State of Wyoming

Department of Health

Annual Report on Cancer in Wyoming - 2003

Brent D. Sherard, M.D., M.P.H., Director

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Tracy Murphy, M.D.
State Epidemiologist

Additional information and copies may be obtained from:
Wyoming Cancer Surveillance Program
6101 Yellowstone Rd., Suite 259A
Cheyenne, WY 82002
(307) 777-7951 telephone
(800) 458-5847 telephone
(307) 777-8604 fax
http://wdh.state.wy.us/wcsp/index.asp

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Executive Summary

Cancer rates in Wyoming remained relatively unchanged from 2002 to 2003, and are still lower than comparable national rates. Incidence for all cancer sites combined for Wyoming was up slightly in 2003 to 422.4 per 100,000 population compared to the 2002 rate of 419.7. However, Wyoming is still below the 2002 national rate of 466.9 per 100,000 population. Mortality for all sites for Wyoming in 2003 was also up from the previous year to 184.9 per 100,000 population, which is also lower than the 2002 national rate of 191.6 per 100,000. Only the incidence rate for males for all cancer sites was significanlty different (lower) than the national rate. No individual cancer site was significantly higher than national rates for incidence or mortality for males, females, or total population (males+females).

By using a 3-year average instead of single year data to track changes over time, the trends for most cancers flattened out somewhat. However, some rates including all sites, kidney & renal pelvis, leukemia, pancreas, and thyroid suggest a possible increase. Still others (female breast, melanoma, oral cavity, ovary, and uterine) show the beginning of a possible 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 non-Hodgkin lymphoma. The most common cancer for incidence by age groups were: leukemia (0-9 years), Hodgkin (15-29 years), cervix (30-34 years), breast (30-54 years), prostate (55-79 years), and breast (80-84) and colorectal (85+ years).

The top five cancer sites for mortality were lung/bronchus, colorectal, ill-defined, breast, and pancreas. The most common cancers for mortality by age groups were: brain/CNS (20-24 years), breast (35-39 years) lung (40-84 years), and colorectal (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 and prostate specific antigen (PSA) 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. A Certified Tumor Registrar reviews each case submitted 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. 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 307-777-7951. 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 2003 except for the 12-year incidence trend, which used 3-year averages (e.g., 97-99 for 1998 and 98-00 for 1999). 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 2003 cancer cases of Wyoming residents received by WCSP as of September 1, 2004.

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 2002 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 2003 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 2002 data for whites.** See Appendix A for reference source.

Population

Wyoming Data -- Population estimates for Wyoming state and counties were obtained from SEER STAT at http://seer.cancer.gov. These estimates represent a modification of the annual time series of July 1 county population estimates by age, sex, race, and Hispanic origin produced by the US Census Bureau's Population Estimates Program, with support from the National Cancer Institute through an interagency agreement. Because NCI 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 2003 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."

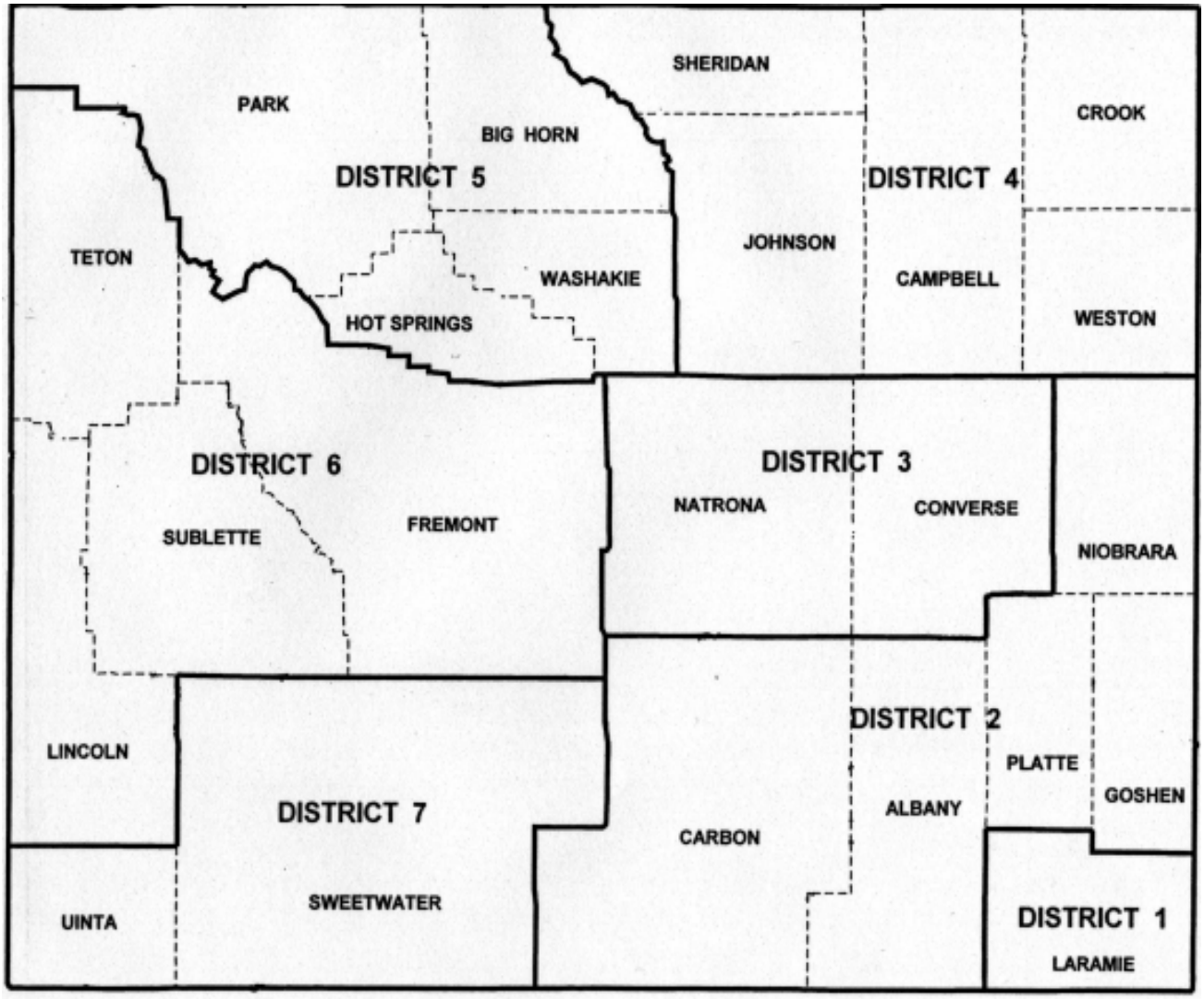
Staging

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.

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 CHDs that were similar in population size thereby eliminating some of the discrepancies in rate calculations that are caused from population size differences. CHDs are used when county data is too sparse to calculate accurate rates.

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



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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 2003: 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	0	3	0	0	0	0	0	0	0
Bladder	81	22	103	0	0	0	0	0	0	1
Bones and Joints	4	0	4	0	0	1	0	1	0	1
Brain/CNS	18	16	34	0	0	1	1	1	0	0
Breast	3	334	337	0	0	0	0	0	1	5
Cervix	0	22	22	0	0	0	0	1	2	6
Colorectal	114	120	234	0	0	0	1	0	2	1
Esophagus	25	7	32	0	0	0	0	0	0	0
Eye	0	2	2	1	0	0	0	0	0	0
Gallbladder	0	1	1	0	0	0	0	0	0	0
Hodgkin	12	7	19	0	0	1	3	2	3	1
Ill-Defined	35	35	70	0	0	0	0	0	0	1
Kidney	40	24	64	0	0	0	0	0	0	1
Larynx	12	4	16	0	0	0	0	0	0	0
Leukemia	33	23	56	3	3	0	1	0	1	0
Liver	13	4	17	0	0	0	0	0	0	0
Lung	150	129	279	0	0	0	0	0	0	0
Melanoma	47	38	85	1	0	0	0	2	3	4
Myeloma	8	11	19	0	0	0	0	0	0	0
Nasal	1	2	3	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	44	47	91	0	0	1	2	2	0	1
Oral Cavity	37	9	46	0	0	0	0	0	0	0
Other Biliary	5	7	12	0	0	0	0	0	0	0
Other Digestive	5	2	7	0	0	0	0	0	0	0
Other Endocrine including Thymus	0	2	2	1	0	0	0	0	0	0
Other Female	0	7	7	0	0	0	0	0	1	0
Other Male	1	0	1	0	0	0	0	0	0	0
Other Skin	6	0	6	0	0	0	0	1	0	0
Other Respiratory	0	1	1	0	0	0	0	0	0	0
Other Urinary	0	3	3	0	0	0	0	0	0	0
Ovary	0	36	36	0	0	0	0	0	0	1
Pancreas	25	27	52	0	0	0	0	0	1	1
Prostate	414	0	414	0	0	0	0	0	0	0
Small Intestine	2	3	5	0	0	0	0	0	0	0
Soft Tissue including Heart	8	8	16	1	0	0	0	0	1	2
Stomach	14	11	25	0	0	0	0	0	0	0
Testis	9	0	9	0	0	0	0	0	0	1
Thyroid	11	44	55	0	0	0	1	1	3	5
Uterine	0	46	46	0	0	0	0	0	0	2
Mesothelioma	6	1	7	0	0	0	0	0	0	0
All sites	1,186	1,055	2,241	7	3	4	9	11	18	34

[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	0	0	0	0	1	2	0	0
Bladder	1	1	3	6	10	10	14	14	23	12	8
Bones and Joints	0	0	1	0	0	0	0	0	0	0	0
Brain/CNS	0	4	3	2	3	3	4	2	5	4	1
Breast	11	22	31	37	46	36	32	46	27	29	14
Cervix	1	3	1	1	0	1	2	2	1	1	0
Colorectal	3	6	11	18	15	32	31	31	33	27	23
Esophagus	1	0	1	2	3	6	4	3	7	2	3
Eye	0	0	0	0	1	0	0	0	0	0	0
Gallbladder	0	0	0	0	0	0	0	0	0	0	1
Hodgkin	0	0	2	0	1	2	0	3	1	0	0
Ill-Defined	0	1	5	5	3	6	9	12	11	8	9
Kidney	0	0	3	12	11	6	11	6	6	5	3
Larynx	0	1	0	2	3	2	1	2	4	1	0
Leukemia	2	1	4	6	7	5	3	5	5	4	6
Liver	0	0	2	5	0	3	1	2	3	0	1
Lung	1	5	8	15	29	42	57	46	46	22	8
Melanoma	6	7	9	7	8	6	10	4	9	8	1
Myeloma	1	0	0	2	2	0	2	4	3	1	4
Nasal	0	0	1	0	0	1	0	1	0	0	0
Non-Hodgkin Lymphoma	3	4	9	3	8	9	11	15	9	7	7
Oral Cavity	1	0	5	10	7	5	6	3	3	4	2
Other Biliary	0	0	1	1	0	2	1	2	4	1	0
Other Digestive	2	0	0	1	0	0	0	1	3	0	0
Other Endocrine including Thymus	0	0	0	0	0	0	0	1	0	0	0
Other Female	0	0	1	2	3	0	0	0	0	0	0
Other Male	0	1	0	0	0	0	0	0	0	0	0
Other Skin	0	0	0	0	2	0	0	1	0	0	2
Other Respiratory	0	0	0	0	0	0	0	0	1	0	0
Other Urinary	0	0	0	1	1	0	0	0	0	0	1
Ovary	0	3	3	4	7	4	6	3	2	2	1
Pancreas	0	0	0	9	3	3	7	8	7	8	5
Prostate	0	5	8	21	62	82	63	75	58	27	13
Small Intestine	0	1	0	1	1	1	1	0	0	0	0
Soft Tissue including Heart	0	1	1	2	1	1	1	1	1	3	0
Stomach	1	1	0	3	3	1	3	3	3	5	2
Testis	3	1	1	3	0	0	0	0	0	0	0
Thyroid	8	3	8	3	5	6	3	6	3	0	0
Uterine	1	2	4	3	8	2	9	3	4	6	2
Mesothelioma	0	0	0	0	1	2	0	2	1	1	0
All sites	46	73	126	187	254	279	292	308	285	188	117

Wyoming Mortality[1] for 2003: 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	10	5	15	0	0	0	0	0	0	0
Bones and Joints	1	1	2	0	0	0	0	0	0	0
Brain/CNS	14	15	29	0	1	0	1	2	0	1
Breast	0	66	66	0	0	0	0	0	0	0
Cervix	0	4	4	0	0	0	0	0	0	0
Colorectal	51	55	106	0	0	0	0	0	0	0
Esophagus	25	8	33	0	0	0	0	0	0	0
Eye	1	0	1	0	0	0	0	0	0	0
Gallbladder	1	1	2	0	0	0	0	0	0	0
Hodgkin	1	0	1	0	0	0	0	0	0	0
Ill-Defined	44	39	83	0	0	0	1	0	0	0
Kidney	16	4	20	0	0	0	0	0	0	0
Larynx	3	0	3	0	0	0	0	0	0	0
Leukemia	22	12	34	0	0	0	1	1	0	0
Liver	14	3	17	0	0	0	0	0	0	1
Lung	148	95	243	0	0	0	0	0	0	0
Melanoma	12	4	16	0	0	0	0	0	1	0
Myeloma	11	6	17	0	0	0	0	0	0	0
Nasal	1	0	1	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	20	22	42	0	0	0	0	0	0	0
Oral Cavity	9	4	13	0	0	0	0	0	0	0
Other Biliary	4	6	10	0	0	0	0	0	0	0
Other Digestive	2	1	3	0	0	0	0	0	0	0
Other Endocrine including Thymus	2	1	3	0	0	0	0	0	0	0
Other Female	0	2	2	0	0	0	0	0	0	0
Other Male	0	0	0	0	0	0	0	0	0	0
Other Skin	4	3	7	0	0	0	0	0	0	0
Other Respiratory	2	0	2	0	0	0	0	0	0	0
Other Urinary	0	0	0	0	0	0	0	0	0	0
Ovary	0	25	25	0	0	0	0	0	0	0
Pancreas	23	29	52	0	0	0	0	0	1	0
Prostate	39	0	39	0	0	0	0	0	0	0
Small Intestine	0	0	0	0	0	0	0	0	0	0
Soft Tissue including Heart	4	4	8	0	0	0	0	1	0	0
Stomach	12	4	16	0	0	0	0	0	0	0
Testis	0	0	0	0	0	0	0	0	0	0
Thyroid	1	1	2	0	0	0	0	0	0	0
Uterine	0	12	12	0	0	0	0	0	0	0
Mesothelioma	5	1	6	0	0	0	0	0	0	0
All sites	502	433	935	0	1	0	3	4	2	2

[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	0	1	0	1	0	0	2	5	5	1	0
Bones and Joints	1	0	0	0	1	0	0	0	0	0	0
Brain/CNS	0	0	3	1	3	3	4	4	2	3	1
Breast	2	2	2	5	7	8	8	10	8	3	11
Cervix	0	0	1	1	0	1	0	1	0	0	0
Colorectal	1	0	0	2	8	14	10	14	17	16	24
Esophagus	1	0	0	0	0	5	7	4	5	4	7
Eye	0	0	0	0	0	0	0	1	0	0	0
Gallbladder	0	0	0	1	0	0	0	0	0	1	0
Hodgkin	0	0	0	1	0	0	0	0	0	0	0
Ill-Defined	0	2	3	6	6	8	11	10	9	7	20
Kidney	0	0	1	1	3	0	3	5	1	4	2
Larynx	0	0	0	0	0	2	0	1	0	0	0
Leukemia	0	1	1	3	1	2	3	4	3	5	9
Liver	0	0	0	4	2	2	2	1	2	0	3
Lung	0	5	4	8	19	31	35	44	49	33	15
Melanoma	0	1	1	1	4	2	1	1	2	1	1
Myeloma	0	0	0	1	0	1	1	5	4	3	2
Nasal	0	0	0	0	0	1	0	0	0	0	0
Non-Hodgkin Lymphoma	1	1	0	4	2	3	3	4	6	9	9
Oral Cavity	0	0	0	2	2	0	3	1	1	3	1
Other Biliary	0	0	0	2	0	0	1	2	1	2	2
Other Digestive	0	0	0	0	0	0	1	0	2	0	0
Other Endocrine including Thymus	0	0	1	0	0	0	1	0	0	1	0
Other Female	0	0	0	0	0	0	0	0	0	0	2
Other Male	0	0	0	0	0	0	0	0	0	0	0
Other Skin	0	1	0	1	0	2	0	1	0	0	2
Other Respiratory	0	0	0	0	0	0	1	1	0	0	0
Other Urinary	0	0	0	0	0	0	0	0	0	0	0
Ovary	0	2	3	1	2	4	1	4	3	2	3
Pancreas	0	1	1	5	2	5	7	9	7	9	5
Prostate	0	0	0	1	1	3	4	2	4	13	11
Small Intestine	0	0	0	0	0	0	0	0	0	0	0
Soft Tissue including Heart	0	1	1	1	0	0	1	2	0	0	1
Stomach	0	0	0	1	1	1	3	2	5	1	2
Testis	0	0	0	0	0	0	0	0	0	0	0
Thyroid	0	0	0	0	1	1	0	0	0	0	0
Uterine	0	0	1	3	2	0	2	1	1	1	1
Mesothelioma	0	0	0	0	0	3	1	1	0	1	0
All sites	6	18	23	57	67	102	116	140	137	123	134

Wyoming Incidence for 2003: Cases by Race and Ethnicity (Top 15 Sites Only)

	Total	White	African American	Native American	Asian	Other	Ethnicity: Hispanic
All Sites Combined	2,242	2,151	17	18	13	43	57
Bladder (Urinary)	103	100	0	0	0	3	3
Brain/CNS	34	33	0	0	0	1	0
Breast (Female)	337	319	3	5	3	7	8
Colorectal	234	225	1	2	0	6	9
Kidney	64	60	0	2	0	2	1
Leukemia	56	54	0	0	1	1	1
Lung and Bronchus	279	269	2	4	1	3	7
Melanoma	85	82	0	0	1	2	0
Non-Hodgkin Lymphoma	91	84	2	1	1	3	3
Oral Cavity	46	46	0	0	0	0	2
Ovary	36	36	0	0	0	0	0
Pancreas	52	51	0	1	0	0	2
Prostate	414	398	4	3	0	9	7
Thyroid	55	49	2	0	2	2	3
Uterine	46	45	1	0	0	0	0

Wyoming Mortality for 2003: Cases by Race and Ethnicity (Top 15 Sites Only)

	Total	White	African American	Native American	Asian	Other	Ethnicity: Hispanic
All Sites Combined	935	915	5	12	2	1	32
Bladder (Urinary)	15	15	0	0	0	0	0
Brain/CNS	29	29	0	0	0	0	0
Breast (Female)	66	66	0	0	0	0	2
Colorectal	106	103	0	2	1	0	6
Kidney	20	20	0	0	0	0	1
Leukemia	34	34	0	0	0	0	1
Lung and Bronchus	243	237	2	3	1	0	7
Melanoma	16	16	0	0	0	0	0
Non-Hodgkin Lymphoma	42	41	0	1	0	0	0
Oral Cavity	13	13	0	0	0	0	0
Ovary	25	25	0	0	0	0	1
Pancreas	52	51	0	1	0	0	2
Prostate	39	39	0	0	0	0	0
Thyroid	2	2	0	0	0	0	0
Uterine	12	12	0	0	0	0	0

State of Wyoming - 2003

Top Cancer Sites by Gender and Age - Incidence and Mortality

Top Incidence Cancer Sites by Gender - 2003

Total		Male		Female	
Prostate	414	Prostate	414	Breast	334
Breast	337	Lung	150	Lung	129
Lung	279	Colorectal	114	Colorectal	120
Colorectal	234	Melanoma	47	Non-Hodgkin	47
Non-Hodgkin	91	Bladder	46	Uterine	46

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	
Leukemia	3	Leukemia	3	All Cancers have 1 or less count		Hodgkin	3	Hodgkin	2
						Non-Hodgkin	2	Melanoma	2
								Non-Hodgkin	2
25-29		**30-34**		**35-39**		**40-44**		**45-49**	
Hodgkin	3	Cervix	6	Breast	11	Breast	22	Breast	31
Melanoma	3	Breast	5	Thyroid	8	Melanoma	7	Colorectal	11
Thyroid	3	Thyroid	5	Melanoma	6	Colorectal	6	Melanoma	9
		Melanoma	4	Colorectal	3	Lung	5	Non-Hodgkin	9
				Non-Hodgkin	3	Prostate	5		
50-54		**55-59**		**60-64**		**65-69**		**70-74**	
Breast	37	Prostate	62	Prostate	82	Prostate	63	Prostate	75
Prostate	21	Breast	46	Lung	42	Lung	57	Breast	46
Colorectal	18	Lung	29	Breast	36	Breast	32	Lung	46
Lung	15	Colorectal	15	Colorectal	32	Colorectal	31	Colorectal	31
Kidney	12	Kidney	11	Leukemia	10	Bladder	14	Non-Hodgkin	15
75-79		**80-84**		**85+**					
Prostaste	58	Breast	29	Colorectal	23				
Lung	46	Colorectal	27	Breast	14				
Colorectal	33	Prostate	27	Prostate	13				
Breast	27	Lung	22	Ill-Defined	9				
Bladder	23	Bladder	12						

Top Mortality Cancer Sites by Gender - 2003

Total		Male		Female	
Lung	243	Lung	148	Lung	95
Colorectal	106	Colorectal	51	Breast	66
Ill-Defined	88	Ill-Defined	49	Colorectal	55
Breast	66	Prostate	39	Ill-Defined	39
Pancreas	52	Esophagus	25	Pancreas	29

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 Count		All Cancers Have 1 or Less Count		All Cancers Have 1 or Less Count		All Cancers Have 1 or Less Count		Brain/CNS	2
25-29		**30-34**		**35-39**		**40-44**		**45-49**	
All Cancers Have 1 or Less Count		All Cancers Have 1 or Less Count		Breast	2	Lung	5	Lung	4
						Breast	2	Brain/CNS	3
						Ill-Defined	2	Ill-Defined	3
						Ovary	2	Ovary	3
								Breast	2
50-54		**55-59**		**60-64**		**65-69**		**70-74**	
Lung	8	Lung	19	Lung	31	Lung	35	Lung	44
Ill-Defined	6	Colorectal	8	Colorectal	14	Ill-Defined	11	Colorectal	14
Breast	5	Breast	7	Breast	8	Colorectal	10	Breast	10
		Ill-Defined	6	Esophagus	5	Breast	8	Ill-Defined	10
				Pancreas	5			Pancreas	9
75-79		**80-84**		**85+**					
Lung	49	Lung	33	Colorectal	24				
Colorectal	17	Colorectal	16	Ill-Defined	20				
Ill-Defined	9	Prostate	13	Lung	15				
Breast	8	Non-Hodgkin	9	Breast	11				
Pancreas	7	Pancreas	9	Prostate	11				

Wyoming Counties - 2003

Incidence and Mortality (All Sites)

Wyoming County Incidence Cases -- 2003 (All Sites)

	Albany	BigHorn	Campbell	Carbon	Converse	Crook	Fremont	Goshen	Hot Springs	Johnson	Laramie	Lincoln
Anus	0	0	0	0	1	0	0	1	0	0	1	0
Bladder	4	1	4	5	4	3	9	4	2	0	20	1
Bones and Joints	0	1	0	0	0	0	0	0	0	0	1	0
Brain/CNS	2	3	3	2	4	0	5	1	1	0	11	2
Breast	18	13	10	8	12	2	25	9	9	4	69	14
Cervix	3	0	1	0	0	0	1	0	0	0	5	0
Colorectal	10	9	11	9	8	3	26	3	0	6	39	8
Esophagus	2	1	2	1	0	0	2	0	0	0	4	0
Eye	0	0	0	0	0	0	0	0	0	0	1	0
Gallbladder	0	0	0	0	0	0	0	0	0	0	0	0
Hodgkin	0	1	4	1	0	0	1	0	0	0	1	1
Ill-Defined	1	0	3	0	1	0	5	1	1	1	16	8
Kidney	4	1	3	2	3	0	7	2	1	1	10	1
Larynx	0	0	1	1	0	0	1	2	0	0	2	0
Leukemia	0	1	3	3	1	1	5	0	0	0	7	1
Liver	0	0	0	0	0	0	1	1	1	0	2	0
Lung	11	10	17	10	12	3	29	12	6	5	41	4
Melanoma	4	4	10	1	1	1	8	4	2	1	10	1
Myeloma	1	1	1	0	2	0	3	0	0	0	2	2
Nasal	0	0	1	0	0	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	5	2	5	4	2	0	8	1	1	2	14	2
Oral Cavity	1	1	2	2	0	2	6	1	1	0	8	2
Other Biliary	1	0	0	1	0	0	1	0	1	0	6	1
Other Digestive	1	0	1	0	0	0	2	0	0	0	1	0
Other Endocrine including Thymus	0	0	0	0	0	0	1	1	0	0	0	3
Other Female	1	2	0	0	0	0	0	0	0	0	4	0
Other Male	0	0	0	0	0	0	1	0	0	0	0	0
Other Skin	1	0	0	1	0	0	0	0	0	0	1	1
Other Respiratory	1	0	0	0	0	0	0	0	0	0	0	0
Other Urinary	0	0	0	0	0	0	0	0	0	0	2	0
Ovary	4	0	1	0	0	2	4	1	0	0	8	1
Pancreas	2	0	1	4	1	0	4	1	2	0	9	0
Prostate	24	4	10	9	12	4	28	12	3	12	116	18
Small Intestine	0	0	0	0	0	0	1	0	0	0	2	0
Soft Tissue including Heart	0	0	0	0	0	0	4	0	0	0	3	1
Stomach	0	0	1	0	1	0	3	1	0	2	1	1
Testis	0	0	0	1	0	0	0	0	0	0	2	0
Thyroid	4	2	2	1	0	0	3	3	0	0	15	3
Uterine	3	1	2	0	0	0	5	1	0	0	4	1
Mesothelioma	0	0	0	0	0	0	1	0	0	0	2	0
All sites	108	58	99	66	65	21	200	62	31	34	440	77

