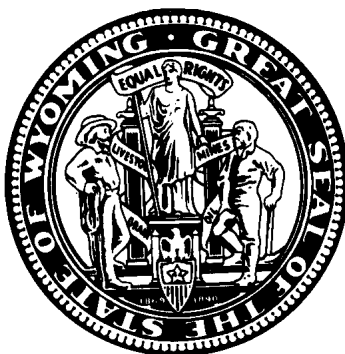


# State of Wyoming



## Department of Health

### Annual Report on Cancer in Wyoming - 2019

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Interim Director

November, 2021



# **State of Wyoming Department of Health**

## **Annual Report on Cancer in Wyoming—2019**

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## Executive Summary

The overall incidence rate for cancer in Wyoming was 416.6/100,000 in 2019, which is higher than the 2018 rate of 391.4/100,000, but lower than the national rate (439.8/100,000). The incidence rate for cancer among Wyoming males (446.4/100,000) and females (393.7/100,000) were also higher than the rates in 2018, but lower than the national rates of 470.8/100,000 for males and 420.6/100,000 for females. The mortality rates for males, females, and total population in Wyoming for 2019 are all lower than the national mortality rates.

The top five cancer sites for incidence in 2019 were: prostate, female breast, lung/bronchus, colorectal and melanoma. The most common cancers for incidence by age group were cancer of the thyroid (20-39); breast cancer (40-59 years); prostate (60-79); and lung (80-85+). There was a total of seventeen cases of cancer diagnosed in children under the age of 15 in 2019.

The top five cancer sites for mortality were lung, colorectal, pancreas, ill-defined, and breast cancer. The most common cancers associated with mortality by age group were leukemia (35-39); breast cancer (45-49); ill-defined (50-54); and lung (55-85+). There were fewer than two deaths per cancer site for all age groups from 0 to 34 and 40 to 44 years of age. There were two deaths from cancer in Wyoming residents under the age of 25 in 2019; one death was due to leukemia and the other was due to brain/CNS cancer.

The 5-year (60 months) relative survival rate for Wyoming cancer patients diagnosed between 2010 and 2019 was 74.7%. This means that nearly three out of every four cancer patients in Wyoming were alive five years after diagnosis during this time period. Prostate cancer (99.0%), cancer of the thyroid (98.3%), melanoma (98.0%), breast cancer (94.5%), and uterine cancer (87.4%) have the highest survival rates among Wyoming residents. The survival rates for cancer of the pancreas (15.3%); lung cancer (24.4%); and brain/CNS cancer (32.8%), while improving, are still the lowest among Wyoming residents. Children/ adolescents (0-19 years) in Wyoming have an excellent 5-year survival rate of 91.4% for all cancer sites combined.

*Note: Basal and squamous cell carcinoma, and in situ cervical cancer are not included in the calculation of All Sites Cancer incidence or 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, and colorectal screenings improve the survival rates and decrease 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.

Ensuring 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 are used by a variety of health professionals and others concerned about cancer. Within the Wyoming Department of Health (WDH), the data are 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 are used by physicians, hospital administrators, legislators, nonprofit 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 122 West 25th Street, 3rd Floor West, Cheyenne, WY 82002. Information is also available at: <https://health.wyo.gov/publichealth/chronic-disease-and-maternal-child-health-epidemiology-unit/cancer-surveillance/>

## 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 2019 except for the 12-year incidence trend, which used 3-year averages (e.g., 2001-2003 for 2002 or 2005-2007 for 2006). The defined population is the state of Wyoming, 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 are 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 2019 cancer cases among Wyoming residents received by WCSP as of July 1, 2021.

National Data -- The National Cancer Institute (NCI) updates cancer statistics annually in a publication called the Surveillance, Epidemiology, and End Results (SEER) Cancer Review, also available on-line. 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 software. WCSP used SEER\*STAT for this report. **The national SEER rates presented in this report were calculated using 2018 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 2019 for Wyoming rates. The defined population is the state of Wyoming, Wyoming counties, and Cancer Health Districts (see page 13).

Wyoming Data -- Mortality data are derived from death certificates filed with Wyoming Vital Statistics 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 2018 data for whites.** See Appendix A for reference source.

