State of Wyoming

Department of Health

Annual Report on Cancer in Wyoming - 2007

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Department of Health

Annual Report on
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Executive Summary

Cancer rates in Wyoming continue to be generally lower than the comparable national rates. Incidence for all cancer sites combined for Wyoming decreased to 411.0 per 100,000 in 2007 from 432.7 per 100,000 population in 2006. However, Wyoming is still lower than the national rate of 458.1 per 100,000 population. Mortality for all sites for Wyoming in 2007 was also down slightly to 161.6 per 100,000 population, and was lower than the national rate of 180.1 per 100,000. Other incidence rates that were significantly different from the national rates included, all cancer sites for females and males, bladder cancer, lung cancer in males, and melanoma in males.

Looking at the incidence rates over a twelve year period (12 year Incidence graphs), the trends for all sites and prostate cancer appear to leveling out. Other rates (kidney & renal pelvis, leukemia, and uterine) are on the increase. Still others (bladder, brain/CNS, female breast, colorectal, lung, melanoma, non-Hodgkin lymphoma, oral cavity, ovary, pancreas, prostate, and thyroid) show a decrease from previous years.

The top five cancer sites for incidence were the same as the previous year: prostate, female breast, lung/bronchus, colorectal and urinary bladder. The most common cancer for incidence by age groups were: leukemia (5-9 years), testis (15-19), Hodgkin lymphoma (20-24 years), thyroid (25-34 years), breast (35-49 years), prostate (50-79 years), lung, (80-84), and breast (85+ years).

The top five cancer sites for mortality were lung/bronchus, colorectal, breast, ill-defined, and cancer of the pancreas. The most common cancers for mortality by age groups were: breast (30-34), cancer of the cervix (35-39), breast (40-49 years), and lung (50-85+ years).

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 completenss 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 259A, Cheyenne, WY 82002. You may also visit our web site at: http://wdhfs.state.wy.us/cancer.

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 2007 except for the 12-year incidence trend, which used 3-year averages (e.g., 98-00 for 1999 or 00-02 for 2001). 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 2007 cancer cases of Wyoming residents received by WCSP as of June 15, 2009.

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 2006 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 2007 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 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 2006 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 Administraiton and Information - Economic Analysis Division. Population data for 2007 are estimates for the July 1, 2007 county populations by age, sex, 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 2007 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 skins
- 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 sexes 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 WCSP Epidemiologist at (307) 777-8654.

Confidence Intervals

A confidence interval is a way of telling how confident we are in the accuracy of a cancer rate. For example, we will often say that the rate of cancer in an area is 130 per 100,000 people and that the confidence interval is 120 to 140 per 100,000. This means that even though we calculated the rate at 130 per 100,000 we would feel better talking about the rate as being between 120 and 140 per 100,000.

Confidence intervals are also used as another 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 then there is statistical significance. This is indicated in the report as "statistically significant" or "significant."

Staging

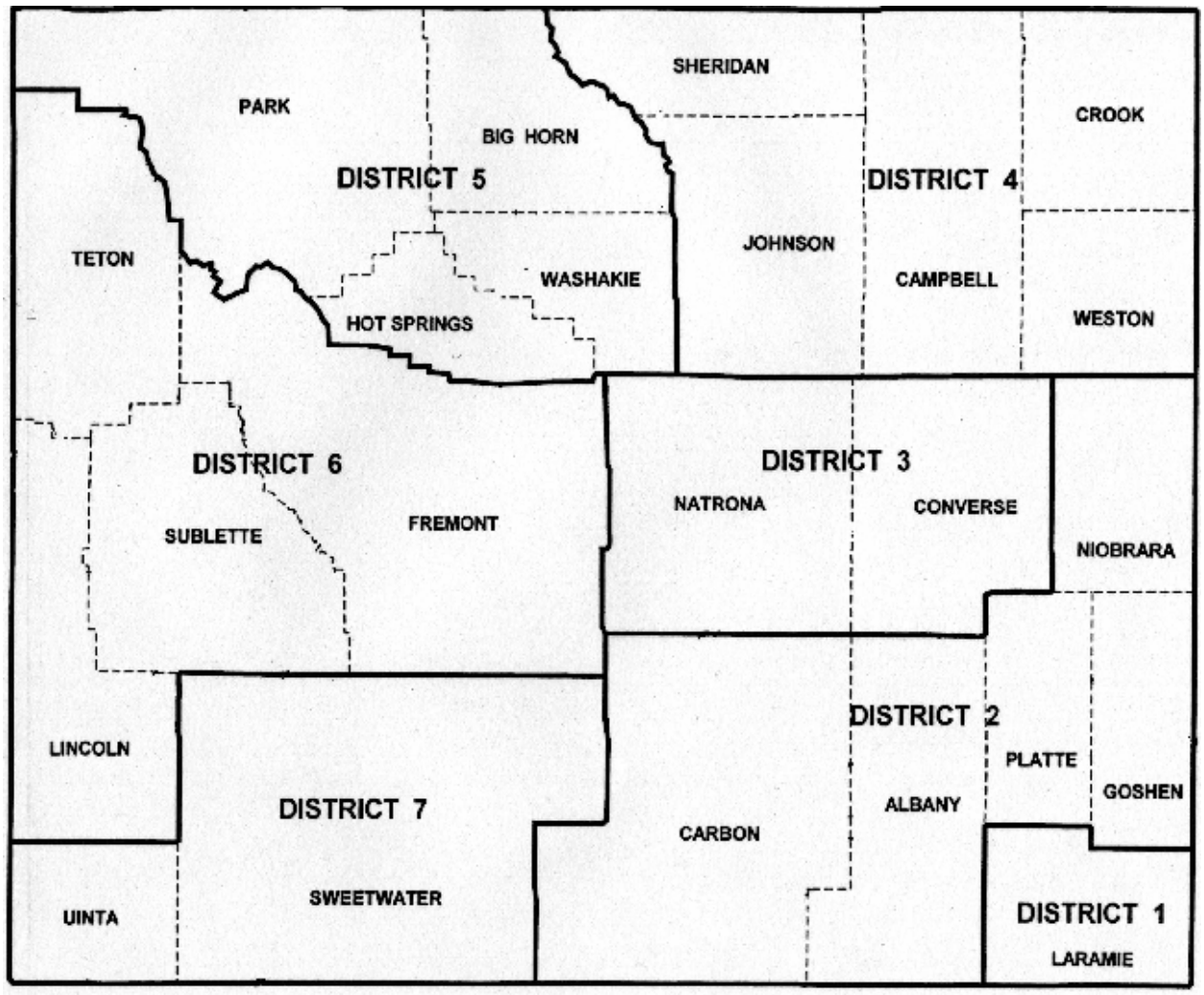
In Situ	cancer has not invaded the organ.
Local Stage	cancer has invaded the organ of origin.
Regional Stage	cancer has invaded beyond the organ of origin by direct extension to adjacent organs/tissues and/or regional lymph nodes.
Distant Stage	direct extension beyond adjacent organs or tissues or metastases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

Note: Starting in 2004 the WCSP as well as other cancer registries belonging to the National Data Standard setters adopted and began using the Collaborative Staging Method for staging cancer cases. This method uses 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 such as frontier vs. rural, and by total 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 - 2007

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 2007: 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	3	4	0	0	0	0	0	0	0
Bladder w/ in situ	95	17	112	0	0	0	0	0	2	0
Bones and Joints	2	1	3	0	1	1	0	0	0	0
Brain	11	12	23	1	0	0	0	0	1	0
Breast	1	309	310	0	0	0	0	0	1	5
Cervix	0	17	17	0	0	0	0	1	1	2
Colorectal	109	101	210	0	0	0	0	1	0	1
Esophagus	18	5	23	0	0	0	0	0	0	0
Eye	3	5	8	0	0	0	0	0	0	1
Gallbladder	0	3	3	0	0	0	0	0	0	0
Hodgkin	9	10	19	0	0	1	1	4	1	1
Ill-Defined	28	36	64	0	0	0	0	0	0	0
Kidney	49	37	86	0	0	0	0	0	0	0
Larynx	10	6	16	0	0	0	0	0	0	0
Leukemia	40	23	63	4	2	0	0	1	0	0
Liver	18	8	26	1	0	0	0	0	0	0
Lung	125	124	249	0	0	0	0	0	0	0
Melanoma	47	45	92	0	0	0	1	1	3	3
Myeloma	12	12	24	0	0	0	0	0	0	0
Nose	2	0	2	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	50	39	89	0	0	0	2	0	3	0
Oral Cavity	30	24	54	0	0	0	0	1	1	0
Other Biliary	5	2	7	0	0	0	0	0	0	0
Other Digestive	1	6	7	0	0	0	0	0	0	0
Other Endocrine	4	2	6	0	0	0	0	0	0	0
Other Female	0	11	11	0	0	0	0	0	0	0
Other Male	4	0	4	0	0	0	0	0	0	0
Other Skin	7	5	12	0	0	0	0	0	0	0
Other Respiratory	0	2	2	0	0	0	0	0	0	0
Other Urinary	4	1	5	0	0	0	0	0	0	0
Ovary	0	22	22	0	0	0	0	0	0	0
Pancreas	24	18	42	0	0	0	0	0	0	0
Prostate	460	0	460	0	0	0	0	0	0	0
Small Intestine	8	5	13	0	0	0	0	0	0	0
Soft Tissue including Heart	9	1	10	0	0	0	0	1	0	0
Stomach	16	12	28	0	0	0	0	0	0	0
Testis	16	0	16	0	0	0	3	1	3	1
Thyroid	14	48	62	0	1	0	0	0	6	8
Uterine	0	54	54	0	0	0	0	0	2	0
Mesothelioma	7	1	8	0	0	0	0	0	0	0
All Sites	1,239	1,027	2,266	22	4	2	7	11	24	22

[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	2	0	0	0	0	1	0	0
Bladder w/ in situ	0	1	4	6	12	11	18	14	20	15	9
Bones and Joints	0	0	0	0	0	1	0	0	0	0	0
Brain	0	2	2	4	2	4	1	3	1	0	2
Breast	9	11	30	27	37	48	41	38	29	18	16
Cervix	2	0	4	1	0	4	0	0	0	1	1
Colorectal	2	5	12	20	21	24	29	26	29	24	16
Esophagus	0	0	0	0	2	3	6	2	7	3	0
Eye	0	0	0	1	1	0	4	0	0	0	1
Gallbladder	0	0	0	0	1	1	0	0	1	0	0
Hodgkin	2	0	2	1	2	2	1	0	0	1	0
Ill-Defined	4	2	4	7	6	4	9	9	5	5	9
Kidney	3	3	6	6	12	11	13	11	10	7	4
Larynx	1	0	0	5	1	3	1	2	0	3	0
Leukemia	1	4	2	4	10	3	7	7	7	8	3
Liver	0	1	1	3	4	3	6	3	1	1	2
Lung	3	0	6	11	17	34	51	38	44	31	14
Melanoma	4	4	10	14	11	12	9	8	9	1	2
Myeloma	0	0	0	1	1	3	5	1	8	3	2
Nose	0	0	1	1	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	2	3	6	6	6	13	13	10	10	10	5
Oral Cavity	0	1	6	5	9	5	5	3	9	5	4
Other Biliary	0	0	0	1	0	0	2	1	0	2	1
Other Digestive	0	0	0	2	1	0	1	2	1	0	0
Other Endocrine	0	1	1	0	1	0	1	0	2	0	0
Other Female	1	1	0	1	1	1	1	1	0	2	2
Other Male	0	0	1	0	1	1	0	1	0	0	0
Other Skin	0	0	1	0	0	1	0	1	3	3	3
Other Respiratory	0	0	0	0	1	0	0	0	0	1	0
Other Urinary	0	0	0	0	0	0	1	2	0	2	0
Ovary	1	0	2	4	3	5	0	1	3	2	1
Pancreas	0	1	3	2	7	5	4	8	3	4	5
Prostate	0	1	4	30	70	89	97	73	63	22	11
Small Intestine	0	0	1	2	0	3	1	0	3	2	1
Soft Tissue including Heart	0	0	1	0	0	3	0	3	0	2	0
Stomach	0	1	1	2	2	6	6	1	2	5	2
Testis	3	1	2	1	0	1	0	0	0	0	0
Thyroid	6	2	11	4	5	5	7	2	3	2	0
Uterine	1	2	6	5	7	8	10	4	5	3	1
Mesothelioma	0	0	0	0	2	1	1	1	2	1	0
All Sites	45	47	131	179	256	318	351	276	281	189	117

Wyoming Mortality[1] for 2007: 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	0	0	0	0	0	0	0	0	0
Bladder w/ in situ	14	6	20	0	0	0	0	0	0	0
Bones and Joints	1	0	1	0	0	0	0	0	0	0
Brain	12	9	21	0	0	0	0	0	0	1
Breast	0	64	64	0	0	0	0	0	1	2
Cervix	0	8	8	0	0	0	0	0	0	0
Colorectal	51	45	96	0	0	0	0	0	0	1
Esophagus	18	4	22	0	0	0	0	0	0	0
Eye	1	0	1	0	0	0	0	0	0	0
Gallbladder	0	1	1	0	0	0	0	0	0	0
Hodgkin	1	0	1	0	0	0	0	0	0	0
Ill-Defined	27	33	60	0	0	0	0	0	0	0
Kidney	19	7	26	0	0	0	0	0	0	0
Larynx	2	2	4	0	0	0	0	0	0	0
Leukemia	19	17	36	1	0	0	0	0	0	0
Liver	13	6	19	0	0	0	0	0	0	0
Lung	121	112	233	0	0	0	0	0	0	0
Melanoma	17	3	20	0	0	0	0	0	0	0
Myeloma	12	7	19	0	0	0	0	0	0	0
Nose	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	18	17	35	0	0	0	0	0	0	0
Oral Cavity	5	4	9	0	0	0	0	0	0	0
Other Biliary	3	2	5	0	0	0	0	0	0	0
Other Digestive	0	0	0	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	1	0	1	0	0	0	0	0	0	0
Other Respiratory	0	1	1	0	0	0	0	0	0	0
Other Urinary	1	0	1	0	0	0	0	0	0	0
Ovary	0	25	25	0	0	0	0	0	0	1
Pancreas	28	30	58	0	0	0	0	0	0	0
Prostate	44	0	44	0	0	0	0	0	0	0
Small Intestine	1	1	2	0	0	0	0	0	0	0
Soft Tissue including Heart	3	1	4	0	0	0	0	0	0	0
Stomach	3	5	8	0	0	0	0	0	0	0
Testis	1	0	1	0	0	0	0	0	0	0
Thyroid	1	2	3	0	0	0	0	0	0	0
Uterine	0	12	12	0	0	0	0	0	0	0
Mesothelioma	4	0	4	0	0	0	0	0	0	0
All Sites	443	428	871	1	0	0	0	0	1	5

[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	0	0
Bladder w/ in situ	0	0	0	3	1	2	2	2	4	4	2
Bones and Joints	0	0	0	0	0	0	0	0	0	1	0
Brain	0	2	3	5	3	2	1	1	2	0	1
Breast	0	3	6	5	3	4	8	12	5	10	5
Cervix	2	1	2	0	1	0	0	0	0	1	1
Colorectal	0	0	4	5	3	10	11	12	14	14	22
Esophagus	0	1	1	2	4	1	4	2	4	2	1
Eye	0	1	0	0	0	0	0	0	0	0	0
Gallbladder	0	0	0	0	0	0	1	0	0	0	0
Hodgkin	0	0	0	0	0	0	0	1	0	0	0
Ill-Defined	0	0	1	3	2	5	6	9	6	10	18
Kidney	0	0	0	1	3	3	3	7	2	4	3
Larynx	0	0	0	0	1	1	1	1	0	0	0
Leukemia	0	0	0	1	3	2	1	4	7	10	7
Liver	0	0	0	3	2	1	2	1	0	3	7
Lung	2	0	6	12	21	31	34	35	35	32	25
Melanoma	0	2	3	0	3	1	3	1	5	1	1
Myeloma	0	0	0	1	1	3	1	3	6	1	3
Nose	0	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	0	1	2	1	1	3	4	1	8	5	9
Oral Cavity	0	0	0	0	1	2	1	1	1	0	3
Other Biliary	1	0	0	1	0	1	0	0	0	1	1
Other Digestive	0	0	0	0	0	0	0	0	0	0	0
Other Endocrine	0	0	0	0	0	0	1	0	1	0	0
Other Female	0	0	0	0	0	0	0	2	0	1	0
Other Male	0	0	0	0	0	1	0	0	0	0	0
Other Skin	0	0	0	0	0	1	0	0	0	0	0
Other Respiratory	0	0	0	1	0	0	0	0	0	0	0
Other Urinary	0	0	0	0	0	0	0	0	0	0	1
Ovary	0	0	2	2	2	1	5	3	1	4	4
Pancreas	1	2	2	4	7	4	6	8	7	10	7
Prostate	0	0	0	0	4	4	3	2	9	9	13
Small Intestine	0	0	0	1	0	0	0	1	0	0	0
Soft Tissue including Heart	0	1	1	0	1	0	0	0	1	0	0
Stomach	0	0	0	1	2	0	2	0	0	2	1
Testis	0	1	0	0	0	0	0	0	0	0	0
Thyroid	0	0	0	0	0	0	0	1	1	1	0
Uterine	0	0	0	2	0	0	1	3	0	2	4
Mesothelioma	0	0	0	0	1	0	0	0	1	2	0
All Sites	6	15	33	54	70	83	101	113	120	130	139

Wyoming Incidence for 2007: Cases by Race and Ethnicity (Top 15 Sites Only)

	Total	White	African American	Native American	Asian	Other	Ethnicity: Hispanic
All Sites	2,267	2,230	8	15	6	8	82
Bladder	112	111	0	0	1	0	5
Brain	23	23	0	0	0	0	1
Breast (Female)	310	303	2	3	1	1	7
Colorectal	210	205	1	3	0	1	10
Kidney	86	86	0	0	0	0	8
Leukemia	63	60	0	2	1	0	2
Lung	249	245	1	2	1	0	4
Melanoma	92	91	0	0	0	1	1
Non-Hodgkin Lymphoma	89	88	0	1	0	0	3
Oral Cavity	54	54	0	0	0	0	0
Ovary	22	22	0	0	0	0	1
Pancreas	42	40	0	1	1	0	2
Prostate	460	458	1	0	0	1	16
Thyroid	62	61	1	0	0	0	1
Uterine	54	53	1	0	0	0	3

Wyoming Mortality for 2007: Cases by Race and Ethnicity (Top 15 Sites Only)

	Total	White	African American	Native American	Asian	Other	Ethnicity: Hispanic
All Sites	871	849	1	15	5	1	32
Bladder	20	20	0	0	0	0	2
Brain/CNS	21	20	0	1	0	0	1
Breast (Female)	64	62	0	1	1	0	2
Colorectal	96	92	0	2	2	0	6
Kidney	26	25	0	1	0	0	0
Leukemia	36	36	0	0	0	0	2
Lung	233	224	1	7	0	1	2
Melanoma	20	20	0	0	0	0	0
Non-Hodgkin Lymphoma	35	35	0	0	0	0	3
Oral Cavity	9	9	0	0	0	0	2
Ovary	25	25	0	0	0	0	1
Pancreas	58	56	0	1	1	0	2
Prostate	44	43	0	1	0	0	1
Thyroid	3	3	0	0	0	0	0
Uterine	12	12	0	0	0	0	0

State of Wyoming - 2007

Top Cancer Sites by Gender and Age - Incidence and Mortality

Top Incidence Cancer Sites by Gender - 2007

Total		Male		Female	
Prostate	460	Prostate	460	Breast	309
Breast	310	Lung	125	Lung	124
Lung	249	Colorectal	109	Colorectal	101
Colorectal	210	Bladder	95	Uterine	54
Bladder	112	Non-Hodgkin	50	Thyroid	48

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

0-4		5-9		10-14		15-19		20-24	
All Cancers have 1 or less to count		Leukemia	2	All Cancers have 1 or less to count		Testis	3	Hodgkin	4
						Non-Hodgkin	2		
25-29		**30-34**		**35-39**		**40-44**		**45-49**	
Thyroid	6	Thyroid	8	Breast	9	Breast	11	Breast	30
Melanoma	3	Breast	5	Thyroid	6	Colorectal	5	Colorectal	12
Non-Hodgkin	3	Melanoma	3	Melanoma	4	Leukemia	4	Thyroid	11
Testis	3					Melanoma	4	Lung	6
								Oral Cavity	6
50-54		**55-59**		**60-64**		**65-69**		**70-74**	
Prostate	30	Prostate	70	Prostate	89	Prostate	97	Prostate	73
Breast	27	Breast	37	Breast	48	Lung	51	Lung	38
Colorectal	20	Colorectal	21	Lung	34	Breast	41	Breast	38
Melanoma	14	Lung	17	Colorectal	24	Colorectal	29	Colorectal	26
Lung	11	Bladder	12	Non-Hodgkin	13	Bladder	18	Bladder	14
75-79		**80-84**		**85+**					
Prostate	63	Lung	31	Breast	16				
Lung	44	Colorectal	24	Colorectal	16				
Breast	29	Prostate	22	Lung	14				
Colorectal	29	Breast	18	Prostate	11				
Bladder	20	Bladder	15	Bladder	9				

Top Mortality Cancer Sites by Gender - 2007

Total		Male		Female	
Lung	233	Lung	121	Lung	112
Colorectal	96	Colorectal	51	Breast	64
Breast	64	Prostate	44	Colorectal	45
Ill-Defined	60	Pancreas	28	Ill-Defined	33
Pancreas	58	Ill-Defined	27	Pancreas	30

Top Mortality Sites by Age (Mortality count included only if more than 1 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		Breast	2	Cervix	2	Breast	3	Breast	6
				Lung	2	Brain	2	Lung	6
						Melanoma	2	Colorectal	4
						Pancreas	2	Brain	3
								Melanoma	3
50-54		**55-59**		**60-64**		**65-69**		**70-74**	
Lung	12	Lung	21	Lung	31	Lung	34	Lung	35
Brain	5	Pancreas	7	Colorectal	10	Colorectal	11	Colorectal	12
Breast	5	Esophagus	4	Breast	4	Breast	8	Breast	12
Colorectal	5	Prostate	4	Pancreas	4	Pancreas	6	Ill-Defined	9
				Prostate	4	Ill-Defined	6	Pancreas	8
75-79		**80-84**		**85+**					
Lung	35	Lung	32	Lung	25				
Colorectal	14	Colorectal	14	Colorectal	22				
Prostate	9	Breast	10	Ill-Defined	18				
Non-Hodgkin	8	Pancreas	10	Prostate	13				
		Leukemia	10	Non-Hodgkin	9				

Wyoming Counties - 2007

Incidence and Mortality (All Sites)

Wyoming County Incidence Cases -- 2007 (All Sites)

	Albany	Big Horn	Campbell	Carbon	Converse	Crook	Fremont	Goshen	Hot Springs	Johnson	Laramie	Lincoln
Anus	0	0	0	0	0	0	0	0	0	0	1	1
Bladder	6	5	6	1	5	0	5	2	2	3	18	1
Bones and Joints	1	0	0	0	0	0	0	0	0	0	0	0
Brain	1	0	1	3	1	0	3	1	0	2	1	0
Breast	5	8	15	7	7	0	22	6	10	2	65	7
Cervix	2	0	0	1	0	0	1	0	0	0	4	0
Colorectal	9	6	12	6	10	2	26	14	2	5	34	7
Esophagus	2	0	1	1	0	0	4	0	1	0	1	0
Eye	0	1	0	0	0	0	0	1	0	0	2	1
Gallbladder	0	0	0	0	0	0	0	1	0	1	0	0
Hodgkin	3	0	3	0	1	0	1	1	0	0	4	0
Ill-Defined	5	1	5	3	0	0	5	4	0	2	11	2
Kidney	7	1	5	2	1	0	6	0	0	0	19	0
Larynx	0	2	0	0	1	0	0	0	0	0	6	0
Leukemia	0	3	2	2	2	0	9	1	1	1	12	0
Liver	0	2	0	2	3	0	2	0	1	0	6	0
Lung	11	6	12	9	11	0	26	9	3	2	58	2
Melanoma	2	1	4	0	1	0	3	1	2	4	12	5
Myeloma	2	1	0	0	0	0	3	0	1	0	3	1
Nose	0	0	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin	7	3	4	5	1	0	10	1	1	0	8	5
Oral Cavity	1	1	1	0	0	2	3	1	2	0	14	2
Other Biliary	1	0	0	0	0	0	3	0	0	0	3	0
Other Digestive	0	0	2	0	0	0	0	1	0	0	0	0
Other Endocrine	0	0	0	1	0	0	1	0	0	0	2	0
Other Female	0	0	1	0	0	0	2	0	0	0	2	1
Other Male	1	0	0	0	0	0	0	0	0	0	0	1
Other Skin	0	0	0	0	1	0	2	0	0	0	1	0
Other Respiratory	0	0	1	0	0	0	0	0	0	0	0	0
Other Urinary	0	0	0	0	0	0	1	1	0	0	3	0
Ovary	1	0	2	0	0	0	4	1	0	0	3	0
Pancreas	0	0	1	1	1	1	2	3	0	0	9	1
Prostate	28	12	21	27	10	4	42	10	6	3	85	17
Small Intestine	0	0	1	0	0	0	1	0	0	1	0	0
Soft Tissue including Heart	0	0	0	1	0	0	1	0	0	0	0	0
Stomach	1	0	0	3	1	0	0	1	0	1	4	2
Testis	0	0	1	0	1	0	3	0	0	0	1	2
Thyroid	2	1	1	0	2	0	4	2	0	0	17	4
Uterine	3	0	6	2	1	0	3	1	1	2	14	0
Mesothelioma	0	0	1	0	0	0	1	0	0	0	3	0
All Sites	101	54	109	77	61	9	199	63	33	29	426	62

