State of Wyoming

Department of Health

Annual Report on Cancer in Wyoming - 2010

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Director

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Department of Health

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Executive Summary

Most cancer rates (incidence and mortality) in Wyoming continue to be lower than the comparable national rates, but only incidence rates for lung and pancreatic cancer in Wyoming males are significantly lower than the national rates statistically. The incidence rate for all cancer sites combined for Wyoming in 2010 (444.2/100,000) was up slightly from 2009 (439.8/100,000). The 2010 mortality rate for all cancers in Wyoming (165.0/100,000) was lower than the national rate (172.4/100,000) and lower than the same rate in 2009 (169.4/100,000).

The top five cancer sites for incidence in 2010 were: prostate, female breast, lung/bronchus, colorectal and melanoma. The most common cancers for incidence by age group were brain/CNS (0-9 years); thyroid (20-24 years); melanoma, non-Hodgkin, testis, and thyroid were tied (25-29 years); breast and thyroid (30-34 years); melanoma (35-39 years); breast (40-54 years); breast and prostate (55-59 years); prostate (60-74 years); and lung cancer (75-85+ years).

The top five cancer sites for mortality were lung, colorectal, ill-defined, breast cancer, and cancer of the pancreas. The most common cancers associated with mortality by age group were breast and colorectal (35-39 years); colorectal and melanoma (40-44 years); breast, ill-defined, and lung (45-49 years); and lung (50-85+ years). There were fewer than two deaths per cancer site for all age groups from 0 to 34 years.

Finally, the 5-year (60 months) survival rate in all Wyoming cancer patients is quite good at 65.20%. This means that just over sixty-five percent of all cancer patients in Wyoming are alive five years after diagnosis. Prostate cancer (99.00%) and cancer of the thyroid (95.10%) had the highest survival rates in Wyoming residents. The survival rates for cancer of the pancreas (3.50%) and lung cancer (15.80%) were the lowest among Wyoming residents. Additionally, children/adolescents (00-19 years) have an even better 5-year overall survival rate (83.2%) than adults (65.2%).

INTRODUCTION

Cancer

Cancer is a group of diseases characterized by uncontrolled growth and spread of abnormal cells. If the spread of abnormal cells is not controlled, death can result. Many cancers are preventable and many can be cured if detected and treated early.

Causes of Cancer

Cancer is caused by both environmental and internal factors. Environmental causes include exposures to chemicals, radiation, or viruses, as well as exposures associated with life-styles (e.g., smoking, diet, and alcohol consumption). Internal causes include hormone levels, immune status, and inherited conditions. Causal factors may act together or in sequence to start or promote cancer. Ten or more years often pass between carcinogenic exposures and detectable cancer.

Prevention

Avoiding potential exposures such as tobacco use, severe sun exposure, and excessive dietary fat may prevent the onset or promotion of cancer. Also, increasing beneficial practices such as eating five servings of fruit or vegetables every day may help to prevent cancer. Early detection and treatment of cancer through established screening practices such as mammography, prostate specific antigen (PSA), and colorectal screening improves the survival rates and decreases mortality.

Wyoming Cancer Surveillance Program

Cancer is a reportable disease in Wyoming. State statute requires that physicians, hospitals and laboratories report all cases of cancer they diagnose or treat in Wyoming to the Cancer Surveillance Program (WCSP), which serves as the state's central cancer registry. The purpose of the registry is to gather data to determine cancer incidence, mortality, treatment, and survival in Wyoming. Through special interstate agreements, information on Wyoming residents diagnosed or treated in other states is included in the program's database.

Insuring accurate data is one of the most important roles of the cancer registry. The WCSP established procedures for both automated and manual methods of checking the quality of data. The data is stored in the Rocky Mountain Cancer Data Systems software which has a built-in system to immediately check data when a new case is entered into the database. Each case submitted is reviewed for accuracy and completeness in compliance with data collection standards from the National Program of Cancer Registries and the American College of Surgeons.

The data is used by a variety of medical professionals and others concerned about cancer. Within the State Department of Health (WDH), the data is used to monitor early detection, to determine year-to-year trends that develop and to determine how Wyoming compares to the rest of the nation. The WDH uses the data to plan and evaluate the effectiveness of its cancer control programs such as the Breast and Cervical Cancer Early Detection Program, and the Wyoming Colorectal Cancer Screening Program. Outside of the WDH, the data is used by physicians, hospital administrators, legislators, nonprofit organizations, and the general public. If you have a concern about cancer and would like more information about cancer in your community, please feel free to call the Wyoming Cancer Surveillance Program's Epidemiologist at 307-777-8654. Written correspondence should be addressed to 6101 Yellowstone Rd., Suite 510, Cheyenne, WY 82002. You may also visit our web site at: http://www.health.wyo.gov/PHSD/wcsp/index.html .

METHODOLOGY and DEFINITIONS

Data Sources

Incidence

Definition -- Incidence is defined as the number of *new* cases diagnosed during a set time period in a defined population. Incidence is not a representation of risk. The defined time period for this report is 2008 except for the 12-year incidence trend, which used 3-year averages (e.g., 01-03 for 2002 or 05-07 for 2006). The defined population is the state of Wyoming, counties, and Cancer Health Districts (CHD) (see page 13).

Wyoming Data -- The Wyoming Cancer Surveillance Program (WCSP) gathers data on Wyoming residents diagnosed and treated for invasive and in situ tumors. The data is sent to the program's registry by every hospital in the state. Data is also collected from pathology laboratories, clinics, and physician offices throughout the state. The registry has several data exchange agreements with other state registries to enable collection of data on Wyoming residents diagnosed and/or treated outside of Wyoming. Wyoming data for this report includes 2010 cancer cases of Wyoming residents received by WCSP as of June 1, 2012.

National Data -- The National Cancer Institute (NCI) updates cancer statistics annually in a publication called the SEER Cancer Review, also available on SEER STAT, an interactive CD-ROM. NCI monitors cancer statistics to assess progress and to identify population subgroups and geographic areas where cancer control efforts need to be concentrated. Cancer incidence rates are calculated using SEER (Surveillance, Epidemiology, and End Results) software. WCSP used SEER*STAT for this report. **The national SEER rates presented in this report were calculated using 2009 data for whites.** See Appendix A for reference source.

Mortality

Definition -- Mortality is defined as the number of persons who have died during a set time period in a defined population. The time period for this report is the calendar year 2010 for Wyoming rates. The defined population is the state of Wyoming, counties, and Cancer Health Districts (see page 13).

Wyoming Data -- Mortality data is derived from death certificates filed with Wyoming Vital Records Services. By state statute, the certification of the cause of death on the death certificate is completed by the attending physician or by the coroner with the assistance of a physician. Although a number of medical conditions may be listed on the certificate, statistics presented here are based solely on the underlying cause of death. This is defined as the disease or injury that initiated the sequence of events leading directly to death or as the circumstances of the accident or violence that produced the fatal injury. The primary underlying cause is selected and classified based upon the regulations of the World Health Organization.

National Data -- The National Center for Health Statistics (NCHS), a division of the Centers for Disease Control and Prevention, provides statistical information including the number of cancer deaths in the United States. United States cancer mortality data is available from SEER STAT, an interactive CD-ROM. WCSP used SEER STAT for this report. **The national SEER rates presented in this report were calculated using 2009 data for whites.** See Appendix A for reference source.

Population

Wyoming Data -- Population estimates for Wyoming state and counties were obtained from the Wyoming Department of Administration and Information - Economic Analysis Division. Population data for 2010 by sex, age, race, and Hispanic origin. Because cancer rates are calculated by dividing the number of cancer cases by a census-generated denominator, rates can be heavily influenced by changes or uncertainties in census counts.

Rates

Age-Adjusted Incidence Rates

Incidence rates include 2010 invasive cases of Wyoming residents, except for bladder cancer which also includes in situ cases. Incidence rates presented are calculated for total cases and separately for males and females. The incidence rates are age-adjusted to the 2000 U.S. standard population using 5-year age groups, and are per 100,000 population. Age-adjustment allows rates to be compared over different time frames and allows rates from one geographic area to be compared with rates from another geographic area that may have differences in age distributions. Any observed differences in age-adjusted incidence rates are not due to differing age structures.

In conformity with the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) Program guidelines, the incidence rates excluded the following:

- in situ cases
- basal and squamous cell skin cancer
- cases with unknown age
- cases with unknown gender

Age-Adjusted Mortality Rates

Mortality rates presented are calculated for total cases and separately for males and females. The mortality rates are age-adjusted to the 2000 U.S. standard population using 5-year age groups and are per 100,000 population. Age-adjustment allows rates to be compared over different time frames and allows rates from one geographic area to be compared with rates from another geographic area that may have differences in age distributions. Any observed differences in age-adjusted incidence rates are not due to differing age structures.

Age-Specific Incidence Rates

An age-specific rate is the rate of cancer found within a certain age group. Age-specific incidence rates were calculated using 5-year age groups and total population (both genders combined). They are reported per 100,000 population.

Statistical Significance

Z-Statistic

A Z-statistic is used to compare two different rates. This is called "The difference between two population proportions." Statistical significance was found if the calculated Z-statistic was found to be greater than 1.65. This provides the equivalence of a 95% confidence interval (see below) and is indicated in the report as "statistically significant" or "significant." The formula used can be found in most statistics books or by calling the WDH Chronic Disease Epidemiologist at (307) 777-8654.

Confidence Intervals

A confidence interval indicates the confidence level in the accuracy of a cancer rate. For example, say you calculate a cancer rate for a particular year as 130 cases per 100,000 people, with a confidence interval of 120 to 140 cases per 100,000. This means that you are 95% sure that the rate of cancer for that particular year lies somewhere between 120 to 140 cases per 100,000 people. The rate of 130 cases may in fact be correct, but you have more confidence that the "true" rate lies between 120 to 140 cases.

Confidence intervals are also used as a way to test statistical significance. If the confidence intervals of two different rates overlap one another, then there is no difference between the two rates. However, if the confidence intervals do not overlap one another, there is statistical significance. This is indicated in the report by the terms "statistically significant" or "significant."

Staging

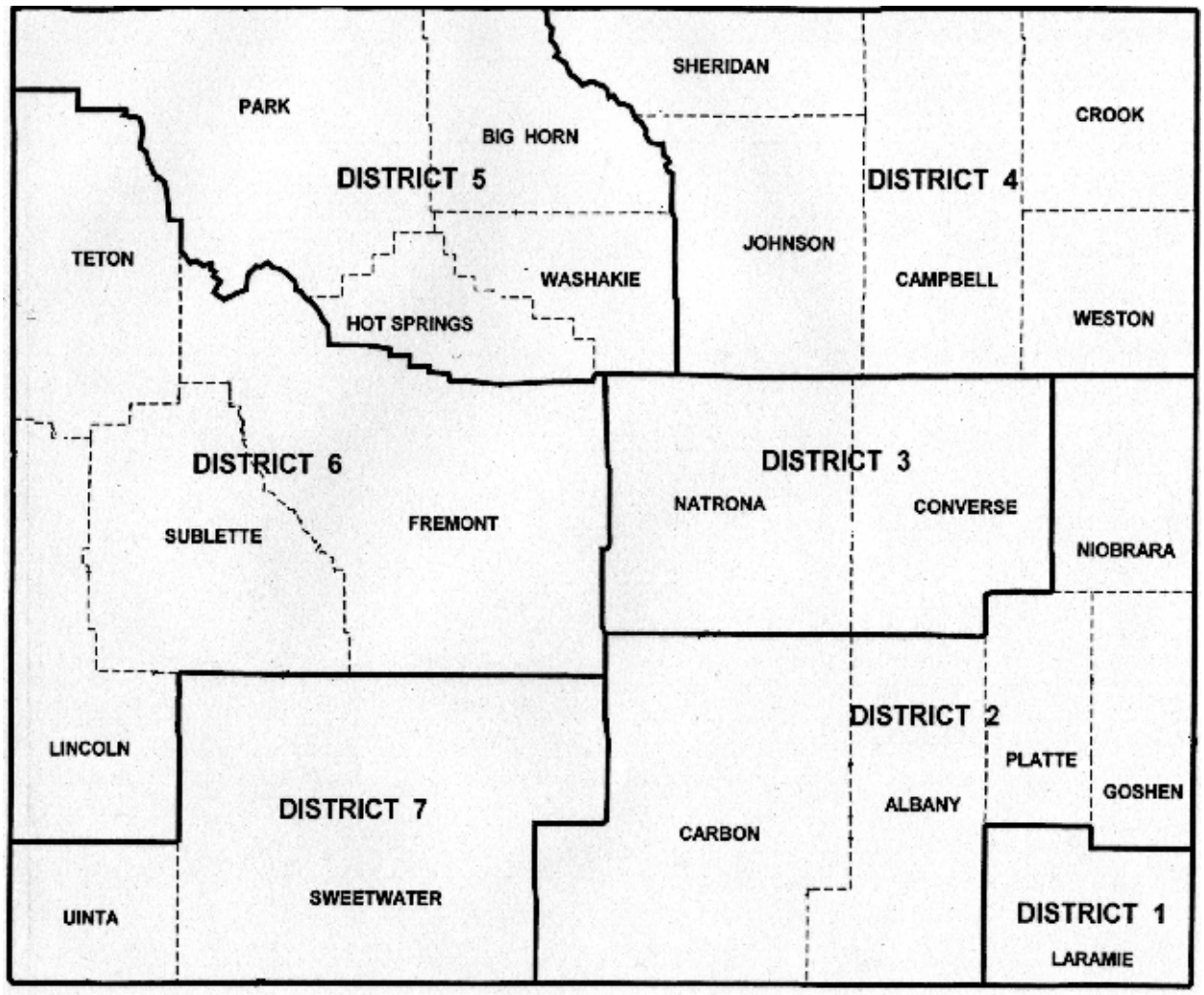
In Situ	cancer has not invaded the organ.
Local Stage	cancer has invaded the organ of origin.
Regional Stage	cancer has invaded beyond the organ of origin by direct extension to adjacent organs/tissues and/or regional lymph nodes.
Distant Stage	direct extension beyond adjacent organs or tissues or metastases to distant site(s) or distant lymph nodes.
Unstaged	extent of disease or primary site cannot be determined.

Note: Starting in 2004, the WCSP and other cancer registries belonging to the National Data Standard setters adopted and began using the Collaborative Staging Method for staging cancer cases. This method utilizes a new type of algorithm that provides more information concerning the size and extent of the cancer, as well as the number of nodes involved.

Cancer Health District

Cancer Health Districts (CHDs) were chosen based on geographic location, similarities in geography and by population size. Also taken into consideration were areas of the state that are routinely grouped for data requests and/or cancer cluster studies. This created seven CHDs that were similar in population size thereby eliminating some of the discrepancies in rate calculations that are caused from population size differences. CHDs are used when county data is too sparse to calculate accurate rates.

CHD 1 Laramie County
CHD 2 Albany County, Carbon County, Goshen County, Niobrara County, Platte County
CHD 3 Converse County, Natrona County
CHD 4 Campbell County, Crook County, Johnson County, Sheridan County, Weston County
CHD 5 Big Horn County, Hot Springs County, Park County, Washakie County
CHD 6 Fremont County, Lincoln County, Sublette County, Teton County
CHD 7 Sweetwater County, Uinta County



State of Wyoming - 2010

Cancer Incidence and Mortality by Gender and Age (All Sites)
Cancer Incidence and Mortality by Race and Ethnicity (Top 15 Sites)

Wyoming Incidence[1] for 2010: Cases by Gender and Age (All Sites)

	Male	Female	Total	00-04	05-09	10-14	15-19	20-24	25-29	30-34
Anus	1	7	8	0	0	0	0	0	0	0
Bladder w/ in situ	83	26	109	0	0	0	0	0	0	1
Bones and Joints	1	1	2	0	0	0	1	0	0	0
Brain	34	25	59	3	4	1	0	0	3	2
Breast	6	363	369	0	0	0	0	1	0	7
Cervix	0	23	23	0	0	0	0	0	0	3
Colorectal	141	129	270	0	0	0	0	0	1	6
Esophagus	37	7	44	0	0	0	0	0	0	0
Eye	6	4	10	1	0	0	0	0	0	0
Gallbladder	1	4	5	0	0	0	0	0	0	0
Hodgkin	12	4	16	0	0	0	0	2	2	3
Ill-Defined	51	37	88	2	0	0	0	0	0	1
Kidney	55	25	80	1	0	0	0	1	2	0
Larynx	16	3	19	0	0	0	0	0	0	0
Leukemia	46	42	88	3	0	1	2	1	1	1
Liver	19	8	27	0	0	0	0	0	0	1
Lung	148	147	295	0	0	0	0	0	2	0
Melanoma	105	73	178	0	0	0	0	3	4	6
Myeloma	16	13	29	0	0	0	0	0	0	0
Nose	9	2	11	1	0	0	0	0	0	0
Non-Hodgkin Lymphoma	60	40	100	0	0	0	0	0	4	0
Oral Cavity	49	24	73	1	0	2	0	0	1	0
Other Biliary	5	6	11	0	0	0	0	0	0	0
Other Digestive	1	3	4	0	0	0	0	0	0	0
Other Endocrine	3	0	3	0	0	0	0	0	0	0
Other Female	0	12	12	0	0	0	0	1	1	0
Other Male	2	0	2	0	0	0	0	0	0	0
Other Skin	7	1	8	0	0	0	0	0	0	1
Other Respiratory	2	0	2	0	0	0	0	0	0	0
Other Urinary	4	1	5	0	0	0	0	0	0	0
Ovary	0	39	39	0	0	0	0	0	1	0
Pancreas	18	26	44	0	0	0	0	0	0	0
Prostate	403	0	403	0	0	0	0	0	0	0
Small Intestine	11	9	20	0	0	0	0	0	0	0
Soft Tissue including Heart	19	4	23	2	0	0	0	1	0	0
Stomach	31	6	37	0	0	0	0	0	1	0
Testis	19	0	19	0	0	0	0	2	4	2
Thyroid	21	72	93	0	0	0	1	4	4	7
Uterine	0	70	70	0	0	0	0	0	0	1
Mesothelioma	4	2	6	0	0	0	0	0	0	0
All Sites	1,447	1,258	2,705	14	4	4	4	16	31	43

[1] See page 10 for a definition of incidence.

	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Anus	0	0	1	0	3	0	0	1	0	0	3
Bladder w/ in situ	0	2	3	6	7	16	19	15	20	10	10
Bones and Joints	0	1	0	0	0	0	0	0	0	0	0
Brain	6	1	2	4	10	6	9	1	3	1	3
Breast	3	25	37	57	50	63	45	40	23	12	6
Cervix	3	2	3	2	2	4	1	0	3	0	0
Colorectal	4	5	13	35	28	30	43	24	32	28	21
Esophagus	1	1	2	3	6	8	2	10	5	1	5
Eye	0	0	0	0	1	1	2	0	2	2	1
Gallbladder	0	1	0	0	1	0	1	1	1	0	0
Hodgkin	0	0	1	3	0	1	1	0	2	1	0
Ill-Defined	1	5	1	6	4	8	15	16	8	11	10
Kidney	1	1	5	9	10	9	18	9	6	6	2
Larynx	0	0	1	0	2	3	7	4	0	2	0
Leukemia	0	2	6	6	11	16	14	6	4	7	7
Liver	0	1	1	3	8	4	0	3	1	4	1
Lung	1	2	4	9	29	40	45	59	45	34	25
Melanoma	9	16	18	22	16	17	18	13	15	15	6
Myeloma	0	0	1	2	4	2	7	6	1	4	2
Nose	0	0	1	0	5	2	2	0	0	0	0
Non-Hodgkin Lymphoma	0	4	4	13	10	14	16	13	9	10	3
Oral Cavity	0	3	5	15	13	7	8	7	4	4	3
Other Biliary	0	1	0	1	2	2	1	2	0	2	0
Other Digestive	0	0	0	0	1	0	0	2	1	0	0
Other Endocrine	0	0	0	0	0	3	0	0	0	0	0
Other Female	0	0	0	1	0	4	1	0	2	0	2
Other Male	0	0	0	0	0	1	0	1	0	0	0
Other Skin	0	0	0	1	0	0	0	1	2	0	3
Other Respiratory	0	0	0	0	0	0	0	0	1	0	0
Other Urinary	0	0	0	0	0	0	1	1	1	2	0
Ovary	0	3	1	9	4	6	3	3	4	3	2
Pancreas	0	0	1	3	5	11	7	7	3	2	5
Prostate	1	4	11	33	50	79	96	68	37	17	7
Small Intestine	0	0	2	0	2	4	6	2	0	1	3
Soft Tissue including Heart	1	0	0	4	4	0	3	3	3	0	2
Stomach	1	0	0	3	2	1	6	4	8	7	4
Testis	3	2	1	2	1	2	0	0	0	0	0
Thyroid	7	8	10	14	14	11	7	3	2	0	1
Uterine	1	2	4	5	15	15	10	7	5	5	0
Mesothelioma	0	0	0	0	0	0	1	1	0	2	2
All Sites	43	93	139	271	320	390	415	333	253	193	139

Wyoming Mortality[1] for 2010: Deaths by Gender and Age (All Sites)

	Male	Female	Total	00-04	05-09	10-14	15-19	20-24	25-29	30-34
Anus	0	1	1	0	0	0	0	0	0	0
Bladder w/ in situ	20	9	29	0	0	0	0	0	0	0
Bones and Joints	1	0	1	0	0	0	0	0	0	0
Brain	17	12	29	0	0	1	0	0	0	1
Breast	0	72	72	0	0	0	0	0	0	0
Cervix	0	11	11	0	0	0	0	0	0	0
Colorectal	48	49	97	0	0	0	0	0	0	0
Esophagus	29	6	35	0	0	0	0	0	0	0
Eye	0	1	1	0	0	0	0	0	0	0
Gallbladder	0	2	2	0	0	0	0	0	0	0
Hodgkin	2	0	2	0	0	0	0	0	1	0
Ill-Defined	35	41	76	0	0	0	0	0	0	0
Kidney	12	10	22	0	0	0	0	0	0	0
Larynx	6	1	7	0	0	0	0	0	0	0
Leukemia	28	19	47	0	0	1	0	1	1	1
Liver	16	9	25	0	0	0	0	0	0	1
Lung	124	105	229	0	0	0	0	0	0	0
Melanoma	13	5	18	0	0	0	0	1	1	0
Myeloma	5	14	19	0	0	0	0	0	0	0
Nose	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	13	13	26	0	0	0	0	0	0	0
Oral Cavity	13	5	18	0	0	0	0	0	0	0
Other Biliary	4	4	8	0	0	0	0	0	0	0
Other Digestive	1	3	4	0	0	0	0	0	0	0
Other Endocrine	1	0	1	0	0	0	0	0	0	0
Other Female	0	3	3	0	0	0	0	0	0	0
Other Male	0	0	0	0	0	0	0	0	0	0
Other Skin	2	2	4	0	0	0	0	0	0	0
Other Respiratory	0	0	0	0	0	0	0	0	0	0
Other Urinary	0	1	1	0	0	0	0	0	0	0
Ovary	0	27	27	0	0	0	0	1	0	0
Pancreas	41	23	64	0	0	0	0	0	0	0
Prostate	60	0	60	0	0	0	0	0	0	0
Small Intestine	1	1	2	0	0	0	0	0	0	0
Soft Tissue including Heart	6	3	9	0	0	0	0	0	0	0
Stomach	6	5	11	0	0	0	0	0	0	0
Testis	0	0	0	0	0	0	0	0	0	0
Thyroid	2	1	3	0	0	0	0	0	0	0
Uterine	0	11	11	0	0	0	0	0	0	0
Mesothelioma	5	1	6	0	0	0	0	0	0	0
All Sites	511	470	981	0	0	2	0	3	3	3

[1]See page 10 for definition of mortality.

