

State of Wyoming



Department of Health

Annual Report on Cancer in Wyoming - 2009

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Executive Summary

Cancer rates (incidence and mortality) in Wyoming continue to be lower than the comparable national rates. The incidence rate for all cancer sites combined for Wyoming in 2009 was exactly the same as the rate in 2008 (439.8 per 100,000 population). The 2009 mortality rate for all cancer sites in Wyoming males (178.0/100,000) was significantly lower than the national rate (213.3/100,000), and while the mortality rates for females and total population were both somewhat higher than the national mortality rates they were not statistically significant.

Looking at the incidence rates over a twelve year period (12 year Incidence graphs), a few rates seems to be holding steady (all sites, female breast, non-Hodgkin, and uterine). Other few other rates are trending upward (bladder, brain, lung, and melanoma), while the rest are trending downward (colorectal, kidney, leukemia, oral cavity, ovary, pancreas, prostate, and thyroid)

The top five cancer sites for incidence were the same as 2008: prostate, female breast, lung/bronchus, colorectal and urinary bladder. The most common cancer for incidence by age groups were: leukemia (0-14 years), Hodgkin lymphoma (15-24), testis (25-34 years), melanoma (35-39 years), colorectal (40-44 years), breast (45-54 years), prostate (55-69), and bladder (70-85+ years).

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

Finally, we have added a table concerning cancer survival rates to this and all future reports (see page 34). In general, the 5-year (60 months) survival rate in all Wyoming cancer patients is quite good at 68.30%. Of course some cancers have a better survival rates (e.g., prostate = 99.20%) than others (pancreas = 2.90%). Additionally, children/adolescents (00-19 years) have an even better 5-year overall survival rate (82.70%) than adults (68.30%).

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 Central 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, 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 Department of Health also 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 Early Detection Program. Outside of the Department of Health, 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 2009 cancer cases of Wyoming residents received by WCSP as of June 1, 2011.

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 2008 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 2009 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 2008 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 2009 are estimates for the July 1, 2009 county populations by age, gender, 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 2009 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

<u>In Situ</u>	cancer has not invaded the organ.
<u>Local Stage</u>	cancer has invaded the organ of origin.
<u>Regional Stage</u>	cancer has invaded beyond the organ of origin by direct extension to adjacent organs/tissues and/or regional lymph nodes.
<u>Distant Stage</u>	direct extension beyond adjacent organs or tissues or metastases to distant site(s) or distant lymph nodes.
<u>Unstaged</u>	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 (CHD) 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 CHD's that were similar in population size thereby eliminating some of the discrepancies in rate calculations that are caused from population size differences. CHD's 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

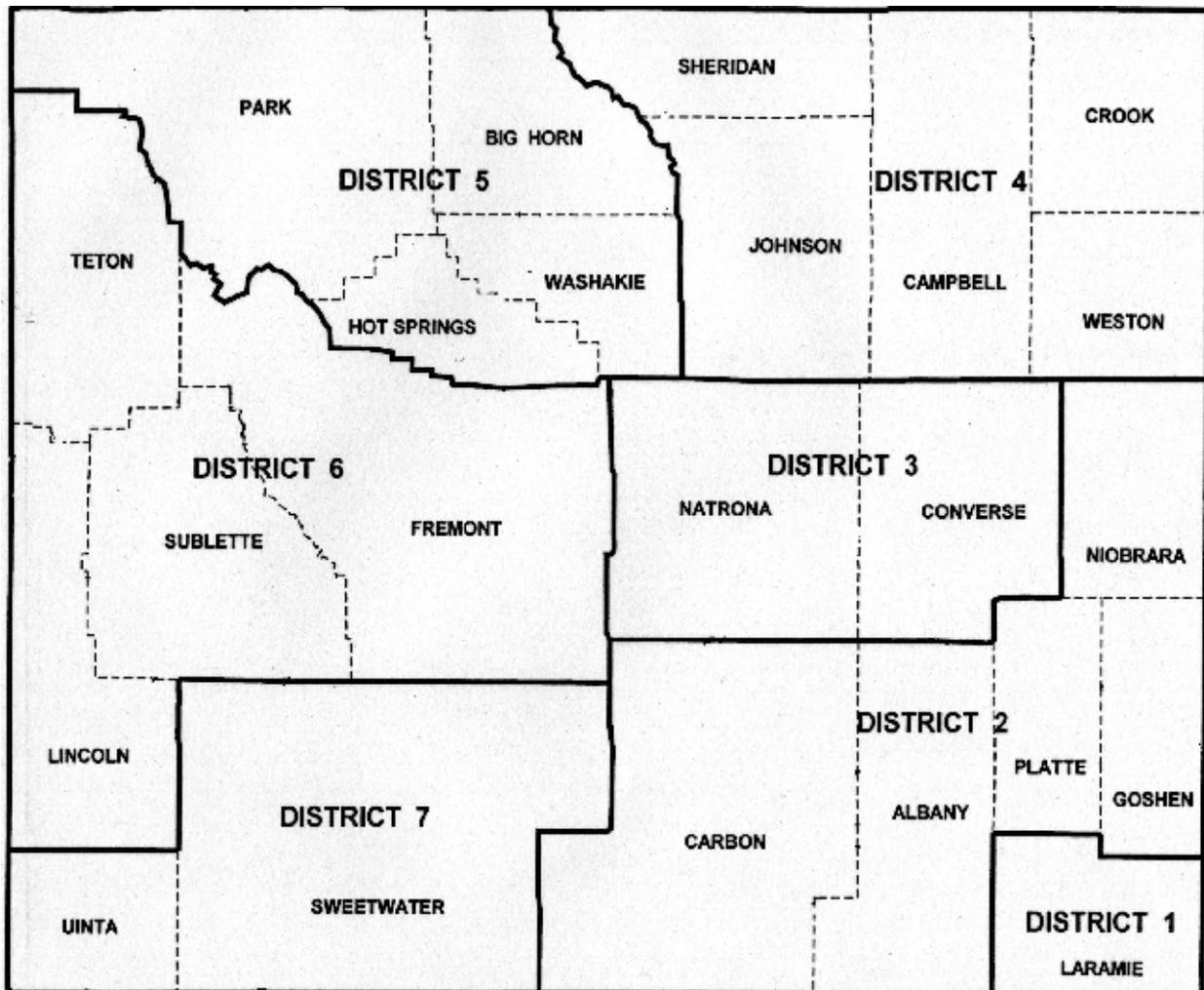
CHD 3 Converse County, Natrona County

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 - 2009

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

Wyoming Incidence¹ for 2009: 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	3	6	9	0	0	0	0	0	0	0
Bladder w/ in situ	112	35	147	0	1	0	0	0	1	1
Bones and Joints	6	6	12	0	0	0	2	1	0	1
Brain	26	19	45	1	0	0	0	0	2	2
Breast	2	335	337	0	0	0	0	0	0	2
Cervix	0	24	24	0	0	0	0	1	0	2
Colorectal	123	111	234	0	0	0	0	0	1	2
Esophagus	23	8	31	0	0	0	0	0	0	0
Eye	4	2	6	0	0	0	0	0	0	0
Gallbladder	2	3	5	0	0	0	0	0	0	1
Hodgkin	7	9	16	0	0	0	2	3	0	1
Ill-Defined	38	50	88	0	0	0	0	0	0	1
Kidney	53	21	74	1	0	0	0	0	0	1
Larynx	15	7	22	0	0	0	0	0	0	0
Leukemia	40	28	68	3	2	4	1	0	1	1
Liver	19	7	26	1	0	0	0	1	0	0
Lung	175	130	305	0	0	0	0	0	0	1
Melanoma	73	43	116	1	0	0	2	1	3	4
Myeloma	22	9	31	0	0	0	0	0	0	0
Nose	3	0	3	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	40	61	101	0	0	1	1	0	1	0
Oral Cavity	37	14	51	0	0	0	0	0	0	0
Other Biliary	8	3	11	0	0	0	0	0	0	0
Other Digestive	2	5	7	1	0	0	0	0	0	0
Other Endocrine	2	0	2	0	0	0	0	0	0	0
Other Female	0	10	10	0	0	0	0	0	0	0
Other Male	3	0	3	0	0	0	0	0	0	0
Other Skin	2	4	6	0	0	0	0	0	0	0
Other Respiratory	1	1	2	0	0	0	0	0	1	0
Other Urinary	1	2	3	0	0	0	0	0	0	0
Ovary	0	34	34	0	0	0	0	0	0	0
Pancreas	32	28	60	0	0	0	0	0	0	0
Prostate	425	0	425	0	0	0	0	0	0	0
Small Intestine	6	8	14	0	0	0	0	0	0	0
Soft Tissue including Heart	10	8	18	0	0	0	1	0	1	0
Stomach	16	8	24	0	0	0	0	0	1	0
Testis	15	0	15	0	0	0	0	0	4	5
Thyroid	18	40	58	0	0	0	1	0	4	3
Uterine	0	69	69	0	0	0	0	0	0	0
Mesothelioma	5	1	6	0	0	0	0	0	0	0
All Sites	1,369	1,149	2,518	8	3	5	10	7	20	28

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	0	3	1	2	0	1	0	1	1
Bladder w/ in situ	6	7	16	28	54	66	78	88	92	75	46
Bones and Joints	1	1	0	1	0	1	1	2	1	0	0
Brain	5	1	4	7	4	5	3	4	6	1	0
Breast	6	9	37	44	53	42	45	31	29	27	12
Cervix	2	2	2	5	2	2	4	1	0	0	1
Colorectal	1	10	11	22	20	29	40	24	28	23	23
Esophagus	0	1	0	4	2	5	4	7	5	0	3
Eye	0	0	0	1	0	1	2	2	0	0	0
Gallbladder	0	0	0	0	0	2	0	2	0	0	0
Hodgkin	1	0	2	1	1	0	0	2	2	0	1
Ill-Defined	1	1	7	9	6	11	10	10	8	9	15
Kidney	2	1	4	14	7	8	10	9	9	5	3
Larynx	0	1	2	0	5	5	1	2	4	2	0
Leukemia	1	2	2	6	2	3	6	12	10	7	5
Liver	0	0	1	5	6	2	2	2	2	1	3
Lung	1	2	9	20	28	35	57	45	39	49	19
Melanoma	9	6	9	10	18	11	12	8	6	10	6
Myeloma	0	2	0	4	2	0	4	8	2	7	2
Nose	0	0	1	0	0	0	0	0	2	0	0
Non-Hodgkin Lymphoma	3	3	5	13	16	11	12	10	10	9	6
Oral Cavity	1	1	5	3	7	7	7	6	7	2	5
Other Biliary	0	0	0	0	2	1	4	2	0	2	0
Other Digestive	0	0	0	2	0	0	2	0	1	1	0
Other Endocrine	0	0	0	0	1	0	0	0	1	0	0
Other Female	0	0	1	3	2	1	2	0	1	0	0
Other Male	0	0	0	0	1	1	0	0	1	0	0
Other Skin	0	0	0	1	1	0	1	0	2	0	1
Other Respiratory	0	0	0	0	0	1	0	0	0	0	0
Other Urinary	0	0	0	0	0	0	0	1	0	2	0
Ovary	2	2	3	4	5	3	8	2	4	1	0
Pancreas	0	1	4	5	9	4	4	6	14	6	7
Prostate	0	0	8	37	70	67	83	71	48	27	14
Small Intestine	1	0	0	2	2	2	1	3	0	1	2
Soft Tissue including Heart	0	0	2	4	2	1	3	0	2	1	1
Stomach	1	0	0	1	3	2	5	3	2	4	2
Testis	2	3	1	0	0	0	0	0	0	0	0
Thyroid	6	6	7	9	4	10	4	3	0	1	0
Uterine	1	1	6	14	18	6	8	5	7	2	1
Mesothelioma	0	0	0	1	0	0	1	1	1	1	1
All Sites	53	63	149	283	354	347	424	373	346	277	180

Wyoming Mortality¹ for 2009: 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	1	1	2	0	0	0	0	0	0	0
Bladder w/ in situ	15	7	22	0	0	0	0	0	0	0
Bones and Joints	3	1	4	0	0	0	0	0	0	0
Brain	15	14	29	0	1	0	0	0	0	0
Breast	1	68	69	0	0	0	0	0	0	0
Cervix	0	8	8	0	0	0	0	0	0	0
Colorectal	43	33	76	0	0	0	0	0	0	0
Esophagus	18	8	26	0	0	0	0	0	0	0
Eye	0	0	0	0	0	0	0	0	0	0
Gallbladder	0	0	0	0	0	0	0	0	0	0
Hodgkin	1	0	1	0	0	0	0	0	0	0
Ill-Defined	43	40	83	0	0	0	0	0	0	0
Kidney	18	4	22	0	0	0	0	0	0	0
Larynx	2	0	2	0	0	0	0	0	0	0
Leukemia	29	21	50	0	0	0	0	0	1	1
Liver	16	6	22	0	0	0	0	0	1	0
Lung	137	101	238	0	0	0	0	0	0	0
Melanoma	12	7	19	1	0	0	0	0	1	0
Myeloma	12	4	16	0	0	0	0	0	0	0
Nose	1	0	1	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	14	20	34	0	0	0	0	0	0	0
Oral Cavity	8	5	13	0	0	0	0	0	0	0
Other Biliary	9	3	12	0	0	0	0	0	0	0
Other Digestive	0	3	3	0	0	0	0	0	0	0
Other Endocrine	1	1	2	0	0	0	0	0	0	0
Other Female	0	3	3	0	0	0	0	0	0	0
Other Male	1	0	1	0	0	0	0	0	0	0
Other Skin	2	2	4	0	0	0	0	0	0	0
Other Respiratory	0	1	1	0	0	0	0	0	0	0
Other Urinary	2	0	2	0	0	0	0	0	0	0
Ovary	0	25	25	0	0	0	0	0	0	1
Pancreas	35	23	58	0	0	0	0	0	0	0
Prostate	38	0	38	0	0	0	0	0	0	0
Small Intestine	0	0	0	0	0	0	0	0	0	0
Soft Tissue including Heart	6	4	10	0	0	0	0	0	0	1
Stomach	8	4	12	0	0	0	0	0	1	0
Testis	0	0	0	0	0	0	0	0	0	0
Thyroid	0	2	2	0	0	0	0	0	0	0
Uterine	0	7	7	0	0	0	0	0	0	0
Mesothelioma	2	3	5	0	0	0	0	0	0	0
All Sites	493	429	922	1	1	0	0	0	4	3

¹See 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	1	0	1	0
Bladder w/ in situ	0	0	0	3	0	0	4	1	8	2	4
Bones and Joints	0	0	1	1	0	0	1	0	0	0	1
Brain	0	3	3	3	4	4	3	3	3	1	1
Breast	0	1	2	8	16	6	5	4	6	7	14
Cervix	1	1	0	2	0	0	3	1	0	0	0
Colorectal	0	0	1	8	4	6	13	12	13	7	12
Esophagus	0	0	0	0	2	2	5	3	7	4	3
Eye	0	0	0	0	0	0	0	0	0	0	0
Gallbladder	0	0	0	0	0	0	0	0	0	0	0
Hodgkin	0	0	0	0	0	0	0	0	1	0	0
III-Defined	0	0	3	4	5	6	12	13	8	15	17
Kidney	0	0	0	0	1	7	3	2	2	5	2
Larynx	0	0	0	0	0	1	0	0	1	0	0
Leukemia	0	0	0	2	0	3	5	8	7	7	16
Liver	0	0	1	3	2	1	3	0	4	2	5
Lung	0	2	3	12	17	25	48	31	39	38	23
Melanoma	0	0	0	2	3	1	2	0	2	4	3
Myeloma	1	0	0	2	1	2	1	1	2	5	1
Nose	0	0	0	0	0	0	0	0	1	0	0
Non-Hodgkin Lymphoma	0	0	0	2	2	2	8	3	5	5	7
Oral Cavity	0	0	0	1	2	0	0	0	7	3	0
Other Biliary	0	0	0	1	0	1	2	3	1	2	2
Other Digestive	0	0	0	0	1	0	1	0	0	0	1
Other Endocrine	0	0	0	0	0	1	0	0	1	0	0
Other Female	0	0	0	1	0	0	0	1	0	0	1
Other Male	0	0	0	0	0	0	0	0	1	0	0
Other Skin	0	0	0	0	1	0	0	1	0	1	1
Other Respiratory	0	0	0	1	0	0	0	0	0	0	0
Other Urinary	0	0	0	0	0	0	0	0	0	1	1
Ovary	0	0	1	2	4	5	1	6	2	3	0
Pancreas	0	0	2	0	7	6	4	3	10	13	13
Prostate	0	0	1	0	3	0	2	5	6	11	10
Small Intestine	0	0	0	0	0	0	0	0	0	0	0
Soft Tissue including Heart	1	0	1	1	1	1	2	0	1	0	1
Stomach	1	0	0	0	1	0	1	4	1	1	2
Testis	0	0	0	0	0	0	0	0	0	0	0
Thyroid	0	0	0	0	0	1	0	0	0	0	1
Uterine	0	1	0	0	0	1	0	0	3	1	1
Mesothelioma	0	0	0	0	0	1	1	1	1	1	0
All Sites	4	8	19	59	77	83	130	107	143	140	143

Wyoming Incidence for 2009: Cases by Race and Ethnicity (Top 15 Sites Only)

	Total	White	African American	Native American	Asian	Other	Ethnicity: Hispanic/Latino
All Sites	2,518	2,449	12	39	13	1	94
Bladder	147	146	0	1	0	0	5
Brain	45	44	0	1	0	0	3
Breast (Female)	337	332	0	5	0	0	13
Colorectal	234	222	1	6	5	0	8
Kidney	74	70	0	4	0	0	2
Leukemia	68	67	1	0	0	0	3
Lung	305	300	1	2	2	0	7
Melanoma	116	114	0	1	0	0	1
Non-Hodgkin Lymphoma	101	97	1	2	0	1	3
Oral Cavity	51	51	0	0	0	0	2
Ovary	34	33	0	1	0	0	0
Pancreas	60	58	1	1	0	0	4
Prostate	425	417	2	5	0	0	19
Thyroid	58	56	0	0	2	0	3
Uterine	69	67	0	1	0	0	1

Wyoming Mortality for 2009: Cases by Race and Ethnicity (Top 15 Sites Only)

	Total	White	African American	Native American	Asian	Other	Ethnicity: Hispanic/Latino
All Sites	922	903	3	13	3	0	26
Bladder	22	21	0	1	0	0	1
Brain/CNS	29	29	0	0	0	0	1
Breast (Female)	69	69	0	0	0	0	2
Colorectal	76	72	1	3	0	0	4
Kidney	22	22	0	0	0	0	1
Leukemia	50	50	0	0	0	0	0
Lung	238	234	0	2	2	0	4
Melanoma	19	19	0	0	0	0	0
Non-Hodgkin Lymphoma	34	33	0	0	1	0	0
Oral Cavity	13	13	0	0	0	0	1
Ovary	25	25	0	0	0	0	0
Pancreas	58	57	0	1	0	0	2
Prostate	38	37	0	1	0	0	2
Thyroid	2	2	0	0	0	0	0
Uterine	7	7	0	0	0	0	0

State of Wyoming - 2009

Top Cancer Sites by Gender and Age - Incidence and Mortality

Top Incidence Cancer Sites by Gender - 2009

Total		Male		Female	
Prostate	425	Prostate	425	Breast	335
Breast	337	Lung	175	Lung	130
Lung	305	Colorectal	123	Colorectal	111
Colorectal	234	Bladder	112	Uterine	69
Bladder	147	Melanoma	73	Non-Hodgkin	61

Top Incidence Sites by Age (Case count included only if more than 1 case per cancer)

<u>0-4</u>		<u>5-9</u>		<u>10-14</u>		<u>15-19</u>		<u>20-24</u>	
Leukemia	3	Leukemia	2	Leukemia	4	Hodgkin	2	Hodgkin	3
						Melanoma	2		
<u>25-29</u>		<u>30-34</u>		<u>35-39</u>		<u>40-44</u>		<u>45-49</u>	
Testis	4	Testis	5	Melanoma	9	Colorectal	10	Breast	37
Thyroid	4	Melanoma	4	Bladder	6	Breast	9	Bladder	16
Melanoma	3	Thyroid	3	Breast	6	Bladder	7	Colorectal	11
Brain/CNS	2			Thyroid	6	Melanoma	6	Lung	9
				Breast	5	Thyroid	6	Melanoma	9
<u>50-54</u>		<u>55-59</u>		<u>60-64</u>		<u>65-69</u>		<u>70-74</u>	
Breast	44	Prostate	70	Prostate	67	Prostate	83	Bladder	88
Prostate	37	Bladder	54	Bladder	66	Bladder	78	Prostate	71
Bladder	28	Breast	53	Breast	42	Lung	57	Lung	45
Colorectal	22	Lung	28	Lung	35	Breast	45	Breast	31
Lung	20	Colorectal	20	Colorectal	29	Colorectal	401	Colorectal	24
<u>75-79</u>		<u>80-84</u>		<u>85+</u>					
Bladder	92	Bladder	75	Bladder	46				
Prostate	48	Lung	49	Colorectal	23				
Lung	39	Breast	27	Lung	19				
Breast	29	Prostate	27	Ill-Defined	15				
Colorectal	28	Colorectal	23	Prostate	14				

Top Mortality Cancer Sites by Gender - 2009

Total		Male		Female	
Lung	238	Lung	137	Lung	101
Ill-Defined	83	Colorectal	43	Breast	68
Colorectal	76	Ill-Defined	43	Ill-Defined	40
Breast	69	Prostate	38	Colorectal	33
Pancreas	58	Pancreas	35	Ovary	25

Top Mortality Sites by Age (Mortality count included only if more than 1 case per cancer)

<u>0-4</u>		<u>5-9</u>		<u>10-14</u>		<u>15-19</u>		<u>20-24</u>	
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	
<u>25-29</u>		<u>30-34</u>		<u>35-39</u>		<u>40-44</u>		<u>45-49</u>	
All Cancers have 1 or less to count		All Cancers have 1 or less to count		All Cancers have 1 or less to count		Brain/CNS	3	Brain/CNS	3
						Lung	2	Ill-Defined	3
								Lung	3
								Breast	2
								Pancreas	2
<u>50-54</u>		<u>55-59</u>		<u>60-64</u>		<u>65-69</u>		<u>70-74</u>	
Lung	12	Lung	17	Lung	25	Lung	48	Lung	31
Breast	8	Breast	16	Kidney	7	Colorectal	13	Ill-Defined	13
Colorectal	8	Pancreas	7	Breast	6	Ill-Defined	12	Colorectal	12
Ill-Defined	4			Colorectal	6	Non-Hodgkin	8	Leukemia	8
				Pancreas	6			Ovary	6
<u>75-79</u>		<u>80-84</u>		<u>85+</u>					
Lung	39	Lung	38	Lung	23				
Colorectal	13	Ill-Defined	15	Ill-Defined	17				
Pancreas	10	Pancreas	13	Leukemia	16				
Bladder	8	Prostate	11	Breast	14				
Ill-Defined	8			Pancreas	13				

Wyoming Counties - 2009

Incidence and Mortality (All Sites)

Wyoming County Incidence Cases -- 2009 (All Sites)