	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	14	0	4	0	12	2	6	4	2	2	0
Bones and Joints	0	0	0	0	0	0	0	0	2	0	0
Brain/CNS	5	1	2	3	3	2	5	2	2	1	2
Breast	61	3	28	3	32	5	24	26	9	7	4
Cervix	3	1	2	0	1	0	4	1	0	0	0
Colorectal	37	4	15	5	12	6	11	9	4	5	3
Esophagus	9	0	3	1	1	0	5	1	1	0	0
Eye	0	0	0	0	0	0	0	0	1	0	0
Gallbladder	0	0	0	0	1	0	0	0	0	0	0
Hodgkin	4	0	0	1	2	0	1	0	0	1	1
Ill-Defined	14	0	3	3	4	1	4	2	2	0	0
Kidney	12	0	2	2	1	0	6	2	2	0	2
Larynx	5	0	0	1	2	0	1	0	0	0	0
Leukemia	10	0	7	2	4	1	6	1	2	0	0
Liver	4	0	3	0	2	1	2	0	0	0	0
Lung	44	1	11	5	17	4	17	7	7	3	3
Melanoma	18	0	13	1	12	2	14	7	3	0	0
Myeloma	2	0	3	0	1	0	0	0	0	0	1
Nasal	0	0	0	0	1	0	1	0	0	0	0
Non-Hodgkin Lymphoma	13	0	10	1	11	1	1	1	4	1	2
Oral Cavity	7	1	3	3	4	1	2	0	0	0	0
Other Biliary	1	0	1	0	0	0	0	0	0	0	0
Other Digestive Organs	1	0	1	0	0	0	0	0	0	0	0
Other Endocrine including Thymus	3	0	0	0	1	0	1	0	2	0	0
Other Female	1	0	0	0	1	0	0	0	0	0	0
Other Male	0	0	0	0	1	0	0	0	0	0	0
Other Skin	0	0	0	0	1	1	1	0	0	0	0
Other Respiratory	0	0	0	0	0	0	0	0	0	0	0
Other Urinary Organs	2	0	0	0	0	0	0	0	0	0	0
Ovary	6	0	1	1	2	1	0	3	1	0	0
Pancreas	8	0	6	1	5	2	0	1	1	3	0
Prostate	55	1	18	14	20	4	18	18	6	3	6
Small Intestine	0	0	0	0	2	0	0	0	0	0	0
Soft Tissue including Heart	1	0	1	2	2	0	1	0	0	1	0
Stomach	4	0	4	1	4	1	1	0	0	0	0
Testis	1	0	1	1	3	0	1	0	0	0	0
Thyroid	3	1	6	1	3	2	3	1	1	0	1
Uterine	13	1	3	0	5	1	1	0	0	0	7
Mesothelioma	2	0	0	0	1	0	1	0	0	0	0
All sites	364	14	151	52	174	38	138	86	52	27	32

Wyoming County Mortality Counts -- 2003 (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	1	2	1	0	1	1	0	0	0	1	1	0
Bones and Joints	0	0	0	0	0	0	0	0	0	0	1	1
Brain/CNS	0	2	4	2	1	0	3	0	0	0	5	0
Breast	2	2	0	2	1	0	6	4	2	1	16	3
Cervix	0	0	0	0	0	0	0	0	0	0	3	0
Colorectal	5	5	5	2	4	2	5	6	3	3	15	4
Esophagus	5	1	1	2	0	0	7	0	0	0	7	0
Eye	0	1	0	0	0	0	0	0	0	0	0	0
Gallbladder	0	0	0	1	0	0	0	0	0	0	0	0
Hodgkin	0	0	0	0	0	0	0	0	0	0	1	0
Ill-Defined	3	2	4	4	1	0	5	2	1	2	23	2
Kidney	0	0	1	1	0	0	2	1	0	1	2	0
Larynx	0	0	0	1	0	0	0	0	0	0	0	0
Leukemia	0	1	1	0	3	1	2	1	1	1	6	0
Liver	0	0	0	0	0	0	2	0	0	0	6	0
Lung	8	7	14	9	9	3	21	8	3	6	37	2
Melanoma	1	1	1	0	1	0	1	1	2	0	2	0
Myeloma	2	0	0	0	1	0	5	0	1	0	2	0
Nasal	0	0	0	0	0	0	1	0	0	0	0	0
Non-Hodgkin Lymphoma	4	1	1	0	1	0	2	2	0	1	5	1
Oral Cavity	1	1	2	2	0	1	0	0	0	0	2	0
Other Biliary	1	0	0	0	1	0	0	0	0	0	2	0
Other Digestive	0	0	0	0	0	0	1	0	0	0	1	0
Other Endocrine including Thymus	0	0	0	0	0	0	1	0	0	0	0	0
Other Female	0	0	0	0	0	0	0	0	0	0	1	0
Other Male	0	0	0	0	0	0	0	0	0	0	0	0
Other Skin	0	1	1	0	0	0	0	0	0	0	1	1
Other Respiratory	0	0	0	0	0	0	0	0	0	0	0	0
Other Urinary	0	0	0	0	0	0	0	0	0	0	0	0
Ovary	2	0	1	1	1	0	3	0	0	1	4	1
Pancreas	2	0	3	2	3	3	4	1	0	0	9	0
Prostate	0	1	4	1	4	0	2	4	0	0	6	0
Small Intestine	0	0	0	0	0	0	0	0	0	0	0	0
Soft Tissue including Heart	1	0	0	0	0	0	2	1	0	0	0	0
Stomach	1	0	2	0	2	1	1	0	0	0	1	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	0	0
Uterine	1	0	1	1	0	0	0	0	0	0	3	2
Mesothelioma	0	0	0	0	1	0	0	0	0	0	1	0
All sites	40	28	47	31	35	12	76	31	13	17	163	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	1	0	1	1	1	0	2	1	0	0	0
Bones and Joints	0	0	0	0	0	0	0	0	0	0	0
Brain/CNS	3	1	2	0	0	1	2	0	1	1	1
Breast	1	1	7	0	4	2	9	0	1	1	1
Cervix	0	0	0	0	0	0	1	0	0	0	0
Colorectal	12	2	8	2	8	2	3	3	1	2	4
Esophagus	3	0	1	1	1	1	2	1	0	0	0
Eye	0	0	0	0	0	0	0	0	0	0	0
Gallbladder	0	0	0	0	0	0	0	1	0	0	0
Hodgkin	0	0	0	0	0	0	0	0	0	0	0
Ill-Defined	13	1	4	1	7	0	4	3	1	0	0
Kidney	3	0	3	0	1	0	4	0	1	0	0
Larynx	0	0	1	0	0	0	1	0	0	0	0
Leukemia	9	0	2	2	2	0	1	0	0	1	0
Liver	2	0	2	0	1	1	2	0	0	0	1
Lung	36	3	11	4	21	4	14	6	5	5	7
Melanoma	1	0	2	0	0	0	0	2	1	0	0
Myeloma	1	0	1	0	2	1	0	1	0	0	0
Nasal	0	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	8	0	3	1	4	1	2	1	1	1	2
Oral Cavity	3	0	0	0	0	0	0	0	1	0	0
Other Biliary	1	0	2	0	1	0	1	0	0	0	1
Other Digestive	1	0	0	0	0	0	0	0	0	0	0
Other Endocrine including Thymus	2	0	0	0	0	0	0	0	0	0	0
Other Female	0	0	0	0	1	0	0	0	0	0	0
Other Male	0	0	0	0	0	0	0	0	0	0	0
Other Skin	0	1	0	0	2	0	0	0	0	0	0
Other Respiratory	1	0	0	0	0	0	1	0	0	0	0
Other Urinary	0	0	0	0	0	0	0	0	0	0	0
Ovary	3	0	0	0	1	0	4	1	0	1	1
Pancreas	7	0	5	1	2	1	2	3	1	2	1
Prostate	4	1	3	2	6	0	0	0	0	0	1
Small Intestine	0	0	0	0	0	0	0	0	0	0	0
Soft Tissue including Heart	2	0	1	0	0	0	0	0	1	0	0
Stomach	2	0	0	2	2	0	0	0	1	0	0
Testis	0	0	0	0	0	0	0	0	0	0	0
Thyroid	1	0	0	0	0	1	0	0	0	0	0
Uterine	2	0	0	0	0	0	1	0	0	1	0
Mesothelioma	2	1	0	1	0	0	0	0	0	0	0
All sites	124	11	59	18	67	15	56	23	16	15	20

Summary of
All Cancer Sites Combined
and
Top 15 Sites

2003 Wyoming Incidence and Mortality Rates

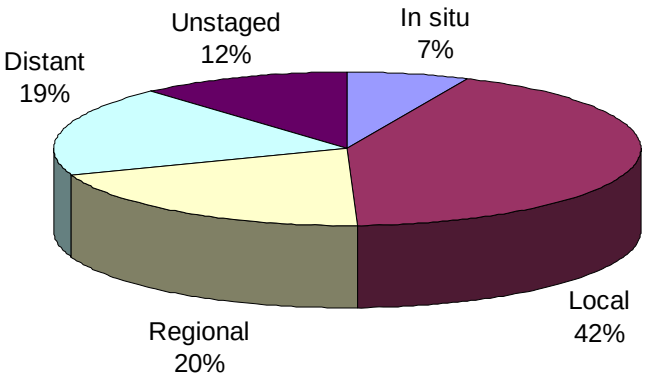
All Sites Combined

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	1,152	1,049	2,201
# In situ Cases	71	86	157
Wyo Incidence	478.8*	380.1	422.4
US Incidence	539.4	418.2	466.9
# Cancer Deaths	502	433	935
Wyo Mortality	226.1	154.0	184.9
US Mortality	236.0	162.0	191.6

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

Stage at Diagnosis



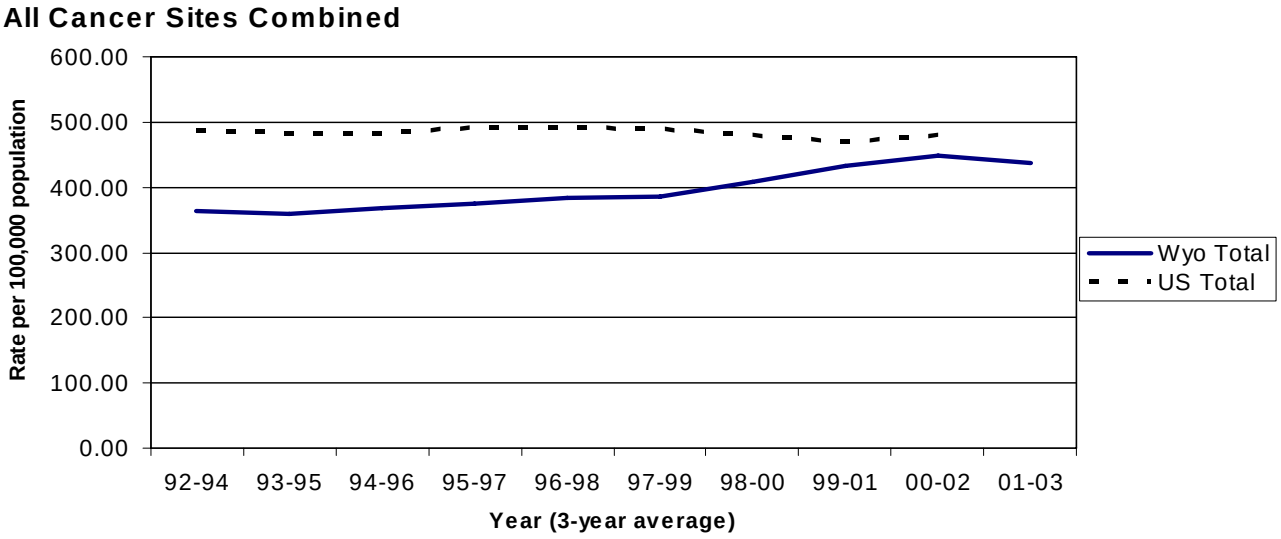
The incidence rate in Wyoming males for all cancer sites was significantly lower than the United States rate. The rate for females and total population, while lower than the national rate, were not significantly lower. The mortality rates in Wyoming were also lower than the national rates, but again were not significant.

The 12-year incidence trend shows that all-site cancer incidence appears to be leveling off from a slight increase. The U.S rate appreas to have remained relatively steady.

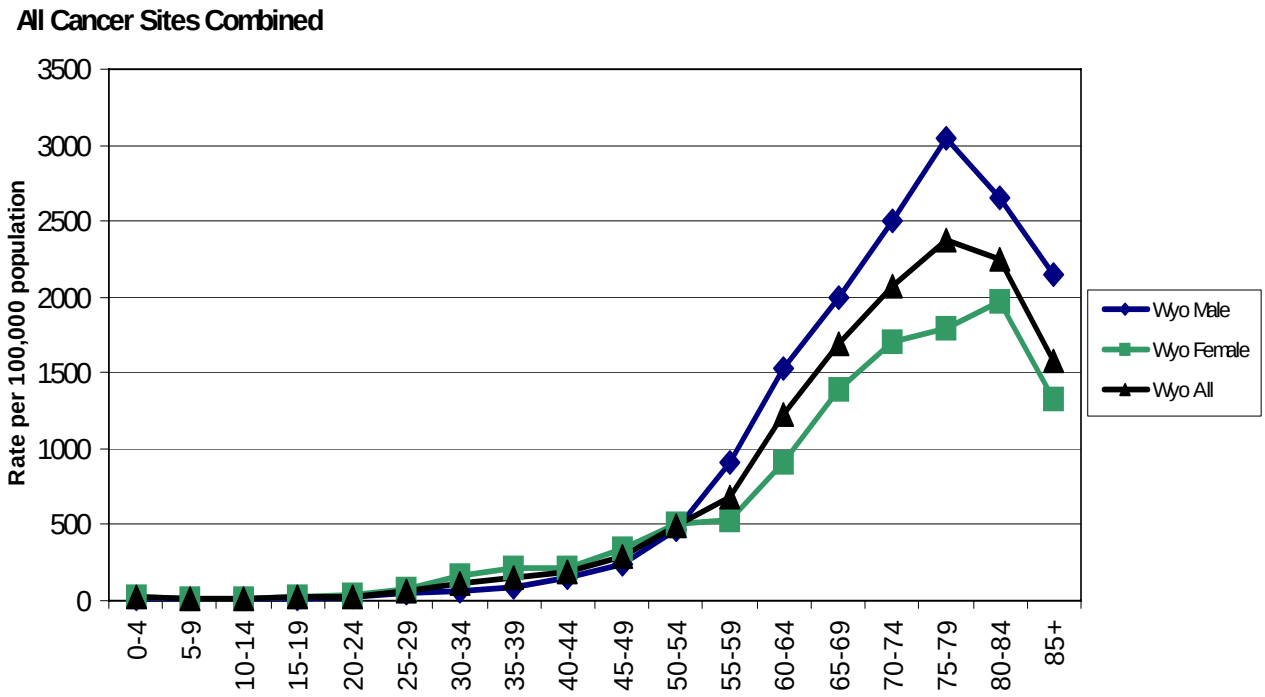
There were no significant differences in the stages at diagnosis from 2002 to 2003

The incidence rate for Cancer Health District (CHD) 7 (348.37) was significantly lower than the state rate (431.47) from 1999-2003. There were no other significant differences between CHD's and the state rate.

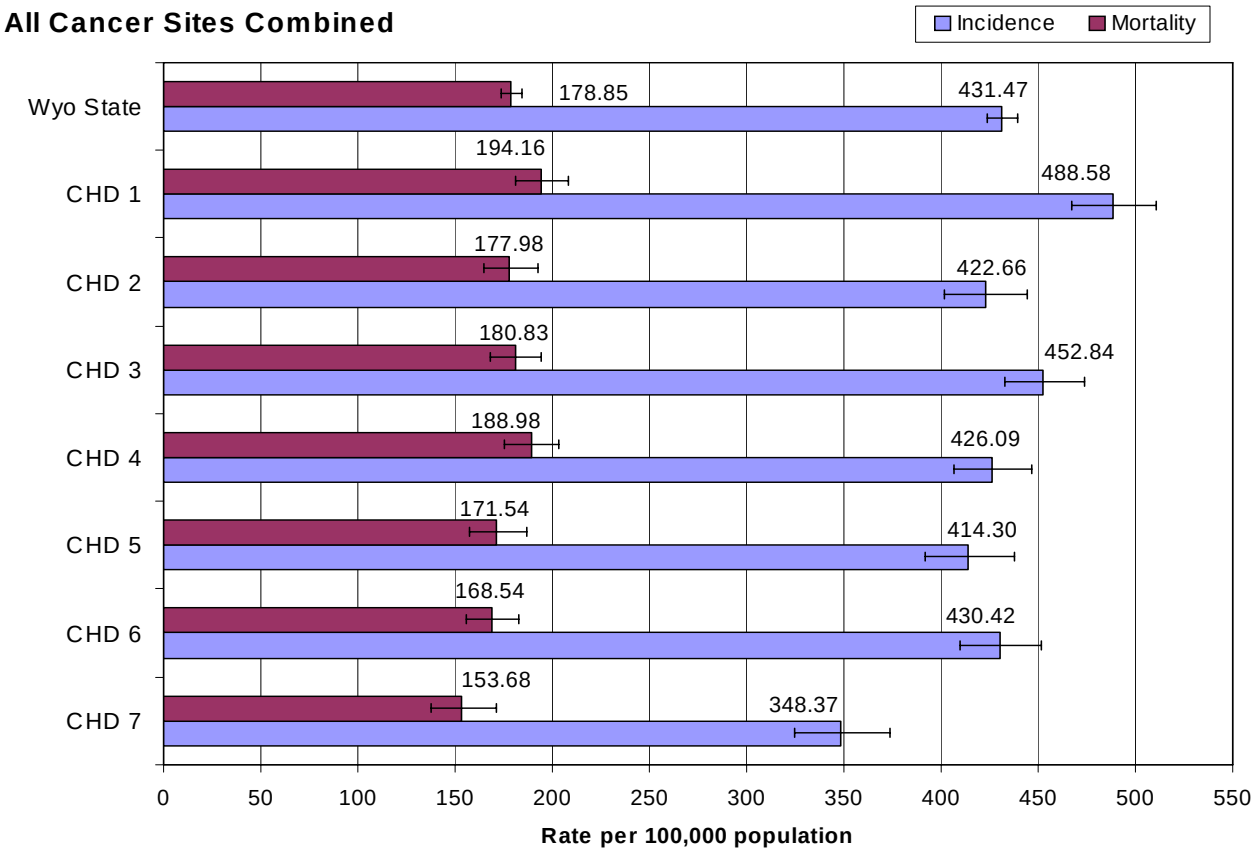
12-Year Incidence Trend



Age-Specific Incidence Rates, 2003



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003



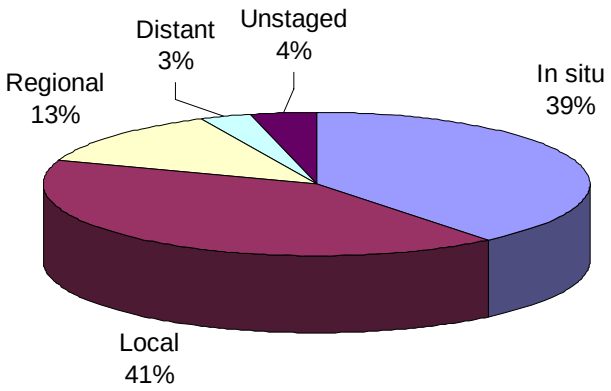
Bladder (Urinary)

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	46	16	62
# In situ Cases	35	6	41
Wyo Incidence	35.12	7.79	20.36
US Incidence	37.9	9.96	21.8
# Cancer Deaths	10	5	15
Wyo Mortality	4.5	2.0	3.2
US Mortality	7.8	2.4	4.5

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

Stage at Diagnosis



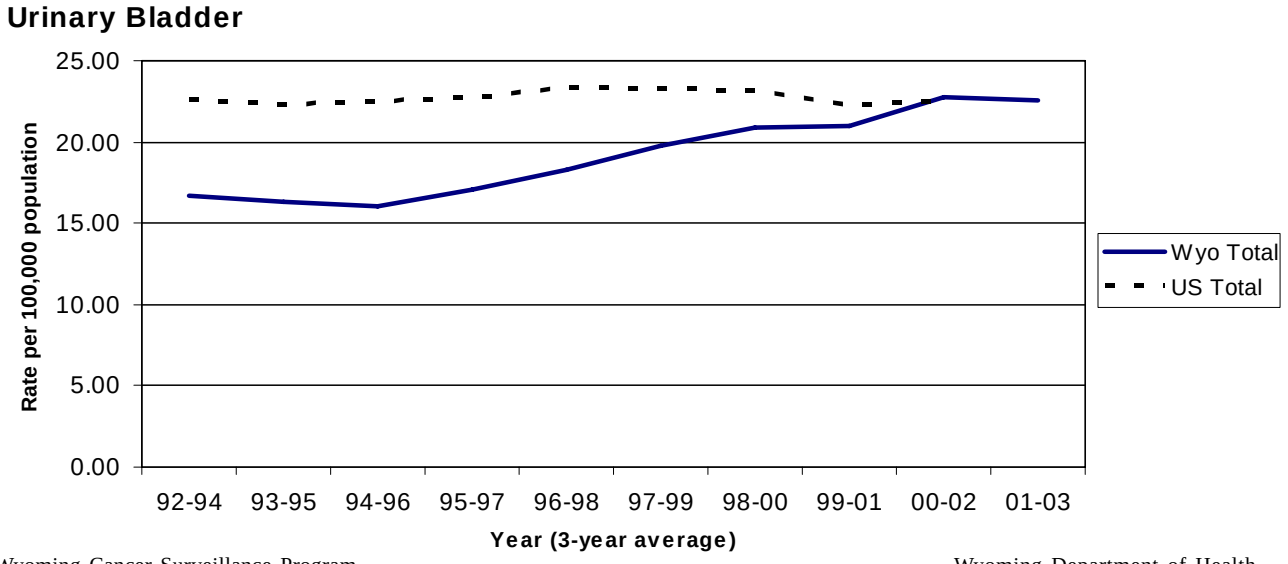
The incidence rates in Wyoming for bladder cancer in males, females, and total population were all lower than the national rates, though not significantly. The mortality rates in Wyoming were lower (not significantly) than the national rates.

The 12-year incidence trend for bladder cancer in Wyoming seems to be plateauing in 01-03, while the national rates appear to be decreasing slightly.

There was a small, but nonsignificant, increase in the number of bladder cancers diagnosed at the local stage from 2002 (32%).