	Natrona	Niobrara	Park	Platte	Sheridan	Sublette	Sweet-water	Teton	Uinta	Washakie	Weston
Anus	1	0	0	0	1	0	0	0	0	0	0
Bladder	16	1	6	3	16	2	5	1	3	5	0
Bones and Joints	2	0	0	0	0	0	0	0	0	0	0
Brain	5	1	2	0	1	0	0	1	0	0	0
Breast	59	2	23	9	24	3	13	10	8	5	0
Cervix	3	1	2	1	0	0	0	2	0	0	0
Colorectal	23	0	11	5	11	3	11	3	5	5	0
Esophagus	2	0	2	3	3	1	2	0	0	0	0
Eye	0	1	0	2	0	0	0	0	0	0	0
Gallbladder	0	0	0	0	0	0	0	0	1	0	0
Hodgkin	1	0	2	0	0	0	2	1	0	0	0
Ill-Defined	11	0	6	0	2	0	2	0	3	1	1
Kidney	17	1	9	4	7	0	3	1	0	3	0
Larynx	4	0	0	0	0	0	0	1	2	0	0
Leukemia	9	0	6	1	6	0	4	1	3	0	0
Liver	2	0	2	0	4	0	1	1	0	0	0
Lung	40	0	13	4	16	0	12	7	5	2	1
Melanoma	17	0	8	0	9	3	4	6	7	2	1
Myeloma	3	0	4	0	3	1	1	1	0	0	0
Nose	0	0	1	0	0	0	0	1	0	0	0
Non-Hodgkin	20	1	8	1	4	3	2	2	1	1	0
Oral Cavity	6	0	7	4	6	1	2	1	0	0	0
Other Biliary	0	0	0	0	0	0	0	0	0	0	0
Other Digestive	2	0	0	1	0	0	0	1	0	0	0
Other Endocrine	1	0	0	0	1	0	0	0	0	0	0
Other Female	1	0	2	1	0	0	1	0	0	0	0
Other Male	1	0	0	1	0	0	0	0	0	0	0
Other Skin	4	0	1	0	0	0	1	2	0	0	0
Other Respiratory	0	0	0	0	0	0	0	0	0	1	0
Other Urinary	0	0	0	0	0	0	0	0	0	0	0
Ovary	5	0	2	0	1	0	0	1	1	0	0
Pancreas	6	0	4	1	3	0	3	2	2	2	0
Prostate	45	3	36	12	37	4	21	18	11	5	3
Small Intestine	3	0	3	1	0	0	2	1	0	0	0
Soft Tissue including Heart	3	1	1	0	1	0	0	2	0	0	0
Stomach	5	0	2	1	3	0	3	0	1	0	0
Testis	3	0	2	0	0	0	1	1	1	0	0
Thyroid	9	0	2	3	6	0	3	1	2	1	0
Uterine	9	0	3	1	3	1	3	0	0	0	1
Mesothelioma	0	0	2	0	0	0	0	0	0	1	0
All Sites	338	12	172	59	168	22	102	69	56	34	7

Wyoming County Mortality Counts -- 2007 (All Sites)

	Albany	Big Horn	Campbell	Carbon	Converse	Crook	Fremont	Goshen	Hot Springs	Johnson	Laramie	Lincoln
Anus	0	0	0	0	0	0	0	0	0	0	0	0
Bladder	0	0	1	0	0	0	1	0	1	0	6	0
Bones and Joints	0	0	0	0	0	0	0	0	0	0	0	1
Brain/CNS	0	1	1	0	0	0	1	0	0	1	2	0
Breast	1	1	3	2	1	0	9	1	3	0	16	2
Cervix	0	0	0	0	0	0	1	1	0	0	2	0
Colorectal	1	2	7	3	2	1	9	1	1	3	22	4
Esophagus	1	1	1	0	1	0	1	1	0	1	5	0
Eye	0	0	0	0	0	0	0	1	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	0	0
Ill-Defined	3	1	2	2	4	1	3	3	2	1	10	1
Kidney	3	0	0	1	0	0	1	1	0	0	3	0
Larynx	0	0	1	0	0	0	1	0	0	0	1	0
Leukemia	0	3	2	1	0	1	1	0	1	2	8	1
Liver	0	1	0	0	1	0	2	0	1	0	7	0
Lung	11	8	18	3	5	1	24	3	5	1	53	2
Melanoma	1	0	0	0	2	2	2	1	0	0	2	0
Myeloma	0	1	0	0	0	1	2	0	0	0	3	0
Nasal	0	0	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin	4	1	2	1	1	0	3	1	0	0	7	2
Oral Cavity	0	0	0	0	0	0	1	0	0	0	3	0
Other Biliary	1	0	0	0	0	0	0	1	0	0	2	0
Other Digestive	0	0	0	0	0	0	0	0	0	0	0	0
Other Endocrine	0	0	0	0	1	0	0	0	0	0	1	0
Other Female	0	0	0	0	0	0	0	1	0	0	0	0
Other Male	0	0	0	0	0	0	0	0	1	0	0	0
Other Skin	0	0	0	0	0	0	0	0	0	0	0	0
Other Respiratory	0	0	0	0	0	0	1	0	0	0	0	0
Other Urinary	0	0	0	0	0	0	0	0	0	0	0	0
Ovary	1	0	0	0	0	0	1	1	1	0	6	0
Pancreas	2	0	6	1	0	0	4	2	0	1	14	2
Prostate	1	1	1	0	0	0	3	2	0	2	10	0
Small Intestine	0	0	1	0	0	0	0	0	0	0	0	1
Soft Tissue including Heart	0	0	0	0	0	0	0	0	1	0	0	0
Stomach	0	0	0	0	0	0	1	0	0	0	0	1
Testis	0	0	0	0	0	0	0	0	0	0	0	0
Thyroid	0	0	0	0	0	0	0	0	0	0	1	0
Uterine	1	0	1	0	1	1	0	0	1	0	2	1
Mesothelioma	0	0	0	0	0	0	0	0	0	0	2	0
All Sites	31	21	47	14	19	8	72	21	18	12	188	18

	Natrona	Niobrara	Park	Platte	Sheridan	Sublette	Sweet-water	Teton	Uinta	Washakie	Weston
Anus	0	0	0	0	0	0	0	0	0	0	0
Bladder	3	0	1	0	2	1	1	0	2	1	0
Bones and Joints	0	0	0	0	0	0	0	0	0	0	0
Brain/CNS	5	0	1	0	1	1	4	1	1	0	1
Breast	11	0	3	0	5	0	0	2	0	1	3
Cervix	1	0	1	0	0	1	0	0	1	0	0
Colorectal	15	0	5	3	5	2	7	1	2	0	0
Esophagus	5	0	1	0	0	1	1	0	1	1	0
Eye	0	0	0	0	0	0	0	0	0	0	0
Gallbladder	1	0	0	0	0	0	0	0	0	0	0
Hodgkin	1	0	0	0	0	0	0	0	0	0	0
Ill-Defined	14	0	3	2	3	0	3	1	1	0	0
Kidney	5	1	1	1	5	1	0	0	0	3	0
Larynx	1	0	0	0	0	0	0	0	0	0	0
Leukemia	8	0	1	1	3	0	2	0	1	0	0
Liver	5	1	0	0	1	0	0	0	0	0	0
Lung	37	0	7	4	16	0	15	4	9	2	5
Melanoma	4	0	4	0	0	0	1	1	0	0	0
Myeloma	4	0	2	0	1	1	2	0	1	0	1
Nasal	0	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin	4	0	2	0	1	1	2	0	0	1	2
Oral Cavity	1	0	0	0	1	0	2	0	1	0	0
Other Biliary	0	0	0	0	0	0	0	0	1	0	0
Other Digestive	0	0	0	0	0	0	0	0	0	0	0
Other Endocrine	0	0	0	0	0	0	0	0	0	0	0
Other Female	0	0	1	0	0	0	0	1	0	0	0
Other Male	0	0	0	0	0	0	0	0	0	0	0
Other Skin	1	0	0	0	0	0	0	0	0	0	0
Other Respiratory	0	0	0	0	0	0	0	0	0	0	0
Other Urinary	1	0	0	0	0	0	0	0	0	0	0
Ovary	5	1	3	1	2	0	2	0	0	1	0
Pancreas	6	0	4	1	4	0	6	2	1	2	0
Prostate	8	1	3	0	5	0	2	1	1	0	3
Small Intestine	0	0	0	0	0	0	0	0	0	0	0
Soft Tissue including Heart	3	0	0	0	0	0	0	0	0	0	0
Stomach	3	0	0	0	1	0	2	0	0	0	0
Testis	0	0	0	0	0	0	1	0	0	0	0
Thyroid	2	0	0	0	0	0	0	0	0	0	0
Uterine	2	0	1	0	1	0	0	0	0	0	0
Mesothelioma	1	0	1	0	0	0	0	0	0	0	0
All Sites	157	4	45	13	57	9	53	14	23	12	15

Summary of
All Cancer Sites Combined
and
Top 15 Sites

2007 Wyoming Incidence and Mortality Rates

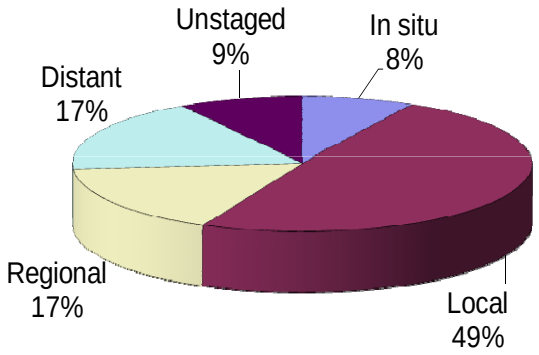
All Sites Combined

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	1,240	1,027	2,267
# In situ Cases	109	85	194
WY Incidence	470.3*	362.8*	411.0*
US Incidence	524.7	412.5	458.1
# Cancer Deaths	443	428	871
WY Mortality	183.1	147.9	161.6
US Mortality	218.7	153.4	180.1

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

Stage at Diagnosis



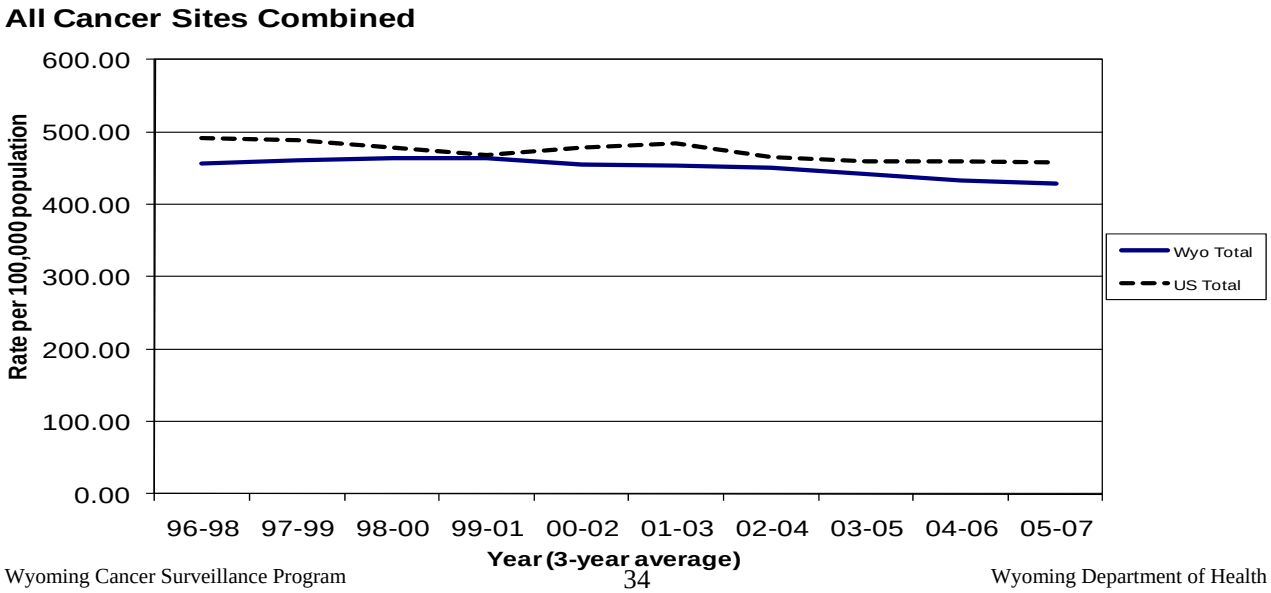
The incidence rates in Wyoming males and females for all cancer sites were significantly lower than the United States rate. The incidence rate for total population was also lower than the United States rates, though not significantly. All three mortality rates in Wyoming were also lower than the national rates, with the male rate being significantly lower than the national rate.

The 12-year incidence trend shows that all-site cancer incidence is decreasing slightly since 02-04. The U.S rate appears to be holding steady since 02-04.

The percent of cancer for each stage of diagnosis was virtually unchanged from 2006.

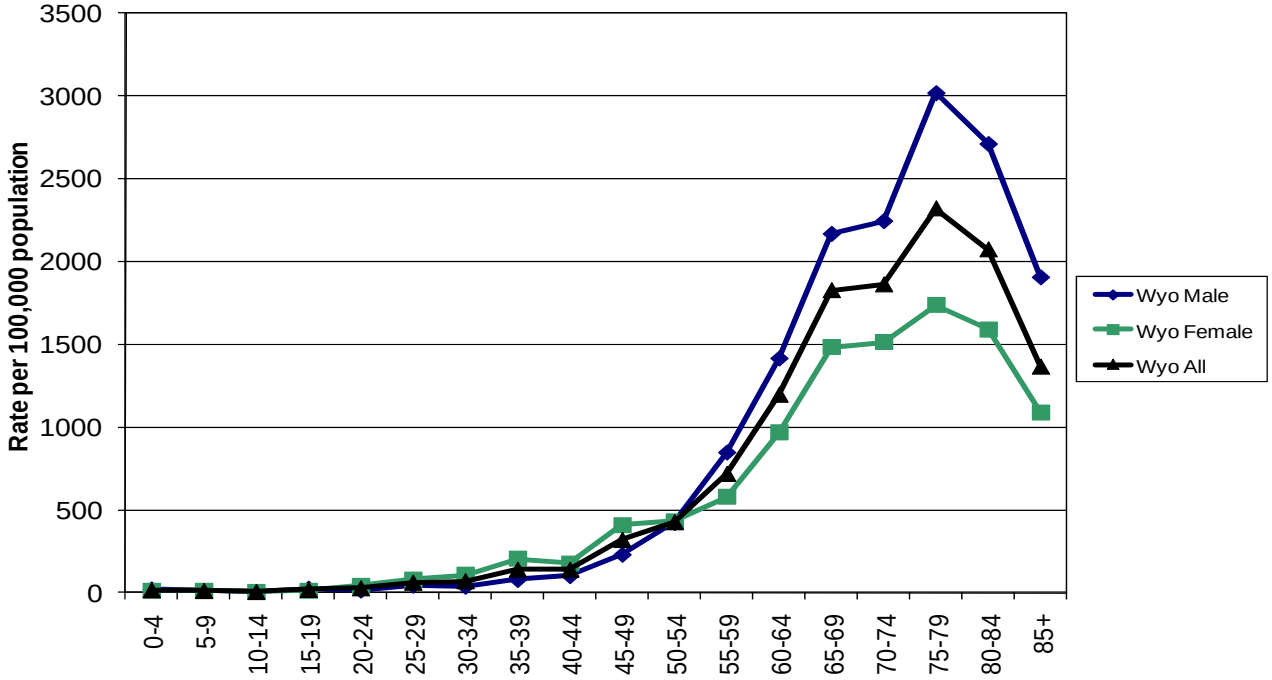
The incidence rate for Cancer Health District (CHD) 7 (356.35) was significantly lower and the rate for CHD 1 was significantly higher (506.68) than the state rate (438.49) for 2003-2007. For mortality rates, CHD 1 (198.09) was significantly higher than the state rate (165.66).

12-Year Incidence Trend



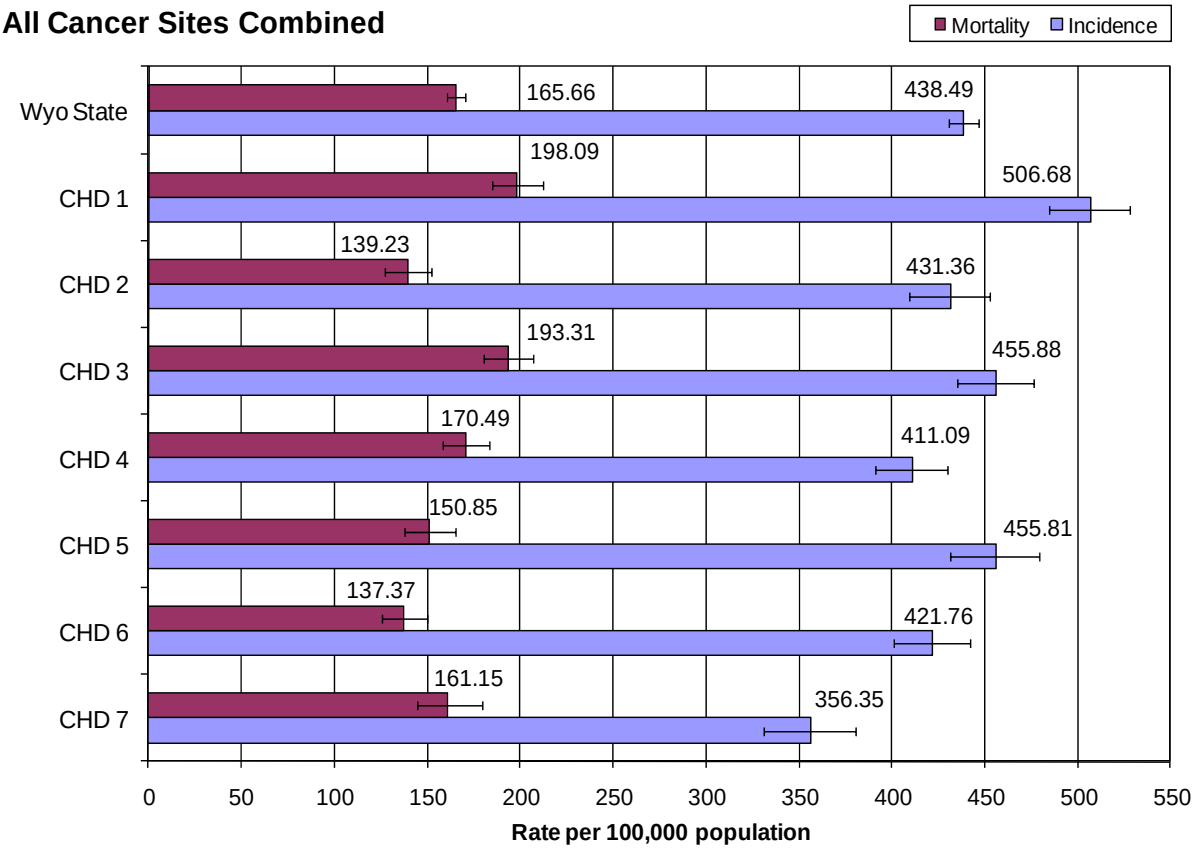
Age-Specific Incidence Rates - 2007

All Cancer Sites Combined



Cancer Health District Incidence and Mortality

All Cancer Sites Combined



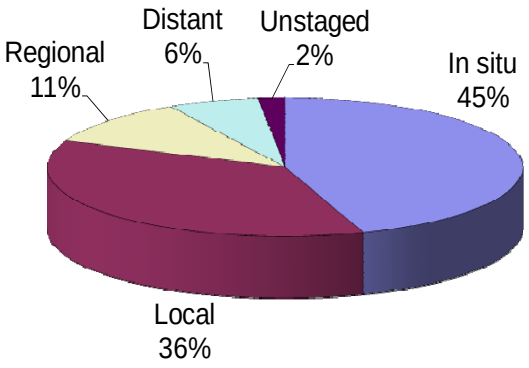
Bladder (Urinary)

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	55	6	61
# In situ Cases	40	11	51
WY Incidence	22.3*	2.10*	11.3*
US Incidence	39.0	9.20	21.9
# Cancer Deaths	14	6	20
WY Mortality	5.94	1.94	3.70
US Mortality	7.95	2.17	4.51

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

Stage at Diagnosis



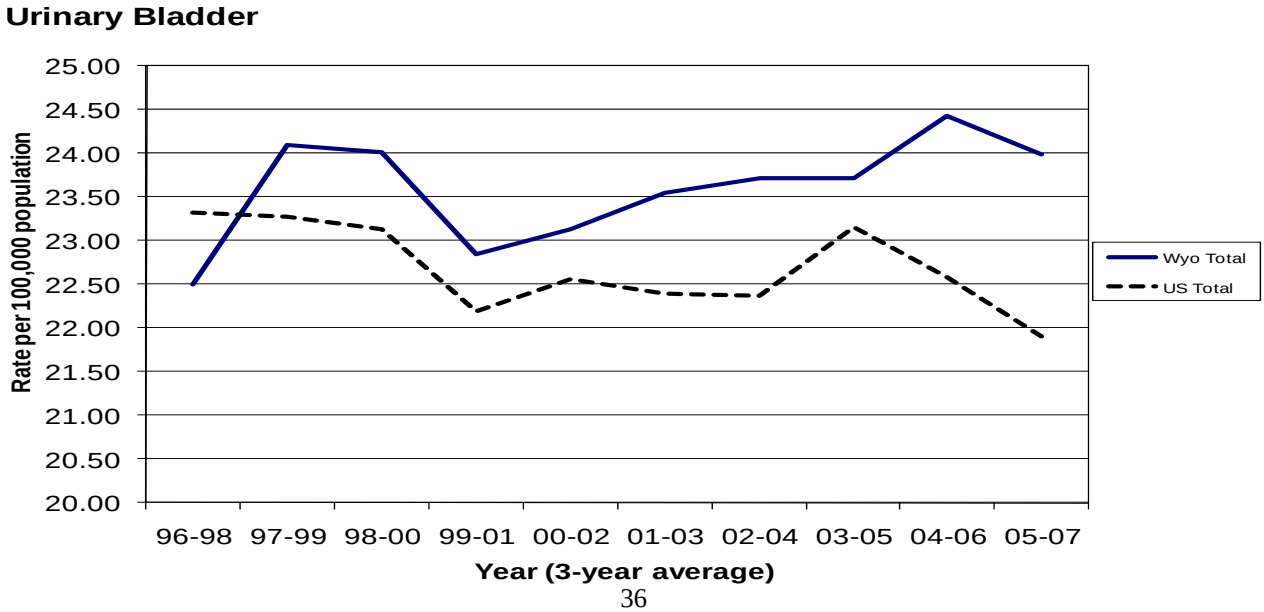
The incidence rates in Wyoming for bladder cancer in males, females, and total population were all significantly lower the national rates in 2007. The mortality rates were also lower for than the national rate, though not significantly.

The 12-year incidence trend for bladder cancer in Wyoming shows a decrease from 04-06 to 05-07, while the US rate shows a decrease since 03-05.

While the percent of bladder cancers diagnosed as local decreased by 9%, the percentage of diagnoses in the other stages were basically unchanged from 2006 to 2007.

