Annual Report
of the

Cancer Data Registry of Idaho

Cancer in Idaho – 2022

December 2024

CDRI Cancer Data Registry of Idaho

Idaho Hospital Association

IDAHO DEPARTMENT OF HEALTH & WELFARE

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CANCER IN IDAHO – 2022

December 2024

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

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PREFACE

"Cancer in Idaho – 2022," the forty-sixth 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 2022. The data can be used by public health and medical professionals, the Comprehensive Cancer Alliance for Idaho, and others to plan services, allocate health resources, develop and measure prevention and intervention strategies, and identify high-risk populations in Idaho.

ACKNOWLEDGMENTS

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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 non-Idaho residents 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), CDRI has received additional funding from the Centers for Disease Control and Prevention (CDC) to enhance cancer data

reporting 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.

A key aspect of population-based cancer data is that each cancer diagnosis is represented once. Thus, 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, e.g., geographic place of residence at time of cancer diagnosis;

◆ description of cancer, e.g. date of diagnosis, primary site, metastatic sites, histology, extent of disease;

◆ 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 and borderline 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. 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/ SEER-22 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 (2021 incidence), the District of Columbia and all U.S. states (except Indiana) are included. Section II describes incidence data by site, subsite, and gender for invasive and in situ cases. Section III describes mortality data by site and gender. Section IV contains a table of age-specific cancer rates by site and gender for 2018–2022. 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 1975–2022. Section VIII shows cancer incidence rates by race and ethnicity for the period 2018–2022. Section IX shows cancer survival statistics for Idahoans diagnosed during the period 2015–2021 with follow-up through 2022. Section X shows maps and figures of cancer incidence and mortality rates by county for the period 2018–2022.

Descriptive Summary by Gender and Race and Ethnicity

The data presented in this report focus on cancer cases diagnosed among Idaho residents from January 1, 2022 to December 31, 2022, inclusive. During this period, there were 11,310 cases of in situ and invasive cancer diagnosed among Idaho residents (5,775 among males and 5,535 among females). By race and ethnicity, there were 10,335 cases among non-Hispanic whites, 511 among Hispanic whites, 46 cases among Blacks, 123 cases among Native Americans, 113 cases among Asians/Pacific Islanders, and 186 cases among persons reporting 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 2021 to 2022, there was a 1.8% decrease in the age-adjusted cancer incidence rates in Idaho as published in CDRI's 2021 and 2022 annual reports. Disruptions caused by the

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[‡]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., and Cancer-Rates.com for Idaho at https://www.cancer-rates.com/id/.

COVID-19 pandemic greatly impacted cancer healthcare services and the cancer statistics in 2020 (and possibly 2021). Disruptions in access to care, including cancer screenings, resulted in decreases in timely diagnosis and thus, 2020 incidence for several screening-amenable cancers. Some of these cancers rebounded in 2021 and returned to near pre-pandemic levels in 2022. For example, colorectal cancer incidence increased 17.5% from 2020 to 2021 and decreased 11.9% in 2022 relative 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 Section VII for more detailed long-term trends in cancer incidence. Due to severely delayed reporting by a hospital in Public Health District 7, case reporting is likely incomplete for this area, greatly impacting comparisons by health district and to a lesser degree, statewide trends.

Population Description

The population of the state of Idaho on July 1, 2022, was estimated to be 1,938,996 (975,291 males and 963,705 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:

Health District	Counties	Male	Female
District 1	Benewah, Bonner, Boundary, Kootenai, Shoshone	136,493	135,702
District 2	Clearwater, Latah, Lewis, Idaho, Nez Perce	58,347	55,883
District 3	Adams, Canyon, Gem, Owyhee, Payette, Washington	163,671	163,187
District 4	Ada, Boise, Elmore, Valley	287,965	281,240
District 5	Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka, Twin Falls	107,979	106,272
District 6	Bannock, Bear Lake, Bingham, Butte, Caribou, Franklin, Oneida, Power	92,769	91,503
District 7	Bonneville, Clark, Custer, Fremont, Jefferson, Lemhi, Madison, Teton	128,067	129,918

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

SUMMARY MEASURES OF CANCER BURDEN IN IDAHO — 2022

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, 2021 to 2022
All Sites	10,015	3,127	68.0	74.0	51,900	17,814	10.2	-1.8%
Bladder	456	91	73.0	78.0	2,600	323	8.7	2.4%
Brain	147	104	62.0	66.0	400	1,222	15.3	4.2%
Breast	1,610	247	66.0	74.0	10,500	1,650	12.1	5.6%
Cervix	58	19	49.5	59.0	400	278	15.4	16.5%
Colorectal	745	269	67.0	70.0	3,900	2,188	13.3	-11.9%
Corpus Uteri	308	35	64.0	71.0	2,100	201	8.0	4.8%
Esophagus	115	83	67.0	70.0	200	594	10.4	10.6%
Hodgkin Lymphoma	43	3	35.0	-	400	-	-	10.4%
Kidney and Renal Pelvis	368	84	69.0	76.0	2,400	350	8.5	-17.4%
Larynx	48	14	71.5	74.0	200	60	7.5	-14.9%
Leukemia	376	136	69.0	74.0	1,800	786	10.3	4.7%
Liver and Bile Duct	183	153	68.0	70.0	400	1,072	10.2	13.8%
Lung and Bronchus	976	581	73.0	75.0	2,700	2,276	7.3	-3.5%
Melanoma of Skin	786	60	67.0	70.5	4,600	522	14.1	5.2%
Myeloma	146	70	72.0	76.0	700	327	10.2	-7.4%
Non-Hodgkin Lymphoma	382	118	70.0	76.5	2,400	487	9.4	-11.0%
Oral Cavity and Pharynx	264	56	66.0	68.0	1,600	456	12.0	-5.5%
Ovary	115	79	64.0	72.0	500	418	8.9	-10.1%
Pancreas	308	244	72.0	73.0	500	1,256	8.5	-3.5%
Prostate	1,376	212	69.0	79.5	9,900	536	6.8	-1.2%
Stomach	122	36	67.0	72.5	300	290	13.2	19.0%
Testis	59	2	29.0	-	500	-	-	-15.0%
Thyroid	201	14	48.0	78.0	2,300	23	4.5	-10.0%

Notes:

Incident cases include all invasive and bladder in situ cases newly diagnosed among Idaho residents in 2022.

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. Beginning in 2022, low and high grade appendiceal mucinous neoplasms became reportable, which added about 25 in situ cases. 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 2022 (11,310), 10,015 cases (9,796 invasive and 219 bladder in situ) were used to calculate age-adjusted incidence rates. Of these 10,015 cases, 5,181 occurred among males and 4,834 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 2022. 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 help 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 estimates will impact the rates.

Stability of estimates: Age-adjusted incidence rates and age-specific rates based on small numbers (< 16) of cases will typically have large standard errors, i.e. standard error is ≥ 25% of the rate itself, and are likely to be unstable – meaning that rates will vary greatly from year to year with small changes in case counts.

Rate comparisons: When comparing rates among geographic areas (counties, health districts, or states), factors such as the absolute numbers of cases, rate stability, 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 2018–2022. 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, 2022, and who had a cancer diagnosis within the past 10 years.

Trend Analyses

Joinpoint Version 5.2.0 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. 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 health care providers who want to estimate a patient's chance of dying from cancer, dying from other competing causes of death, or surviving for a certain amount of time post diagnosis, e.g. five years.[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 surviving for a certain amount of time post diagnosis.[21]

Survival statistics published in this report include all invasive and bladder in situ cases diagnosed during 2015–2021 among patients aged 15–99 with follow-up/death ascertainment through December 31, 2022. (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 8.4.4) was used to perform survival calculations. Survival duration was calculated from complete dates and alive patients were censored on December 31, 2022, or at their date of last contact if before December 31, 2022. Survival calculations were performed using the actuarial method on monthly intervals. Using life tables matched to the patients by age, sex, year, race/ethnicity, and county-level socioeconomic status, the Ederer II approach was used to estimate expected survival.[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.

2022 SUMMARY ON ALL SITES COMBINED
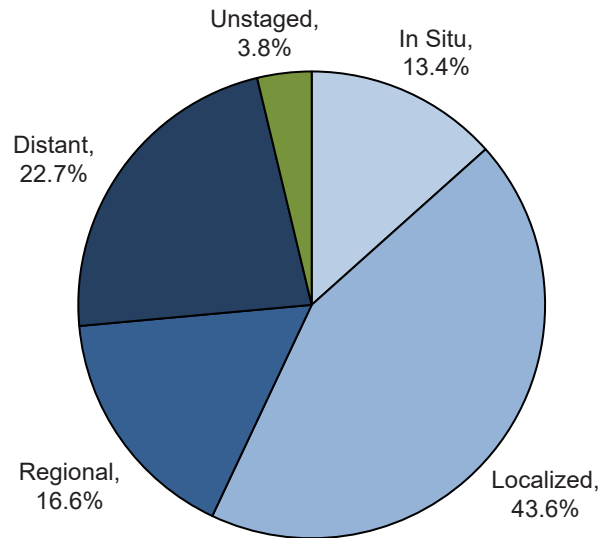**AND**
23 MOST COMMON SITES

ALL SITES

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	428.0	449.0	414.0
# of new invasive cases	9,796	4,999	4,797
# of new in situ cases	1,514	776	738
# of deaths	3,127	1,697	1,430

Total Cases by County

County	Cases	County	Cases	County	Cases
Ada	3,090	Cassia	98	Lewis	33
Adams	37	Clark	2	Lincoln	24
Bannock	511	Clearwater	96	Madison	106
Bear Lake	41	Custer	34	Minidoka	111
Benewah	68	Elmore	179	Nez Perce	286
Bingham	251	Franklin	84	Oneida	32
Blaine	244	Fremont	54	Owyhee	85
Boise	79	Gem	186	Payette	183
Bonner	414	Gooding	94	Power	35
Bonneville	484	Idaho	147	Shoshone	102
Boundary	81	Jefferson	134	Teton	58
Butte	27	Jerome	105	Twin Falls	539
Camas	6	Kootenai	1205	Valley	106
Canyon	1,423	Latah	199	Washington	97
Caribou	47	Lemhi	93		

Stage at Diagnosis - All Sites

- Unstaged, 3.8%
- In Situ, 13.4%
- Distant, 22.7%
- Regional, 16.6%
- Localized, 43.6%

## 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:	423.8
95% confidence interval on the mean age-adjusted incidence rate:	392.1–455.4
Median age-adjusted incidence rate of health districts:	433.6
Range of age-adjusted incidence rate for health districts:	345.5–486.1
USCS rate (2021, all races):	439.1

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 Districts 3 and 4 had statistically significantly more cases of cancer than expected based upon rates for the remainder of Idaho and Health Districts 1 and 7 had statistically significantly fewer. (See Section V for data.)

**State All Cancer Sites Combined
Age-specific Rates 2018–2022**
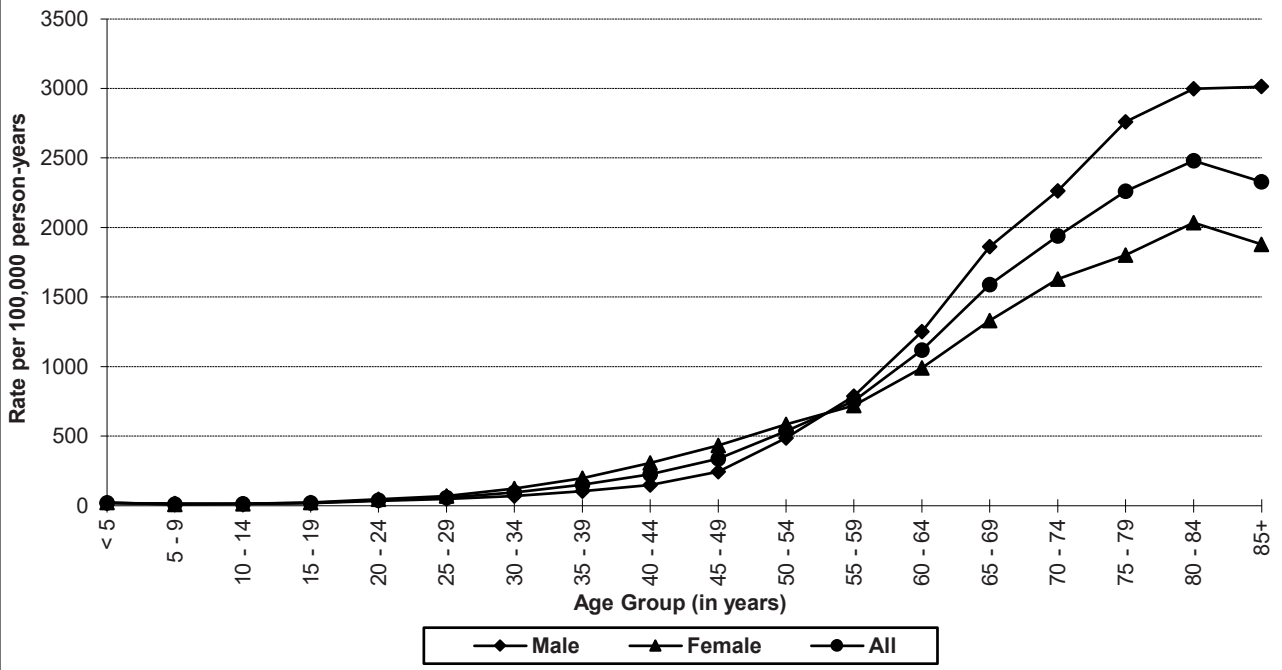
**All Sites Combined Cancer Incidence
Age-adjusted Rates by Health District**
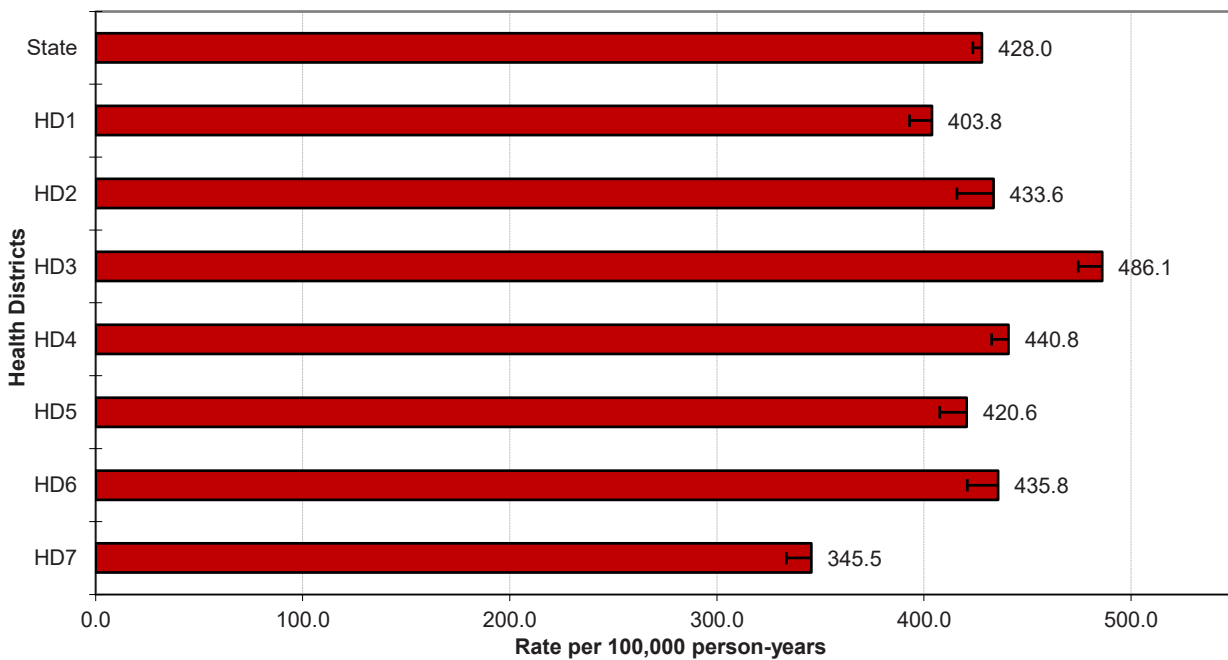
BLADDER

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	19.0	32.7	6.9
# of new invasive cases	237	187	50
# of new in situ cases	219	182	37
# of deaths	91	73	18

Stage at Diagnosis - Bladder

- In Situ, 48.0%
- Localized, 36.2%
- Regional, 6.1%
- Distant, 6.8%
- Unstaged, 2.9%

Total Cases by County

County		County		County	
Ada	117	Cassia	1	Lewis	2
Adams	2	Clark	0	Lincoln	2
Bannock	19	Clearwater	4	Madison	1
Bear Lake	2	Custer	1	Minidoka	5
Benewah	2	Elmore	6	Nez Perce	11
Bingham	9	Franklin	5	Oneida	2
Blaine	6	Fremont	3	Owyhee	5
Boise	4	Gem	9	Payette	4
Bonner	20	Gooding	3	Power	0
Bonneville	21	Idaho	10	Shoshone	5
Boundary	2	Jefferson	3	Teton	1
Butte	2	Jerome	2	Twin Falls	27
Camas	1	Kootenai	50	Valley	5
Canyon	68	Latah	8	Washington	3
Caribou	1	Lemhi	2		

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 than 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 increased risk of bladder cancer.

Special Notes

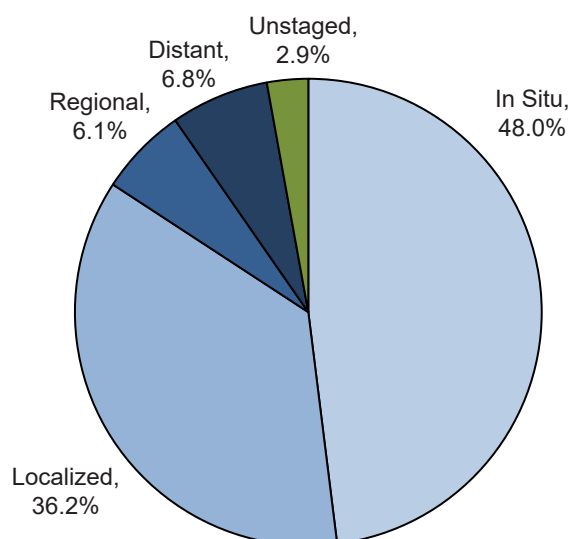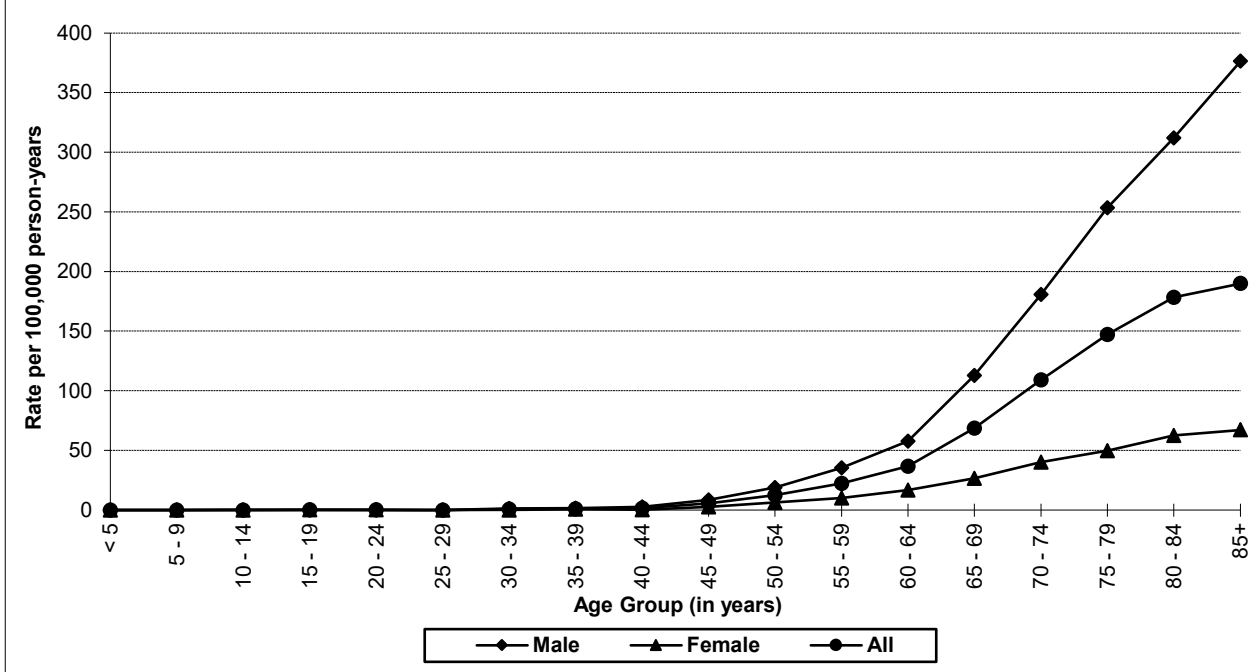|	
Mean age-adjusted incidence rate across health districts:	18.9
95% confidence interval on the mean age-adjusted incidence rate:	16.4–21.4
Median age-adjusted incidence rate of health districts:	19.0
Range of age-adjusted incidence rate for health districts:	12.5–23.2
USCS rate (2021, all races):	18.1

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 3 had statistically significantly more cases of bladder cancer than expected based upon rates for the remainder of Idaho and Health District 7 had statistically significantly fewer. (See Section V for data.)

State Bladder Cancer Incidence
Age-specific Rates 2018–2022

Bladder Cancer Incidence
Age-adjusted Rates by Health District

Health District	Rate per 100,000 person-years
State	19.0
HD1	19.5
HD2	21.5
HD3	23.2
HD4	18.7
HD5	17.7
HD6	19.0
HD7	12.5

BRAIN

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	6.6	7.5	5.8
# of new invasive cases	147	83	64
# of new in situ cases	0	0	0
# of deaths	104	56	48

Total Cases by County

County	#	County	#	County	#
Ada	39	Cassia	1	Lewis	-
Adams	1	Clark	-	Lincoln	-
Bannock	3	Clearwater	2	Madison	1
Bear Lake	-	Custer	1	Minidoka	4
Benewah	2	Elmore	4	Nez Perce	5
Bingham	4	Franklin	1	Oneida	2
Blaine	2	Fremont	2	Owyhee	3
Boise	2	Gem	2	Payette	3
Bonner	6	Gooding	4	Power	1
Bonneville	7	Idaho	-	Shoshone	-
Boundary	1	Jefferson	3	Teton	-
Butte	-	Jerome	2	Twin Falls	5
Camas	-	Kootenai	13	Valley	1
Canyon	19	Latah	1	Washington	-
Caribou	-	Lemhi	-		

Stage at Diagnosis - Brain

Localized, 83.7%
Regional, 11.6%
Distant, 2.0%
Unstaged, 2.7%

Factors Associated with Cancer Incidence

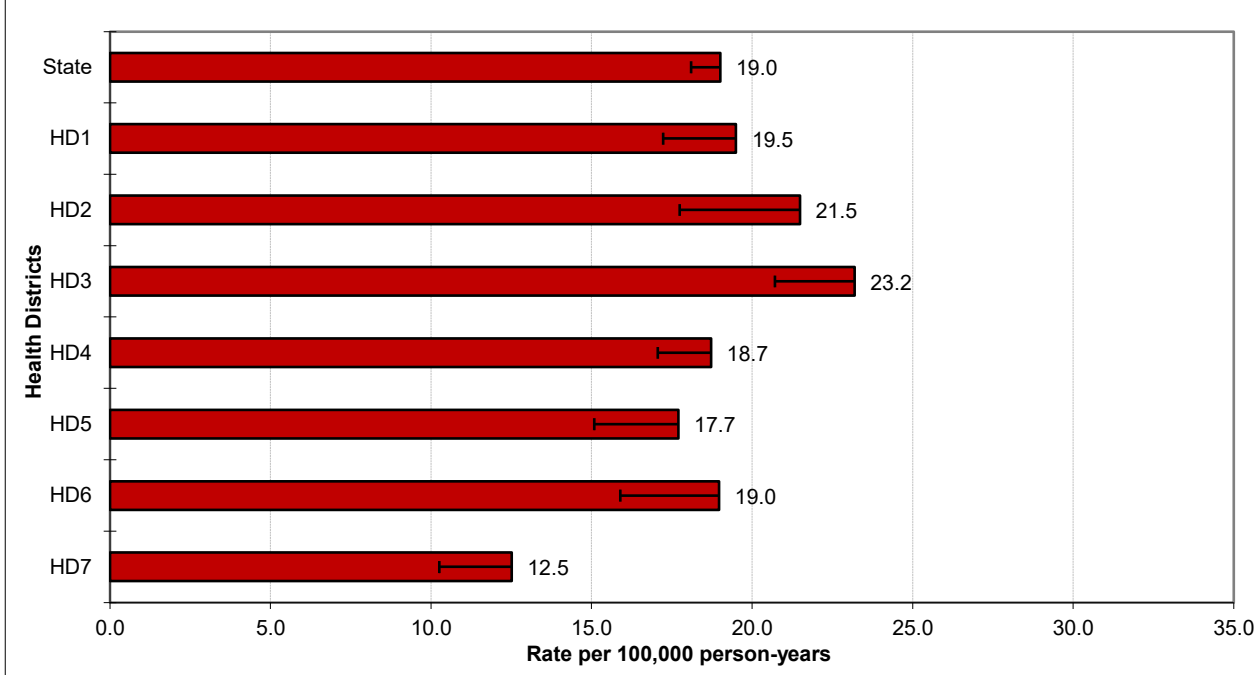|	
Age	Among children 0–14 years old, brain and central nervous system tumors are the second most common cancer. Incidence demonstrates a small peak in ages 1–9, a decrease and subsequent gradual rise through young adulthood, a steeper increase from age 50 onwards, and a second peak from ages 75–84.
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:	6.3
95% confidence interval on the mean age-adjusted incidence rate:	5.7–7.0
Median age-adjusted incidence rate of health districts:	6.1
Range of age-adjusted incidence rate for health districts:	5.2–7.3
USCS rate (2021, all races):	5.7

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 2018–2022

Brain Cancer Incidence
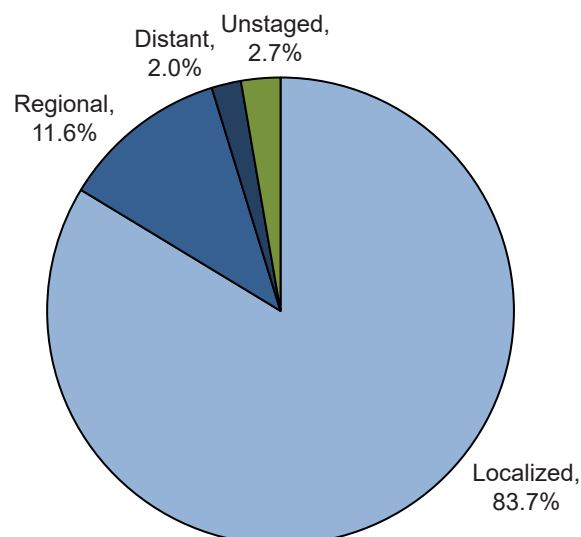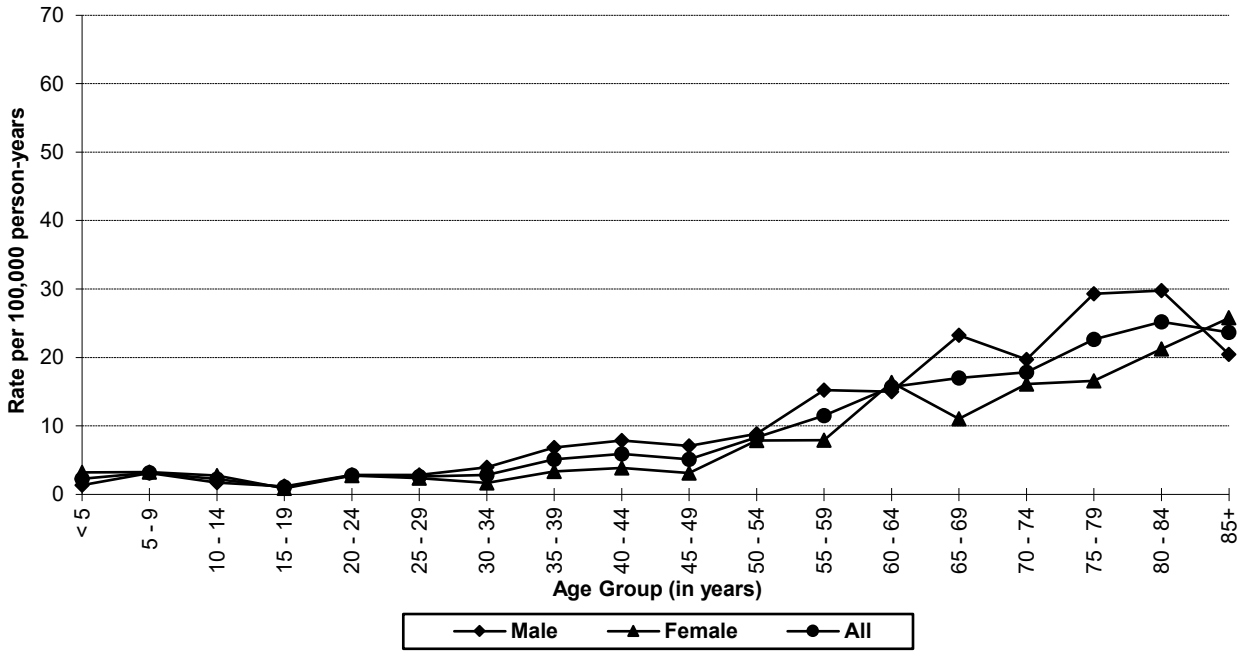## Age-adjusted Rates by Health District
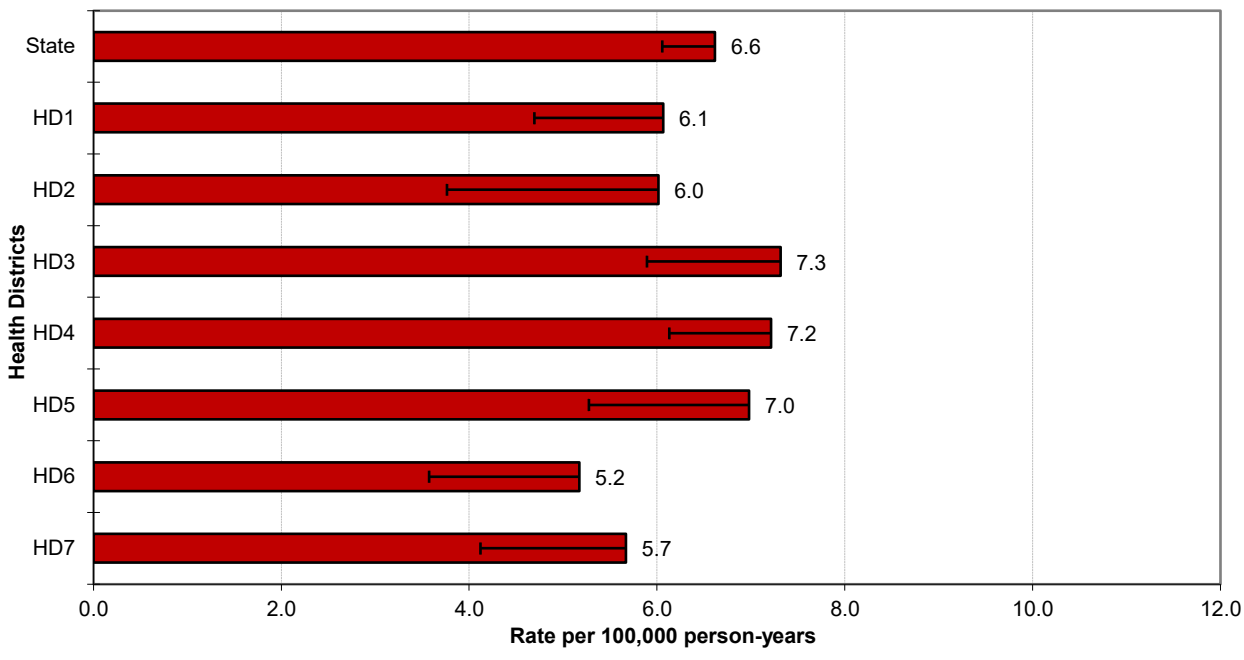
BRAIN & OTHER CNS NON-MALIGNANT

Incidence Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	15.8	10.0	21.4
# of new cases	349	110	239

Total Cases by County

County		County		County	
Ada	105	Cassia	5	Lewis	-
Adams	-	Clark	-	Lincoln	1
Bannock	25	Clearwater	1	Madison	3
Bear Lake	-	Custer	1	Minidoka	6
Benewah	1	Elmore	3	Nez Perce	5
Bingham	5	Franklin	2	Oneida	-
Blaine	8	Fremont	6	Owyhee	3
Boise	3	Gem	2	Payette	10
Bonner	12	Gooding	-	Power	2
Bonneville	20	Idaho	1	Shoshone	-
Boundary	4	Jefferson	4	Teton	2
Butte	-	Jerome	1	Twin Falls	11
Camas	-	Kootenai	23	Valley	3
Canyon	54	Latah	5	Washington	6
Caribou	3	Lemhi	3		

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 females have higher rates than males.
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 reported on data submitted from eighteen state central cancer registries, including Idaho.

Data Summary

Mean age-adjusted incidence rate across health districts:	15.1
95% confidence interval on the mean age-adjusted incidence rate:	12.0–18.1
Median age-adjusted incidence rate of health districts:	15.5
Range of age-adjusted incidence rate for health districts:	8.9–20.6
USCS rate (2021, all races):	13.4

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. Health District 3 had statistically significantly more cases of non-malignant brain and other central nervous system tumors than expected based upon rates for the remainder of Idaho and Health Districts 1 and 2 had statistically significantly fewer. (See Section V for data.)

State Brain & other CNS Non-Malignant Incidence
Age-specific Rates 2018–2022
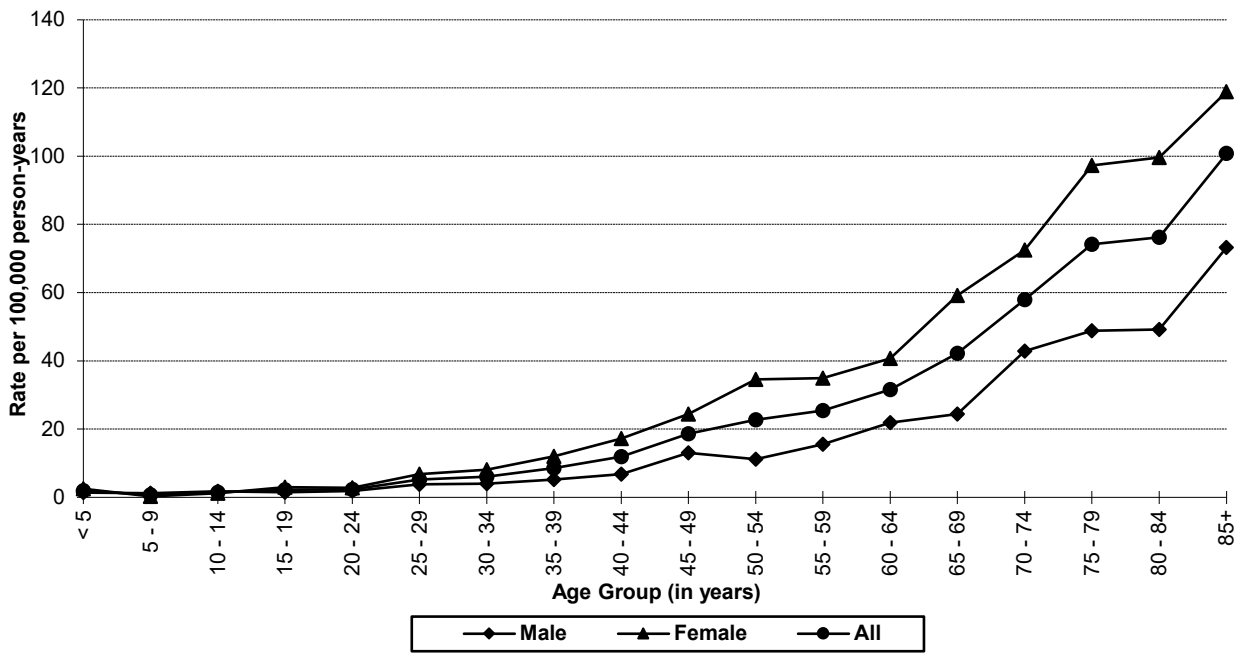
Male ◆ **Female** ▲ **All** ●

Brain & other CNS non-Malignant Incidence
Age-adjusted Rates by Health District

Health District	Rate per 100,000 person-years
State	15.8
HD1	11.6
HD2	8.9
HD3	20.6
HD4	17.6
HD5	13.2
HD6	18.0
HD7	15.5

BREAST

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	70.3	1.3	136.9
# of new invasive cases	1,610	14	1,596
# of new in situ cases	314	1	313
# of deaths	247	0	247

Total Cases by County

County	Cases	County	Cases	County	Cases
Ada	573	Cassia	10	Lewis	8
Adams	6	Clark	0	Lincoln	0
Bannock	85	Clearwater	9	Madison	18
Bear Lake	8	Custer	9	Minidoka	19
Benewah	9	Elmore	30	Nez Perce	55
Bingham	39	Franklin	18	Oneida	5
Blaine	30	Fremont	9	Owyhee	16
Boise	18	Gem	37	Payette	39
Bonner	71	Gooding	11	Power	3
Bonneville	90	Idaho	18	Shoshone	17
Boundary	9	Jefferson	22	Teton	8
Butte	9	Jerome	20	Twin Falls	81
Camas	1	Kootenai	198	Valley	11
Canyon	231	Latah	41	Washington	18
Caribou	4	Lemhi	11		

Stage at Diagnosis - Breast

- Distant, 4.3%
- Unstaged, 0.8%
- In Situ, 16.3%
- Regional, 20.4%
- Localized, 58.2%

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.
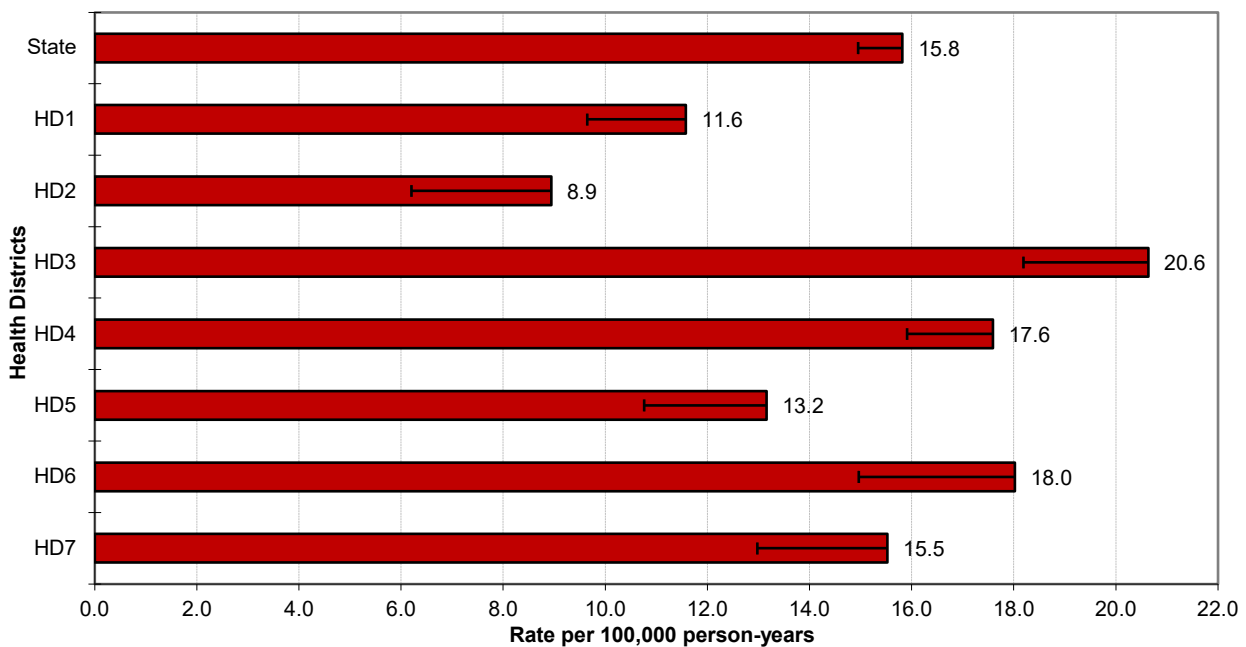

Data Summary

Mean age-adjusted incidence rate across health districts:	135.5
95% confidence interval on the mean age-adjusted incidence rate:	123.1–147.9
Median age-adjusted incidence rate of health districts:	133.6
Range of age-adjusted incidence rate for health districts:	112.0–157.7
USCS rate (2021, female, all races):	133.8

During 2022, 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 4 had statistically significantly more cases of invasive breast 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 Female Breast Cancer Incidence
Age-specific Rates 2018–2022
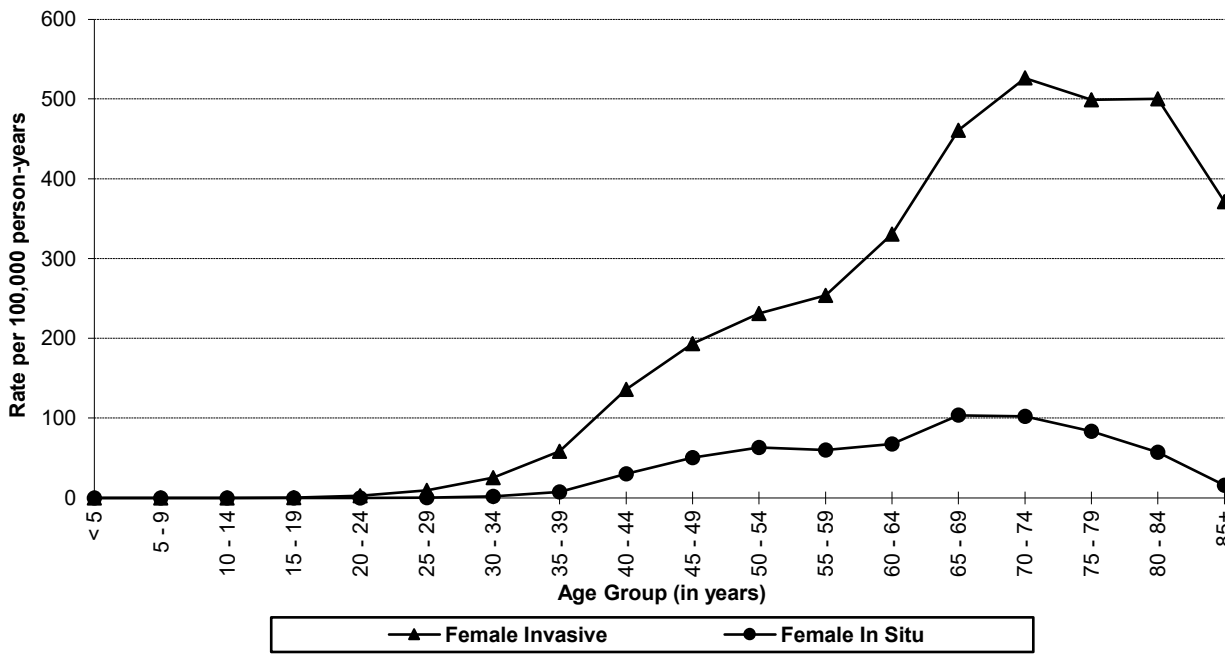
Female Breast Cancer Incidence
Age-adjusted Rates by Health District
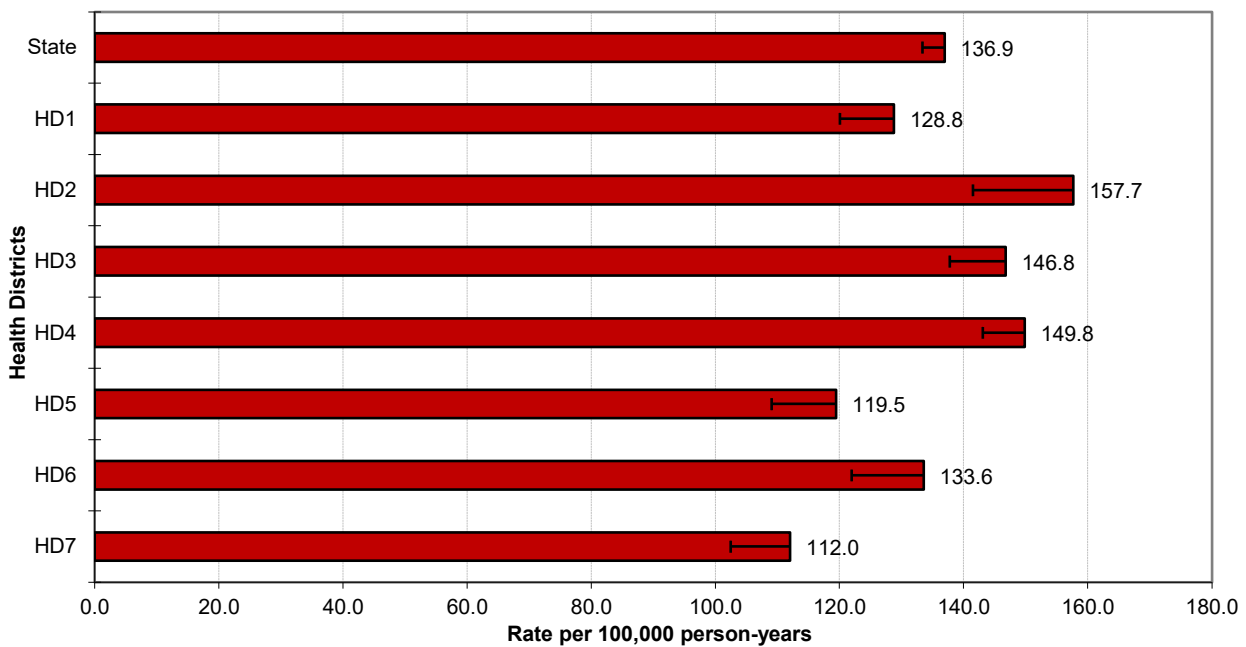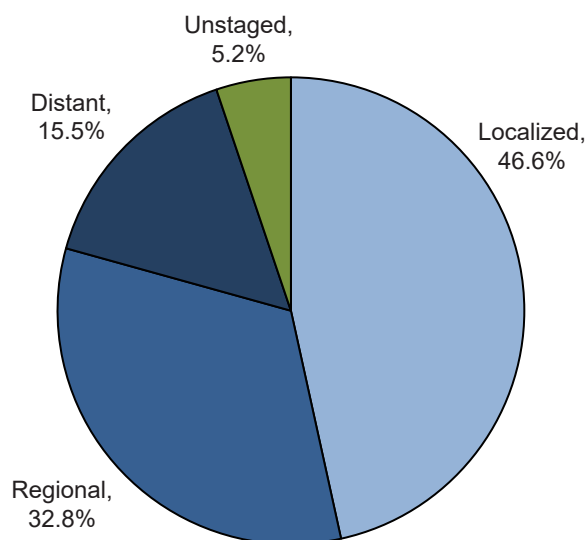
CERVIX

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	-	-	6.2
# of new invasive cases	-	-	58
# of new in situ cases	-	-	n/a
# of deaths	-	-	19

Stage at Diagnosis - Cervix

Unstaged, 5.2%
Distant, 15.5%
Localized, 46.6%
Regional, 32.8%

Total Cases by County

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

Factors Associated with Cancer Incidence

Age — Among women > 19 years, cervical cancer incidence increases sharply and steadily until it peaks among ages 40-54. 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:	6.4
95% confidence interval on the mean age-adjusted incidence rate:	5.5–7.3
Median age-adjusted incidence rate of health districts:	6.2
Range of age-adjusted incidence rate for health districts:	4.6–8.3
USCS rate (2021, all races):	7.4

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 40–44-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 2018–2022**
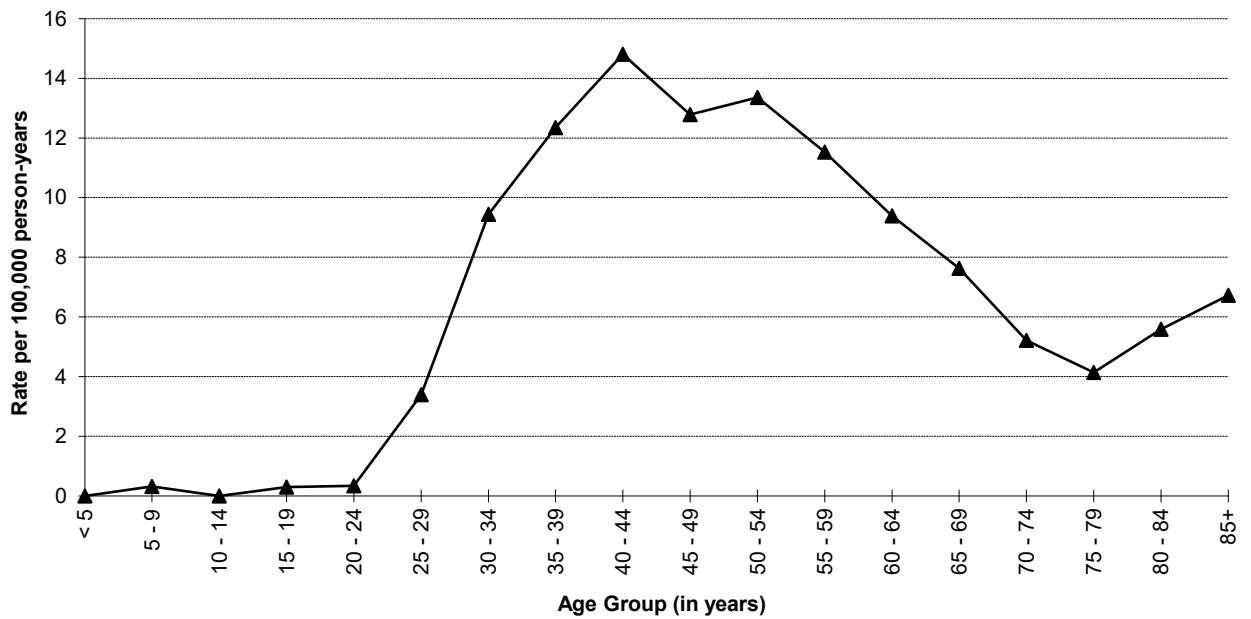
**Cervical Cancer Incidence
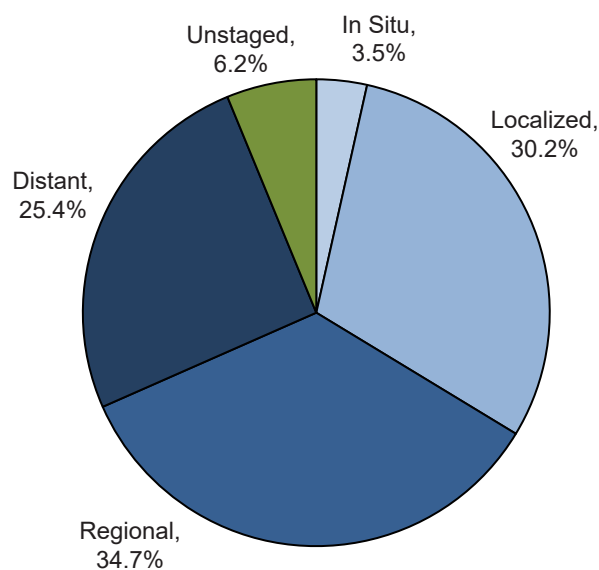Age-adjusted Rates by Health District**
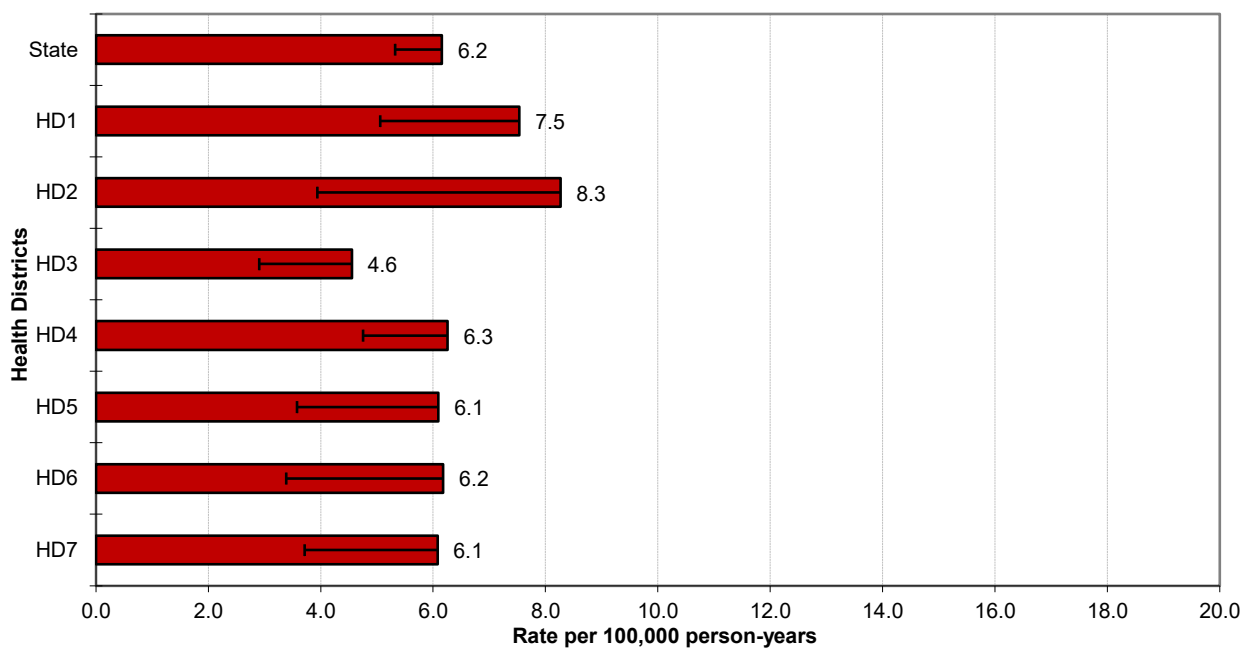
COLORECTAL

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	33.4	34.4	32.4
# of new invasive cases	745	385	360
# of new in situ cases	27	13	14
# of deaths	269	147	122

Total Cases by County

County		County		County	
Ada	167	Cassia	7	Lewis	2
Adams	3	Clark	-	Lincoln	2
Bannock	34	Clearwater	8	Madison	11
Bear Lake	2	Custer	2	Minidoka	8
Benewah	7	Elmore	19	Nez Perce	17
Bingham	24	Franklin	4	Oneida	2
Blaine	15	Fremont	1	Owyhee	2
Boise	6	Gem	13	Payette	22
Bonner	32	Gooding	8	Power	3
Bonneville	32	Idaho	10	Shoshone	14
Boundary	6	Jefferson	10	Teton	3
Butte	-	Jerome	5	Twin Falls	50
Camas	-	Kootenai	102	Valley	5
Canyon	86	Latah	16	Washington	8
Caribou	2	Lemhi	2		

Stage at Diagnosis - Colorectal

- Unstaged, 6.2%
- In Situ, 3.5%
- Localized, 30.2%
- Distant, 25.4%
- Regional, 34.7%

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:	33.7
95% confidence interval on the mean age-adjusted incidence rate:	29.7–37.7
Median age-adjusted incidence rate of health districts:	34.6
Range of age-adjusted incidence rate for health districts:	24.3–40.7
USCS rate (2021, all races):	36.0

Although colorectal cancer rates are declining among adults 50 years and older, colorectal cancer rates are increasing among adults less than 50. Health District 1 had statistically significantly more cases of colorectal cancer than expected based upon rates for the remainder of Idaho and Health Districts 4 and 7 had significantly fewer. (See Section V for data.)