	Albany	Big Horn	Campbell	Carbon	Converse	Crook	Fremont	Goshen	Hot Springs	Johnson	Laramie	Lincoln
Anus	0	0	<3	<3	0	0	0	0	<3	0	0	<3
Bladder	8	<3	7	7	5	<3	10	8	<3	<3	25	4
Bones and Joints	<3	0	0	0	<3	0	<3	<3	0	0	<3	<3
Brain	4	<3	3	0	0	0	7	<3	0	0	7	<3
Breast	16	5	28	11	10	<3	21	8	<3	6	62	18
Cervix	3	0	<3	<3	0	0	<3	0	0	0	4	<3
Colorectal	14	11	12	4	9	<3	24	10	4	4	31	4
Esophagus	<3	<3	<3	0	<3	<3	3	<3	0	<3	4	0
Eye	0	0	0	0	0	0	<3	<3	0	0	<3	0
Gallbladder	<3	0	<3	0	0	0	0	0	0	0	3	0
Hodgkin	<3	0	5	<3	0	0	0	0	0	0	<3	0
Ill-Defined	5	<3	8	<3	4	<3	3	<3	<3	3	11	8
Kidney	4	<3	5	5	<3	0	13	<3	0	<3	13	0
Larynx	<3	<3	<3	0	<3	0	0	0	0	0	4	0
Leukemia	<3	0	7	3	0	<3	4	<3	3	<3	10	<3
Liver	0	0	3	0	<3	0	5	0	0	0	3	0
Lung	7	9	16	13	11	3	20	11	9	4	60	7
Melanoma	5	<3	5	<3	3	<3	10	3	<3	5	17	5
Myeloma	<3	<3	<3	<3	0	<3	<3	<3	<3	<3	<3	0
Nose	0	0	0	0	0	0	0	0	0	0	0	<3
Non-Hodgkin	5	<3	7	4	<3	<3	8	<3	<3	<3	21	3
Oral Cavity	0	<3	3	0	<3	<3	7	<3	<3	0	4	<3
Other Biliary	0	0	0	<3	0	0	<3	0	0	0	5	0
Other Digestive	0	0	0	0	0	0	0	0	<3	0	<3	<3
Other Endocrine	0	0	0	0	0	0	0	0	0	0	0	0
Other Female	0	0	<3	<3	<3	0	<3	0	0	0	0	0
Other Male	<3	0	0	0	0	0	0	0	0	0	<3	0
Other Skin	<3	0	0	<3	<3	0	0	<3	0	0	<3	0
Other Respiratory	0	0	0	<3	0	0	0	0	0	0	0	0
Other Urinary	0	<3	0	0	0	0	0	0	0	0	<3	0
Ovary	3	0	0	0	0	0	5	<3	0	5	7	<3
Pancreas	<3	3	3	3	<3	0	4	3	0	<3	6	3
Prostate	24	13	17	13	9	<3	20	12	4	5	88	9
Small Intestine	0	<3	<3	<3	0	0	0	0	<3	0	<3	0
Soft Tissue including Heart	<3	0	4	<3	<3	<3	0	<3	0	<3	<3	0
Stomach	0	<3	0	<3	<3	0	<3	<3	0	0	4	<3
Testis	4	0	<3	<3	0	0	0	<3	0	<3	<3	<3
Thyroid	5	<3	3	<3	<3	<3	0	0	<3	<3	9	0
Uterine	<3	3	4	3	<3	0	6	<3	0	<3	11	<3
Mesothelioma	0	0	0	0	0	0	0	0	0	0	<3	0
All Sites	122	60	152	84	70	18	180	76	35	45	425	77

	Natrona	Niobrara	Park	Platte	Sheridan	Sublette	Sweetwater	Teton	Uinta	Washakie	Weston
Anus	<3	0	<3	0	0	0	<3	0	0	<3	0
Bladder	19	<3	12	<3	11	<3	<3	7	3	8	<3
Bones and Joints	0	0	<3	0	0	0	0	3	<3	0	0
Brain	6	0	<3	<3	<3	0	7	3	0	<3	0
Breast	47	<3	23	4	20	6	19	13	10	0	5
Cervix	5	0	<3	0	<3	0	<3	0	0	0	0
Colorectal	32	3	14	6	14	<3	13	5	7	5	5
Esophagus	<3	<3	<3	0	4	0	5	0	0	<3	<3
Eye	0	0	0	0	0	0	0	0	0	0	<3
Gallbladder	0	0	0	0	0	0	0	0	0	0	0
Hodgkin	<3	0	<3	0	<3	0	3	0	0	<3	0
Ill-Defined	10	<3	6	<3	6	<3	<3	4	<3	4	<3
Kidney	8	0	4	<3	6	0	4	<3	<3	4	<3
Larynx	6	0	3	0	<3	0	0	0	<3	0	0
Leukemia	12	<3	4	<3	0	<3	7	<3	4	<3	<3
Liver	5	0	<3	0	<3	<3	<3	0	3	0	0
Lung	56	3	16	8	22	<3	9	6	6	3	3
Melanoma	19	<3	5	<3	4	4	9	8	3	<3	0
Myeloma	8	0	5	<3	<3	0	<3	0	0	<3	0
Nose	<3	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin	10	<3	4	<3	8	3	6	<3	4	3	<3
Oral Cavity	7	0	<3	<3	6	<3	5	<3	0	<3	<3
Other Biliary	<3	0	0	0	<3	0	0	0	<3	0	0
Other Digestive	<3	0	<3	<3	0	0	0	0	0	0	0
Other Endocrine	<3	0	0	0	0	0	<3	0	0	0	0
Other Female	3	0	0	<3	<3	0	0	0	0	0	0
Other Male	0	0	0	0	0	0	0	0	<3	0	0
Other Skin	0	<3	0	0	0	0	0	0	0	0	0
Other Respiratory	0	0	0	0	0	0	0	0	0	0	0
Other Urinary	0	0	<3	0	0	0	0	0	0	0	0
Ovary	4	0	3	0	0	0	<3	<3	<3	0	<3
Pancreas	13	0	4	<3	4	<3	5	0	0	<3	0
Prostate	43	<3	29	12	45	7	34	19	8	8	<3
Small Intestine	0	0	<3	<3	3	0	0	0	<3	0	0
Soft Tissue including Heart	<3	0	0	0	0	0	<3	<3	0	0	0
Stomach	4	0	<3	<3	<3	0	<3	0	0	0	0
Testis	<3	0	<3	0	<3	0	0	0	0	<3	0
Thyroid	16	0	<3	<3	<3	<3	5	<3	<3	<3	<3
Uterine	15	<3	<3	0	3	0	7	<3	0	3	<3
Mesothelioma	<3	0	0	0	0	<3	<3	0	0	0	0
All Sites	363	18	151	49	169	35	156	80	60	52	29

Wyoming County Mortality Counts -- 2009 (All Sites)

	Albany	Big Horn	Campbell	Carbon	Converse	Crook	Fremont	Goshen	Hot Springs	Johnson	Laramie	Lincoln
Anus	0	0	<3	0	0	0	0	0	0	0	<3	0
Bladder	0	0	0	<3	0	0	5	<3	0	0	<3	<3
Bones and Joints	0	0	0	0	0	0	0	0	0	0	<3	0
Brain/CNS	<3	0	3	<3	<3	0	4	0	0	0	3	0
Breast	<3	<3	10	<3	3	<3	4	<3	<3	<3	6	3
Cervix	<3	<3	0	<3	0	0	0	0	0	0	0	0
Colorectal	<3	3	<3	0	5	0	4	<3	0	<3	15	3
Esophagus	<3	<3	0	0	0	0	3	<3	<3	<3	5	<3
Eye	0	0	0	0	0	0	0	0	0	0	0	0
Gallbladder	0	0	0	0	0	0	0	0	0	0	0	0
Hodgkin	0	0	0	0	0	0	0	0	0	0	<3	0
Ill-Defined	<3	<3	3	4	4	<3	10	<3	0	0	13	5
Kidney	0	0	3	<3	0	0	3	<3	0	0	4	0
Larynx	0	0	0	0	0	0	0	0	0	0	<3	0
Leukemia	0	0	6	<3	0	0	5	3	<3	0	11	<3
Liver	0	0	<3	<3	0	0	<3	<3	0	0	5	0
Lung	8	7	28	10	7	3	20	6	7	3	34	4
Melanoma	0	0	<3	<3	<3	0	<3	0	<3	<3	<3	5
Myeloma	0	0	3	0	0	<3	<3	0	0	<3	<3	0
Nasal	0	0	0	0	0	0	0	0	0	0	0	<3
Non-Hodgkin	3	<3	<3	0	0	0	4	<3	0	<3	7	<3
Oral Cavity	<3	0	3	0	0	0	0	0	0	0	3	0
Other Biliary	<3	0	0	0	0	0	<3	0	0	0	<3	0
Other Digestive	0	0	<3	0	0	0	<3	0	0	0	0	0
Other Endocrine	0	0	0	0	0	0	0	0	0	0	0	0
Other Female	0	0	0	<3	0	0	0	0	0	0	<3	0
Other Male	0	0	0	0	0	0	0	0	0	0	0	0
Other Skin	0	<3	0	<3	0	0	0	0	0	0	0	0
Other Respiratory	0	0	0	0	0	0	0	0	0	0	<3	0
Other Urinary	0	0	<3	0	0	0	0	0	0	0	0	<3
Ovary	0	0	<3	0	<3	0	<3	<3	<3	0	3	<3
Pancreas	0	0	5	<3	<3	<3	5	4	0	<3	3	<3
Prostate	0	3	<3	0	3	3	4	<3	0	0	7	0
Small Intestine	0	0	0	0	0	0	0	0	0	0	0	0
Soft Tissue including Heart	0	0	0	<3	0	0	<3	0	0	0	<3	0
Stomach	0	0	<3	0	0	0	<3	3	0	0	<3	0
Testis	0	0	0	0	0	0	0	0	0	0	0	0
Thyroid	0	0	0	0	0	0	0	<3	0	0	<3	0
Uterine	0	0	0	0	0	0	0	0	0	<3	<3	0
Mesothelioma	0	0	0	0	0	0	<3	0	0	0	<3	0
All Sites	24	19	78	30	28	13	84	31	13	12	137	30

	Natrona	Niobrara	Park	Platte	Sheridan	Sublette	Sweetwater	Teton	Uinta	Washakie	Weston
Anus	0	0	0	0	0	0	0	0	0	0	0
Bladder	5	0	0	<3	3	0	<3	0	0	0	0
Bones and Joints	0	0	<3	0	0	0	0	0	0	0	<3
Brain/CNS	6	0	<3	0	3	0	<3	<3	<3	0	0
Breast	12	<3	5	0	4	0	3	<3	3	<3	<3
Cervix	<3	<3	0	0	0	0	0	0	<3	<3	0
Colorectal	9	<3	5	0	5	<3	5	5	<3	<3	<3
Esophagus	5	0	0	<3	<3	<3	<3	0	<3	0	0
Eye	0	0	0	0	0	0	0	0	0	0	0
Gallbladder	0	0	0	0	0	0	0	0	0	0	0
Hodgkin	0	0	0	0	0	0	0	0	0	0	0
Ill-Defined	11	<3	6	<3	4	0	4	<3	3	4	<3
Kidney	<3	0	<3	<3	3	0	<3	0	0	<3	0
Larynx	<3	0	0	0	0	0	0	0	0	0	0
Leukemia	7	0	4	<3	4	0	<3	0	0	0	<3
Liver	3	0	<3	0	4	<3	0	0	0	0	0
Lung	39	3	14	6	14	0	7	4	<3	5	7
Melanoma	<3	0	0	0	0	<3	<3	0	0	<3	0
Myeloma	3	0	<3	0	0	0	0	<3	<3	<3	0
Nasal	0	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin	6	0	<3	<3	<3	0	<3	0	<3	0	0
Oral Cavity	<3	0	<3	0	<3	0	0	0	<3	<3	0
Other Biliary	<3	0	0	0	<3	<3	0	0	0	0	<3
Other Digestive	<3	0	0	0	0	0	0	0	0	0	0
Other Endocrine	<3	0	0	0	0	0	0	0	0	<3	0
Other Female	0	0	0	0	0	0	0	<3	0	0	0
Other Male	0	0	0	0	0	0	0	0	<3	0	0
Other Skin	<3	0	<3	0	0	0	0	0	0	0	0
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	0
Ovary	6	0	0	0	4	<3	0	3	<3	0	0
Pancreas	8	0	5	3	6	<3	5	<3	<3	<3	<3
Prostate	3	<3	3	<3	<3	0	<3	0	<3	0	<3
Small Intestine	0	0	0	0	0	0	0	0	0	0	0
Soft Tissue including Heart	<3	0	<3	0	<3	0	0	<3	0	0	0
Stomach	<3	0	0	0	<3	0	<3	0	0	<3	0
Testis	0	0	0	0	0	0	0	0	0	0	0
Thyroid	0	0	0	0	0	0	0	0	0	0	0
Uterine	<3	0	0	0	<3	0	<3	<3	0	0	0
Mesothelioma	<3	0	0	0	0	0	<3	0	0	<3	0
All Sites	139	9	55	20	64	8	42	22	20	24	20

Relative Survival Rates 2001-2009
All Sites and
Top 15 Cancers

Relative Survival by Cancer Type: 2001-2009 (All Ages Combined)

	12 months	24 months	36 months	48 months	60 months
All Sites	81.90%	75.90%	72.50%	70.10%	68.30%
Bladder w/in situ	91.10%	85.70%	82.10%	78.50%	77.30%
Brain/CNS	56.20%	42.00%	37.50%	33.70%	31.00%
Breast (Female)	97.50%	95.30%	93.60%	92.30%	90.20%
Colorectal	82.90%	74.40%	68.50%	64.40%	61.70%
Kidney	84.60%	76.80%	74.70%	70.90%	66.70%
Leukemia	76.30%	70.10%	66.70%	62.10%	58.00%
Lung	43.10%	26.90%	21.60%	18.40%	16.50%
Melanoma	98.10%	96.20%	94.80%	93.70%	93.50%
Non Hodgkin	83.10%	77.20%	74.10%	70.40%	68.60%
Oral Cavity	85.60%	78.80%	74.40%	67.80%	65.90%
Ovary	75.00%	64.80%	54.90%	48.70%	42.40%
Pancreas	26.50%	14.20%	7.00%	6.20%	2.90%
Prostate	99.90%	99.90%	99.90%	99.50%	99.20%
Thyroid	96.50%	96.30%	95.50%	95.40%	95.40%
Uterine	94.50%	89.10%	87.90%	87.90%	84.80%

Relative Survival by Cancer Type: 2001-2009 (Ages 00-19 years old)

	12 Months	24 Months	36 Months	48 Months	60 Months
All Sites	90.90%	88.90%	88.90%	86.20%	82.70%
Brain	66.70%	60.10%	60.10%	40.10%	40.10%
Leukemia	92.50%	87.70%	87.70%	87.70%	72.50%
Melanoma	82.50%	82.50%	82.50%	82.50%	82.50%

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**

2009 Wyoming Incidence and Mortality Rates

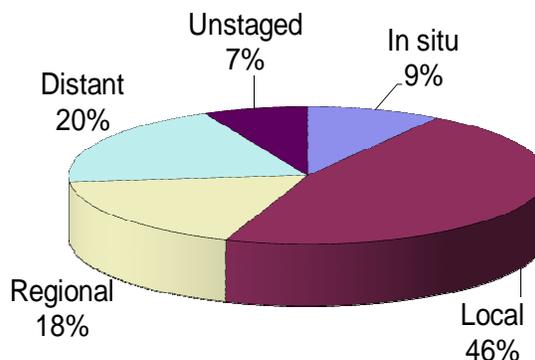
All Cancer Sites

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	1,369	1,149	2,518
# In situ Cases	122	127	249
WY Incidence	503.9	388.5	439.8
US Incidence	525.2	421.9	463.5
# Cancer Deaths	493	429	922
WY Mortality	178.0*	160.5	169.4
US Mortality	213.3	148.2	174.9

* 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 rates in Wyoming males, females, and total population for all cancer sites were lower than the United States rates, though not significant. The mortality rate for Wyoming males was significantly lower than the U.S. rate. The overall mortality rate for Wyoming was also lower, while the female rate in Wyoming was higher than the national; however, neither was statistically significant.

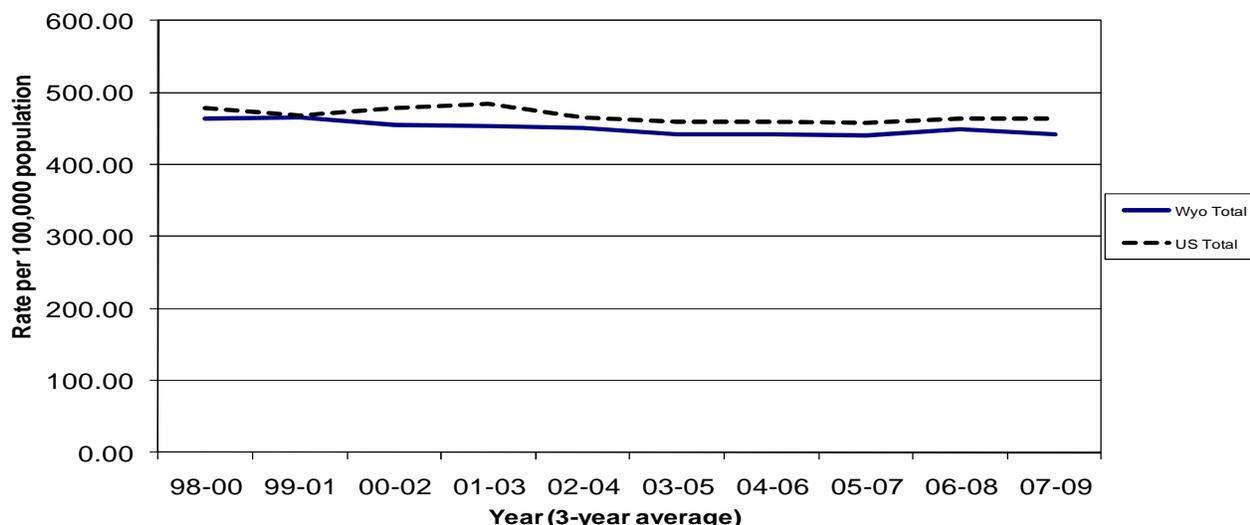
The 12-year incidence trend shows a possible slight decline since 06-08, while the U.S. rate appears to be holding steady.

There were no significant changes in the percentages of cancer diagnosed at each stage from 2008-2009.

The incidence rate for Cancer Health District (CHD) 7 (373.10) was significantly lower and the rate than the state rate (440.73) There were no significant differences between districts for mortality.

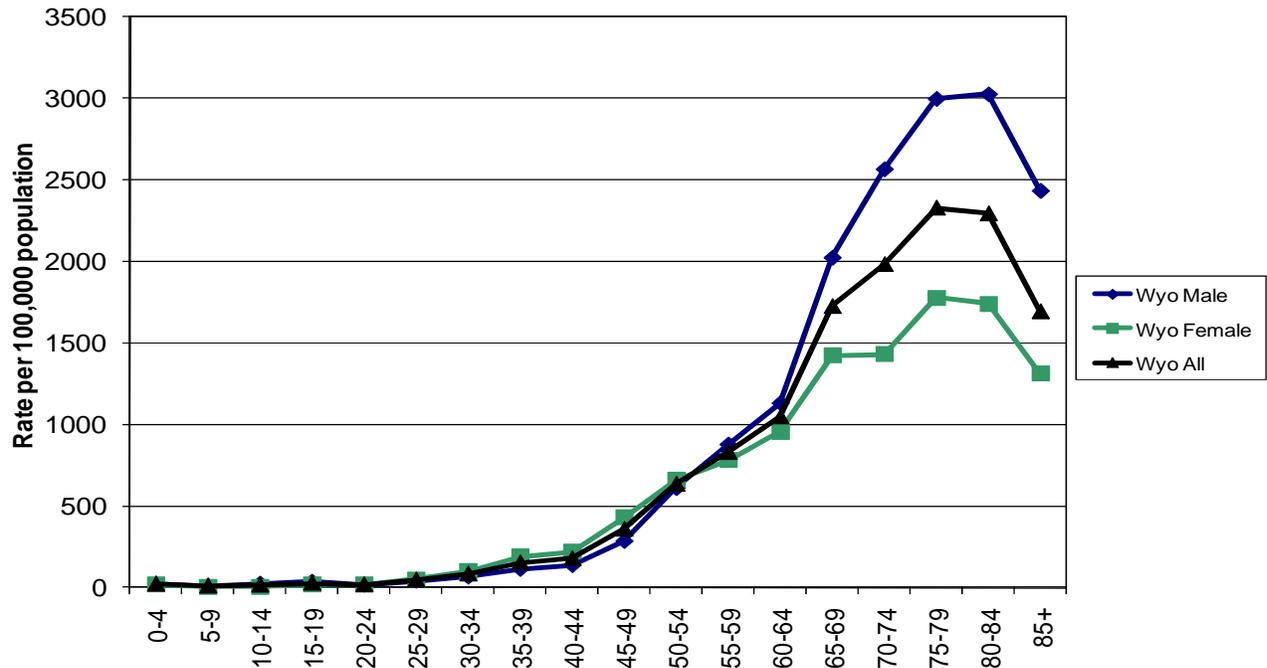
12-Year Incidence Trend

All Cancer Sites Combined



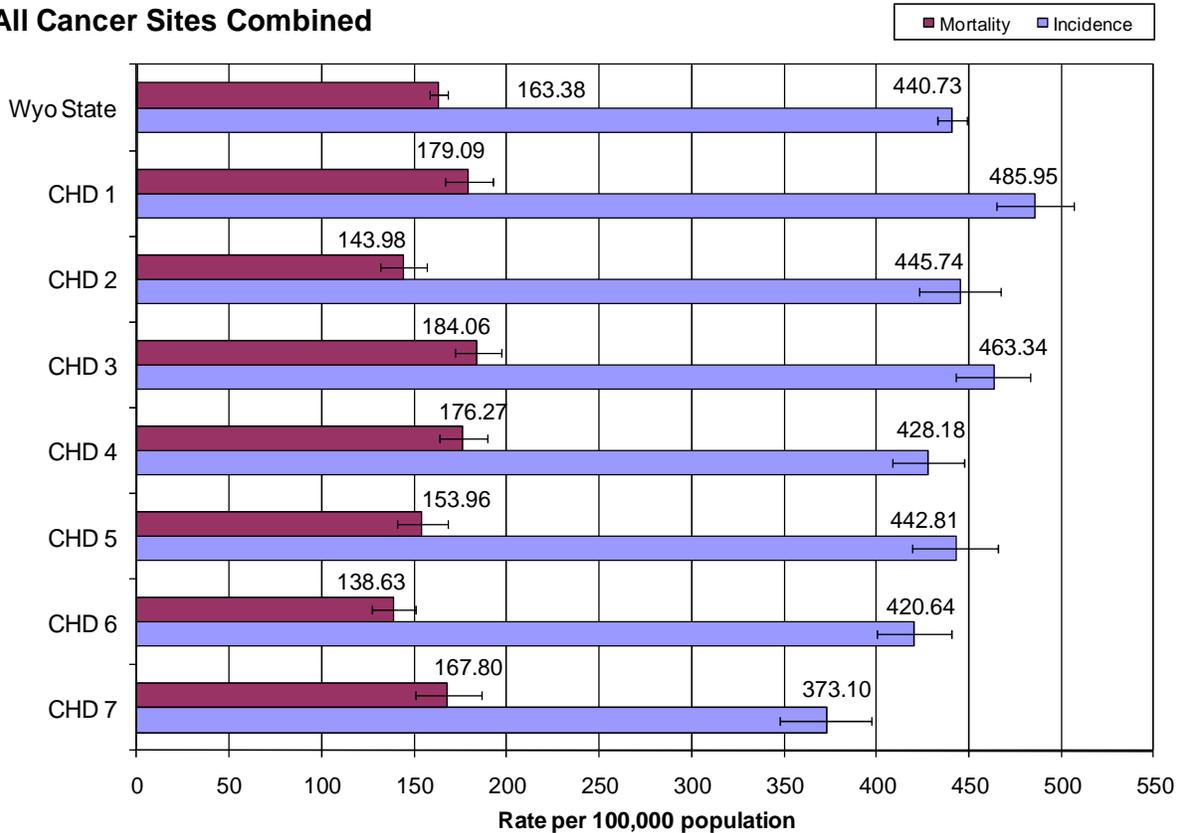
Age-Specific Incidence Rates - 2009

All Cancer Sites Combined



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

All Cancer Sites Combined



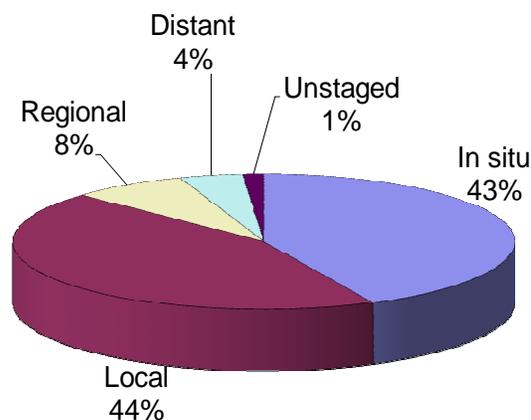
Bladder (Urinary)

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	62	21	83
# In situ Cases	50	14	64
WY Incidence	43.3	12.1	26.3
US Incidence	38.7	9.6	22.0
# Cancer Deaths	15	7	22
WY Mortality	5.4	2.6	4.0
US Mortality	8.0	2.2	4.6

* 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 somewhat higher than the national rates in 2009. The mortality rates for males and total population were a little lower than the national rate, while females were a bit higher. None of these differences were significant.