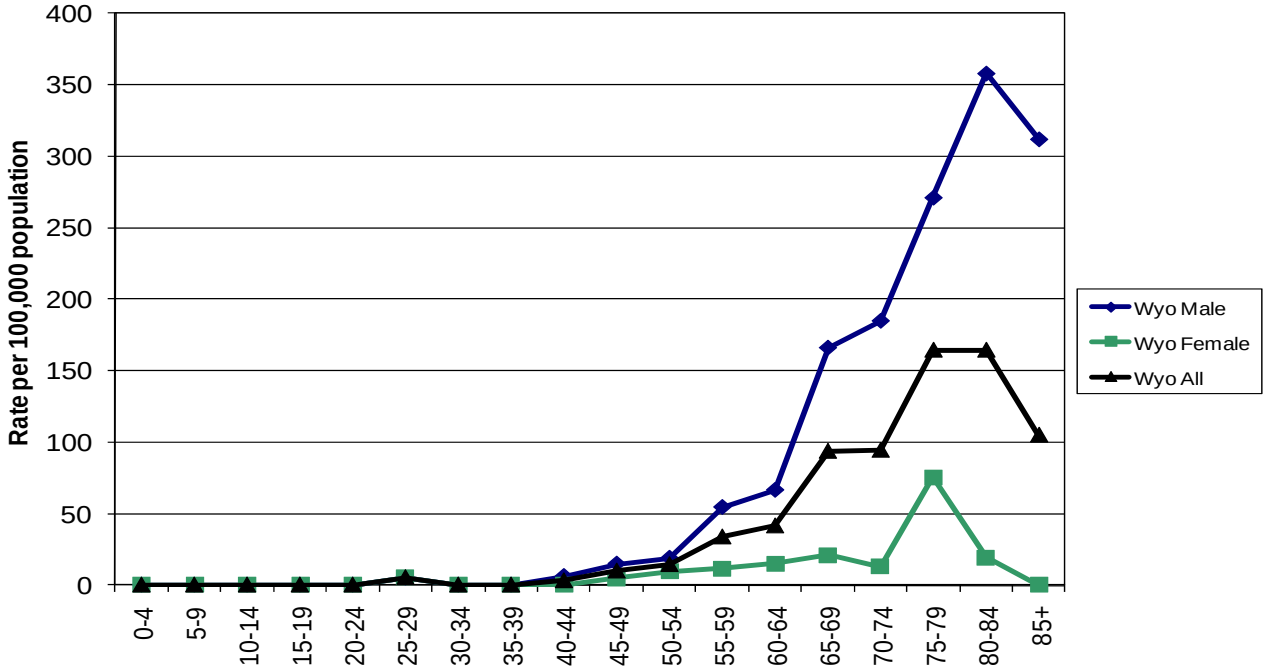
No statistically significant differences were found between CHD's and state rate for incidence or mortality.

12-Year Incidence Trend



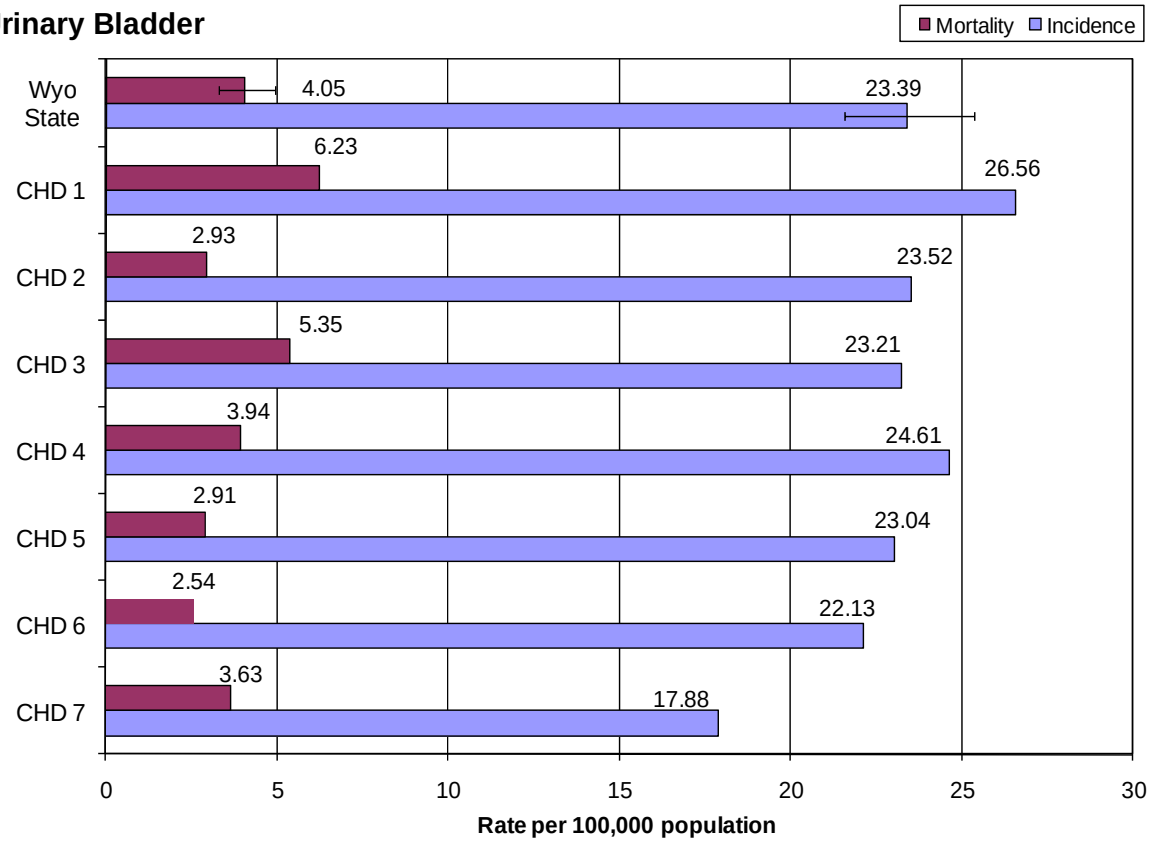
Age-Specific Incidence Rates - 2007

Urinary Bladder



Cancer Health District Incidence and Mortality

Urinary Bladder



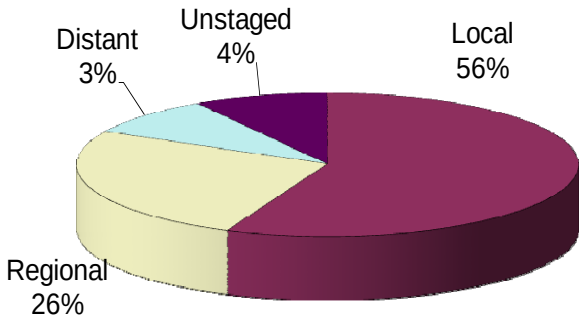
Brain/CNS

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	11	12	23
WY Incidence	3.50	4.30	4.10
US Incidence	7.65	5.22	6.36
# Cancer Deaths	12	9	21
WY Mortality	3.97	3.33	3.71
US Mortality	5.53	3.66	4.52

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

Stage at Diagnosis



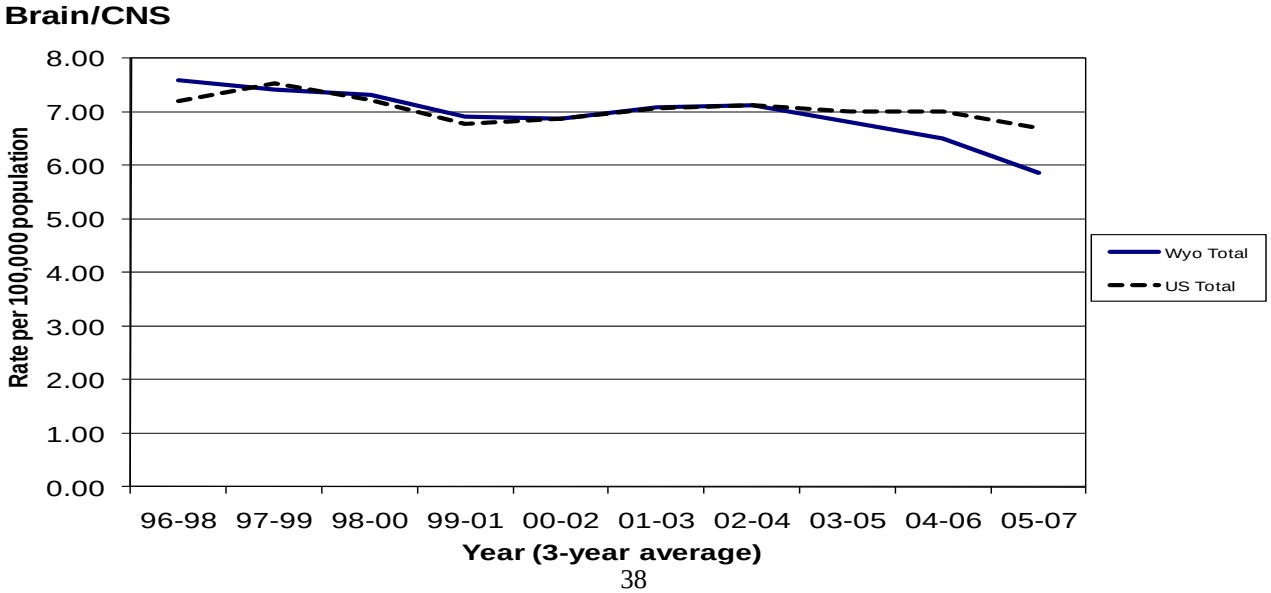
The incidence and mortality rates of brain/CNS cancer for males, females, and total population were all lower than the national rates; however, none of these differences were significant.

The 12-year trend shows a continuation of a decrease of the Wyoming incidence of brain/CNS cancer that started in 02-04. The national trend also shows a slight decrease since 04-06.

A significantly smaller percentage of brain/CNS cancers were diagnosed as local in 2007 than in 2006 (77%). A higher percentage were diagnosed as regional in 2007 than 2006 (16%), though this difference was not significant.

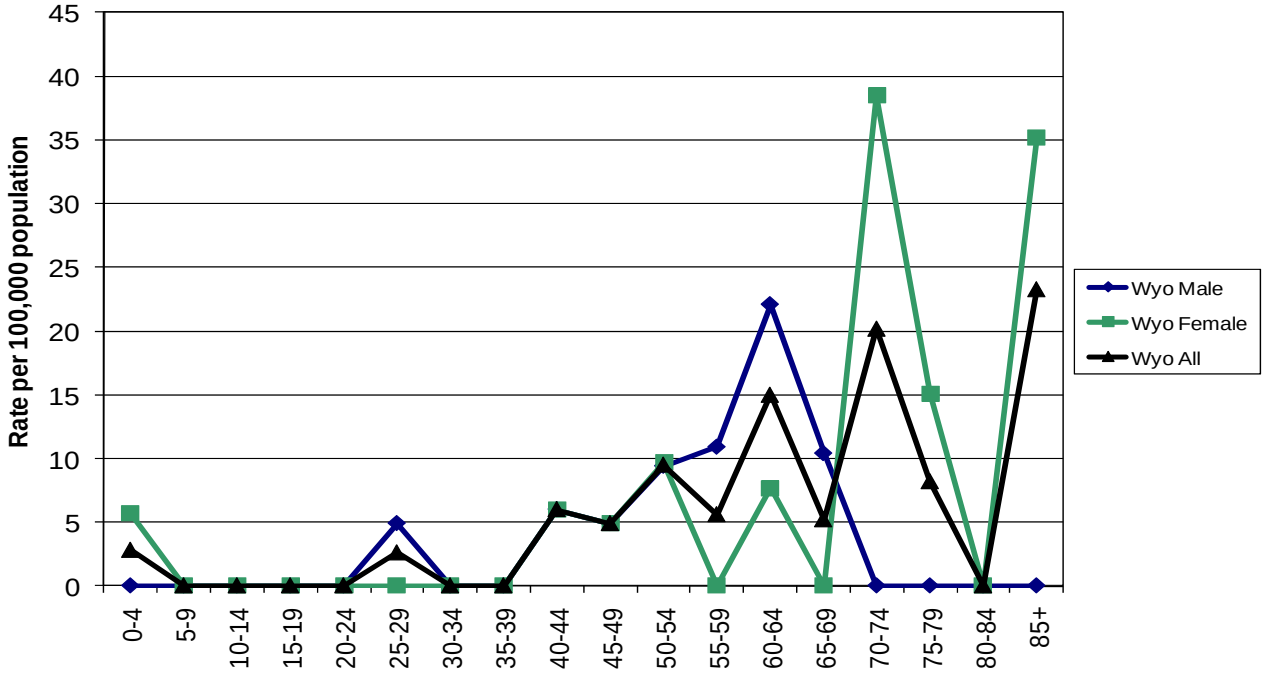
No statistically significant differences were found between the CHD's and state rate for incidence or mortality.

12-Year Incidence Trend



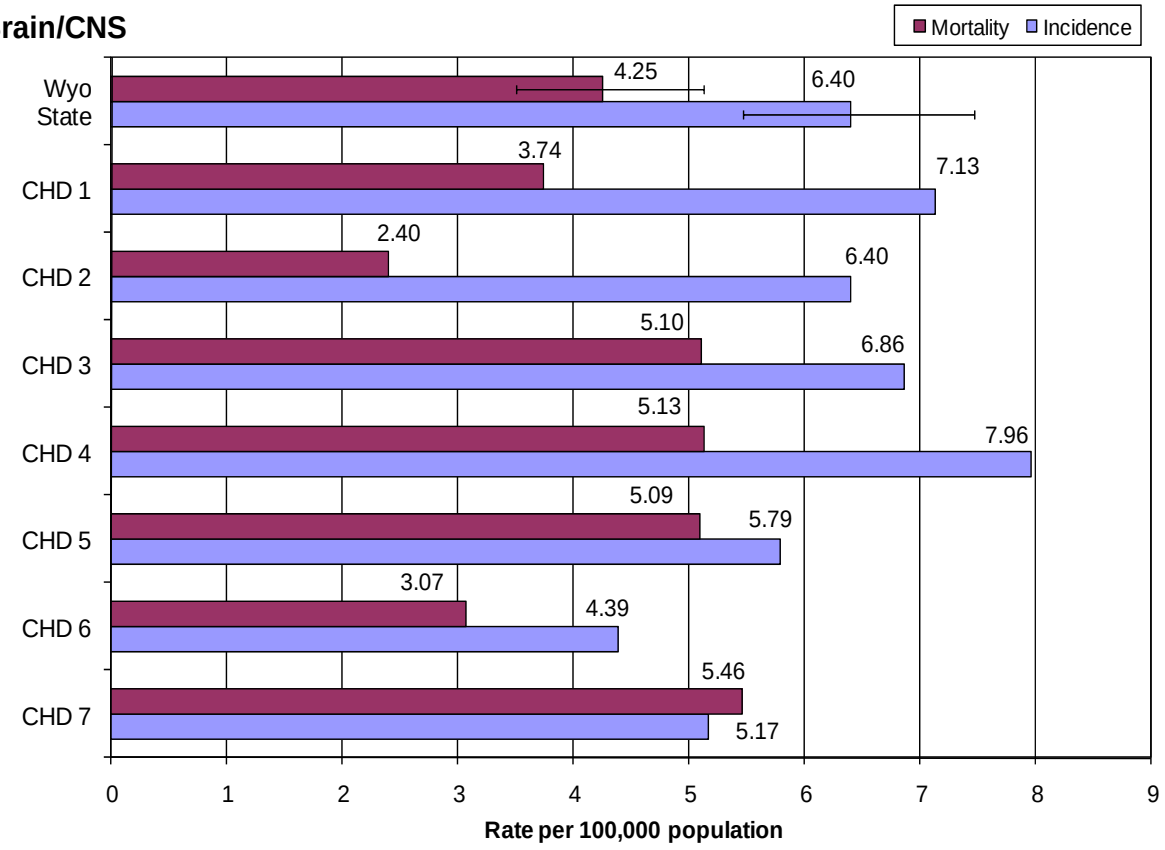
Age-Specific Incidence Rates - 2007

Brain/CNS



Cancer Health District Incidence and Mortality

Brain/CNS



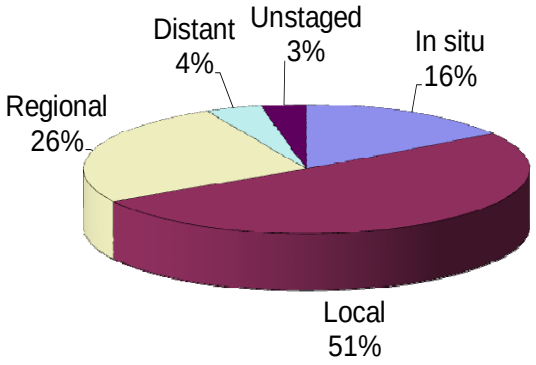
Breast (Female Only)

Incidence and Mortality Summary

	Female
# Invasive Cases	309
# In situ Cases	58
WY Incidence	108.2
US Incidence	124.3
# Cancer Deaths	64
WY Mortality	23.0
US Mortality	22.9

* 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 was lower than the United States rate, but not significant. The mortality rate for Wyoming women was essentially the same as the national rate.

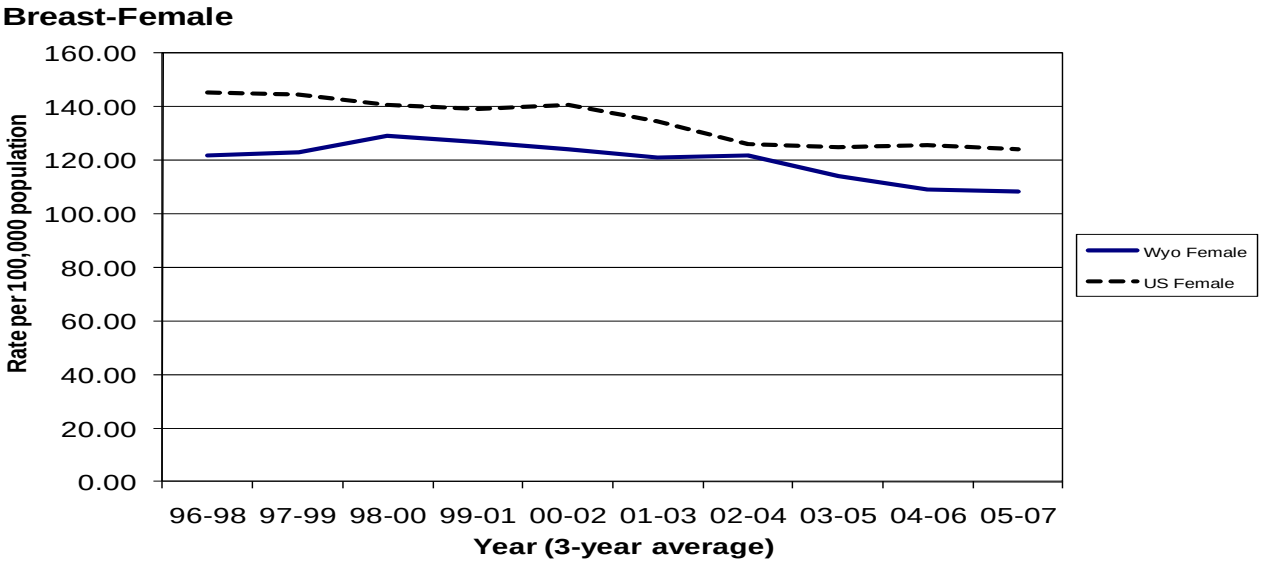
The 12-year incidence trend shows a slight decrease in the Wyoming rate since 02-04. The national rate has been basically level since 02-04.

The percentage of diagnoses in each stage in 2007 was essentially the same as in 2006.

The incidence of breast cancer in females in CHD 7 was significantly lower (82.59) than the state rate (113.00) from 2003-2007. No statistically significant differences were found for mortality.

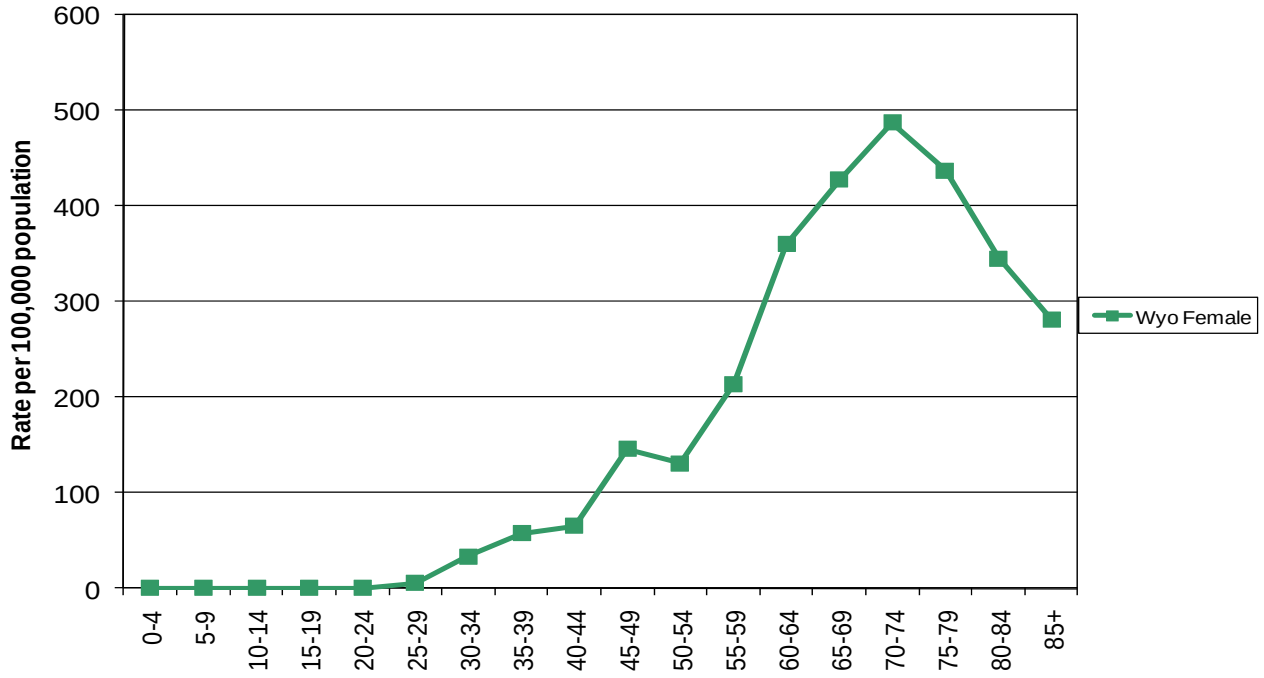
There was 1 case of male breast cancer reported in Wyoming in 2007.

12-Year Incidence Trend



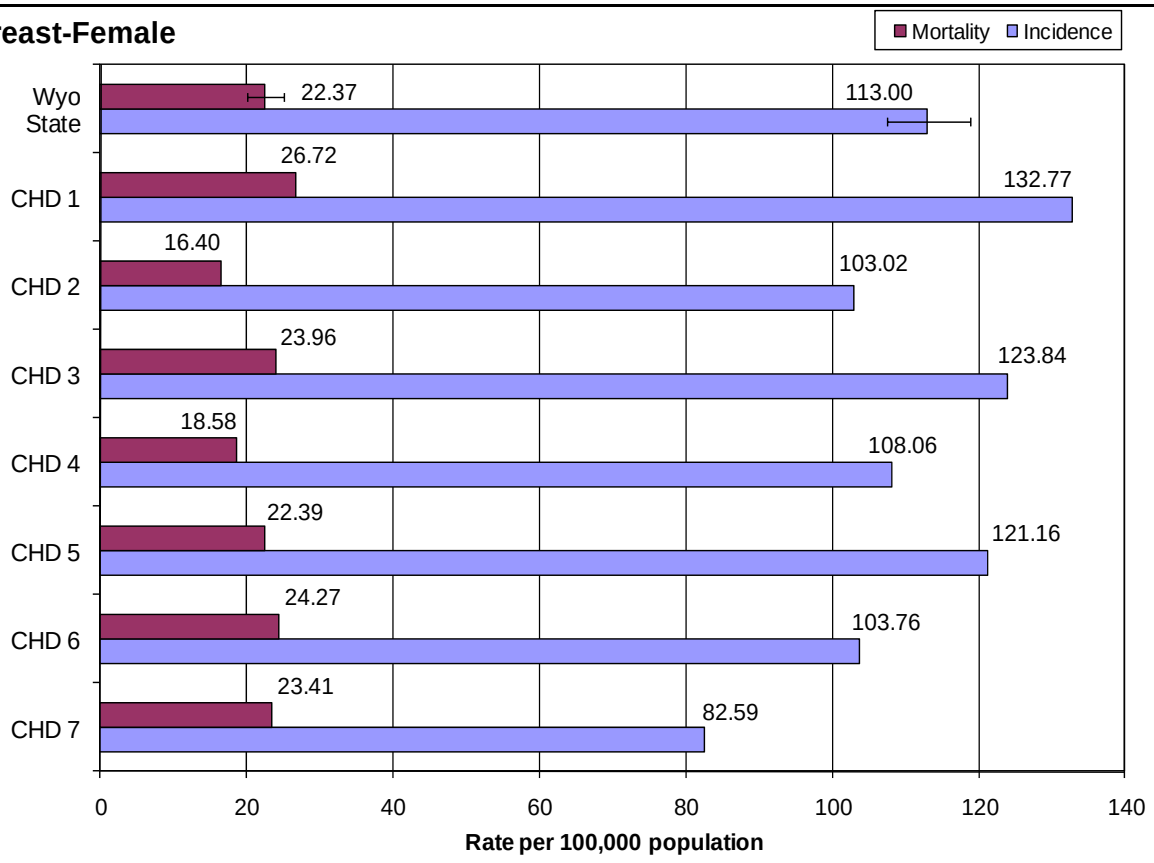
Age-Specific Incidence Rates - 2007

Breast-Female



Cancer Health District Incidence and Mortality

Breast-Female



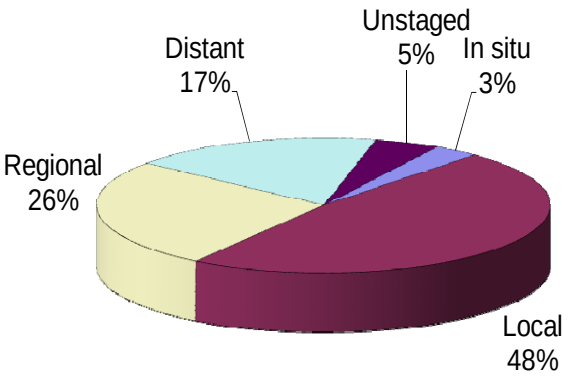
Colorectal

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	109	101	210
# In situ Cases	4	3	7
WY Incidence	42.3	35.5	38.4
US Incidence	52.2	39.7	45.3
# Cancer Deaths	51	45	96
WY Mortality	21.7	15.3	17.9
US Mortality	19.9	14.1	16.6

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

Stage at Diagnosis



The Wyoming incidence rates for males, females, and total population were all lower than the national rates. The mortality rates for each group was slightly higher than the national mortality rates. None of these differences were statistically significant.