	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Anus	0	0	0	0	0	0	0	0	0	1	0
Bladder w/ in situ	0	0	1	2	3	5	4	3	1	4	6
Bones and Joints	0	0	0	0	1	0	0	0	0	0	0
Brain	1	1	2	3	5	4	3	0	4	1	3
Breast	2	1	4	9	7	11	9	9	3	7	10
Cervix	1	1	0	3	0	1	3	0	1	0	1
Colorectal	2	2	1	5	12	20	15	7	9	12	12
Esophagus	0	1	1	3	2	5	5	5	3	4	6
Eye	0	0	0	0	1	0	0	0	0	0	0
Gallbladder	0	0	0	0	0	0	1	1	0	0	0
Hodgkin	0	0	0	0	0	0	1	0	0	0	0
Ill-Defined	0	0	4	3	6	5	5	14	9	17	13
Kidney	0	0	0	1	4	5	4	2	4	2	0
Larynx	0	0	0	0	1	1	0	1	1	3	0
Leukemia	0	1	0	0	3	9	7	4	3	7	9
Liver	0	1	1	3	4	3	0	3	2	5	2
Lung	1	0	4	11	19	27	38	27	30	40	32
Melanoma	0	2	1	3	1	3	0	3	1	2	0
Myeloma	0	0	0	2	0	1	0	4	3	4	5
Nose	0	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	0	0	1	2	0	2	0	2	6	8	5
Oral Cavity	0	0	0	3	0	6	2	2	1	1	3
Other Biliary	0	0	0	0	1	1	1	0	2	2	1
Other Digestive	0	0	0	0	0	1	0	0	2	0	1
Other Endocrine	0	0	0	0	0	1	0	0	0	0	0
Other Female	0	0	0	0	0	0	0	0	0	0	3
Other Male	0	0	0	0	0	0	0	0	0	0	0
Other Skin	0	0	0	1	0	0	0	0	1	1	1
Other Respiratory	0	0	0	0	0	0	0	0	0	0	0
Other Urinary	0	0	0	0	0	0	0	0	0	0	1
Ovary	1	1	0	2	0	5	3	5	1	6	2
Pancreas	0	0	2	5	7	7	13	6	7	5	12
Prostate	0	0	0	1	3	3	4	8	4	15	22
Small Intestine	0	0	0	0	0	0	0	1	0	0	1
Soft Tissue including Heart	0	1	2	0	1	0	2	1	0	2	0
Stomach	0	0	0	0	0	1	0	2	2	3	3
Testis	0	0	0	0	0	0	0	0	0	0	0
Thyroid	0	0	0	0	0	1	1	0	0	0	1
Uterine	0	0	0	1	0	2	4	0	1	3	0
Mesothelioma	0	0	0	0	0	1	2	1	0	2	0
All Sites	8	12	24	63	81	131	127	111	101	157	155

Wyoming Incidence for 2010: Cases by Race and Ethnicity (Top 15 Sites Only)

	Total	White	African American	Native American	Asian	Other	Ethnicity: Hispanic/Latino
All Sites	2,657	2,584	17	45	5	4	79
Bladder	109	108	0	1	0	0	2
Brain	59	58	0	1	0	0	1
Breast (Female)	369	360	1	8	0	0	9
Colorectal	270	258	1	8	1	2	13
Kidney	80	78	0	2	0	0	10
Leukemia	88	86	0	1	1	0	2
Lung	295	290	1	4	0	0	4
Melanoma	178	175	0	2	0	1	2
Non-Hodgkin Lymphoma	100	98	1	0	0	1	3
Oral Cavity	73	71	0	2	0	0	2
Ovary	39	38	1	0	0	0	0
Pancreas	44	42	2	0	0	0	2
Prostate	403	390	4	6	1	0	6
Thyroid	93	91	1	1	0	0	4
Uterine	70	67	1	2	0	0	3

Wyoming Mortality for 2010: Cases by Race and Ethnicity (Top 15 Sites Only)

	Total	White	African American	Native American	Asian	Other	Ethnicity: Hispanic/Latino
All Sites	981	949	5	20	4	3	29
Bladder	29	29	0	0	0	0	0
Brain/CNS	29	28	0	1	0	0	1
Breast (Female)	72	70	0	1	1	0	1
Colorectal	97	91	1	3	1	1	5
Kidney	22	22	0	0	0	0	2
Leukemia	47	47	0	0	0	0	0
Lung	229	226	0	2	0	1	4
Melanoma	18	18	0	0	0	0	0
Non-Hodgkin Lymphoma	26	26	0	0	0	0	0
Oral Cavity	18	17	0	0	0	1	0
Ovary	27	25	1	1	0	0	1
Pancreas	64	60	2	2	0	0	0
Prostate	60	59	0	1	0	0	3
Thyroid	3	3	0	0	0	0	1
Uterine	11	10	0	1	0	0	1

State of Wyoming - 2010

Top Cancer Sites by Gender and Age - Incidence and Mortality

Top Incidence Cancer Sites by Gender - 2010

Total		Male		Female	
Prostate	403	Prostate	403	Breast	363
Breast	369	Lung	148	Lung	147
Lung	295	Colorectal	141	Colorectal	129
Colorectal	270	Melanoma	105	Melanoma	73
Melanoma	178	Bladder	83	Thyroid	72

Top Incidence Sites by Age (Case count included only if more than 2 cases per cancer)

0-4		5-9		10-14		15-19		20-24	
Brain	3	Brain	4	All Cancers have 2 or less		All Cancers have 2 or less		Thyroid	4
Leukemia	3							Melanoma	3
25-29		**30-34**		**35-39**		**40-44**		**45-49**	
Melanoma	4	Breast	7	Melanoma	9	Breast	25	Breast	37
Non-Hodgkin	4	Thyroid	7	Thyroid	7	Melanoma	16	Melanoma	18
Testis	4	Colorectal	6	Brain	6	Thyroid	8	Colorectal	13
Thyroid	4	Melanoma	6	Colorectal	4	Colorectal	5	Prostate	11
Brain	3					Ill-Defined	5	Thyroid	10
50-54		**55-59**		**60-64**		**65-69**		**70-74**	
Breast	57	Breast	50	Prostate	79	Prostate	96	Prostate	68
Colorectal	35	Prostate	50	Breast	63	Breast	45	Lung	59
Prostate	33	Lung	29	Lung	40	Lung	45	Breast	40
Melanoma	22	Colorectal	28	Colorectal	30	Colorectal	43	Colorectal	24
Oral Cavity	15	Melanoma	16			Bladder	19	Ill-Defined	16
75-79		**80-84**		**85+**					
Lung	45	Lung	34	Lung	25				
Prostate	37	Colorectal	28	Colorectal	21				
Colorectal	32	Prostate	17	Bladder	10				
Breast	23	Melanoma	15	Ill-Defined	10				
Bladder	20	Breast	12						

Top Mortality Cancer Sites by Gender - 2010

Total		Male		Female	
Lung	229	Lung	124	Lung	105
Colorectal	97	Prostate	60	Breast	72
Ill-Defined	76	Colorectal	48	Colorectal	49
Breast	72	Pancreas	41	Ill-Defined	41
Pancreas	64	Ill-Defined	35	Ovary	27

Top Mortality Sites by Age (Mortality count included only if more than 2 case per cancer)

0-4		5-9		10-14		15-19		20-24	
All Cancers have 1 or less to count		All Cancers have 1 or less to count		All Cancers have 1 or less to count		All Cancers have 1 or less to count		All Cancers have 1 or less to count	
25-29		**30-34**		**35-39**		**40-44**		**45-49**	
All Cancers have 1 or less to count		All Cancers have 1 or less to count		Breast	2	Colorectal	2	Breast	4
				Colorectal	2	Melanoma	2	Ill-Defined	4
								Lung	4
50-54		**55-59**		**60-64**		**65-69**		**70-74**	
Lung	11	Lung	19	Lung	27	Lung	38	Lung	27
Breast	9	Colorectal	12	Colorectal	20	Colorectal	15	Ill-Defined	14
Colorectal	5	Breast	7	Breast	11	Pancreas	13	Breast	9
Pancreas	5	Pancreas	7	Leukemia	9	Breast	9	Prostate	8
				Pancreas	7	Leukemia	7	Colorectal	7
75-79		**80-84**		**85+**					
Lung	30	Lung	40	Lung	32				
Colorectal	9	Ill-Defined	17	Prostate	22				
Ill-Defined	9	Prostate	15	Ill-Defined	13				
Pancreas	7	Colorectal	12	Colorectal	12				
Non-Hodgkin	6	Non-Hodgkin	8	Pancreas	12				

Wyoming Counties - 2010

Incidence and Mortality (All Sites)

Wyoming County Incidence Cases -- 2010 (All Sites)

	ALBANY	BIG HORN	CAMPBELL	CARBON	CONVERSE	CROOK	FREMONT	GOSHEN	HOT SPRINGS	JOHNSON	LARAMIE	LINCOLN
Anus	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Bladder w/in situ	<3	<3	<3	<3	<3	<3	3	7	<3	<3	12	<3
Bones and Joints	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Brain/CNS	<3	<3	<3	3	<3	<3	<3	3	<3	<3	15	<3
Breast	10	11	16	10	6	<3	31	9	<3	10	63	9
Cervix	<3	<3	<3	<3	<3	<3	5	<3	<3	<3	5	<3
Colorectal	13	5	18	9	3	3	27	11	6	5	46	6
Esophagus	<3	<3	3	<3	<3	<3	4	<3	<3	<3	8	<3
Eye	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Gallbladder	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	3	<3
Hodgkin	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Ill-Defined	<3	<3	4	<3	4	3	10	<3	<3	<3	16	<3
Kidney	3	<3	4	<3	<3	<3	<3	3	<3	<3	14	<3
Larynx	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	4	<3
Leukemia	5	<3	5	<3	5	<3	4	<3	3	<3	16	4
Liver	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	5	<3
Lung	17	9	13	7	4	3	20	8	8	4	58	4
Melanoma	10	5	<3	6	4	<3	8	5	<3	3	25	8
Myeloma	<3	<3	<3	<3	<3	<3	4	<3	<3	<3	3	<3
Nasal	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	4	<3
Non Hodgkin	3	4	<3	<3	4	<3	4	<3	<3	3	26	4
Oral Cavity	<3	3	<3	<3	<3	<3	7	3	<3	<3	12	<3
Other Biliary	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	3	<3
Other Digestive	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Endocrine including Thymus	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Female	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Male	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Skin	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Respiratory	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Urinary	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Ovary	<3	3	3	<3	<3	<3	<3	<3	<3	<3	8	4
Pancreas	<3	<3	<3	<3	3	<3	<3	3	<3	<3	9	<3
Prostate	6	12	18	9	8	<3	29	9	9	9	61	16
Small Intestine	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	4	<3
Soft Tissue including Heart	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Stomach	<3	<3	4	<3	<3	<3	6	<3	<3	<3	4	<3
Testis	<3	<3	<3	<3	<3	<3	3	<3	<3	<3	3	<3
Thyroid	<3	<3	10	3	4	<3	3	<3	<3	3	13	<3
Uterine	3	<3	4	<3	<3	<3	3	3	<3	<3	13	<3
Mesothelioma	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
All Sites	94	62	120	67	61	14	191	74	42	50	466	73

	NATRONA	NIOBRARA	PARK	PLATTE	SHERIDAN	SUBLETTE	SWEET-WATER	TETON	UINTA	WASHAKIE	WESTON
Anus	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Bladder w/in situ	13	<3	<3	<3	3	<3	3	<3	<3	<3	<3
Bones and Joints	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Brain/CNS	6	<3	6	3	<3	<3	<3	3	<3	<3	<3
Breast	45	<3	23	3	25	8	19	14	28	8	<3
Cervix	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Colorectal	32	<3	15	5	12	<3	12	6	17	11	<3
Esophagus	3	<3	<3	<3	<3	<3	5	<3	6	<3	<3
Eye	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Gallbladder	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Hodgkin	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Ill-Defined	13	<3	<3	<3	9	<3	3	<3	5	3	<3
Kidney	12	<3	<3	<3	7	<3	10	<3	3	<3	<3
Larynx	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Leukemia	14	<3	9	<3	<3	<3	3	<3	7	<3	<3
Liver	8	<3	<3	<3	4	<3	<3	<3	<3	<3	<3
Lung	51	<3	12	6	17	5	13	4	5	7	6
Melanoma	25	<3	8	<3	16	3	9	14	5	3	<3
Myeloma	5	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Nasal	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Non Hodgkin	13	<3	9	<3	10	<3	6	<3	<3	<3	<3
Oral Cavity	10	<3	<3	<3	7	<3	8	3	<3	4	<3
Other Biliary	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Digestive	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Endocrine including Thymus	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Female	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Male	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Skin	4	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Respiratory	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Urinary	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Ovary	7	<3	3	<3	<3	<3	<3	<3	<3	<3	<3
Pancreas	10	<3	<3	3	<3	<3	<3	<3	<3	<3	<3
Prostate	43	<3	23	11	31	4	39	9	12	10	<3
Small Intestine	6	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Soft Tissue including Heart	6	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Stomach	7	<3	<3	<3	<3	<3	3	<3	<3	<3	<3
Testis	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Thyroid	17	<3	7	<3	3	<3	10	<3	6	<3	<3
Uterine	15	<3	<3	<3	5	<3	4	<3	<3	<3	<3
Mesothelioma	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
All Sites	390	16	139	48	167	30	163	68	106	60	15

Wyoming County Mortality Counts -- 2010 (All Sites)

	ALBANY	BIGHORN	CAMPBELL	CARBON	CONVERSE	CROOK	FREMONT	GOSHEN	HOT SPRINGS	JOHNSON	LARAMIE	LINCOLN
Anus	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Bladder	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	9	<3
Bones and Joints	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Brain/CNS	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	6	<3
Breast	3	3	<3	5	<3	<3	6	<3	<3	<3	14	<3
Cervix	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Colorectal	13	4	7	3	5	<3	5	3	<3	<3	13	3
Esophagus	<3	<3	5	<3	<3	<3	4	<3	<3	<3	4	<3
Eye	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Gallbladder	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Hodgkin	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Ill-Defined	<3	<3	<3	<3	<3	4	8	4	<3	<3	13	<3
Kidney	<3	<3	3	<3	<3	<3	<3	<3	<3	<3	3	<3
Larynx	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Leukemia	3	<3	5	<3	3	<3	3	5	<3	<3	4	<3
Liver	<3	<3	3	<3	<3	<3	3	<3	<3	<3	3	<3
Lung	9	8	18	8	7	10	18	7	3	4	44	<3
Melanoma	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Myeloma	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Nasal	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Non-Hodgkin	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	10	<3
Oral Cavity	<3	<3	<3	<3	<3	<3	3	<3	<3	<3	<3	<3
Other Biliary	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	3	<3
Other Digestive	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Endo-crine including Thymus	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Female	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Male	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Skin	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Respira-tory	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Urinary	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Ovary	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	11	<3
Pancreas	<3	3	<3	<3	<3	3	3	3	<3	3	12	3
Prostate	<3	<3	<3	<3	<3	<3	4	<3	<3	<3	12	3
Small Intestine	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Soft Tissue including Heart	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Stomach	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Testis	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Thyroid	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Uterine	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Mesothelioma	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
All Sites	28	18	41	16	15	17	57	22	3	7	161	9

	NATRONA	NIOBRARA	PARK	PLATTE	SHERIDAN	SUBLETTE	SWEETWA-TER	TETON	UINTA	WASHAKIE	WESTON
Anus	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Bladder	3	<3	<3	<3	4	<3	3	<3	<3	<3	<3
Bones and Joints	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Brain/CNS	3	<3	<3	<3	<3	<3	4	<3	<3	<3	<3
Breast	13	<3	4	<3	4	<3	4	3	<3	<3	<3
Cervix	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Colorectal	9	<3	7	<3	3	<3	6	3	4	3	<3
Esophagus	4	<3	<3	<3	3	<3	<3	<3	3	<3	<3
Eye	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Gallbladder	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Hodgkin	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Ill-Defined	11	<3	5	<3	7	<3	3	<3	<3	<3	<3
Kidney	5	<3	<3	<3	3	<3	<3	<3	<3	<3	<3
Larynx	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Leukemia	9	<3	<3	<3	3	<3	<3	<3	4	<3	<3
Liver	5	<3	<3	<3	5	<3	<3	<3	<3	<3	<3
Lung	37	3	11	3	13	3	7	5	3	3	3
Melanoma	6	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Myeloma	<3	<3	5	<3	<3	<3	<3	<3	<3	<3	<3
Nasal	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Non-Hodgkin	<3	<3	<3	<3	3	<3	<3	<3	<3	<3	<3
Oral Cavity	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Biliary	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Digestive	4	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Endocrine including Thymus	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Female	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Male	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Skin	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Respiratory	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Other Urinary	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Ovary	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Pancreas	8	<3	5	<3	6	<3	<3	<3	<3	<3	<3
Prostate	7	<3	6	<3	7	<3	3	3	<3	3	<3
Small Intestine	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Soft Tissue in-cluding Heart	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Stomach	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Testis	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Thyroid	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Uterine	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Mesothelioma	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
All Sites	133	3	43	3	61	3	30	14	14	9	3

Relative Survival Rates State of Wyoming
2001-2010
All Sites and Top 15 Cancers

Relative Survival by Cancer Type: 2001-2010 (All Ages Combined)

	12 months	24 months	36 months	48 months	**60 months**
All Sites	80.5%	73.6%	69.8%	67.2%	**65.2%**
Bladder w/in situ	90.7%	84.0%	80.7%	77.5%	**75.6%**
Brain/CNS	56.4%	41.2%	36.0%	32.7%	**29.9%**
Breast (Female)	96.7%	93.7%	91.1%	89.4%	**86.8%**
Colorectal	82.1%	72.6%	66.2%	61.6%	**58.7%**
Kidney	84.7%	77.2%	74.1%	71.1%	**67.1%**
Leukemia	75.4%	68.9%	65.0%	60.7%	**57.7%**
Lung	42.3%	25.9%	20.8%	17.9%	**15.8%**
Melanoma	96.1%	93.2%	91.4%	88.8%	**88.4%**
Non Hodgkin	83.2%	77.8%	74.6%	70.1%	**68.2%**
Oral Cavity	84.8%	75.5%	70.7%	65.1%	**62.9%**
Ovary	74.4%	64.3%	53.3%	47.5%	**40.6%**
Pancreas	26.4%	14.2%	6.8%	5.7%	**3.5%**
Prostate	99.9%	99.9%	99.8%	99.2%	**99.0%**
Thyroid	96.8%	96.6%	96.1%	95.6%	**95.1%**
Uterine	93.5%	88.2%	86.4%	86.4%	**83.4%**

Relative Survival by Cancer Type: 2001-2010 (Ages 00-19 years old)

	12 Months	24 Months	36 Months	48 Months	**60 Months**
All Sites	91.4%	88.1%	88.1%	85.9%	**83.2%**
Brain	79.6%	73.9%	73.9%	65.4%	**60.8%**
Leukemia	92.0%	89.4%	89.4%	89.4%	**84.9%**
Melanoma	83.4%	83.4%	83.4%	83.4%	**83.4%**
Non-Hodgkin	90.9%	81.9%	81.9%	81.9%	**81.9%**

Note: Recurrent percents across months are partly due to low numbers of cases in this age-group

Relative Survival: is a net survival measure representing cancer survival in the absence of other causes of death. It is defined as the ratio of the proportion of observed survivors in a cohort of cancer patients to the proportion of expected survivors in a comparable set of cancer free individuals for a specific time period.

5-Year Survival: A 5-year (60 months) survival rate is important when discussing cancer as it is the goal that every survivor strives to meet. Basically, a person who is diagnosed with cancer (e.g., breast cancer) is considered "cured" if they can survive five years after treatment and they are found to have no other cancer. This does not mean that they may not develop another cancer after five years or even have a reoccurrence, but for that initial diagnosis they are considered "cured."

Stage: Many factors play a part in the survival of a cancer patient including the stage at which the cancer is detected. Having a cancer diagnoses at an early stage (e.g., local or Stage I) generally results in a better survival prognosis that a cancer detected in its later stages (e.g., distant or Stage IV).

Summary of
All Cancer Sites Combined
and
Top 15 Sites

2010 Wyoming Incidence and Mortality Rates

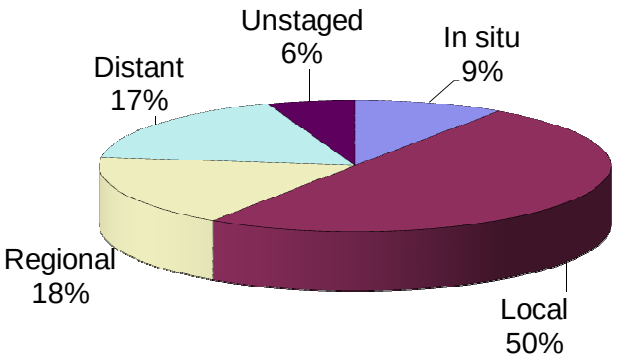
All Cancer Sites

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	1,448	1,258	2,706
# In situ Cases	143	137	280
WY Incidence	485.6	410.6	444.2
US Incidence	519.3	420.9	460.4
# Cancer Deaths	511	470	981
WY Mortality	185.4	148.7	165.0
US Mortality	209.8	146.5	172.4

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis



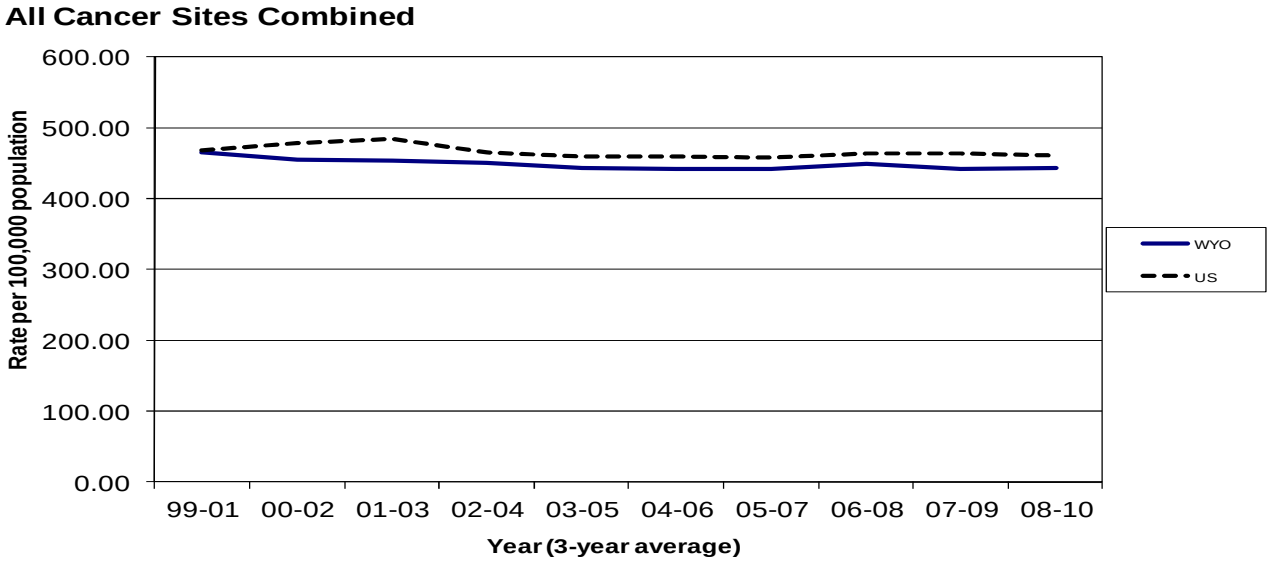
The incidence rates in Wyoming males, females, and total population for all cancer sites were lower than the United States rates, though not significantly. The overall mortality rate and the rate for males were both lower than the U.S. rate. The mortality rate for Wyoming females was just slightly higher than the national rate. None of the mortality rate differences were statistically significant.

The 12-year incidence trend for both Wyoming and the U.S. appeared steady, and unchanged from 07-09.

There were no significant changes in the percentages of cancer diagnosed at each stage from 2009 to 2010.

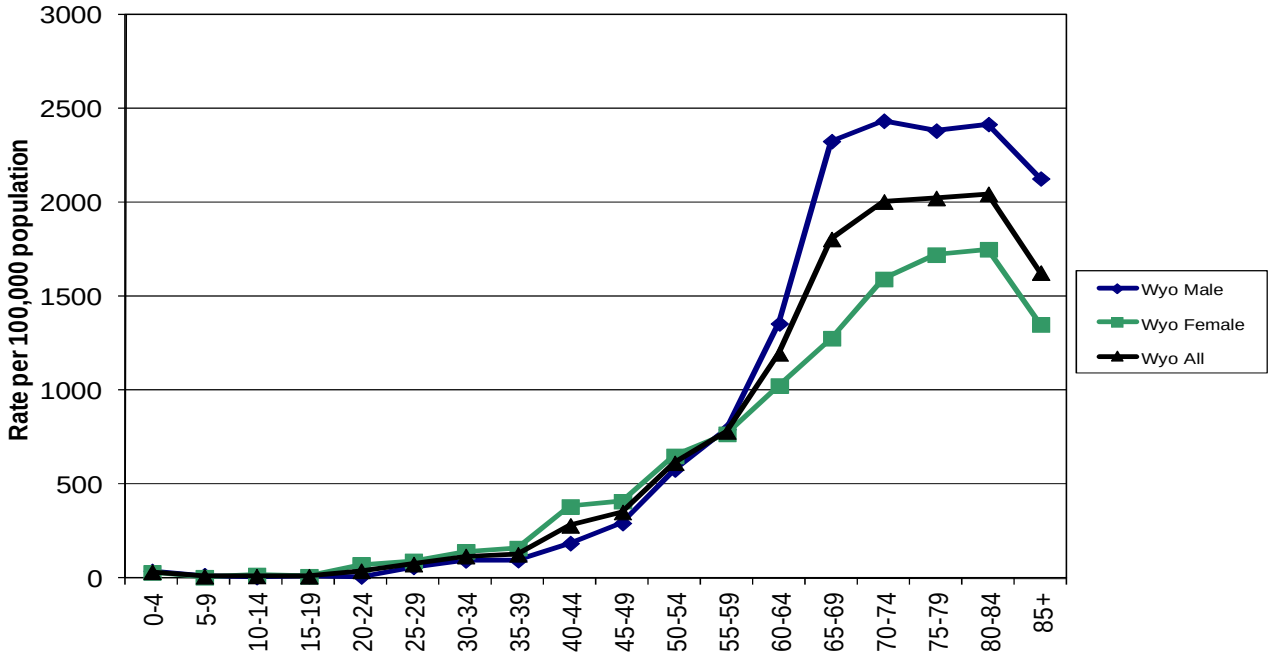
There were no significant differences between CHD rates for incidence or mortality.

