8.1	18	24.2	39	44.1	10	15.5	18	12.3	27	15.7 +
Pediatric (age 0-19)	6	6.1	3	2.6	9	8.9	17	12.3	5	6.1	7	5.1	5	10.9

Notes:
+ Statistically significant difference at p<.05.
* Statistically significant difference at p<.01.

Observed and expected numbers exclude in situ cases, basal/squamous skin cases, and cases with unknown age or sex.

SECTION VI

RISKS OF BEING DIAGNOSED WITH AND DYING FROM CANCER

Risks of Being Diagnosed with and Dying from Cancer

All Sites, Invasive in Females

If your current age is:	Then your risk of being diagnosed with cancer by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in 63	1 in 20	1 in 9	1 in 5	1 in 3	1 in 2
40		1 in 28	1 in 10	1 in 5	1 in 3	1 in 2
50			1 in 15	1 in 6	1 in 3	1 in 2
60				1 in 9	1 in 4	1 in 3
70					1 in 6	1 in 3
80						1 in 4

If your current age is:	Then your risk of dying from cancer by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in 640	1 in 164	1 in 54	1 in 22	1 in 11	1 in 6
40		1 in 218	1 in 59	1 in 22	1 in 11	1 in 6
50			1 in 78	1 in 24	1 in 11	1 in 6
60				1 in 34	1 in 12	1 in 6
70					1 in 17	1 in 7
80						1 in 9

All Sites, Invasive in Males

If your current age is:	Then your risk of being diagnosed with cancer by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in 115	1 in 35	1 in 12	1 in 5	1 in 3	1 in 2
40		1 in 49	1 in 13	1 in 5	1 in 3	1 in 2
50			1 in 16	1 in 5	1 in 3	1 in 2
60				1 in 7	1 in 3	1 in 2
70					1 in 4	1 in 2
80						1 in 3

If your current age is:	Then your risk of dying from cancer by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in 803	1 in 199	1 in 56	1 in 20	1 in 9	1 in 5
40		1 in 259	1 in 60	1 in 20	1 in 9	1 in 5
50			1 in 75	1 in 21	1 in 9	1 in 5
60				1 in 27	1 in 10	1 in 5
70					1 in 13	1 in 5
80						1 in 6

Risks of Being Diagnosed with and Dying from Cancer

Female Breast Cancer

If your current age is:	Then your risk of being diagnosed with breast cancer by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in 211	1 in 50	1 in 23	1 in 13	1 in 9	1 in 7
40		1 in 64	1 in 25	1 in 14	1 in 9	1 in 7
50			1 in 41	1 in 17	1 in 10	1 in 8
60				1 in 27	1 in 13	1 in 9
70					1 in 21	1 in 13
80						1 in 24

If your current age is:	Then your risk of dying from breast cancer by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in 2058	1 in 619	1 in 225	1 in 112	1 in 66	1 in 39
40		1 in 876	1 in 250	1 in 118	1 in 67	1 in 39
50			1 in 344	1 in 133	1 in 72	1 in 40
60				1 in 208	1 in 86	1 in 44
70					1 in 134	1 in 50
80						1 in 62

Prostate Cancer

If your current age is:	Then your risk of being diagnosed with prostate cancer by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in 18118	1 in 528	1 in 55	1 in 16	1 in 9	1 in 7
40		1 in 533	1 in 55	1 in 15	1 in 9	1 in 7
50			1 in 59	1 in 15	1 in 9	1 in 7
60				1 in 19	1 in 9	1 in 8
70					1 in 15	1 in 10
80						1 in 20

| If your current age is:	Then your risk of dying from prostate cancer by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in *	1 in 20649	1 in 1616	1 in 341	1 in 105	1 in 38
40		1 in 20243	1 in 1584	1 in 334	1 in 103	1 in 37
50			1 in 1665	1 in 329	1 in 100	1 in 36
60				1 in 383	1 in 100	1 in 34
70					1 in 116	1 in 32
80						1 in 31

Note: * Risk is not precise - estimate not shown.

Risks of Being Diagnosed with and Dying from Cancer

Colon/Rectal Cancer in Females

If your current age is:	Then your risk of <u>being diagnosed with colorectal cancer</u> by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in 1104	1 in 275	1 in 125	1 in 68	1 in 42	1 in 28
40		1 in 362	1 in 139	1 in 72	1 in 43	1 in 28
50			1 in 220	1 in 88	1 in 48	1 in 30
60				1 in 139	1 in 58	1 in 33
70					1 in 89	1 in 39
80						1 in 54

If your current age is:	Then your risk of <u>dying from colorectal cancer</u> by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in 7799	1 in 1416	1 in 534	1 in 250	1 in 133	1 in 66
40		1 in 1712	1 in 567	1 in 255	1 in 133	1 in 65
50			1 in 831	1 in 294	1 in 142	1 in 67
60				1 in 434	1 in 163	1 in 69
70					1 in 238	1 in 75
80						1 in 84

Colon/Rectal Cancer in Males

If your current age is:	Then your risk of <u>being diagnosed with colorectal cancer</u> by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in 1245	1 in 281	1 in 98	1 in 53	1 in 34	1 in 25
40		1 in 355	1 in 104	1 in 54	1 in 35	1 in 25
50			1 in 142	1 in 62	1 in 37	1 in 26
60				1 in 102	1 in 46	1 in 30
70					1 in 73	1 in 36
80						1 in 49

If your current age is:	Then your risk of <u>dying from colorectal cancer</u> by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in 4341	1 in 952	1 in 355	1 in 163	1 in 99	1 in 62
40		1 in 1196	1 in 379	1 in 166	1 in 100	1 in 61
50			1 in 538	1 in 187	1 in 105	1 in 63
60				1 in 267	1 in 122	1 in 66
70					1 in 195	1 in 76
80						1 in 87

Risks of Being Diagnosed with and Dying from Cancer

Melanoma in Females

If your current age is:	Then your risk of <u>being diagnosed with melanoma</u> by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in 504	1 in 213	1 in 120	1 in 75	1 in 52	1 in 42
40		1 in 365	1 in 156	1 in 87	1 in 58	1 in 45
50			1 in 266	1 in 111	1 in 67	1 in 50
60				1 in 181	1 in 85	1 in 58
70					1 in 144	1 in 78
80						1 in 130

If your current age is:	Then your risk of <u>dying from melanoma</u> by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in 17663	1 in 4642	1 in 2501	1 in 1253	1 in 730	1 in 445
40		1 in 6232	1 in 2883	1 in 1334	1 in 753	1 in 452
50			1 in 5255	1 in 1664	1 in 840	1 in 477
60				1 in 2327	1 in 955	1 in 502
70					1 in 1470	1 in 581
80						1 in 741

Melanoma in Males

If your current age is:	Then your risk of <u>being diagnosed with melanoma</u> by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in 781	1 in 255	1 in 119	1 in 62	1 in 37	1 in 27
40		1 in 372	1 in 138	1 in 66	1 in 38	1 in 27
50			1 in 211	1 in 77	1 in 41	1 in 28
60				1 in 113	1 in 47	1 in 30
70					1 in 69	1 in 35
80						1 in 49

If your current age is:	Then your risk of <u>dying from melanoma</u> by a given age is:					
	By age 40	By age 50	By age 60	By age 70	By age 80	Ever
30	1 in 9024	1 in 4505	1 in 1793	1 in 767	1 in 398	1 in 223
40		1 in 8818	1 in 2053	1 in 822	1 in 408	1 in 224
50			1 in 2828	1 in 878	1 in 415	1 in 223
60				1 in 1188	1 in 453	1 in 225
70					1 in 631	1 in 240
80						1 in 270

SECTION VII

CANCER TRENDS IN IDAHO
1975–2021

All Sites

Trends in Age-adjusted Incidence Rates
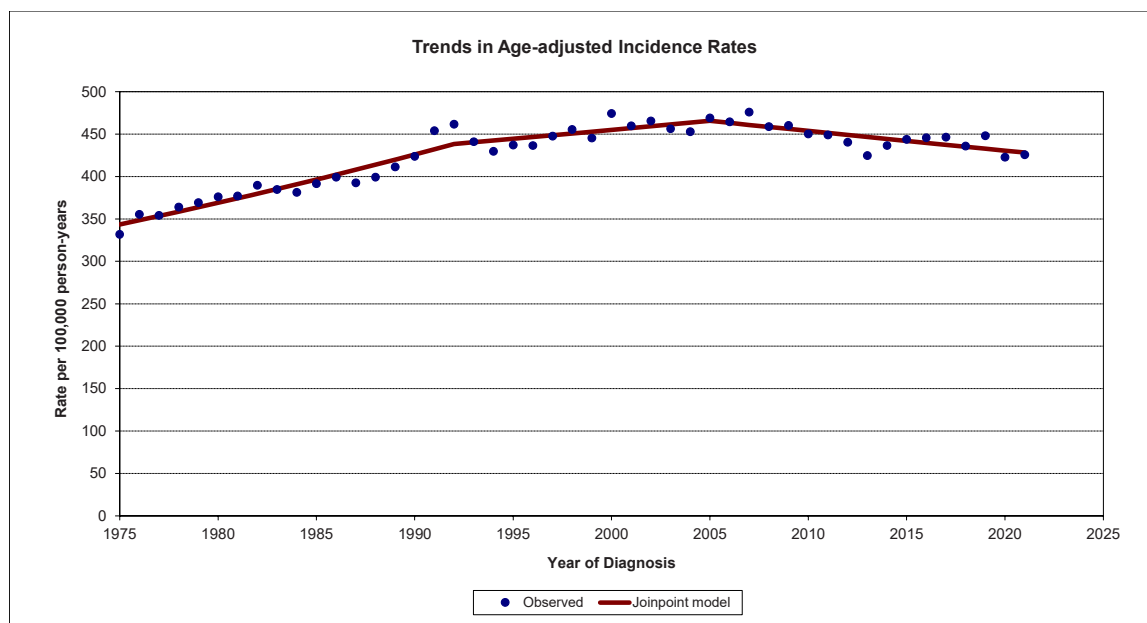
Cancer incidence increased at a rate of about 1.5% per year in Idaho from 1975 to 1992, and at a rate of about 0.5% per year from 1992 to 2005. Since 2005, overall cancer incidence has declined about 0.5% per year. Cancer incidence trends over time were different for males and females. For males, much of the overall trend is due to the trend in prostate cancer incidence. For females, much of the overall trend is due to the trend in breast cancer incidence.

Bladder

Trends in Age-adjusted Incidence Rates
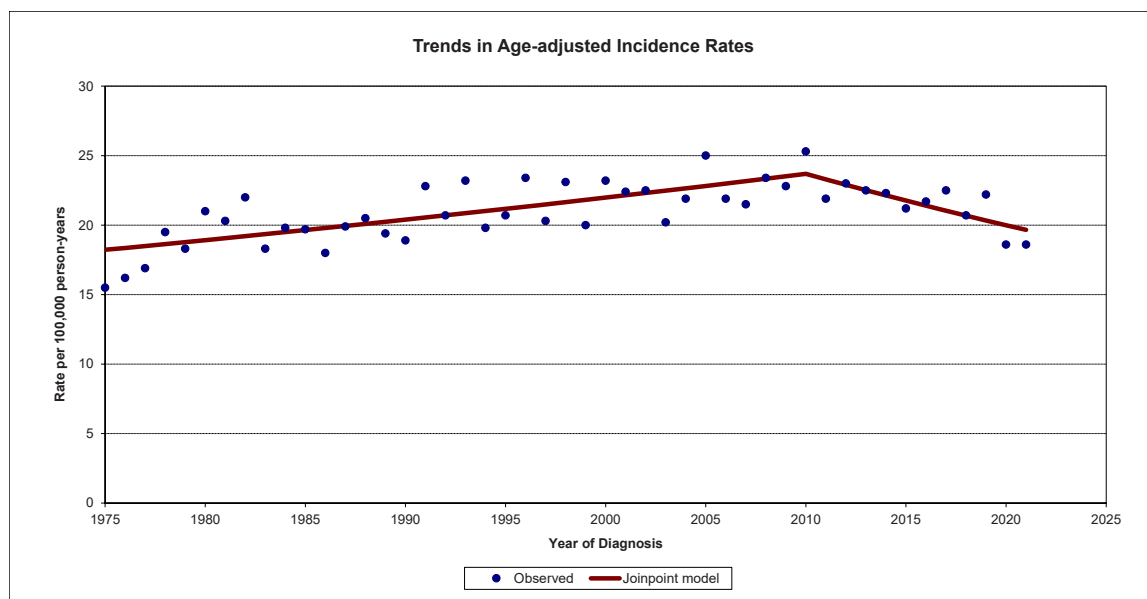
Bladder cancer incidence includes in situ and invasive cases. Bladder cancer incidence increased at a rate of about 0.8% per year in Idaho from 1975 to 2010, then decreased at a rate of about 1.7% per year since 2010. The trends in bladder cancer incidence are driven by males, who have rates of bladder cancer incidence about 4-5 times those of females.

Brain

Trends in Age-adjusted Incidence Rates
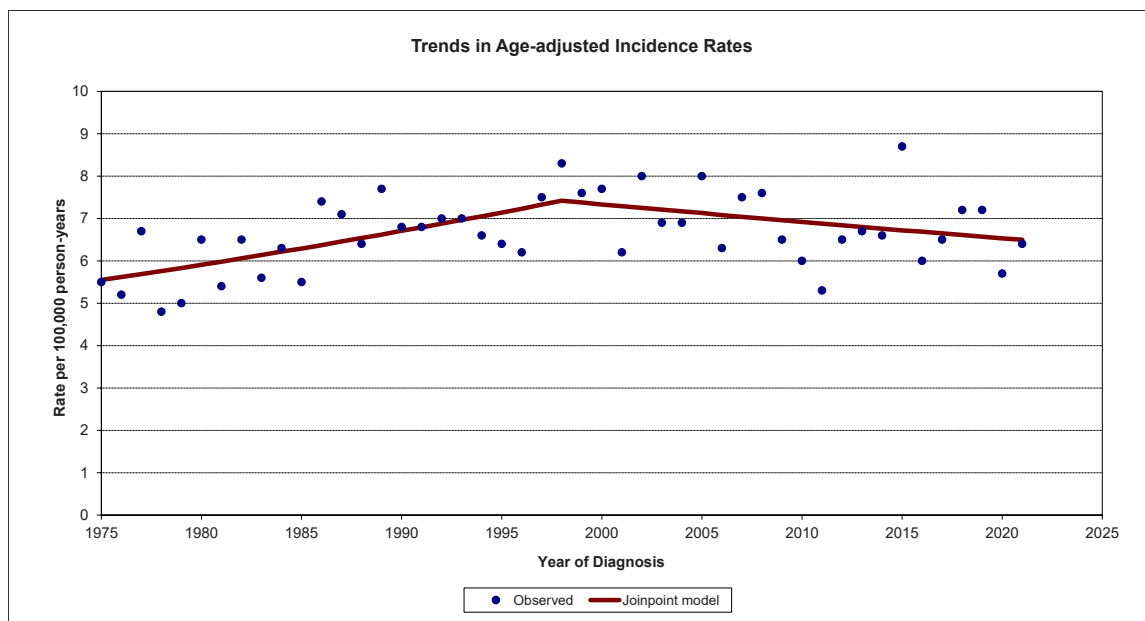
Malignant brain cancer incidence increased at a rate of about 1.3% per year in Idaho from 1975 to 1998, after which the rate has declined about 0.6% per year. Among males, malignant brain cancer incidence rates followed the same pattern. Among females, the rate has been stable 1975 to present.

Brain and Other CNS, Non-Malignant

Trends in Age-adjusted Incidence Rates
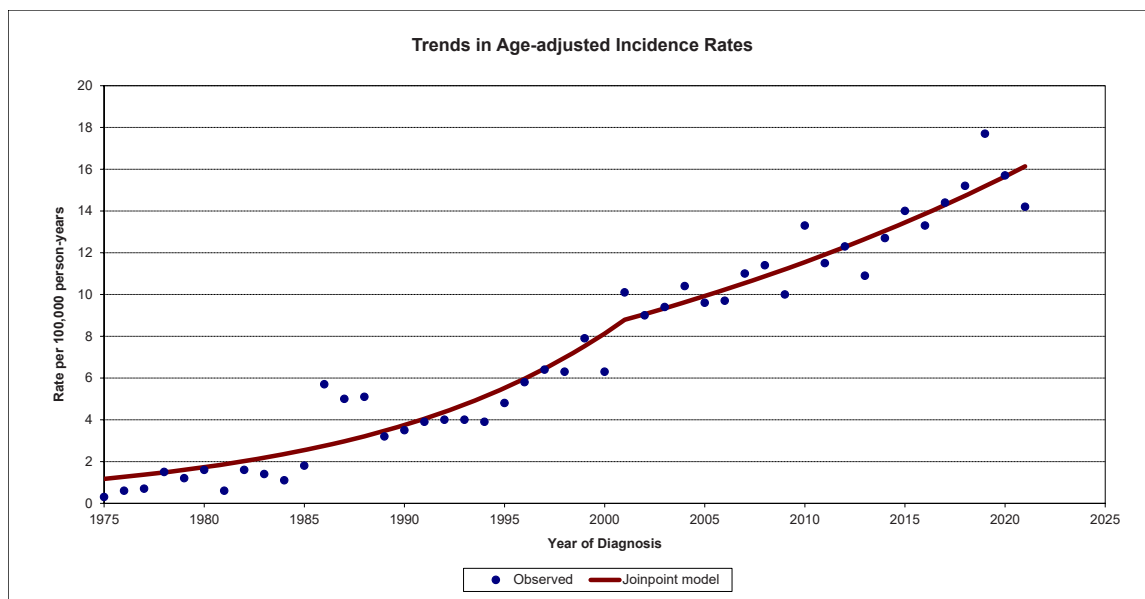
Non-malignant brain and other central nervous system tumors include those with benign and borderline behavior. Non-malignant brain and other CNS tumor incidence increased at a rate of about 8.1% per year in Idaho from 1975 to 2001 (some of which was likely due to improved reporting), after which the rate increased by about 3.1% per year.

Breast Female

Trends in Age-adjusted Incidence Rates
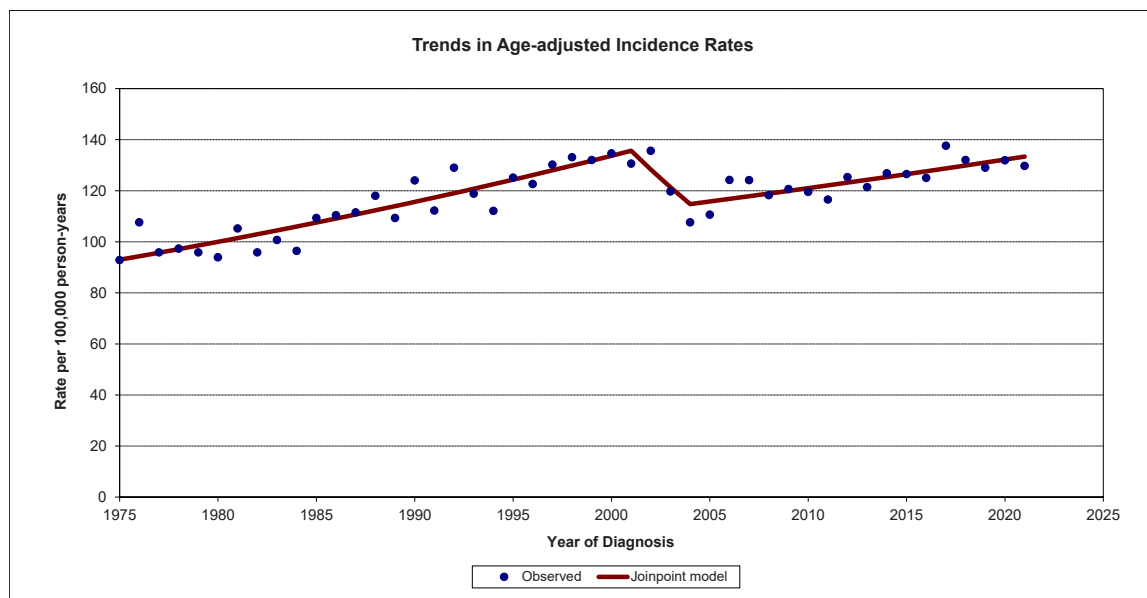
Invasive breast cancer incidence increased at a rate of about 1.5% per year among female Idahoans from 1975 to 2001. From 2001 to 2004, the rate decreased sharply by about 5.4% per year. This decrease may be due in part to a decrease in the use of hormone replacement therapy. Since 2004, the invasive breast cancer incidence rate has increased about 0.9% per year. In situ breast cancer rates increased at a rate of about 13.2% per year from 1975 to 1992 and 0.8% since 1992 (data not shown).

Cervix

Trends in Age-adjusted Incidence Rates
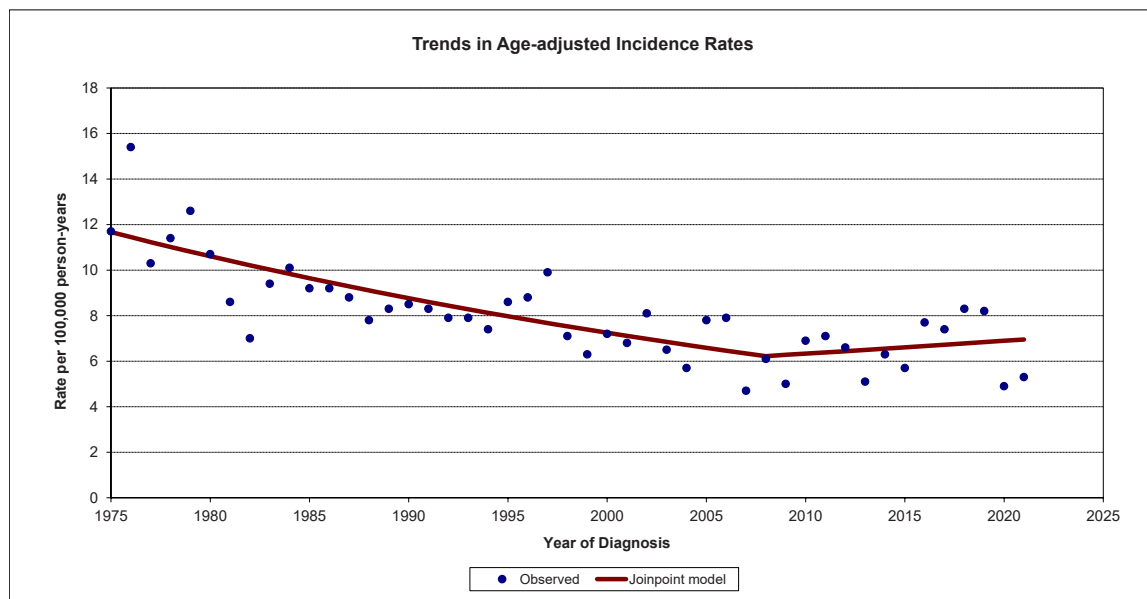
Invasive cervical cancer incidence decreased about 1.9% per year in Idaho from 1975 to 2008 and has increased by about 0.9% per year since 2008.

Colorectal

Trends in Age-adjusted Incidence Rates
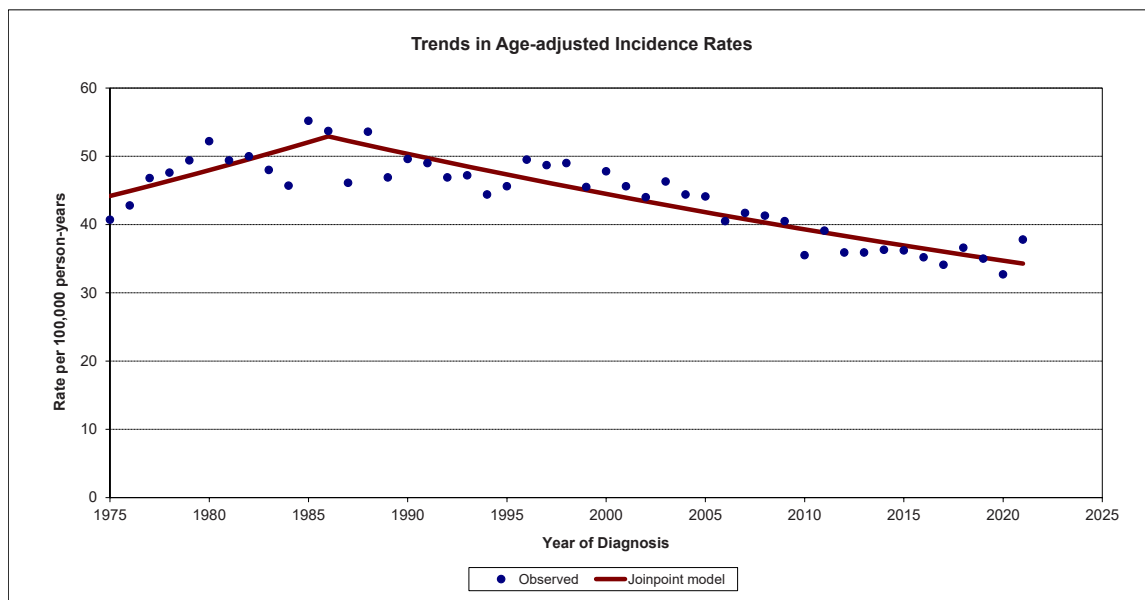
Colorectal cancer incidence rates in Idaho increased about 1.7% per year from 1975 to 1986 and have since decreased about 1.2% per year. Colorectal cancer incidence trends over time were different for males and females. For males, rates increased about 2.0% per year from 1975 to 1988, then decreased about 1.5% per year. For females, rates increased about 1.2% per year from 1975 to 1985, then decreased about 1.1% per year.

Corpus Uteri

Trends in Age-adjusted Incidence Rates
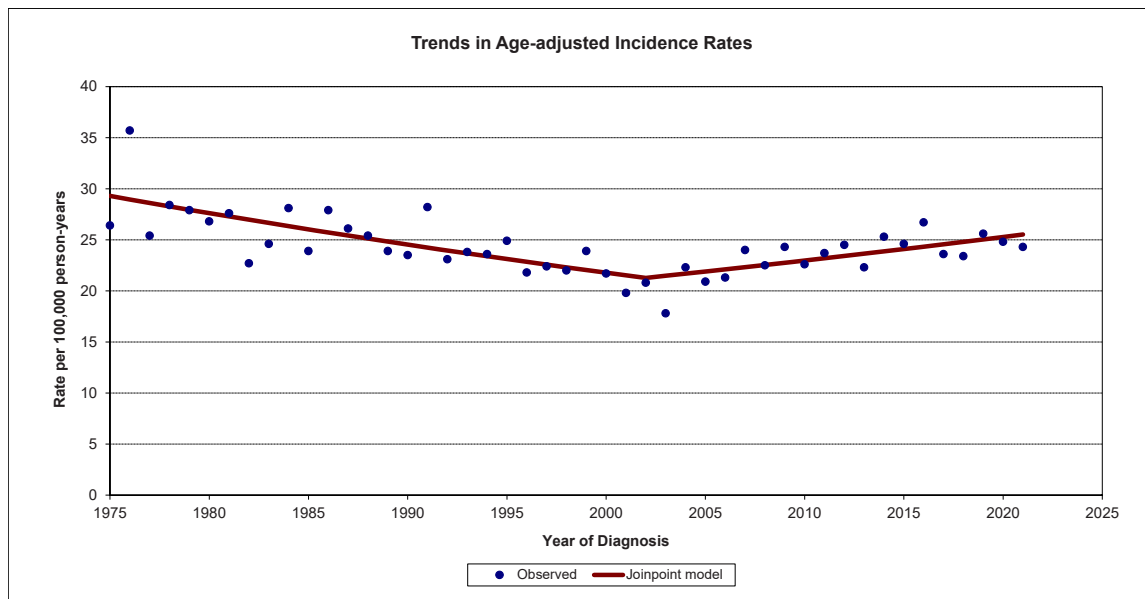
Corpus uteri cancer incidence rates decreased about 1.2% per year in Idaho from 1975 to 2002 and have increased by 1.0% per year since 2002.

Esophagus

Trends in Age-adjusted Incidence Rates
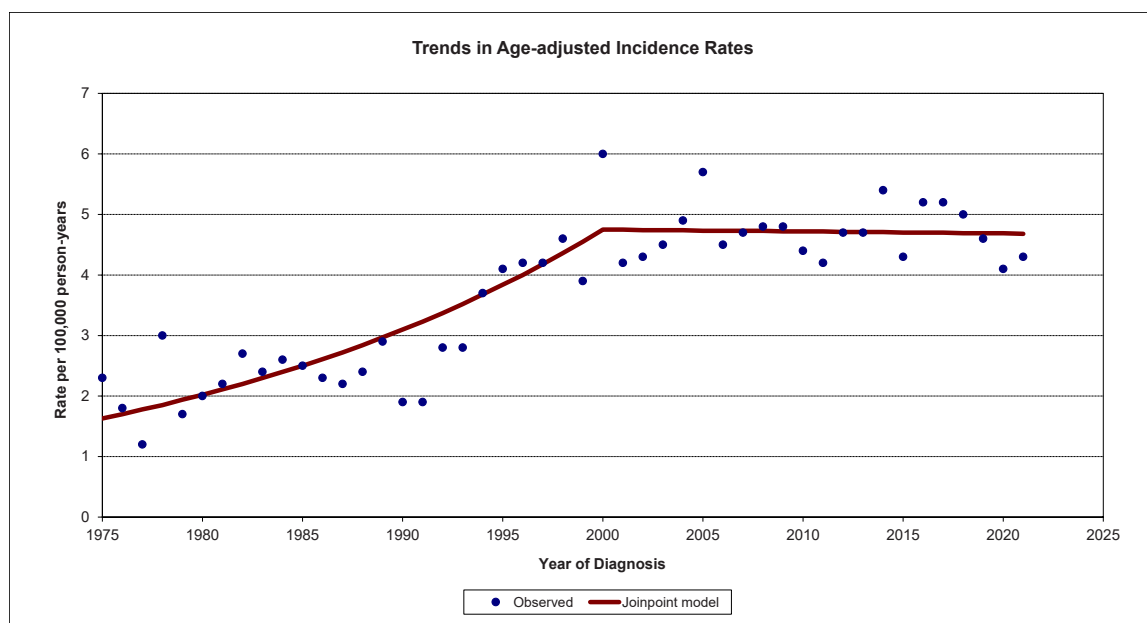
Esophageal cancer incidence increased at a rate of about 4.4% per year in Idaho from 1975 to 2000, after which incidence rates have been stable. Rates of esophageal cancers among males were about 3-4 times higher than those among females.

Hodgkin Lymphoma

Trends in Age-adjusted Incidence Rates
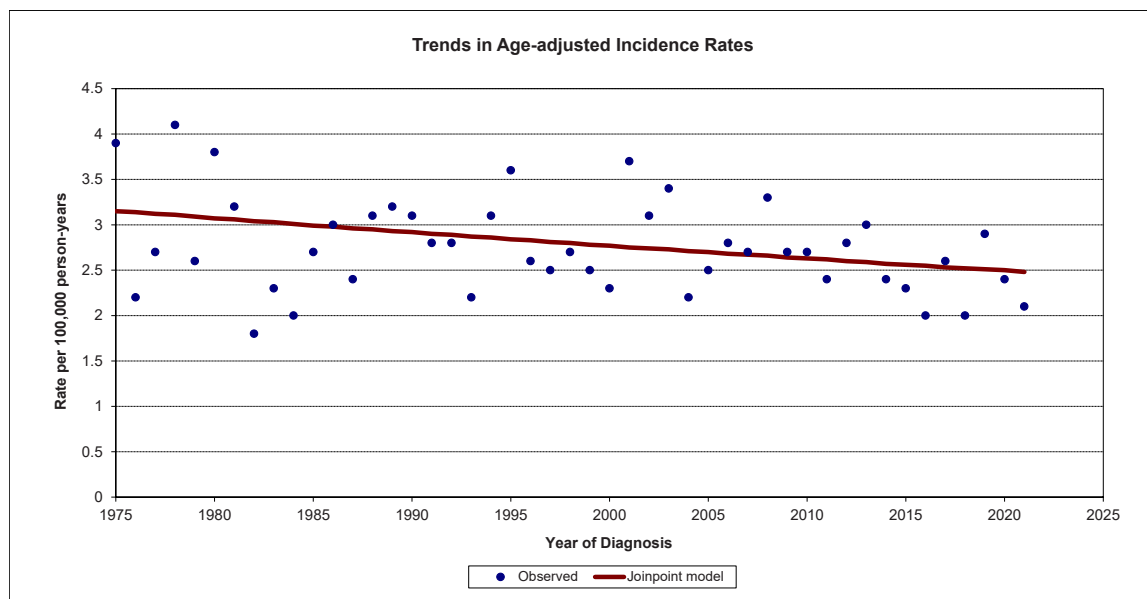
Hodgkin lymphoma incidence has decreased about 0.5% per year in Idaho from 1975 to 2021. Rates showed year-to-year variability due to the relatively small numbers of cases diagnosed annually.