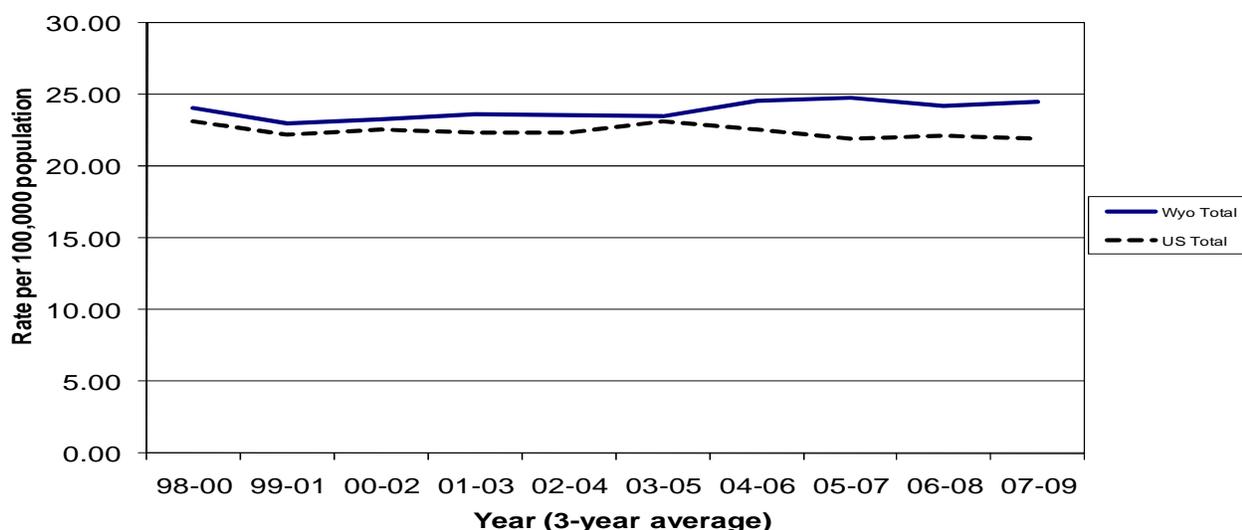
The 12-year incidence trend for bladder cancer in Wyoming shows a small increase from 06-08 to 07-09, while the US rate appears steady.

The percent of bladder cancers diagnosed in-situ increased slightly from 38% in 2008, while the percentage diagnosed as local dropped from 52% in 2008. The other stages were basically unchanged.

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

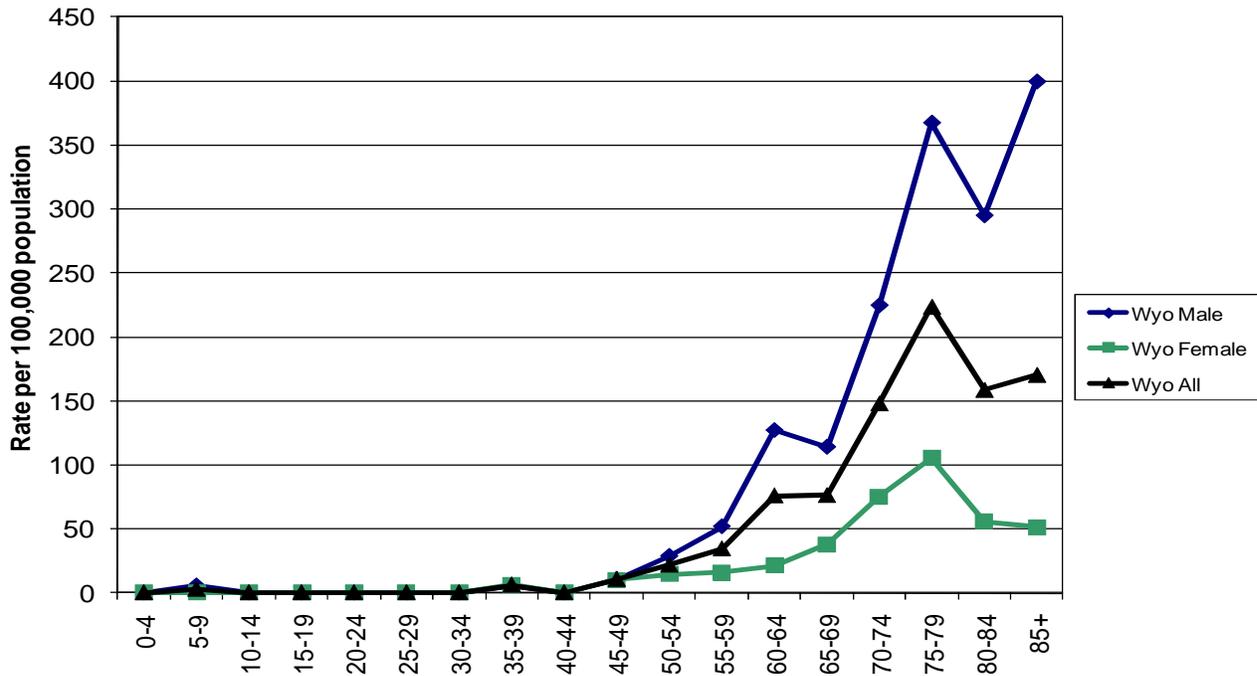
12-Year Incidence Trend

Urinary Bladder



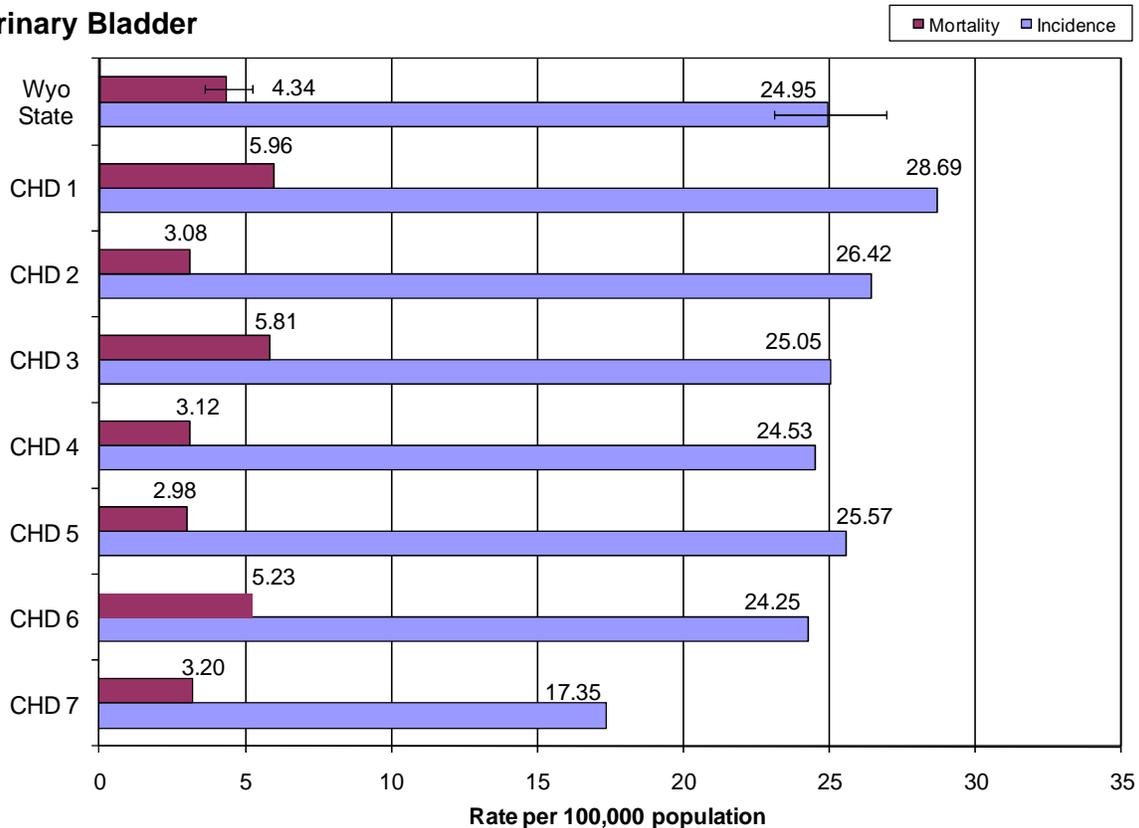
Age-Specific Incidence Rates - 2009

Urinary Bladder



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

Urinary Bladder



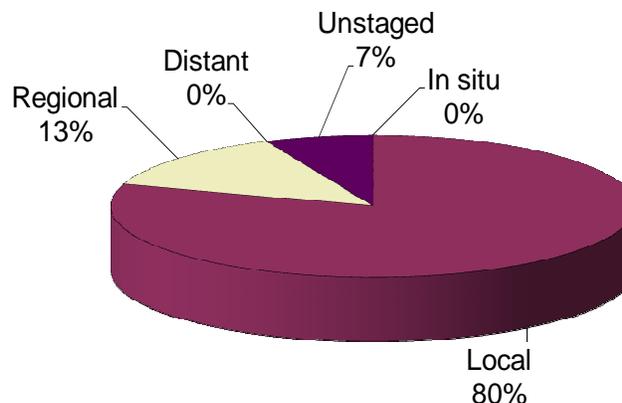
Brain/CNS

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	26	19	45
WY Incidence	9.7	6.8	8.2
US Incidence	8.3	5.7	6.9
# Cancer Deaths	15	14	29
WY Mortality	5.4	5.2	5.3
US Mortality	5.7	3.8	4.6

* 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 lower, while the female mortality rate was higher than the U.S. rates. However, none of these differences were significant.

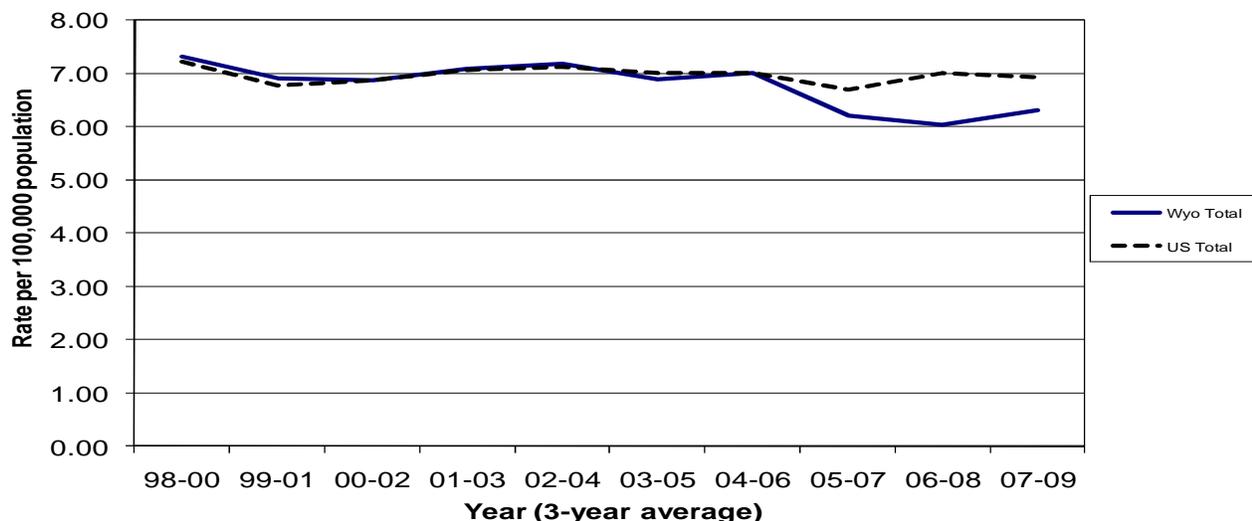
The 12-year trend shows a slight increase from 06-08 to 07-09, while the national trend seems level.

The percentage of cases diagnosed as local dropped from 91% in 2008, while cases diagnosed as regional rose from 9% in 2008. These changes were not statistically significant.

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

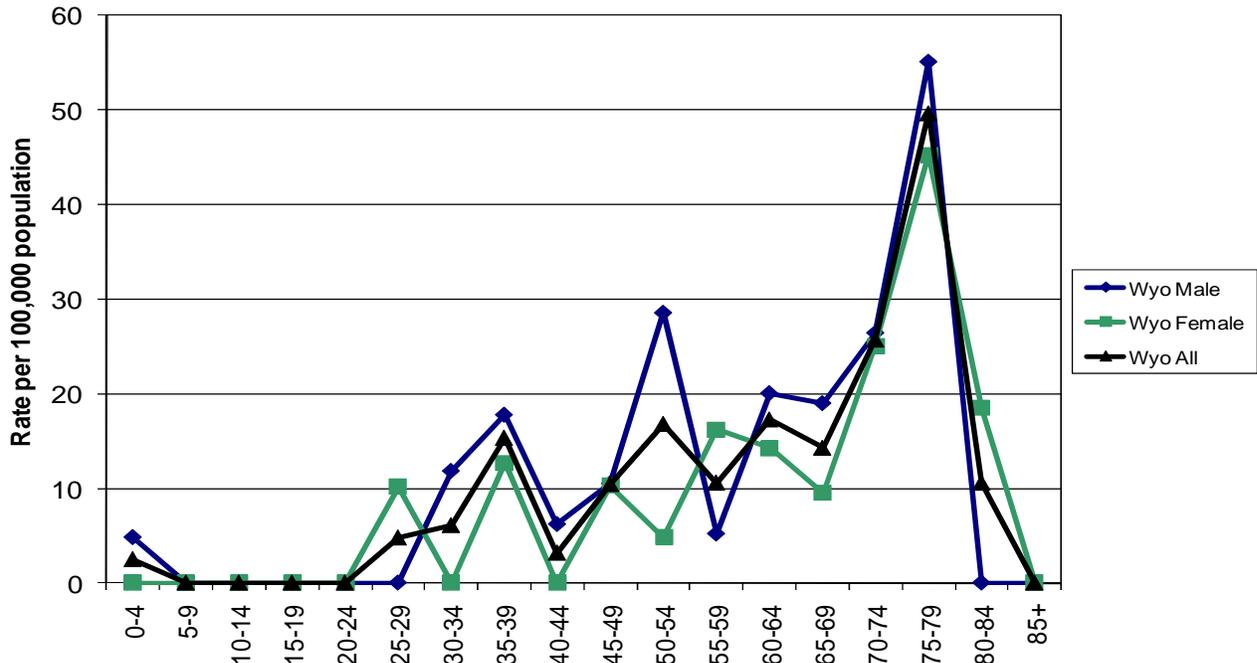
12-Year Incidence Trend

Brain/CNS



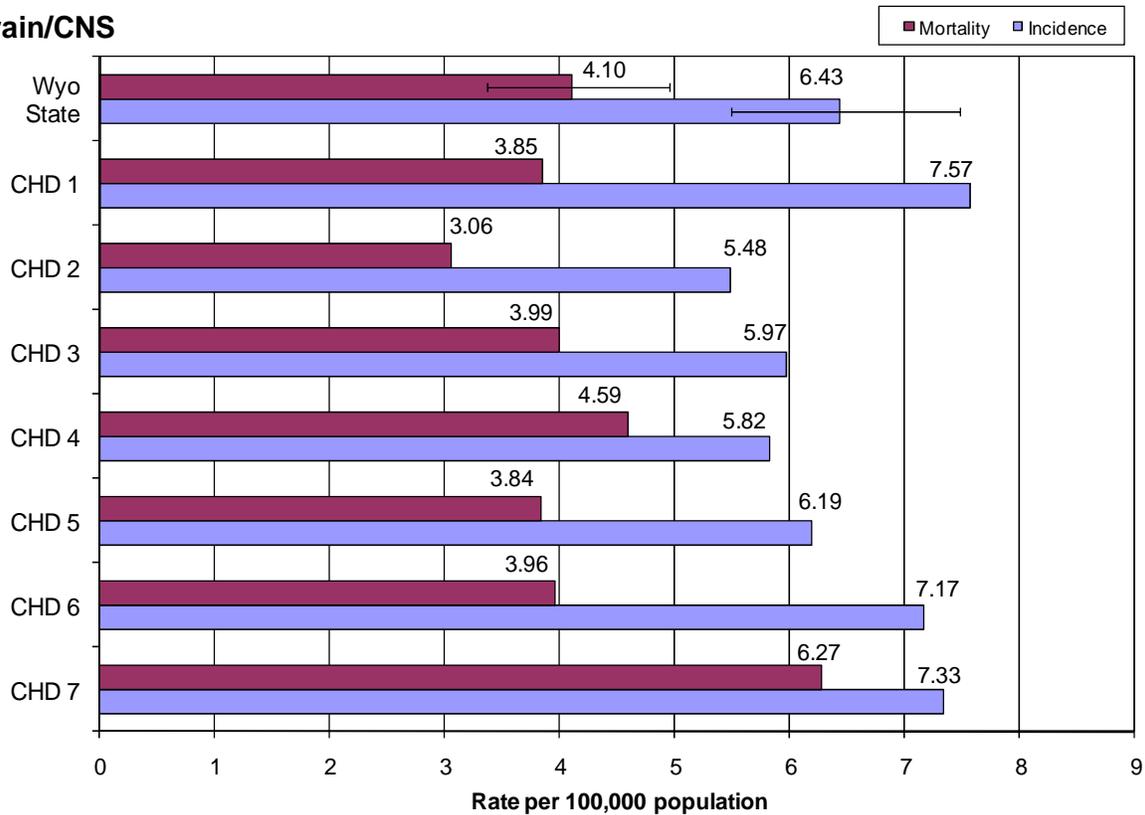
Age-Specific Incidence Rates - 2009

Brain/CNS



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

Brain/CNS



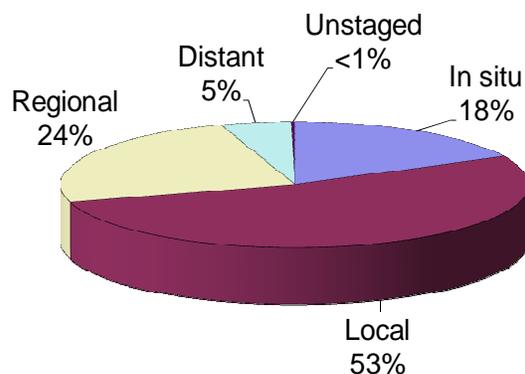
Breast (Female Only)

Incidence and Mortality Summary

	Female
# Invasive Cases	335
# In situ Cases	72
WY Incidence	111.6
US Incidence	127.8
# Cancer Deaths	68
WY Mortality	25.5
US Mortality	21.9

* 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 rate of female breast cancer in Wyoming continues to be lower than the United States rate in 2009, 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.

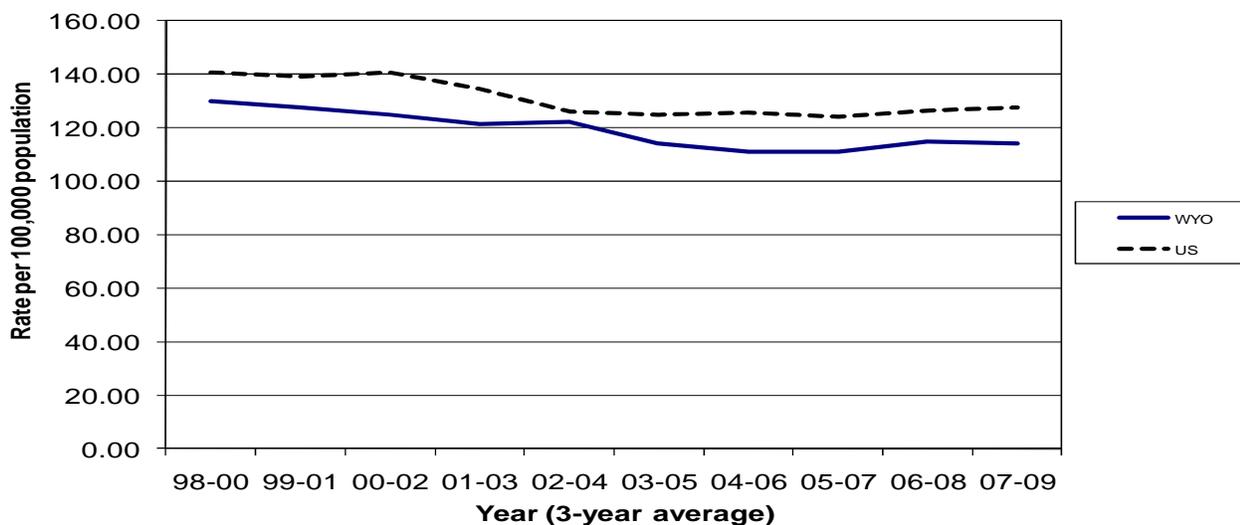
The percentage of diagnoses in each stage in 2009 was essentially the same as in 2008.

No statistically significant differences were found for incidence or mortality between CHD's.

There were 2 cases of male breast cancer reported in Wyoming in 2009.