State Colorectal Cancer Incidence
Age-specific Rates 2018–2022
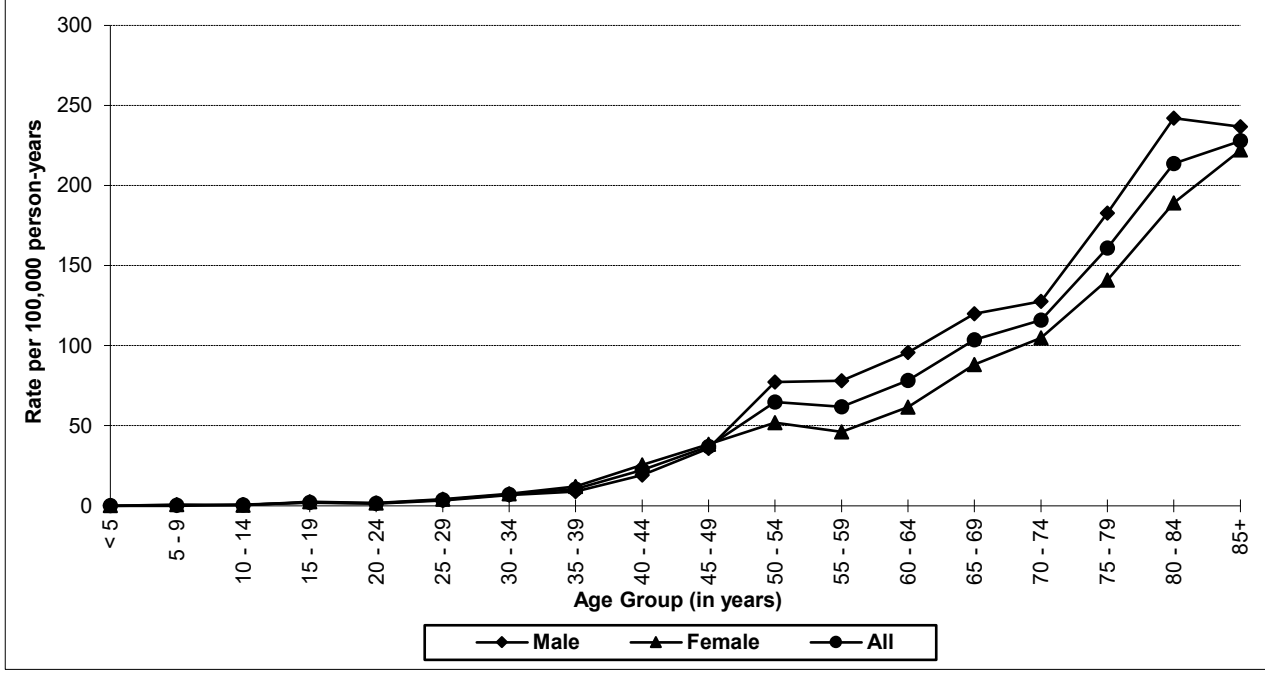
Colorectal Cancer Incidence
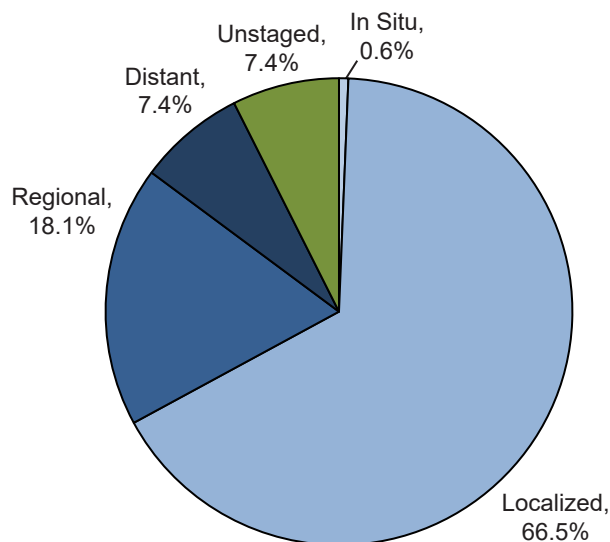## Age-adjusted Rates by Health District
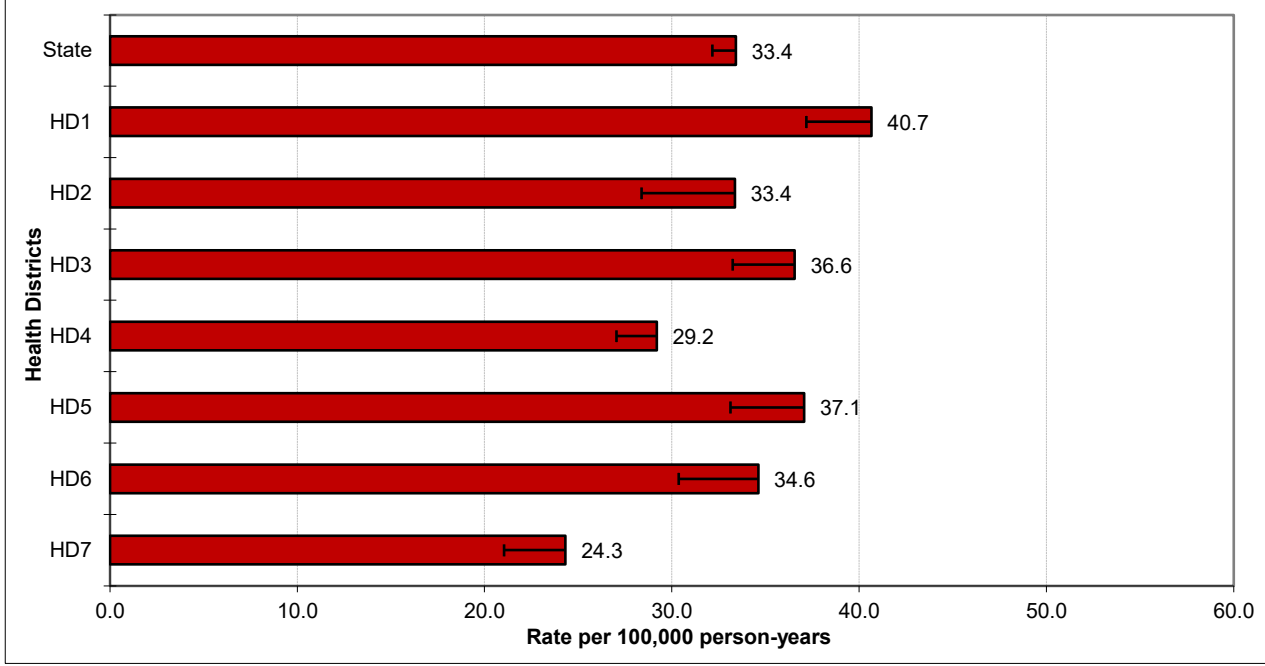
CORPUS UTERI

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	-	-	25.5
# of new invasive cases	-	-	308
# of new in situ cases	-	-	2
# of deaths	-	-	35

Stage at Diagnosis - Corpus Uteri

In Situ, 0.6%
Unstaged, 7.4%
Distant, 7.4%
Regional, 18.1%
Localized, 66.5%

Total Cases by County

County		County		County	
Ada	75	Cassia	4	Lewis	1
Adams	-	Clark	1	Lincoln	-
Bannock	12	Clearwater	3	Madison	1
Bear Lake	-	Custer	-	Minidoka	3
Benewah	4	Elmore	5	Nez Perce	6
Bingham	9	Franklin	-	Oneida	2
Blaine	9	Fremont	1	Owyhee	1
Boise	3	Gem	2	Payette	6
Bonner	9	Gooding	3	Power	-
Bonneville	16	Idaho	4	Shoshone	3
Boundary	4	Jefferson	3	Teton	2
Butte	-	Jerome	7	Twin Falls	18
Camas	-	Kootenai	24	Valley	2
Canyon	51	Latah	9	Washington	3
Caribou	1	Lemhi	3		

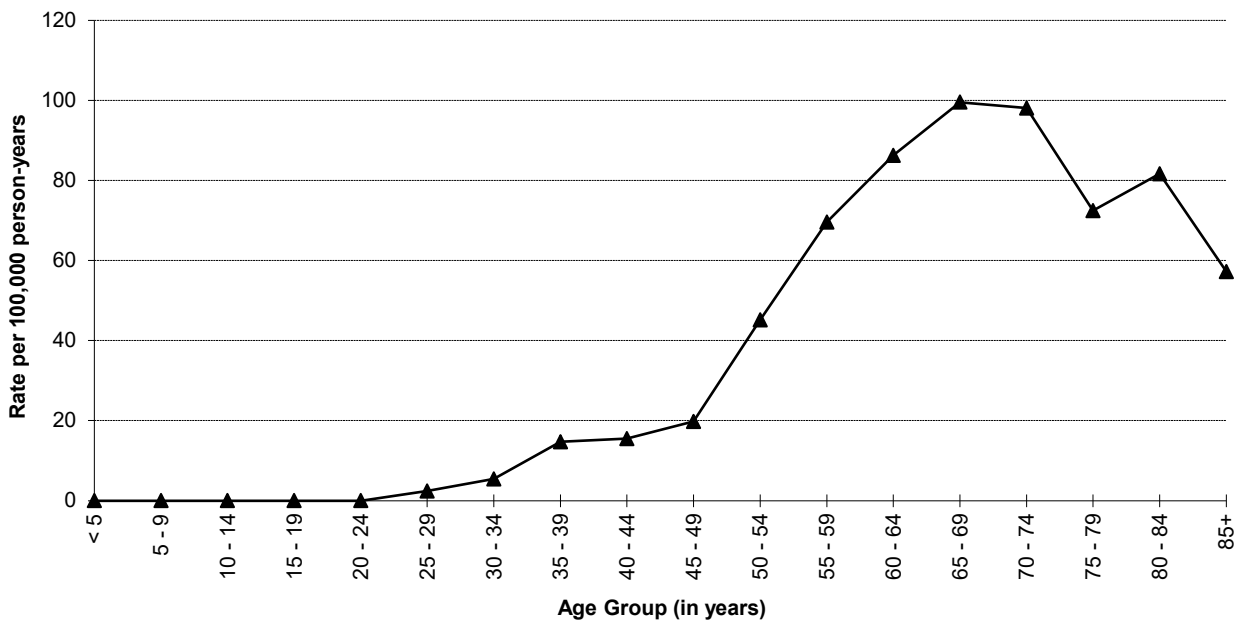## Factors Associated with Cancer Incidence

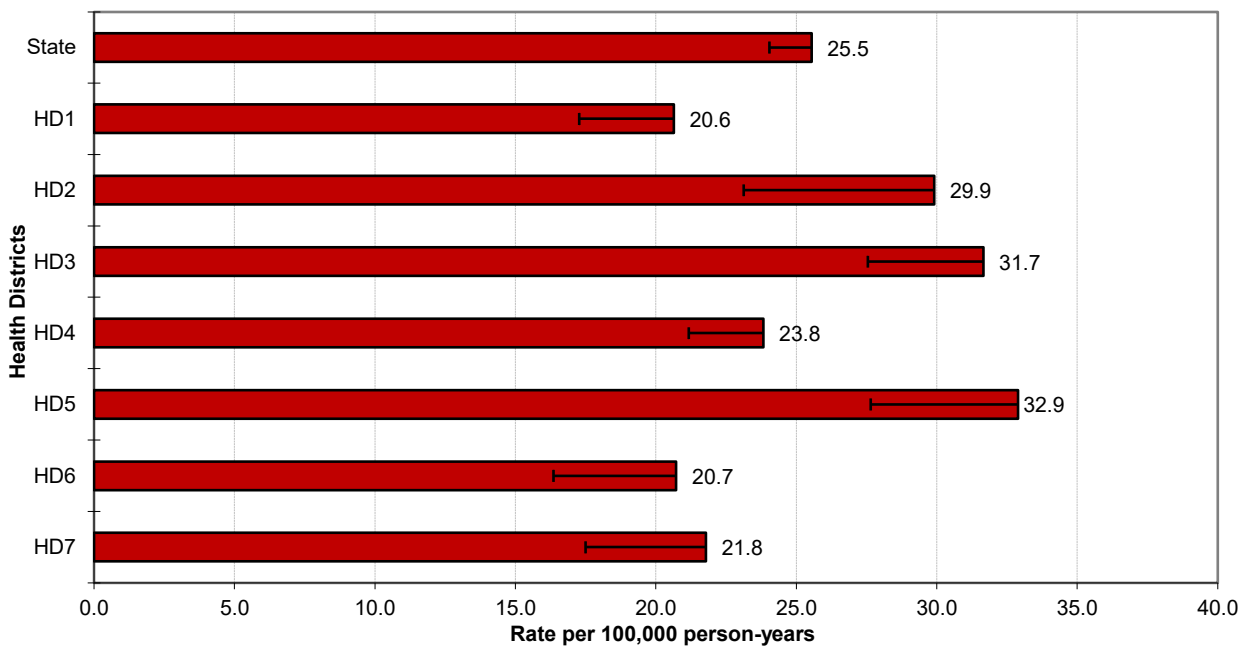|	
Age	Occurs predominantly after menopause, with incidence rates above 80 per 100,000 among persons aged 60–79.
Race/Ethnicity	Among adult females, Whites and Asians/Pacific Islanders have the highest incidence until age 54, when rates in Asians/Pacific Islanders decrease. Blacks have the highest incidence 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:	21.9–29.9
Median age-adjusted incidence rate of health districts:	23.8
Range of age-adjusted incidence rate for health districts:	20.6–32.9
USCS rate (2021, all races):	28.3

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

State Corpus Uteri Cancer Incidence
Age-specific Rates 2018–2022

Y-axis: Rate per 100,000 person-years (0 to 120)
X-axis: Age Group (in 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+

Corpus Uteri Cancer Incidence
Age-adjusted Rates by Health District

Health District	Rate per 100,000 person-years
State	25.5
HD1	20.6
HD2	29.9
HD3	31.7
HD4	23.8
HD5	32.9
HD6	20.7
HD7	21.8

ESOPHAGUS

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	4.8	7.6	2.1
# of new invasive cases	115	91	24
# of new in situ cases	0	0	0
# of deaths	83	72	11

Stage at Diagnosis - Esophagus

Unstaged, 9.6%
Localized, 20.0%
Regional, 29.6%
Distant, 40.9%

Total Cases by County

County		County		County	
Ada	21	Cassia	1	Lewis	0
Adams	1	Clark	-	Lincoln	0
Bannock	8	Clearwater	2	Madison	1
Bear Lake	1	Custer	-	Minidoka	2
Benewah	-	Elmore	5	Nez Perce	4
Bingham	2	Franklin	1	Oneida	1
Blaine	3	Fremont	1	Owyhee	4
Boise	-	Gem	2	Payette	3
Bonner	2	Gooding	-	Power	0
Bonneville	5	Idaho	3	Shoshone	4
Boundary	1	Jefferson	-	Teton	0
Butte	1	Jerome	1	Twin Falls	4
Camas	-	Kootenai	15	Valley	0
Canyon	13	Latah	-	Washington	1
Caribou	1	Lemhi	1		

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:	4.9
95% confidence interval on the mean age-adjusted incidence rate:	3.9–5.9
Median age-adjusted incidence rate of health districts:	5.3
Range of age-adjusted incidence rate for health districts:	3.1–6.8
USCS rate (2021, all races):	4.4

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 75-79 for males and 80-84 for 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 2018–2022

Esophageal Cancer Incidence
Age-adjusted Rates by Health District

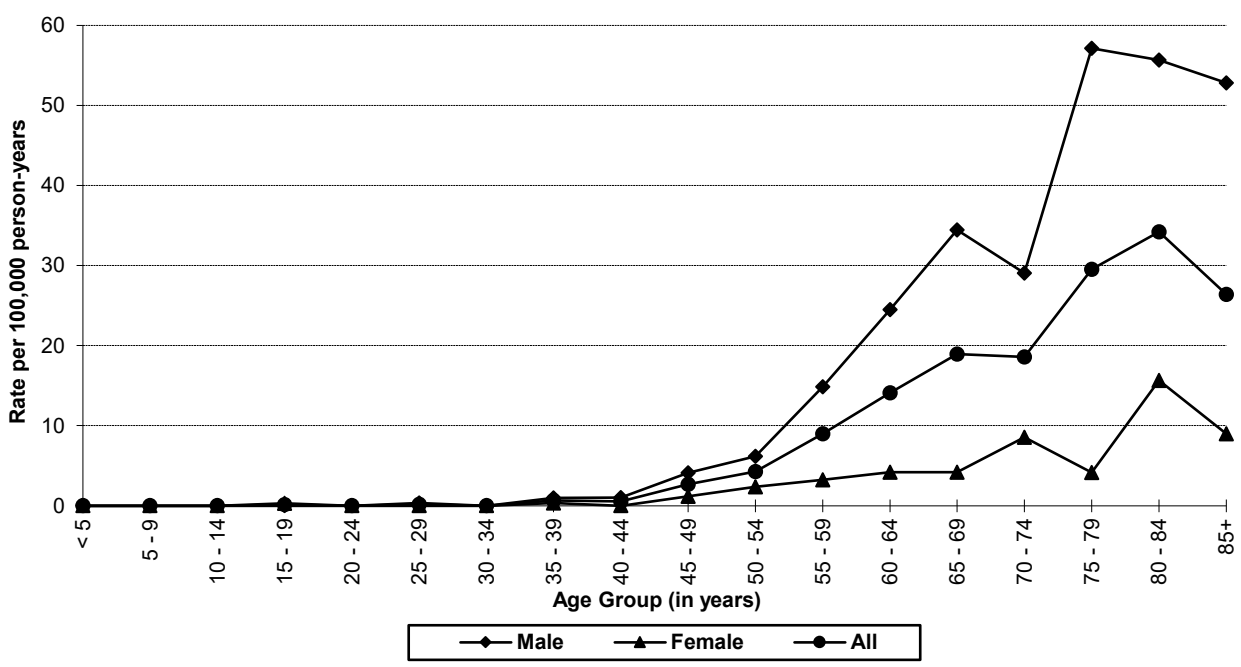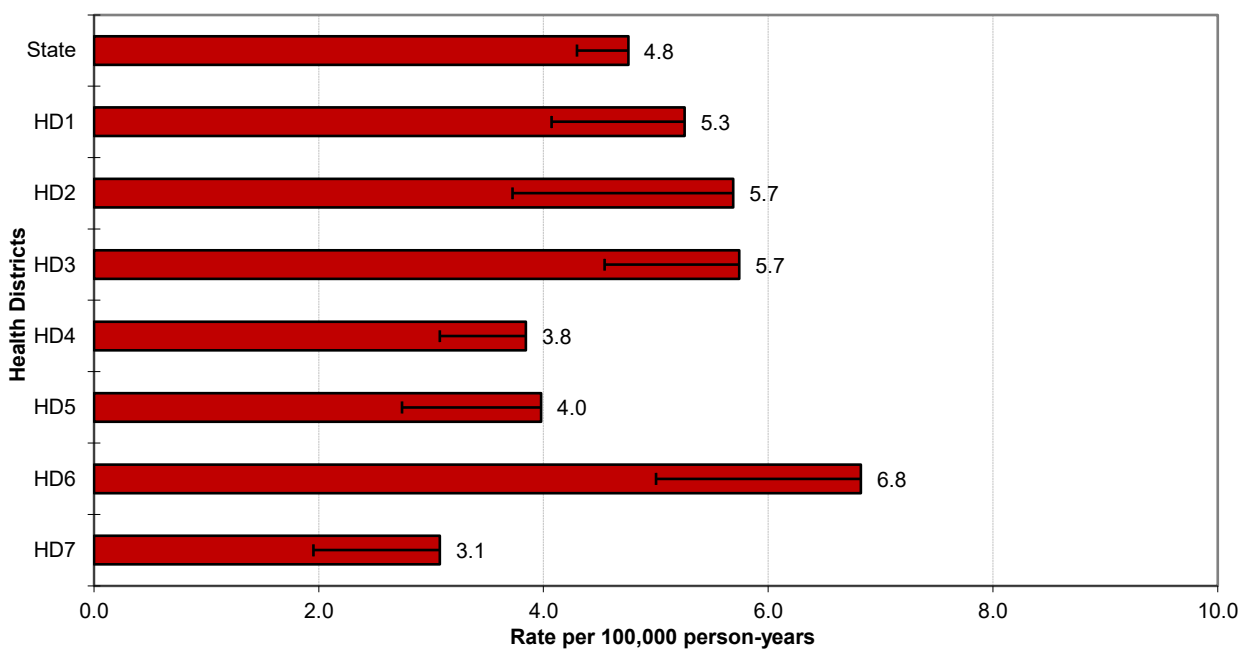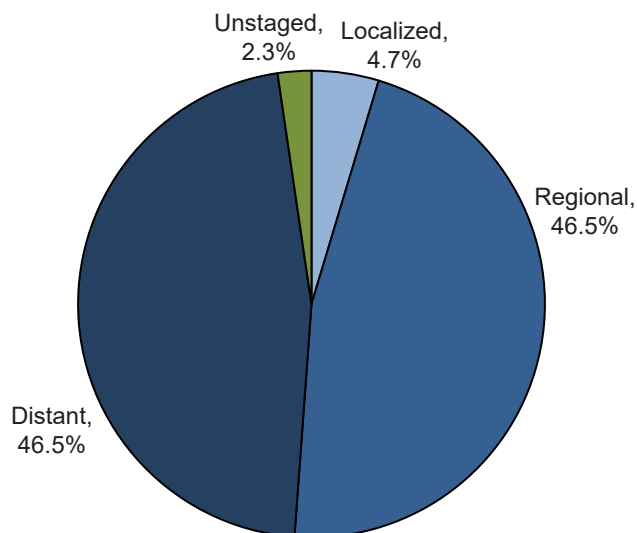# HODGKIN LYMPHOMA

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	2.3	2.9	1.7
# of new invasive cases	43	27	16
# of new in situ cases	0	0	0
# of deaths	3	2	1

Total Cases by County

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

Stage at Diagnosis - Hodgkin Lymphoma

- Unstaged, 2.3%
- Localized, 4.7%
- Regional, 46.5%
- Distant, 46.5%

## 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:	2.3
95% confidence interval on the mean age-adjusted incidence rate:	1.0–3.5
Median age-adjusted incidence rate of health districts:	1.8
Range of age-adjusted incidence rate for health districts:	0.8–5.9
USCS rate (2021, all races):	2.4

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. Health District 6 had statistically significantly more 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 2018–2022
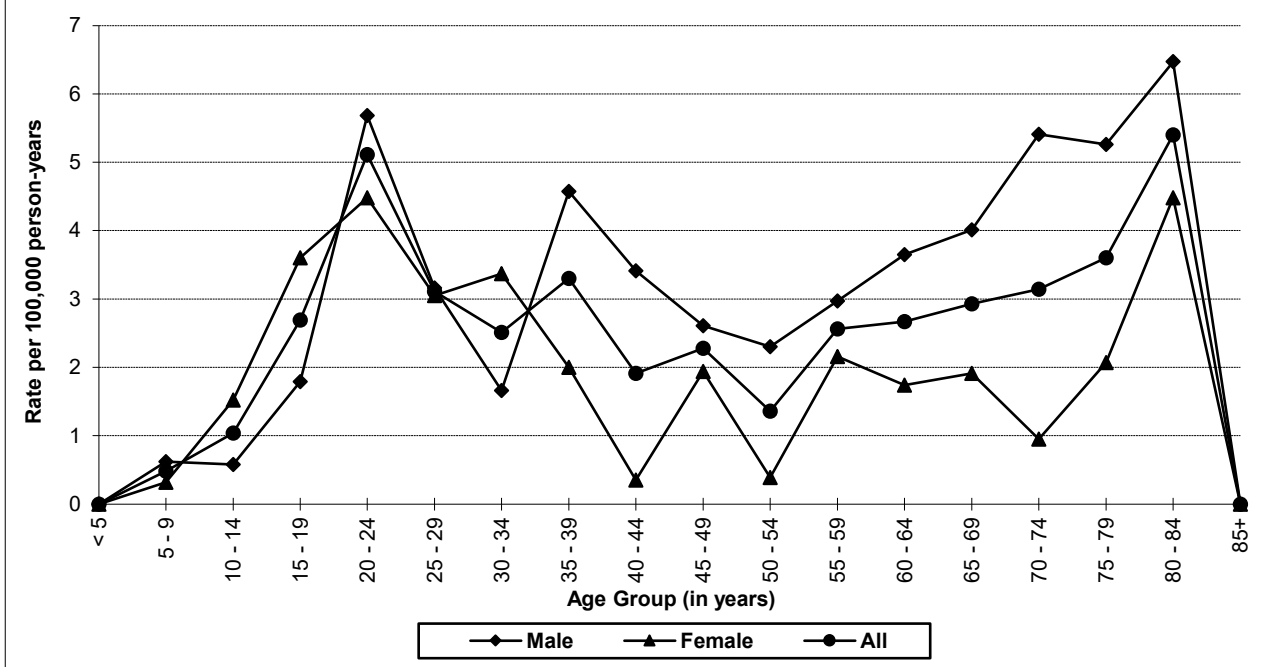
Hodgkin Lymphoma Incidence
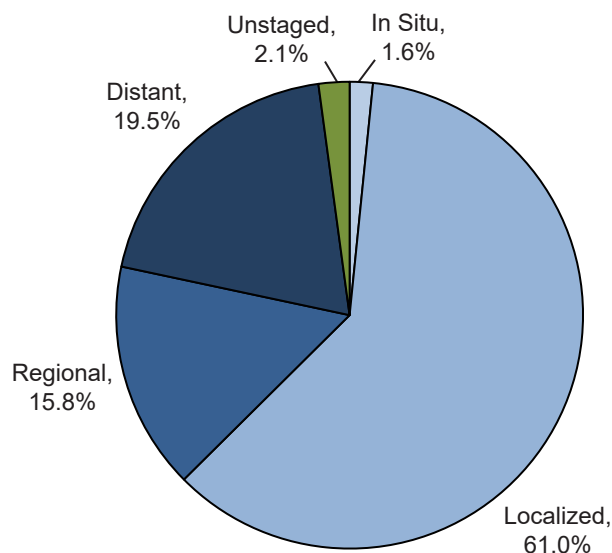## Age-adjusted Rates by Health District
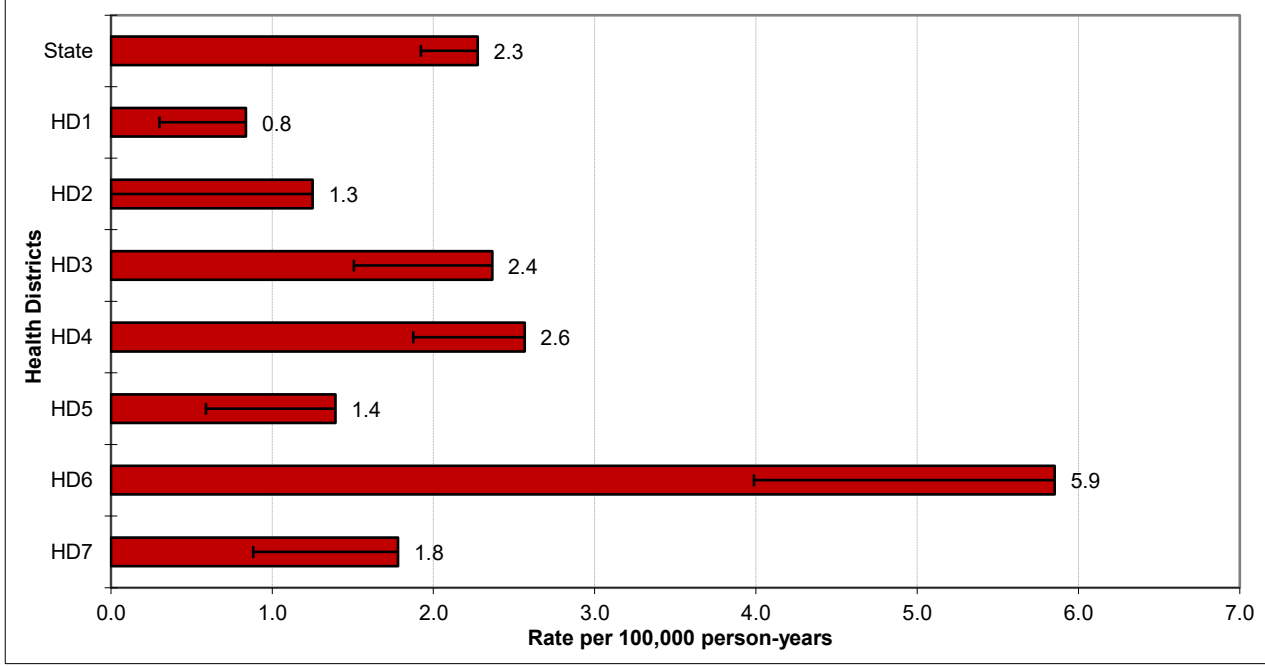
KIDNEY AND RENAL PELVIS

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	15.3	21.4	9.6
# of new invasive cases	368	248	120
# of new in situ cases	6	3	3
# of deaths	84	51	33

Total Cases by County

County		County		County	
Ada	95	Cassia	9	Lewis	3
Adams	2	Clark	-	Lincoln	1
Bannock	18	Clearwater	5	Madison	3
Bear Lake	-	Custer	3	Minidoka	2
Benewah	2	Elmore	8	Nez Perce	10
Bingham	7	Franklin	2	Oneida	-
Blaine	1	Fremont	5	Owyhee	-
Boise	2	Gem	5	Payette	5
Bonner	13	Gooding	4	Power	4
Bonneville	17	Idaho	5	Shoshone	1
Boundary	4	Jefferson	5	Teton	3
Butte	-	Jerome	4	Twin Falls	26
Camas	-	Kootenai	30	Valley	4
Canyon	52	Latah	5	Washington	3
Caribou	3	Lemhi	3		

Stage at Diagnosis - Kidney and Renal Pelvis

Unstaged, 2.1%
In Situ, 1.6%
Distant, 19.5%
Regional, 15.8%
Localized, 61.0%

## 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:	15.7
95% confidence interval on the mean age-adjusted incidence rate:	14.0–17.3
Median age-adjusted incidence rate of health districts:	15.5
Range of age-adjusted incidence rate for health districts:	11.4–18.3
USCS rate (2021, all races):	17.0

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 District 1 had statistically significantly fewer cases of kidney cancer than expected based upon rates for the remainder of Idaho. (See Section V for data.)

**State Kidney & Renal Pelvis Cancer Incidence
Age-specific Rates 2018–2022**
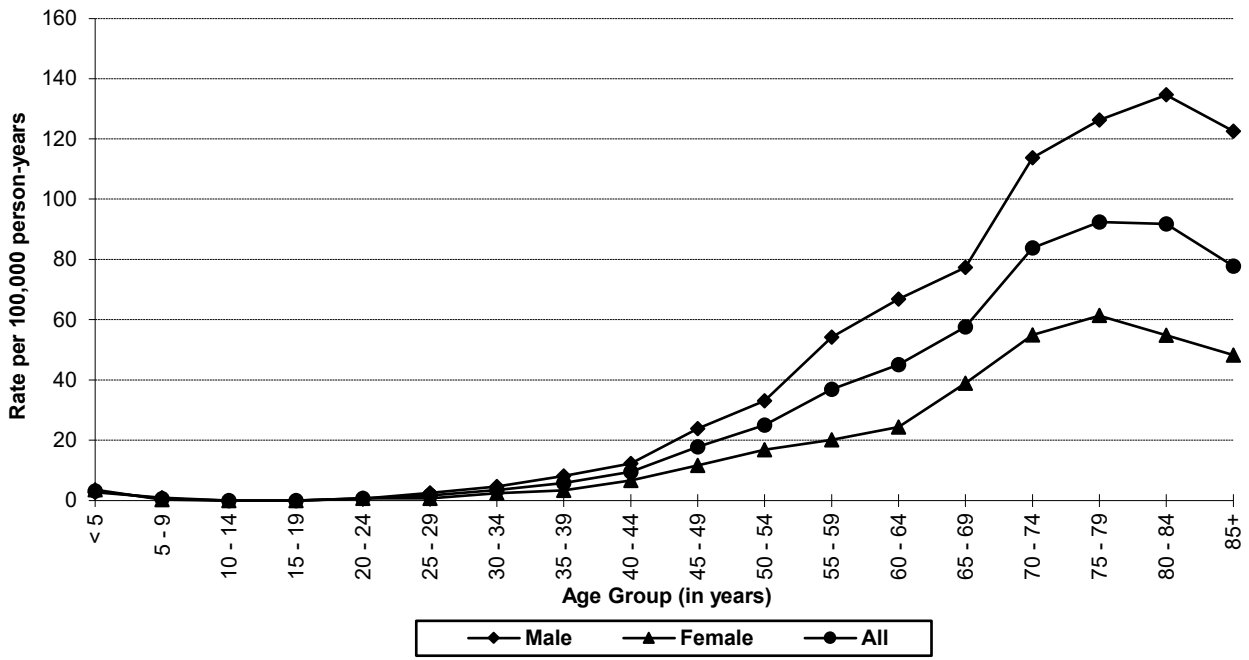
**Kidney & Renal Pelvis Cancer Incidence
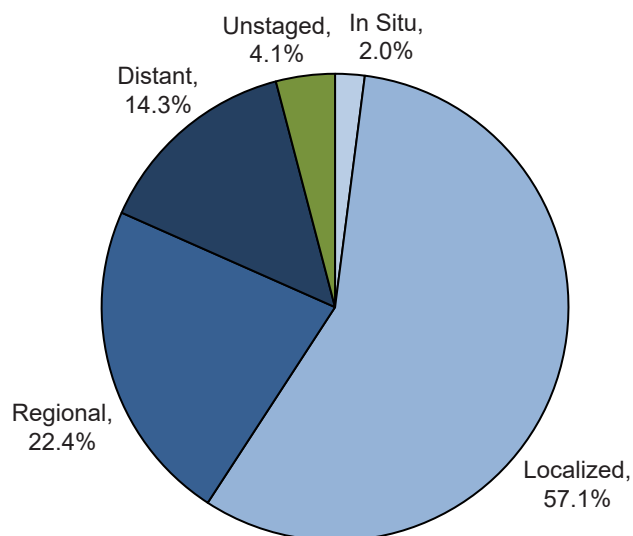Age-adjusted Rates by Health District**

Health District	Rate
State	15.3
HD1	11.4
HD2	18.3
HD3	17.2
HD4	14.9
HD5	17.3
HD6	15.5
HD7	15.0
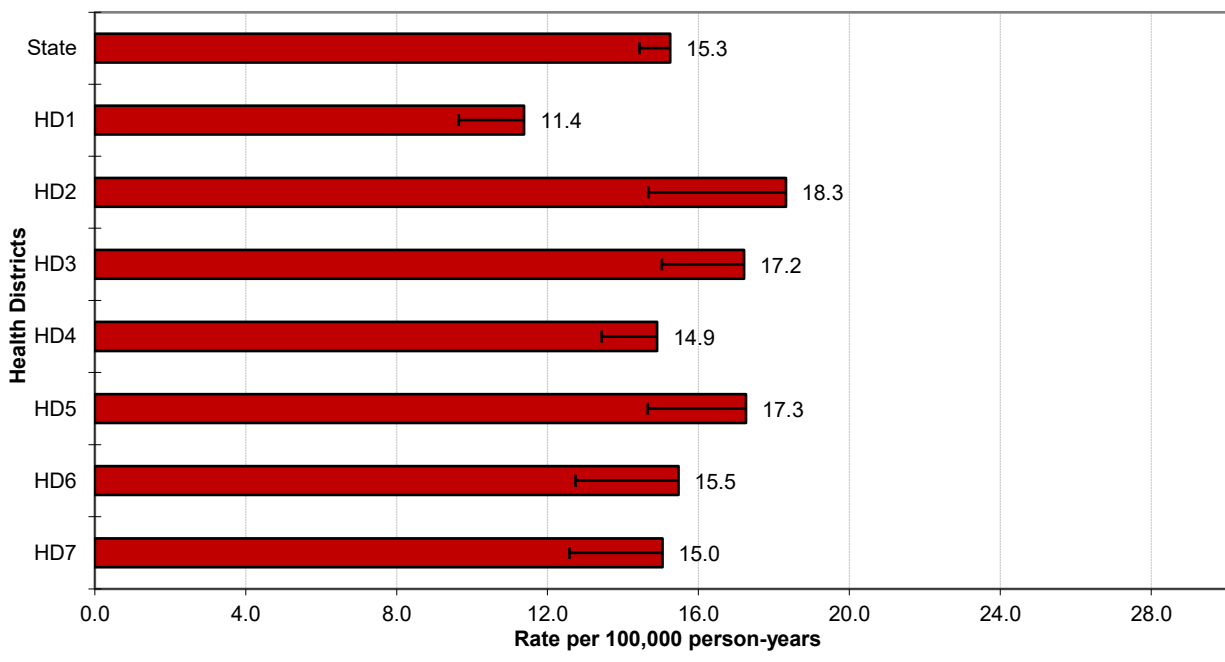
LARYNX

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	2.0	3.2	0.7
# of new invasive cases	48	39	9
# of new in situ cases	1	1	0
# of deaths	14	13	1

Total Cases by County

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

Stage at Diagnosis - Larynx

- Unstaged, 4.1%
- In Situ, 2.0%
- Distant, 14.3%
- Regional, 22.4%
- Localized, 57.1%

## 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 to greatly 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:	1.8
95% confidence interval on the mean age-adjusted incidence rate:	1.1–2.6
Median age-adjusted incidence rate of health districts:	1.6
Range of age-adjusted incidence rate for health districts:	0.7–3.8
USCS rate (2021, all races):	2.7

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 85+ for females. Health District 5 had statistically significantly more cases than expected based upon rates for the remainder of Idaho. (See Section V for data.)

**State Laryngeal Cancer Incidence
Age-specific Rates 2018–2022**
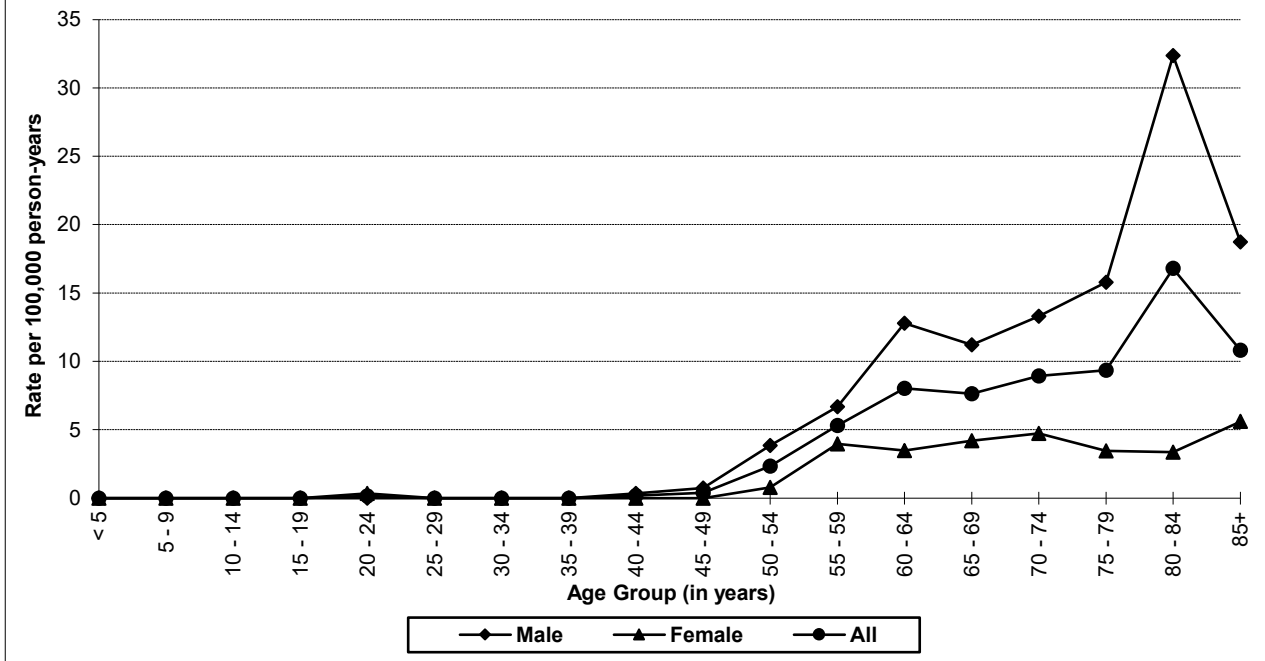
**Laryngeal Cancer Incidence
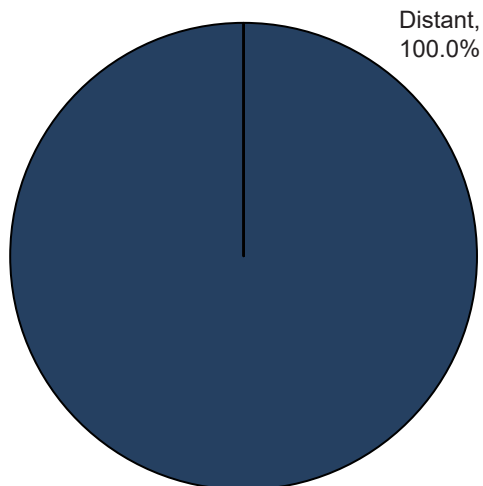Age-adjusted Rates by Health District**
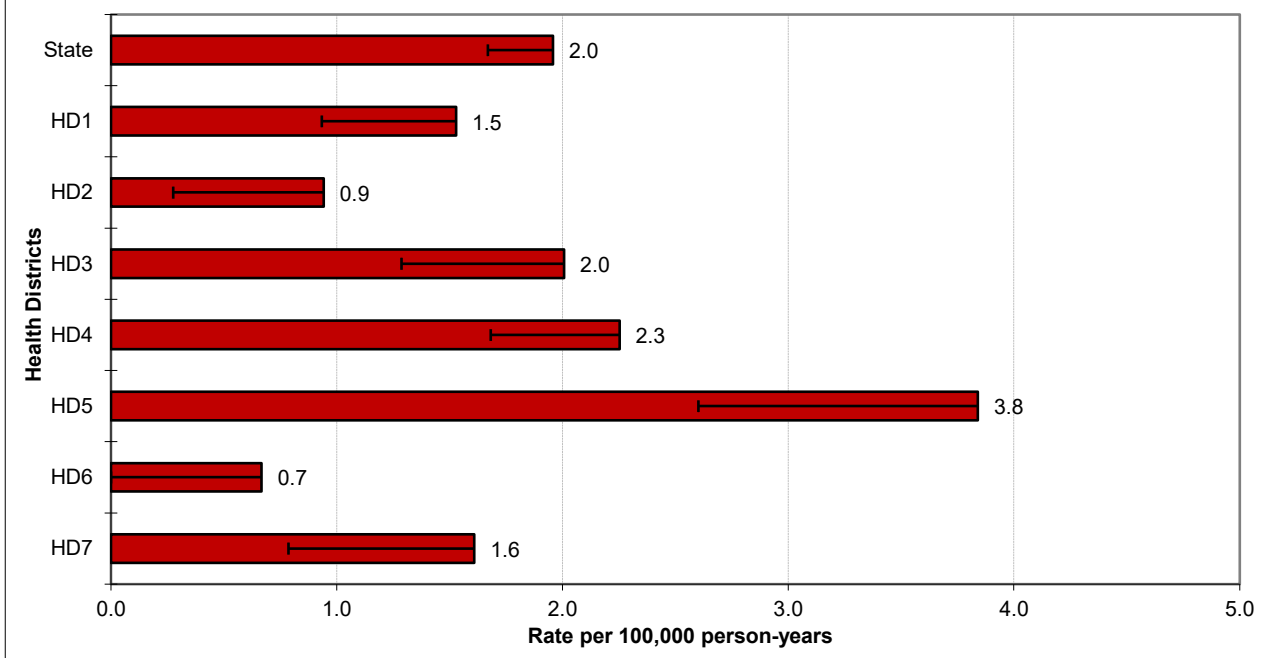
LEUKEMIA

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	16.5	20.3	13.1
# of new invasive cases	376	223	153
# of new in situ cases	0	0	0
# of deaths	136	87	49

Stage at Diagnosis - Leukemia

Distant, 100.0%

Total Cases by County

County		County		County	
Ada	99	Cassia	6	Lewis	2
Adams	1	Clark	-	Lincoln	1
Bannock	15	Clearwater	1	Madison	6
Bear Lake	1	Custer	1	Minidoka	3
Benewah	4	Elmore	9	Nez Perce	8
Bingham	9	Franklin	4	Oneida	1
Blaine	3	Fremont	4	Owyhee	1
Boise	4	Gem	4	Payette	2
Bonner	15	Gooding	4	Power	1
Bonneville	18	Idaho	4	Shoshone	3
Boundary	3	Jefferson	4	Teton	3
Butte	1	Jerome	3	Twin Falls	24
Camas	-	Kootenai	28	Valley	6
Canyon	60	Latah	3	Washington	4
Caribou	1	Lemhi	2		

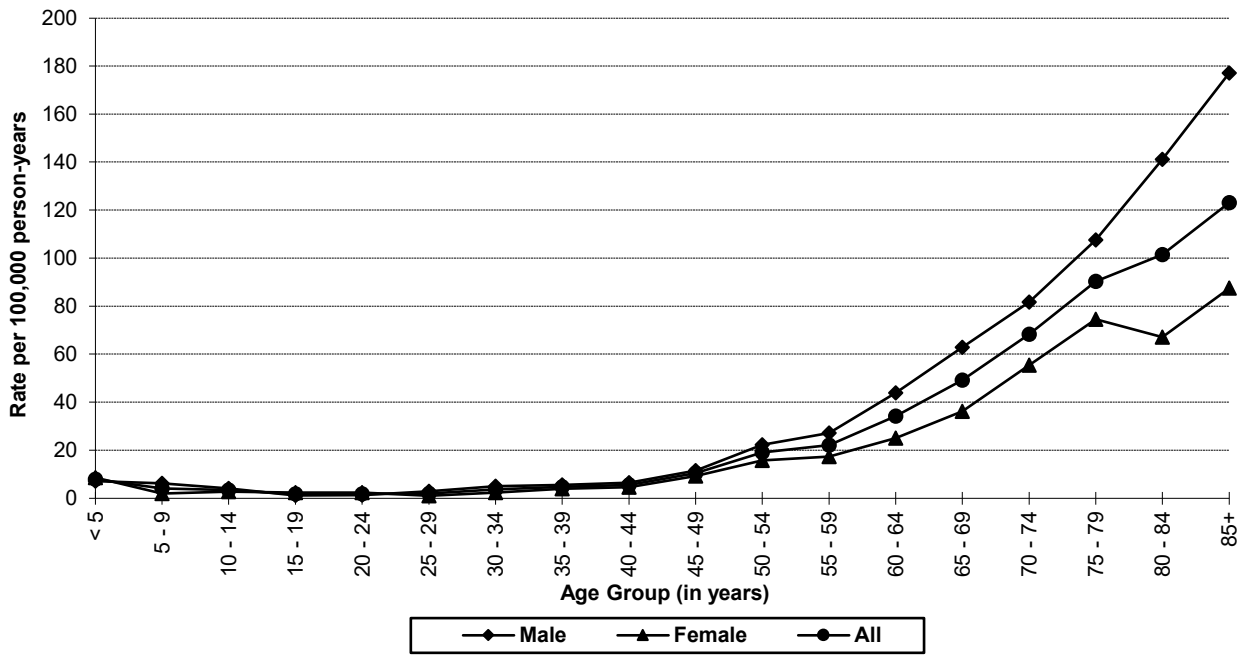## Factors Associated with Cancer Incidence

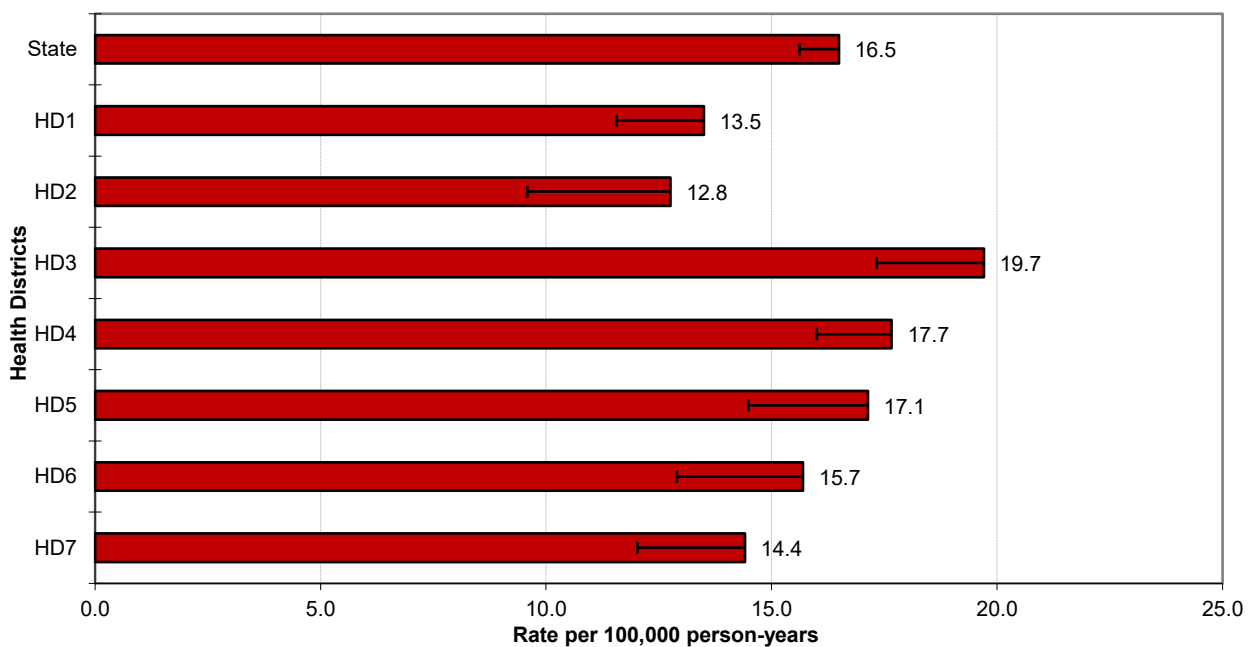|	
Age	Leukemia is the most common form of cancer in children. Incidence usually increases with age in adults. The highest rates occur in individuals over age 60.
Sex	Males have higher incidence rates than females for acute lymphoblastic leukemia (ALL), chronic lymphocytic leukemia (CLL), acute myeloid 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:	14.0–17.7
Median age-adjusted incidence rate of health districts:	15.7
Range of age-adjusted incidence rate for health districts:	12.8–19.7
USCS rate (2021, all races):	13.6

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

State Leukemia Incidence
Age-specific Rates 2018–2022

Leukemia Incidence
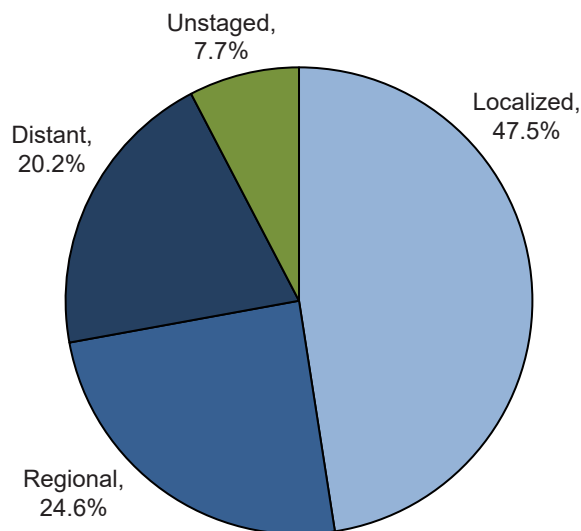## Age-adjusted Rates by Health District

Health District	Rate per 100,000 person-years
State	16.5
HD1	13.5
HD2	12.8
HD3	19.7
HD4	17.7
HD5	17.1
HD6	15.7
HD7	14.4

LIVER AND BILE DUCT

Incidence and Mortality Summary

	Total	Male	Female
AAge-adjusted incidence rate per 100,000	7.5	10.5	4.8
# of new invasive cases	183	122	61
# of new in situ cases	0	0	0
# of deaths	153	103	50

Total Cases by County

County		County		County	
Ada	44	Cassia	1	Lewis	1
Adams	-	Clark	-	Lincoln	-
Bannock	8	Clearwater	1	Madison	1
Bear Lake	4	Custer	1	Minidoka	2
Benewah	-	Elmore	6	Nez Perce	7
Bingham	8	Franklin	-	Oneida	-
Blaine	4	Fremont	2	Owyhee	3
Boise	1	Gem	2	Payette	1
Bonner	4	Gooding	1	Power	1
Bonneville	6	Idaho	1	Shoshone	3
Boundary	1	Jefferson	-	Teton	-
Butte	1	Jerome	2	Twin Falls	9
Camas	-	Kootenai	22	Valley	-
Canyon	33	Latah	1	Washington	1
Caribou	-	Lemhi	-		

Stage at Diagnosis - Liver and Bile Duct

Unstaged, 7.7%
Localized, 47.5%
Distant, 20.2%
Regional, 24.6%

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:	7.6
95% confidence interval on the mean age-adjusted incidence rate:	5.7–9.4
Median age-adjusted incidence rate of health districts:	7.0
Range of age-adjusted incidence rate for health districts:	4.0–11.0
USCS rate (2021, 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 75–79 for males and females. Health District 3 had statistically significantly more cases of liver and bile duct cancer than expected based upon rates for the remainder of Idaho and Health District 4 had significantly fewer. (See Section V for data.)