Kidney and Renal Pelvis

Trends in Age-adjusted Incidence Rates
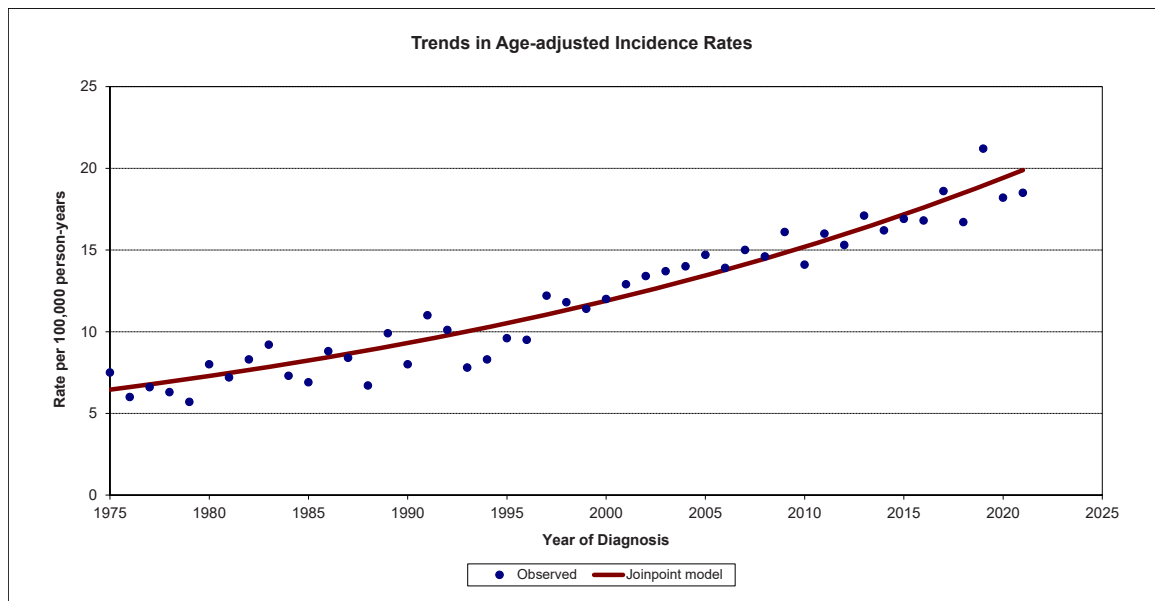
Kidney and renal pelvis cancer incidence increased at a rate of about 2.5% per year in Idaho from 1975 to 2021. The rate of increase was similar for males and females, although rates of kidney and renal pelvis cancer rates among males were about twice as high as among females.

Larynx

Trends in Age-adjusted Incidence Rates
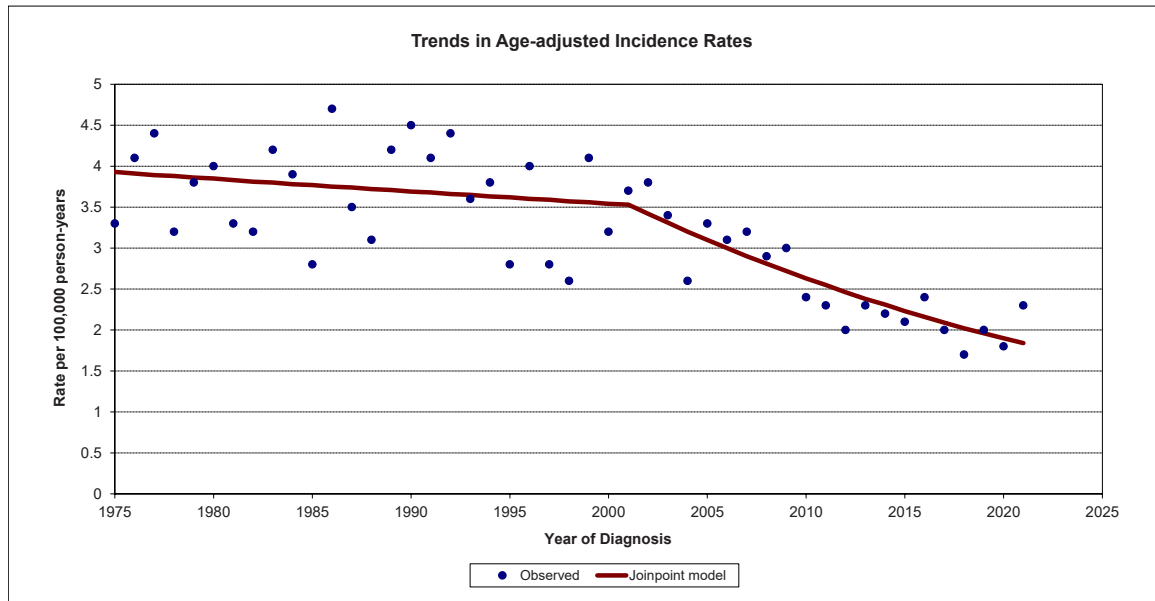
Laryngeal cancer incidence decreased about 0.4% per year in Idaho from 1975 to 2001 and decreased about 3.2% per year since 2001. Rates showed year-to-year variability due to the relatively small numbers of cases diagnosed annually. The temporal pattern was similar for males. Among females, incidence rates of laryngeal cancer decreased about 1.3% per year from 1975 to 2021. Incidence rates of laryngeal cancers among males were about four times as high as among females.

Leukemia
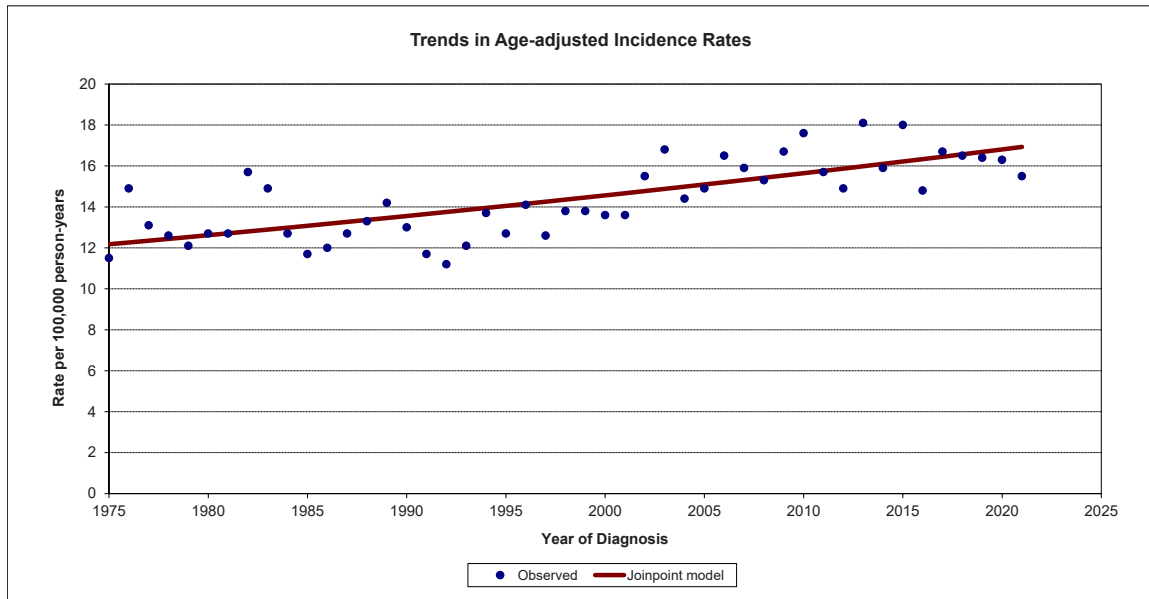
Leukemia incidence has increased about 0.7% per year from 1975 to 2021. Rates showed year-to-year variability due to the relatively small numbers of cases diagnosed annually.

Liver and Bile Duct
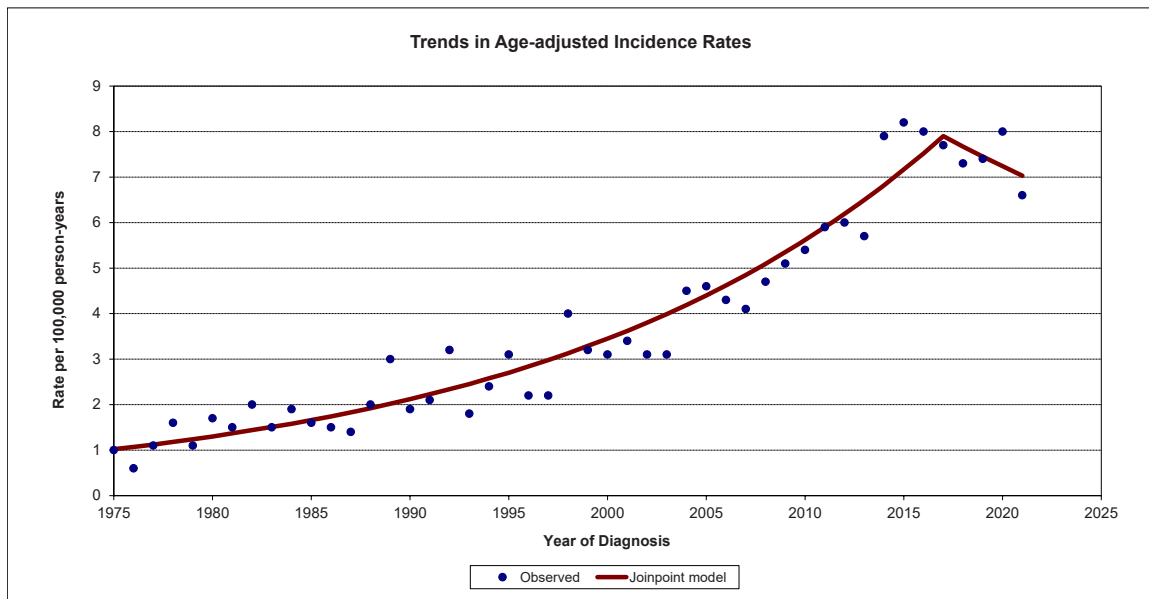
Liver cancer incidence increased at a rate of about 5.0% per year in Idaho from 1975 to 2017, after which rates showed year-to-year variability and a downward trend but were overall stable. The pattern was similar for males. Among females, liver cancer rates increased about 3.5% per year 1975-2021. Rates of liver cancer among males were about twice as high as among females.

Lung and Bronchus

Trends in Age-adjusted Incidence Rates
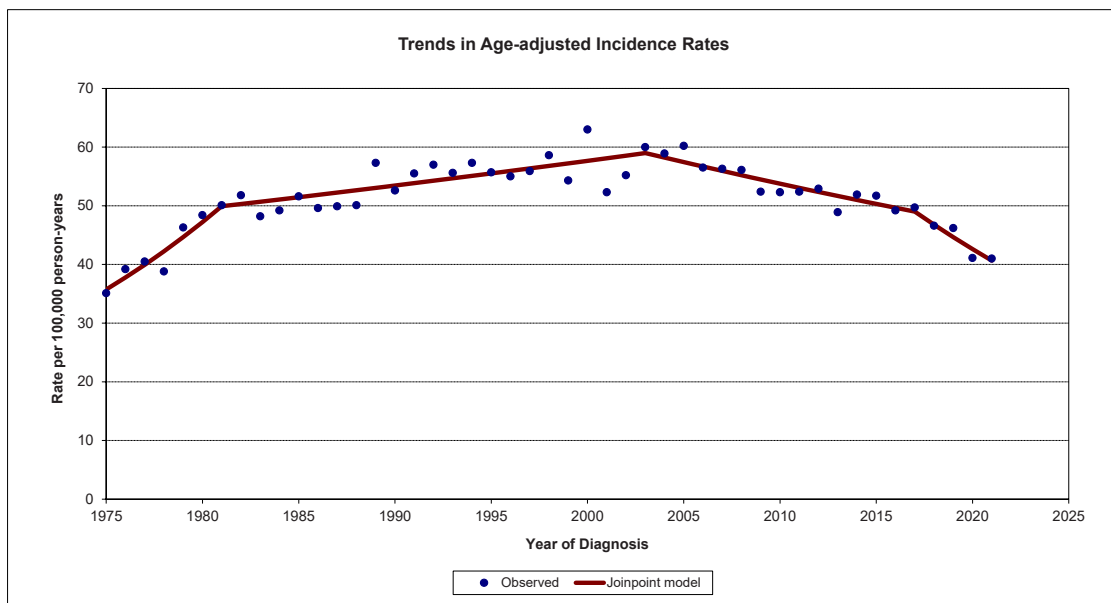
Lung cancer incidence increased at a rate of about 5.7% per year in Idaho from 1975 to 1981, after which the rate of increase lessened to about 0.8% per year until 2003. From 2003 to 2017, the rate decreased about 1.3% per year. Starting in 2018, there is evidence of a substantial decrease in lung cancer incidence through 2021 of about 4.6% per year, which may in part be related to the COVID-19 pandemic. Lung cancer incidence trends over time were different for males and females. For males, lung cancer incidence increased at a rate of about 4.6% per year from 1975 to 1981, and then decreased by about 0.4% per year until 2004, after which it has decreased by about 2.6% per year. For females, lung cancer incidence increased at a rate of about 6.1% per year from 1975 to 1988, after which the rate of increase lessened to about 1.9% per year until 2005. From 2005 to 2019, the rate decreased about 0.7% per year, after which it decreased 9.4% per year. Historically, lung cancer incidence rates were two or more times higher among males as among females, but the gap is continuing to narrow, reflecting long-term trends in smoking prevalence.

Melanoma

Trends in Age-adjusted Incidence Rates
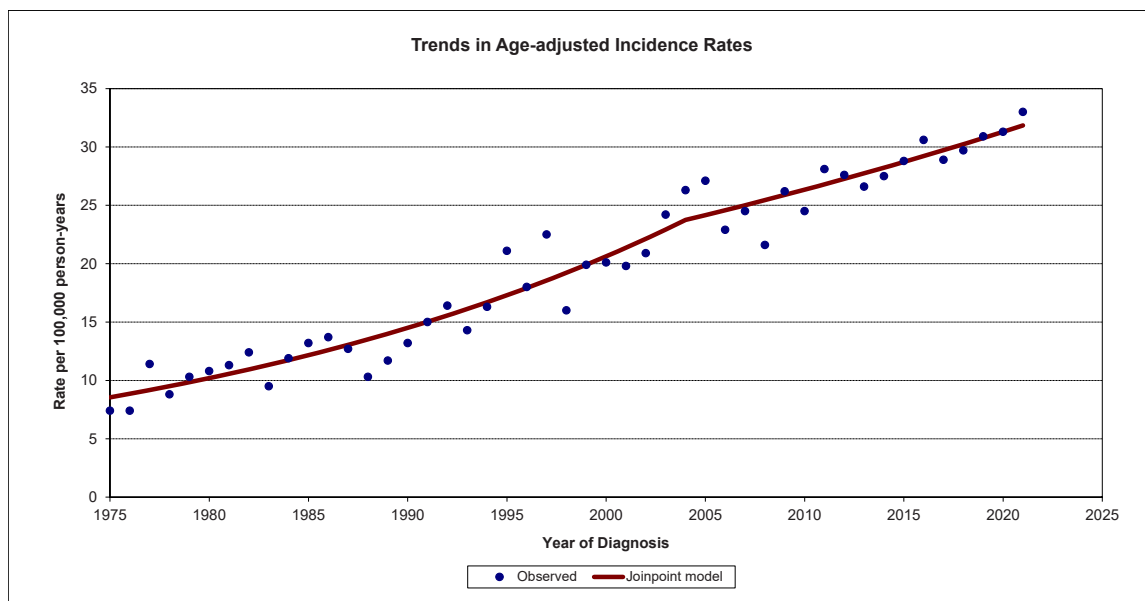
The incidence of melanoma of the skin increased at a rate of about 3.6% per year in Idaho from 1975 to 2004, after which it increased about 1.7% per year. Trends were similar among males. Among females, incidence rates of melanoma of the skin increased about 2.4% per year from 1975 to 2021. The incidence of in situ melanoma of the skin increased at a higher rate (5.7% per year from 1980 to 2021) than for the invasive cases depicted in the graph.

Myeloma

Trends in Age-adjusted Incidence Rates
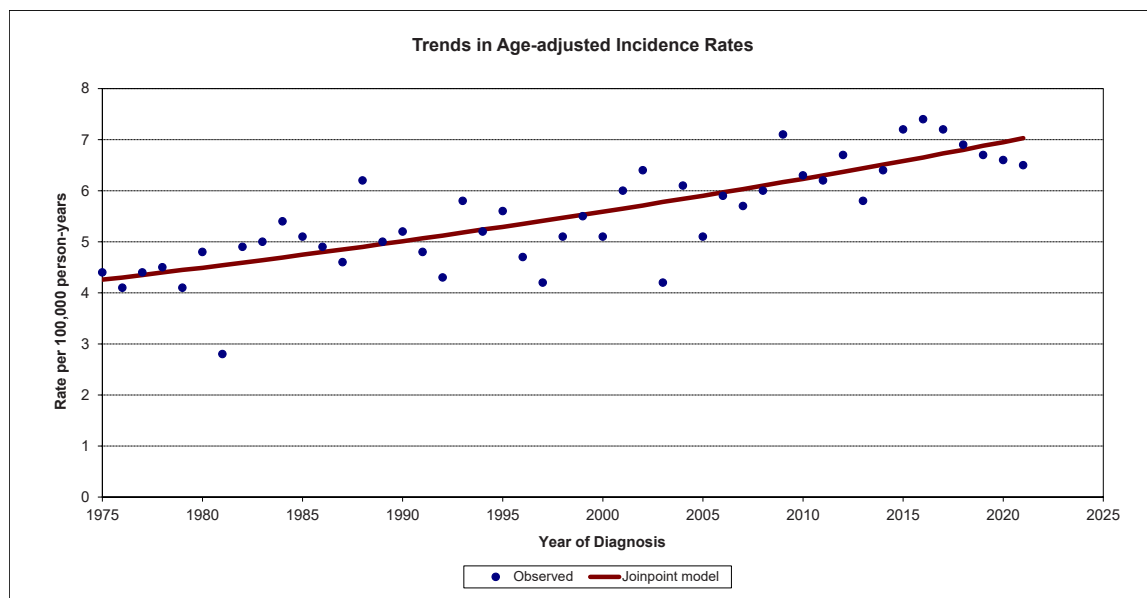
The incidence of myeloma increased at a rate of about 1.1% per year in Idaho from 1975 to 2021. The rate of increase was higher for males (1.4% per year) than for females (0.6% per year), and rates of myeloma incidence among males were higher than among females.

Non-Hodgkin Lymphoma

Trends in Age-adjusted Incidence Rates
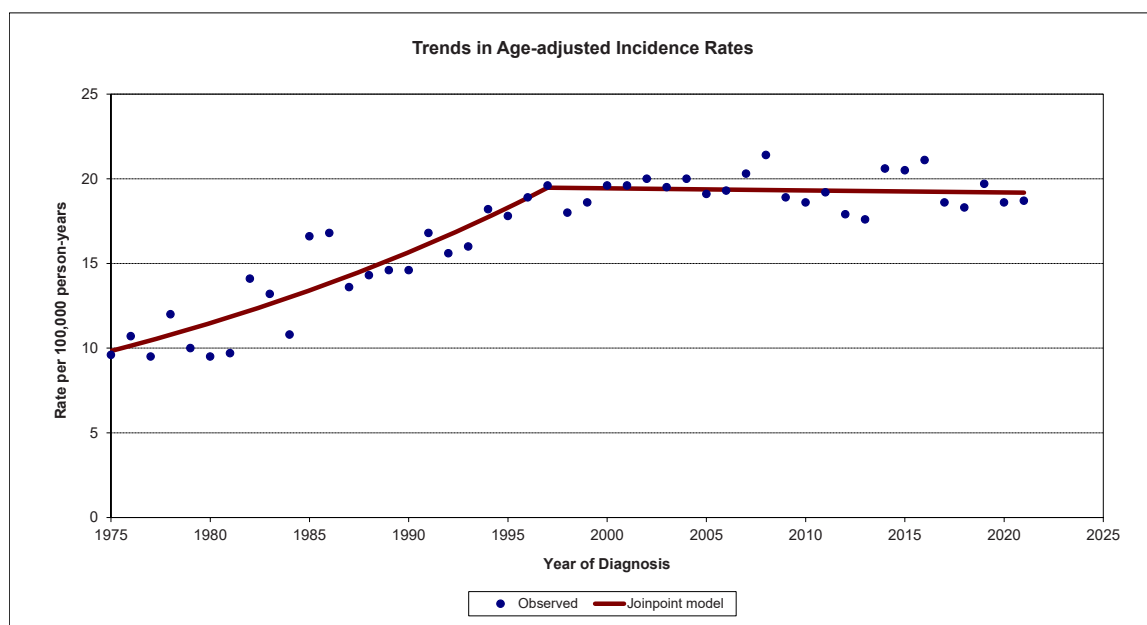
The incidence of non-Hodgkin lymphoma increased at a rate of about 3.2% per year in Idaho from 1975 to 1997, after which rates were stable. Non-Hodgkin lymphoma incidence trends over time were similar for males. Among females, rates increased about 3.2% per year from 1975 to 2000, after which they decreased about 0.8% per year. Rates of non-Hodgkin lymphoma incidence among males were higher than among females.

Oral Cavity and Pharynx

Trends in Age-adjusted Incidence Rates
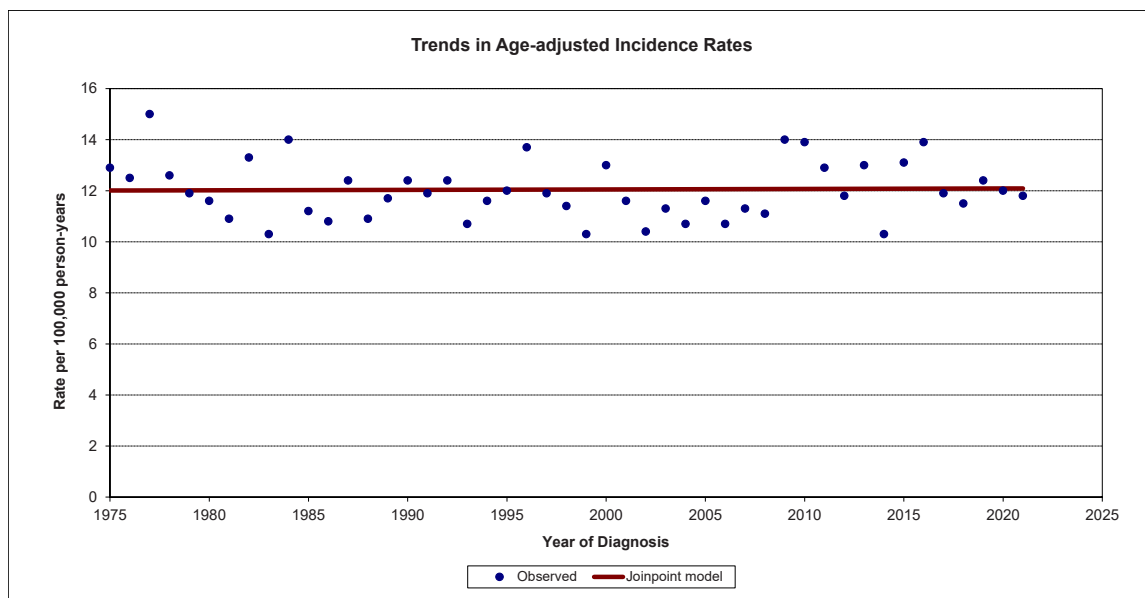
The incidence of cancers of the oral cavity and pharynx was stable in Idaho from 1975 to 2021. Among males, rates decreased about 0.3% per year. Among females, incidence of cancers of the oral cavity and pharynx increased at a rate of about 0.5% per year. Rates of cancers of the oral cavity and pharynx were about 3 times higher among males than among females. This latter result likely reflects differences in long-term prevalence trends for tobacco use and alcohol consumption between males and females.

Ovary

Trends in Age-adjusted Incidence Rates
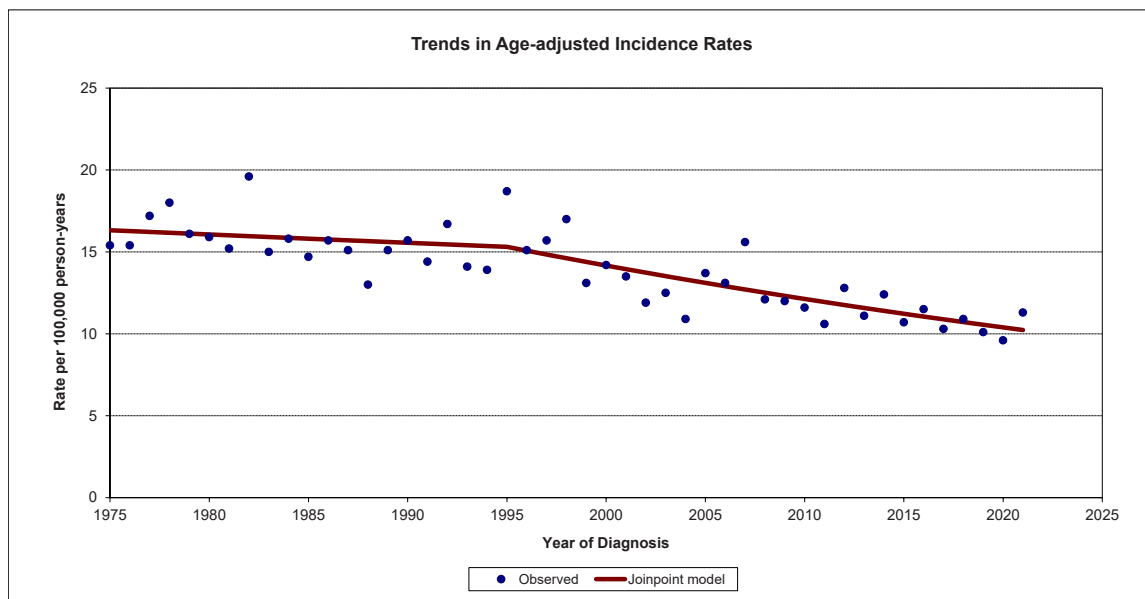
The incidence of ovarian cancer among females in Idaho was stable from 1975 to 1995 and decreased about 1.5% per year since 1995. Part of the decrease in ovarian cancer incidence rates may have been due to a decrease in the use of hormone replacement therapy.

Pancreas

Trends in Age-adjusted Incidence Rates
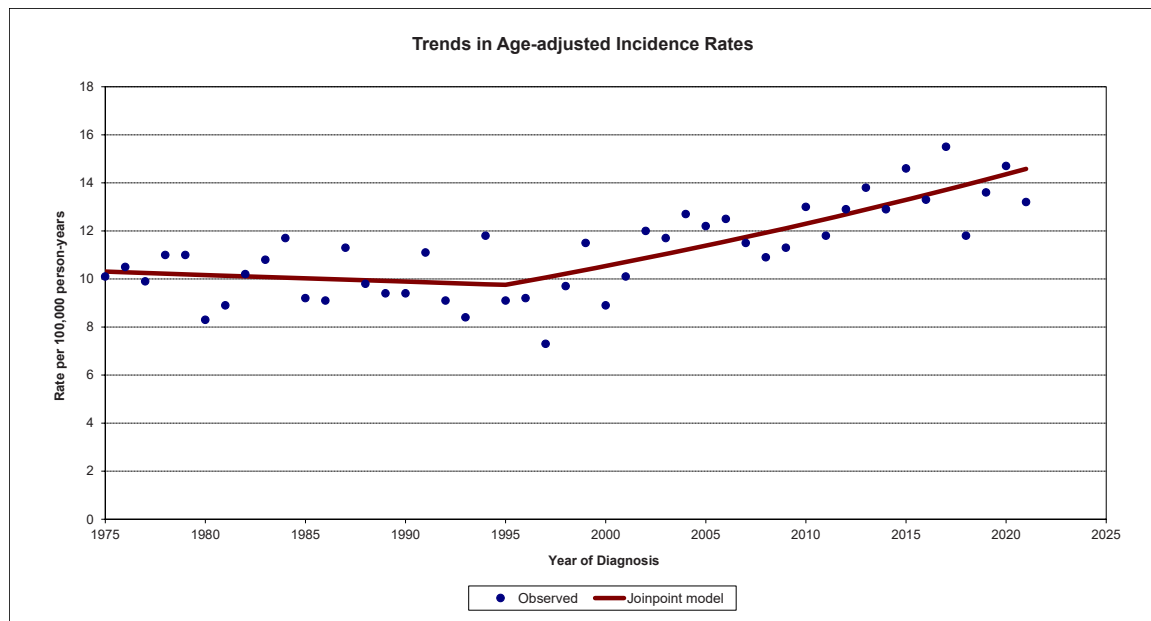
Pancreas cancer incidence was relatively stable from 1975 to 1995, after which rates increased about 1.6% per year. Pancreas cancer incidence trends over time were different for males and females. Among males, pancreas cancer incidence decreased about 1.1% per year from 1975 to 1997, after which rates increased about 1.9% per year. Among females, pancreas cancer increased about 1.1% per year from 1975 to 2021. Rates of pancreas cancer incidence among males were higher than among females.

Prostate

Trends in Age-adjusted Incidence Rates
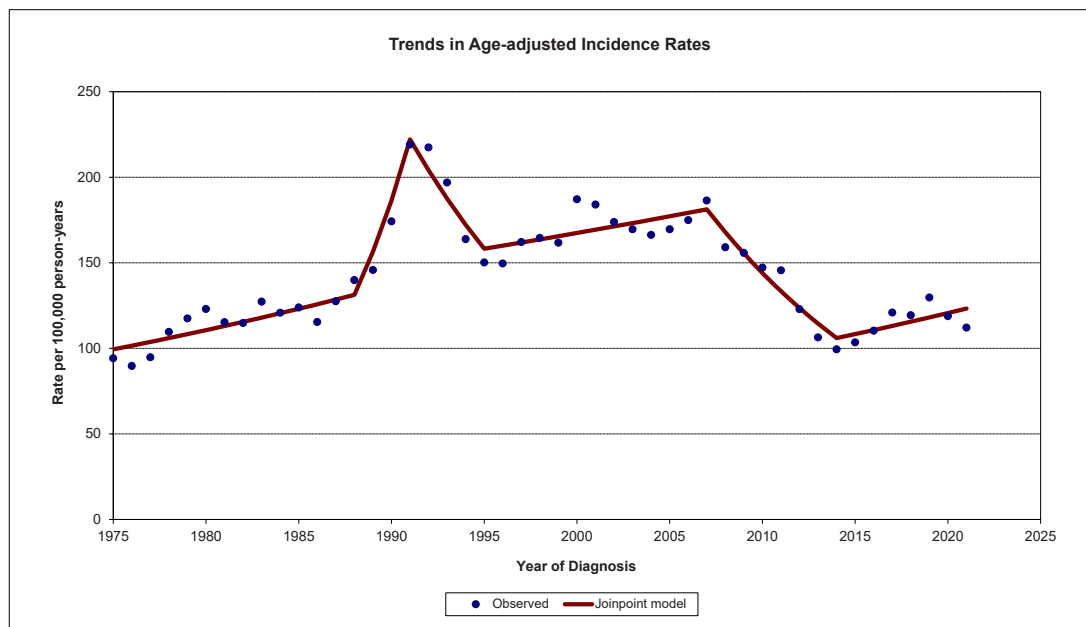
Trends in prostate cancer incidence are complicated, owing to the adoption of the Prostate-Specific Antigen (PSA) screening test in the late 1980s and early 1990s. From 1975 to 1988, prostate cancer incidence increased in Idaho at a rate of about 2.2% per year. From 1988 to 1991, prostate cancer incidence increased at a rate of about 19.2% per year. During 1991-1995, prostate cancer incidence rates decreased by about 8.1% per year. During 1995-2007, the rates increased about 1.1% per year. From 2007 to 2014, rates decreased about 7.4% per year. Since 2014, rates have increased about 2.2% per year. Overall, there was an increasing trend in prostate cancer incidence from 1975 to 2007 punctuated by a large increase and concomitant decrease associated with widespread adoption of the PSA test, which likely detected many indolent cases. In May 2012, the United States Preventive Service Task Force issued a recommendation against PSA-based screening for prostate cancer in all age groups. The prostate cancer incidence rates in 2014-2021 were similar to the rates at the beginning of the time series, before the adoption of the PSA test.