12-Year Incidence Trend



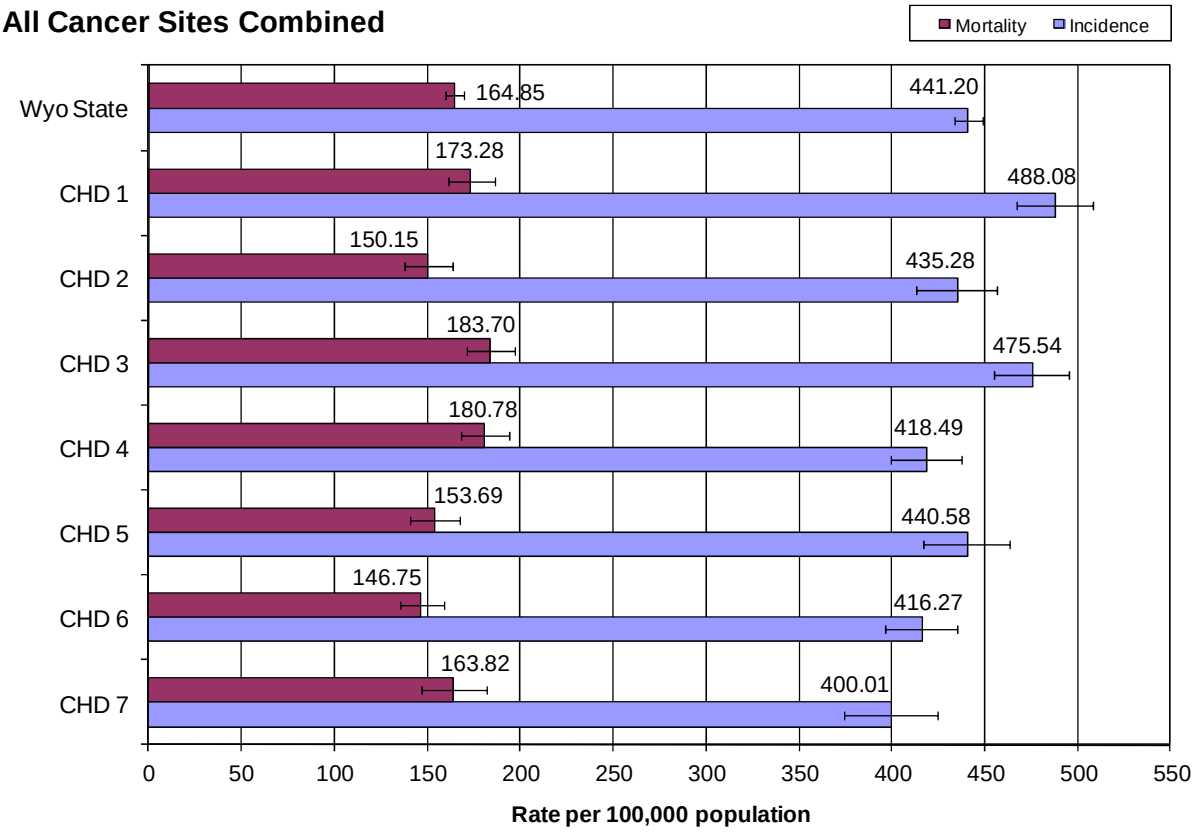
Age-Specific Incidence Rates - 2010

All Cancer Sites Combined



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

All Cancer Sites Combined



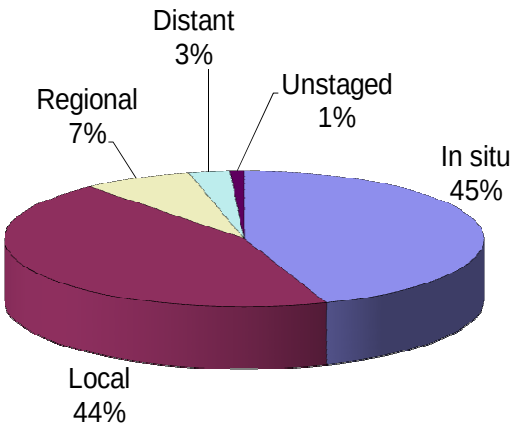
Bladder (Urinary)

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	48	13	61
# In situ Cases	35	13	48
WY Incidence	30.1	8.5	18.6
US Incidence	38.0	9.3	21.6
# Cancer Deaths	20	9	29
WY Mortality	7.1	2.7	4.6
US Mortality	8.0	2.1	4.5

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis



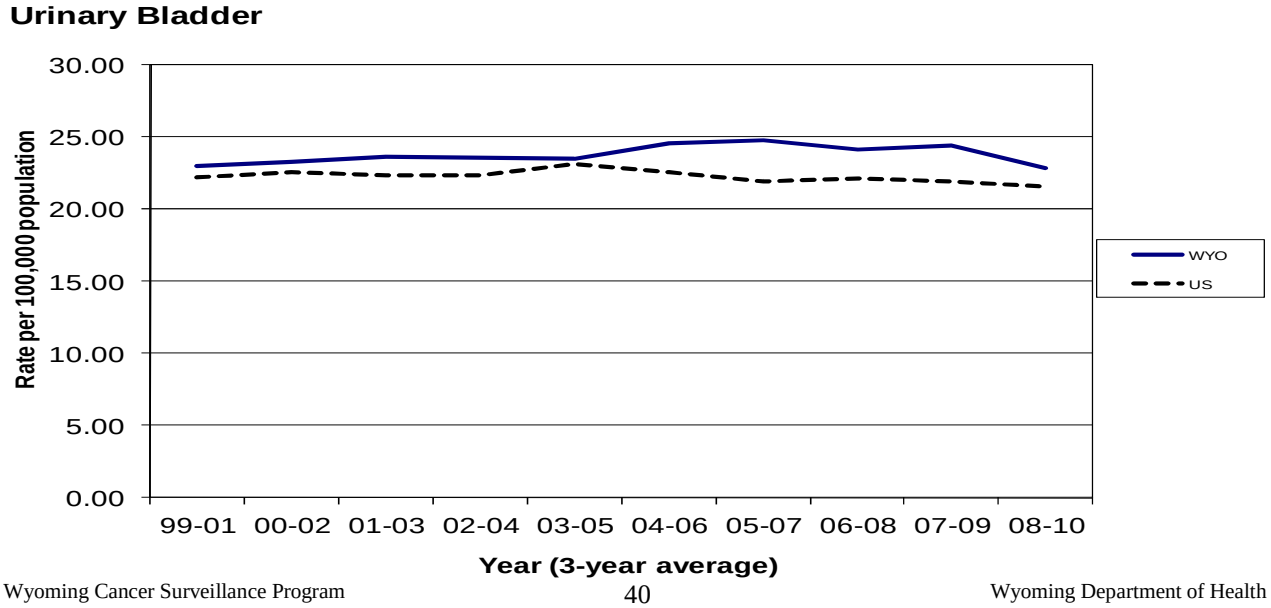
The incidence rates in Wyoming for bladder cancer in males, females and total population were all lower than the national rates in 2010. The mortality rates for females and total population were higher than the national rate, while males were lower. None of these difference were significant.

The 12-year incidence trend for bladder cancer in Wyoming shows a decrease increase from 07-09 to 08-10, while the US rate appears steady.

The percent of bladder cancers diagnosed at each stage in 2010 were basically unchanged from 2009.

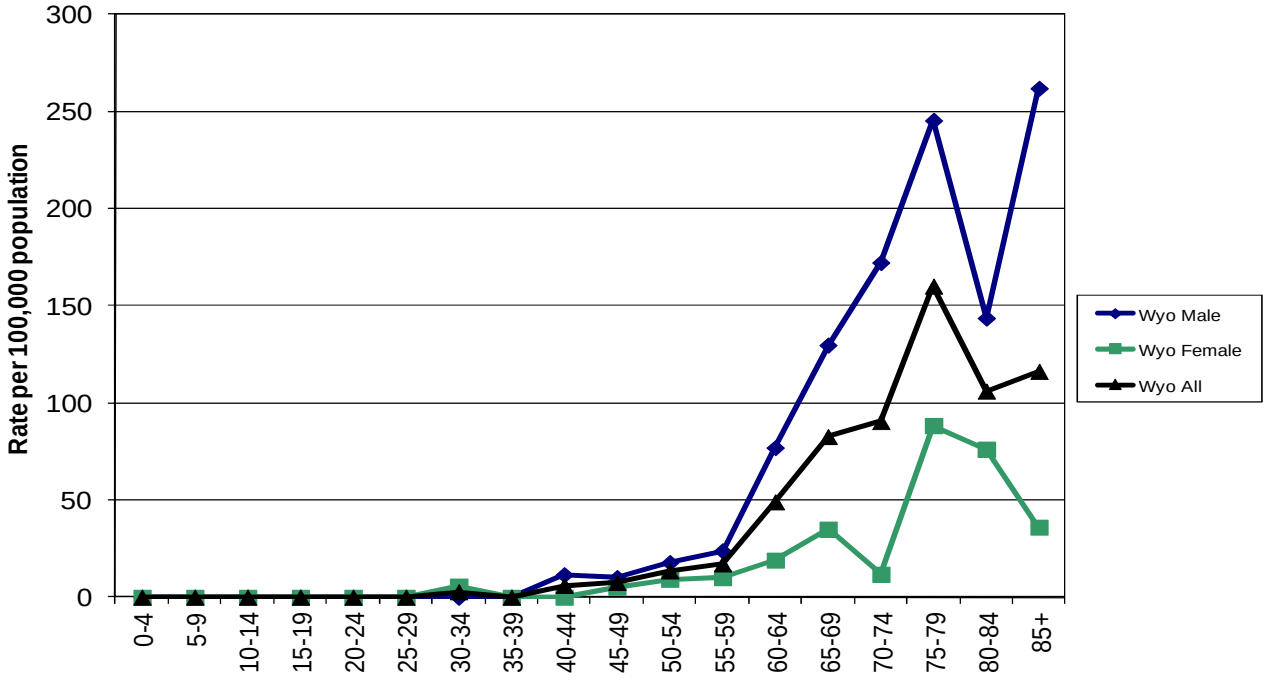
No statistically significant differences were found between the CHD rates and the state rate for incidence or mortality.

12-Year Incidence Trend



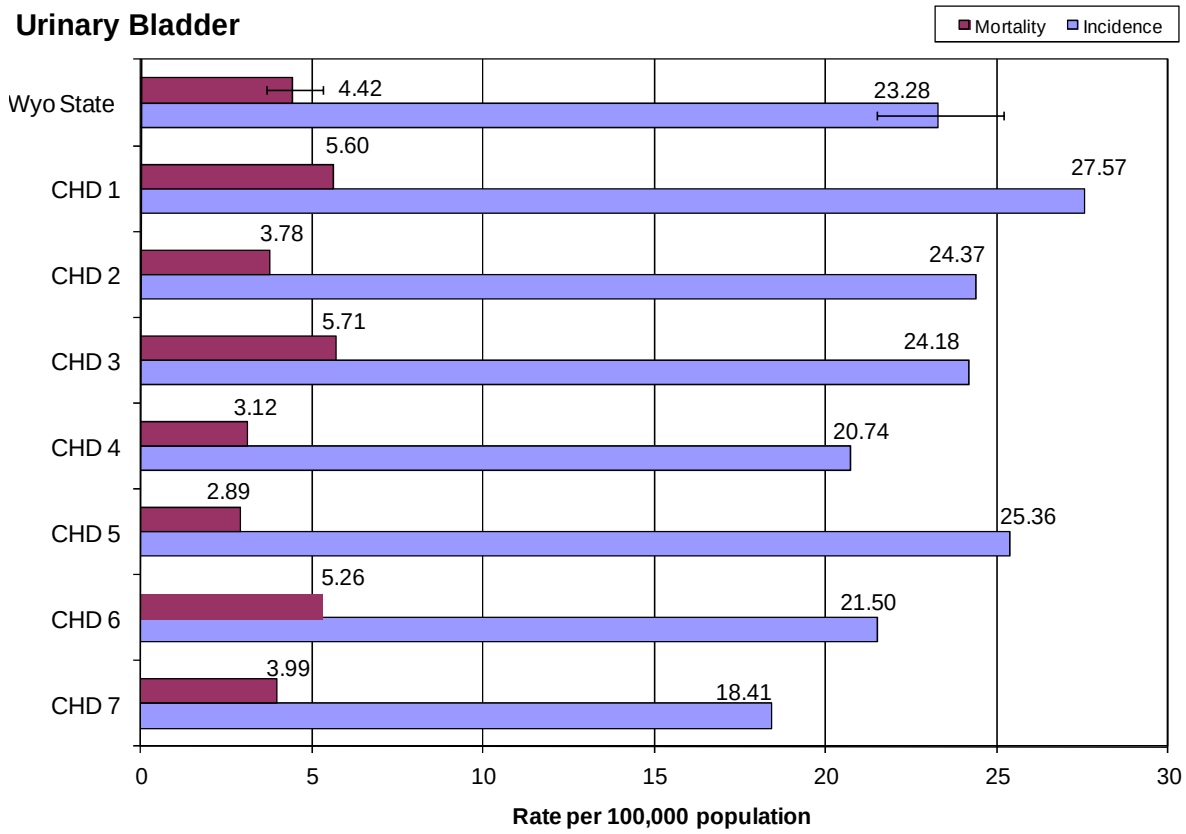
Age-Specific Incidence Rates - 2010

Urinary Bladder



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

Urinary Bladder



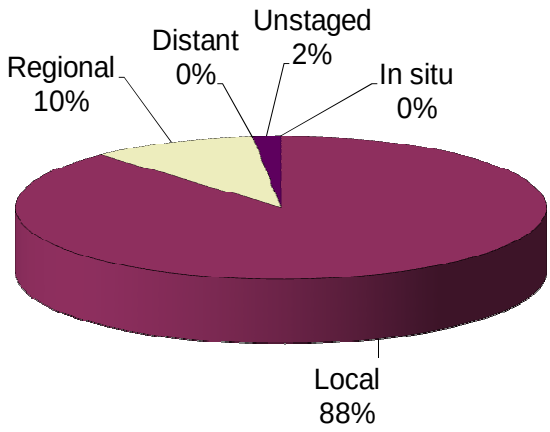
Brain/CNS

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	34	25	59
WY Incidence	11.3	8.6	9.8
US Incidence	8.3	7.0	5.8
# Cancer Deaths	17	12	29
WY Mortality	5.9	3.6	4.8
US Mortality	5.7	3.9	4.7

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis



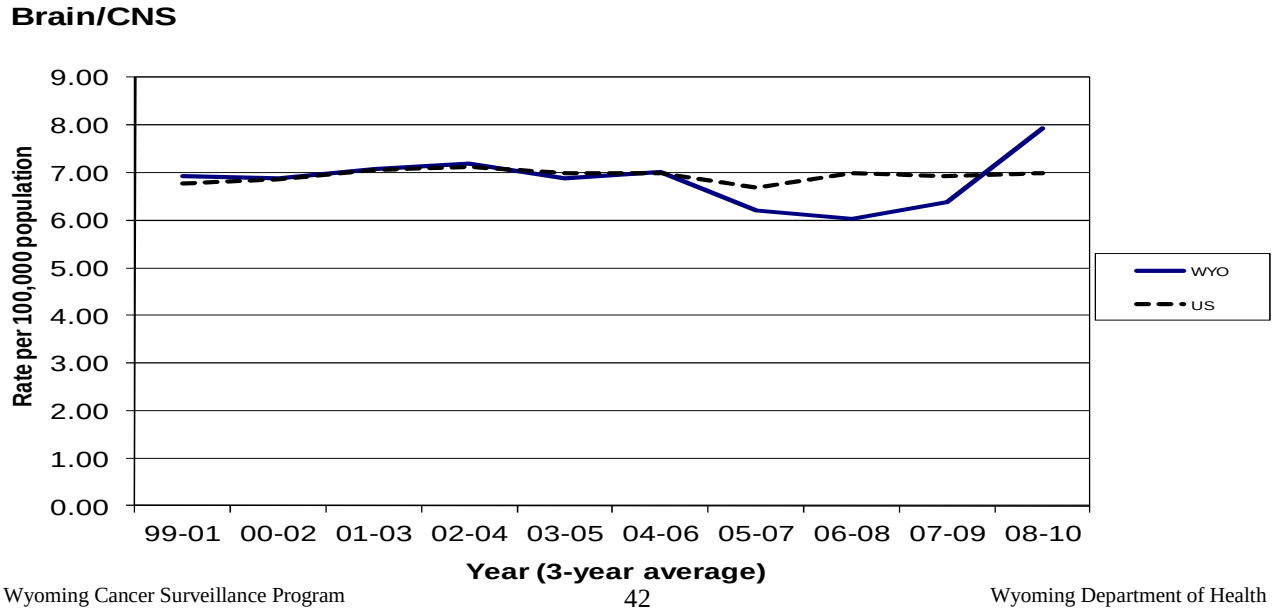
The incidence rates of brain/CNS cancer for males, females, and total population were all higher than the national rates. The Wyoming mortality rates for males and total population were a bit higher, while the female mortality rate was lower than the U.S. rates. However, none of these differences were significant.

The 12-year trend showed a marked increase from 07-09, while the national trend remained level.

The percentage of cases diagnosed as local increased from 80% in 2009, while the other stages remained basically unchanged. None of the changes were statistically significant.

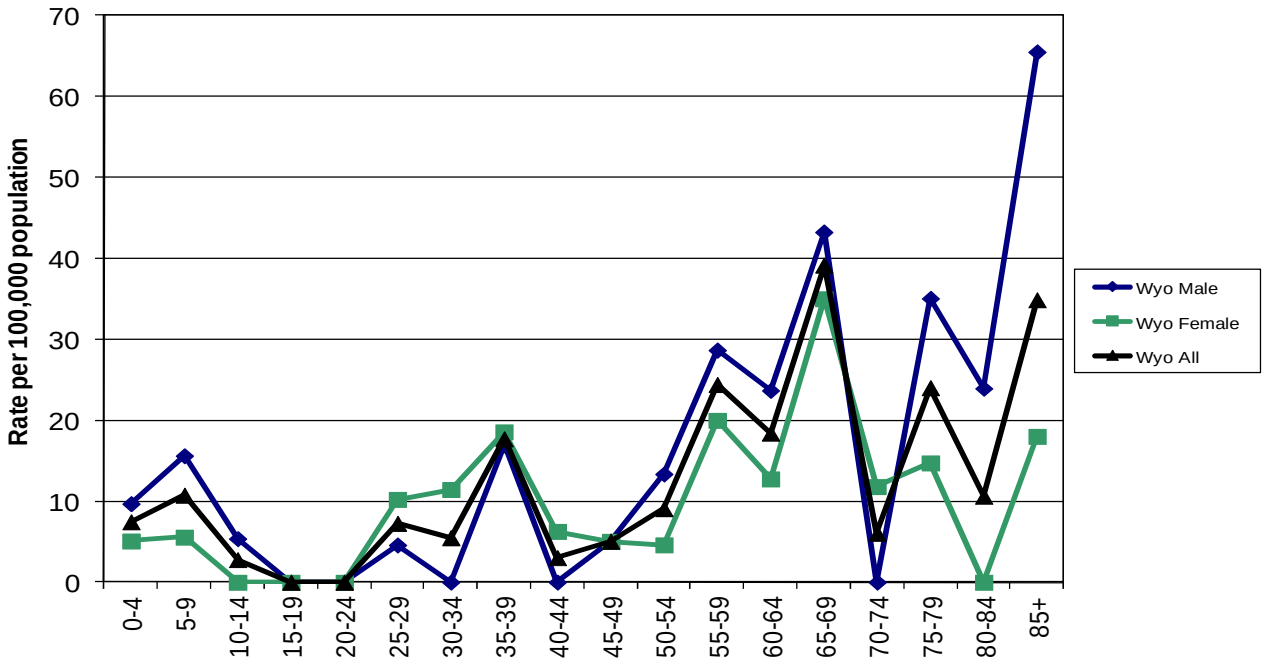
No statistically significant differences were found between the CHD rates and the state rate for incidence or mortality.

12-Year Incidence Trend



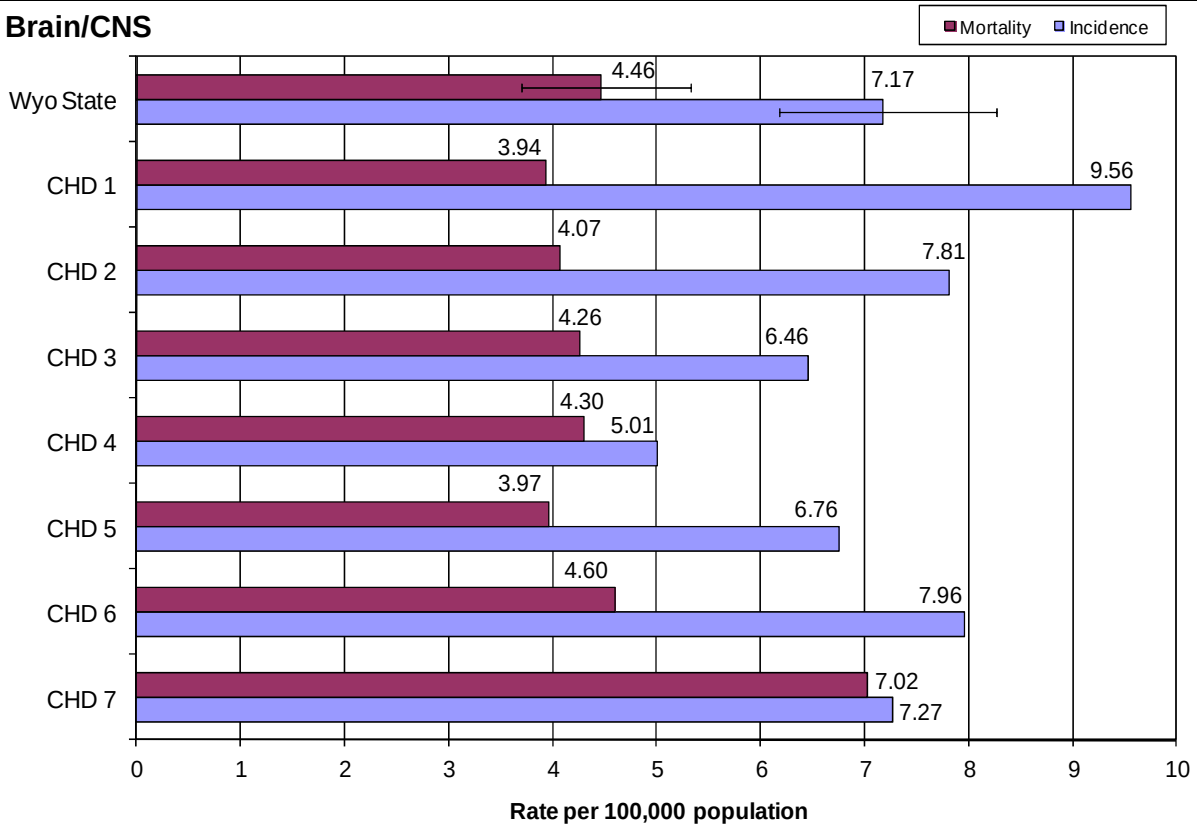
Age-Specific Incidence Rates - 2010

Brain/CNS



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

Brain/CNS



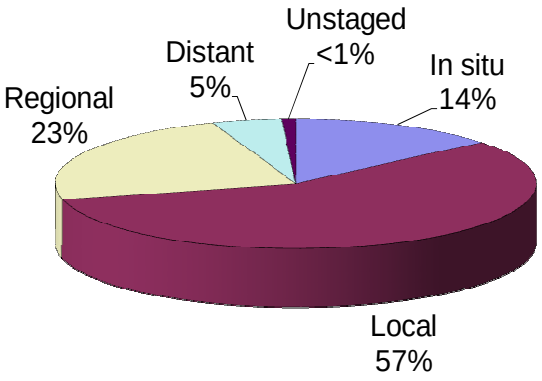
Breast (Female Only)

Incidence and Mortality Summary

	Female
# Invasive Cases	369
# In situ Cases	60
WY Incidence	116.9
US Incidence	128.3
# Cancer Deaths	72
WY Mortality	22.4
US Mortality	21.7

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis



The incidence rate of female breast cancer in Wyoming continues to be lower than the United States rate in 2010, but not significantly. The mortality rate for Wyoming is slightly higher than the national rate, but again not significantly.

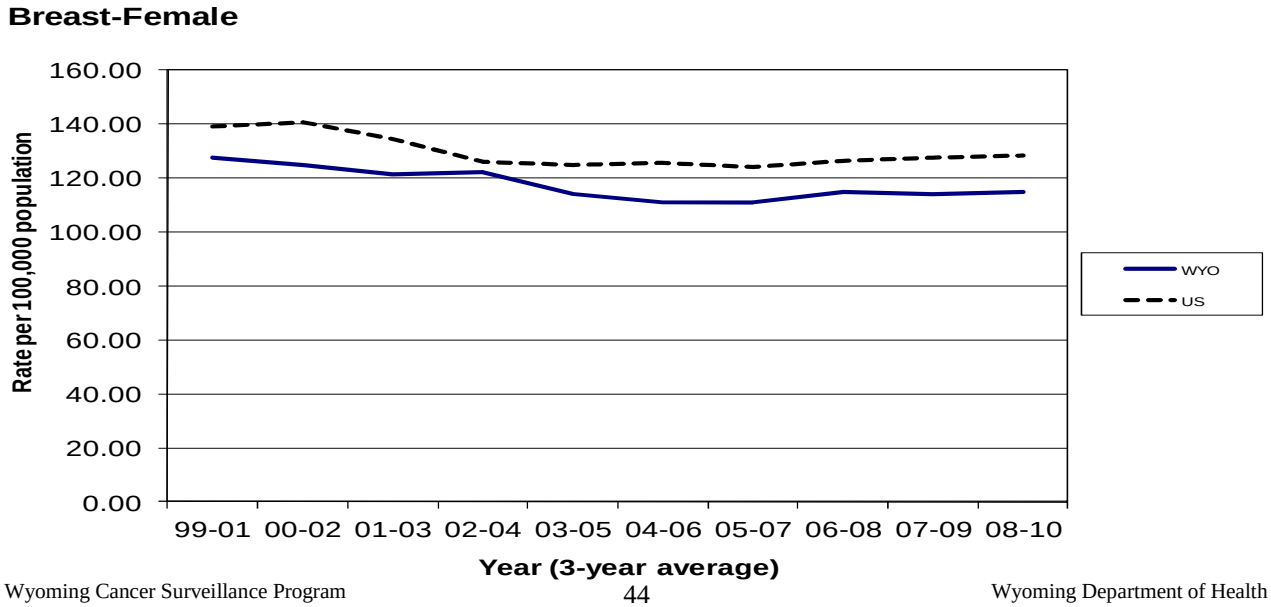
The 12-year incidence trend appears level from 06-08 for both the state and national rates.

The percentage of diagnoses in each stage in 2010 was essentially the same as in 2009.

No statistically significant differences were found for incidence or mortality between CHDs.