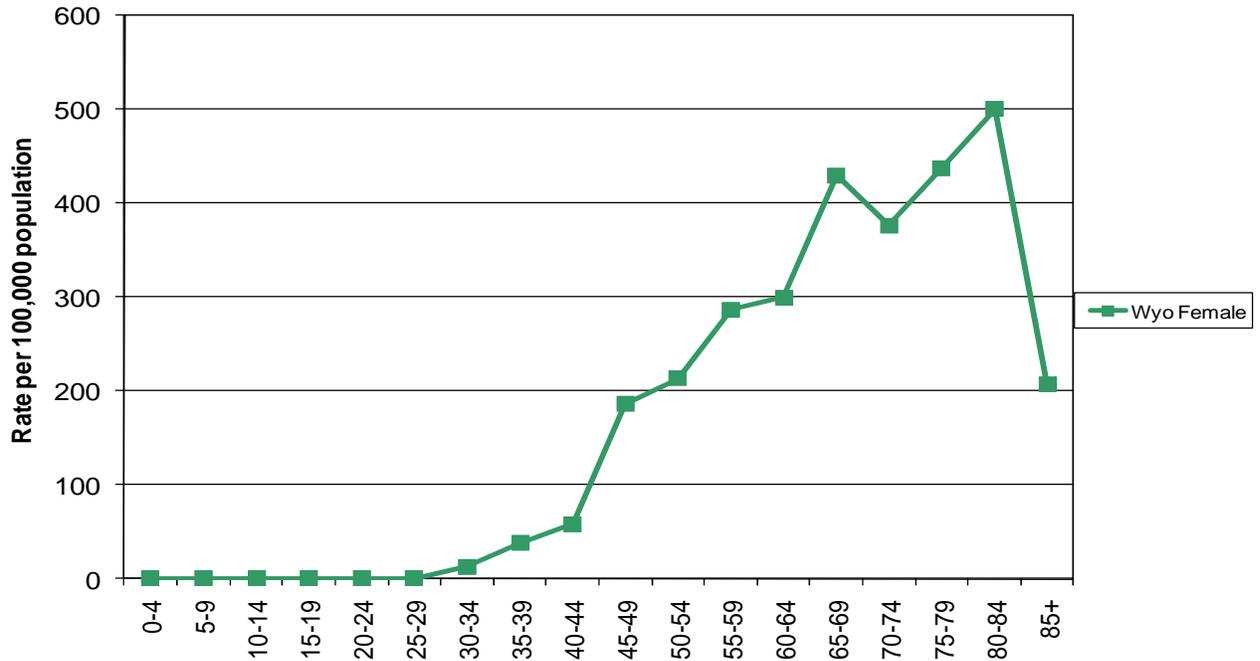
12-Year Incidence Trend

Breast-Female



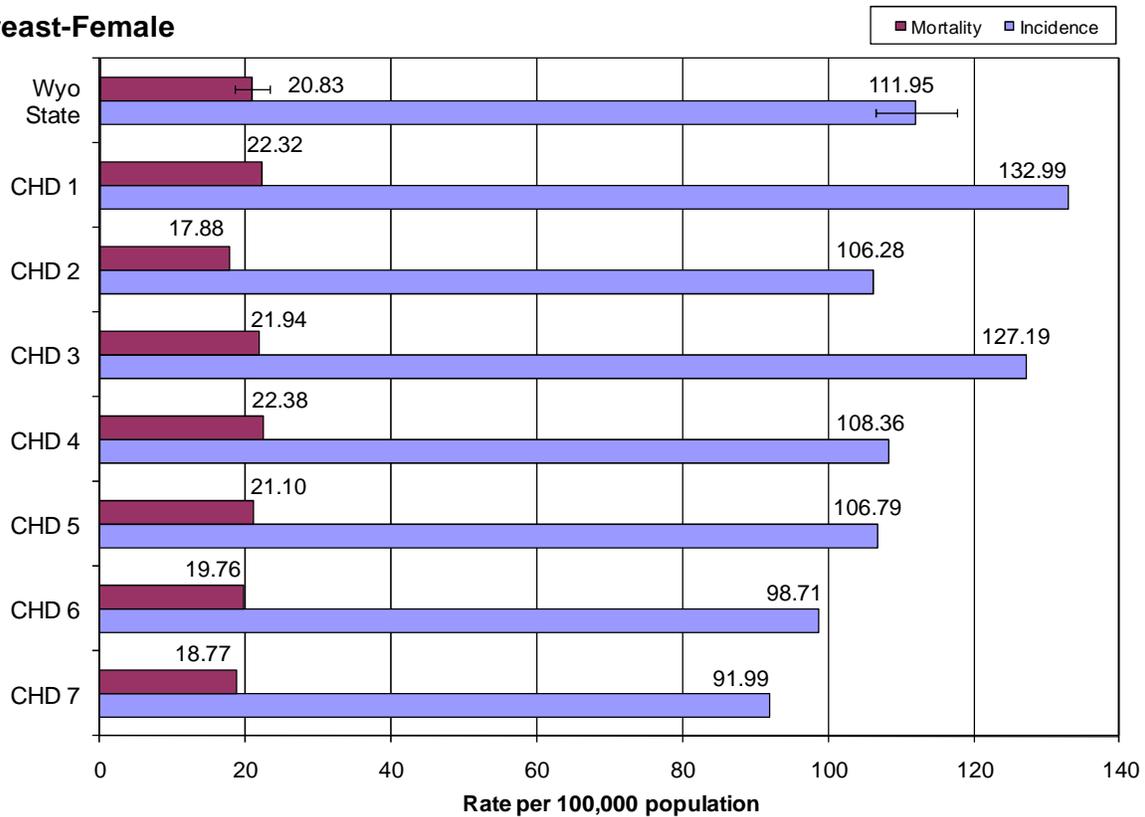
Age-Specific Incidence Rates - 2009

Breast-Female



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

Breast-Female



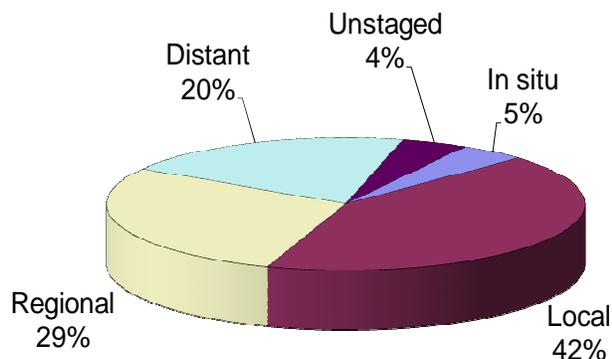
Colorectal

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	123	111	234
# In situ Cases	5	6	11
WY Incidence	46.4	36.6	41.4
US Incidence	51.8	38.5	44.4
# Cancer Deaths	43	33	76
WY Mortality	15.5	12.4	14.0
US Mortality	19.0	13.4	15.8

* 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 males, females, and total population were all lower than the national rates. None of these differences were statistically significant.

The 12-year incidence graph shows that rates in Wyoming continue a decreasing trend that started in 04-06.

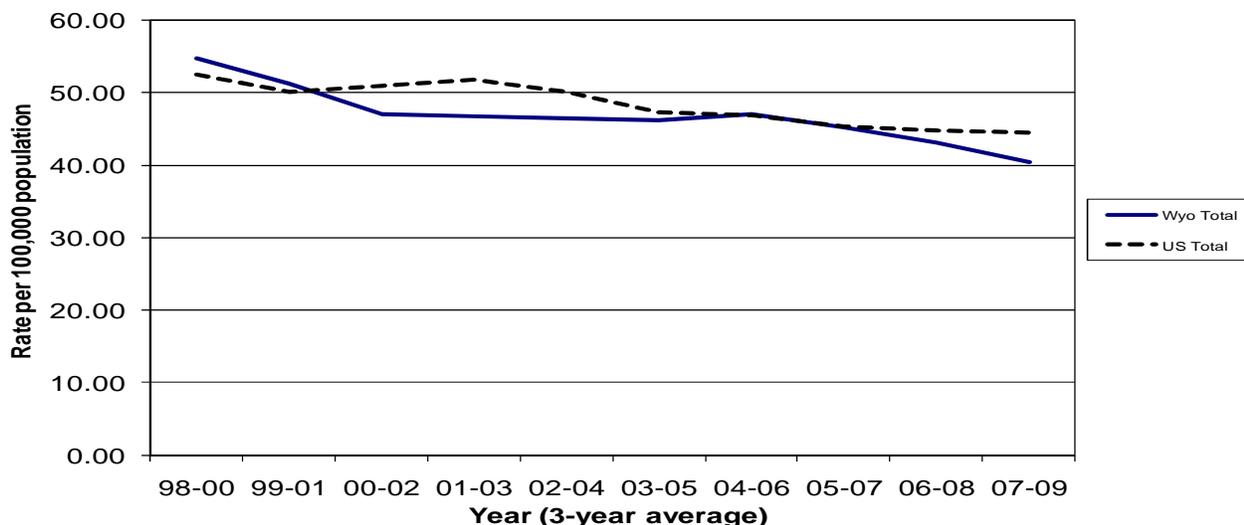
The percentage of cancers diagnosed at each stage in 2009 were essentially the same as 2008.

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

(Colorectal = Colon and rectum combined)

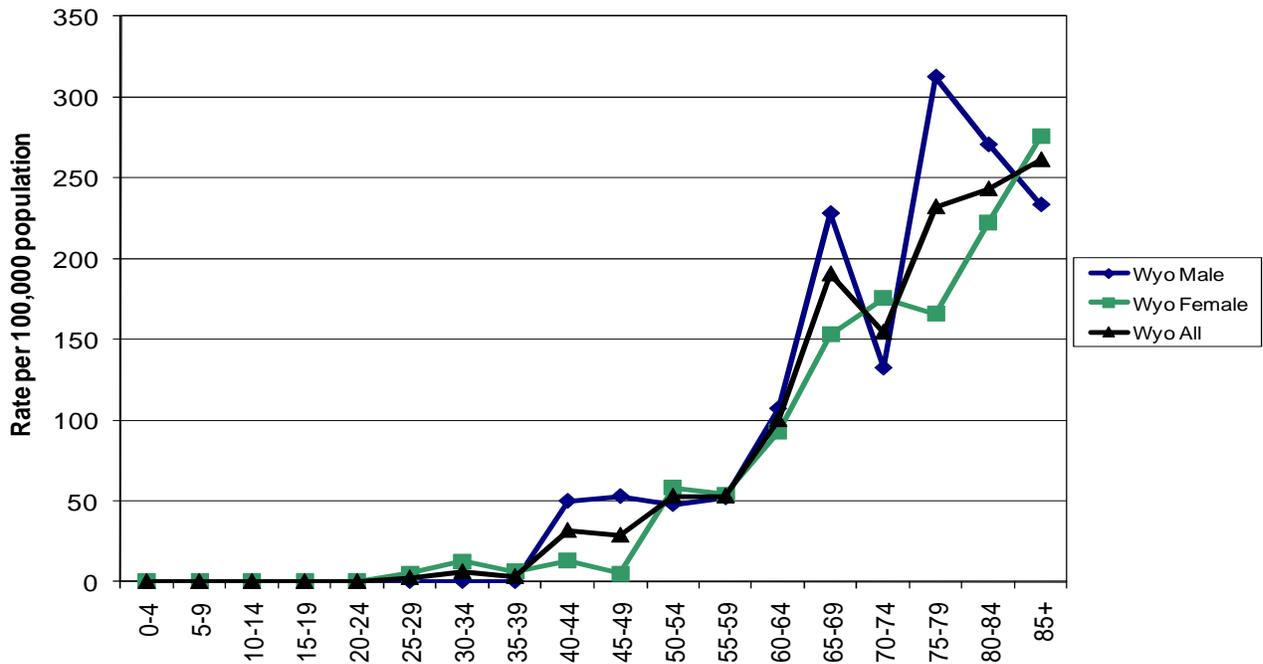
12-Year Incidence Trend

Colorectal



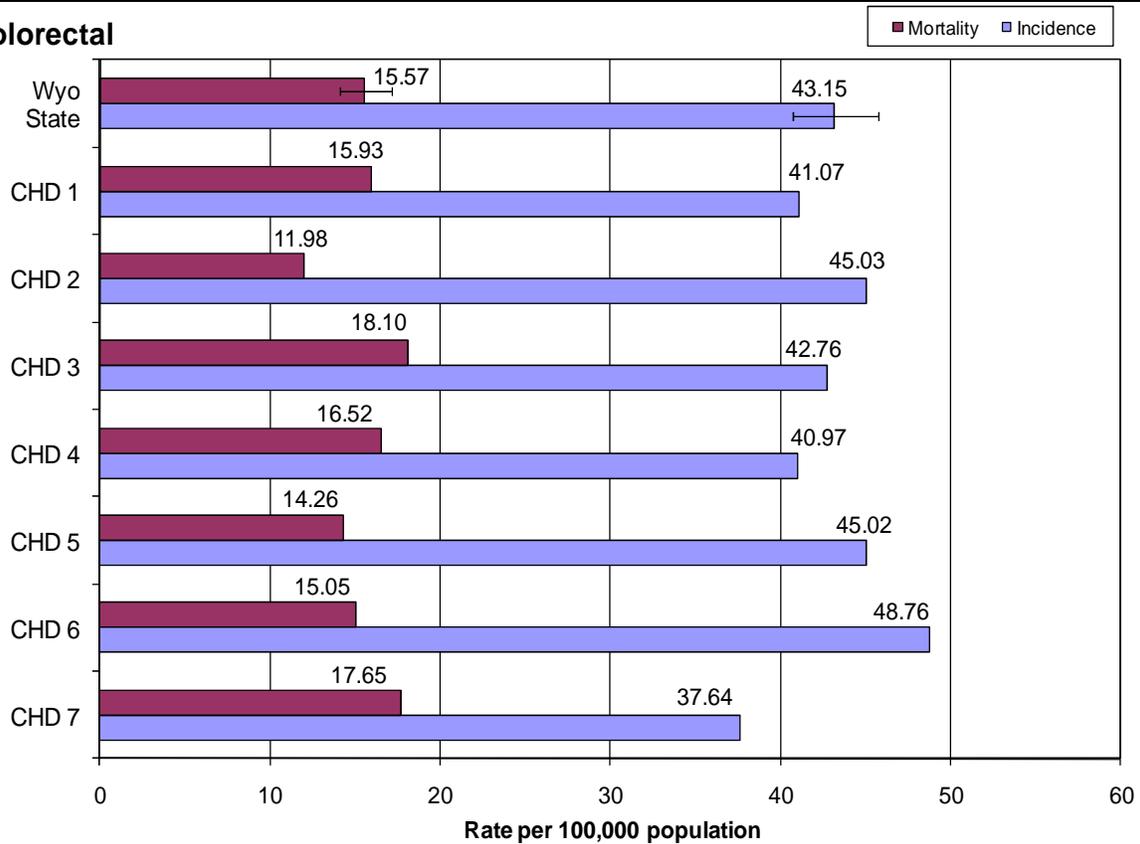
Age-Specific Incidence Rates - 2009

Colorectal



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

Colorectal



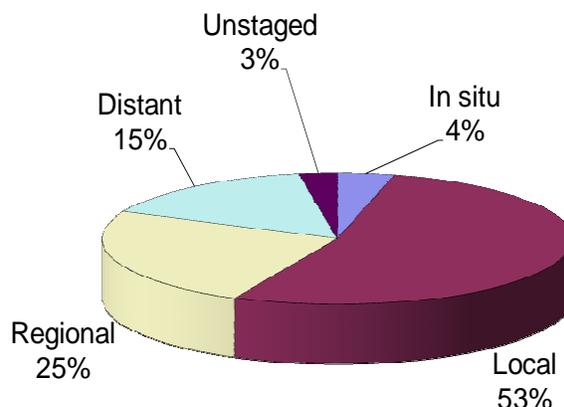
Kidney/Renal Pelvis

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	53	21	74
WY Incidence	18.9	7.2	12.9
US Incidence	21.5	11.1	15.8
# Cancer Deaths	18	4	22
WY Mortality	6.5	1.5	4.0
US Mortality	5.9	2.6	4.1

* 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 rates for kidney/renal pelvis cancer in Wyoming males, females and the total population were all lower than the national rates in 2009. The mortality rate for Wyoming males were slightly higher than the national rate, while the female rate was lower and the total rate was basically the same as the national rate. None of these differences were statistically significant.

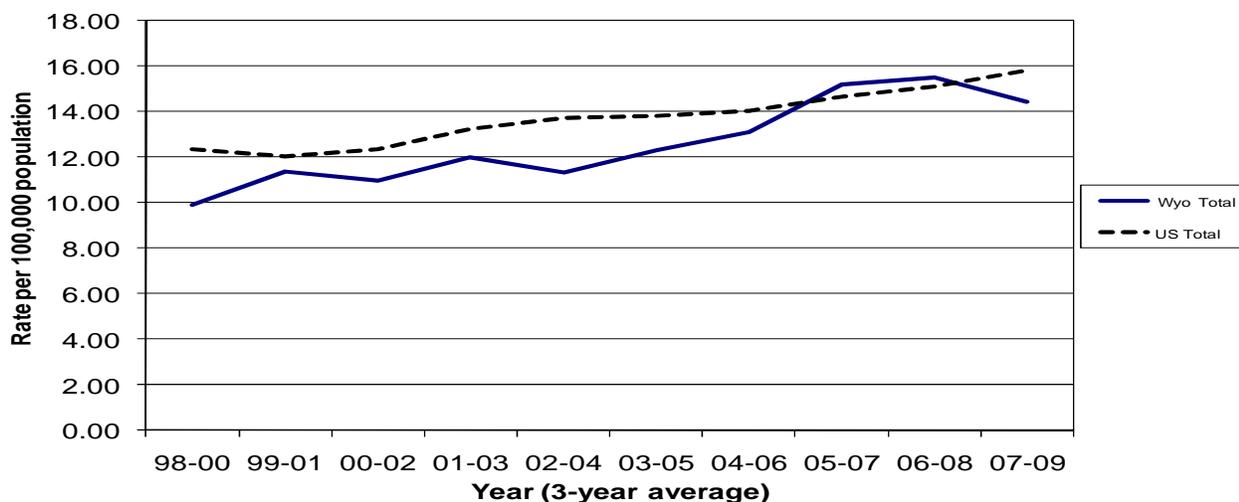
The 12-year trend shows a potential decrease from 06-08 to 07-09. The national rate continues to increase.

The percent of kidney/renal pelvis cases diagnosed as local was much lower in 2009 than in 2008 (71%), while the percentage diagnosed as regional and distant both showed a modest increase from 2008.

No statistically significant differences were found between the CHD's rates and the state rate for inci-

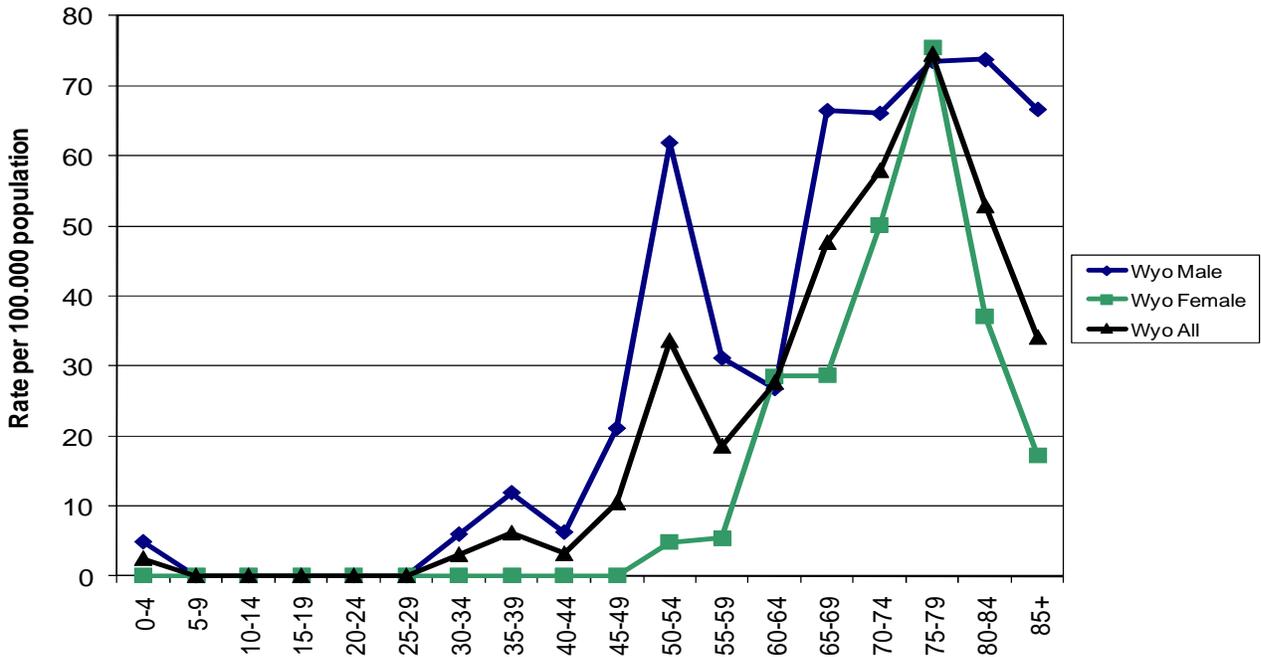
12-Year Incidence Trend

Kidney/Renal Pelvis



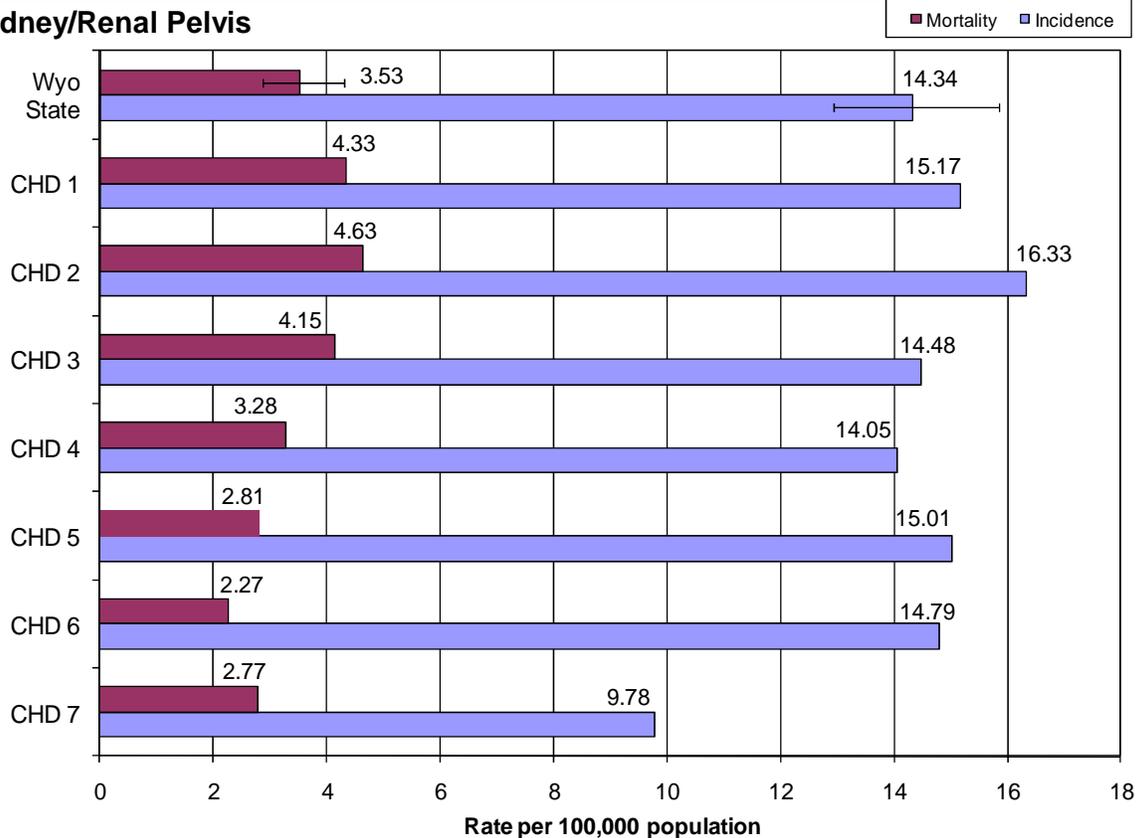
Age-Specific Incidence Rates - 2009

Kidney/Renal Pelvis



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

Kidney/Renal Pelvis



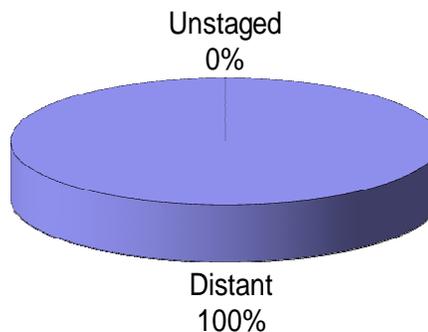
Leukemia

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	40	28	68
WY Incidence	16.7	10.1	12.9
US Incidence	16.2	10.0	12.7
# Cancer Deaths	29	21	50
WY Mortality	10.5	7.9	9.2
US Mortality	9.8	5.4	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



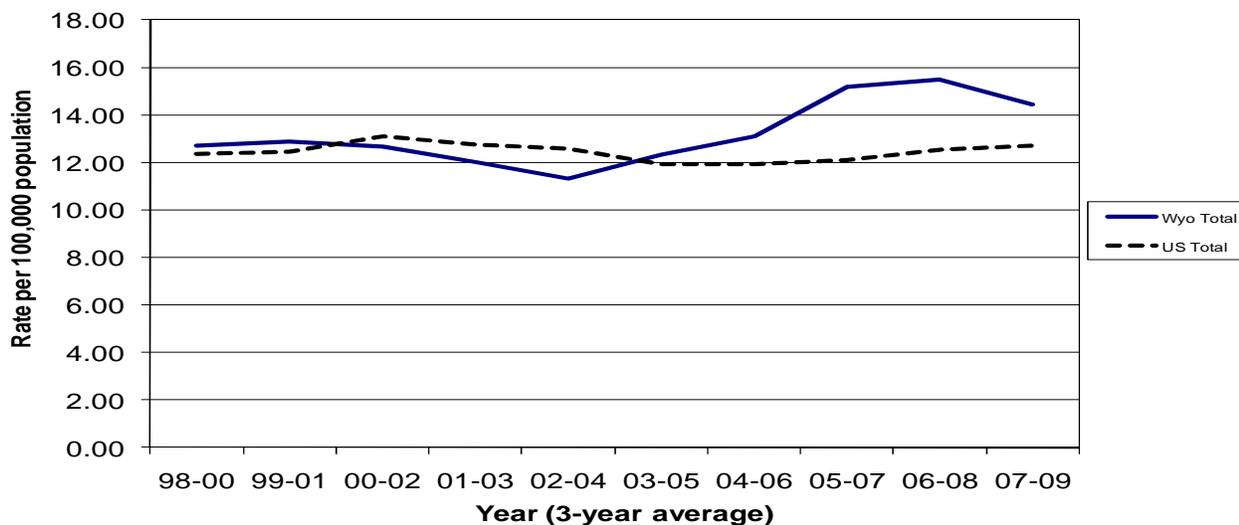
The incidence and mortality rates in Wyoming for leukemia were all slightly higher than the national rates for males, females, and total population. However, none of the differences were statistically significant.