## Population

Wyoming Data -- Population estimates for Wyoming state and counties were obtained from the Centers for Disease Control and Prevention (CDC) Wonder website for Bridged-Race Population Estimates for 2019. Population numbers were broken down by county, age-group, sex, race, and ethnicity. 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 2019 invasive cases among 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 nineteen 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 (except bladder cancer)
- 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

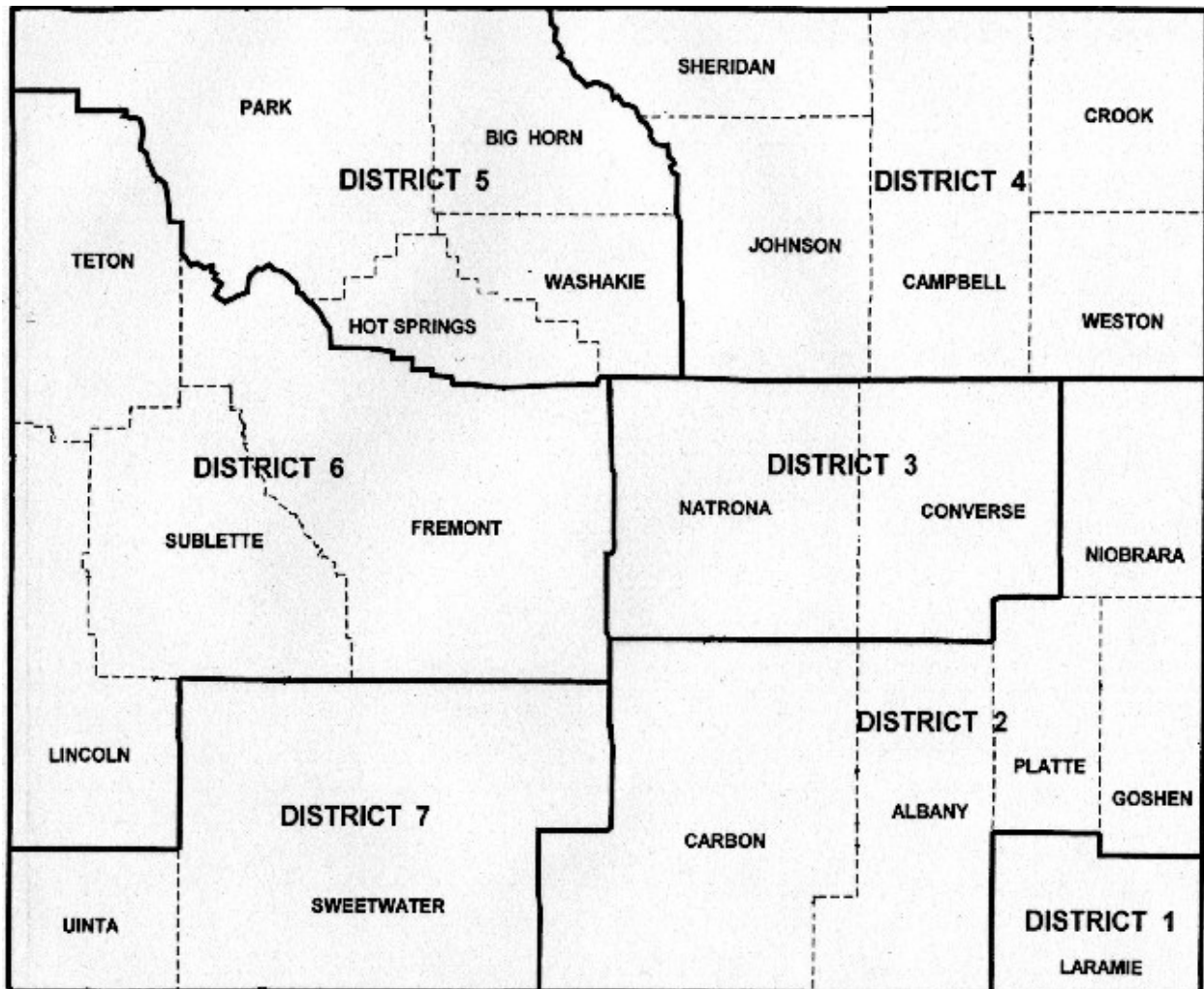
<u>In Situ</u>	cancer has not invaded the organ.
<u>Local Stage</u>	cancer has invaded the organ of origin.
<u>Regional Stage</u>	cancer has invaded beyond the organ of origin by direct extension to adjacent organs/tissues and/or regional lymph nodes.
<u>Distant Stage</u>	direct extension beyond adjacent 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 - 2019**