**State Liver & Bile Duct Cancer Incidence
Age-specific Rates 2018–2022**
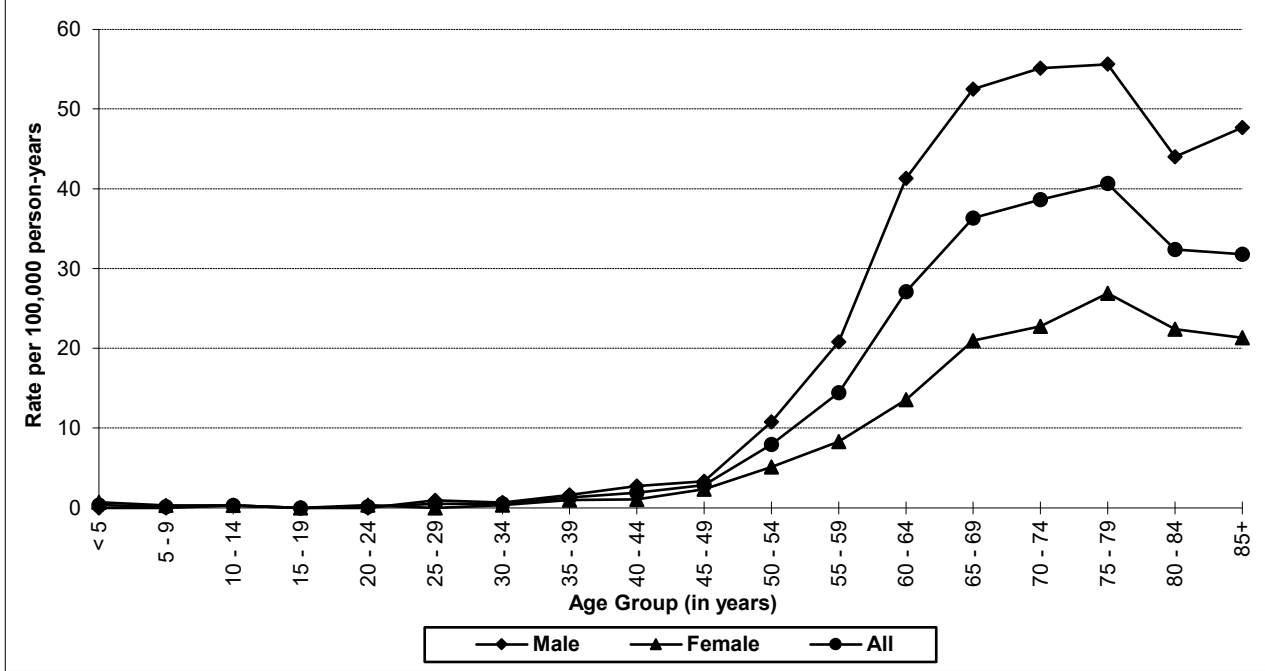
**Liver and Bile Duct Cancer Incidence
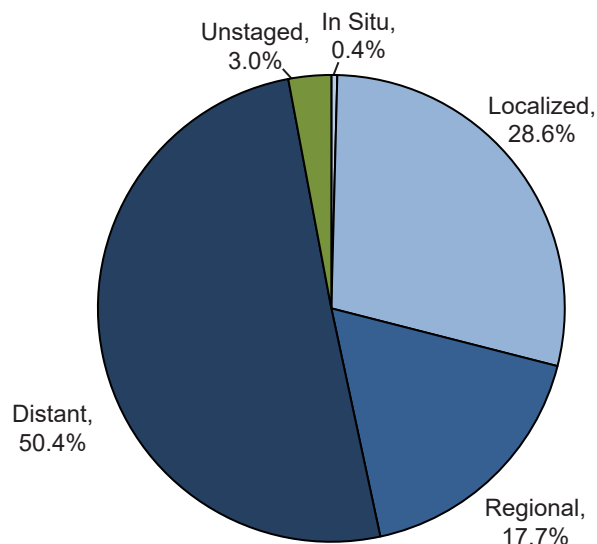Age-adjusted Rates by Health District**
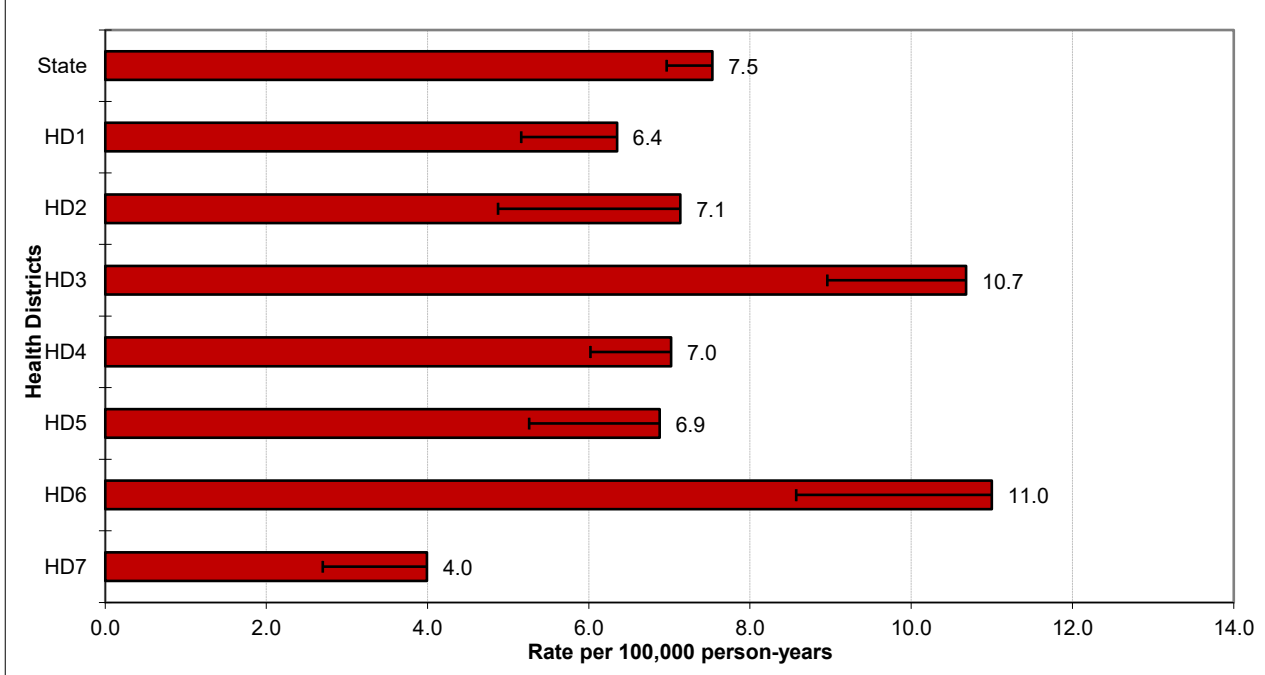
LUNG AND BRONCHUS

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	39.6	42.3	37.5
# of new invasive cases	976	490	486
# of new in situ cases	4	1	3
# of deaths	581	313	268

Total Cases by County

County	Cases	County	Cases	County	Cases
Ada	242	Cassia	7	Lewis	5
Adams	3	Clark	0	Lincoln	3
Bannock	41	Clearwater	11	Madison	8
Bear Lake	3	Custer	1	Minidoka	9
Benewah	12	Elmore	12	Nez Perce	30
Bingham	19	Franklin	6	Oneida	1
Blaine	12	Fremont	4	Owyhee	8
Boise	3	Gem	19	Payette	22
Bonner	40	Gooding	13	Power	4
Bonneville	46	Idaho	12	Shoshone	13
Boundary	12	Jefferson	10	Teton	3
Butte	2	Jerome	6	Twin Falls	40
Camas	-	Kootenai	130	Valley	9
Canyon	141	Latah	5	Washington	6
Caribou	2	Lemhi	5		

Stage at Diagnosis - Lung and Bronchus

Pie chart showing:
- Unstaged, 3.0%
- In Situ, 0.4%
- Localized, 28.6%
- Regional, 17.7%
- Distant, 50.4%

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:	38.5
95% confidence interval on the mean age-adjusted incidence rate:	33.1–43.9
Median age-adjusted incidence rate of health districts:	36.5
Range of age-adjusted incidence rate for health districts:	30.9–50.3
USCS rate (2021, all races):	49.1

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 85+ 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 2018–2022**
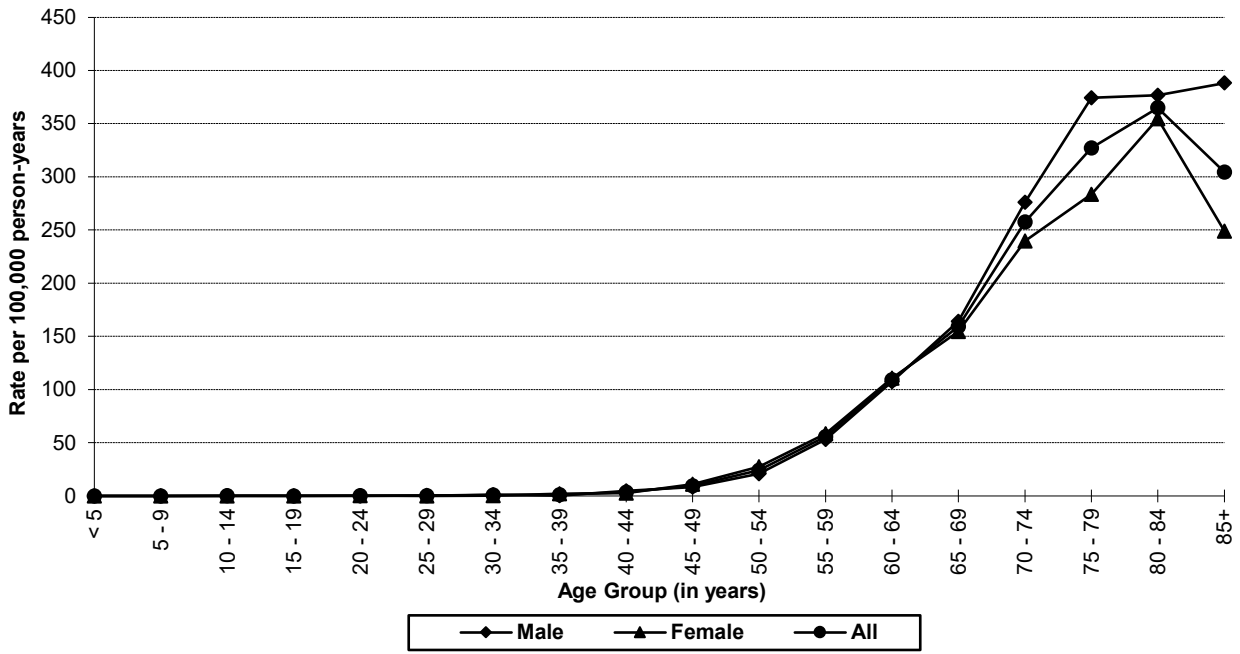
**Lung & Bronchus Cancer Incidence
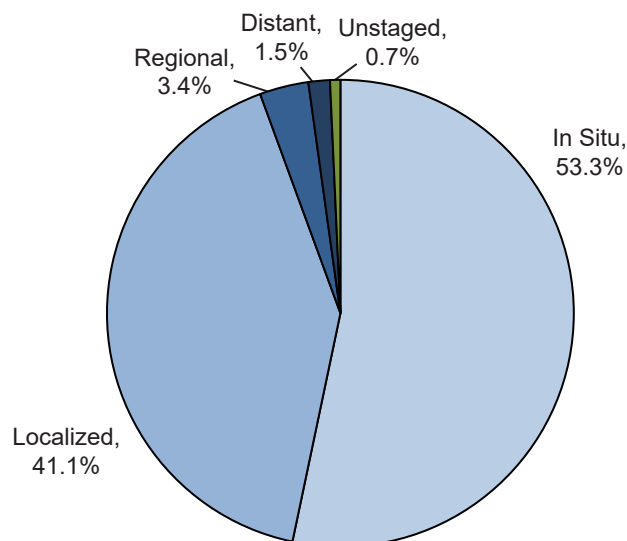Age-adjusted Rates by Health District**
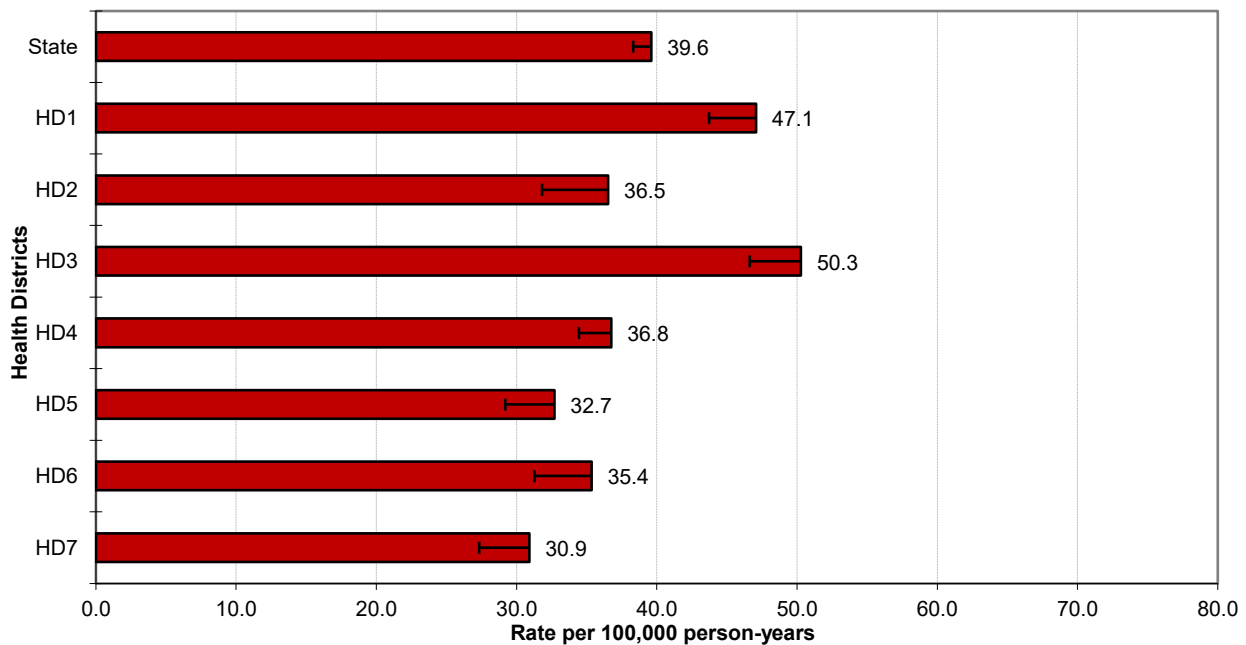
MELANOMA OF SKIN

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	34.7	41.5	29.2
# of new invasive cases	786	463	323
# of new in situ cases	897	549	348
# of deaths	60	38	22

Total Cases by County

County	Cases	County	Cases	County	Cases
Ada	471	Cassia	14	Lewis	2
Adams	2	Clark	0	Lincoln	4
Bannock	82	Clearwater	15	Madison	15
Bear Lake	9	Custer	7	Minidoka	15
Benewah	9	Elmore	10	Nez Perce	42
Bingham	37	Franklin	21	Oneida	4
Blaine	66	Fremont	3	Owyhee	6
Boise	13	Gem	19	Payette	14
Bonner	95	Gooding	11	Power	8
Bonneville	43	Idaho	20	Shoshone	10
Boundary	12	Jefferson	33	Teton	13
Butte	2	Jerome	14	Twin Falls	57
Camas	-	Kootenai	243	Valley	25
Canyon	151	Latah	36	Washington	9
Caribou	6	Lemhi	15		

Stage at Diagnosis - Melanoma of Skin

- In Situ, 53.3%
- Localized, 41.1%
- Regional, 3.4%
- Distant, 1.5%
- Unstaged, 0.7%

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:	35.1
95% confidence interval on the mean age-adjusted incidence rate:	30.2–40.0
Median age-adjusted incidence rate of health districts:	35.8
Range of age-adjusted incidence rate for health districts:	24.3–43.4
USCS rate (2021, all races):	23.0

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 and Health Districts 3 and 7 had significantly fewer. (See Section V for data.)

State Melanoma of the Skin Incidence
Age-specific Rates 2018–2022
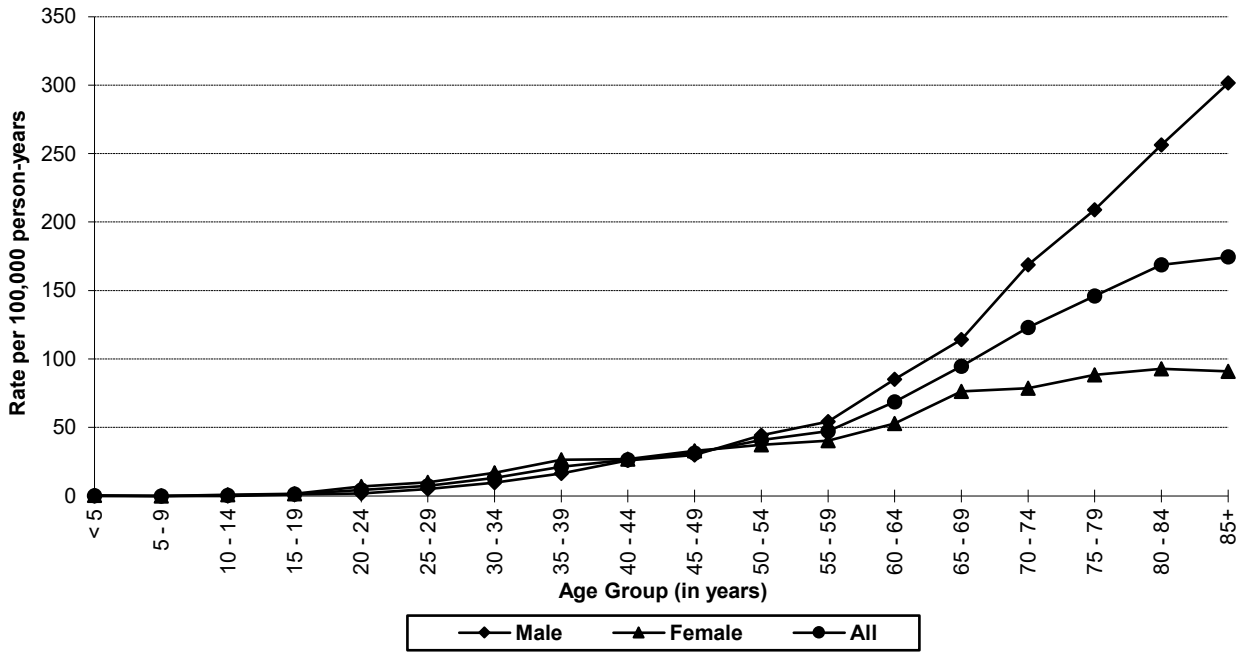
Melanoma of the Skin Incidence
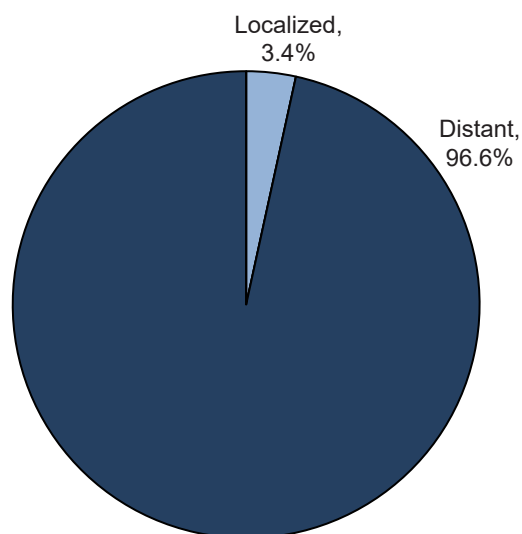## Age-adjusted Rates by Health District
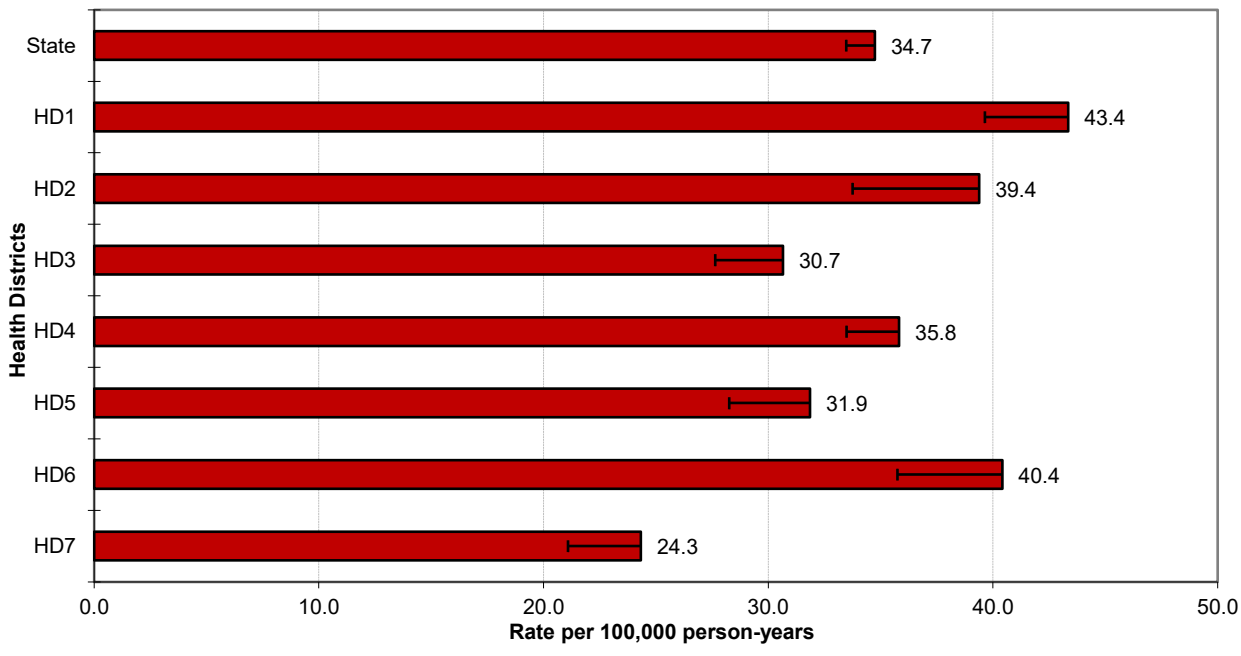
MYELOMA

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	6.0	7.9	4.2
# of new invasive cases	146	94	52
# of new in situ cases	0	0	0
# of deaths	70	40	30

Stage at Diagnosis - Myeloma

Localized, 3.4%
Distant, 96.6%

Total Cases by County

County		County		County	
Ada	44	Cassia	1	Lewis	-
Adams	-	Clark	-	Lincoln	1
Bannock	7	Clearwater	-	Madison	3
Bear Lake	-	Custer	1	Minidoka	3
Benewah	2	Elmore	3	Nez Perce	4
Bingham	3	Franklin	1	Oneida	-
Blaine	1	Fremont	-	Owyhee	3
Boise	2	Gem	4	Payette	3
Bonner	4	Gooding	1	Power	-
Bonneville	6	Idaho	-	Shoshone	1
Boundary	2	Jefferson	2	Teton	1
Butte	-	Jerome	-	Twin Falls	5
Camas	-	Kootenai	12	Valley	2
Canyon	20	Latah	2	Washington	2
Caribou	-	Lemhi	-		

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:	5.6
95% confidence interval on the mean age-adjusted incidence rate:	4.6–6.7
Median age-adjusted incidence rate of health districts:	5.2
Range of age-adjusted incidence rate for health districts:	4.3–8.3
USCS rate (2021, all races):	6.9

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. No health district had statistically significantly more, or 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 2018–2022
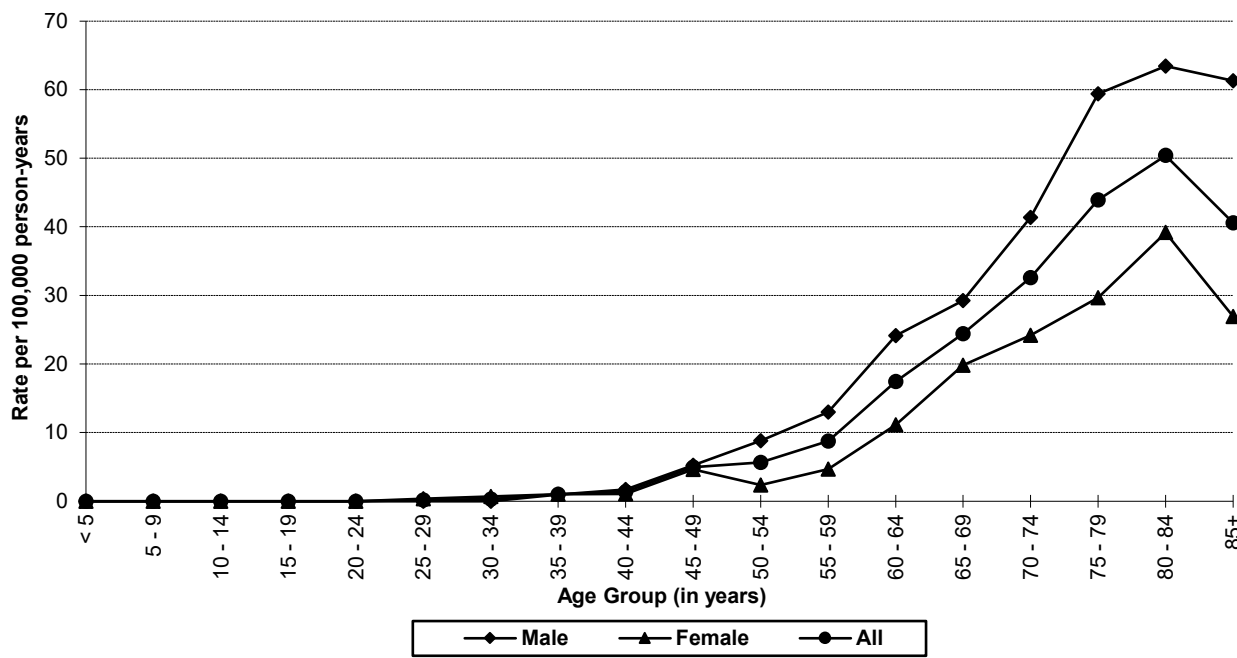
Myeloma Incidence
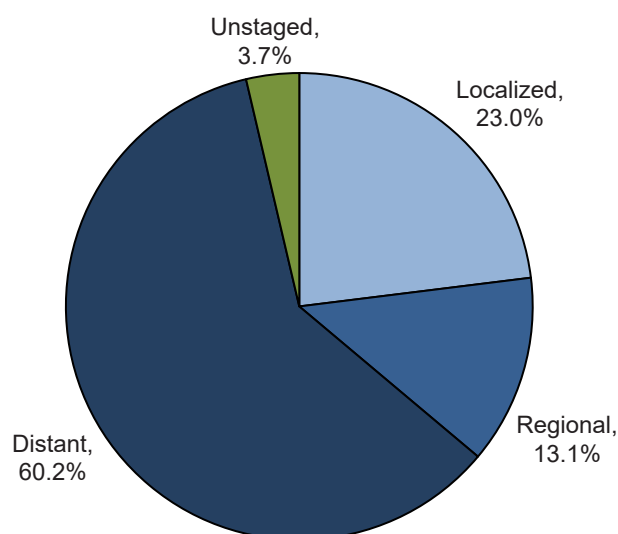## Age-adjusted Rates by Health District
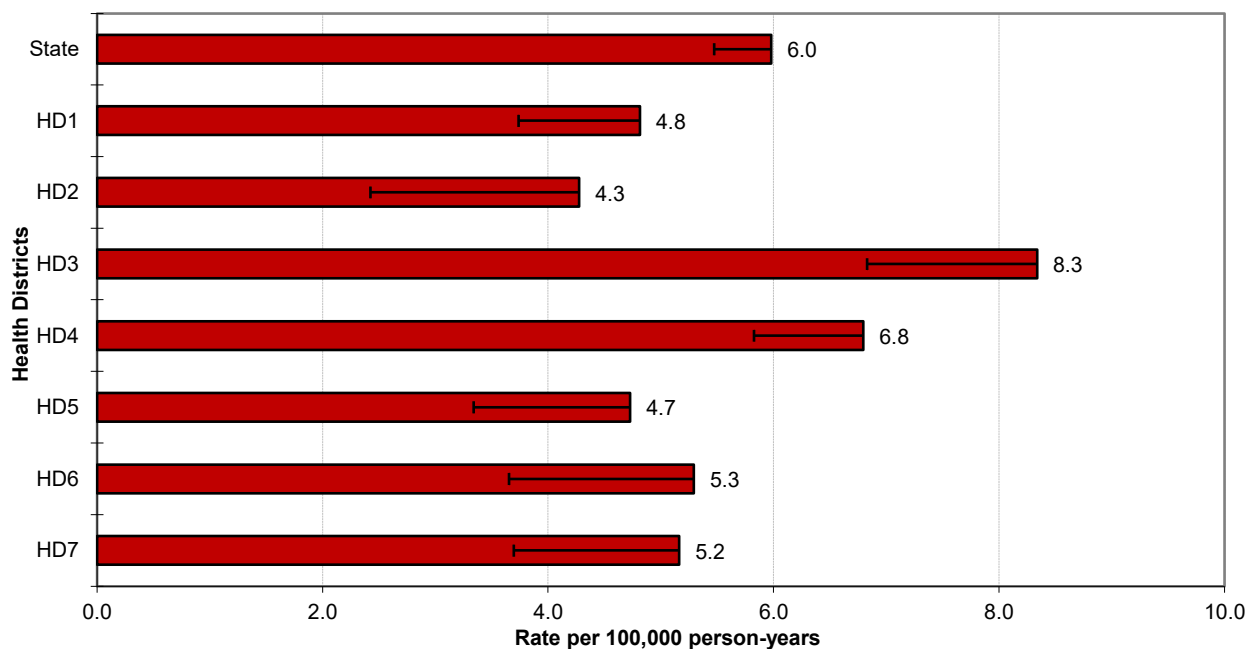
NON-HODGKIN LYMPHOMA

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	16.6	18.0	15.3
# of new invasive cases	382	202	180
# of new in situ cases	0	0	0
# of deaths	118	69	49

Stage at Diagnosis - Non-Hodgkin Lymphoma

Unstaged, 3.7%
Localized, 23.0%
Regional, 13.1%
Distant, 60.2%

Total Cases by County

County		County		County	
Ada	111	Cassia	5	Lewis	-
Adams	3	Clark	-	Lincoln	2
Bannock	17	Clearwater	5	Madison	6
Bear Lake	3	Custer	2	Minidoka	4
Benewah	2	Elmore	5	Nez Perce	8
Bingham	5	Franklin	1	Oneida	1
Blaine	7	Fremont	1	Owyhee	4
Boise	3	Gem	5	Payette	8
Bonner	10	Gooding	5	Power	1
Bonneville	17	Idaho	4	Shoshone	4
Boundary	4	Jefferson	1	Teton	1
Butte	1	Jerome	4	Twin Falls	15
Camas	-	Kootenai	41	Valley	1
Canyon	54	Latah	3	Washington	2
Caribou	2	Lemhi	4		

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:	16.0
95% confidence interval on the mean age-adjusted incidence rate:	14.3–17.8
Median age-adjusted incidence rate of health districts:	15.9
Range of age-adjusted incidence rate for health districts:	13.1–19.9
USCS rate (2021, all races):	17.8

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 2018–2022**
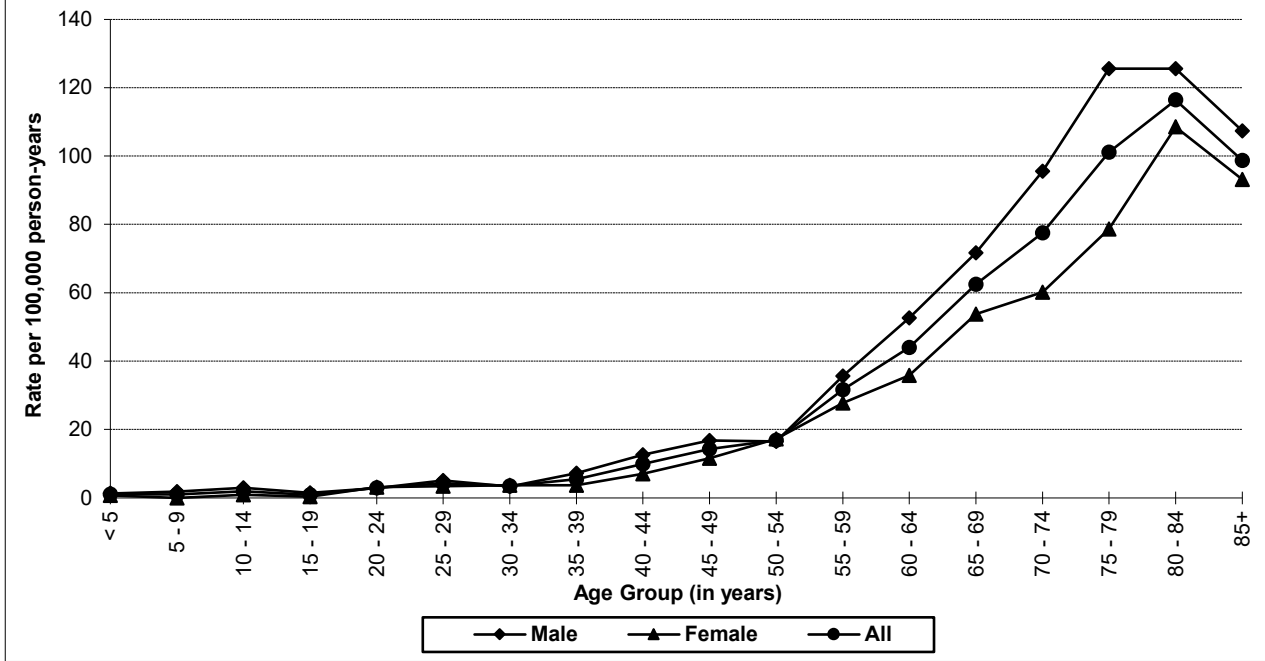
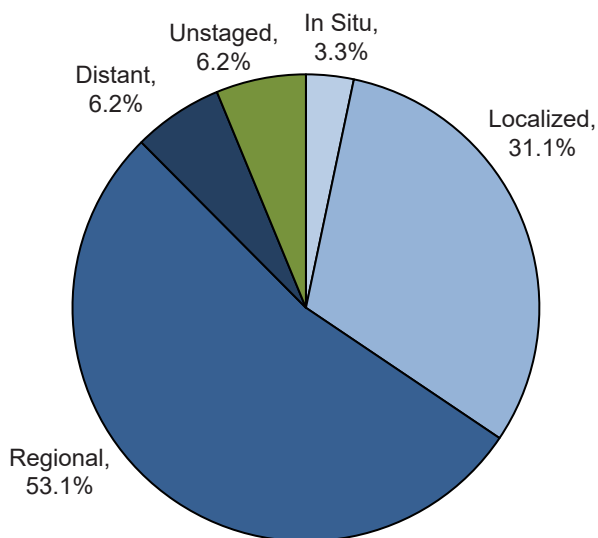**Non-Hodgkin Lymphoma Incidence
Age-adjusted Rates by Health District**
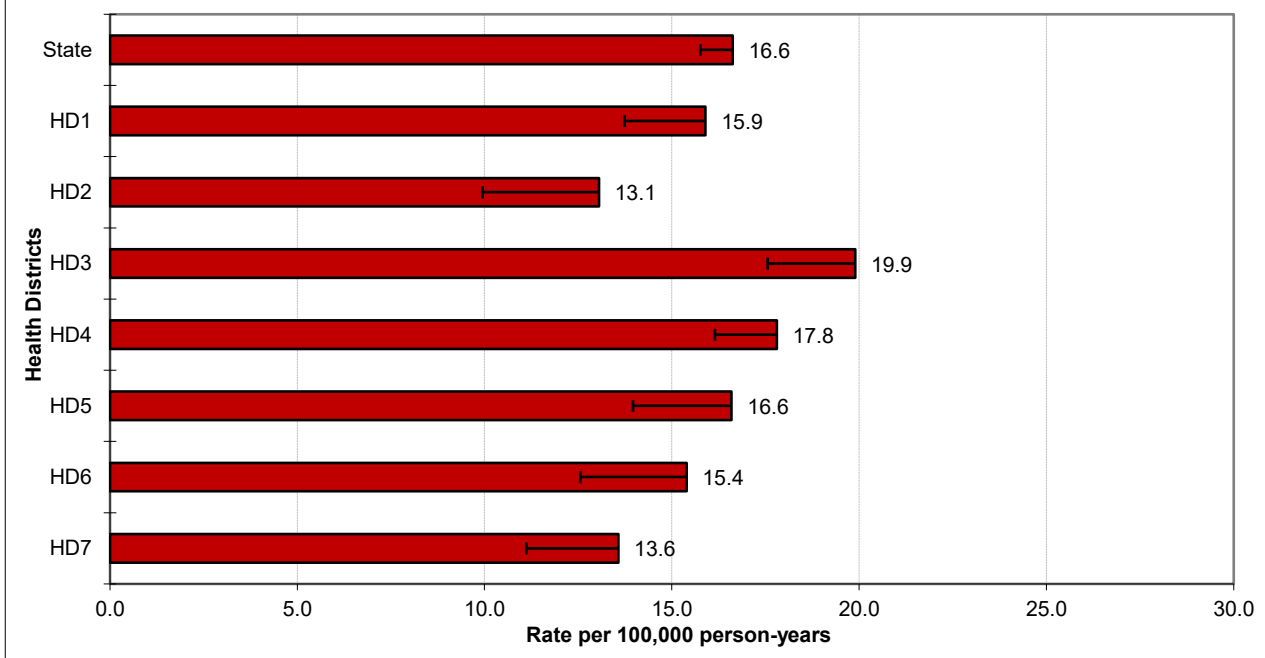
ORAL CAVITY AND PHARYNX

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	11.2	16.1	6.4
# of new invasive cases	264	189	75
# of new in situ cases	9	8	1
# of deaths	56	44	12

Stage at Diagnosis - Oral Cavity and Pharynx

Unstaged, 6.2%
In Situ, 3.3%
Distant, 6.2%
Localized, 31.1%
Regional, 53.1%

Total Cases by County

County		County		County	
Ada	76	Cassia	5	Lewis	1
Adams	-	Clark	-	Lincoln	-
Bannock	12	Clearwater	-	Madison	4
Bear Lake	2	Custer	-	Minidoka	1
Benewah	1	Elmore	5	Nez Perce	9
Bingham	5	Franklin	1	Oneida	1
Blaine	10	Fremont	4	Owyhee	1
Boise	-	Gem	8	Payette	4
Bonner	7	Gooding	2	Power	-
Bonneville	11	Idaho	1	Shoshone	3
Boundary	4	Jefferson	4	Teton	1
Butte	-	Jerome	2	Twin Falls	15
Camas	-	Kootenai	27	Valley	4
Canyon	31	Latah	5	Washington	1
Caribou	2	Lemhi	3		

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:	10.8
95% confidence interval on the mean age-adjusted incidence rate:	9.8–11.9
Median age-adjusted incidence rate of health districts:	10.5
Range of age-adjusted incidence rate for health districts:	8.5–12.8
USCS rate (2021, all races):	11.9

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 2018–2022**
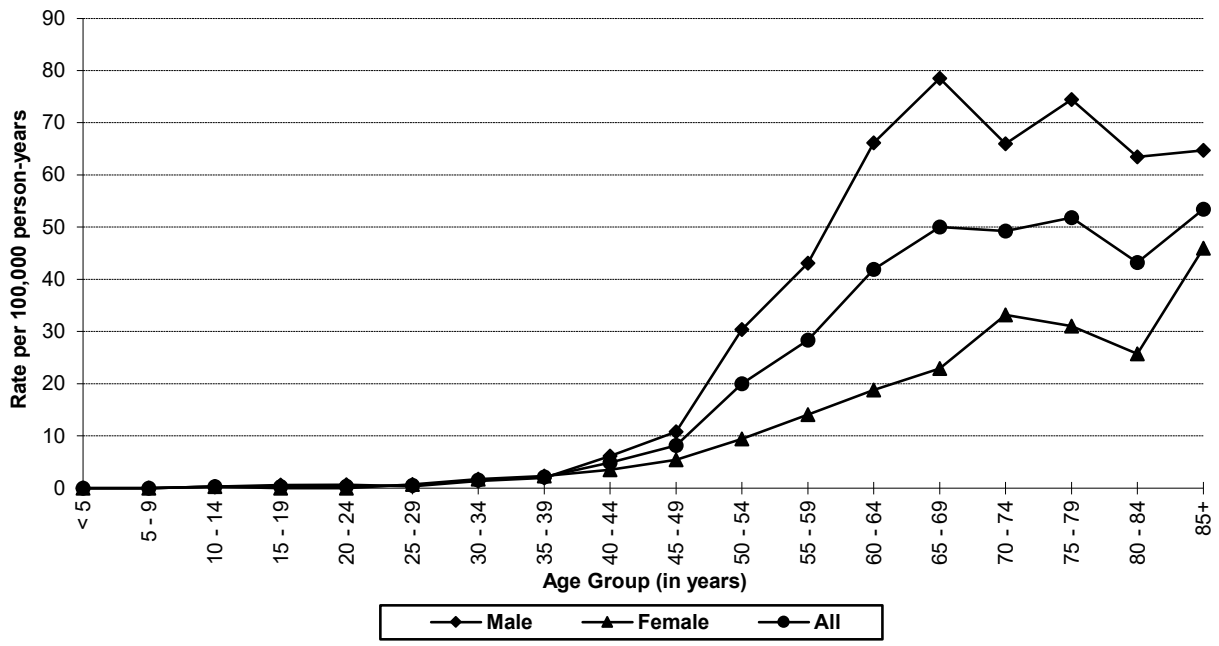
**Oral Cavity & Pharyngeal Cancer Incidence
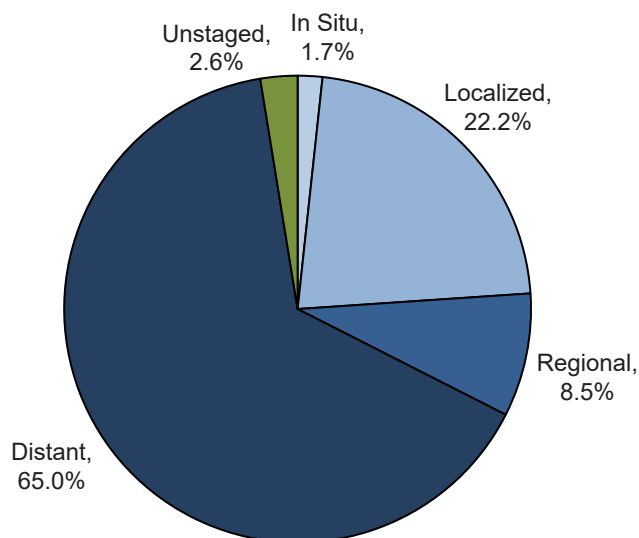Age-adjusted Rates by Health District**
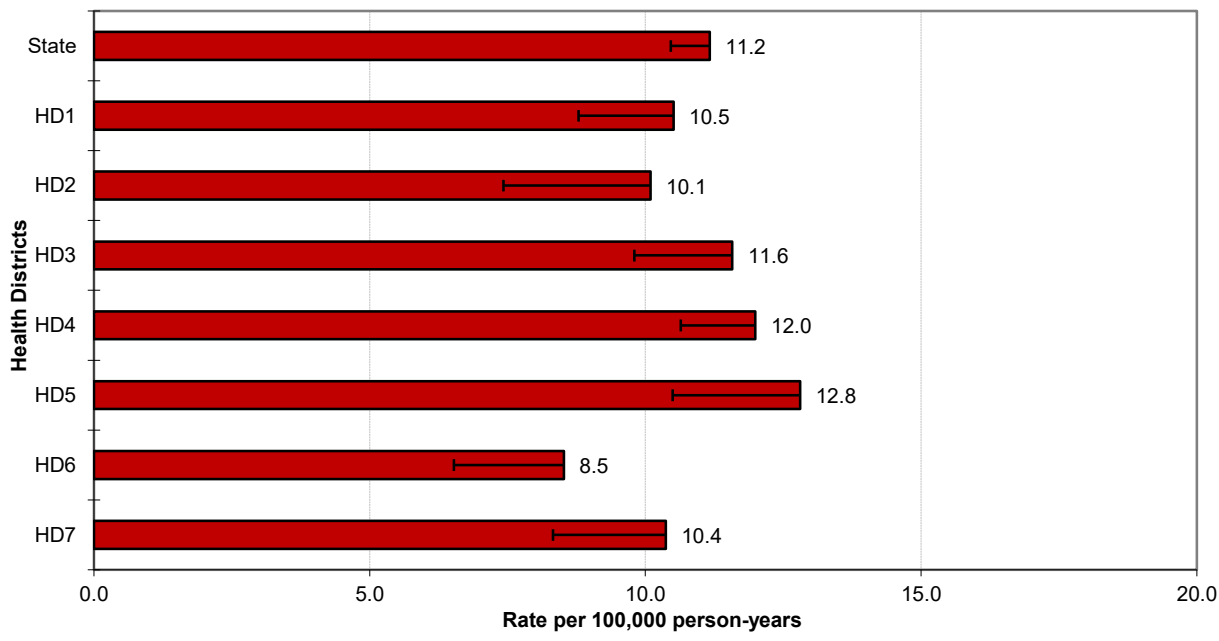
OVARY

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	-	-	10.1
# of new invasive cases	-	-	115
# of new in situ cases	-	-	2
# of deaths	-	-	79

Total Cases by County

County		County		County	
Ada	31	Cassia	1	Lewis	1
Adams	-	Clark	-	Lincoln	1
Bannock	4	Clearwater	-	Madison	1
Bear Lake	-	Custer	-	Minidoka	1
Benewah	-	Elmore	1	Nez Perce	1
Bingham	6	Franklin	-	Oneida	-
Blaine	4	Fremont	-	Owyhee	2
Boise	-	Gem	3	Payette	3
Bonner	3	Gooding	1	Power	1
Bonneville	5	Idaho	1	Shoshone	2
Boundary	-	Jefferson	-	Teton	-
Butte	-	Jerome	2	Twin Falls	10
Camas	-	Kootenai	14	Valley	1
Canyon	16	Latah	1	Washington	-
Caribou	-	Lemhi	-		

Stage at Diagnosis - Ovary

- Unstaged, 2.6%
- In Situ, 1.7%
- Localized, 22.2%
- Regional, 8.5%
- Distant, 65.0%

Factors Associated with Cancer Incidence

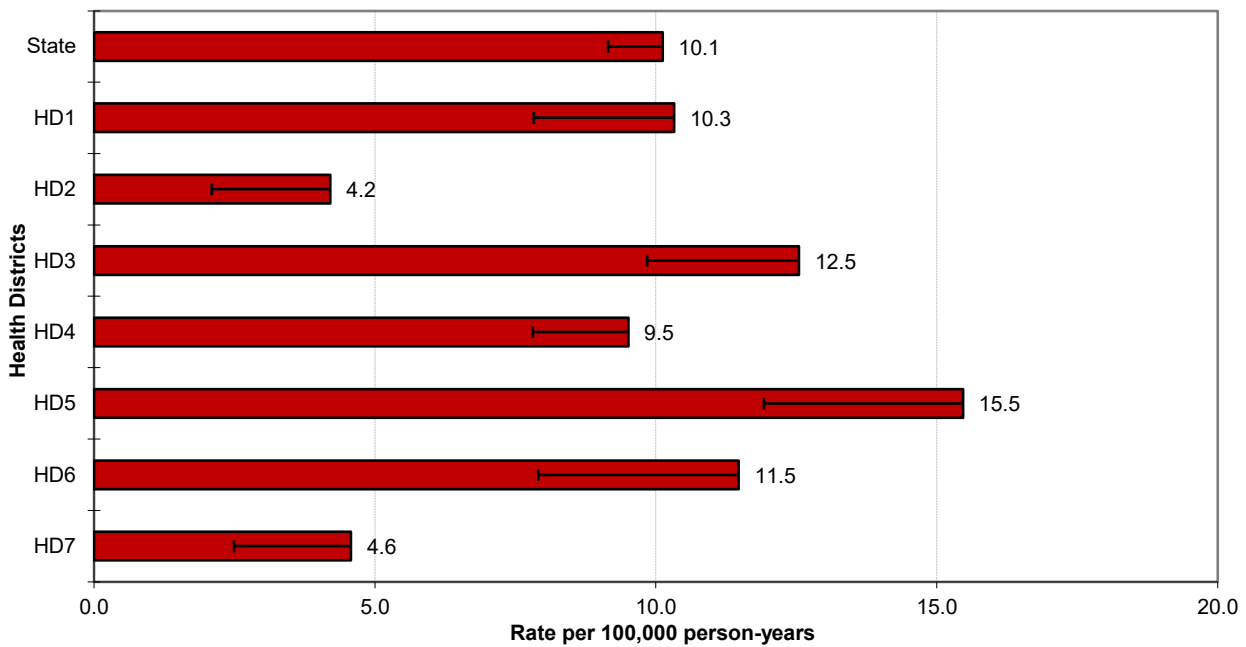|	
Age	The rate of ovarian cancer increases with age, markedly after age 39.
Race/Ethnicity	Incidence rates are slightly higher among non-Hispanic Whites and Hispanics than other race/ethnicity groups.
Genetics	The most important risk factor for ovarian cancer is a family history of a first-degree relative (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:	9.7
95% confidence interval on the mean age-adjusted incidence rate:	6.7–12.8
Median age-adjusted incidence rate of health districts:	10.3
Range of age-adjusted incidence rate for health districts:	4.2–15.5
USCS rate (2021, all races):	9.9

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+. Health District 5 had statistically significantly more cases of ovarian cancer than expected based upon rates for the remainder of Idaho and Health District 7 had significantly fewer. (See Section V for data.)

**State Ovarian Cancer Incidence
Age-specific Rates 2018–2022**

Rate per 100,000 person-years

Age Group (in years)

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

Health Districts

Health District	Rate
State	10.1
HD1	10.3
HD2	4.2
HD3	12.5
HD4	9.5
HD5	15.5
HD6	11.5
HD7	4.6

Rate per 100,000 person-years
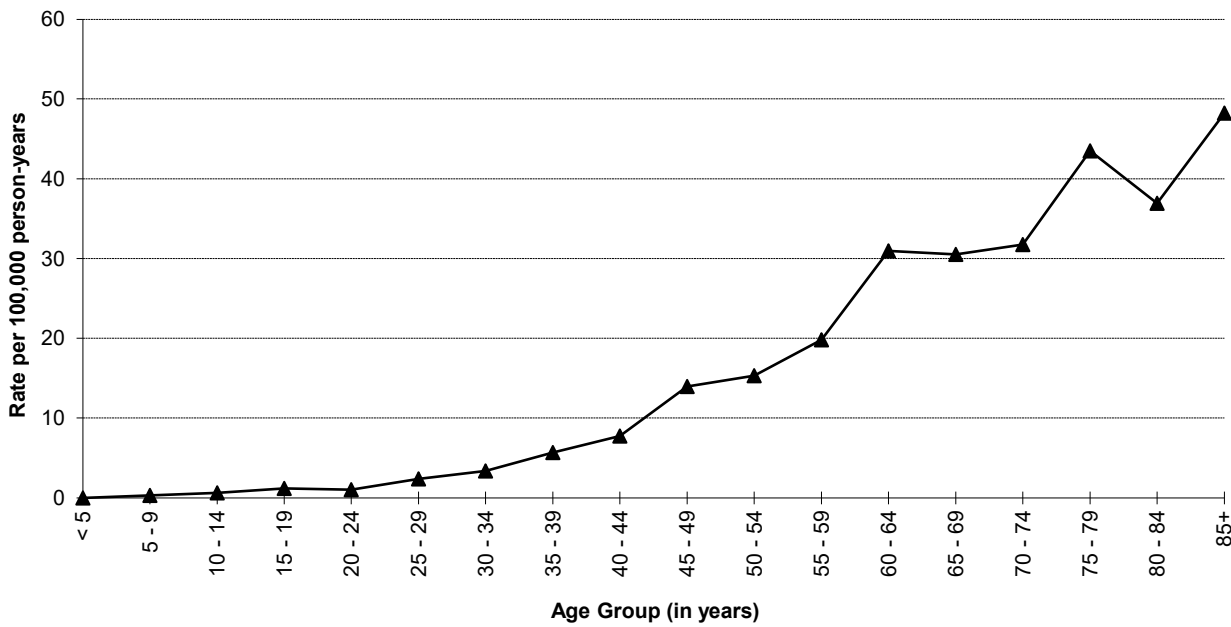
PANCREAS

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	12.8	14.4	11.2
# of new invasive cases	308	165	143
# of new in situ cases	3	2	1
# of deaths	244	136	108

Total Cases by County

County	#	County	#	County	#
Ada	76	Cassia	1	Lewis	-
Adams	-	Clark	-	Lincoln	-
Bannock	21	Clearwater	3	Madison	1
Bear Lake	-	Custer	1	Minidoka	4
Benewah	3	Elmore	3	Nez Perce	14
Bingham	3	Franklin	2	Oneida	-
Blaine	2	Fremont	2	Owyhee	3
Boise	3	Gem	7	Payette	2
Bonner	13	Gooding	5	Power	3
Bonneville	11	Idaho	12	Shoshone	3
Boundary	1	Jefferson	1	Teton	1
Butte	-	Jerome	2	Twin Falls	15
Camas	1	Kootenai	36	Valley	2
Canyon	39	Latah	7	Washington	3
Caribou	3	Lemhi	2		

Stage at Diagnosis - Pancreas

- Unstaged, 4.5%
- In Situ, 1.0%
- Localized, 16.4%
- Regional, 27.3%
- Distant, 50.8%

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:	13.2
95% confidence interval on the mean age-adjusted incidence rate:	10.4–16.1
Median age-adjusted incidence rate of health districts:	13.5
Range of age-adjusted incidence rate for health districts:	7.8–20.2
USCS rate (2021, all races):	13.4

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. Health District 2 had statistically significantly more cases of pancreatic cancer than expected based upon rates for the remainder of Idaho and Health District 7 had significantly fewer. (See Section V for data.)

State Pancreas Cancer Incidence
Age-specific Rates 2018–2022
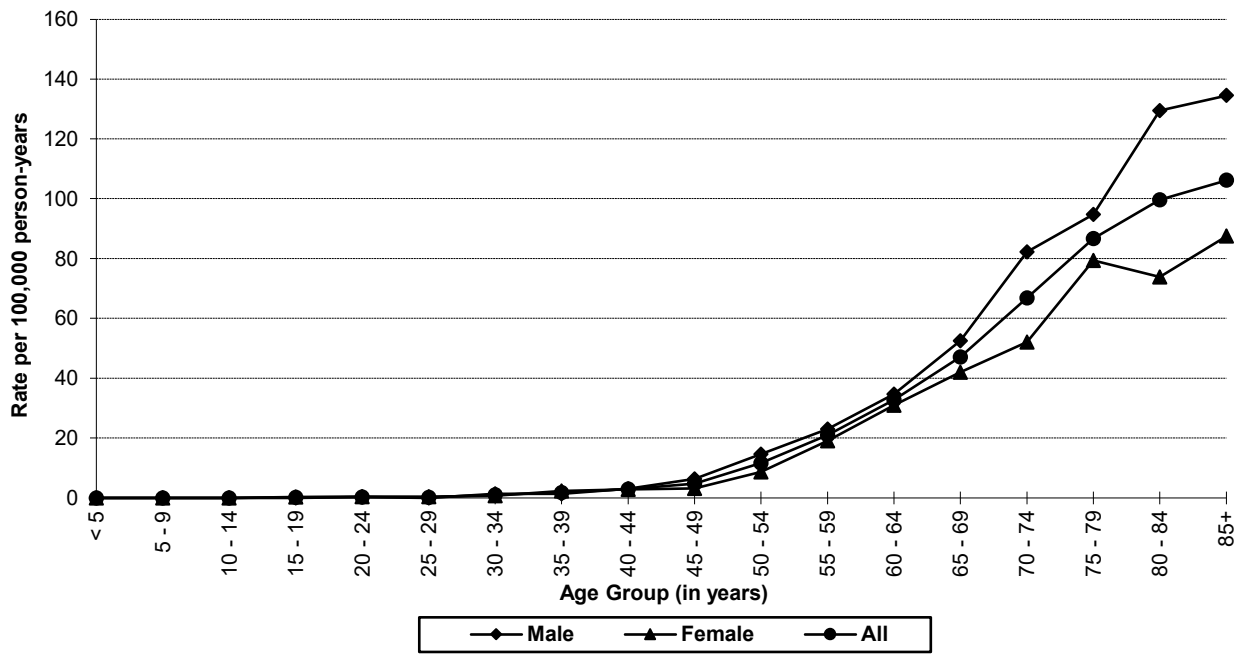
Pancreas Cancer Incidence
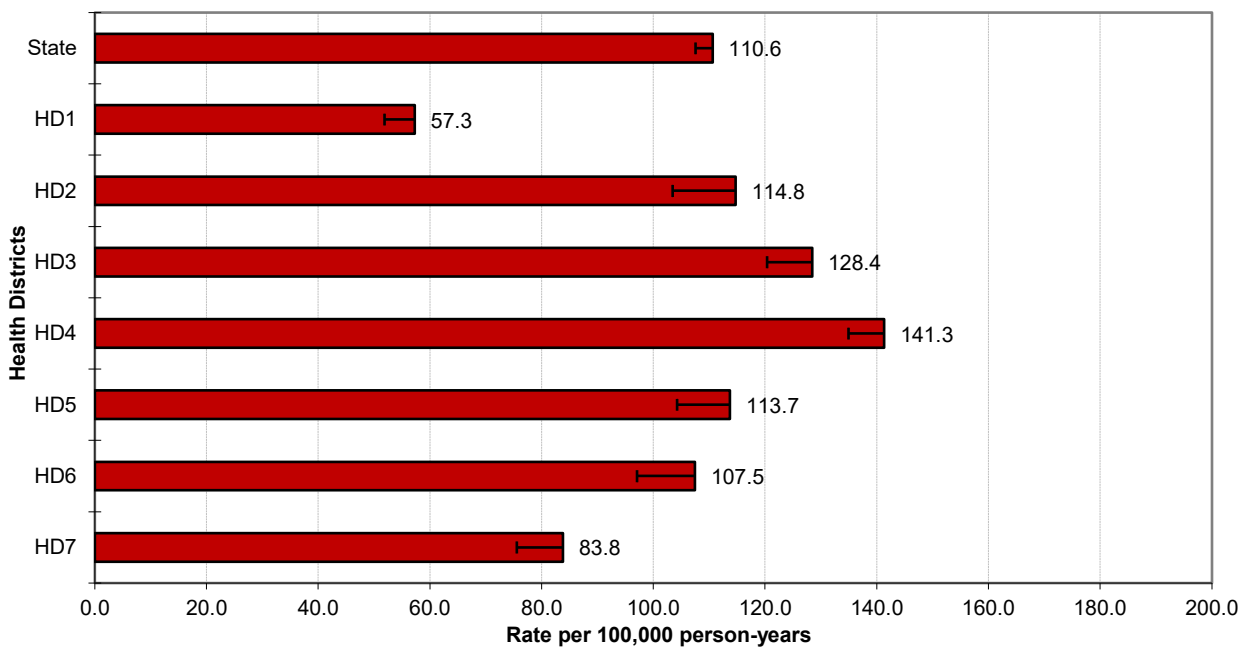## Age-adjusted Rates by Health District
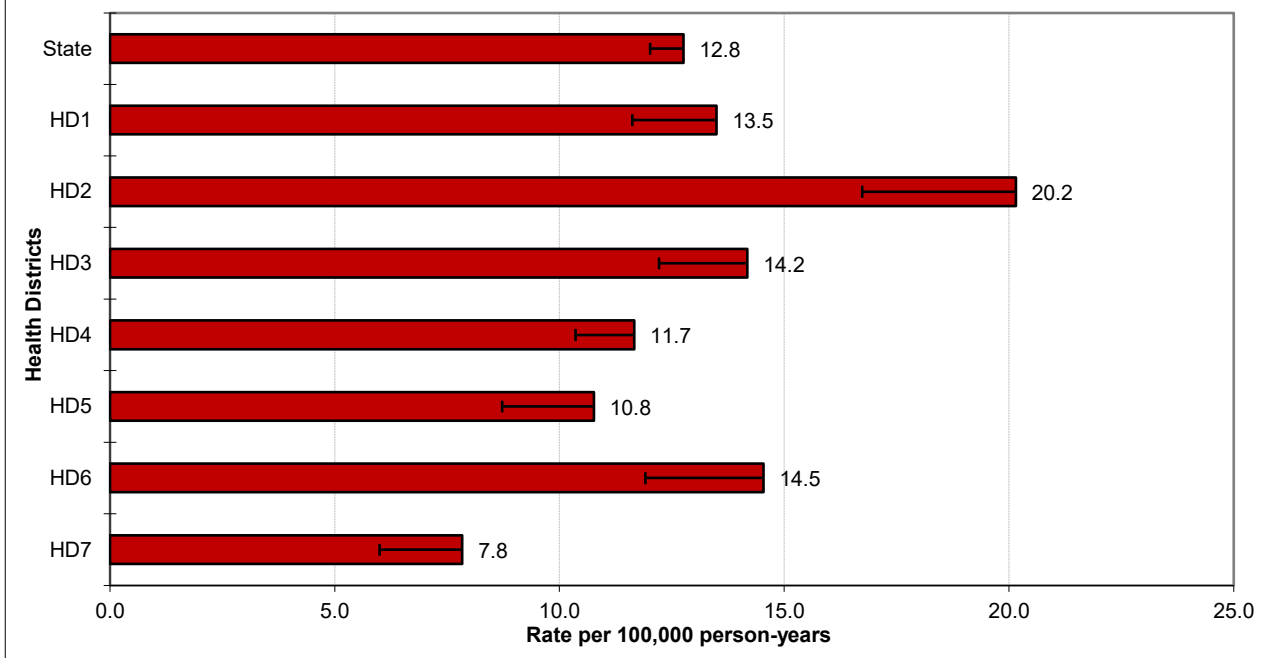
PROSTATE

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	-	110.6	-
# of new invasive cases	-	1,376	-
# of new in situ cases	-	0	-
# of deaths	-	212	-

Total Cases by County

County	Cases	County	Cases	County	Cases
Ada	462	Cassia	5	Lewis	3
Adams	8	Clark	-	Lincoln	2
Bannock	56	Clearwater	17	Madison	6
Bear Lake	3	Custer	3	Minidoka	16
Benewah	5	Elmore	15	Nez Perce	29
Bingham	22	Franklin	10	Oneida	6
Blaine	42	Fremont	6	Owyhee	15
Boise	10	Gem	28	Payette	20
Bonner	32	Gooding	8	Power	3
Bonneville	47	Idaho	22	Shoshone	3
Boundary	8	Jefferson	8	Teton	9
Butte	5	Jerome	14	Twin Falls	62
Camas	2	Kootenai	74	Valley	22
Canyon	177	Latah	35	Washington	15
Caribou	10	Lemhi	31		

Stage at Diagnosis - Prostate

- Unstaged, 1.5%
- Distant, 10.0%
- Regional, 15.1%
- Localized, 73.4%
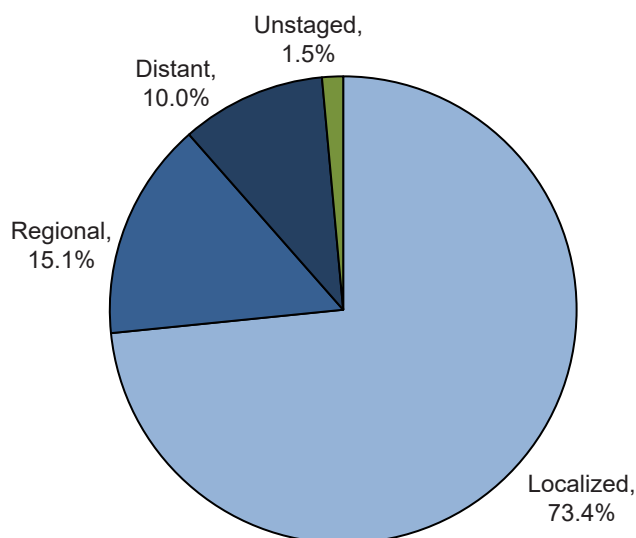
Factors Associated with Cancer Incidence

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:	106.7
95% confidence interval on the mean age-adjusted incidence rate:	85.9–127.5
Median age-adjusted incidence rate of health districts:	113.7
Range of age-adjusted incidence rate for health districts:	57.3–141.3
USCS rate (2021, all races):	114.7

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 3 and 4 had statistically significantly more cases than expected based upon rates for the remainder of Idaho and Health Districts 1 and 7 had statistically significantly fewer. (See Section V for data.)