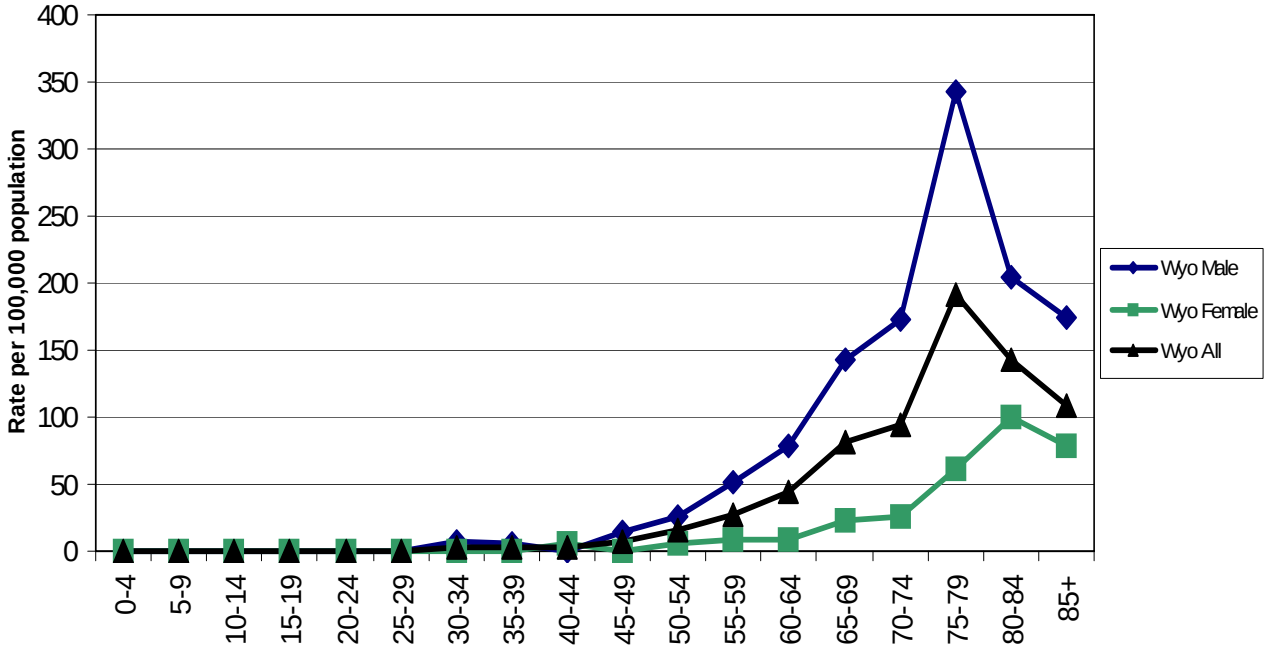
No statistically significant differences were found between CHD's and state rate for incidence or mortality.
Note: Rates for Bladder Cancer includes in situ.

12-Year Incidence Trend



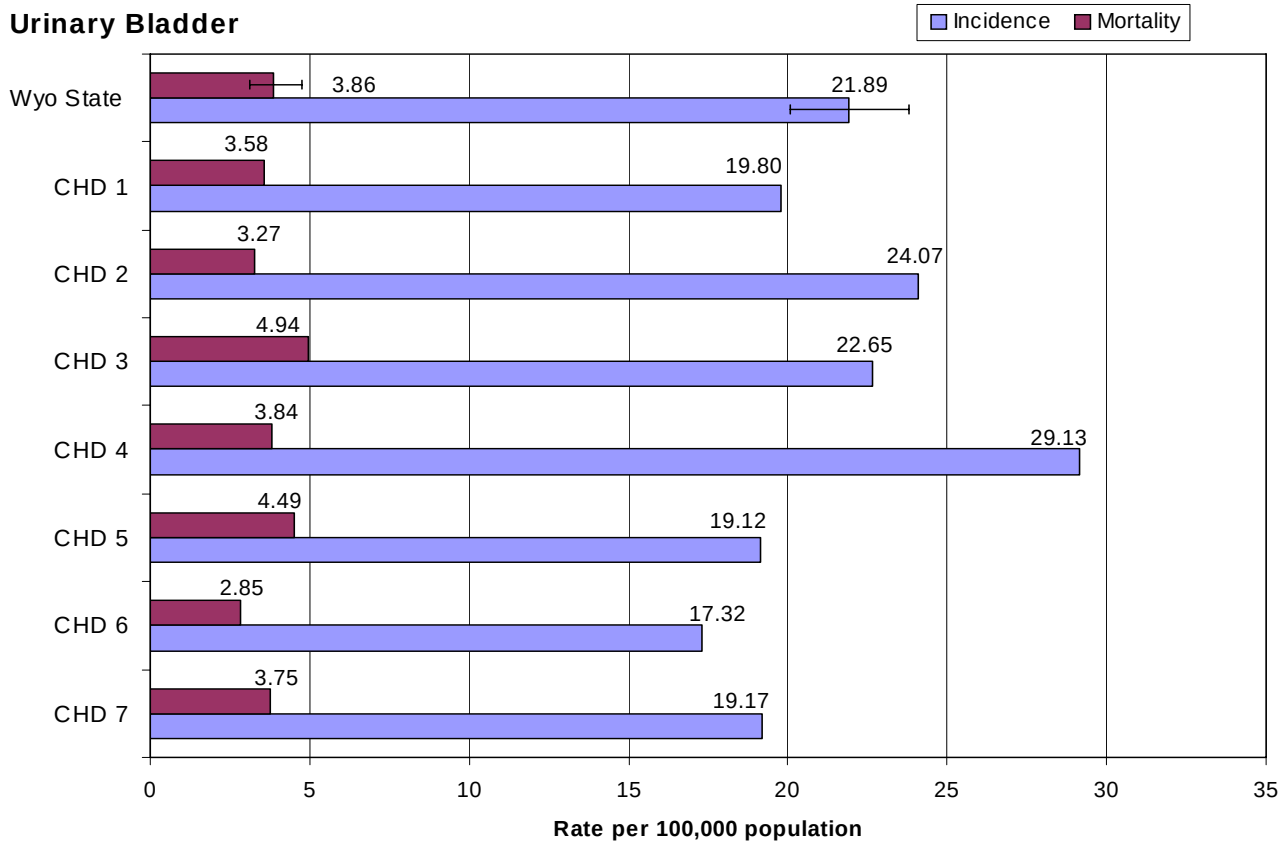
Age-Specific Incidence Rates, 2003

Bladder (Urinary)



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003

Urinary Bladder



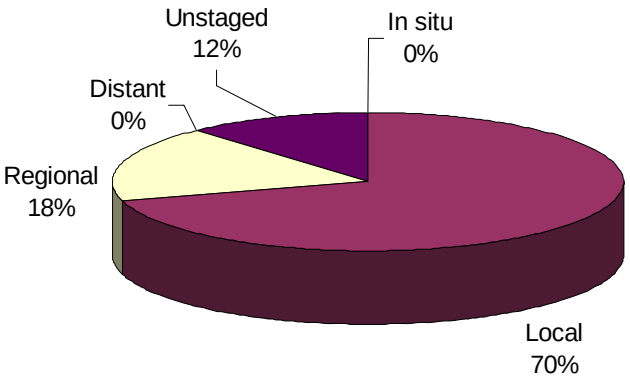
Brain/CNS

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	18	16	34
Wyo Incidence	7.3	5.8	6.3
US Incidence	8.0	5.5	6.6
# Cancer Deaths	14	15	29
Wyo Mortality	5.6	5.2	5.5
US Mortality	5.8	3.9	4.8

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

Stage at Diagnosis



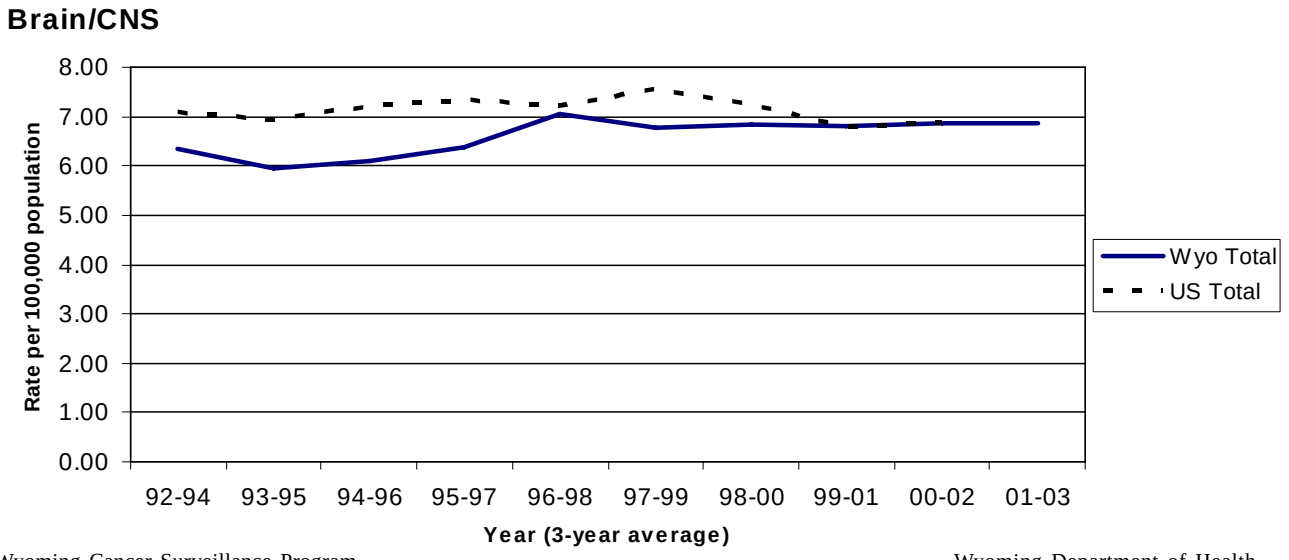
The incidence rate of brain/CNS cancer for males and total population were slightly lower than the national rate, while the incidence rate for females was slightly higher than the national rate. The mortality rate for males was lower, but the rate for females and total population were a little higher than the national rate. None of these differences were significant.

The 12-year trend continues to show a leveling-off of the incidence of brain/CNS cancer since 97-99.

A smaller percentage of brain/CNS cancers were diagnosed at the local stage in 2003 than in 2002 (80%). However this decrease was not significant.

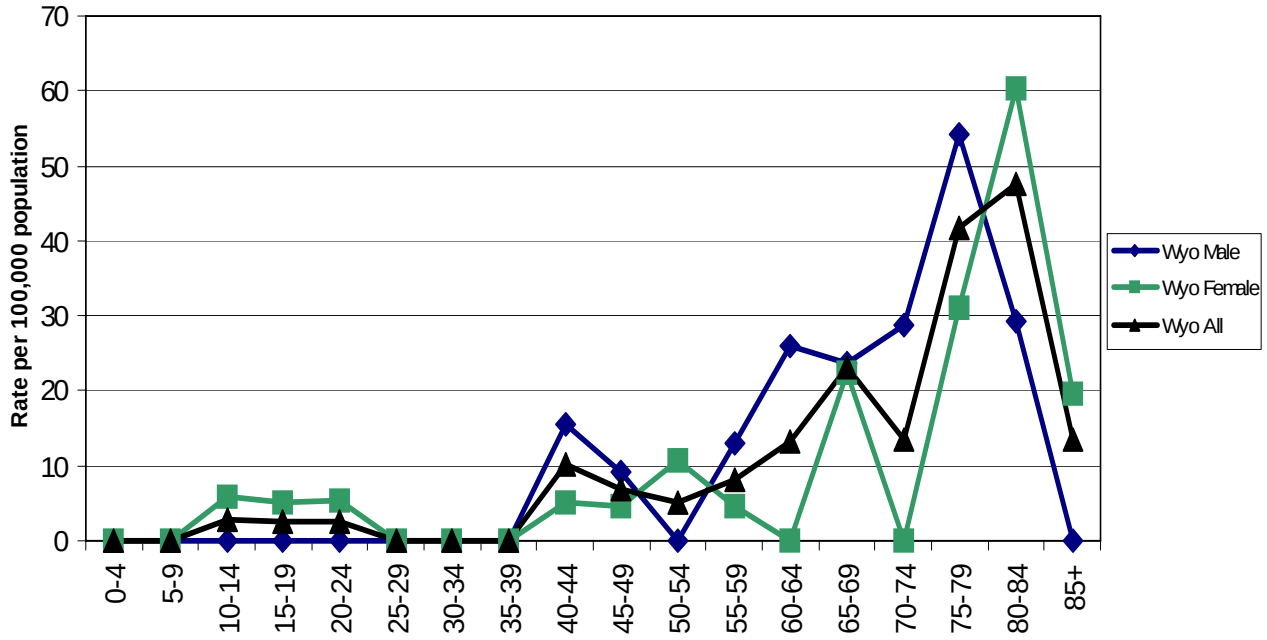
No statistically significant differences were found between the CHD's and state rate for incidence or mortality.
(CNS=Central Nervous System)

12-Year Incidence Trend



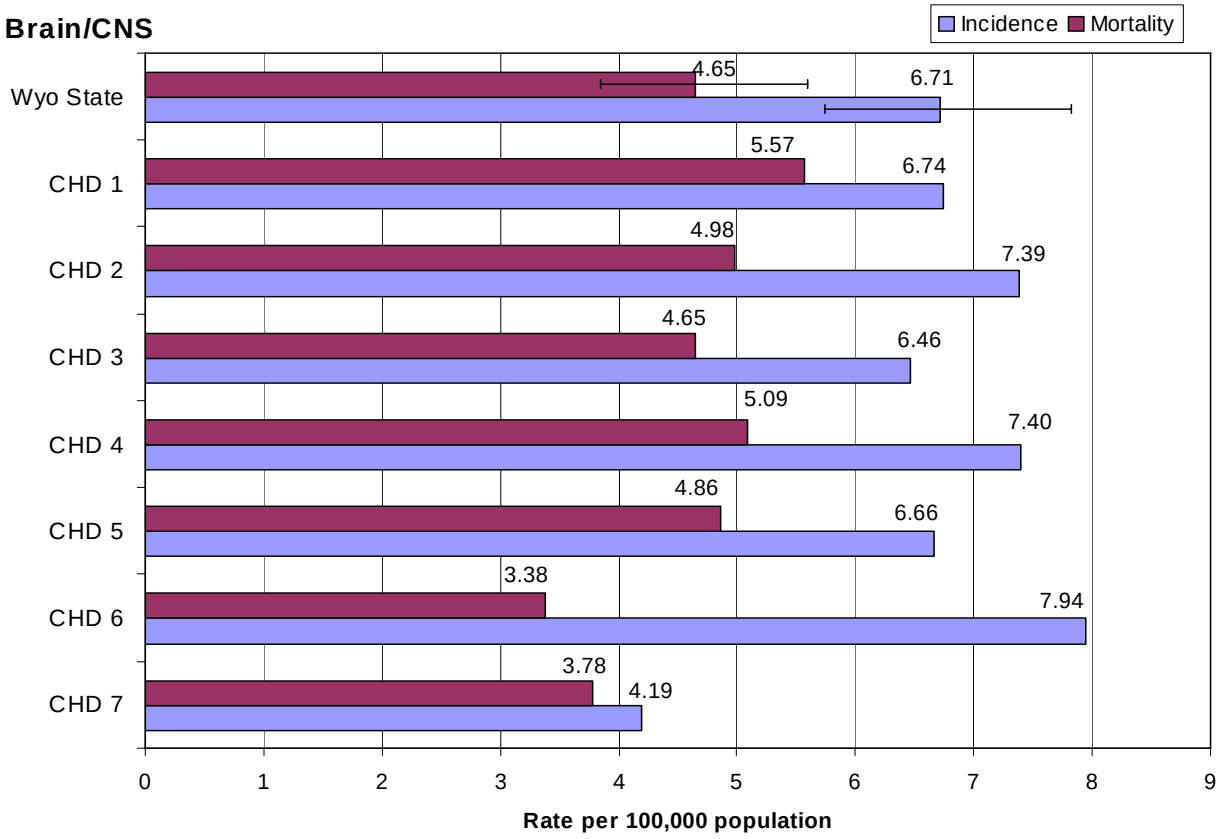
Age-Specific Incidence Rates, 2003

Brain/CNS



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003

Brain/CNS



Breast (Female Only)

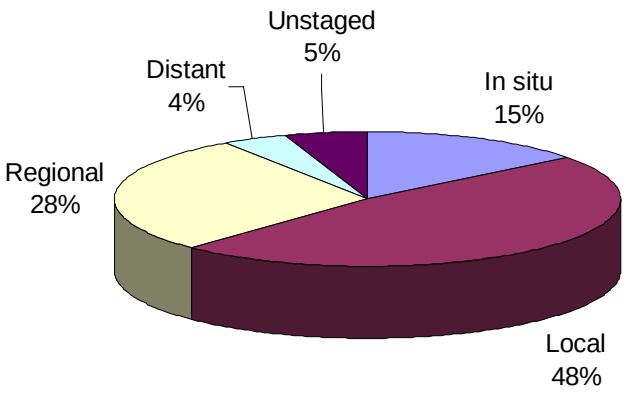
Incidence and Mortality Summary

	Female
# Invasive Cases	334
# In situ Cases	57
Wyo Incidence	118.9
US Incidence	135.8
# Cancer Deaths	66
Wyo Mortality	23.4
US Mortality	24.9

* 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 motality rates of female breast cancer in Wyoming were both lower than the United States rates. However, these differences were not statistically significant.

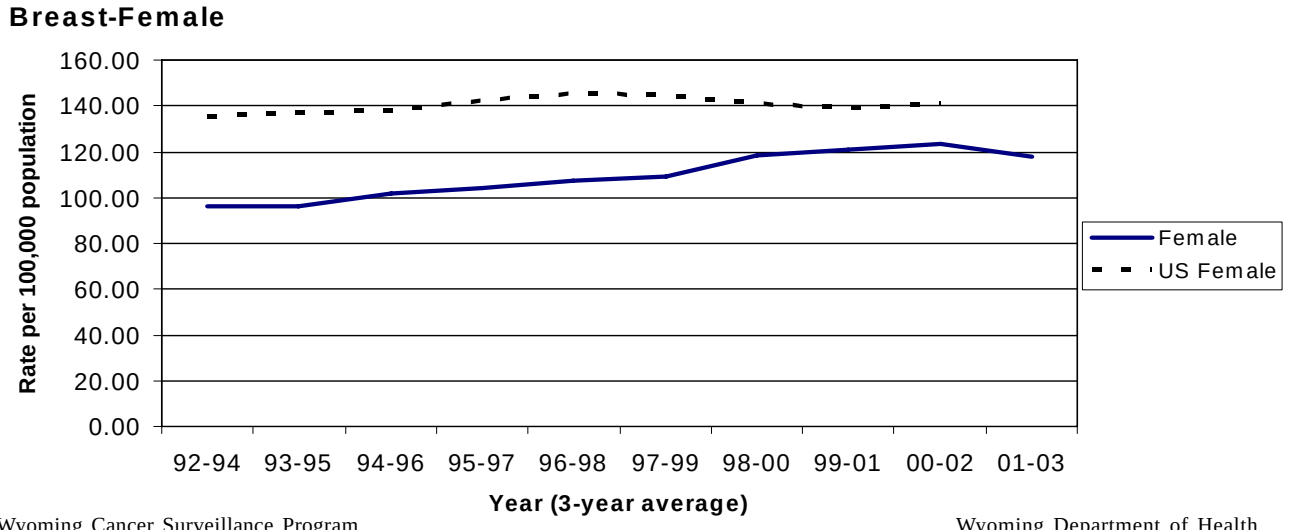
The 12-year incidence trend shows a very slight decrease from 00-02 to 01-03.

The percentage of cancers staged as regional increased from 2002 (22%); however, this increase was not significant.

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

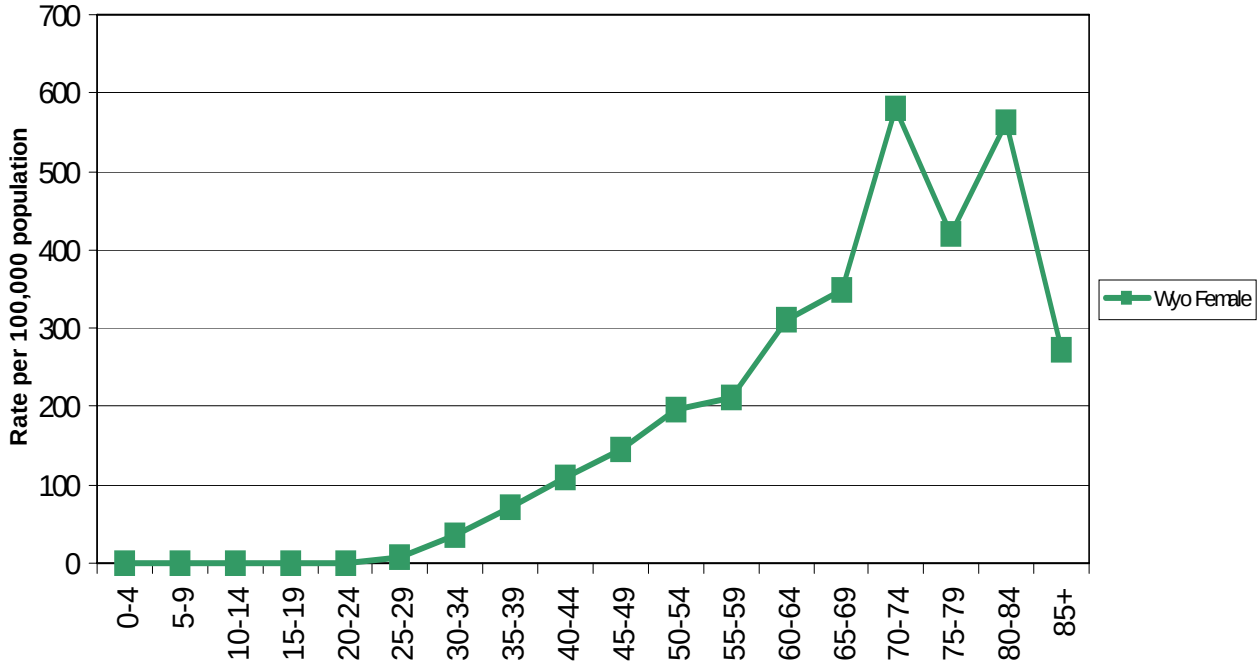
There were 3 cases of male breast cancer reported in Wyoming in 2003.

12-Year Incidence Trend



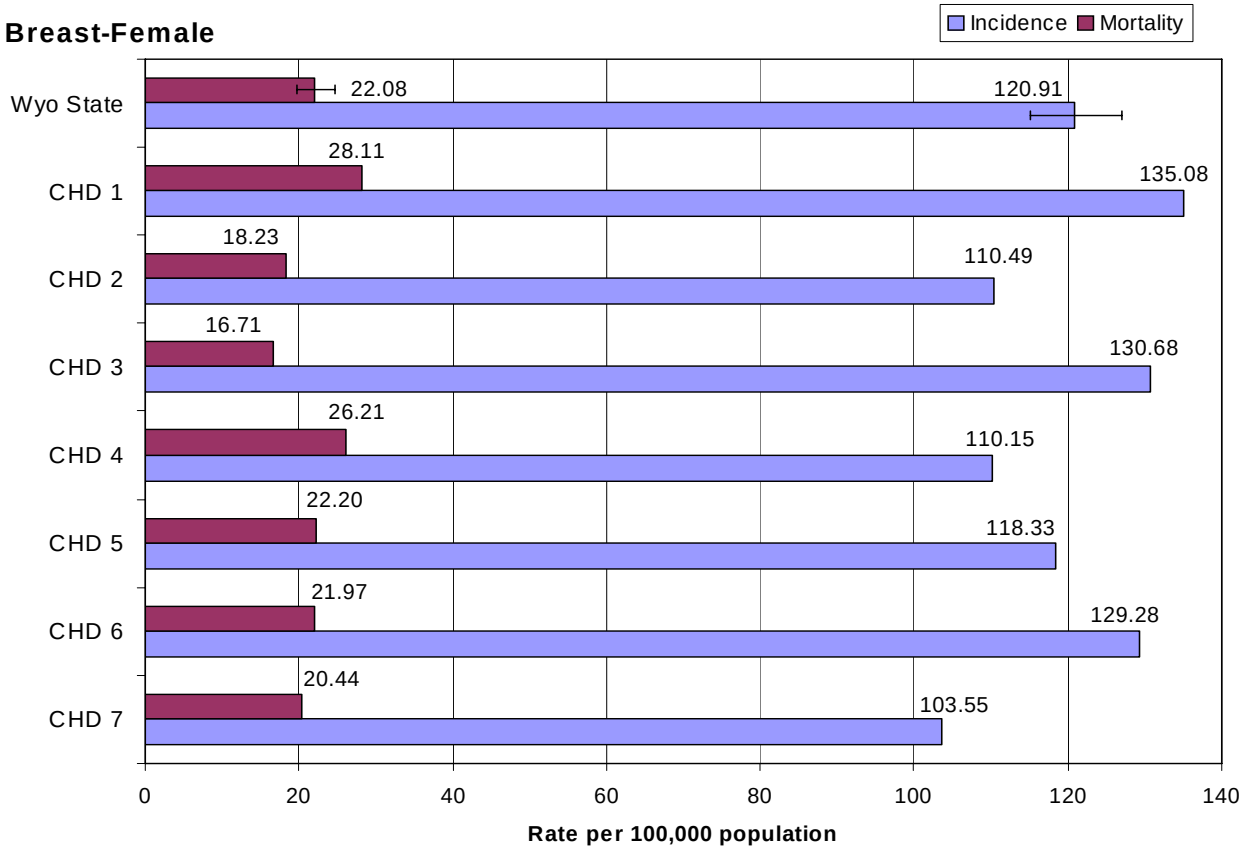
Age-Specific Incidence Rates - 2003

Breast-Female



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003

Breast-Female



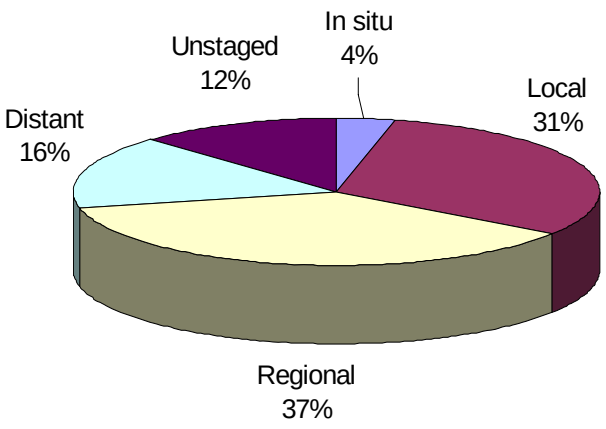
Colorectal

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	114	120	234
# In situ Cases	7	2	9
Wyo Incidence	48.2	43.7	45.8
US Incidence	57.4	43.2	49.5
# Cancer Deaths	51	55	106
Wyo Mortality	22.9	19.5	21.2
US Mortality	23.2	16.0	19.1

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

Stage at Diagnosis



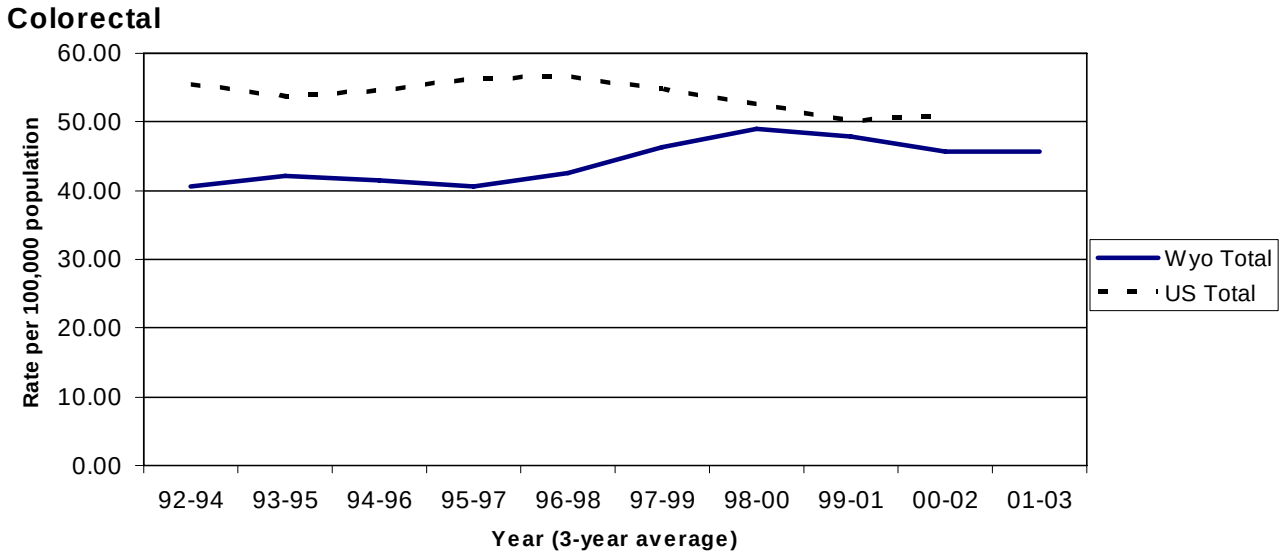
The Wyoming incidence rates for males and total population were both lower than the national rates, while the rate for females was sightly higher than the national rate. The mortality rate for females was higher than the national rate, while the rates for males and total population were both slightly lower than the national rates. None of these differences were significant.