Stomach

Trends in Age-adjusted Incidence Rates
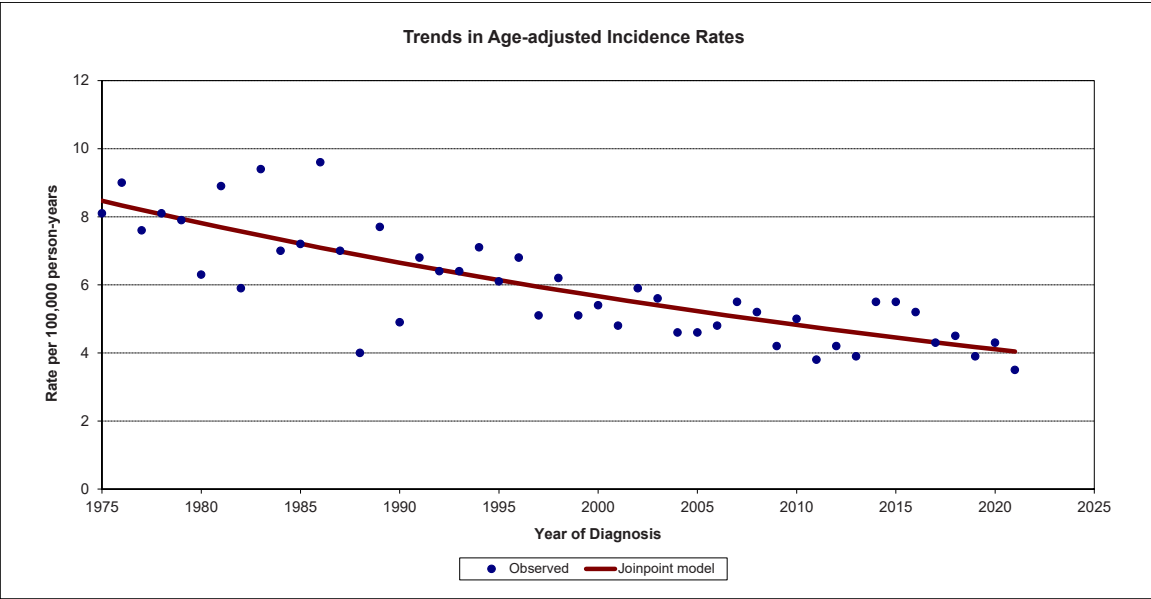
Stomach cancer incidence decreased at a rate of about 1.6% per year in Idaho from 1975 to 2021. Stomach cancer incidence trends over time were similar for males and females, although stomach cancer incidence rates among males were about twice as high as among females.

Testis

Trends in Age-adjusted Incidence Rates
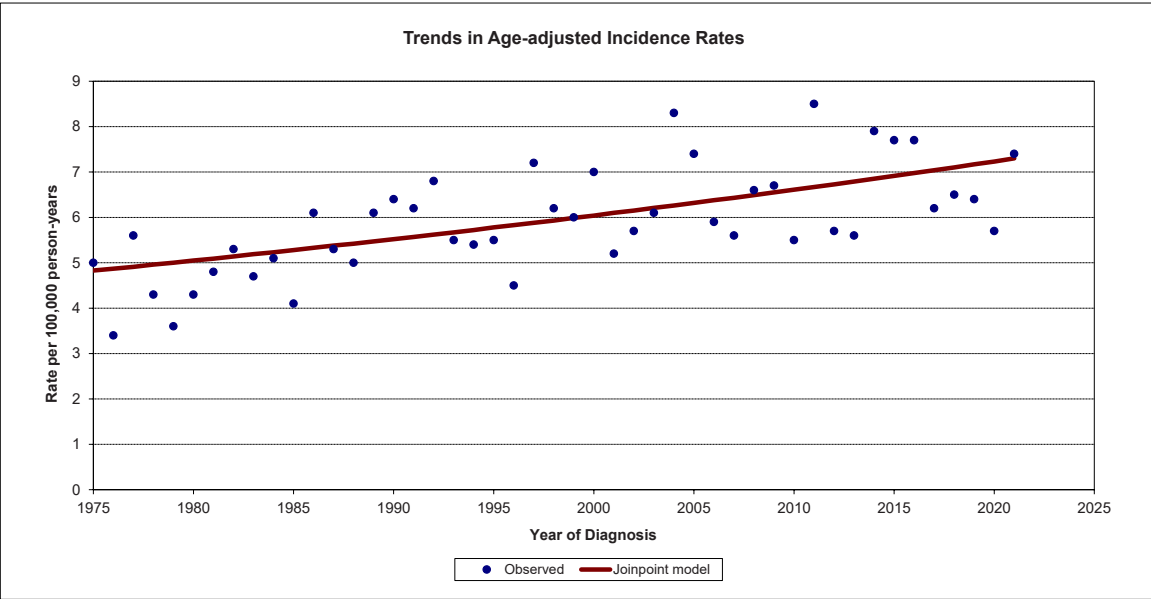
Testis cancer incidence increased at a rate of about 0.9% per year in Idaho from 1975 to 2021.

Thyroid

Trends in Age-adjusted Incidence Rates
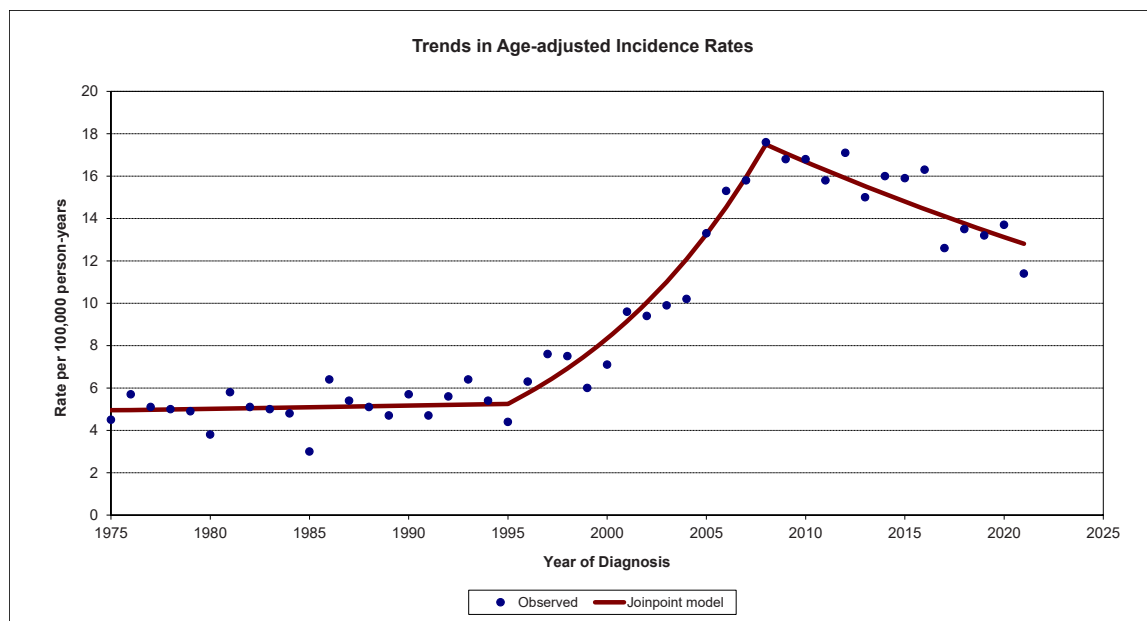
Thyroid cancer incidence was stable in Idaho from 1975 to 1995. From 1995-2008, thyroid cancer incidence increased at a rate of about 9.7% per year, and thyroid cancer incidence has decreased about 2.4% per year since 2008. Thyroid cancer incidence trends over time were similar for males and females, with stable rates from 1975 through the mid to late 1990s, large increases until about 2008, then stable rates for males and decreases in rates for females. Historically, thyroid cancer incidence rates have been about 3 times higher among females as among males.

Pediatric (age 0 to 19) Cancer

Trends in Age-adjusted Incidence Rates
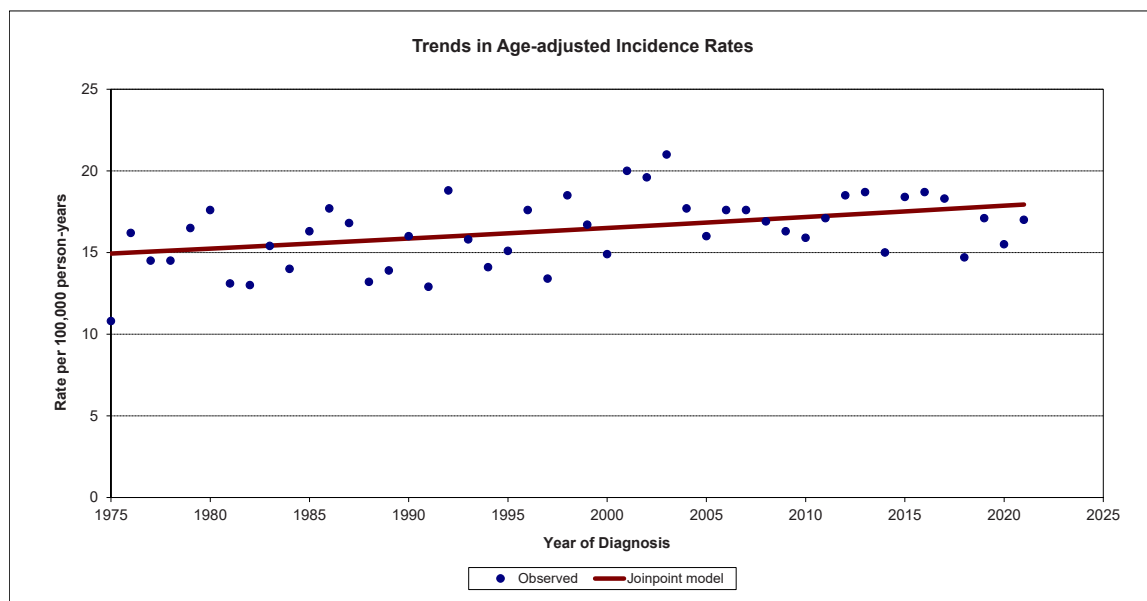
Pediatric cancer incidence increased at a rate of about 0.4% per year in Idaho from 1975 to 2021. Among males, pediatric cancer incidence rates were stable from 1975–2021. Among females, pediatric cancer incidence rates increased about 0.7% per year from 1975–2021. For more detailed information on pediatric cancer in Idaho, see: https://www.idcancer.org/pediatriccancer.

SECTION VIII

**CANCER INCIDENCE BY RACE AND ETHNICITY
2017–2021**

Idaho Cancer Incidence Rates by Race and Ethnicity, 2017–2021

Primary Site	All Races (includes Hispanic)		White Non-Hispanic		Hispanic (any race)		Black		American Indian/ Alaska Native		Asian or Pacific Islander	
	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases
All Sites	445.1	47,333	448.3	43,325	363.4	2,350	358.4	199	352.3	518	317.7	485
Bladder	20.4	2,220	20.7	2,089	13.4	69	<	<	14.6	20	9.6	13
Brain - malignant	6.6	657	6.8	600	5.6	41	<	<	<	<	<	<
Brain and other CNS - non-malignant	15.4	1,547	15.5	1,395	14.6	98	<	<	7.1	11	12.4	21
Breast	131.9	6,943	133.7	6,355	105.7	364	77.6	18	93.1	74	111.2	102
Breast - in situ	26.2	1,365	26.7	1,248	17.2	63	<	<	20.1	15	26.9	24
Cervix	6.8	294	6.5	241	8.5	39	<	<	<	<	<	<
Colorectal	35.3	3,632	34.9	3,254	33.0	222	35.1	16	46.0	63	29.7	45
Corpus Uteri	24.3	1,354	24.1	1,219	24.6	86	<	<	22.6	17	16.5	16
Esophagus	4.6	507	4.7	476	2.6	15	<	<	<	<	<	<
Hodgkin Lymphoma	2.4	222	2.4	188	2.7	24	<	<	<	<	<	<
Kidney and Renal Pelvis	18.6	1,951	18.1	1,718	22.4	152	<	<	25.8	39	12.2	19
Larynx	2.0	220	2.0	206	<	<	<	<	<	<	<	<
Leukemia	16.7	1,727	16.8	1,578	12.3	88	16.6	14	9.3	14	13.4	21
Liver and Bile Duct	7.4	843	6.8	719	13.5	83	<	<	12.3	20	8.5	13
Lung and Bronchus	44.7	4,959	45.3	4,656	31.9	156	60.8	23	46.1	62	40.1	56
Melanoma of the Skin	30.9	3,144	33.8	3,075	7.6	49	<	<	<	<	<	<
Myeloma	6.8	728	6.7	667	7.2	47	<	<	<	<	<	<
Non-Hodgkin Lymphoma	18.8	1,992	18.9	1,815	19.2	124	<	<	11.4	17	11.2	17
Oral Cavity and Pharynx	11.9	1,315	12.2	1,223	6.3	44	<	<	6.7	11	9.3	15
Ovary	10.4	553	10.3	491	11.0	42	<	<	13.3	10	<	<
Pancreas	13.8	1,488	13.9	1,389	11.9	65	<	<	8.3	11	10.6	14
Prostate	120.0	6,766	118.7	6,164	86.2	234	160.9	55	66.7	53	81.3	46
Stomach	4.5	474	4.1	394	10.8	61	<	<	<	<	7.4	10
Testis	6.4	274	6.6	229	4.8	32	<	<	<	<	<	<
Thyroid	12.8	1,185	12.8	1,011	12.9	117	<	<	9.1	13	12.5	22
Pediatric Age 0 to 19	17.0	425	17.5	336	12.8	60	<	<	<	<	<	<

Notes:

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

Rates and case counts include all invasive and bladder in situ cases. Statistics for non-malignant brain and other CNS and breast in situ categories are not included in the all sites totals.

Rates and case counts for cancers of the breast, cervix, corpus uteri, and ovary are for females only, and rates and case counts for cancers of the prostate and testis are for males only.

Statistics for Black, American Indian/Alaska Native, and Asian or Pacific Islander include non-Hispanic and Hispanic ethnicity. All races category includes unknown race.

^ Statistic not displayed due to fewer than 10 cases.

SECTION IX

**CANCER SURVIVAL
2014–2020**

Actual (Crude) Measures of Cancer Prognosis at 5 Years After Diagnosis
Idaho Cases Diagnosed 2014–2020 Followed Through December 31, 2021

Primary Site	N	Using Cause of Death			Using Expected Survival		
		Cancer Death	Other Death	Survival	Cancer Death	Other Death	Survival
All Sites	57,196	29.9	10.6	59.5	31.0	9.5	59.5
Brain & Other Nervous System	866	74.3	4.2	21.5	76.5	2.0	21.5
Breast	8,779	10.1	7.6	82.3	8.5	9.2	82.3
Cervix Uteri	395	24.1	2.0	73.9	23.8	2.3	73.9
Colon & Rectum	4,559	34.0	12.0	54.0	36.0	10.2	53.8
Corpus & Uterus, NOS	1,857	18.2	6.2	75.6	18.0	6.5	75.5
Esophagus	672	74.2	9.9	15.9	78.2	6.0	15.8
Hodgkin Lymphoma	276	11.2	6.7	82.1	14.3	3.5	82.2
Kidney & Renal Pelvis	2,341	19.6	15.9	64.5	25.4	10.1	64.5
Larynx	290	31.0	19.2	49.8	40.9	9.3	49.8
Leukemia	2,071	36.5	14.6	48.9	40.8	10.3	48.9
Liver & Intrahepatic Bile Duct	1,111	72.3	12.4	15.3	81.5	3.7	14.8
Lung & Bronchus	6,507	64.4	13.6	22.0	71.5	6.5	22.0
Melanoma of the Skin	3,753	8.3	11.3	80.4	7.2	12.4	80.4
Mesothelioma	141	83.8	7.3	8.9	85.3	5.8	8.9
Myeloma	927	37.0	14.8	48.2	41.2	10.9	47.9
Non-Hodgkin Lymphoma	2,594	26.8	12.2	61.0	28.4	10.7	60.9
Oral Cavity & Pharynx	1,684	25.6	13.7	60.7	29.9	9.6	60.5
Ovary	730	52.6	4.6	42.8	52.7	4.6	42.7
Pancreas	1,874	84.1	6.2	9.7	87.2	3.3	9.5
Prostate	8,251	8.2	10.1	81.7	4.4	13.9	81.7
Stomach	676	66.4	9.6	24.0	70.2	5.8	24.0
Testis	380	2.7	2.0	95.3	2.7	2.0	95.3
Thyroid	1,746	3.3	3.4	93.3	1.9	4.8	93.3
Urinary Bladder	2,901	22.1	18.1	59.8	23.3	16.9	59.8

Notes:

Actual (crude) measures of cancer survival include competing causes of death. Analysis includes all invasive and bladder in situ cases diagnosed among persons aged 15-99. See Technical Notes for more details.

N: Number of cases included in analysis.

Net Measures of Cancer Survival at 5 Years After Diagnosis
Idaho Cases Diagnosed 2014–2020 Followed Through December 31, 2021

Primary Site	N	Cause Specific Survival (95% CI)		Relative Survival Ratio (95% CI)	
All Sites	57,196	68.2	(67.8, 68.6)	67.4	(66.8, 67.9)
Brain & Other Nervous System	866	29.3	(26.1, 32.6)	28.1	(24.9, 31.4)
Breast	8,779	88.4	(87.5, 89.2)	90.8	(89.3, 92.0)
Cervix Uteri	395	71.0	(65.0, 76.2)	70.6	(64.0, 76.3)
Colon & Rectum	4,559	64.1	(62.5, 65.7)	62.5	(60.5, 64.5)
Corpus & Uterus, NOS	1,857	78.2	(75.7, 80.6)	77.6	(74.2, 80.6)
Esophagus	672	20.8	(17.0, 24.9)	18.5	(14.7, 22.7)
Hodgkin Lymphoma	276	88.9	(84.8, 92.0)	85.2	(79.8, 89.2)
Kidney & Renal Pelvis	2,341	78.0	(75.9, 80.0)	72.0	(69.3, 74.6)
Larynx	290	68.8	(62.2, 74.5)	59.7	(51.7, 66.9)
Leukemia	2,071	63.2	(60.8, 65.5)	59.2	(56.3, 62.0)
Liver & Intrahepatic Bile Duct	1,111	*21.7*	*(18.6, 24.9)*	14.2	(11.4, 17.3)
Lung & Bronchus	6,507	32.5	(30.7, 34.3)	28.8	(27.0, 30.6)
Melanoma of the Skin	3,753	92.7	(91.6, 93.6)	93.1	(91.7, 94.3)
Mesothelioma	141	*10.4*	*(4.8, 18.5)*	*10.6*	*(4.8, 19.0)*
Myeloma	927	62.9	(58.9, 66.6)	59.5	(55.0, 63.7)
Non-Hodgkin Lymphoma	2,594	72.5	(70.6, 74.3)	71.2	(68.7, 73.6)
Oral Cavity & Pharynx	1,684	71.8	(69.1, 74.2)	67.1	(63.6, 70.3)
Ovary	730	41.7	(37.8, 45.6)	41.5	(37.3, 45.7)
Pancreas	1,874	14.0	(11.9, 16.1)	12.9	(10.9, 15.1)
Prostate	8,251	90.1	(89.2, 90.9)	93.7	(92.1, 94.9)
Stomach	676	30.6	(26.7, 34.7)	27.8	(23.8, 32.0)
Testis	380	96.0	(90.5, 98.3)	94.8	(84.6, 98.3)
Thyroid	1,746	95.5	(94.1, 96.6)	96.7	(95.2, 97.8)
Urinary Bladder	2,901	78.3	(76.2, 80.2)	76.3	(73.5, 78.8)

Notes:

Net measures of cancer survival <u>exclude</u> competing causes of death. Analysis includes all invasive and bladder in situ cases diagnosed among persons aged 15-99. Age standardized to the International Cancer Survival Standards. Statistics in bold italics could not be age standardized; unstandardized measure shown instead. See Technical Notes for more details.

N: Number of cases included in analysis; CI: Confidence Interval.

Age-Adjusted Incidence Rates
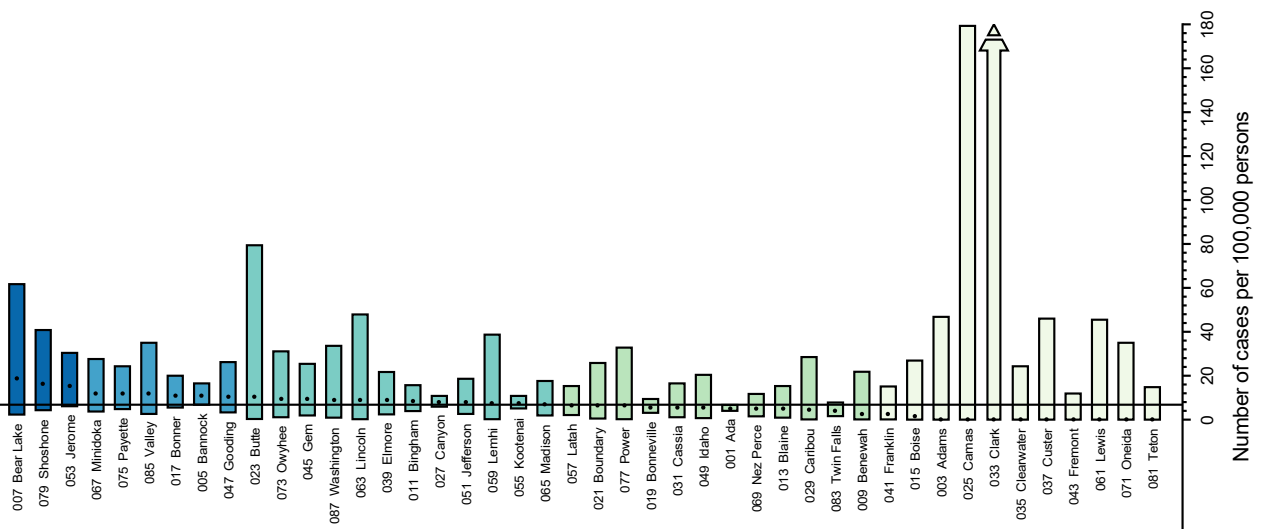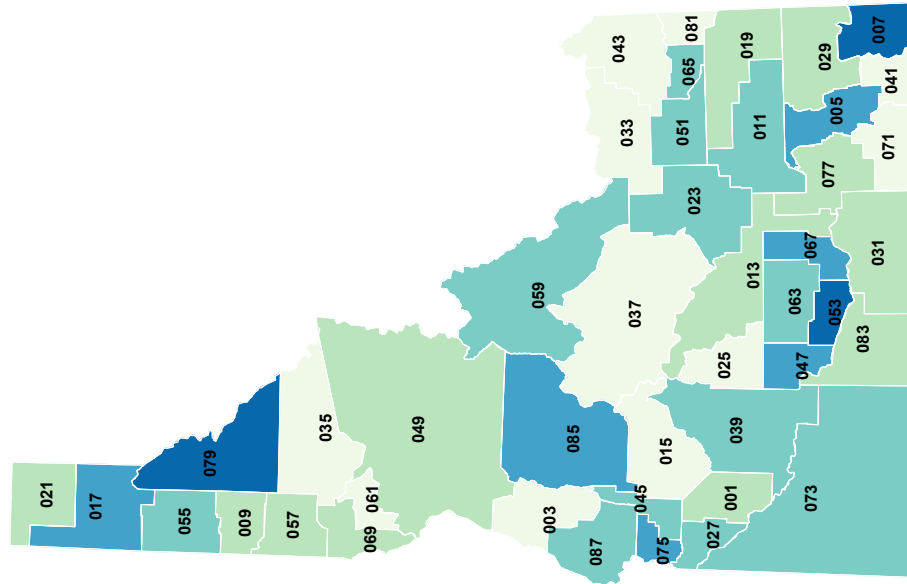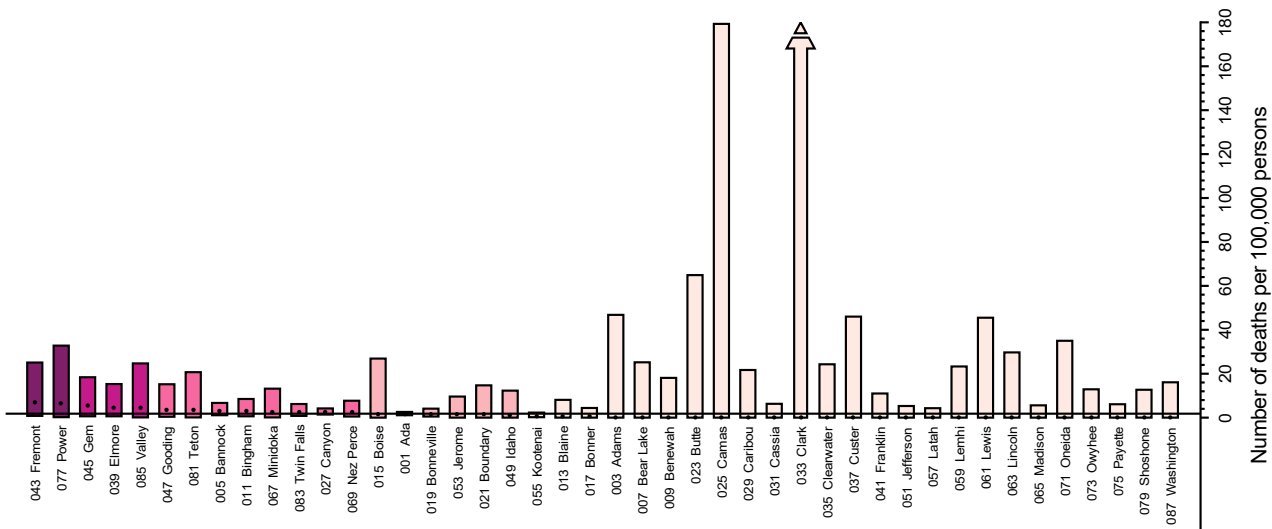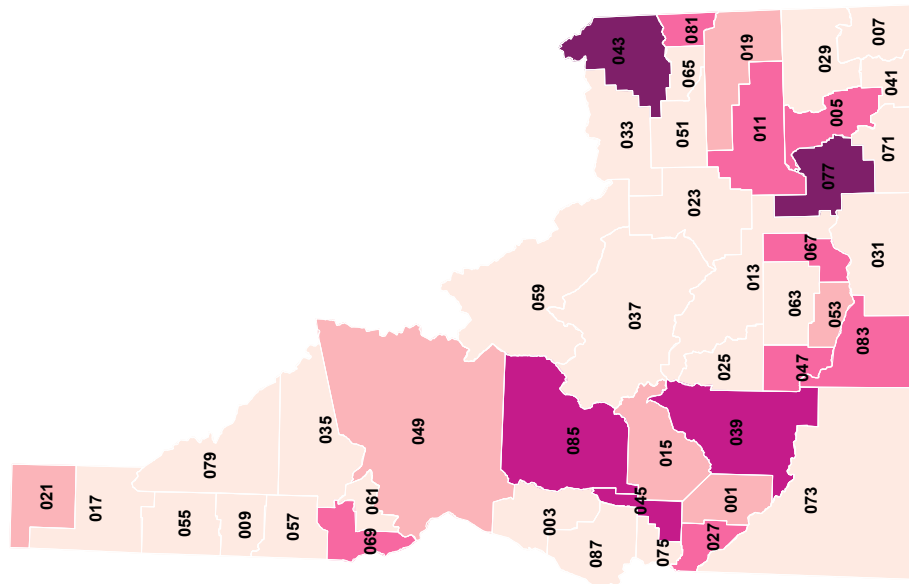
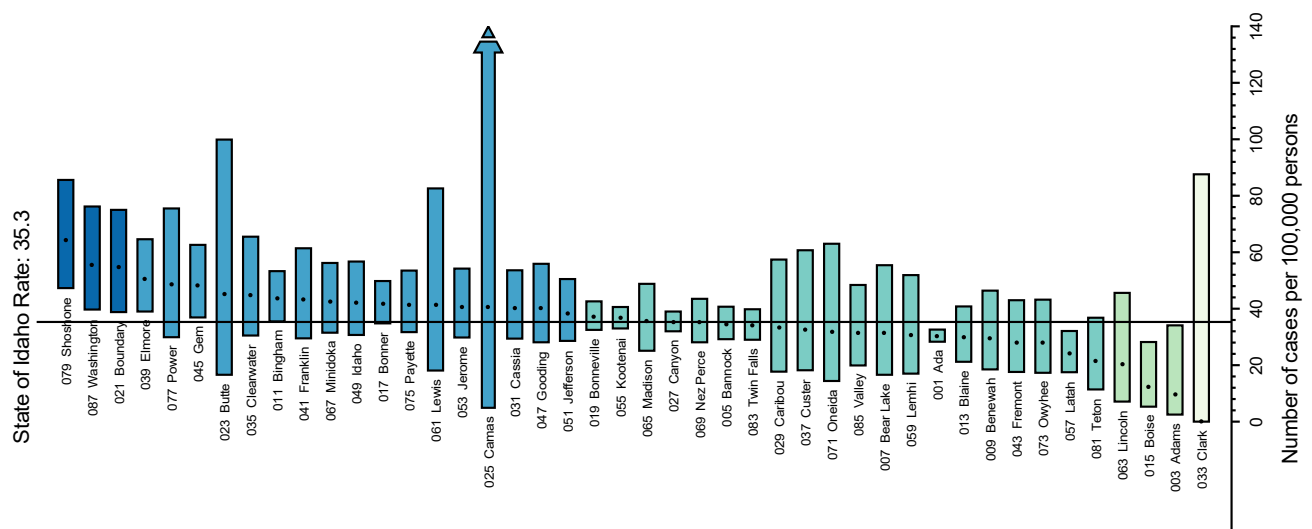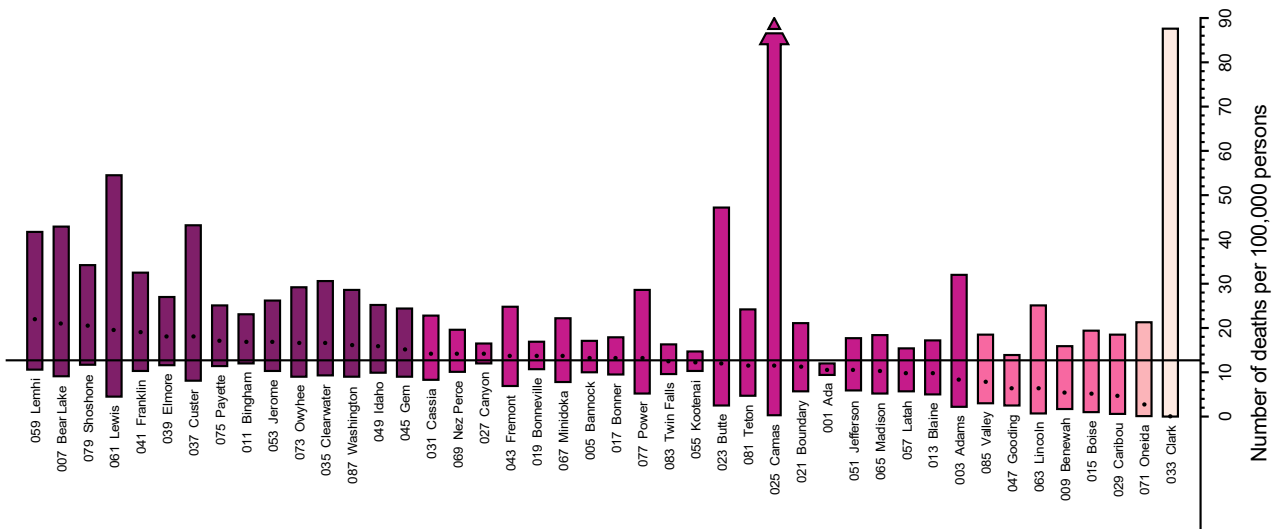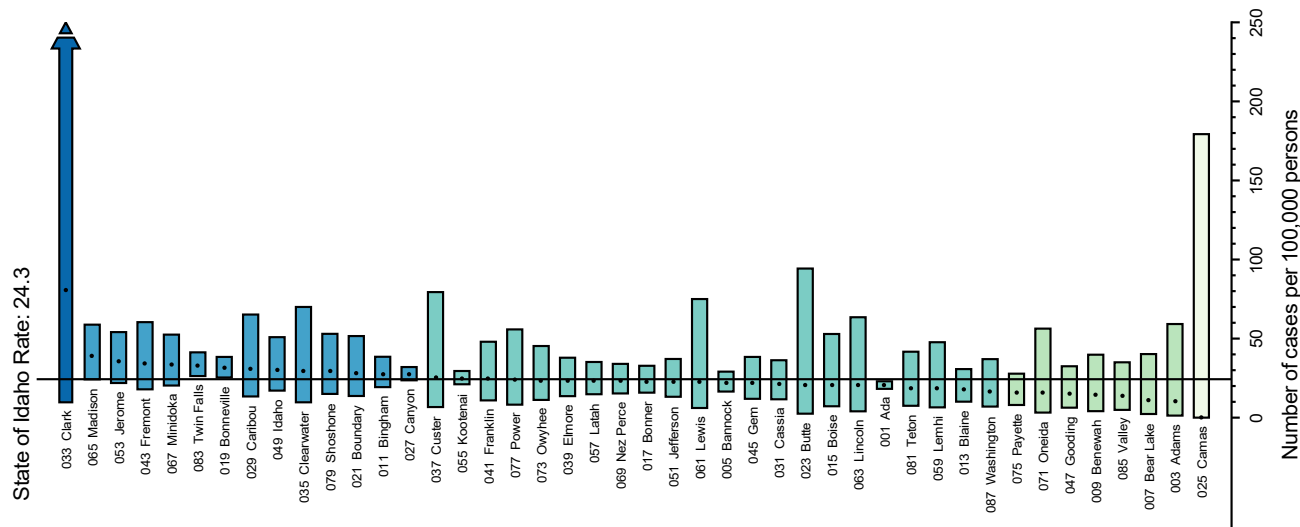**All Sites**