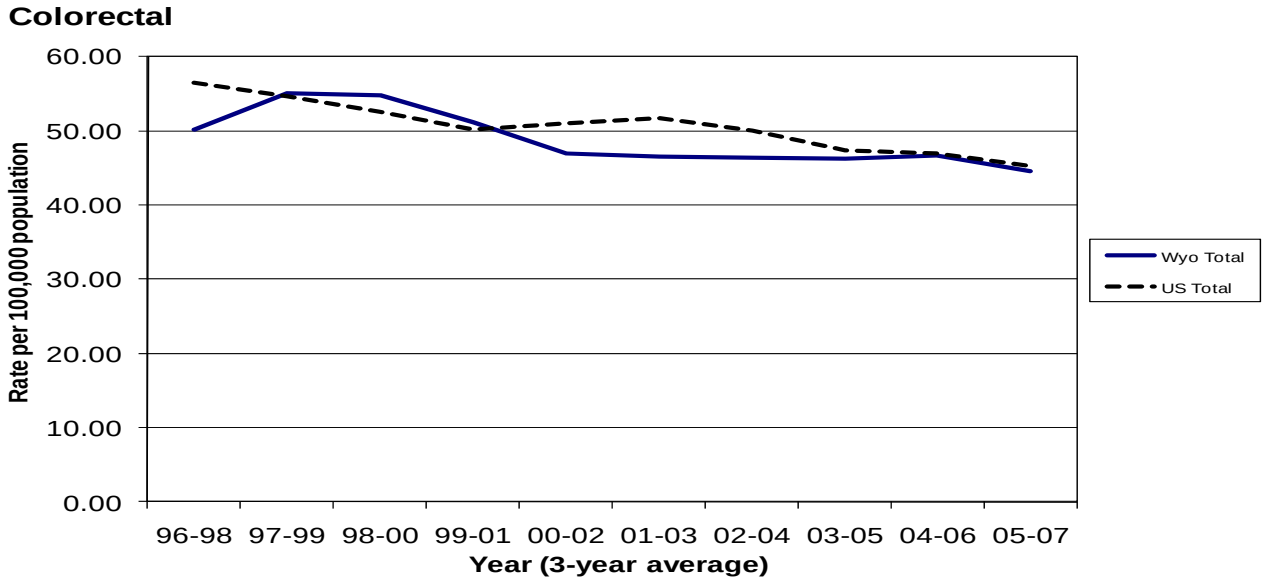
The incidence rates for Wyoming and the US appear to have decreased a little since 04-06.

The percentage of colorectal cases diagnosed at the local stage increased from 40% in 2006. The percentages for the other stages were essentially the same as in 2006.

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

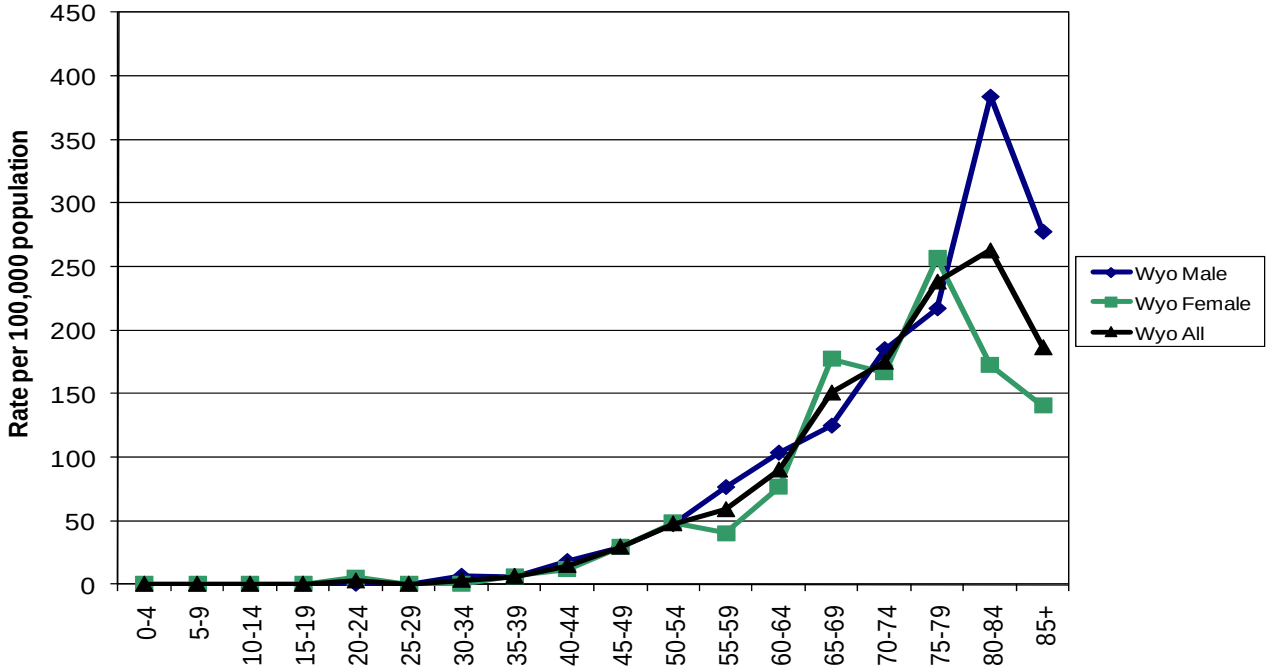
(Colorectal = Colon and rectum combined.)

12-Year Incidence Trend



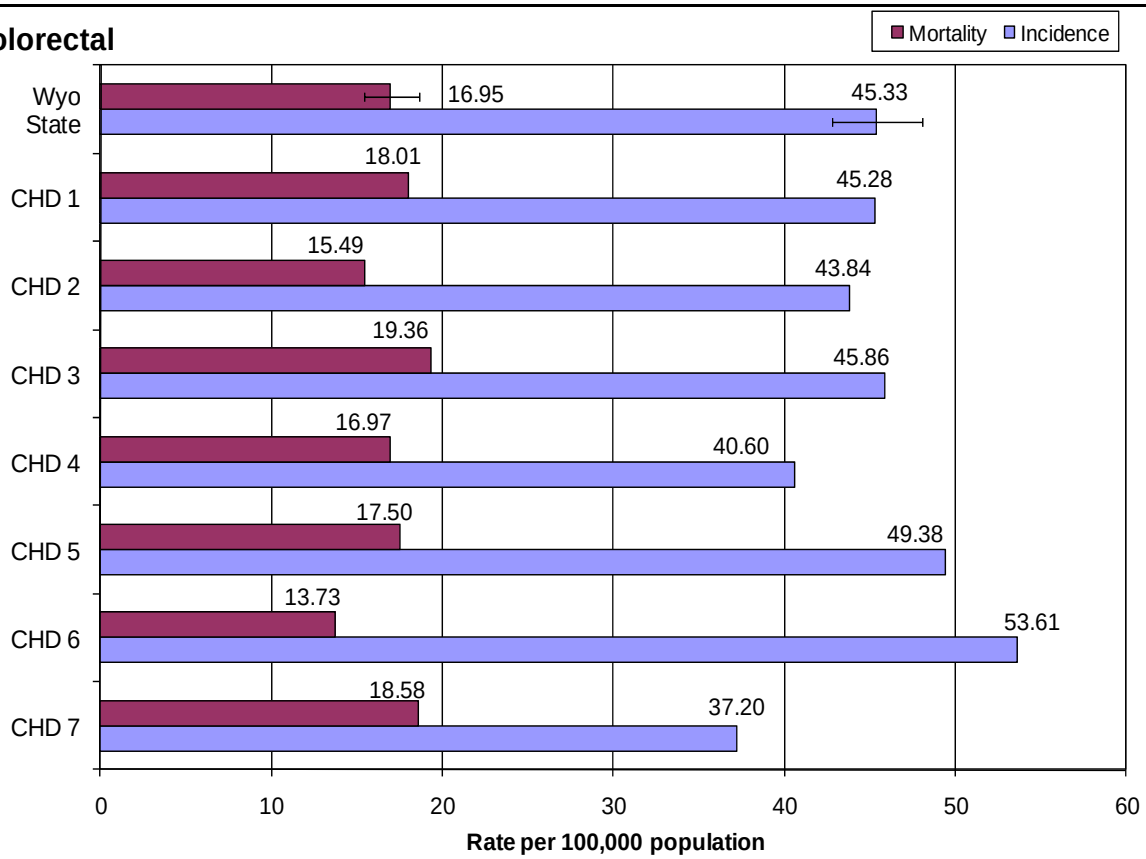
Age-Specific Incidence Rates - 2007

Colorectal



Cancer Health District Incidence and Mortality

Colorectal



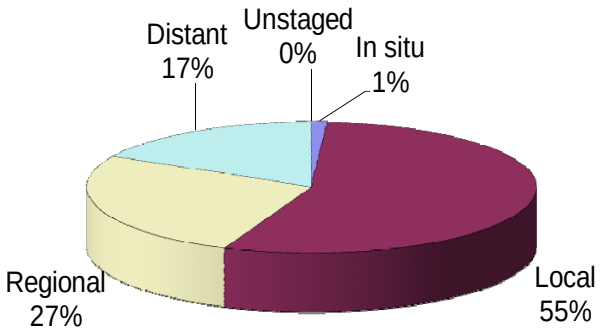
Kidney/Renal Pelvis

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	49	37	86
WY Incidence	18.9	13.0	15.7
US Incidence	19.7	10.5	14.7
# Cancer Deaths	19	7	28
WY Mortality	7.60	2.50	4.80
US Mortality	5.83	2.70	4.07

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

Stage at Diagnosis



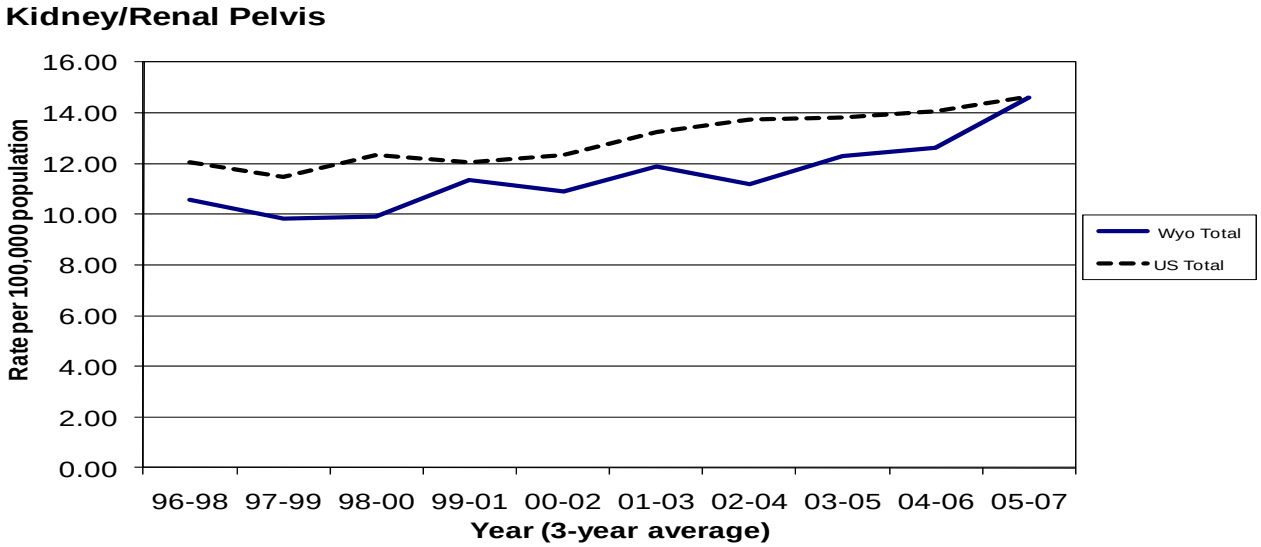
The incidence rates for kidney/renal pelvis cancer were higher in Wyoming females and total population, but lower in males. The mortality rates for males and total population were higher than the national rates, while females were lower. None of these differences were statistically significant.

The 12-year trend shows a continued increase in incidence from 04-06 to 05-07. The national rate also seems to be on the increase since 02-04.

The percent of kidney/renal pelvis cases diagnosed regional is higher in 2007 than in 2006 (18%). The percentage staged as local dropped from 60% 2006.

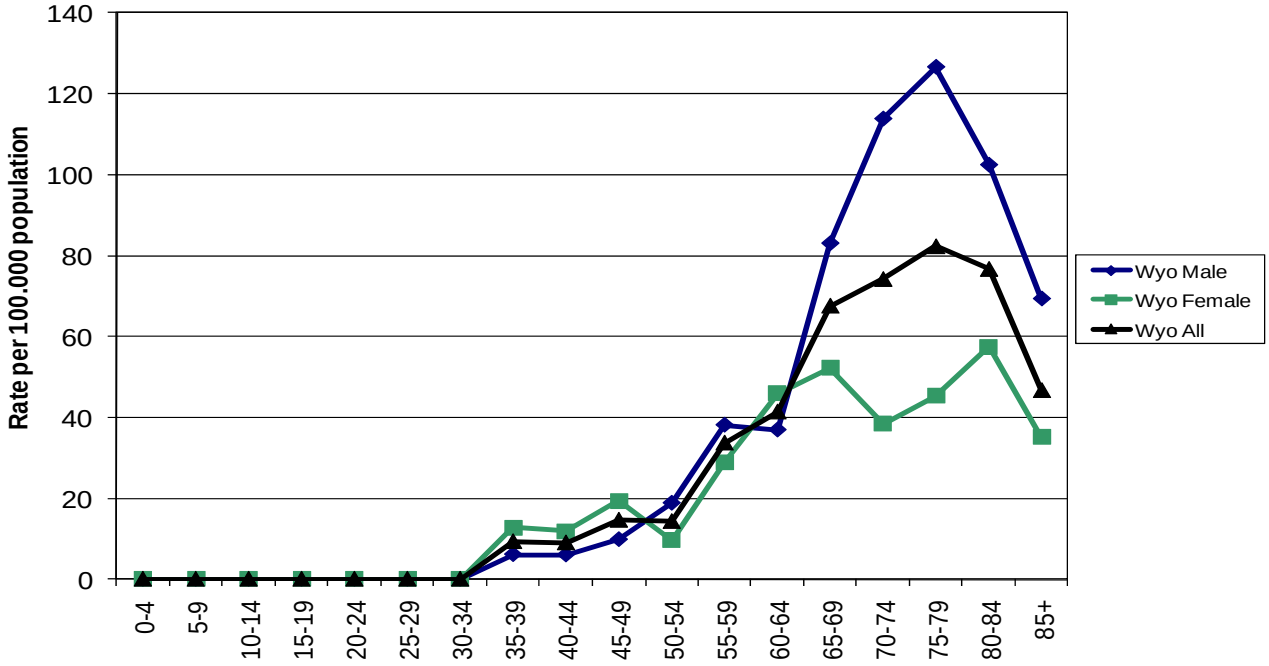
No statistically significant differences were found between CHD's and the state rate for incidence or mortality.

12-Year Incidence Trend



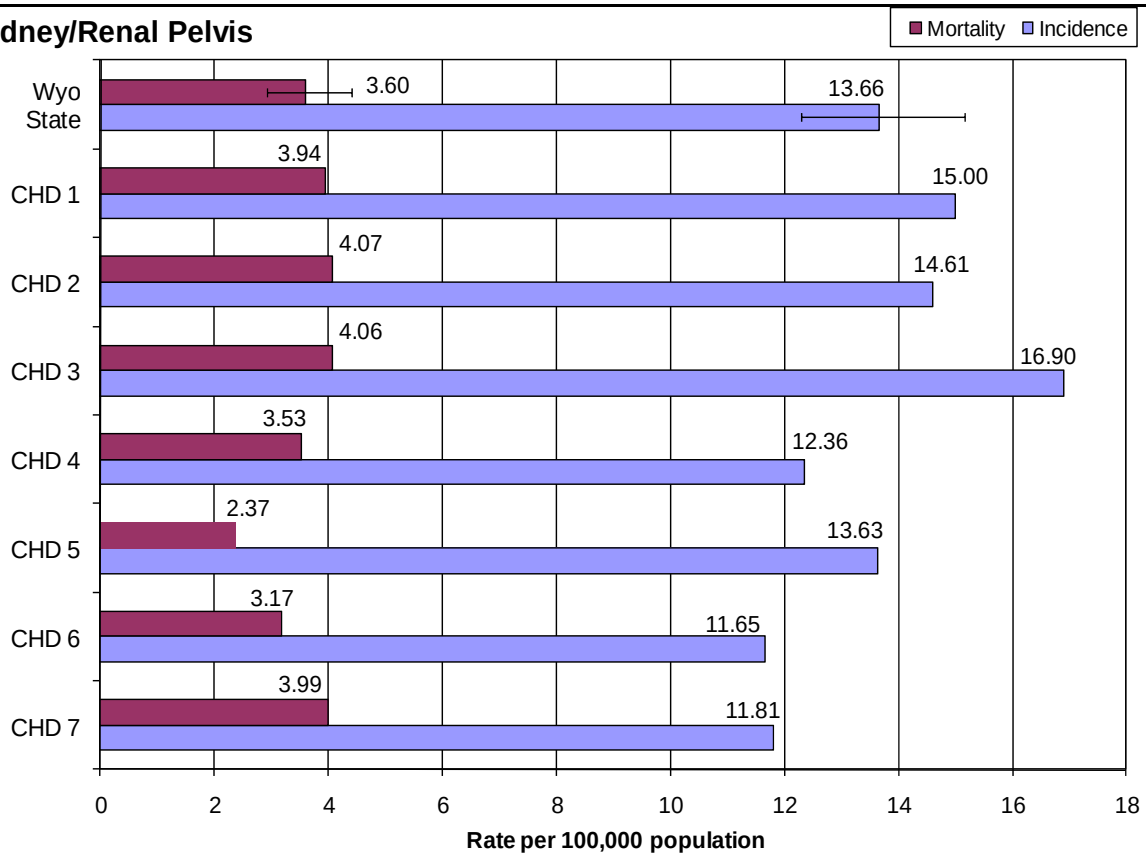
Age-Specific Incidence Rates - 2007

Kidney/Renal Pelvis



Cancer Health District Incidence and Mortality

Kidney/Renal Pelvis



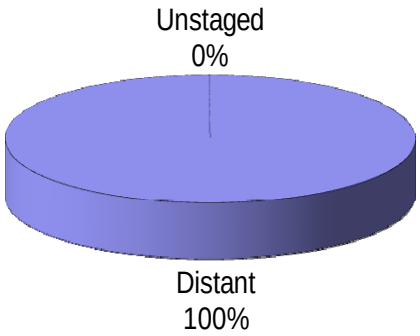
Leukemia

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	40	23	63
WY Incidence	15.4	8.60	11.8
US Incidence	15.3	9.69	12.1
# Cancer Deaths	19	17	36
WY Mortality	8.48	5.73	6.85
US Mortality	9.89	5.59	7.41

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

Stage at Diagnosis

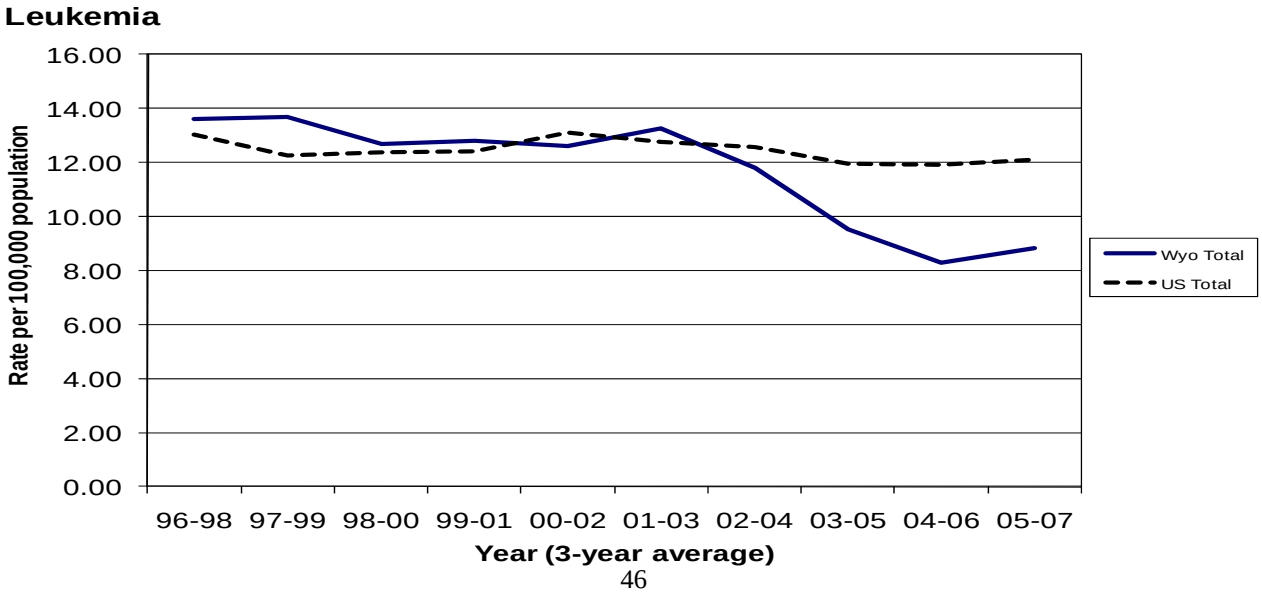


Incidence rates in Wyoming for leukemia were lower than the national rates for females and total population, while the rates for males were basically the same as the national rate. For mortality, Wyoming males and total population were lower that the national rates, but females were a bit higher. None of these differences were statistically significant.

The incidence trend for Wyoming shows an increase from 04-06 to 05-07 after a significant decrease from 01-03 to 04-06. The national trend appears to be level since 03-05.

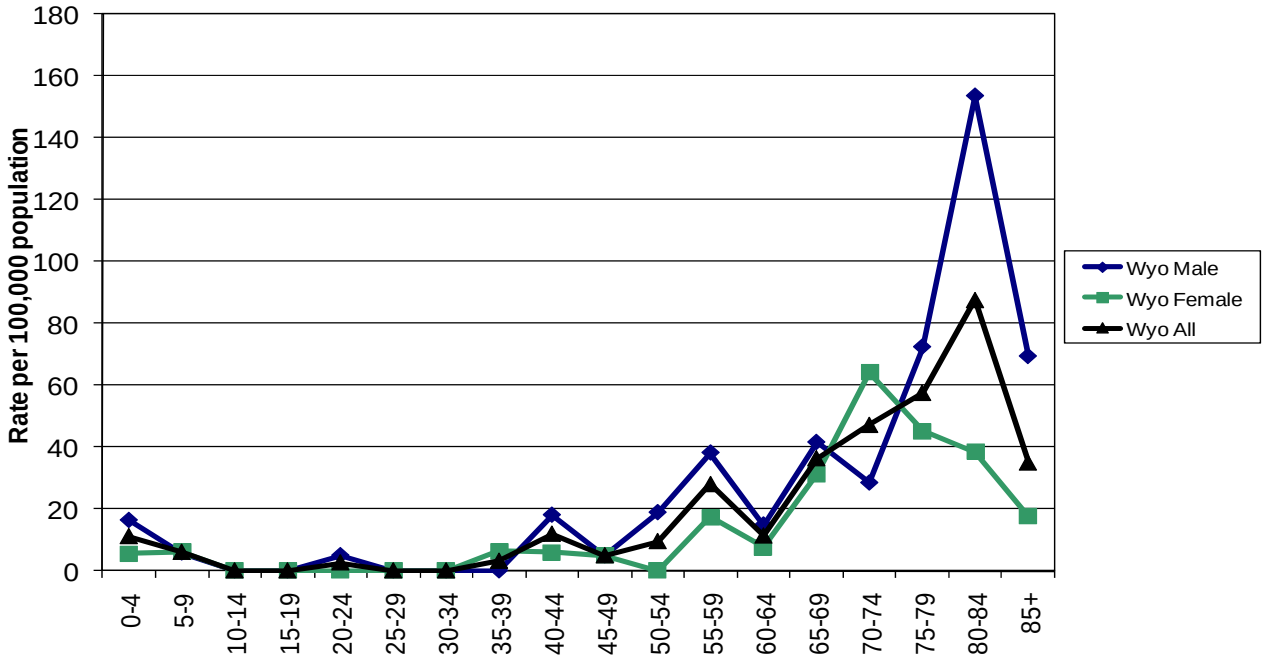
There were no differences between the CHD's and state rate for incidence or mortality.