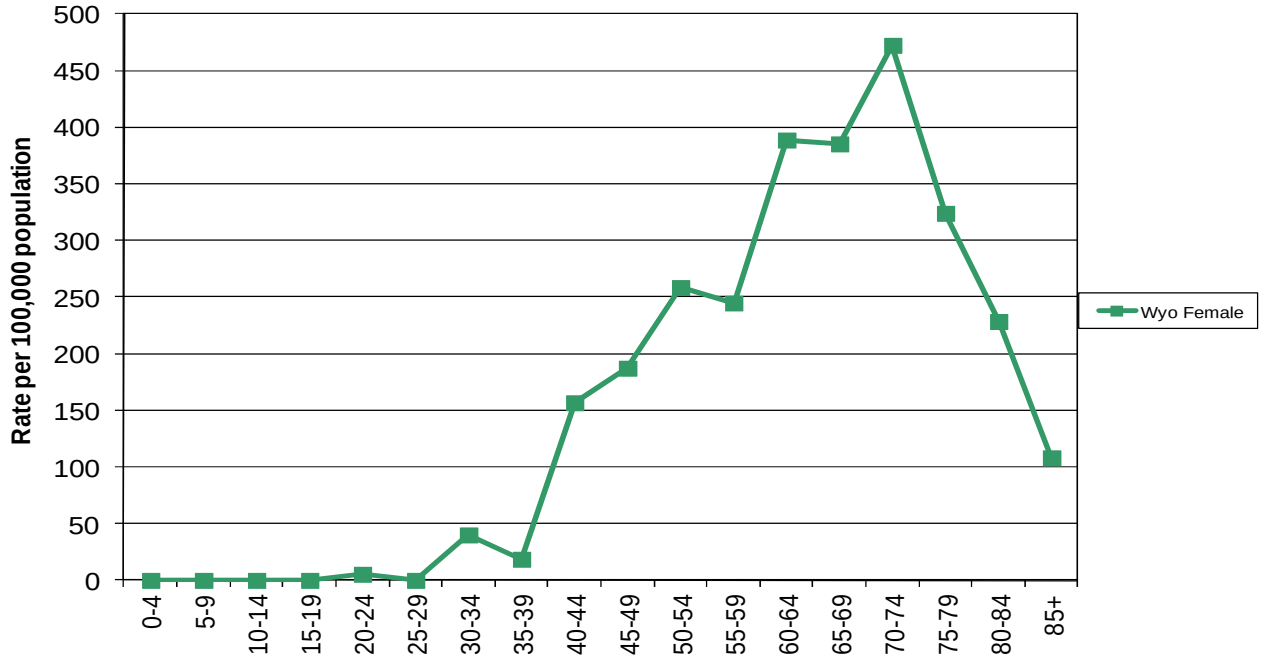
There were 6 cases of male breast cancer reported in Wyoming in 2010.

12-Year Incidence Trend



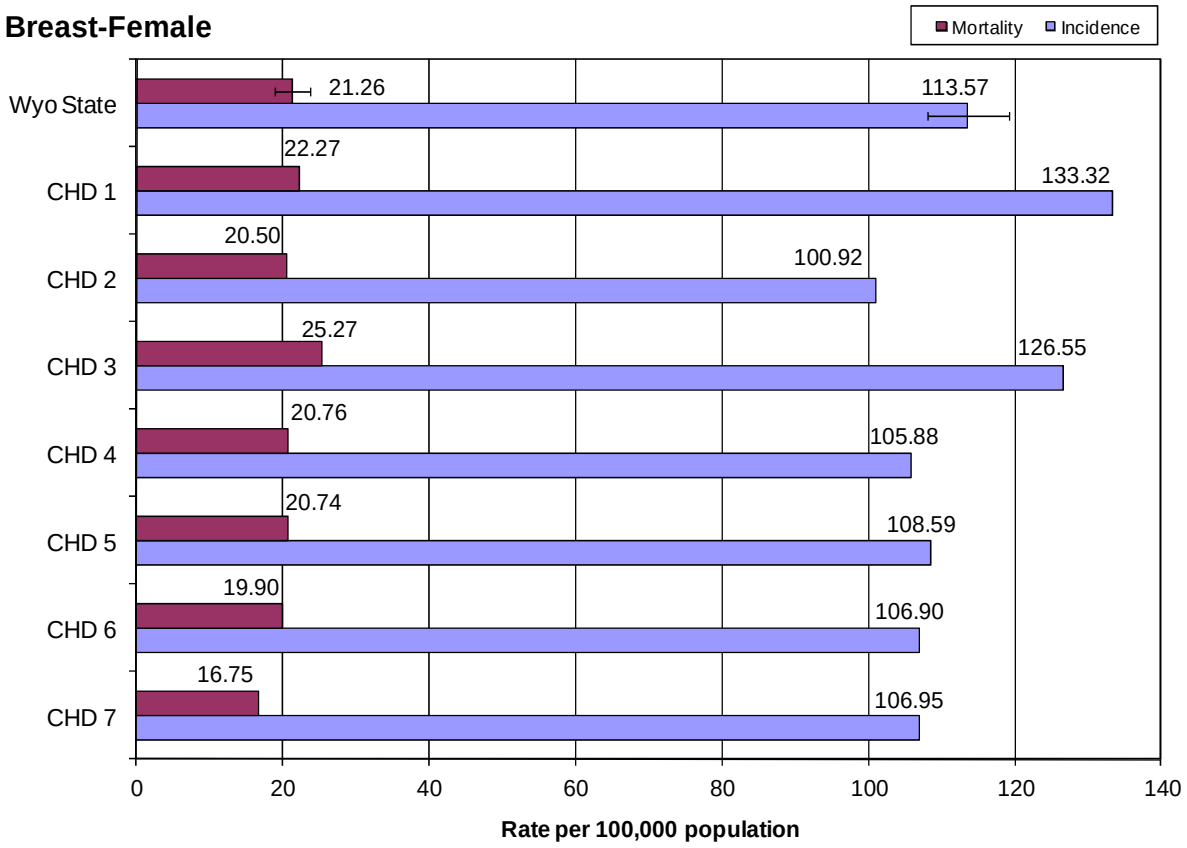
Age-Specific Incidence Rates - 2010

Breast-Female



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

Breast-Female



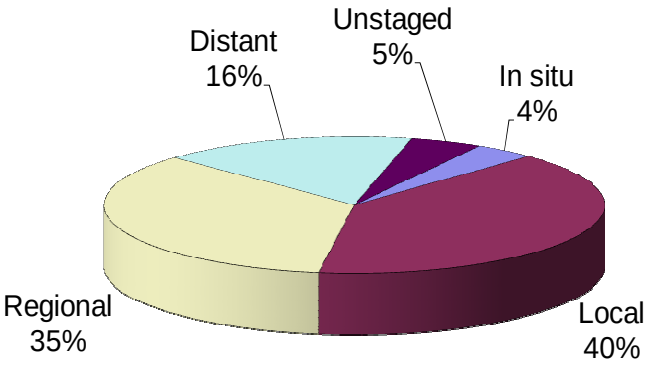
Colorectal

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	141	129	270
# In situ Cases	6	6	12
WY Incidence	48.9	41.4	44.8
US Incidence	48.9	37.1	42.3
# Cancer Deaths	48	49	97
WY Mortality	15.3	15.7	15.6
US Mortality	18.6	12.7	15.3

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis



The Wyoming incidence and mortality rates for females and total population were both lower than the national rates. The incidence rate for males was the same as the national rate and the mortality rate was slightly lower. None of these differences were statistically significant.

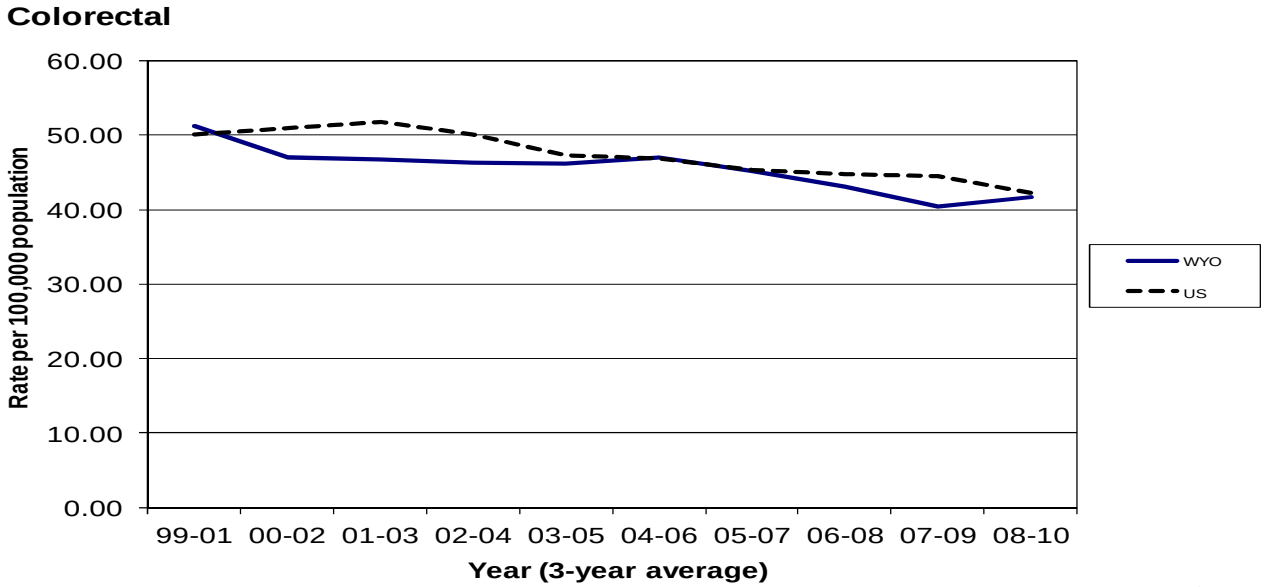
The 12-year incidence graph shows that rates in Wyoming increased slightly from 07-09.

The percentage of cancers diagnosed at each stage in 2010 were essentially the same as 2009.

No statistically significant differences were found between the CHD rates and the state rate for incidence or mortality.

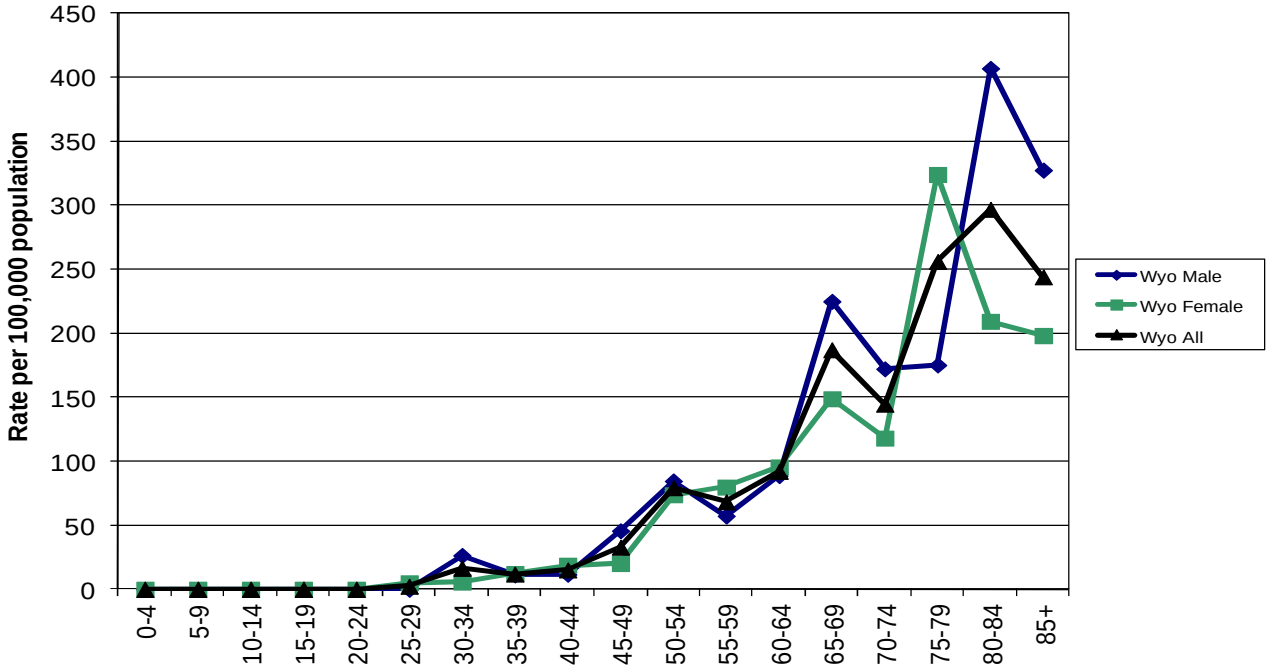
(Colorectal = Colon and rectum combined)

12-Year Incidence Trend



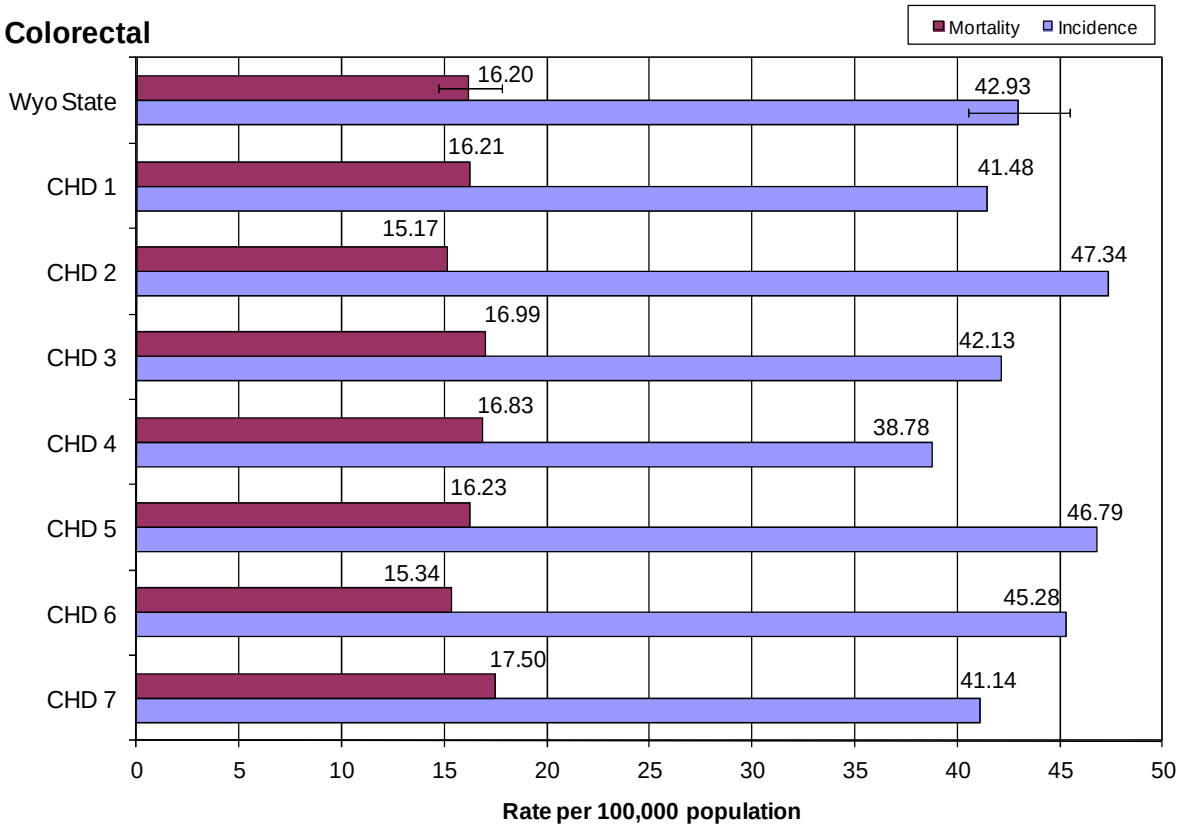
Age-Specific Incidence Rates - 2010

Colorectal



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

Colorectal



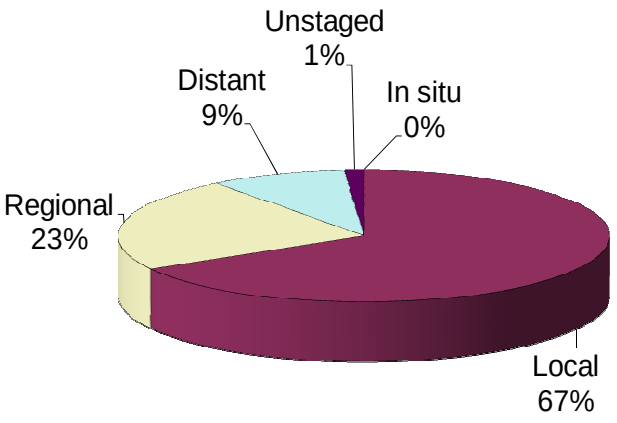
Kidney/Renal Pelvis

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	55	25	80
WY Incidence	18.1	7.7	12.8
US Incidence	21.8	11.0	15.9
# Cancer Deaths	12	10	22
WY Mortality	3.7	3.1	3.4
US Mortality	5.9	2.5	4.0

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis



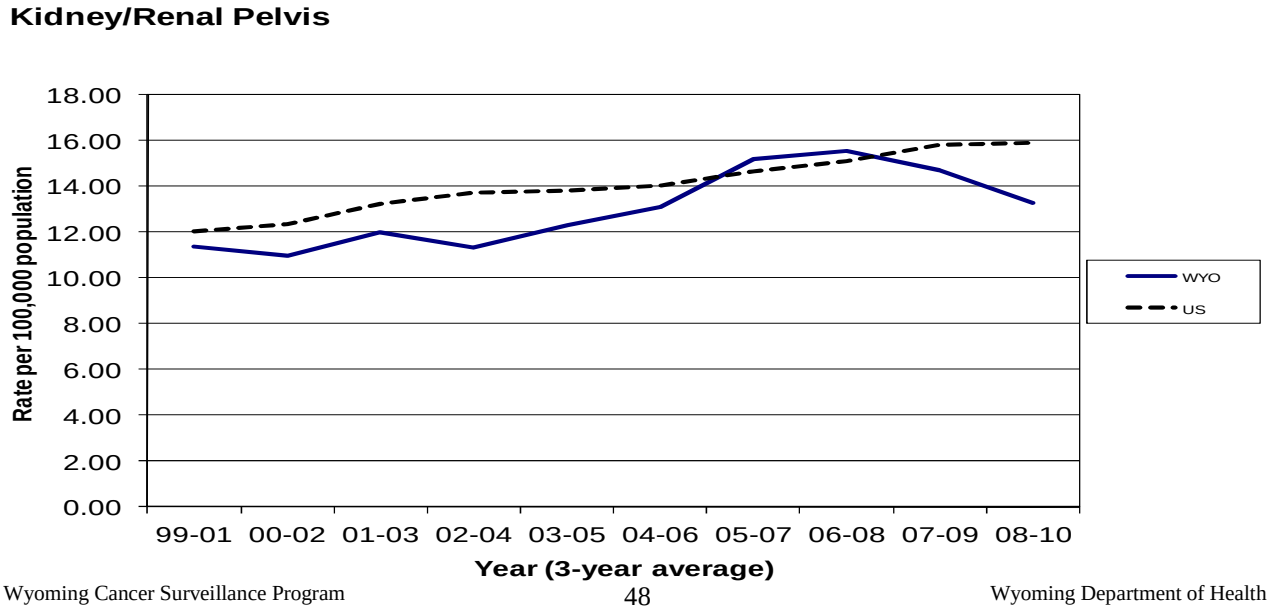
The incidence rates for kidney/renal pelvis cancer in Wyoming males, females and the total population were all lower than the national rates in 2010. The mortality rates for males and the overall population were both lower than the national, but the female rate was slightly higher. None of these differences were statistically significant.

The 12-year trend showed a continued decrease from 06-08. The national rate continued to increase.

The percent of kidney/renal pelvis cases diagnosed as local increased from 2009 (53%), but not significantly.

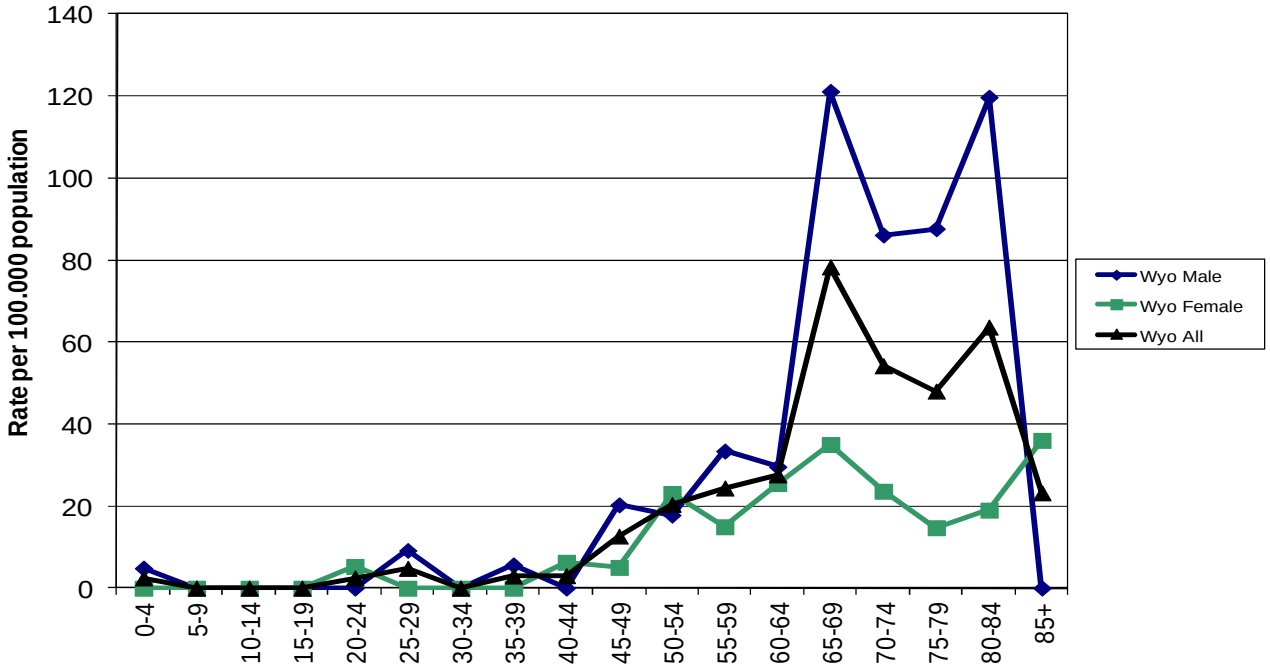
No statistically significant differences were found between the CHD rates and the state rate for incidence or mortality.

12-Year Incidence Trend



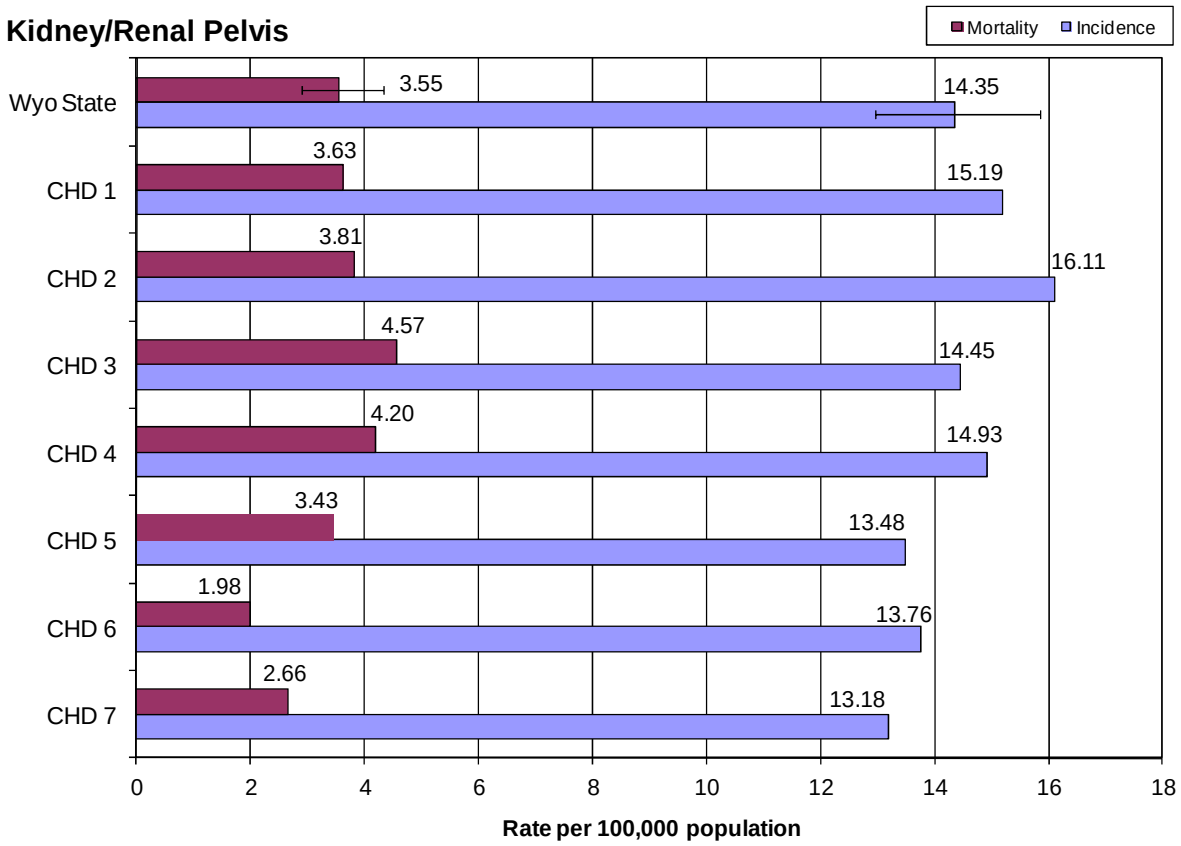
Age-Specific Incidence Rates - 2010

Kidney/Renal Pelvis



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

Kidney/Renal Pelvis



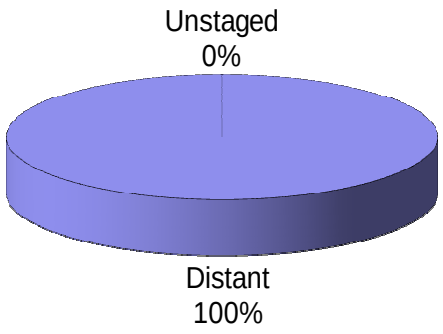
Leukemia

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	46	42	88
WY Incidence	13.8	13.7	13.9
US Incidence	15.9	9.7	12.4
# Cancer Deaths	28	19	47
WY Mortality	9.8	5.8	7.8
US Mortality	9.9	5.3	7.3

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis

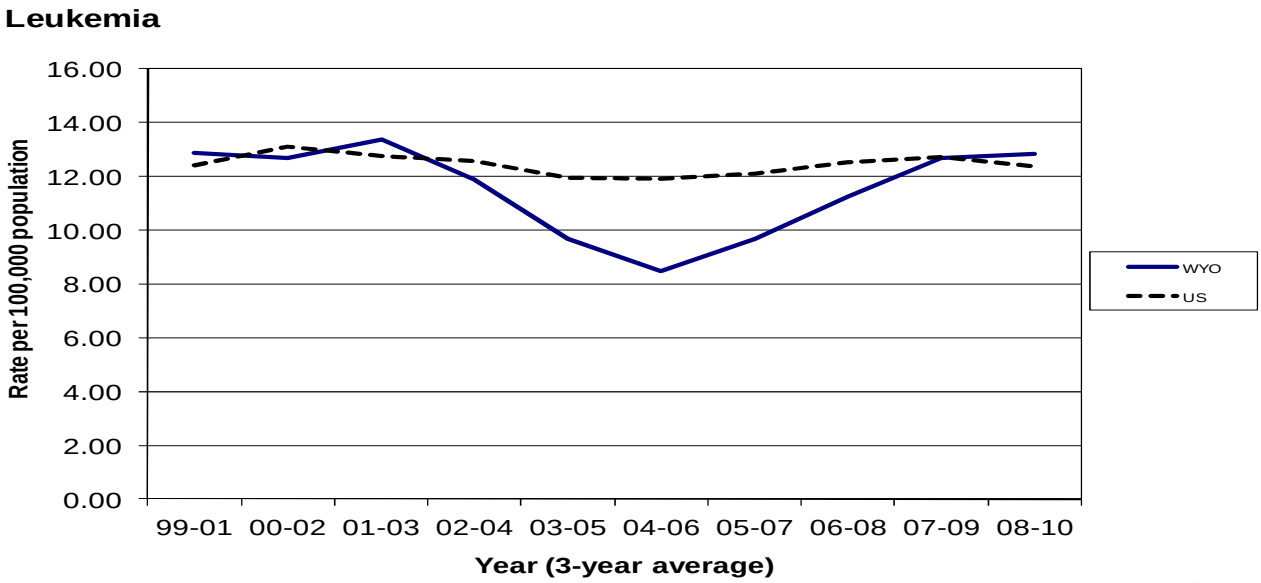


The incidence and mortality rates in Wyoming for females and the total population were slightly higher than the national rate, with the male rates were both a little lower. However, none of the differences were statistically significant.