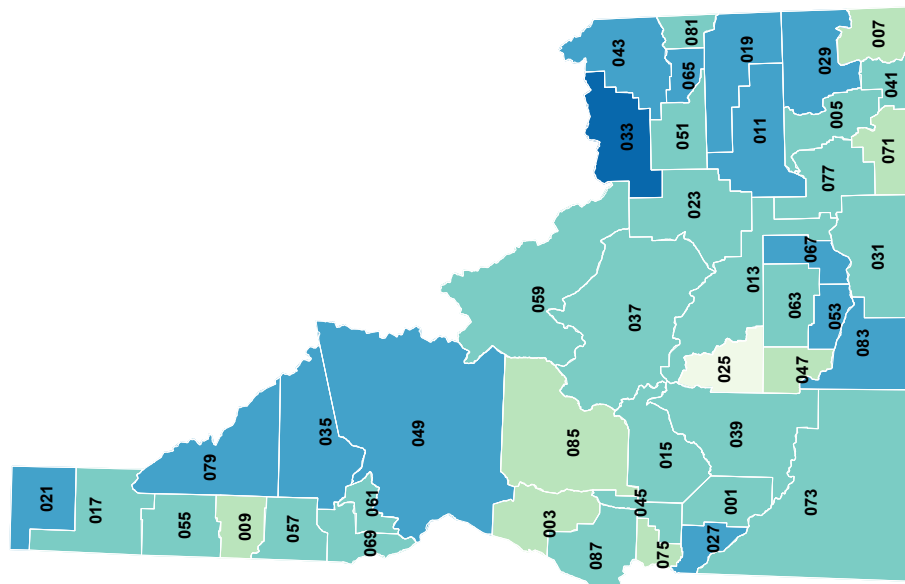**Both Males and Females**

State of Idaho, by County, 2017–2021

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.

State of Idaho Rate: 445.1

Number of cases per 100,000 persons
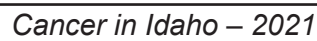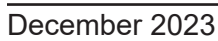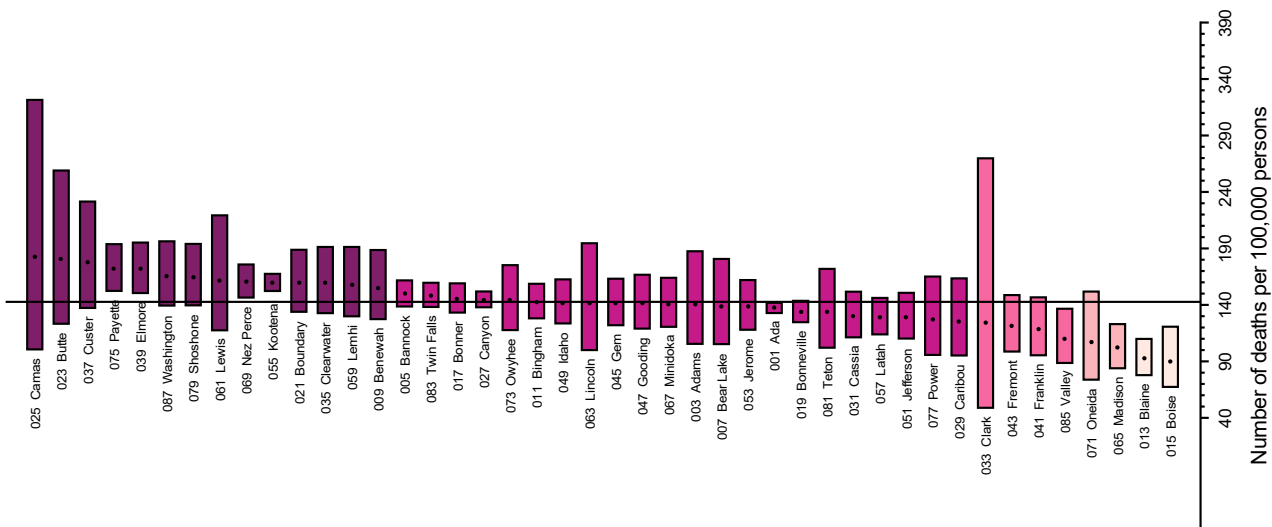
Age-Adjusted Mortality Rates

All Malignant Cancers

Both Males and Females
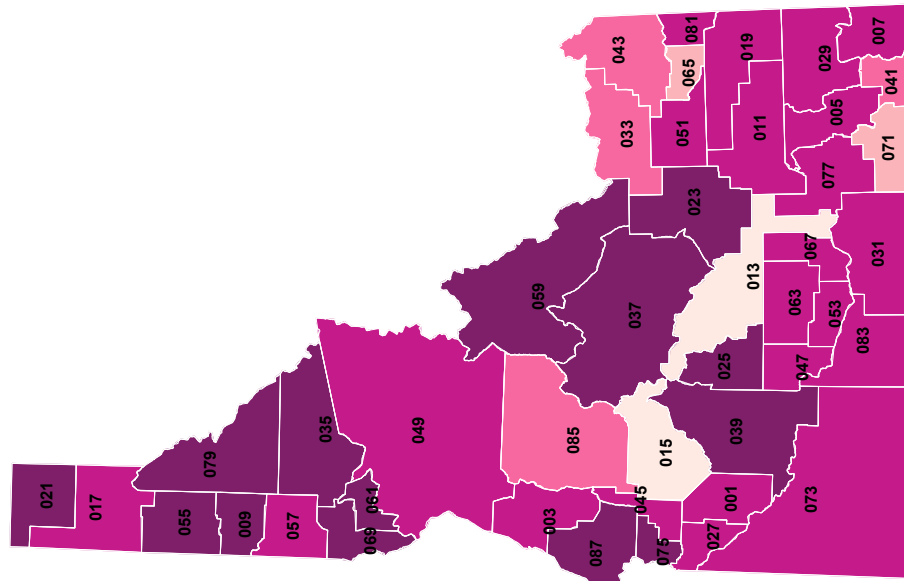
State of Idaho, by County, 2017–2021

State of Idaho Rate: 142.7

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.

Age-Adjusted Incidence Rates

Bladder

Both Males and Females

State of Idaho, by County, 2017–2021

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.

State of Idaho Rate: 20.4

Number of cases per 100,000 persons
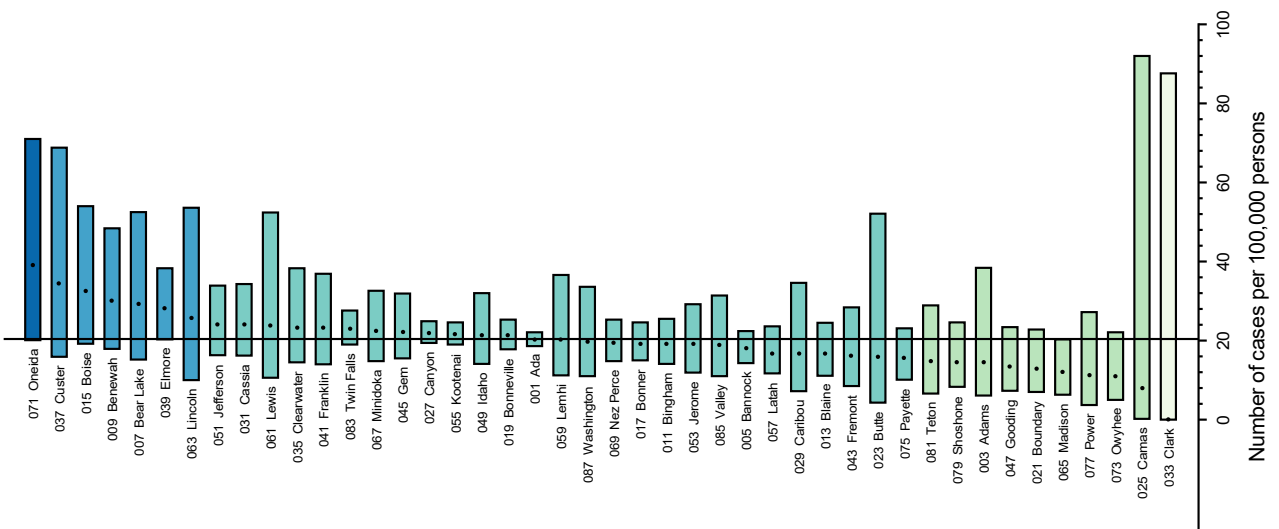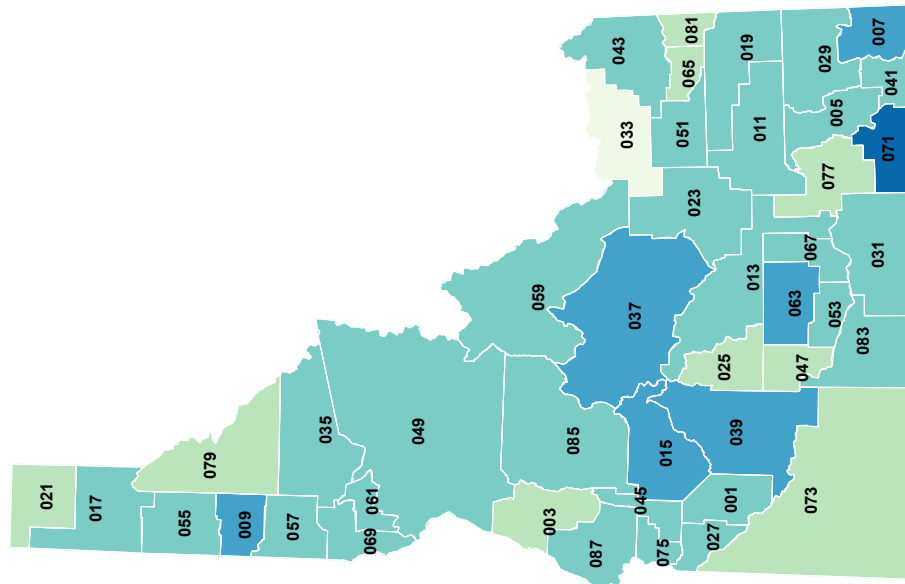
Age-Adjusted Mortality Rates

Bladder

Both Males and Females
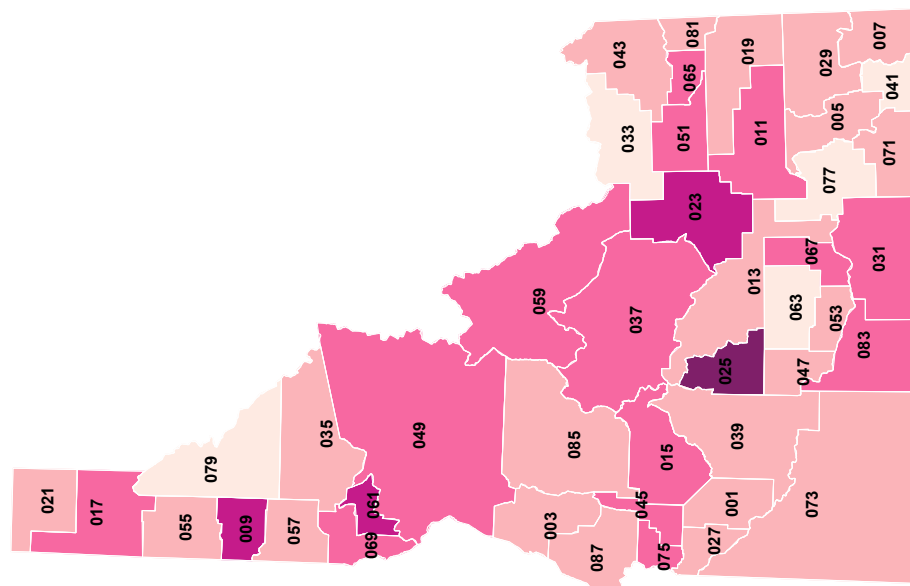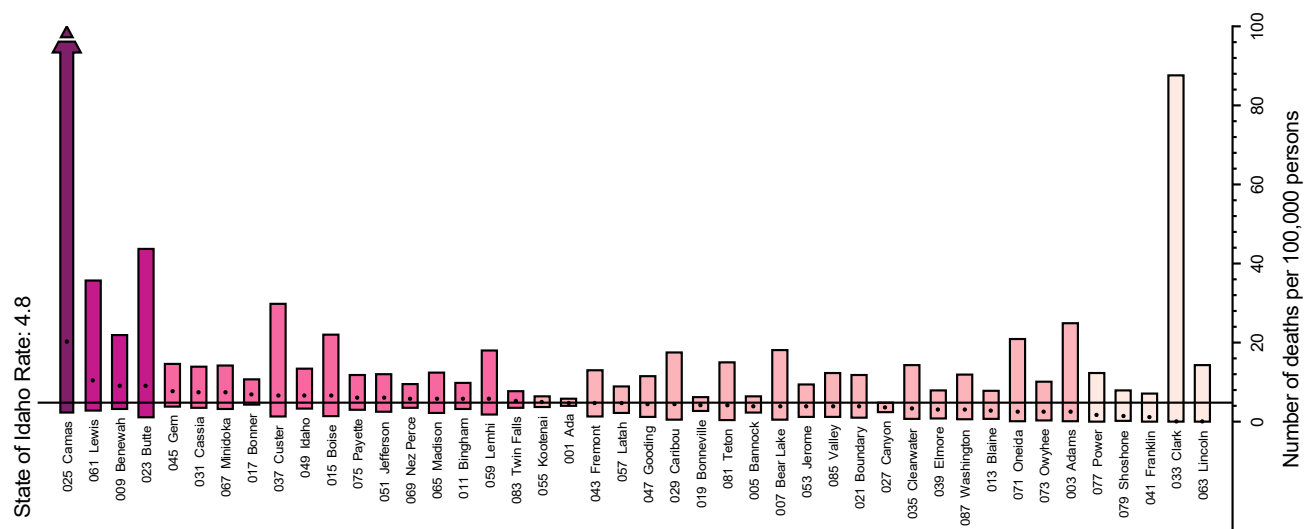
State of Idaho, by County, 2017–2021

State of Idaho Rate: 4.8

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
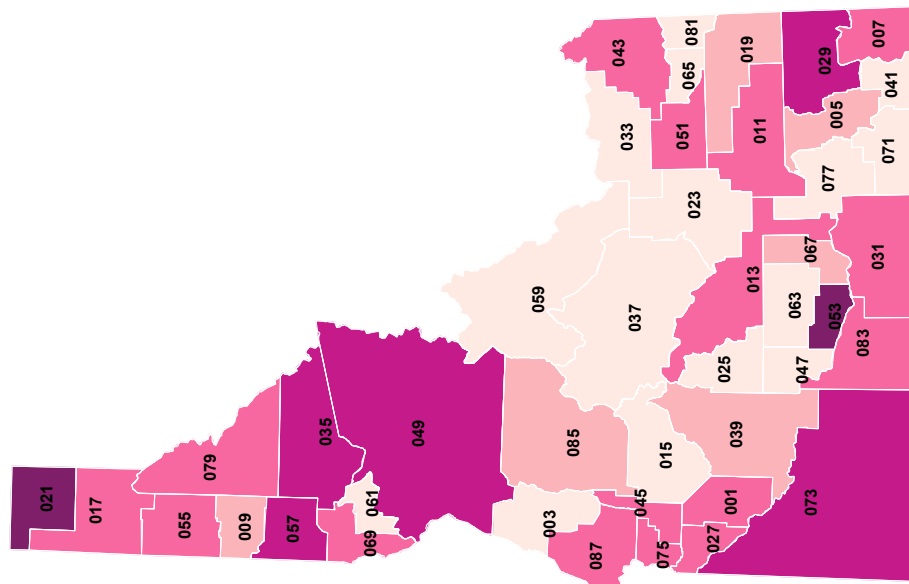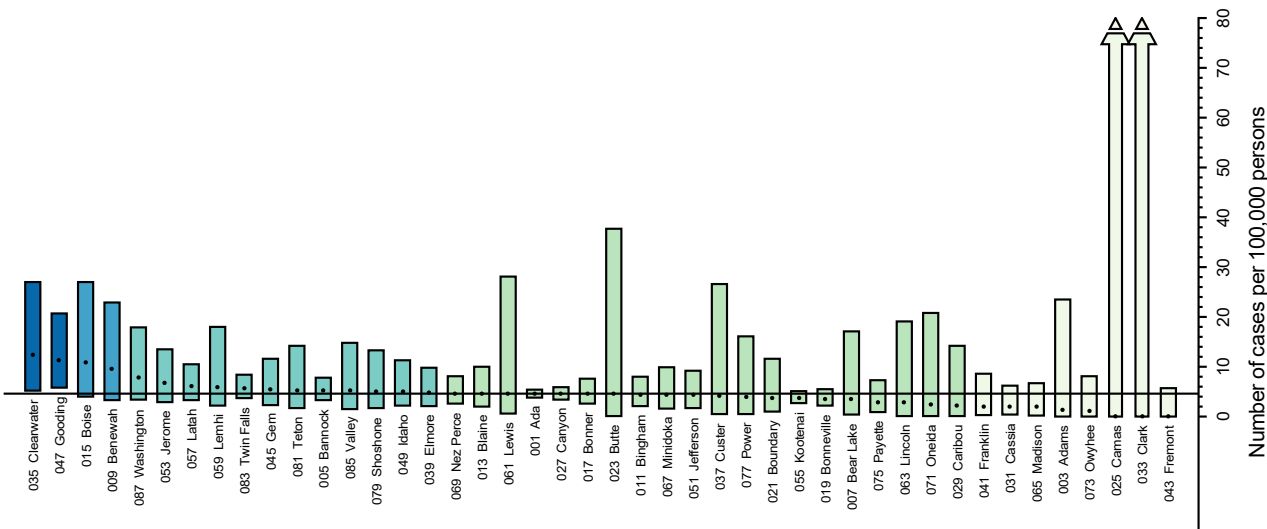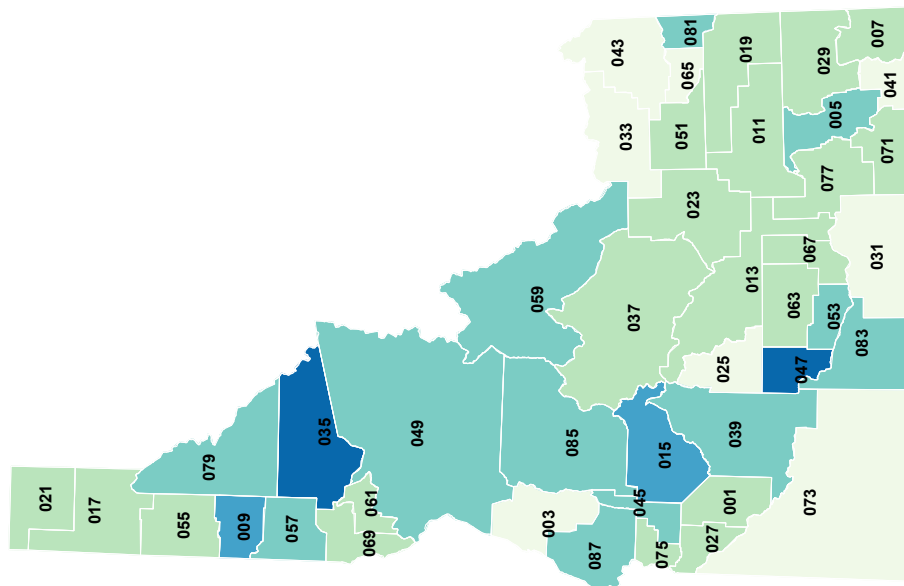*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Incidence Rates

Brain - malignant

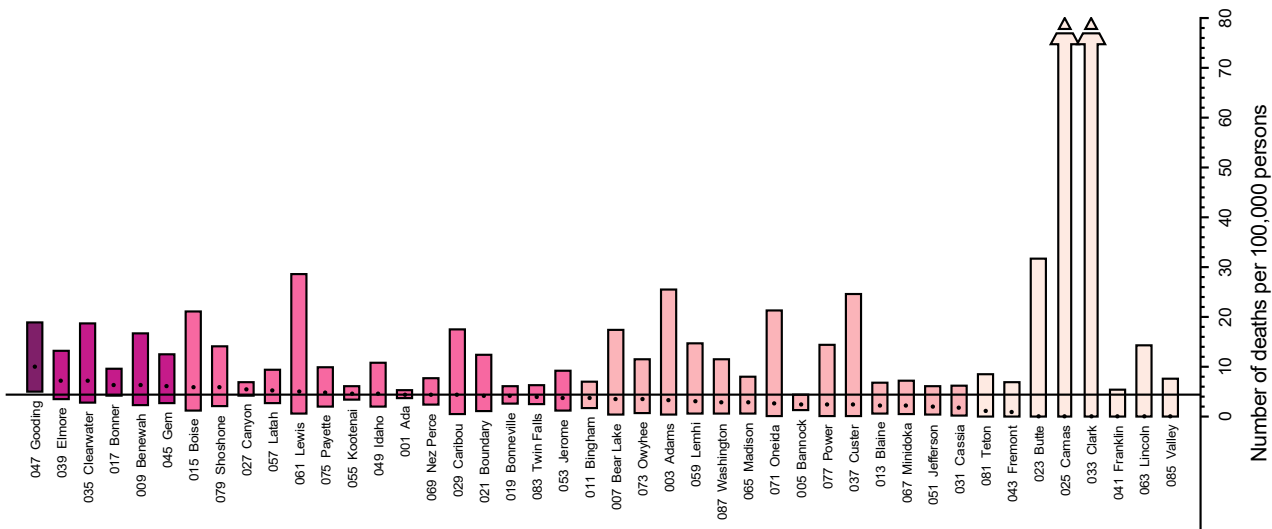**Both Males and Females**
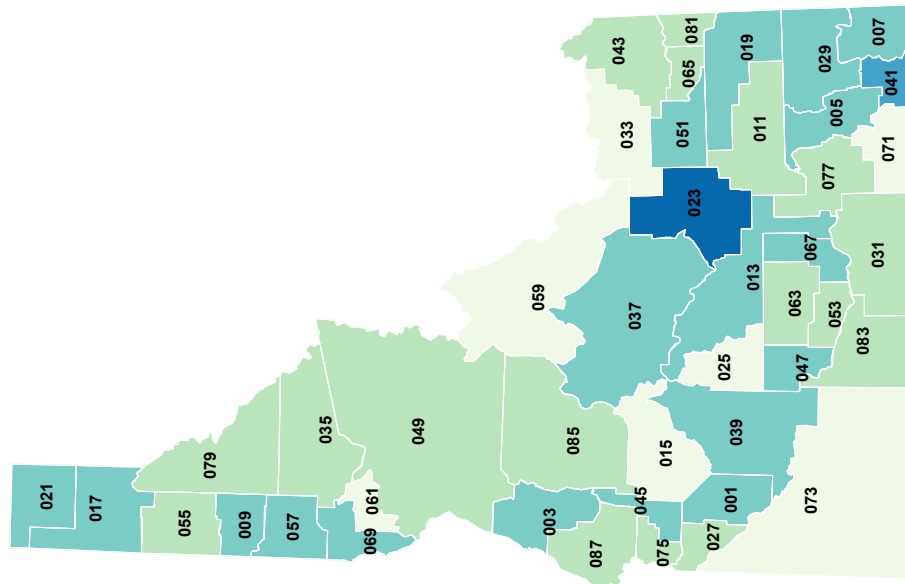
State of Idaho, by County, 2017–2021

State of Idaho Rate: 6.6

Number of cases per 100,000 persons
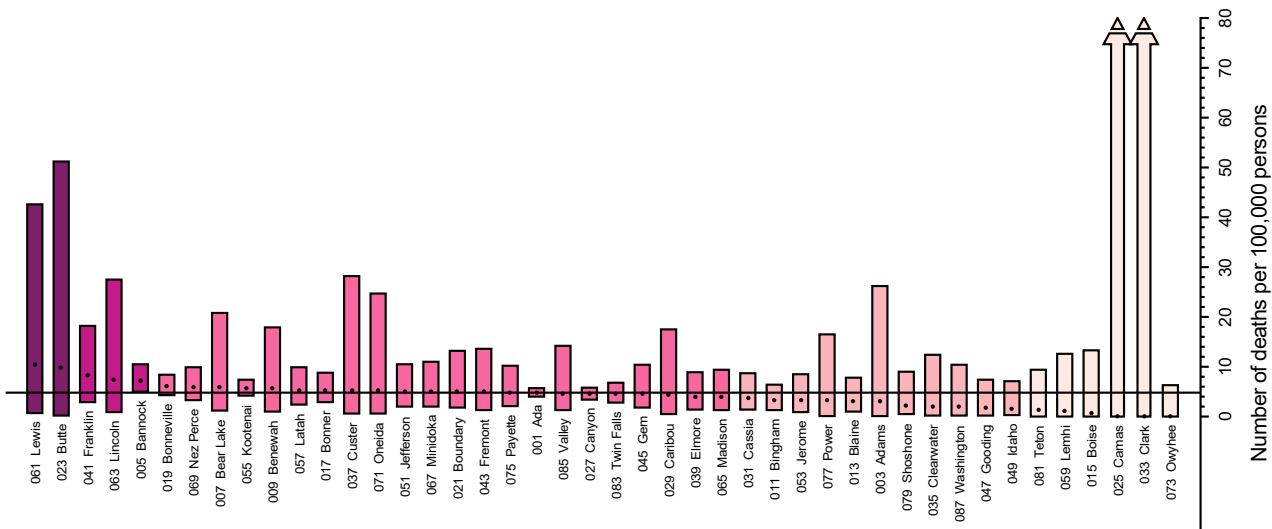
Age-Adjusted Mortality Rates

Brain and Other Nervous System

Both Males and Females
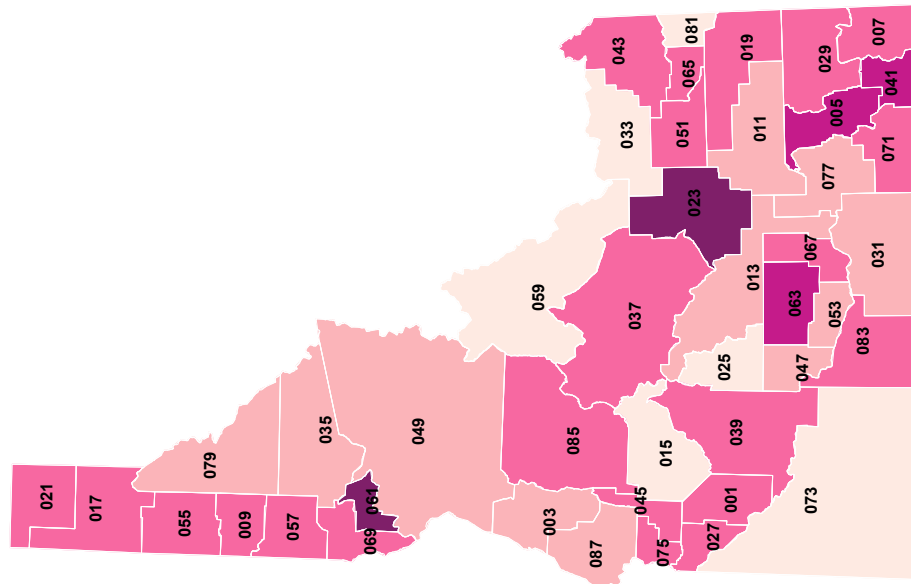
State of Idaho, by County, 2017–2021