State Prostate Cancer Incidence
Age-specific Rates 2018–2022

Rate per 100,000 person-years

800	
700	
600	
500	
400	
300	
200	
100	
0	

Age Group: < 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+

Age Group (in years)

Prostate Cancer Incidence
Age-adjusted Rates by Health District

Health Districts

District	Rate
State	110.6
HD1	57.3
HD2	114.8
HD3	128.4
HD4	141.3
HD5	113.7
HD6	107.5
HD7	83.8

Rate per 100,000 person-years
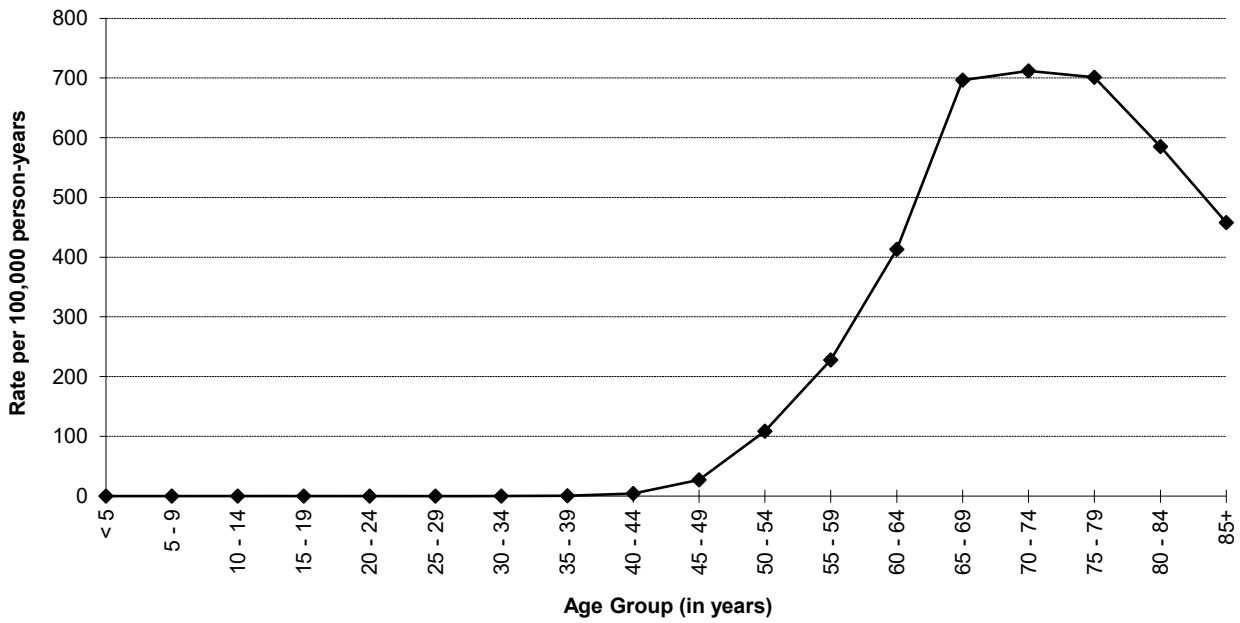
STOMACH

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	5.3	6.0	4.8
# of new invasive cases	122	68	54
# of new in situ cases	0	0	0
# of deaths	36	20	16

Total Cases by County

County		County		County	
Ada	28	Cassia	-	Lewis	-
Adams	-	Clark	-	Lincoln	-
Bannock	7	Clearwater	1	Madison	1
Bear Lake	-	Custer	-	Minidoka	1
Benewah	-	Elmore	2	Nez Perce	3
Bingham	3	Franklin	1	Oneida	-
Blaine	1	Fremont	-	Owyhee	1
Boise	-	Gem	2	Payette	2
Bonner	2	Gooding	2	Power	1
Bonneville	10	Idaho	-	Shoshone	-
Boundary	1	Jefferson	1	Teton	1
Butte	1	Jerome	1	Twin Falls	6
Camas	-	Kootenai	10	Valley	-
Canyon	26	Latah	2	Washington	4
Caribou	-	Lemhi	1		

Stage at Diagnosis - Stomach

- Unstaged, 6.6%
- Localized, 53.3%
- Distant, 23.8%
- Regional, 16.4%

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:	5.4
95% confidence interval on the mean age-adjusted incidence rate:	3.7–7.1
Median age-adjusted incidence rate of health districts:	4.3
Range of age-adjusted incidence rate for health districts:	3.3–9.9
USCS rate (2021, all races):	6.7

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 80-84 age group for males and females. Health District 3 had statistically significantly more 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 2018–2022**
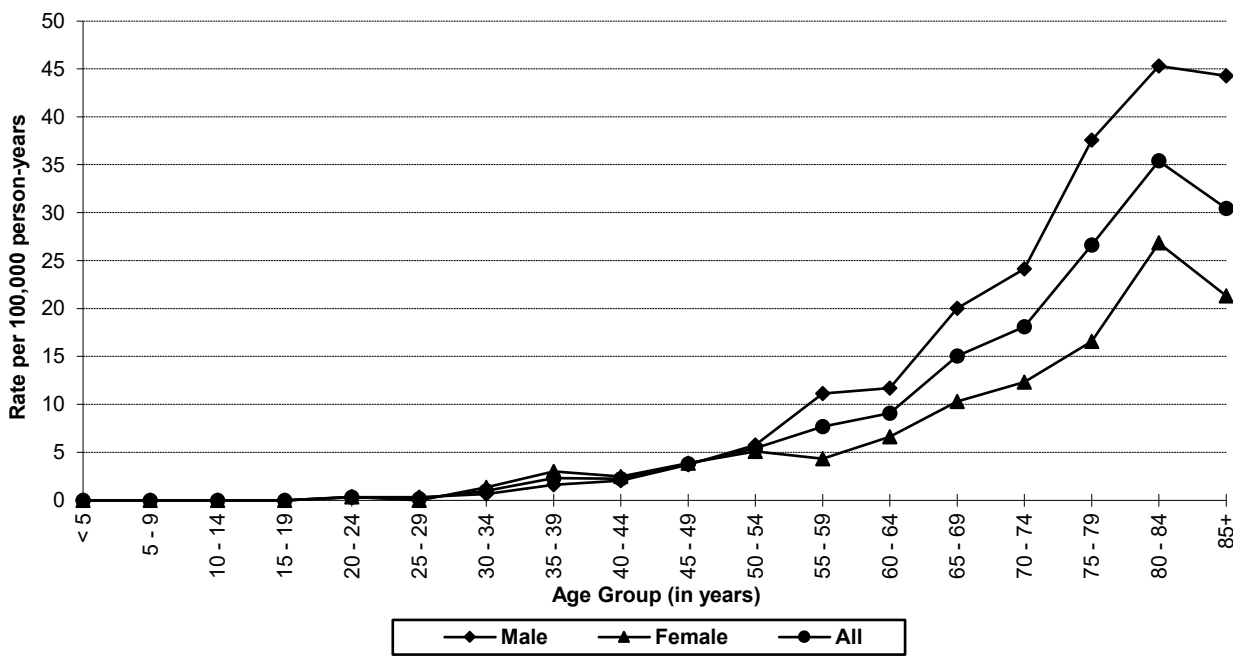
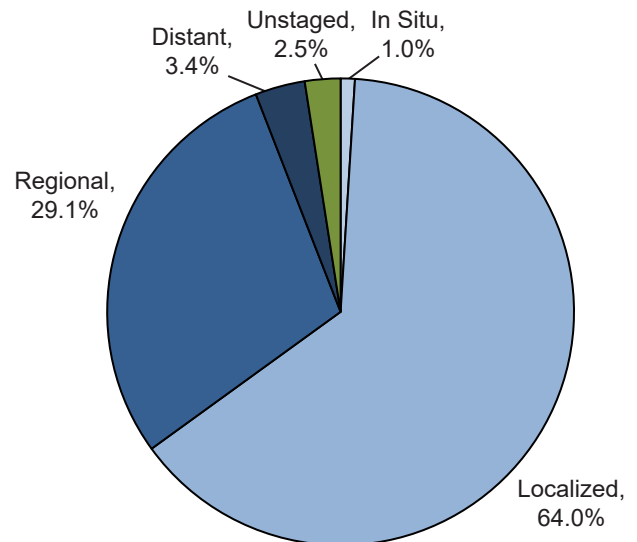**Stomach Cancer Incidence
Age-adjusted Rates by Health District**
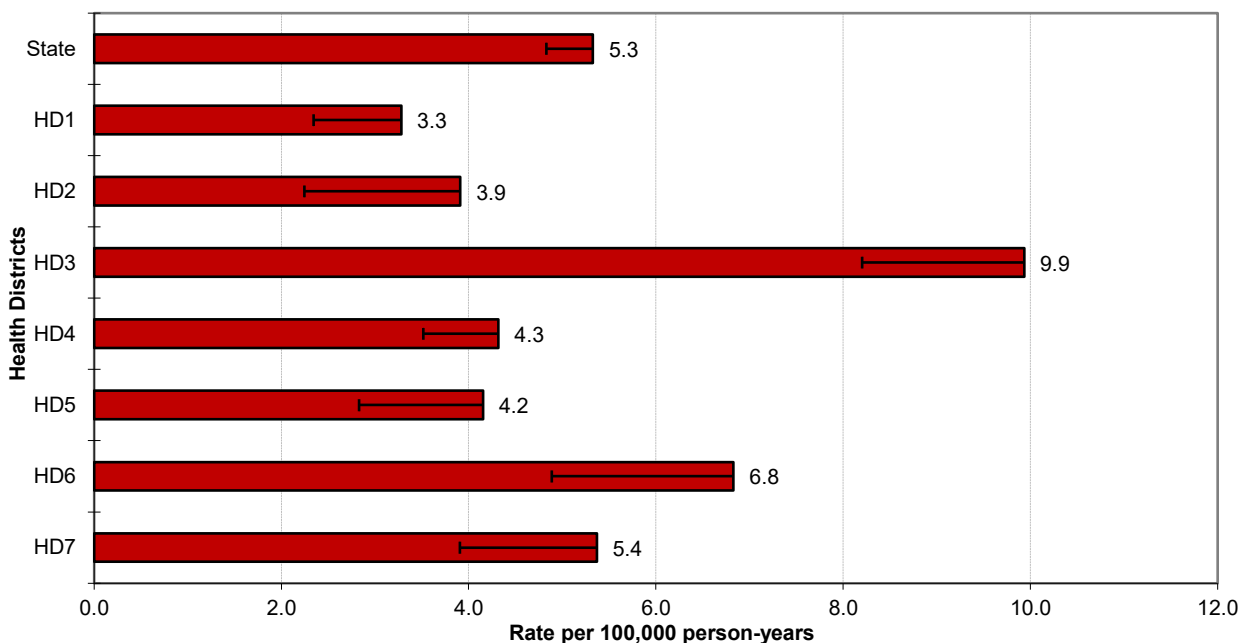
TESTIS

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	-	6.3	-
# of new invasive cases	-	59	-
# of new in situ cases	-	0	-
# of deaths	-	2	-

Total Cases by County

County		County		County	
Ada	15	Cassia	1	Lewis	-
Adams	-	Clark	-	Lincoln	-
Bannock	1	Clearwater	-	Madison	2
Bear Lake	-	Custer	-	Minidoka	1
Benewah	-	Elmore	4	Nez Perce	1
Bingham	2	Franklin	1	Oneida	-
Blaine	-	Fremont	-	Owyhee	-
Boise	1	Gem	2	Payette	-
Bonner	2	Gooding	1	Power	-
Bonneville	-	Idaho	-	Shoshone	-
Boundary	2	Jefferson	1	Teton	1
Butte	-	Jerome	-	Twin Falls	3
Camas	-	Kootenai	7	Valley	-
Canyon	10	Latah	1	Washington	-
Caribou	-	Lemhi	-		

Stage at Diagnosis - Testis

Distant, 10.2%
Regional, 22.0%
Localized, 67.8%

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:	5.9
95% confidence interval on the mean age-adjusted incidence rate:	4.1–7.6
Median age-adjusted incidence rate of health districts:	5.2
Range of age-adjusted incidence rate for health districts:	3.0–9.3
USCS rate (2021, all races):	5.7

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 2018–2022
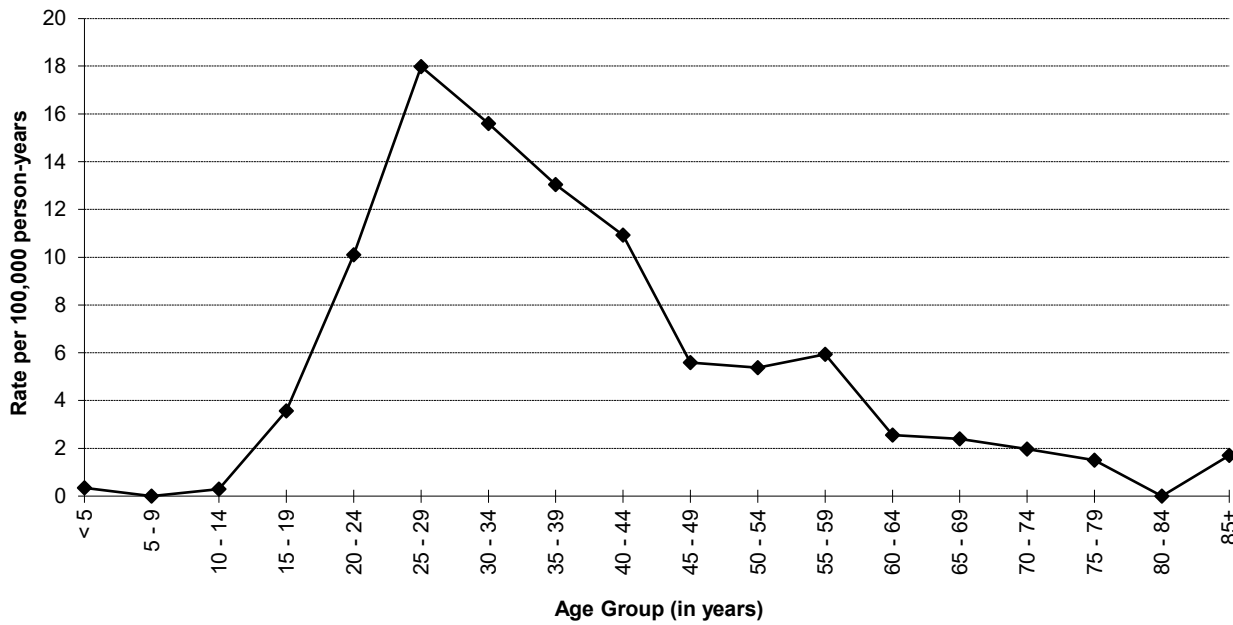
Testis Cancer Incidence
Age-adjusted Rates by Health District
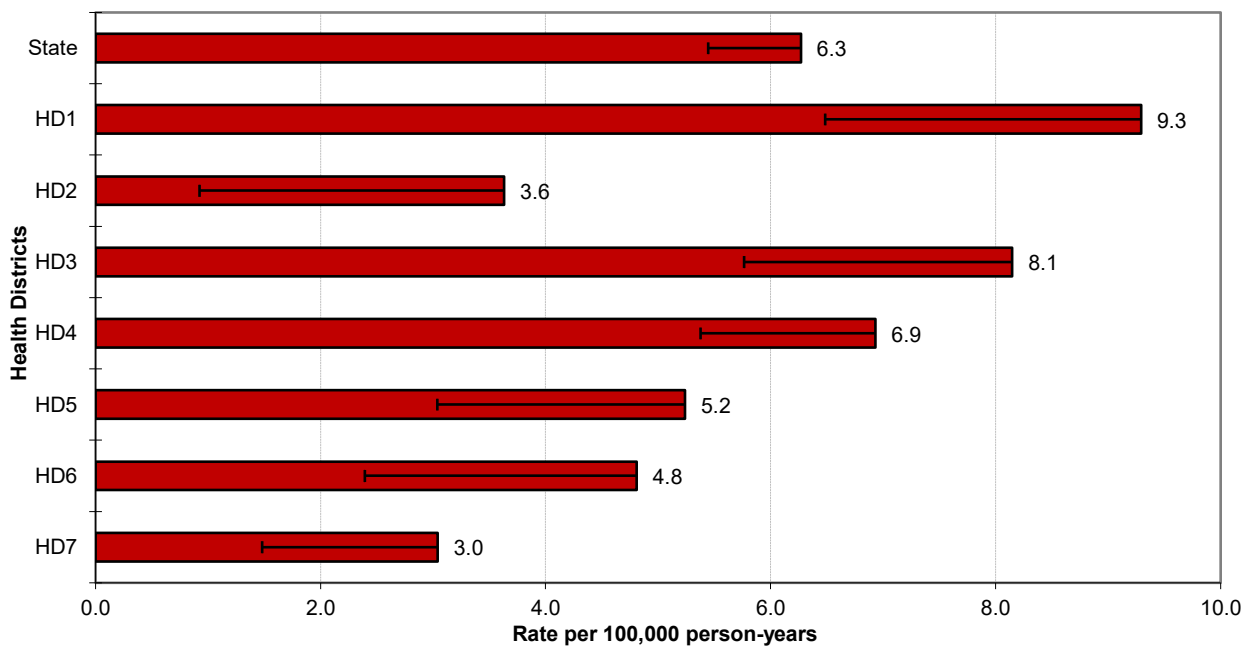
THYROID

Incidence and Mortality Summary

	Total	Male	Female
Age-adjusted incidence rate per 100,000	10.2	6.9	13.8
# of new invasive cases	201	71	130
# of new in situ cases	2	0	2
# of deaths	14	8	6

Total Cases by County

County		County		County	
Ada	50	Cassia	4	Lewis	-
Adams	-	Clark	-	Lincoln	1
Bannock	11	Clearwater	-	Madison	3
Bear Lake	1	Custer	-	Minidoka	2
Benewah	-	Elmore	3	Nez Perce	5
Bingham	12	Franklin	-	Oneida	2
Blaine	5	Fremont	1	Owyhee	1
Boise	-	Gem	3	Payette	3
Bonner	4	Gooding	2	Power	1
Bonneville	24	Idaho	1	Shoshone	2
Boundary	1	Jefferson	9	Teton	2
Butte	-	Jerome	-	Twin Falls	6
Camas	-	Kootenai	15	Valley	-
Canyon	25	Latah	1	Washington	1
Caribou	1	Lemhi	1		

Stage at Diagnosis - Thyroid

- Distant, 3.4%
- Unstaged, 2.5%
- In Situ, 1.0%
- Regional, 29.1%
- Localized, 64.0%

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:	10.5
95% confidence interval on the mean age-adjusted incidence rate:	7.2–13.8
Median age-adjusted incidence rate of health districts:	8.7
Range of age-adjusted incidence rate for health districts:	5.2–17.4
USCS rate (2021, all races):	12.6

The age-specific incidence rates of thyroid cancer were typically higher for females than males. Health Districts 6 and 7 had statistically significantly more 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 2018–2022
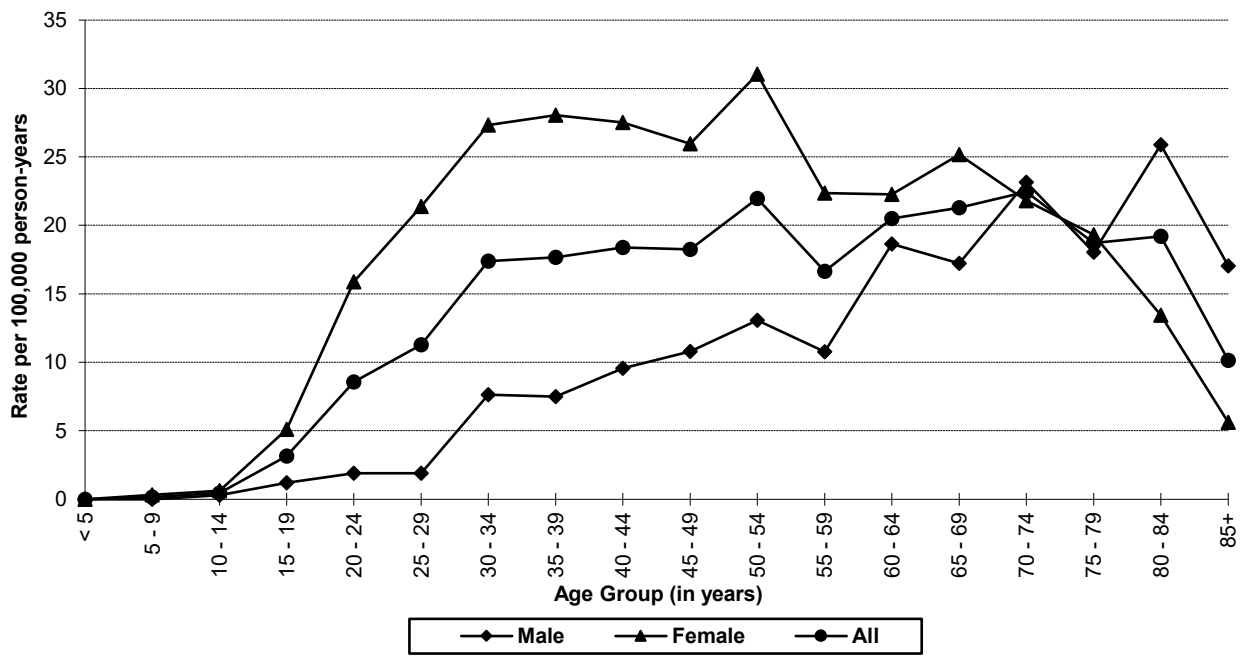
Thyroid Cancer Incidence
Age-adjusted Rates by Health District
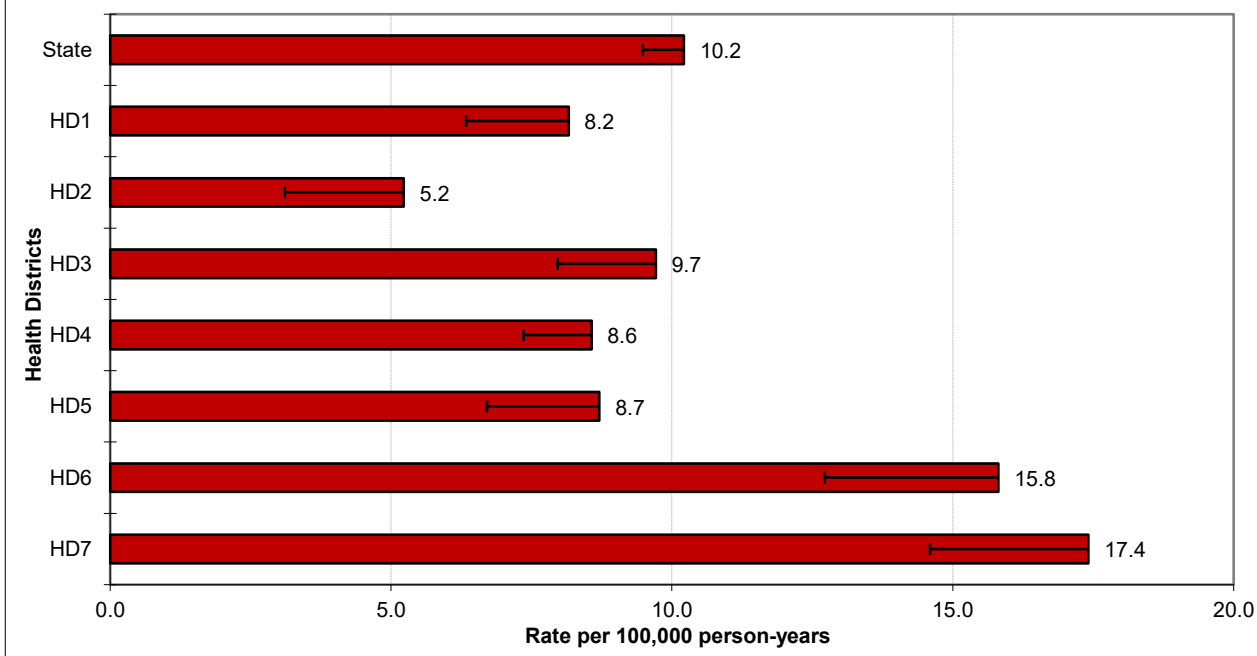
SECTION II

**INCIDENCE DATA BY SITE AND GENDER
– STATE OF IDAHO, 2022**

Idaho Resident Cancer Cases – 2022

Primary Site of Cancer	Invasive			In situ		
	Total	Male	Female	Total	Male	Female
All Sites	9,796	4,999	4,797	1,514	776	738
Oral Cavity and Pharynx	264	189	75	9	8	1
Lip	17	10	7	5	5	-
Tongue	98	69	29	3	2	1
Salivary Gland	26	17	9	-	-	-
Floor of Mouth	6	3	3	-	-	-
Gum and Other Mouth	29	12	17	-	-	-
Nasopharynx	8	6	2	-	-	-
Tonsil	50	43	7	-	-	-
Oropharynx	18	17	1	1	1	-
Hypopharynx	11	11	-	-	-	-
Other Oral Cavity and Pharynx	1	1	-	-	-	-
Digestive System	1,659	907	752	32	15	17
Esophagus	115	91	24	-	-	-
Stomach	122	68	54	-	-	-
Small Intestine	55	30	25	-	-	-
Colon and Rectum	745	385	360	27	13	14
Colon excluding Rectum	528	256	272	27	13	14
Cecum	79	40	39	-	-	-
Appendix	50	20	30	25	13	12
Ascending Colon	90	39	51	-	-	-
Hepatic Flexure	25	13	12	-	-	-
Transverse Colon	46	17	29	-	-	-
Splenic Flexure	21	14	7	-	-	-
Descending Colon	37	17	20	1	-	1
Sigmoid Colon	154	84	70	1	-	1
Large Intestine, NOS	26	12	14	-	-	-
Rectum and Rectosigmoid Junction	217	129	88	-	-	-
Rectosigmoid Junction	36	18	18	-	-	-
Rectum	181	111	70	-	-	-
Anus, Anal Canal and Anorectum	41	10	31	2	-	2
Liver and Intrahepatic Bile Duct	183	122	61	-	-	-
Liver	140	102	38	-	-	-
Intrahepatic Bile Duct	43	20	23	-	-	-
Gallbladder	24	4	20	-	-	-
Other Biliary	29	18	11	-	-	-
Pancreas	308	165	143	3	2	1
Retroperitoneum	7	2	5	-	-	-
Peritoneum, Omentum and Mesentery	11	2	9	-	-	-
Other Digestive Organs	19	10	9	-	-	-
Respiratory System	1,039	537	502	7	3	4
Nose, Nasal Cavity and Middle Ear	8	6	2	2	1	1
Larynx	48	39	9	1	1	-
Lung and Bronchus	976	490	486	4	1	3
Pleura	2	-	2	-	-	-
Trachea, Mediastinum and Other Respiratory Organs	5	2	3	-	-	-
Skin excluding Basal and Squamous	820	483	337	897	549	348
Melanoma of the Skin	786	463	323	897	549	348
Other Non-Epithelial Skin	34	20	14	-	-	-
Breast	1,610	14	1,596	314	1	313

Primary Site of Cancer	Invasive			In situ		
	Total	Male	Female	Total	Male	Female
Female Genital System	538	-	538	6	-	6
Cervix Uteri	58	-	58	-	-	-
Corpus and Uterus, NOS	314	-	314	2	-	2
Corpus Uteri	308	-	308	2	-	2
Uterus, NOS	6	-	6	-	-	-
Ovary	115	-	115	2	-	2
Vagina	4	-	4	-	-	-
Vulva	28	-	28	2	-	2
Other Female Genital Organs	19	-	19	-	-	-
Male Genital System	1,445	1,445	-	9	9	-
Prostate	1,376	1,376	-	-	-	-
Testis	59	59	-	-	-	-
Penis	6	6	-	8	8	-
Other Male Genital Organs	4	4	-	1	1	-
Urinary System	623	447	176	235	189	46
Urinary Bladder	237	187	50	219	182	37
Kidney and Renal Pelvis	368	248	120	6	3	3
Ureter	7	4	3	5	2	3
Other Urinary Organs	11	8	3	5	2	3
Brain and Other Nervous System	154	86	68	-	-	-
Brain	147	83	64	-	-	-
Cranial Nerves Other Nervous System	7	3	4	-	-	-
Endocrine System	234	82	152	2	-	2
Thyroid	201	71	130	2	-	2
Other Endocrine including Thymus	33	11	22	-	-	-
Lymphoma	425	229	196	-	-	-
Hodgkin Lymphoma	43	27	16	-	-	-
Non-Hodgkin Lymphoma	382	202	180	-	-	-
Myeloma	146	94	52	-	-	-
Leukemia	376	223	153	-	-	-
Lymphocytic Leukemia	190	107	83	-	-	-
Acute Lymphocytic Leukemia	35	17	18	-	-	-
Chronic Lymphocytic Leukemia	149	85	64	-	-	-
Other Lymphocytic Leukemia	6	5	1	-	-	-
Myeloid and Monocytic Leukemia	169	106	63	-	-	-
Acute Myeloid Leukemia	126	81	45	-	-	-
Acute Monocytic Leukemia	2	1	1	-	-	-
Chronic Myeloid Leukemia	40	23	17	-	-	-
Other Myeloid/Monocytic Leukemia	1	1	-	-	-	-
Other Leukemia	17	10	7	-	-	-
Other Acute Leukemia	2	-	2	-	-	-
Aleukemic, Subleukemic and NOS	15	10	5	-	-	-
Other or Unknown Sites	463	263	200	3	2	1
Bones and Joints	18	9	9	-	-	-
Soft Tissue including Heart	59	37	22	-	-	-
Eye and Orbit	23	9	14	3	2	1
Mesothelioma	15	13	2	-	-	-
Kaposi Sarcoma	2	2	-	-	-	-
Miscellaneous	346	193	153	-	-	-

**MORTALITY RATES BY SITE AND GENDER
– STATE OF IDAHO, 2022**

Idaho Resident Cancer Mortality Rates – 2022

Cause of Death	Total			Male			Female		
	Rate	Deaths	Pop	Rate	Deaths	Pop	Rate	Deaths	Pop
All Causes of Death	788.0	17,114	1,938,996	897.7	9,096	975,291	685.1	8,018	963,705
All Malignant Cancers	135.1	3,127	1,938,996	156.2	1,697	975,291	117.5	1,430	963,705
Bladder	4.0	91	1,938,996	7.0	73	975,291	1.5	18	963,705
Brain and Other Nervous System	4.7	109	1,938,996	5.2	59	975,291	4.2	50	963,705
Breast	11.2	247	1,938,996	0.0	0	975,291	21.1	247	963,705
Cervix	-	-	-	-	-	-	1.6	19	963,705
Colorectal	11.9	269	1,938,996	13.4	147	975,291	10.4	122	963,705
Corpus Uteri	-	-	-	-	-	-	2.7	35	963,705
Esophagus	3.4	83	1,938,996	6.1	72	975,291	0.9	11	963,705
Hodgkin Lymphoma	0.1	3	1,938,996	0.2	2	975,291	0.1	1	963,705
Kidney	3.6	84	1,938,996	4.8	51	975,291	2.6	33	963,705
Larynx	0.6	14	1,938,996	1.2	13	975,291	0.1	1	963,705
Leukemia	5.9	136	1,938,996	8.2	87	975,291	4.1	49	963,705
Liver and Bile Duct	6.4	153	1,938,996	8.8	103	975,291	4.2	50	963,705
Lung and Bronchus	24.4	581	1,938,996	28.2	313	975,291	21.2	268	963,705
Melanoma of the Skin	2.7	60	1,938,996	3.7	38	975,291	1.7	22	963,705
Myeloma	3.1	70	1,938,996	3.9	40	975,291	2.4	30	963,705
Non-Hodgkin Lymphoma	5.3	118	1,938,996	6.5	69	975,291	4.1	49	963,705
Oral Cavity and Pharynx	2.3	56	1,938,996	3.8	44	975,291	1.0	12	963,705
Ovary	-	-	-	-	-	-	6.2	79	963,705
Pancreas	10.2	244	1,938,996	11.8	136	975,291	8.8	108	963,705
Prostate	-	-	-	21.3	212	975,291	-	-	-
Stomach	1.6	36	1,938,996	2.0	20	975,291	1.4	16	963,705
Testis	-	-	-	0.2	2	975,291	-	-	-
Thyroid	0.6	14	1,938,996	0.8	8	975,291	0.5	6	963,705

Data source: Bureau of Vital Records and Health Statistics (BVRHS), Idaho Department of Health and Welfare, 2023.[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

**2018–2022 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	20.4	12.4	13.8	20.8	40.7	59.0	96.7	150.7	227.0	338.1	535.7	753.8	1118.0	1590.1	1939.5	2260.0	2480.7	2328.8
Male	18.0	15.3	14.5	17.6	34.4	49.5	71.0	104.0	149.8	245.4	488.2	788.7	1251.8	1861.6	2262.7	2759.4	2996.2	3012.3
Female	23.0	9.4	13.1	24.0	47.6	69.2	122.7	198.5	306.8	434.6	584.2	720.0	990.6	1331.6	1628.3	1801.5	2035.0	1878.6
Bladder																		
All	0.0	0.0	0.0	0.2	0.2	0.0	0.7	1.2	1.6	5.7	12.6	22.5	36.7	68.8	109.1	147.1	178.2	190.0
Male	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.6	2.7	8.6	18.8	35.3	57.7	112.9	180.6	253.3	311.9	376.3
Female	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.7	0.4	2.7	6.3	10.1	16.7	26.7	40.3	49.7	62.7	67.3
Brain																		
All	2.3	3.2	2.2	1.1	2.8	2.6	2.8	5.1	5.9	5.1	8.4	11.5	15.7	17.0	17.9	22.7	25.2	23.7
Male	1.4	3.1	1.7	1.2	2.8	2.8	4.0	6.9	7.9	7.1	8.8	15.2	15.0	23.2	19.7	29.3	29.8	20.4
Female	3.2	3.2	2.7	0.9	2.8	2.4	1.7	3.3	3.9	3.1	7.9	7.9	16.4	11.1	16.1	16.6	21.3	25.8
Brain & Other Central Nervous System (Non-Malignant)																		
All	1.9	0.8	1.5	2.2	2.3	5.2	6.0	8.6	12.0	18.6	22.7	25.4	31.5	42.2	57.9	74.1	76.2	100.8
Male	1.4	1.3	1.7	1.5	1.9	3.8	4.0	5.2	6.8	13.0	11.1	15.6	21.9	24.4	42.8	48.9	49.2	73.2
Female	2.5	0.3	1.2	3.0	2.8	6.8	8.1	12.0	17.3	24.4	34.6	35.0	40.7	59.1	72.5	97.3	99.6	118.9
Breast																		
Female Invasive	0.0	0.0	0.0	0.3	2.8	9.5	25.3	58.4	136.1	193.3	231.0	253.7	330.4	460.7	526.4	498.9	500.1	371.2
Female In Situ	0.0	0.0	0.0	0.0	0.0	0.3	2.0	7.3	30.0	50.4	63.3	59.8	67.5	103.7	102.3	83.5	57.1	15.7
Cervix																		
Female	0.0	0.3	0.0	0.3	0.3	3.4	9.4	12.4	14.8	12.8	13.4	11.5	9.4	7.6	5.2	4.1	5.6	6.7
Colorectal																		
All	0.0	0.3	0.5	2.1	1.5	3.6	7.0	10.4	22.2	37.0	64.7	61.8	78.2	103.5	115.9	160.8	213.6	227.9
Male	0.0	0.0	0.6	1.8	1.3	3.2	6.6	8.8	19.1	35.7	77.2	78.0	95.7	119.8	127.5	182.7	242.0	236.7
Female	0.0	0.7	0.3	2.4	1.7	4.1	7.4	12.0	25.4	38.4	51.9	46.1	61.6	88.1	104.7	140.8	189.1	222.1
Corpus Uteri																		
Female	0.0	0.0	0.0	0.0	0.0	2.4	5.4	14.7	15.5	19.8	45.2	69.6	86.3	99.5	98.1	72.5	81.7	57.2
Esophagus																		
All	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.7	0.5	2.7	4.3	9.0	14.1	19.0	18.6	29.5	34.2	26.4
Male	0.0	0.0	0.0	0.0	0.0	0.3	0.0	1.0	1.0	4.1	6.2	14.9	24.5	34.4	29.0	57.1	55.7	52.8
Female	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0	1.2	2.4	3.2	4.2	4.2	8.5	4.1	15.7	9.0

AGE-SPECIFIC CANCER RATES, PER 100,000 POPULATION, BY SITE AND GENDER — 2018–2022

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	0.5	1.0	2.7	5.1	3.1	2.5	3.3	1.9	2.3	1.4	2.6	2.7	2.9	3.1	3.6	5.4	0.0
Male	0.0	0.6	0.6	1.8	5.7	3.2	1.7	4.6	3.4	2.6	2.3	3.0	3.7	4.0	5.4	5.3	6.5	0.0
Female	0.0	0.3	1.5	3.6	4.5	3.1	3.4	2.0	0.4	1.9	0.4	2.2	1.7	1.9	1.0	2.1	4.5	0.0
Kidney & Renal Pelvis																		
All	3.1	0.6	0.0	0.0	0.7	1.6	3.5	5.8	9.5	17.9	25.1	36.9	45.1	57.6	83.8	92.5	91.8	77.8
Male	2.7	0.9	0.0	0.0	0.6	2.5	4.7	8.2	12.3	23.8	33.0	54.2	66.9	77.3	113.7	126.3	134.6	122.6
Female	3.6	0.3	0.0	0.0	0.7	0.7	2.4	3.3	6.7	11.6	16.9	20.2	24.4	38.9	55.0	61.4	54.8	48.2
Larynx																		
All	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.4	2.3	5.3	8.0	7.6	8.9	9.4	16.8	10.8
Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7	3.8	6.7	12.8	11.2	13.3	15.8	32.4	18.7
Female	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.8	4.0	3.5	4.2	4.7	3.5	3.4	5.6
Leukemia																		
All	7.9	4.1	3.4	1.8	1.8	2.0	3.7	4.8	5.6	10.4	19.0	22.1	34.2	49.2	68.3	90.3	101.4	123.1
Male	7.2	6.2	4.1	1.2	1.3	2.8	5.0	5.5	6.5	11.5	22.3	27.1	43.9	62.9	81.7	107.5	141.1	177.1
Female	8.6	2.0	2.7	2.4	2.4	1.0	2.4	4.0	4.6	9.3	15.7	17.3	25.0	36.2	55.4	74.5	67.1	87.5
Liver & Bile Duct																		
All	0.4	0.2	0.3	0.0	0.2	0.5	0.5	1.3	1.9	2.9	8.0	14.5	27.1	36.3	38.6	40.7	32.4	31.8
Male	0.0	0.0	0.3	0.0	0.0	1.0	0.7	1.6	2.7	3.4	10.8	20.8	41.3	52.5	55.1	55.6	44.0	47.7
Female	0.7	0.3	0.3	0.0	0.3	0.0	0.3	1.0	1.1	2.3	5.1	8.3	13.6	21.0	22.7	26.9	22.4	21.3
Lung & Bronchus																		
All	0.0	0.0	0.2	0.0	0.2	0.3	0.7	1.2	3.6	9.5	24.1	55.8	109.1	159.2	257.6	327.0	364.8	304.3
Male	0.0	0.0	0.3	0.0	0.0	0.6	1.0	0.3	4.8	8.2	20.7	53.1	107.4	164.2	276.1	374.3	376.6	388.2
Female	0.0	0.0	0.0	0.0	0.3	0.0	0.3	2.0	2.5	10.9	27.5	58.4	110.6	154.4	239.7	283.6	354.7	249.0
Melanoma of the Skin																		
All	0.2	0.0	0.5	1.3	4.3	7.4	13.2	21.3	26.4	31.3	40.8	47.2	68.6	94.7	122.9	146.1	168.6	174.5
Male	0.0	0.0	0.0	1.2	1.9	5.1	9.6	16.3	25.9	29.8	44.2	54.2	85.1	114.1	168.8	209.0	256.3	301.4
Female	0.4	0.0	0.9	1.5	6.9	9.8	16.9	26.4	26.8	32.9	37.3	40.4	52.9	76.3	78.6	88.3	92.9	90.8
Myeloma																		
All	0.0	0.0	0.0	0.0	0.0	0.2	0.3	1.0	1.4	4.9	5.6	8.8	17.5	24.4	32.6	43.9	50.4	40.6
Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.7	5.2	8.8	13.0	24.1	29.2	41.4	59.4	63.4	61.3
Female	0.0	0.0	0.0	0.0	0.0	0.3	0.7	1.0	1.1	4.7	2.4	4.7	11.1	19.8	24.2	29.7	39.2	26.9

IDAHO — AGE-SPECIFIC CANCER RATES, PER 100,000 POPULATION, BY SITE AND GENDER

2018–2022

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	1.1	1.0	1.9	0.9	3.0	4.3	3.5	5.4	9.9	14.2	16.9	31.6	44.0	62.5	77.5	101.1	116.4	98.7
Male	1.4	1.9	2.9	1.5	2.8	5.1	3.3	7.2	12.6	16.8	16.5	35.7	52.6	71.7	95.5	125.5	125.5	107.3
Female	0.7	0.0	0.9	0.3	3.1	3.4	3.7	3.7	7.1	11.6	17.3	27.8	35.8	53.8	60.2	78.7	108.5	93.1
Oral Cavity & Pharynx																		
All	0.0	0.0	0.3	0.3	0.3	0.5	1.5	2.1	4.9	8.2	20.0	28.4	41.9	50.0	49.3	51.8	43.2	53.4
Male	0.0	0.0	0.3	0.6	0.6	0.3	1.3	2.0	6.1	10.8	30.4	43.1	66.1	78.5	66.0	74.4	63.4	64.7
Female	0.0	0.0	0.3	0.0	0.0	0.7	1.7	2.3	3.5	5.4	9.4	14.1	18.8	22.9	33.2	31.1	25.7	46.0
Ovary																		
Female	0.0	0.3	0.6	1.2	1.0	2.4	3.4	5.7	7.8	13.9	15.3	19.8	31.0	30.5	31.7	43.5	36.9	48.2
Pancreas																		
All	0.0	0.0	0.0	0.2	0.3	0.2	1.0	1.8	3.0	4.8	11.7	21.0	32.8	47.1	66.9	86.7	99.6	106.2
Male	0.0	0.0	0.0	0.0	0.3	0.0	1.3	1.3	3.1	6.3	14.6	23.0	34.7	52.5	82.2	94.7	129.4	134.5
Female	0.0	0.0	0.0	0.3	0.3	0.3	0.7	2.3	2.8	3.1	8.6	19.1	31.0	42.0	52.1	79.4	73.8	87.5
Prostate																		
Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	4.4	27.2	108.7	227.6	412.9	696.5	711.7	701.3	585.0	458.1
Stomach																		
All	0.0	0.0	0.0	0.0	0.3	0.2	1.0	2.3	2.3	3.8	5.4	7.7	9.1	15.0	18.1	26.6	35.4	30.4
Male	0.0	0.0	0.0	0.0	0.3	0.3	0.7	1.6	2.1	3.7	5.8	11.1	11.7	20.0	24.1	37.6	45.3	44.3
Female	0.0	0.0	0.0	0.0	0.3	0.0	1.4	3.0	2.5	3.9	5.1	4.3	6.6	10.3	12.3	16.6	26.9	21.3
Testis																		
Male	0.3	0.0	0.3	3.6	10.1	18.0	15.6	13.0	10.9	5.6	5.4	5.9	2.6	2.4	2.0	1.5	0.0	1.7
Thyroid																		
All	0.0	0.2	0.5	3.1	8.6	11.3	17.4	17.7	18.4	18.2	22.0	16.6	20.5	21.3	22.5	18.7	19.2	10.1
Male	0.0	0.0	0.3	1.2	1.9	1.9	7.6	7.5	9.6	10.8	13.1	10.8	18.6	17.2	23.1	18.0	25.9	17.0
Female	0.0	0.3	0.6	5.1	15.9	21.4	27.3	28.0	27.5	26.0	31.0	22.3	22.3	25.2	21.8	19.3	13.4	5.6

SECTION V

2022 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	1,588	1,713.8*	676	685.6	1,849	1,594.9*	3,049	2,909.0+	1,084	1,098.5	904	892.4	865	1,086.7*
Bladder	79	79.5	35	32.7	91	70.7+	132	132.4	47	50.8	40	40.3	32	48.6+
Brain	22	23.9	8	9.6	28	23.6	46	42.3	18	16.0	11	13.7	14	16.8
Brain & CNS non-Malignant	40	61.1*	12	24.7*	75	53.6*	114	98.9	32	39.2	37	30.6	39	37.5
Breast	253	272.1	112	106.9	288	258.6	524	460.7*	145	179.5*	144	144.1	144	175.0+
Breast (in situ)	51	52.0	19	20.3	59	50.1	108	88.6	27	35.0	27	28.3	23	34.9+
Cervix	10	8.6	4	3.4	8	10.1	18	17.9	6	6.3	5	5.3	7	6.7
Colorectal	154	117.8*	50	50.3	128	120.6	192	233.8*	93	80.3	70	65.9	58	81.9*
Corpus Uteri	43	53.5	23	19.8	63	48.5	85	95.3	43	32.0	24	27.7	27	32.9
Esophagus	22	19.1	9	7.7	24	17.8	26	37.2	11	12.7	15	9.8	8	12.5
Hodgkin lymphoma	3	6.3	1	2.6	8	7.0	14	12.3	3	4.9	10	3.4*	4	6.3
Kidney & renal pelvis	48	65.7+	28	25.1	66	58.9	107	108.7	46	39.5	34	32.7	39	38.7
Larynx	7	8.6	2	3.5	8	7.8	16	13.3	10	4.7+	1	4.6	4	5.1
Leukemia	53	64.5	18	26.3	72	59.6	118	106.1	44	41.2	33	33.9	38	41.0
Liver & bile duct	30	31.5	11	12.7	40	27.9+	51	55.2	19	20.2	22	15.7	10	20.1+
Lung & bronchus	207	162.7*	63	70.4	199	150.7*	263	290.8	89	109.6+	78	87.2	77	103.2*
Melanoma of skin	156	126.4+	56	53.1	109	132.5+	244	228.5	83	86.5	79	69.4	59	87.9*
Myeloma	21	26.2	6	10.8	32	22.1	51	39.0	12	16.6	11	13.1	13	15.4
N-H Lymphoma	61	65.3	20	26.7	76	59.9	120	109.4	42	41.9	31	34.3	32	41.4
Oral cavity & pharynx	42	45.0	16	18.0	45	42.8	82	76.6	33	28.3	19	24.0	27	28.1
Ovary	19	19.1	4	7.8	23	18.3	33	35.1	20	11.6+	11	10.1	5	13.1+
Pancreas	55	53.0	36	20.7*	54	49.4	83	92.7	29	34.6	32	26.8	19	33.2+
Prostate	122	265.3*	106	97.6	263	214.6*	509	351.6*	151	150.5	115	124.1	110	148.7*
Stomach	13	22.1	6	8.5	35	17.0*	30	38.7	11	13.7	13	10.7	14	12.8
Testis	11	7.1	2	3.6	12	9.4	20	17.7	6	6.3	4	5.7	4	8.8
Thyroid	22	31.8	7	12.6	33	33.5	52	65.6	20	21.9	27	17.5+	40	21.4*
Pediatric (age 0-19)	6	11.5	2	4.7	19	14.9	21	24.5	12	10.3	10	9.2	20	14.7

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.

2022 OBSERVED VERSUS EXPECTED NUMBERS
BY
HEALTH DISTRICT

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	790	904.9*	356	369.6	945	820.2*	1,592	1,469.1*	596	565.3	462	463.5	440	565.5*
Bladder	64	64.3	26	27.6	74	57.0+	108	104.7	38	41.0	34	32.6	25	39.9+
Brain	12	13.7	6	5.4	17	13.0	30	22.1	7	9.4	4	7.9	7	9.6
Brain & CNS non-Malignant	14	19.2	1	8.4*	19	17.6	39	29.0	11	12.2	13	9.6	13	11.9
Breast	1	2.6	2	0.8	3	2.1	4	4.3	0	1.7	3	1.1	1	1.6
Breast (in situ)	0	0.2	1	0.0*	0	0.2	0	0.5	0	0.1	0	0.1	0	0.1
Colorectal	76	62.0	25	26.5	62	62.8	100	119.1	56	40.6+	32	34.5	34	42.2
Esophagus	18	15.0	9	6.1	18	14.1	20	29.4	9	10.1	10	8.0	7	9.9
Hodgkin lymphoma	3	3.8	1	1.7	5	4.3	8	8.2	1	3.1	6	2.1+	3	3.7
Kidney & renal pelvis	36	43.5	15	17.8	43	39.6	74	71.5	31	26.7	24	22.0	25	26.6
Larynx	6	7.0	1	2.9	5	6.6	14	10.2	9	3.7+	1	3.7	3	4.2
Leukemia	33	38.0	14	15.8	42	35.3	67	63.8	25	24.6	17	20.4	25	24.2
Liver & bile duct	18	21.2	9	8.7	25	18.7	36	35.7	13	13.4	14	10.6	7	13.6
Lung & bronchus	119	79.0*	28	37.1	91	77.1	121	148.1+	45	54.9	47	43.2	39	52.3
Melanoma of skin	82	77.9	36	32.7	60	78.0+	138	134.2	60	49.8	50	40.6	37	51.0+
Myeloma	10	17.6	2	7.2+	25	13.3*	36	23.4+	8	10.7	5	8.7	8	10.1
N-H Lymphoma	31	35.1	15	14.1	32	33.1	63	57.1	25	21.8	17	18.2	19	21.9
Oral cavity & pharynx	33	31.5	11	13.1	37	29.4	59	54.1	19	20.9	12	17.4	18	20.7
Pancreas	29	28.5	13	11.8	31	26.0	47	48.1	17	18.3	19	14.2	9	18.2+
Prostate	122	265.3*	106	97.6	263	214.6*	509	351.6*	151	150.5	115	124.1	110	148.7*
Stomach	9	12.1	5	4.8	14	10.4	17	21.1	8	7.4	6	6.1	9	7.1
Testis	11	7.1	2	3.6	12	9.4	20	17.7	6	6.3	4	5.7	4	8.8
Thyroid	6	12.4	3	4.8	15	10.9	21	21.4	6	8.0	5	6.5	15	7.0+
Pediatric (age 0-19)	3	6.2	2	2.5	7	8.6	14	11.9	5	5.6	5	4.9	11	6.7

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.