The incidence trend for Wyoming shows a decrease from 06-08 to 07-09, while the national rate seems to be continuing to increase.

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

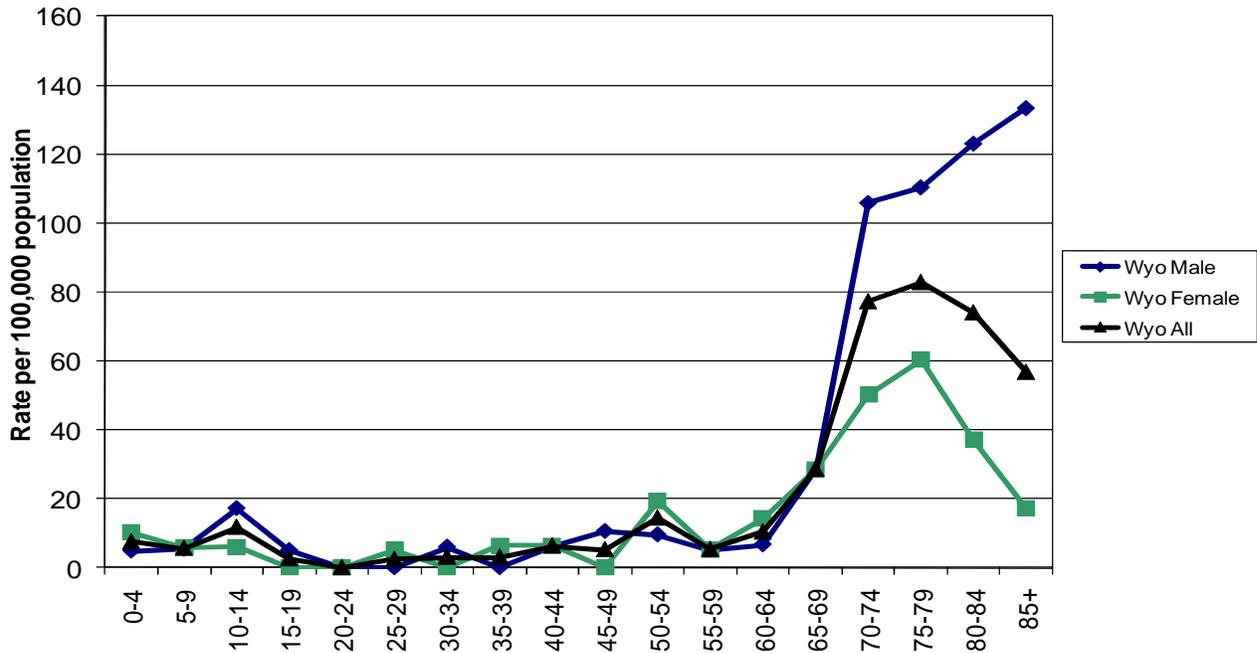
12-Year Incidence Trend

Leukemia



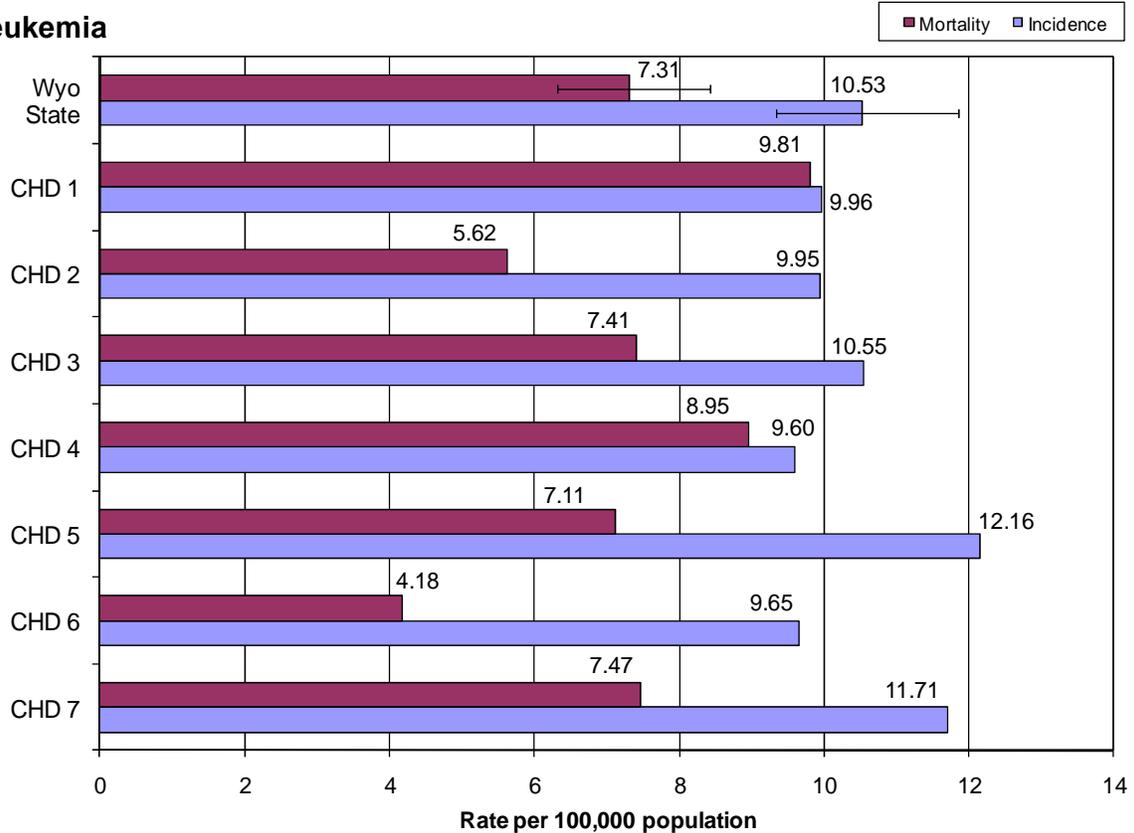
Age-Specific Incidence Rates - 2009

Leukemia



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

Leukemia



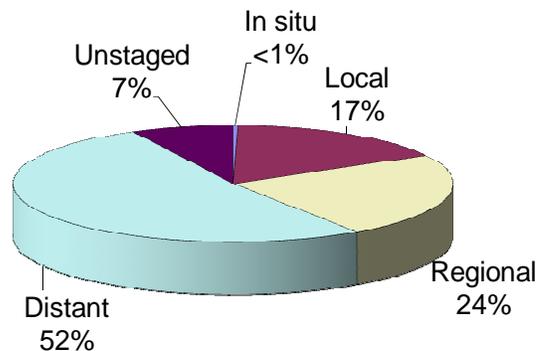
Lung and Bronchus

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	175	130	305
WY Incidence	65.2	43.7	53.8
US Incidence	71.2	52.9	60.6
# Cancer Deaths	137	101	238
WY Mortality	49.5	37.8	43.8
US Mortality	63.8	40.2	50.2

* 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, though not significantly.

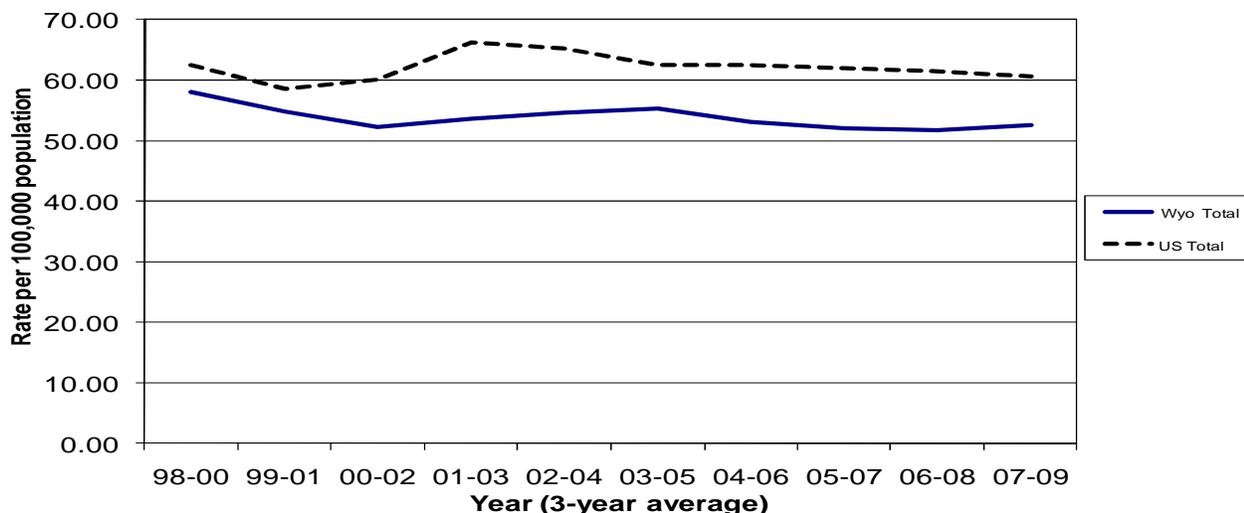
The 12 year incidence trend shows the rates for lung cancer in Wyoming shows a little increase from 06-08– to 07-09. The national rate appears to be decreasing slightly.

The percentage of cases diagnoses at each stage was unchanged from 2008 to 2009.

The incidence of lung cancer in CHD 7 was significantly lower than the state rate from 05-09. No other statistically significant differences were found between the CHD’s rates and the state rate for incidence or mortality.

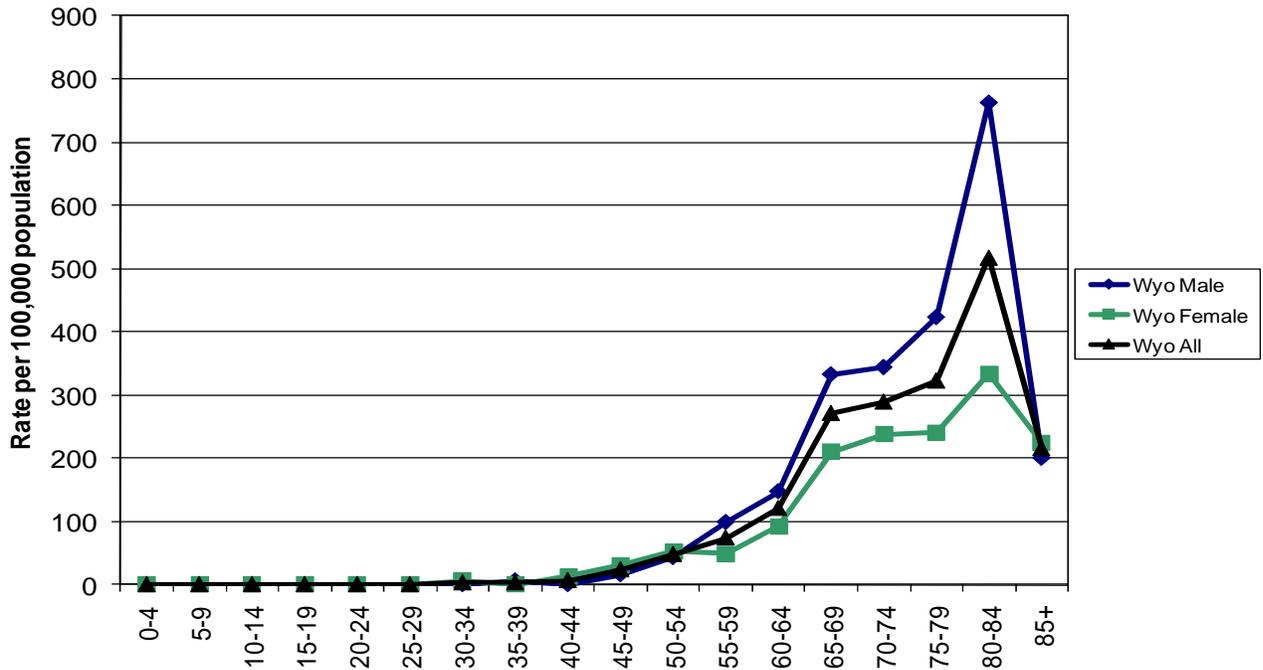
12-Year Incidence Trend

Lung and Bronchus



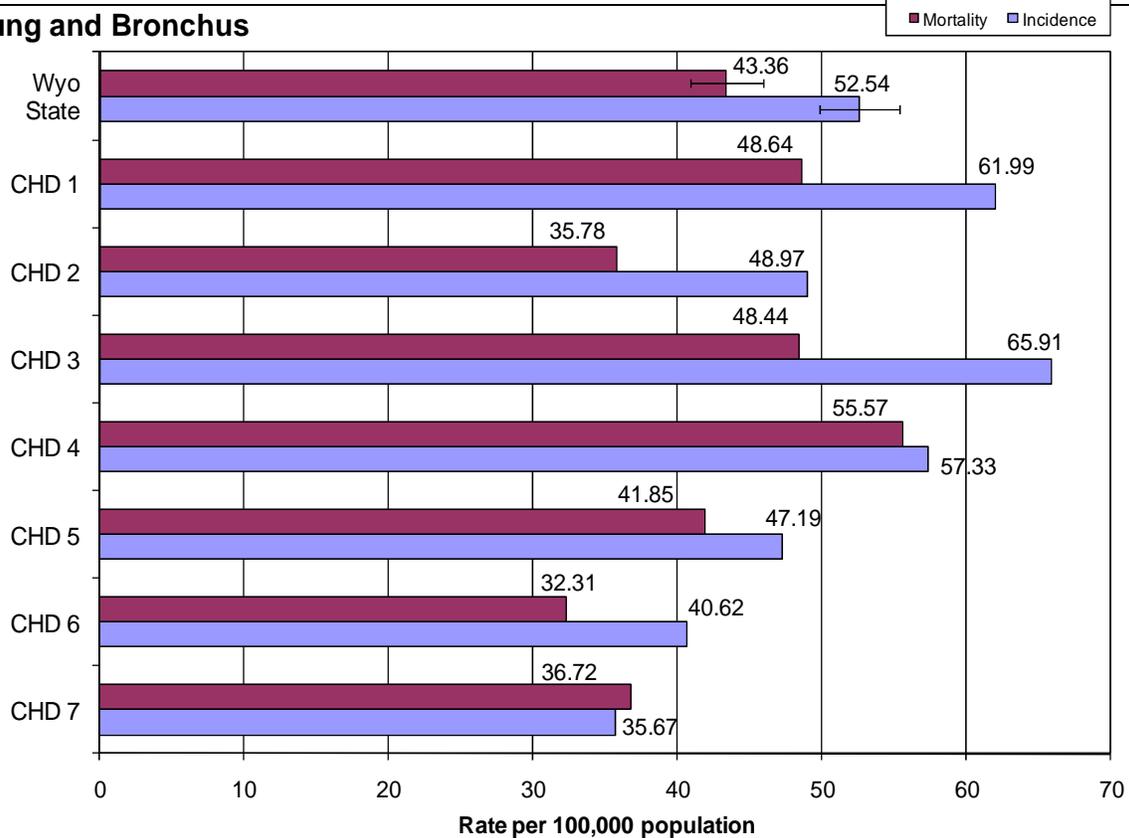
Age-Specific Incidence Rates - 2009

Lung and Bronchus



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

Lung and Bronchus



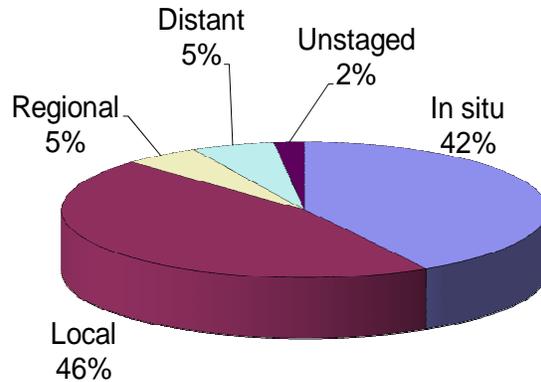
Melanoma (of the skin)

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	73	43	116
# In situ Cases	55	28	83
WY Incidence	26.2	15.7	20.7
US Incidence	31.5	19.7	24.6
# Cancer Deaths	12	7	19
WY Mortality	4.3	2.6	3.5
US Mortality	4.6	1.9	3.1

* 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 lower than the national rates. The mortality rates for Wyoming females and total population were higher than the national, while the male rate was a bit lower. None of the incidence or mortality differences were statistically significant.

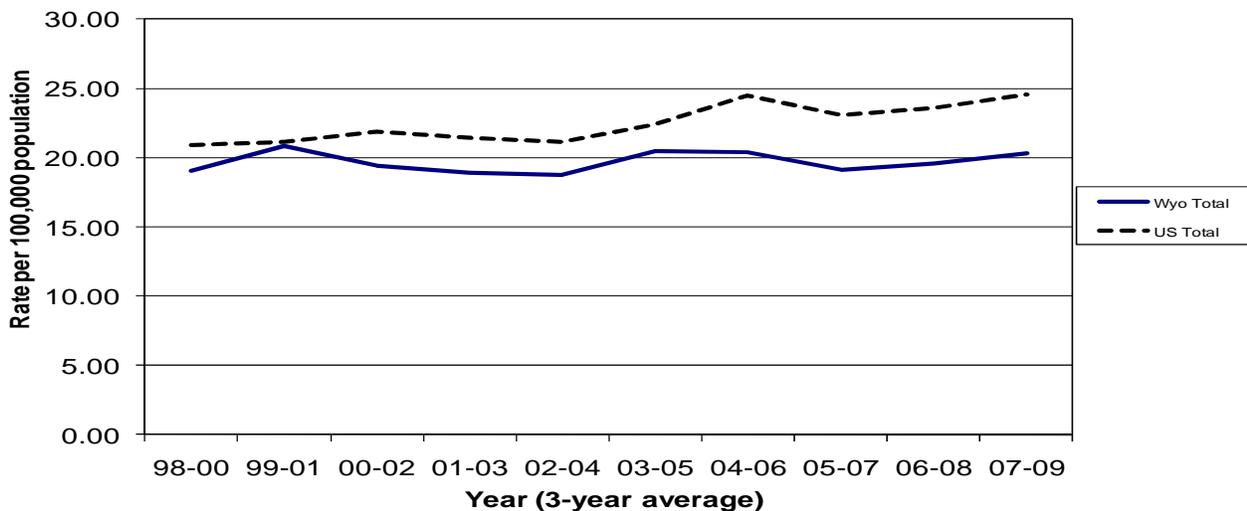
There appears to be a modest increase in melanoma incidence for both Wyoming and the U.S. starting in 05-07 and continuing through 07-09.

The percent of cases diagnosed at each stage in 2009 was essentially the same as the percentages in 2008.