State of Idaho Rate: 4.8

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
Arrows indicate upper confidence interval extends beyond graphic area.
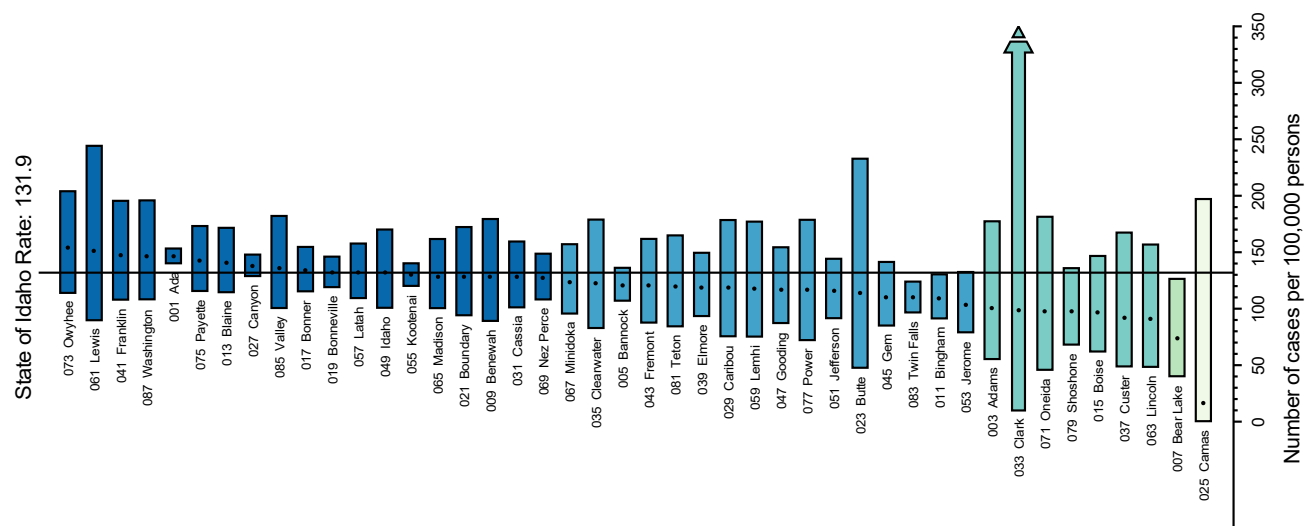
Age-Adjusted Incidence Rates
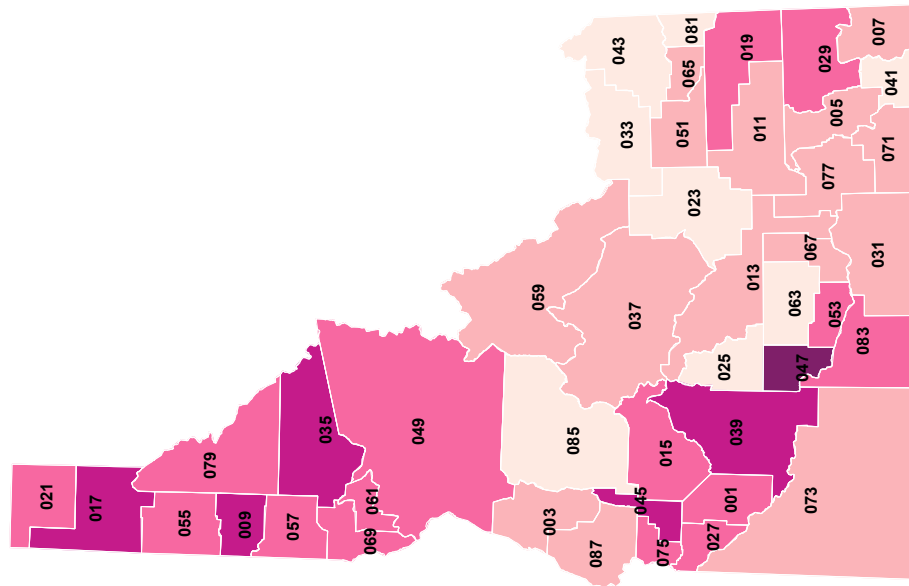
Breast

Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 131.9

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Breast

Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 19.7

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
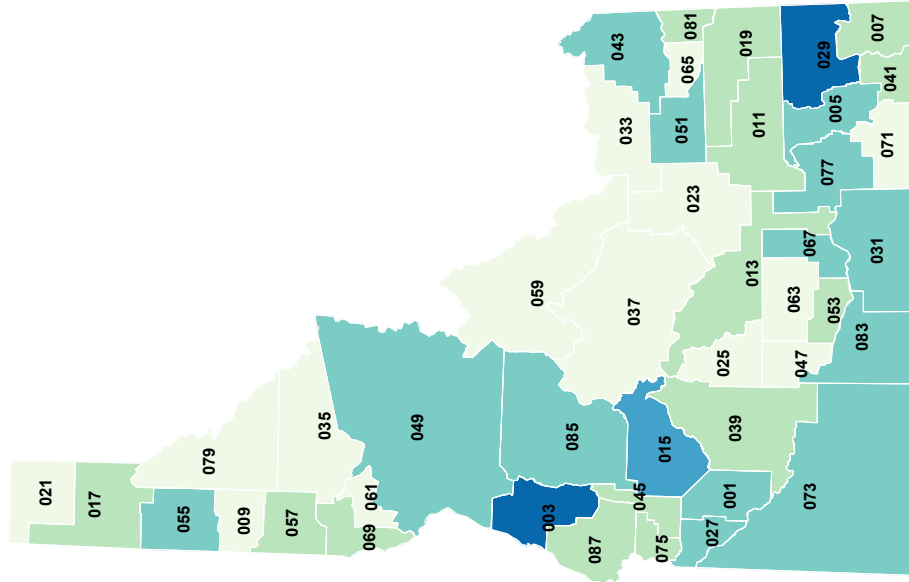*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Incidence Rates

Cervix

Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 6.8

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Cervix

Females

State of Idaho, by County, 2017–2021

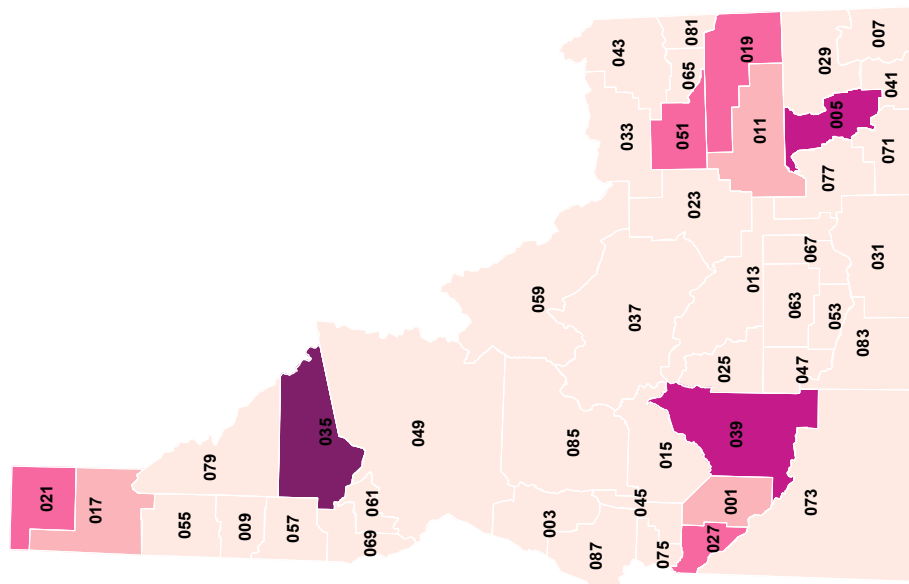State of Idaho Rate: 1.8

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
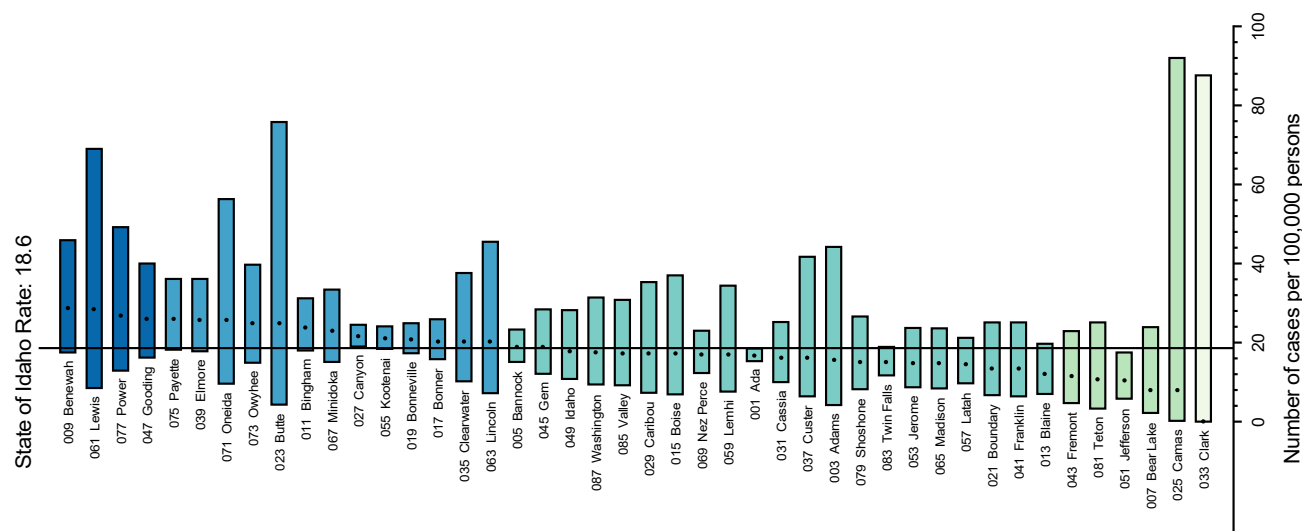*Arrows indicate upper confidence interval extends beyond graphic area.*

Cancer in Idaho – 2021

Age-Adjusted Incidence Rates

Colorectal

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 35.3

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Colorectal
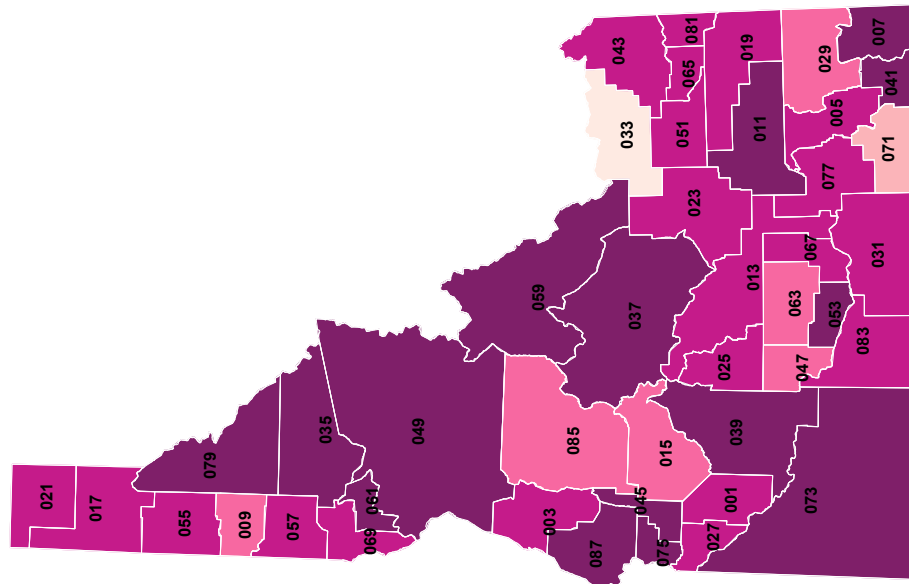
Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 12.7
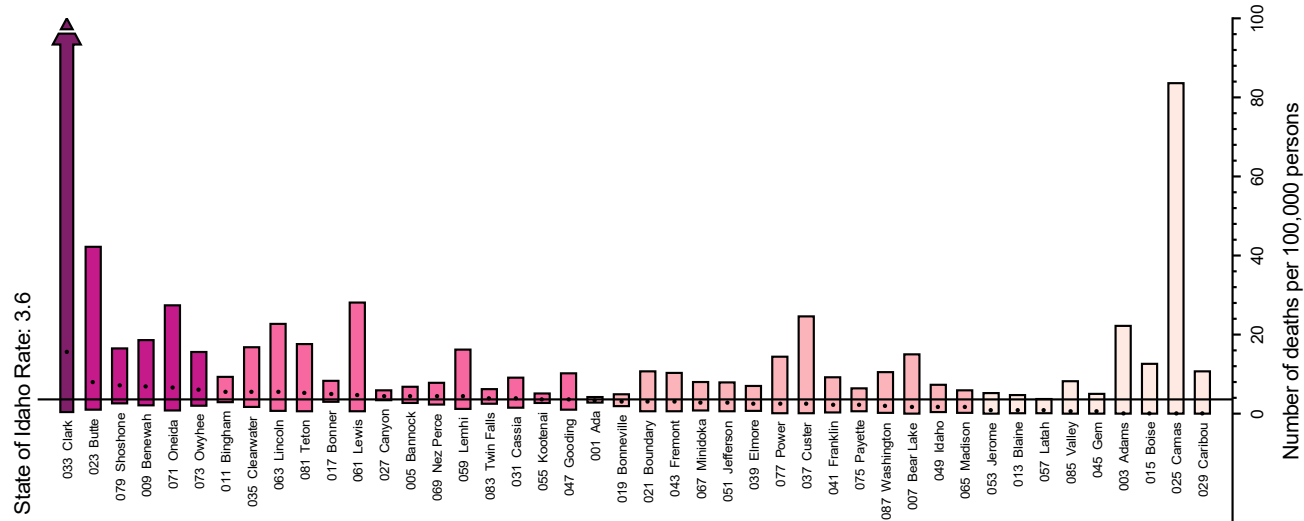

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
Arrows indicate upper confidence interval extends beyond graphic area.

Age-Adjusted Incidence Rates

Corpus Uteri

Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 24.3

Number of cases per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
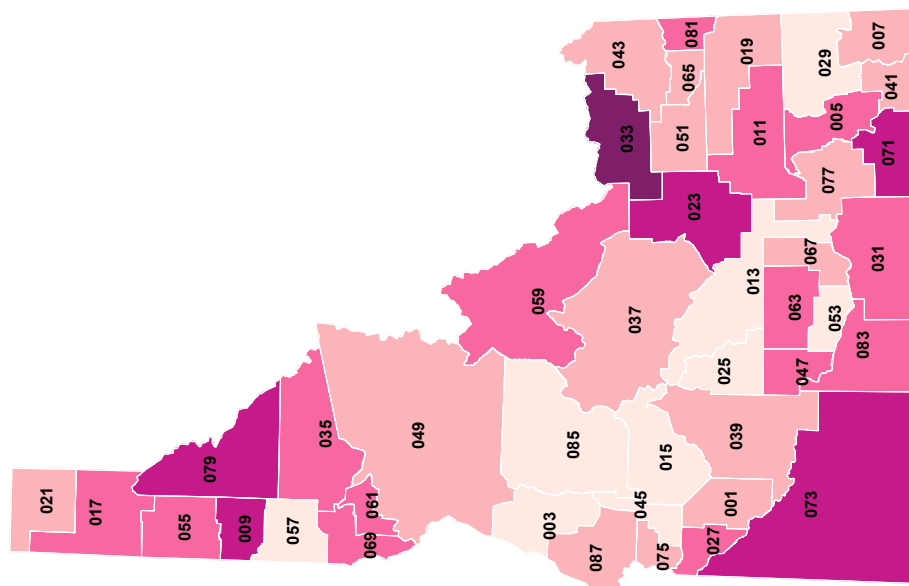*Colors denote rate clustering. Width of bars indicate 95% confidence intervals.*
Arrows indicate upper confidence interval extends beyond graphic area.

Age-Adjusted Mortality Rates

Corpus Uteri

Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 3.0

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
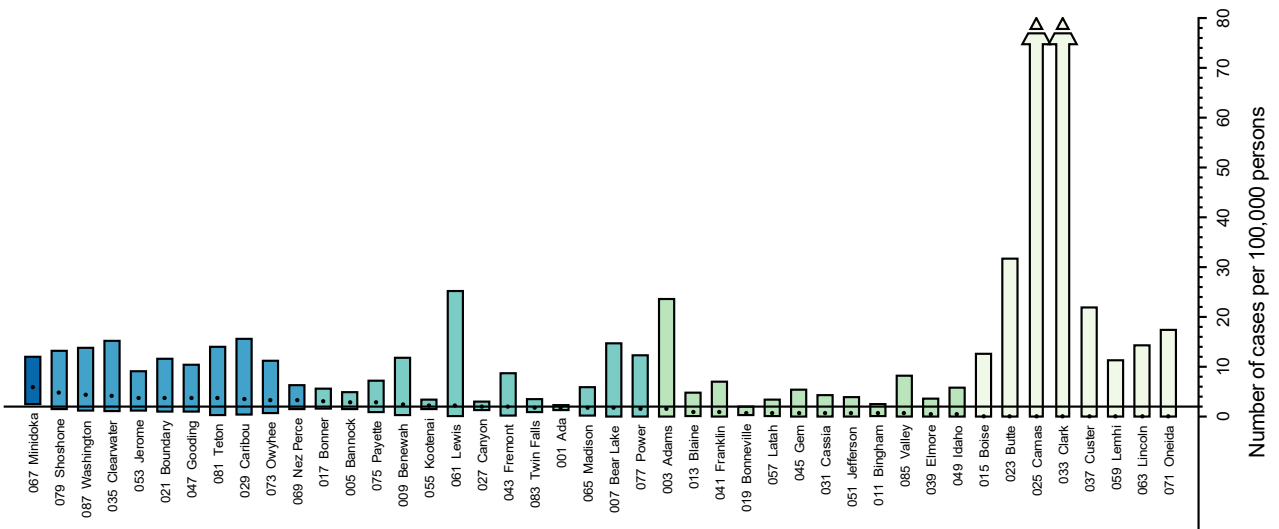*Colors denote rate clustering. Width of bars indicate 95% confidence intervals.*
Arrows indicate upper confidence interval extends beyond graphic area.

Age-Adjusted Incidence Rates

Esophagus

Both Males and Females

State of Idaho, by County, 2017–2021

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
Arrows indicate upper confidence interval extends beyond graphic area.
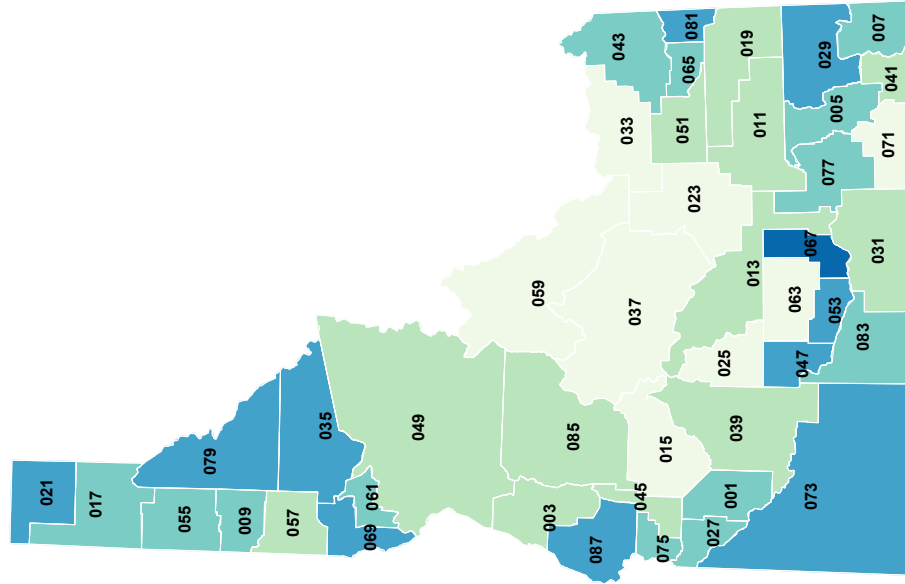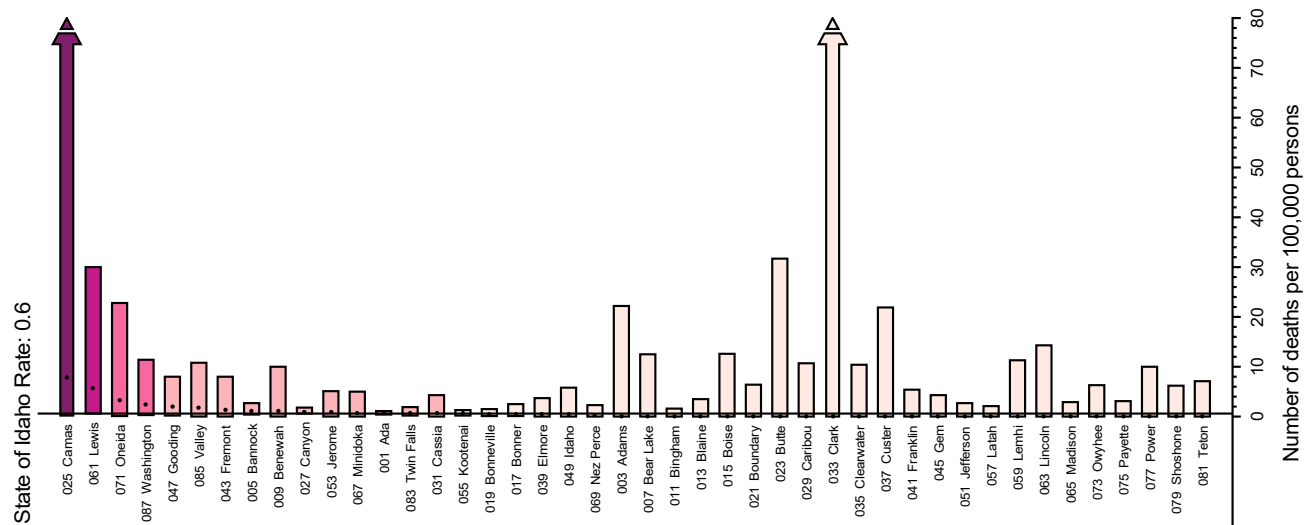
State of Idaho Rate: 4.6

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Esophagus

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 4.4

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
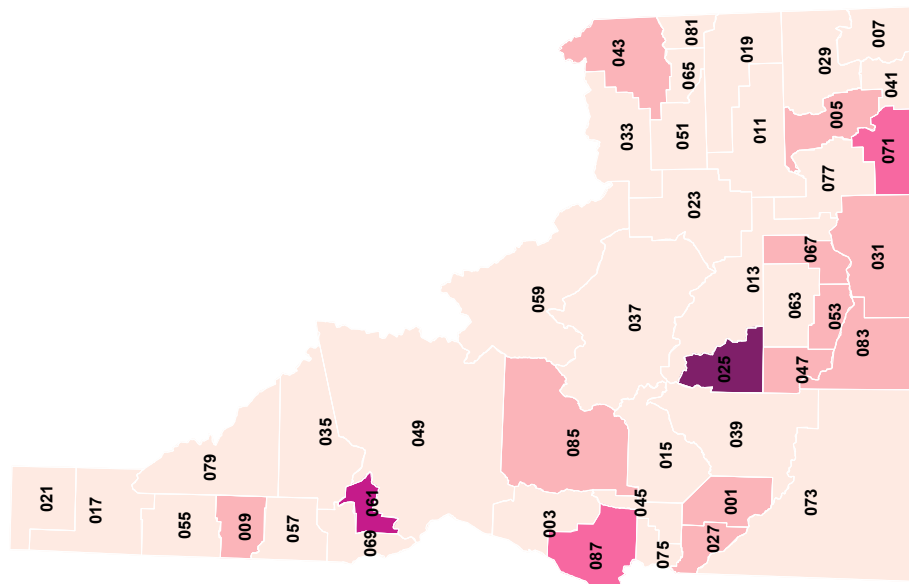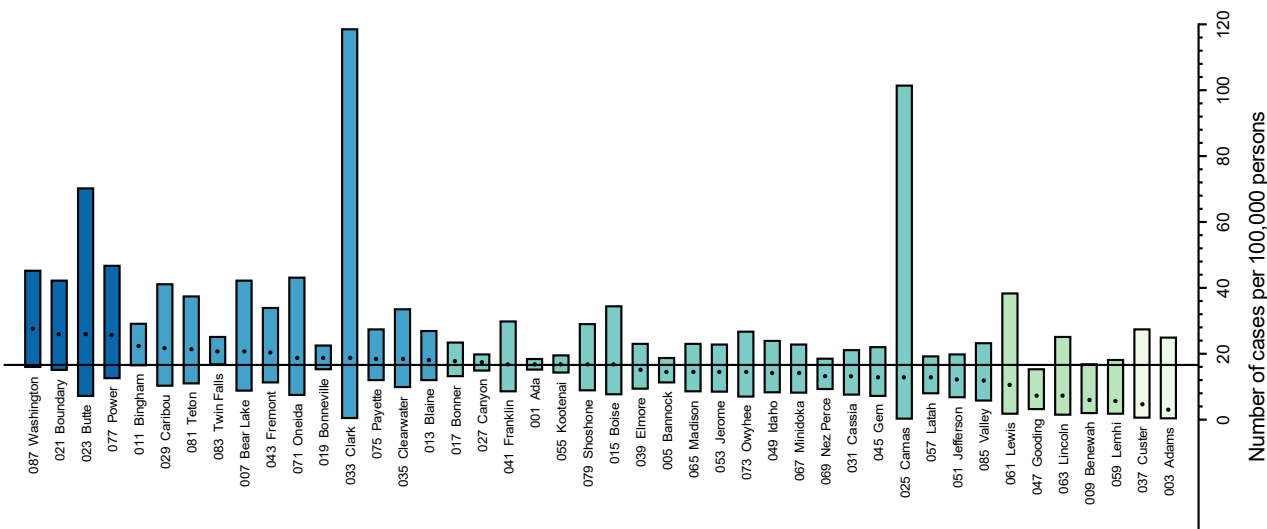*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Incidence Rates

Hodgkin Lymphoma

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 2.4

Number of cases per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
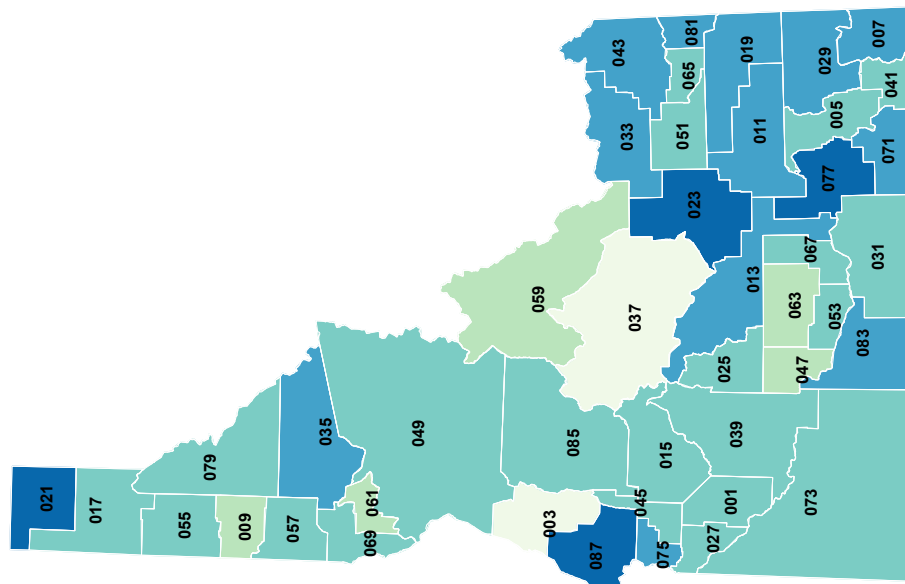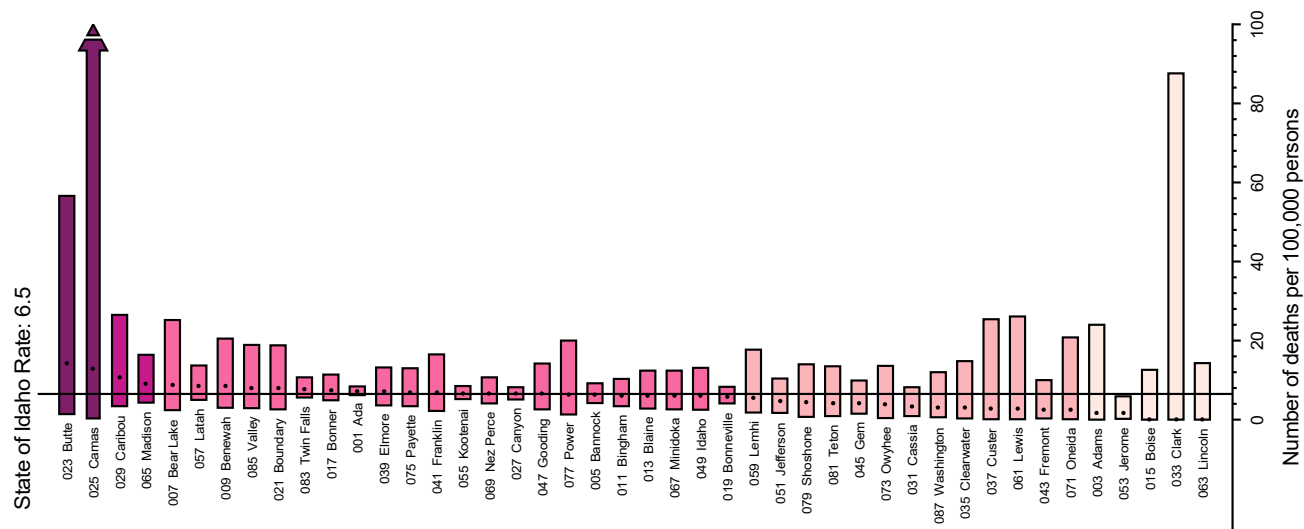*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Mortality Rates

Hodgkin Lymphoma

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 0.3

Number of deaths per 100,000 persons

Age-Adjusted Incidence Rates

Kidney and Renal Pelvis

Both Males and Females
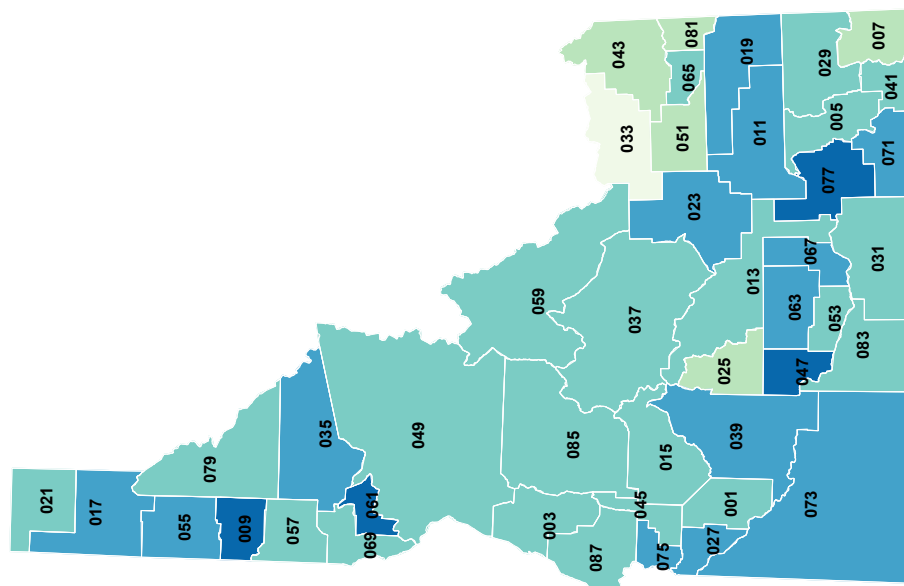
State of Idaho, by County, 2017–2021

State of Idaho Rate: 18.6

Number of cases per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
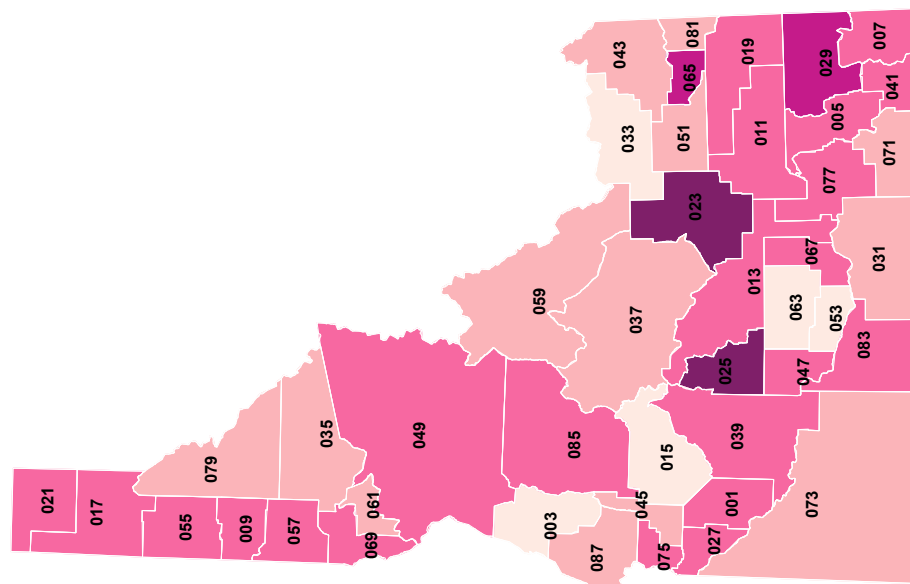*Colors denote rate clustering. Width of bars indicate 95% confidence intervals.*