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	798	810.5	320	319.1	904	775.7*	1,457	1,432.9	488	532.5	442	429.8	425	522.0*
Bladder	15	15.2	9	5.9	17	13.5	24	26.2	9	9.7	6	7.8	7	9.0
Brain	10	10.1	2	4.2	11	10.6	16	20.0	11	6.6	7	5.8	7	7.3
Brain & CNS non-Malignant	26	42.1+	11	16.2	56	36.1*	75	70.0	21	26.9	24	21.1	26	25.5
Breast	252	270.4	110	103.7	285	259.2	520	460.1*	145	176.7+	141	142.5	143	170.9+
Breast (in situ)	51	52.1	18	19.9	59	50.6	108	88.6	27	34.6	27	28.1	23	34.1
Cervix	10	8.6	4	3.4	8	10.1	18	17.9	6	6.3	5	5.3	7	6.7
Colorectal	78	55.8*	25	23.7	66	57.8	92	114.5+	37	39.9	38	31.5	24	39.8*
Corpus Uteri	43	53.5	23	19.8	63	48.5	85	95.3	43	32.0	24	27.7	27	32.9
Esophagus	4	4.1	0	1.7	6	3.6	6	7.6	2	2.7	5	1.8	1	2.7
Hodgkin lymphoma	0	2.5	0	0.9	3	2.6	6	4.2	2	1.8	4	1.3	1	2.7
Kidney & renal pelvis	12	22.2+	13	7.7	23	19.0	33	36.8	15	12.8	10	10.7	14	12.3
Larynx	1	1.7	1	0.6	3	1.1	2	2.9	1	1.0	0	0.9	1	0.9
Leukemia	20	26.5	4	10.7+	30	24.3	51	42.0	19	16.6	16	13.5	13	16.9
Liver & bile duct	12	10.2	2	4.2	15	9.1	15	19.3	6	6.7	8	5.1	3	6.6
Lung & bronchus	88	83.9	35	33.6	108	73.6*	142	142.6	44	54.4	31	44.0	38	51.0
Melanoma of skin	74	48.7*	20	20.8	49	54.5	106	93.1	23	36.7+	29	29.0	22	36.8+
Myeloma	11	8.5	4	3.6	7	8.7	15	15.4	4	6.0	6	4.5	5	5.4
N-H Lymphoma	30	30.4	5	12.6+	44	26.8*	57	52.1	17	20.1	14	16.2	13	19.6
Oral cavity & pharynx	9	13.4	5	5.0	8	13.2	23	22.1	14	7.5+	7	6.7	9	7.7
Ovary	19	19.1	4	7.8	23	18.3	33	35.1	20	11.6+	11	10.1	5	13.1+
Pancreas	26	24.5	23	9.0*	23	23.4	36	44.5	12	16.3	13	12.5	10	15.1
Stomach	4	10.0	1	3.7	21	6.6*	13	17.5	3	6.3	7	4.6	5	5.8
Thyroid	16	19.5	4	7.8	18	22.8	31	43.8	14	14.0	22	11.0*	25	14.4+
Pediatric (age 0-19)	3	5.3	0	2.2	12	6.4	7	12.6	7	4.7	5	4.3	9	8.0

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.

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 <u>being diagnosed with 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 62	1 in 19	1 in 9	1 in 5	1 in 3	1 in 2
40		1 in 27	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 8	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 <u>dying from 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 645	1 in 168	1 in 56	1 in 23	1 in 11	1 in 6
40		1 in 226	1 in 60	1 in 23	1 in 11	1 in 6
50			1 in 81	1 in 25	1 in 11	1 in 6
60				1 in 35	1 in 13	1 in 6
70					1 in 18	1 in 7
80						1 in 9

All Sites, Invasive in Males

If your current age is:	Then your risk of <u>being diagnosed with 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 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 <u>dying from 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 881	1 in 209	1 in 58	1 in 20	1 in 10	1 in 5
40		1 in 269	1 in 61	1 in 20	1 in 10	1 in 5
50			1 in 76	1 in 21	1 in 10	1 in 5
60				1 in 28	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 <u>being diagnosed with breast 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 223	1 in 50	1 in 23	1 in 13	1 in 9	1 in 7
40		1 in 64	1 in 26	1 in 14	1 in 9	1 in 7
50			1 in 42	1 in 17	1 in 10	1 in 8
60				1 in 26	1 in 12	1 in 9
70					1 in 21	1 in 13
80						1 in 23

If your current age is:	Then your risk of <u>dying from breast 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 2302	1 in 664	1 in 233	1 in 120	1 in 69	1 in 39
40		1 in 924	1 in 257	1 in 125	1 in 70	1 in 39
50			1 in 348	1 in 141	1 in 74	1 in 40
60				1 in 228	1 in 90	1 in 43
70					1 in 136	1 in 48
80						1 in 57

Prostate Cancer

If your current age is:	Then your risk of <u>being diagnosed with prostate 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 24222	1 in 495	1 in 56	1 in 16	1 in 9	1 in 8
40		1 in 495	1 in 55	1 in 16	1 in 9	1 in 7
50			1 in 59	1 in 16	1 in 9	1 in 7
60				1 in 19	1 in 10	1 in 8
70					1 in 15	1 in 10
80						1 in 20

If your current age is:	Then your risk of <u>dying from prostate 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 *	1 in 19293	1 in 1382	1 in 318	1 in 103	1 in 38
40		1 in 18903	1 in 1354	1 in 312	1 in 101	1 in 37
50			1 in 1411	1 in 307	1 in 99	1 in 36
60				1 in 366	1 in 99	1 in 34
70					1 in 117	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 1017	1 in 246	1 in 116	1 in 68	1 in 41	1 in 28
40		1 in 320	1 in 129	1 in 70	1 in 43	1 in 28
50			1 in 211	1 in 88	1 in 48	1 in 30
60				1 in 143	1 in 59	1 in 34
70					1 in 91	1 in 40
80						1 in 55

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 6233	1 in 1340	1 in 514	1 in 251	1 in 138	1 in 68
40		1 in 1690	1 in 554	1 in 259	1 in 140	1 in 68
50			1 in 809	1 in 299	1 in 149	1 in 70
60				1 in 454	1 in 175	1 in 73
70					1 in 259	1 in 79
80						1 in 88

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 1273	1 in 283	1 in 98	1 in 53	1 in 35	1 in 26
40		1 in 357	1 in 104	1 in 54	1 in 35	1 in 26
50			1 in 141	1 in 62	1 in 38	1 in 27
60				1 in 103	1 in 48	1 in 31
70					1 in 76	1 in 38
80						1 in 51

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 5500	1 in 989	1 in 345	1 in 164	1 in 101	1 in 63
40		1 in 1181	1 in 361	1 in 166	1 in 101	1 in 63
50			1 in 503	1 in 186	1 in 107	1 in 64
60				1 in 276	1 in 127	1 in 69
70					1 in 201	1 in 79
80						1 in 90

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 488	1 in 201	1 in 115	1 in 70	1 in 49	1 in 39
40		1 in 337	1 in 149	1 in 81	1 in 54	1 in 42
50			1 in 162	1 in 105	1 in 63	1 in 47
60				1 in 166	1 in 79	1 in 55
70					1 in 135	1 in 74
80						1 in 124

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 18233	1 in 5271	1 in 2670	1 in 1301	1 in 788	1 in 435
40		1 in 7338	1 in 3096	1 in 1387	1 in 815	1 in 441
50			1 in 5246	1 in 1675	1 in 898	1 in 460
60				1 in 2351	1 in 1036	1 in 481
70					1 in 1679	1 in 549
80						1 in 629

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 766	1 in 253	1 in 118	1 in 61	1 in 36	1 in 26
40		1 in 371	1 in 137	1 in 65	1 in 37	1 in 26
50			1 in 209	1 in 76	1 in 39	1 in 27
60				1 in 112	1 in 45	1 in 29
70					1 in 64	1 in 33
80						1 in 46

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 12261	1 in 3969	1 in 1514	1 in 734	1 in 387	1 in 224
40		1 in 5750	1 in 1693	1 in 765	1 in 391	1 in 223
50			1 in 2322	1 in 854	1 in 406	1 in 225
60				1 in 1259	1 in 459	1 in 232
70					1 in 622	1 in 244
80						1 in 281

SECTION VII

CANCER TRENDS IN IDAHO
1975–2022

All Sites

Trends in Age-adjusted Incidence Rates
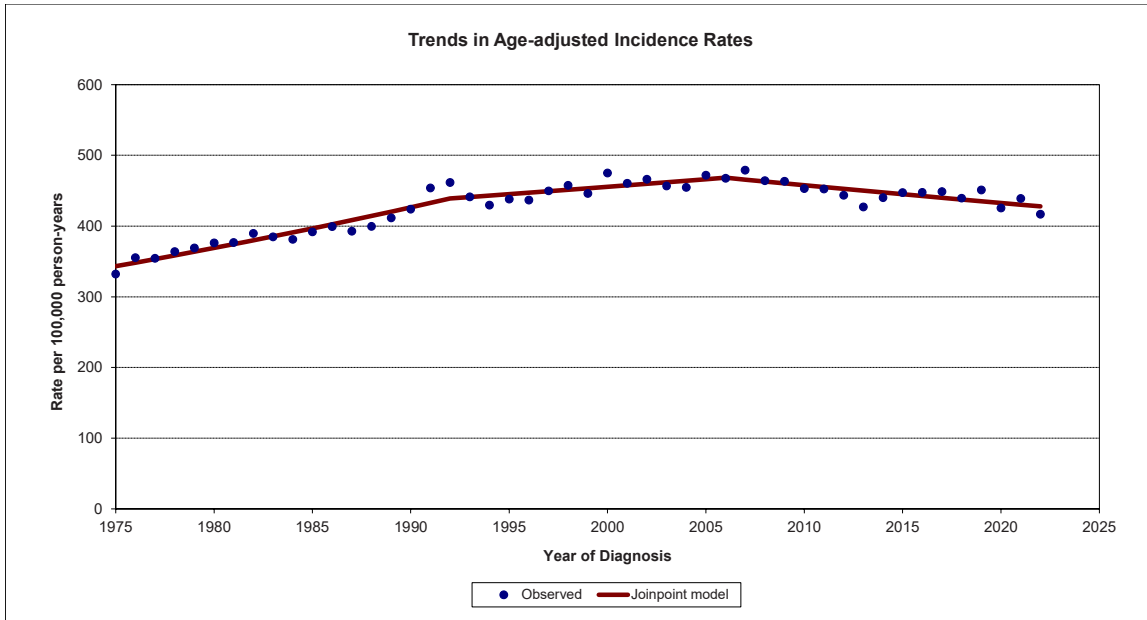
Cancer incidence increased at a rate of about 1.5% per year in Idaho from 1975 to 1992, and at a rate of about 0.5% per year from 1992 to 2006. Since 2006, overall cancer incidence has declined about 0.6% per year. Cancer incidence trends over time were different for males and females. For males, much 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
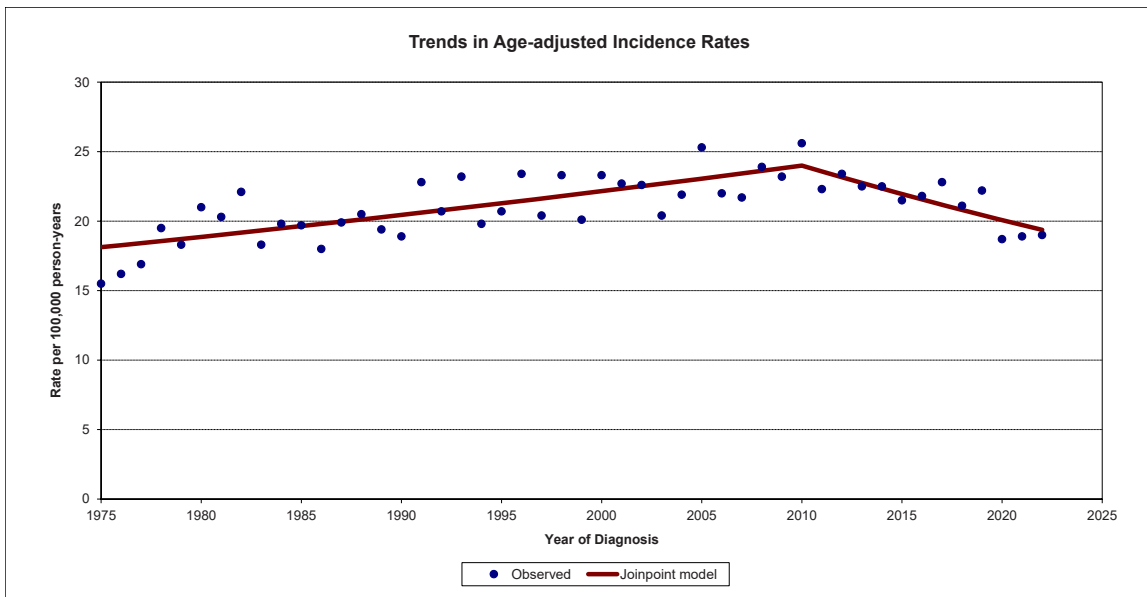
Bladder cancer incidence includes in situ and invasive cases. Bladder cancer incidence increased at a rate of about 0.8% per year in Idaho from 1975 to 2010, then decreased at a rate of about 1.8% per year since 2010. The trends in bladder cancer incidence are driven by males, who have rates of bladder cancer incidence about 4–5 times those of females.

Brain

Trends in Age-adjusted Incidence Rates
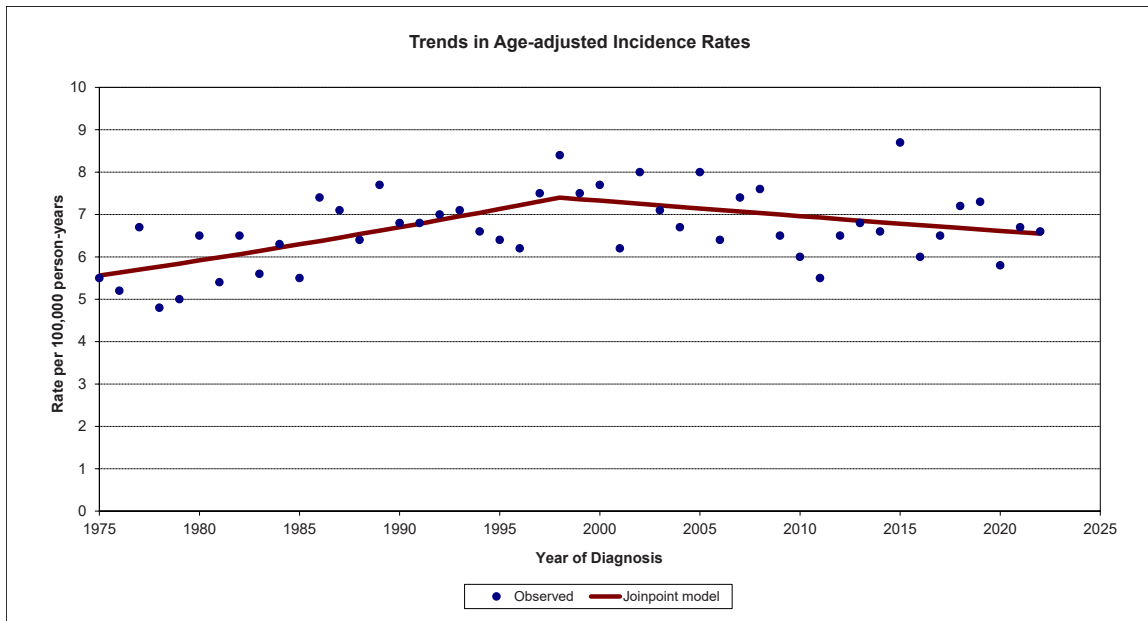
Malignant brain cancer incidence increased at a rate of about 1.3% per year in Idaho from 1975 to 1998, after which the rate has declined about 0.5% per year. Among males, malignant brain cancer incidence rates followed the same pattern. Among females, the rate has been stable 1975 to present.

Brain and Other CNS, Non-Malignant

Trends in Age-adjusted Incidence Rates
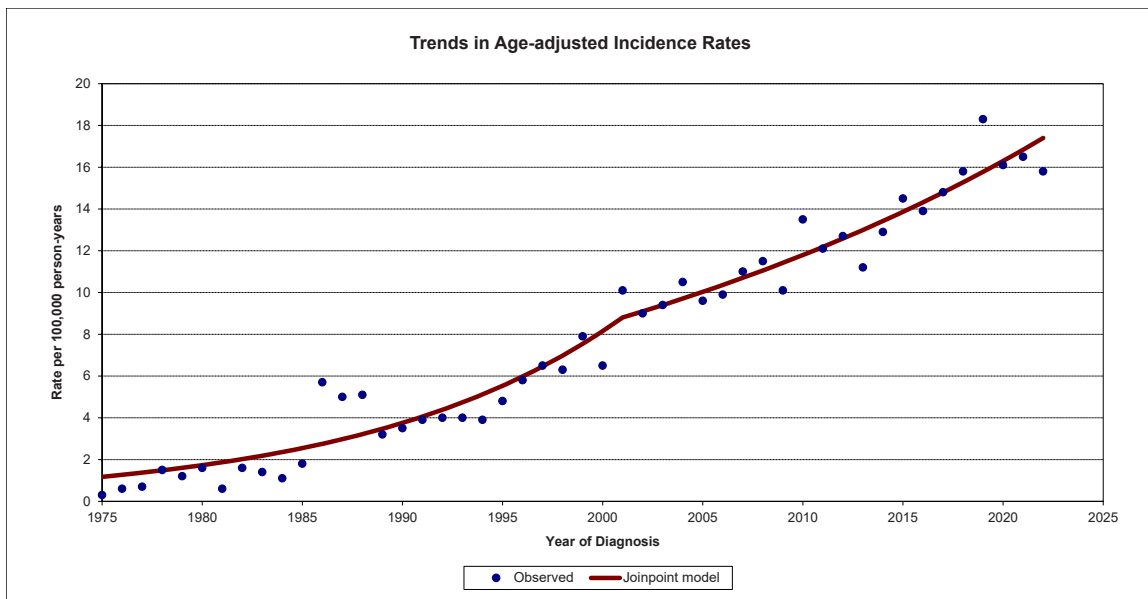
Non-malignant brain and other central nervous system tumors include those with benign and borderline behavior. Non-malignant brain and other CNS tumor incidence increased at a rate of about 8.1% per year in Idaho from 1975 to 2001 (some of which was due to improved reporting), after which the rate increased by about 3.3% per year.

Breast Female

Trends in Age-adjusted Incidence Rates
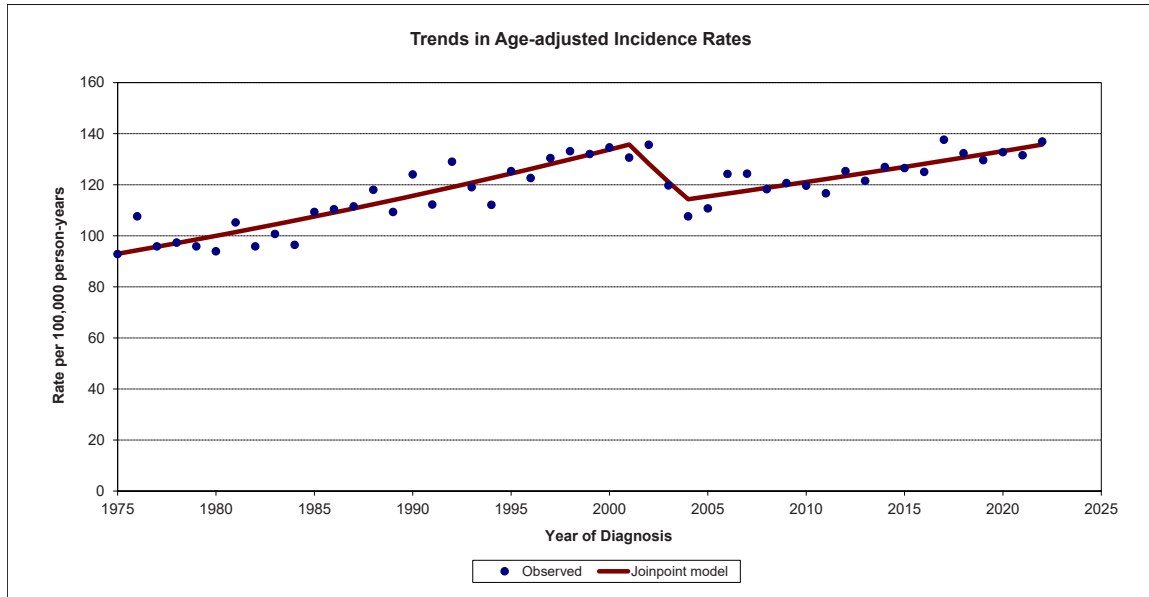
Invasive breast cancer incidence increased at a rate of about 1.5% per year among female Idahoans from 1975 to 2001. From 2001 to 2004, the rate decreased sharply by about 5.5% per year. This decrease may be due in part to a decrease in the use of hormone replacement therapy. Since 2004, the invasive breast cancer incidence rate has increased about 1.0% per year. In situ breast cancer rates increased at a rate of about 13.2% per year from 1975 to 1992 and 0.9% since 1992 (data not shown).

Cervix

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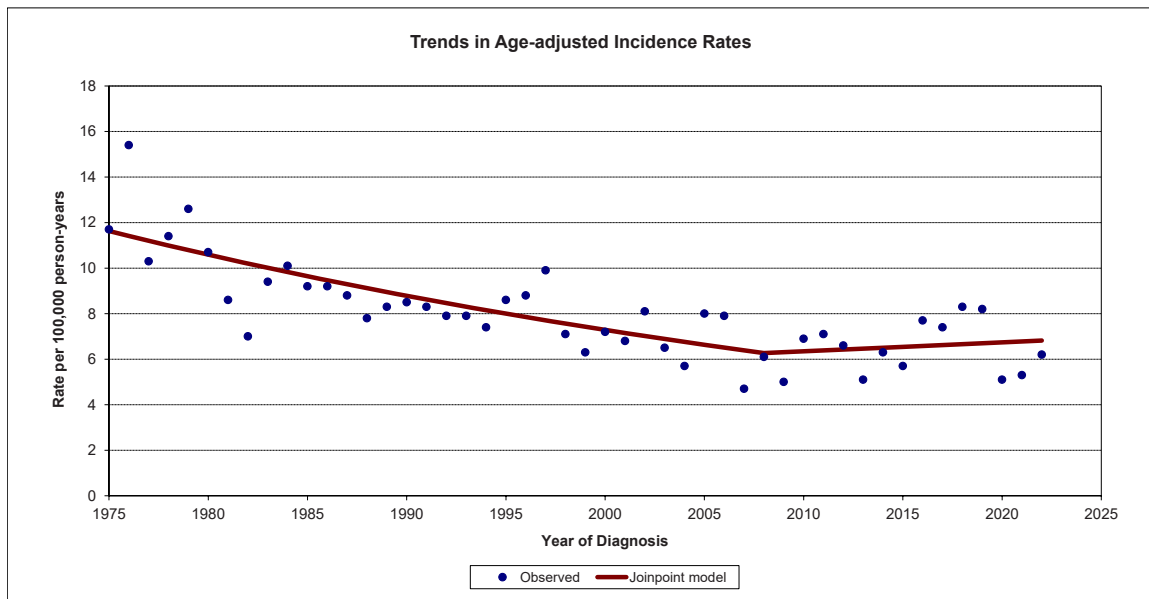
Invasive cervical cancer incidence decreased about 1.9% per year in Idaho from 1975 to 2008 and has been stable since 2008.

Colorectal

Trends in Age-adjusted Incidence Rates
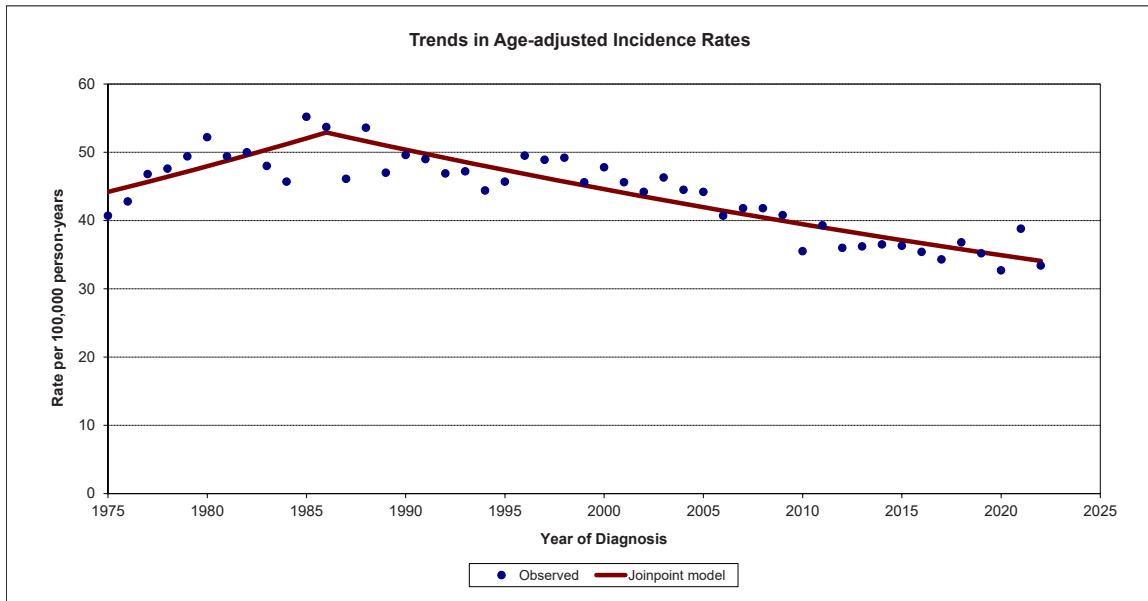
Colorectal cancer incidence rates in Idaho increased about 1.7% per year from 1975 to 1986 and have since decreased about 1.2% per year. Colorectal cancer incidence trends over time were different for males and females. For males, rates increased about 2.0% per year from 1975 to 1988, then decreased about 1.5% per year. For females, rates increased about 6.0% per year from 1975 to 1979, then decreased about 1.0% per year.

Corpus Uteri

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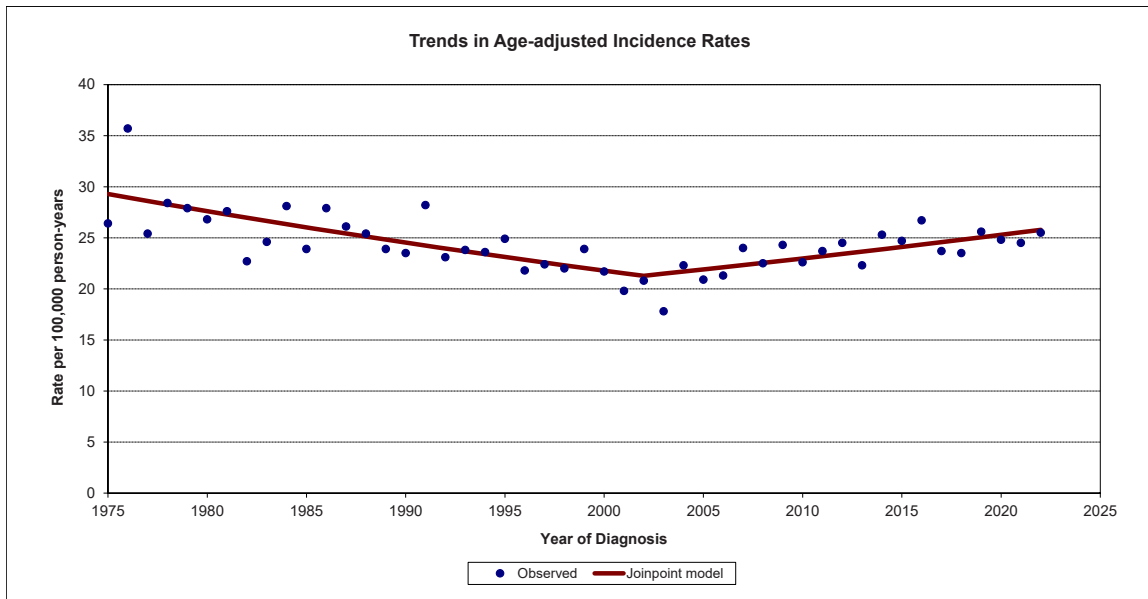
Corpus uteri cancer incidence rates decreased about 1.2% per year in Idaho from 1975 to 2002 and have increased by 1.0% per year since 2002.

Esophagus

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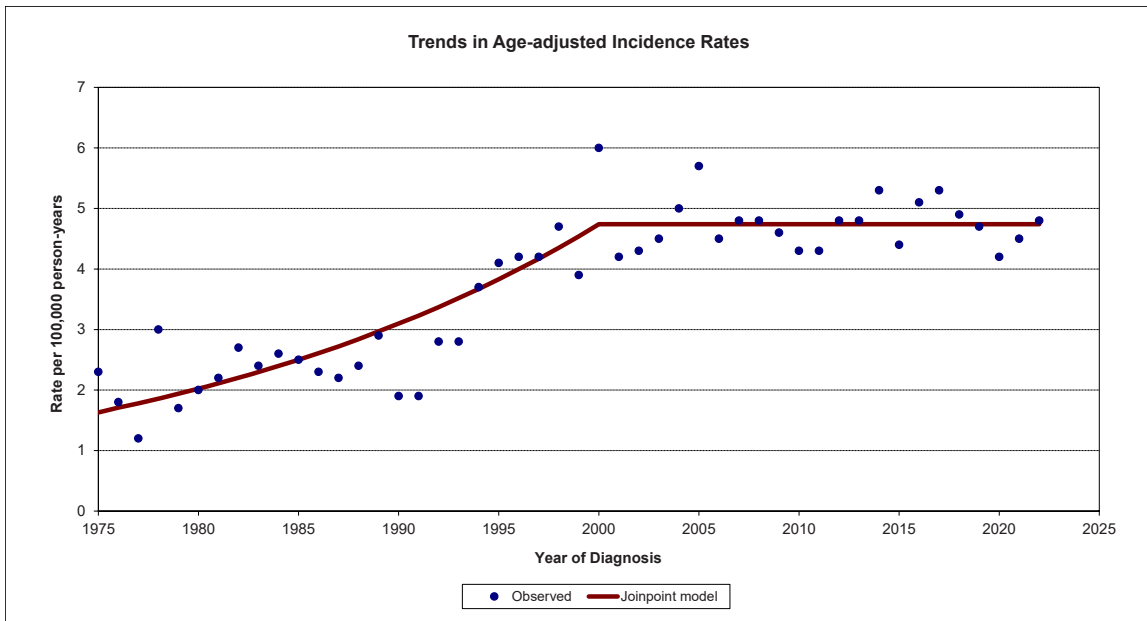
Esophageal cancer incidence increased at a rate of about 4.4% per year in Idaho from 1975 to 2000, after which incidence rates have been stable. Rates of esophageal cancers were about 3-4 times higher among males versus females.

Hodgkin Lymphoma

Trends in Age-adjusted Incidence Rates
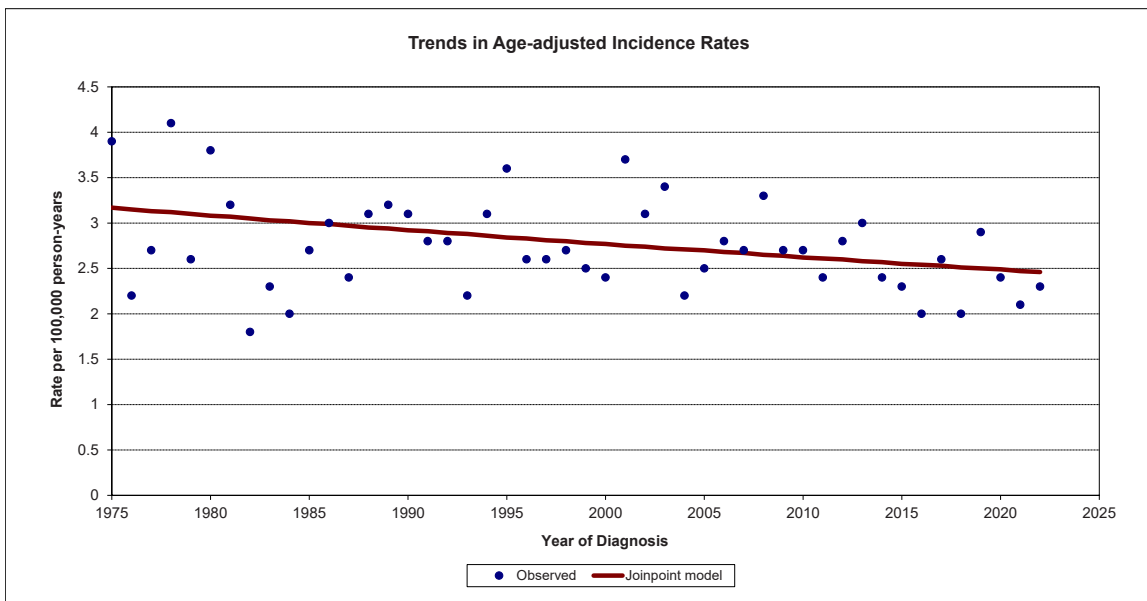
Hodgkin lymphoma incidence has decreased about 0.5% per year in Idaho from 1975 to 2022. Rates showed high year-to-year variability due to the relatively small numbers of cases diagnosed annually.

Kidney and Renal Pelvis

Trends in Age-adjusted Incidence Rates
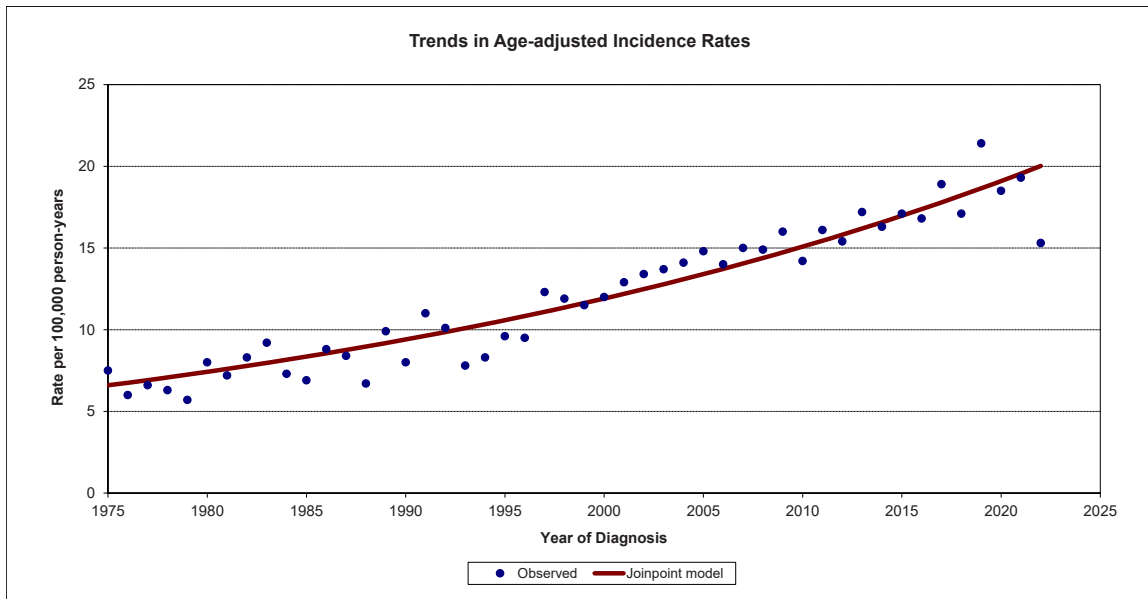
Kidney and renal pelvis cancer incidence increased at a rate of about 2.4% per year in Idaho from 1975 to 2022. The rate of increase was similar for males and females, although rates of kidney and renal pelvis cancer rates among males were about twice as high as among females.

Larynx

Trends in Age-adjusted Incidence Rates
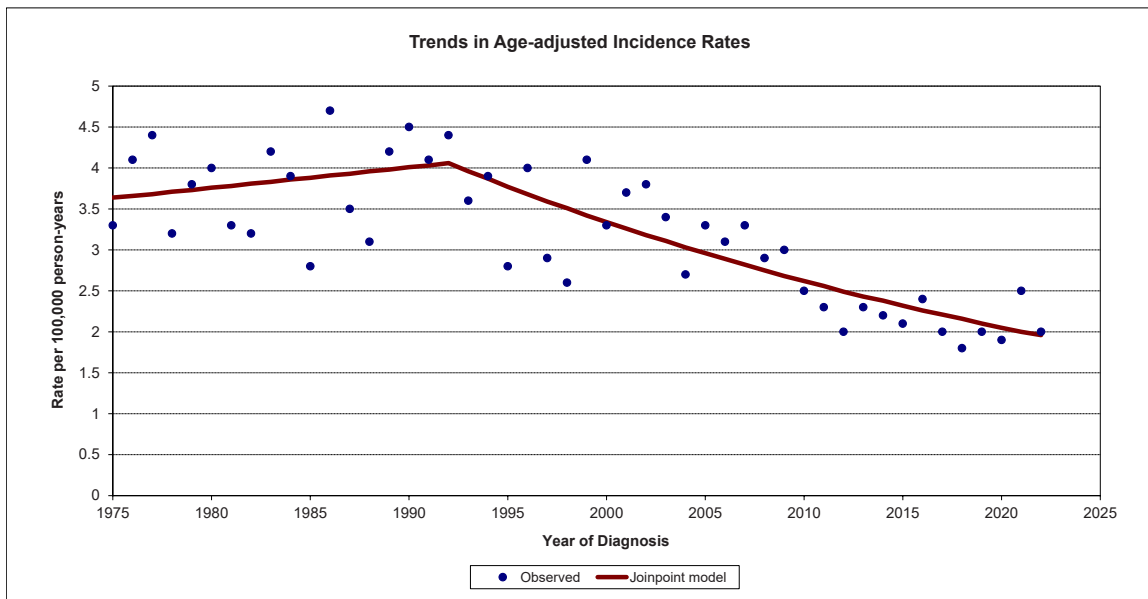
Laryngeal cancer incidence was statistically stable in Idaho from 1975 to 1992 and decreased about 2.4% per year since 1992. Rates showed year-to-year variability due to the relatively small numbers of cases diagnosed annually. The temporal pattern was similar for males. Among females, incidence rates of laryngeal cancer decreased about 1.3% per year from 1975 to 2022. Incidence rates of laryngeal cancers among males were about four times as high as among females.

Leukemia

Trends in Age-adjusted Incidence Rates
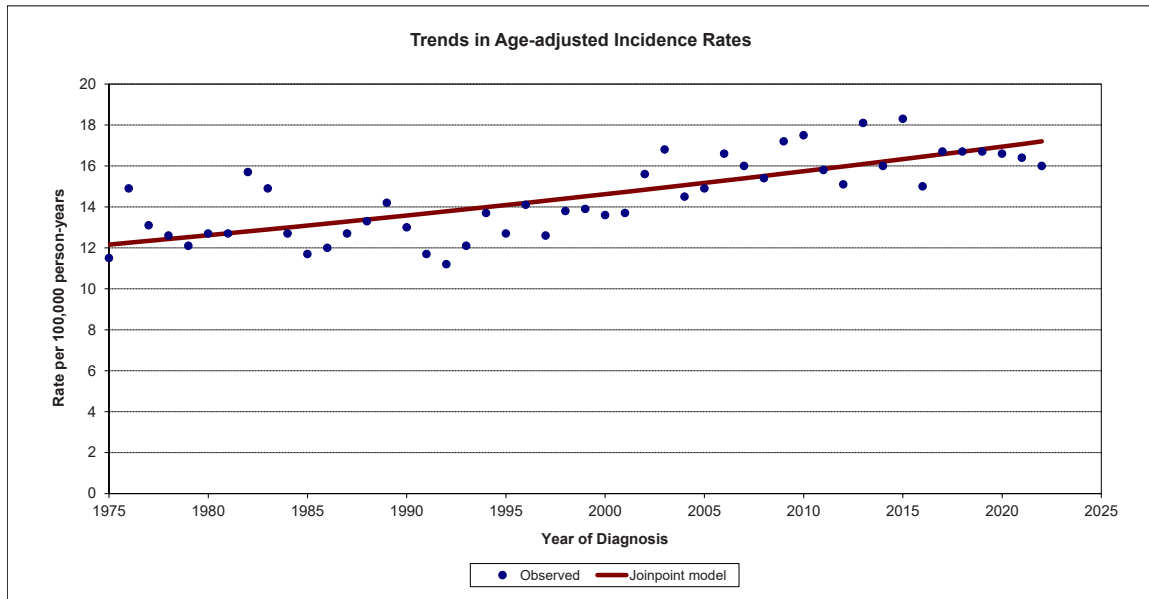
Leukemia incidence has increased about 0.7% per year from 1975 to 2022. Rates showed high year-to-year variability due to the relatively small numbers of cases diagnosed annually.

Liver and Bile Duct

Trends in Age-adjusted Incidence Rates
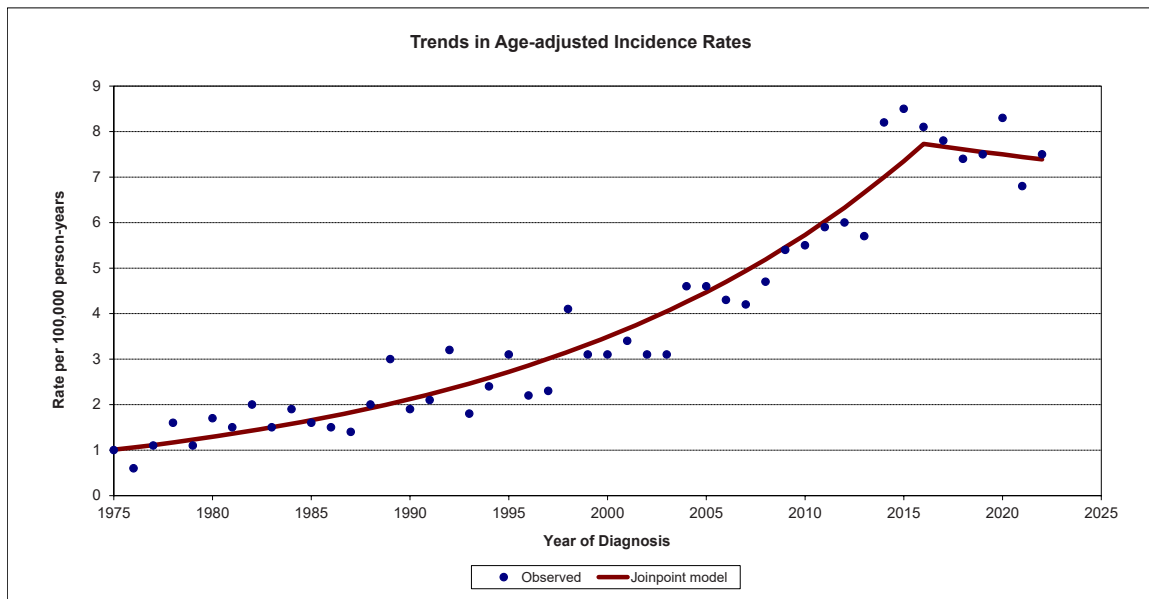
Liver cancer incidence increased at a rate of about 5.0% per year in Idaho from 1975 to 2016, after which rates showed year-to-year variability and a downward trend but were overall stable. The pattern was similar for males. Among females, liver cancer rates increased about 3.5% per year 1975–2022. Rates of liver cancer among males were about twice as high as among females.

Lung and Bronchus

Trends in Age-adjusted Incidence Rates
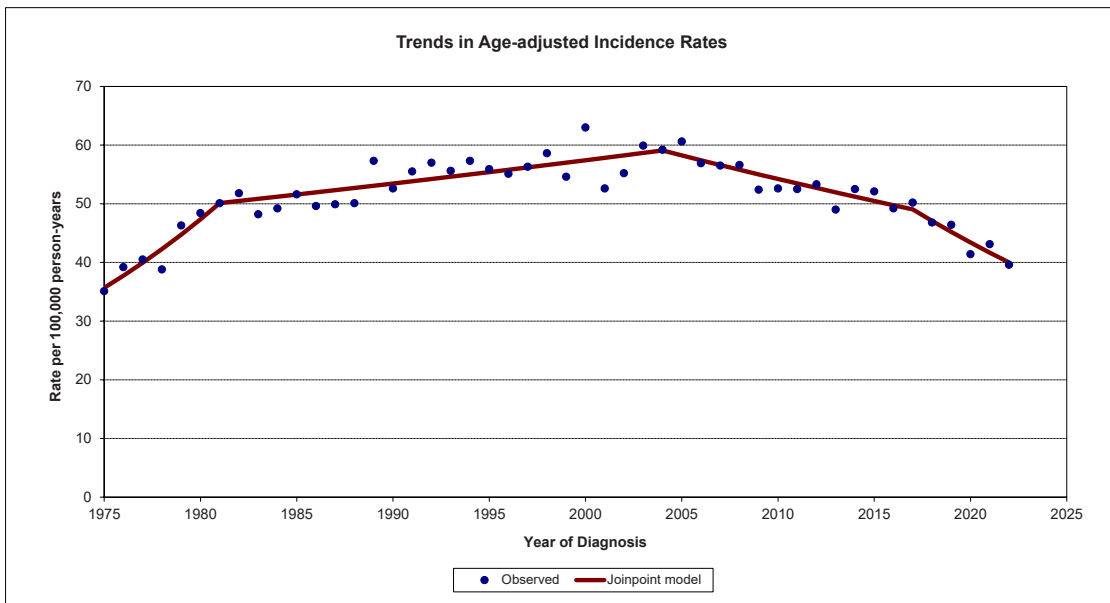
Lung cancer incidence increased at a rate of about 5.8% per year in Idaho from 1975 to 1981, after which the rate of increase lessened to about 0.7% per year until 2004. From 2004 to 2017, the rate decreased about 1.4% per year. Starting in 2017, there is evidence of a substantial decrease in lung cancer incidence through 2022 of about 4.0% 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 4.5% 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 5.8% per year from 1975 to 1989, after which the rate of increase lessened to about 1.7% per year until 2005. From 2005 to 2017, the rate was stable, after which it decreased 4.2% 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
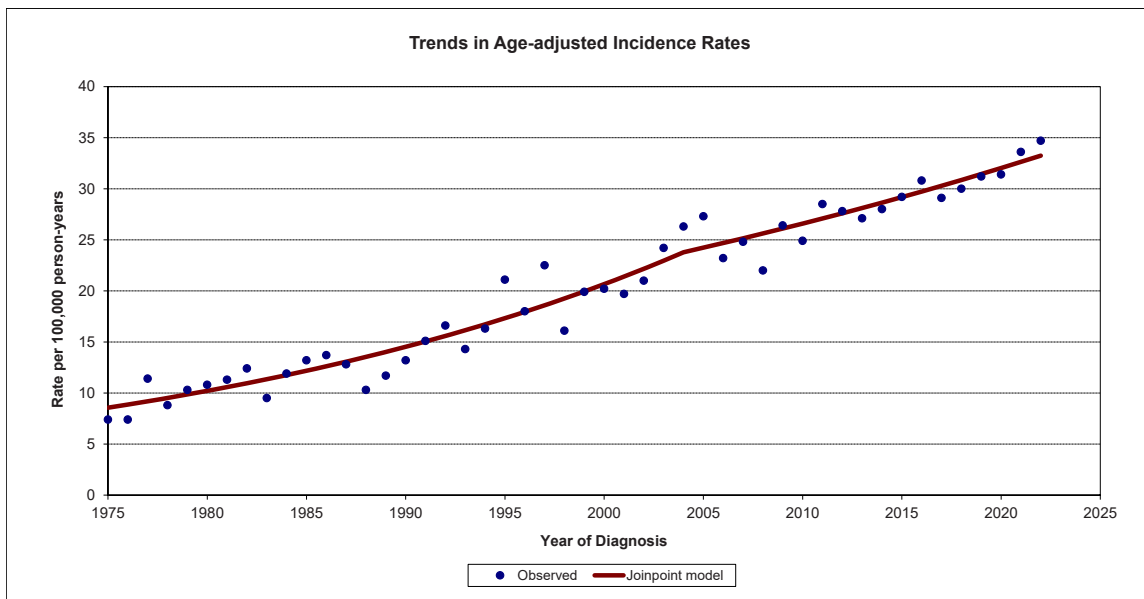
The incidence of melanoma of the skin increased at a rate of about 3.6% per year in Idaho from 1975 to 2004, after which it increased about 1.9% per year. Trends were similar among males. Among females, incidence rates of melanoma of the skin increased about 2.5% per year from 1975 to 2022. The incidence of in situ melanoma of the skin increased at a higher rate (5.6% per year from 1980 to 2022) than for the invasive cases depicted in the graph.

Myeloma

Trends in Age-adjusted Incidence Rates
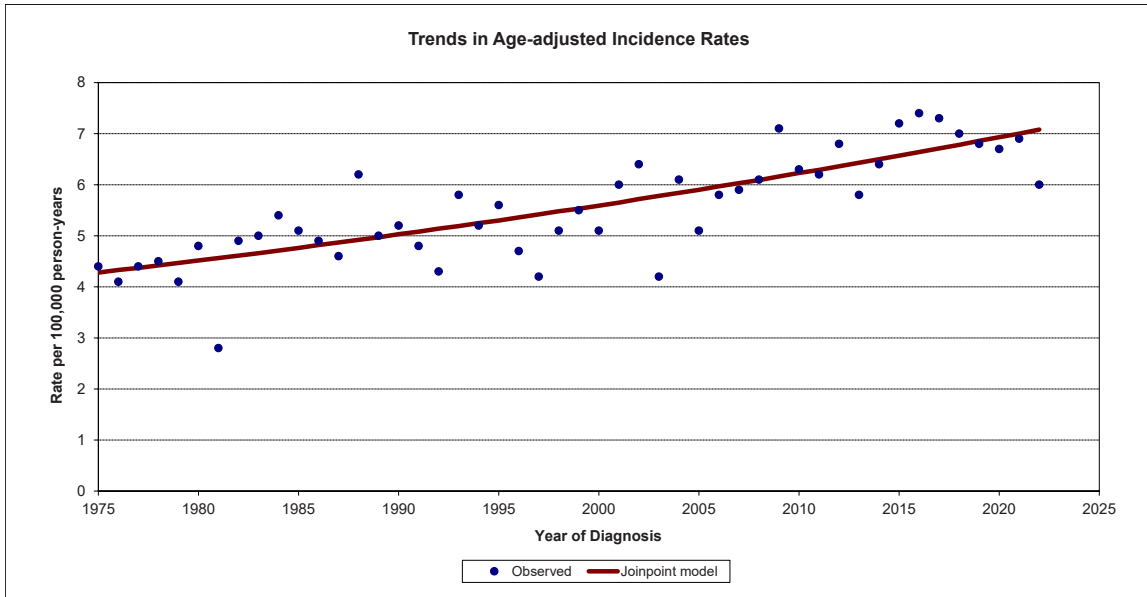
The incidence of myeloma increased at a rate of about 1.1% per year in Idaho from 1975 to 2022. The rate of increase was higher for males (1.3% per year) than for females (0.5% per year), and rates of myeloma incidence among males were higher than among females.

Non-Hodgkin Lymphoma

Trends in Age-adjusted Incidence Rates
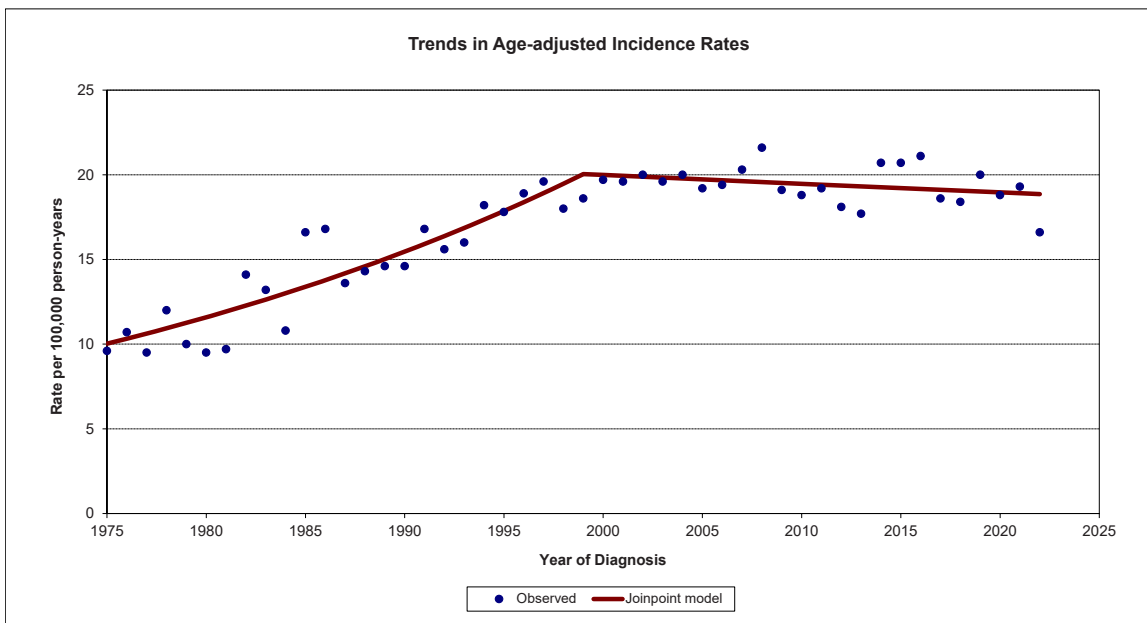
The incidence of non-Hodgkin lymphoma increased at a rate of about 2.9% per year in Idaho from 1975 to 1999, after which rates were stable. Non-Hodgkin lymphoma incidence trends over time were similar for males. Among females, rates increased about 3.1% per year from 1975 to 2000, after which they decreased about 0.7% 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
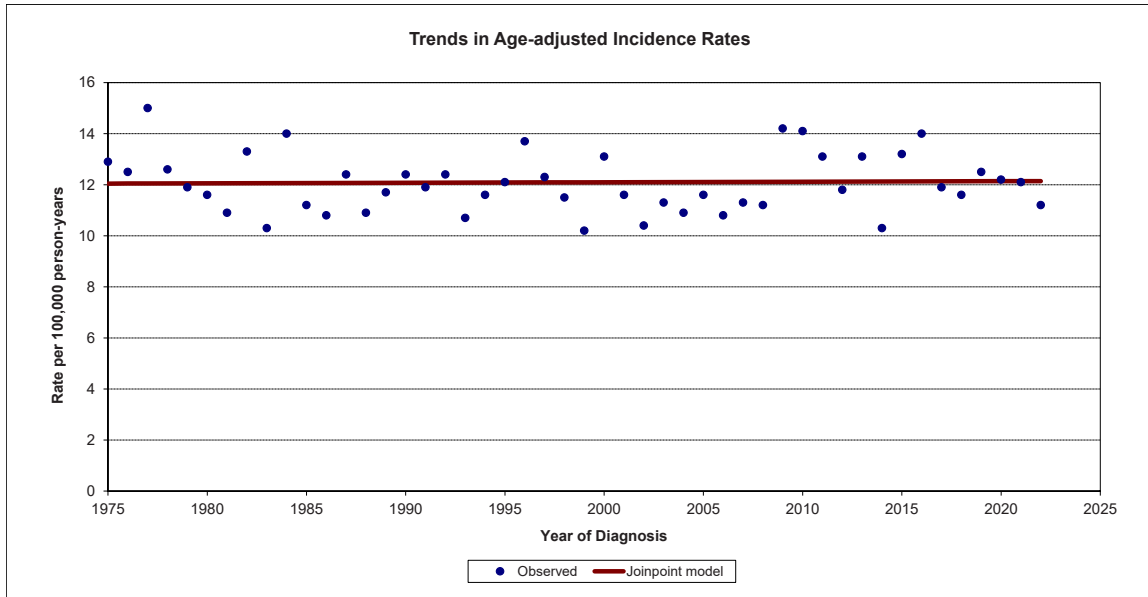
The incidence of cancers of the oral cavity and pharynx was stable in Idaho from 1975 to 2022. Among males, rates decreased about 0.3% per year. Among females, incidence of cancers of the oral cavity and pharynx increased at a rate of about 0.5% per year. Rates of cancers of the oral cavity and pharynx 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
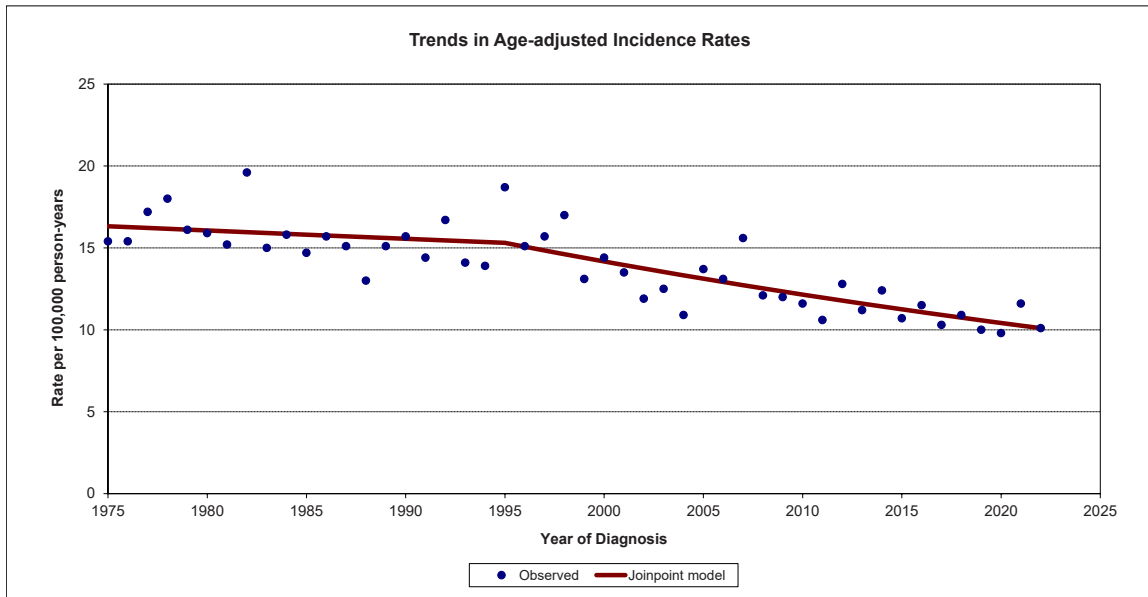
The incidence of ovarian cancer among females in Idaho was stable from 1975 to 1995 and decreased about 1.7% per year since 1995. Part of the decrease in ovarian cancer incidence rates may have been due to a decrease in the use of hormone replacement therapy.