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

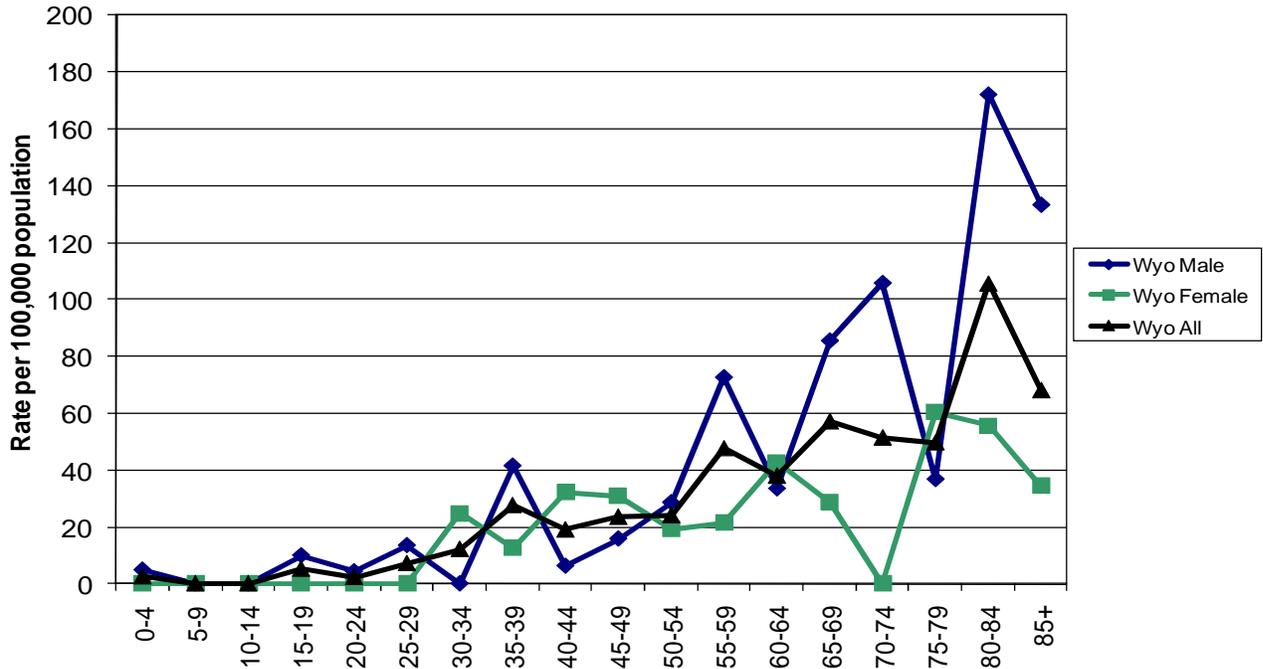
12-Year Incidence Trend

Melanoma (of the skin)



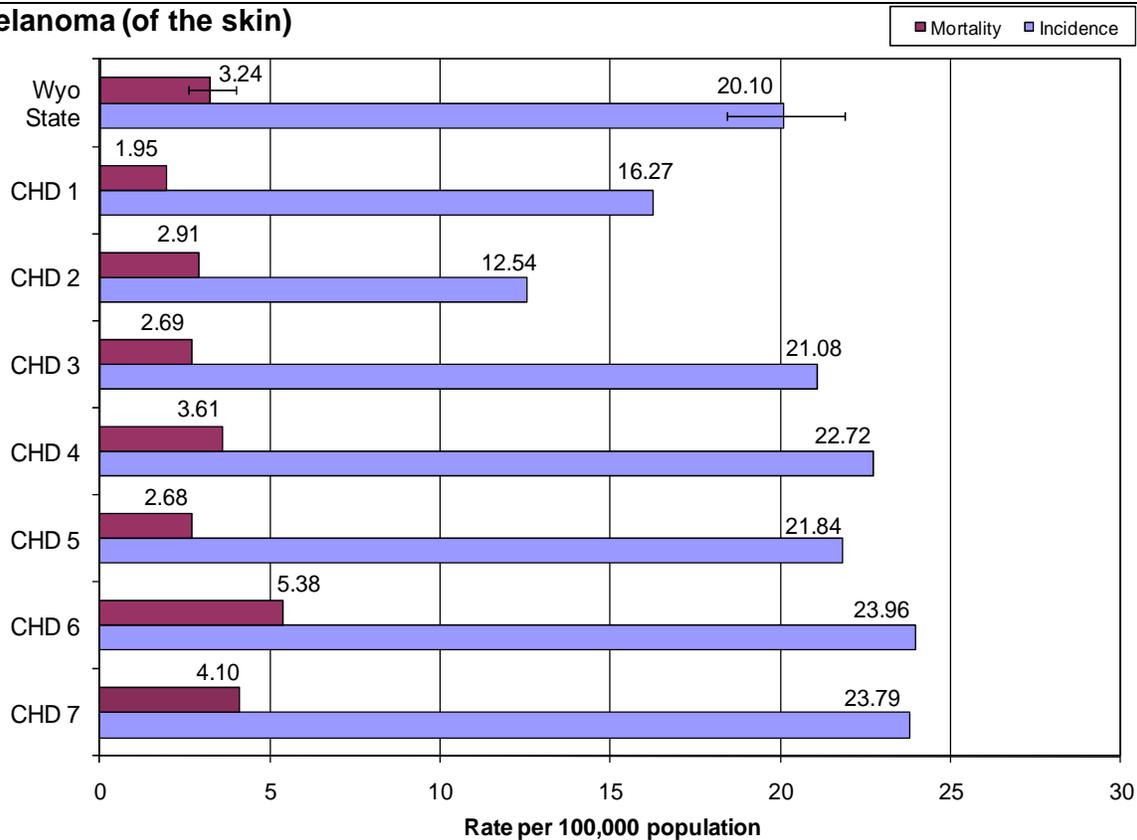
Age-Specific Incidence Rates - 2009

Melanoma (of the skin)



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

Melanoma (of the skin)



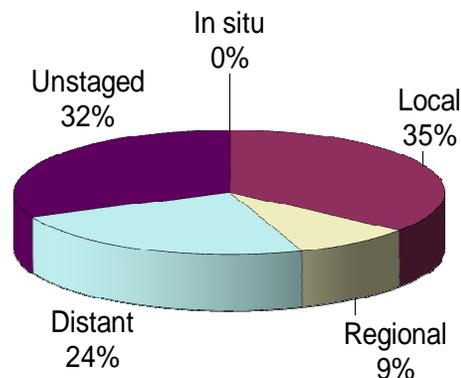
Non-Hodgkin Lymphoma

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	40	61	101
WY Incidence	15.7	19.9	17.5
US Incidence	24.4	17.0	20.3
# Cancer Deaths	14	20	34
WY Mortality	5.1	7.5	6.3
US Mortality	8.5	5.3	6.7

* 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 for males and total population in Wyoming were lower than the national rates, but the female rate was a little higher. The same was true with mortality rates, with males and total population being lower than the national rates, while female rate was slightly higher. None of the differences were statistically significant.

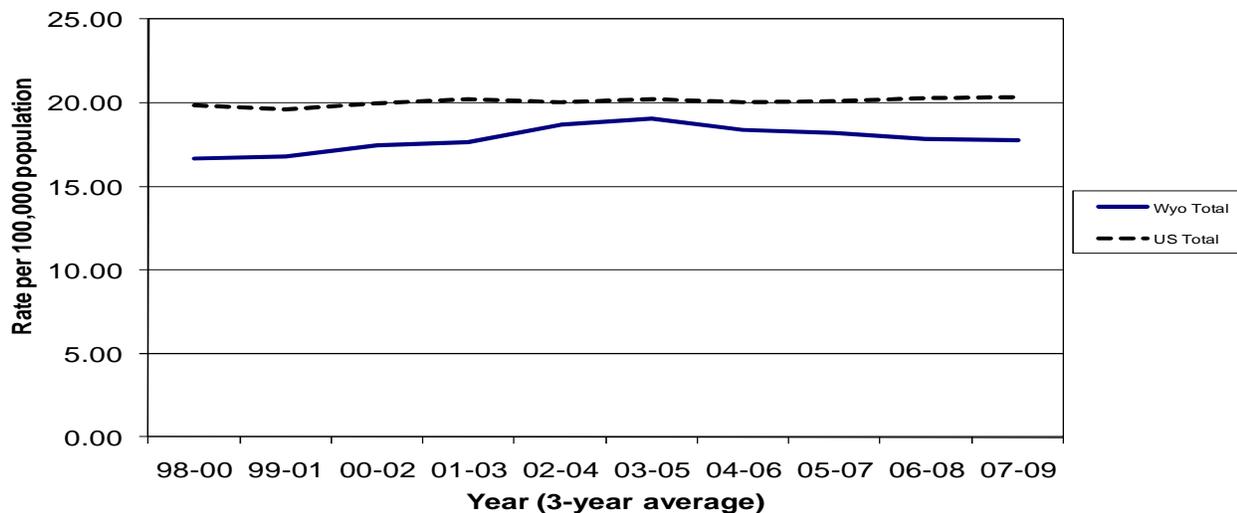
The incidence trends for both Wyoming and the nation seem to be more or less level.

The percent of cancers diagnosed at each stage was largely unchanged from 2008 to 2009.

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

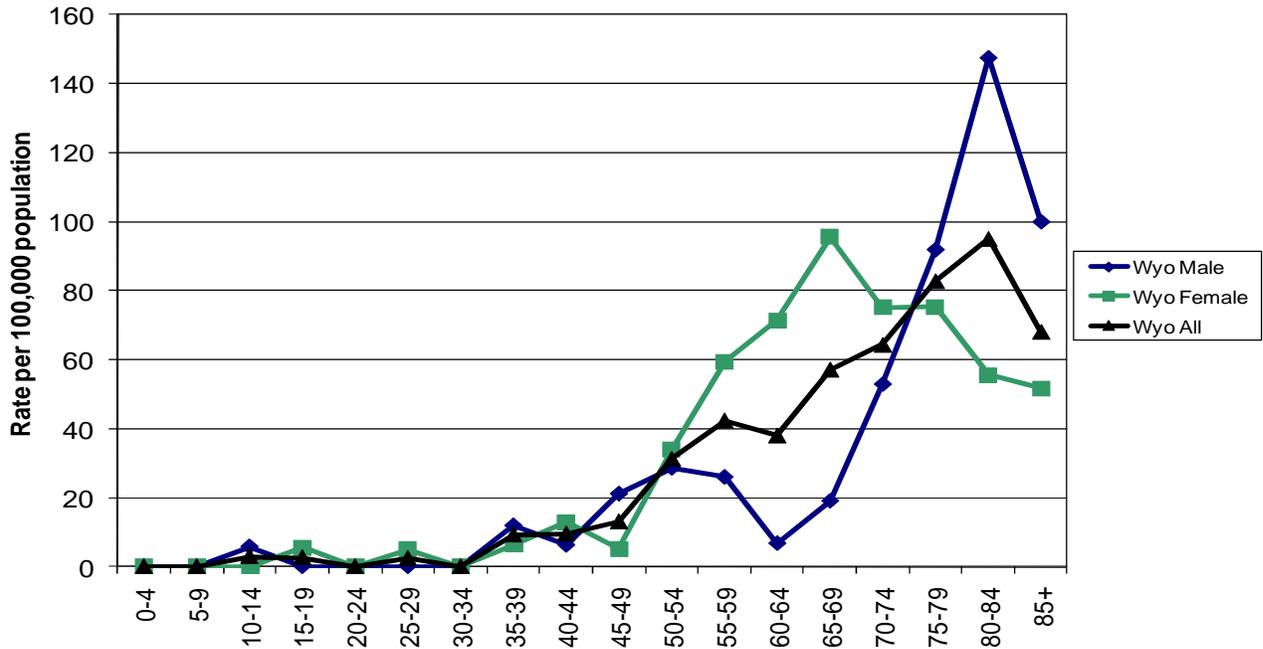
12-Year Incidence Trend

Non-Hodgkin Lymphoma



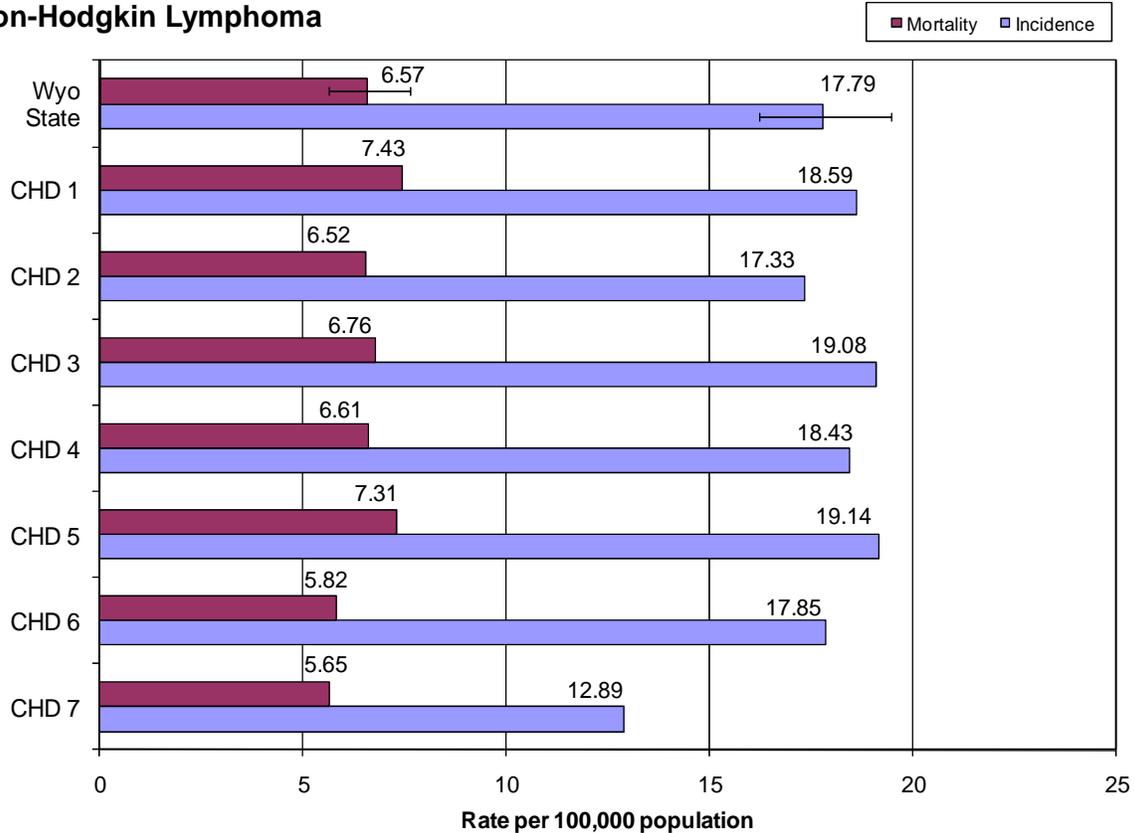
Age-Specific Incidence Rates - 2009

Non-Hodgkin Lymphoma



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

Non-Hodgkin Lymphoma



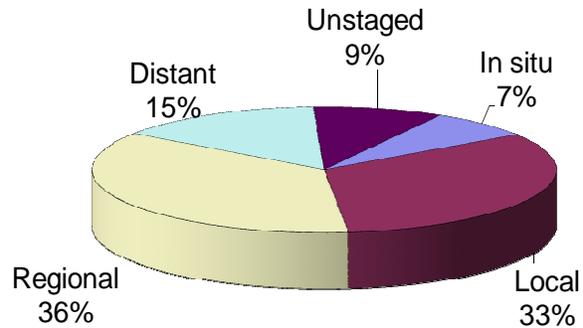
Oral Cavity

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	37	14	51
# In situ Cases	2	2	4
WY Incidence	14.2	4.8	8.9
US Incidence	16.2	6.3	11.0
# Cancer Deaths	8	5	13
WY Mortality	2.9	1.9	2.4
US Mortality	3.6	1.4	2.4

* 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 males, females, and total population were all lower than the national rate. The mortality rate for males was a little lower, while females were slightly higher and total population was the same as the national rate. None of the differences were statistically significant.

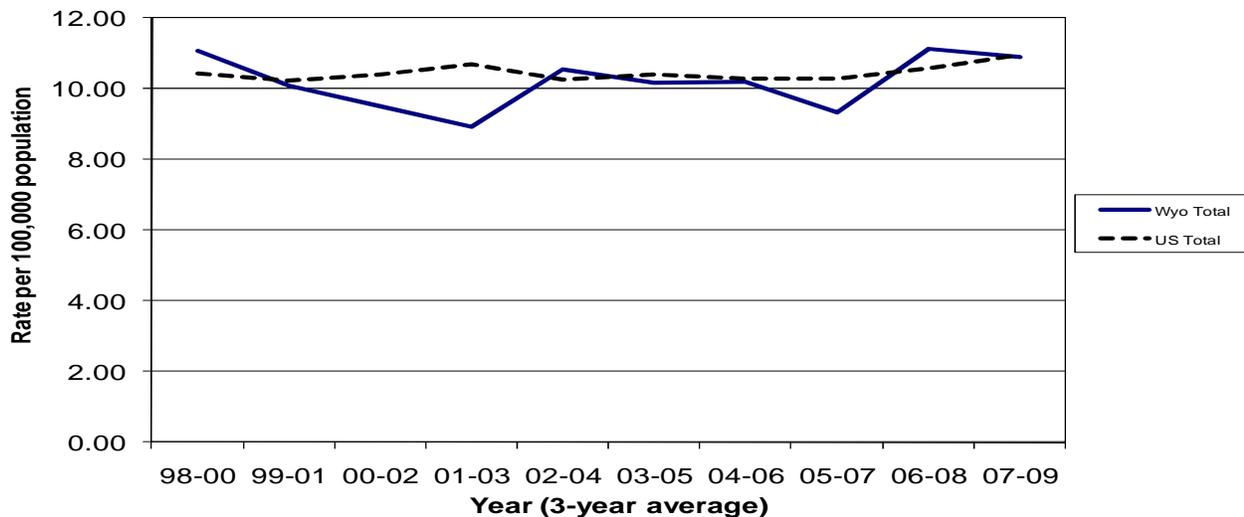
The incidence trend shows a slight decline from 06-08 to 07-09, while the national rate continues to increase.

Fewer cases of oral cancer were diagnosed at the local stage in 2009 than in 2008 (45%). The percentages in the other stages were essentially the same as 2008.

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

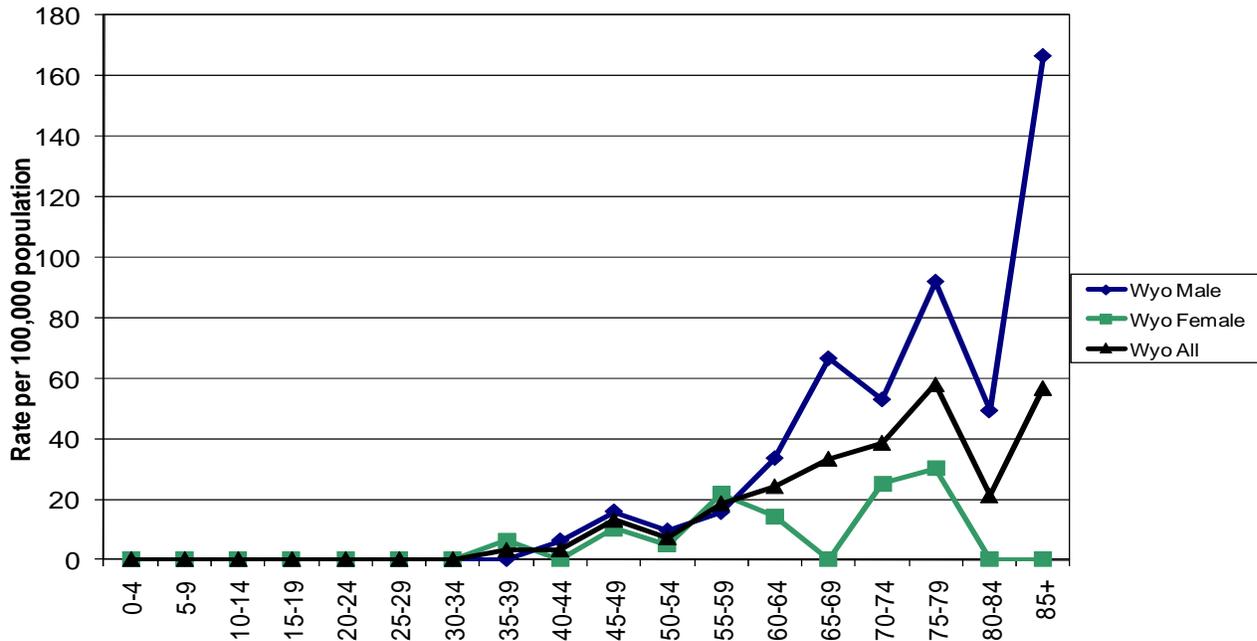
12-Year Incidence Trend

Oral Cavity and Pharynx



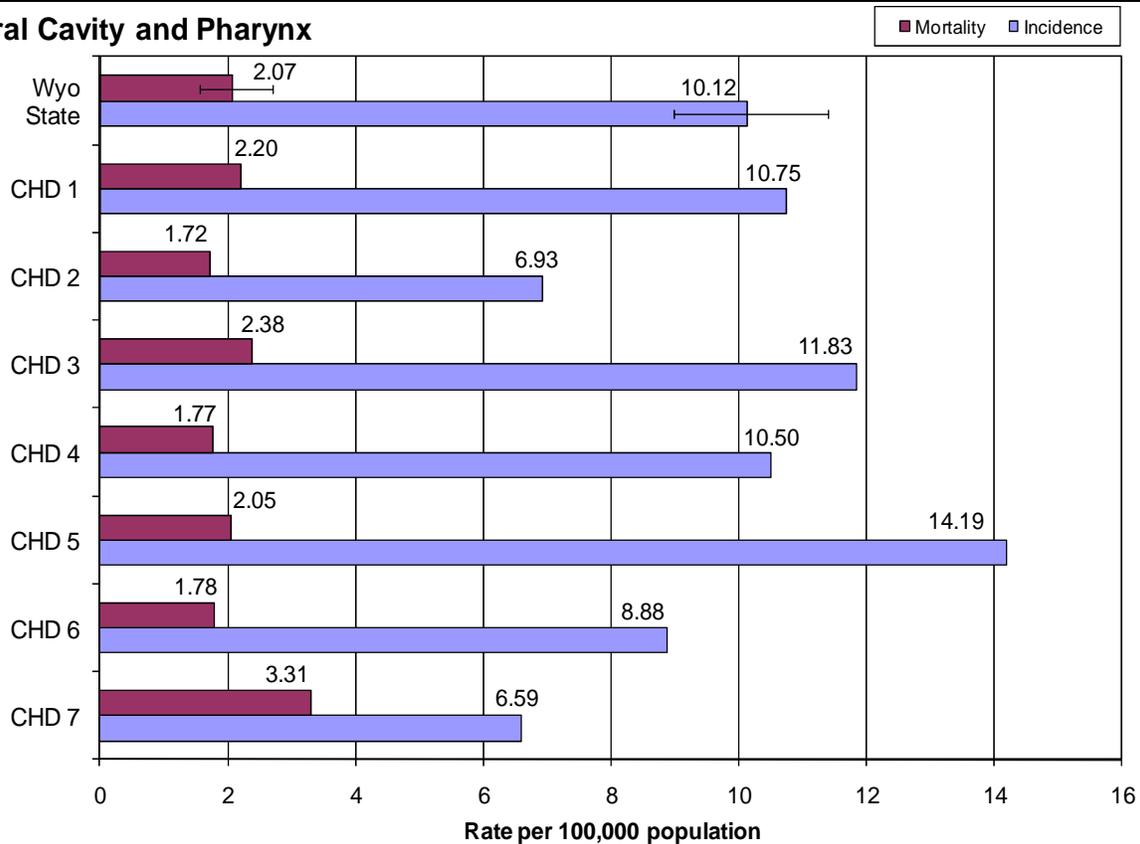
Age-Specific Incidence Rates - 2009

Oral Cavity and Pharynx



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

Oral Cavity and Pharynx



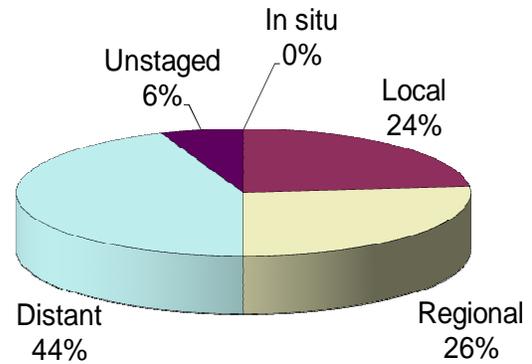
Ovary

Incidence and Mortality Summary

	Female
# Invasive Cases	34
WY Incidence	11.9
US Incidence	13.1
# Cancer Deaths	25
WY Mortality	9.4
US Mortality	8.2

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

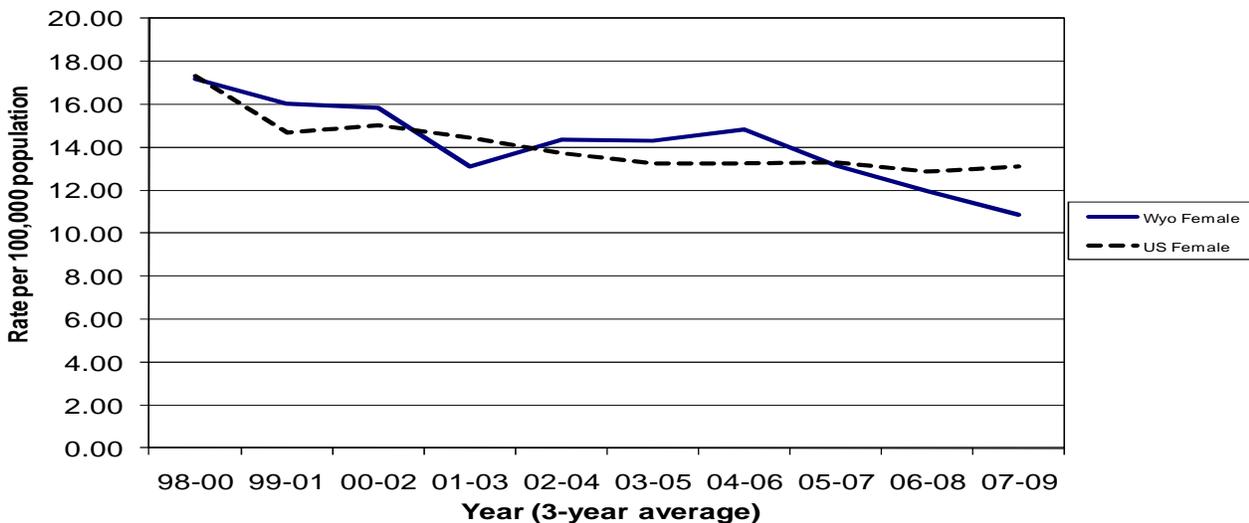
The 12-year incidence trend continues to show a steep decrease in Wyoming incidence that started in 04-06. The national incidence rate appears to be mostly level.