12-Year Incidence Trend



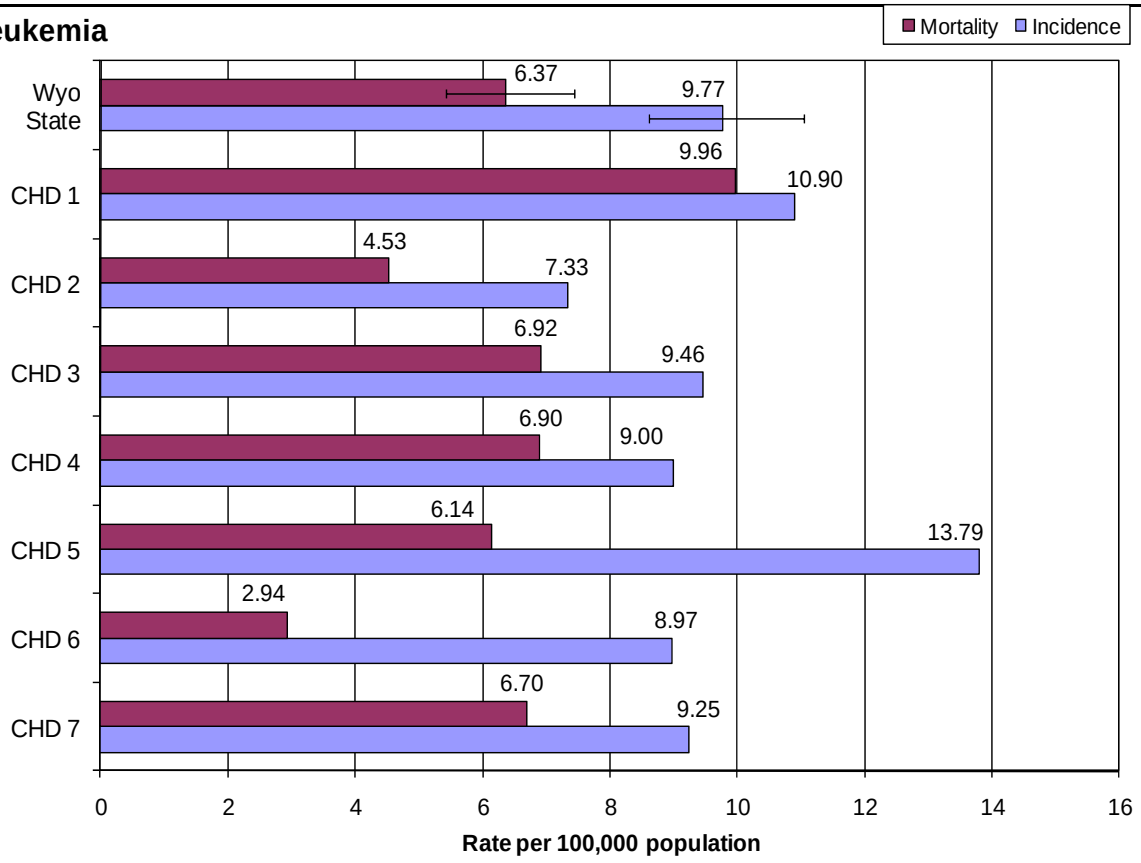
Age-Specific Incidence Rates - 2007

Leukemia



Cancer Health District Incidence and Mortality

Leukemia



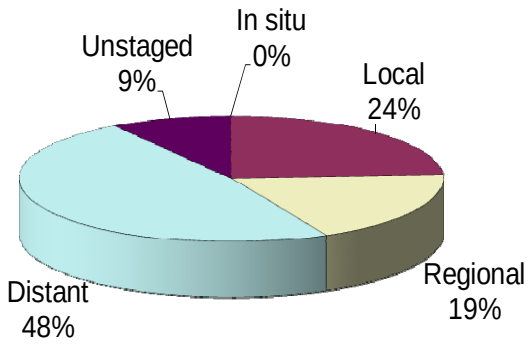
Lung and Bronchus

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	125	124	248
WY Incidence	48.8*	44.0	46.3
US Incidence	73.3	53.7	61.9
# Cancer Deaths	121	112	233
WY Mortality	48.6*	38.7	42.8
US Mortality	67.1	41.3	52.3

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

Stage at Diagnosis



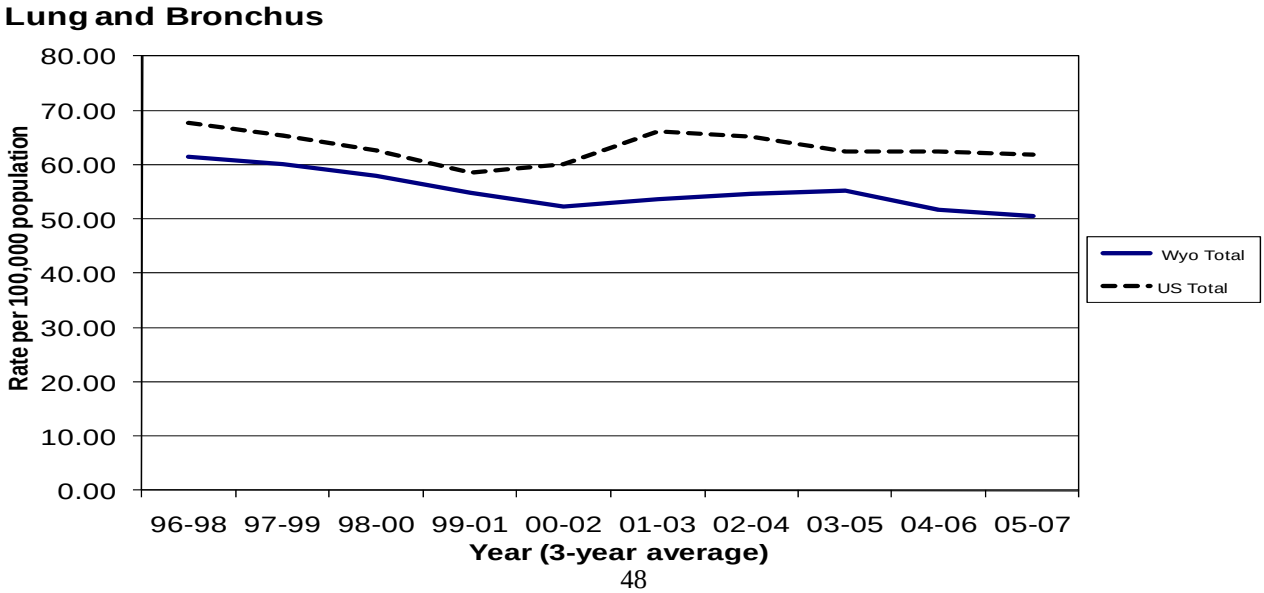
Lung cancer incidence rates in Wyoming males, females, and total population were all lower than the national rates, with males being significantly lower than the national rate. For mortality, all rates were again lower than the national rates with males being significantly lower again.

Incidence rates for lung cancer in Wyoming shows a decrease since 03-05 continuing. Nationally, the rate seems to be level since 03-05.

The percentages diagnoses at the regional stage was down from 2006 (26%), while local was up slightly from 2006 (20%).

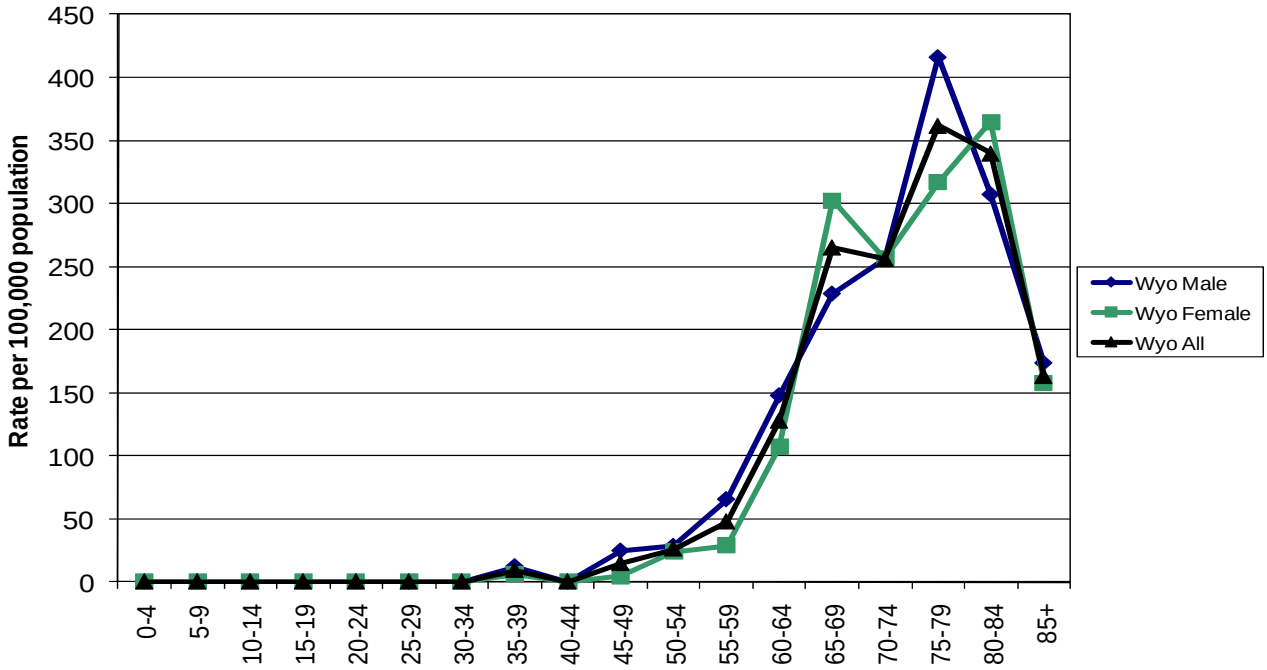
There were no significant differences between CHD's and the state rate for incidence or mortality.

12-Year Incidence Trend



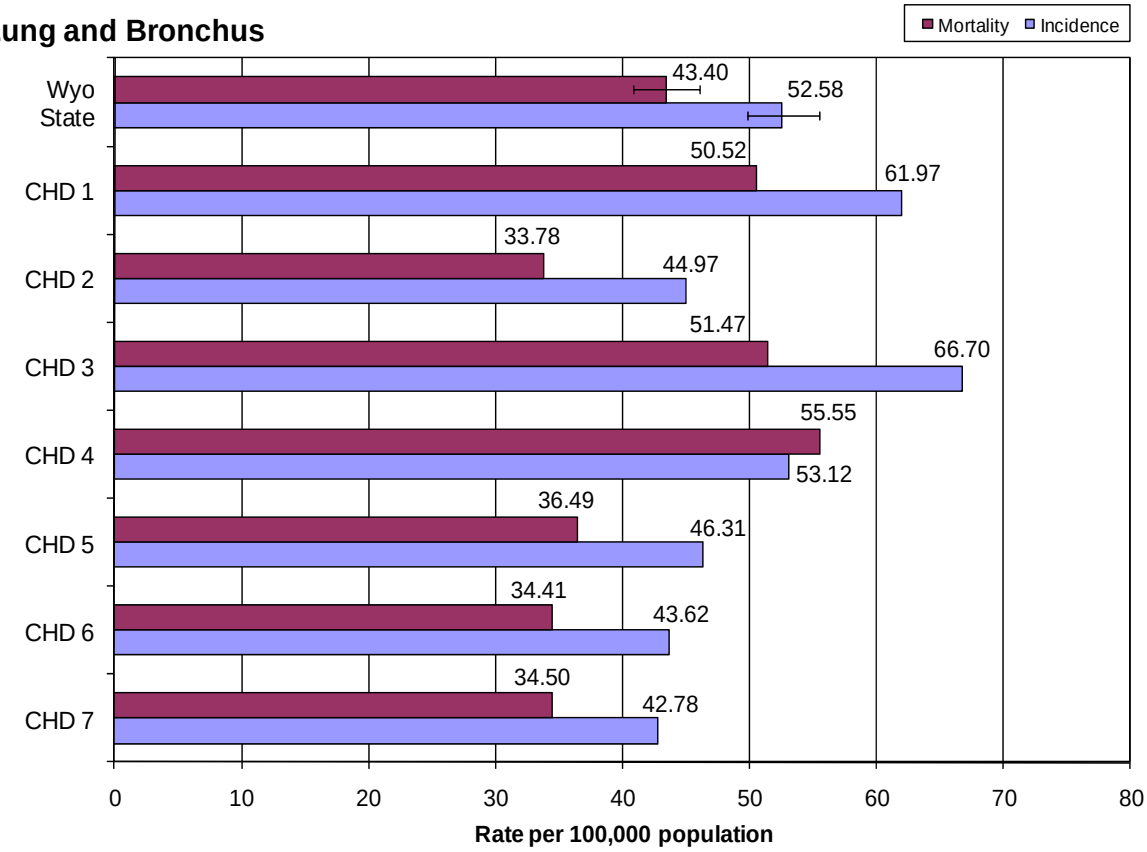
Age-Specific Incidence Rates - 2007

Lung and Bronchus



Cancer Health District Incidence and Mortality

Lung and Bronchus



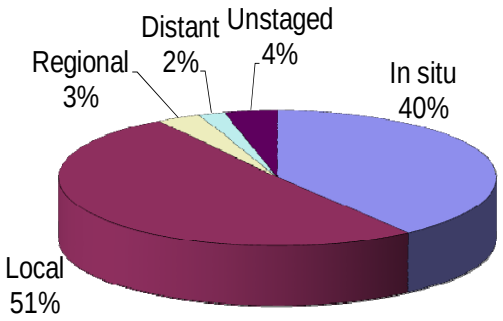
Melanoma (of the skin)

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	47	45	92
# In situ Cases	36	25	61
WY Incidence	17.8*	16.0	16.5
US Incidence	29.1	18.9	23.1
# Cancer Deaths	17	3	20
WY Mortality	7.06	0.97	3.81
US Mortality	4.60	1.97	3.10

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

Stage at Diagnosis



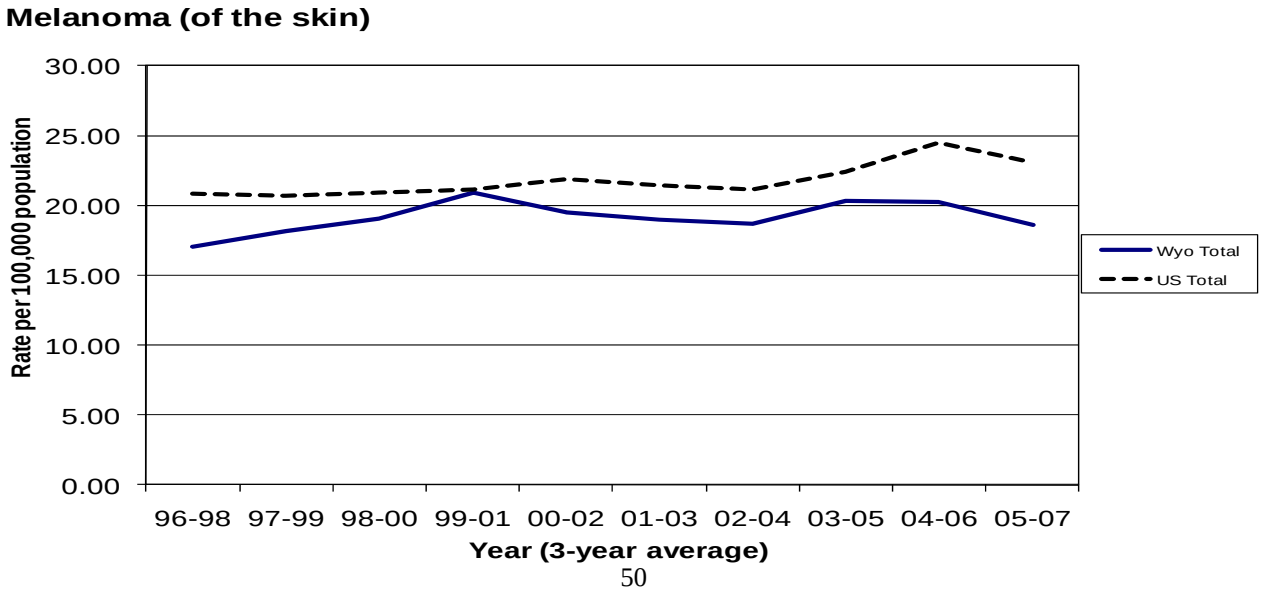
Incidence rates for melanoma of the skin in Wyoming for males, females, and total population were all lower than the national rates, with the difference for Wyoming men being significant. The mortality rates for males and total population were both higher than the national, while female rates were lower.. None of the mortality differences were statistically significant.

The increase in melanoma incidence that began in 02-04 appears to be leveling off since 03-05. Nationally, the rate has been increasing since 02-04.

The percent of cases diagnosed at each stage in 2007 was essentially the same as in 2006.

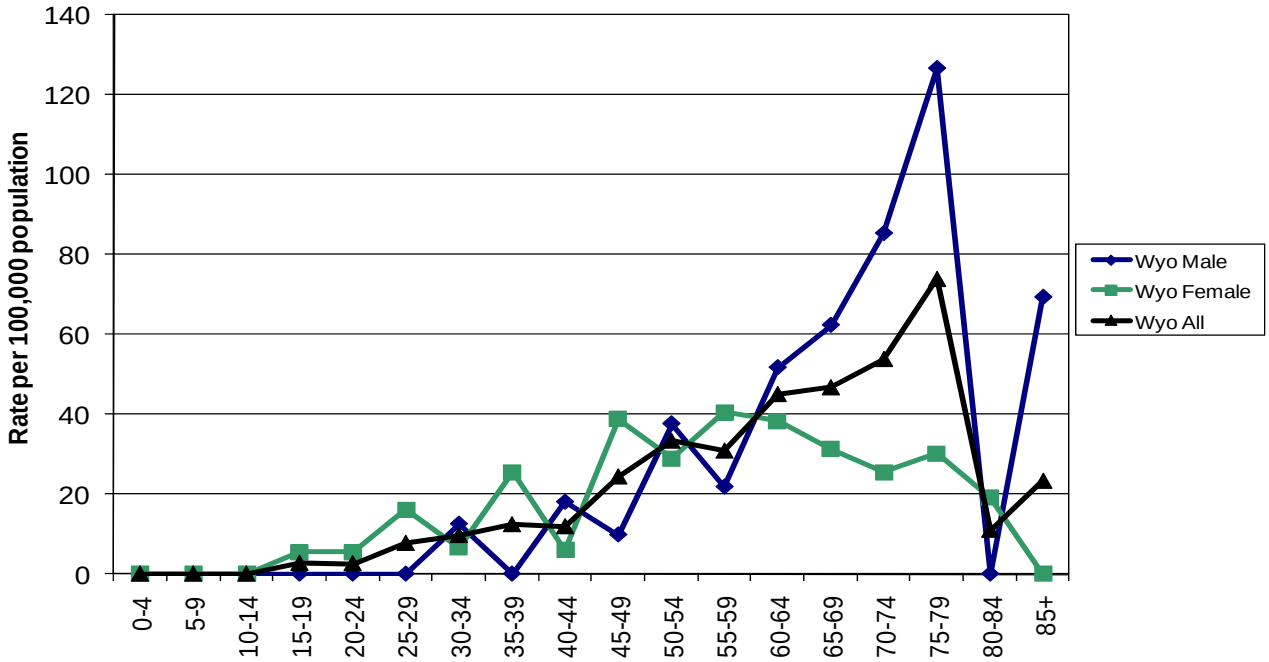
No statistically significant differences were found between the CHD's and state rate for incidence or mortality.

12-Year Incidence Trend



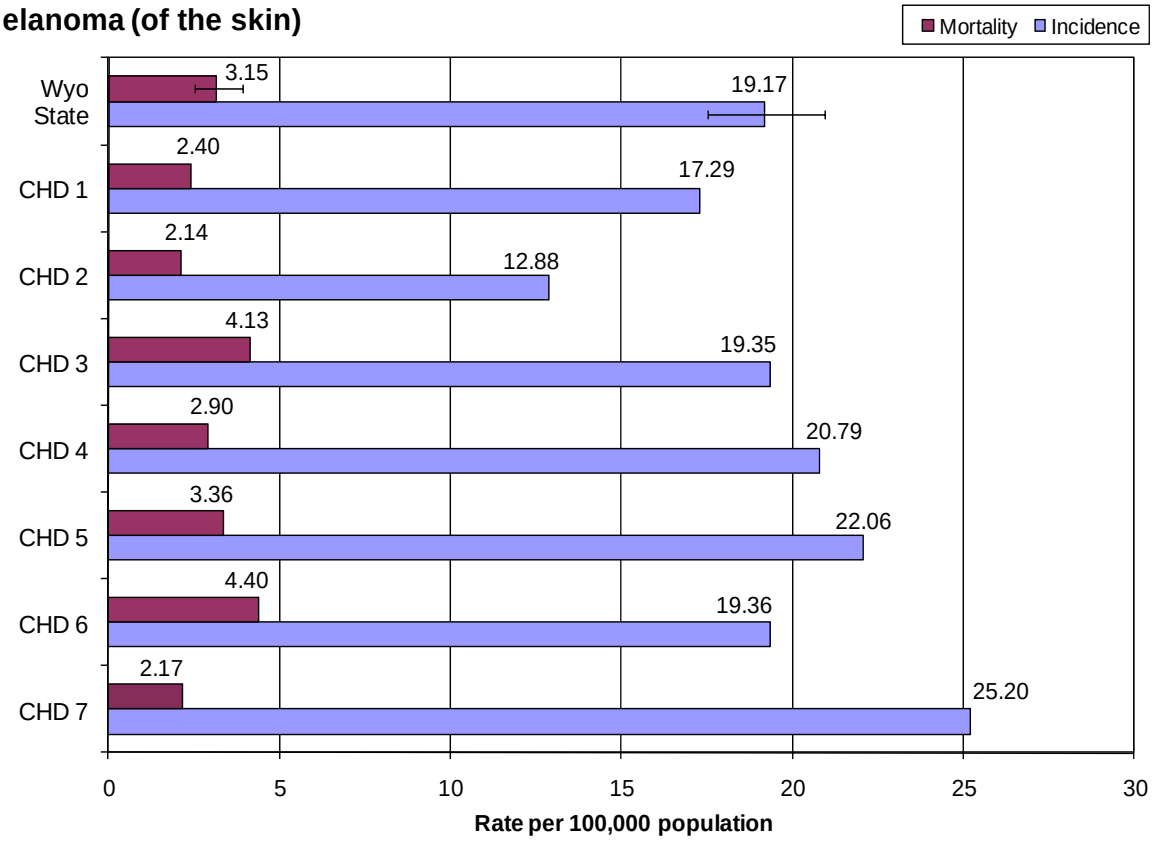
Age-Specific Incidence Rates - 2007

Melanoma (of the skin)



Cancer Health District Incidence and Mortality

Melanoma (of the skin)



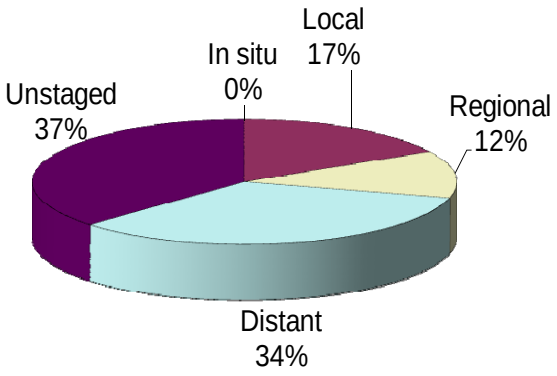
Non-Hodgkin Lymphoma

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	50	39	89
WY Incidence	19.2	14.0	16.3
US Incidence	23.9	17.0	20.1
# Cancer Deaths	18	17	35
WY Mortality	8.19	5.57	6.63
US Mortality	8.72	5.60	6.95

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

Stage at Diagnosis



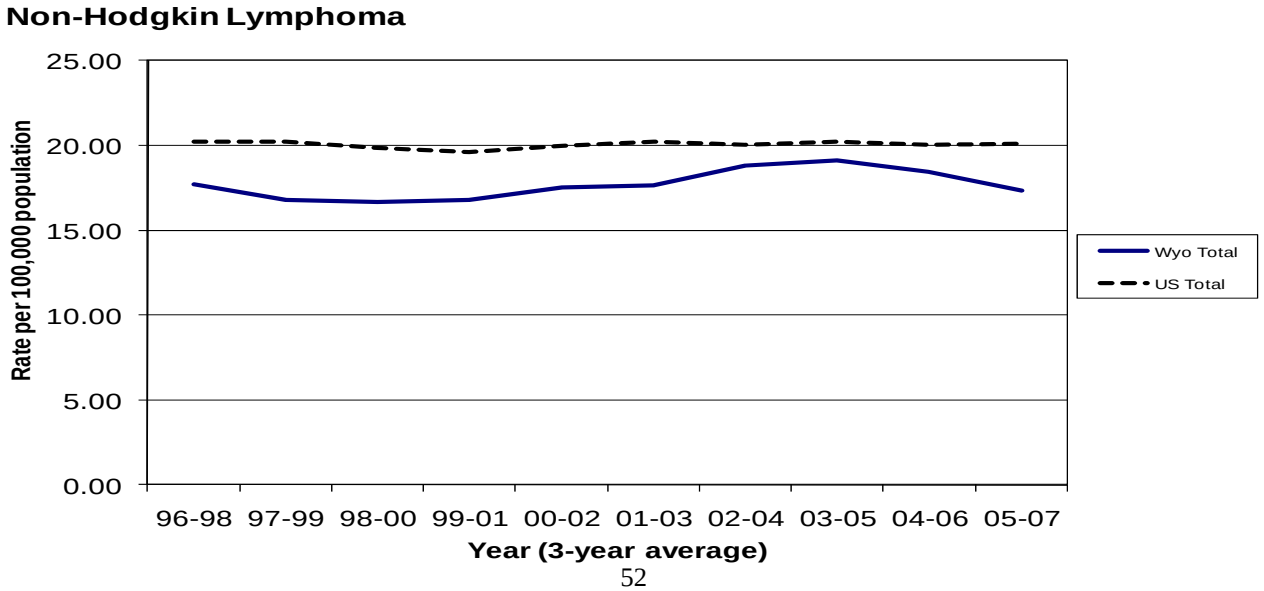
The incidence and mortality rates for males, females, and total population in Wyoming were all lower than the national rates. None were statistically significantly lower.