Pancreas
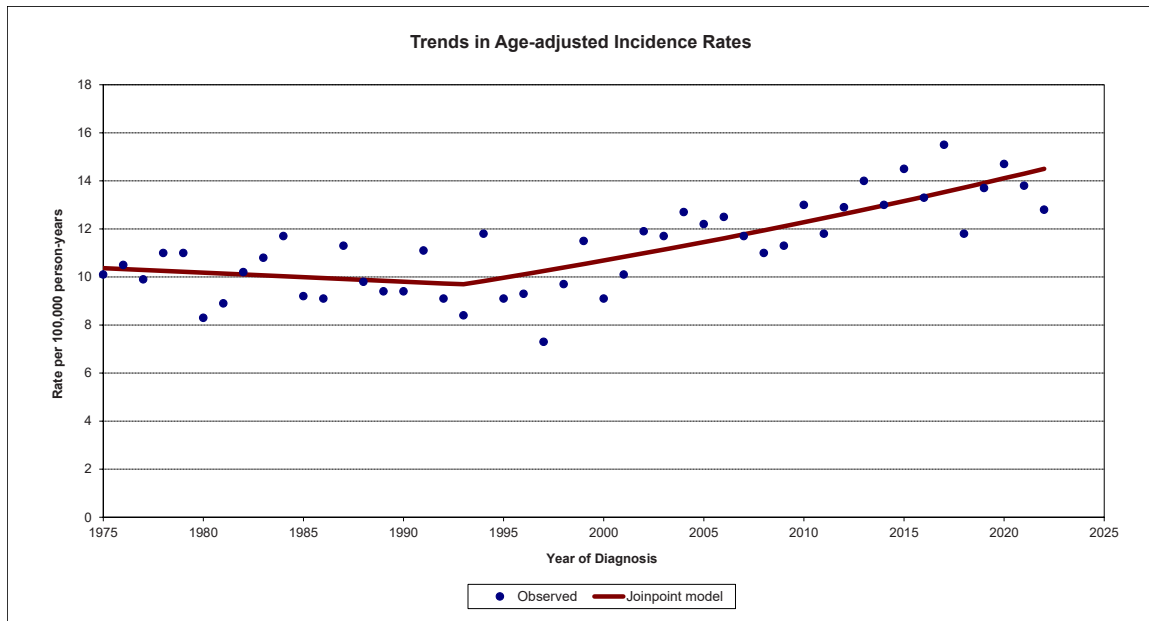
Pancreas cancer incidence was relatively stable from 1975 to 1993, after which rates increased about 1.4% per year. Pancreas cancer incidence trends over time were different for males and females. Among males, pancreas cancer incidence decreased about 1.0% per year from 1975 to 1997, after which rates increased about 1.7% per year. Among females, pancreas cancer increased about 1.1% per year from 1975 to 2022. Rates of pancreas cancer incidence among males were higher than among females.

Prostate
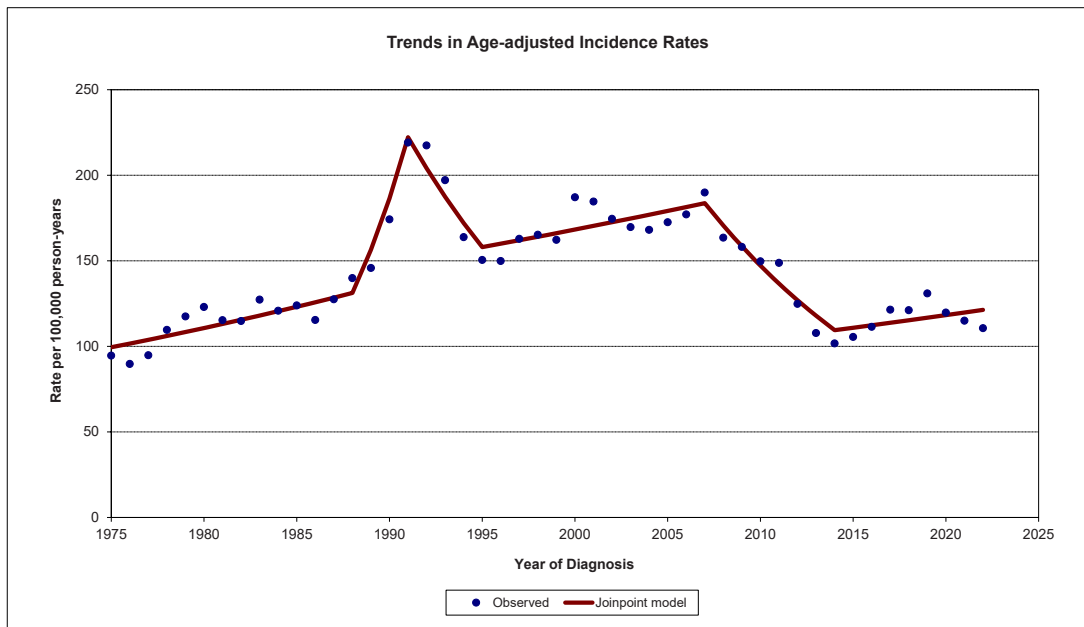
Trends in prostate cancer incidence are complicated, owing to the adoption of the Prostate-Specific Antigen (PSA) screening test in the late 1980s and early 1990s. From 1975 to 1988, prostate cancer incidence increased in Idaho at a rate of about 2.1% per year. From 1988 to 1991, prostate cancer incidence increased at a rate of about 19.9% per year. During 1991–1995, prostate cancer incidence rates decreased by about 7.5% per year. During 1995–2007, the rates increased about 1.7% per year. From 2007 to 2014, rates decreased about 6.9% per year. Since 2014, rates have been statistically stable. 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 2014-2022 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
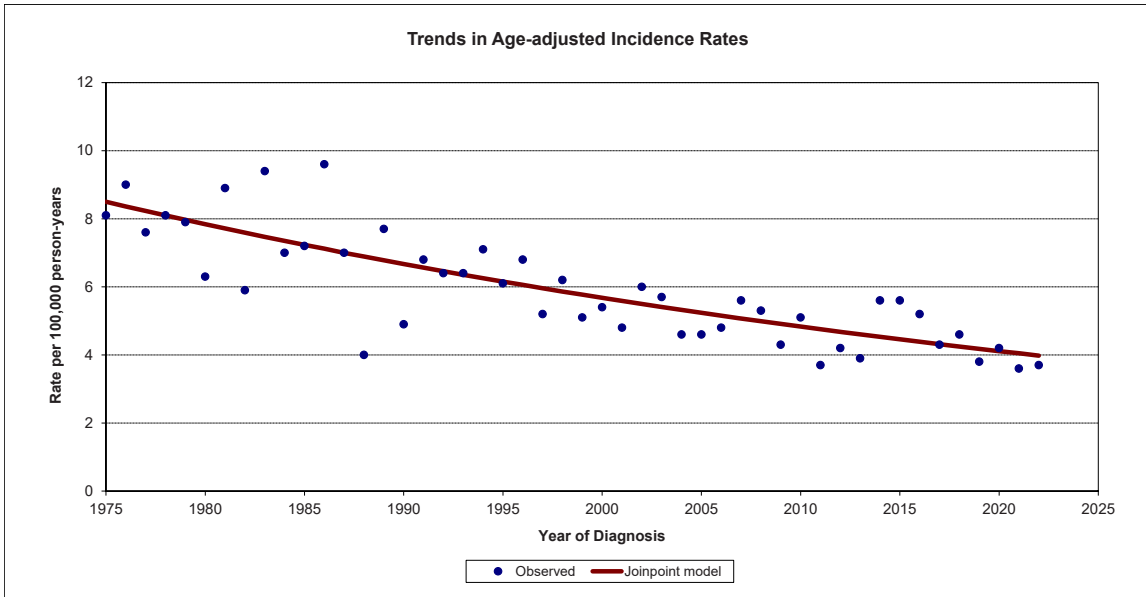
Stomach cancer incidence decreased at a rate of about 1.6% per year in Idaho from 1975 to 2022. Stomach cancer incidence trends over time were similar for males and females, although stomach cancer incidence rates among males were about twice as high as among females.

Testis

Trends in Age-adjusted Incidence Rates
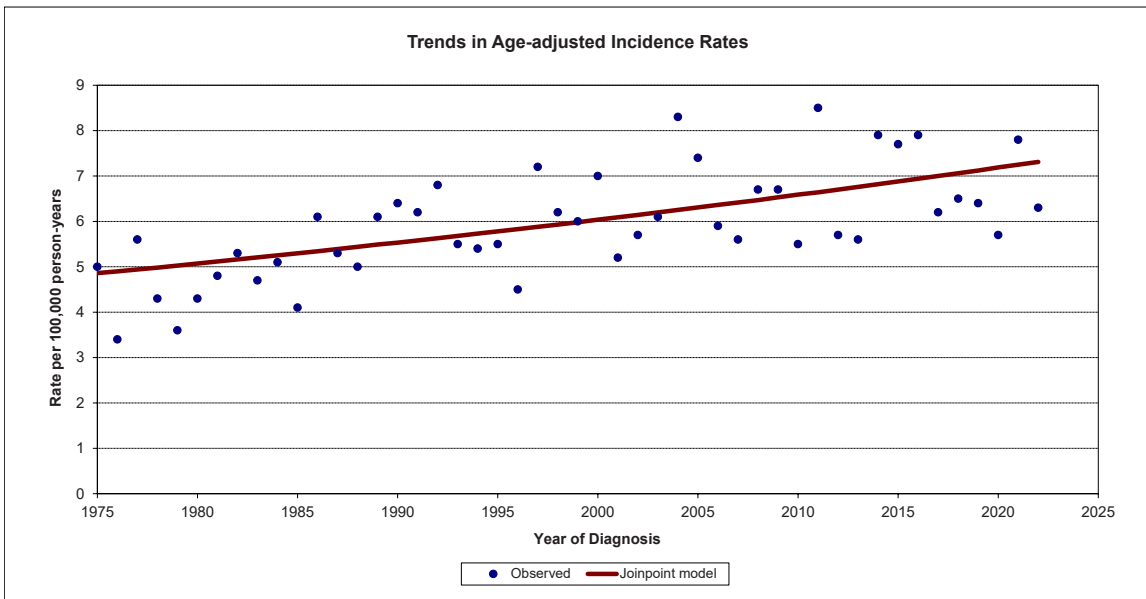
Testicular cancer incidence increased at a rate of about 0.9% per year in Idaho from 1975 to 2022.

Thyroid

Trends in Age-adjusted Incidence Rates
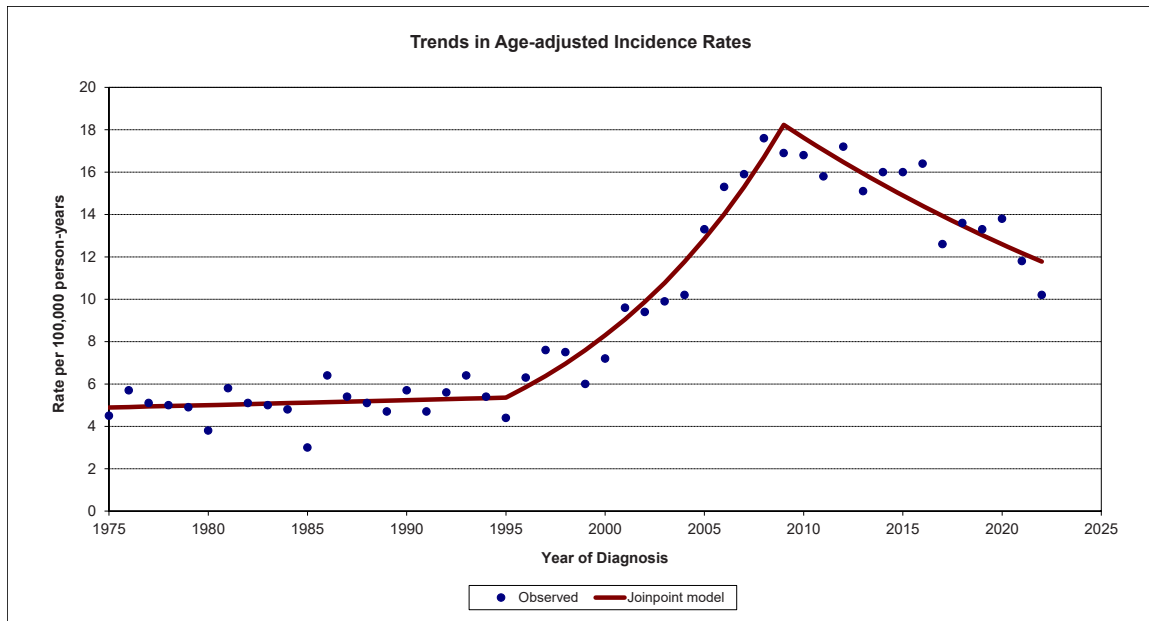
Thyroid cancer incidence was stable in Idaho from 1975 to 1995. From 1995–2009, thyroid cancer incidence increased at a rate of about 9.1% per year, and thyroid cancer incidence has decreased about 3.3% per year since 2009. Thyroid cancer incidence trends over time were similar for males and females, with stable rates from 1975 through the mid to late 1990s, large increases until about 2009, 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
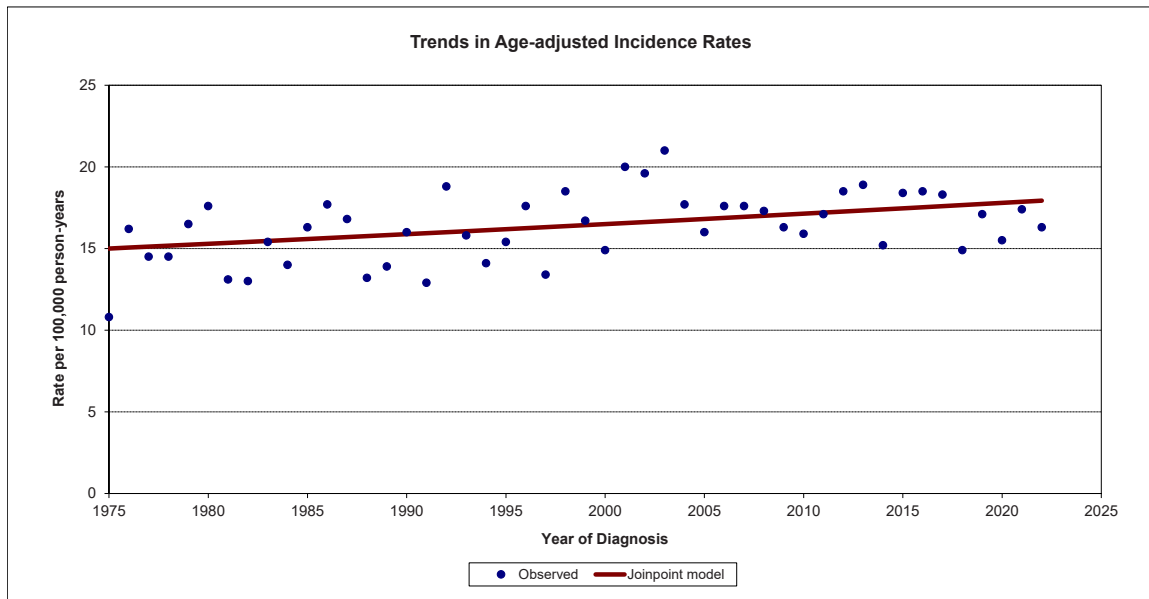
Pediatric cancer incidence increased at a rate of about 0.4% per year in Idaho from 1975 to 2022. Among males, pediatric cancer incidence rates were stable during 1975–2022. Among females, pediatric cancer incidence rates increased about 0.7% per year during 1975–2022. For more detailed information on pediatric cancer in Idaho, see "Pediatric Cancer in Idaho, 2012–2021," available at the CDRI website.

SECTION VIII

CANCER INCIDENCE BY RACE AND ETHNICITY
2018–2022

Idaho Cancer Incidence Rates by Race and Ethnicity, 2018–2022

Primary Site	All Races (includes Hispanic) Rate	Cases	White Non-Hispanic Rate	Cases	Hispanic (any race) Rate	Cases	Black Rate	Cases	American Indian/ Alaska Native Rate	Cases	Asian or Pacific Islander Rate	Cases
All Sites	444.3	48,799	447.2	44,534	368.6	2,534	349.1	216	352.3	546	323.1	515
Bladder	19.9	2,237	20.3	2,106	13.2	70	<	<	14.9	21	8.1	12
Brain - malignant	6.7	692	6.9	624	6.0	51	<	<	<	<	<	<
Brain and other CNS - non-malignant	16.5	1,715	16.6	1,546	15.8	107	<	<	5.3	10	14.3	22
Breast	132.6	7,229	134.3	6,602	106.4	391	78.8	19	95.5	77	112.0	105
Breast - in situ	26.6	1,439	27.0	1,307	18.8	73	<	<	17.0	14	26.9	26
Cervix	6.6	294	6.3	241	9.0	41	<	<	<	<	<	<
Colorectal	35.4	3,738	34.8	3,325	33.7	240	26.8	15	43.5	63	31.3	50
Corpus Uteri	24.8	1,415	24.5	1,266	26.0	96	<	<	22.1	19	18.6	19
Esophagus	4.6	525	4.7	493	2.6	17	<	<	<	<	<	<
Hodgkin Lymphoma	2.3	219	2.3	181	2.3	24	<	<	<	<	<	<
Kidney and Renal Pelvis	18.3	1,992	17.6	1,742	24.2	171	<	<	24.7	41	11.5	19
Larynx	2.0	236	2.1	222	<	<	<	<	<	<	<	<
Leukemia	16.9	1,812	16.9	1,642	13.7	104	17.2	15	11.4	17	12.0	21
Liver and Bile Duct	7.5	878	6.9	743	14.7	93	<	<	11.2	19	9.1	15
Lung and Bronchus	43.3	4,977	43.9	4,663	31.9	167	58.8	25	43.8	63	37.4	54
Melanoma of the Skin	32.3	3,401	35.3	3,319	8.4	57	<	<	6.2	10	<	<
Myeloma	6.6	746	6.6	684	5.6	42	<	<	<	<	<	<
Non-Hodgkin Lymphoma	18.6	2,030	18.7	1,854	18.1	122	<	<	10.1	15	12.4	20
Oral Cavity and Pharynx	11.9	1,351	12.2	1,254	6.8	52	<	<	9.1	16	8.2	15
Ovary	10.5	571	10.4	513	9.6	39	<	<	11.9	10	<	<
Pancreas	13.4	1,504	13.5	1,400	10.9	63	<	<	9.8	15	12.2	17
Prostate	119.1	6,950	117.8	6,313	88.7	266	156.1	61	68.3	56	83.3	51
Stomach	4.7	507	4.4	428	9.5	57	<	<	<	<	8.5	11
Testis	6.5	287	6.7	240	5.1	34	<	<	<	<	<	<
Thyroid	12.5	1,178	12.5	1,007	12.1	114	11.3	10	9.2	14	11.3	20
Pediatric Age 0 to 19	16.8	427	17.1	333	13.5	65	<	<	<	<	20.5	11

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.

CANCER SURVIVAL
2015–2021

Actual (Crude) Measures of Cancer Prognosis at 5 Years After Diagnosis
Idaho Cases Diagnosed 2015–2021 Followed Through December 31, 2022

Primary Site	N	Using Cause of Death			Using Expected Survival		
		Cancer Death	Other Death	Survival	Cancer Death	Other Death	Survival
All Sites	59,740	29.1	10.8	60.1	29.8	10.1	60.1
Brain & Other Nervous System	887	72.6	5.2	22.2	75.8	2.0	22.2
Breast	9,123	9.9	7.9	82.2	8.2	9.6	82.2
Cervix Uteri	399	25.5	2.0	72.5	25.0	2.5	72.5
Colon & Rectum	4,761	33.5	12.2	54.3	35.2	10.6	54.2
Corpus & Uterus, NOS	1,914	16.6	6.5	76.9	16.1	7.1	76.8
Esophagus	688	72.2	10.5	17.3	76.2	6.6	17.2
Hodgkin Lymphoma	278	10.7	7.3	82.0	14.2	3.7	82.1
Kidney & Renal Pelvis	2,497	18.8	14.8	66.4	22.7	10.9	66.4
Larynx	308	28.9	17.3	53.8	36.1	10.0	53.9
Leukemia	2,189	35.3	13.9	50.8	38.7	10.6	50.7
Liver & Intrahepatic Bile Duct	1,150	71.7	12.6	15.7	80.5	4.2	15.3
Lung & Bronchus	6,622	62.0	14.6	23.4	69.6	7.1	23.3
Melanoma of the Skin	4,016	7.6	11.4	81.0	5.9	13.2	80.9
Mesothelioma	141	83.9	6.7	9.4	83.7	6.9	9.4
Myeloma	981	37.6	15.1	47.3	41.3	11.5	47.2
Non-Hodgkin Lymphoma	2,687	26.7	12.4	60.9	27.9	11.3	60.8
Oral Cavity & Pharynx	1,802	24.9	14.0	61.1	28.6	10.5	60.9
Ovary	749	53.0	4.8	42.2	52.9	5.0	42.1
Pancreas	1,977	83.1	6.2	10.7	85.9	3.6	10.5
Prostate	8,862	8.0	10.0	82.0	3.3	14.7	82.0
Stomach	679	65.1	10.6	24.3	69.4	6.4	24.2
Testis	394	3.7	1.7	94.6	3.3	2.2	94.5
Thyroid	1,718	3.5	4.5	92.0	2.9	5.1	92.0
Urinary Bladder	2,973	22.9	18.1	59.0	23.5	17.5	59.0

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 2015–2021 Followed Through December 31, 2022

Primary Site	N	Cause Specific Survival (95% CI)		Relative Survival Ratio (95% CI)	
All Sites	59,740	69.1	(68.7, 69.5)	68.7	(68.1, 69.2)
Brain & Other Nervous System	887	29.6	(26.5, 32.8)	28.0	(24.9, 31.2)
Breast	9,123	88.5	(87.6, 89.4)	90.8	(89.4, 92.1)
Cervix Uteri	399	70.3	(64.2, 75.6)	69.6	(63.1, 75.2)
Colon & Rectum	4,761	64.6	(63.0, 66.1)	63.4	(61.4, 65.3)
Corpus & Uterus, NOS	1,914	80.3	(77.9, 82.4)	80.2	(77.0, 83.0)
Esophagus	688	22.9	(19.0, 27.0)	20.7	(16.6, 25.1)
Hodgkin Lymphoma	278	90.1	(86.1, 93.0)	86.4	(81.3, 90.2)
Kidney & Renal Pelvis	2,497	79.1	(77.1, 81.0)	75.1	(72.4, 77.5)
Larynx	308	70.7	(64.2, 76.2)	64.1	(56.1, 70.9)
Leukemia	2,189	64.6	(62.3, 66.8)	61.6	(58.9, 64.1)
Liver & Intrahepatic Bile Duct	1,150	*22.1*	*(19.0, 25.5)*	15.4	(12.5, 18.6)
Lung & Bronchus	6,622	35.2	(33.4, 36.9)	30.5	(28.7, 32.3)
Melanoma of the Skin	4,016	93.2	(92.3, 94.1)	94.0	(92.6, 95.2)
Mesothelioma	141	*10.8*	*(4.7, 19.8)*	*11.4*	*(4.9, 20.9)*
Myeloma	981	60.8	(56.6, 64.7)	57.8	(53.1, 62.2)
Non-Hodgkin Lymphoma	2,687	72.4	(70.4, 74.2)	71.4	(68.8, 73.7)
Oral Cavity & Pharynx	1,802	72.3	(69.7, 74.8)	68.9	(65.4, 72.1)
Ovary	749	41.7	(37.8, 45.6)	41.5	(37.2, 45.7)
Pancreas	1,977	15.3	(13.3, 17.5)	14.4	(12.4, 16.6)
Prostate	8,862	89.9	(89.0, 90.7)	94.2	(92.7, 95.4)
Stomach	679	31.5	(27.4, 35.6)	28.6	(24.4, 32.8)
Testis	394	91.5	(80.4, 96.5)	91.5	(74.1, 97.4)
Thyroid	1,718	95.0	(93.5, 96.2)	95.6	(93.5, 97.0)
Urinary Bladder	2,973	77.7	(75.6, 79.6)	76.6	(73.8, 79.0)

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.

<div style="border: 2px solid black; display: inline-block; padding: 10px 40px;">

SECTION X

</div>

MAPS AND CHARTS OF AGE-ADJUSTED INCIDENCE AND MORTALITY RATES BY COUNTY, 2018–2022
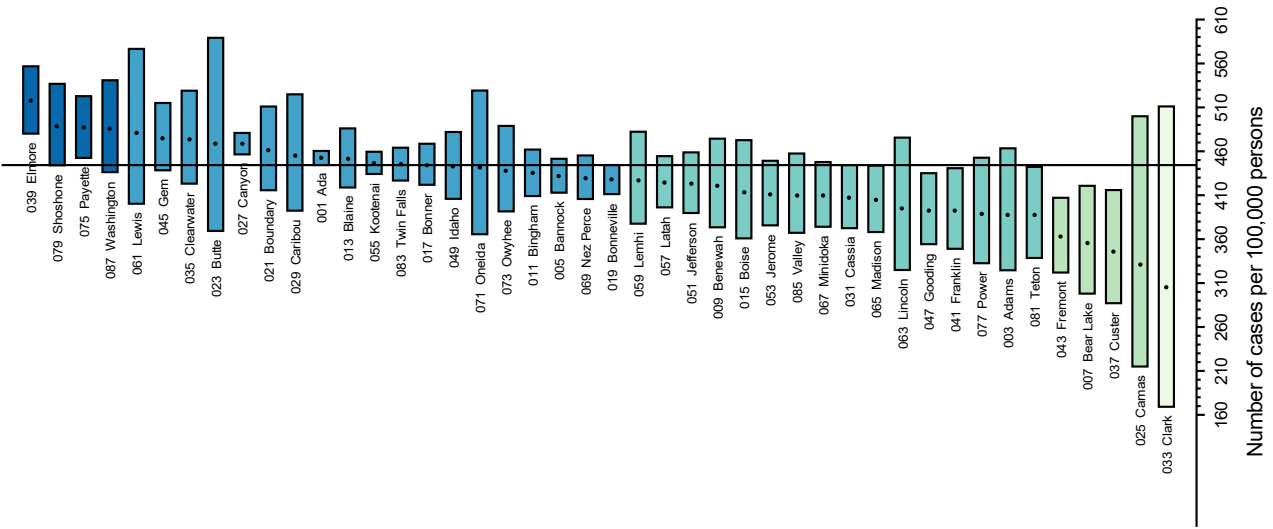
Age-Adjusted Incidence Rates

All Sites

Both Males and Females
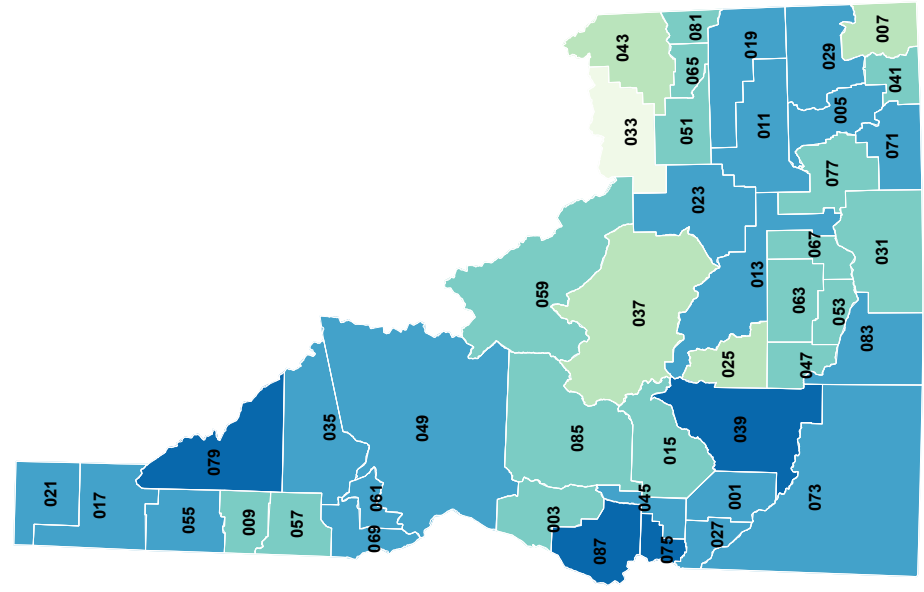
State of Idaho, by County, 2018–2022

State of Idaho Rate: 444.3

Number of cases per 100,000 persons

160 210 260 310 360 410 460 510 560 610

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

Age-Adjusted Mortality Rates

All Malignant Cancers

Both Males and Females
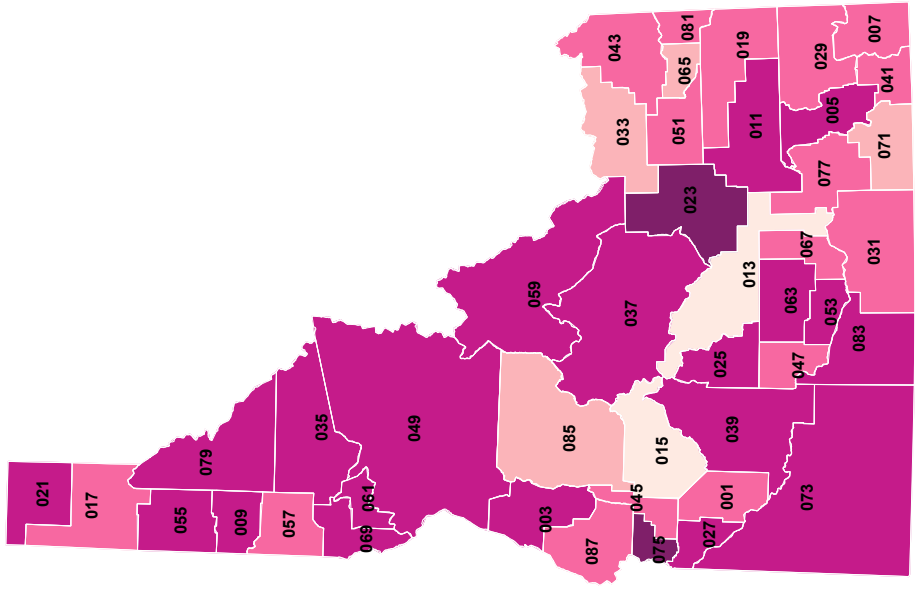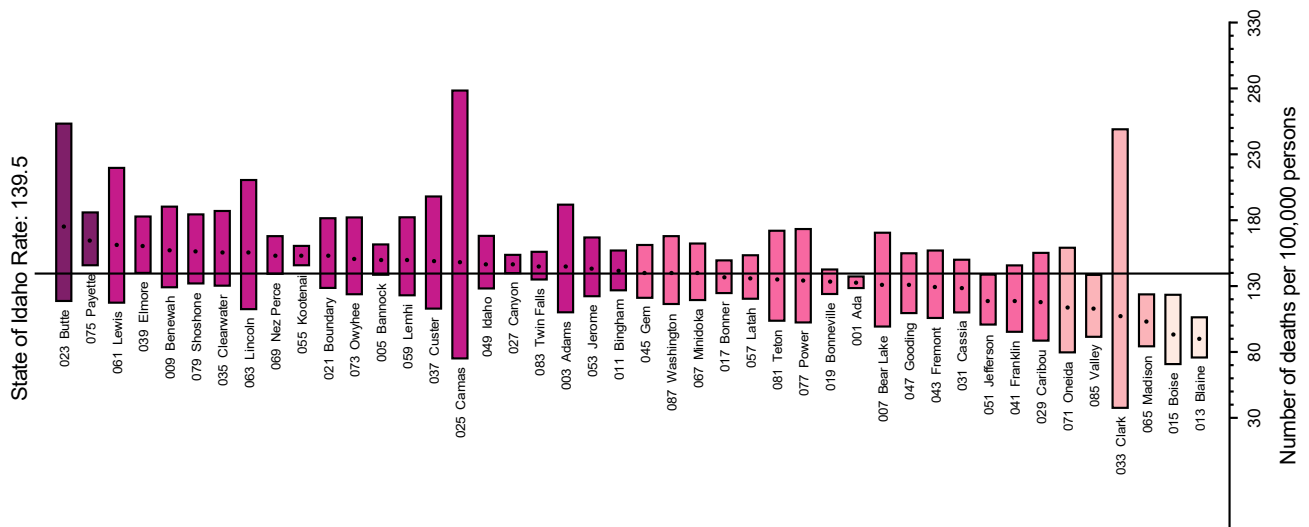
State of Idaho, by County, 2018–2022

State of Idaho Rate: 139.5
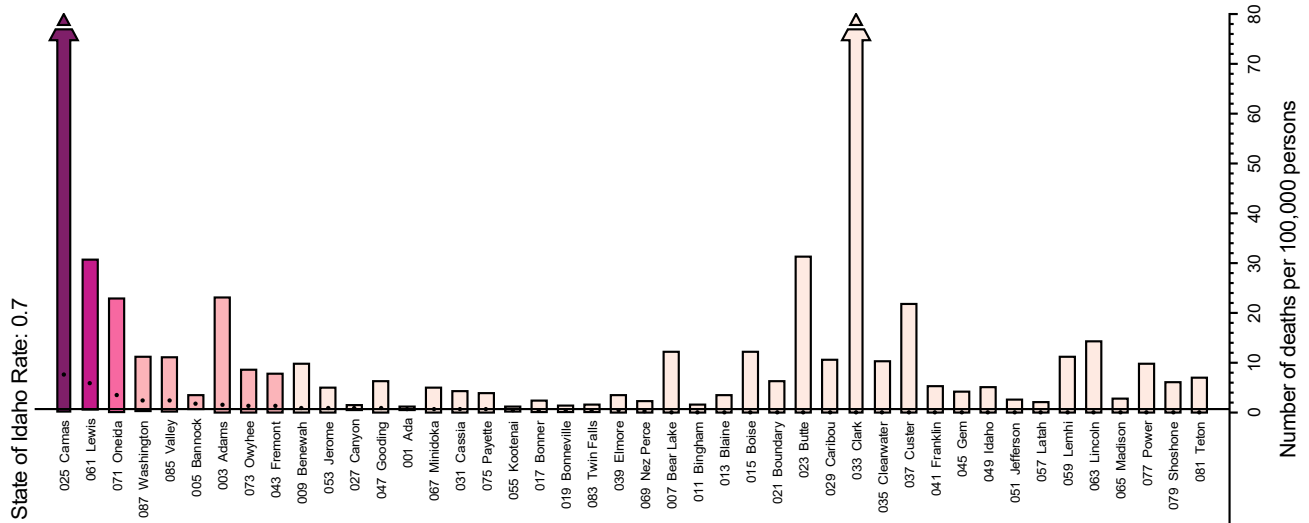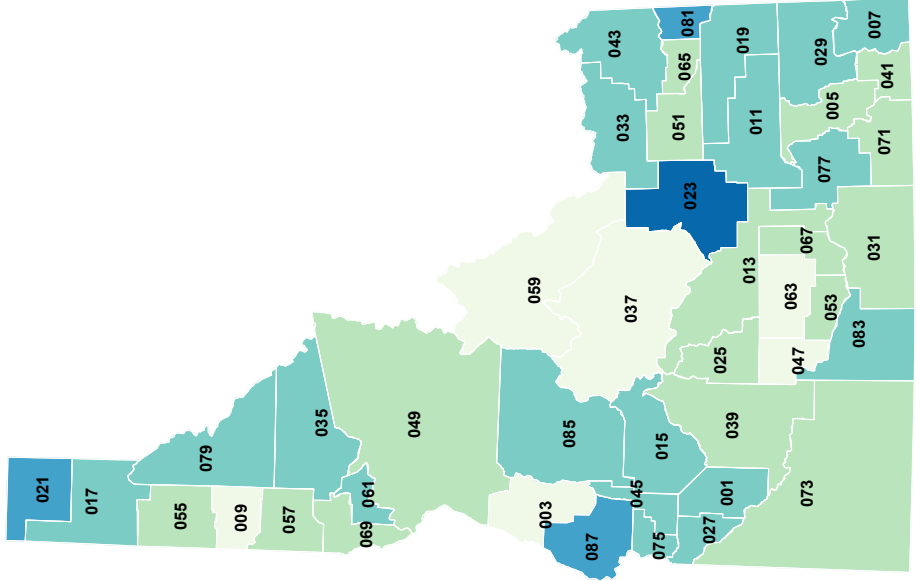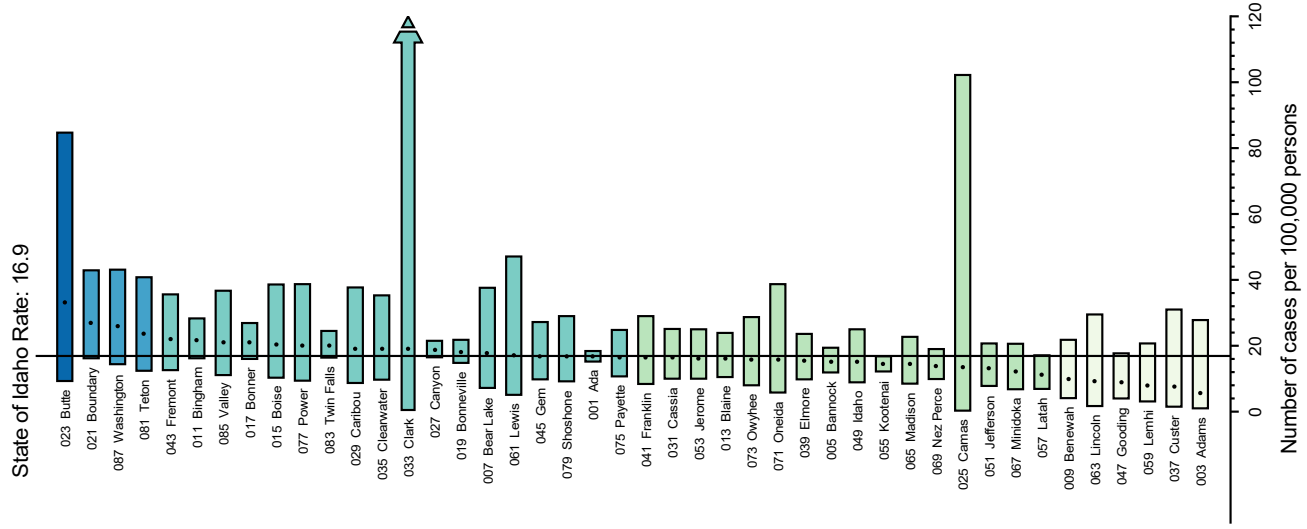
Number of deaths per 100,000 persons

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.

Age-Adjusted Incidence Rates

Bladder

Both Males and Females

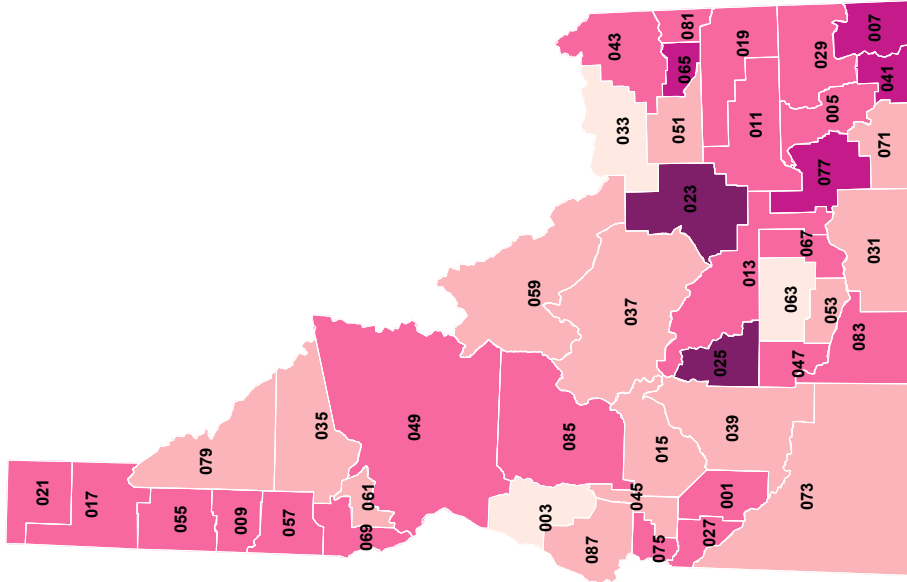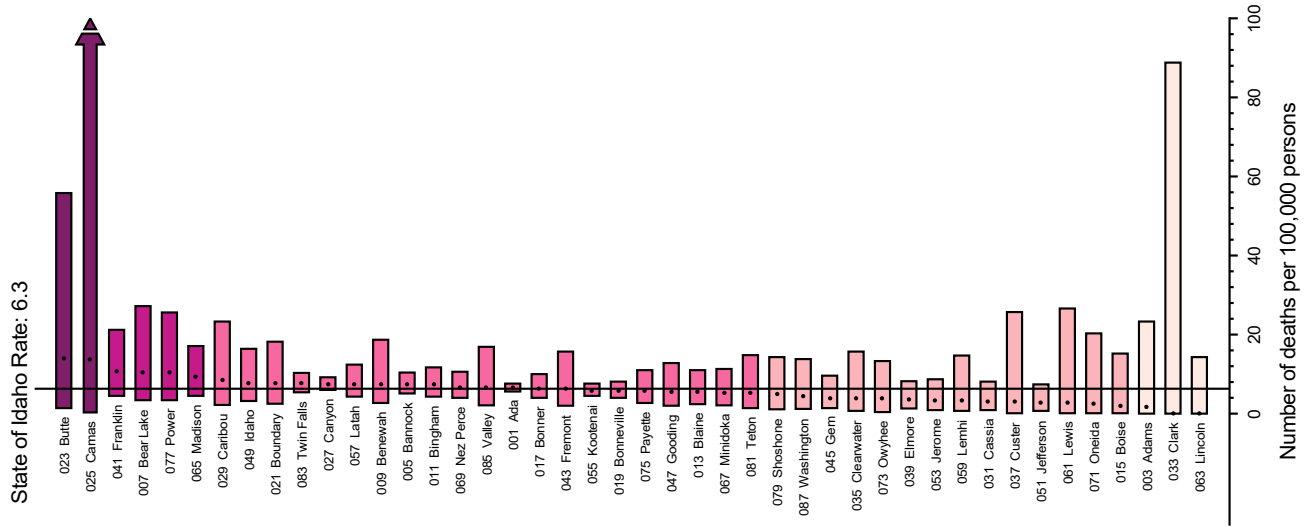**State of Idaho, by County, 2018–2022**

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: 19.9

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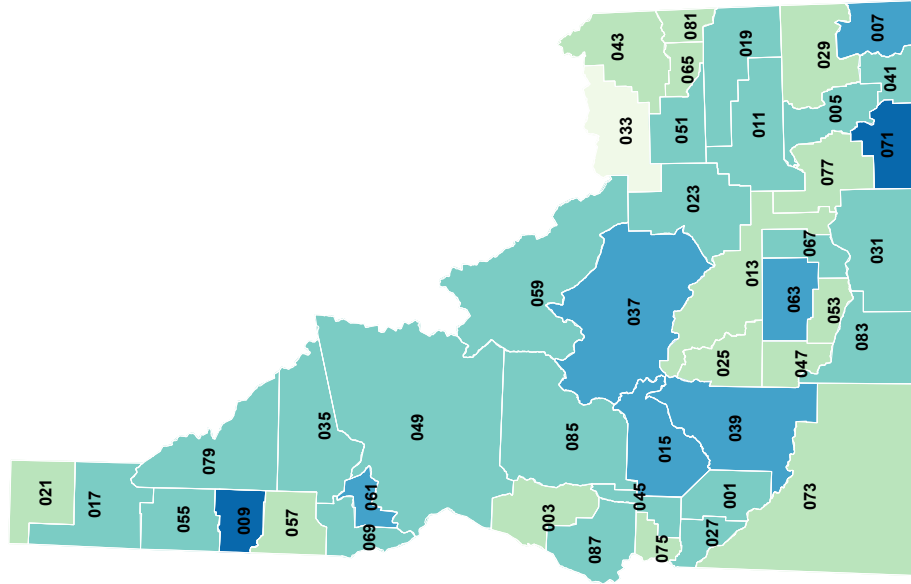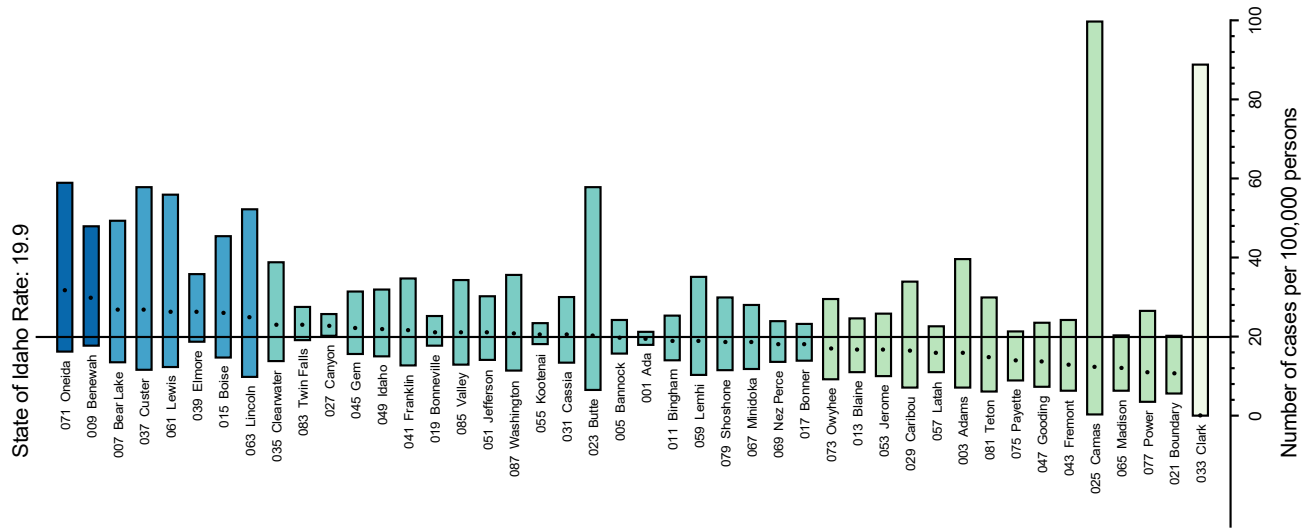
Age-Adjusted Mortality Rates

Bladder

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 4.6

Number of deaths per 100,000 persons

Age-Adjusted Incidence Rates

Brain - malignant

Both Males and Females
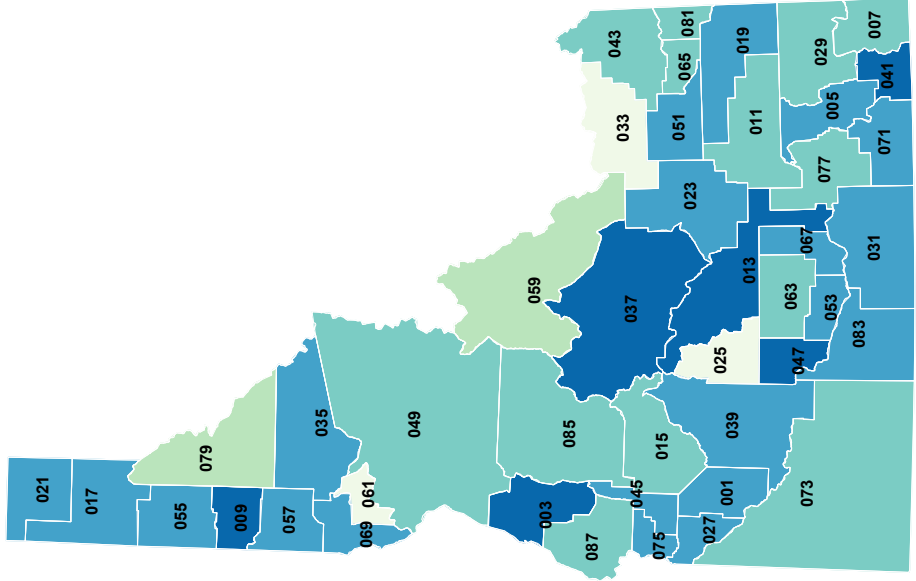
State of Idaho, by County, 2018–2022

State of Idaho Rate: 6.7

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Brain and Other Nervous System

Both Males and Females
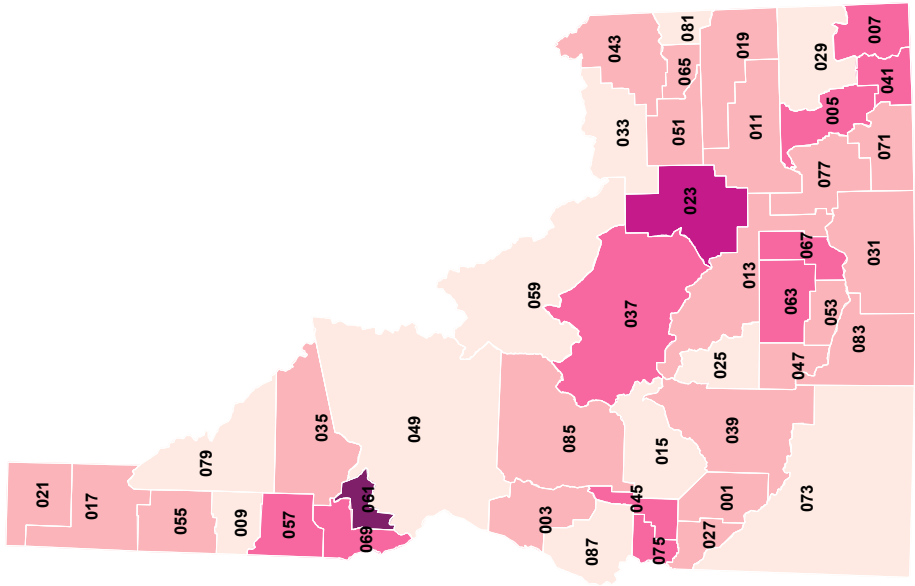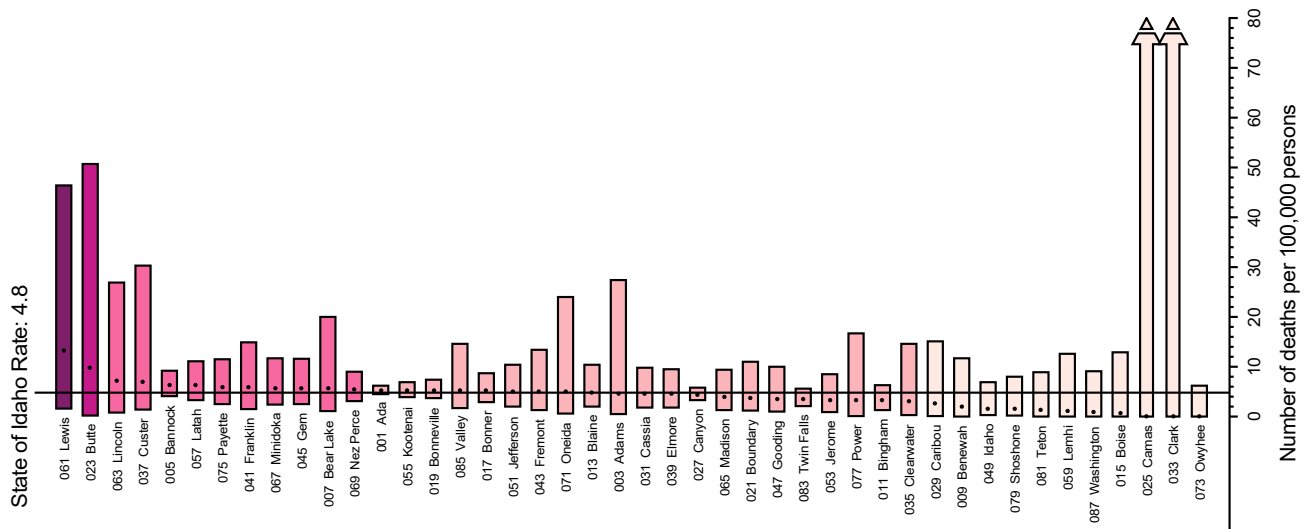
State of Idaho, by County, 2018–2022

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.
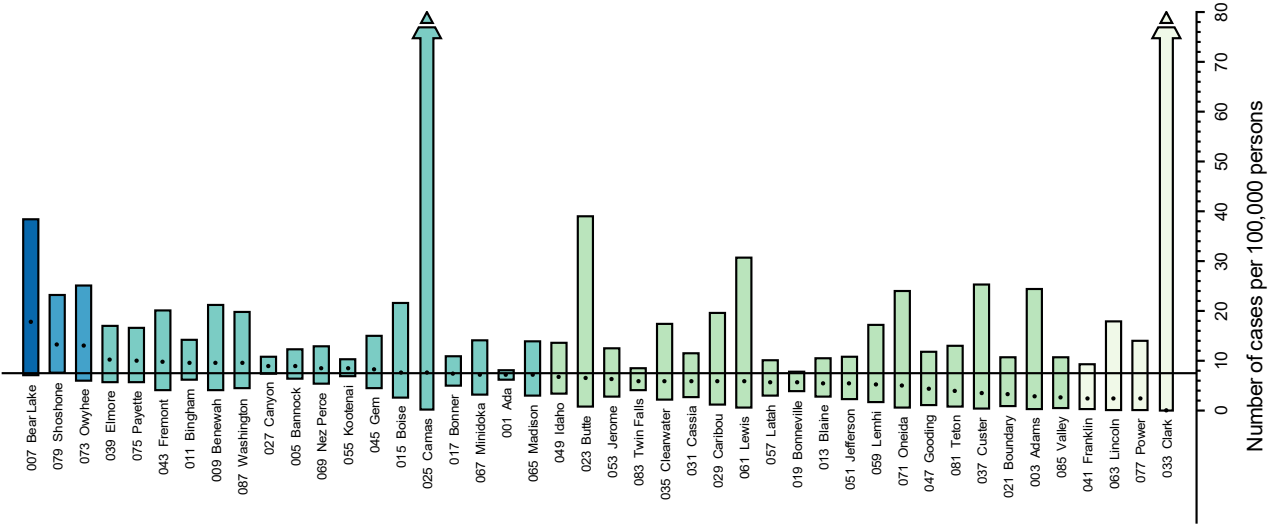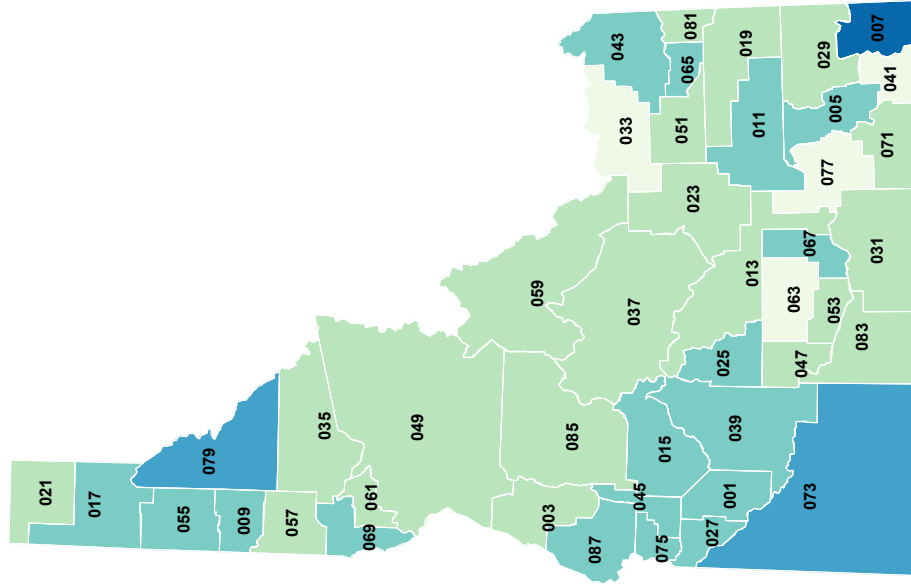
Age-Adjusted Incidence Rates