Fewer cancers of the ovary were diagnosed at the distant stage in 2009 than in 2008 (57%), while the percent of cancer diagnosed as regional increased from 2008 (18%). Neither change was significant.

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

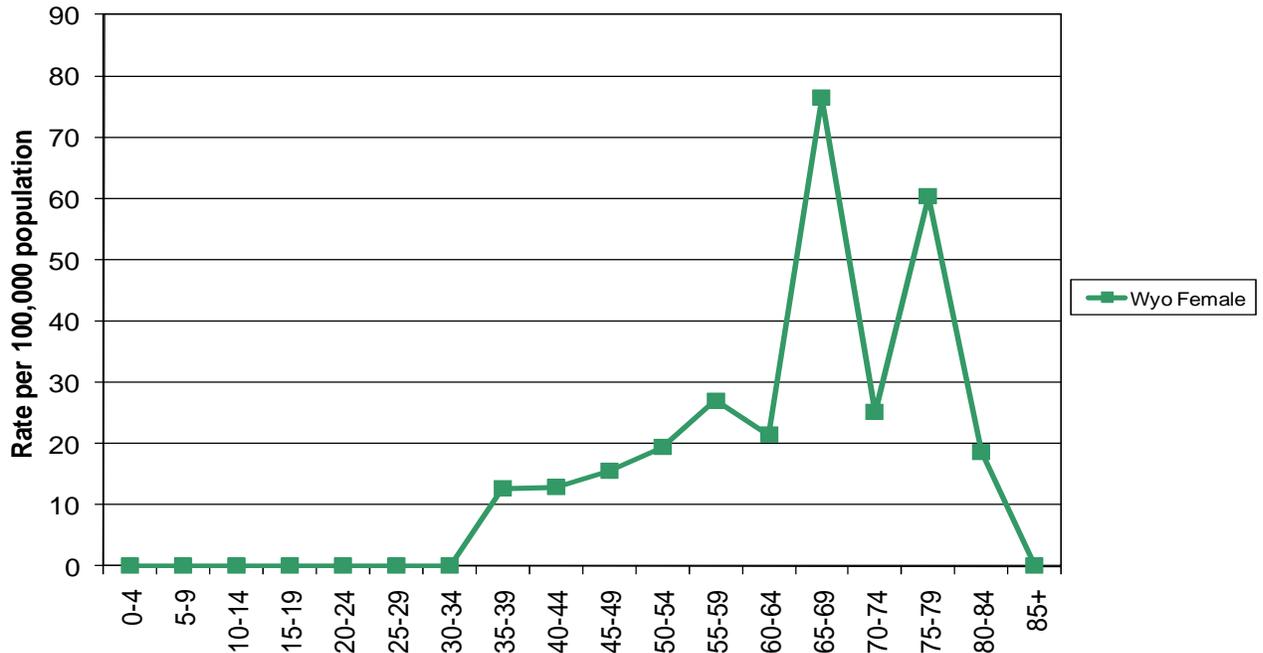
12-Year Incidence Trend

Ovary



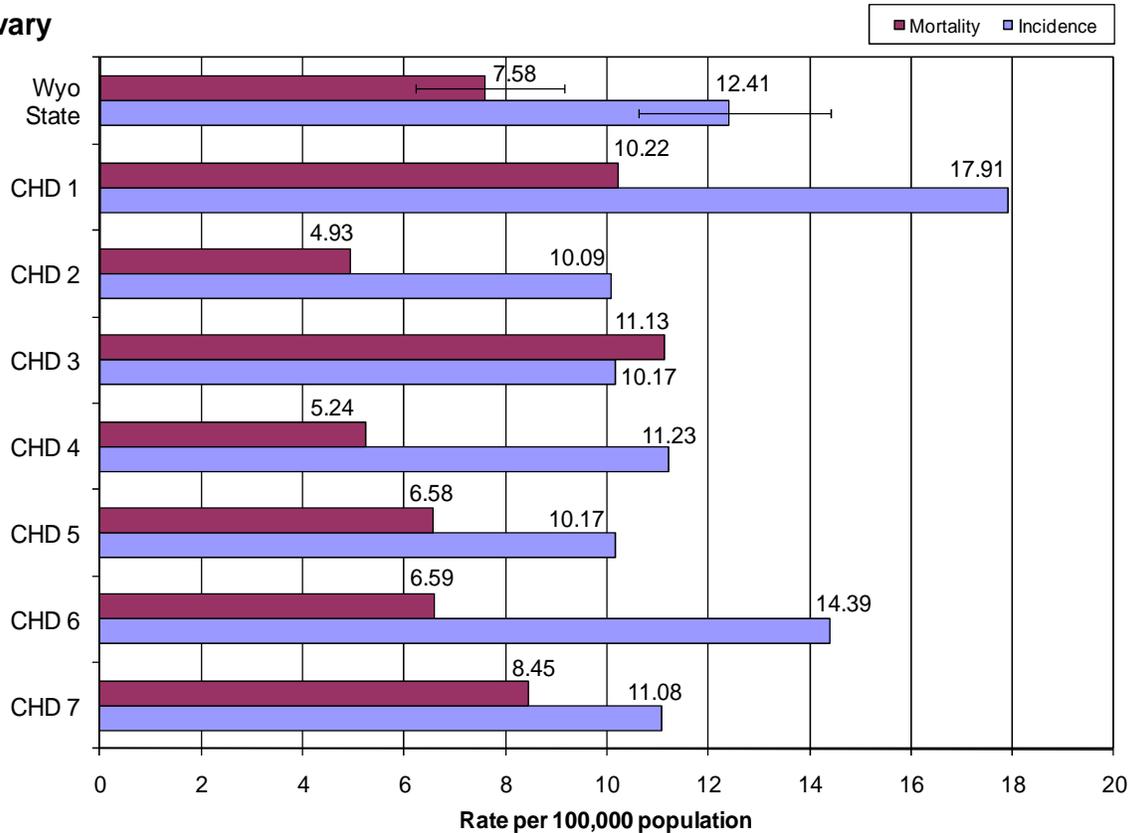
Age-Specific Incidence Rates - 2009

Ovary



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

Ovary



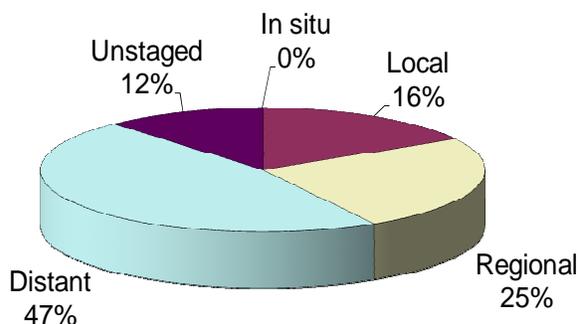
Pancreas

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	32	28	60
WY Incidence	12.8	9.1	10.8
US Incidence	13.4	10.6	11.9
# Cancer Deaths	35	23	58
WY Mortality	12.6	8.6	10.7
US Mortality	12.5	9.4	10.8

* 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 mortality rate for Wyoming females was slightly lower, while male and total population mortality rates were basically the same as the national rate. None of these differences were statistically significant.

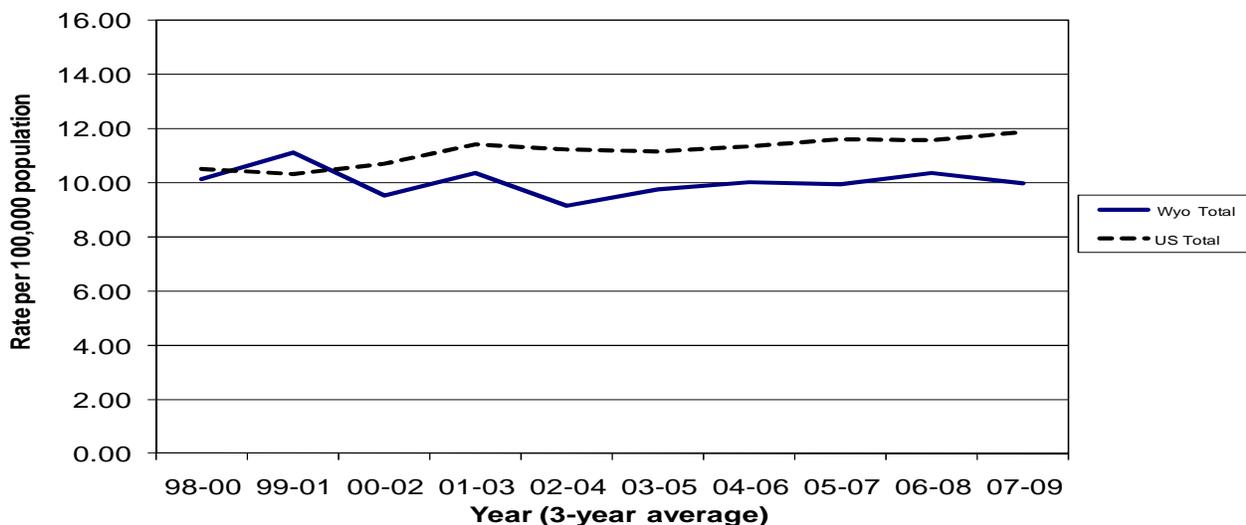
Wyoming's trend shows a small decrease from 06-08 to 07-09, while the national rate also appears to be increasing to a small extent.

A significantly greater percent of pancreatic cancers were unstaged in 2009 than in 2008 (5%). All other percentages were similar to 2008.

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

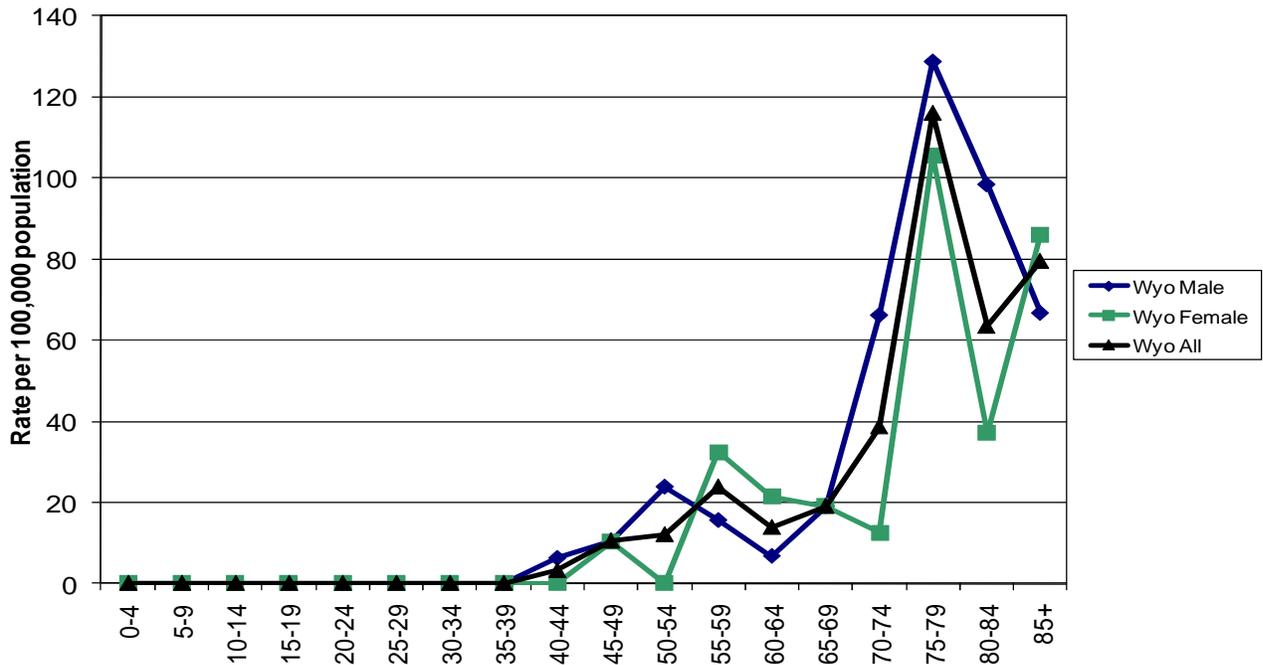
12-Year Incidence Trend

Pancreas



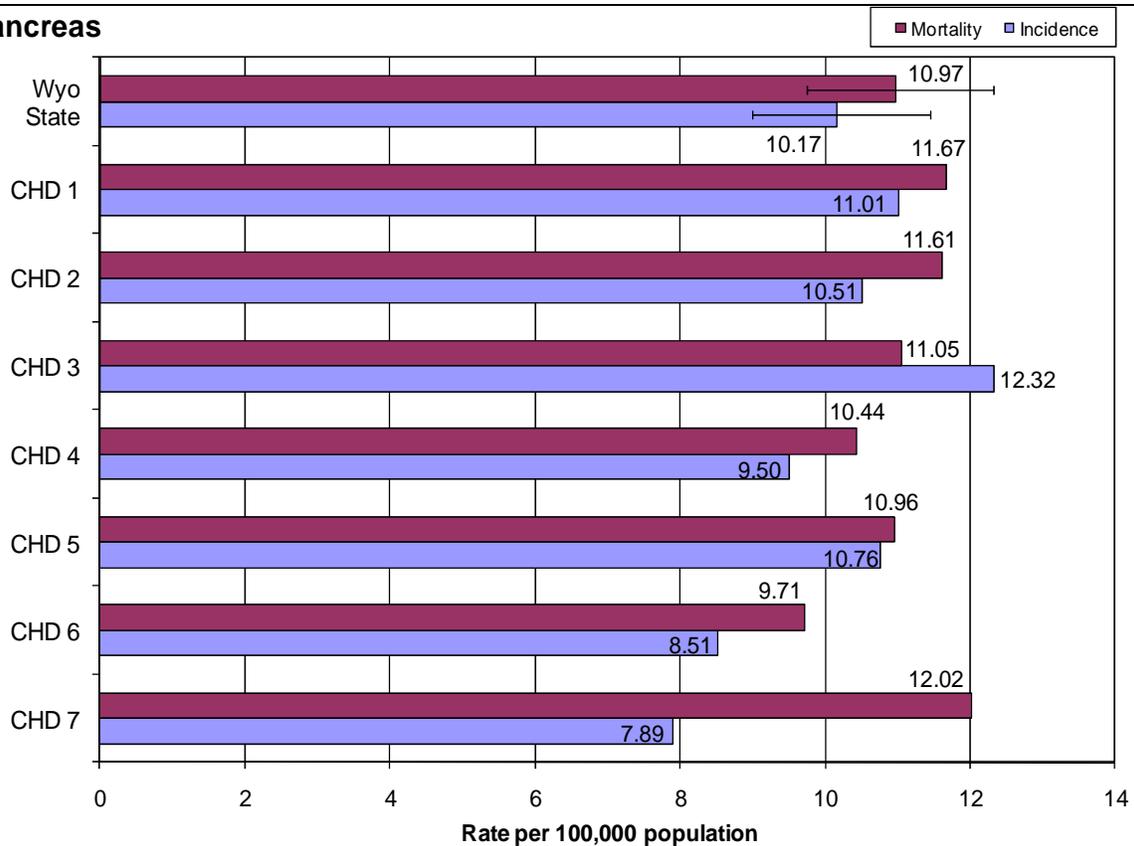
Age-Specific Incidence Rates - 2009

Pancreas



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

Pancreas



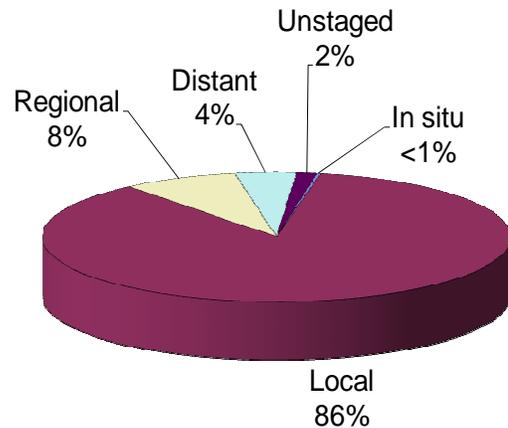
Prostate

Incidence and Mortality Summary

	Male
# Invasive Cases	425
WY Incidence	148.9
US Incidence	139.6
# Cancer Deaths	38
WY Mortality	13.7
US Mortality	21.2

* 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 higher than the national rate; however, the mortality rate was lower than the national. Neither difference was statistically significant.

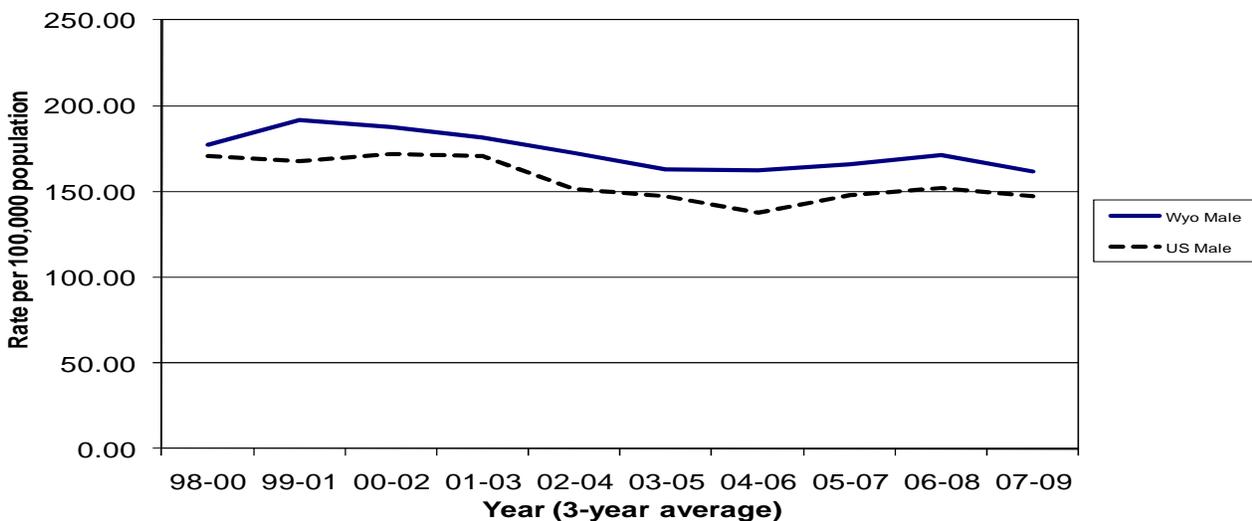
The incidence rate for both Wyoming and the U.S. show a modest decrease from 06-08 to 07-09.

The percent of cases diagnosed at each stage in 2009 was almost identical to the percents in 2008.

The incidence of prostate cancer in CHD 1 (193.32) was significantly higher than the state rate (161.47) during 05-09 time period. There were no other significant differences in incidence or mortality.

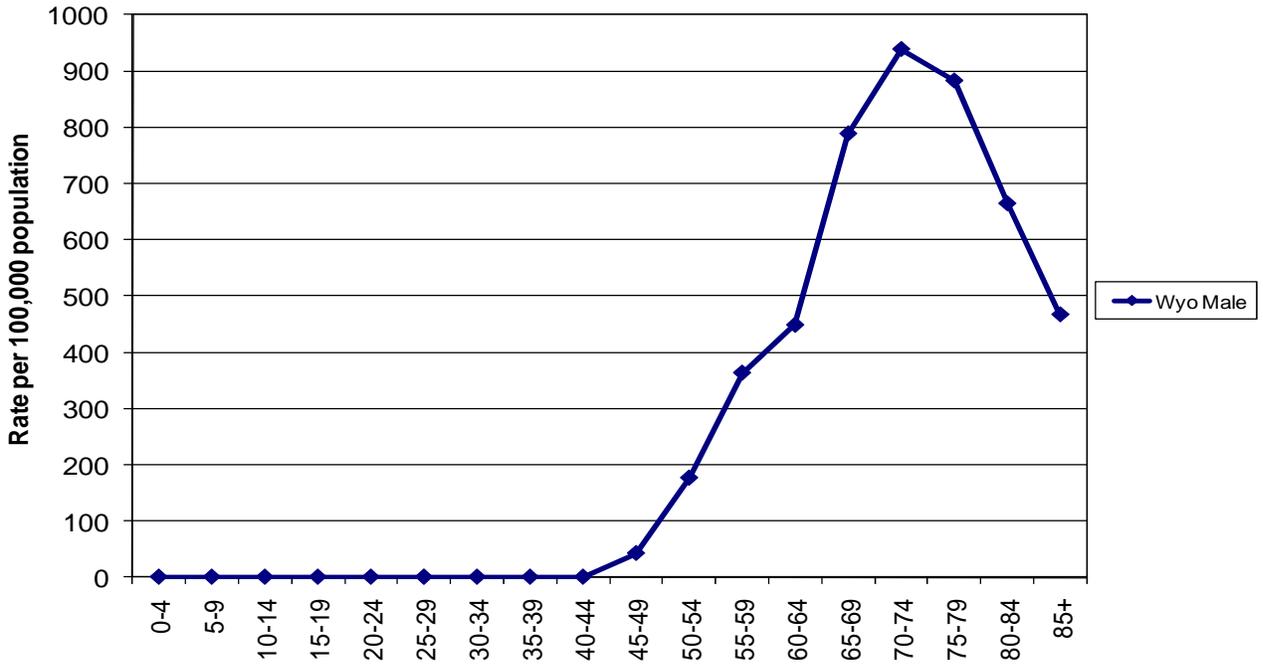
12-Year Incidence Trend

Prostate



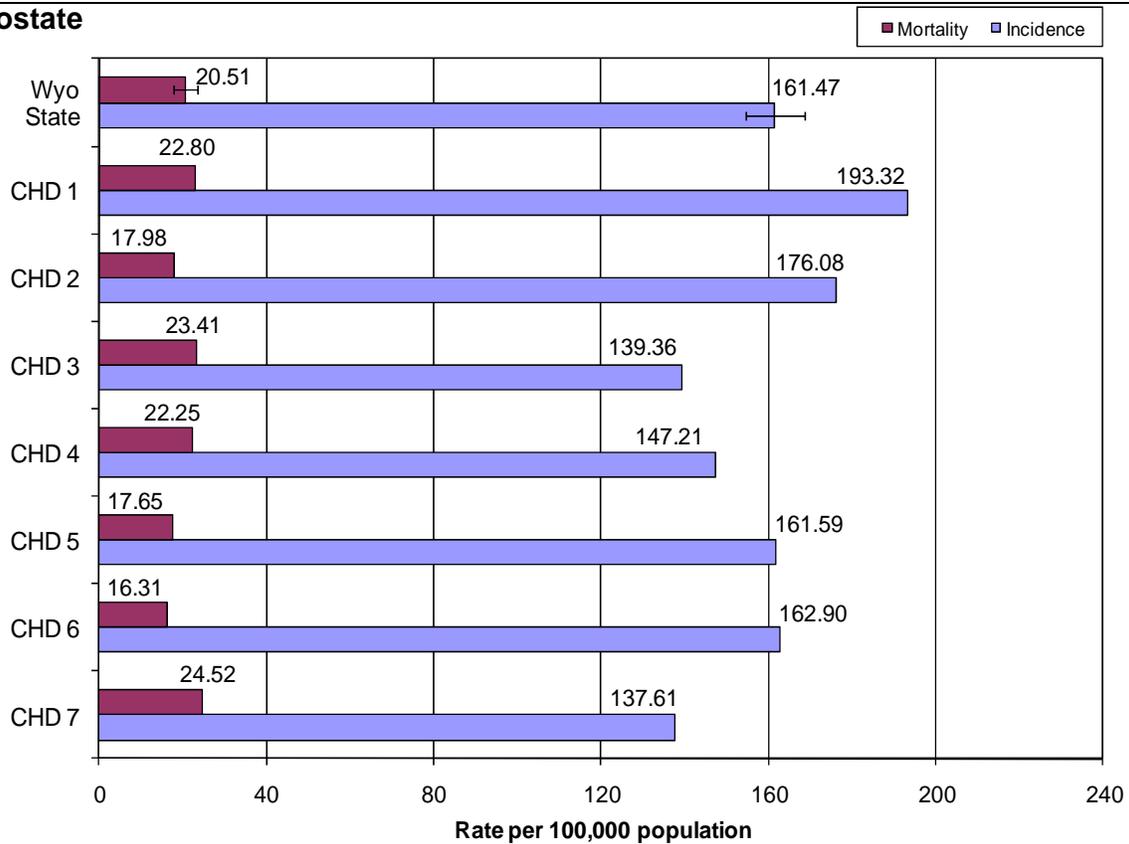
Age-Specific Incidence Rates - 2009

Prostate



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

Prostate



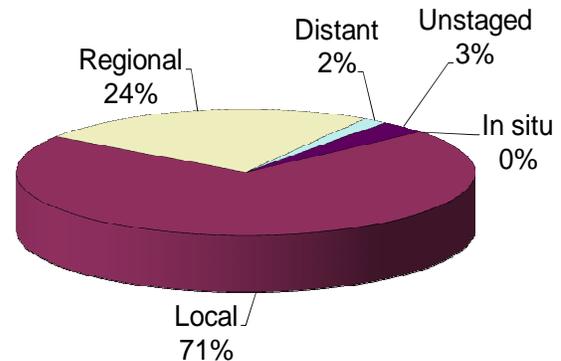
Thyroid

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	18	40	58
WY Incidence	6.1	15.2	10.5
US Incidence	6.6	19.8	13.1
# Cancer Deaths	0	2	2
WY Mortality	N/A	N/A	N/A
US Mortality	0.52	0.51	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, females, and total population were all lower 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.

