

# State of Wyoming



## Department of Health

### Annual Report on Cancer in Wyoming - 2012

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Director

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# **State of Wyoming Department of Health**

## **Annual Report on Cancer in Wyoming—2012**

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# Table of Contents

Executive Summary	7
Introduction	9
Methodology and Definitions	10
CHD Map	13
Wyoming Incidence for 2012 Cases by Gender/Age	16
Wyoming Mortality for 2012 Deaths by Gender/Age	18
Wyoming Incidence for 2012 Cases by Race/Ethnicity	20
Wyoming Mortality for 2012 Deaths by Race/Ethnicity	21
Top Incidence Cancer Sites	24
Top Mortality Cancer Sites	25
Wyoming Relative Survival Rates	28
Summaries of All Cancer Sites Combined and the Top 15 Cancer Sites	
All Sites Combined	32
Bladder (Urinary)	34
Brain/CNS	36
Breast (Female)	38
Colorectal	40
Kidney/Renal Pelvis	42
Leukemia	44
Lung/Bronchus	46
Melanoma (of the skin)	48
Non-Hodgkin Lymphoma	50
Oral Cavity and Pharynx	52
Ovary	54
Pancreas	56
Prostate	58
Thyroid	60
Uterine	62
Appendix A: References	65
Definition of Age-Adjustment	66



## Executive Summary

The incidence of and mortality from cancer in Wyoming continues to be lower the average for the United States. The incidence rates for all cancer sites for males and total population and lung cancer rates in males were the only rates that were significantly different (lower) from the national rates. The incidence rate for all cancer sites combined for Wyoming in 2012 (395.2/100,000) was down from 2011 (403.8/100,000). The 2012 mortality rate for all cancers in Wyoming (154.3/100,000) was also slightly lower than the mortality rate in 2011 (154.8/100,000).

The top five cancer sites for incidence in 2012 were: female breast, lung/bronchus, prostate, colorectal and bladder. The most common cancers for incidence by age group were melanoma (20-24 years); thyroid (25-34 years); breast cancer (35-59 years); prostate (60-69 years); lung (70-84 years); and bladder (85+ years).

The top five cancer sites for mortality were lung, colorectal, ill-defined, cancer of the pancreas, and breast cancer. The most common cancers associated with mortality by age group were colorectal (35-39 years); lung cancer (40-49 years); colorectal (50-54 years); lung cancer (55-84 years); and breast cancer (85+ years). There were fewer than two deaths per cancer site for all age groups from 0 to 34 years.

The 5-year (60 months) survival rate in all Wyoming cancer patients is quite good at 68.4%. This means that just over sixty-eight percent of all cancer patients in Wyoming are alive five years after diagnosis. Prostate cancer (99.8%), cancer of the thyroid (96.3%), and melanoma (93.5%) have the highest survival rates among Wyoming residents. The survival rates for cancer of the pancreas (4.6%) and lung cancer (16.4%) are the lowest among Wyoming residents. Additionally, children/adolescents (00-19 years) continue to have an excellent 5-year overall survival rate of 85.5%.

*Note: Basal and squamous cell carcinoma, and in situ cervical cancer are not included in the calculation of All Sites Cancer incidence and Mortality rates.*



## 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 lifestyles (e.g., smoking, diet, and alcohol consumption). Internal causes include hormone levels, immune status, and inherited conditions. Causal factors may act together or in sequence to start or promote cancer. Ten or more years often pass between carcinogenic exposures and detectable cancer.

### Prevention

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

### Wyoming Cancer Surveillance Program

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

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

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

## METHODOLOGY and DEFINITIONS

### Data Sources

#### Incidence

Definition -- Incidence is defined as the number of *new* cases diagnosed during a set time period in a defined population. Incidence is not a representation of risk. The defined time period for this report is 2011 except for the 12-year incidence trend, which used 3-year averages (e.g., 01-03 for 2002 or 05-07 for 2006). The defined population is the state of Wyoming, counties, and Cancer Health Districts (CHD) (see page 13).

Wyoming Data -- The Wyoming Cancer Surveillance Program (WCSP) gathers data on Wyoming residents diagnosed and treated for invasive and in situ tumors. The data is sent to the program's registry by every hospital in the state. Data is also collected from pathology laboratories, clinics, and physician offices throughout the state. The registry has several data exchange agreements with other state registries to enable collection of data on Wyoming residents diagnosed and/or treated outside of Wyoming. Wyoming data for this report includes 2012 cancer cases of Wyoming residents received by WCSP as of June 1, 2014.

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 2011 data for whites.** See Appendix A for reference source.

#### Mortality

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

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

National Data -- The National Center for Health Statistics (NCHS), a division of the U.S. Centers for Disease Control and Prevention (CDC), 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 2011 data for whites.** See Appendix A for reference source.

## Population

Wyoming Data -- Population estimates for Wyoming state and counties were obtained from the Wyoming Department of Administration and Information - Economic Analysis Division. Population data for 2012 by sex, age, race, and Hispanic origin. Because cancer rates are calculated by dividing the number of cancer cases by a census-generated denominator, rates can be heavily influenced by changes or uncertainties in census counts.

## **Rates**

### Age-Adjusted Incidence Rates

Incidence rates include 2012 invasive cases of Wyoming residents, except for bladder cancer which also includes in situ cases. Incidence rates presented are calculated for total cases and separately for males and females. The incidence rates are age-adjusted to the 2000 U.S. standard population using 5-year age groups, and are per 100,000 population. Age-adjustment allows rates to be compared over different time frames and allows rates from one geographic area to be compared with rates from another geographic area that may have differences in age distributions. Any observed differences in age-adjusted incidence rates are not due to differing age structures.

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

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

### Age-Adjusted Mortality Rates

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

### Age-Specific Incidence Rates

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

## Statistical Significance

### Z-Statistic

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

### Confidence Intervals

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

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

## Staging

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

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

## Cancer Health District

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

CHD 1 Laramie County

CHD 2 Albany County, Carbon County, Goshen County, Niobrara County, Platte County

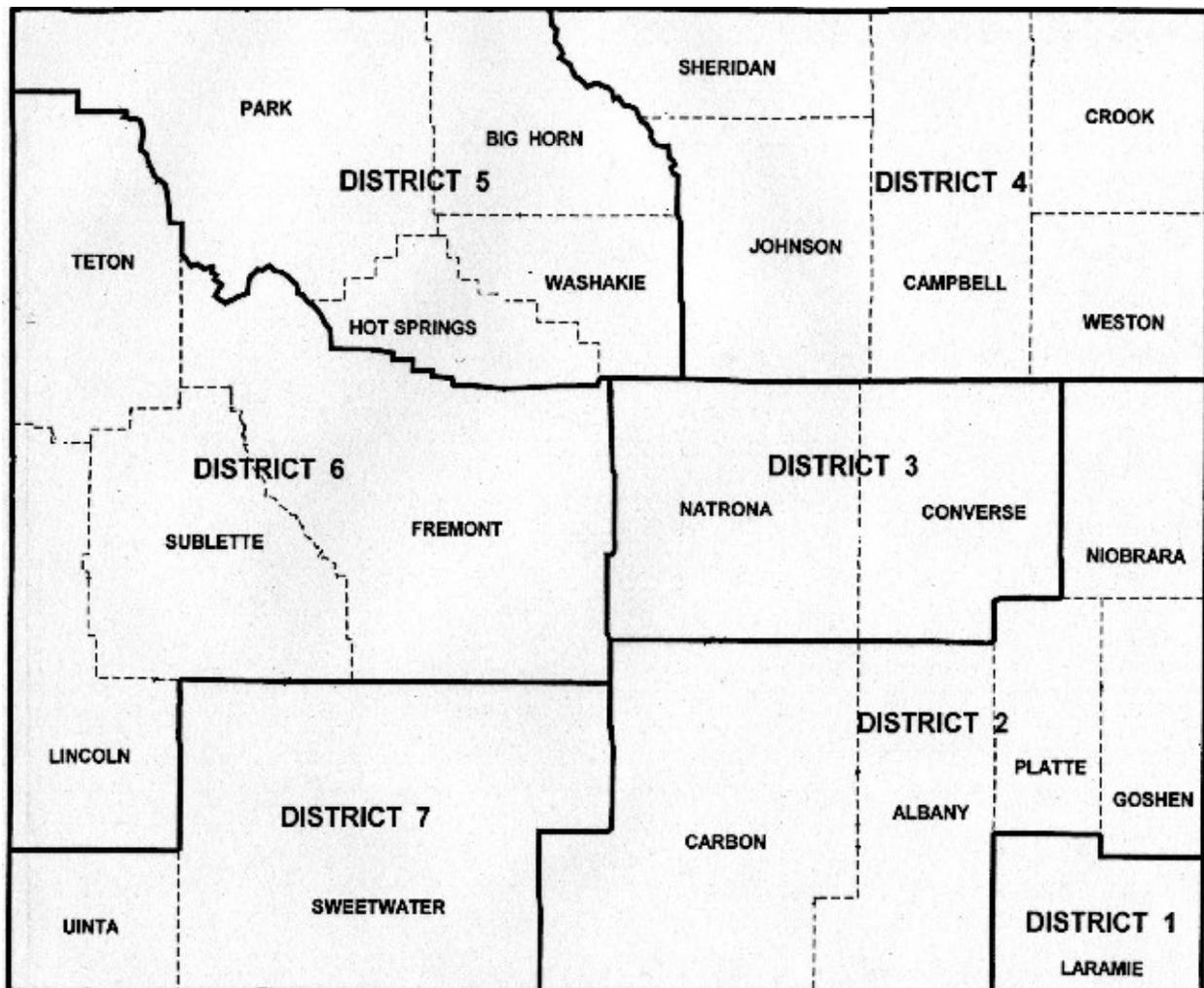
CHD 3 Converse County, Natrona County

CHD 4 Campbell County, Crook County, Johnson County, Sheridan County, Weston County

CHD 5 Big Horn County, Hot Springs County, Park County, Washakie County

CHD 6 Fremont County, Lincoln County, Sublette County, Teton County

CHD 7 Sweetwater County, Uinta County





## **State of Wyoming - 2012**

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

## Wyoming Incidence<sup>1</sup> for 2012: 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	0	8	8	0	0	0	0	0	0	0
Bladder w/ in situ	108	44	152	0	0	0	0	0	1	0
Bones and Joints	4	2	6	0	0	0	1	1	0	1
Brain	21	21	42	3	1	1	1	0	1	0
Breast	6	345	351	0	0	0	0	0	2	2
Cervix	0	17	17	0	0	0	0	0	3	3
Colorectal	145	85	230	0	0	0	0	0	0	2
Esophagus	19	5	24	0	0	0	0	0	1	0
Eye	4	0	4	0	0	0	0	0	0	0
Gallbladder	0	3	3	0	0	0	0	0	0	0
Hodgkin	8	6	14	0	0	1	0	1	1	2
III-Defined	57	59	116	2	0	0	0	0	0	1
Kidney	60	31	91	0	0	0	0	0	2	1
Larynx	16	5	21	0	0	0	0	0	0	1
Leukemia	46	39	85	0	0	0	2	1	1	1
Liver	25	8	33	0	0	0	0	0	0	0
Lung	148	159	307	0	0	0	0	0	1	1
Melanoma	62	66	128	0	0	0	1	5	4	3
Myeloma	21	16	37	0	0	0	0	0	0	0
Nasal	1	2	3	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	49	36	85	0	0	1	1	0	0	2
Oral Cavity	48	13	61	0	0	0	0	0	0	0
Other Biliary	4	4	8	0	0	0	0	0	0	0
Other Digestive	5	8	13	0	0	0	0	0	1	0
Other Endocrine	1	1	2	0	0	0	0	0	0	0
Other Female	0	15	15	0	0	0	0	1	0	1
Other Male	1	0	1	0	0	0	0	0	0	0
Other Skin	9	2	11	0	0	0	0	1	1	1
Other Respiratory	1	0	1	1	0	0	0	0	0	0
Other Urinary	1	2	3	0	0	0	0	0	0	0
Ovary	0	47	47	0	0	0	1	1	0	0
Pancreas	25	30	55	0	0	0	0	0	0	1
Prostate	306	0	306	0	0	0	0	0	0	0
Small Intestine	6	5	11	0	0	0	0	0	0	0
Soft Tissue including Heart	14	8	22	2	1	0	0	0	0	0
Stomach	17	9	26	0	0	0	0	0	0	0
Testis	18	0	18	0	0	0	1	1	5	0
Thyroid	19	51	70	0	0	1	1	1	7	5
Uterine	0	81	81	0	0	0	0	0	0	2
Mesothelioma	4	2	6	0	0	0	0	0	0	0
All Sites	1,279	1,235	2,514	8	2	4	9	13	31	30

<sup>1</sup> 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	1	0	1	0	0	2	2	0	1	1	0
Bladder w/ in situ	1	0	5	7	16	16	17	26	14	26	23
Bones and Joints	0	1	0	0	1	1	0	0	0	0	0
Brain	1	5	1	4	2	6	8	4	1	3	0
Breast	6	19	26	32	49	49	59	30	34	27	16
Cervix	4	2	1	0	0	2	1	0	1	0	0
Colorectal	5	4	11	20	18	31	34	28	28	31	18
Esophagus	0	1	0	1	5	6	3	3	2	1	1
Eye	0	0	0	1	1	1	1	0	0	0	0
Gallbladder	0	0	0	0	1	0	0	1	0	1	0
Hodgkin	2	1	2	1	1	0	2	0	0	0	0
Ill-Defined	0	1	4	9	8	16	11	13	15	19	17
Kidney	1	4	6	7	11	11	16	14	10	6	2
Larynx	0	2	1	0	4	1	4	4	0	3	1
Leukemia	0	4	0	5	11	11	15	8	13	5	8
Liver	0	0	1	2	9	6	3	8	2	2	0
Lung	0	3	5	22	22	53	50	48	44	38	20
Melanoma	6	8	12	6	10	14	14	12	10	13	10
Myeloma	0	0	2	4	6	7	3	2	6	4	3
Nasal	0	0	0	0	0	0	2	0	0	0	1
Non-Hodgkin Lymphoma	2	2	6	2	11	10	16	10	8	4	10
Oral Cavity	3	0	7	8	16	10	2	5	4	4	2
Other Biliary	0	0	0	0	3	0	1	1	1	0	2
Other Digestive	0	1	1	1	1	1	2	1	2	1	1
Other Endocrine	0	0	0	0	1	0	1	0	0	0	0
Other Female	0	0	1	1	3	3	1	0	3	0	1
Other Male	0	0	0	0	0	0	1	0	0	0	0
Other Skin	0	0	0	0	2	0	0	0	1	1	4
Other Respiratory	0	0	0	0	0	0	0	0	0	0	0
Other Urinary	0	0	0	0	0	0	2	1	0	0	0
Ovary	1	2	1	4	2	8	13	3	7	2	2
Pancreas	0	2	1	3	5	4	9	8	5	6	11
Prostate	0	1	6	16	47	65	75	47	26	18	5
Small Intestine	0	0	0	2	1	0	2	2	1	1	2
Soft Tissue including Heart	0	2	0	2	1	2	3	4	2	1	2
Stomach	0	0	3	1	4	3	9	1	1	3	1
Testis	0	3	1	5	2	0	0	0	0	0	0
Thyroid	4	9	9	3	7	9	4	2	6	2	0
Uterine	2	4	3	10	12	22	10	8	3	5	0
Mesothelioma	0	0	0	0	0	1	1	2	1	1	0
All Sites	39	81	117	179	293	371	397	296	252	229	163

## Wyoming Mortality<sup>1</sup> for 2012: Deaths by Gender and Age (All Sites)

	Male	Female	Total	00-04	05-09	10-14	15-19	20-24	25-29	30-34
Anus	0	1	1	0	0	0	0	0	0	0
Bladder w/ in situ	23	5	28	0	0	0	0	0	0	0
Bones and Joints	4	1	5	0	0	0	0	0	0	0
Brain	17	13	30	0	0	0	0	0	0	1
Breast	1	52	53	0	0	0	0	0	0	1
Cervix	0	10	10	0	0	0	0	0	0	1
Colorectal	55	40	95	0	0	0	0	1	0	1
Esophagus	28	4	32	0	0	0	0	0	0	0
Eye	0	0	0	0	0	0	0	0	0	0
Gallbladder	0	1	1	0	0	0	0	0	0	0
Hodgkin	0	2	2	0	0	0	0	0	0	0
III-Defined	46	38	84	0	1	0	0	0	0	0
Kidney	15	7	22	0	0	0	0	0	0	0
Larynx	3	1	4	0	0	0	0	0	0	0
Leukemia	24	14	38	0	0	0	0	0	0	0
Liver	22	9	31	0	0	0	0	0	0	0
Lung	117	113	230	0	0	0	0	0	0	0
Melanoma	6	8	14	0	0	0	0	0	0	0
Myeloma	13	11	24	0	0	0	0	0	0	0
Nasal	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	12	11	23	0	0	0	0	0	0	0
Oral Cavity	10	4	14	0	0	0	0	0	0	0
Other Biliary	5	4	9	0	0	0	0	0	0	0
Other Digestive	3	4	7	0	0	0	0	0	0	0
Other Endocrine	0	0	0	0	0	0	0	0	0	0
Other Female	0	1	1	0	0	0	0	0	0	0
Other Male	1	0	1	0	0	0	0	0	0	0
Other Skin	4	1	5	0	0	0	0	0	0	0
Other Respiratory	0	0	0	0	0	0	0	0	0	0
Other Urinary	0	1	1	0	0	0	0	0	0	0
Ovary	0	41	41	0	0	0	0	0	0	0
Pancreas	22	33	55	0	0	0	0	0	0	0
Prostate	41	0	41	0	0	0	0	0	0	0
Small Intestine	2	0	2	0	0	0	0	0	0	0
Soft Tissue including Heart	5	8	13	0	0	0	0	0	0	1
Stomach	10	9	19	0	0	0	0	0	0	0
Testis	0	0	0	0	0	0	0	0	0	0
Thyroid	0	2	2	0	0	0	0	0	0	0
Uterine	0	11	11	0	0	0	0	0	0	0
Mesothelioma	2	2	4	0	0	0	0	0	0	0
All Sites	491	462	953	0	1	0	0	1	0	5

<sup>1</sup>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	1	0	0	0	0	0
Bladder w/ in situ	0	0	0	0	3	2	0	2	5	7	9
Bones and Joints	0	0	0	0	0	0	0	1	1	1	2
Brain	0	2	0	2	3	7	5	3	5	1	1
Breast	0	2	1	4	6	8	7	4	6	6	8
Cervix	0	0	1	1	1	1	1	2	1	0	1
Colorectal	2	0	2	10	8	7	5	14	11	13	21
Esophagus	0	0	2	5	4	7	6	2	2	1	3
Eye	0	0	0	0	0	0	0	0	0	0	0
Gallbladder	0	0	0	0	0	0	0	0	0	1	0
Hodgkin	0	0	0	0	0	0	0	1	1	0	0
III-Defined	0	0	0	5	9	8	9	9	12	17	14
Kidney	0	0	0	3	1	5	2	3	4	2	2
Larynx	0	0	0	0	1	1	2	0	0	0	0
Leukemia	0	1	1	0	4	3	3	4	6	5	11
Liver	0	0	0	2	6	8	0	8	3	2	2
Lung	1	3	3	8	11	33	32	45	45	28	21
Melanoma	0	0	3	2	1	0	0	1	1	2	4
Myeloma	0	1	0	1	0	2	3	2	4	5	6
Nasal	0	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	0	0	1	0	4	1	2	2	5	2	6
Oral Cavity	0	0	0	2	2	2	1	2	1	1	3
Other Biliary	0	1	0	0	2	1	2	1	0	1	1
Other Digestive	0	0	0	1	0	0	0	1	1	3	1
Other Endocrine	0	0	0	0	0	0	0	0	0	0	0
Other Female	0	0	0	0	0	0	0	1	0	0	0
Other Male	0	0	0	0	0	0	0	1	0	0	0
Other Skin	0	0	0	0	2	2	0	0	1	0	0
Other Respiratory	0	0	0	0	0	0	0	0	0	0	0
Other Urinary	0	0	0	0	0	0	0	1	0	0	0
Ovary	0	1	3	2	3	8	7	5	6	5	1
Pancreas	0	2	1	1	5	5	9	8	7	8	9
Prostate	0	0	0	1	0	2	6	7	5	9	11
Small Intestine	0	0	0	0	0	1	0	1	0	0	0
Soft Tissue including Heart	0	0	0	2	0	1	1	3	1	1	3
Stomach	0	1	1	3	0	1	5	2	1	3	2
Testis	0	0	0	0	0	0	0	0	0	0	0
Thyroid	0	0	0	0	0	1	0	0	0	0	1
Uterine	0	0	0	3	0	3	1	0	2	2	0
Mesothelioma	0	0	0	0	0	1	0	0	1	1	1
All Sites	3	14	19	58	76	122	109	136	138	127	144

### Wyoming Incidence for 2012: Cases by Race and Ethnicity (Top 15 Sites Only)

	Total	White	African American	Native American	Asian	Other	Ethnicity: Hispanic/Latino
<b>All Sites</b>	2,432	2,404	8	14	5	1	81
<b>Bladder</b>	152	152	0	0	0	0	4
<b>Brain</b>	42	42	0	0	0	0	2
<b>Breast (Female)</b>	351	350	0	1	0	0	12
<b>Colorectal</b>	230	225	4	1	0	0	8
<b>Kidney</b>	91	88	1	2	0	0	2
<b>Leukemia</b>	85	84	0	1	0	0	2
<b>Lung</b>	307	305	1	0	1	0	14
<b>Melanoma</b>	128	127	0	1	0	0	1
<b>Non-Hodgkin Lymphoma</b>	85	85	0	0	0	0	1
<b>Oral Cavity</b>	61	59	0	1	1	0	3
<b>Ovary</b>	47	47	0	0	0	0	1
<b>Pancreas</b>	55	55	0	0	0	0	5
<b>Prostate</b>	306	304	0	0	2	0	9
<b>Thyroid</b>	70	69	0	0	0	1	2
<b>Uterine</b>	81	77	2	2	0	0	1