The incidence rates for Wyoming appear to have plateaued after a small decrease that started in 98-00. Nationally the rates also seem to be leveling off after decreasing since 1996.

There was a small decrease in the number of cases diagnosed as regional from 2002 (43%).

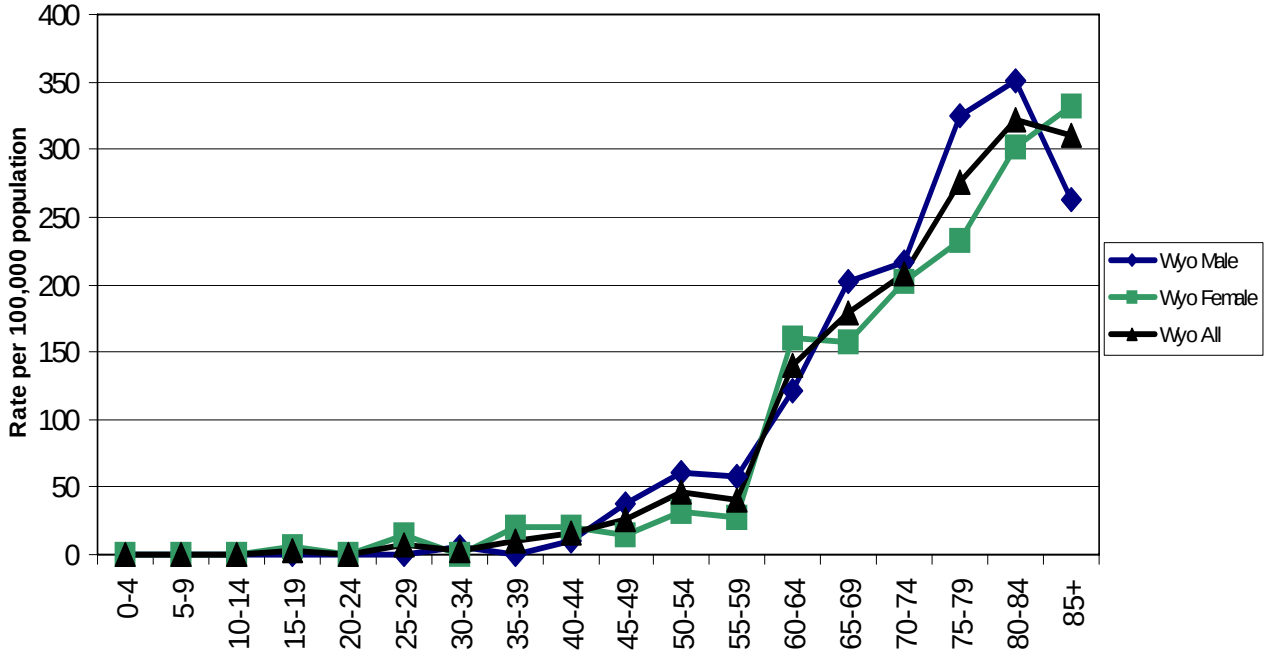
No statistically significant differences were found between the CHD's and state rate for incidence or mortality. (Colorectal = Colon and rectum combined.)

12-Year Incidence Trend



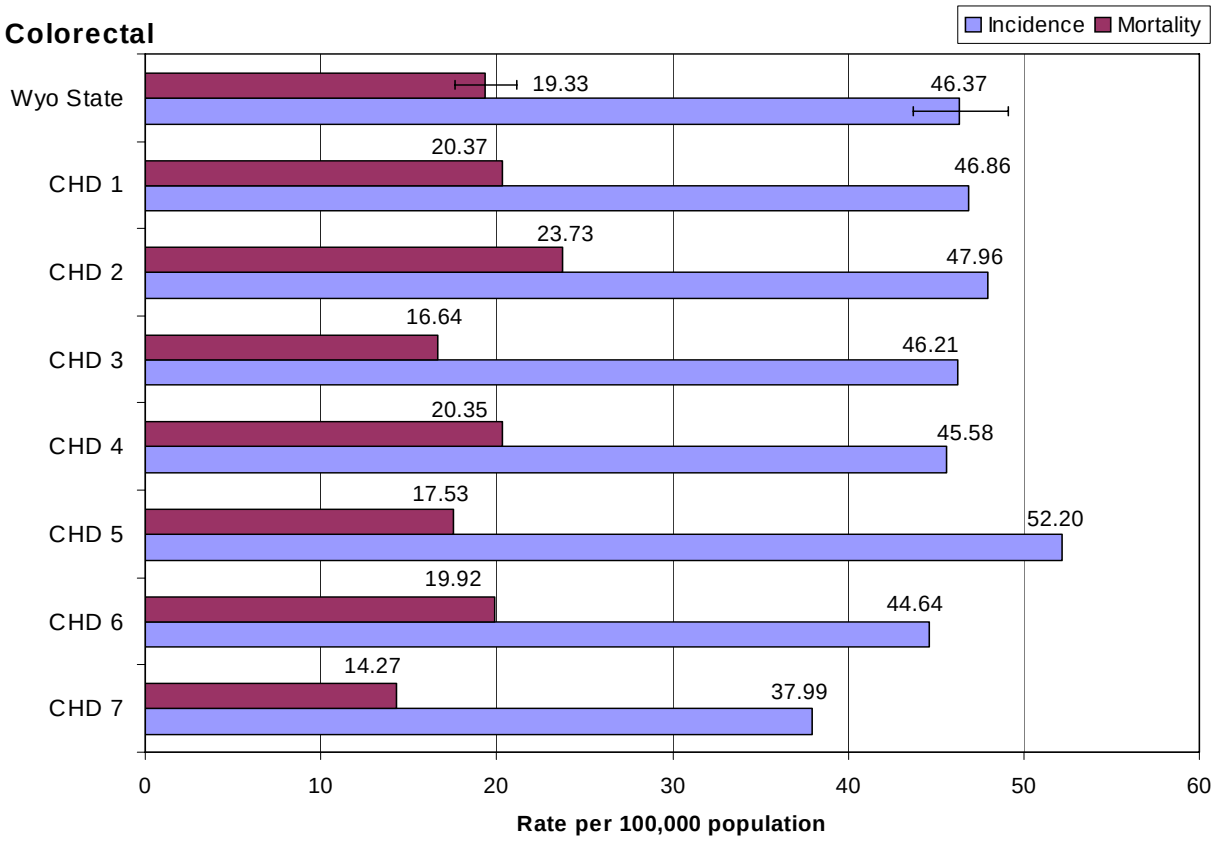
Age-Specific Incidence Rates, 2003

Colorectal



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003

Colorectal



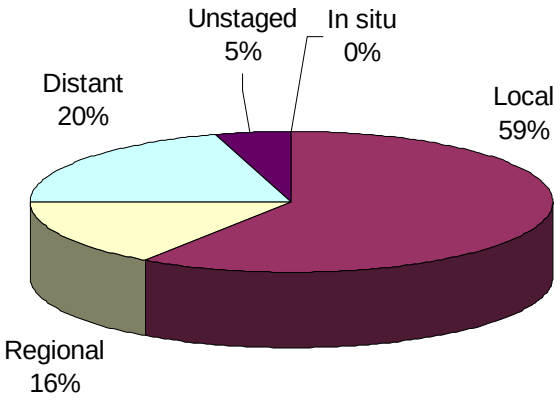
Kidney/Renal Pelvis

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	40	24	64
Wyo Incidence	15.4	8.4	11.7
US Incidence	17.0	8.2	12.2
# Cancer Deaths	16	4	20
Wyo Mortality	7.1	1.4	3.9
US Mortality	6.3	2.8	4.3

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

Stage at Diagnosis



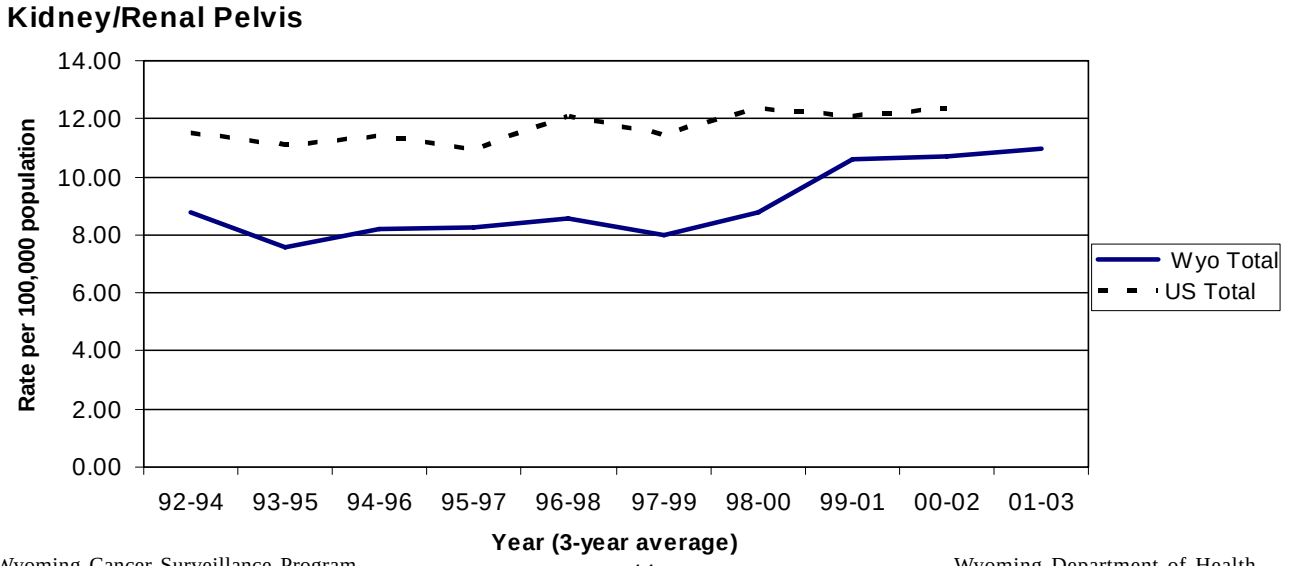
The incidence rates for kidney/renal pelvis cancer were lower in Wyoming males and total population, but slightly higher for females than the national population. The mortality rates for females and total population were lower than the national rates, while the male mortalily rate was higher than the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

The 12-year trend shows a very slight increase since 99-01. The national rate seems to mirror the state rate.

The number of kidney/renal pelvis cases diagnosed at the local stage increased from 49% in 2002 to 59% in 2003; however, this change was not significant.

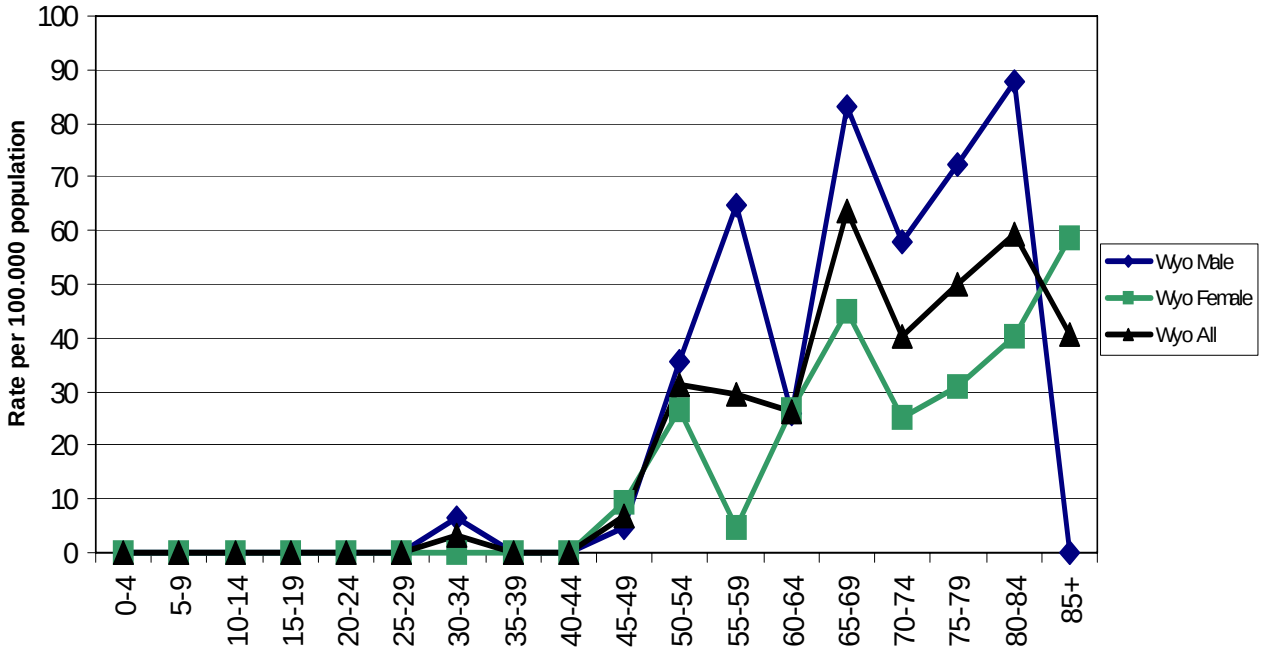
No statistically significant differences were found between CHD's and the state rate for incidence or mortality.

12-Year Incidence Trend



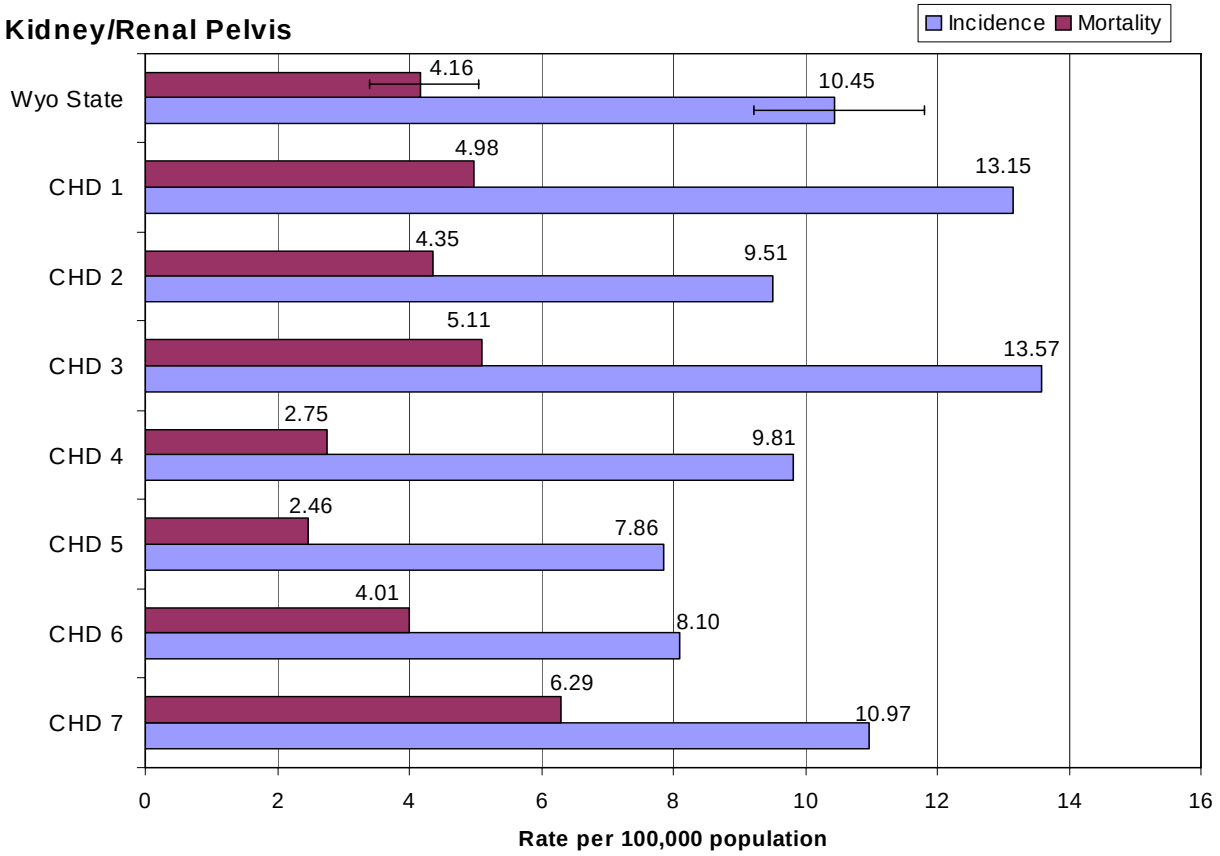
Age-Specific Incidence Rates, 2003

Kidney/Renal Pelvis



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003

Kidney/Renal Pelvis



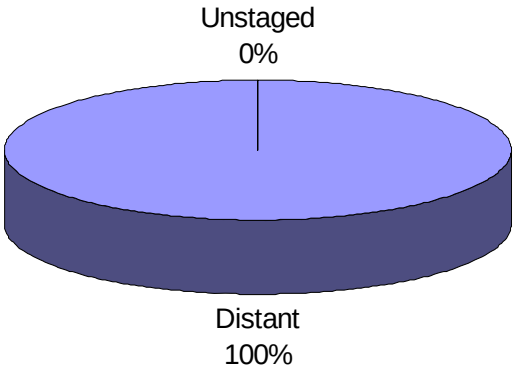
Leukemia

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	33	23	56
Wyo Incidence	14.3	8.6	10.8
US Incidence	15.9	9.3	12.2
# Cancer Deaths	22	12	34
Wyo Mortality	10.4	4.1	6.8
US Mortality	10.4	5.8	7.7

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

Stage at Diagnosis



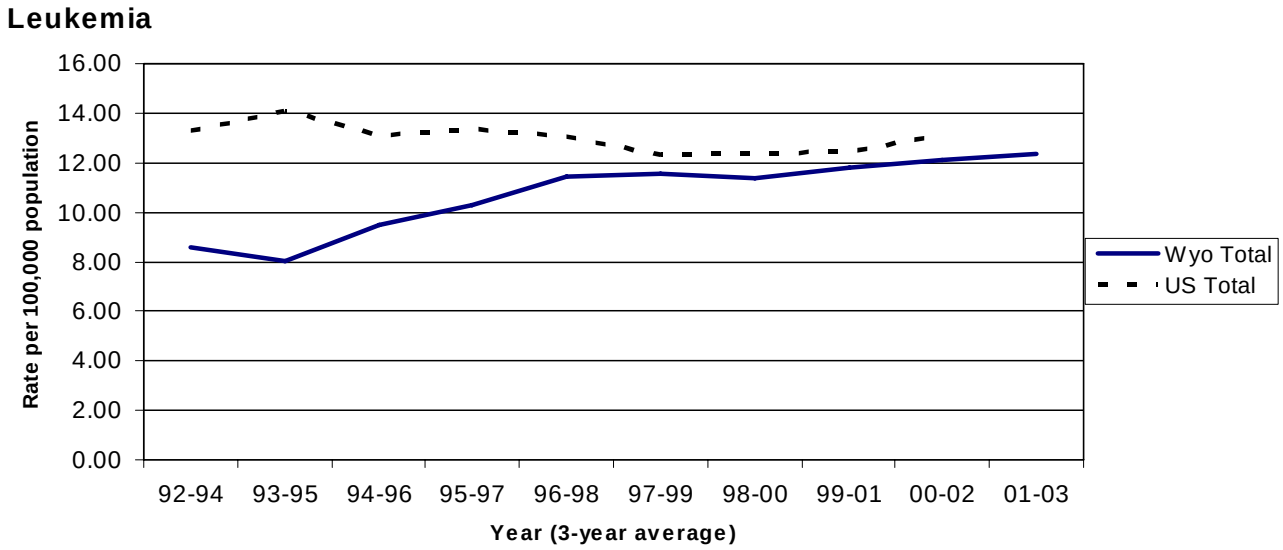
Note: Leukemia is systemic and therefore only diagnosed at the distant stage.

Both incidence and mortality rates in Wyoming for leukemia were lower than or equal to national rates for males, females, and total population. None of these differences were statistically significant.

The incidence trend for Wyoming appears to be on a slight increase since 98-00. The national trend also appears to be increasing a little as well since 99-01.

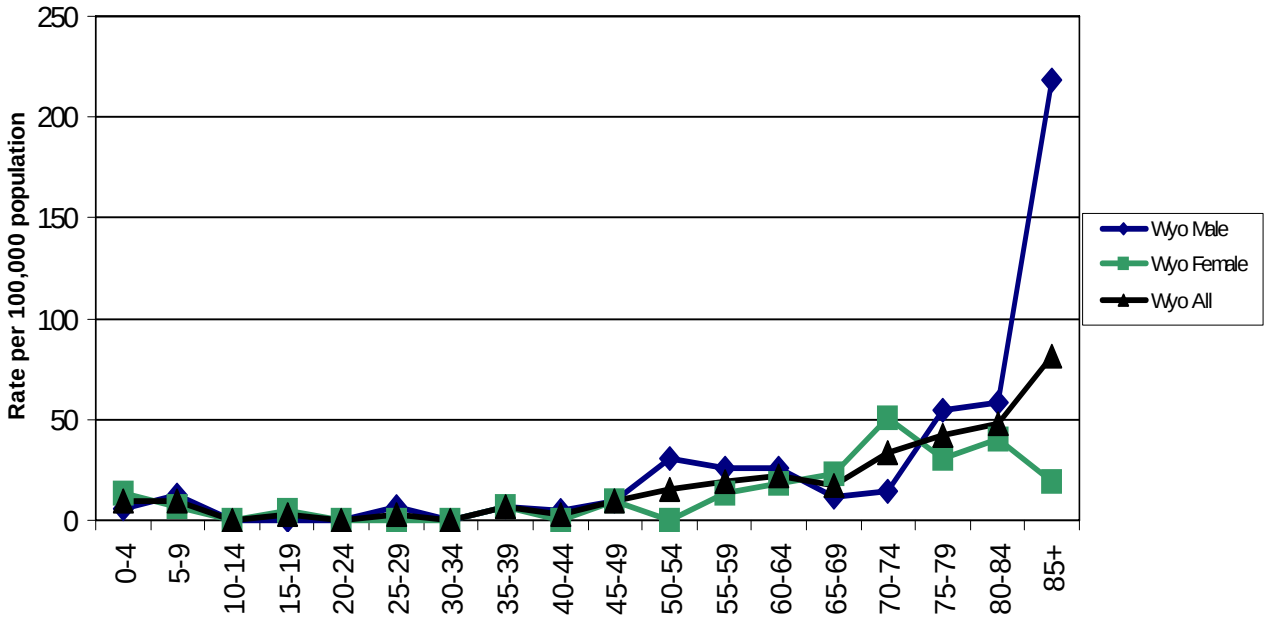
The mortality rate for CHD 7 was significantly lower than the state rate. There were no differences between the CHD's and state rate for incidence.