The incidence trend for Wyoming showed a slight increase from 07-09 to 08-10, while the national rate seemed to be decreasing a little.

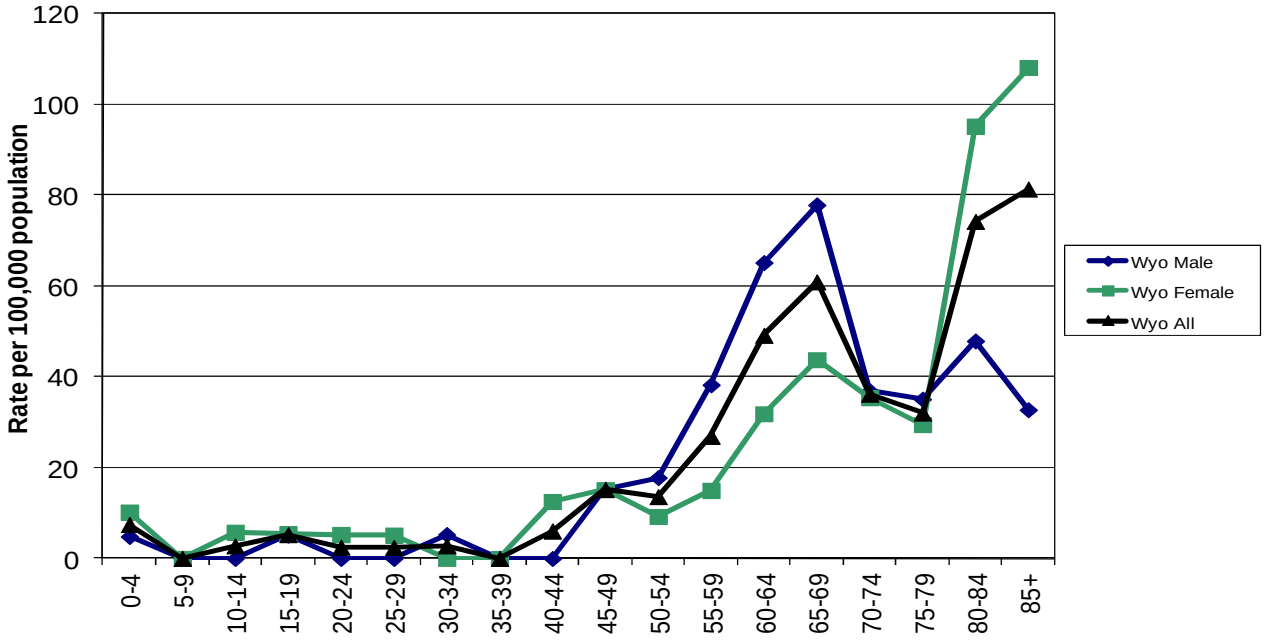
No statistically significant differences were found between the CHD rates and the state rate for incidence or mortality.

12-Year Incidence Trend



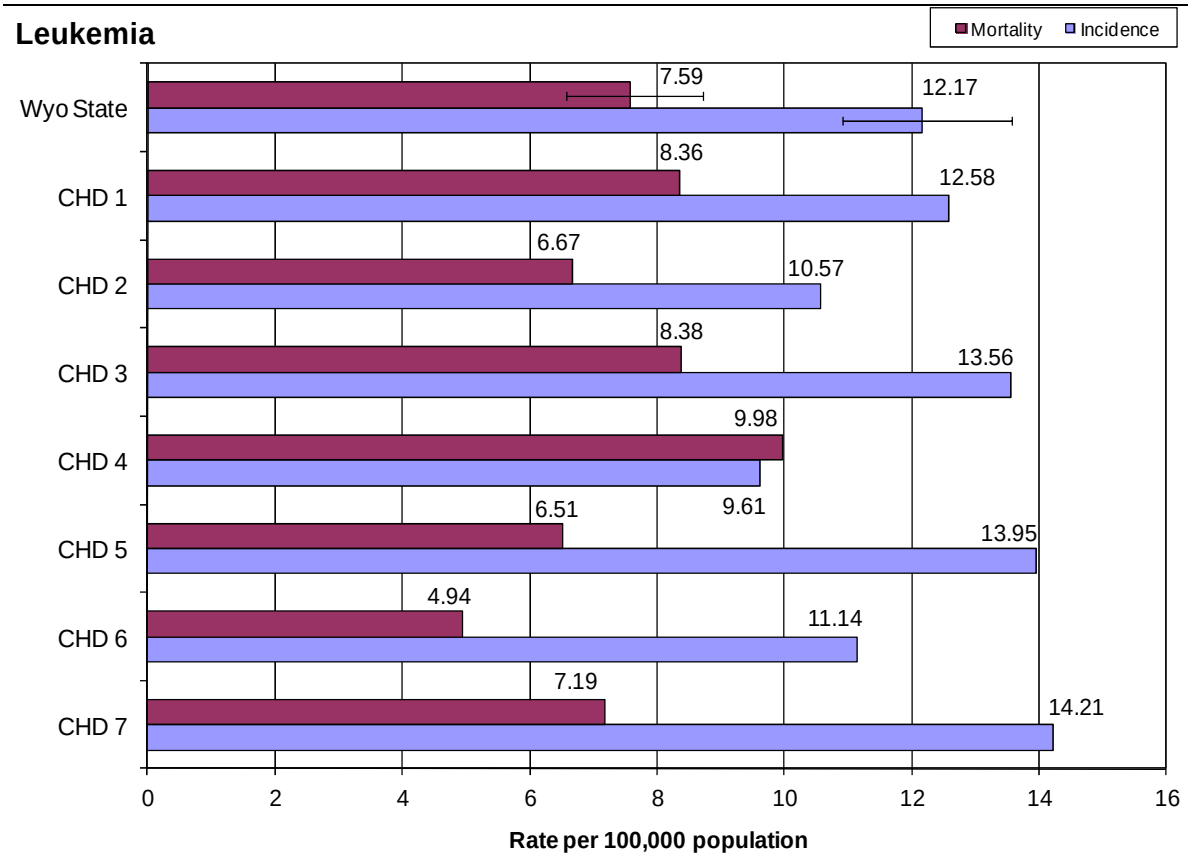
Age-Specific Incidence Rates - 2010

Leukemia



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

Leukemia



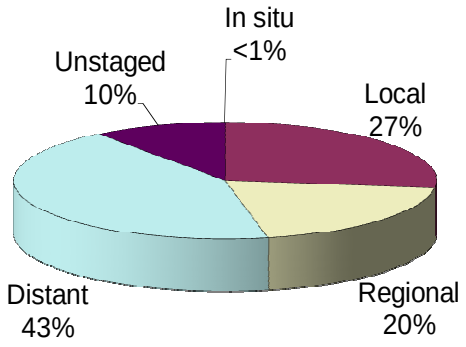
Lung and Bronchus

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	148	147	295
WY Incidence	51.6*	48.0	49.9
US Incidence	72.4	53.5	61.4
# Cancer Deaths	124	105	229
WY Mortality	45.1	32.8	38.7
US Mortality	61.8	39.9	49.2

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis



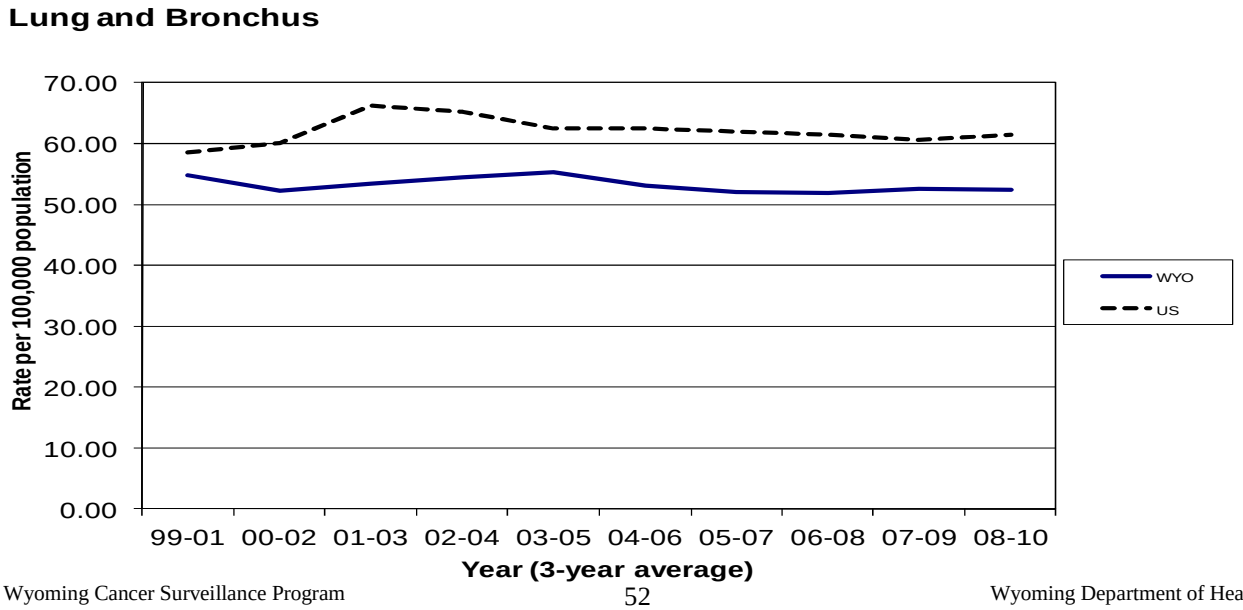
Lung cancer incidence and mortality rates in Wyoming males, females, and total population were all lower than the national rates. Only the male incidence rate was significantly lower than the national rate.

The 12 year incidence trend showed the rates for lung cancer in Wyoming held steady from 07-09. The national rate appeared to be increasing slightly.

The percentage of cases diagnosed as regional and distant stage were a little lower than 2009, while local was up from 2009 (17%).

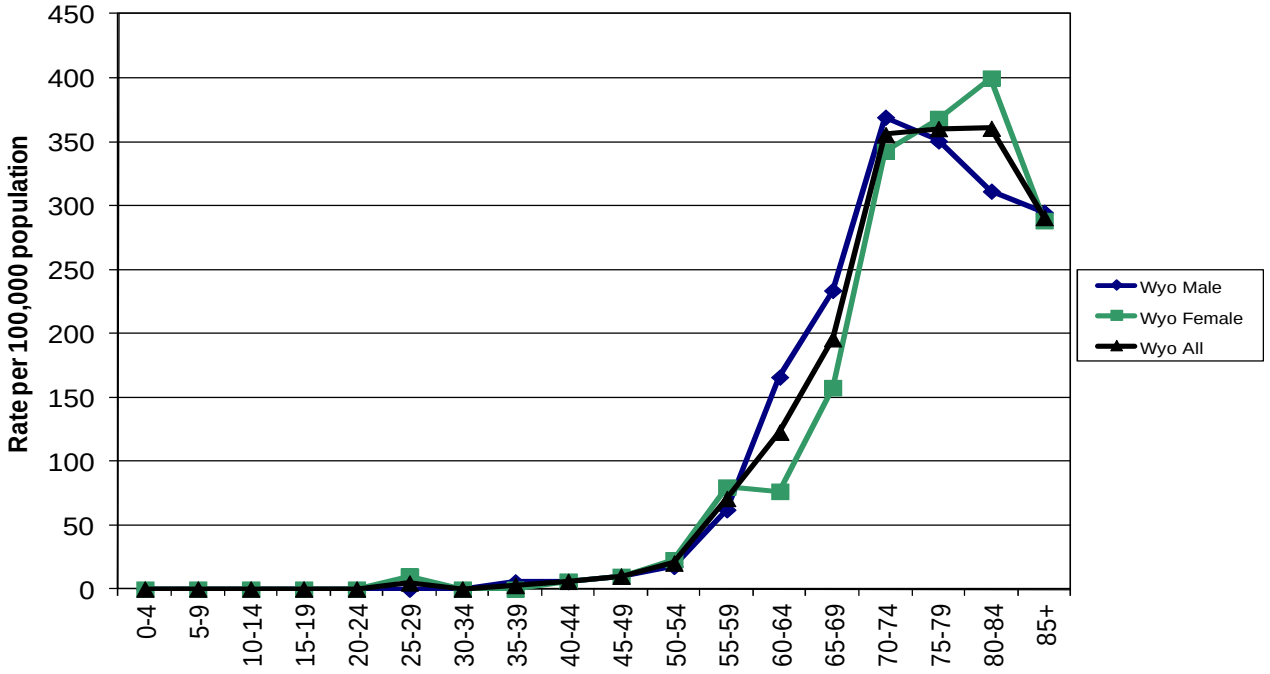
The incidence of lung cancer in CHD 7 was significantly lower than the state rate from 06-10. No other statistically significant differences were found between the CHD rates and the state rate for incidence or mortality.

12-Year Incidence Trend



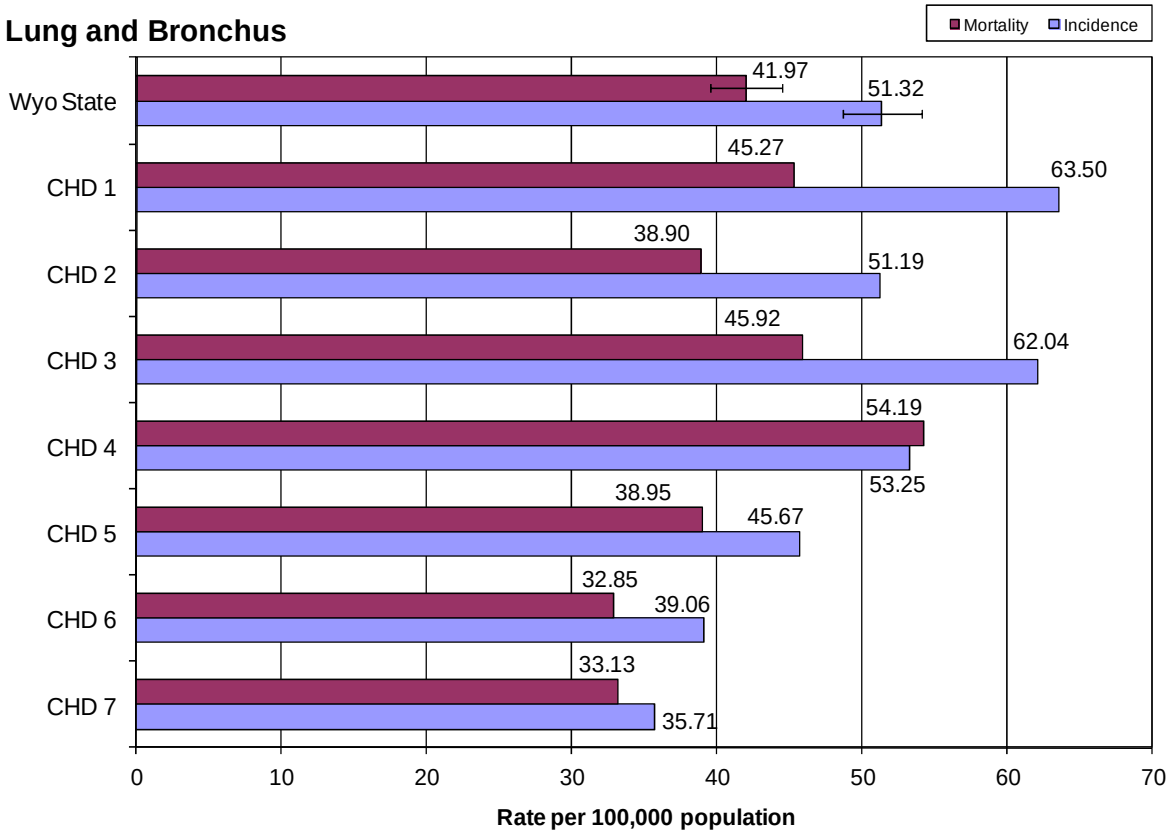
Age-Specific Incidence Rates - 2010

Lung and Bronchus



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

Lung and Bronchus



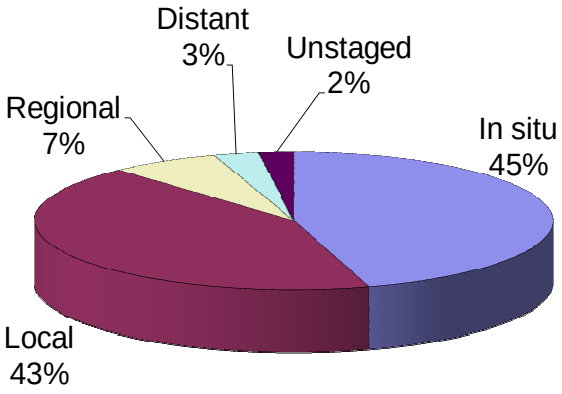
Melanoma (of the skin)

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	105	73	178
# In situ Cases	98	51	149
WY Incidence	36.2	26.2	31.1
US Incidence	31.3	19.5	24.3
# Cancer Deaths	13	5	18
WY Mortality	4.7	1.5	3.1
US Mortality	4.8	2.1	3.2

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis



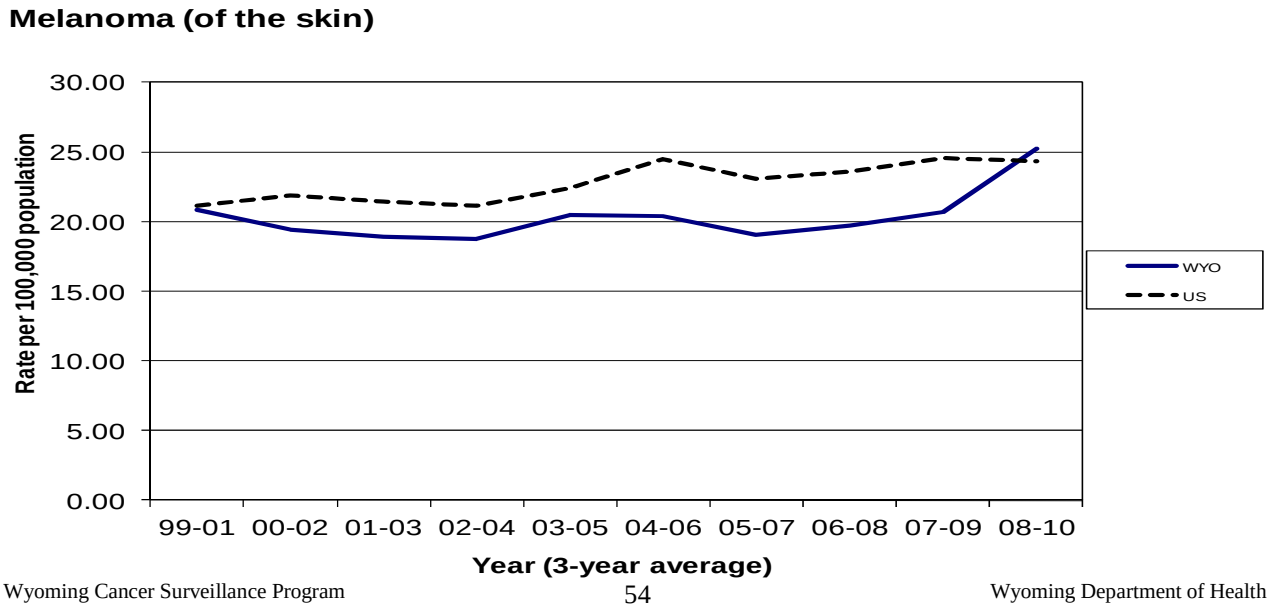
Incidence rates for melanoma of the skin for Wyoming males, females, and total population were all higher than the national rates. The mortality rates for Wyoming males, females and total population were each slightly lower than the national rate. None of the differences were statistically significant.

There appeared to be a marked increase in melanoma incidence for Wyoming from 07-09. The U.S. rate seemed to be steady from 07-09.

The percent of cases diagnosed at each stage in 2010 was essentially the same as the percentages in 2009.

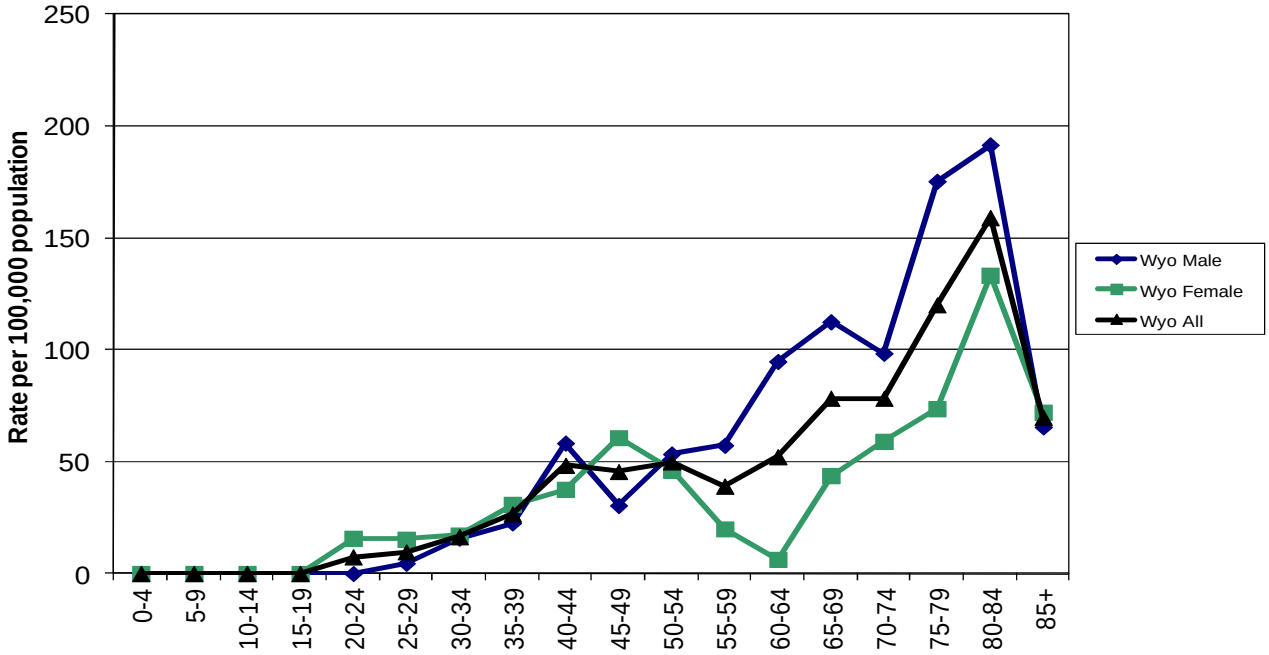
No statistically significant differences were found between the CHD and state rate for incidence or mortality.