### Wyoming Mortality for 2012: Cases by Race and Ethnicity (Top 15 Sites Only)

	Total	White	African American	Native American	Asian	Other	Ethnicity: Hispanic/Latino
<b>All Sites</b>	953	928	5	17	2	1	34
<b>Bladder</b>	28	28	0	0	0	0	1
<b>Brain/CNS</b>	30	29	0	0	1	0	1
<b>Breast (Female)</b>	53	52	0	0	0	1	1
<b>Colorectal</b>	95	93	0	2	0	0	5
<b>Kidney</b>	22	22	0	0	0	0	1
<b>Leukemia</b>	38	36	2	0	0	0	1
<b>Lung</b>	230	223	1	6	0	0	9
<b>Melanoma</b>	14	13	0	1	0	0	0
<b>Non-Hodgkin Lymphoma</b>	23	22	1	0	0	0	1
<b>Oral Cavity</b>	14	14	0	0	0	0	0
<b>Ovary</b>	41	40	0	1	0	0	1
<b>Pancreas</b>	55	54	0	1	0	0	5
<b>Prostate</b>	41	41	0	0	0	0	1
<b>Thyroid</b>	2	2	0	0	0	0	0
<b>Uterine</b>	11	10	1	0	0	0	0



## **State of Wyoming - 2012**

### **Top Cancer Sites by Gender and Age - Incidence and Mortality**

## Top Incidence Cancer Sites by Gender - 2012

Total		Male		Female	
Breast	351	Prostate	306	Breast	345
Lung	307	Lung	148	Lung	159
Prostate	306	Colorectal	145	Colorectal	85
Colorectal	230	Bladder	108	Uterine	81
Bladder	152	Melanoma	62	Melanoma	66

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

<u>0-4</u>		<u>5-9</u>		<u>10-14</u>		<u>15-19</u>		<u>20-24</u>	
Brain	3	All Cancers have 2 or less		All Cancers have 2 or less		All Cancers have 2 or less		Melanoma	5
<u>25-29</u>		<u>30-34</u>		<u>35-39</u>		<u>40-44</u>		<u>45-49</u>	
Thyroid	7	Thyroid	5	Breast	6	Breast	19	Breast	26
Testis	5	Melanoma	3	Melanoma	6	Thyroid	9	Melanoma	12
Melanoma	4	Cervix	3	Colorectal	5	Melanoma	8	Colorectal	11
Cervix	3			Thyroid	4	Brain	5	Thyroid	9
								Oral Cavity	7
<u>50-54</u>		<u>55-59</u>		<u>60-64</u>		<u>65-69</u>		<u>70-74</u>	
Breast	32	Breast	49	Prostate	65	Prostate	75	Lung	48
Lung	22	Prostate	47	Lung	53	Breast	59	Prostate	47
Colorectal	20	Lung	22	Breast	49	Lung	50	Breast	30
Prostate	16	Colorectal	18	Colorectal	31	Colorectal	34	Colorectal	28
Uterine	10			Uterine	22	Bladder	17	Bladder	26
<u>75-79</u>		<u>80-84</u>		<u>85+</u>					
Lung	44	Lung	38	Bladder	23				
Breast	34	Colorectal	31	Lung	20				
Colorectal	28	Breast	27	Colorectal	18				
Prostate	26	Bladder	26	Ill-Defined	17				
Ill-Defined	15	Prostate	18	Breast	16				





**Relative Survival Rates State of Wyoming  
2001-2012  
All Sites and Top 15 Cancers**

### Relative Survival by Cancer Type: 2001-2012 (All Ages Combined)

	12 months	24 months	36 months	48 months	<b>60 months</b>
All Sites	82.10%	75.90%	72.50%	70.20%	<b>68.40%</b>
Bladder w/in situ	91.10%	84.60%	81.80%	78.10%	<b>76.10%</b>
Brain/CNS	56.60%	41.70%	37.80%	34.20%	<b>31.80%</b>
Breast (Female)	97.40%	95.20%	93.10%	91.70%	<b>89.90%</b>
Colorectal	83.20%	74.40%	68.90%	64.80%	<b>62.10%</b>
Kidney	86.20%	79.10%	75.50%	72.30%	<b>68.70%</b>
Leukemia	77.10%	70.40%	66.10%	62.20%	<b>59.00%</b>
Lung	43.30%	27.10%	21.60%	18.40%	<b>16.40%</b>
Melanoma	98.40%	96.50%	95.10%	93.60%	<b>93.50%</b>
Non Hodgkin	83.10%	78.00%	76.00%	72.10%	<b>70.20%</b>
Oral Cavity	85.90%	77.90%	72.40%	67.50%	<b>63.70%</b>
Ovary	76.10%	65.00%	53.30%	47.80%	<b>41.80%</b>
Pancreas	27.70%	14.60%	8.30%	6.20%	<b>4.60%</b>
Prostate	99.90%	99.90%	99.90%	99.80%	<b>99.80%</b>
Thyroid	97.30%	97.20%	96.50%	96.40%	<b>96.30%</b>
Uterine	94.40%	90.20%	87.80%	87.60%	<b>84.30%</b>

### Relative Survival by Cancer Type: 2001-2012 (Ages 00-19 years old)

	12 Months	24 Months	36 Months	48 Months	60 Months
All Sites	92.70%	88.90%	88.90%	87.30%	<b>85.50%</b>
Brain	81.70%	73.10%	73.10%	67.30%	<b>64.10%</b>
Leukemia	93.20%	89.40%	89.40%	89.40%	<b>86.60%</b>
Melanoma	85.70%	85.70%	85.70%	85.70%	<b>85.70%</b>
Non-Hodgkin	92.90%	85.80%	85.80%	85.80%	<b>85.80%</b>

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

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

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

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



**Summary of  
All Cancer Sites Combined  
and  
Top 15 Sites**

**2012 Wyoming Incidence and Mortality Rates**

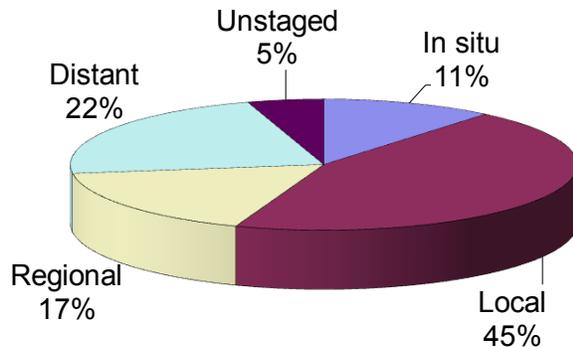
# All Cancer Sites

## Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	1,279	1,235	2,514
# In situ Cases	142	160	302
WY Incidence	412.9*	383.7	395.2*
US Incidence	502.5	414.4	450.5
# Cancer Deaths	491	462	953
WY Mortality	169.4*	143.2	154.3
US Mortality	203.2	143.4	168.5

\* 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 for Wyoming's total population and males were significantly lower than the United States rates. The incidence rates for females were also lower, though not significantly. The mortality rates for total population, males and females were all lower than the United States mortality with only the rate for males being statistically significant.

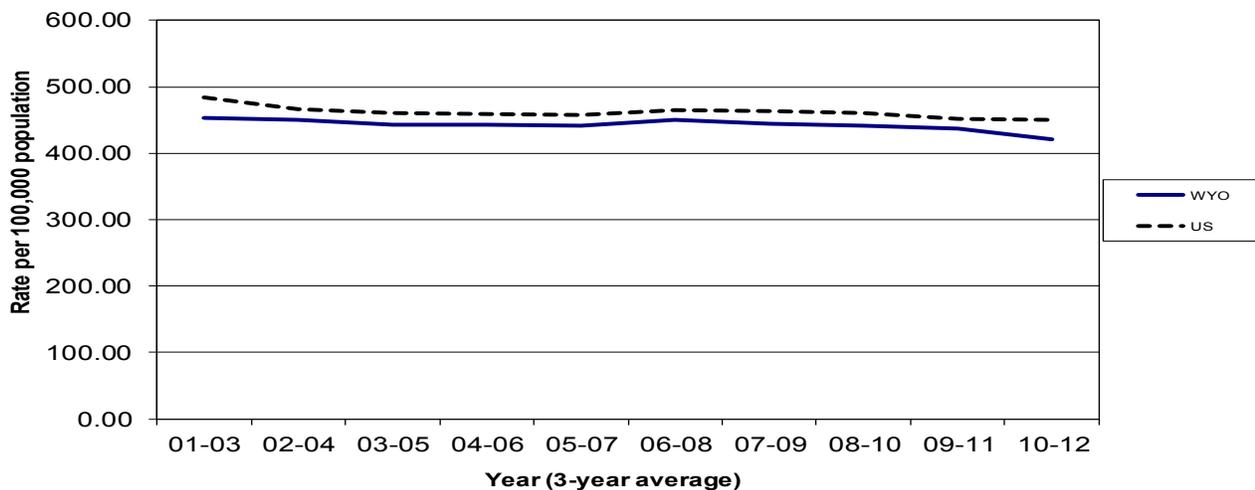
The 12-year incidence trend for Wyoming seems to be declining slightly while the U.S. trend appears steady.

There were no significant changes in the percentages of cancer diagnosed at each stage from 2011 to 2012.

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

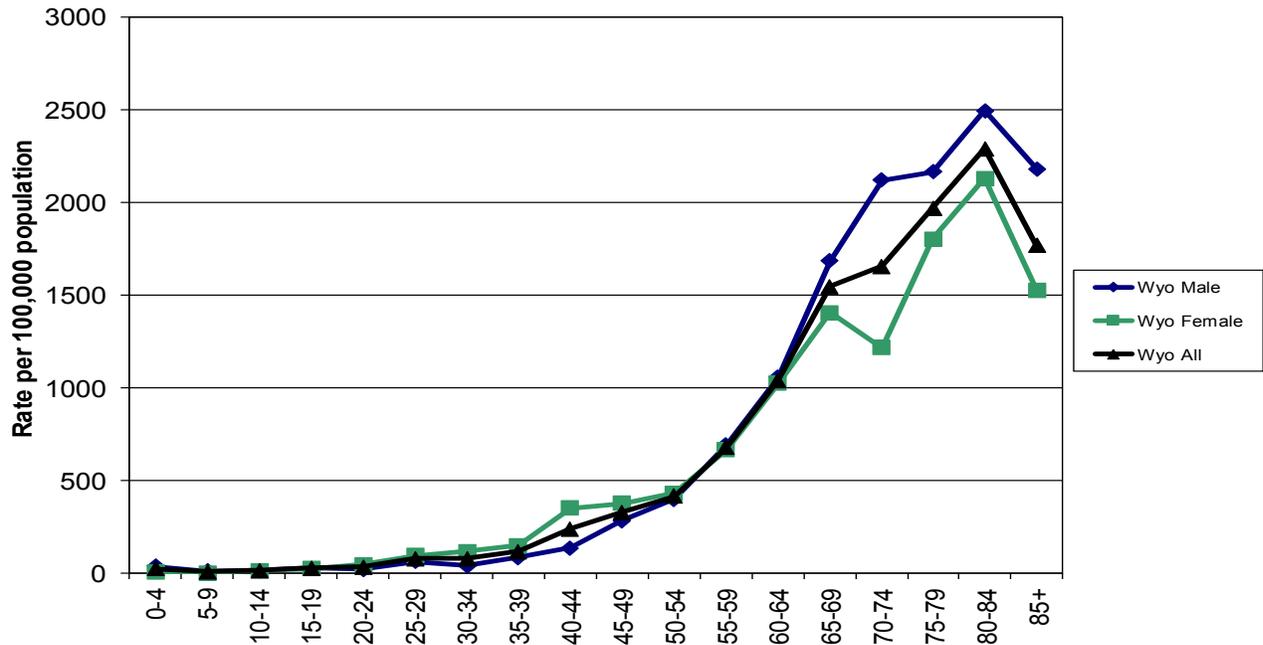
## 12-Year Incidence Trend

### All Cancer Sites Combined



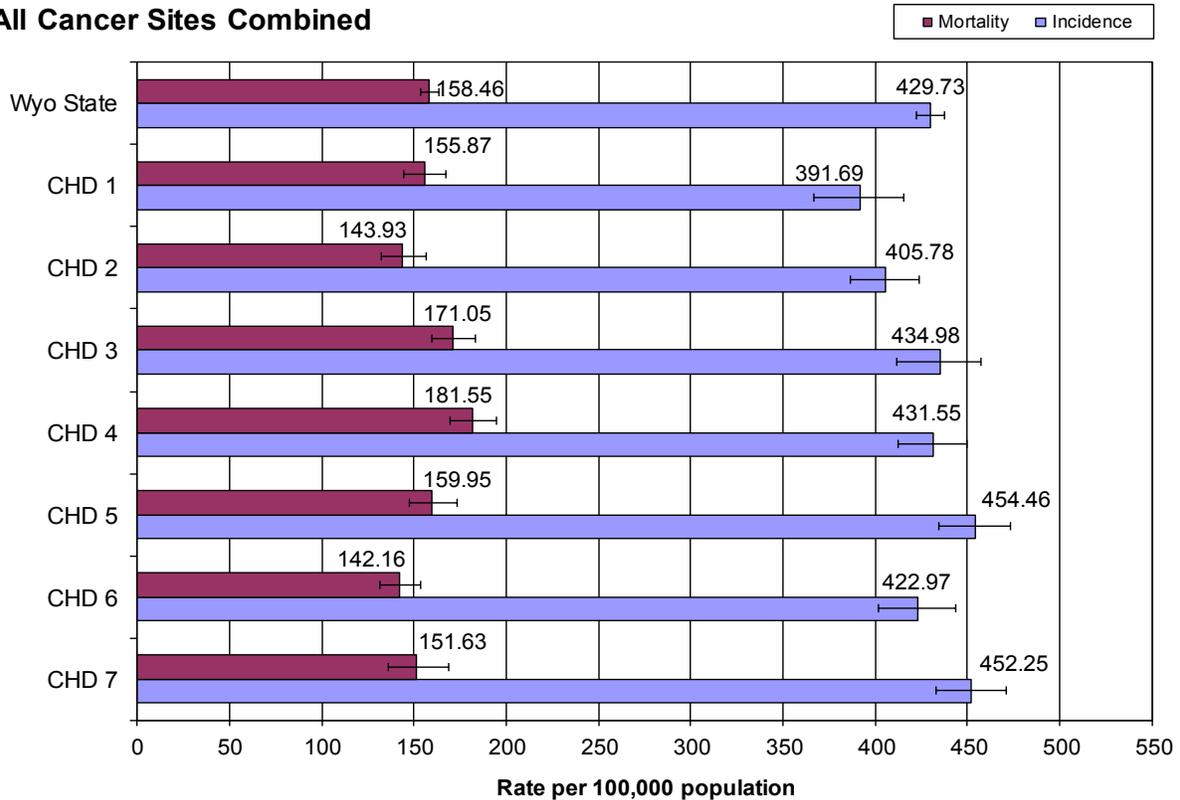
## Age-Specific Incidence Rates - 2012

### All Cancer Sites Combined



## Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012

### All Cancer Sites Combined



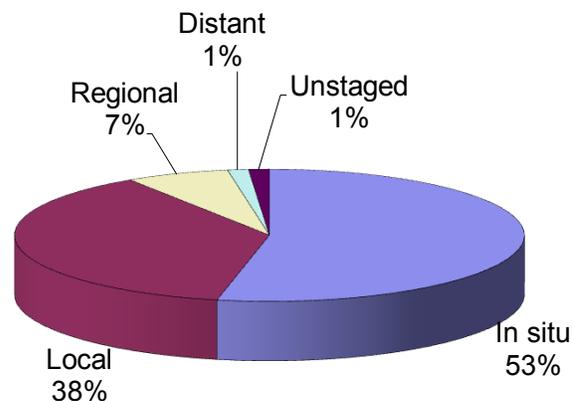
# Bladder (Urinary)

## Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	52	18	70
# In situ Cases	56	26	82
WY Incidence	37.4	13.4	24.3
US Incidence	37.7	9.0	21.5
# Cancer Deaths	23	5	28
WY Mortality	8.8	1.6	4.7
US Mortality	8.1	2.2	4.6

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

## Stage at Diagnosis



The incidence rates in Wyoming for bladder cancer in females and total population were slightly higher than the national rates, while males were a little lower. For mortality, the rates for males and total population were a bit higher than the national, with the female rate being slightly lower. None of the difference were statistically significant.

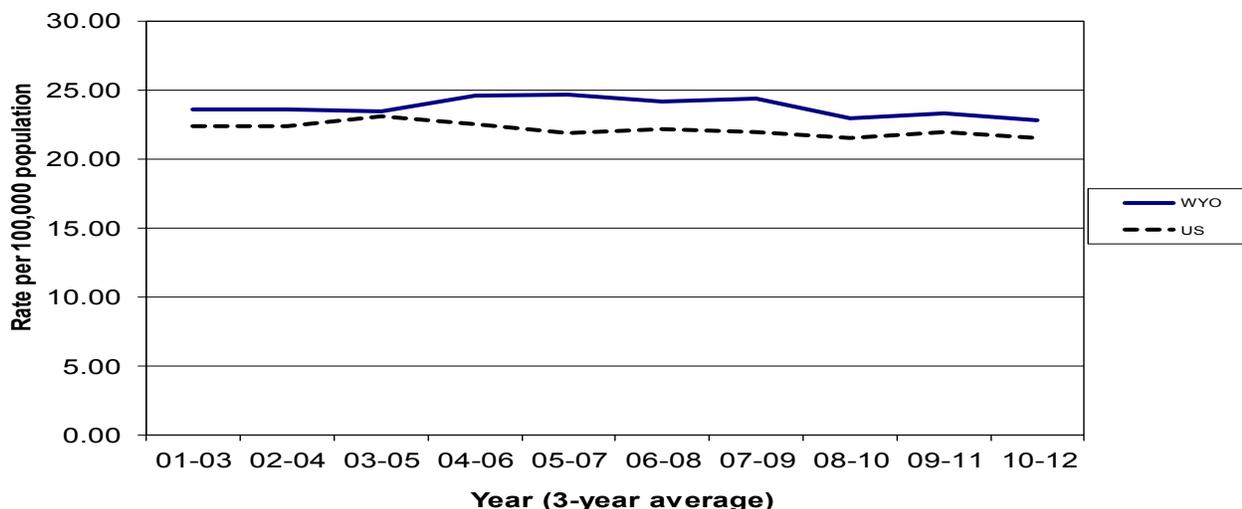
The 12-year incidence trend for bladder cancer in Wyoming and the US rate appears to be level from 09-11 to 10-12.

The percent of bladder cancers diagnosed at each stage in 2012 were similar to 2011, except for In situ which was up from 44% in 2011.

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

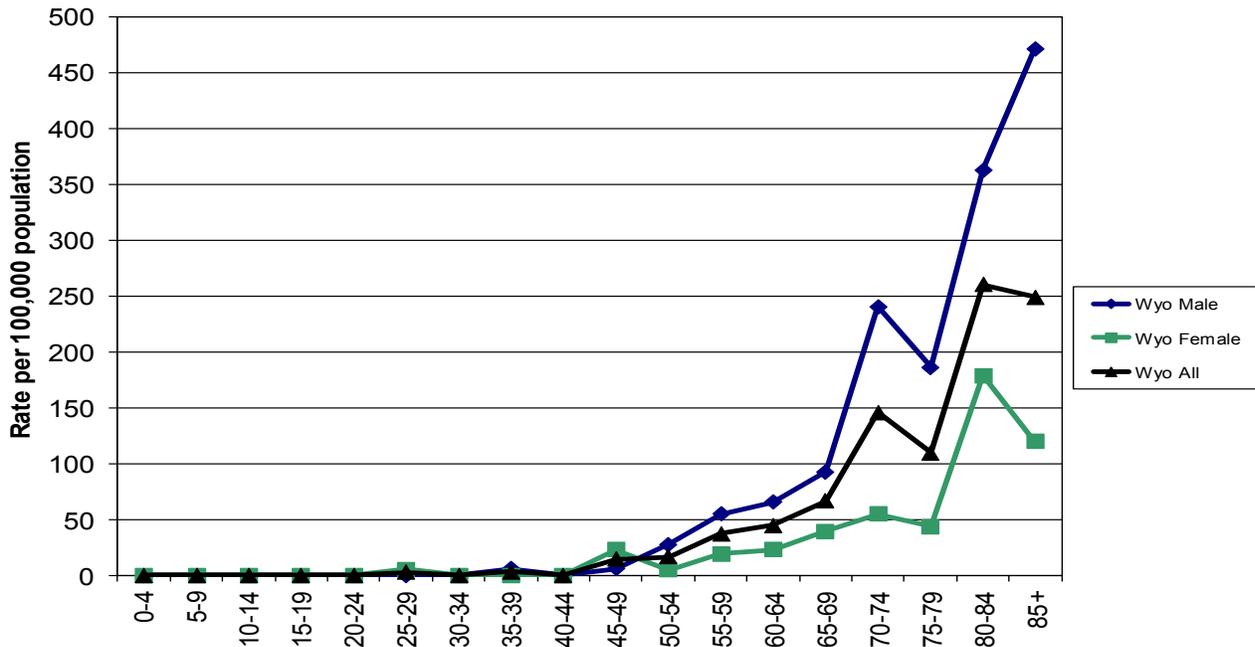
## 12-Year Incidence Trend

### Urinary Bladder



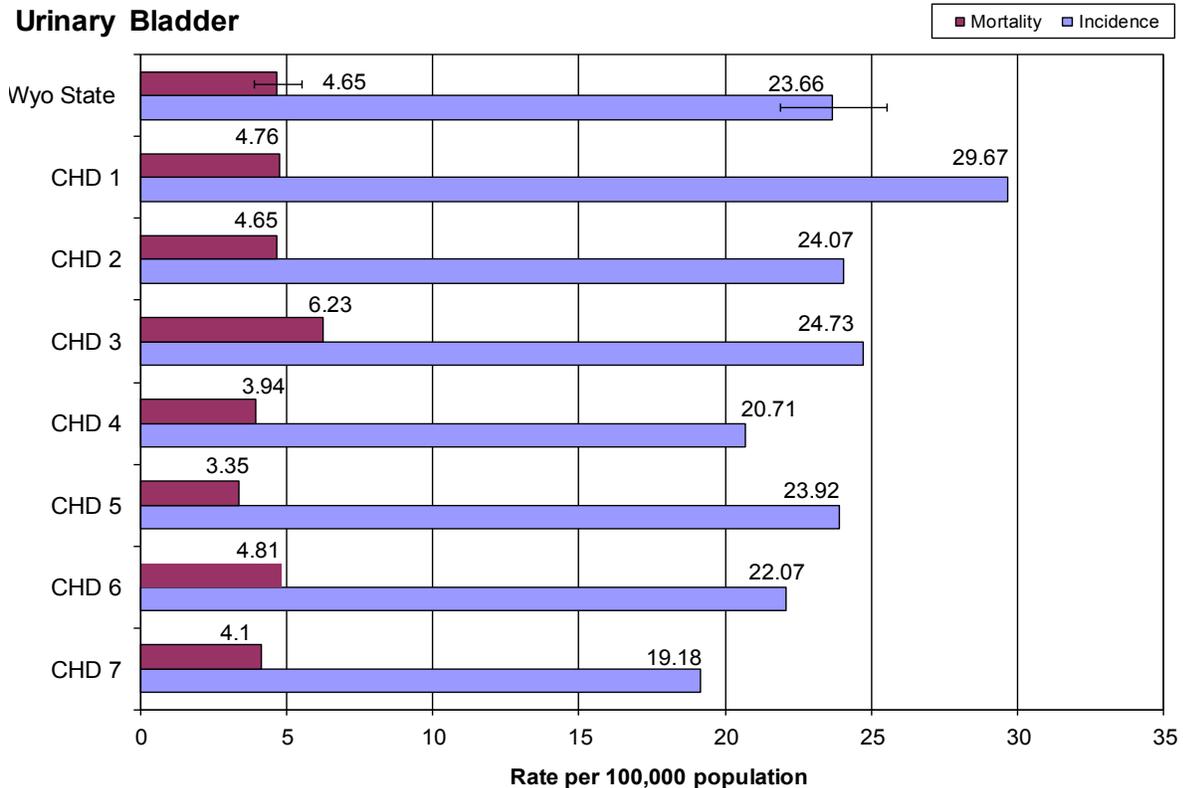
## Age-Specific Incidence Rates - 2012

### Urinary Bladder



## Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012

### Urinary Bladder



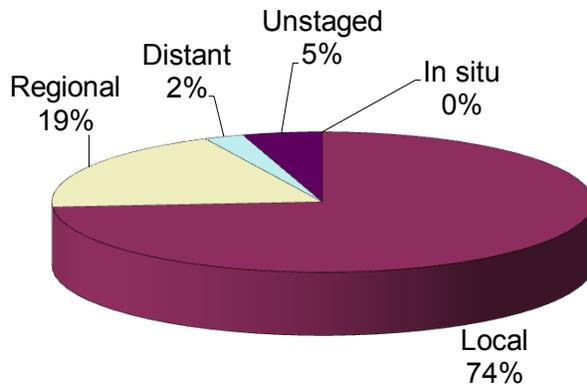
# Brain/Central Nervous System (CNS)

## Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	21	21	42
WY Incidence	6.8	7.1	6.9
US Incidence	8.1	5.7	6.8
# Cancer Deaths	17	13	30
WY Mortality	5.5	4.0	4.7
US Mortality	5.7	3.8	4.6

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

## Stage at Diagnosis



The incidence and mortality rates of Brain/CNS cancer in females, and total population were higher than the U.S. rates, but the male rates were lower in 2012. None of these differences were significant.

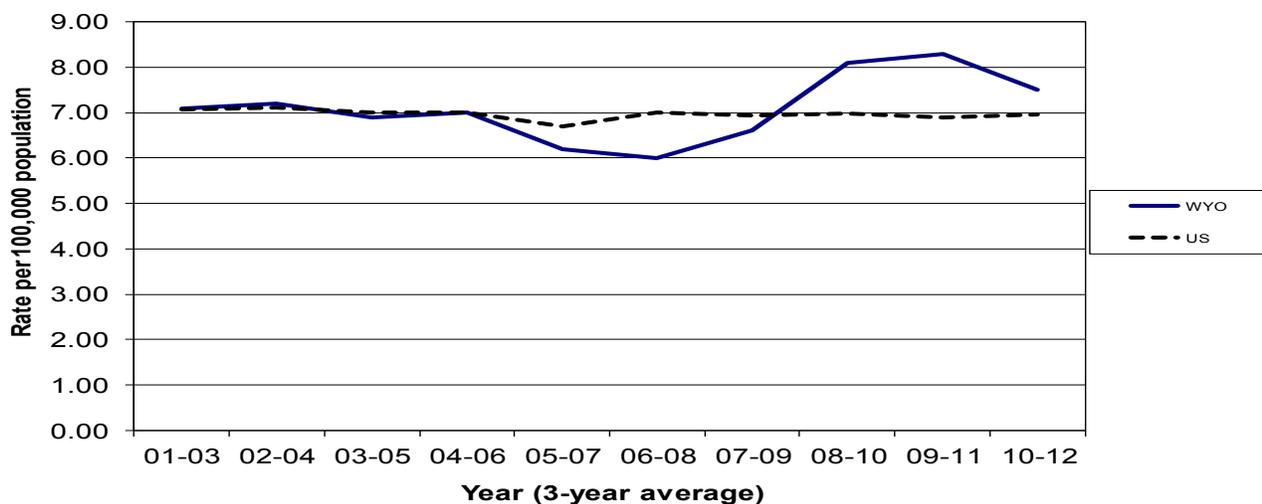
The 12-year Wyoming trend finally shows a decrease starting in 09-11 after a lengthy increase starting in 06-08.

The percentage of cases diagnosed at regional was significantly higher in 2012, than in 2011 (6%). None of the other stage percentages were statistically significant/

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

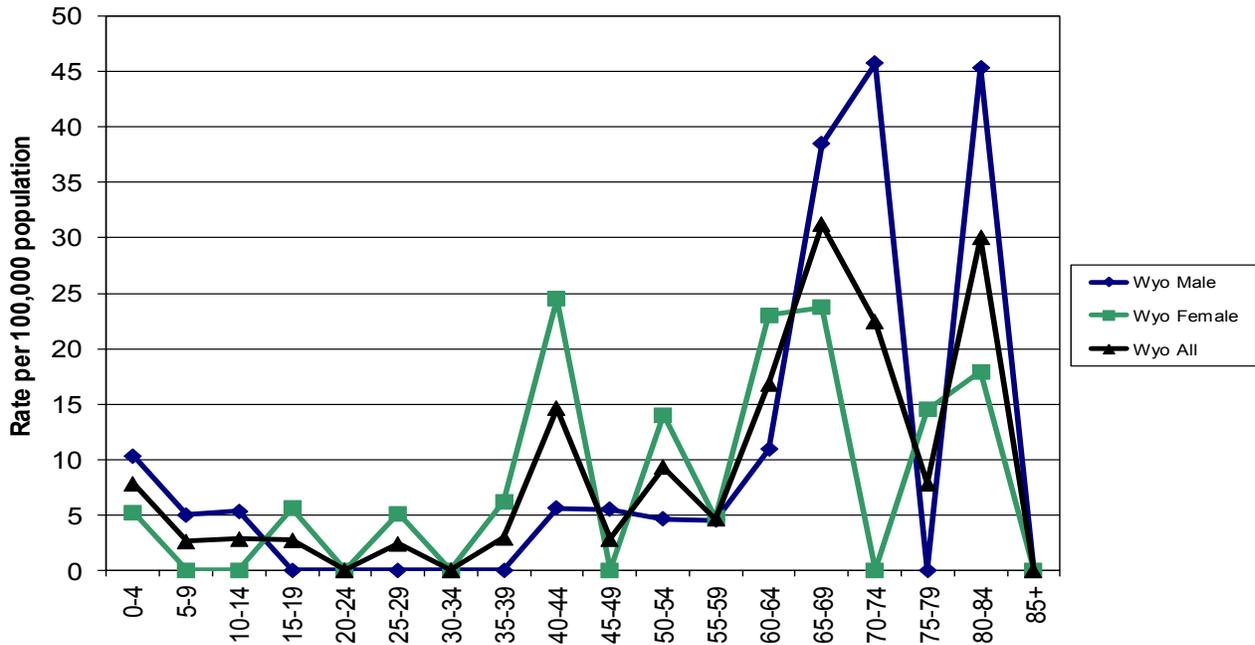
## 12-Year Incidence Trend

### Brain/CNS



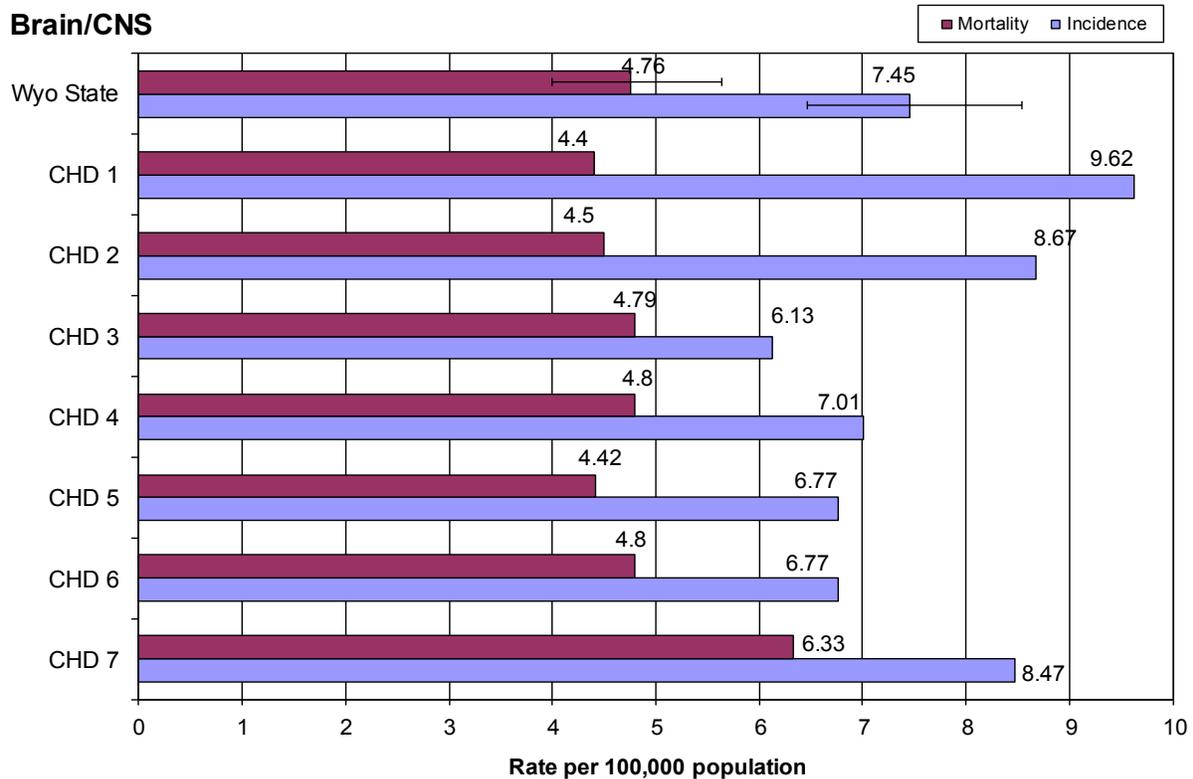
## Age-Specific Incidence Rates - 2012

### Brain/CNS



## Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012

### Brain/CNS



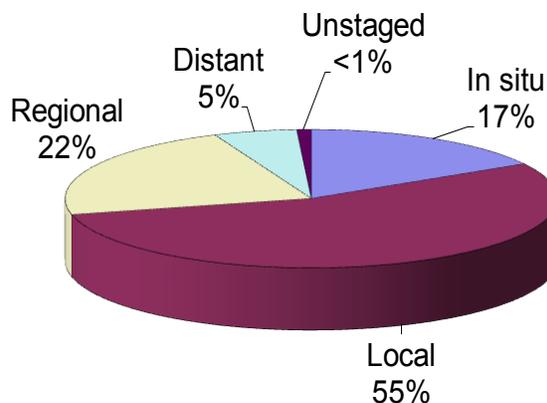
# Breast (Female Only)

## Incidence and Mortality Summary

	Female
# Invasive Cases	345
# In situ Cases	70
WY Incidence	107.0
US Incidence	127.2
# Cancer Deaths	52
WY Mortality	15.5
US Mortality	20.9

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

## Stage at Diagnosis



The incidence and mortality rates of female breast cancer in Wyoming were both lower than the United States rate in 2012, but not significantly.

The 12-year incidence trend for Wyoming seems to have leveled off, while the national rate shows a slight increase from 09-11 to 10-12.

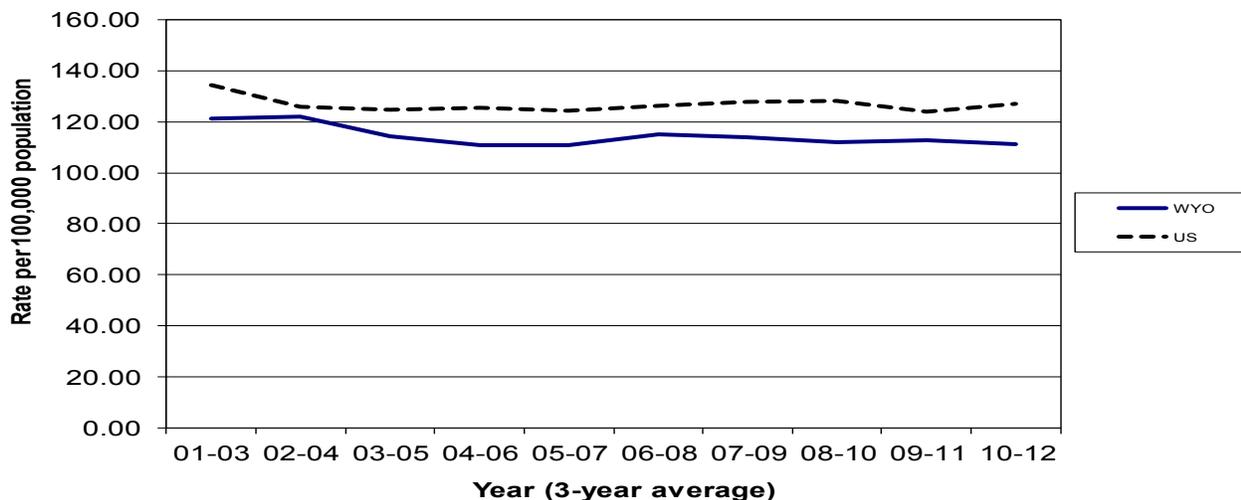
The percentage of diagnoses in each stage in 2012 were essentially the same as in 2011.

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

There were 6 cases diagnosed of breast cancer and one death reported in Wyoming males in 2012.

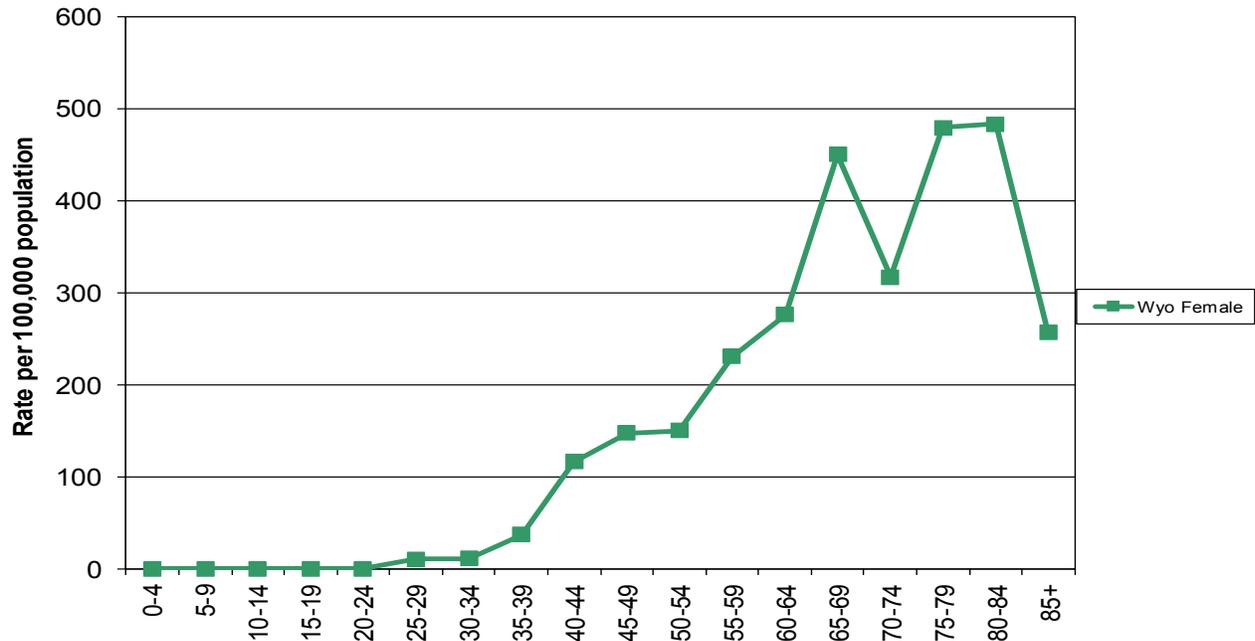
## 12-Year Incidence Trend

### Breast-Female



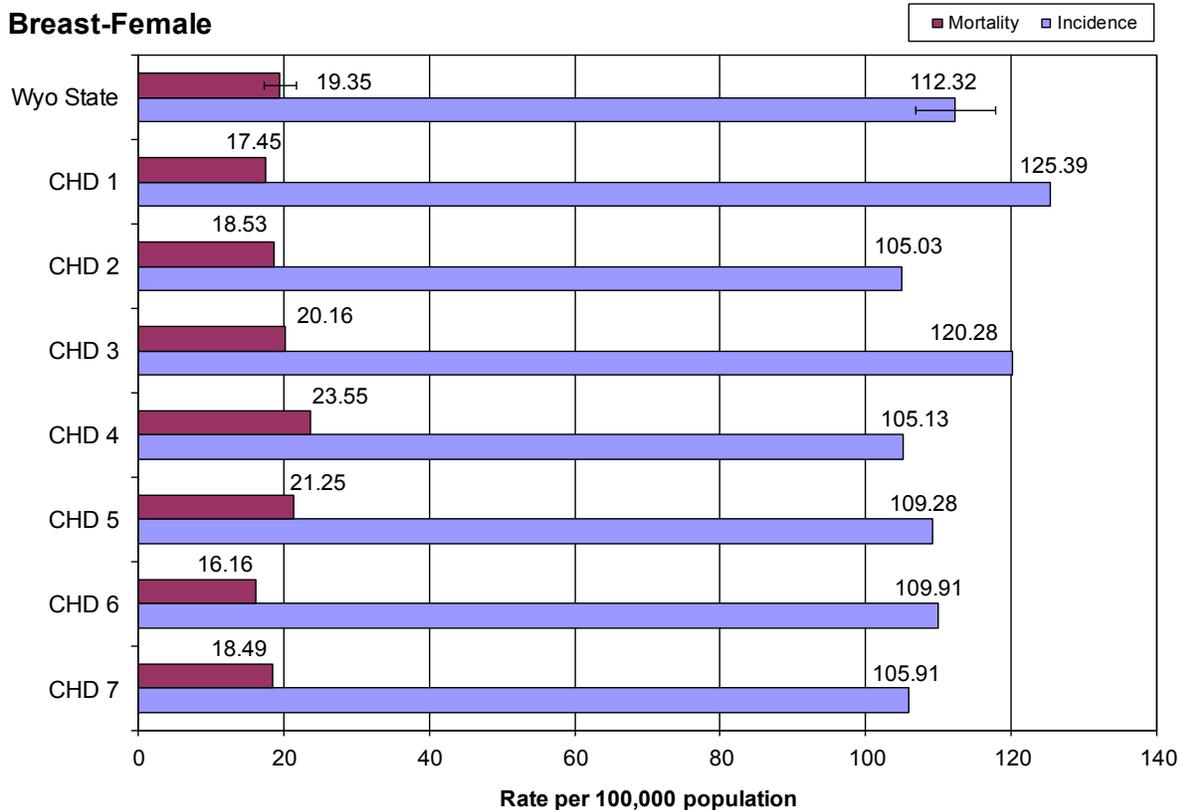
## Age-Specific Incidence Rates - 2012

### Breast-Female



## Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012

### Breast-Female



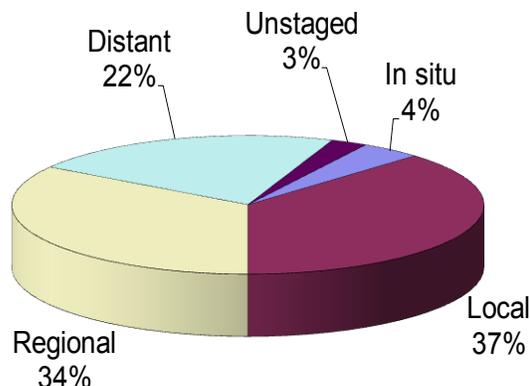
# Colorectal

## Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	145	85	230
# In situ Cases	5	5	10
WY Incidence	48.2	26.6	37.0
US Incidence	45.2	34.3	39.3
# Cancer Deaths	55	40	95
WY Mortality	19.4	12.5	15.7
US Mortality	17.5	12.3	14.6

\* 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 females and total population were both lower than the national rates, while the rate for males was a bit higher. The mortality rates for males, females, and total population were all just a little higher than the national rates. None of these differences were statistically significant.