The incidence trend seems to be continuing a slight decrease that began 03-05, while the national trend has been level for many years.

The percent of cancers diagnosed at each stage in 2007 is very similar to the percent by stage in 2006.

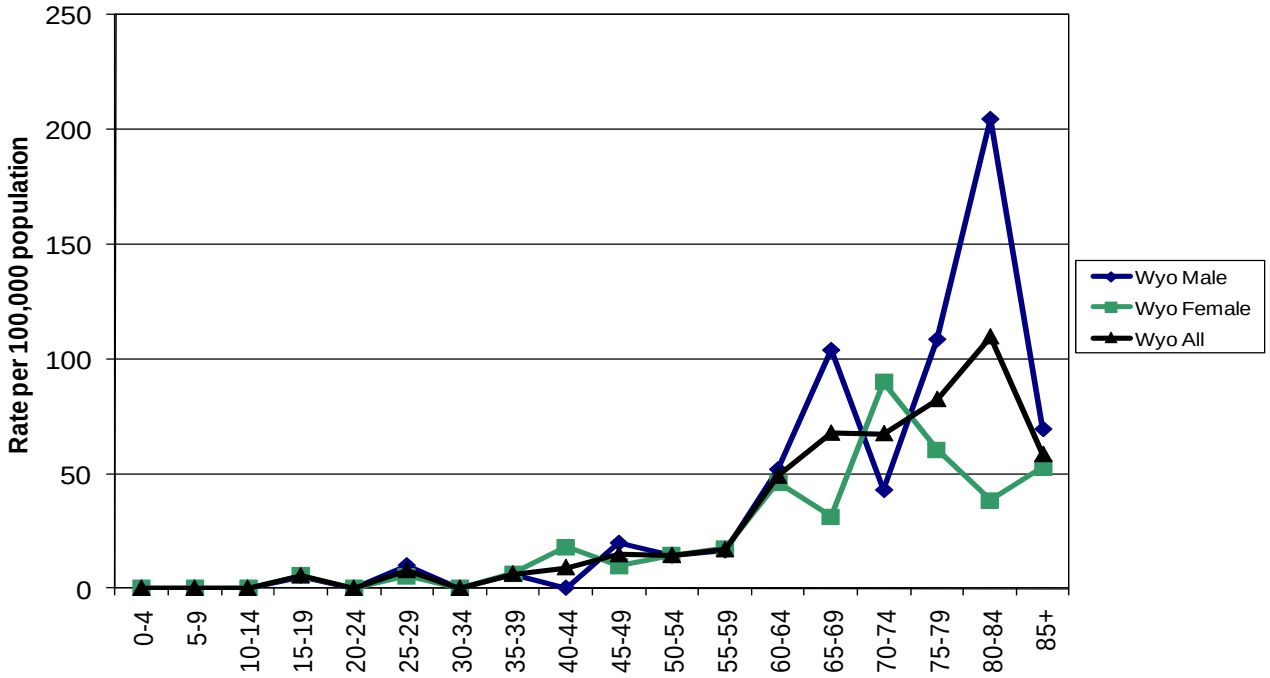
The incidence rate in CHD 7 (9.09) was significantly lower than state rate (18.13). No significant difference were found for mortality rates.

12-Year Incidence Trend



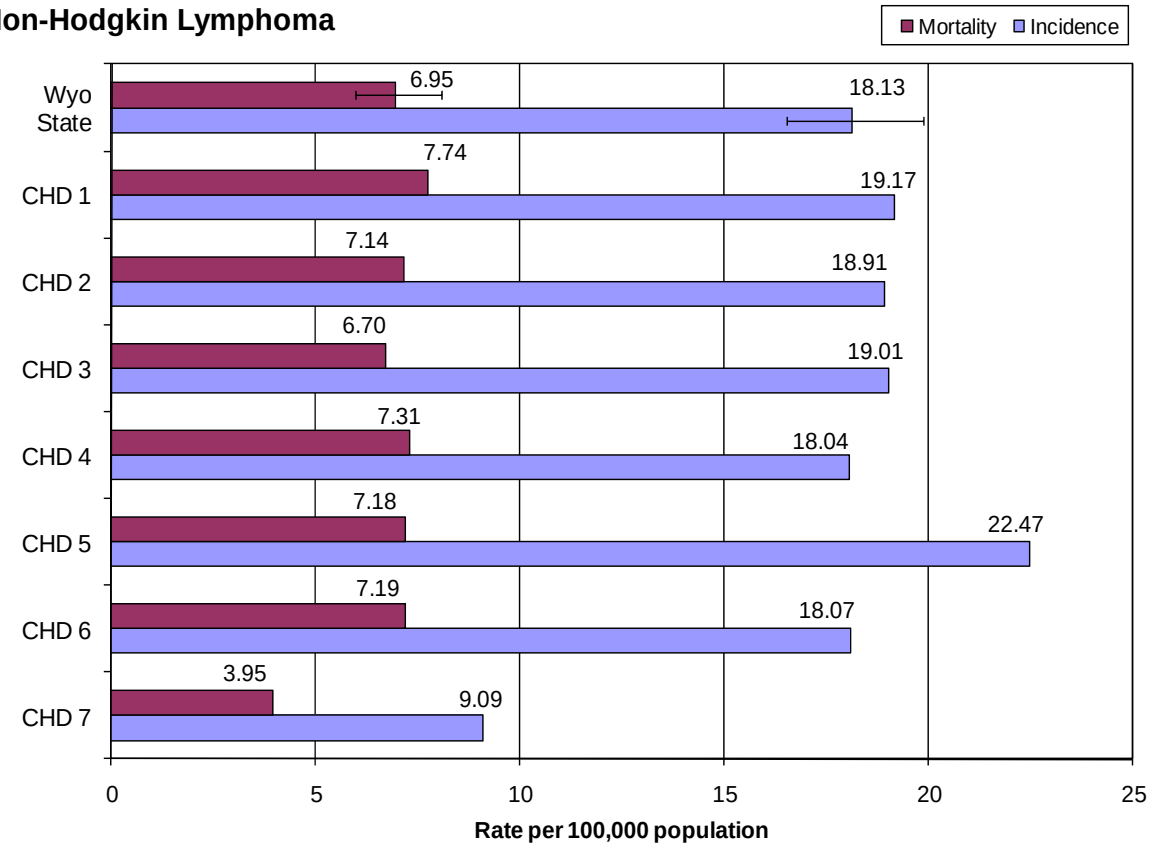
Age-Specific Incidence Rates - 2007

Non-Hodgkin Lymphoma



Cancer Health District Incidence and Mortality
5-Year Average, 2003-2007

Non-Hodgkin Lymphoma



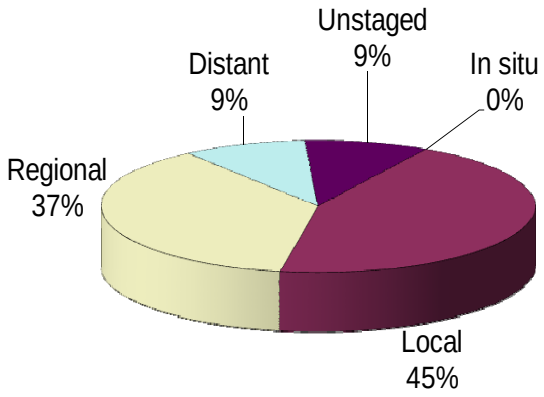
Oral Cavity

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	30	24	54
# In situ Cases	0	0	0
WY Incidence	10.9	8.40	9.60
US Incidence	15.1	6.07	10.3
# Cancer Deaths	5	4	9
WY Mortality	2.10	1.32	1.58
US Mortality	3.60	1.37	2.39

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

Stage at Diagnosis



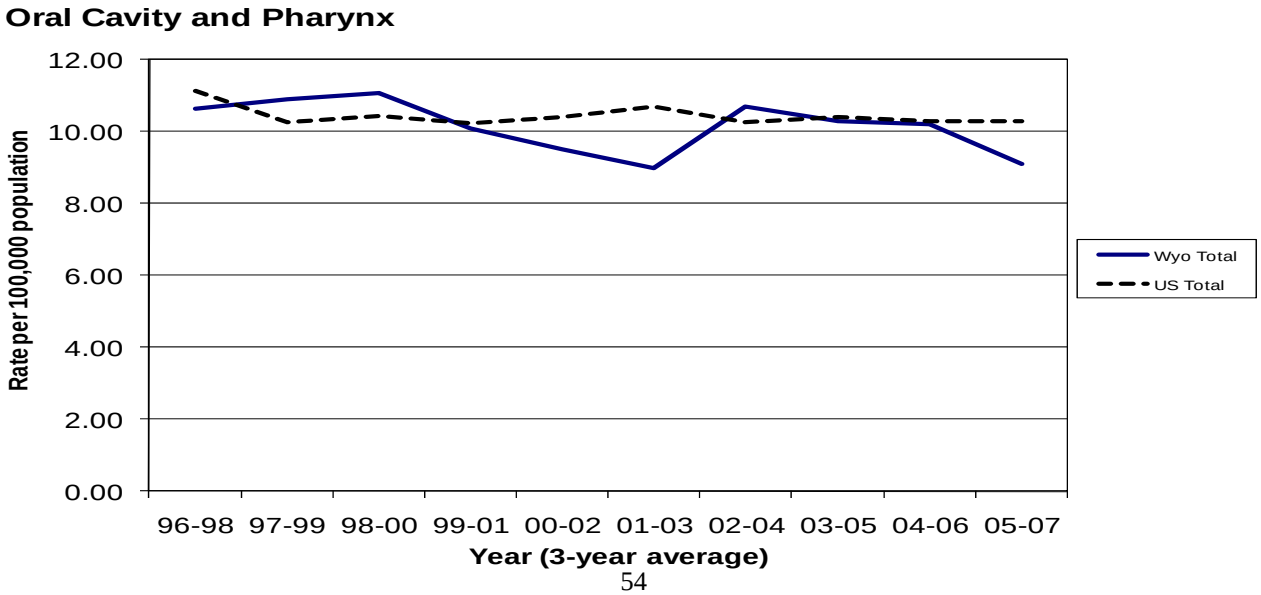
Incidence rates for cancer of the oral cavity and pharynx in females and total population were higher than the national rate, while males were lower. Mortality rates for males, females, and total population were all lower than the national rates, though not significantly.

The incidence trend shows a steeper decrease from 04-06 to 05-07 than the gradual decrease that had started in 02-04.. Nationally, the trend has been level since 02-04.

More cases were diagnosed as regional in 2007 than 2006 (33%), though this difference was not significant. The rest of stages were similar to the percentages seen in 2006.

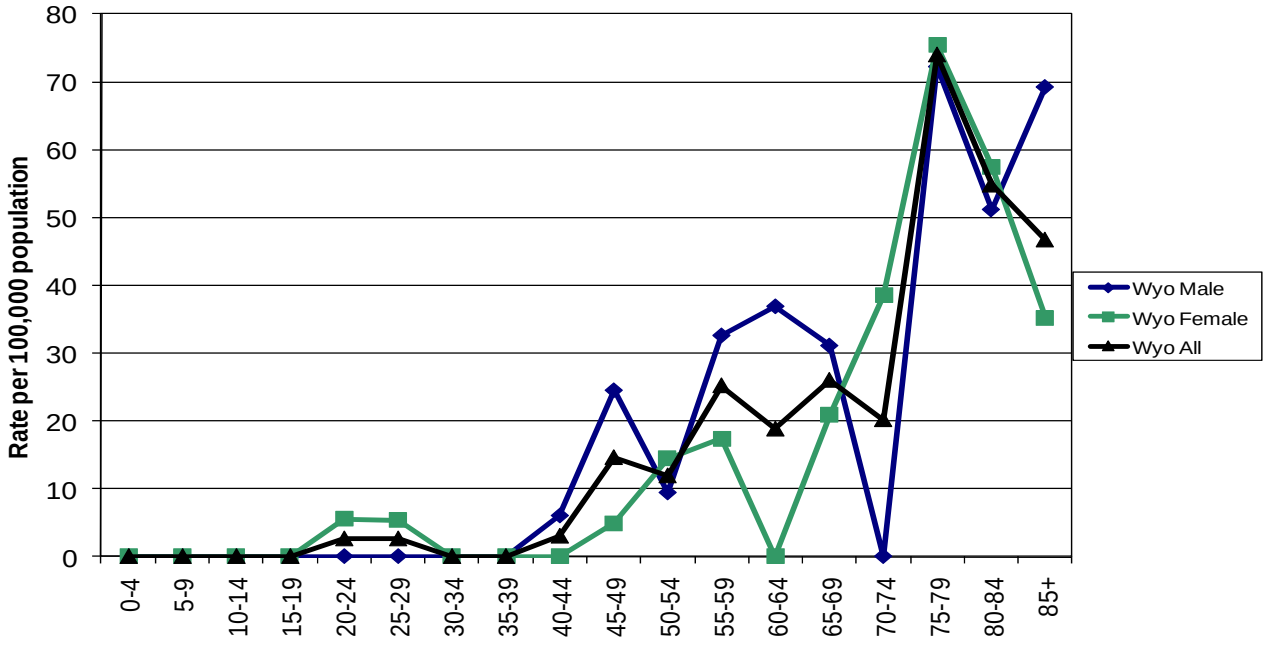
No statistically significant differences were found between the CHD's and state rate for incidence or mortality.

12-Year Incidence Trend



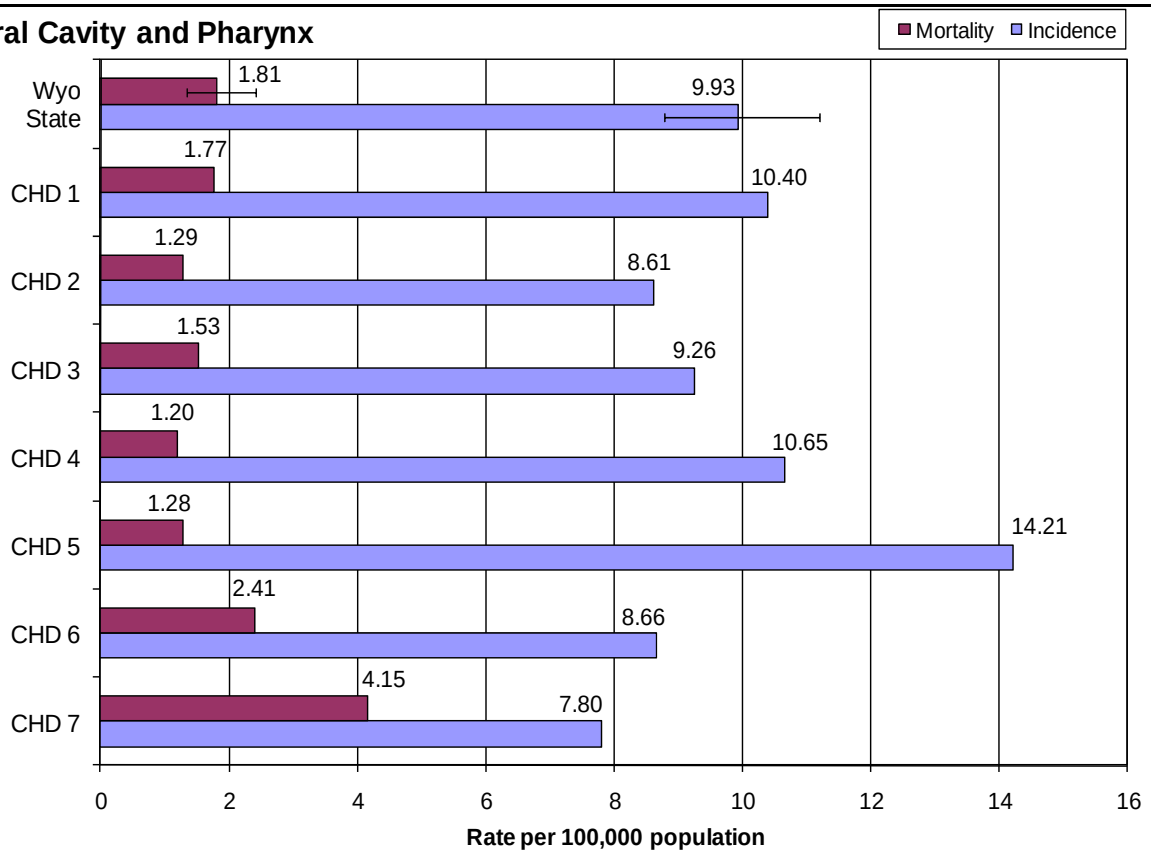
Age-Specific Incidence Rates - 2007

Oral Cavity and Pharynx



Cancer Health District Incidence and Mortality

Oral Cavity and Pharynx



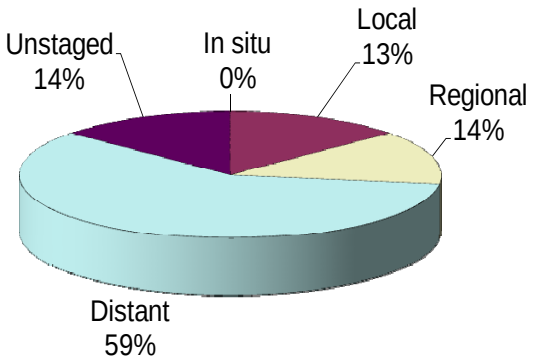
Ovary

Incidence and Mortality Summary

	Female
# Invasive Cases	22
WY Incidence	7.30
US Incidence	13.3
# Cancer Deaths	25
WY Mortality	8.51
US Mortality	8.91

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

Stage at Diagnosis



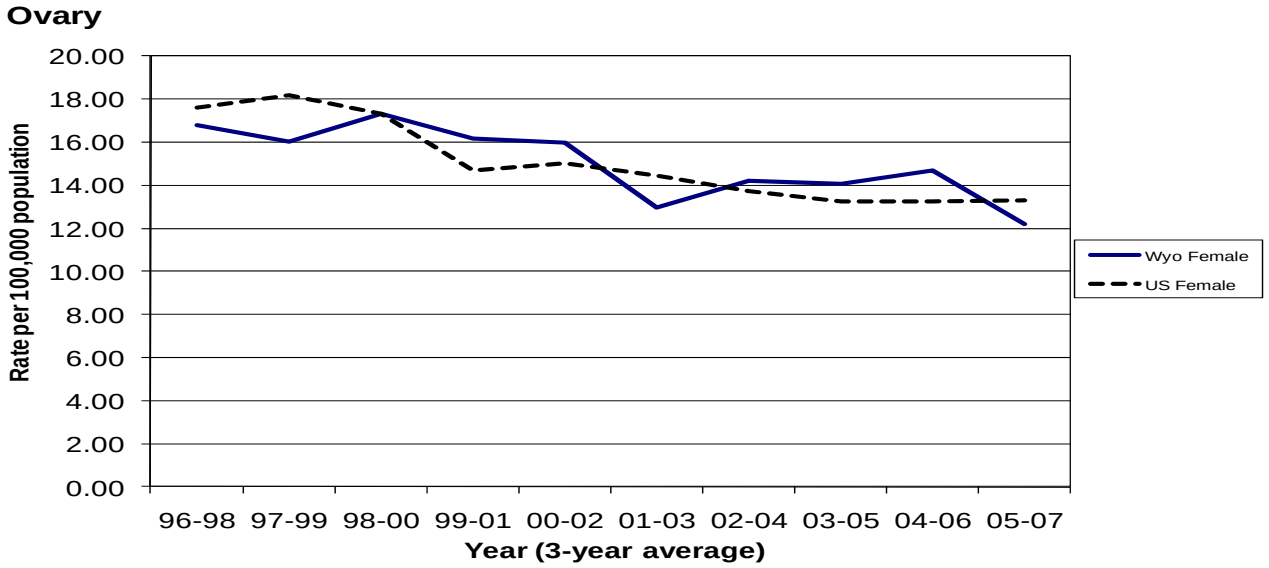
The incidence and mortality rates in Wyoming females for ovarian cancer were both lower than the national rates. However, neither difference was statistically significant.

The 12-year incidence trend shows a steep decrease from 04-06 to 05-07. The national rate appears to be remaining level since 03-05.

A significantly lower percentage of cases were diagnoses at the regional stage in 2007 than in 2006 (29%). The percentages at each other stage were similar to the percentages in 2006.

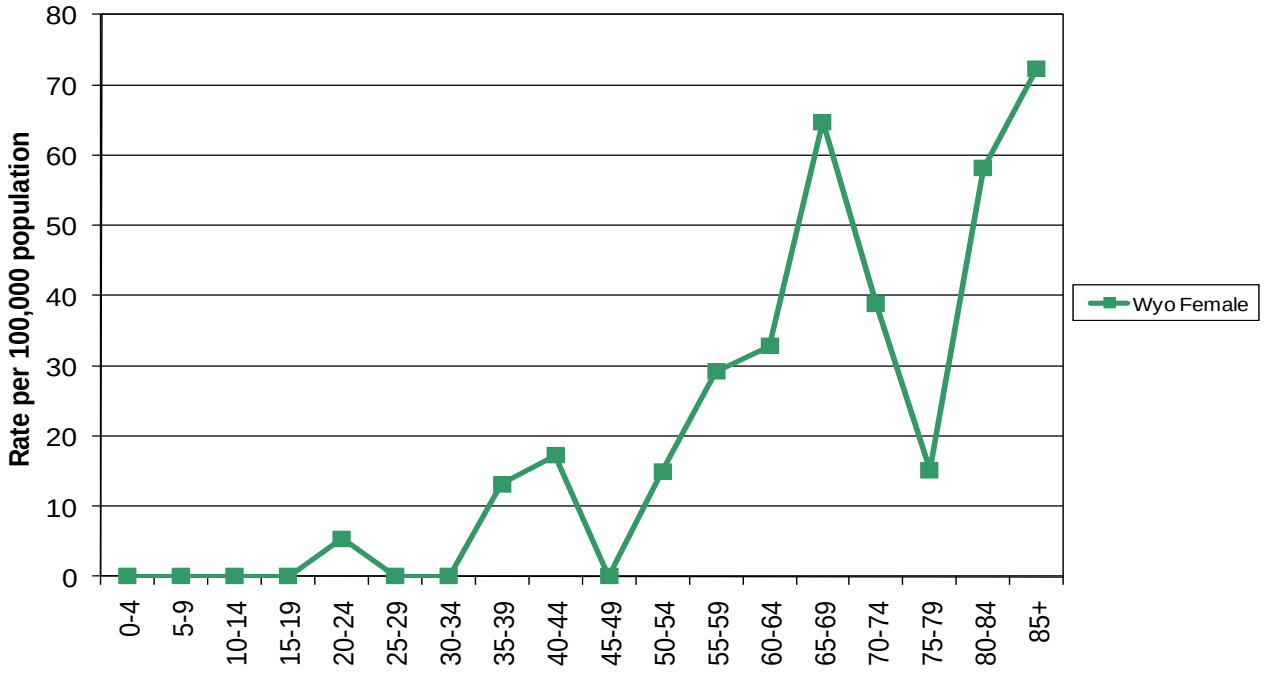
No statistically significant differences were found between the CHD's and state rate for incidence or mortality.