12-Year Incidence Trend



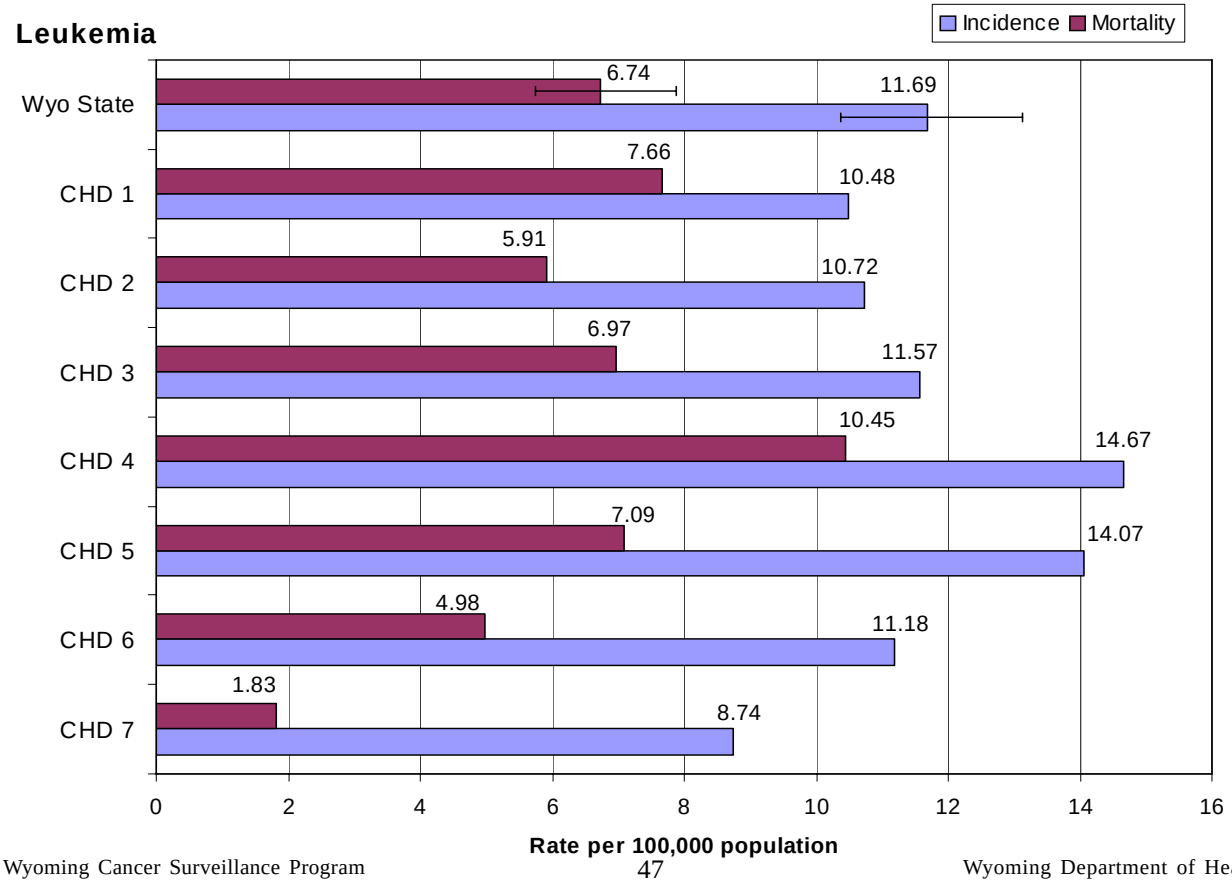
Age-Specific Incidence Rates, 2003

Leukemia



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003

Leukemia



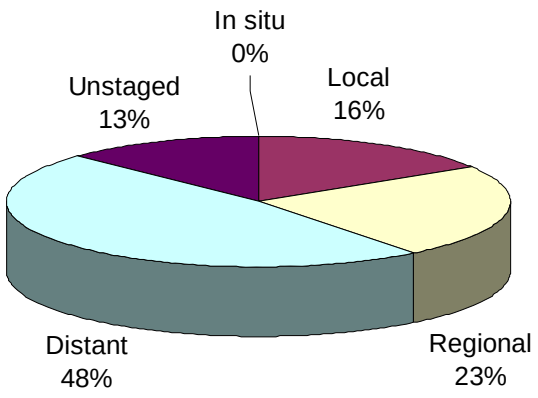
Lung and Bronchus

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	150	129	279
Wyo Incidence	63.3	46.7	53.8
US Incidence	72.5	49.9	59.3
# Cancer Deaths	148	95	243
Wyo Mortality	66.2	34.7	48.3
US Mortality	72.7	42.6	55.2

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

Stage at Diagnosis



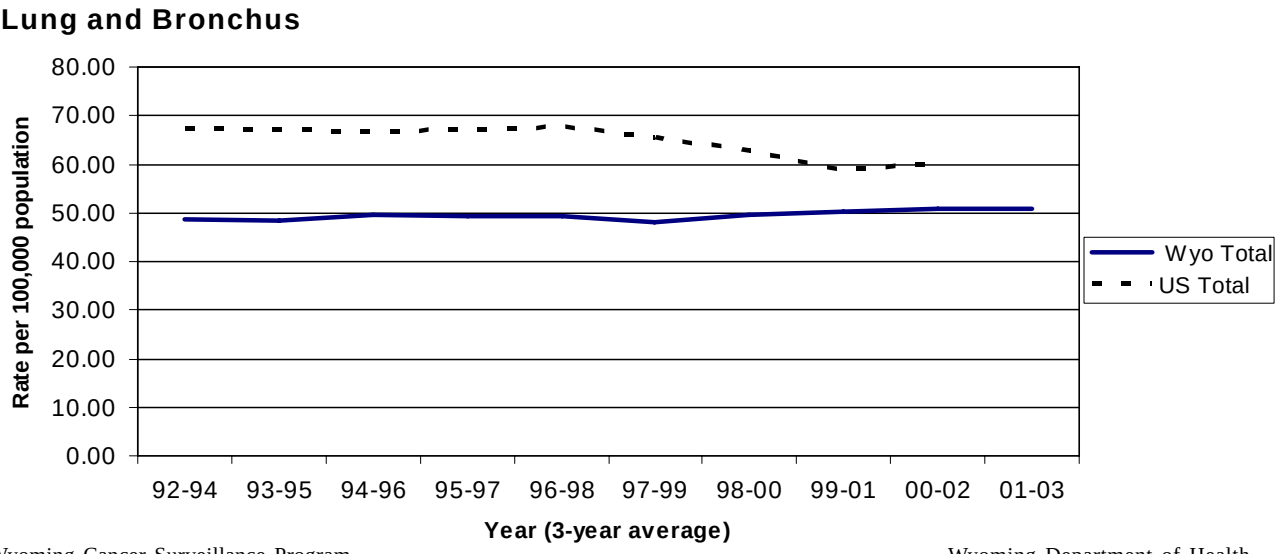
Lung cancer incidence and mortality rates in Wyoming males, females, and total population were all lower than the national rates. However, none of the differences were significant.

Incidence rates for lung cancer in Wyoming have been relatively steady since 1990. The national rate shows a possible leveling off in starting in 2002.

The percentages at each stage of diagnosis were very similar to the percentages seen in 2002.

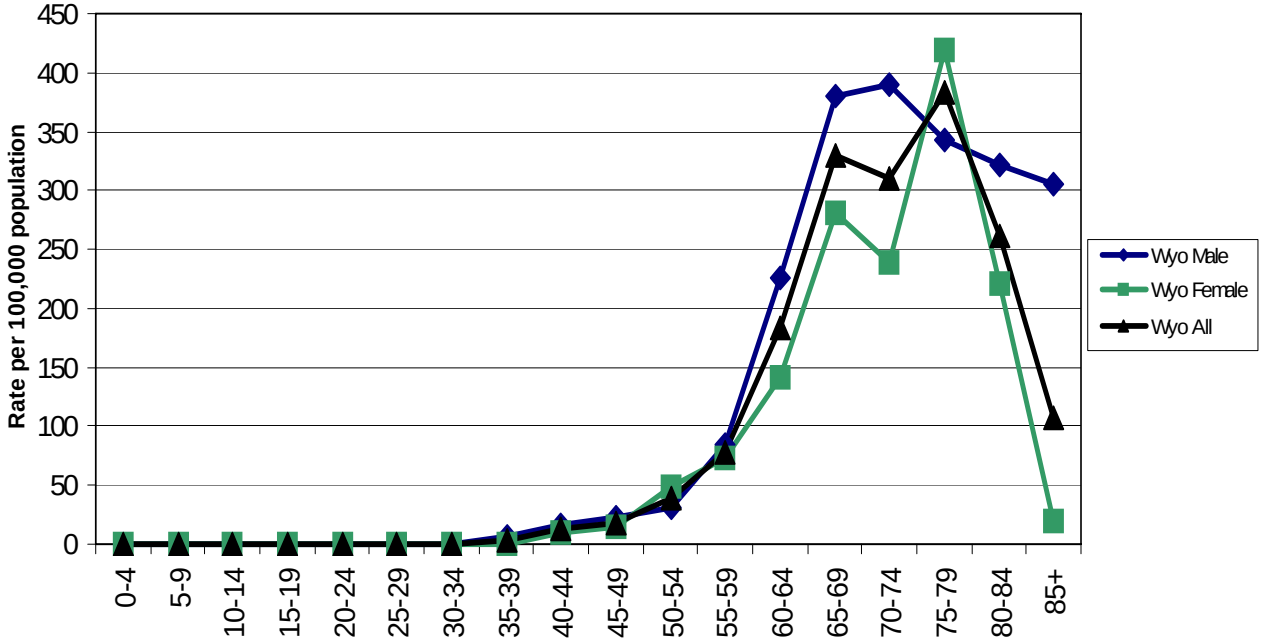
There were no signficant differences between CHD's and the state rate for incidence or mortality.

12-Year Incidence Trend



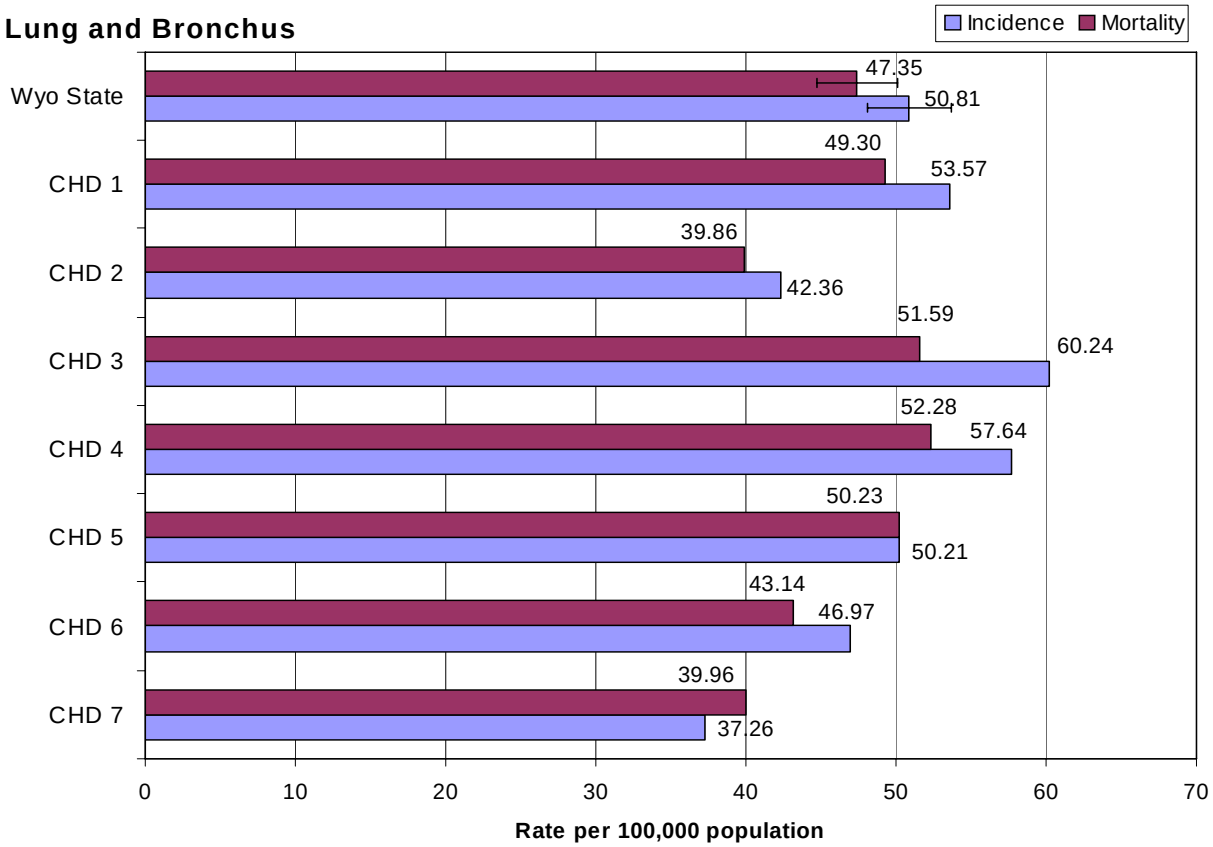
Age-Specific Incidence Rates, 2003

Lung and Bronchus



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003

Lung and Bronchus



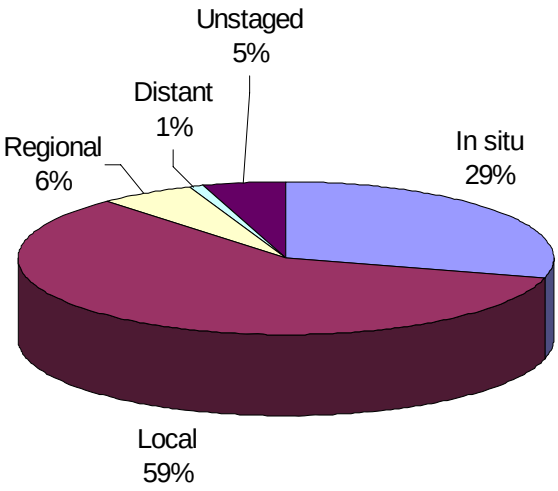
Melanoma (of the skin)

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	47	38	85
# In situ Cases	22	13	35
Wyo Incidence	19.6	14.4	16.7
US Incidence	25.5	17.1	20.5
# Cancer Deaths	12	4	16
Wyo Mortality	4.4	1.5	2.9
US Mortality	4.2	2.0	3.0

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

Stage at Diagnosis



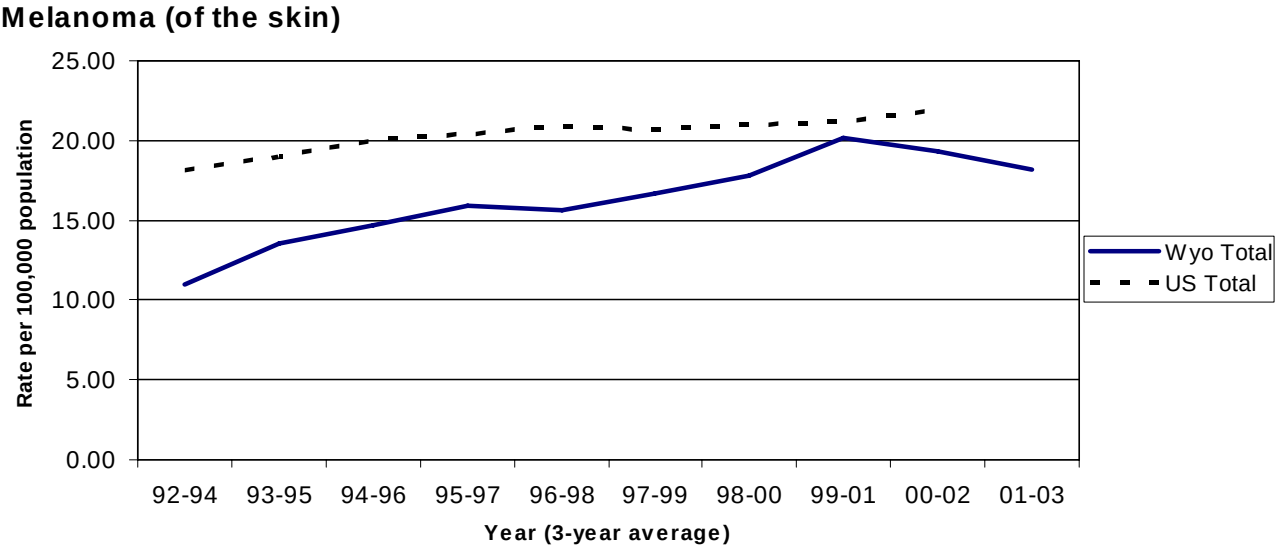
Incidence rates for melanoma of the skin in Wyoming for males, females, and total population were somewhat lower than the national rates, though not significantly. The mortality rates in Wyoming were basically the same as the national rates for all three groups.

A decreasing trend in melanoma incidence for Wyoming residents seems to have begun in 99-01 after an increase starting in 96-98.

The percentage of cases diagnosed at the in situ stage decreased from 42% in 2002, while the percentage of cases diagnosed at the local stage increased from 43% in 2002. Neither change was significant.

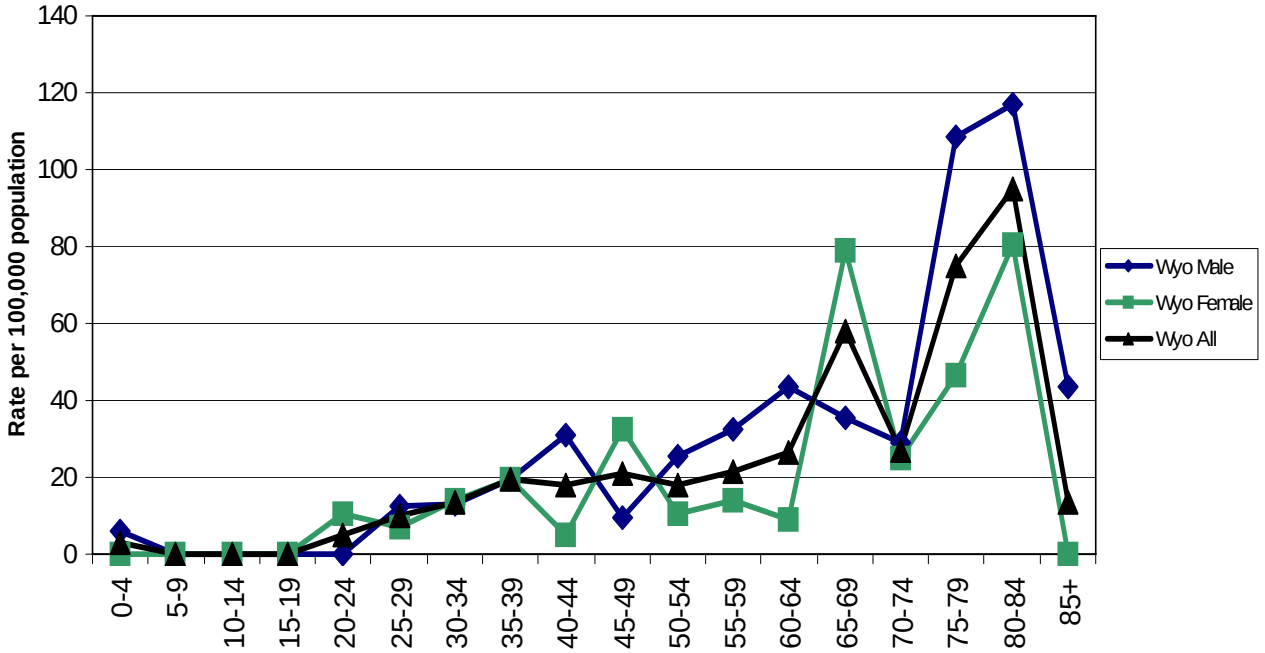
No statistically significant differences were found between the CHD's and state rate for incidence or mortality.

12-Year Incidence Trend



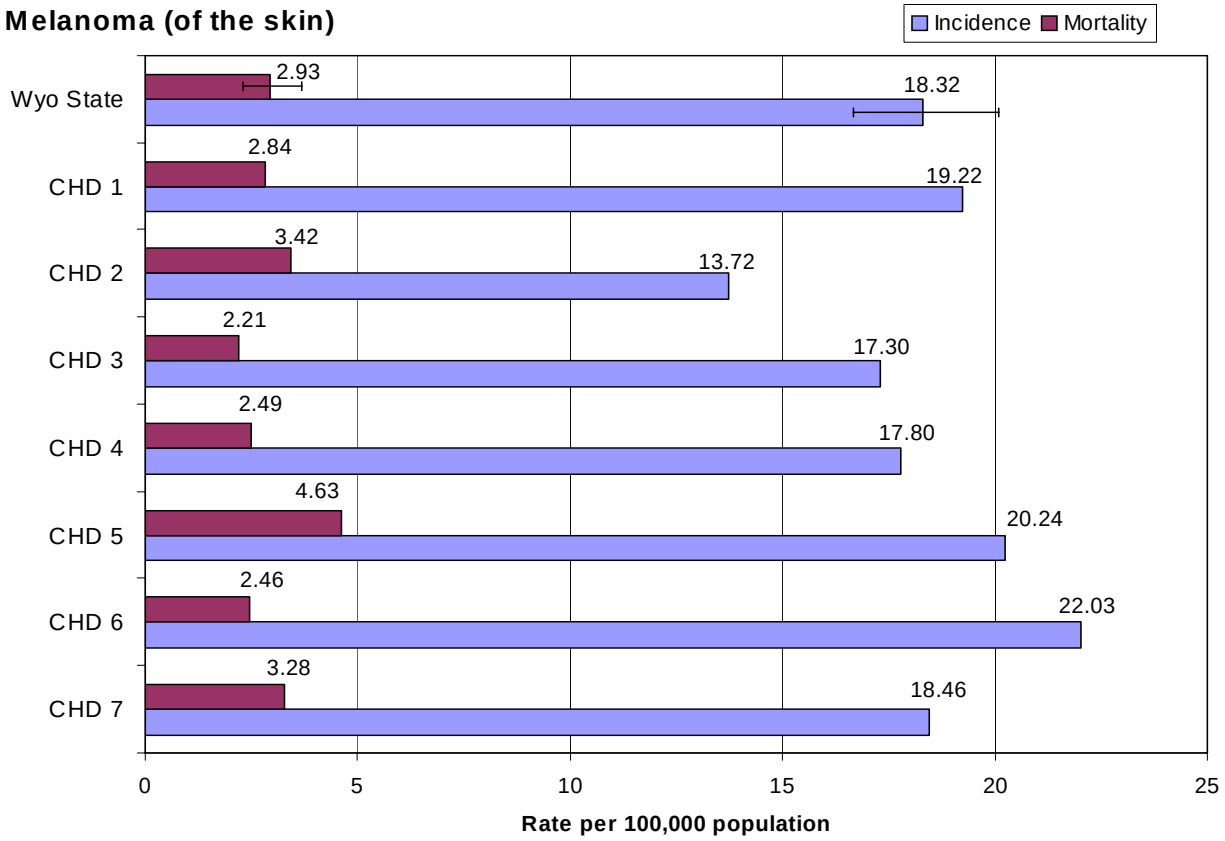
Age-Specific Incidence Rates, 2003

Melanoma (of the skin)



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003

Melanoma (of the skin)



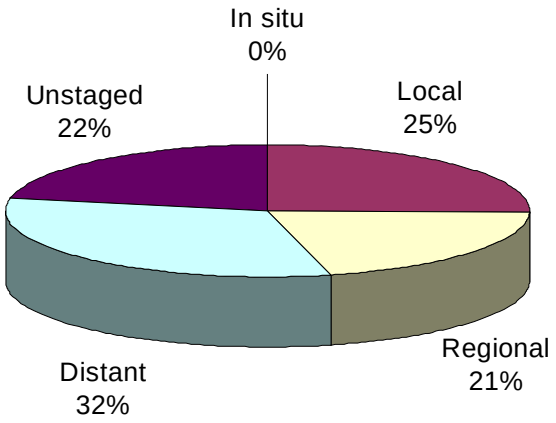
Non-Hodgkin Lymphoma

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	44	47	91
Wyo Incidence	18.4	17.0	17.7
US Incidence	23.9	16.7	19.9
# Cancer Deaths	20	22	42
Wyo Mortality	9.6	7.8	8.5
US Mortality	10.0	6.4	7.9

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

Stage at Diagnosis



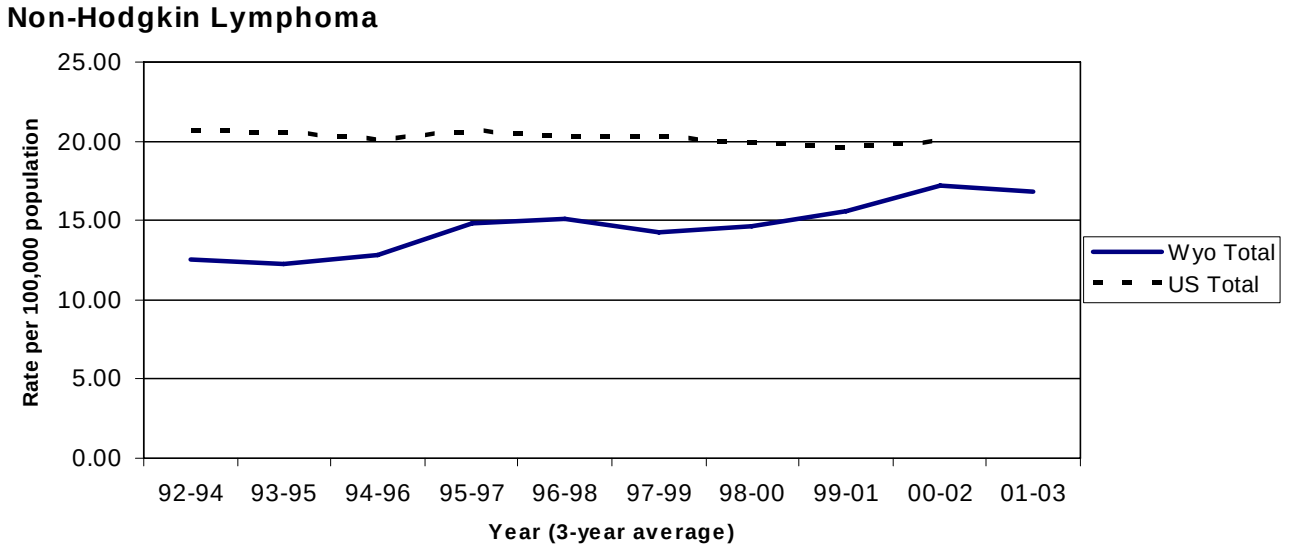
The incidence rate for males and total population in Wyoming were lower, while the rate for females was slightly higher than the national rate. The mortality rate for females and total population in Wyoming were higher than the national rate, while the mortality rate for males was lower. None of these differences were statistically significant.