12-Year Incidence Trend



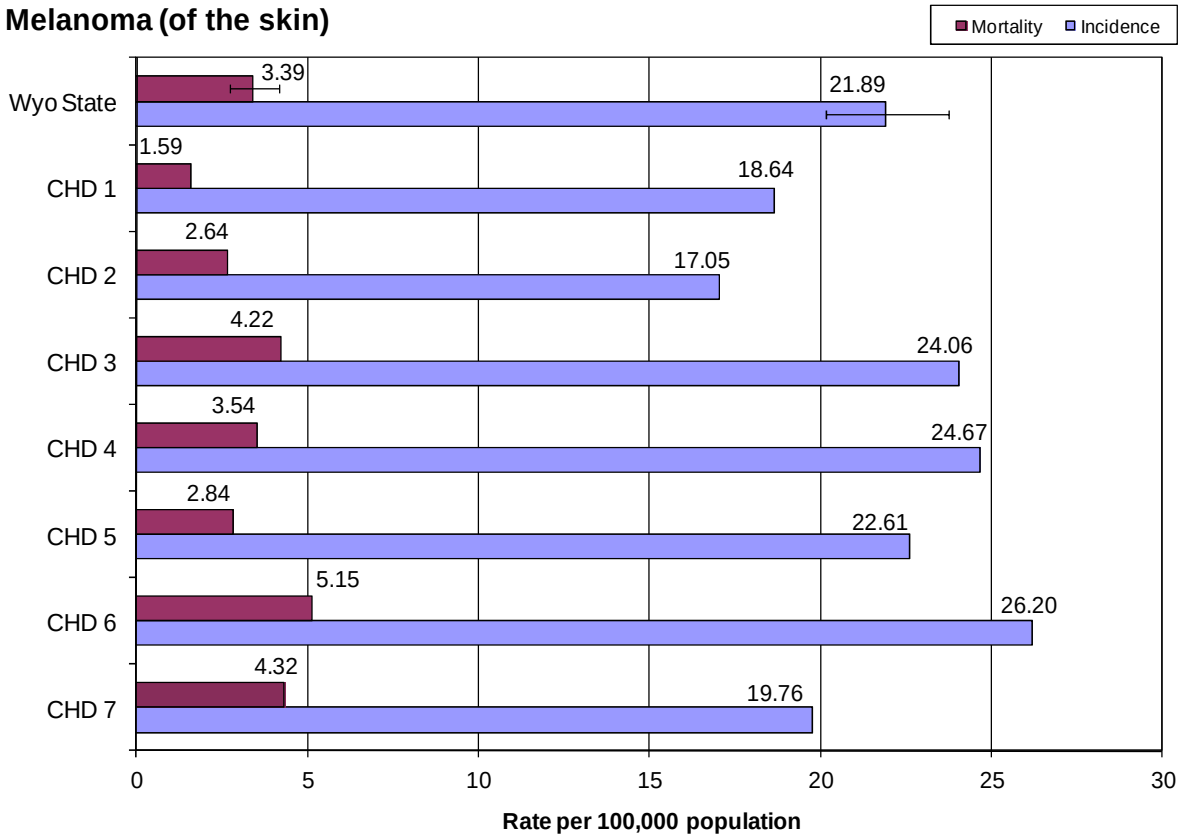
Age-Specific Incidence Rates - 2010

Melanoma (of the skin)



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

Melanoma (of the skin)



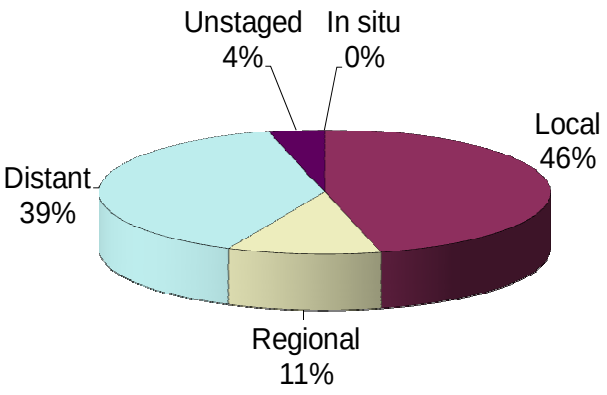
Non-Hodgkin Lymphoma

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	60	40	100
WY Incidence	19.9	13.4	16.3
US Incidence	24.1	16.6	20.0
# Cancer Deaths	13	13	26
WY Mortality	5.4	4.4	4.8
US Mortality	8.4	5.1	6.5

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis



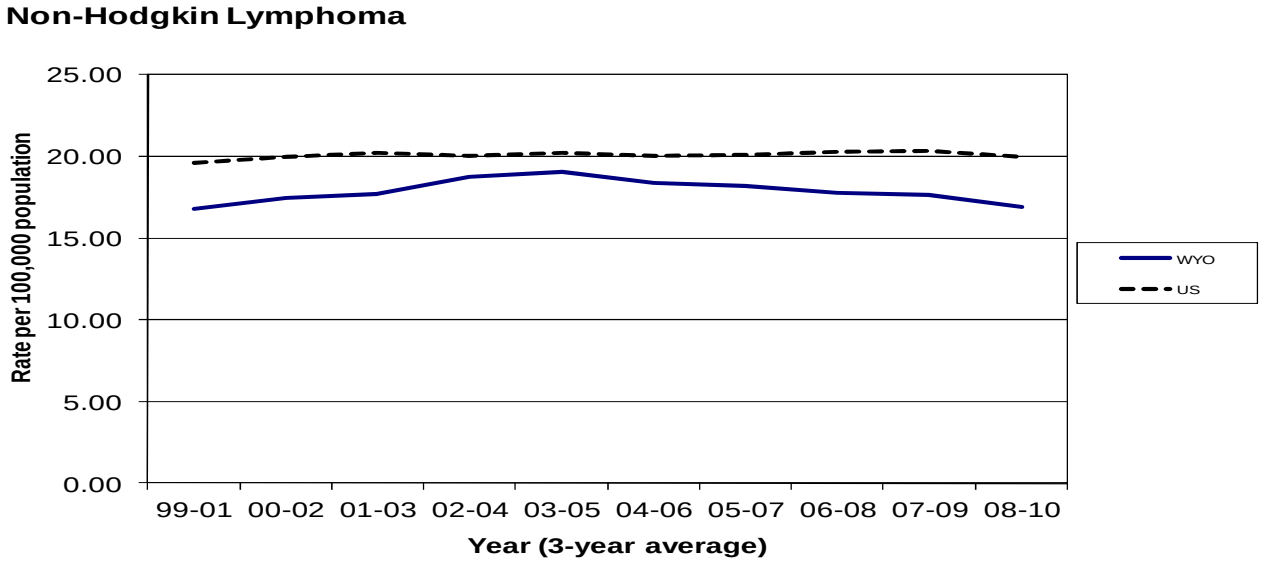
The incidence and mortality rates for males, females, and total population in Wyoming were all lower than the national rates. None of the differences were statistically significant.

The incidence trends for Wyoming showed a slight decrease from 07-09, while the national rate remained level.

The percent of cancers diagnosed as local and distant were both up from 2009 (35% and 24% respectively).

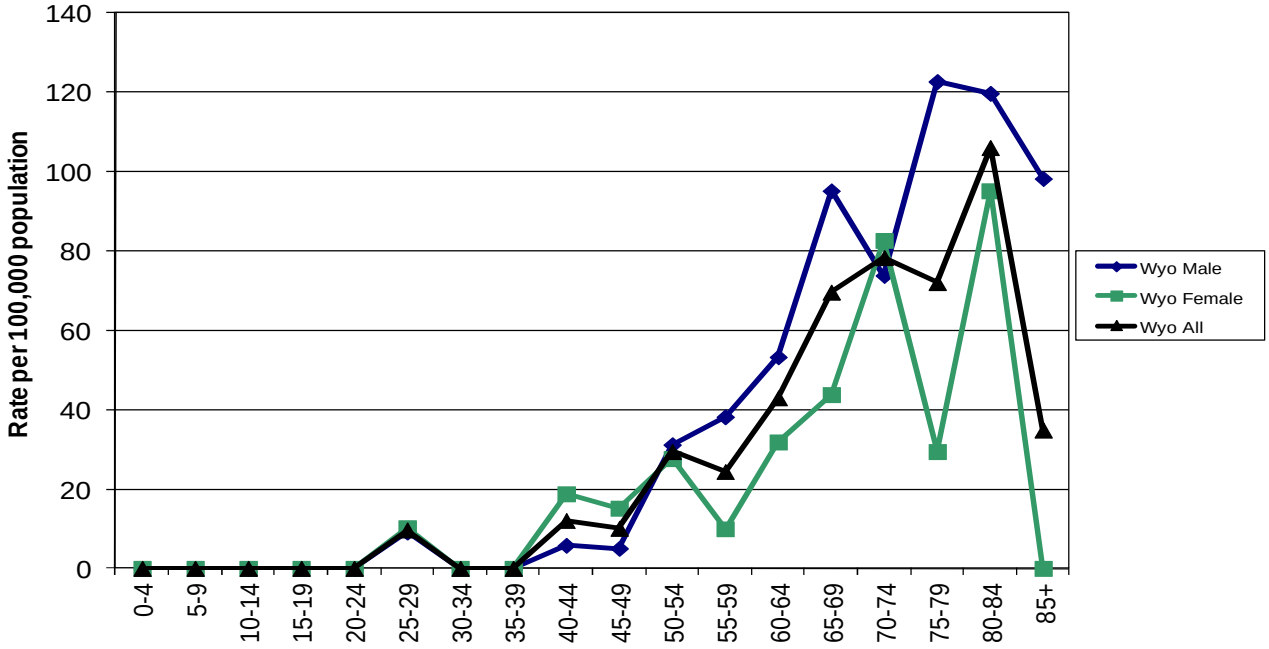
No statistically significant differences were found between the CHD rates and the state rate for incidence or mortality.

12-Year Incidence Trend



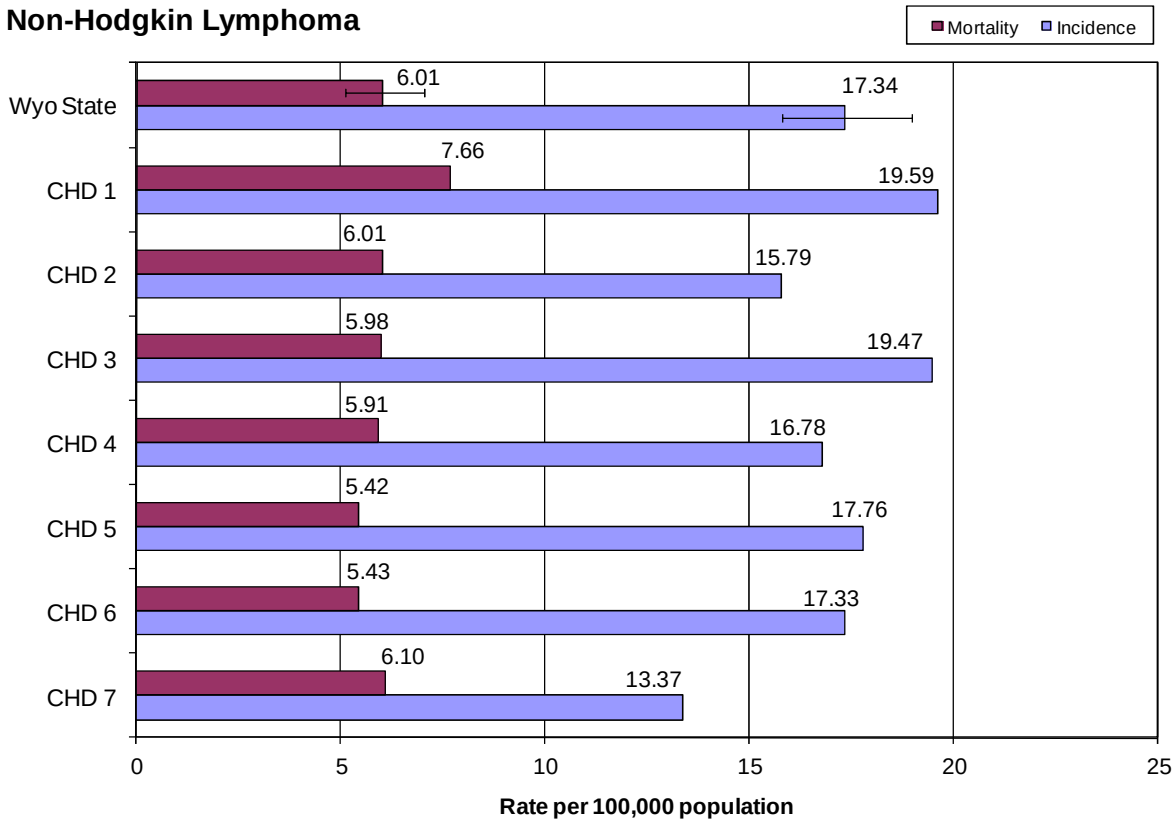
Age-Specific Incidence Rates - 2010

Non-Hodgkin Lymphoma



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

Non-Hodgkin Lymphoma



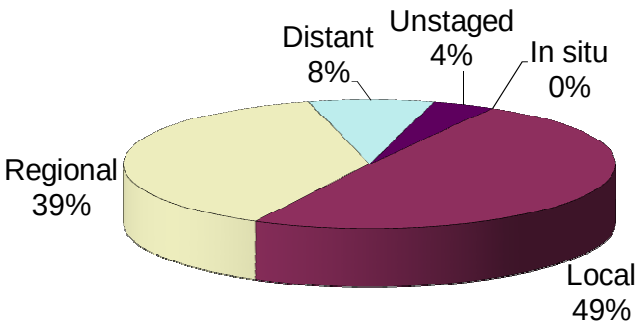
Oral Cavity and Pharynx

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	49	24	73
# In situ Cases	0	0	0
WY Incidence	16.1	7.4	11.6
US Incidence	16.7	6.4	11.3
# Cancer Deaths	13	5	18
WY Mortality	4.0	1.5	2.8
US Mortality	3.5	1.3	2.3

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis



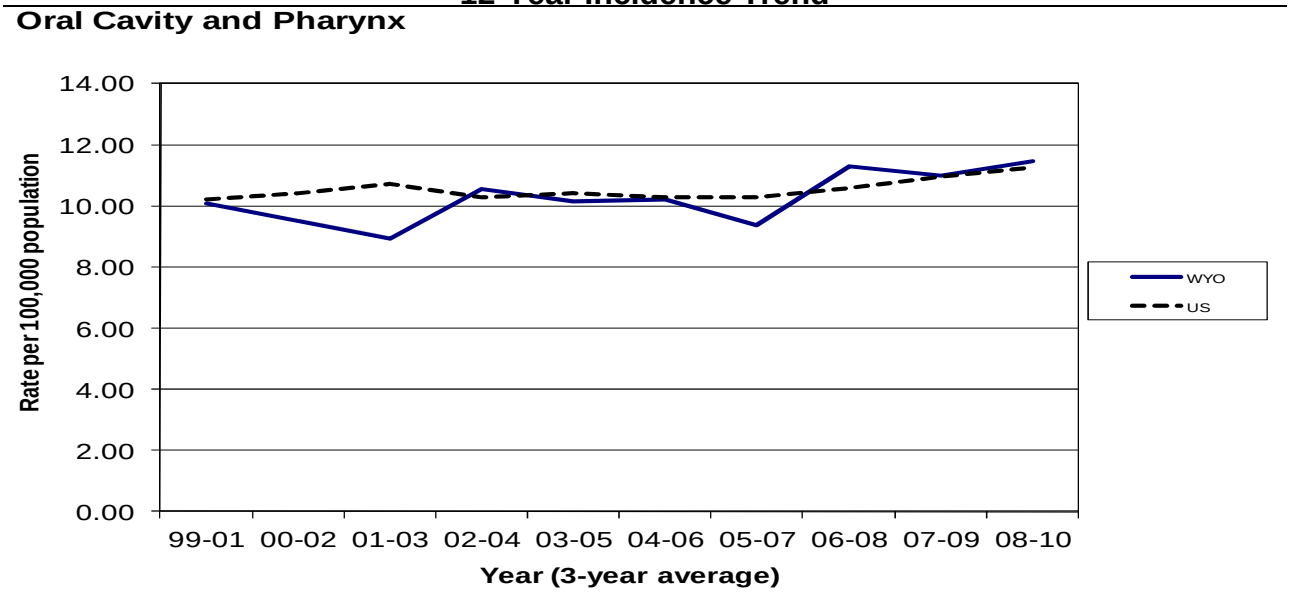
Incidence rates for cancer of the oral cavity and pharynx in Wyoming females and total population were both a bit higher than the national rate, while the male rate was a little lower. The mortality rates for all three populations were higher than the national rates. None of the differences were statistically significant.

The incidence trend for Wyoming showed a slight increase from 07-09 to 08-10. While the national rate continued to increase since 05-07.

Significantly more cases were diagnosed at the local stage in 2010 than in 2009 (33%).

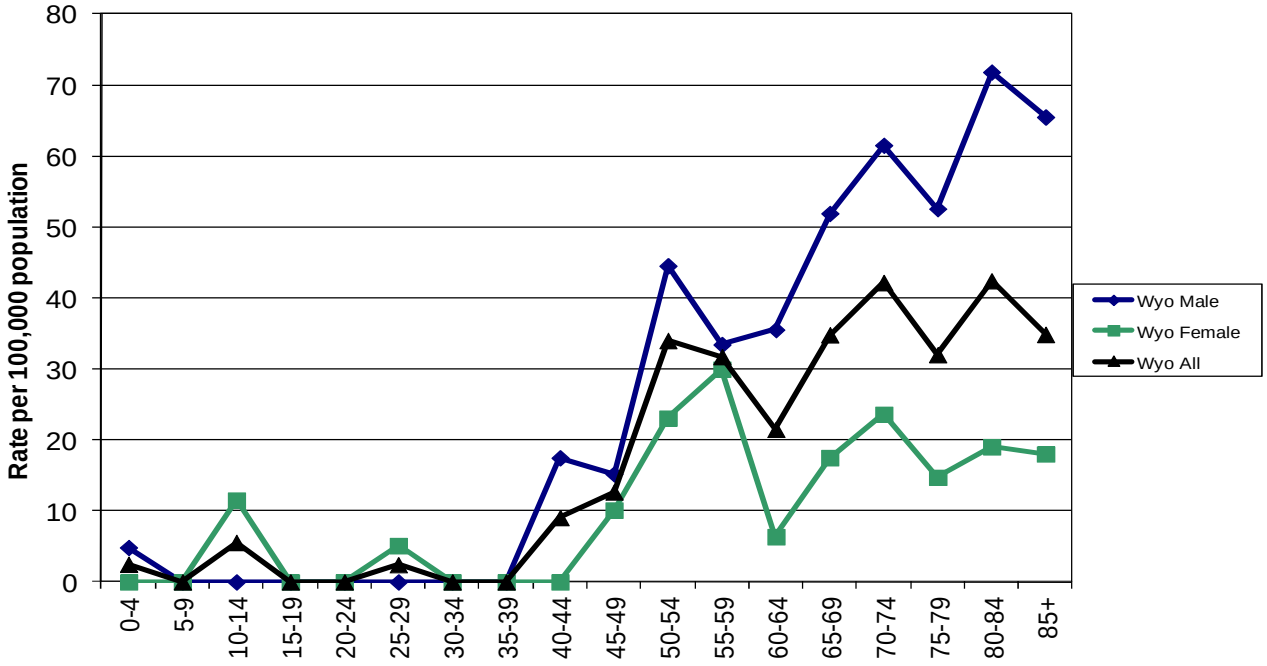
No statistically significant differences were found between the CHD rates and the state rate for incidence or mortality.

12-Year Incidence Trend



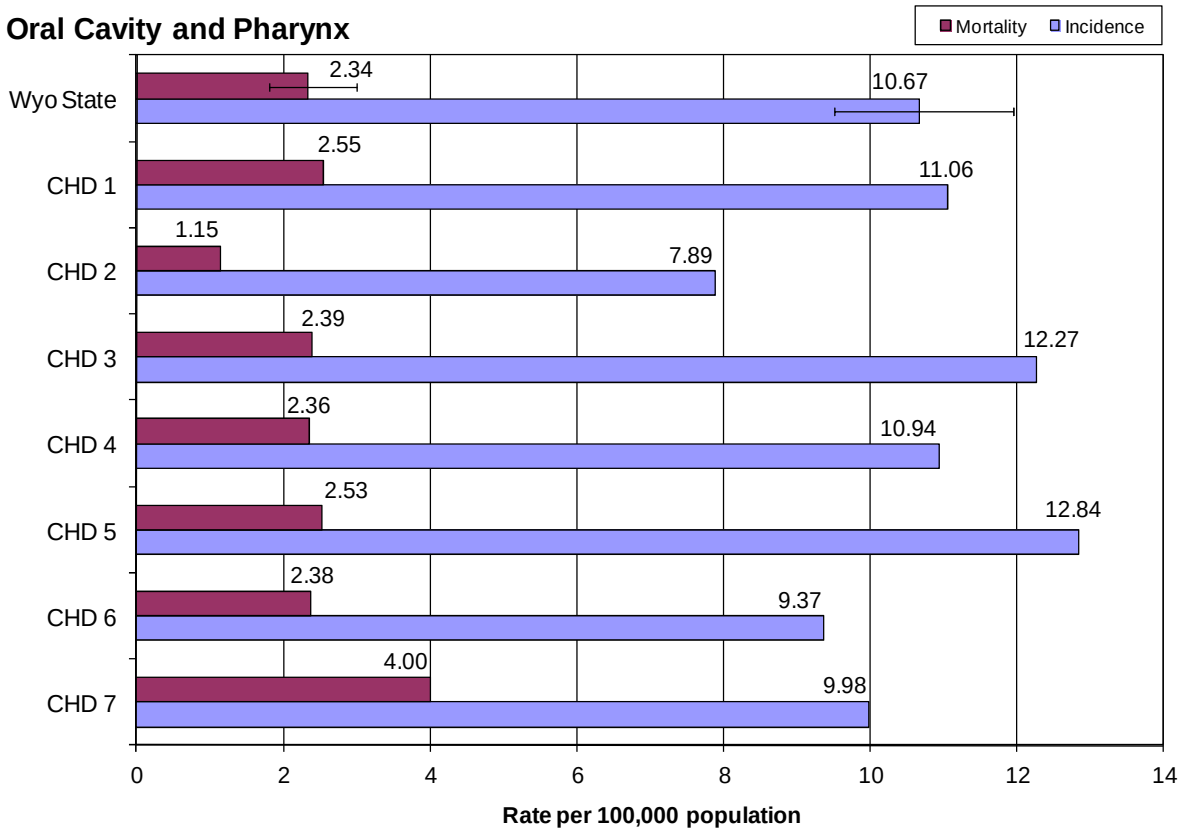
Age-Specific Incidence Rates - 2010

Oral Cavity and Pharynx



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

Oral Cavity and Pharynx



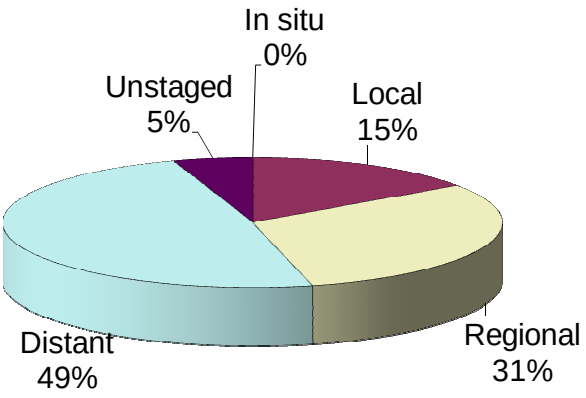
Ovary

Incidence and Mortality Summary

	Female
# Invasive Cases	39
WY Incidence	12.5
US Incidence	12.8
# Cancer Deaths	27
WY Mortality	9.0
US Mortality	8.1

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis



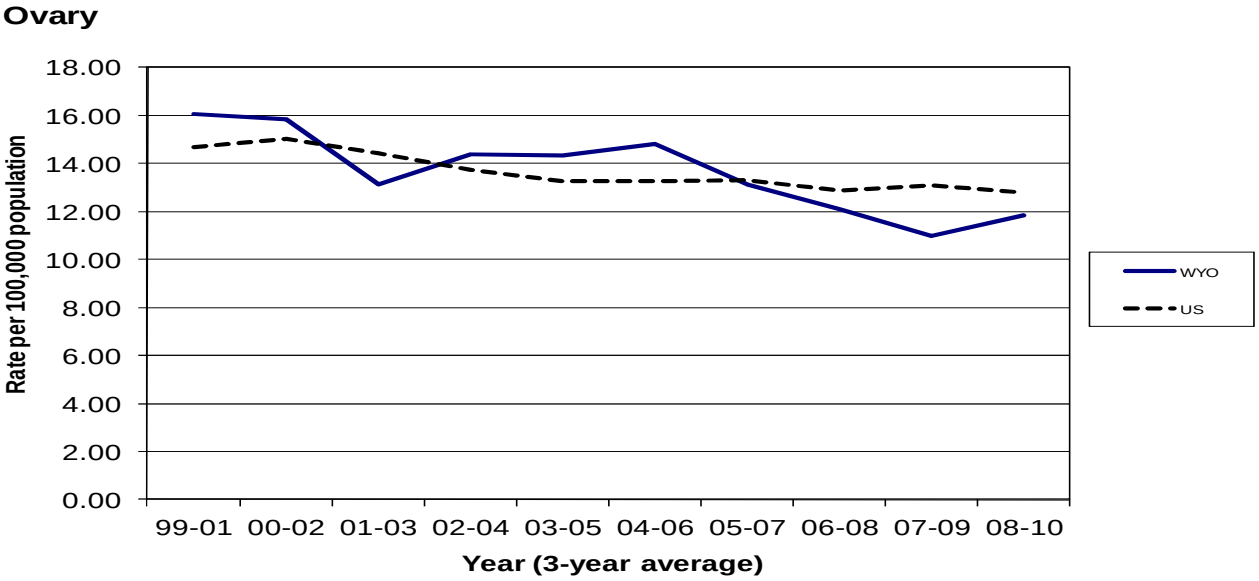
The incidence rate in Wyoming females for ovarian cancer was lower than the national rate. However, the mortality rate was somewhat higher. Neither difference was statistically significant.

The 12-year incidence trend showed an increase in Wyoming from 07-09 to 08-10. The national incidence rate appeared be mostly level.

More cancers of the ovary were diagnosed at the regional and distant stages in 2010 than in 2009 (26% and 44% respectively). Neither change was significant.

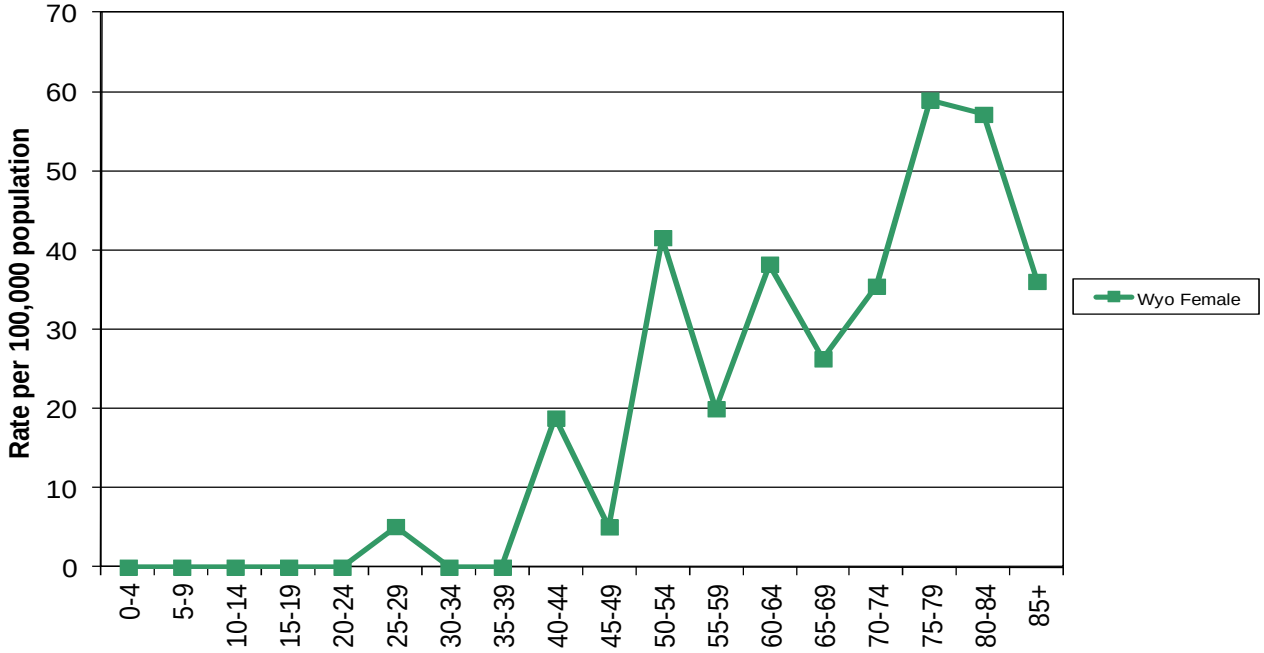
No statistically significant differences were found between the CHD rates and the state rate for incidence or mortality.