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

## Wyoming Cancer Incidence<sup>1</sup> for 2019: 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	7	10	0	0	0	0	0	0	0
Bladder w/ in situ	132	33	165	0	0	0	0	0	0	0
Bones and Joints	4	3	7	0	0	2	0	1	0	1
Brain	19	21	40	2	0	1	2	2	1	1
Breast	3	418	421	0	0	0	0	0	2	4
Cervix	0	27	27	0	0	0	0	0	1	3
Colorectal	151	111	262	0	0	0	0	0	2	2
Esophagus	30	7	37	0	0	0	0	0	0	0
Eye	3	2	5	0	0	0	0	0	0	0
Gallbladder	2	1	3	0	0	0	0	0	0	0
Hodgkin	9	10	19	0	0	0	2	0	1	2
III-Defined	47	44	91	0	0	0	0	0	1	1
Kidney	85	48	133	0	0	0	0	1	0	1
Larynx	12	6	18	0	0	0	0	0	0	0
Leukemia	62	38	100	5	0	1	1	0	0	3
Liver	34	4	38	0	0	0	0	0	0	0
Lung	155	175	330	0	0	0	0	1	0	0
Melanoma	104	82	186	0	0	1	1	1	3	5
Myeloma	31	14	45	0	0	0	0	0	0	0
Nasal	1	0	1	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	70	51	121	0	0	0	1	0	0	4
Oral Cavity	52	24	76	0	0	0	0	0	1	2
Other Biliary	9	7	16	0	0	0	0	0	0	0
Other Digestive	2	6	8	1	0	0	0	0	0	0
Other Endocrine	1	0	1	0	0	0	0	0	0	0
Other Female	0	19	19	0	0	0	0	0	0	0
Other Male	8	0	8	0	0	0	0	0	0	0
Other Skin	6	6	12	0	0	0	0	0	0	1
Other Respiratory	1	0	1	0	0	0	0	0	0	0
Other Urinary	2	1	3	0	0	0	0	0	0	0
Ovary	0	32	32	0	0	0	1	0	0	1
Pancreas	47	26	73	0	0	0	0	0	0	0
Prostate	449	0	449	0	0	0	0	0	0	0
Small Intestine	7	8	15	0	0	0	0	0	0	0
Soft Tissue including Heart	12	10	22	2	0	1	1	2	0	1
Stomach	23	14	37	0	0	0	0	0	0	0
Testis	20	0	20	0	0	1	0	0	4	4
Thyroid	26	64	90	0	0	0	1	4	6	9
Uterine	0	80	80	0	0	0	0	0	1	0
Mesothelioma	2	0	2	0	0	0	0	0	0	0
<b>All Sites</b>	<b>1,624</b>	<b>1,399</b>	<b>3,023</b>	<b>10</b>	<b>0</b>	<b>7</b>	<b>10</b>	<b>12</b>	<b>23</b>	<b>45</b>