The 12-year incidence trend appears to be leveling off after a small increase that started in 99-01.

The percentages at each stage of diagnosis were very similar to the percentages in 2002.

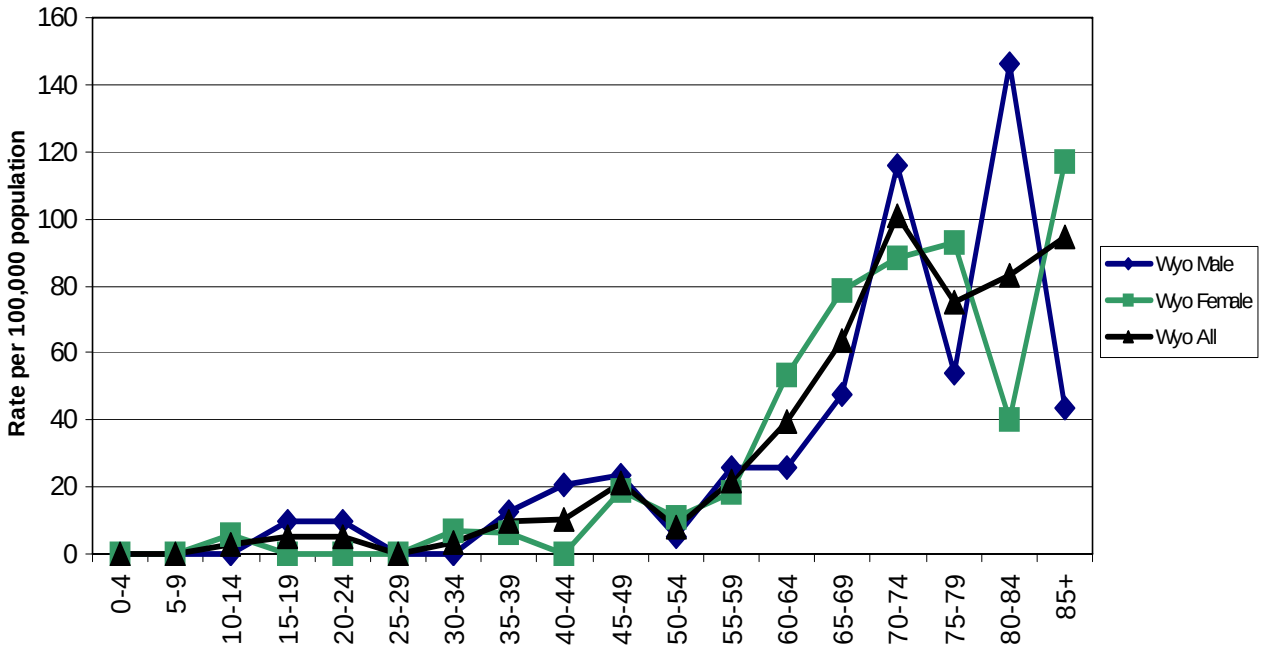
No statistically significant differences were found between the CHD's and state rate for incidence or mortality.

12-Year Incidence Trend



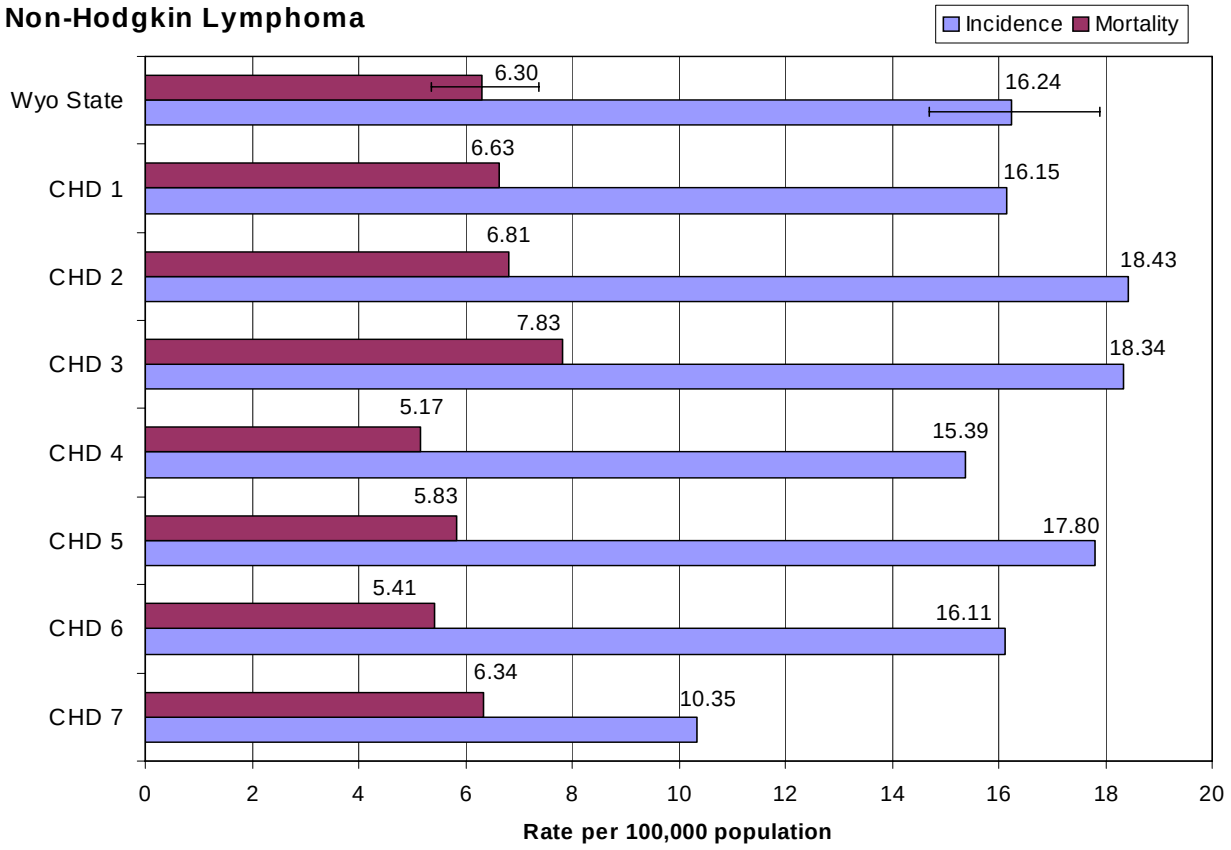
Age-Specific Incidence Rates, 2003

Non-Hodgkin Lymphoma



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003

Non-Hodgkin Lymphoma



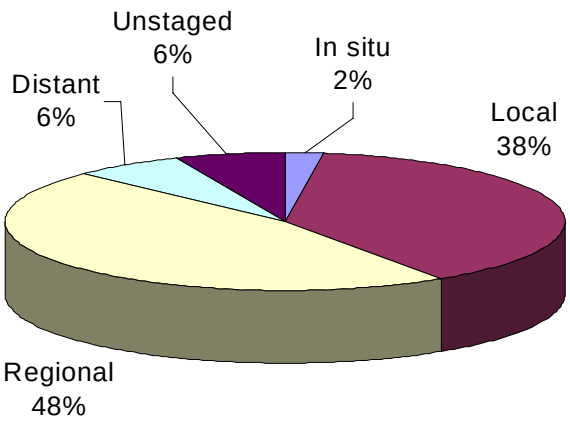
Oral Cavity and Pharynx

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	37	9	46
# In situ Cases	1	0	1
Wyo Incidence	14.1	3.1	8.3
US Incidence	15.3	6.4	10.5
# Cancer Deaths	9	4	13
Wyo Mortality	3.5	1.4	2.5
US Mortality	3.9	1.5	2.6

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

Stage at Diagnosis



Incidence and mortality rates for males, females, and total population for cancer of the oral cavity & pharynx in Wyoming were all lower than the national rates, though not significantly.

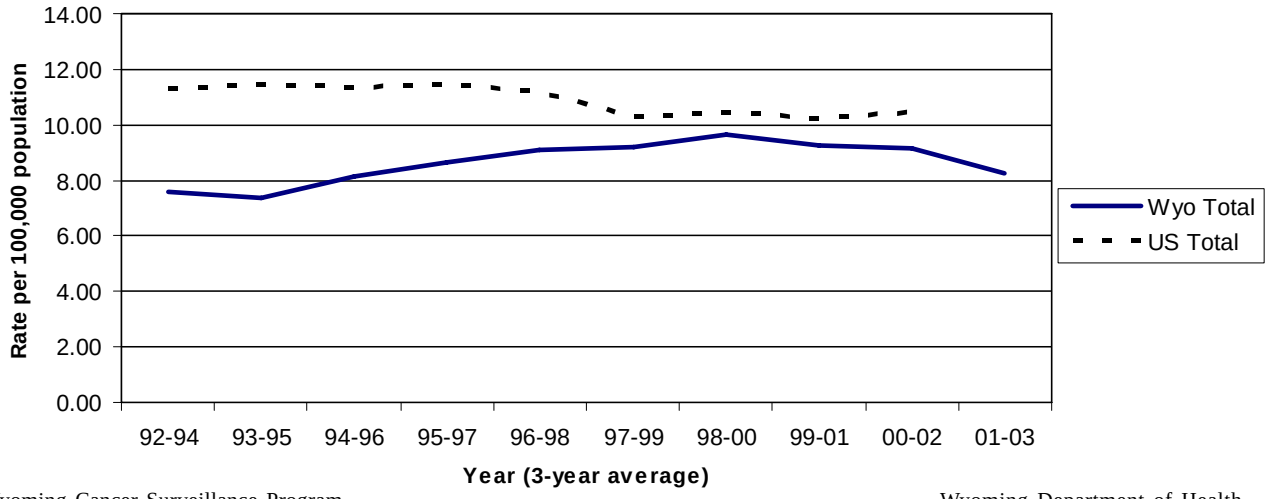
The decreasing incidence trend for Wyoming that started in 98-00 appears to have continued through 01-03. Nationally, cancer of the oral cavity and pharynx appears to have plateaued since 1998.

Significantly more cases were staged as regional in 2003 than in 2002 (33%). Fewer cases were staged as local in 2003 (38%) than in 2002 (49%), but this difference was not significant.

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

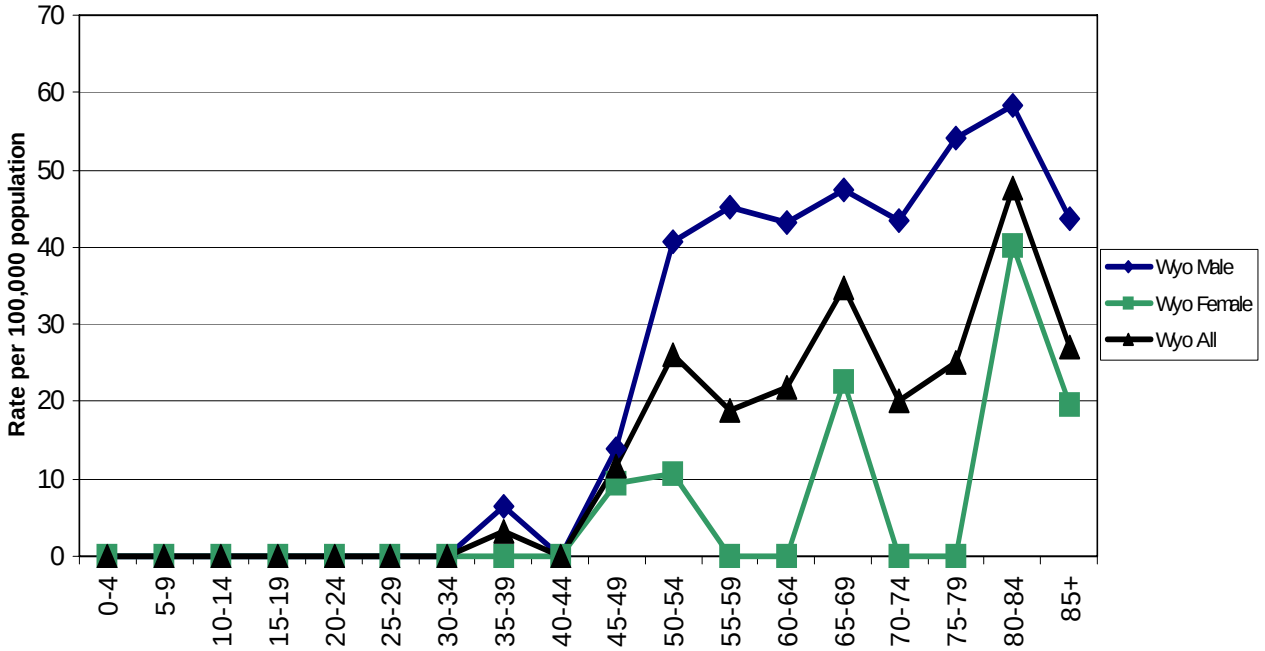
12-Year Incidence Trend

Oral Cavity and Pharynx



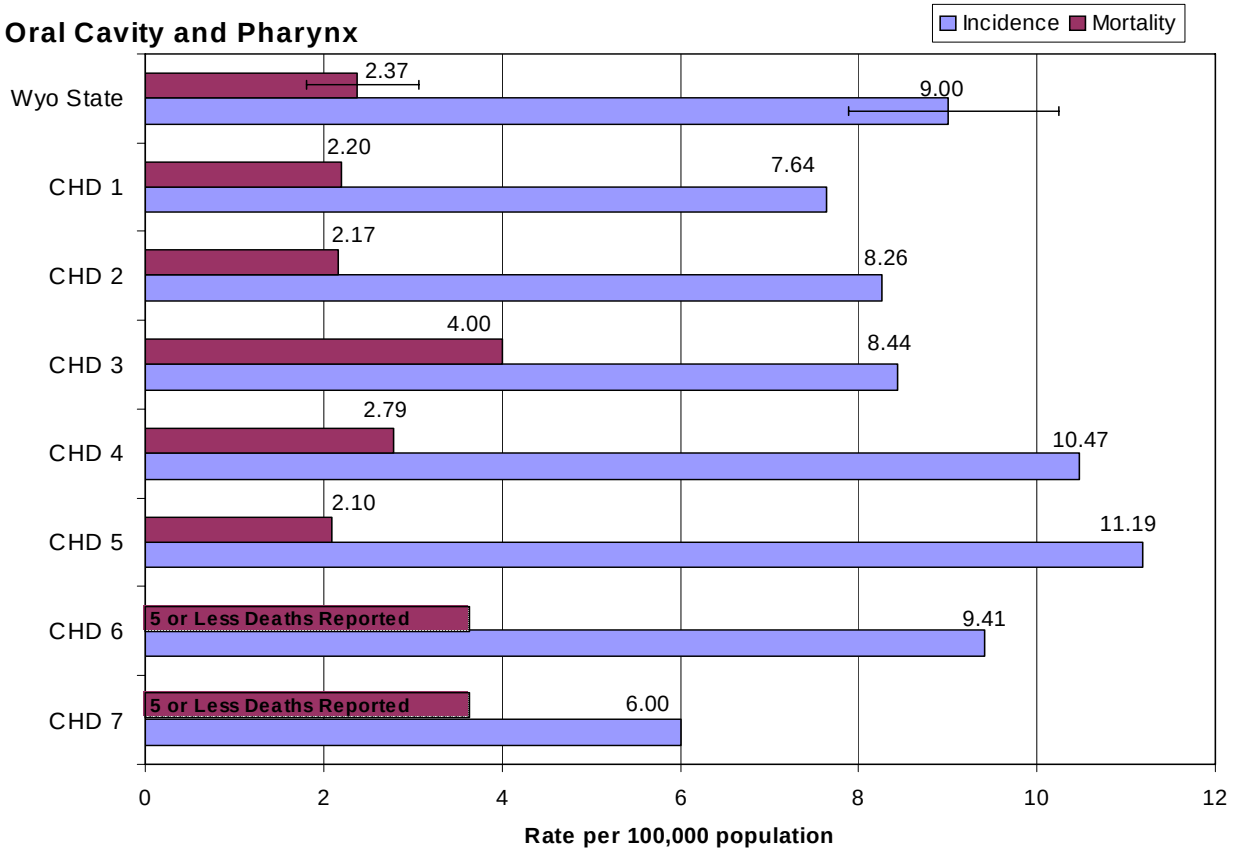
Age-Specific Incidence Rates, 2003

Oral Cavity and Pharynx



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003

Oral Cavity and Pharynx



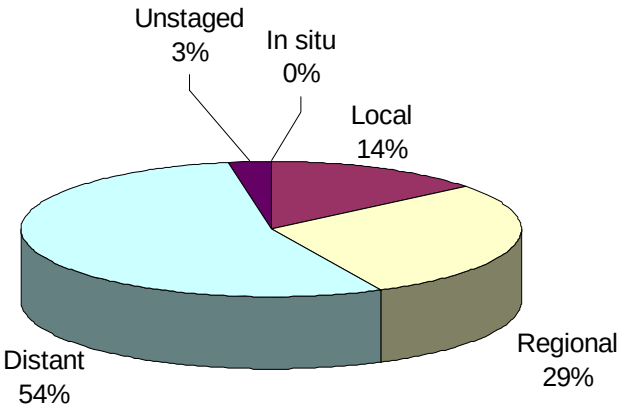
Ovary

Incidence and Mortality Summary

	Female
# Invasive Cases	36
Wyo Incidence	12.4
US Incidence	14.0
# Cancer Deaths	25
Wyo Mortality	8.9
US Mortality	9.4

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

Stage at Diagnosis



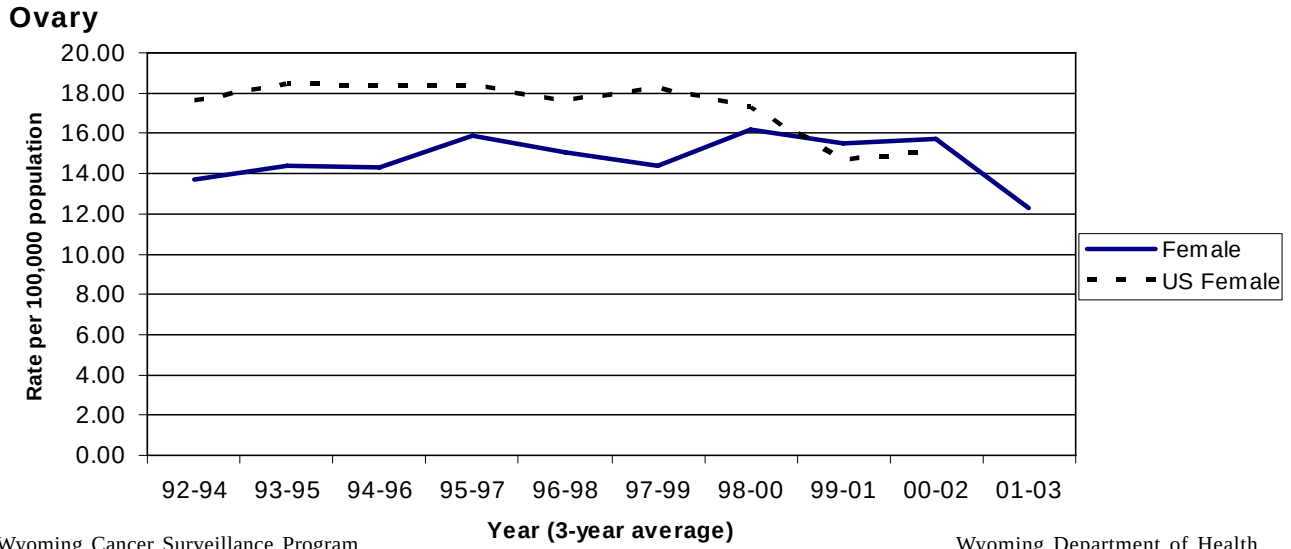
The incidence and mortality rates in Wyoming females for ovarian cancer were lower than the national rates. However, neither difference was significant.

The 12-year incidence trend shows a decrease in cases in 01-03, after a leveling off period from 98-00 to 00-02. The national rate appears to have been decreasing since 1998.

Significantly more cases of ovarian cancer were diagnosed at the regional stage in 2003 (29%) than in 2002 (11%).

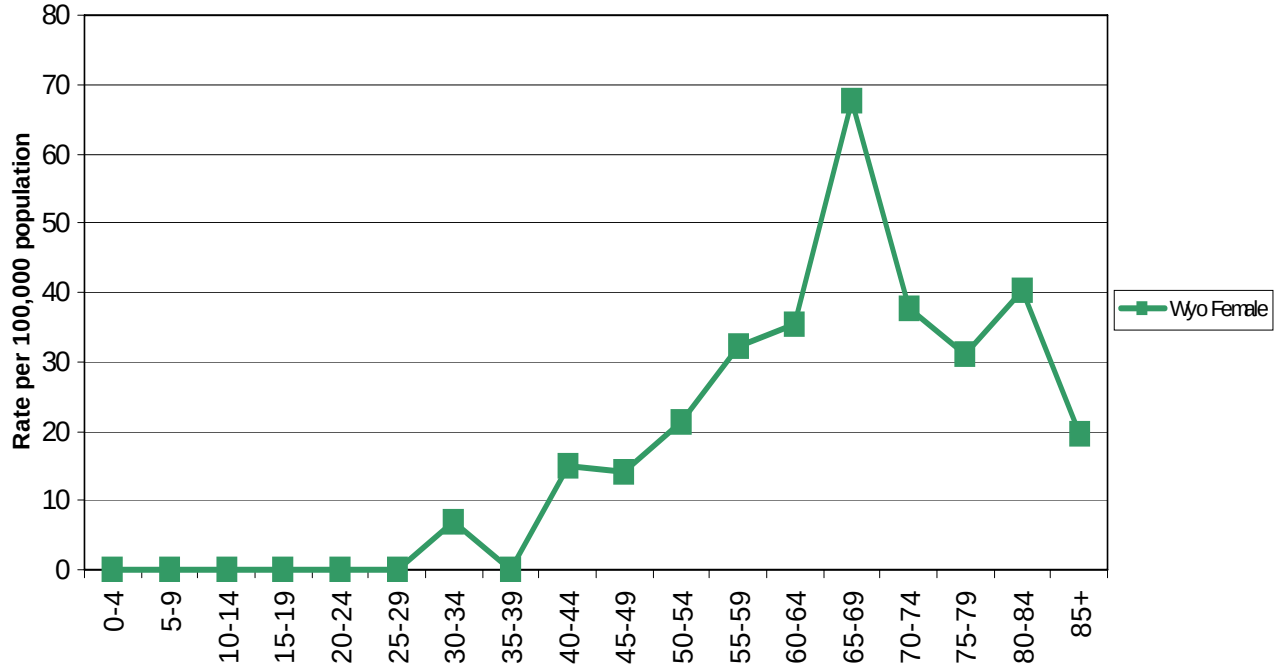
No statistically significant differences were found between the CHD's and state rate for incidence or mortality.