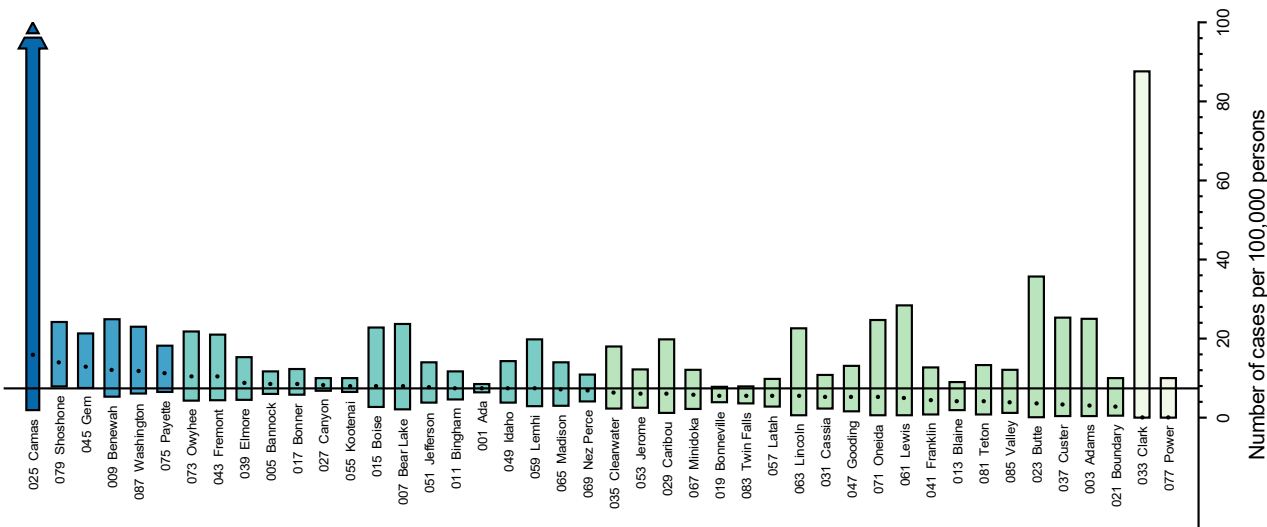**Age-Adjusted Mortality Rates**

Kidney

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 3.6

Number of deaths per 100,000 persons

033 Clark
023 Butte
079 Shoshone
009 Benewah
071 Oneida
073 Owyhee
011 Bingham
035 Clearwater
063 Lincoln
081 Teton
017 Bonner
061 Lewis
027 Canyon
005 Bannock
069 Nez Perce
059 Lemhi
083 Twin Falls
031 Cassia
055 Kootenai
047 Gooding
001 Ada
019 Bonneville
021 Boundary
043 Fremont
067 Minidoka
051 Jefferson
039 Elmore
077 Power
037 Custer
041 Franklin
075 Payette
087 Washington
007 Bear Lake
049 Idaho
065 Madison
053 Jerome
013 Blaine
057 Latah
085 Valley
045 Gem
003 Adams
015 Boise
025 Camas
029 Caribou

Age-Adjusted Incidence Rates

Larynx

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 2.0

Number of cases per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
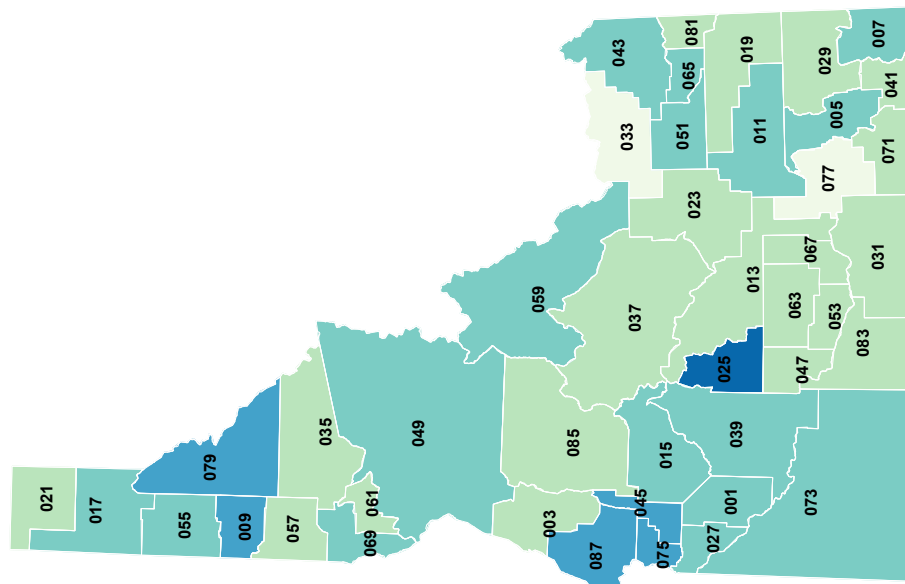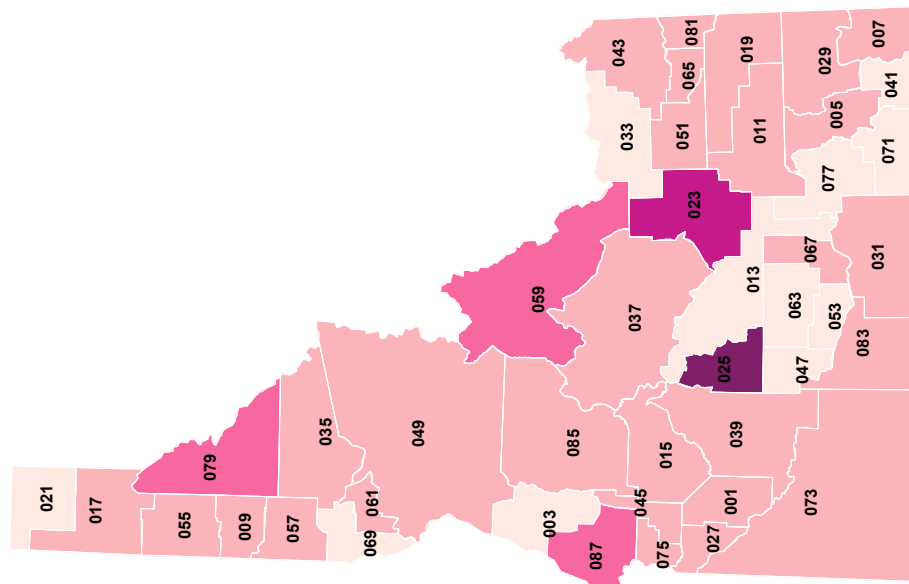*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Mortality Rates
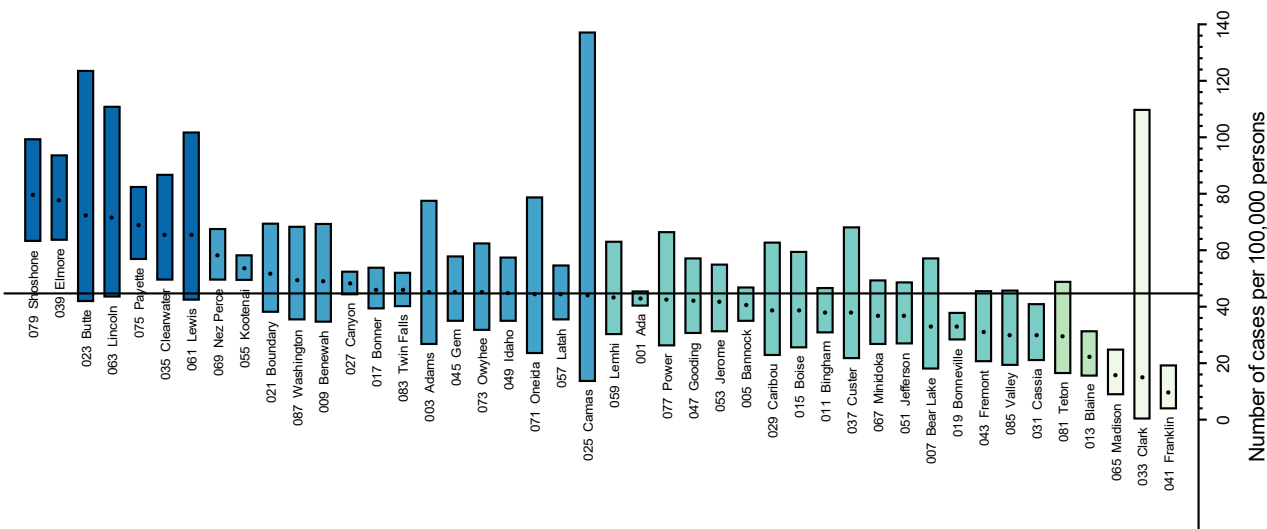
Larynx

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 0.6

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
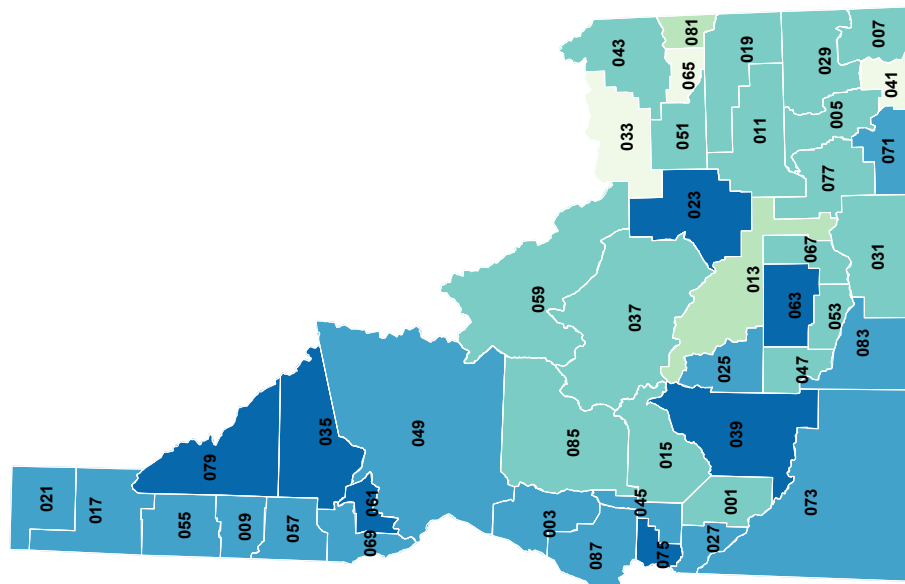*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Incidence Rates

Leukemia

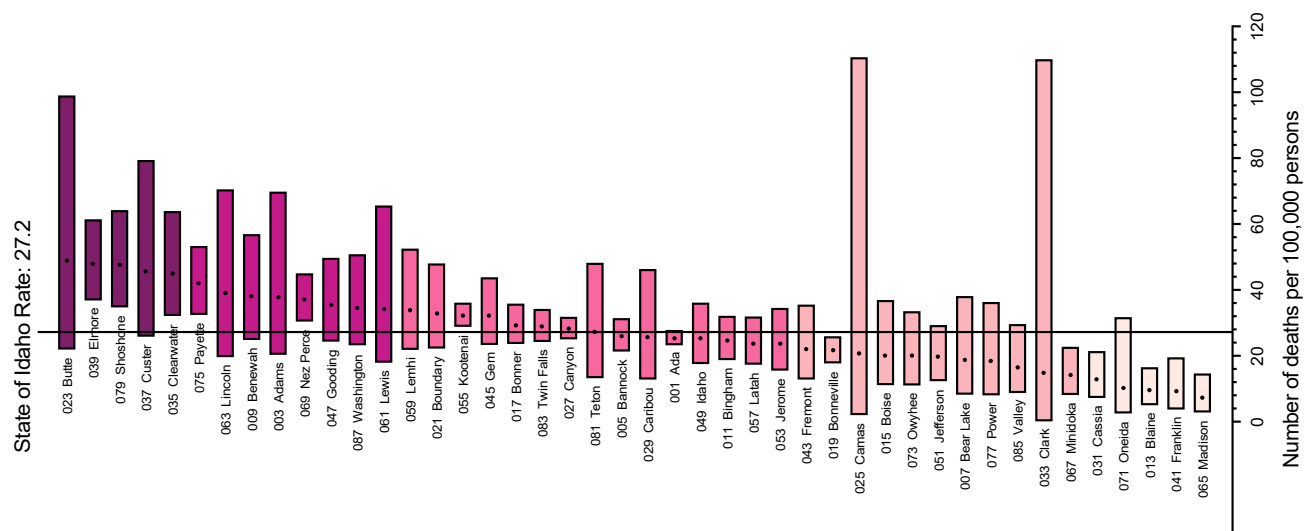**Both Males and Females**

State of Idaho, by County, 2017–2021

State of Idaho Rate: 16.6

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Leukemia

Both Males and Females

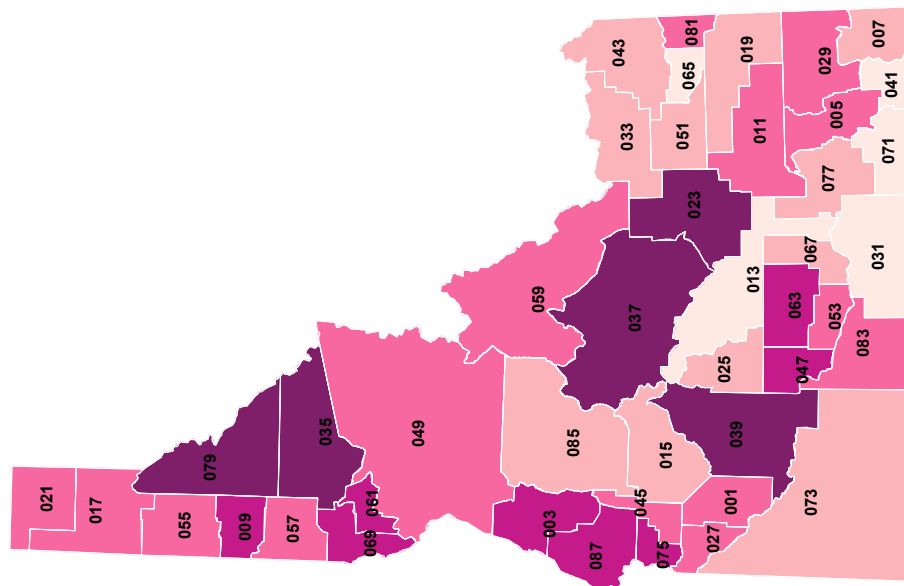**State of Idaho, by County, 2017–2021**

State of Idaho Rate: 6.5

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
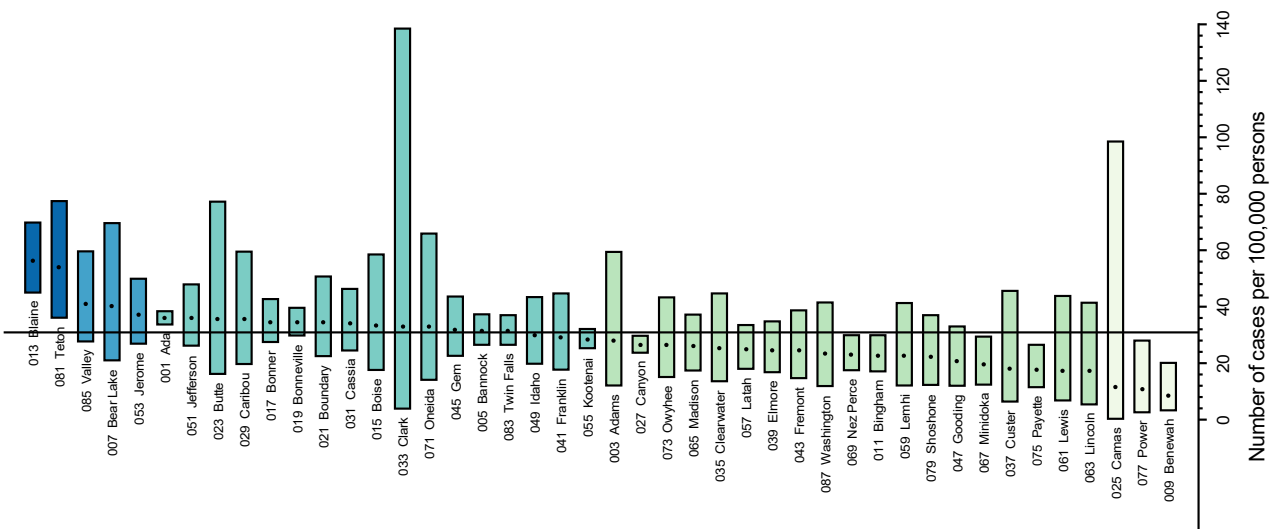*Colors denote rate clustering. Width of bars indicate 95% confidence intervals.*
Arrows indicate upper confidence interval extends beyond graphic area.

Age-Adjusted Incidence Rates

Liver and Bile Duct

Both Males and Females

State of Idaho, by County, 2017–2021

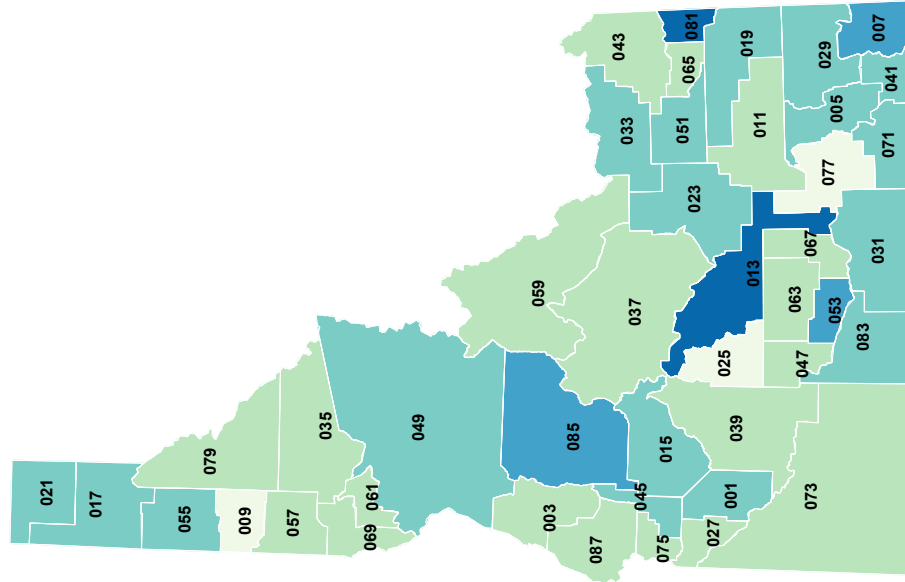State of Idaho Rate: 7.4

Number of cases per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
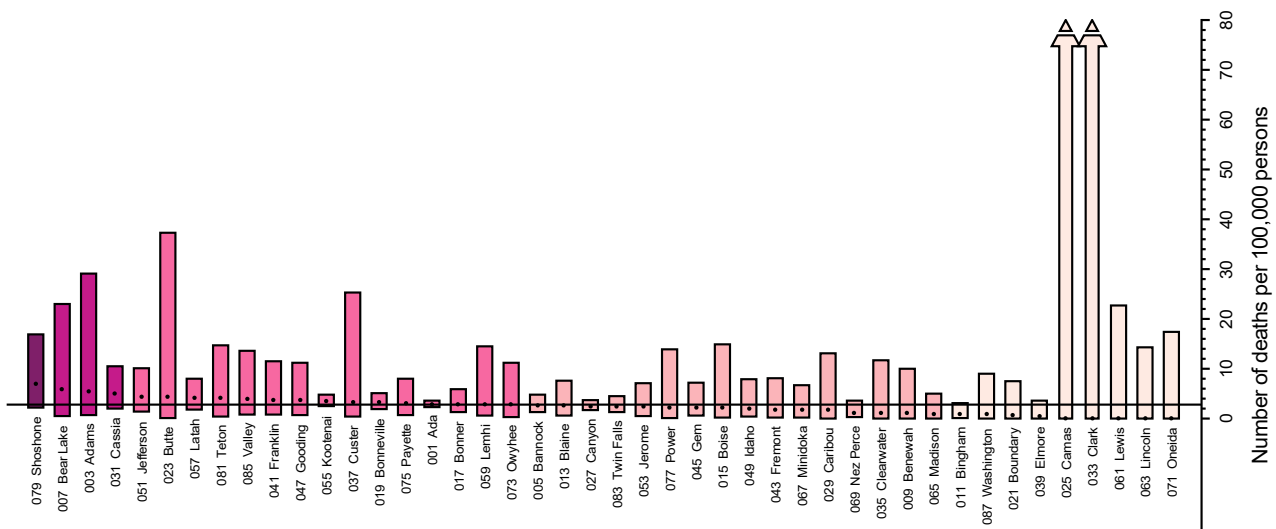*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Mortality Rates

Liver and Bile Duct

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 5.4

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
Arrows indicate upper confidence interval extends beyond graphic area.

Age-Adjusted Incidence Rates

Lung and Bronchus

Both Males and Females

State of Idaho, by County, 2017–2021

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
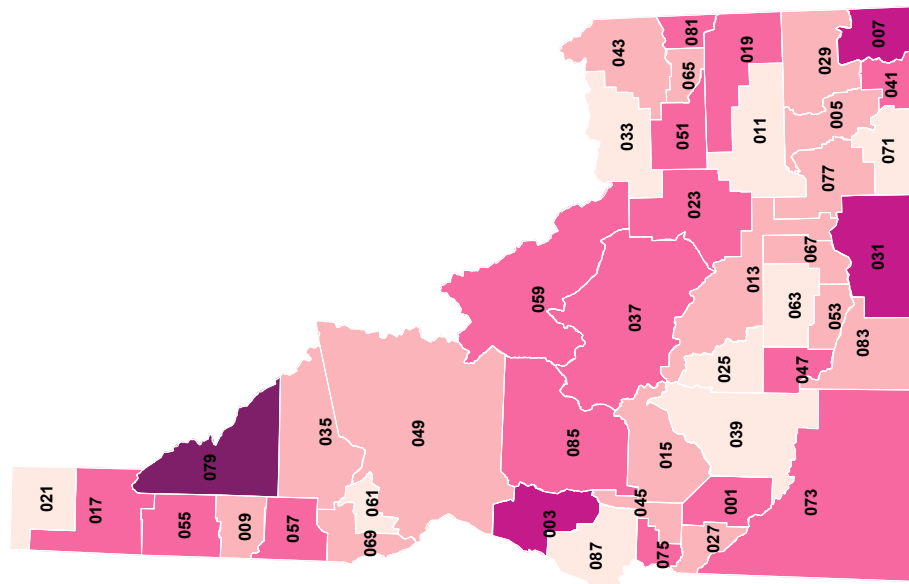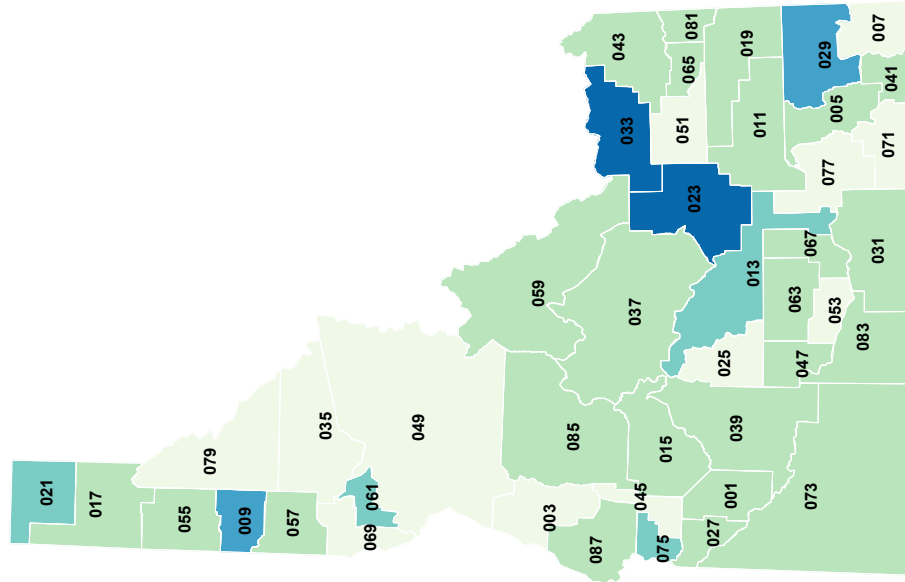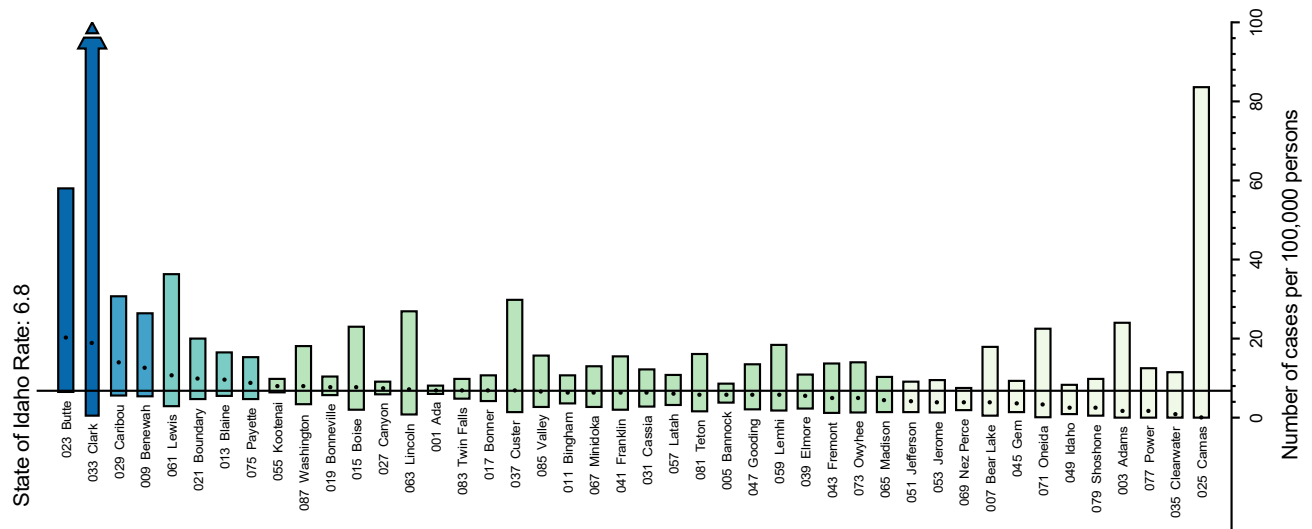
State of Idaho Rate: 44.7

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Lung and Bronchus

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 27.2

Number of deaths per 100,000 persons

023 Butte
039 Elmore
079 Shoshone
037 Custer
035 Clearwater
075 Payette
063 Lincoln
009 Benewah
003 Adams
069 Nez Perce
047 Gooding
087 Washington
061 Lewis
059 Lemhi
021 Boundary
055 Kootenai
045 Gem
017 Bonner
083 Twin Falls
027 Canyon
081 Teton
005 Bannock
029 Caribou
001 Ada
049 Idaho
011 Bingham
057 Latah
053 Jerome
043 Fremont
019 Bonneville
025 Camas
015 Boise
073 Owyhee
051 Jefferson
007 Bear Lake
077 Power
085 Valley
033 Clark
067 Minidoka
031 Cassia
071 Oneida
013 Blaine
041 Franklin
065 Madison

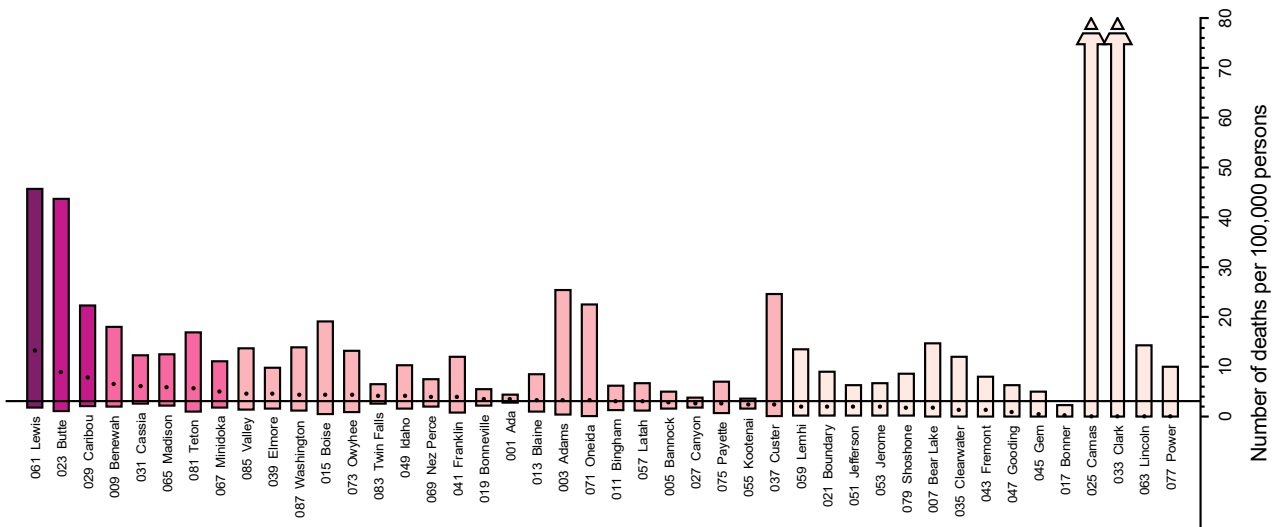**Age-Adjusted Incidence Rates**

Melanoma of the Skin

Both Males and Females
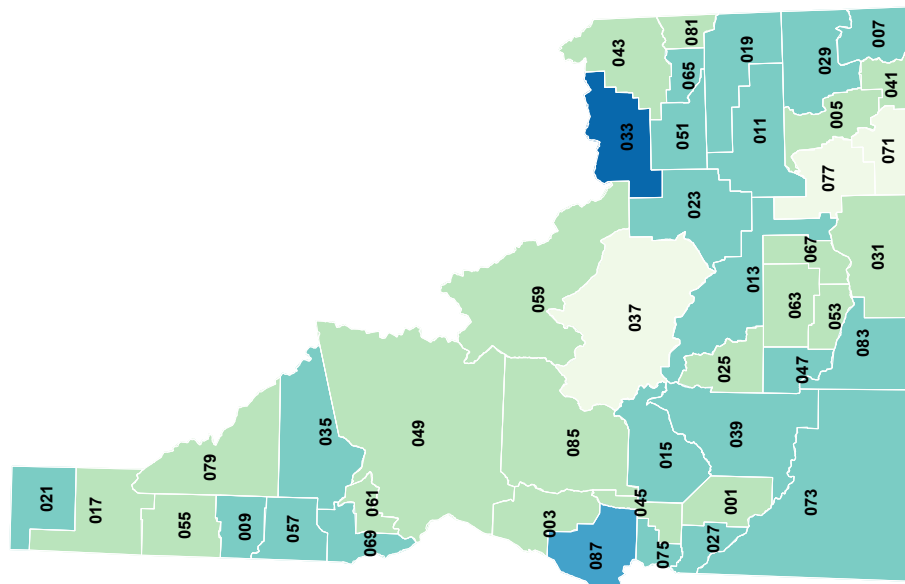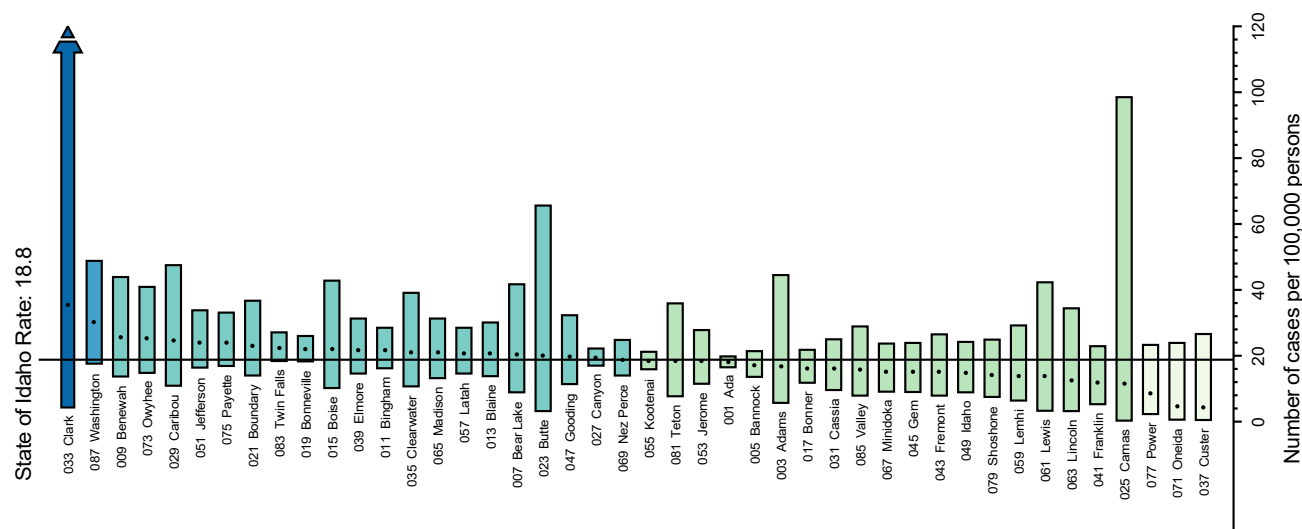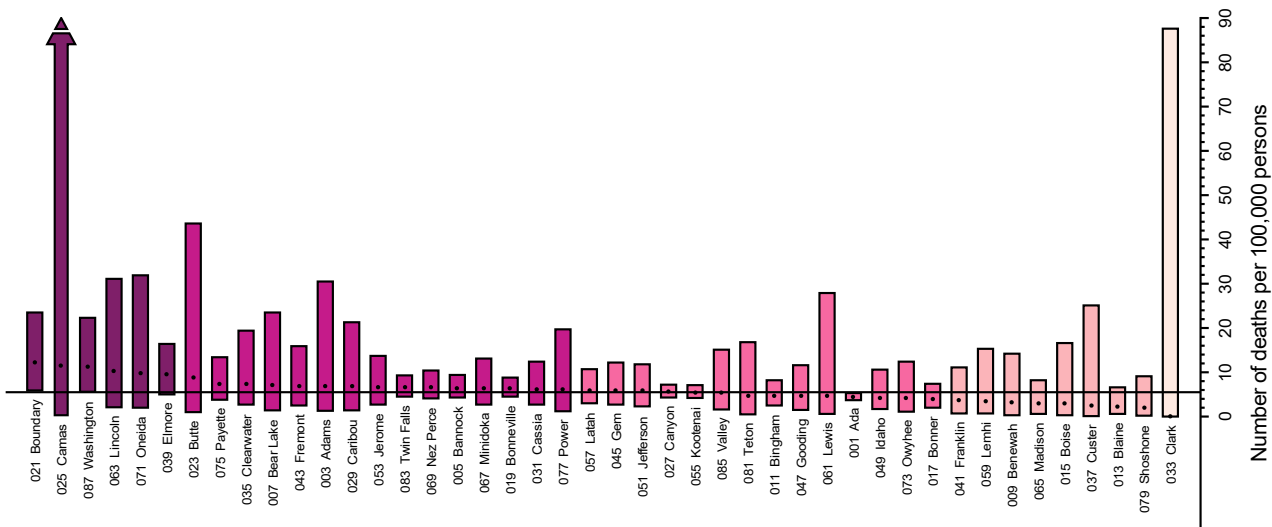
State of Idaho, by County, 2017–2021

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.