12-Year Incidence Trend



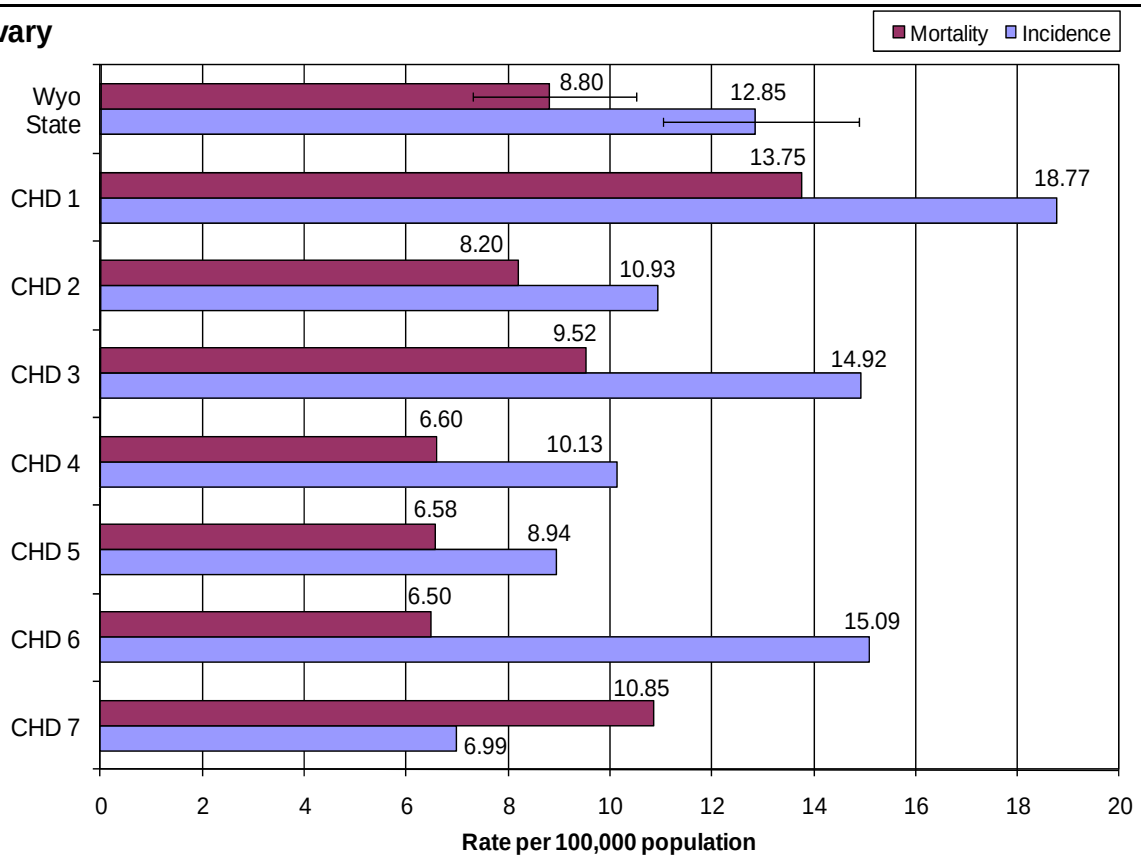
Age-Specific Incidence Rates - 2007

Ovary



Cancer Health District Incidence and Mortality

Ovary



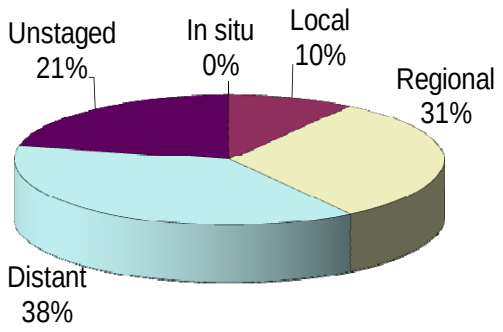
Pancreas

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	24	18	42
WY Incidence	9.20	6.30	7.50
US Incidence	13.3	10.2	11.6
# Cancer Deaths	28	30	58
WY Mortality	11.4	10.6	10.8
US Mortality	12.4	9.24	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



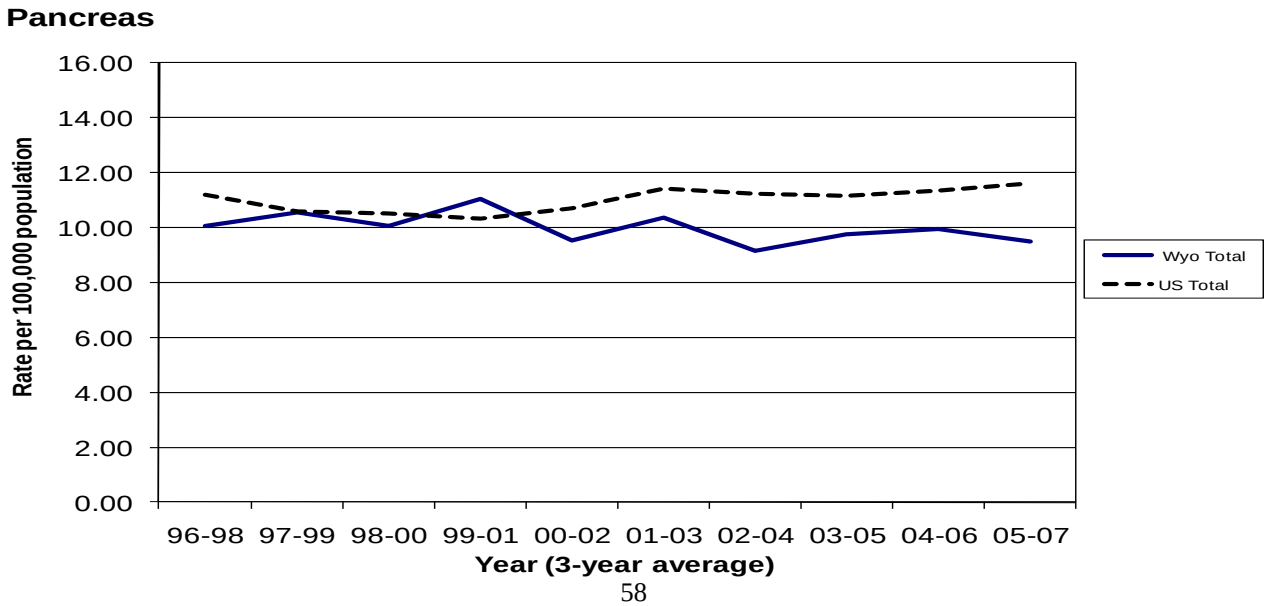
The incidence rates of cancer of the pancreas in Wyoming males, females and the total population were all lower than the national rates. The mortality rate for females was slightly higher, while males were lower and total population was basically the same as the national rates. None of the differences were statistically significant.

Wyoming's trend shows a small decrease from 04-06 to 05-07. Nationally, the rate appears to be increasing slightly.

A significantly lower percent of pancreas cancers were staged as distant in 2007 than in 2006 (56%), while a higher percentage were staged as regional in 2007 than in 2006 (24%).

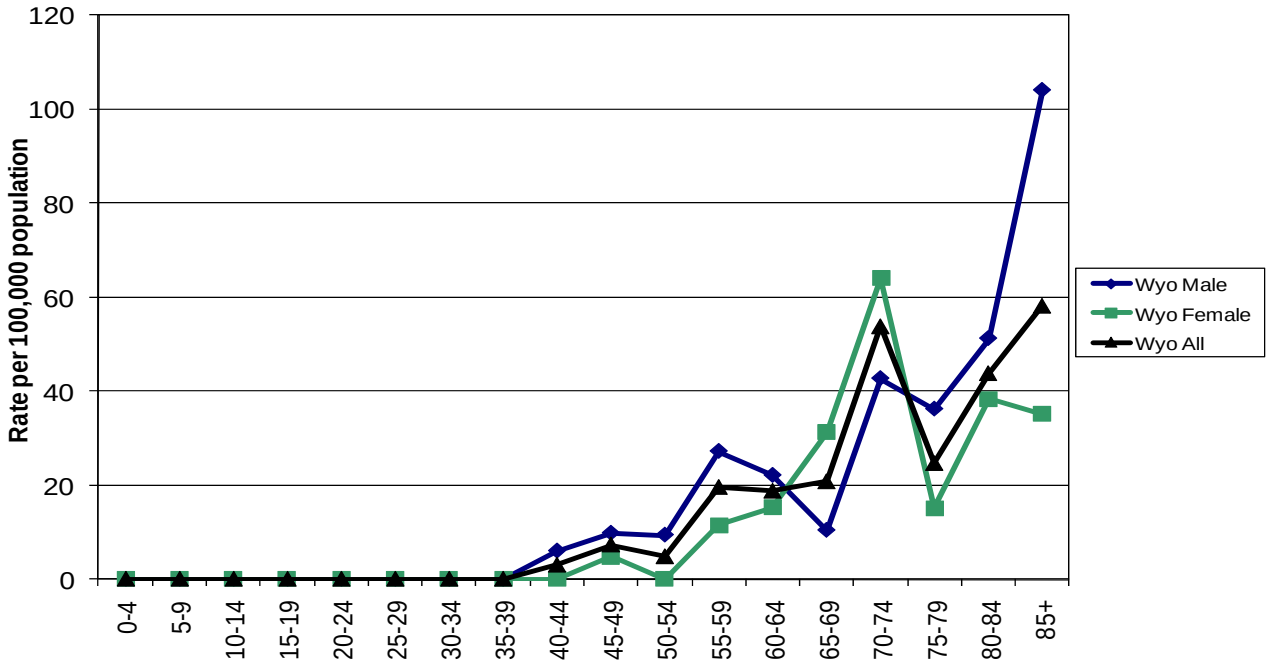
No statistically significant differences were found between the CHD's and state rates for incidence or mortality.

12-Year Incidence Trend



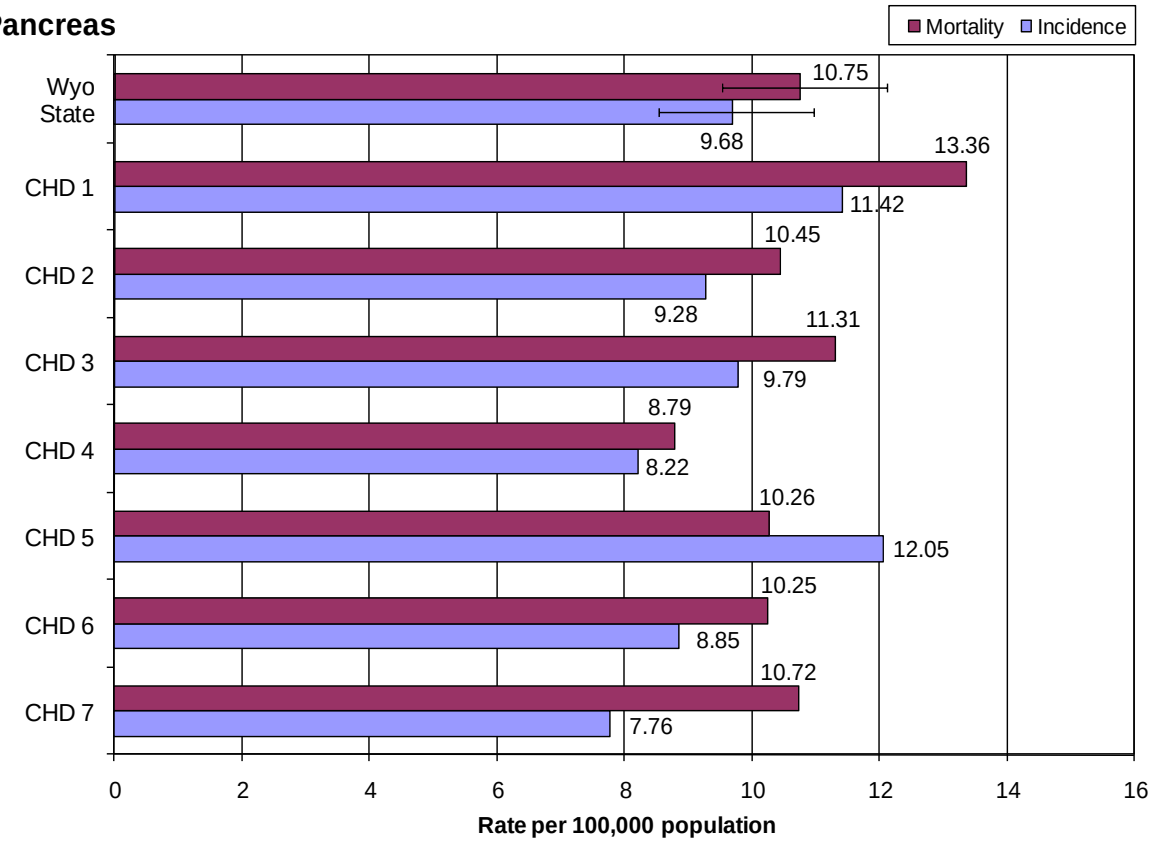
Age-Specific Incidence Rates - 2007

Pancreas



Cancer Health District Incidence and Mortality
5-Year Average, 2003-2007

Pancreas



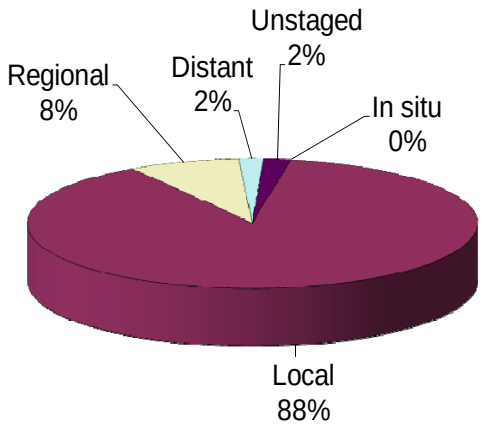
Prostate

Incidence and Mortality Summary

	Male
# Invasive Cases	460
WY Incidence	168.9
US Incidence	147.7
# Cancer Deaths	44
WY Mortality	19.7
US Mortality	21.8

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

Stage at Diagnosis



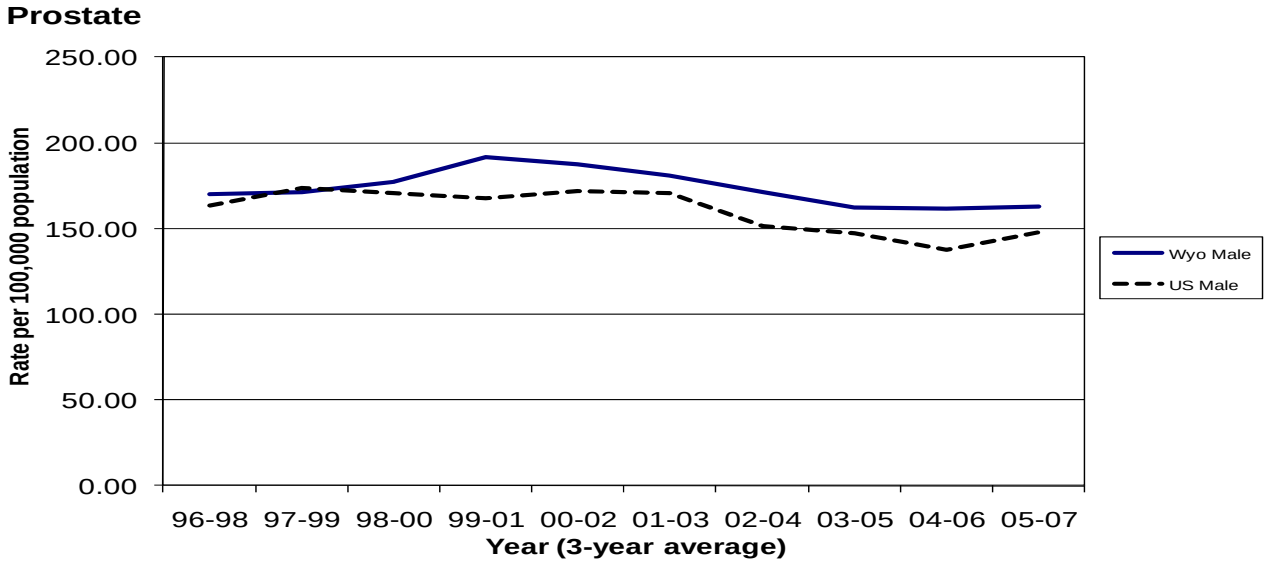
The incidence rate for prostate cancer in Wyoming males was higher than the national rate; however, the mortality rate for Wyoming men was low than the national rate. Neither of these differences were significant.

The incidence rate that started in in Wyoming men has been leveling since 03-05, while the national rate shows an increase from 04-06 to 05-07.

The percent of cases diagnosed at each stage in 2007 is essentially the same as in 2006.

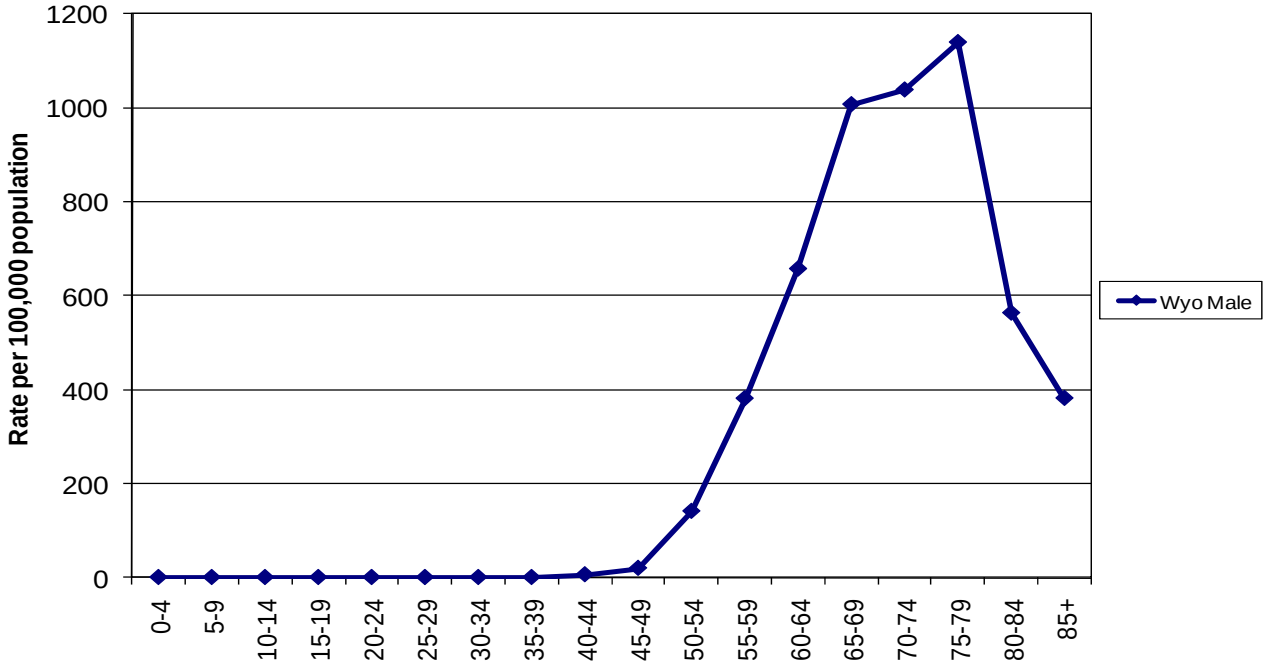
The incidence rate in CHD 1 (217.37) was significantly higher, and CHD 7 was significantly lower (125.16) than the state incidence rate (166.04) from 2003 to 2007. There were no significant differences in mortality rates.

12-Year Incidence Trend



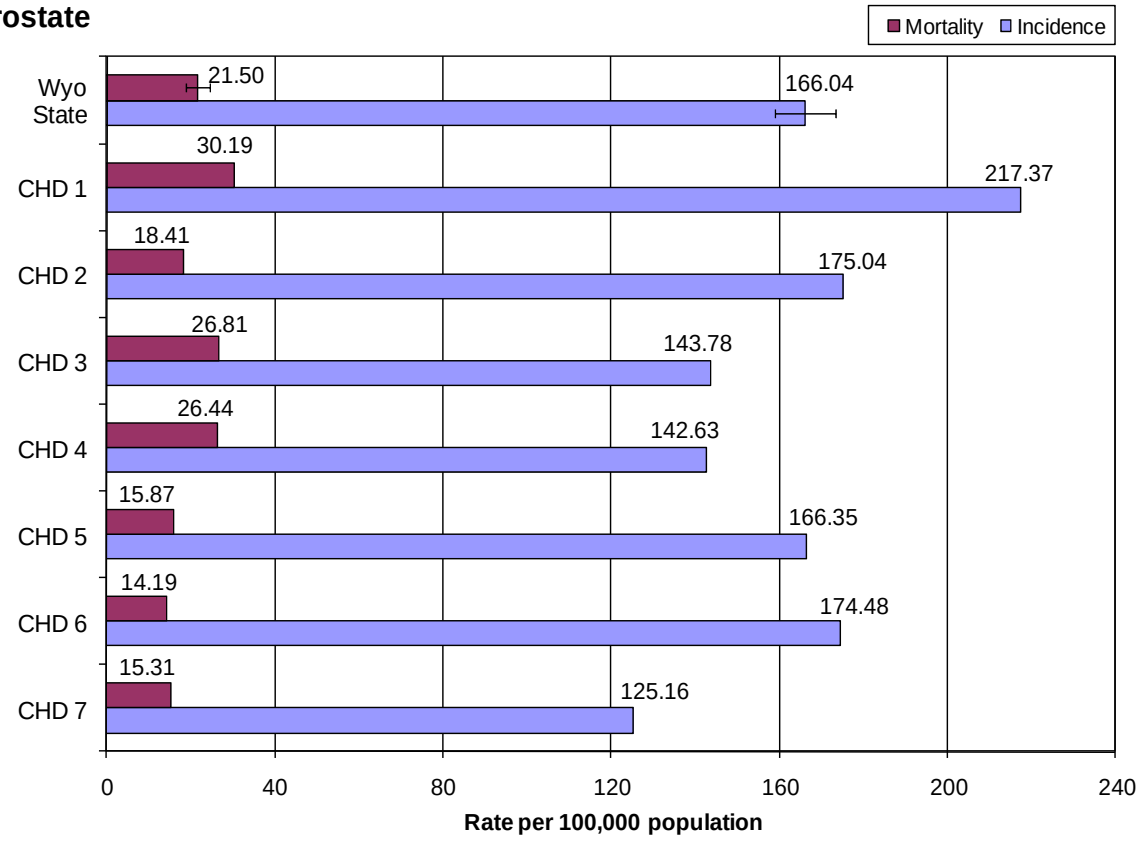
Age-Specific Incidence Rates - 2007

Prostate



Cancer Health District Incidence and Mortality

Prostate



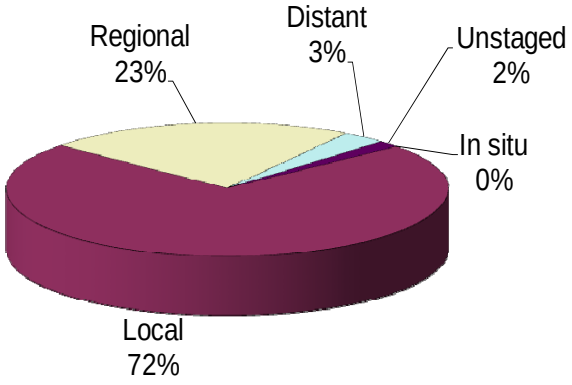
Thyroid

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	14	48	62
WY Incidence	4.60	18.8	11.7
US Incidence	5.75	16.6	11.2
# Cancer Deaths	1	2	3
WY Mortality	N/A	N/A	N/A
US Mortality	0.48	0.49	0.49

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

Stage at Diagnosis



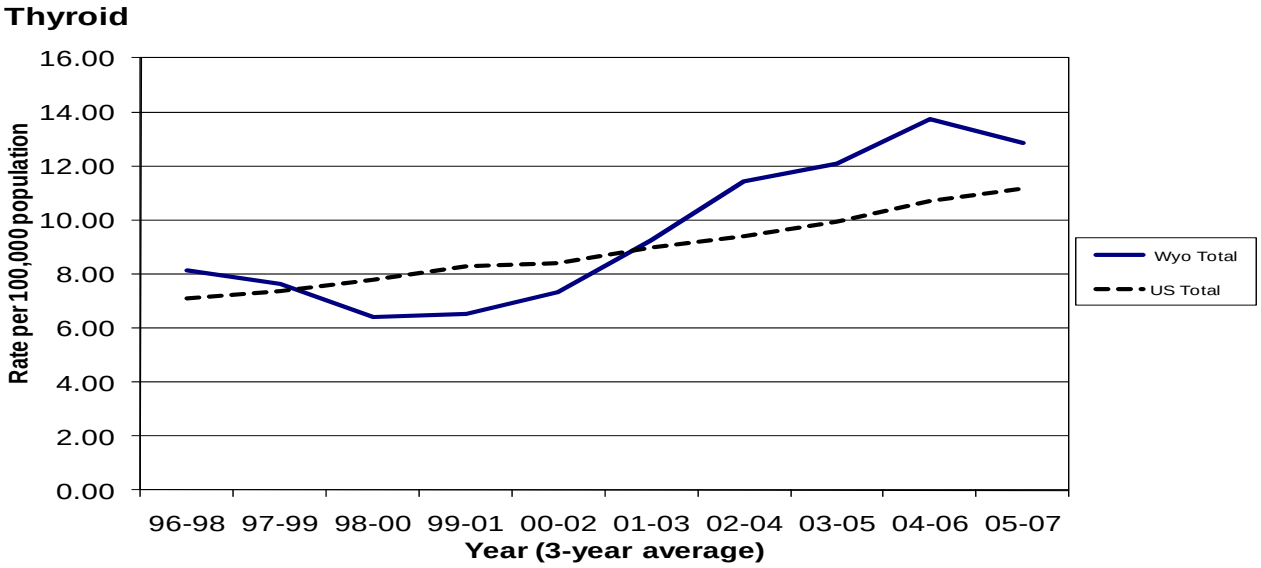
Incidence rates for thyroid cancer in Wyoming were higher than the national rates for females and total population, but lower for males These differences were not statistically significant.