12-Year Incidence Trend



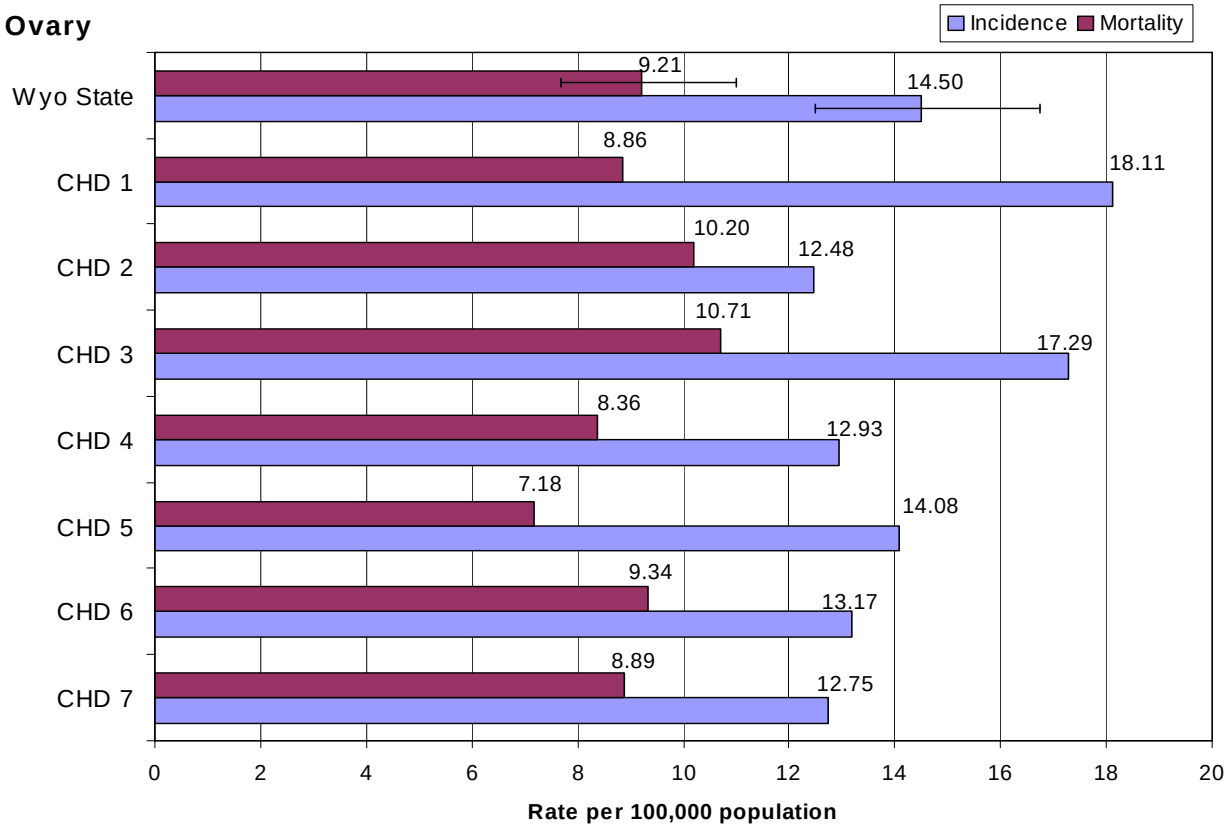
Age-Specific Incidence Rates - 2003

Ovary



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003

Ovary



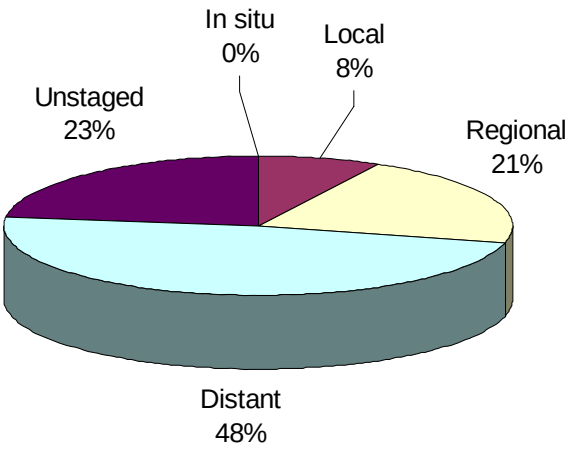
Pancreas

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	25	27	52
Wyo Incidence	10.9	9.5	10.2
US Incidence	12.5	9.6	10.9
# Cancer Deaths	23	29	52
Wyo Mortality	10.1	10.5	10.4
US Mortality	12.0	8.9	10.3

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

Stage at Diagnosis



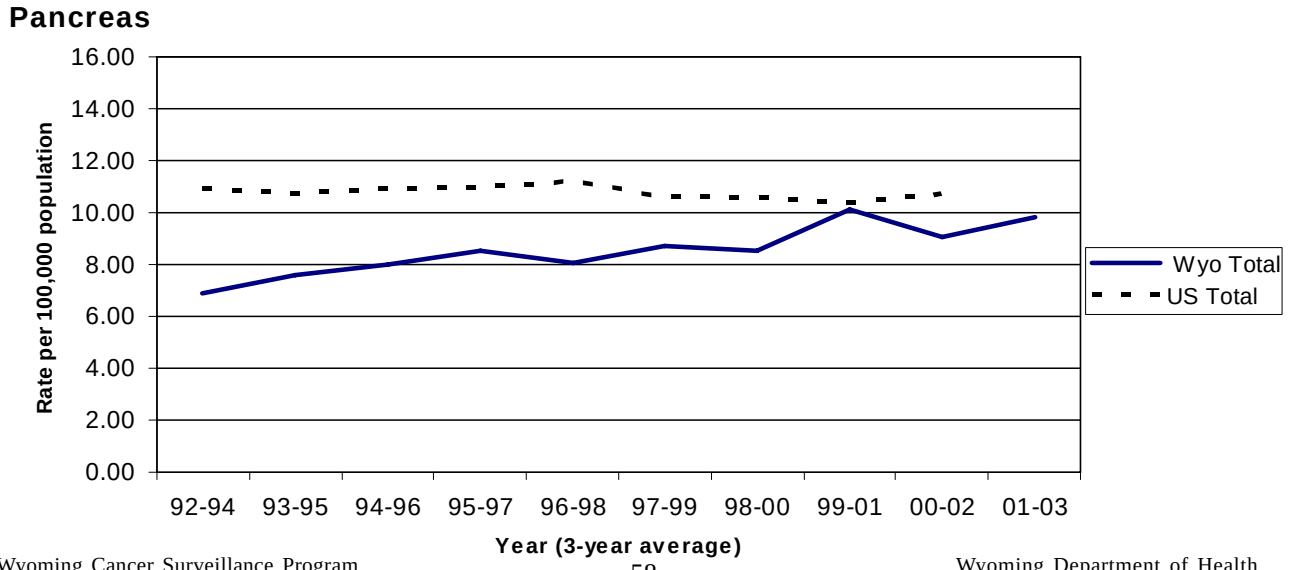
The incidence rates of cancer of the pancreas in Wyoming males, females, and the total population were all lower than the national rates. The mortality rate for males was lower, while the rates for females and total population were silghtly higher than the national rate. None of the differences were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

Wyoming's trend shows a possible increase from 00-02 to 01-03, after a decrease from 99-01 to 00-02.

The percentage of cases in each diagnostic stage were basically unchanged from 2002.

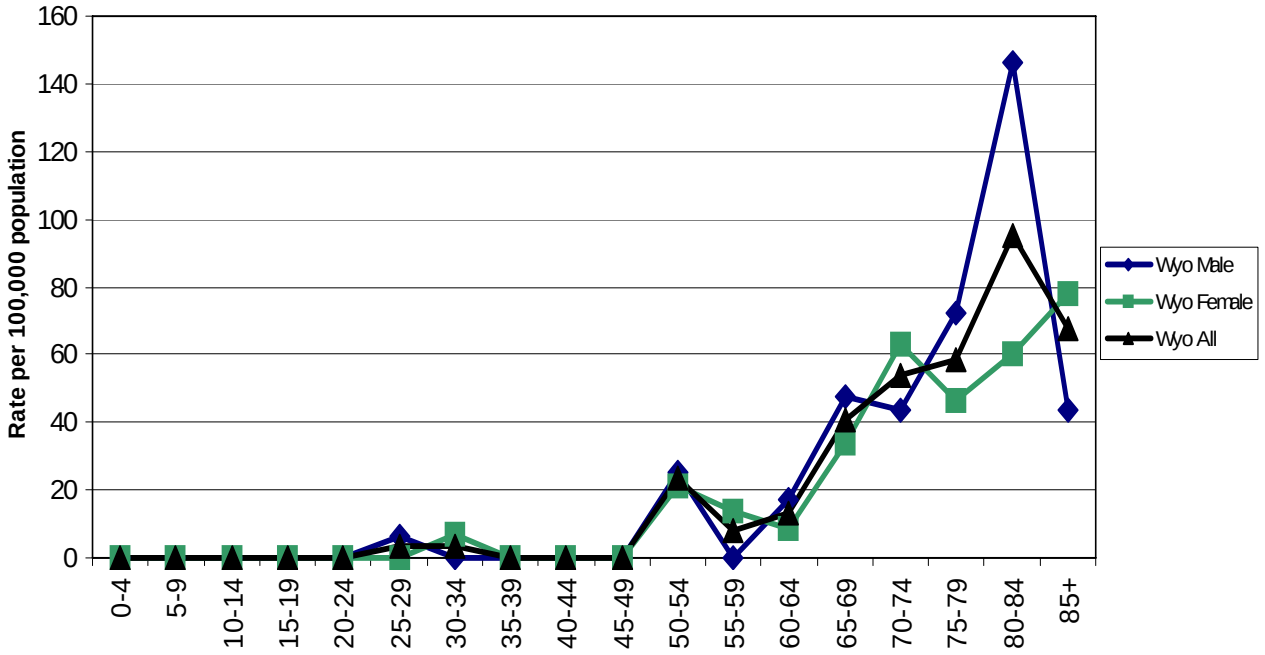
No statistically significant differences were found between the CHD's and state rates for incidence or mortality.

12-Year Incidence Trend



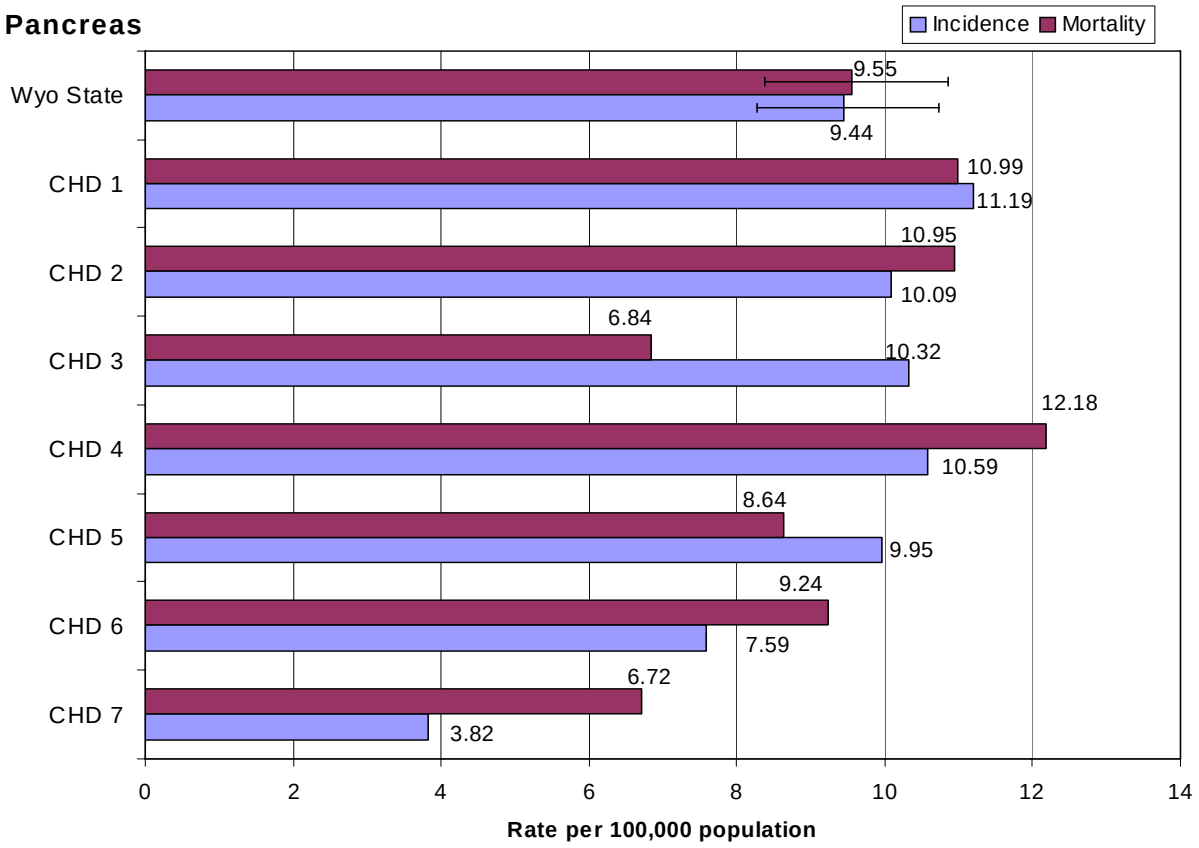
Age-Specific Incidence Rates, 2003

Pancreas



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003

Pancreas



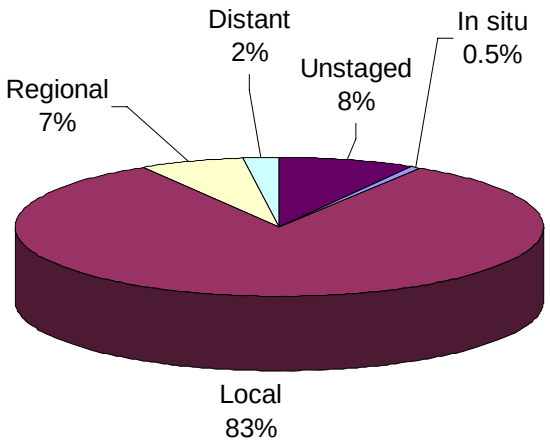
Prostate

Incidence and Mortality Summary

	Male
# Invasive Cases	414
Wyo Incidence	169.7
US Incidence	166.3
# Cancer Deaths	39
Wyo Mortality	20.4
US Mortality	25.8

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

Stage at Diagnosis



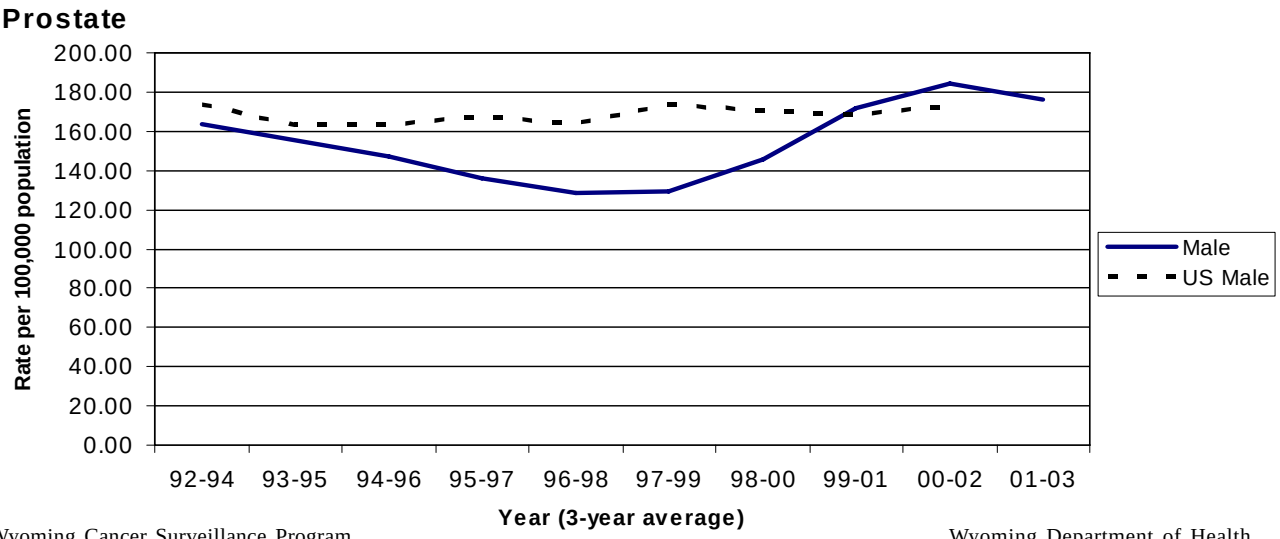
The incidence rate for prostate cancer in Wyoming males was slightly higher than the national rate, while the mortality rate in Wyoming males was lower than the national rate. Neither difference was significant.

After an upswing in prostate cancer incidence that started in 97-99, there appears to be a leveling off or even modest decline in 01-03. The national rate has remained relatively steady for the last several years.

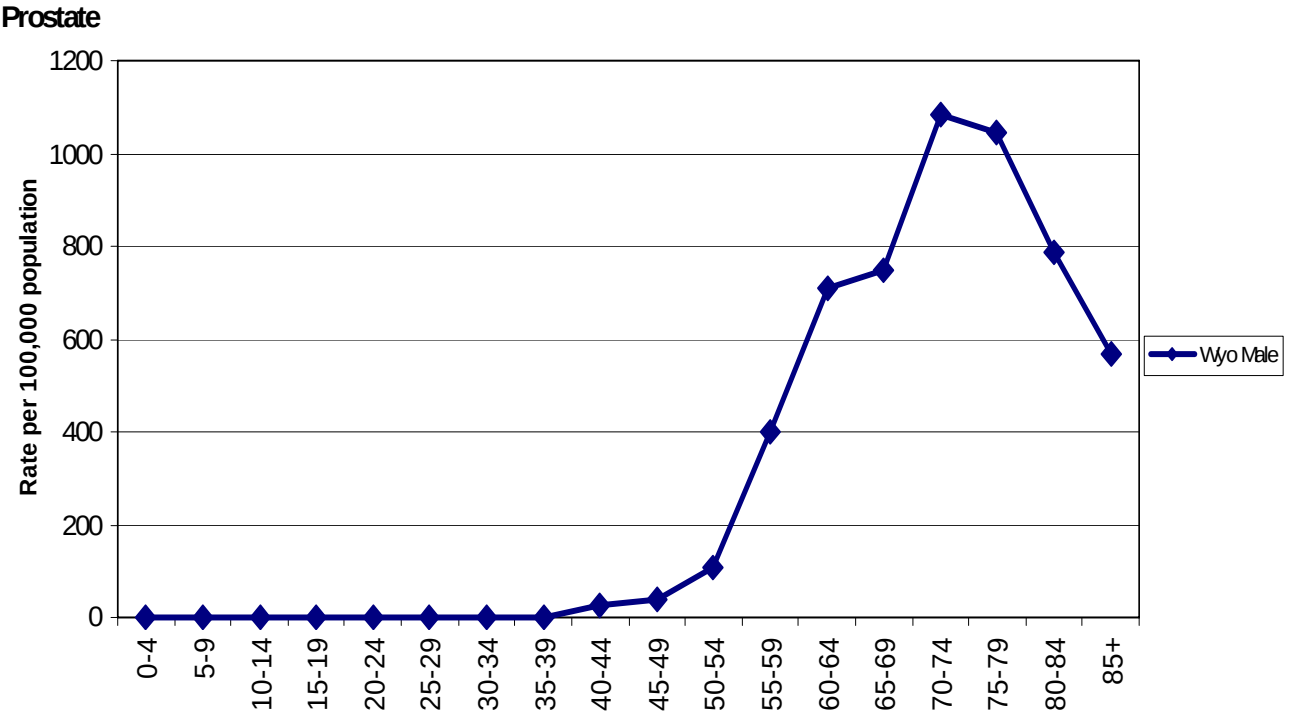
Significantly fewer cases of prostate cancer were staged as unstaged/unknown in 2003 (8%) than in 2002 (18%).

The incidence rate in CHD 1 was significantly higher than the state incidence rate for the 5-year period. However, the incidence rates in CHD 5 and CHD 7 were significantly lower than the state rate for the 5-year period. Additionally, CHD 7 has a significantly lower mortality rate than the state for this 5-year period.

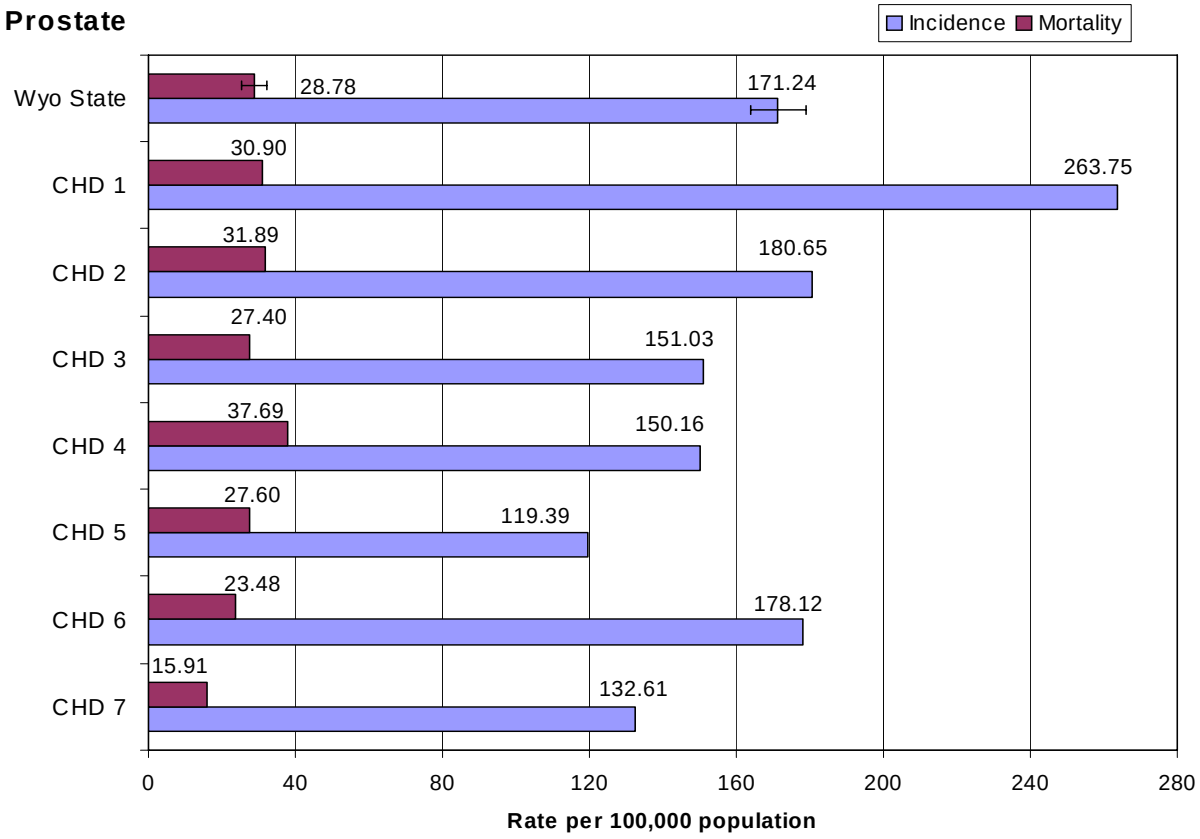
12-Year Incidence Trend



Age-Specific Incidence Rates - 2003



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003



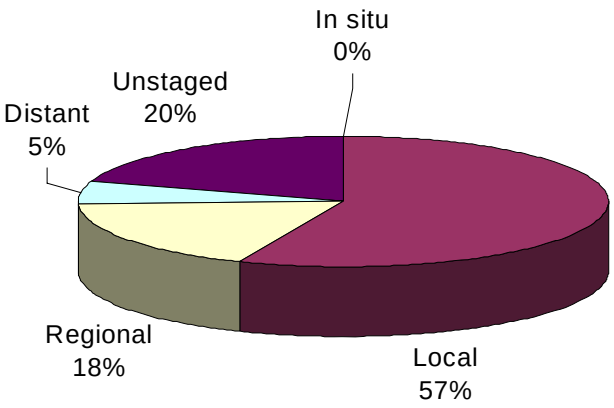
Thyroid

Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	11	44	55
Wyo Incidence	4.4	17.6	11.0
US Incidence	4.8	13.4	9.1
# Cancer Deaths	1	1	2
Wyo Mortality	NC	NC	NC
US Mortality	0.5	0.5	0.5

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

Stage at Diagnosis



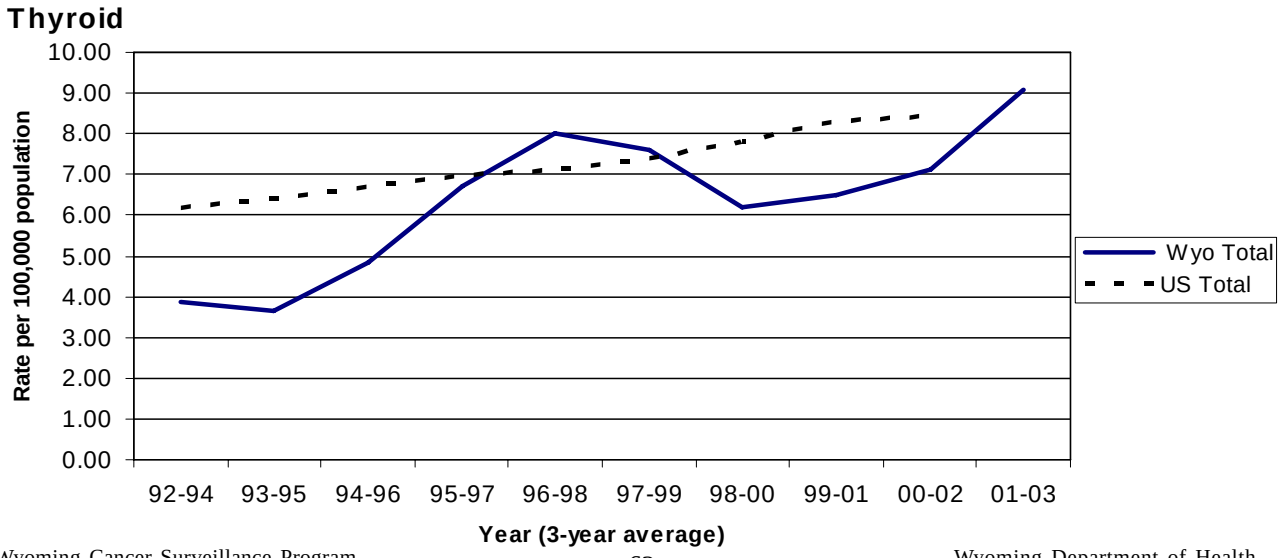
Incidence rates for thyroid cancer in Wyoming were slightly higher than the national rates for females and total population, but lower in males. These differences were not statistically significant.