State of Idaho Rate: 30.9

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Melanoma of the Skin

Both Males and Females

State of Idaho, by County, 2017–2021

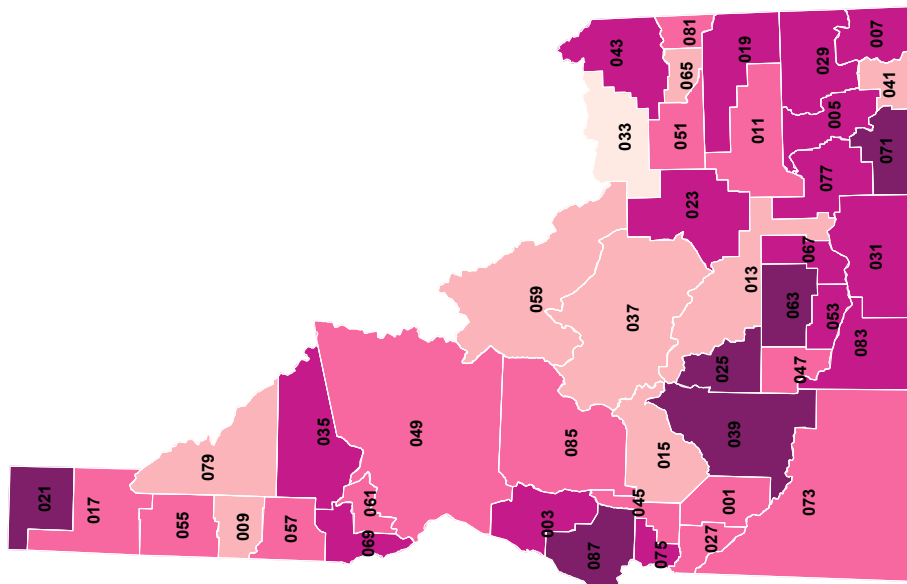State of Idaho Rate: 2.8

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
Arrows indicate upper confidence interval extends beyond graphic area.

Age-Adjusted Incidence Rates

Myeloma

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 6.8

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Myeloma

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 3.1

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
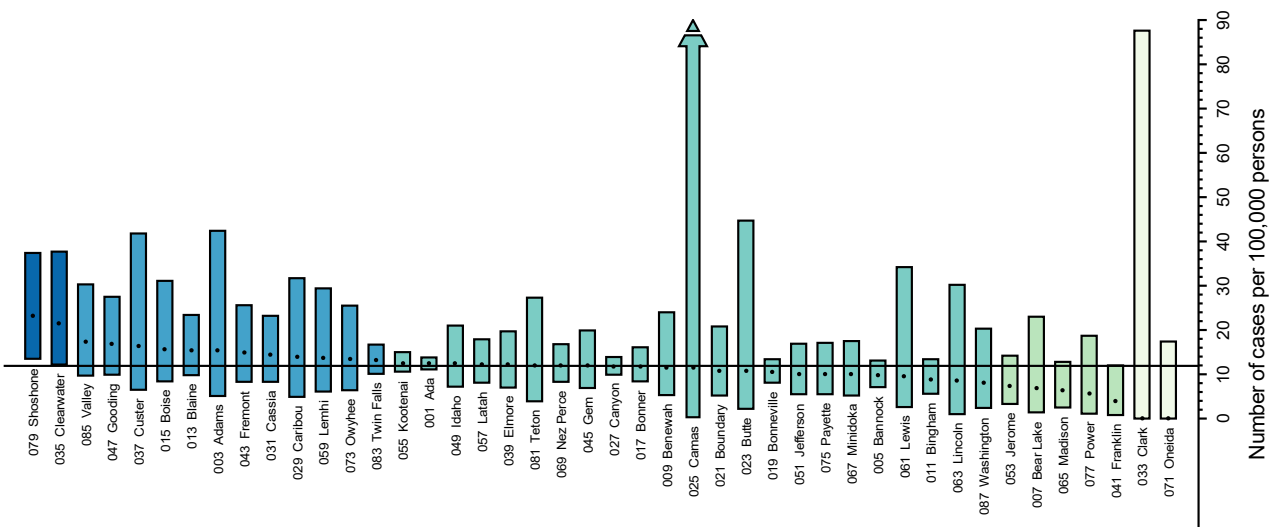*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Incidence Rates

Non-Hodgkin Lymphoma

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 18.8

Number of cases per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
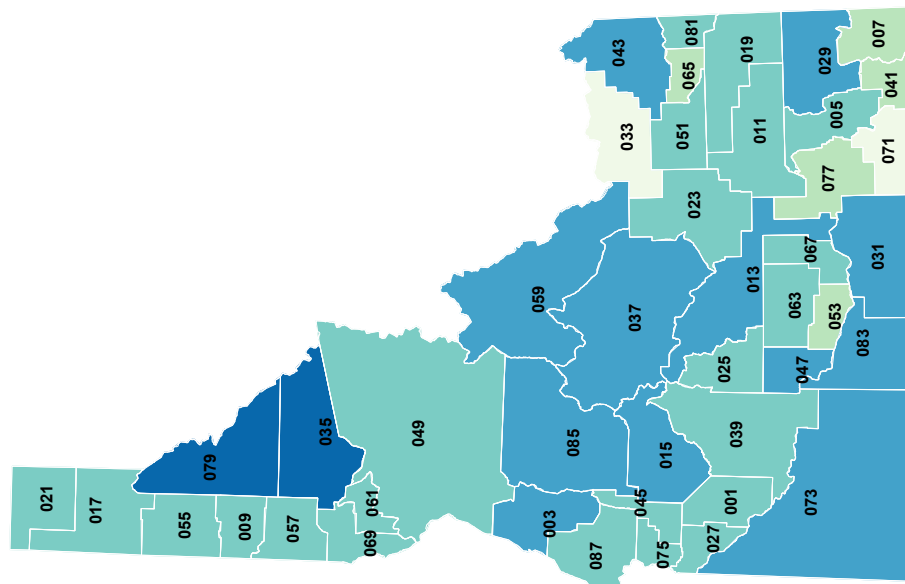*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Mortality Rates

Non-Hodgkin Lymphoma

Both Males and Females

State of Idaho, by County, 2017–2021

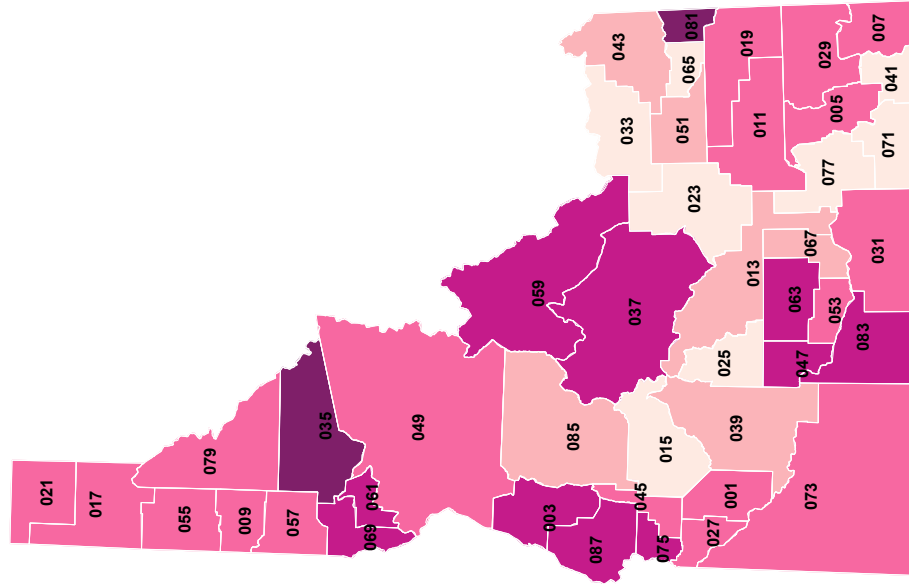State of Idaho Rate: 5.5

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
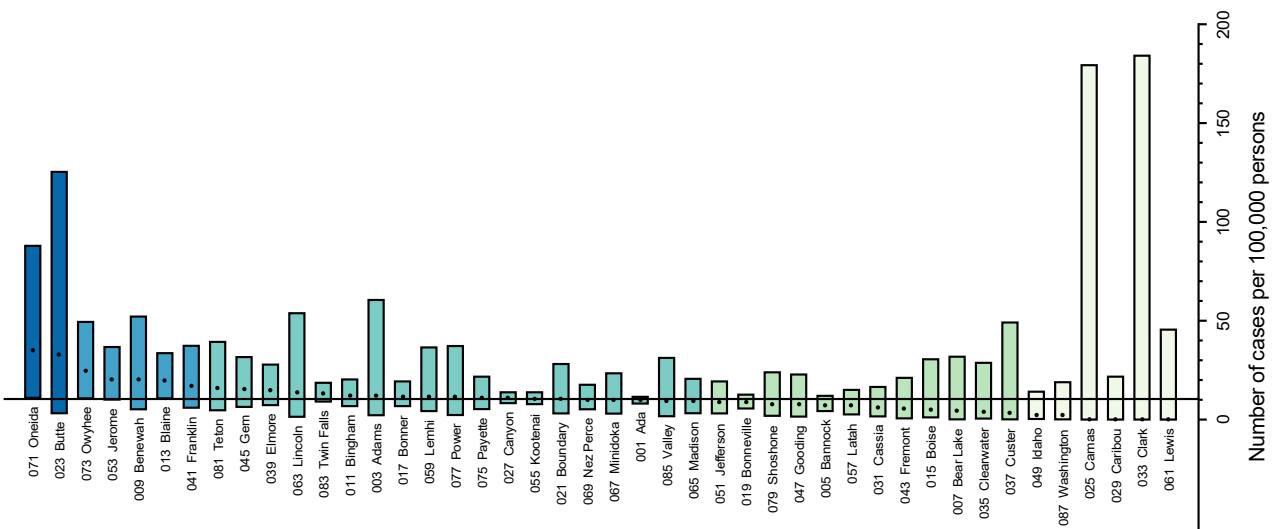*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Incidence Rates

Oral Cavity and Pharynx

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 11.9

Number of cases per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
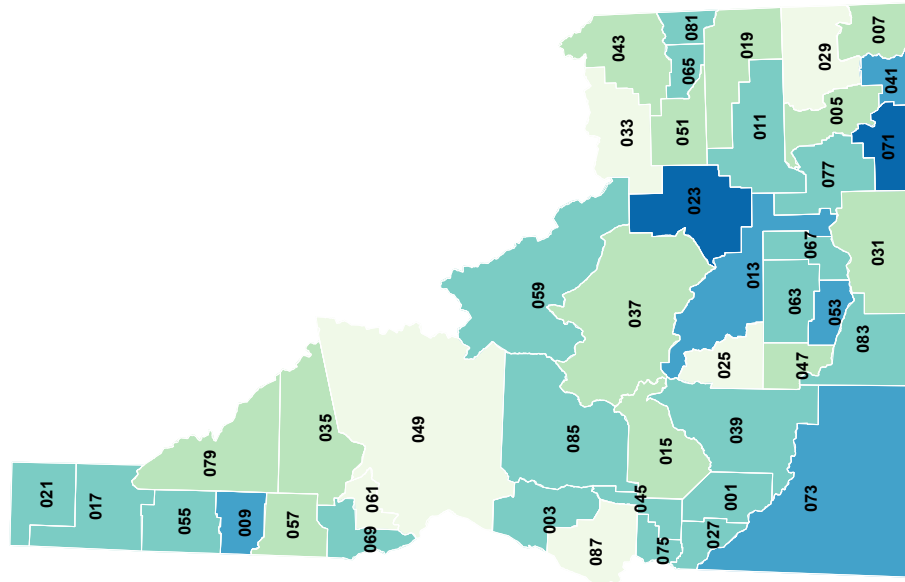Arrows indicate upper confidence interval extends beyond graphic area.

Age-Adjusted Mortality Rates

Oral Cavity and Pharynx

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 2.4

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
Arrows indicate upper confidence interval extends beyond graphic area.
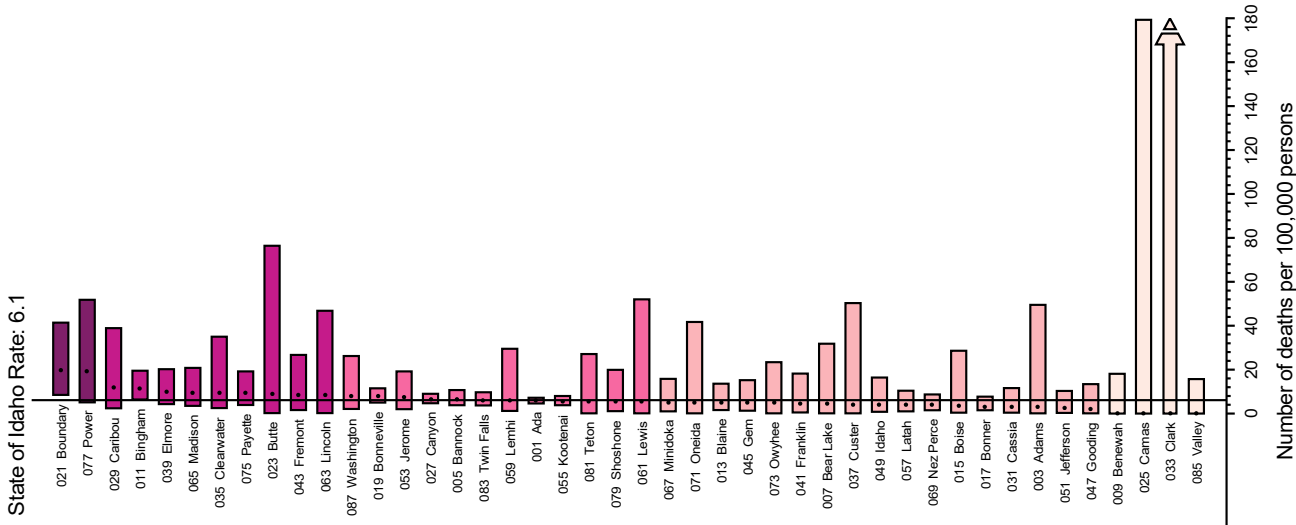
Age-Adjusted Incidence Rates

Ovary

Females

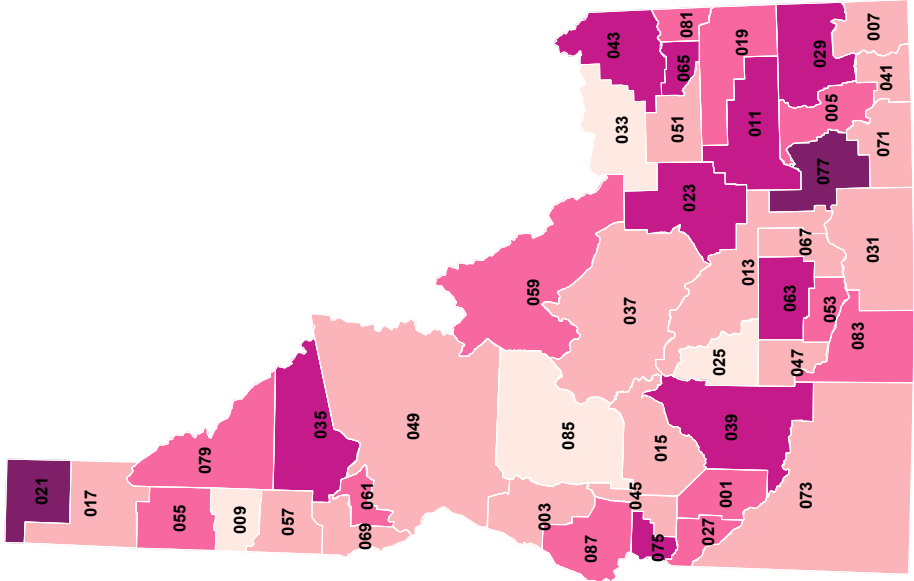**State of Idaho, by County, 2017–2021**

State of Idaho Rate: 10.4

Number of cases per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
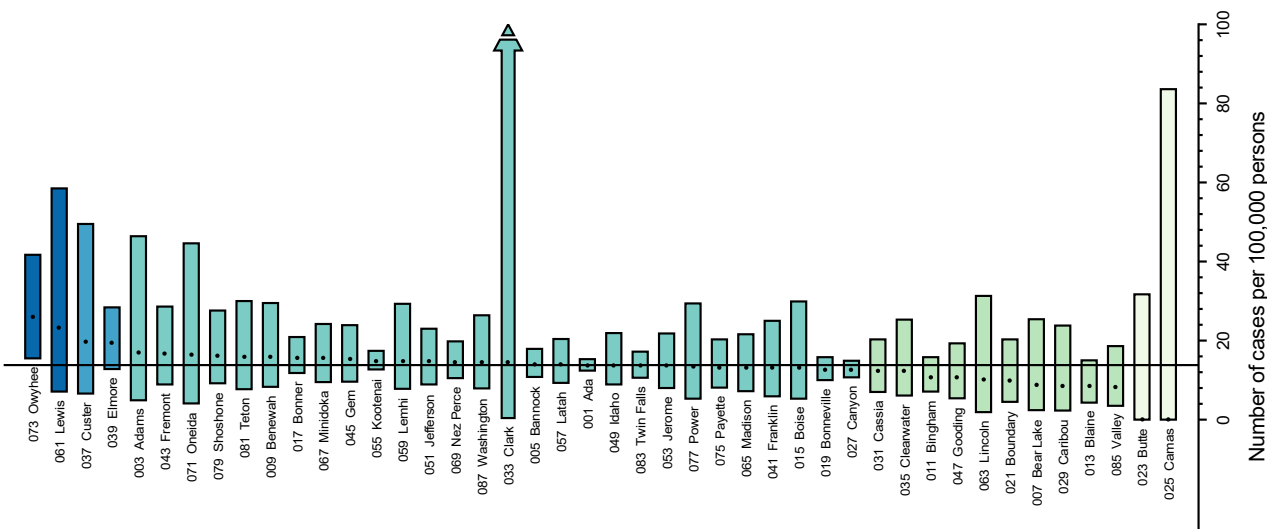*Colors denote rate clustering. Width of bars indicate 95% confidence intervals.*

Age-Adjusted Mortality Rates

Ovary

Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 6.1

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
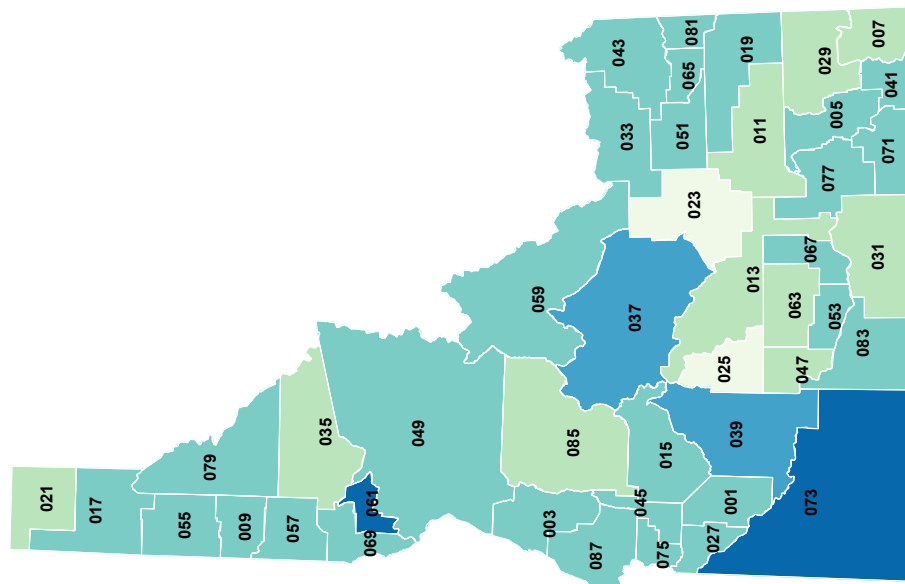*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Incidence Rates

Pancreas

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 13.8

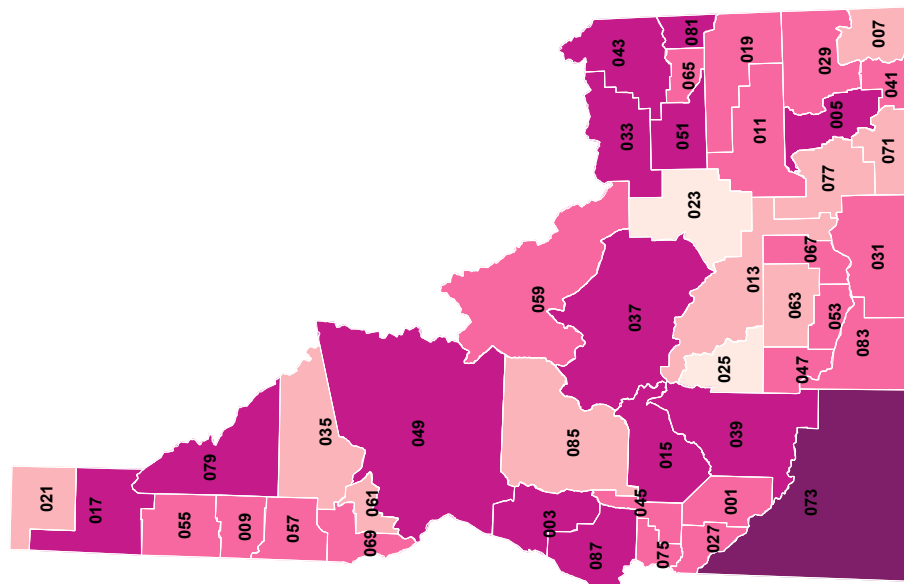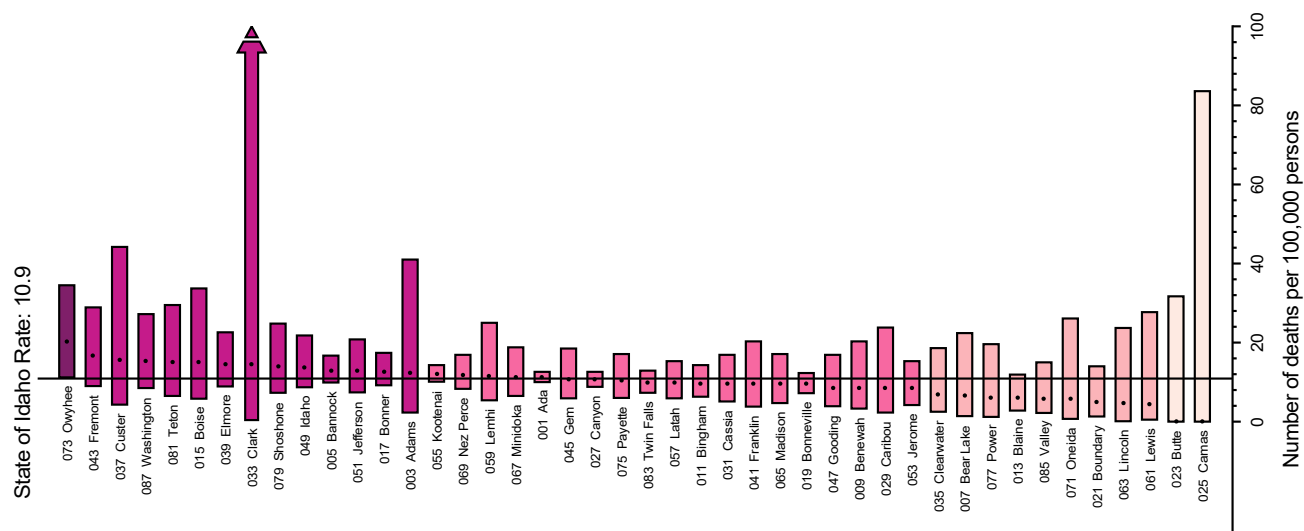Number of cases per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
Arrows indicate upper confidence interval extends beyond graphic area.
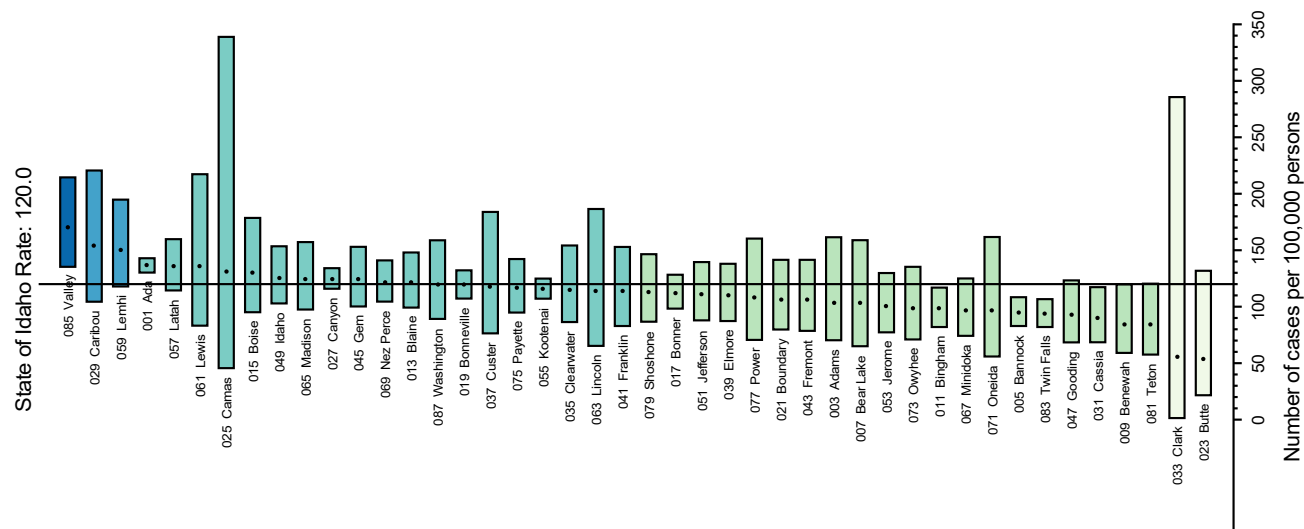
Age-Adjusted Mortality Rates

Pancreas

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 10.9

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
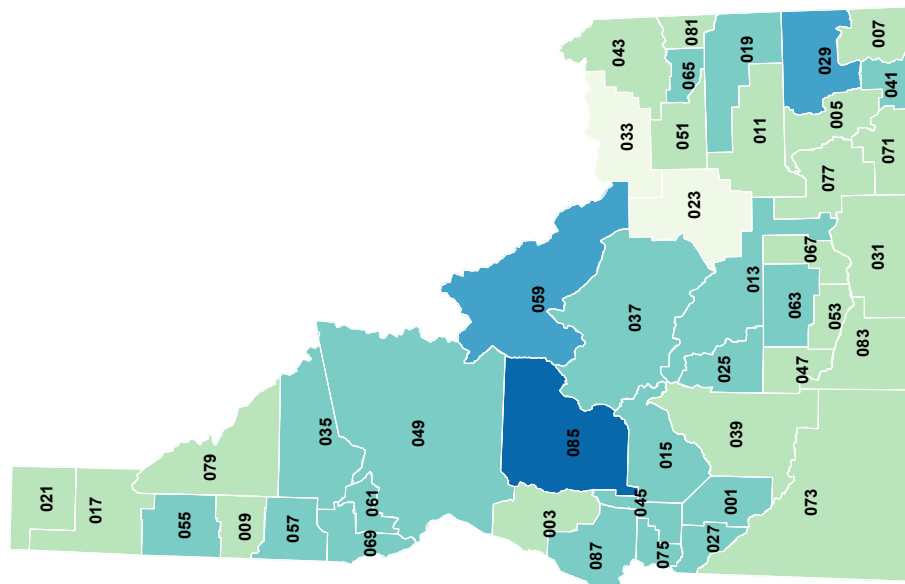*Arrows indicate upper confidence interval extends beyond graphic area.*
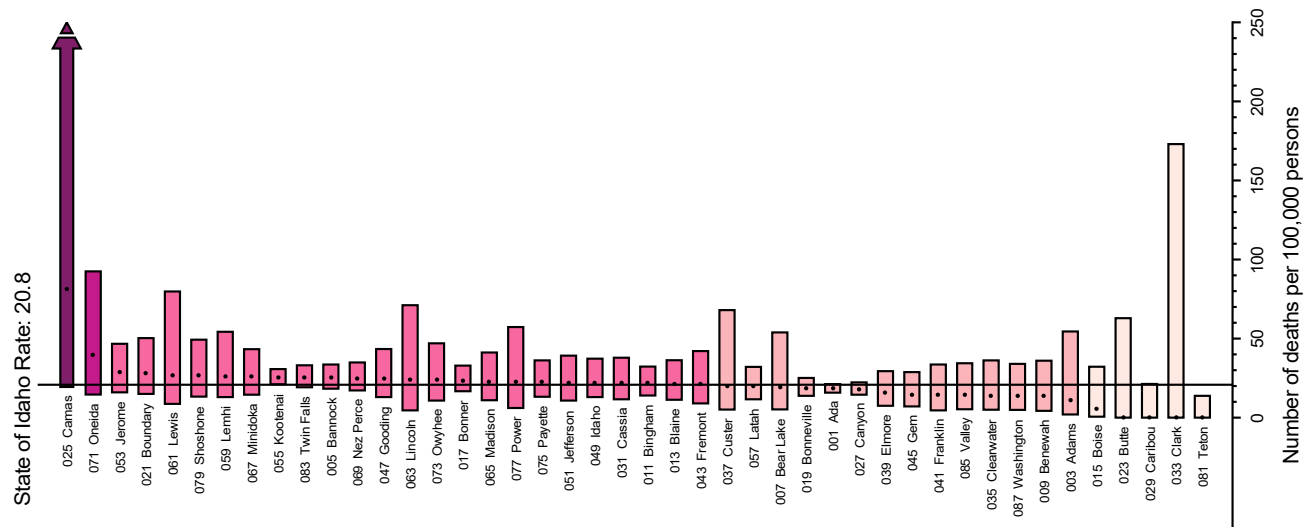
Age-Adjusted Incidence Rates