<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	0	0	0	2	5	0	1	1	1	0	0
Bladder w/ in situ	1	0	0	6	12	16	34	23	31	21	21
Bones and Joints	0	1	0	0	0	0	0	1	1	0	0
Brain	2	2	2	1	1	6	7	5	4	0	1
Breast	9	21	22	28	45	65	76	71	37	20	21
Cervix	1	5	6	3	4	2	0	1	0	0	1
Colorectal	3	4	13	23	24	34	38	37	40	18	24
Esophagus	0	0	1	2	3	5	4	8	8	5	1
Eye	0	0	2	0	0	1	0	1	0	0	1
Gallbladder	0	0	0	0	1	1	0	1	0	0	0
Hodgkin	2	2	1	0	3	3	1	0	1	0	1
Ill-Defined	0	1	3	3	6	10	12	18	10	10	16
Kidney	3	8	8	6	11	23	29	15	14	7	7
Larynx	0	1	0	1	3	4	3	2	3	1	0
Leukemia	0	3	4	6	5	16	15	13	14	6	8
Liver	0	0	0	1	6	11	11	4	2	2	1
Lung	0	0	6	13	19	57	50	80	49	24	31
Melanoma	4	8	10	14	19	23	25	37	16	9	10
Myeloma	1	0	1	4	5	6	9	7	6	2	4
Nasal	1	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	4	5	6	7	12	14	21	13	13	11	10
Oral Cavity	4	3	1	8	15	10	14	9	2	5	2
Other Biliary	0	0	0	0	2	1	1	3	3	4	2
Other Digestive	0	0	0	1	1	3	0	0	0	2	0
Other Endocrine	0	0	0	0	0	0	1	0	0	0	0
Other Female	0	0	0	1	1	4	4	3	3	2	1
Other Male	0	0	0	0	0	3	0	1	2	1	1
Other Skin	0	0	0	1	0	1	5	1	1	2	0
Other Respiratory	1	0	0	0	0	0	0	0	0	0	0
Other Urinary	0	0	0	0	0	0	0	2	1	0	0
Ovary	0	2	2	0	4	5	5	5	4	1	2
Pancreas	1	0	1	8	11	12	12	10	9	3	6
Prostate	0	0	4	14	42	84	117	86	68	20	14
Small Intestine	0	0	0	4	1	2	0	2	4	1	1
Soft Tissue including Heart	0	2	0	0	3	2	2	0	3	3	0
Stomach	0	1	1	0	4	7	7	6	4	3	4
Testis	2	3	2	1	1	1	0	0	1	0	0
Thyroid	12	10	6	9	3	12	4	8	4	2	0
Uterine	0	1	5	7	11	21	12	10	5	1	6
Mesothelioma	0	0	0	0	0	0	0	0	1	1	0
<b>All Sites</b>	<b>51</b>	<b>83</b>	<b>107</b>	<b>174</b>	<b>283</b>	<b>465</b>	<b>520</b>	<b>484</b>	<b>365</b>	<b>187</b>	<b>197</b>

## Wyoming Cancer Mortality<sup>1</sup> for 2019: 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	30	2	32	0	0	0	0	0	0	0
Bones and Joints	0	0	0	0	0	0	0	0	0	0
Brain	22	5	27	0	0	0	0	1	0	0
Breast	1	62	63	0	0	0	0	0	0	2
Cervix	0	10	10	0	0	0	0	0	1	0
Colorectal	45	44	89	0	0	0	0	0	0	0
Esophagus	29	3	32	0	0	0	0	0	0	0
Eye	0	0	0	0	0	0	0	0	0	0
Gallbladder	2	2	4	0	0	0	0	0	0	0
Hodgkin	0	0	0	0	0	0	0	0	0	0
Ill-Defined	45	37	82	0	0	0	0	0	0	0
Kidney	25	9	34	0	0	0	0	0	0	0
Larynx	4	3	7	0	0	0	0	0	0	0
Leukemia	26	23	49	0	1	0	0	0	0	0
Liver	28	2	30	0	0	0	0	0	0	0
Lung	123	102	225	0	0	0	0	0	0	0
Melanoma	9	8	17	0	0	0	0	0	0	0
Myeloma	10	9	19	0	0	0	0	0	0	0
Nasal	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	18	20	38	0	0	0	0	0	0	0
Oral Cavity	6	3	9	0	0	0	0	0	0	0
Other Biliary	4	4	8	0	0	0	0	0	0	0
Other Digestive	0	2	2	0	0	0	0	0	0	0
Other Endocrine	1	1	2	0	0	0	0	0	0	0
Other Female	0	6	6	0	0	0	0	0	0	0
Other Male	0	0	0	0	0	0	0	0	0	0
Other Skin	2	3	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	26	26	0	0	0	0	0	0	0
Pancreas	50	32	82	0	0	0	0	0	0	0
Prostate	57	0	57	0	0	0	0	0	0	0
Small Intestine	1	1	2	0	0	0	0	0	0	0
Soft Tissue including Heart	5	6	11	0	0	0	0	0	0	0
Stomach	12	3	15	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	23	23	0	0	0	0	0	0	0
Mesothelioma	5	0	5	0	0	0	0	0	0	0
<b>All Sites</b>	<b>560</b>	<b>455</b>	<b>1,015</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>