Breast

Females
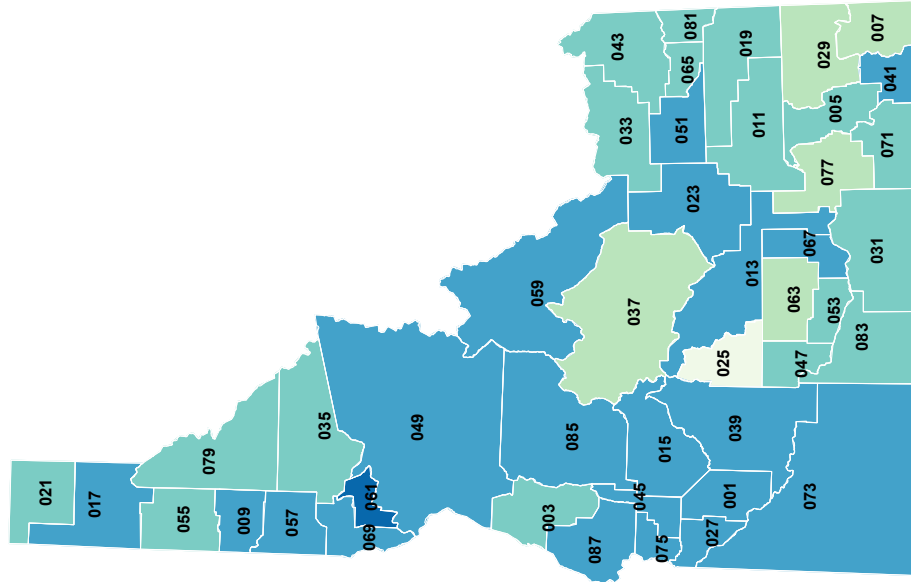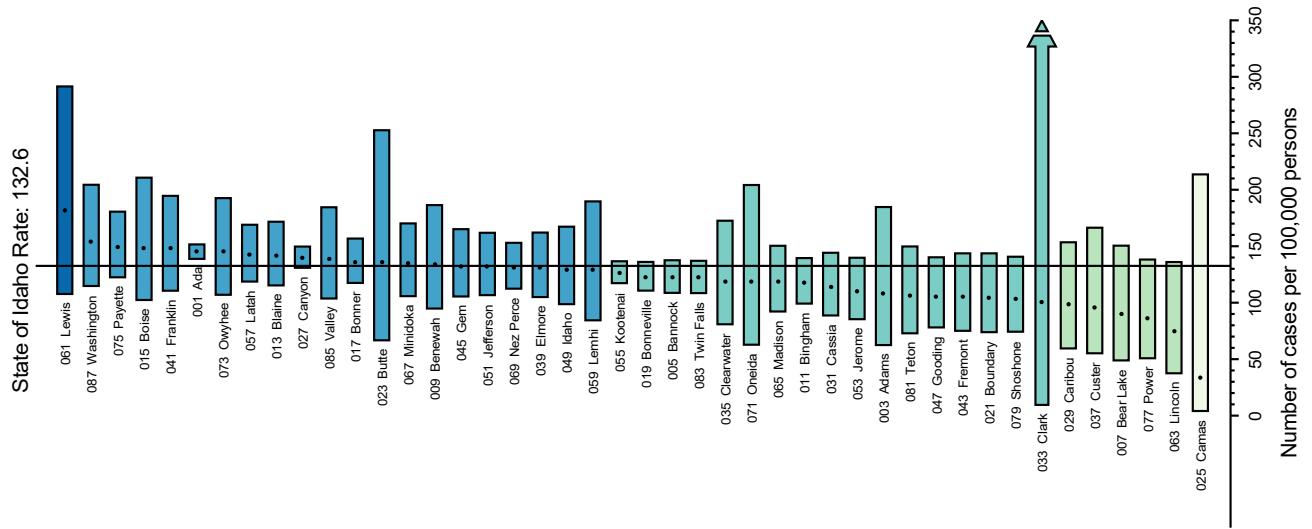
State of Idaho, by County, 2018–2022

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.
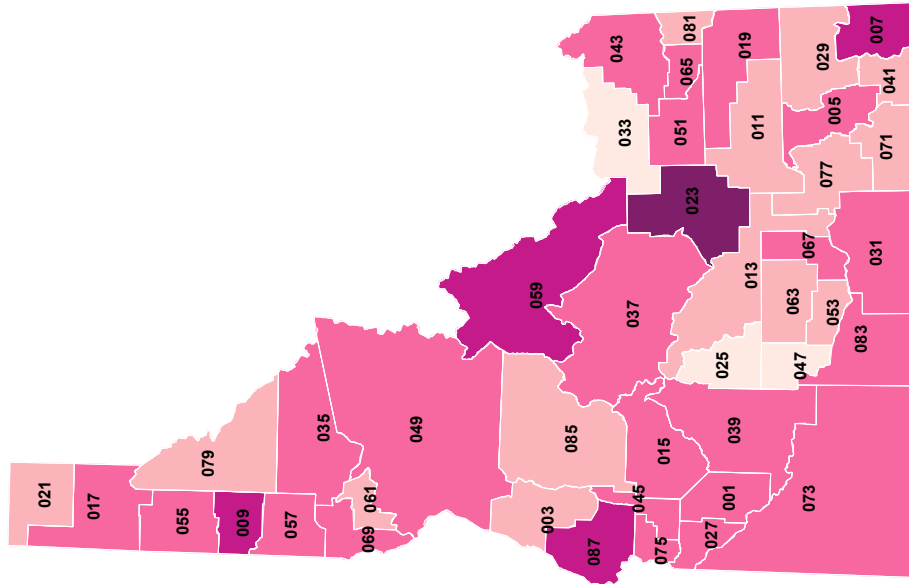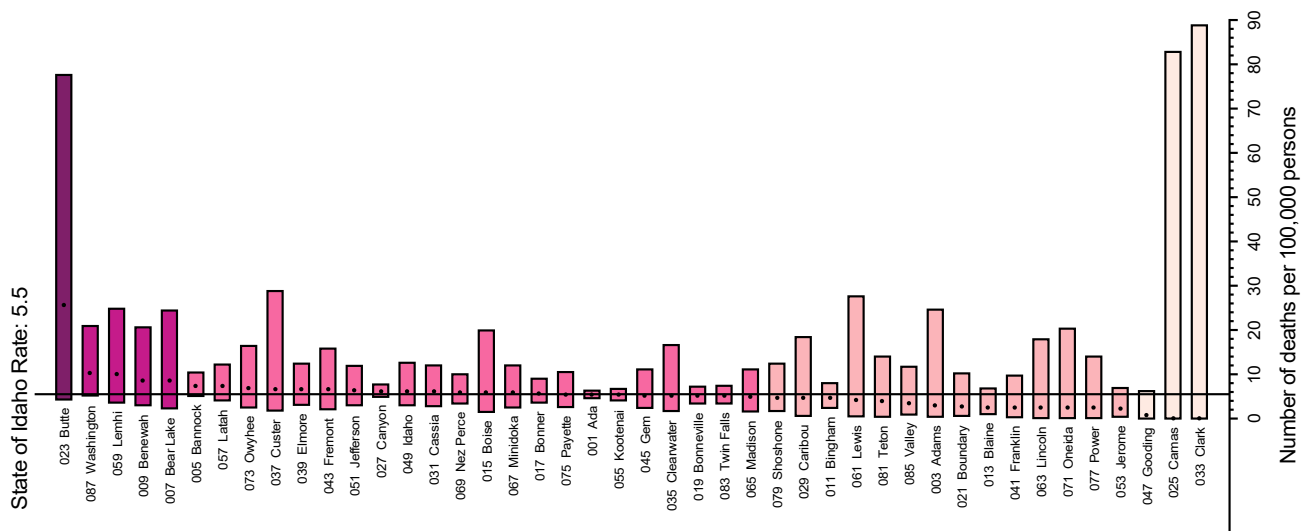
State of Idaho Rate: 132.6

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Breast

Females

State of Idaho, by County, 2018–2022

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
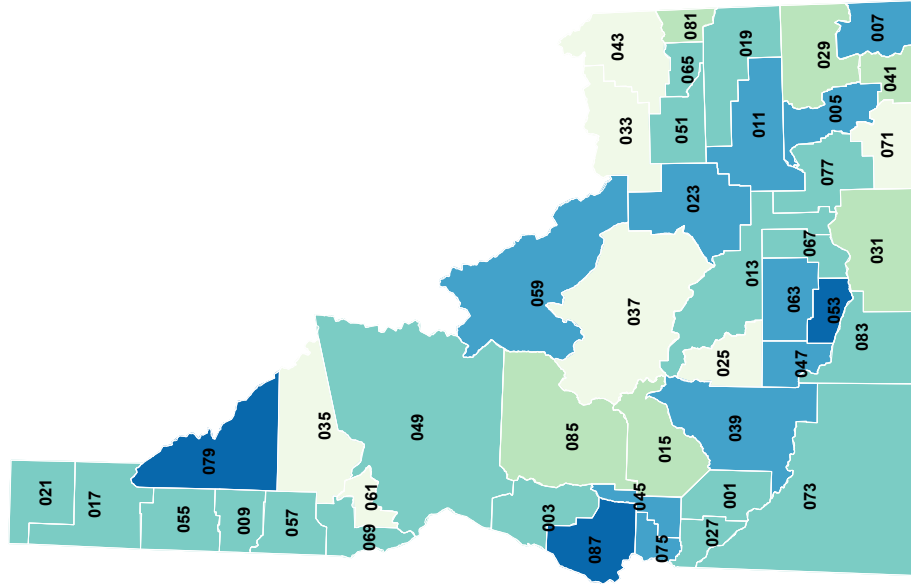
State of Idaho, by County, 2018–2022

State of Idaho Rate: 6.6

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Cervix

Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 1.8
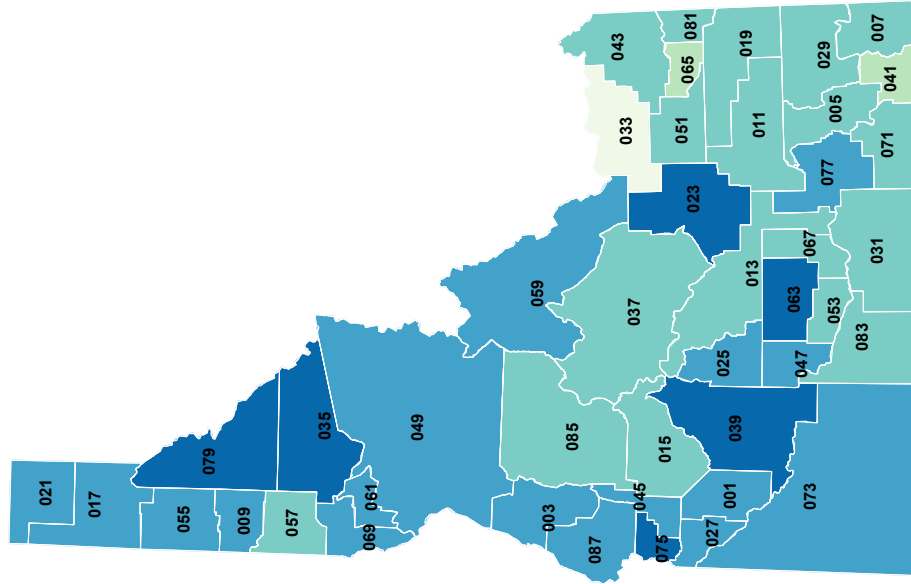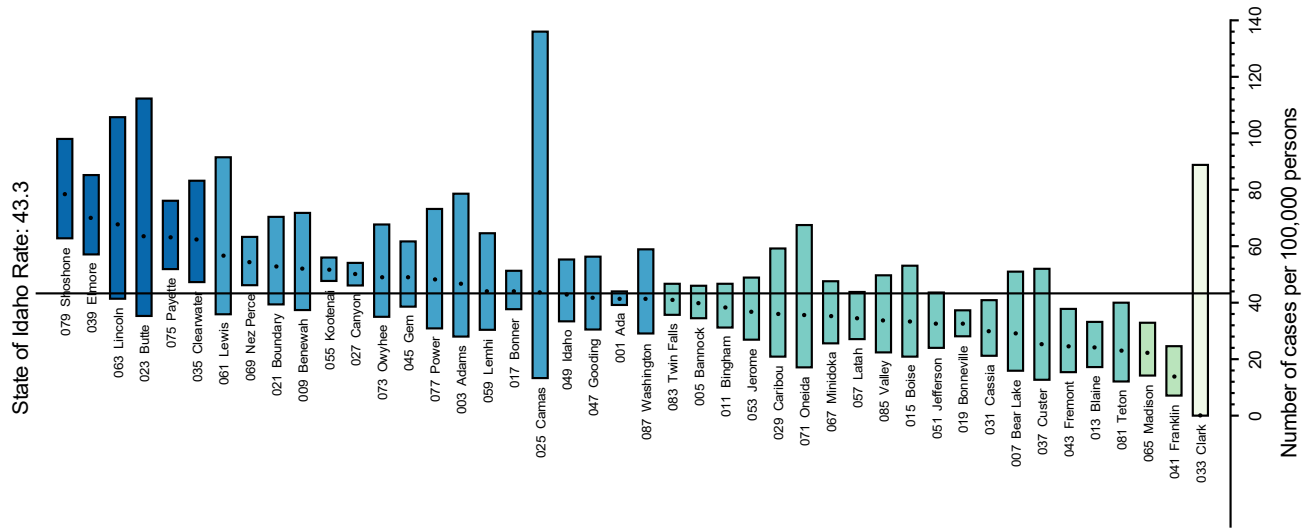

Number of deaths per 100,000 persons

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.

Age-Adjusted Incidence Rates

Colorectal

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 35.4

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Colorectal
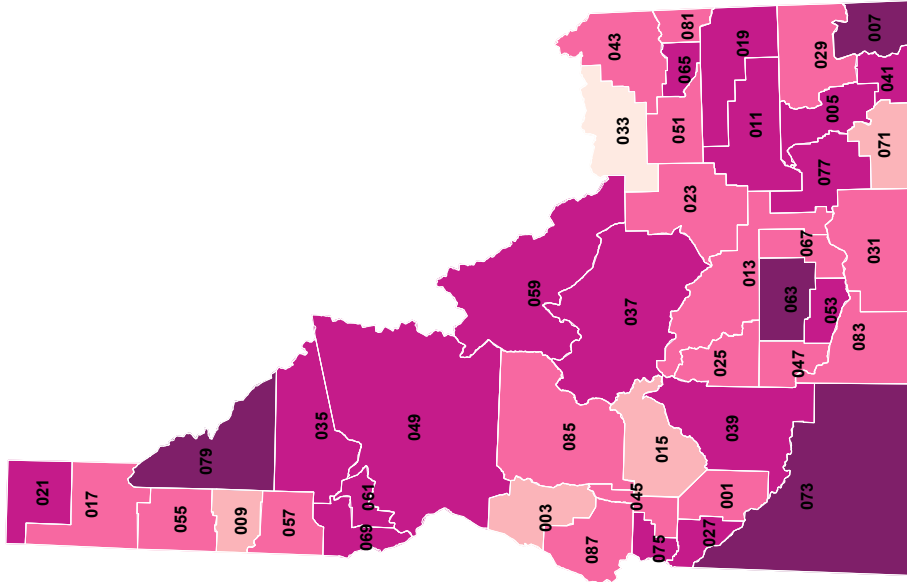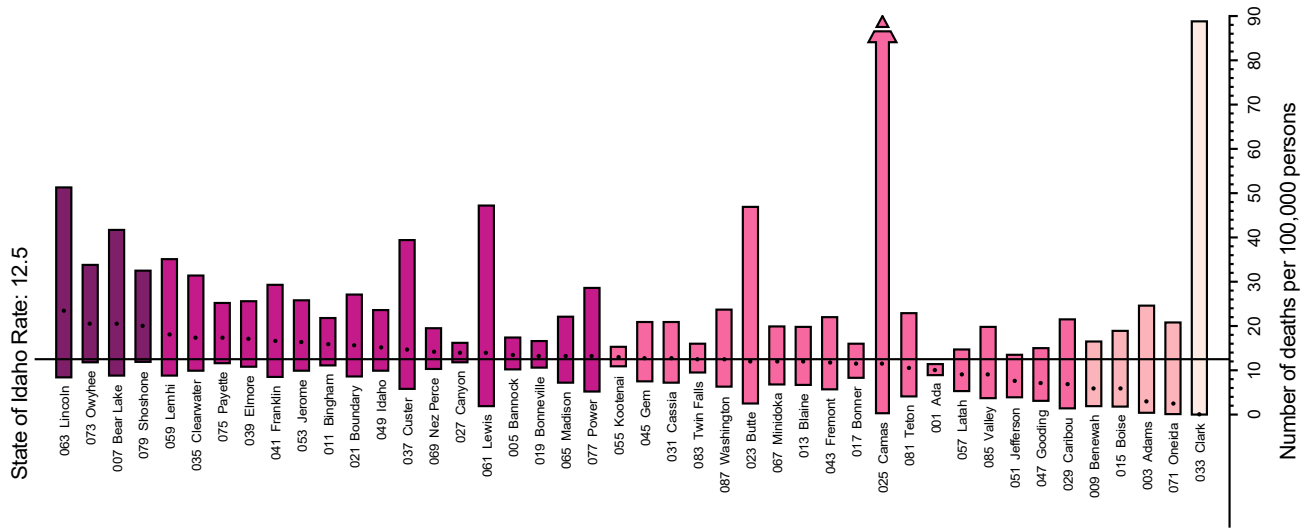
Both Males and Females

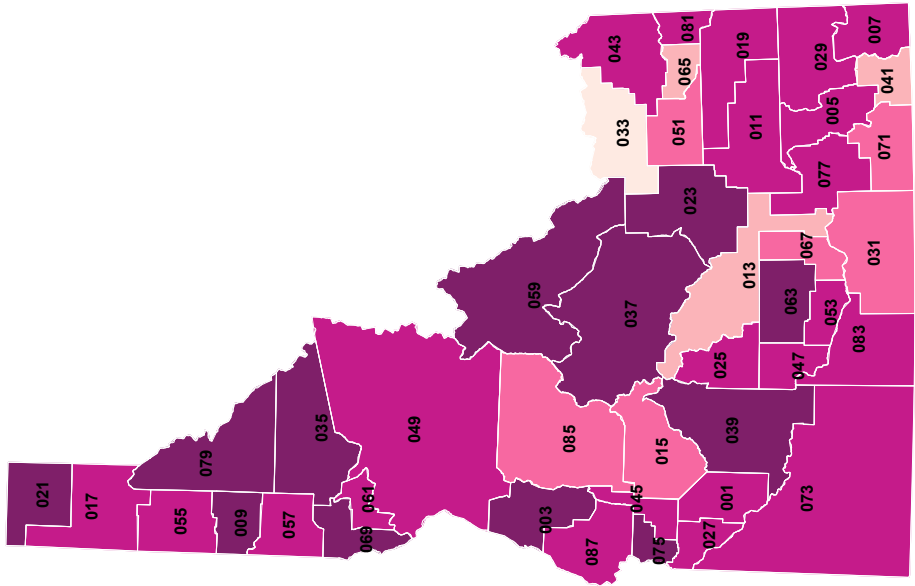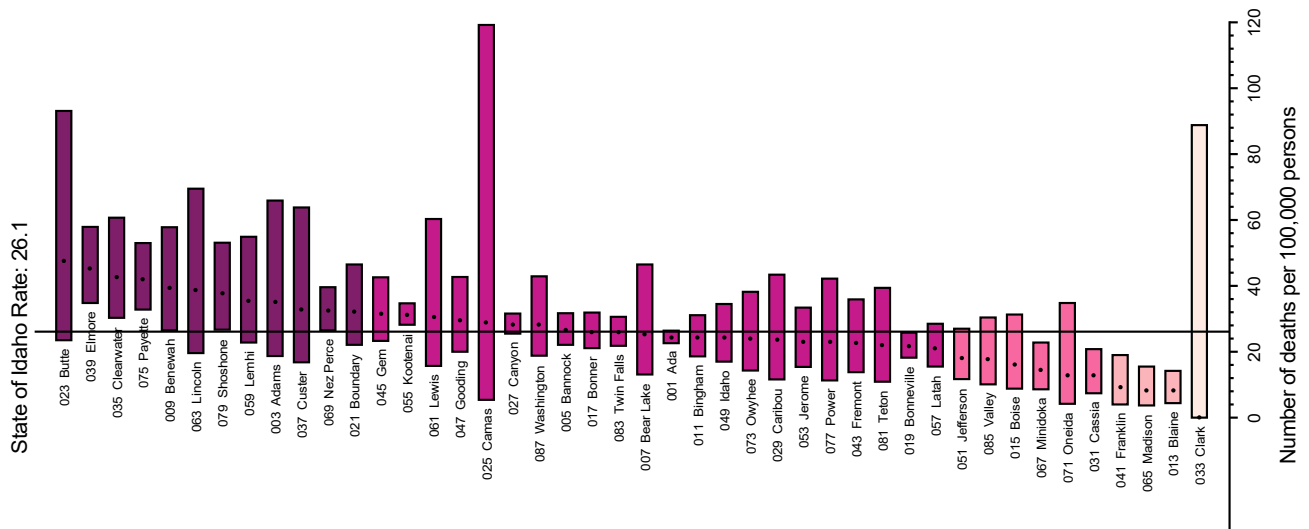**State of Idaho, by County, 2018–2022**

State of Idaho Rate: 12.5

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

Corpus Uteri

Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 24.8

Number of cases per 100,000 persons
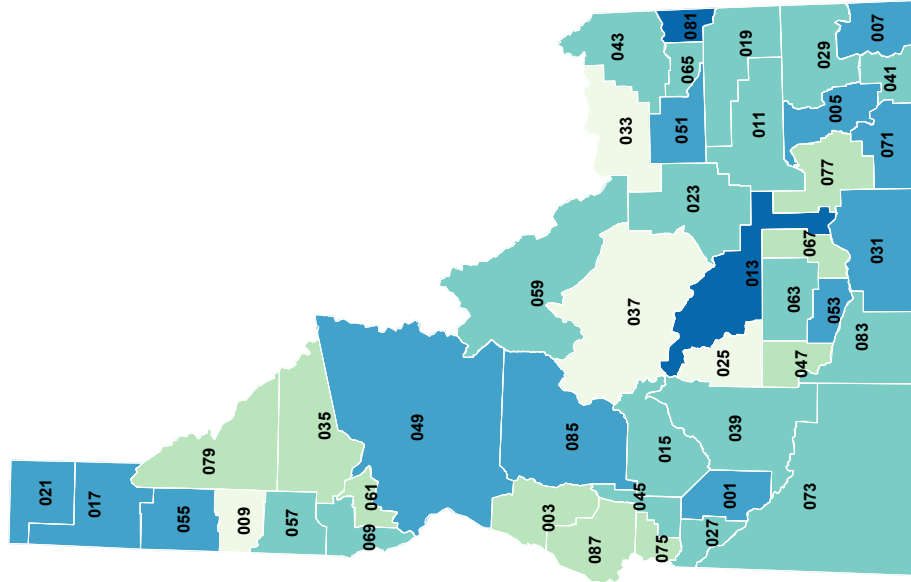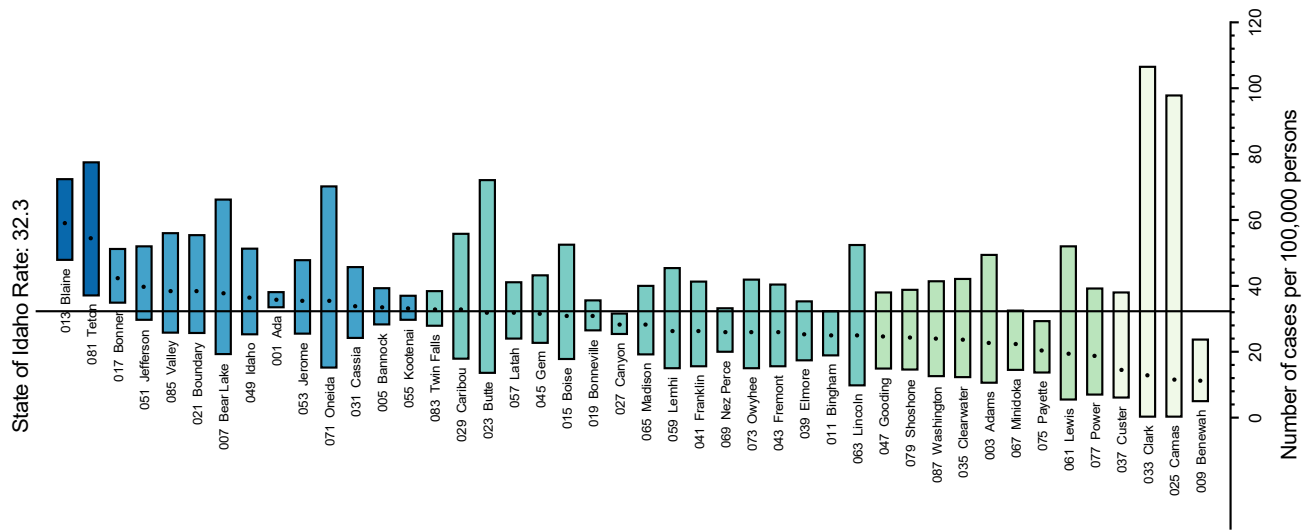

Cancer Data Registry of Idaho.
Rates age-adjusted to the 2000 U.S. population. U.S. FIPS codes label counties.
Colors denote rate clustering. Width of bars indicate 95% confidence intervals.
Arrows indicate upper confidence interval extends beyond graphic area.

Age-Adjusted Mortality Rates

Corpus Uteri

Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 2.8

Number of deaths per 100,000 persons

Age-Adjusted Incidence Rates

Esophagus

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 4.6

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Esophagus

Both Males and Females

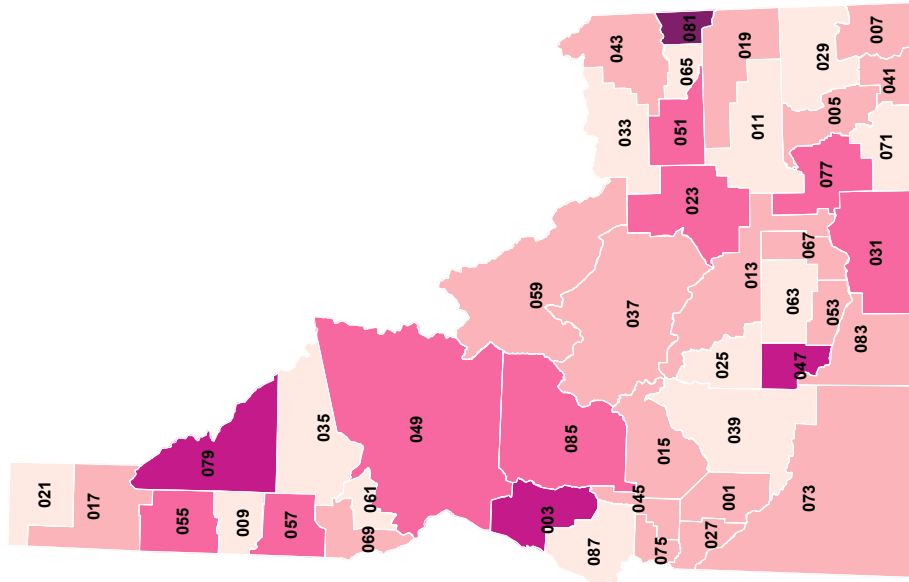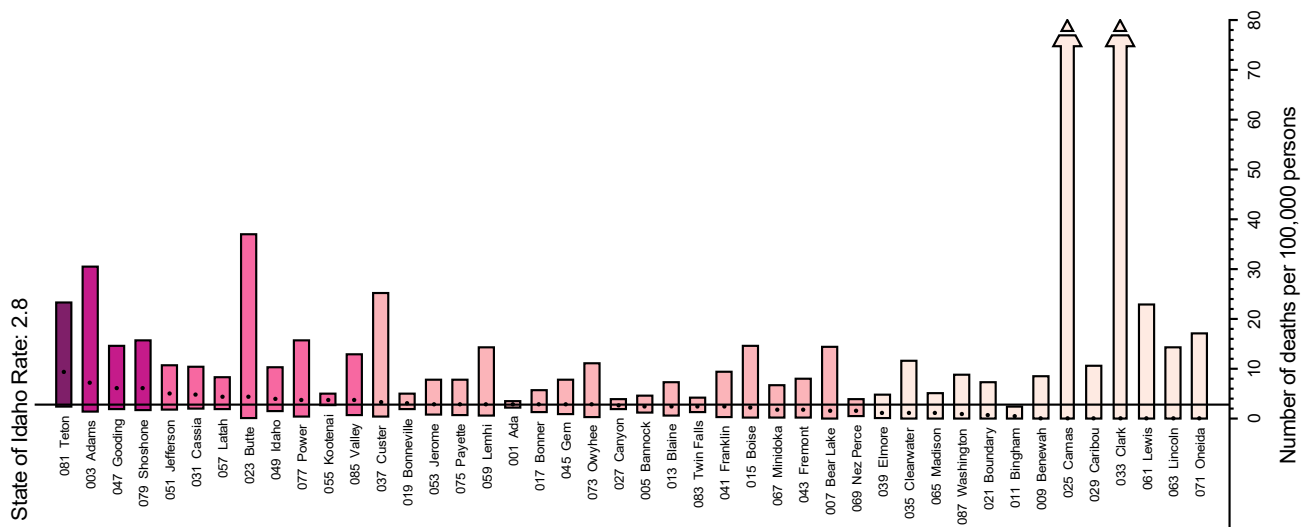**State of Idaho, by County, 2018–2022**

State of Idaho Rate: 4.1

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

Hodgkin Lymphoma

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 2.3

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Hodgkin Lymphoma

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 0.2
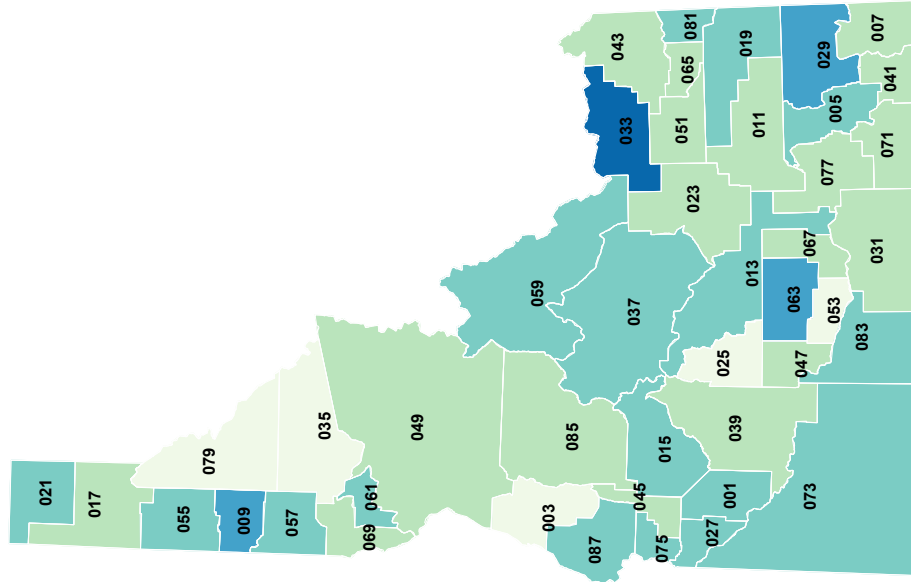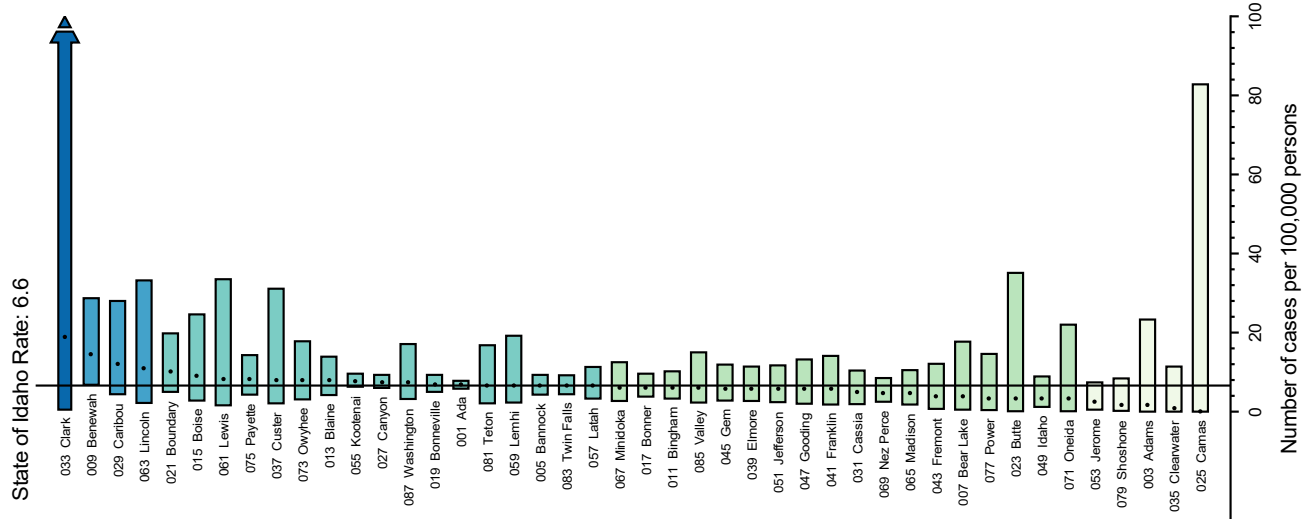

Number of deaths per 100,000 persons

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

Kidney and Renal Pelvis
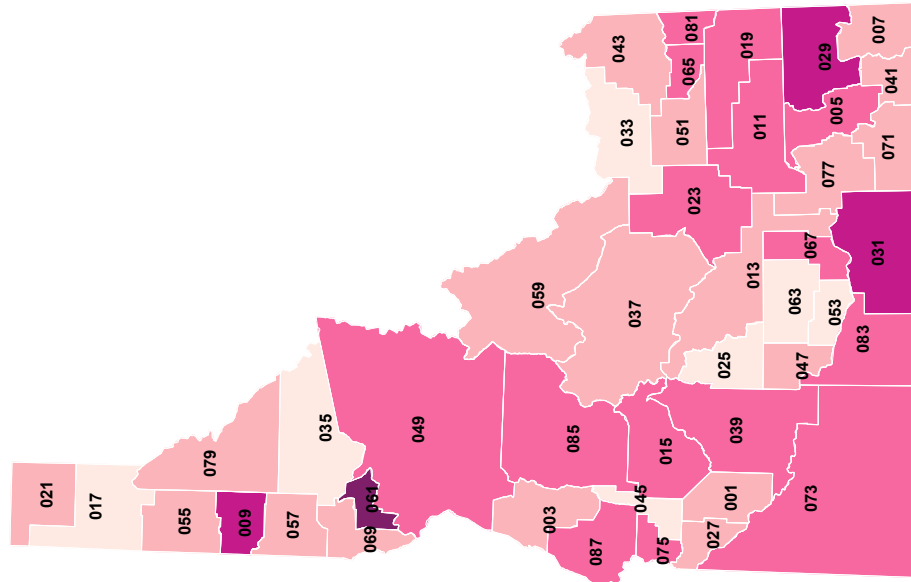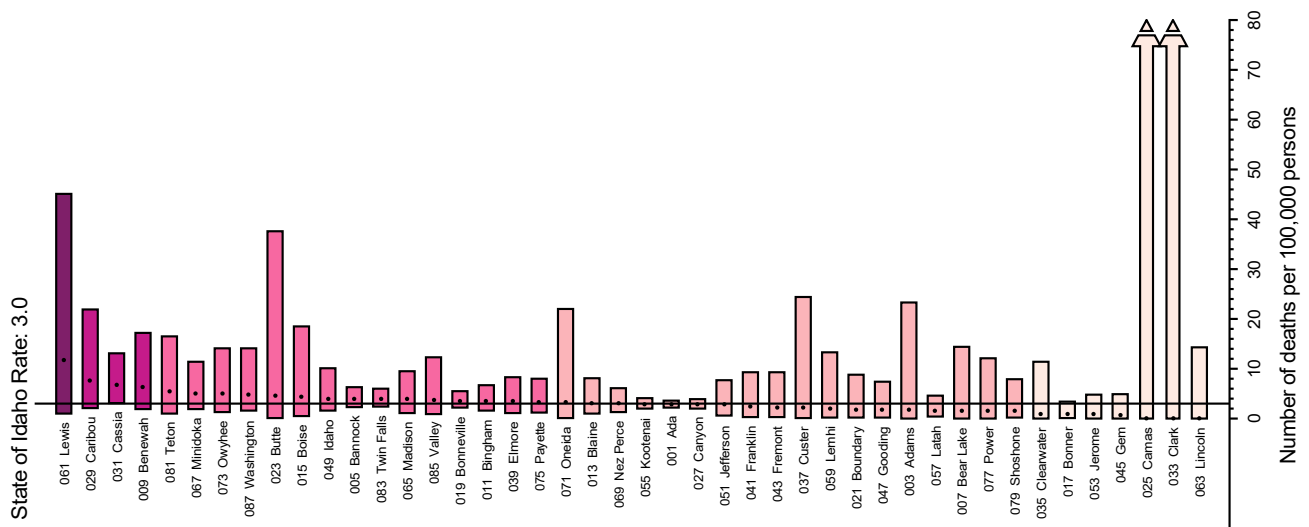
Both Males and Females

State of Idaho, by County, 2018–2022

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: 18.3

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Kidney

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 3.5

Number of deaths per 100,000 persons

Age-Adjusted Incidence Rates

Larynx

Both Males and Females

State of Idaho, by County, 2018–2022

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.
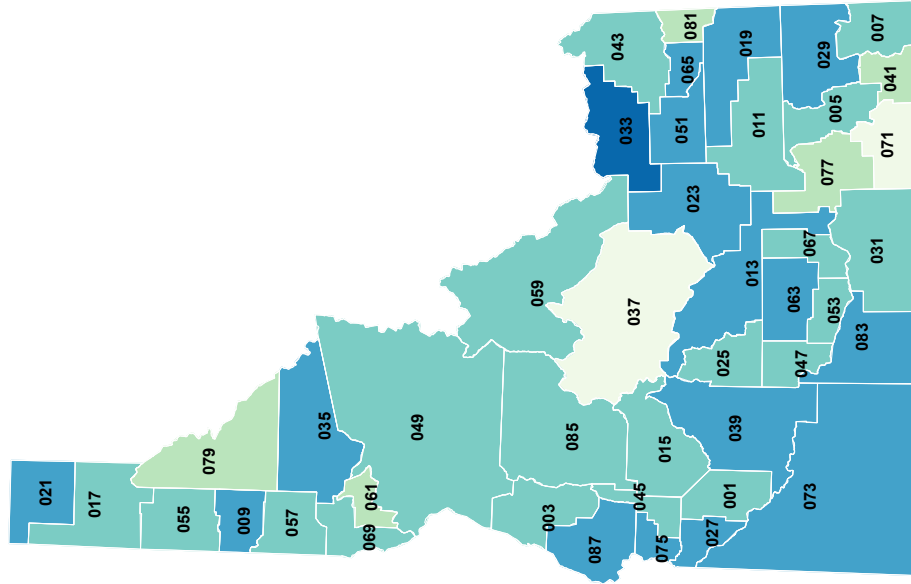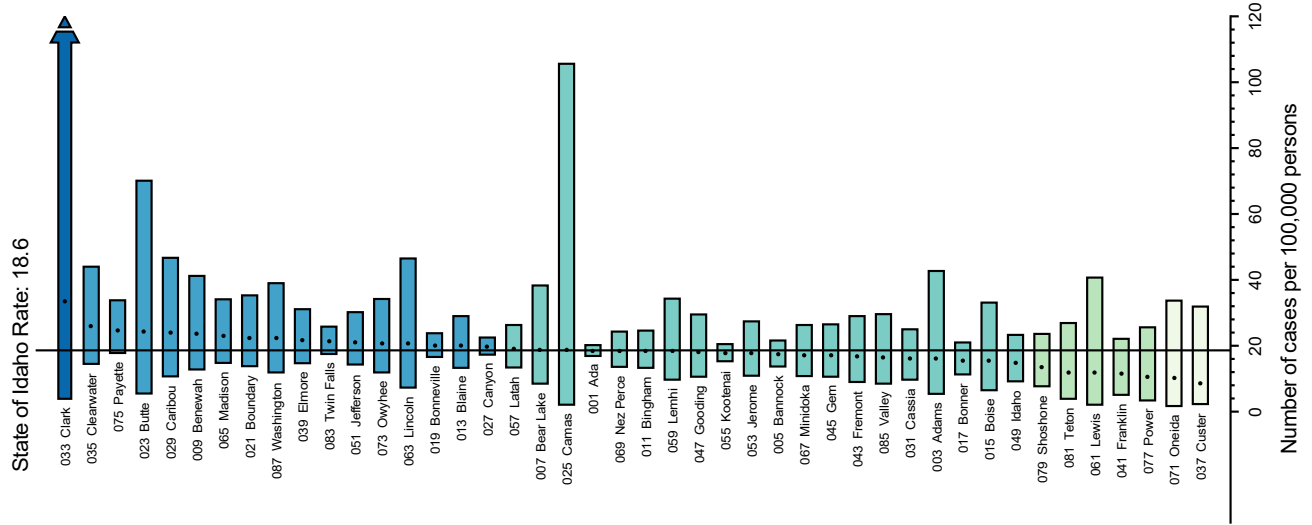*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Mortality Rates

Larynx

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 0.7

Number of deaths per 100,000 persons

Age-Adjusted Incidence Rates

Leukemia

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 16.9

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Leukemia

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 6.3

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.
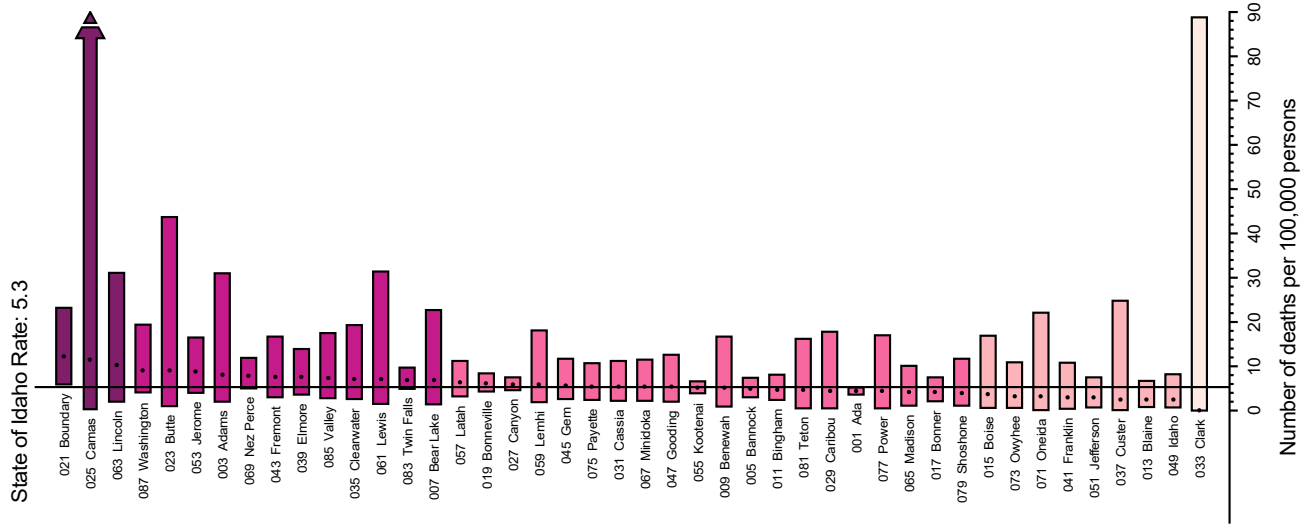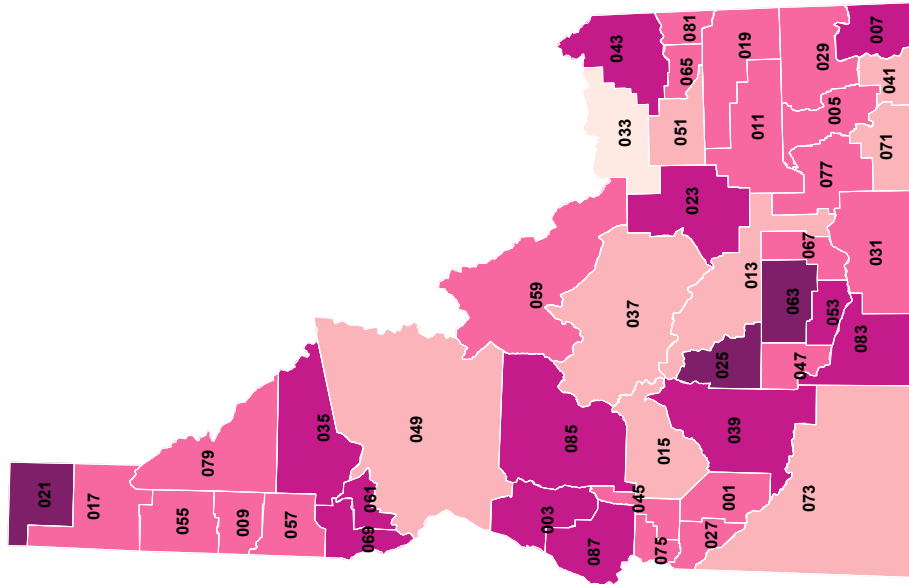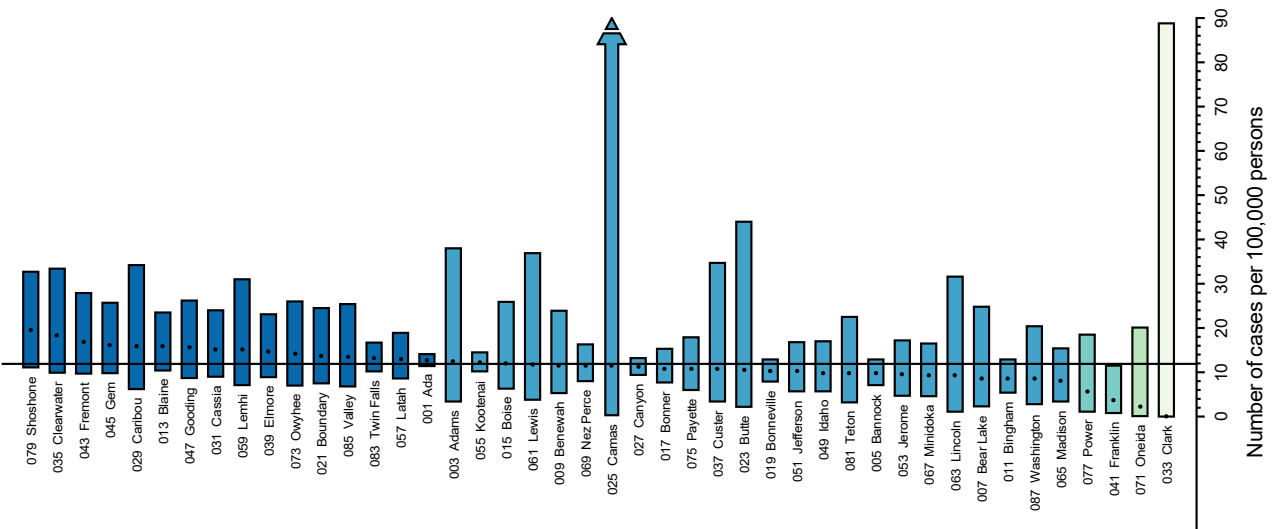*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Incidence Rates

Liver and Bile Duct

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 7.5

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Liver and Bile Duct

Both Males and Females

State of Idaho, by County, 2018–2022

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: 5.5

Number of deaths per 100,000 persons

Age-Adjusted Incidence Rates

Lung and Bronchus

Both Males and Females

State of Idaho, by County, 2018–2022

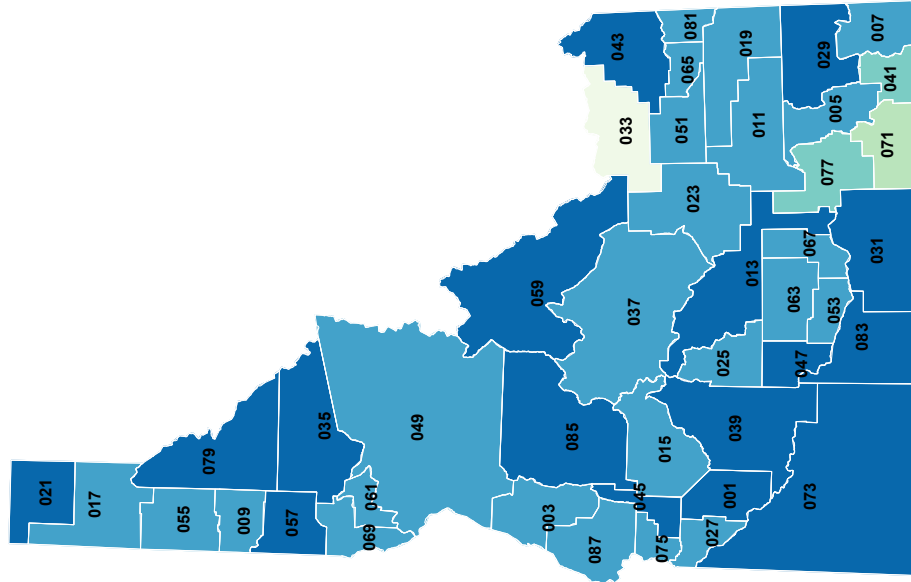State of Idaho Rate: 43.3

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.

Age-Adjusted Mortality Rates

Lung and Bronchus

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 26.1

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.