The trend for thyroid cancer in Wyoming shows a possible decrease from 04-06 to 05-07. The national rate appears to be continuing to increase.

The percentage of cases diagnosed at the local stage was higher in 2007 than 2006 (63%) though this difference was not significant. The percentages for the other stages were very similar to the percentages seen in 2006.

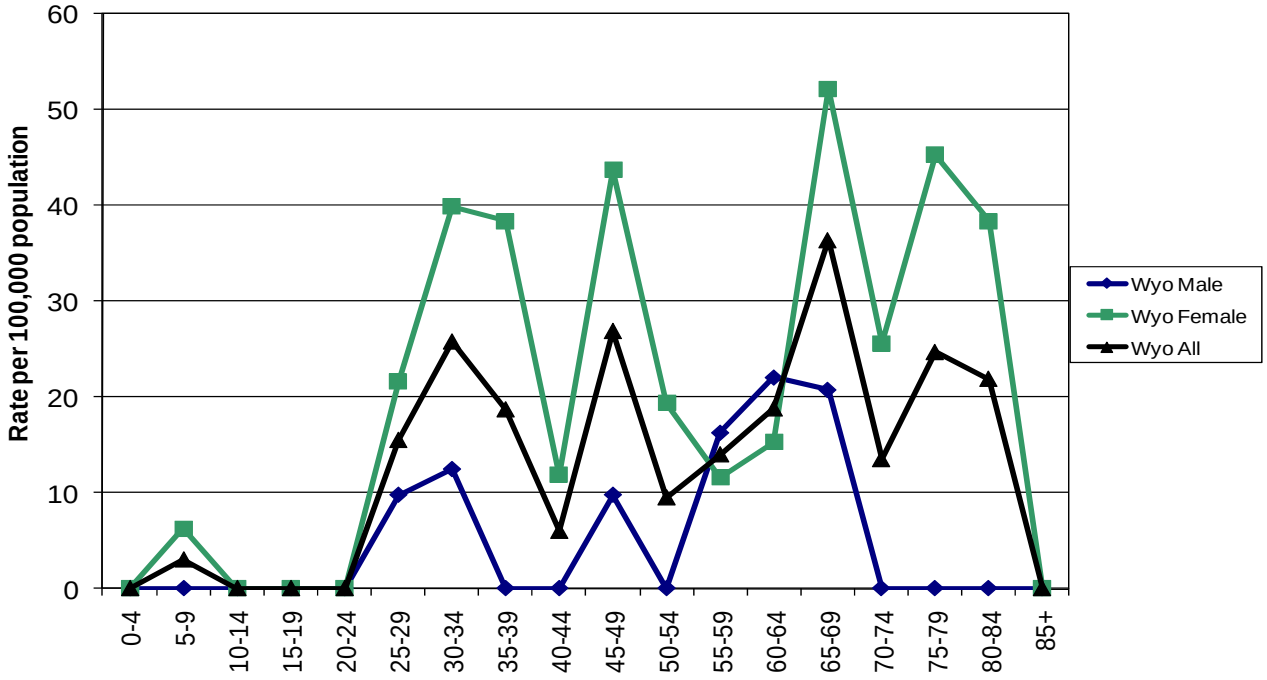
No statistically significant differences were found between the CHD's and state rate for incidence. Additionally, only one region reported more than 5 deaths due to thyroid cancer from 2003-2007.

12-Year Incidence Trend



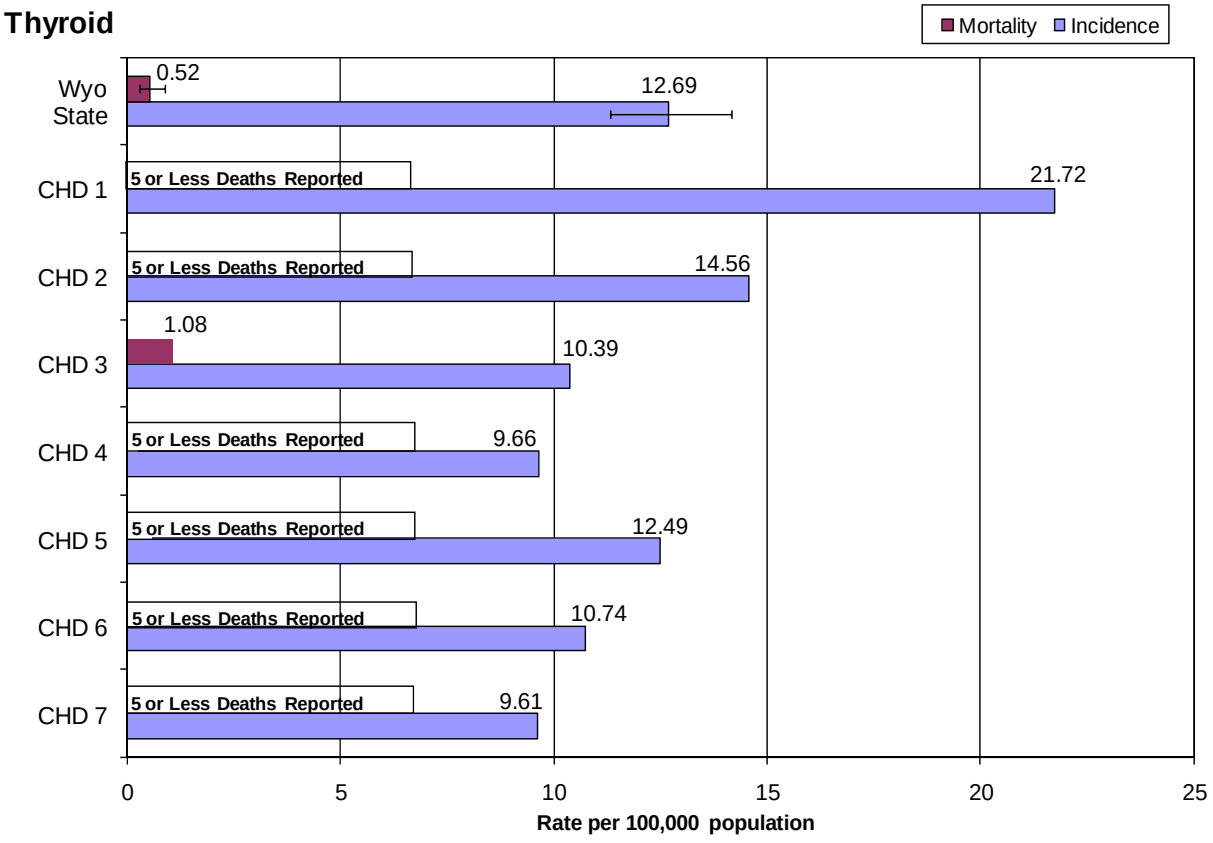
Age-Specific Incidence Rates - 2007

Thyroid



Cancer Health District Incidence and Mortality

Thyroid



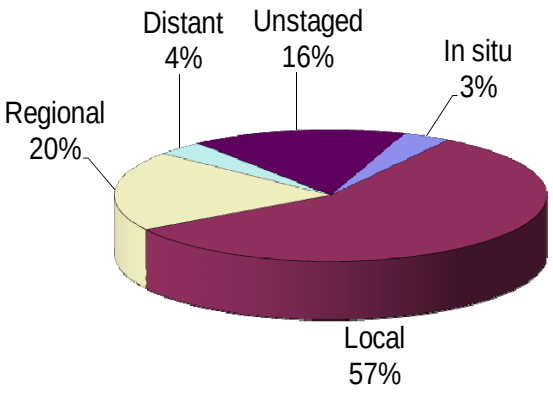
Uterine (Corpus Uteri &

Incidence and Mortality Summary

	Female
# Invasive Cases	54
WY Incidence	18.7
US Incidence	24.6
# Cancer Deaths	12
WY Mortality	3.96
US Mortality	3.92

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

Stage at Diagnosis



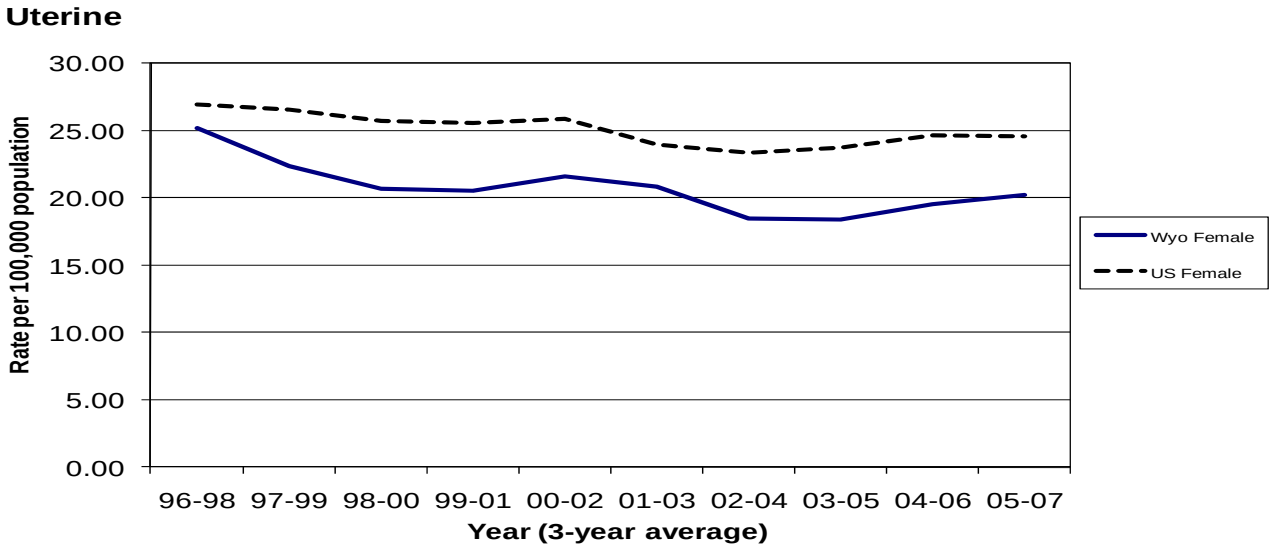
The incidence rate in Wyoming females for uterine cancer was lower than the national rate, while the mortality rate was just a bit higher, though not significantly.

The Wyoming incidence rate seem to be continuing an increase that started in 03-05. The incidence trend for the nation also shows a leveling off after a slight increase starting in 03-05.

Significantly fewer cases of uterine cancer were staged as regional in 2007 than in 2006 (36%). There were no other significant difference in the percentages of each stage as compared to 2006.

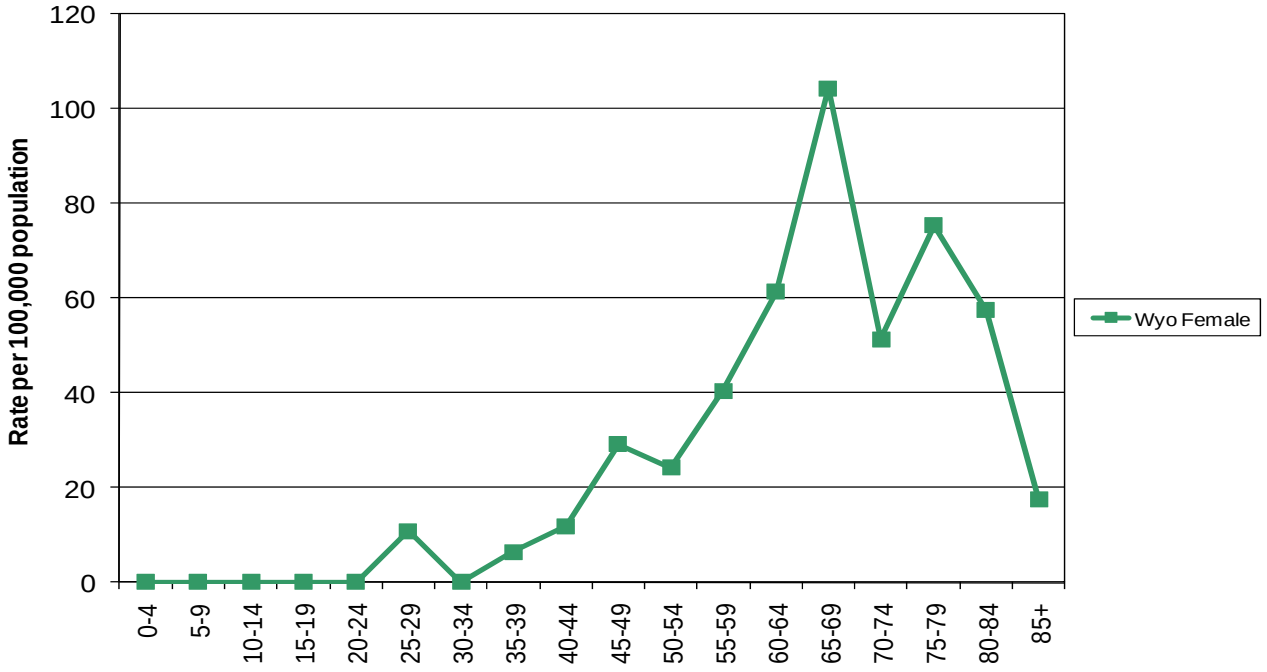
No statistically significant differences were found between the CHD's and state rate for incidence or mortality.

12-Year Incidence Trend



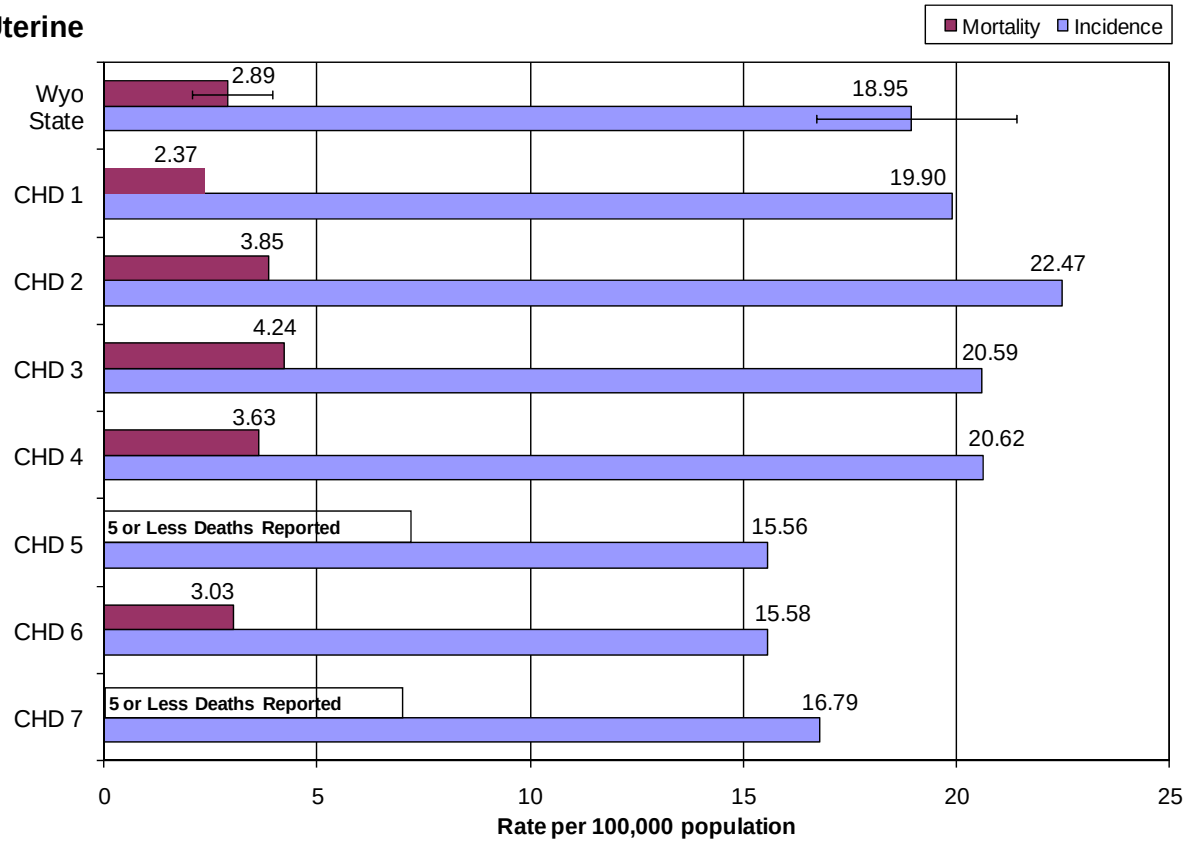
Age-Specific Incidence Rates - 2007

Uterine



Cancer Health District Incidence and Mortality
5-Year Average, 2003-2007

Uterine



Appendix A

References

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

Surveillance, Epidemiology, and End Results (SEER) Program Public-Use Data (1969-2006) (SEER*STAT,Version 6.5.2), National Cancer Institute, DCCPS, Surveillance Research Program, Cancer Statistics Branch, <Katrina/Rita Population Adjustement>-Linked to County attributes, released April 2009, based on November 2008 submissions.

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

Surveillance, Epidemiology, and End Results (SEER) U.S. Population Data, National Cancer Institute (http://seer.cancer.gov/popdata/)

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 to track trends over time or to make comparisons among groups using the same population standard.

Chart A:

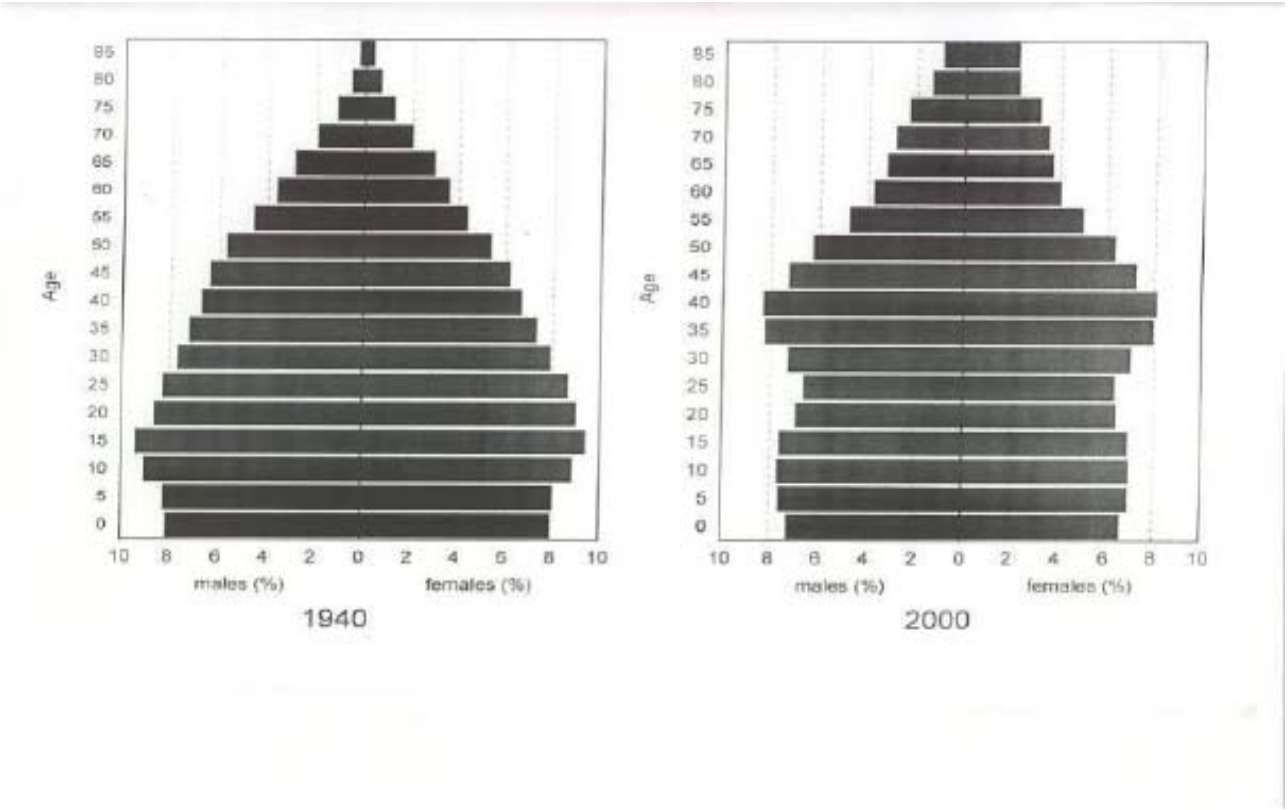
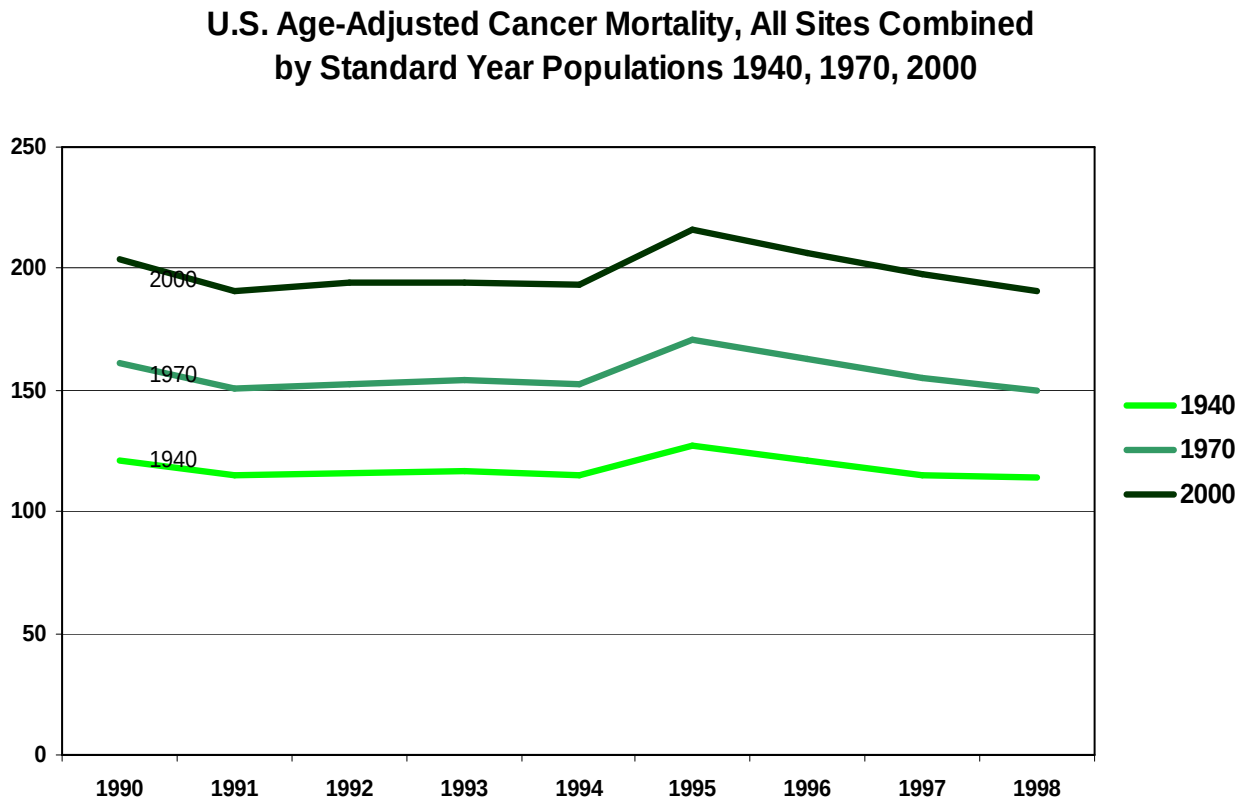


Chart B:


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