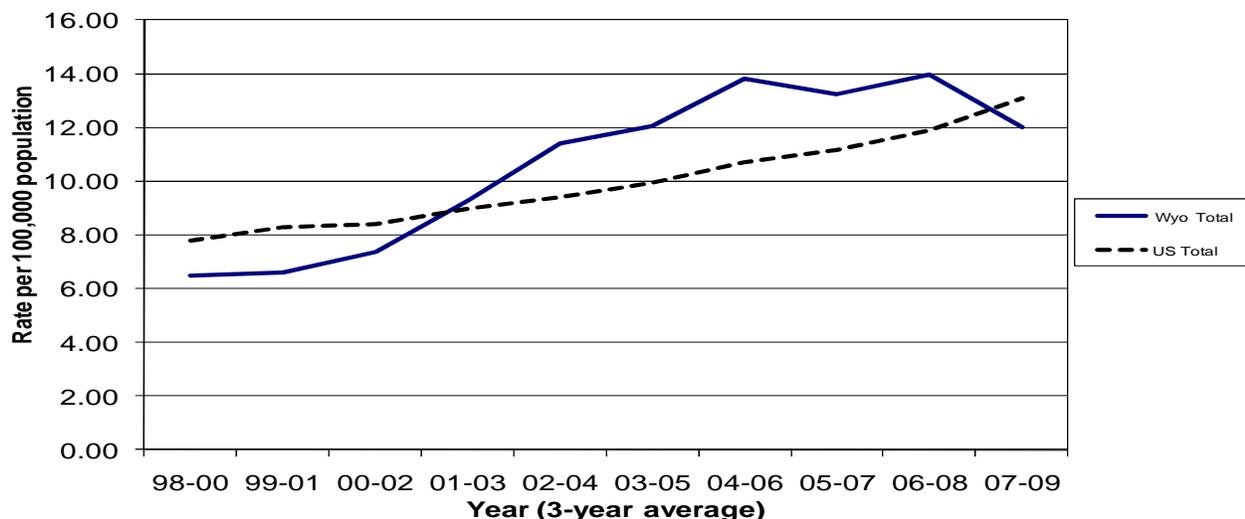
The trend for thyroid cancer in Wyoming shows a relatively steep decrease from 06-08 to 07-09. The national rate continues an increasing trend that started in 98-00.

The percentage of cases diagnosed at the local stage was higher in 2009 than 2008 (62%), although the percentage diagnosed as regional went down from 2008 (34%). The percentages for the other stages were very similar to those seen in 2008.

No statistically significant differences were found between the CHD's rates and state rate for incidence. Only three regions reported more than 5 deaths due to thyroid cancer from 2005-2009.

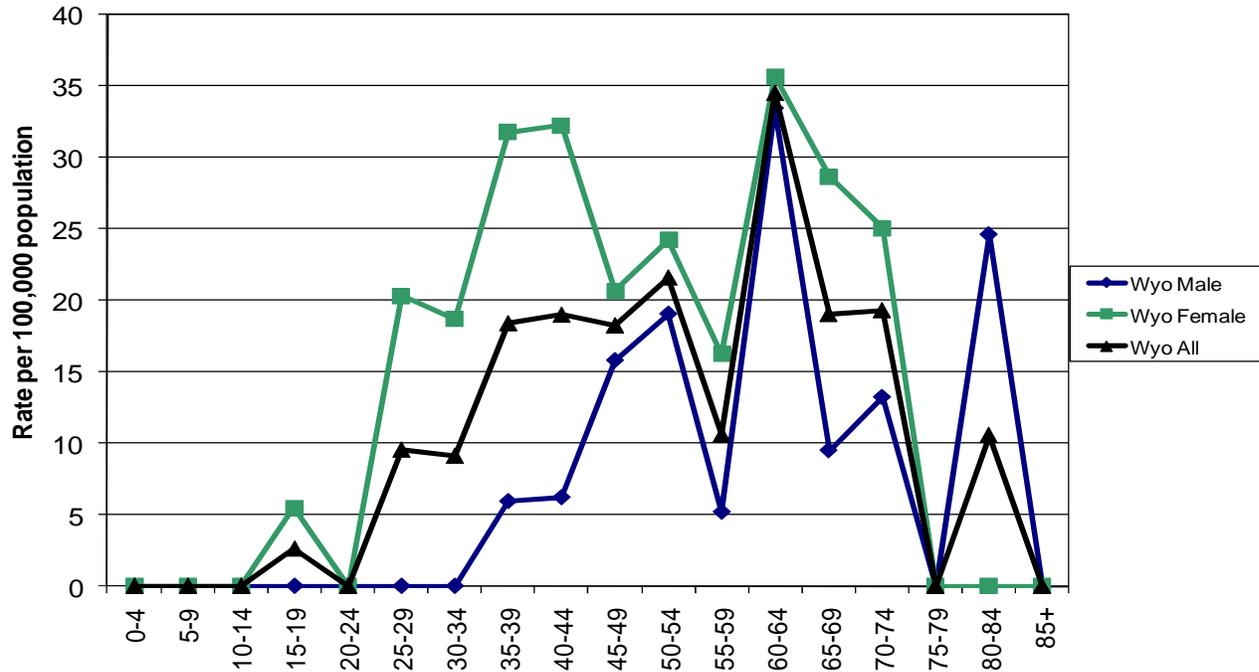
12-Year Incidence Trend

Thyroid



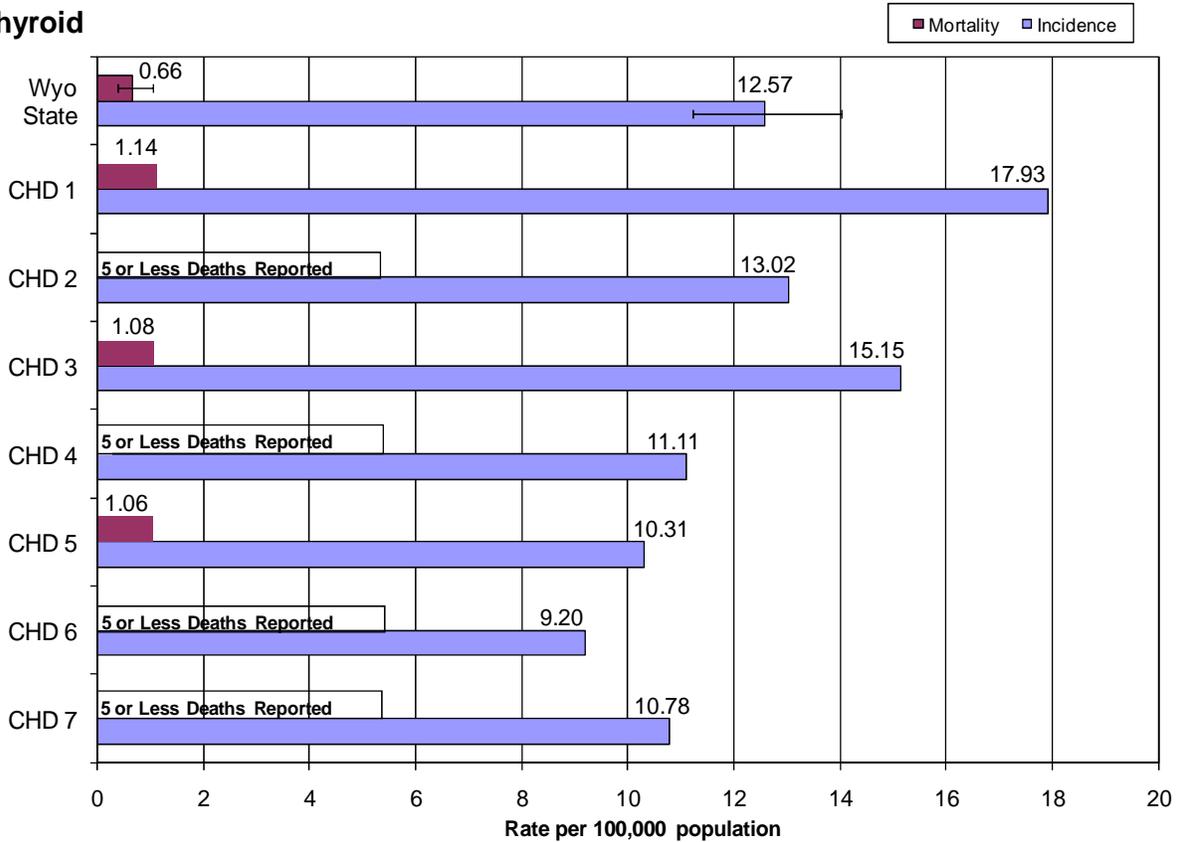
Age-Specific Incidence Rates - 2009

Thyroid



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

Thyroid



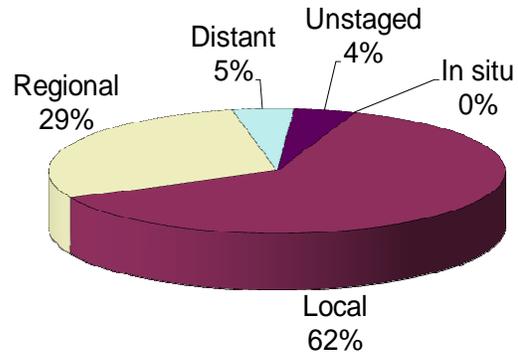
Uterine (Corpus Uteri &

Incidence and Mortality Summary

	Female
# Invasive Cases	69
WY Incidence	22.3
US Incidence	25.1
# Cancer Deaths	7
WY Mortality	2.6
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.

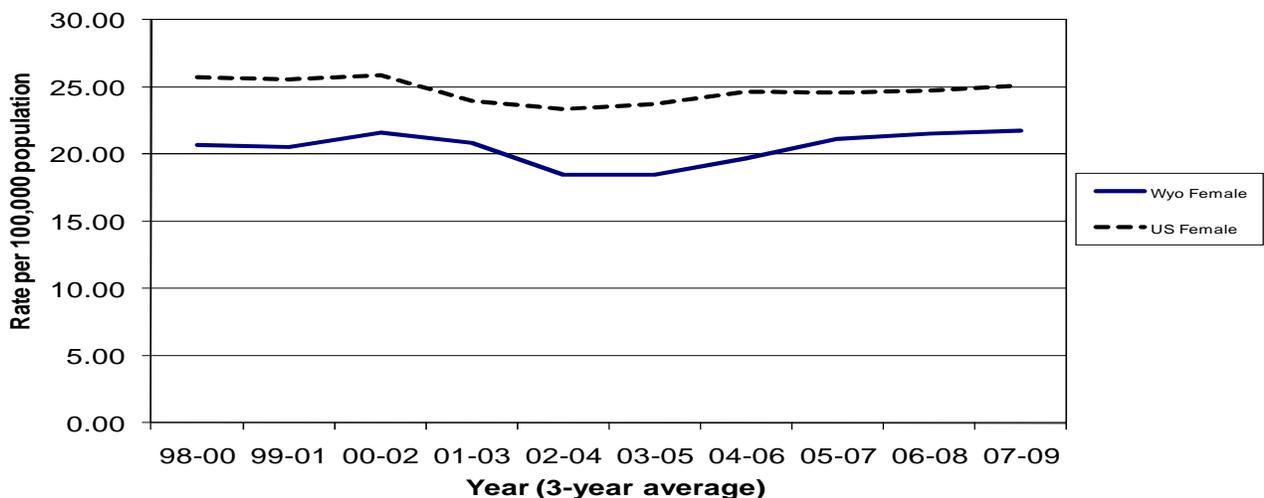
The Wyoming and national incidence rates remained relatively level in 07-09.

There were no significant difference in the percentages diagnosed at each stage as compared to 2008.

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

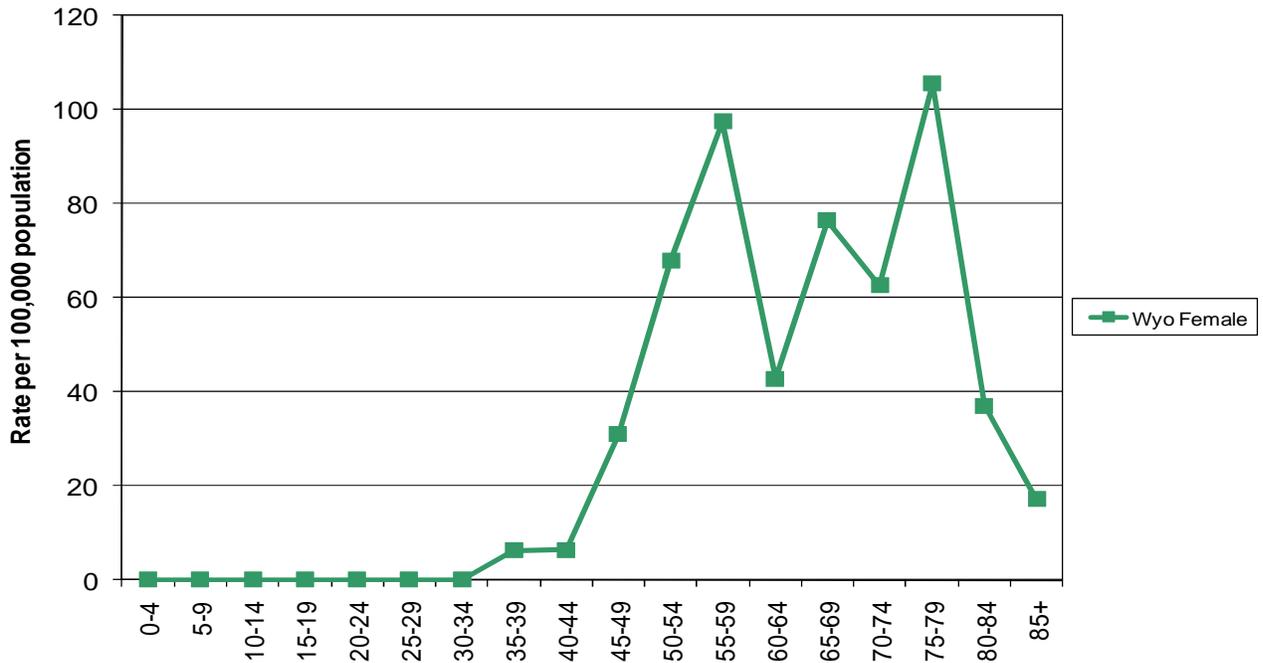
12-Year Incidence Trend

Uterine



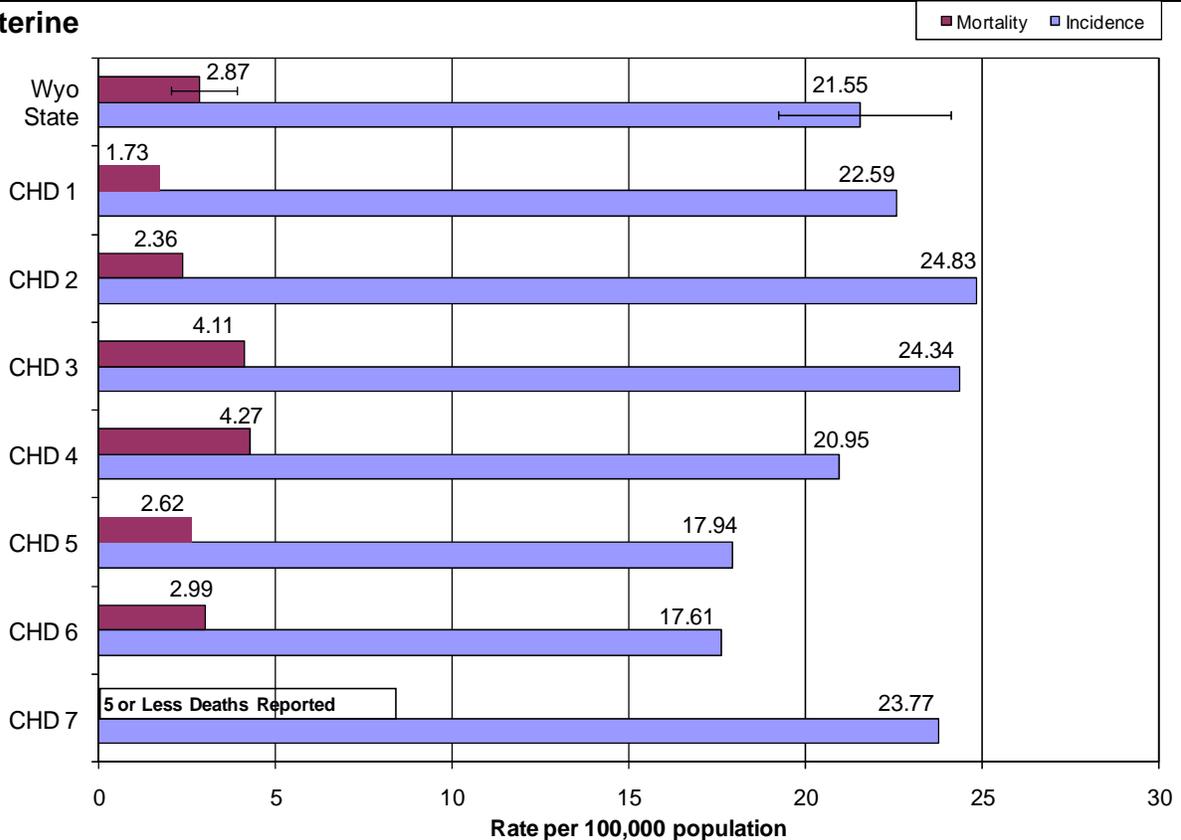
Age-Specific Incidence Rates - 2009

Uterine



Cancer Health District Incidence and Mortality 5-Year Average, 2005-2009

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 17 Regs Research Data + Hurricane Katrina Impacted Louisiana Cases, Nov 2009 Sub (2000-2008) <Katrina/Rita Population Adjustment> Linked To County Attributes - Total U.S., 1969-2009 Counties, National Cancer Institute, DCCPS, Surveillance Research Program, Cancer Statistics Branch, released April 2011, based on the November 2009 submission.

Wyoming Department of Administration and Information, Economic Analysis Division. Wyoming State and County Population. (<http://eativ.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 appropriate

Chart A:

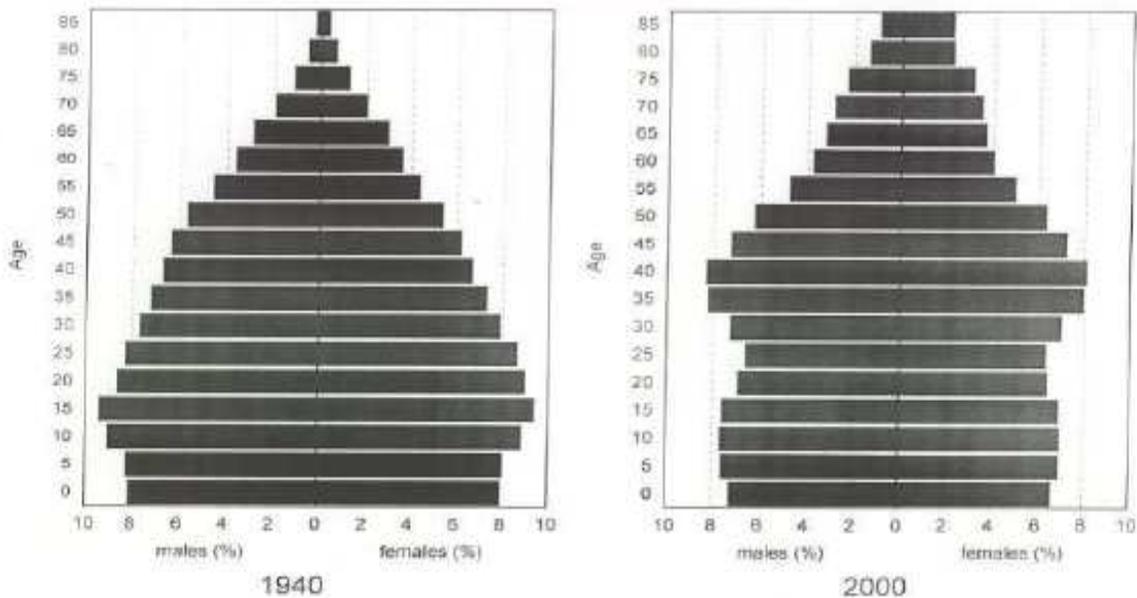


Chart B:

U.S. Age-Adjusted Cancer Mortality, All Sites Combined by Standard Year Populations 1940, 1970, 2000