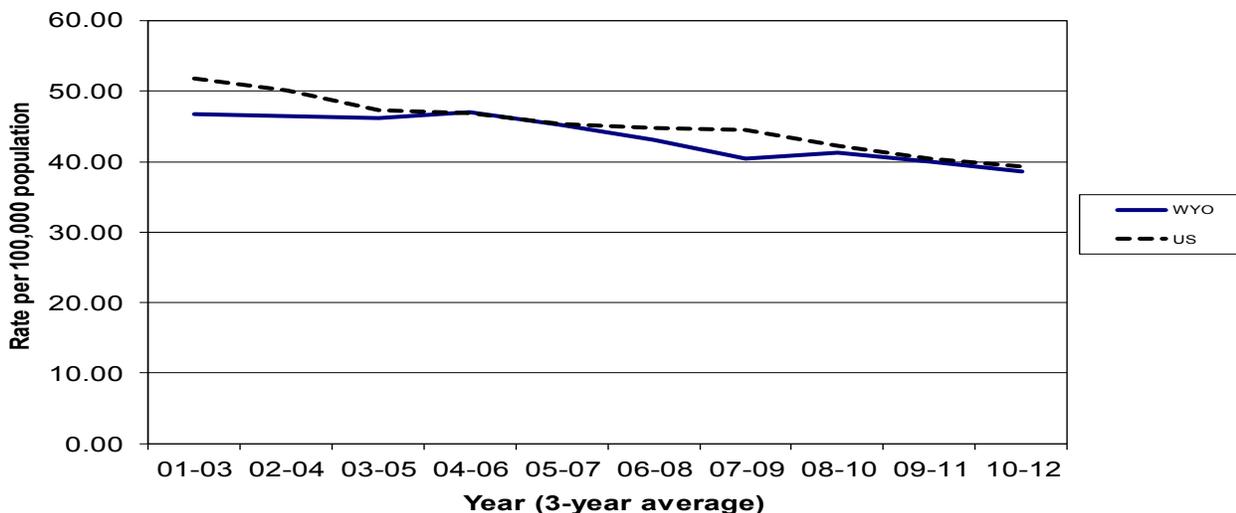
The 12-year incidence graph shows that rates in Wyoming and the U.S. continue to decrease.

The percentage of cancers diagnosed at the local stage in 2012 was down from 46% in 2011, while the percentage for regional was up from 2011 (29%). The rest were essentially the same as 2011.

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

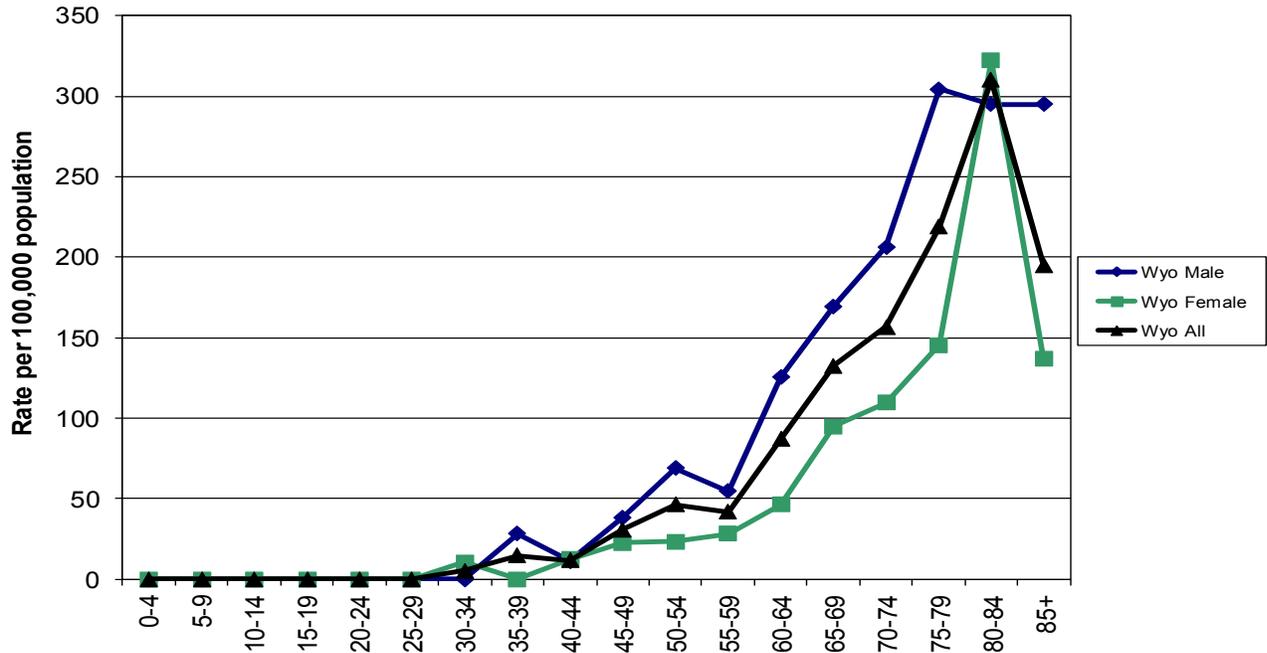
## 12-Year Incidence Trend

### Colorectal



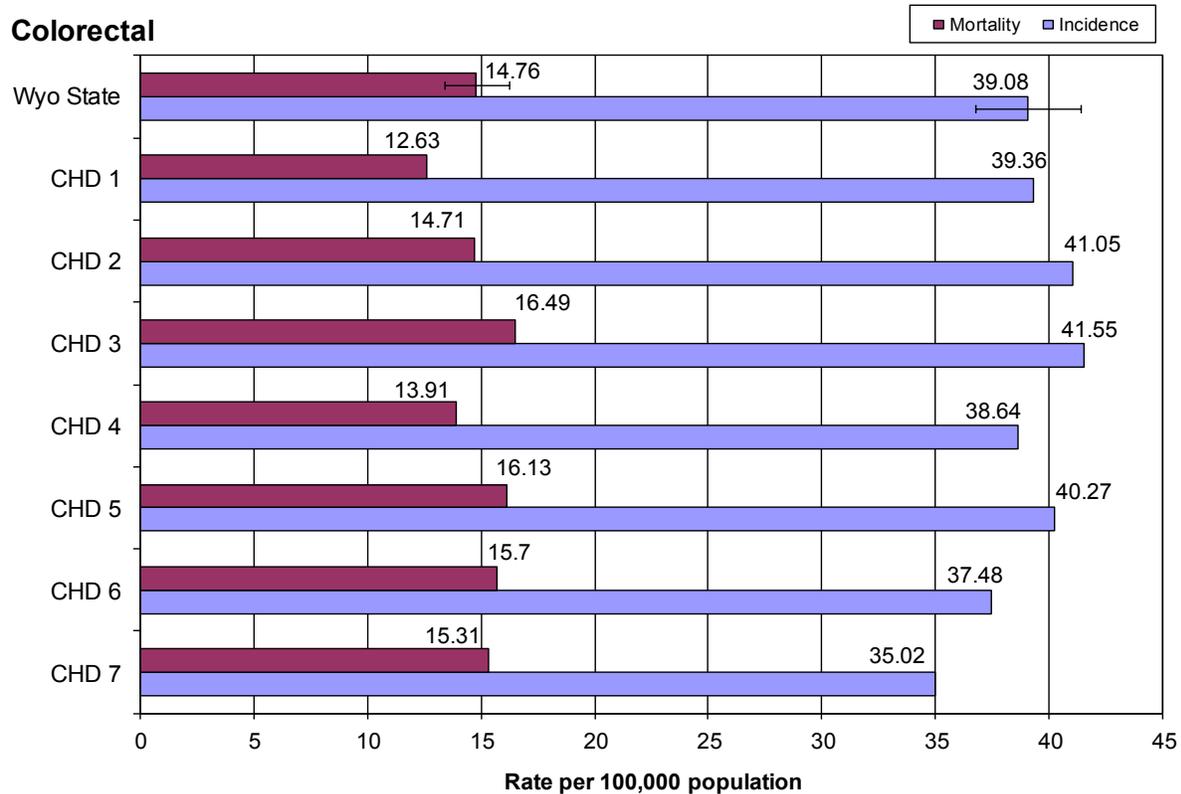
## Age-Specific Incidence Rates - 2012

### Colorectal



## Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012

### Colorectal



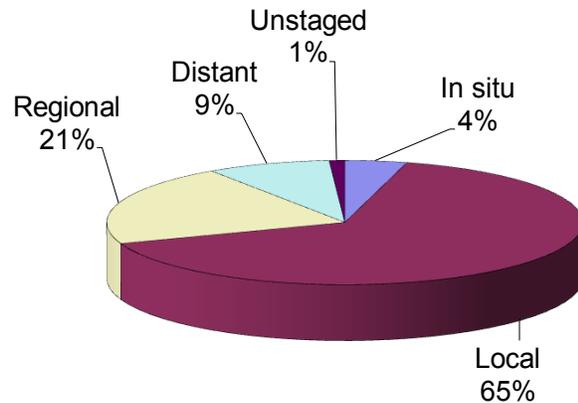
# Kidney/Renal Pelvis

## Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	60	31	91
WY Incidence	19.7	9.6	14.5
US Incidence	21.1	10.9	15.6
# Cancer Deaths	15	7	22
WY Mortality	4.6	2.4	3.4
US Mortality	5.9	2.6	4.1

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

## Stage at Diagnosis



The incidence and mortality rates for kidney/renal pelvis cancer in Wyoming males, females and the total population were all lower than the national rates in 2012. None of these differences were statistically significant.

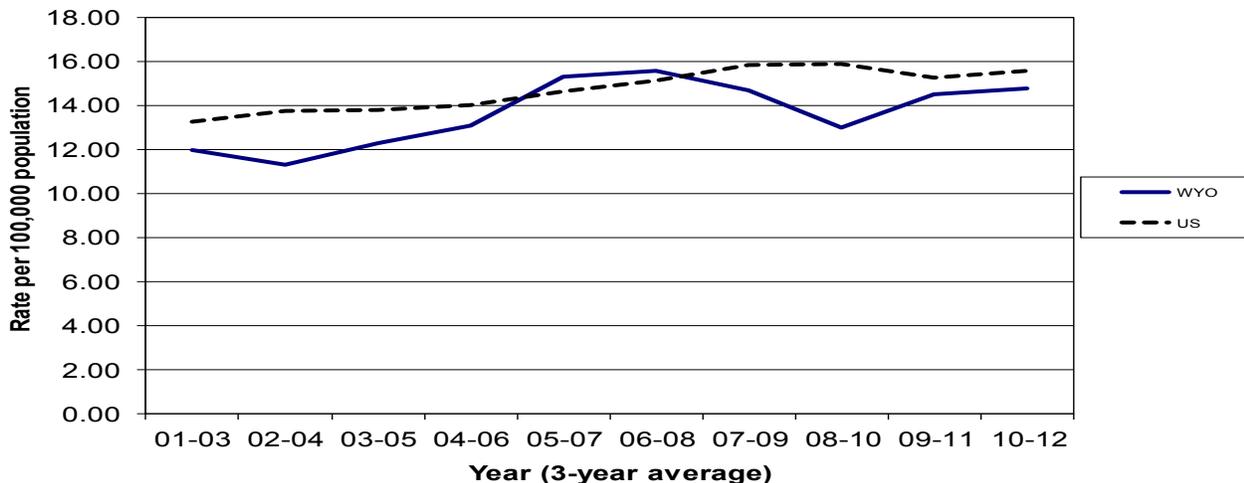
The 12-year trend showed a leveling off of an increase that began in 08-10. The national rate appears to be increasing slightly.

A higher percent of kidney/renal pelvis cases were diagnosed as local than in 2011 (59%), while the percentages for the other stages were all similar to 2011.

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

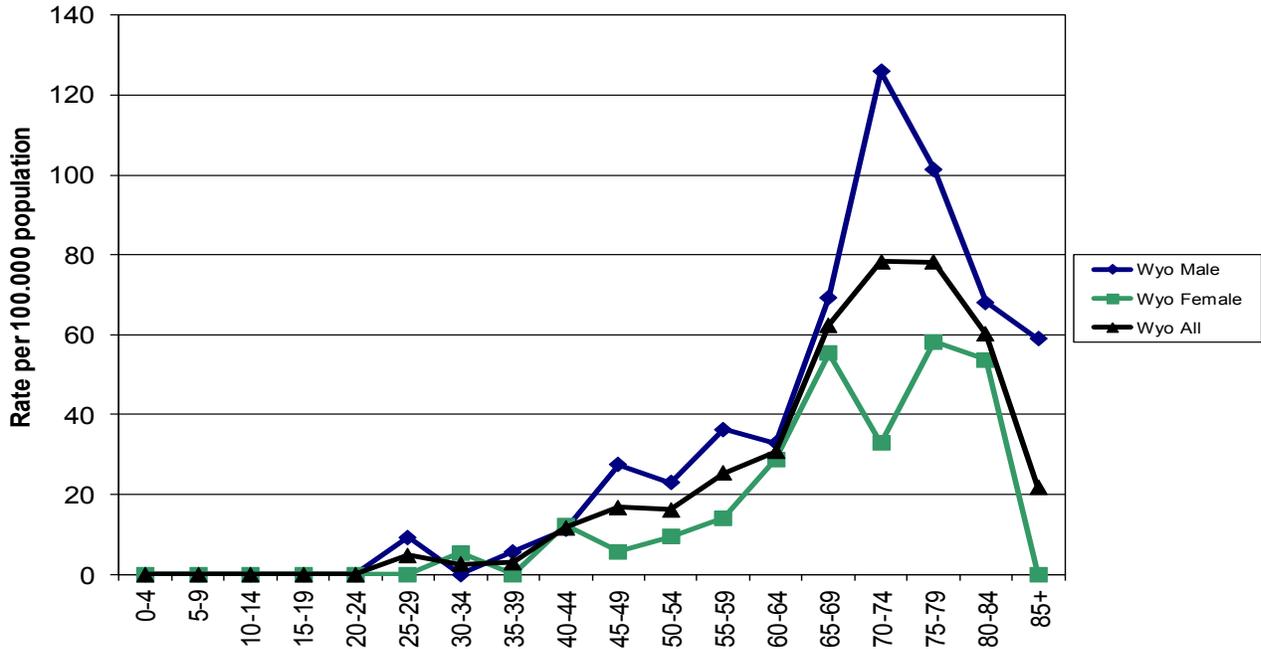
## 12-Year Incidence Trend

### Kidney/Renal Pelvis



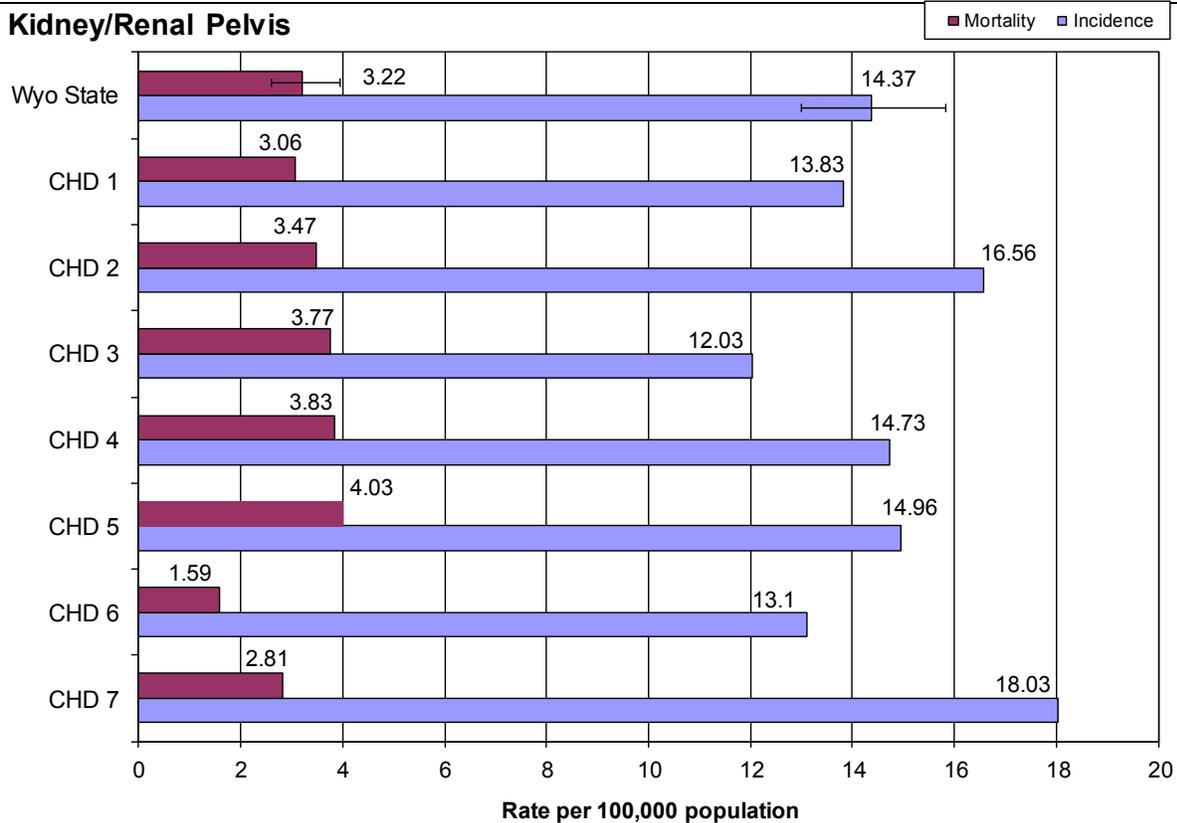
## Age-Specific Incidence Rates - 2012

### Kidney/Renal Pelvis



### Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012

#### Kidney/Renal Pelvis



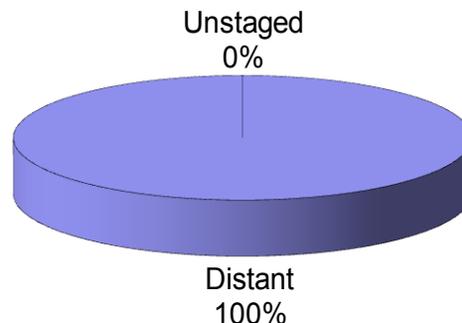
# Leukemia

## Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	46	39	85
WY Incidence	14.9	12.3	13.4
US Incidence	17.2	10.8	13.6
# Cancer Deaths	24	14	38
WY Mortality	8.9	4.6	6.3
US Mortality	9.6	5.4	7.2

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

## Stage at Diagnosis



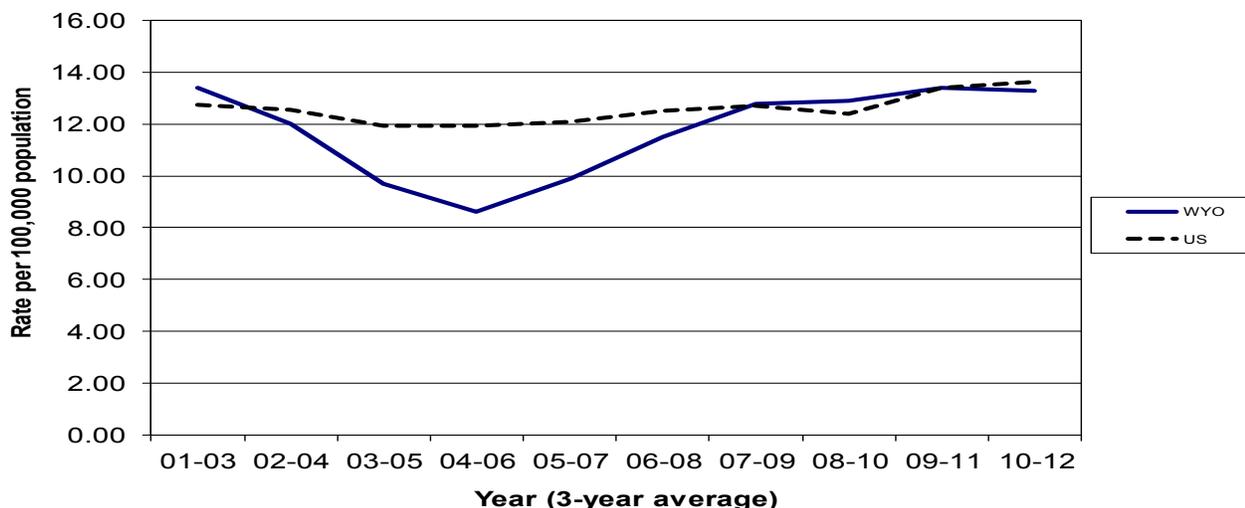
The incidence rates for leukemia in Wyoming for males, and total population were lower than the national rates, while the female rate was higher than the national. The mortality rates were all lower than the national rates in 2012. None of the differences were statistically significant.

The incidence trend for Wyoming appears to have plateaued, while the national rate continues to show a slight increase.