<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	1	0	0	0	0	0	0	0
Bladder w/ in situ	0	0	0	1	2	4	3	4	5	2	11
Bones and Joints	0	0	0	0	0	0	0	0	0	0	0
Brain	1	0	0	2	4	6	8	1	2	1	1
Breast	1	1	3	3	6	7	6	11	9	8	6
Cervix	0	0	1	3	2	1	0	2	0	0	0
Colorectal	0	1	2	5	9	8	14	9	13	12	16
Esophagus	0	0	3	0	2	3	5	7	7	3	2
Eye	0	0	0	0	0	0	0	0	0	0	0
Gallbladder	0	0	0	0	0	0	1	1	0	0	2
Hodgkin	0	0	0	0	0	0	0	0	0	0	0
III-Defined	0	0	1	6	1	12	9	12	12	12	17
Kidney	0	0	0	0	3	4	8	6	6	3	4
Larynx	0	0	0	0	0	1	2	2	2	0	0
Leukemia	3	0	1	0	1	1	6	6	11	9	10
Liver	0	1	0	0	2	5	10	3	3	5	1
Lung	0	0	1	0	11	29	32	48	42	28	34
Melanoma	0	0	0	3	0	3	4	2	4	0	1
Myeloma	0	0	0	0	1	0	3	2	3	5	5
Nasal	0	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin Lymphoma	0	1	0	2	2	2	6	5	6	5	9
Oral Cavity	0	0	0	1	1	4	1	2	0	0	0
Other Biliary	0	0	0	0	0	1	1	1	3	0	2
Other Digestive	0	0	0	0	0	1	0	0	0	0	1
Other Endocrine	0	0	0	0	1	0	0	0	0	0	1
Other Female	0	0	0	0	1	1	1	1	0	2	0
Other Male	0	0	0	0	0	0	0	0	0	0	0
Other Skin	0	0	0	1	0	0	1	0	1	0	2
Other Respiratory	0	0	0	0	0	0	0	0	0	0	0
Other Urinary	0	0	0	0	0	0	1	0	0	0	0
Ovary	0	0	0	3	5	4	5	0	4	2	3
Pancreas	0	1	1	5	11	9	9	11	16	8	11
Prostate	0	0	0	0	1	6	5	6	13	10	16
Small Intestine	0	0	1	0	0	1	0	0	0	0	0
Soft Tissue including Heart	1	0	0	0	2	3	0	0	0	3	2
Stomach	0	0	1	1	1	1	4	2	3	1	1
Testis	0	0	0	0	0	0	0	0	0	0	0
Thyroid	0	0	0	0	0	1	0	0	0	1	0
Uterine	0	0	0	1	4	4	6	2	2	1	3
Mesothelioma	0	0	0	0	1	0	0	0	2	2	0
<b>All Sites</b>	<b>6</b>	<b>5</b>	<b>15</b>	<b>38</b>	<b>74</b>	<b>122</b>	<b>151</b>	<b>146</b>	<b>169</b>	<b>123</b>	<b>161</b>