12-Year Incidence Trend



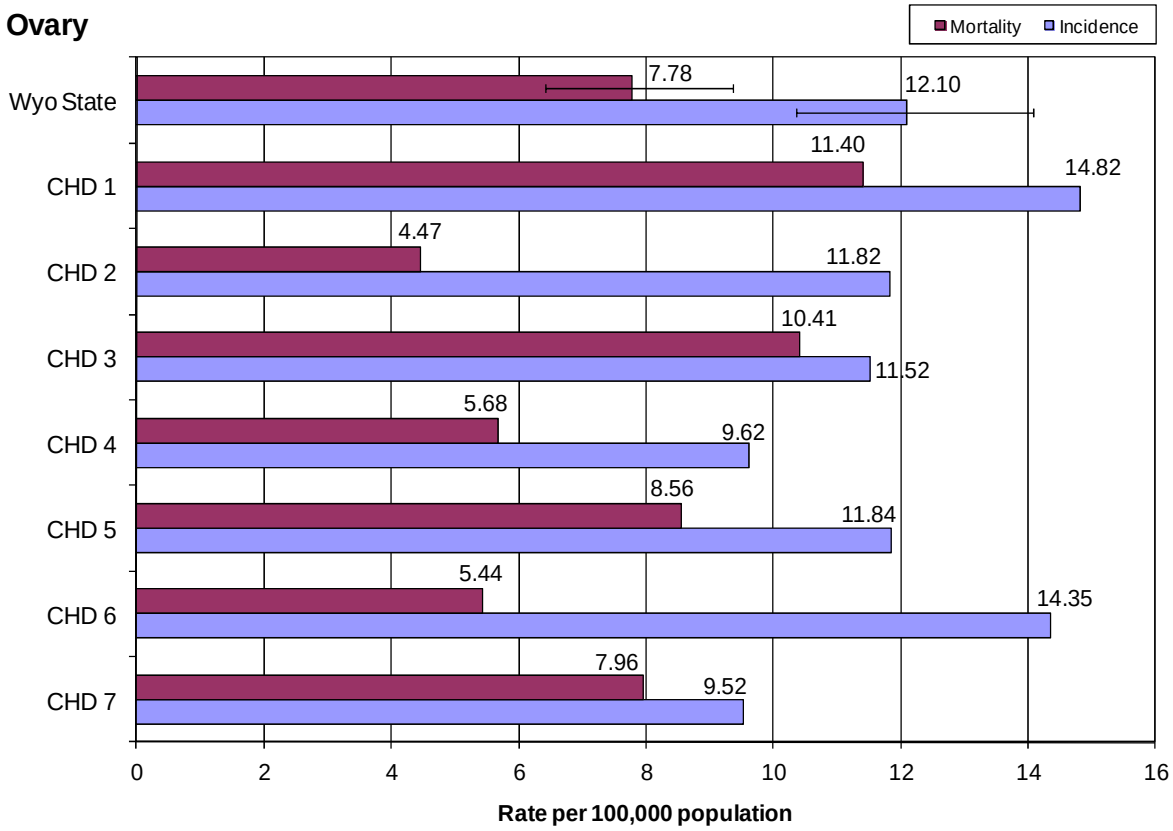
Age-Specific Incidence Rates - 2010

Ovary



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

Ovary



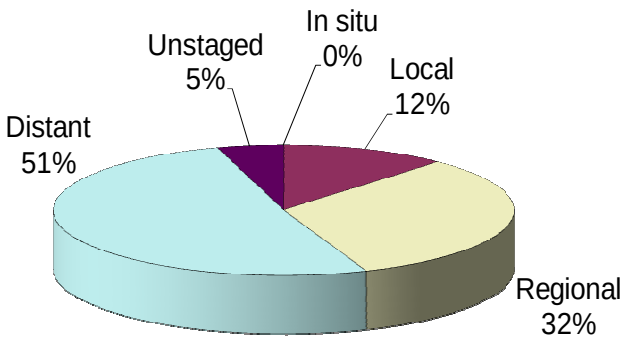
Pancreas

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	18	26	44
WY Incidence	5.4*	8.0	6.8
US Incidence	13.8	10.5	12.0
# Cancer Deaths	41	23	64
WY Mortality	14.2	7.0	10.5
US Mortality	12.4	9.3	10.7

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis



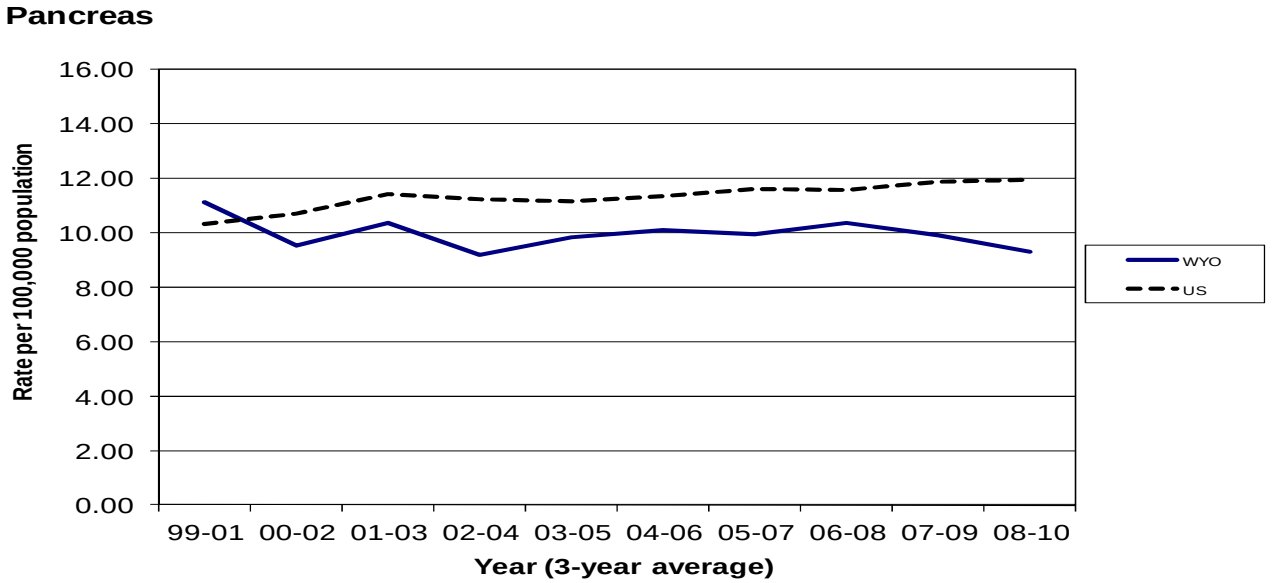
The incidence rates of cancer of the pancreas in Wyoming males, females and the total population were all lower than the national rates, the male rate was significantly lower. The mortality rate for Wyoming males was slightly higher, while female and total population mortality rates were both lower than the national rate.

Wyoming's trend showed a continued decrease from 06-08, while the national rate continued to be increasing to a small extent.

A significantly smaller percent of pancreatic cancers were unstaged in 2010 than in 2009 (12%). All other percentages were similar to 2009.

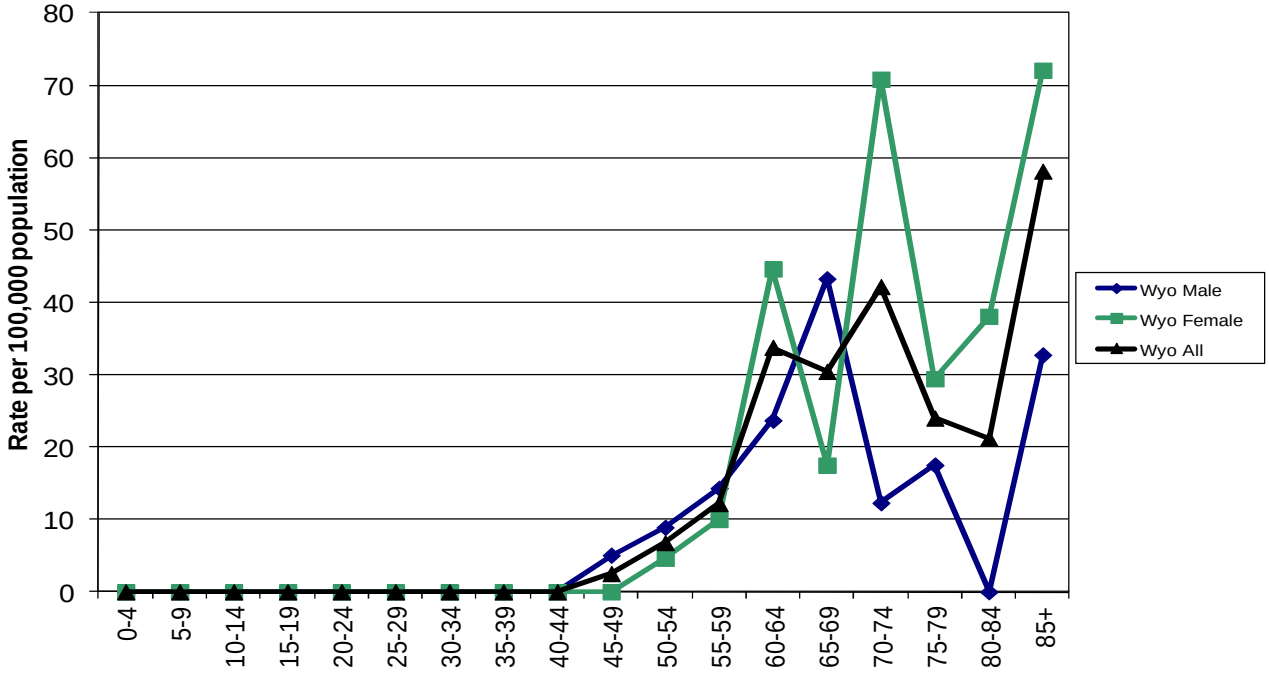
No statistically significant differences were found between the CHD rates and the state rate for incidence or mortality.

12-Year Incidence Trend



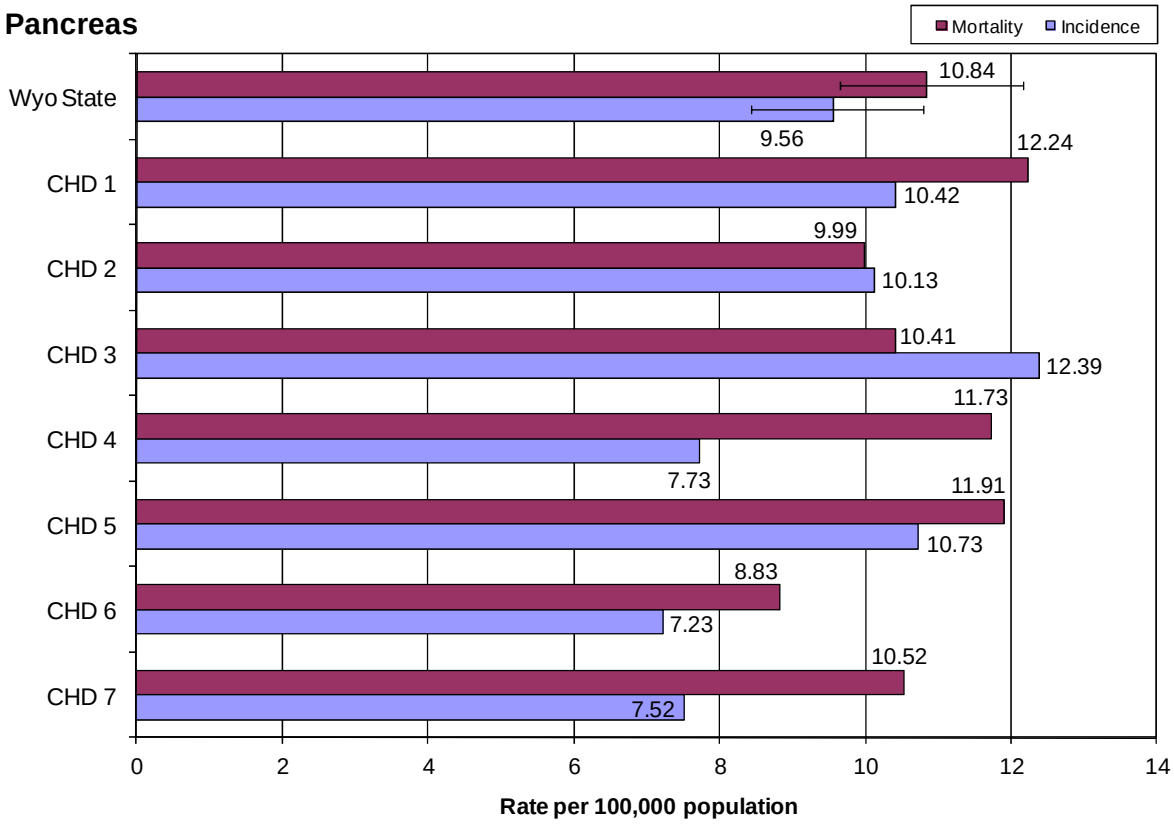
Age-Specific Incidence Rates - 2010

Pancreas



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

Pancreas



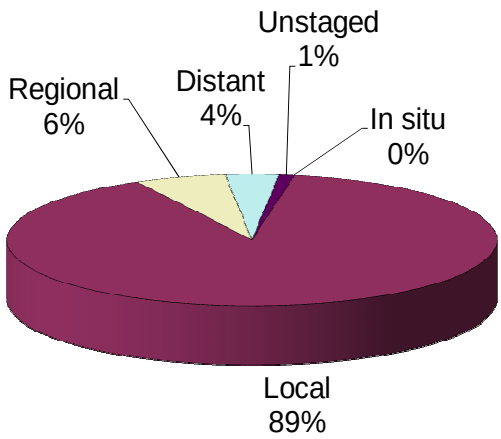
Prostate

Incidence and Mortality Summary

	Male
# Invasive Cases	403
WY Incidence	128.7
US Incidence	134.9
# Cancer Deaths	60
WY Mortality	25.5
US Mortality	20.2

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis



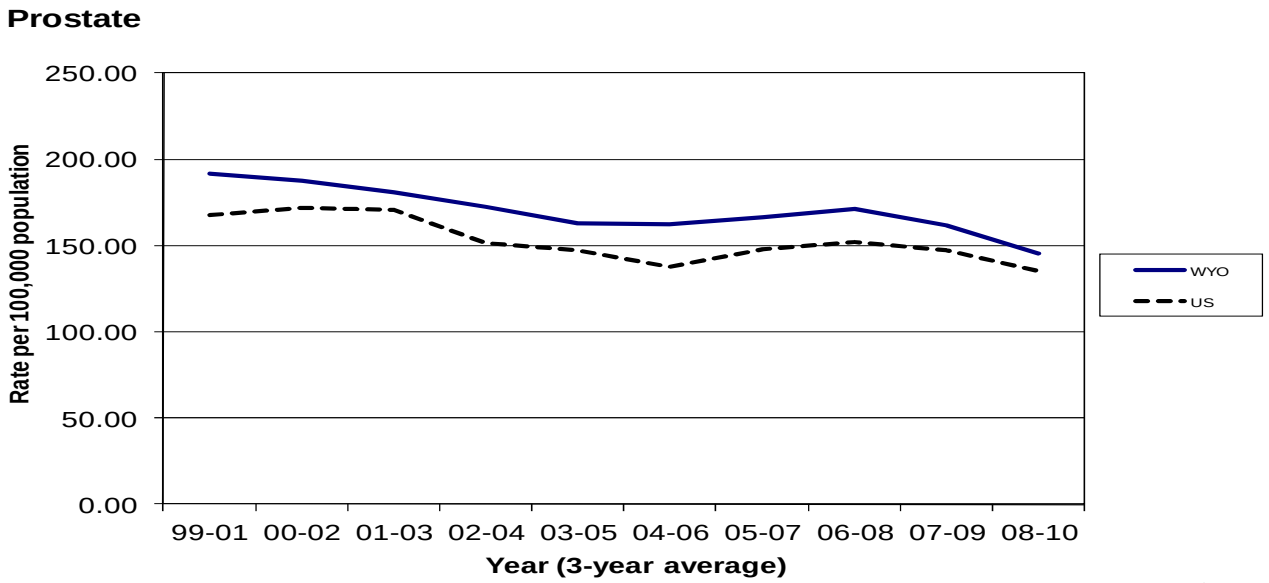
The incidence rate for prostate cancer in Wyoming males was lower than the national rate; however, the mortality rate was slightly higher than the national. Neither difference was statistically significant.

The incidence rate for both Wyoming and the U.S. show a continued decrease from 06-08.

The percent of cases diagnosed at each stage in 2010 were very similar to the percents in 2009.

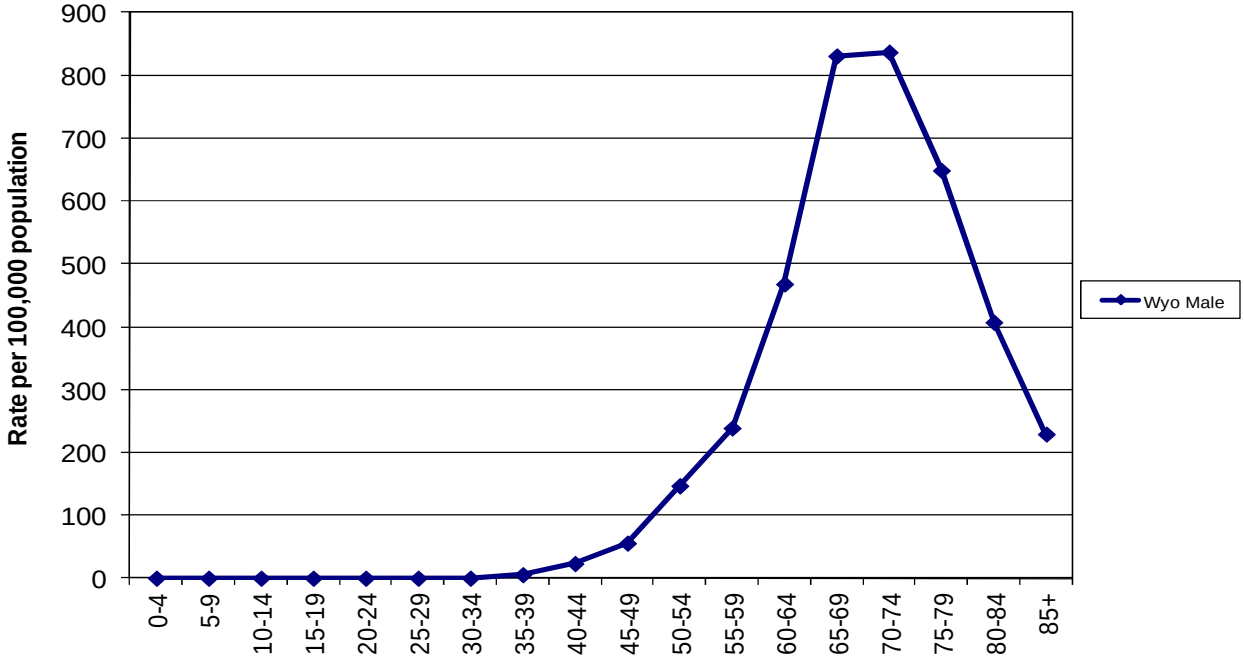
There were no significant differences in incidence or mortality between the state and CHD rates.

12-Year Incidence Trend



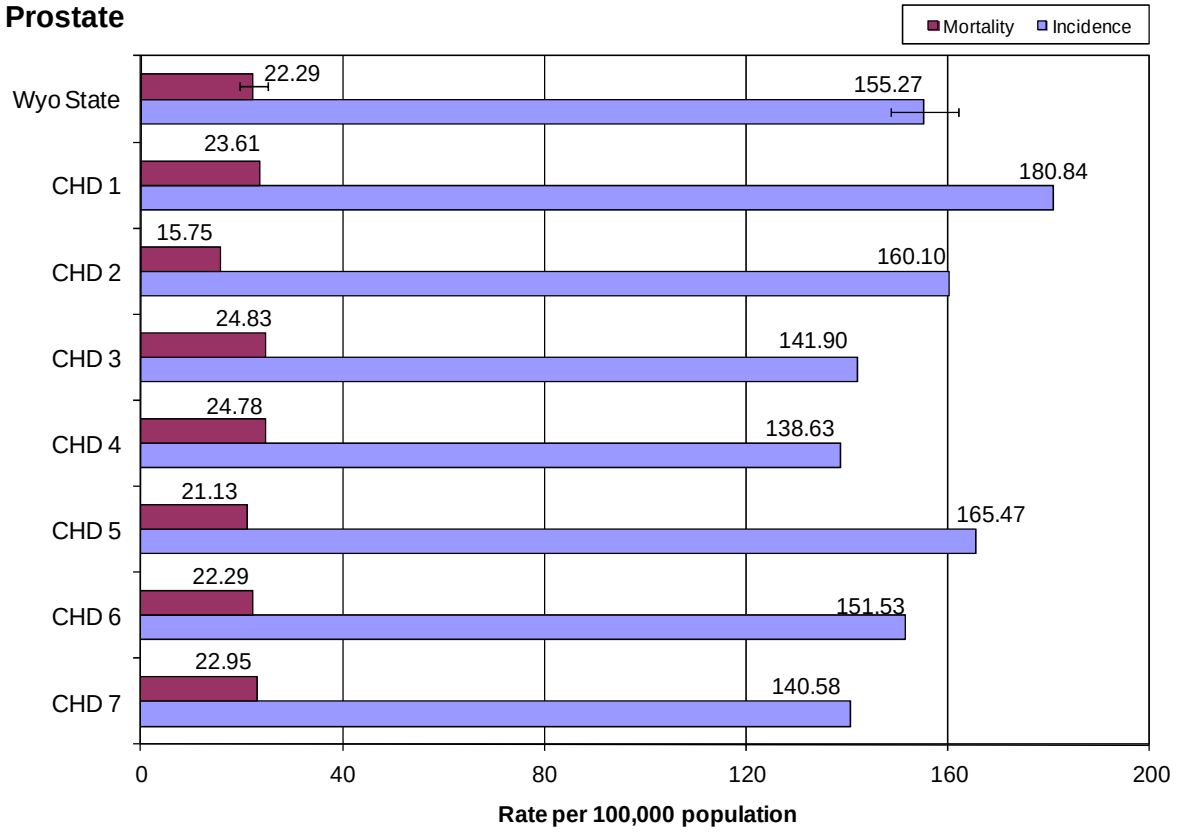
Age-Specific Incidence Rates - 2010

Prostate



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

Prostate



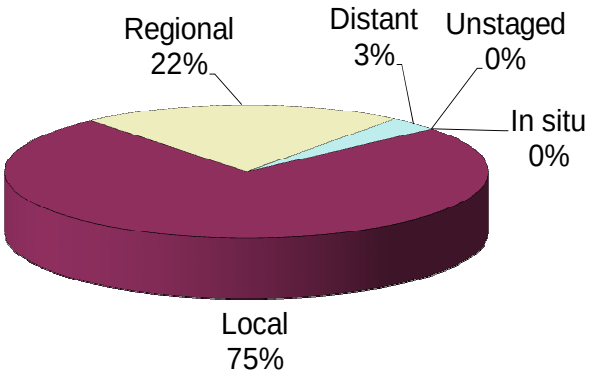
Thyroid

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	21	72	93
WY Incidence	6.4	25.1	15.5
US Incidence	6.8	20.8	13.8
# Cancer Deaths	2	1	3
WY Mortality	N/A	N/A	N/A
US Mortality	0.52	0.49	0.51

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis



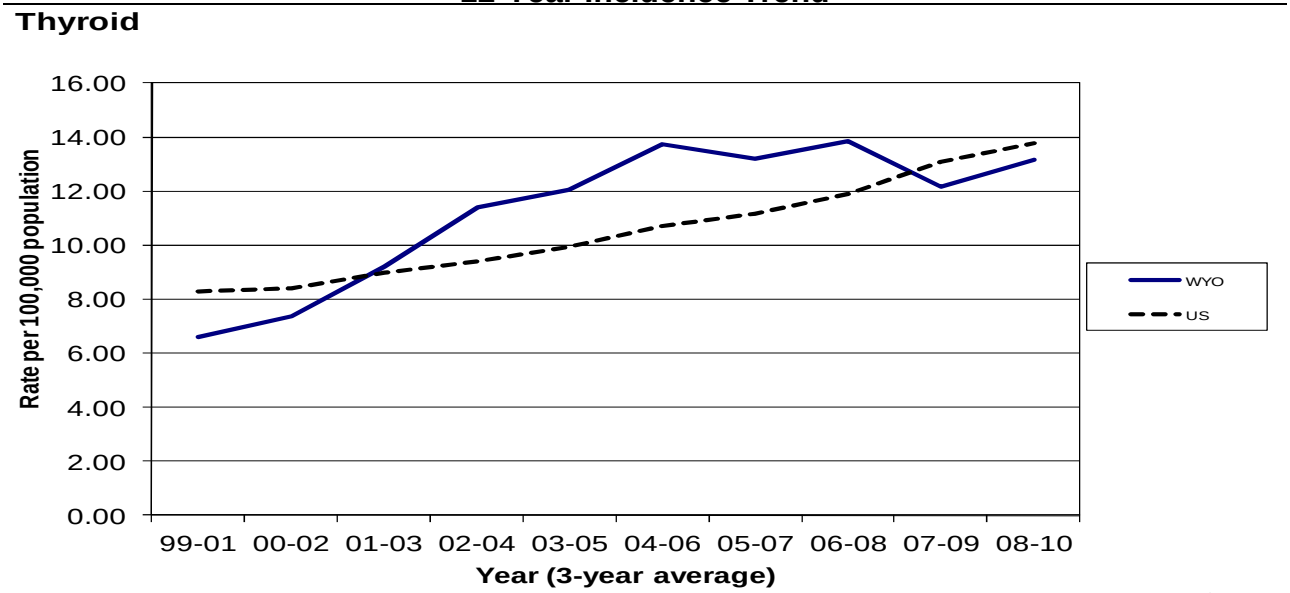
Incidence rates for thyroid cancer in Wyoming males was lower than the national rate. The rates for females and total population were both higher than the national rates. None of the differences were statistically significant. Due to low numbers of deaths, Wyoming mortality rates were not compared to the national rates.