There appears to be a continuation of an increasing trend for thyroid cancer in Wyoming starting in 98-00.

The percentage of cases that were not staged (unstaged or unknown) was up significantly from 7% in 2002 to 20% in 2003.

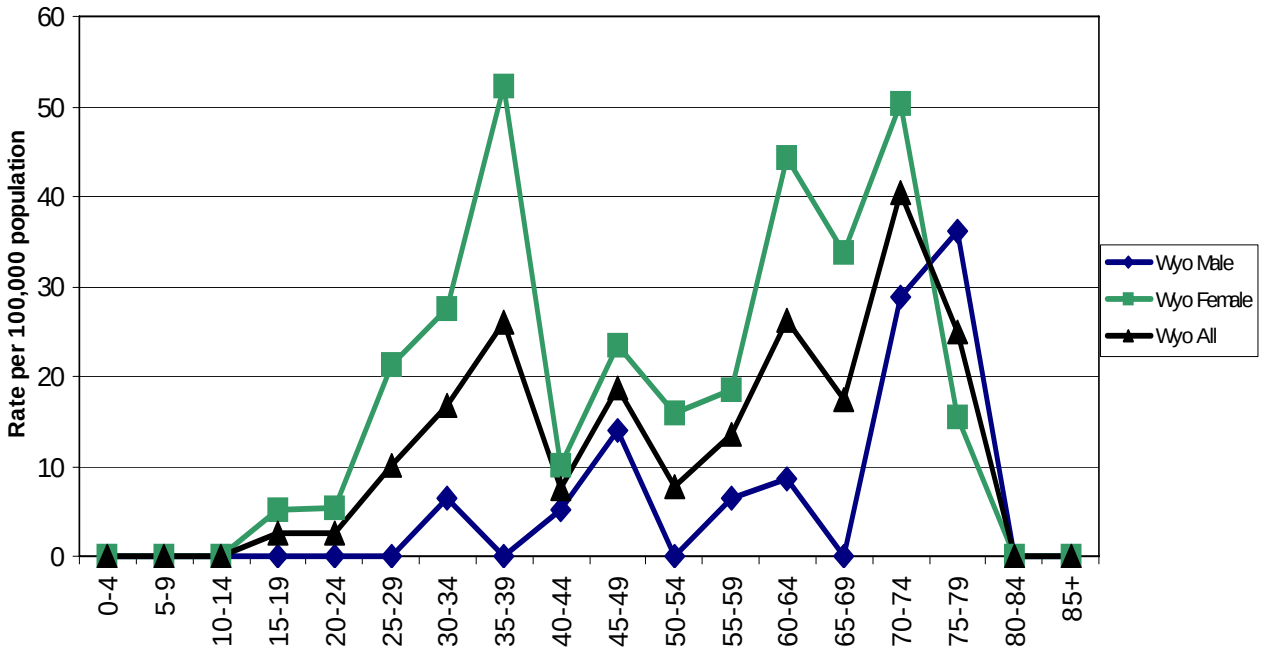
No statistically significant differences were found between the CHD's and state rate for incidence or mortality.

12-Year Incidence Trend



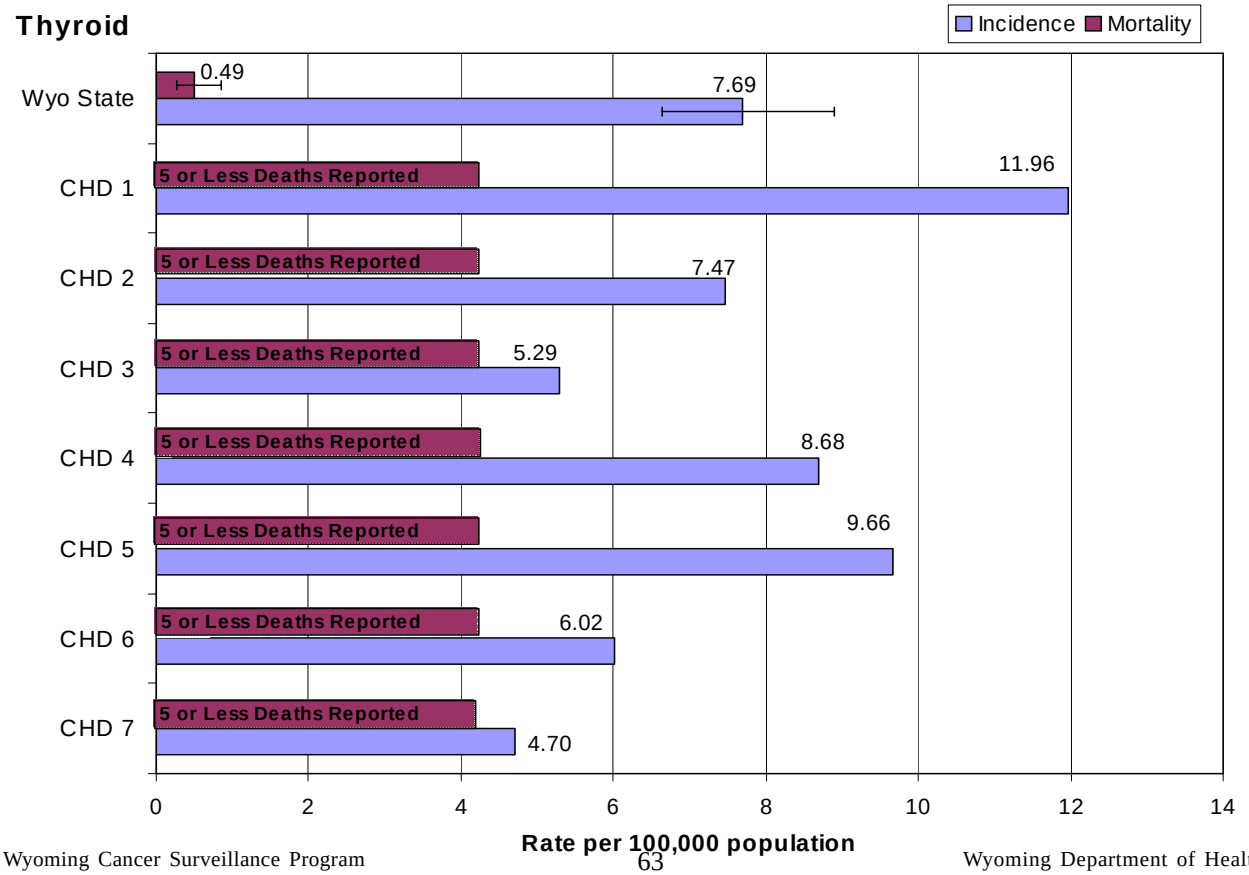
Age-Specific Incidence Rates, 2003

Thyroid



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003

Thyroid



Uterine (Corpus Uteri & Uterus)

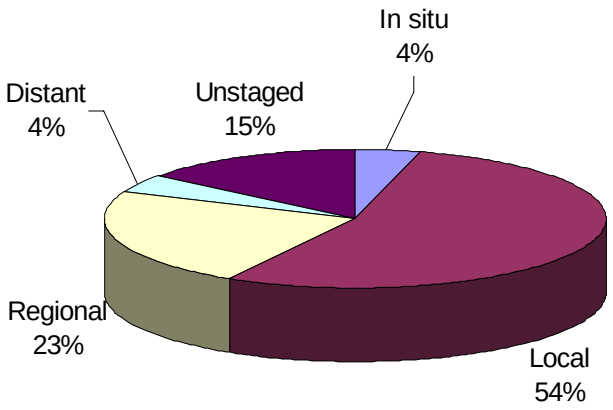
Incidence and Mortality Summary

	Female
# Invasive Cases	46
Wyo Incidence	16.3
US Incidence	24.4
# Cancer Deaths	12
Wyo Mortality	4.0
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



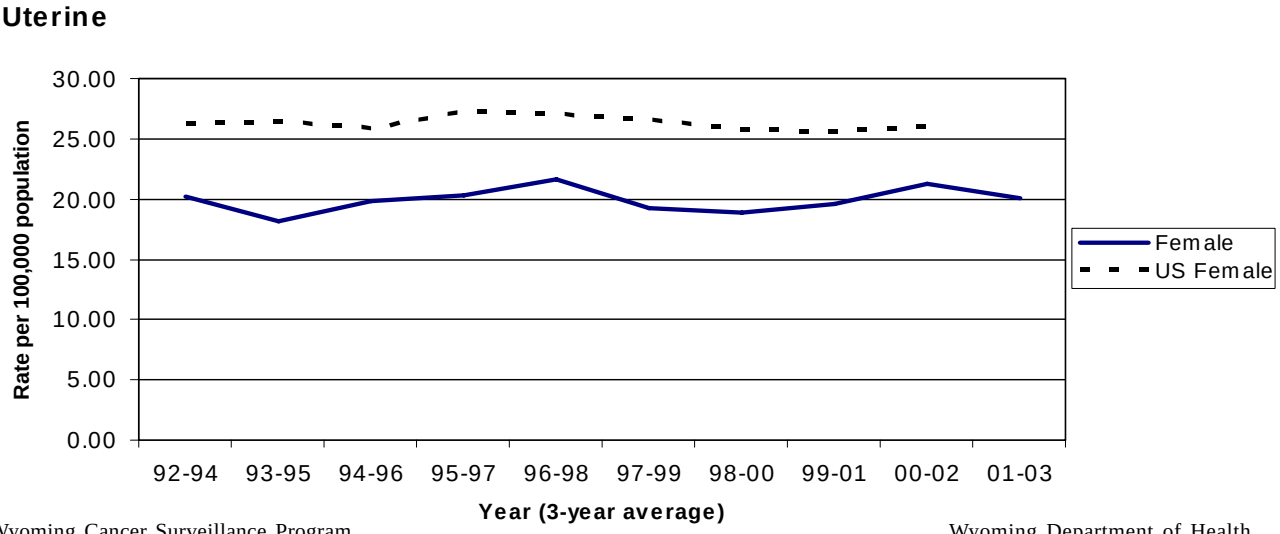
The incidence rate in Wyoming females for uterine cancer is lower than the national rate, though not significantly. The mortality rate is nearly the same as the national rate.

There appears to be a decrease in incidence in 01-03 after a small peak in 00-02. The incidence trend for the nation has remained relatively stable.

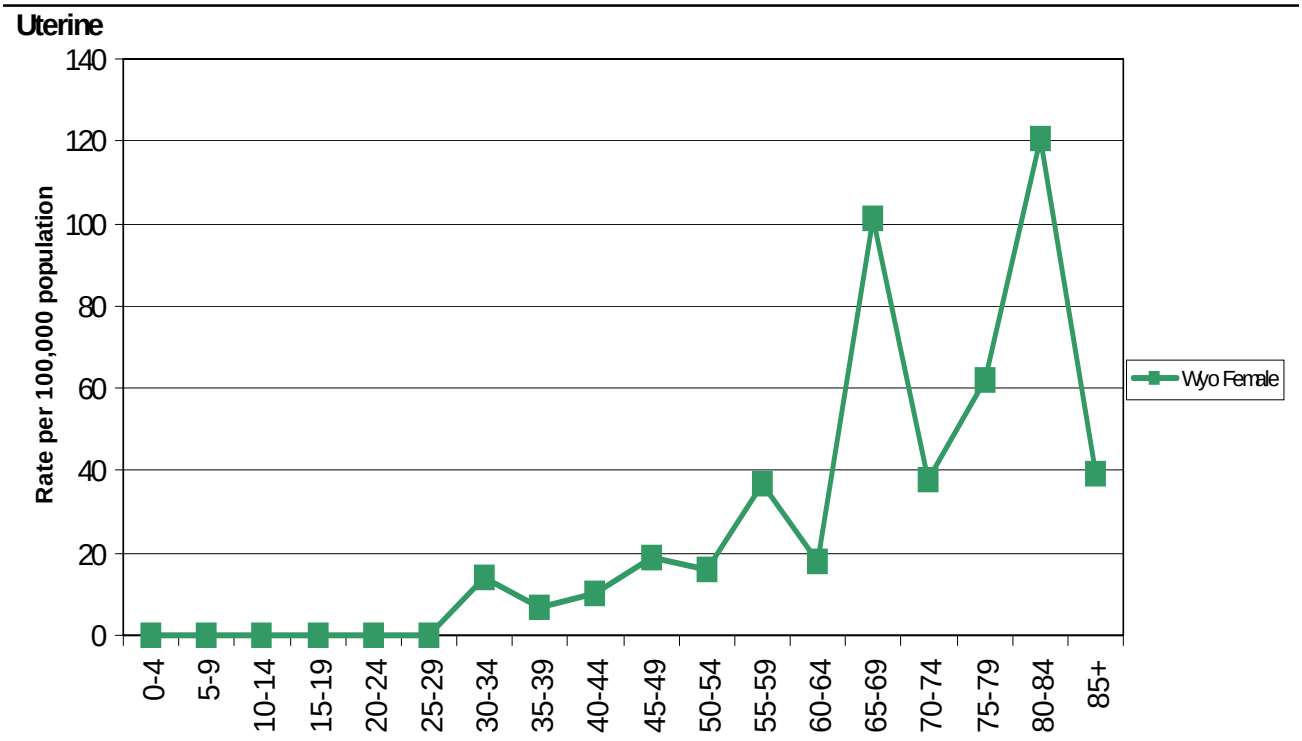
The percentage of cases that were not staged (unstaged or unknown) was up significantly from 7% in 2002 to 15% in 2003.

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

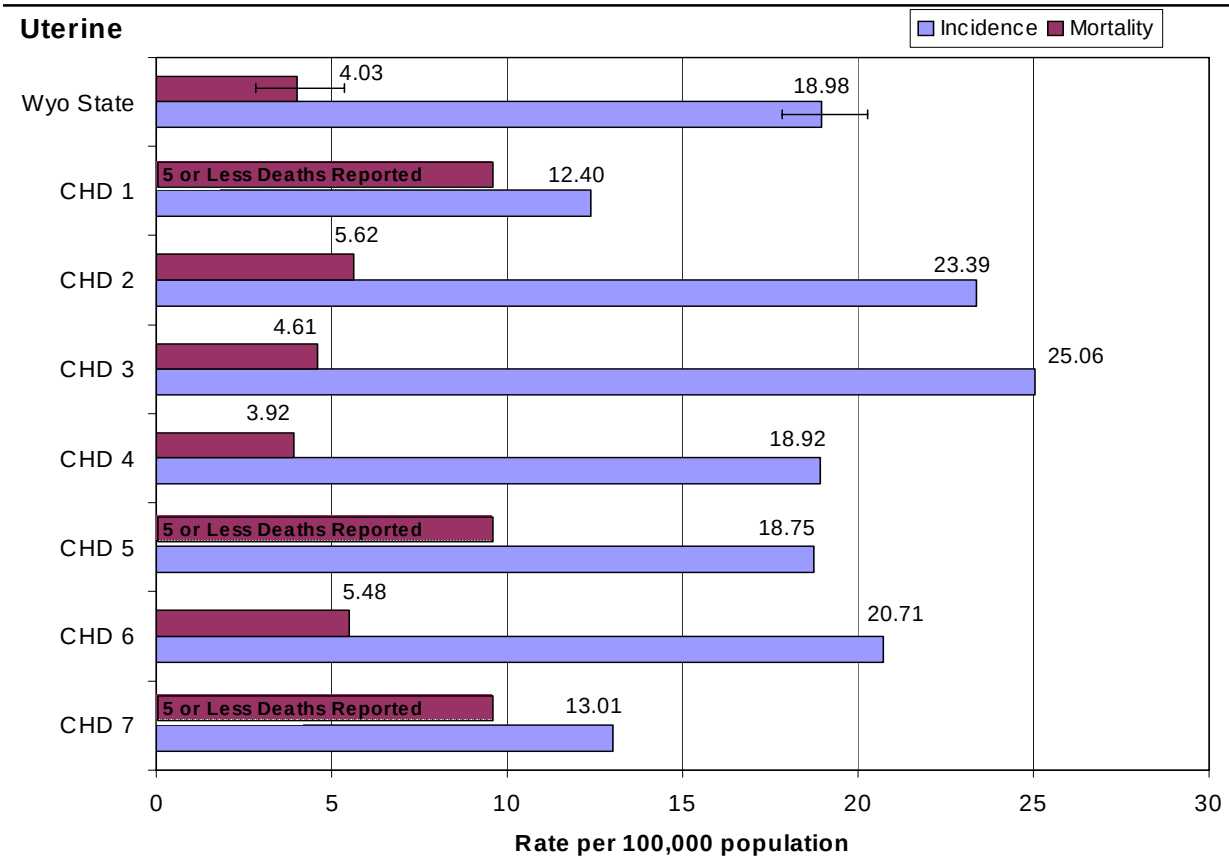
12-Year Incidence Trend



Age-Specific Incidence Rates - 2003



Cancer Health District Incidence and Mortality
5-Year Average, 1999-2003



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 (1969-2002) (SEER*STAT,Version 6.1.4), National Cancer Institute, DCCPS, Surveillance Research Program, Cancer Statistics Branch, released April 2005.

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:

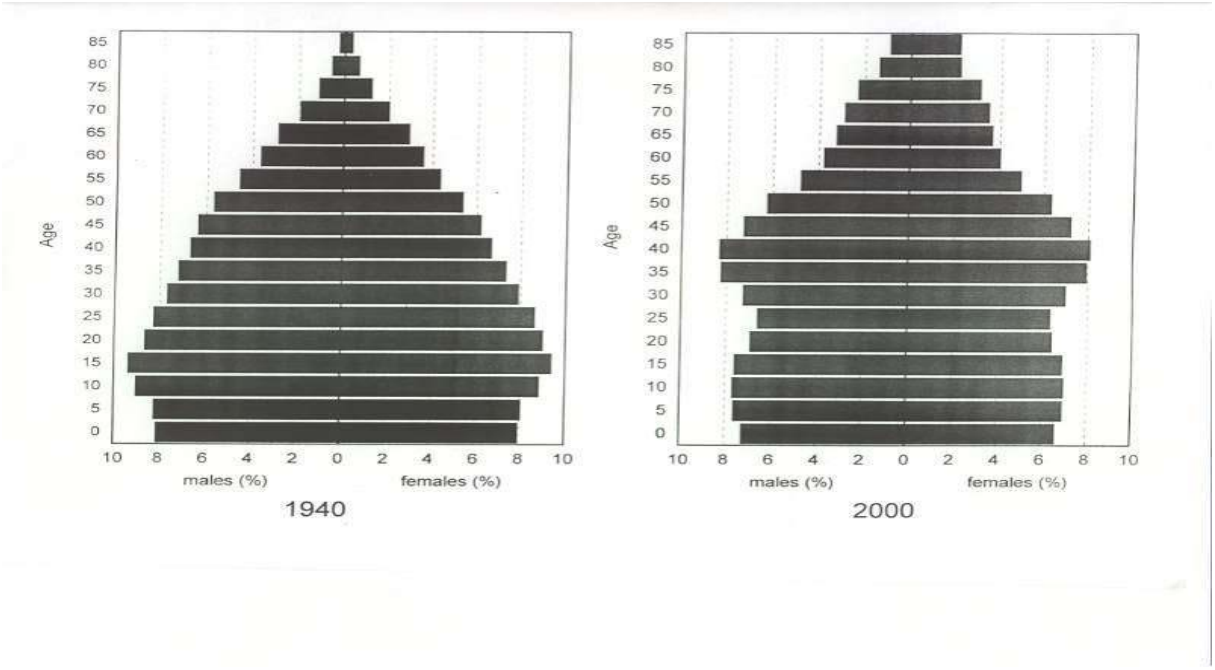
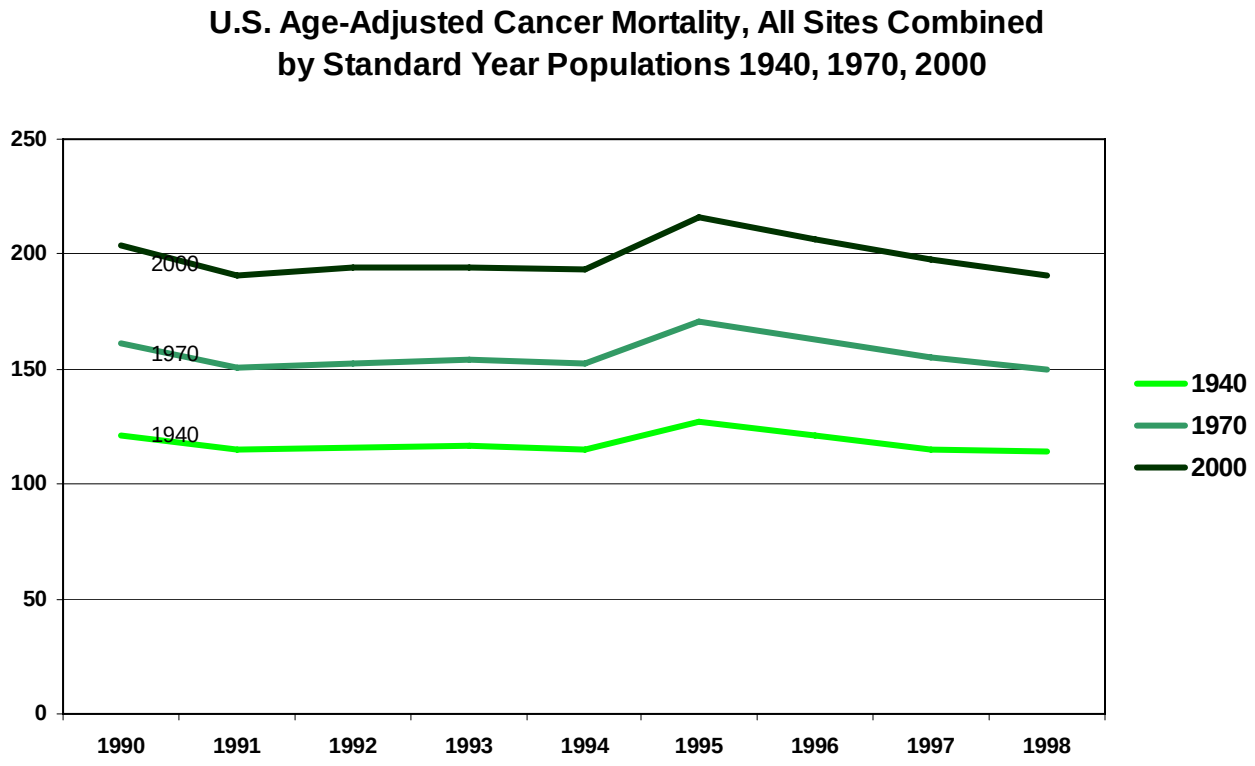


Chart B:


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