**Wyoming Cancer Incidence for 2019: Cases by Race and Ethnicity  
(Top 15 Sites Only)**

	<b>Total</b>	<b>White</b>	<b>African American</b>	<b>Native American</b>	<b>Asian</b>	<b>Other</b>	<b>Ethnicity: Hispanic/Latino</b>
<b>All Sites</b>	<b>3,023</b>	<b>2,948</b>	<b>16</b>	<b>35</b>	<b>10</b>	<b>14</b>	<b>85</b>
<b>Bladder</b>	165	161	1	2	1	0	4
<b>Brain</b>	40	36	0	4	0	0	0
<b>Breast (Female)</b>	421	412	3	6	0	0	8
<b>Colorectal</b>	262	256	1	3	0	2	7
<b>Kidney</b>	133	128	0	3	1	1	7
<b>Leukemia</b>	100	98	1	0	0	1	8
<b>Lung</b>	330	318	2	6	2	2	9
<b>Melanoma</b>	186	186	0	0	0	0	1
<b>Non-Hodgkin Lymphoma</b>	121	120	1	0	0	0	5
<b>Oral Cavity</b>	76	74	0	1	0	1	2
<b>Ovary</b>	32	31	0	0	1	0	1
<b>Pancreas</b>	73	70	2	1	0	0	3
<b>Prostate</b>	449	440	3	3	1	2	11
<b>Thyroid</b>	90	90	0	0	0	0	1
<b>Uterine</b>	80	78	0	0	1	1	2

**Wyoming Cancer Mortality for 2019: Cases by Race and Ethnicity  
(Top 15 Sites Only)**

	<b>Total</b>	<b>White</b>	<b>African American</b>	<b>Native American</b>	<b>Asian</b>	<b>Other</b>	<b>Ethnicity: Hispanic/Latino</b>
<b>All Sites</b>	<b>1,015</b>	<b>976</b>	<b>5</b>	<b>25</b>	<b>8</b>	<b>1</b>	<b>50</b>
<b>Bladder</b>	32	29	2	1	0	0	0
<b>Brain/CNS</b>	27	27	0	0	0	0	0
<b>Breast (Female)</b>	63	60	0	3	0	0	3
<b>Colorectal</b>	89	83	0	3	2	1	8
<b>Kidney</b>	34	33	0	1	0	0	2
<b>Leukemia</b>	49	47	1	1	0	0	3
<b>Lung</b>	225	218	0	5	2	0	8
<b>Melanoma</b>	17	17	0	0	0	0	0
<b>Non-Hodgkin Lymphoma</b>	38	38	0	0	0	0	2
<b>Oral Cavity</b>	9	8	0	1	0	0	3
<b>Ovary</b>	26	25	0	1	0	0	0
<b>Pancreas</b>	82	79	1	1	1	0	4
<b>Prostate</b>	57	55	0	2	0	0	1
<b>Thyroid</b>	2	2	0	0	0	0	0
<b>Uterine</b>	23	22	0	0	1	0	0



## **State of Wyoming - 2019**

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

## Top Cancer Incidence - Site by Gender - 2019

Total		Male		Female	
Prostate	449	Prostate	449	Breast	418
Breast	421	Lung	155	Lung	175
Lung	330	Colorectal	151	Colorectal	111
Colorectal	262	Bladder/w in situ	132	Melanoma	82
Melanoma	186	Melanoma	104	Uterine	80

### Top Incidence Sites by Age (Case count included only if more than 3 cases per cancer)

NHL = Non-Hodgkin's Lymphoma

		<u>0-4</u>		<u>5-9</u>		<u>10-14</u>		<u>15-19</u>	
		Leukemia	5	Each site has less than 3 cases		Each site has less than 3 cases		Each site has less than 3 cases	
		<u>20-24</u>		<u>25-29</u>		<u>30-34</u>		<u>35-39</u>	
Thyroid	4	Thyroid	6	Thyroid	9	Thyroid	12	Breast	21
		Testis	4	Melanoma	5	Breast	9	Thyroid	10
		Melanoma	3	Breast	4	Melanoma	4	Kidney	8
				NHL	4	NHL	4	Melanoma	8
				Testis	4	Oral Cavity	4	NHL	5
		<u>45-49</u>		<u>50-54</u>		<u>55-59</u>		<u>60-64</u>	
Breast	22	Breast	28	Breast	45	Prostate	84	Prostate	117
Colorectal	13	Colorectal	23	Prostate	42	Breast	65	Breast	76
Melanoma	10	Melanoma	14	Colorectal	24	Lung	57	Lung	50
NHL	6	Prostate	14	Lung	19	Colorectal	34	Colorectal	38
Thyroid	6	Lung	13	Melanoma	19	Melanoma & Kidney	23	Bladder	34
		<u>70-74</u>		<u>75-79</u>		<u>80-84</u>		<u>85+</u>	
Prostate	86	Prostate	68	Lung	24	Lung	31		
Lung	80	Lung	49	Bladder	21	Colorectal	24		
Breast	71	Colorectal	40	Breast	20	Bladder	21		
Colorectal	37	Breast	37	Prostate	20	Breast	21		
Melanoma	37	Bladder	31	Colorectal	18	Ill-Defined	16		