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

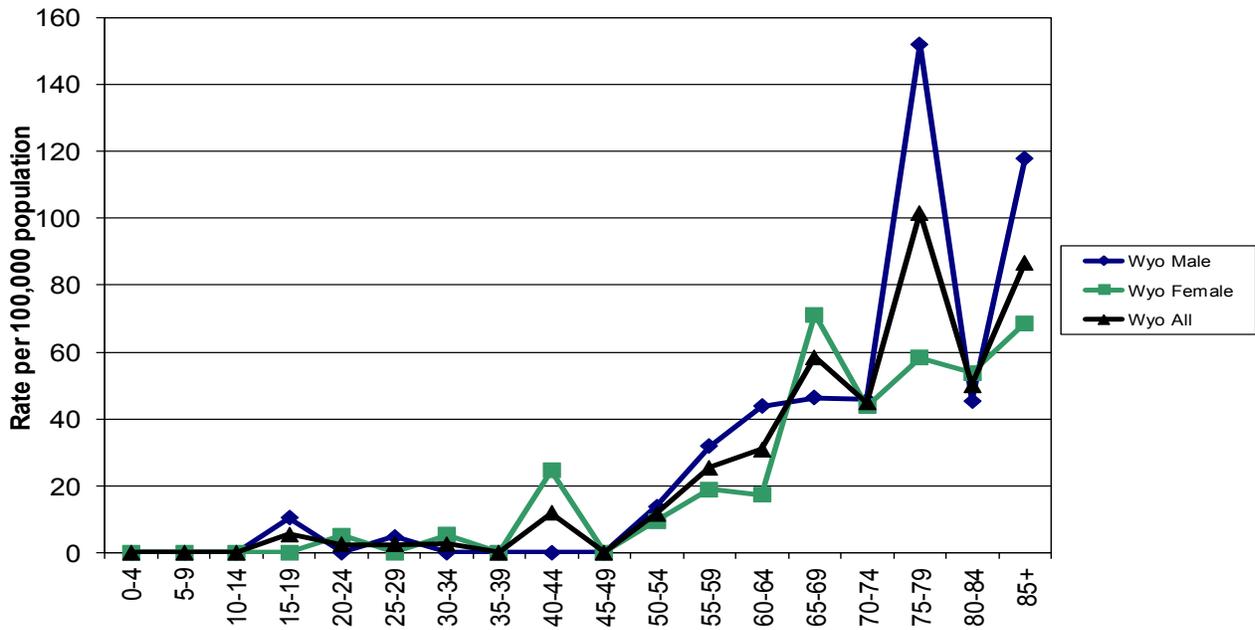
## 12-Year Incidence Trend

### Leukemia



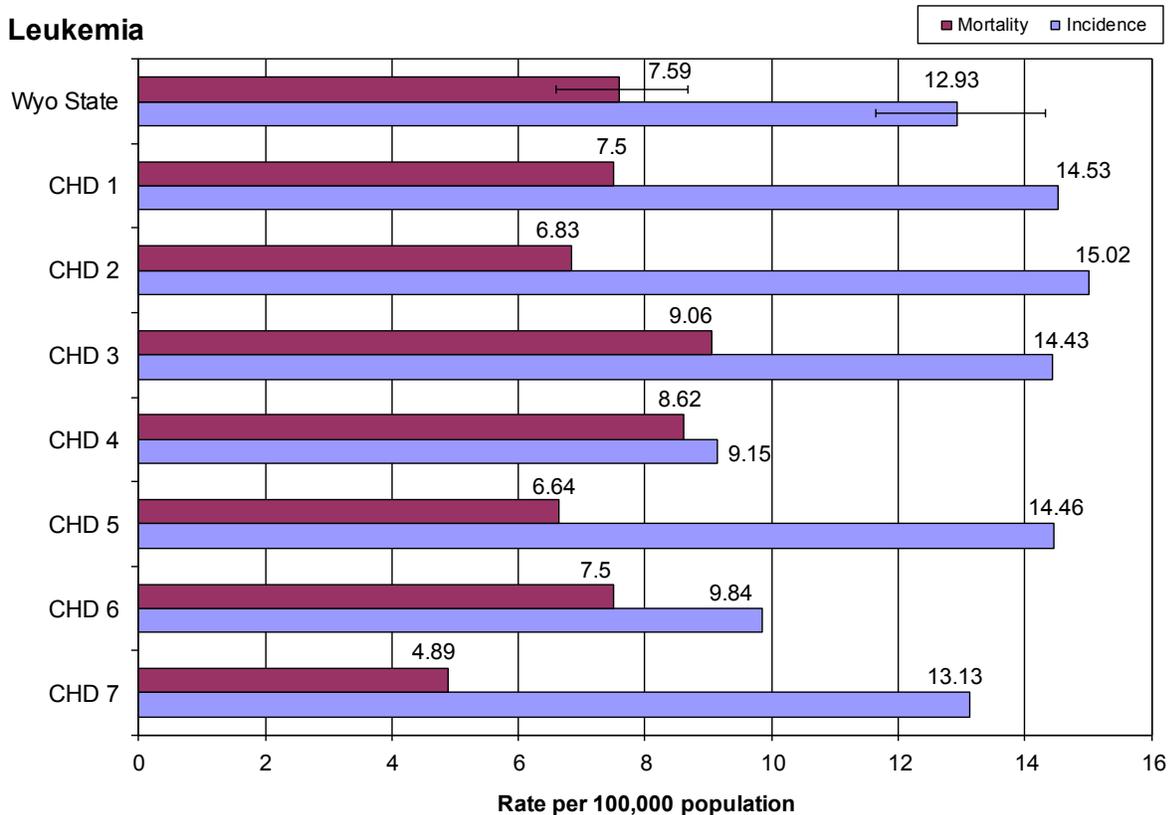
## Age-Specific Incidence Rates - 2012

### Leukemia



## Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012

### Leukemia



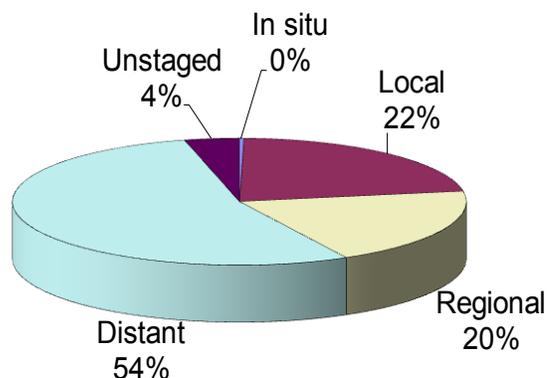
# Lung and Bronchus

## Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	148	159	307
WY Incidence	49.1*	48.0	48.1
US Incidence	66.4	50.8	57.5
# Cancer Deaths	117	113	230
WY Mortality	39.7*	35.9	37.9
US Mortality	57.8	38.2	46.7

\* 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. The incidences and mortality rates for males were significantly lower than the national rate.

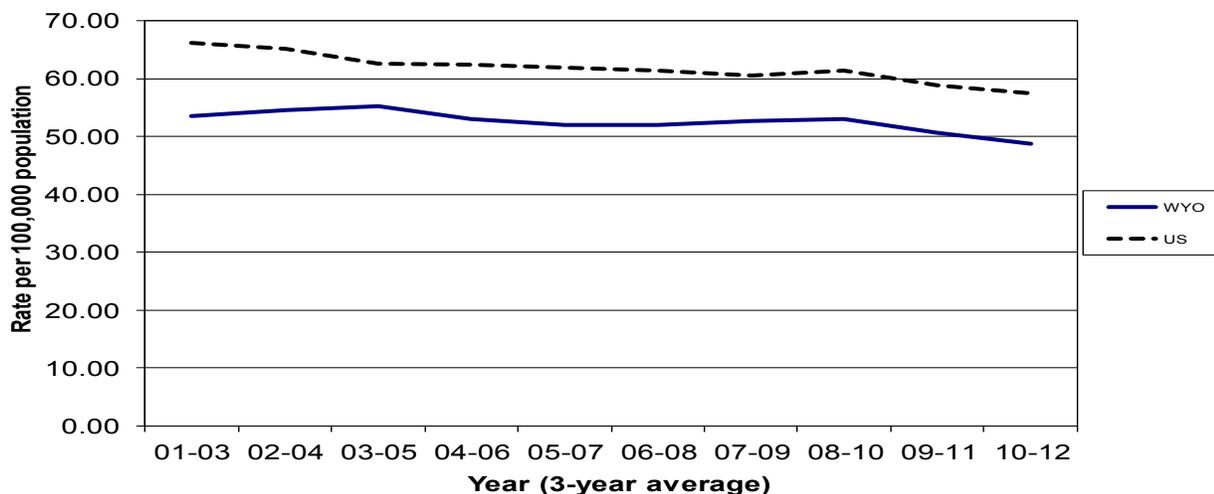
The 12 year incidence trend showed the rates for lung cancer show a continued decrease in Wyoming and the U.S. from 08-10.

The higher percentage of cases diagnosed as distant in 2012 than 2011 (44%). The rest of the percentages were similar to the percentages in 2011.

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

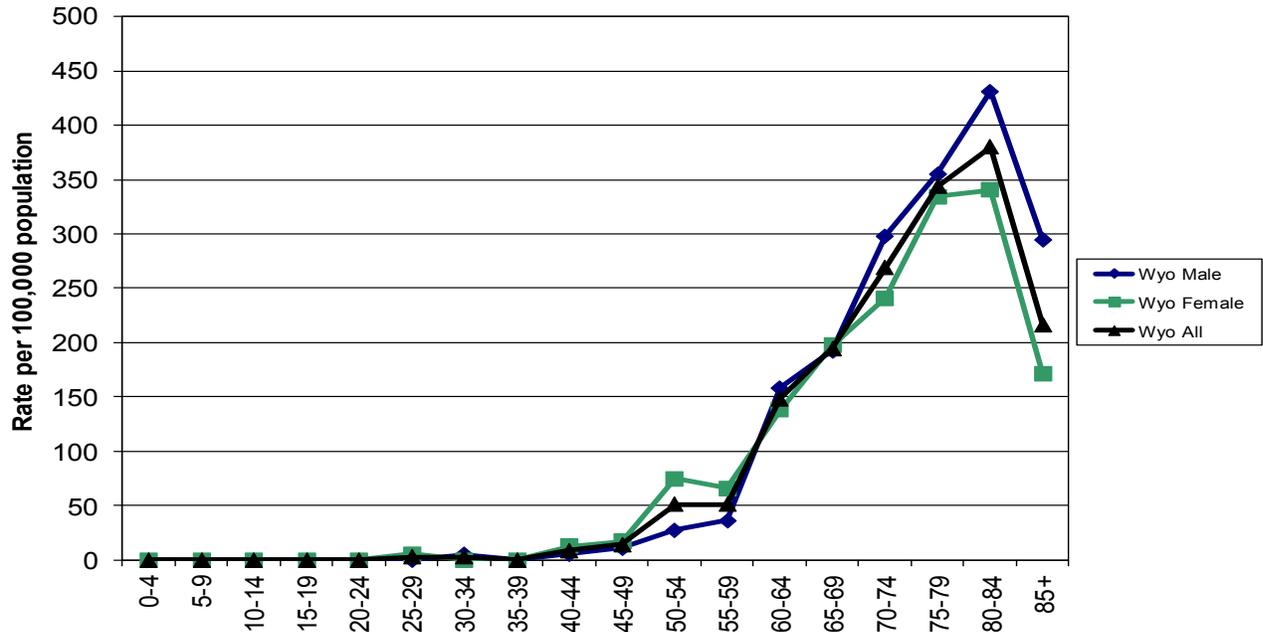
## 12-Year Incidence Trend

### Lung and Bronchus

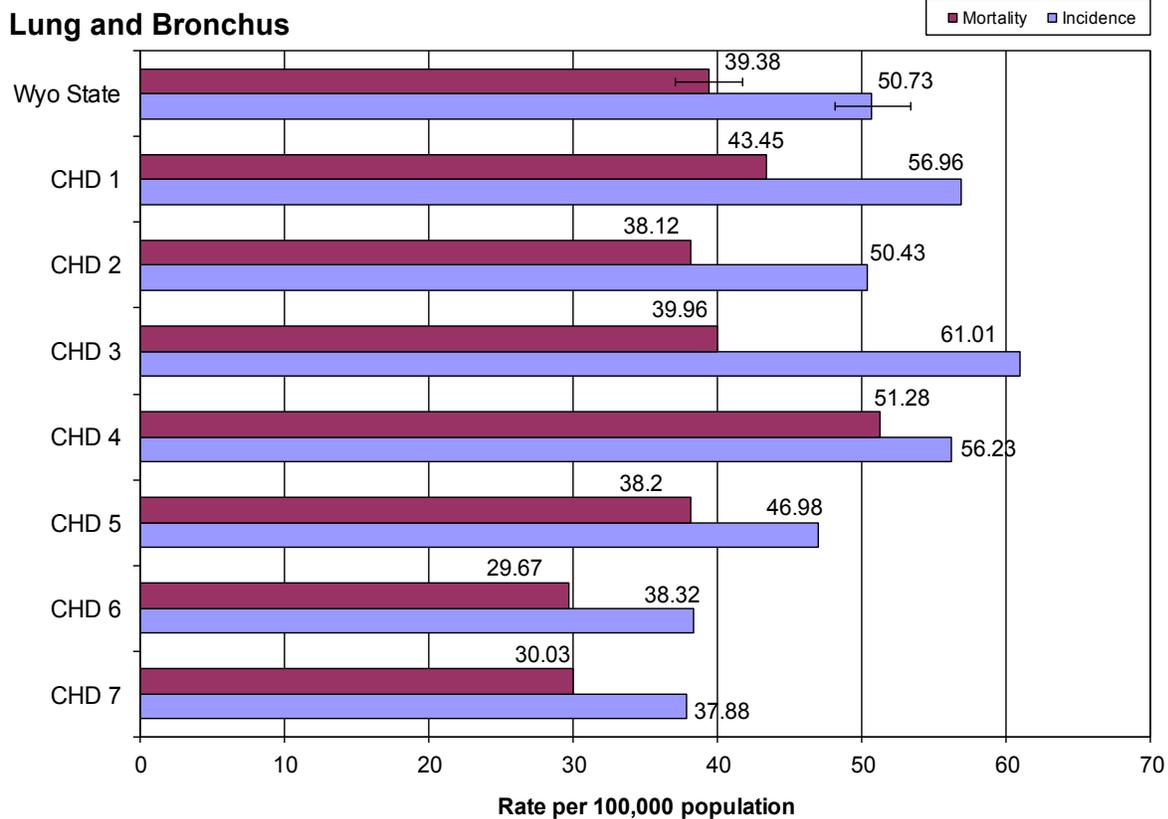


## Age-Specific Incidence Rates - 2012

### Lung and Bronchus



### Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012



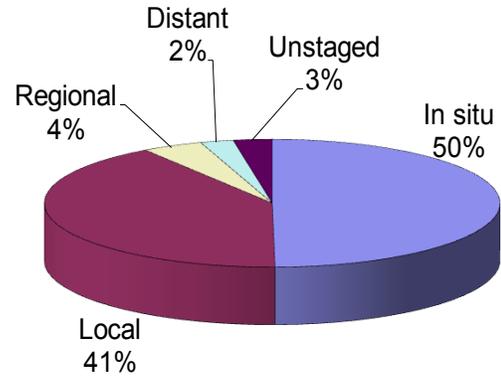
# Melanoma (of the skin)

## Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	62	66	128
# In situ Cases	76	51	127
WY Incidence	22.0	21.5	21.5
US Incidence	32.2	19.3	24.8
# Cancer Deaths	6	8	14
WY Mortality	2.4	2.4	2.4
US Mortality	4.6	1.9	3.1

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

## Stage at Diagnosis



Incidence and mortality rates for melanoma of the skin for Wyoming males and total population were both lower than the national rates in 2012, with the female rates a little higher than the national. None of the differences were statistically significant.

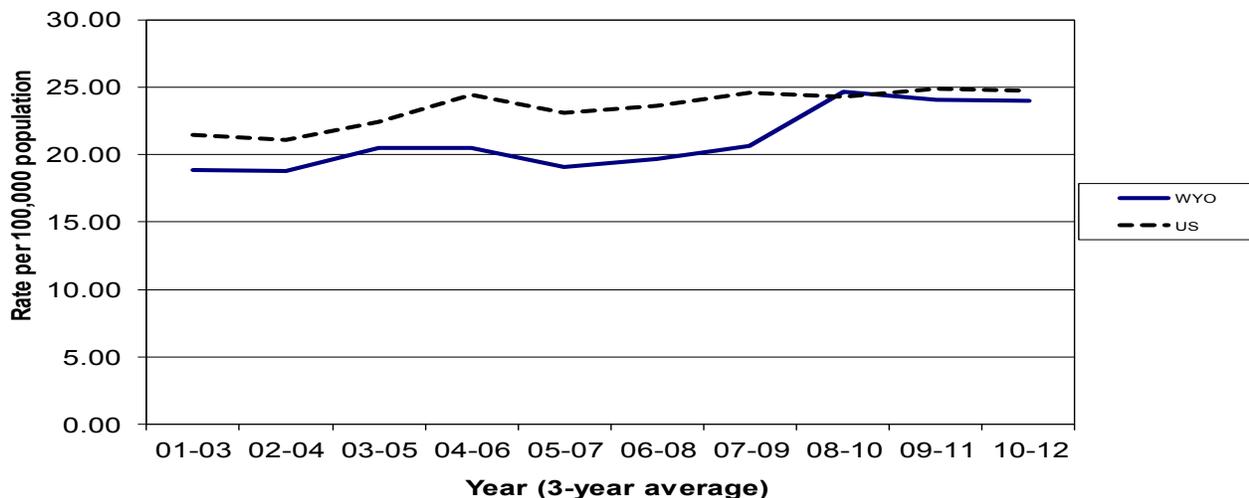
The marked increase in melanoma incidence for Wyoming from 07-09 seems to have plateaued in 08-10 and is holding steady. The national rate is also relatively flat and steady.

The percent of cases diagnosed at each stage in 2012 were very similar to the percentages in 2011.

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

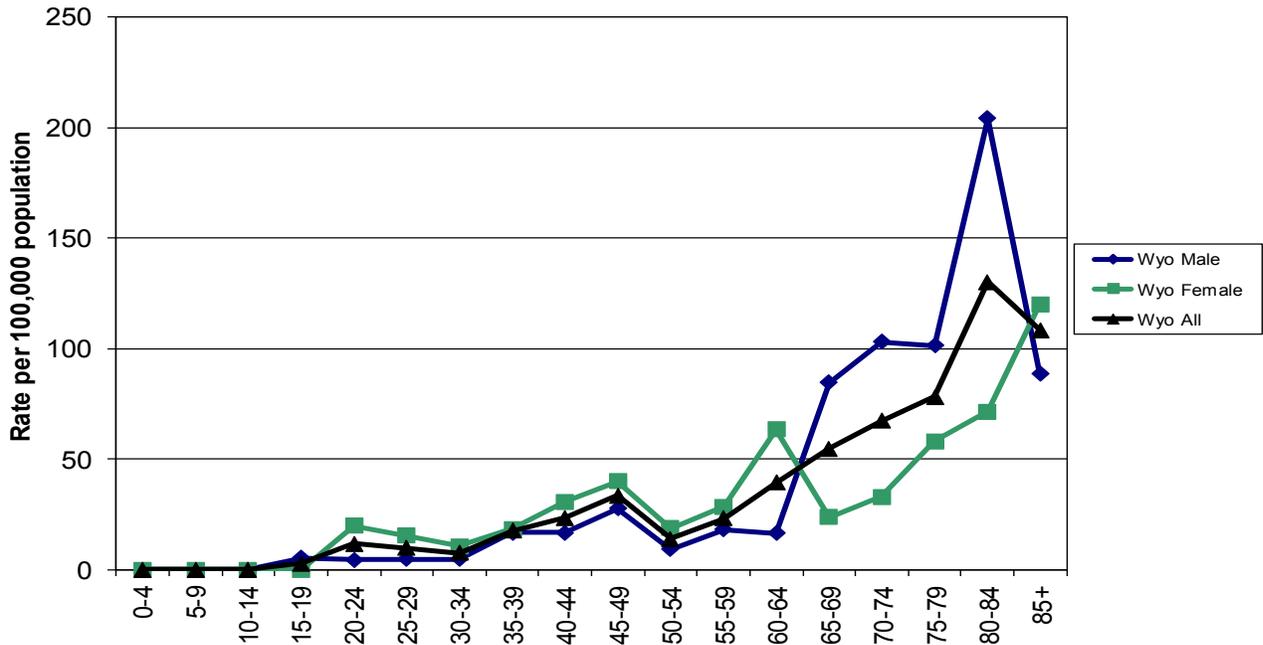
## 12-Year Incidence Trend

### Melanoma (of the skin)



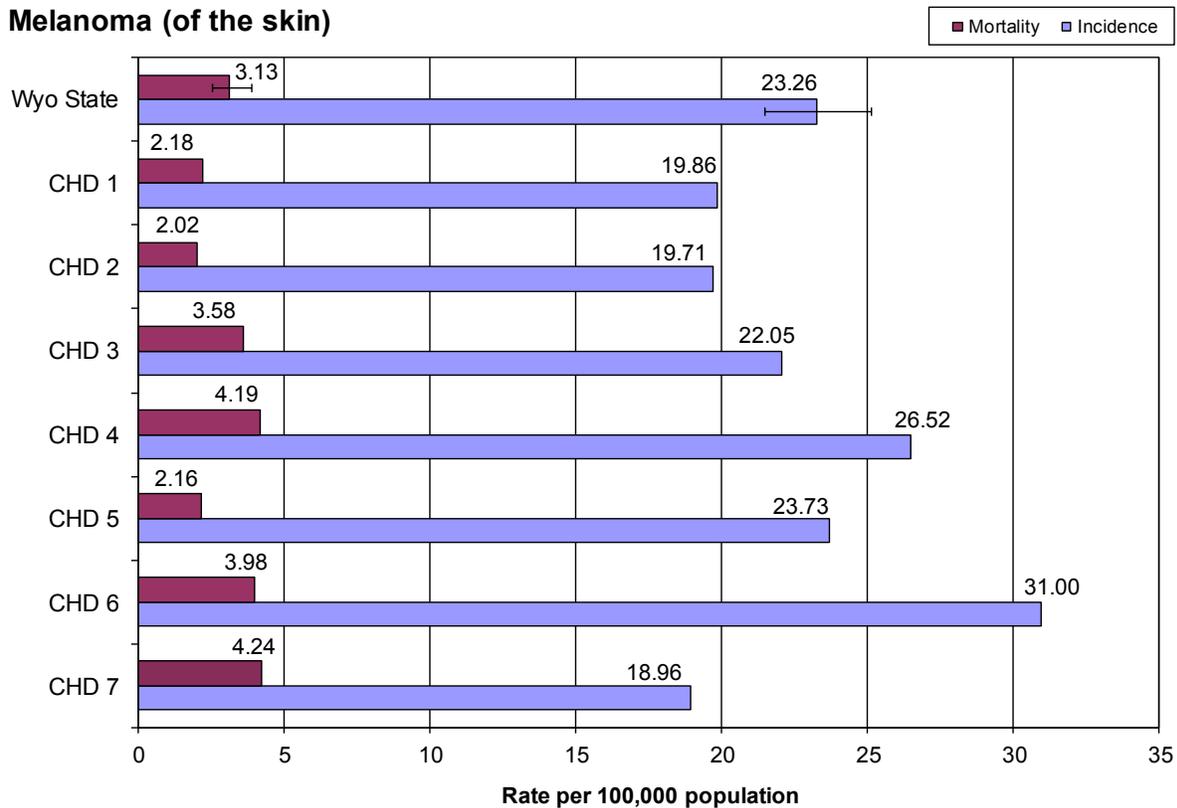
## Age-Specific Incidence Rates - 2012

### Melanoma (of the skin)



## Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012

### Melanoma (of the skin)



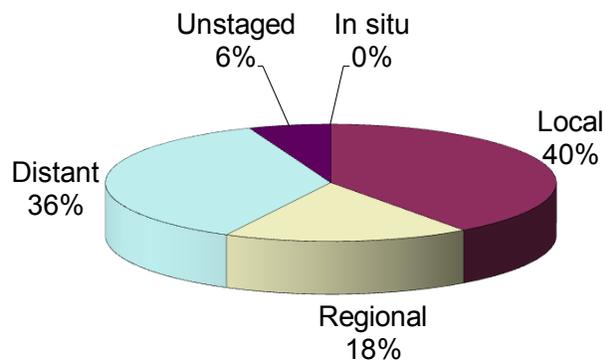
# Non-Hodgkin Lymphoma

## Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	49	36	85
WY Incidence	16.3	10.9	13.5
US Incidence	23.9	16.5	19.9
# Cancer Deaths	12	11	23
WY Mortality	4.3	3.3	3.8
US Mortality	8.2	4.8	6.3

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

## Stage at Diagnosis



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

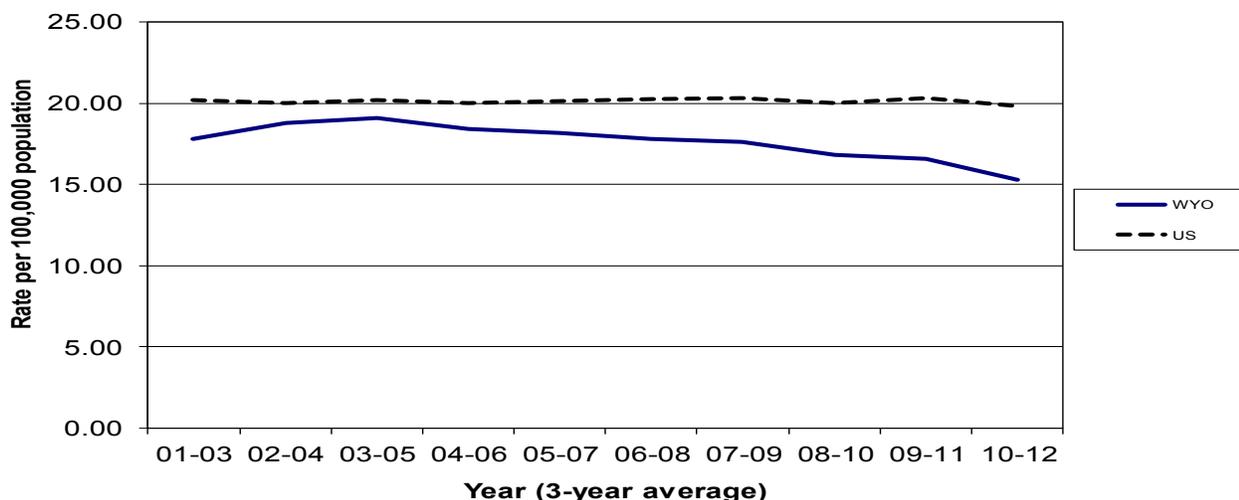
The incidence trends for Wyoming continues a decrease that started in 03-05, while the national rate remained basically flat.