Prostate

Males

State of Idaho, by County, 2017–2021

State of Idaho Rate: 120.0

Number of cases per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
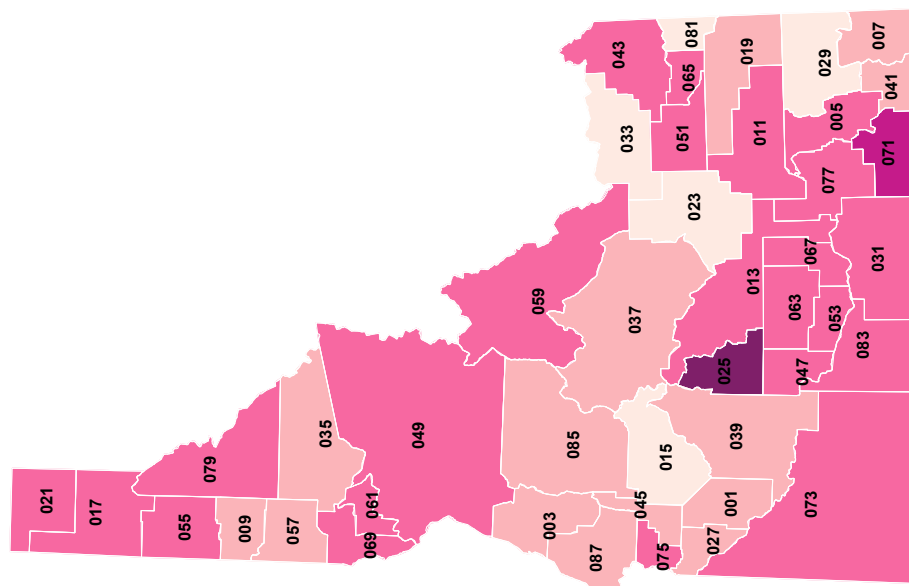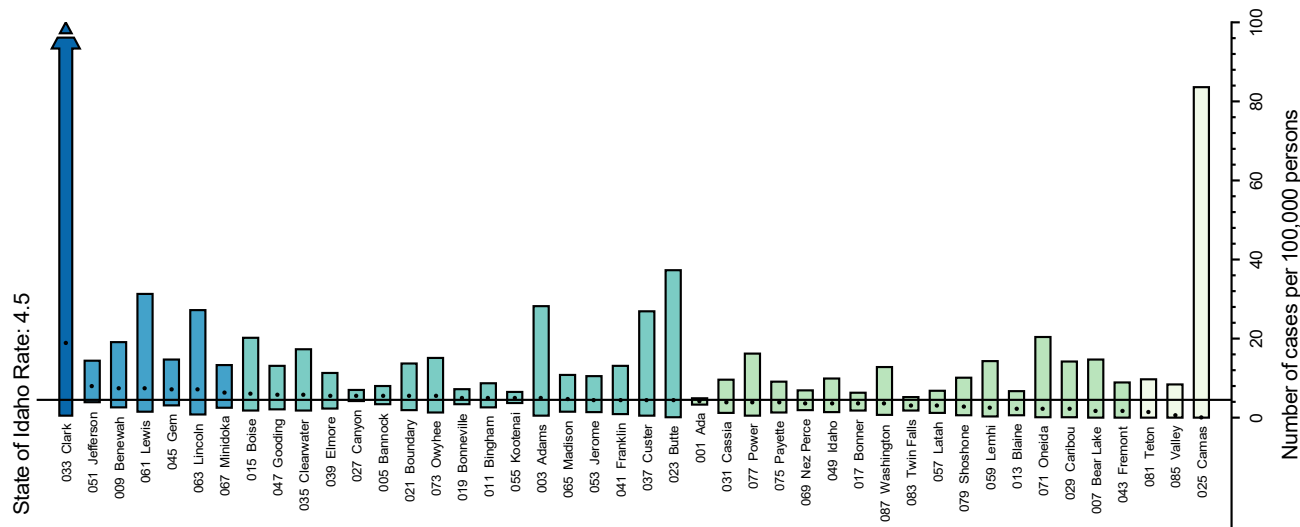
Age-Adjusted Mortality Rates

Prostate

Males

State of Idaho, by County, 2017–2021

State of Idaho Rate: 20.8

Number of deaths per 100,000 persons

Age-Adjusted Incidence Rates

Stomach

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 4.5

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Stomach

Both Males and Females

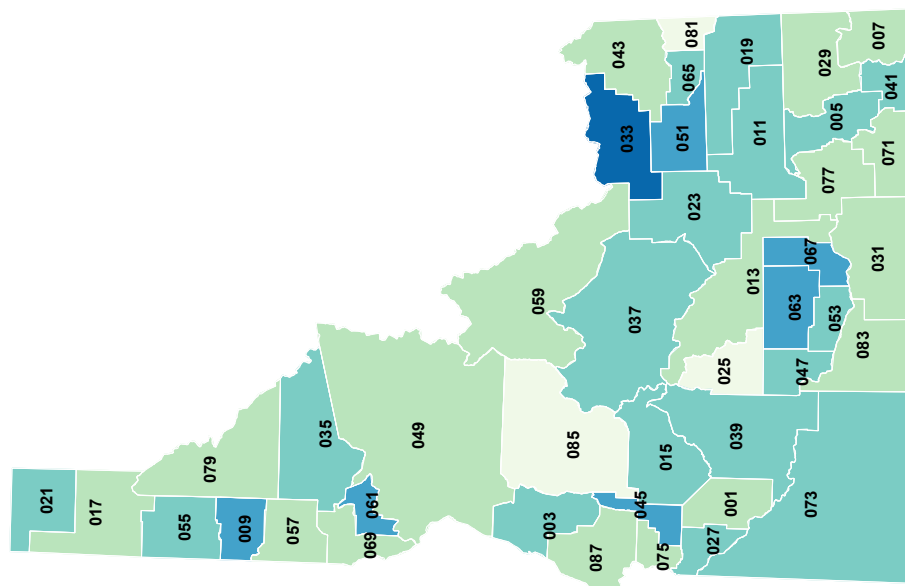**State of Idaho, by County, 2017–2021**

State of Idaho Rate: 1.9
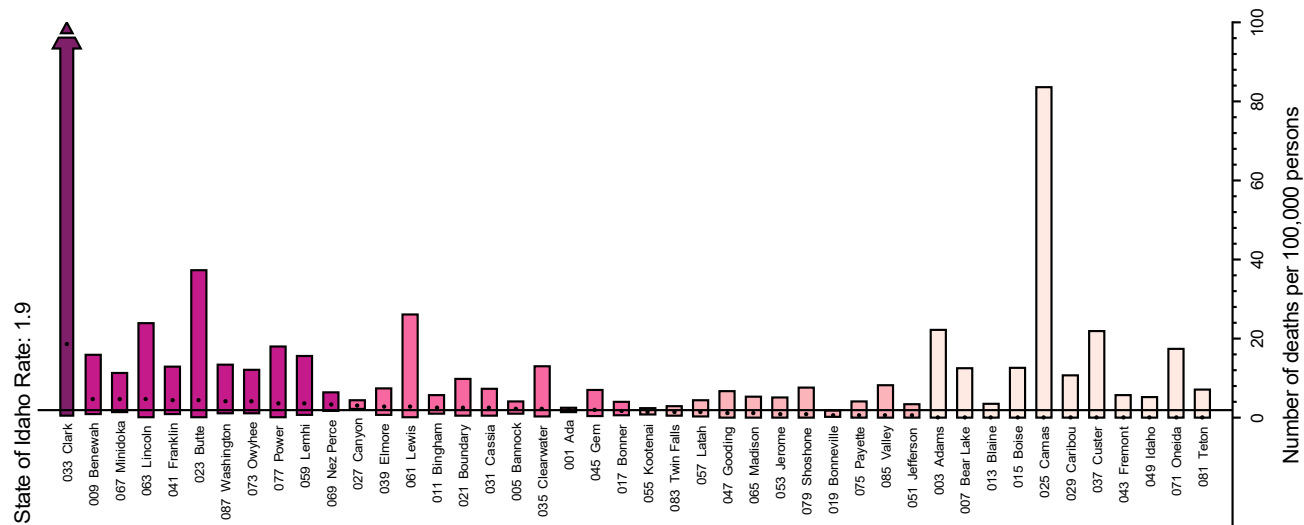
Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
Arrows indicate upper confidence interval extends beyond graphic area.

Age-Adjusted Incidence Rates

Testis

Males

State of Idaho, by County, 2017–2021

State of Idaho Rate: 6.4

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Testis

Males

State of Idaho, by County, 2017–2021

State of Idaho Rate: 0.2

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
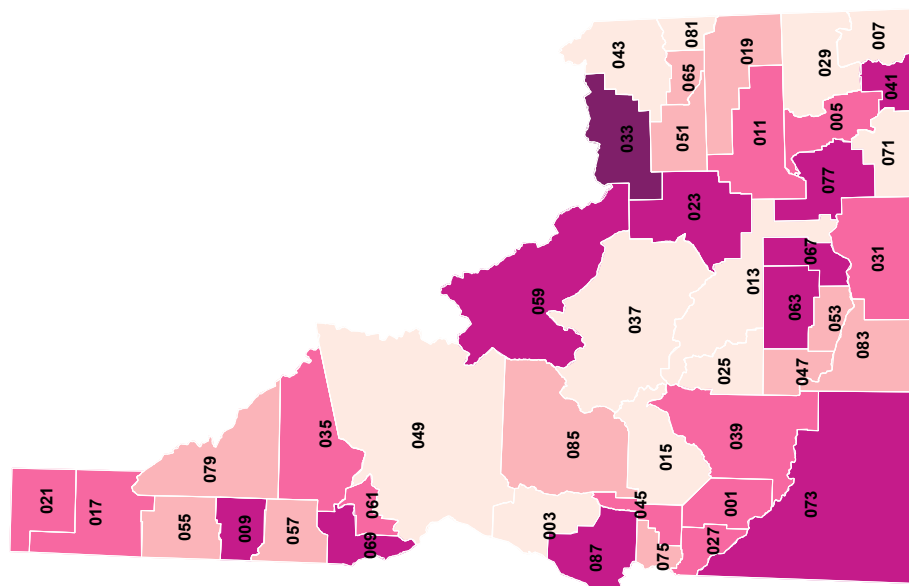*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Incidence Rates

Thyroid

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 12.8

Number of cases per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
Arrows indicate upper confidence interval extends beyond graphic area.
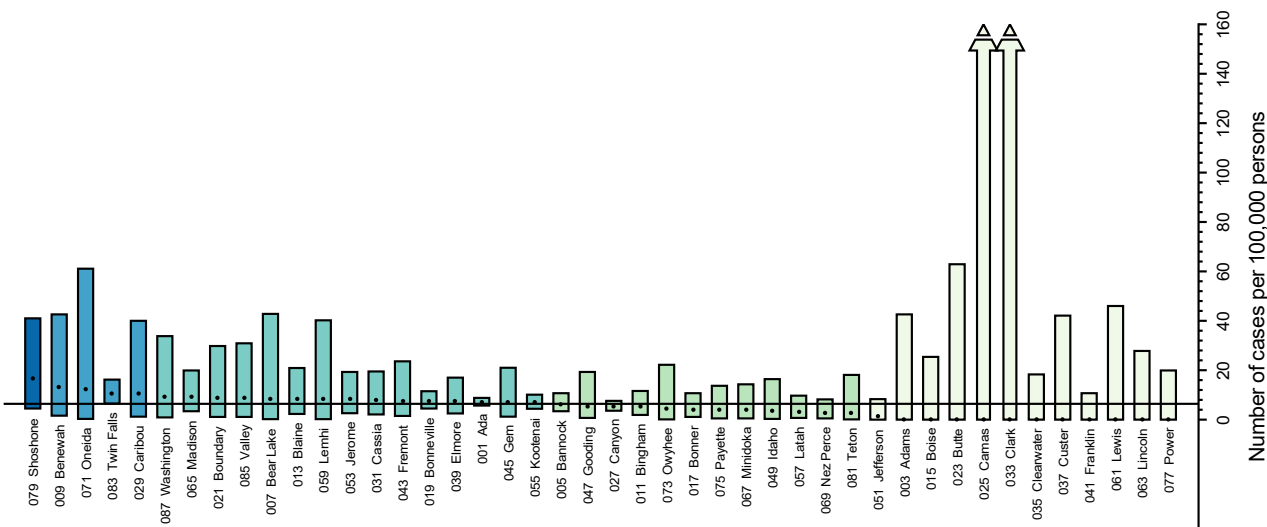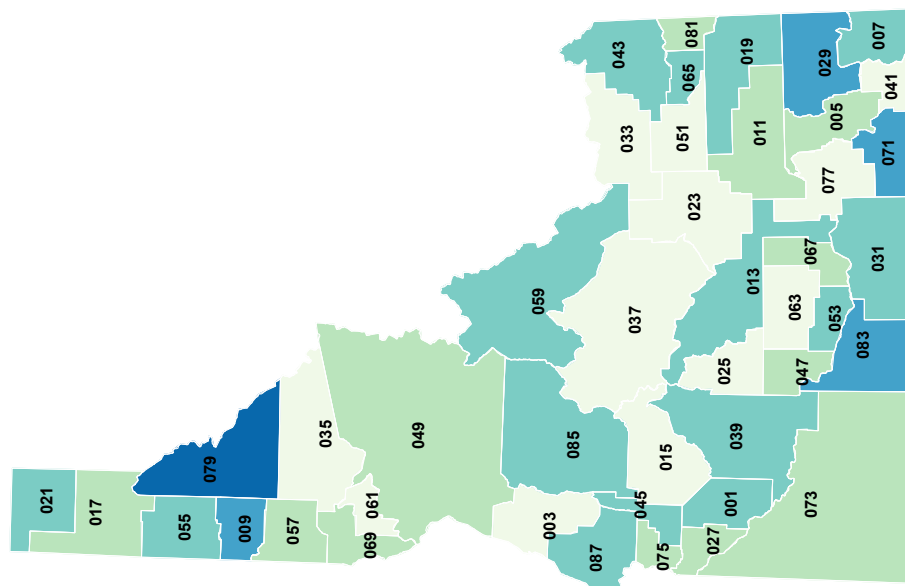
Age-Adjusted Mortality Rates

Thyroid

Both Males and Females

State of Idaho, by County, 2017–2021

State of Idaho Rate: 0.5

Number of deaths per 100,000 persons

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
Arrows indicate upper confidence interval extends beyond graphic area.

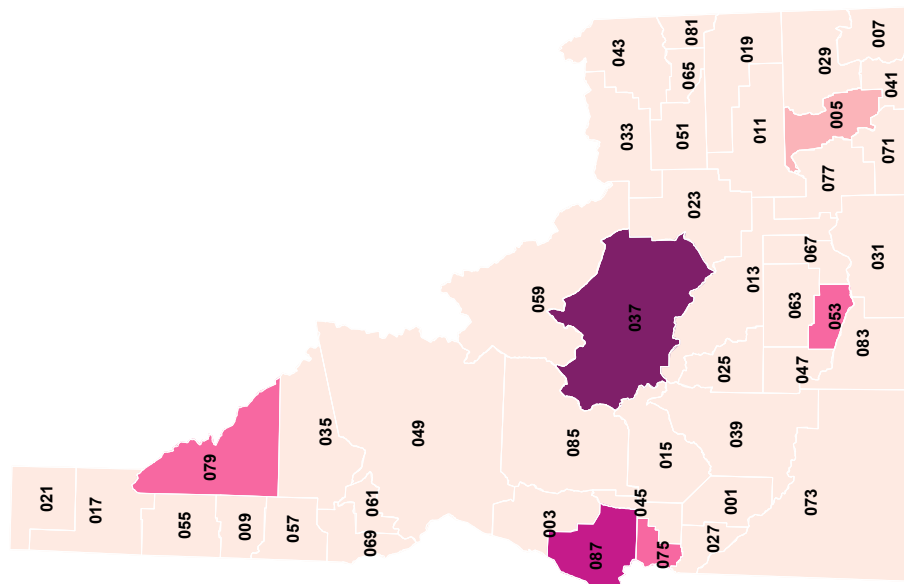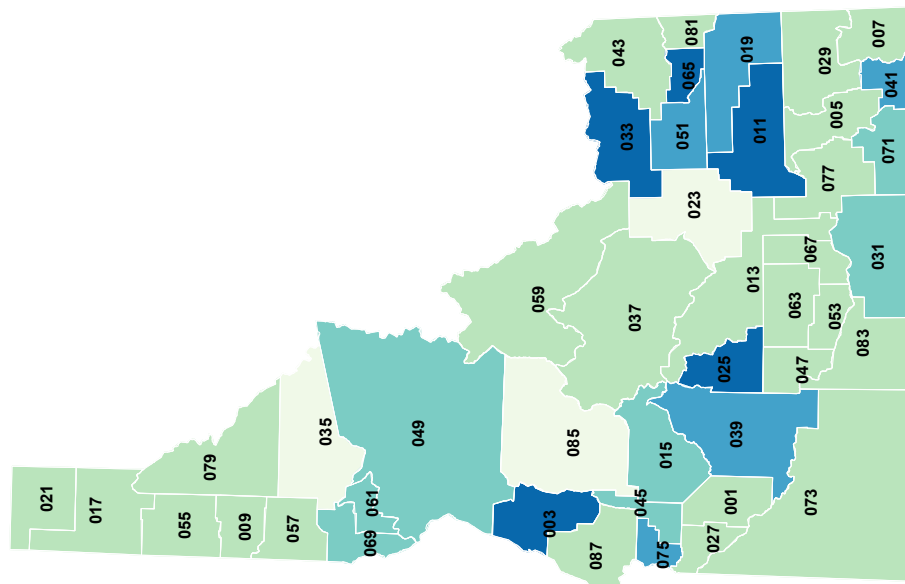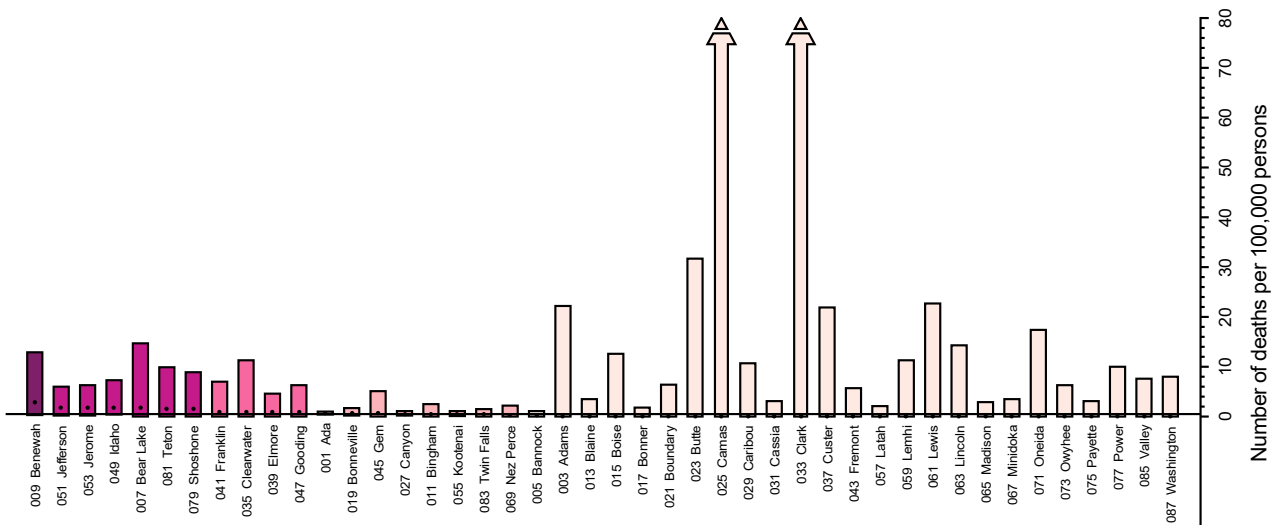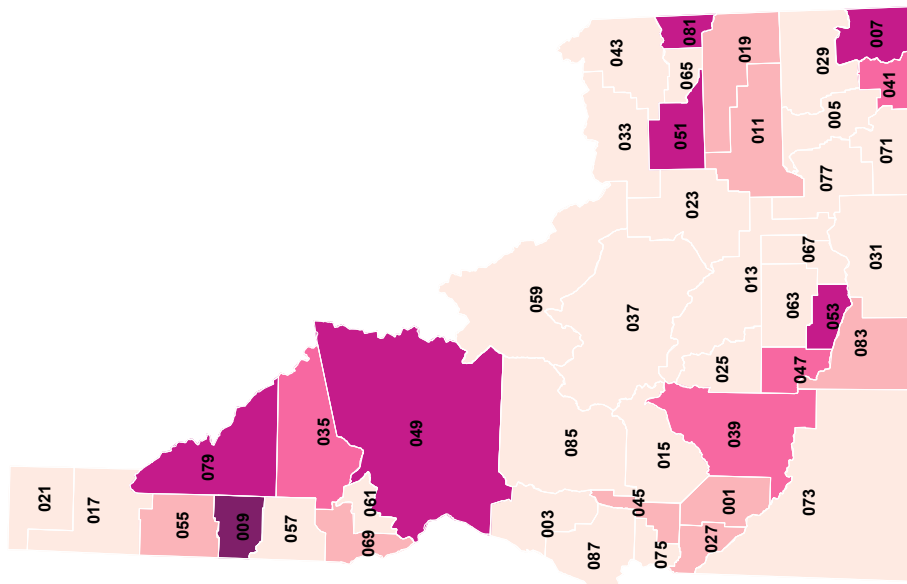1. Fritz A, Percy C, Jack A, Shanmugaratnam K, Sobin L, Parkin D, Whelan S. *International Classification of Diseases for Oncology*. 3rd ed. Geneva, Switzerland: World Health Organization; 2000.

2. Ruhl JL, Callaghan C, Hurlbut, A, Ries LAG, Adamo P, Dickie L, Schussler N, eds. *Summary Stage 2018: Codes and Coding Instructions*. National Cancer Institute, Bethesda, MD, 2018.

3. MB Amin, SB Edge, FL Greene, et al, eds. *AJCC Cancer Staging Manual. 8th ed*. New York: Springer; 2017.

4. Thornton ML, (ed). *Standards for Cancer Registries Volume II: Data Standards and Data Dictionary, Version 22, 23rd ed*. Springfield, Ill.: North American Association of Central Cancer Registries, July 2021, August, September, October 2021, May 2022. Available at: http://datadictionary.naaccr.org/.

5. Adamo M, Groves C, Dickie L, Ruhl J. (September 2020). *SEER Program Coding and Staging Manual 2021*. National Cancer Institute, Bethesda, MD 20892. U.S. Department of Health and Human Services National Institutes of Health National Cancer Institute. Available at: https://seer.cancer.gov/archive/manuals/2021/SPCSM_2021_MainDoc.pdf.

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APPENDICES

APPENDIX A

Map of Idaho Public Health Districts and Counties

Source: https://healthandwelfare.idaho.gov/health-wellness/community-health/public-health-districts
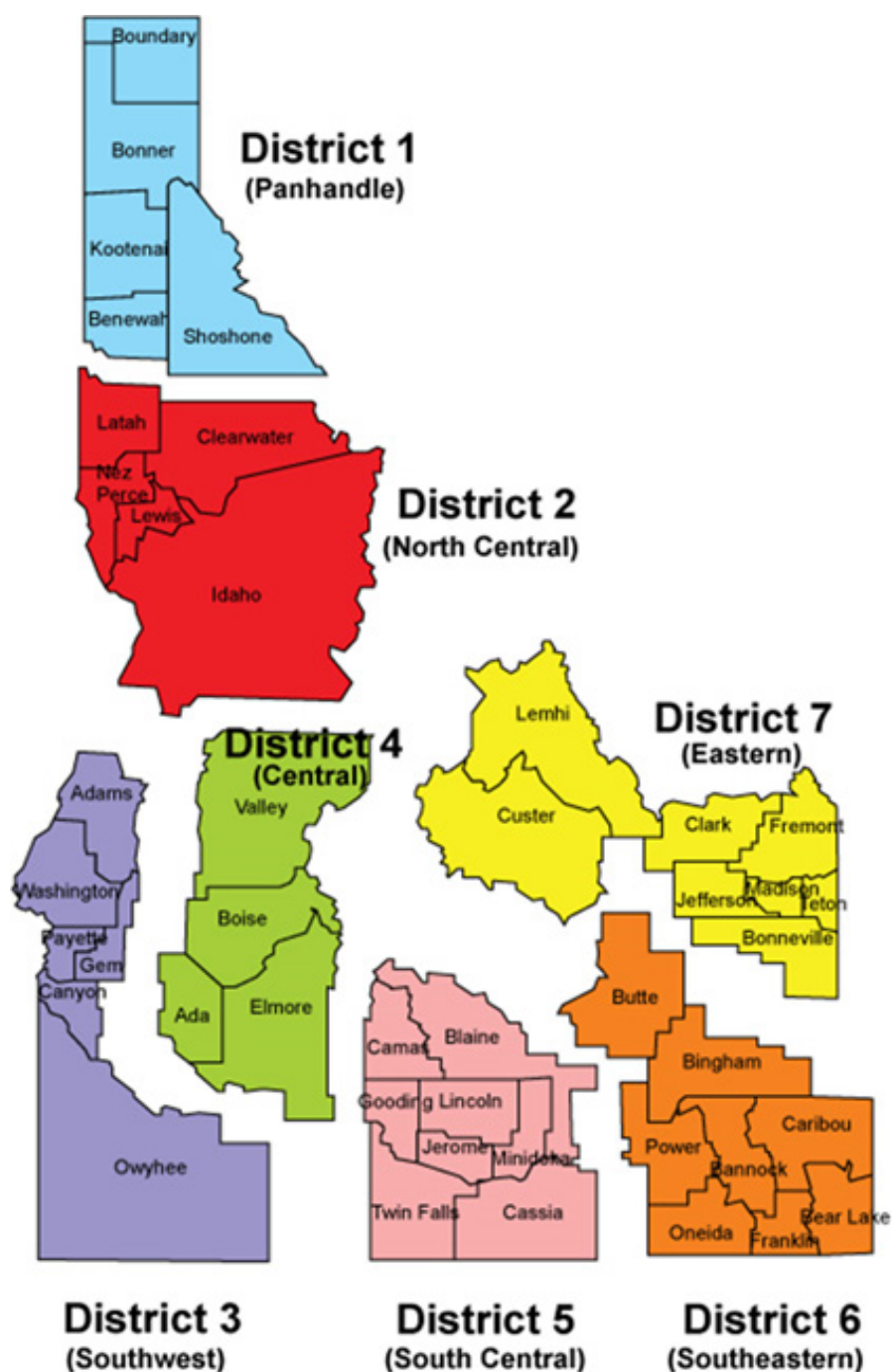
APPENDIX B

2000 U.S. STANDARD POPULATION

Age Group	2000 US Standard Population (Census P25-1130)
0	3,794,901
1-4	15,191,619
5-9	19,919,840
10-14	20,056,779
15-19	19,819,518
20-24	18,257,225
25-29	17,722,067
30-34	19,511,370
35-39	22,179,956
40-44	22,479,229
45-49	19,805,793
50-54	17,224,359
55-59	13,307,234
60-64	10,654,272
65-69	9,409,940
70-74	8,725,574
75-79	7,414,559
80-84	4,900,234
85+	4,259,173
Total	274,633,642

Source: SEER Program, National Cancer Institute, 2022.[12]

APPENDIX C

2021 POPULATION BY HEALTH DISTRICT, GENDER, AND AGE GROUP

	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	STATE
Males								
< 5	7,532	2,861	10,661	14,800	6,996	6,016	9,154	58,020
5 to 9	8,389	3,092	11,829	17,343	7,813	6,833	9,410	64,709
10 to 14	8,718	3,274	12,574	19,580	8,722	7,625	10,128	70,621
15 to 19	8,122	4,003	12,041	19,621	8,079	7,324	12,120	71,310
20 to 24	7,078	5,798	10,599	19,341	6,609	6,576	12,495	68,496
25 to 29	7,811	3,902	10,613	20,227	6,754	5,736	9,094	64,137
30 to 34	8,237	3,533	10,470	20,130	6,836	5,799	7,613	62,618
35 to 39	8,307	3,341	10,226	20,865	7,031	6,059	7,715	63,544
40 to 44	8,201	3,199	10,014	20,229	6,972	5,968	7,825	62,408
45 to 49	7,501	2,961	9,028	18,423	6,078	5,000	6,461	55,452
50 to 54	8,093	3,057	9,108	18,280	5,895	4,599	5,780	54,812
55 to 59	8,542	3,352	9,086	16,953	6,038	4,731	6,037	54,739
60 to 64	9,714	3,777	9,020	16,719	6,284	5,315	6,222	57,051
65 to 69	9,344	3,742	8,234	14,802	5,652	4,929	5,597	52,300
70 to 74	8,009	3,286	6,919	12,349	4,657	3,850	4,493	43,563
75 to 79	5,001	2,021	4,486	7,507	2,990	2,380	2,727	27,112
80 to 84	2,994	1,295	2,641	4,318	1,877	1,421	1,656	16,202
85+	1,894	1,111	1,919	3,376	1,351	1,038	1,238	11,927
Total	133,487	57,605	159,468	284,863	106,634	91,199	125,765	959,021

	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	STATE
Females								
< 5	6,837	2,753	10,015	14,203	6,640	5,772	8,696	54,916
5 to 9	7,937	3,034	11,295	16,492	7,601	6,691	9,053	62,103
10 to 14	8,205	3,038	11,806	18,534	8,455	7,193	9,784	67,015
15 to 19	7,324	3,811	11,240	18,405	7,480	6,851	18,706	73,817
20 to 24	6,549	4,942	10,120	17,165	6,380	5,910	11,651	62,717
25 to 29	7,270	3,252	10,206	17,921	6,468	5,508	8,035	58,660
30 to 34	8,226	3,274	10,547	19,417	6,658	5,780	7,194	61,096
35 to 39	8,148	3,092	10,082	19,714	6,691	5,913	7,496	61,136
40 to 44	8,018	2,965	9,781	19,184	6,398	5,788	7,104	59,238
45 to 49	7,234	2,687	8,843	16,760	5,603	4,712	5,879	51,718
50 to 54	7,936	3,002	8,766	16,899	5,283	4,579	5,496	51,961
55 to 59	8,989	3,373	9,273	16,975	6,082	4,832	5,729	55,253
60 to 64	10,125	3,922	9,516	17,378	6,456	5,279	6,045	58,721
65 to 69	9,802	3,611	8,618	16,011	5,720	4,902	5,559	54,223
70 to 74	8,248	3,081	7,326	13,154	4,694	3,919	4,622	45,044
75 to 79	5,159	2,068	4,964	8,378	3,411	2,567	2,971	29,518
80 to 84	3,296	1,470	3,071	5,227	2,140	1,674	1,997	18,875
85+	3,208	1,605	2,913	5,560	2,383	1,720	1,893	19,282
Total	132,511	54,980	158,382	277,377	104,543	89,590	127,910	945,293
Total	265,998	112,585	317,850	562,240	211,177	180,789	253,675	1,904,314

Source: U.S. Census Bureau, Population Division, June 2023.