Age-Adjusted Incidence Rates

Melanoma of the Skin

Both Males and Females
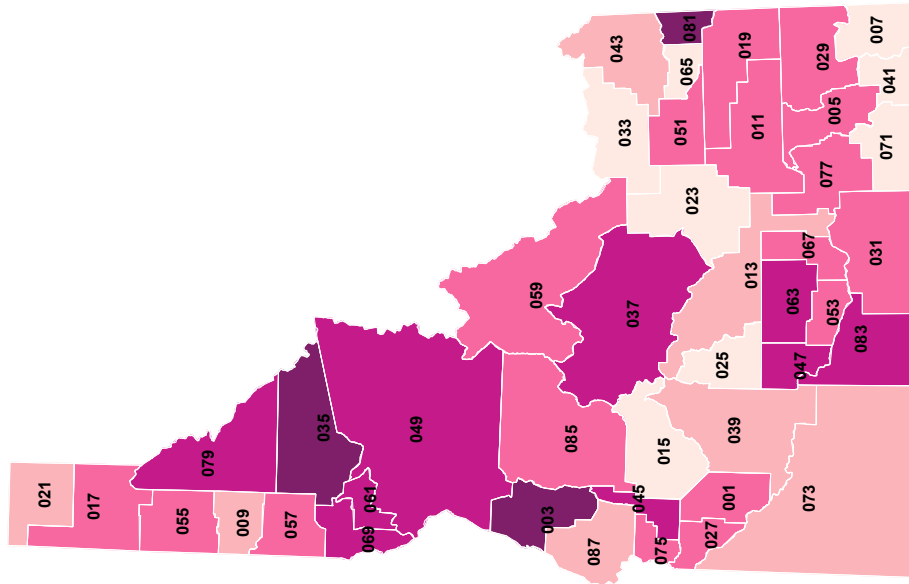
State of Idaho, by County, 2018–2022

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: 32.3

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Melanoma of the Skin

Both Males and Females

State of Idaho, by County, 2018–2022

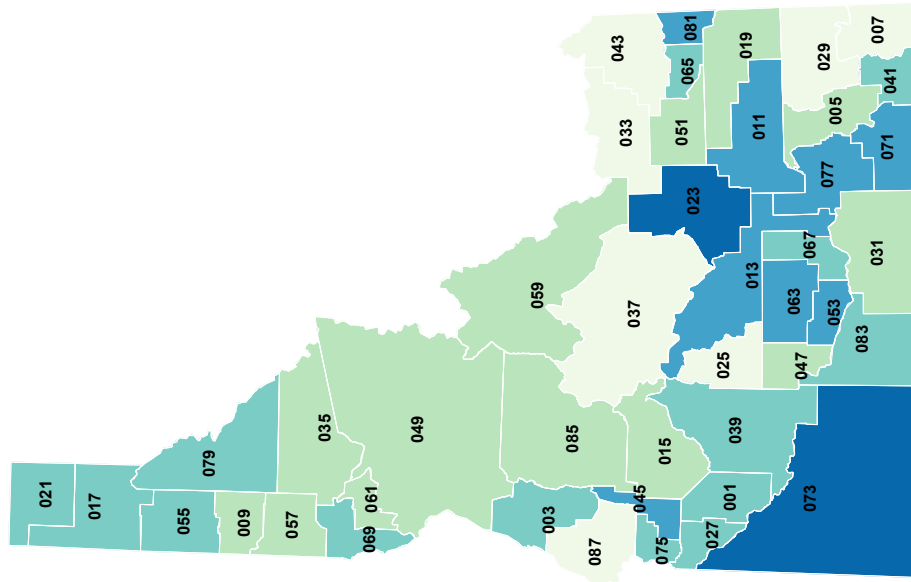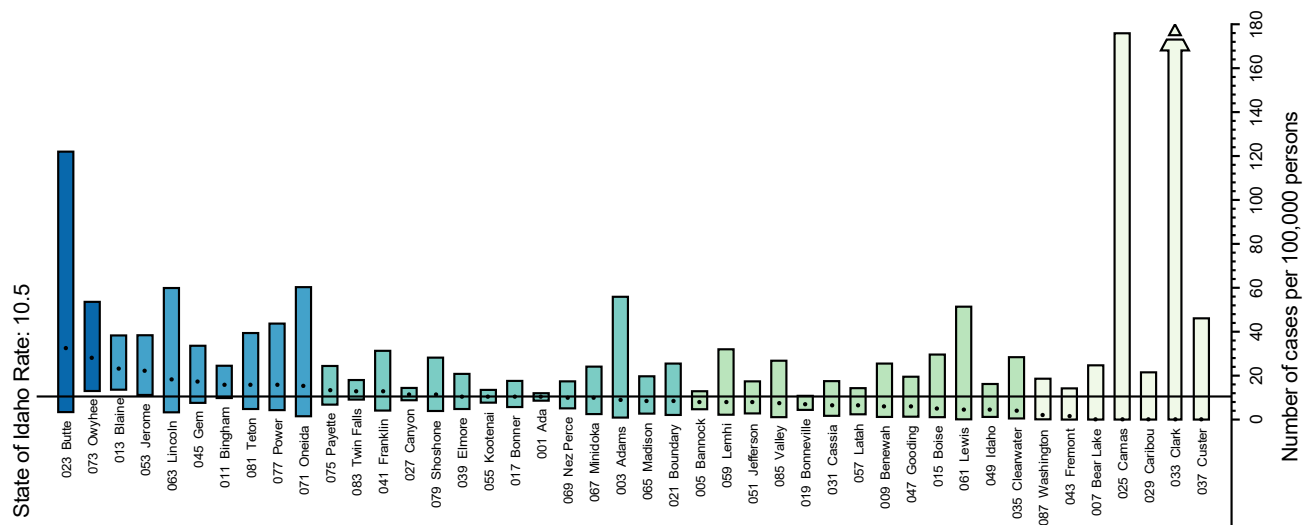State of Idaho Rate: 2.8

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, 2018–2022

State of Idaho Rate: 6.6

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Myeloma

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 3.0
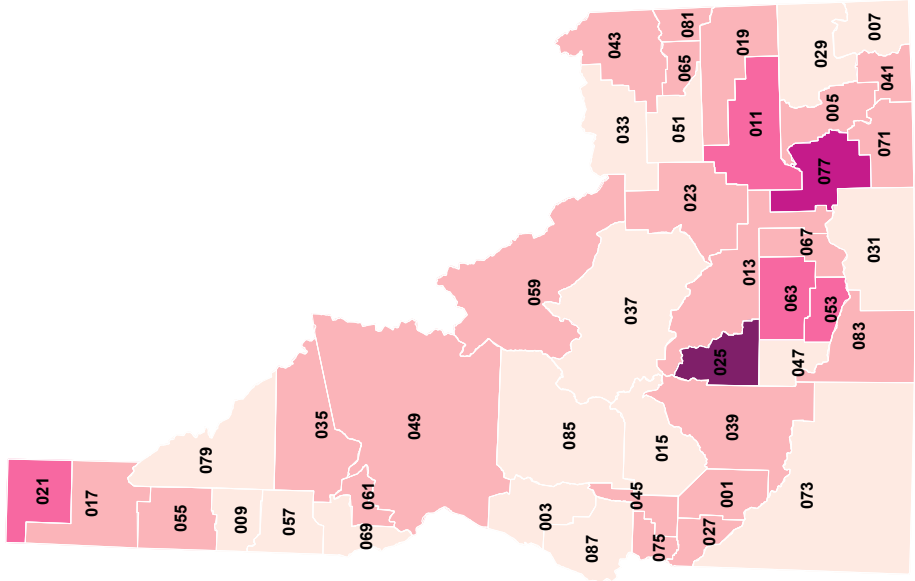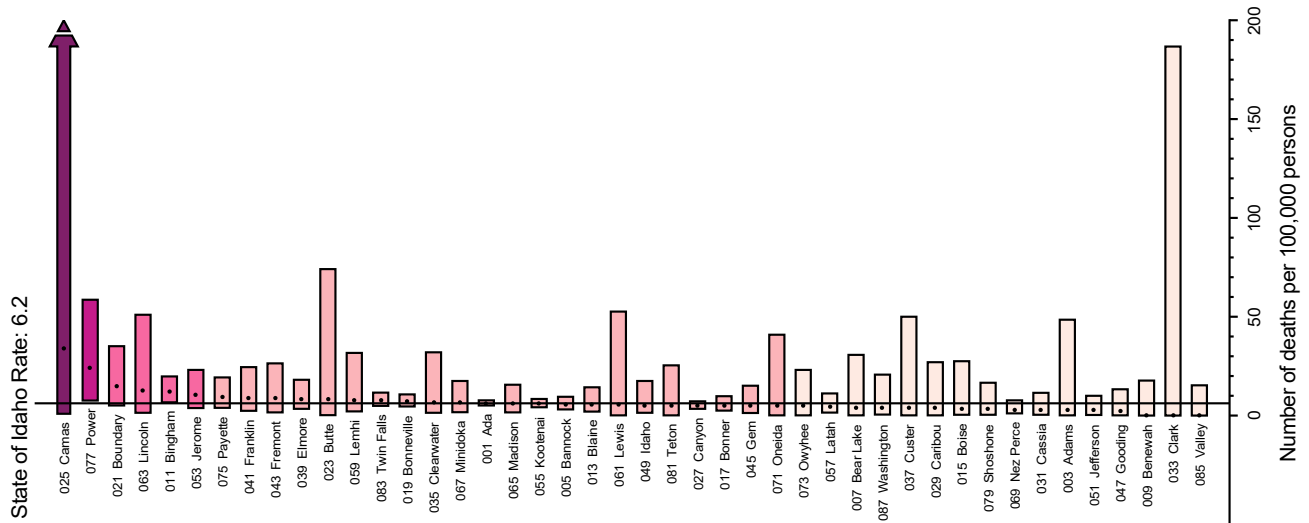

Number of deaths per 100,000 persons

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

Non-Hodgkin Lymphoma

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 18.6

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Non-Hodgkin Lymphoma

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 5.3

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.
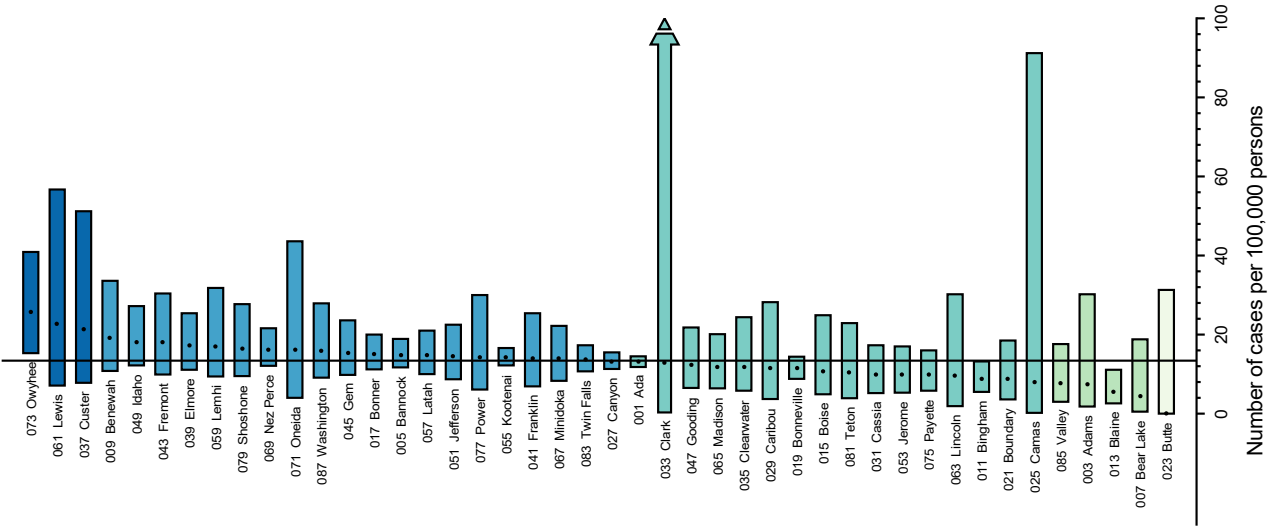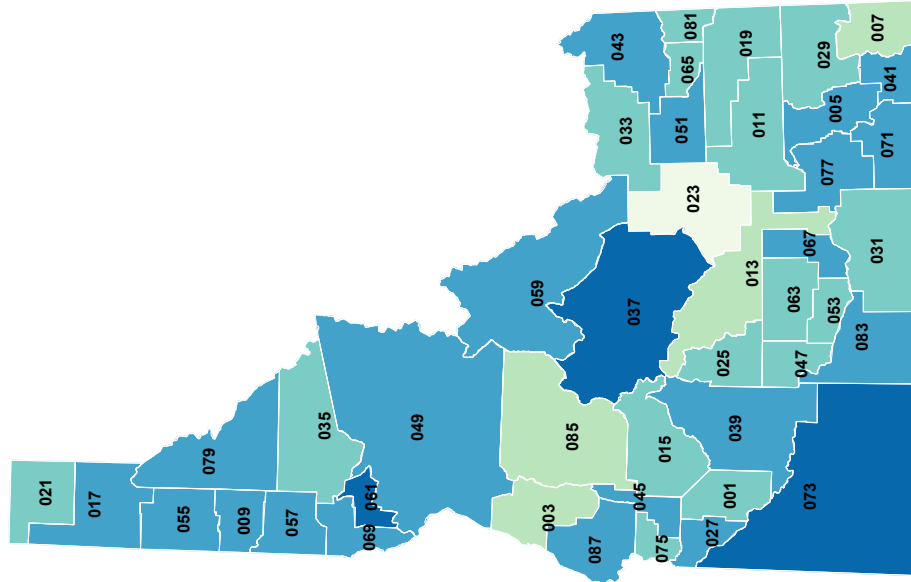*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Incidence Rates

Oral Cavity and Pharynx

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 11.9

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Oral Cavity and Pharynx

Both Males and Females

State of Idaho, by County, 2018–2022

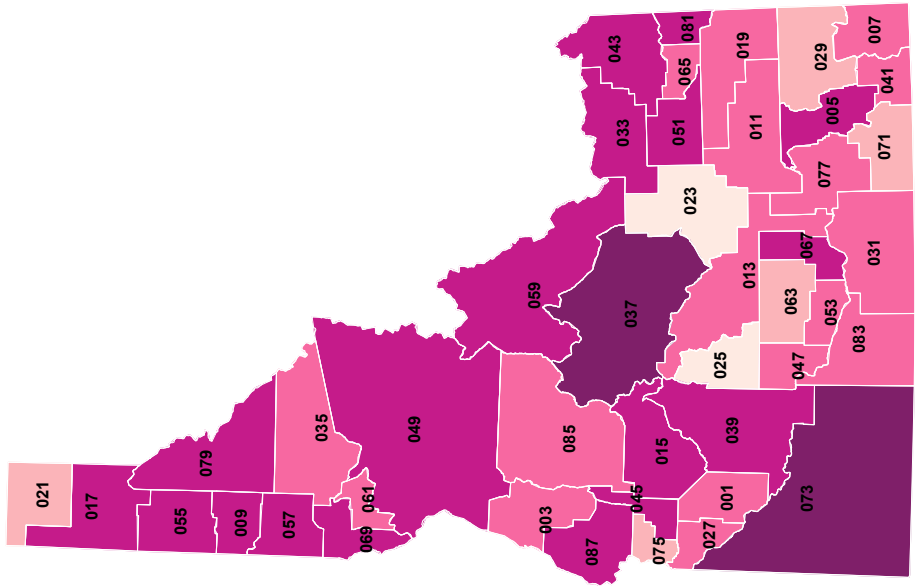State of Idaho Rate: 2.4

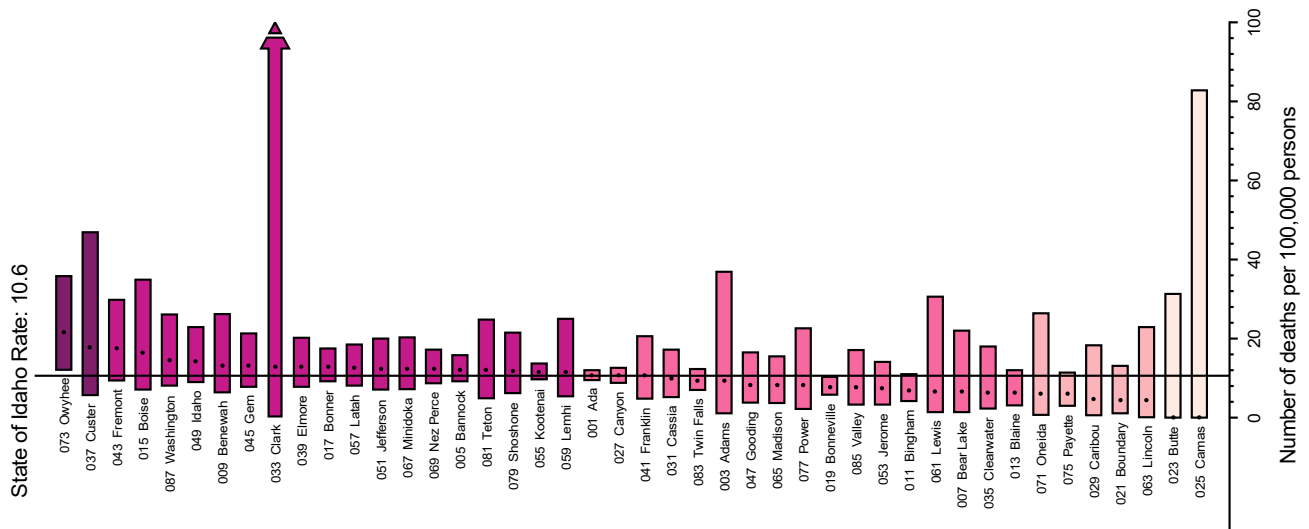Number of deaths per 100,000 persons

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, 2018–2022

State of Idaho Rate: 10.5

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Ovary

Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 6.2

Number of deaths per 100,000 persons

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

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

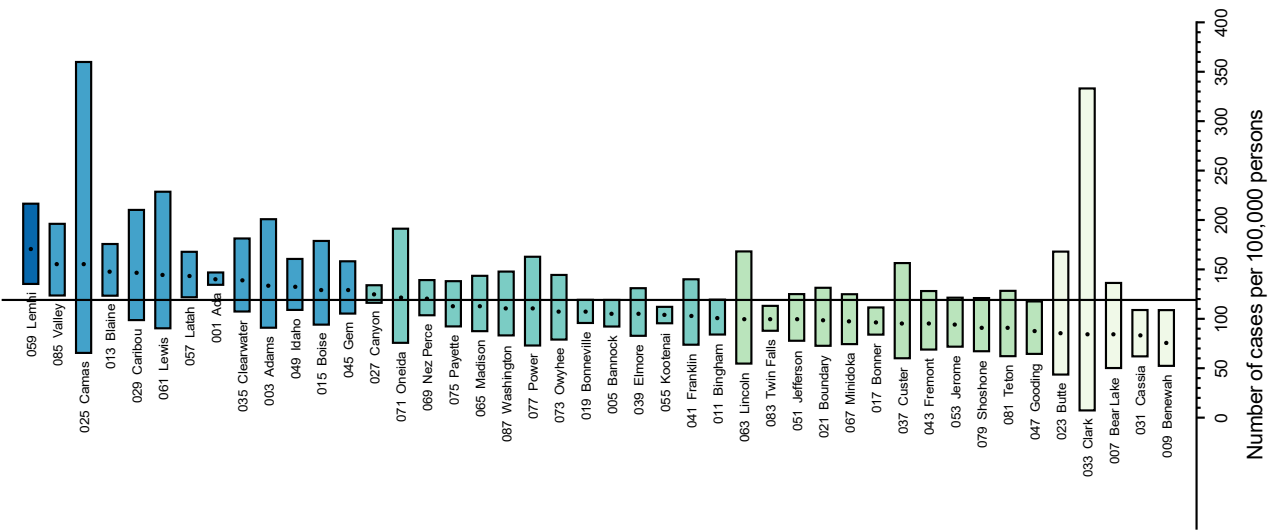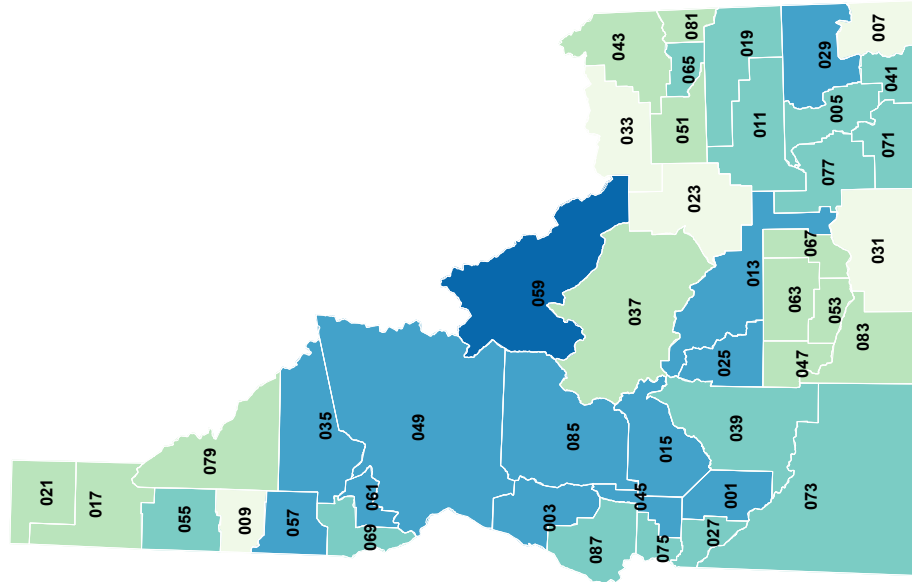**Pancreas**

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 13.4
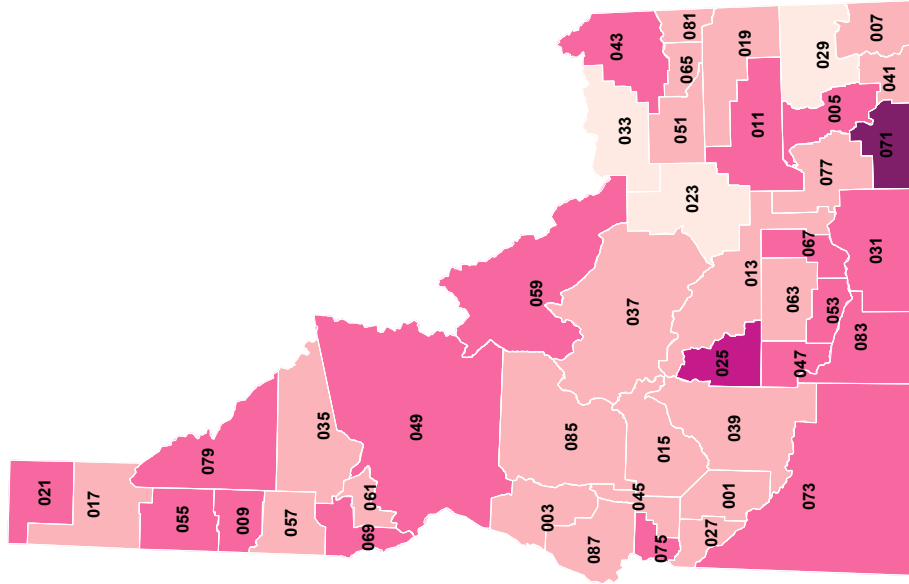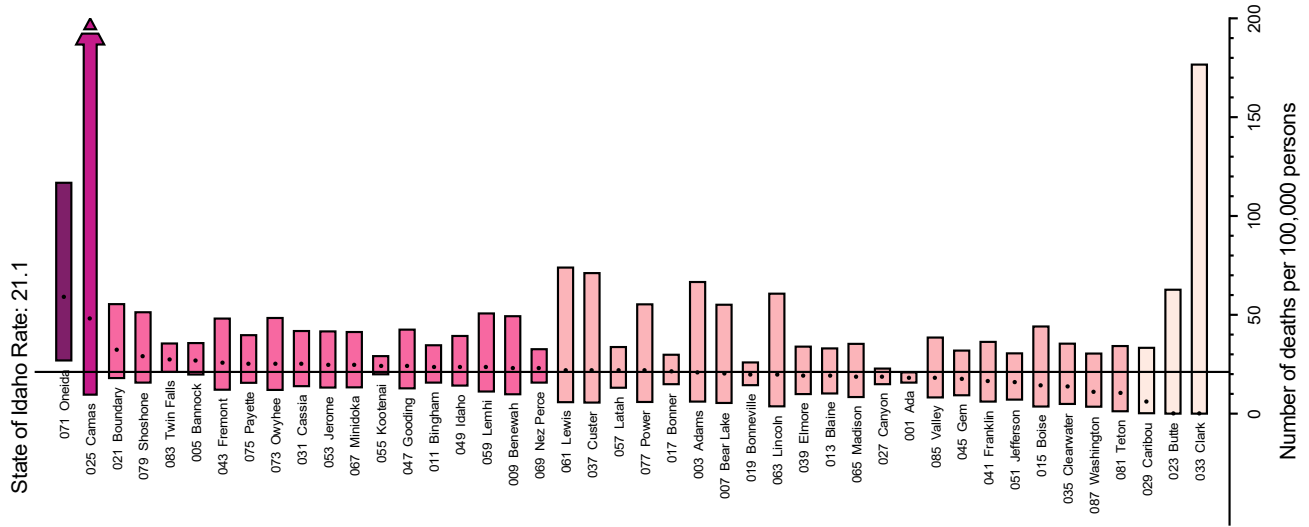
Number of cases per 100,000 persons

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

Pancreas

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 10.6

Number of deaths per 100,000 persons

Age-Adjusted Incidence Rates

Prostate

Males

State of Idaho, by County, 2018–2022

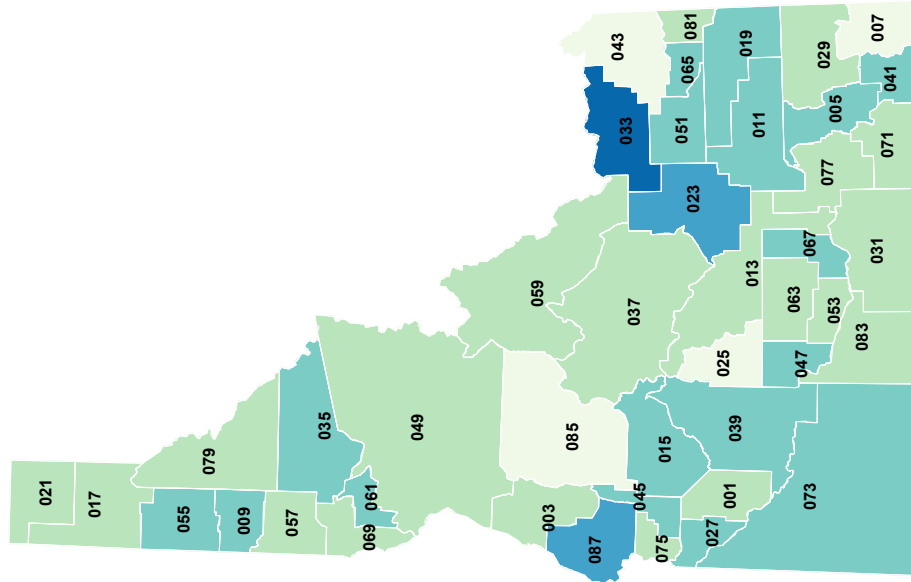State of Idaho Rate: 119.1

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, 2018–2022

State of Idaho Rate: 21.1

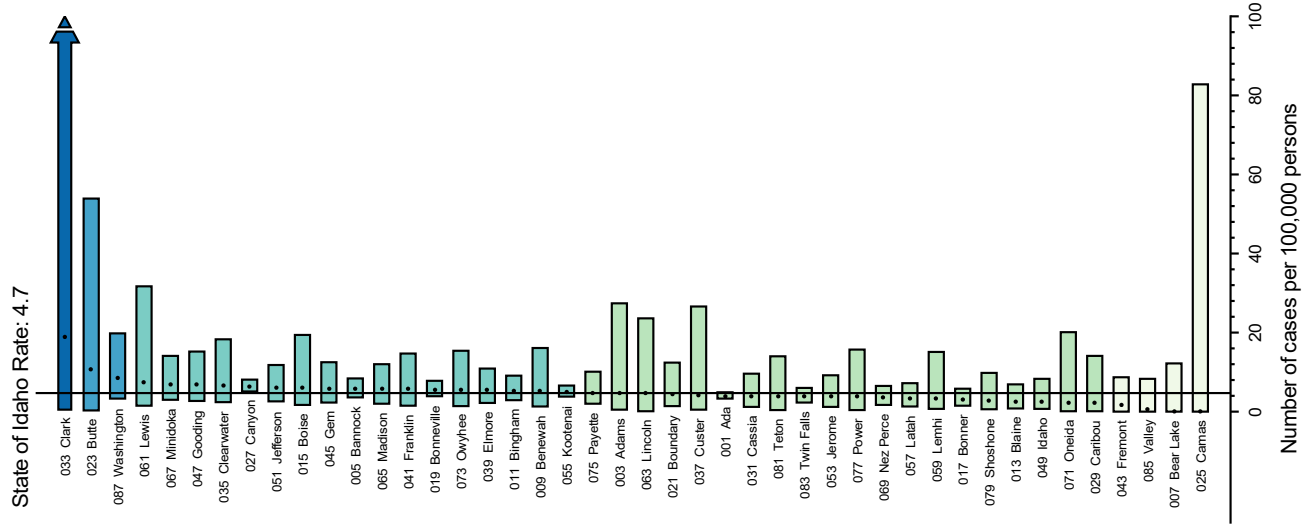Number of deaths per 100,000 persons

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
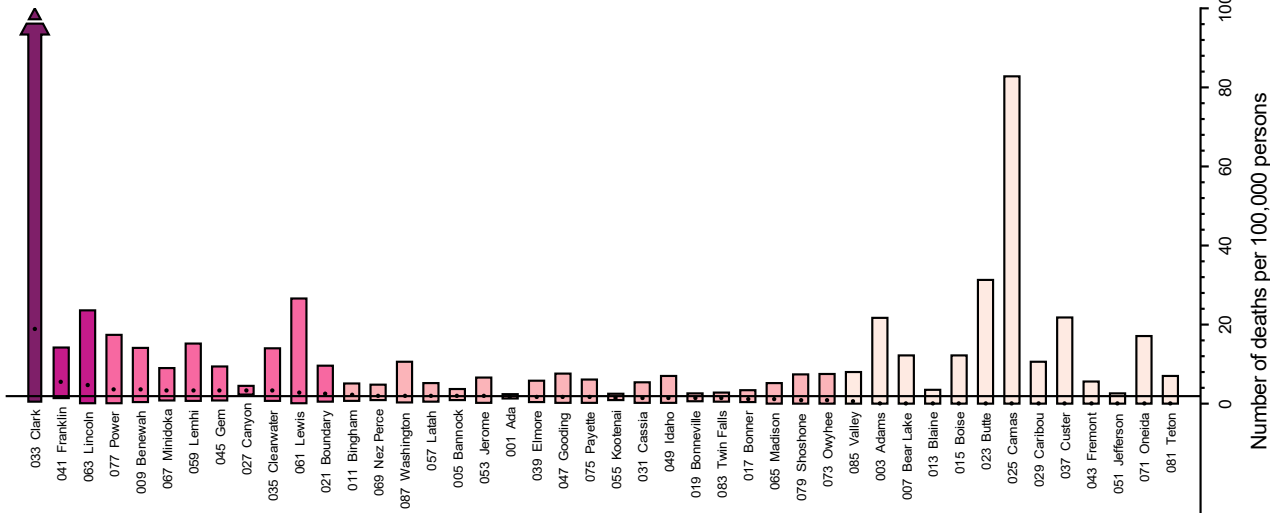
Stomach

Both Males and Females

State of Idaho, by County, 2018–2022

State of Idaho Rate: 4.7

Number of cases per 100,000 persons

Age-Adjusted Mortality Rates

Stomach

Both Males and Females

State of Idaho, by County, 2018–2022

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.
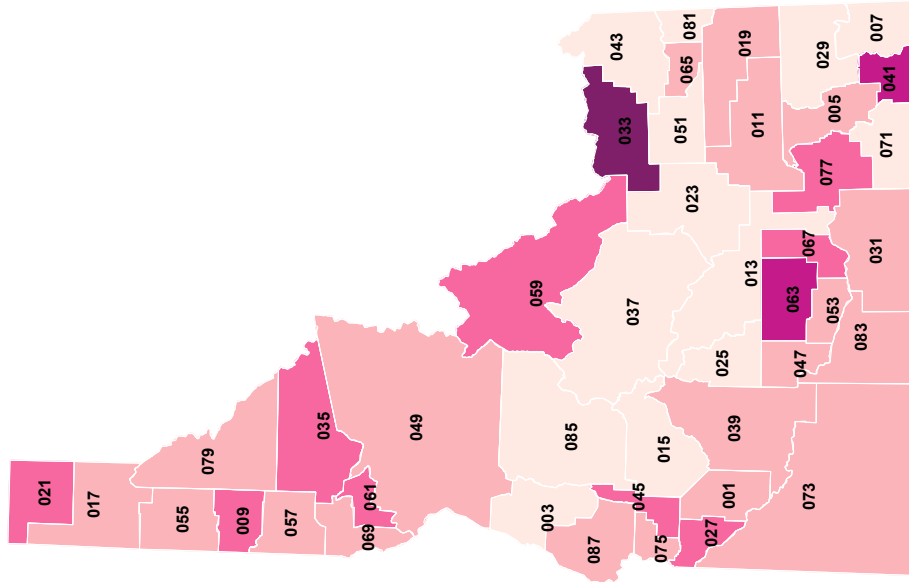*Arrows indicate upper confidence interval extends beyond graphic area.*

Age-Adjusted Incidence Rates

Testis

Males

State of Idaho, by County, 2018–2022

State of Idaho Rate: 6.5

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

Number of cases per 100,000 persons

0   20   40   60   80   100   120   140   160

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.
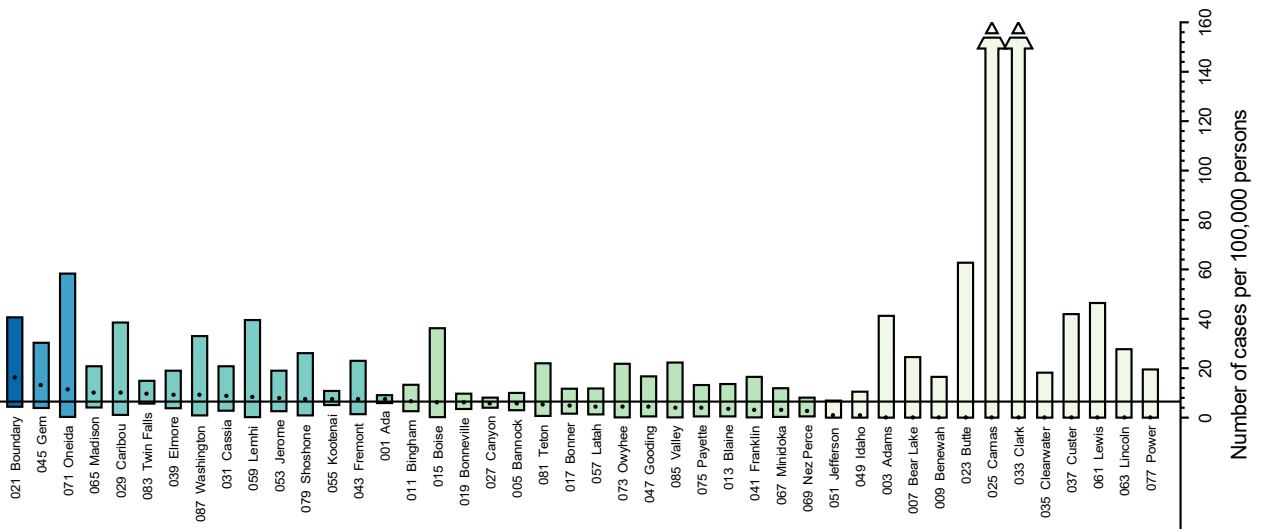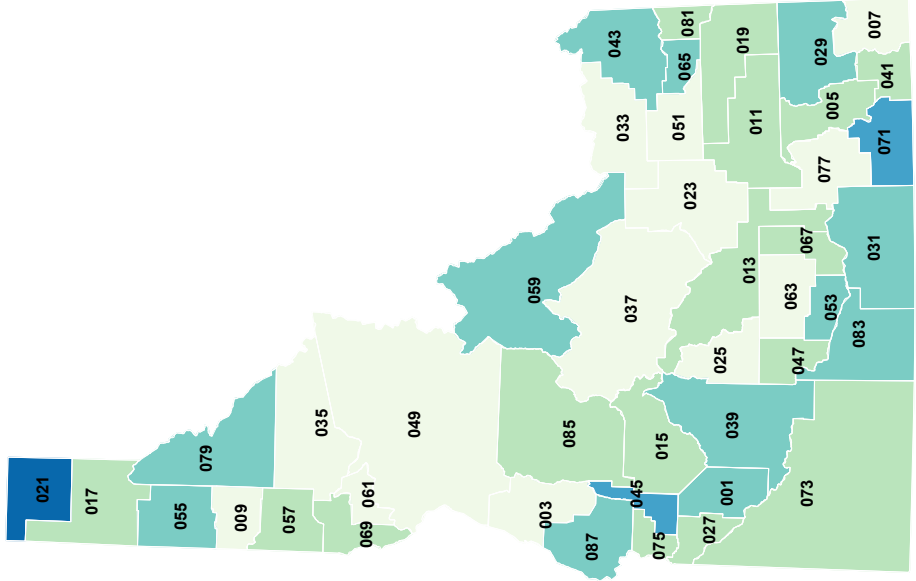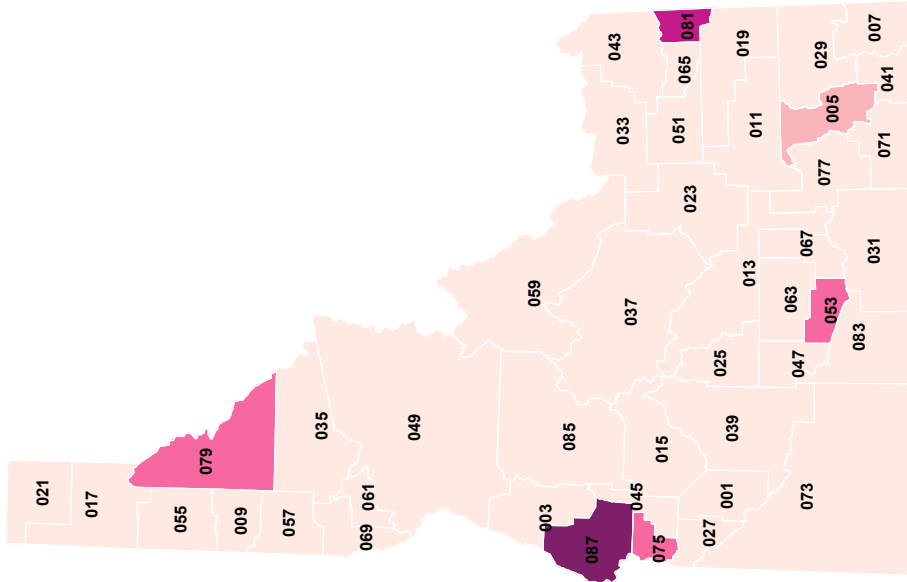
Age-Adjusted Mortality Rates

Testis

Males

State of Idaho, by County, 2018–2022

State of Idaho Rate: 0.2

Number of deaths per 100,000 persons

Age-Adjusted Incidence Rates

Thyroid

Both Males and Females

State of Idaho, by County, 2018–2022

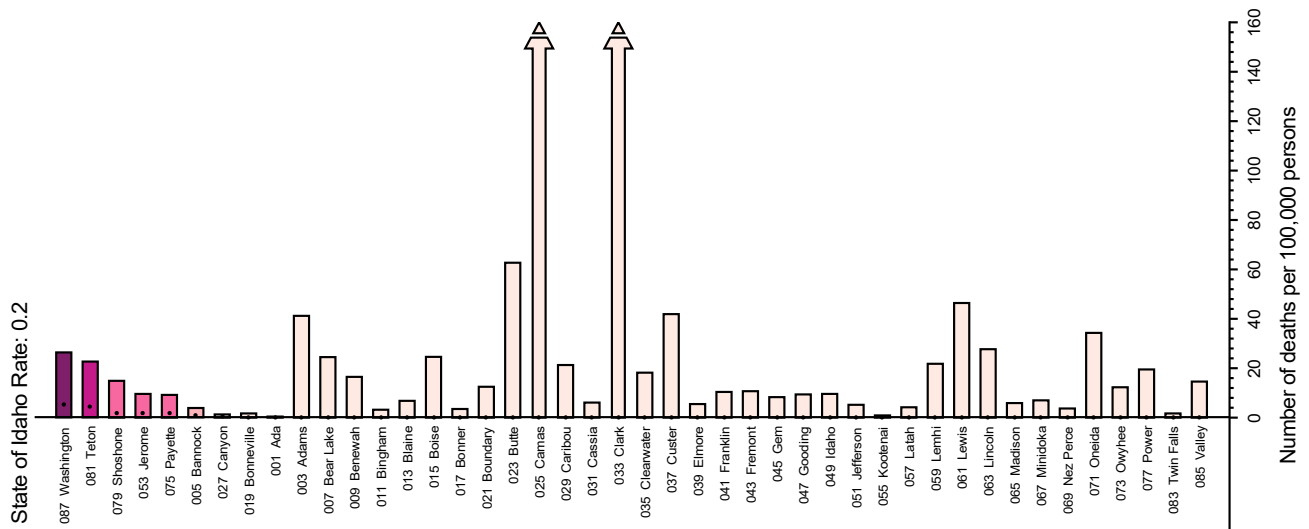State of Idaho Rate: 12.5
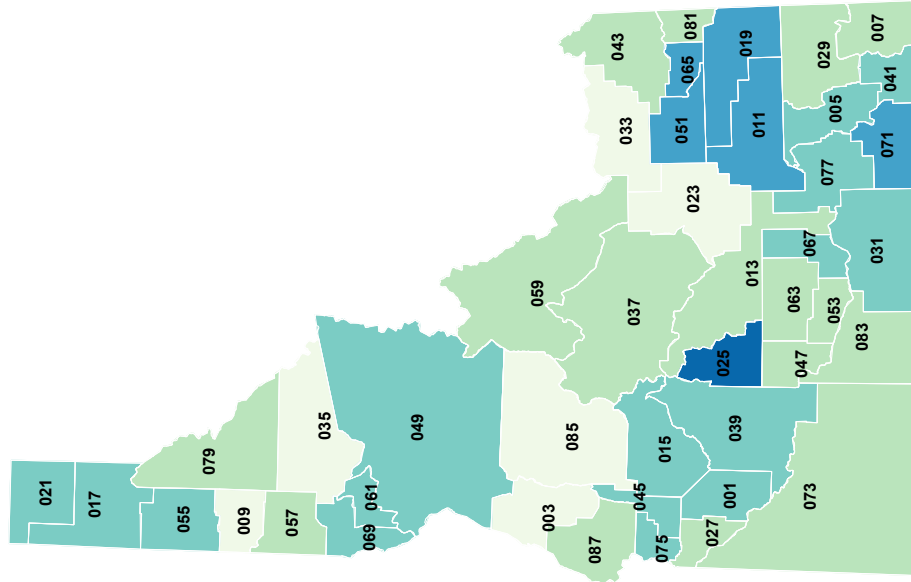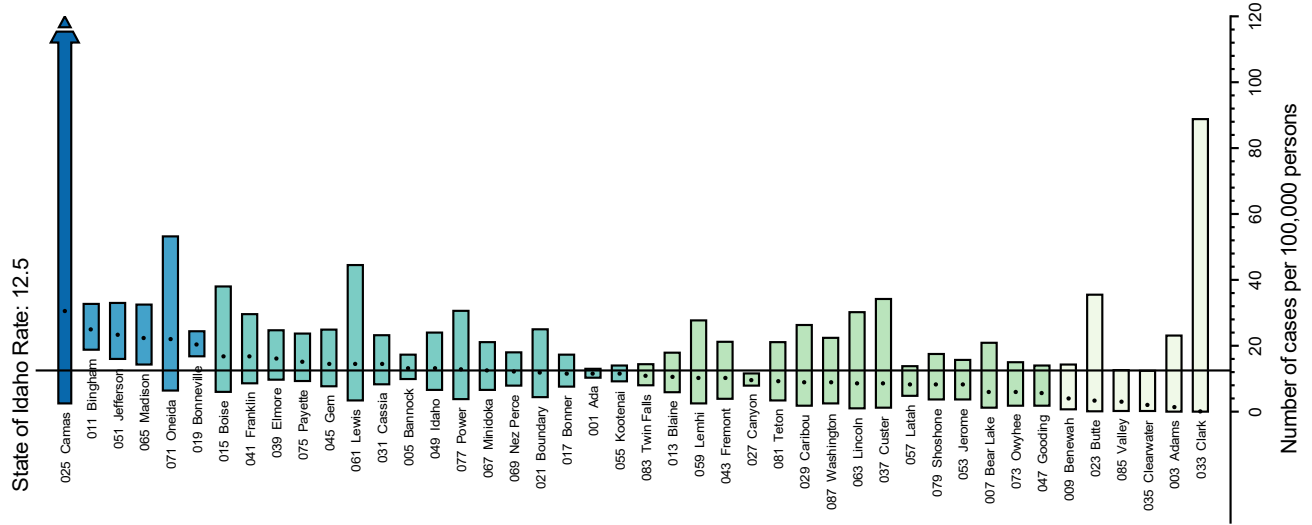
Number of cases per 100,000 persons

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
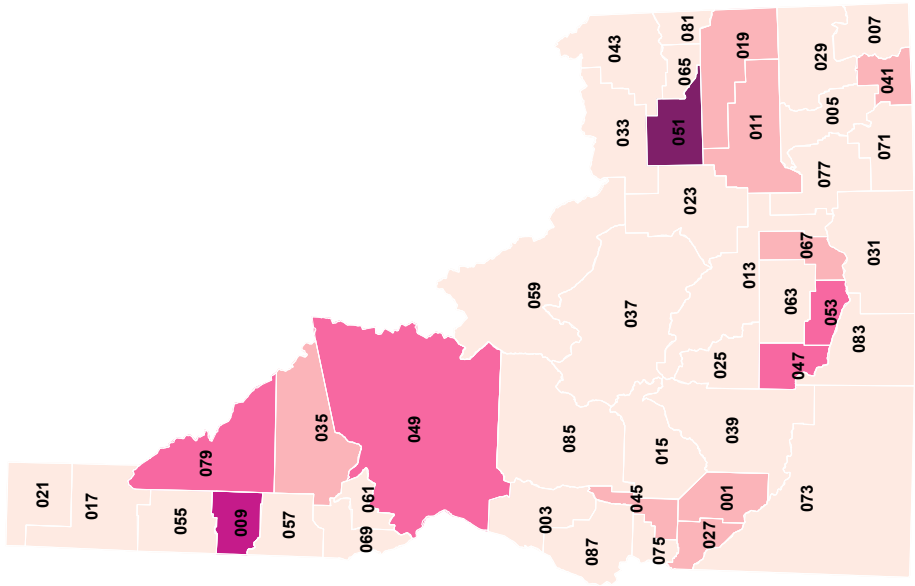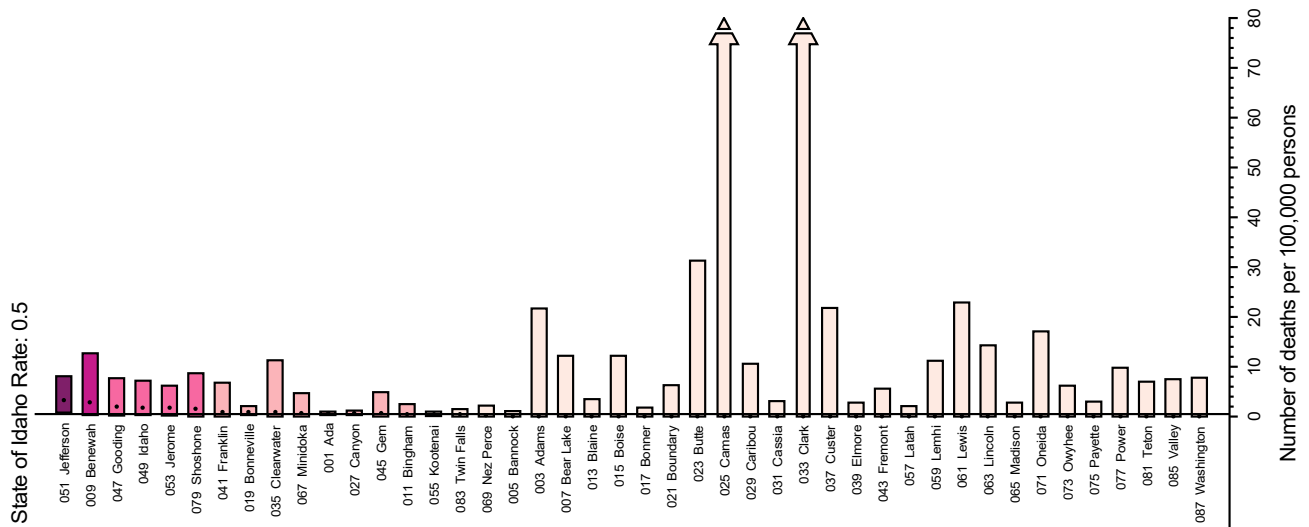
State of Idaho, by County, 2018–2022

State of Idaho Rate: 0.5

Number of deaths per 100,000 persons

REFERENCES

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 24, 25th ed. Springfield, Ill.: North American Association of Central Cancer Registries, July 2023. Rev. July 2023, Aug. 2023, Oct. 2023, Feb 2024, Mar 2024. Available at: http://datadictionary.naaccr.org/.

5. Adamo M, Groves C, Dickie L, Ruhl J. (September 2021). SEER Program Coding and Staging Manual 2022. 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/2022/SPCSM_2022_MainDoc.pdf.

6. Commission on Cancer. STORE: STandards for Oncology Registry Entry. Chicago, IL: American College of Surgeons Commission on Cancer. Released 2022. Available at: https://www.facs.org/media/xyuauust/store_manual_2022.pdf.

7. Dickie L, Johnson, CH, Adams, S, Negoita, S. Solid Tumor Rules. National Cancer Institute, Rockville, MD, 2021. Available at: https://seer.cancer.gov/tools/solidtumor.

8. Ruhl J, Adamo M, Dickie L., Negoita, S. (August 2021). Hematopoietic and Lymphoid Neoplasm Coding Manual. National Cancer Institute, Bethesda, MD, 20892. Available at: https://seer.cancer.gov/tools/heme/Hematopoietic_Instructions_and_Rules.pdf.

9. Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: National Program of Cancer Registries (NPCR) and SEER Incidence Public Use Data, 2001-2021, released June 2024 These data were provided by central cancer registries participating in the NPCR and SEER Programs and submitted in November 2023.

10. CiNA Explorer: An interactive tool for quick access to key NAACCR cancer statistics based on the Cancer in North America (CiNA) dataset from the North American Association of Central Cancer Registries. Available from (https://apps.naaccr.org/explorer). (Accessed on 11-01-2024)

11. CC-EST2023-ALLDATA-16: Annual County Resident Population Estimates by Age, Sex, Race, and Hispanic Origin: April 1, 2020 to July 1, 2023. U.S. Census Bureau, Population Division. Release date: June 2024.

12. Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Incidence - SEER Research Plus Limited-Field Data, 22 Registries, Nov 2023 Sub (2000-2021) - Linked To County Attributes - Total U.S., 1969-2022 Counties, National Cancer Institute, DCCPS, Surveillance Research Program, released April 2024, based on the November 2023 submission.

13. Thun M, Linet M, Cerhan J, Haiman C, Schottenfeld D (Eds). *Cancer Epidemiology and Prevention*. Fourth ed. New York, NY: Oxford University Press; 2018.

14. PDQ® Screening and Prevention Editorial Board. PDQ Cancer Prevention Overview. Bethesda, MD: National Cancer Institute. Updated 10/04/2019. Available at: https://www.cancer.gov/about-cancer/causes-prevention/hp-prevention-overview-pdq. Accessed 11/08/2019.

15. Cogliano VJ, Baan R, Straif K, Grosse Y, Lauby-Secretan B, El Ghissassi F, Bouvard V, Benbrahim-Tallaa L, Guha N, Freeman C, Galichet L, Wild CP. Preventable exposures associated with human cancers. J Natl Cancer Inst. 2011;103(24):1827-39. Epub 2011/12/14. doi: 10.1093/jnci/djr483.

16. DevCan: Probability of Developing or Dying of Cancer Software, Version 6.7.5. Surveillance Research Program, Statistical Methodology and Applications, National Cancer Institute, 2012. Available at: https://surveillance.cancer.gov/devcan/.

17. Joinpoint Regression Program, Version 5.2.0. April 2024; Statistical Research and Applications Branch, National Cancer Institute. Available at: https://surveillance.cancer.gov/joinpoint/.

18. Final 2022 mortality data, Bureau of Vital Records and Health Statistics, Division of Public Health, Idaho Department of Health and Welfare; September 2023.

19. Cronin KA, Feuer EJ. Cumulative cause-specific mortality for cancer patients in the presence of other causes: a crude analogue of relative survival. *Stat Med 2000* Jul 15;19(13):1729-40.

20. Ellison LF. Adjusting relative survival estimates for cancer mortality in the general population. Statistics Canada, Catalogue no. 82-003-X, *Health Reports*, Vol. 25, no. 11, pp. 3-9, November 2014.

21. Howlader N, Ries LA, Mariotto AB, Reichman ME, Ruhl J, Cronin KA. Improved Estimates of Cancer-Specific Survival Rates From Population-Based Data. *J Natl Cancer Inst* 2010 Oct 20;102(20):1584-98. Epub 2010 Oct 11.

22. Ederer F, Heise H (1959). Instructions to IBM 650 programmers in processing survival computations, methodological note 10. End Results Evaluation Section, National Cancer Institute.

23. Mariotto AB, Zou J, Johnson CJ, Weir HK, Scoppa S, Huang B. Geographical, racial and socio-economic variation in life expectancy in the US and their impact on cancer relative survival. *PLoS One*. 2018 Jul 25;13(7):e0201034. doi: 10.1371/journal.pone.0201034.

24. Corazziari I, Quinn M, Capocaccia R. Standard cancer patient population for age standardising survival ratios. *Eur J Cancer*. 2004 Oct;40(15):2307-16.

APPENDICES

APPENDIX A

Map of Idaho Public Health Districts and Counties

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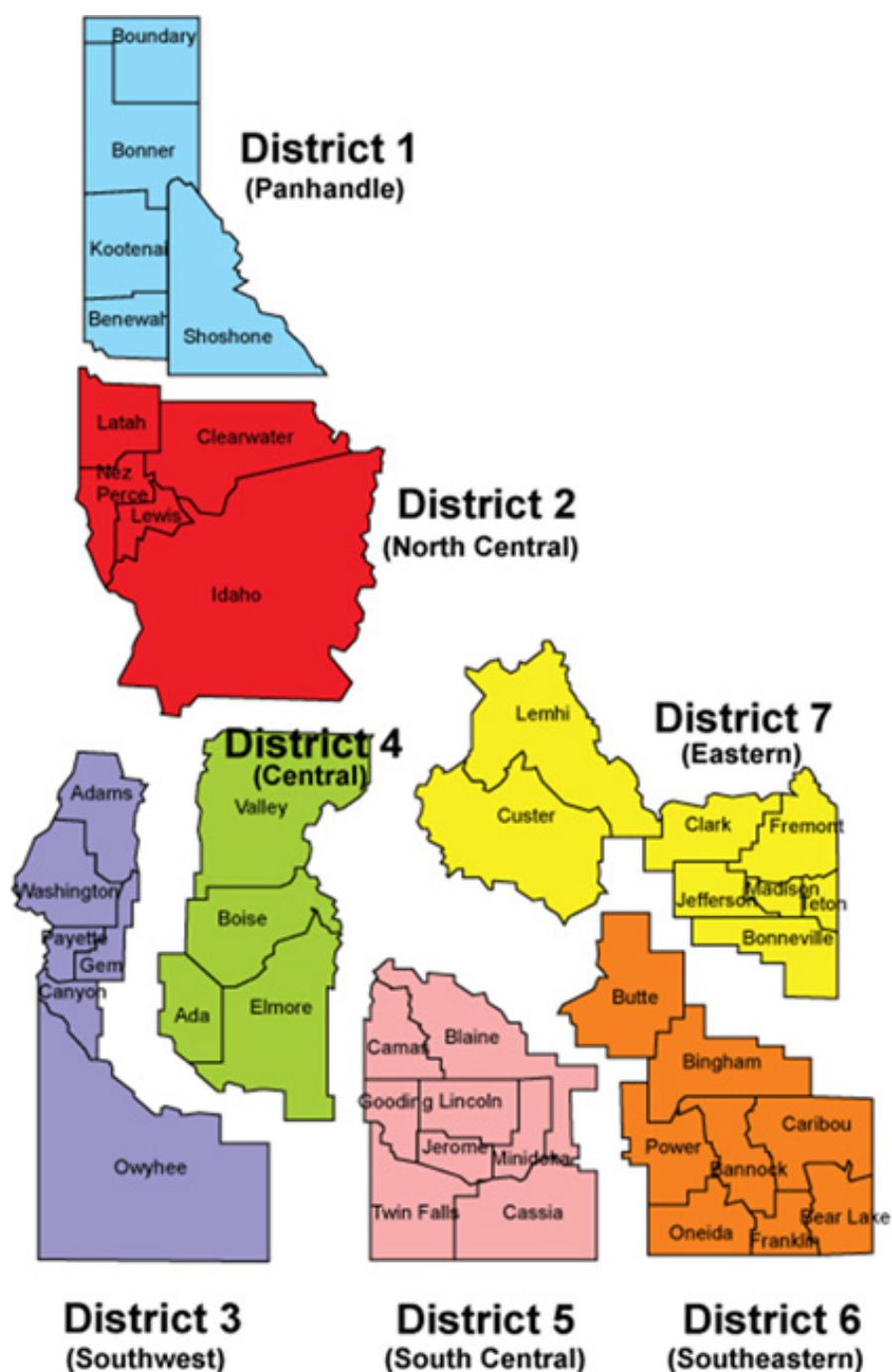
APPENDIX B

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, 2024.[12]

APPENDIX C

2022 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	7,471	2,978	10,903	14,805	7,120	6,166	9,225	58,668
5 to 9	8,745	3,232	12,124	17,478	7,912	6,943	9,670	66,104
10 to 14	8,950	3,344	12,613	19,371	8,714	7,682	10,186	70,860
15 to 19	8,374	4,155	12,378	19,922	8,313	7,464	12,428	73,034
20 to 24	6,906	5,506	10,405	18,908	6,332	6,360	12,395	66,812
25 to 29	7,780	3,831	10,807	20,390	6,658	5,970	9,190	64,626
30 to 34	8,534	3,673	11,026	20,292	6,992	5,938	7,893	64,348
35 to 39	8,611	3,331	10,721	20,906	7,027	6,119	7,789	64,504
40 to 44	8,635	3,282	10,379	20,825	7,118	6,130	8,116	64,485
45 to 49	7,697	2,991	9,297	18,413	6,280	5,287	6,754	56,719
50 to 54	8,298	3,083	9,386	18,608	5,958	4,721	5,934	55,988
55 to 59	8,562	3,285	9,189	16,816	5,994	4,589	5,932	54,367
60 to 64	9,856	3,822	9,202	17,083	6,379	5,319	6,363	58,024
65 to 69	9,561	3,828	8,606	15,276	5,900	5,024	5,712	53,907
70 to 74	8,035	3,326	7,020	12,345	4,697	3,932	4,592	43,947
75 to 79	5,550	2,253	4,977	8,656	3,255	2,660	2,980	30,331
80 to 84	3,067	1,296	2,779	4,486	1,968	1,457	1,708	16,761
85+	1,861	1,131	1,859	3,385	1,362	1,008	1,200	11,806
Total	136,493	58,347	163,671	287,965	107,979	92,769	128,067	975,291

	HD 1	HD 2	HD 3	HD 4	HD 5	HD 6	HD 7	STATE
Females								
< 5	6,952	2,757	10,138	14,239	6,626	5,884	8,593	55,189
5 to 9	8,257	3,142	11,608	16,728	7,669	6,871	9,060	63,335
10 to 14	8,463	3,234	11,940	18,336	8,487	7,227	9,888	67,575
15 to 19	7,466	3,790	11,574	18,603	7,737	7,027	18,815	75,012
20 to 24	6,355	4,795	9,973	16,852	6,320	5,866	11,427	61,588
25 to 29	7,269	3,254	10,501	18,171	6,441	5,741	8,342	59,719
30 to 34	8,469	3,396	11,272	19,456	6,882	5,956	7,595	63,026
35 to 39	8,555	3,120	10,477	19,966	6,790	5,995	7,533	62,436
40 to 44	8,478	3,172	10,264	19,810	6,731	5,964	7,572	61,991
45 to 49	7,590	2,749	9,192	17,186	5,801	5,053	6,172	53,743
50 to 54	8,119	3,031	9,275	17,322	5,426	4,676	5,721	53,570
55 to 59	8,958	3,295	9,240	16,899	5,960	4,736	5,657	54,745
60 to 64	10,188	4,055	9,897	17,663	6,612	5,336	6,169	59,920
65 to 69	10,104	3,728	9,050	16,531	6,003	5,108	5,710	56,234
70 to 74	8,410	3,159	7,506	13,431	4,780	4,023	4,662	45,971
75 to 79	5,732	2,269	5,491	9,367	3,666	2,819	3,200	32,544
80 to 84	3,403	1,470	3,151	5,539	2,154	1,659	2,075	19,451
85+	2,934	1,467	2,638	5,141	2,187	1,562	1,727	17,656
Total	135,702	55,883	163,187	281,240	106,272	91,503	129,918	963,705
Total	272,195	114,230	326,858	569,205	214,251	184,272	257,985	1,938,996

Source: U.S. Census Bureau, Population Division, June 2024.