The percentage of cancers diagnosed as regional doubles from 2011 (9%) while those diagnosed as distant decreased from 2011 (46%). The percentages for the other stages were basically the same as 2011.

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

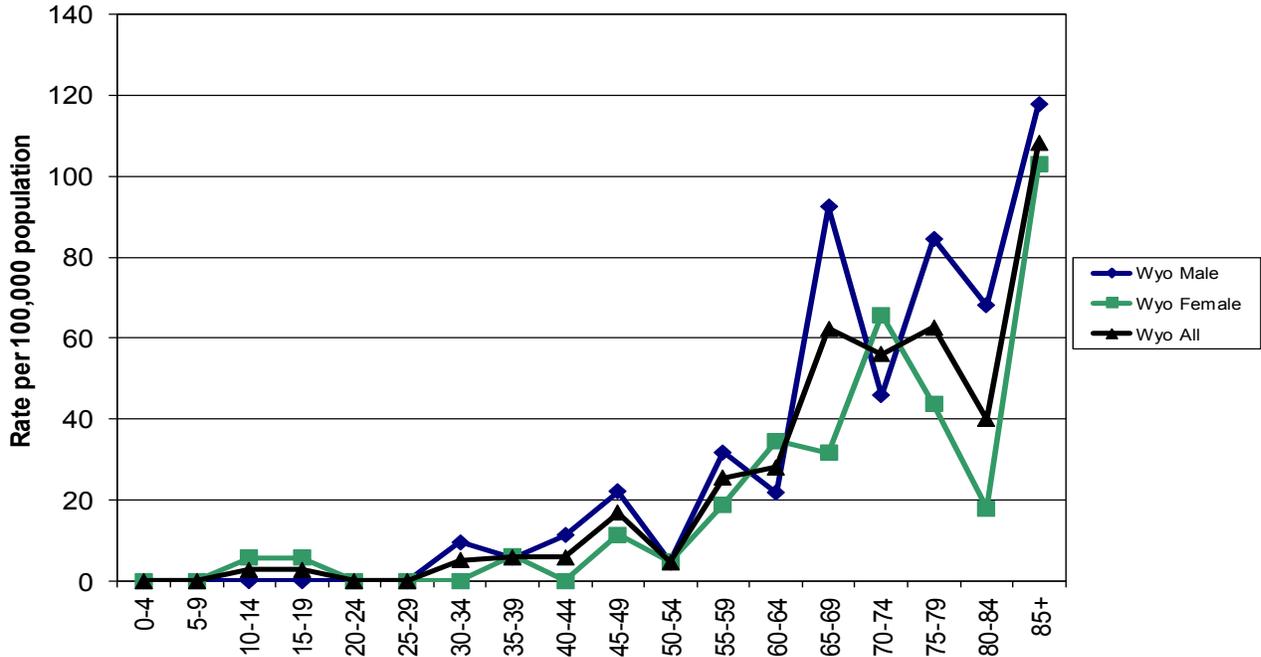
## 12-Year Incidence Trend

### Non-Hodgkin Lymphoma



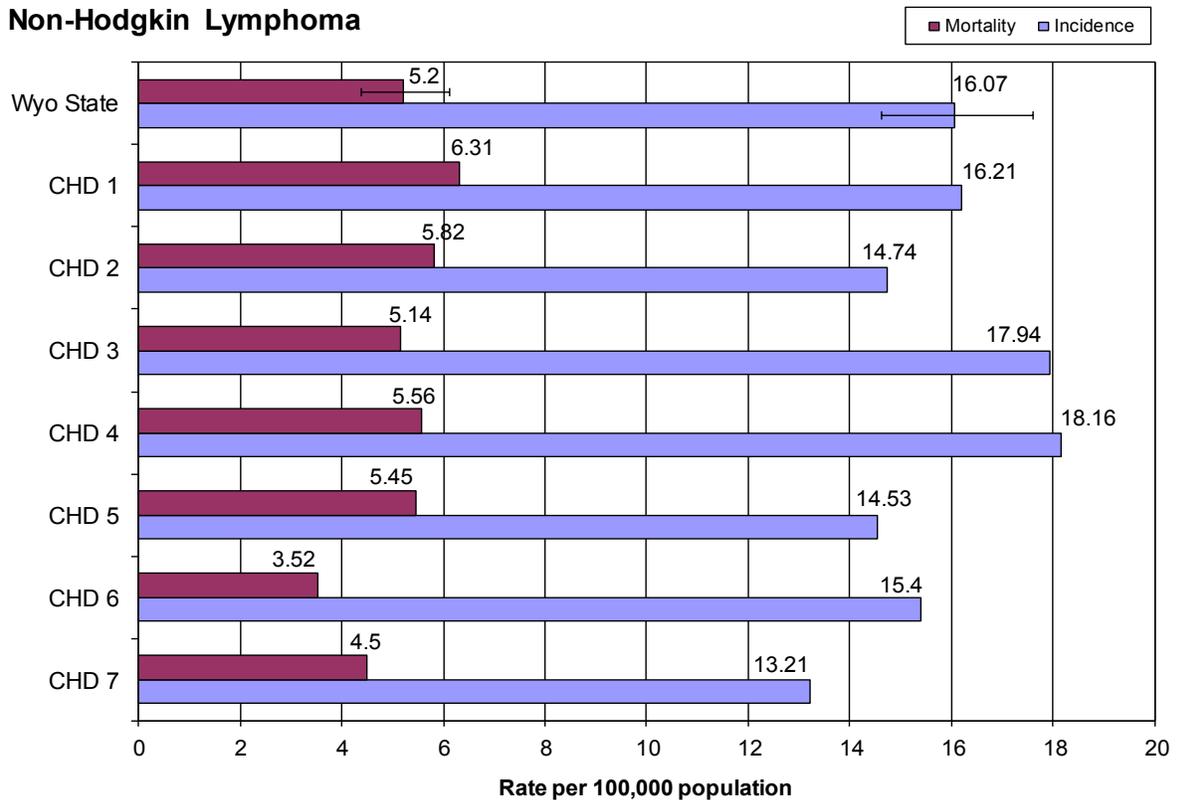
## Age-Specific Incidence Rates - 2012

### Non-Hodgkin Lymphoma



### Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012

#### Non-Hodgkin Lymphoma



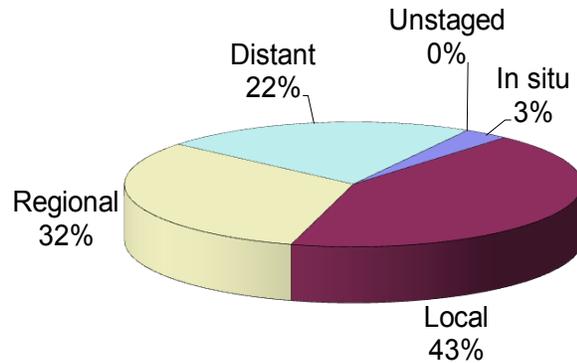
# Oral Cavity and Pharynx

## Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	48	13	61
WY Incidence	14.4	4.2	9.2
US Incidence	17.4	6.4	11.5
# Cancer Deaths	10	4	14
WY Mortality	3.3	1.0	2.1
US Mortality	3.7	1.3	2.4

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

## Stage at Diagnosis



Incidence and mortality rates for cancer of the oral cavity and pharynx in Wyoming males, females and total population were all lower than the national rates. None of the differences were statistically significant.

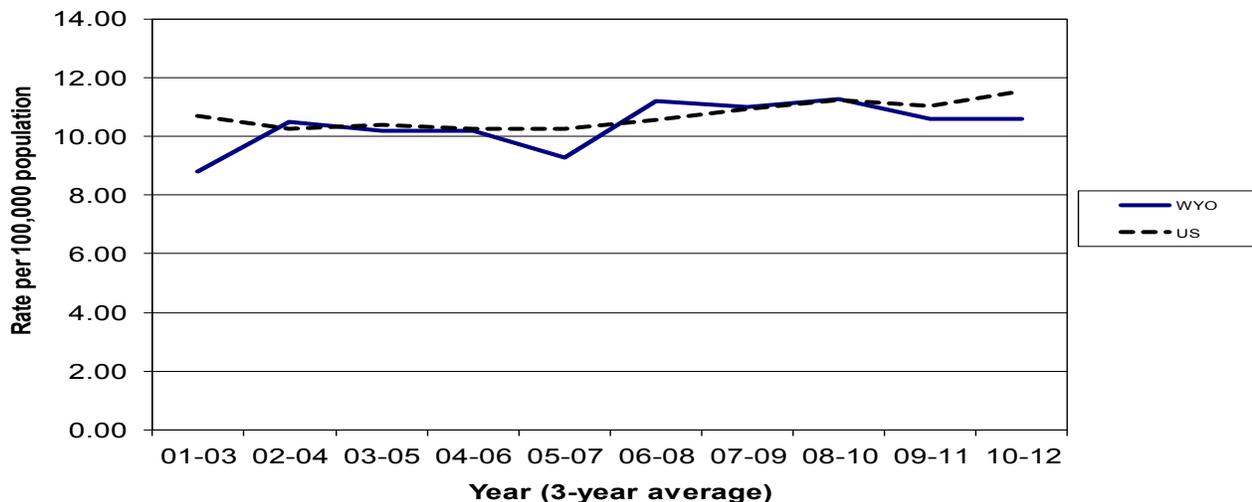
The incidence trend for Wyoming shows a leveling off from a decrease that started in 08-10. The national rate appears to be on the increase from 09-11 to 10-12.

The percent of cancers diagnosed at each stage were basically unchanged from 2011.

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

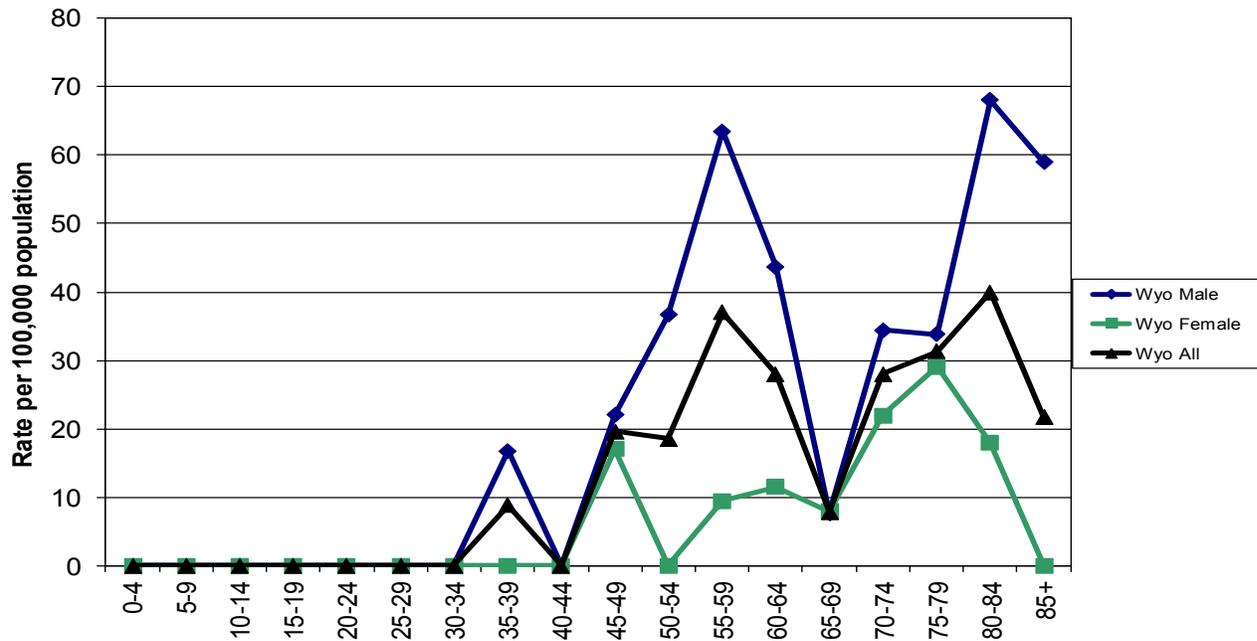
## 12-Year Incidence Trend

### Oral Cavity and Pharynx



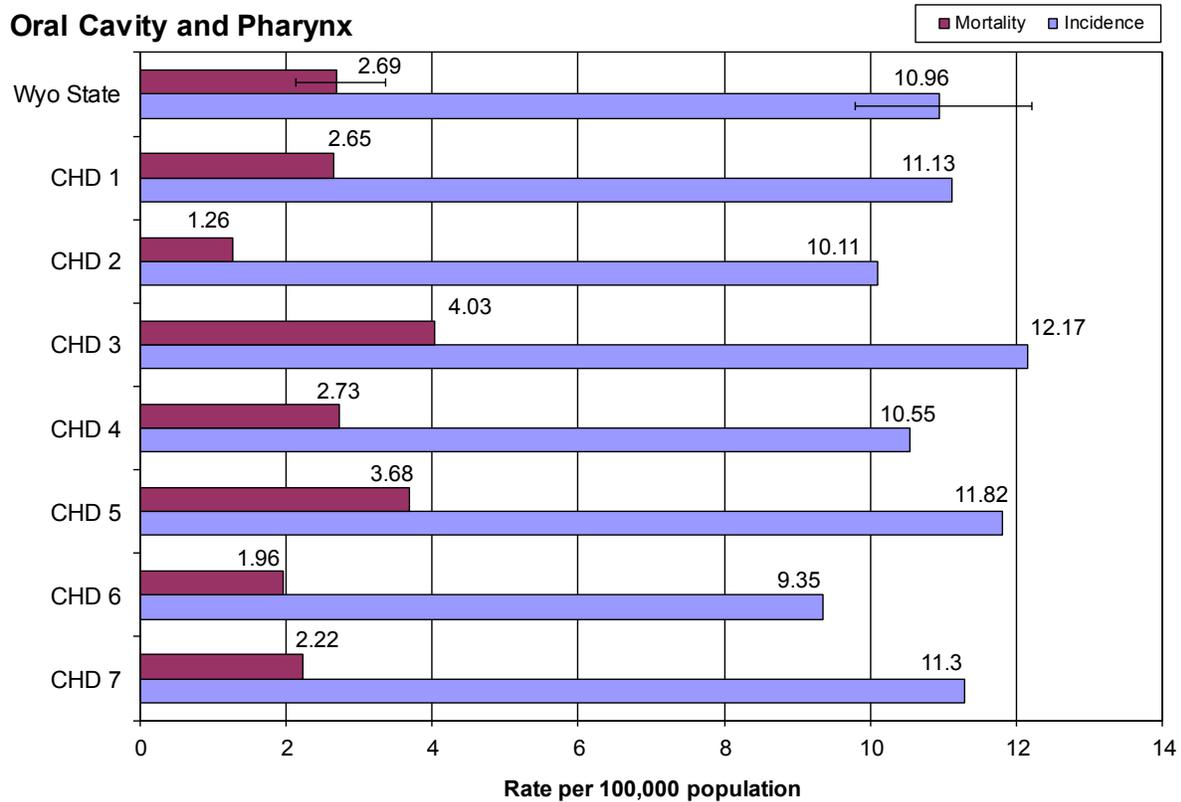
## Age-Specific Incidence Rates - 2012

### Oral Cavity and Pharynx



## Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012

### Oral Cavity and Pharynx



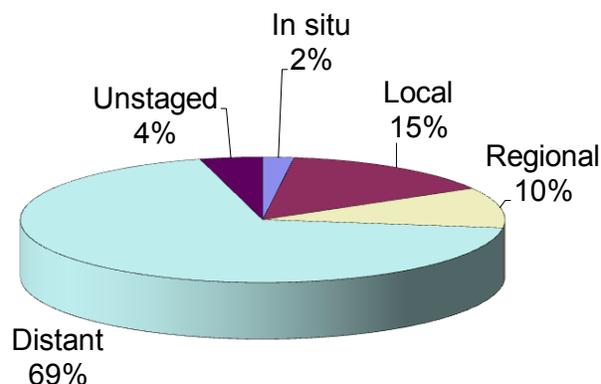
# Ovary

## Incidence and Mortality Summary

	Female
# Invasive Cases	47
WY Incidence	14.5
US Incidence	12.1
# Cancer Deaths	41
WY Mortality	12.7
US Mortality	7.8

\* 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 and mortality rate in Wyoming females for ovarian cancer were both higher than the national rate in 2012; however, neither difference was statistically significant.

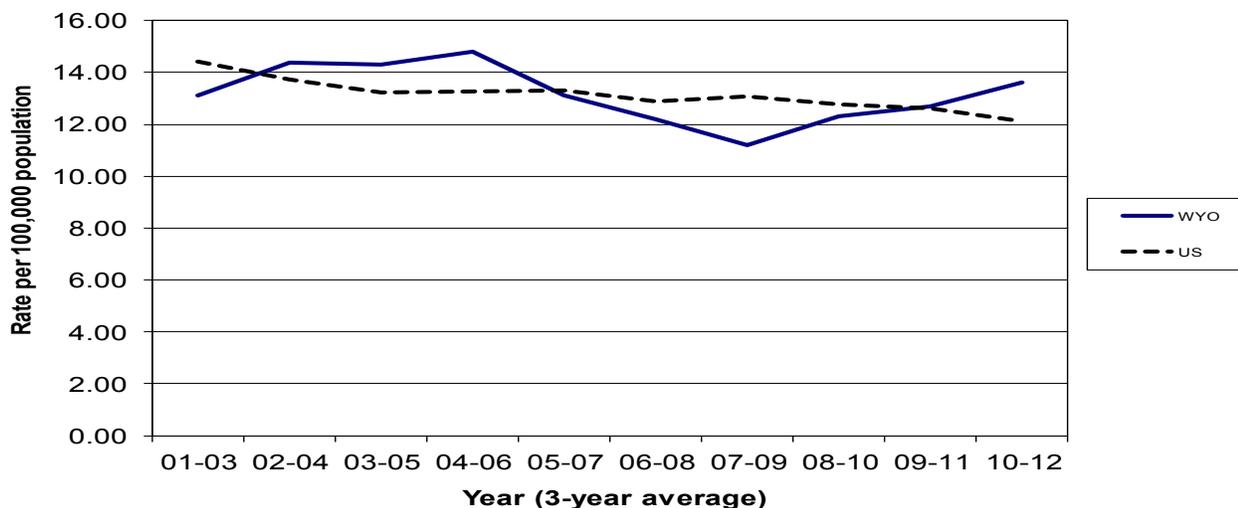
The 12-year incidence trend shows a continuing increase that began in 07-09, while the national incidence rate appears to be slowly decreasing.

There was a decrease in the percentage of cancers diagnosed at the regional stage from 2011 (17%) and a slight increase in the cases stages as local (9%). The other stages were basically unchanged from 2011.