The trend for thyroid cancer in Wyoming showed an increase 07-09. The national rate continued an increasing trend that started in 99-01.

The percentages for each stage was very similar to those seen in 2009.

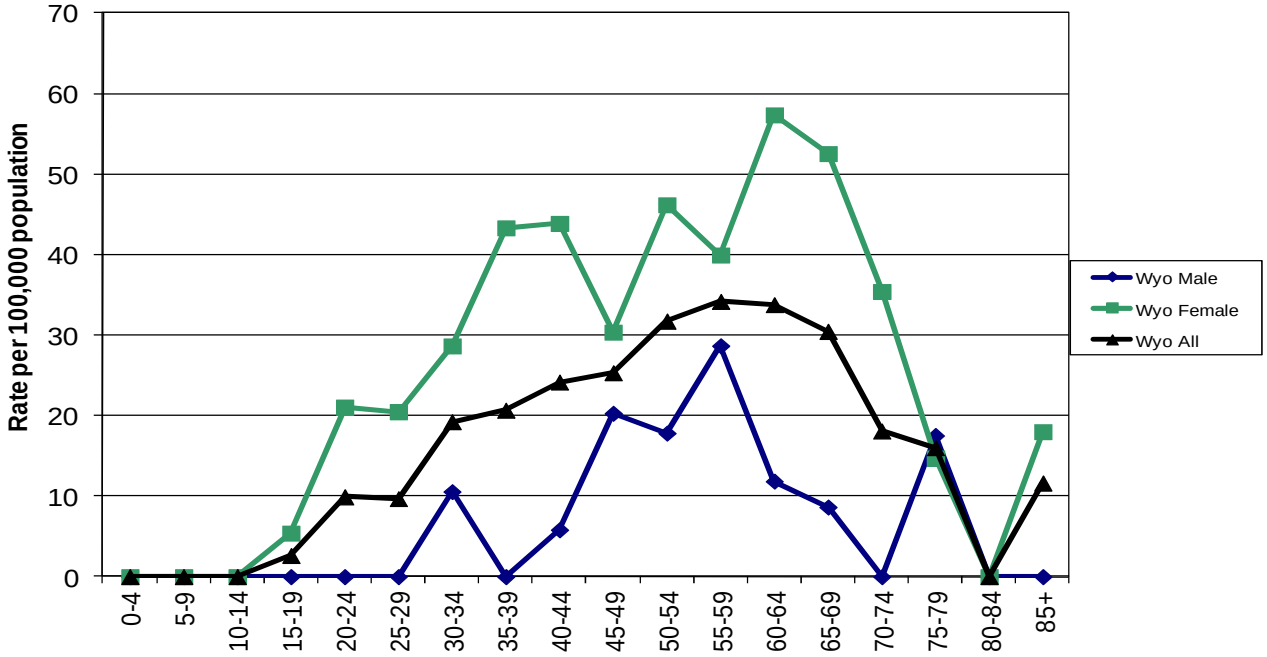
No statistically significant differences were found between the CHD rates and state rate for incidence. No region reported more than 5 deaths due to thyroid cancer from 2006-2010.

12-Year Incidence Trend



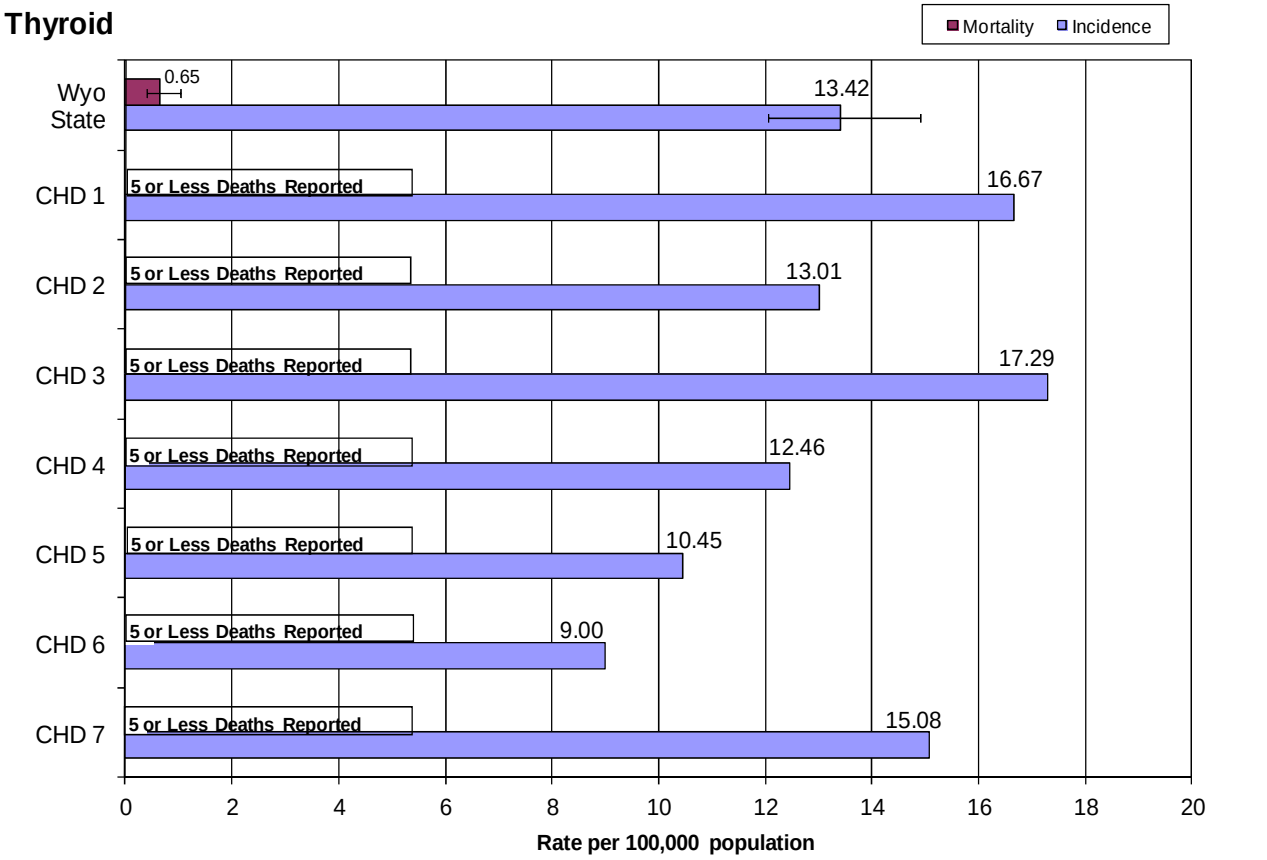
Age-Specific Incidence Rates - 2010

Thyroid



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

Thyroid



Uterine

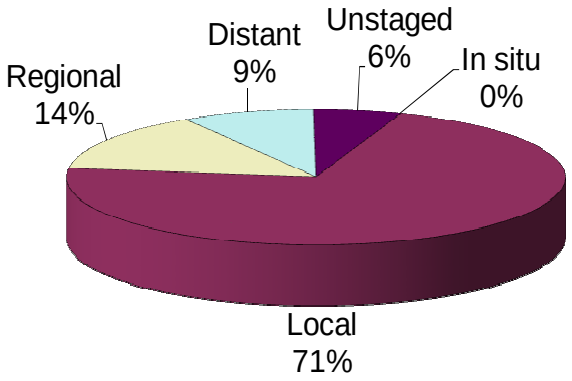
(Corpus Uteri + Uterus)

Incidence and Mortality Summary

	Female
# Invasive Cases	70
WY Incidence	21.5
US Incidence	25.5
# Cancer Deaths	11
WY Mortality	3.4
US Mortality	3.9

* indicates the state rate is significantly different than the national rate
NC = rate not calculated for under 5 cases/deaths

Stage at Diagnosis



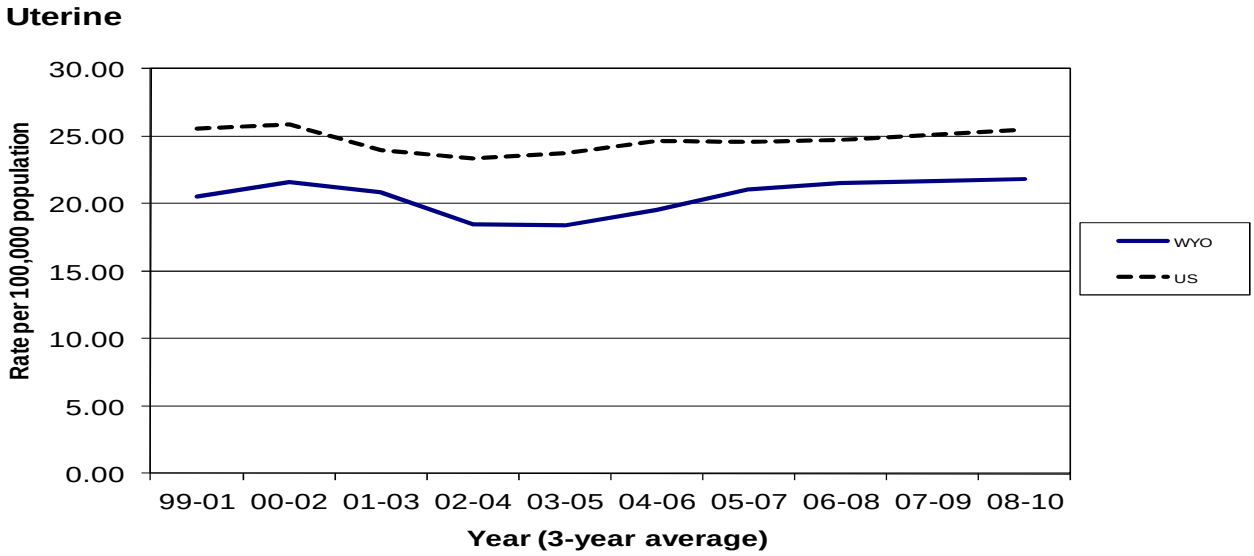
The incidence and mortality rates in Wyoming females for uterine cancer were both lower than the national rates, though not significantly.

The Wyoming and national incidence rates remained relatively level in 08-10.

Significantly fewer cases were diagnosed as regional in 2010 than in 2009 (29%). There were no other significant differences in the percentages diagnosed from 2009.

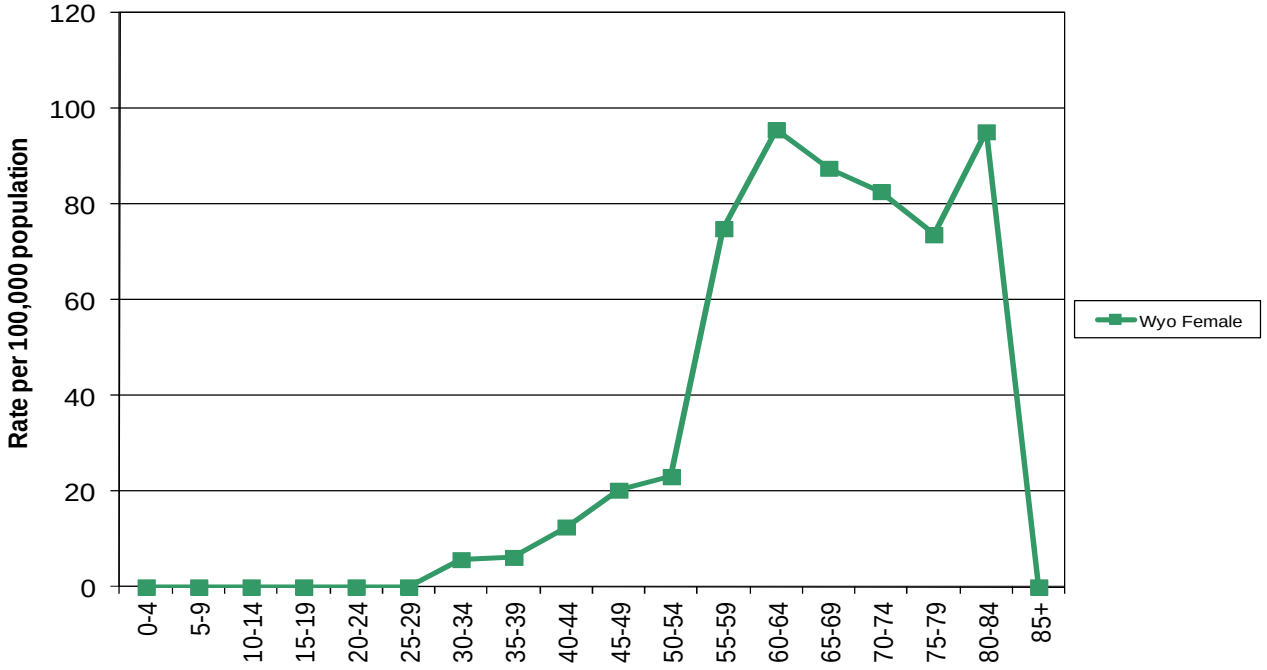
No statistically significant differences were found between the CHD rates and the state rate for incidence or mortality.

12-Year Incidence Trend



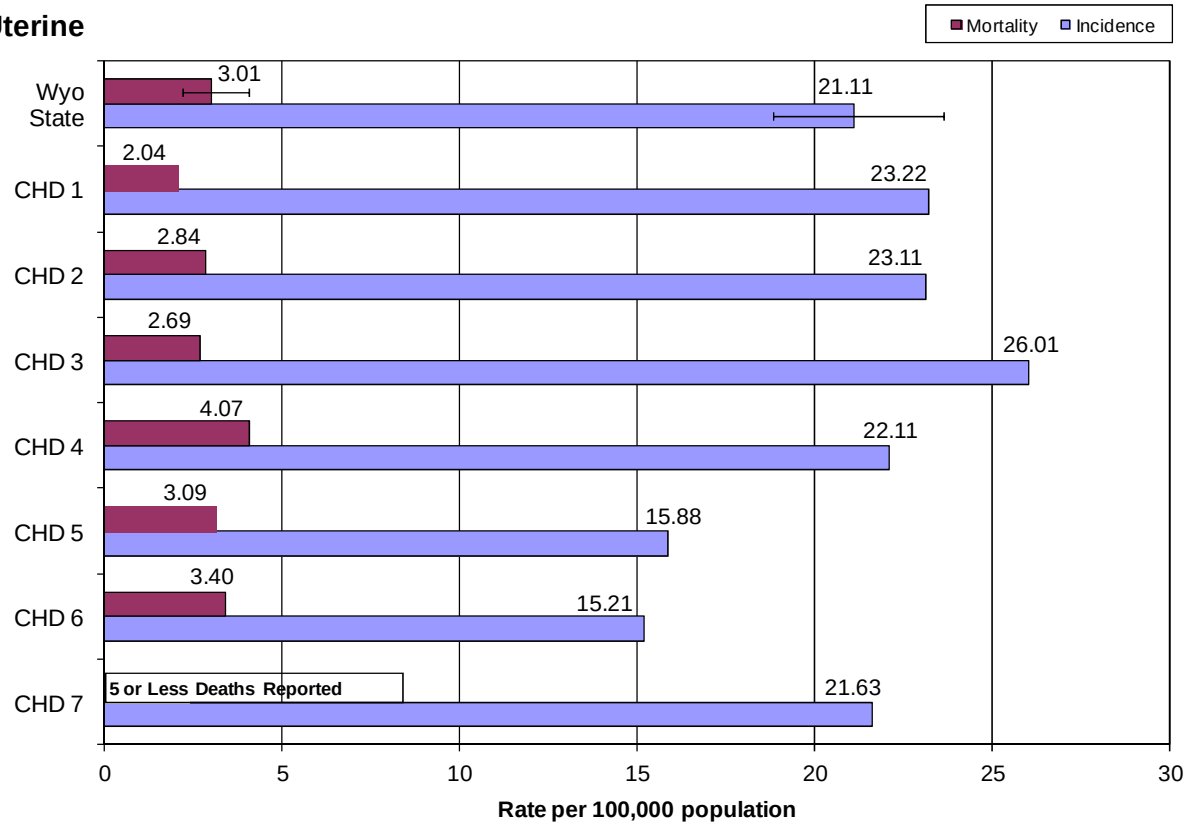
Age-Specific Incidence Rates - 2010

Uterine



Cancer Health District Incidence and Mortality
5-Year Average, 2006-2010

Uterine



Appendix A

References

Centers for Disease Control and Prevention. CDC Wonder. (http://www.cdc.gov)

Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Incidence - SEER 18 Regs Research Data + Hurricane Katrina Impacted Louisiana Cases, Nov 2011 Sub, Vintage 2009 Pops (2000-2009) <Katrina/Rita Population Adjustment> Linked To County Attributes - Total U.S., 1969-2010 Counties, National Cancer Institute, DCCPS, Surveillance Research Program, Cancer Statistics Branch, released April 2012, based on the November 2011 submission.

Wyoming Department of Administration and Information, Economic Analysis Division. Wyoming State and County Population. (http://eadiv.state.wy.us/eahome.htm)

Wyoming Vital Statistics Service, Wyoming Department of Health - (http://www.health.wyo.gov/rfhd/vital_records/index.html) (*Note: These data were supplied by the Vital Statistics Services, Wyoming Department of Health, Cheyenne, Wyoming. The Wyoming Vital Statistics Services was not involved in any analyses, interpretations, or conclusions).*

Age-Adjustment

Previous to data year 1999, the Wyoming Cancer Surveillance Program (WCSP) performed age-adjustment of cancer mortality rates using the 1940 standard population and a 10-year age group, or the 1970 standard population using 5-year age groups. Starting with the data year 1999, WCSP began using the Year 2000 standard population with 5-year age groups to calculate cancer mortality and cancer incidence rates.

The decision to use 5-year age groups was made to keep WCSP data calculations "in-line" with the national cancer reports published through SEER and the National Cancer Institute. The 5-year age group also enables cancer prevention programs to use Wyoming reports (e.g., Vital Records) as printed versus requesting specially calculated rates.

"Age-adjusted rates should be used for comparative purposes only and should not be interpreted as the absolute risk of the disease or death." As can be seen in Chart A (below) and Chart B, (following page), the change in standard population affects the magnitude of the age-adjusted rates but not the trends of the rates. In general, the age-adjusted rate is only appropri-

Chart A:

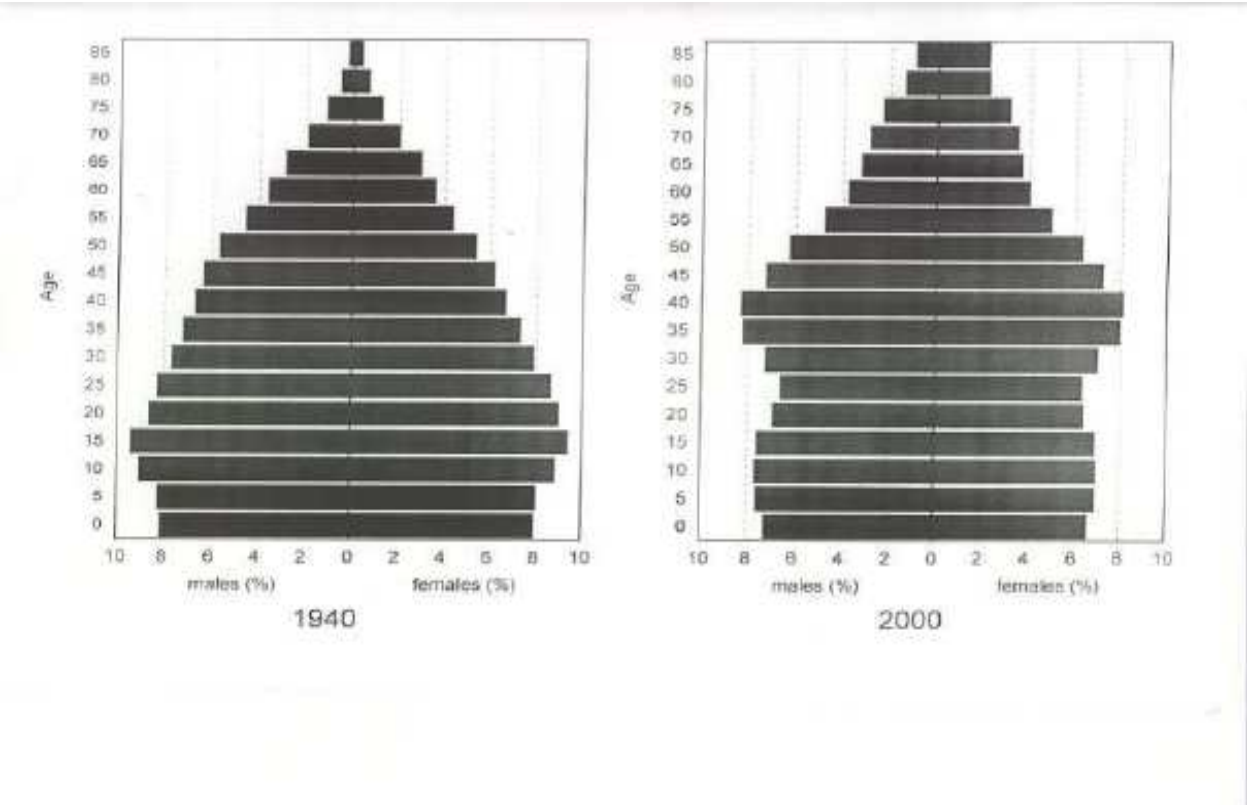
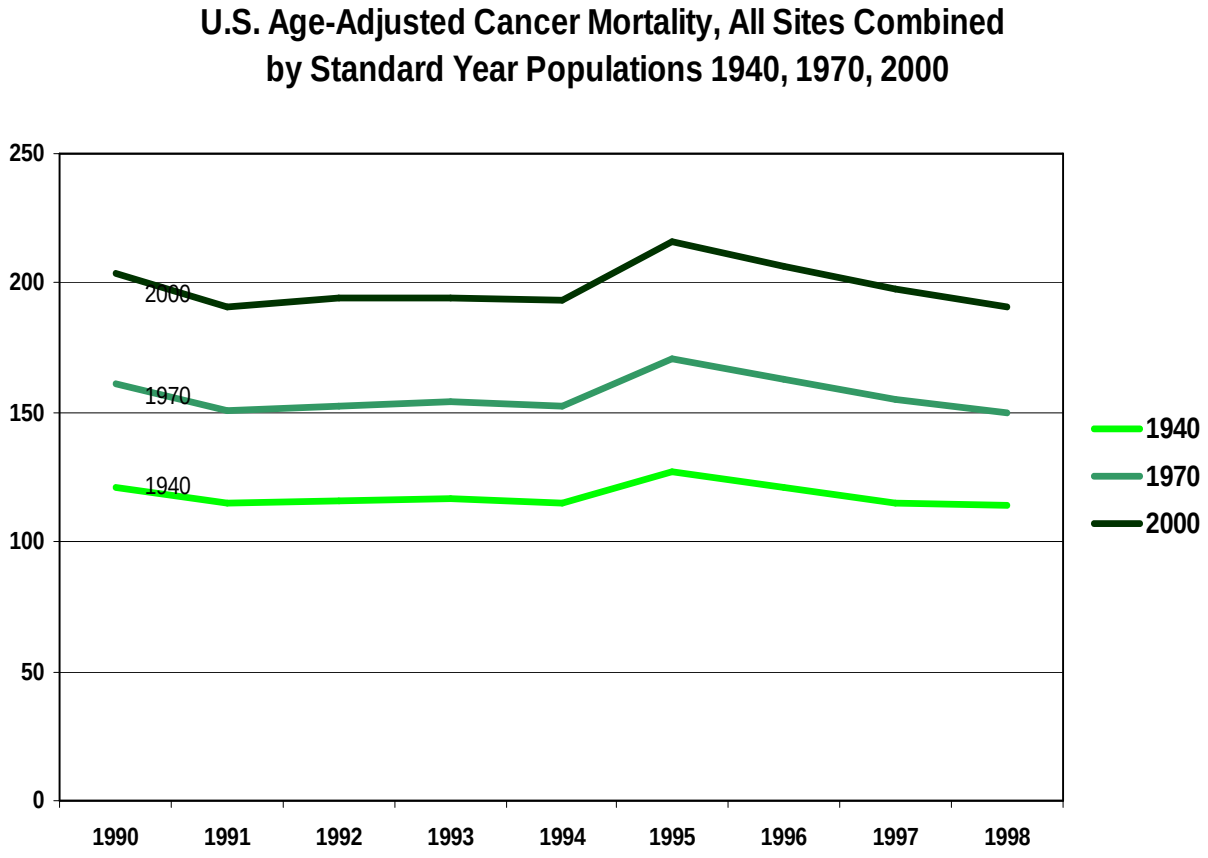


Chart B:


U.S. Age-Adjusted Cancer Mortality, All Sites Combined
by Standard Year Populations 1940, 1970, 2000
250
200
150
100
50
0
2000
1970
1940
1990
1991
1992
1993
1994
1995
1996
1997
1998
1940
1970
2000