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

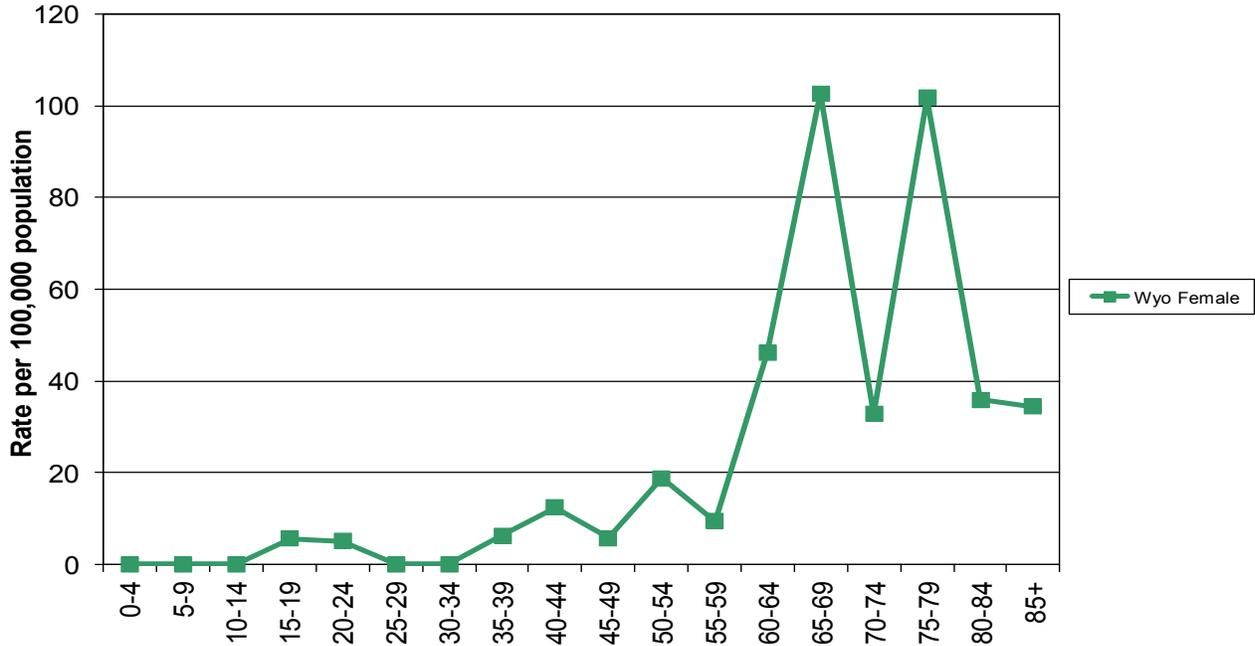
## 12-Year Incidence Trend

### Ovary



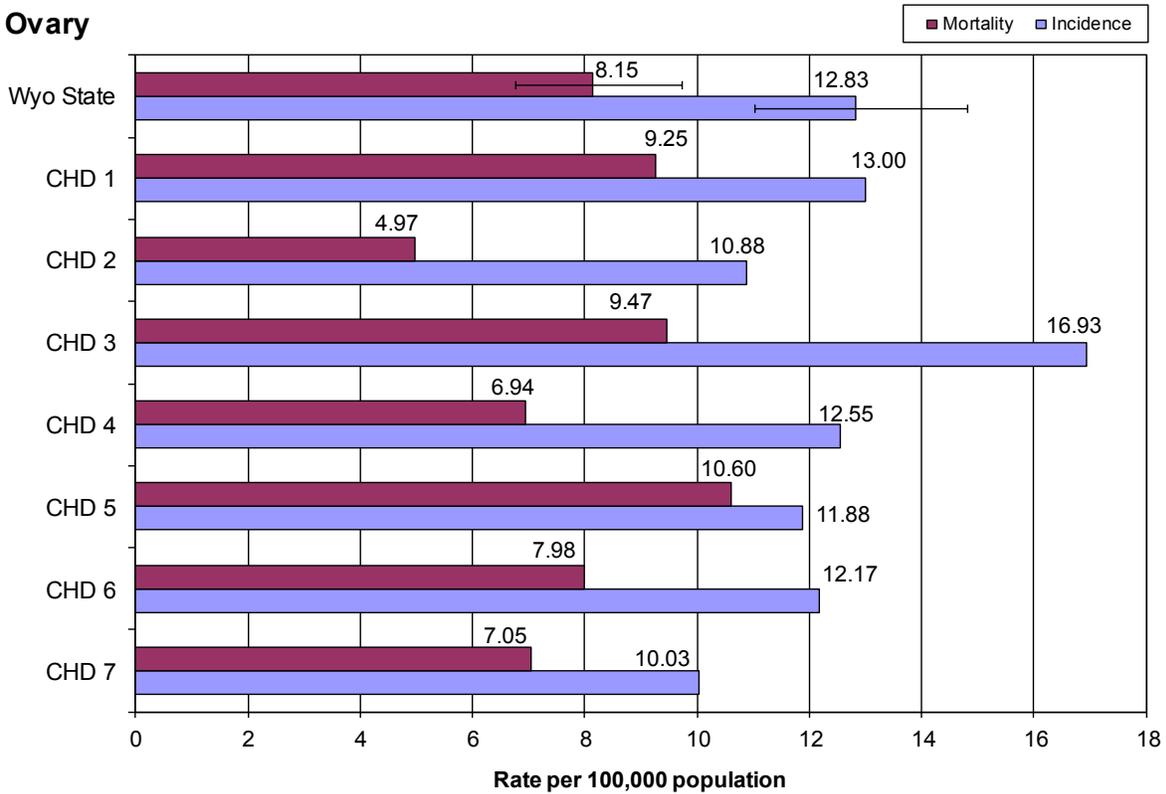
## Age-Specific Incidence Rates - 2012

### Ovary



## Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012

### Ovary



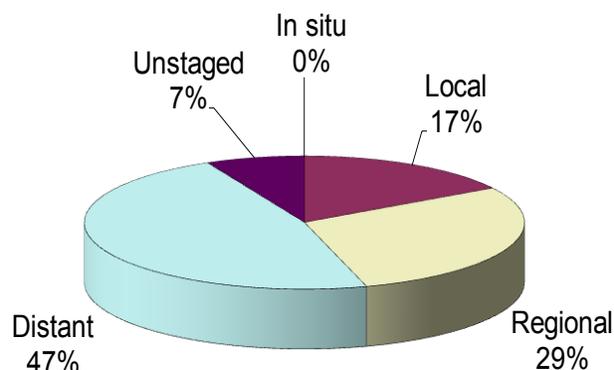
# Pancreas

## Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	25	30	55
WY Incidence	8.4	9.0	8.9
US Incidence	14.1	10.5	12.1
# Cancer Deaths	22	33	55
WY Mortality	7.2	10.2	8.9
US Mortality	12.5	9.4	10.8

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

## Stage at Diagnosis



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

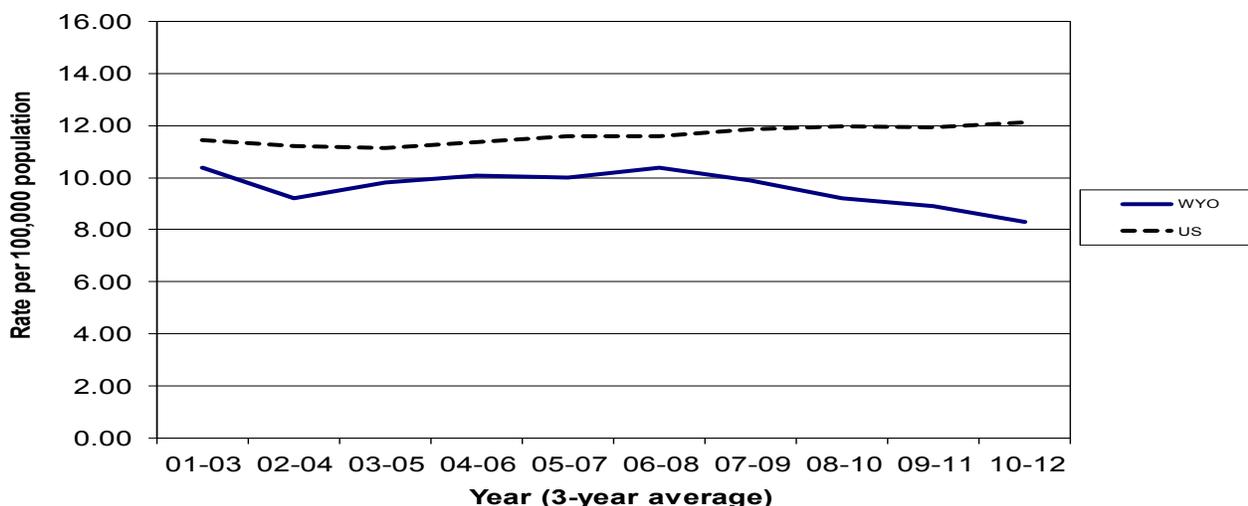
Wyoming's trend showed a continued decrease from 06-08, while the national rate remained basically level.

The percentage of cancer diagnosed at each stage were very similar to the percentages seen in 2011.

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

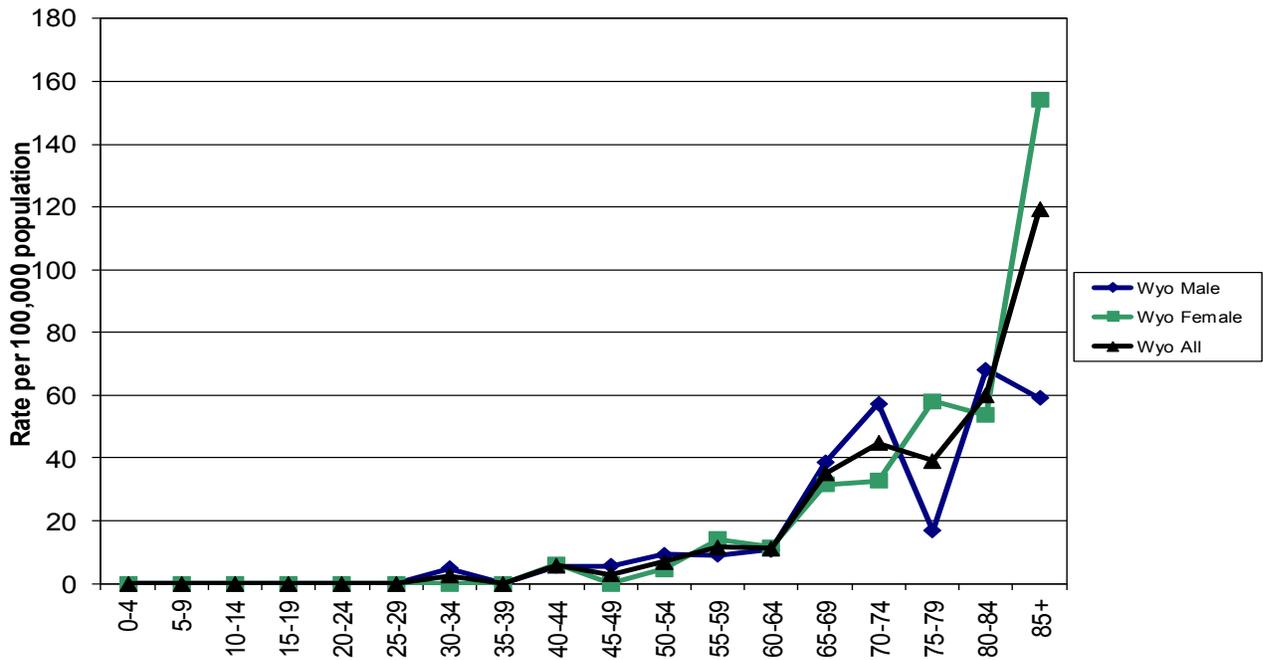
## 12-Year Incidence Trend

### Pancreas



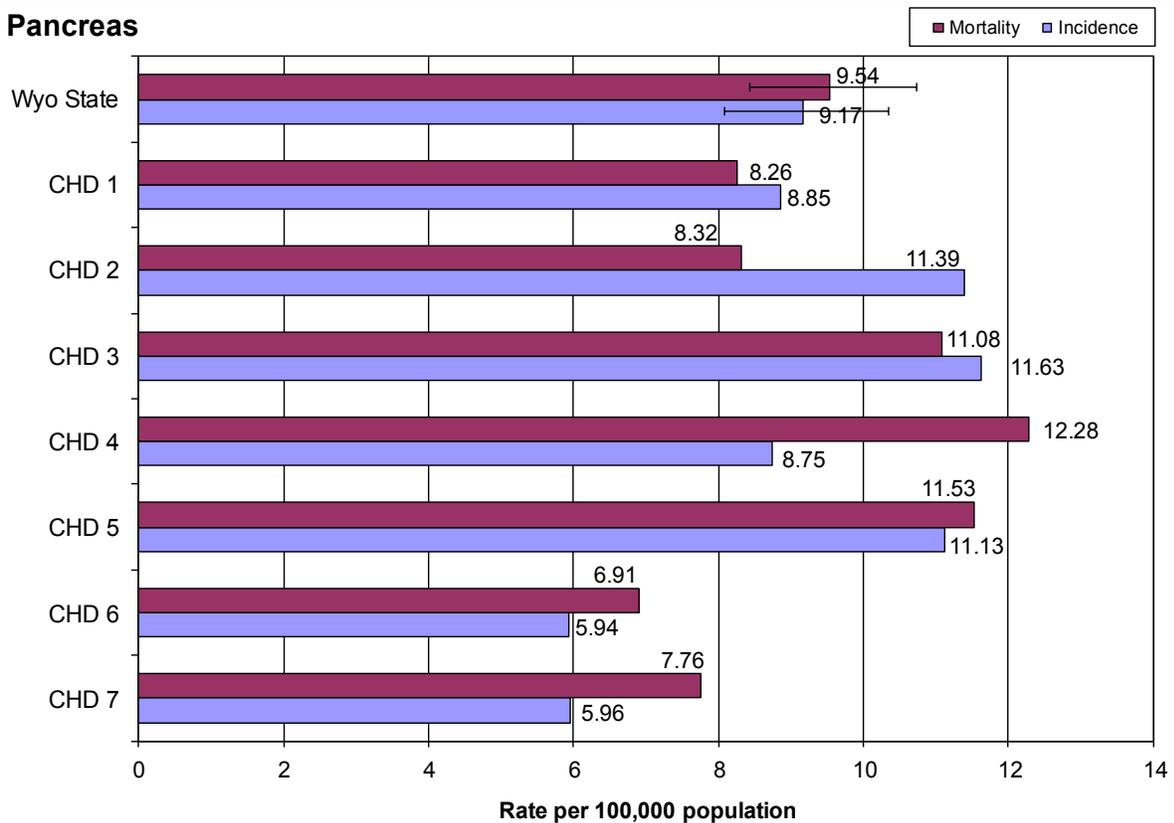
## Age-Specific Incidence Rates - 2012

### Pancreas



## Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012

### Pancreas



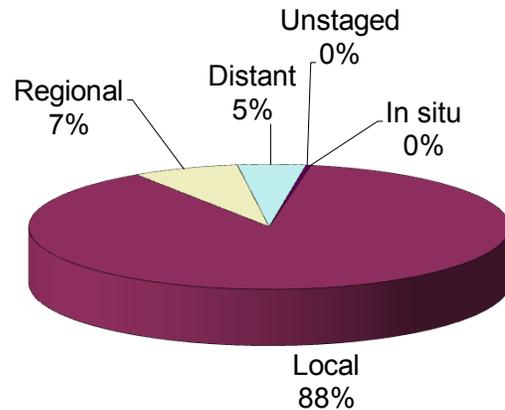
# Prostate

## Incidence and Mortality Summary

	Male
# Invasive Cases	306
WY Incidence	89.9
US Incidence	125.9
# Cancer Deaths	41
WY Mortality	15.8
US Mortality	19.2

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

## Stage at Diagnosis



The incidence and mortality rates for prostate cancer in Wyoming males were both lower than the national rate; however, neither difference was statistically significant.

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

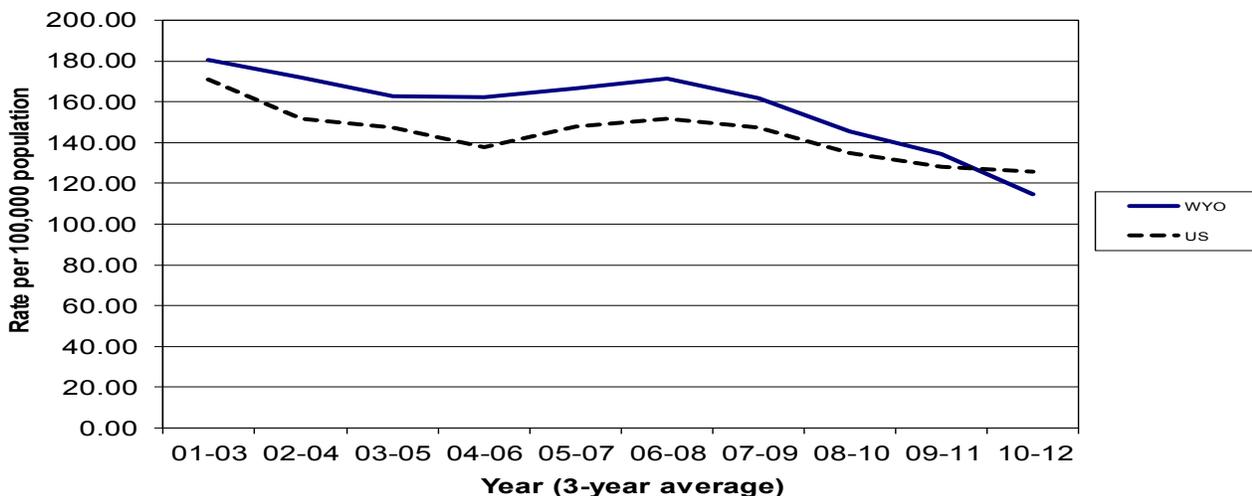
The percent of cases diagnosed at each stage in 2012 were very similar to 2011.

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

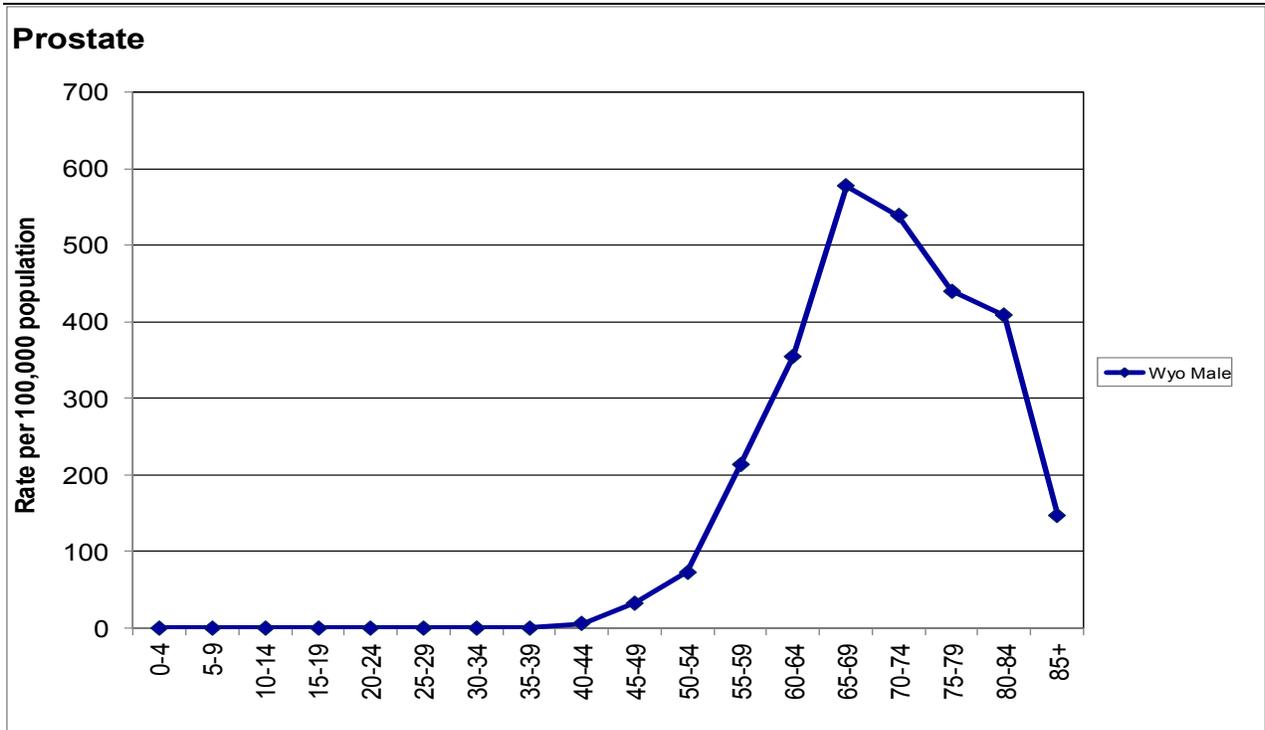
*Note - The dramatic decrease in the number of cases from 2011 (379) should not be seen as a irreversible and lasting change. This decrease may well be anomalous and due more to problems in receiving cases from other states than a real decrease in the number of cancers.*

## 12-Year Incidence Trend

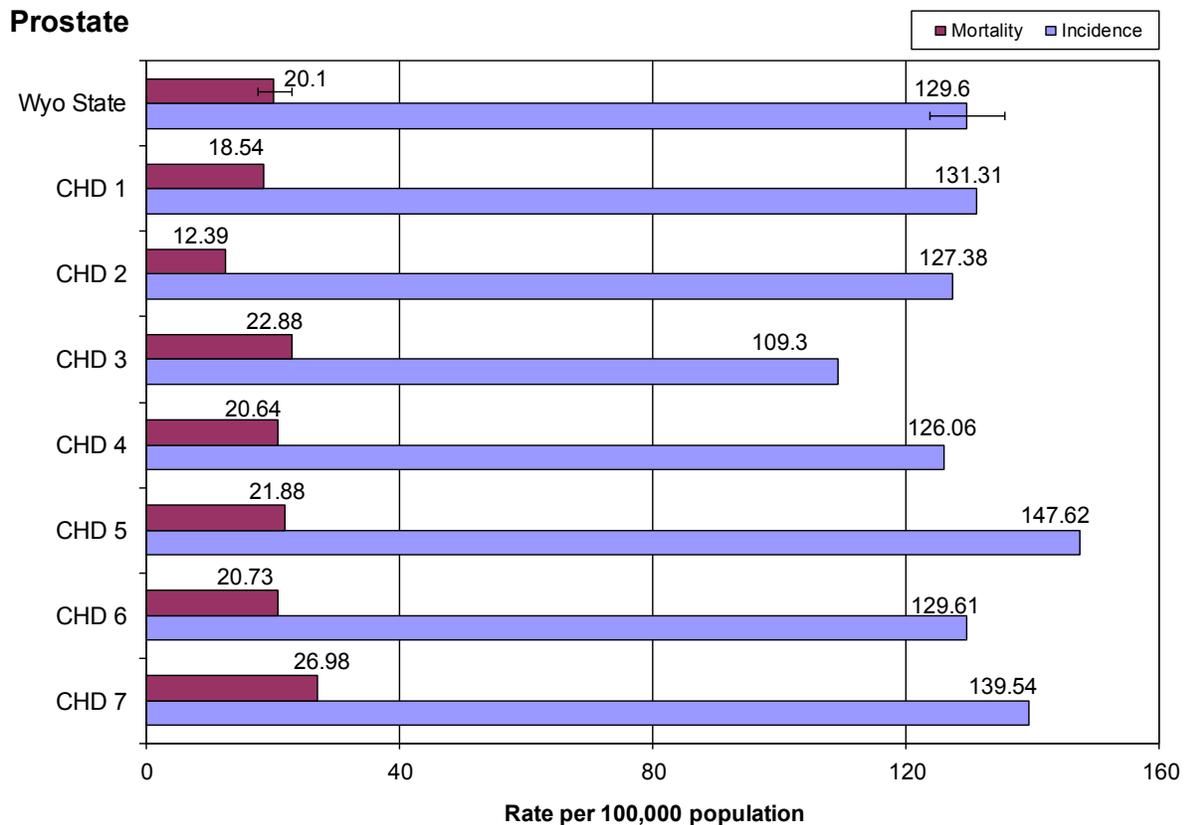
### Prostate



## Age-Specific Incidence Rates - 2012



## Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012



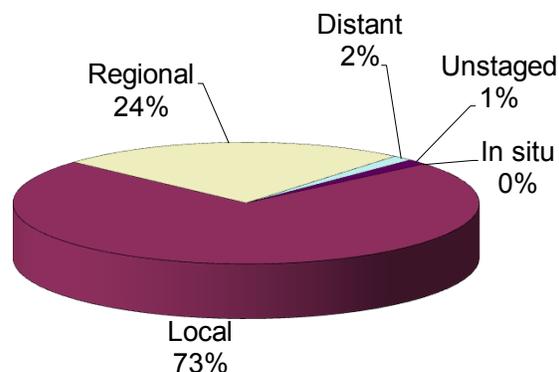
# Thyroid

## Incidence and Mortality Summary

	Male	Female	Total
# Invasive Cases	19	51	70
WY Incidence	6.6	18.3	12.2
US Incidence	7.4	21.7	14.5
# Cancer Deaths	NC	NC	NC
WY 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



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

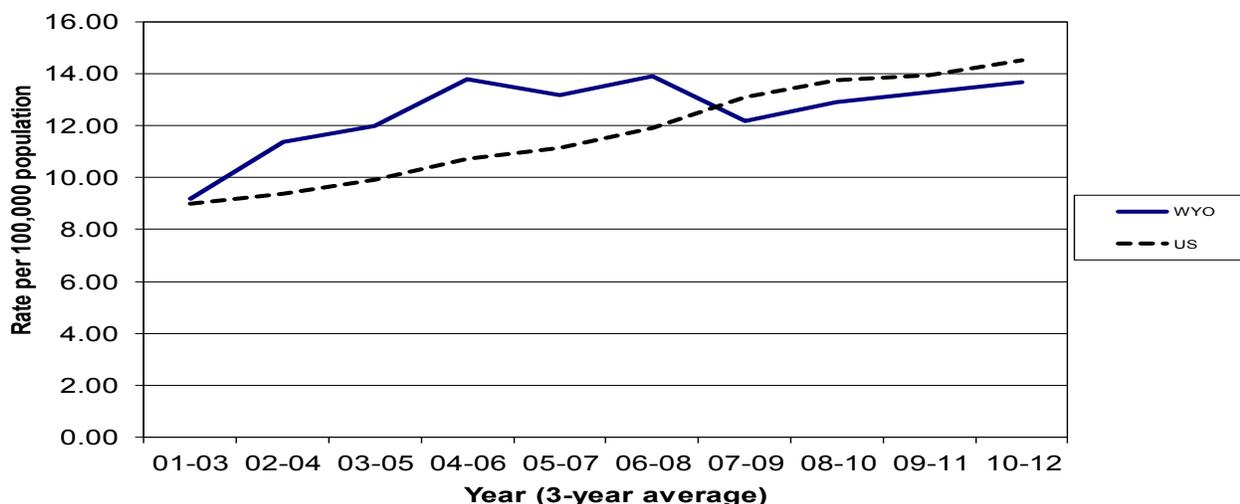
The trends for thyroid cancer in Wyoming and the United States both show an continuing increase over time.

The percentages for each stage were essentially the same as those seen in 2011, with only the regional stage showing any real change from 2011 (14%).

No statistically significant differences were found between the CHD rates and state rate for incidence. No region reported more than 5 deaths due to thyroid cancer from 2008-2012.

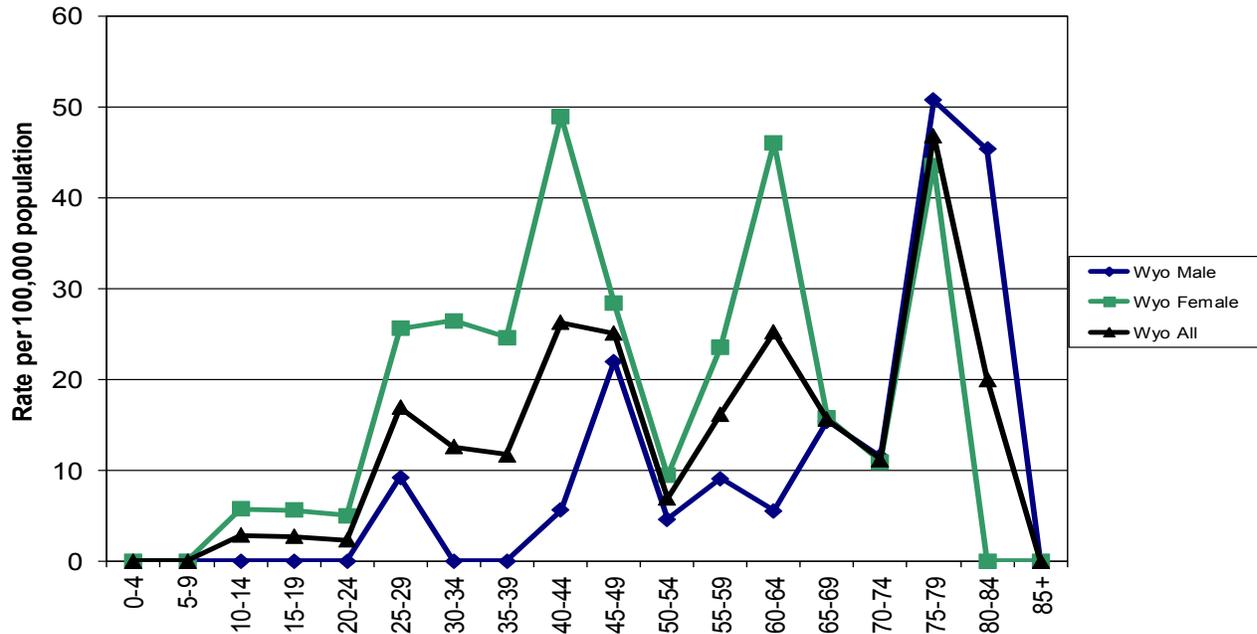
## 12-Year Incidence Trend

### Thyroid



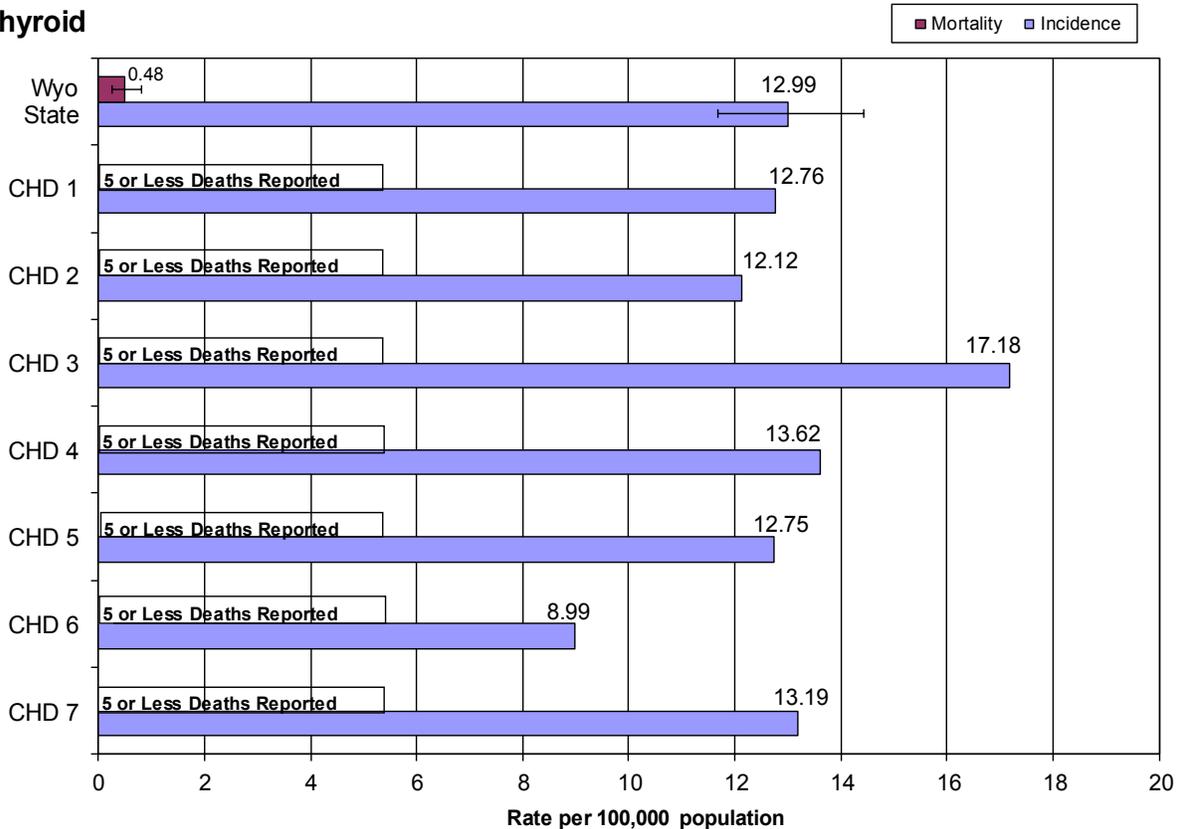
## Age-Specific Incidence Rates - 2012

### Thyroid



## Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012

### Thyroid



# Uterine

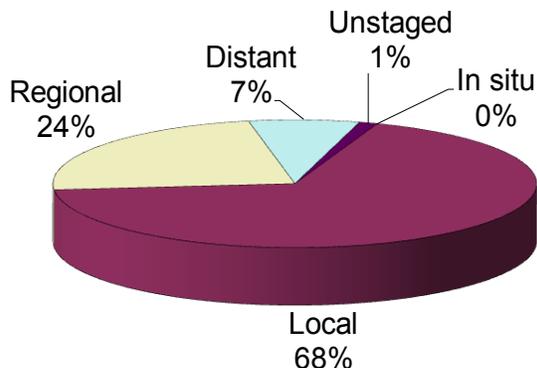
(Corpus Uteri + Uterus)

## Incidence and Mortality Summary

	Female
# Invasive Cases	81
WY Incidence	23.8
US Incidence	25.5
# Cancer Deaths	11
WY Mortality	3.3
US Mortality	4.2

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

## Stage at Diagnosis



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

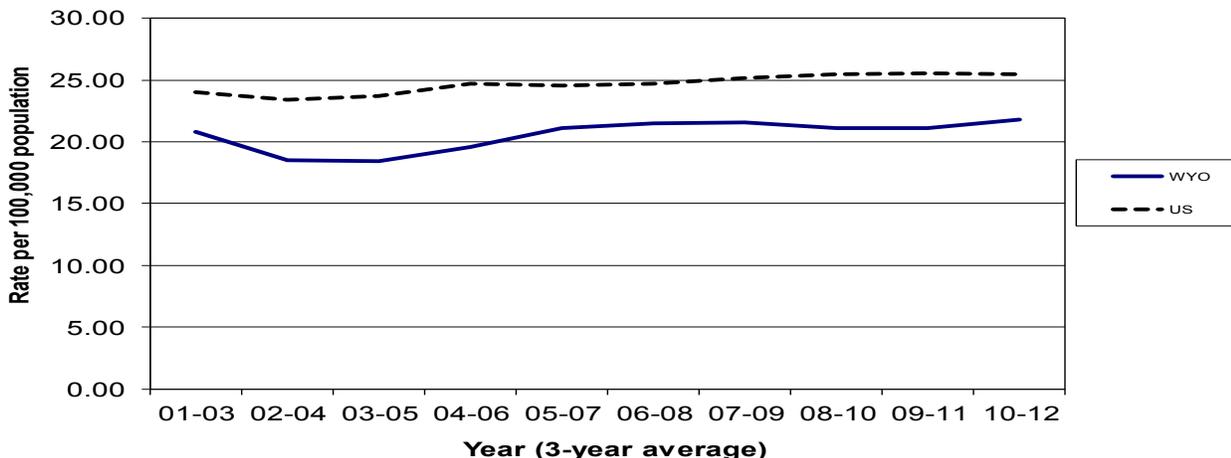
The Wyoming incidence rate shows a slight increase from 09-11 to 10-12, while the national rate remained level.

The percentage diagnosed at each stage similar to 2011 except for regional which increased from 2011 (13%) and distant which decreased (13%).

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

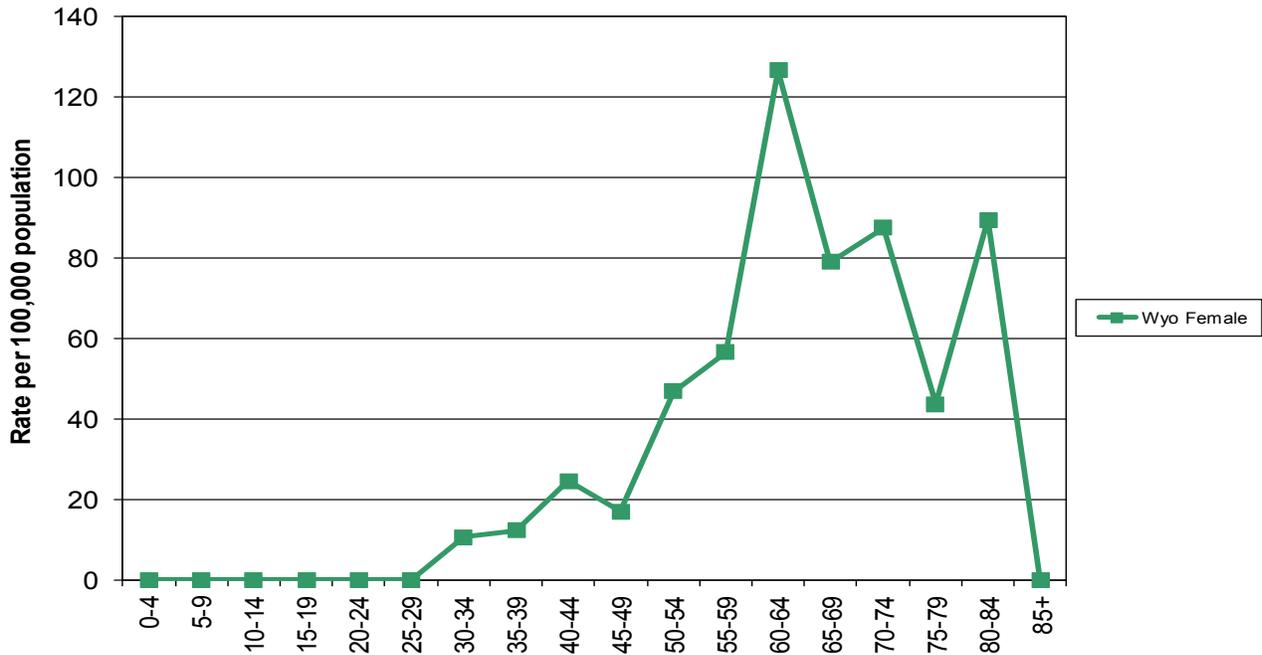
## 12-Year Incidence Trend

### Uterine



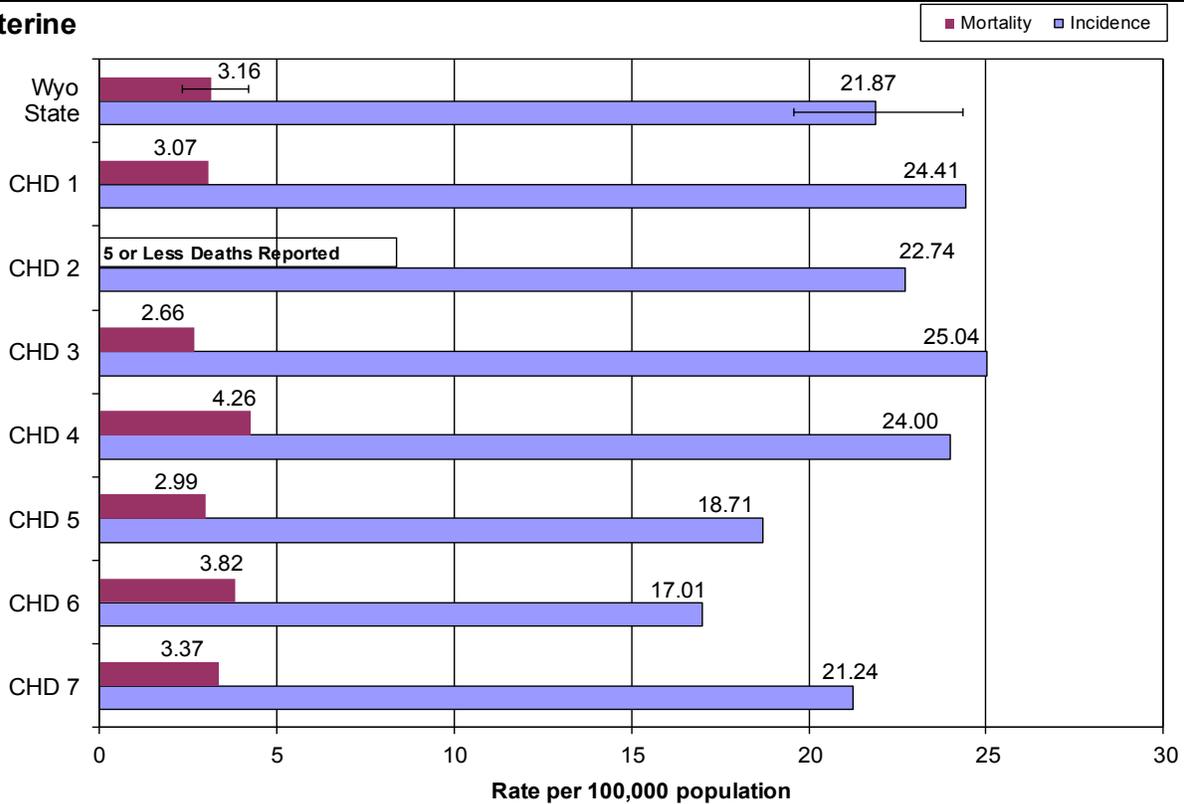
## Age-Specific Incidence Rates - 2012

### Uterine



## Cancer Health District Incidence and Mortality 5-Year Average, 2008-2012

### Uterine





# Appendix A

## References

Surveillance, Epidemiology, and End Results (SEER) Program ([www.seer.cancer.gov](http://www.seer.cancer.gov))  
SEER\*Stat Database: Incidence - SEER 18 Regs Research Data + Hurricane Katrina Impacted Louisiana Cases, Nov 2012 Sub (2000-2010) <Katrina/Rita Population Adjustment> Linked To County Attributes - Total U.S., 1969-2011 Counties, National Cancer Institute, DCCPS, Surveillance Research Program, Cancer Statistics Branch, released April 2013, based on the November 2012 submission.

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

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

## Age-Adjustment

Prior 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 comparable to 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:

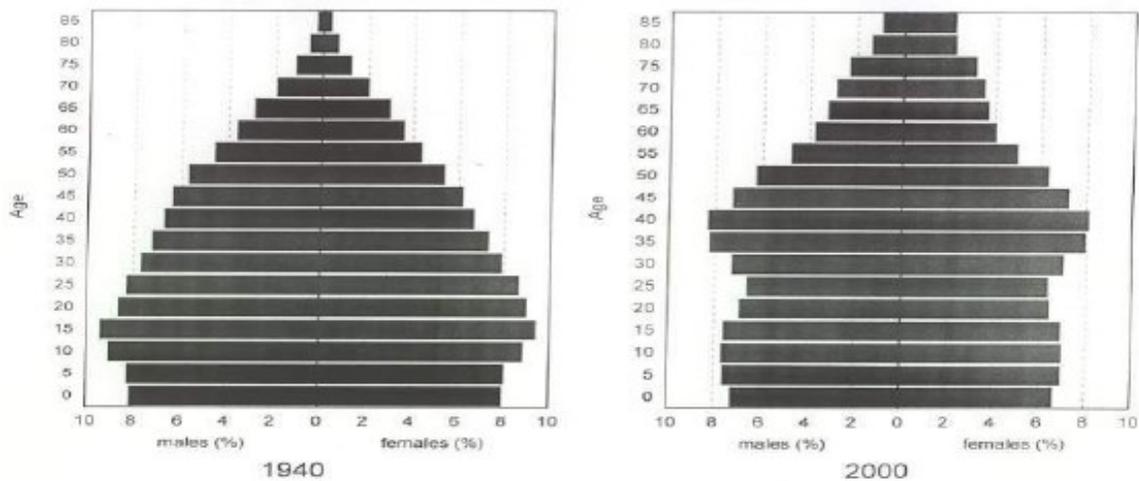


Chart B:

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