## Top Cancer Mortality - Site by Gender - 2019

Total		Male		Female	
Lung	225	Lung	123	Lung	102
Colorectal	89	Prostate	57	Breast	62
Pancreas	82	Pancreas	50	Colorectal	44
Ill-Defined	82	Colorectal	45	Ill-Defined	37
Breast	63	Ill-Defined	45	Pancreas	32

## Top Mortality Sites by Age (Mortality count included only if 2 or more cases per cancer)

		<u>0-4</u>		<u>5-9</u>		<u>10-14</u>		<u>15-19</u>	
		Each site has less than 2 deaths		Each site has less than 2 deaths		Each site has less than 2 deaths		Each site has less than 2 deaths	
<u>20-24</u>		<u>25-29</u>		<u>30-34</u>		<u>35-39</u>		<u>40-44</u>	
Each site has less than 2 deaths		Each site has less than 2 deaths		Each site has less than 2 deaths		Leukemia	3	Each site has less than 2 deaths	
<u>45-49</u>		<u>50-54</u>		<u>55-59</u>		<u>60-64</u>		<u>65-69</u>	
Breast	3	Ill-Defined	6	Lung	11	Lung	29	Lung	32
Esophagus	2	Colorectal	5	Pancreas	11	Ill-Defined	12	Colorectal	14
Colorectal	2	Pancreas	5	Colorectal	9	Pancreas	9	Liver	10
		Breast, Cervix, Melanoma, & Ovary	3	Breast	6	Colorectal	8	Pancreas	9
				Ovary	5	Breast	7	Ill-Defined	9
<u>70-74</u>		<u>75-79</u>		<u>80-84</u>		<u>85+</u>			
Lung	48	Lung	42	Lung	28	Lung	34		
Ill-Defined	12	Pancreas	16	Colorectal	12	Ill-Defined	17		
Breast	11	Colorectal	13	Ill-Defined	12	Colorectal	16		
Pancreas	11	Prostate	13	Prostate	10	Prostate	16		
Colorectal	9	Ill-Defined	12	Breast & Pancreas	8	Bladder & Pancreas	11		



**Relative Survival Rates State of Wyoming  
2010-2019  
All Sites and Top 15 Cancers**

**Relative Survival by Cancer Type: 2010-2019 (All Ages and Stages Combined)**

<b>Cancer Site</b>	12 Months	24 Months	36 Months	48 Months	<b>60 Months</b>
All Sites	84.70%	80.10%	77.50%	75.70%	<b>74.70%</b>
Bladder w/in situ	92.70%	87.40%	85.30%	84.60%	<b>84.50%</b>
Brain/CNS	57.10%	44.00%	38.40%	33.80%	<b>32.80%</b>
Breast (Female)	98.40%	97.60%	96.00%	95.20%	<b>94.50%</b>
Colorectal	84.90%	77.60%	74.00%	69.40%	<b>66.20%</b>
Kidney	90.20%	86.90%	85.30%	82.40%	<b>80.90%</b>
Leukemia	80.10%	74.50%	71.50%	68.90%	<b>67.10%</b>
Lung	49.30%	36.10%	30.40%	26.80%	<b>24.40%</b>
Melanoma	99.20%	98.50%	98.50%	98.20%	<b>98.00%</b>
Non-Hodgkin's	85.60%	81.60%	79.00%	77.20%	<b>75.90%</b>
Oral Cavity	90.70%	83.90%	78.60%	75.60%	<b>74.20%</b>
Ovary	82.40%	72.20%	66.00%	59.90%	<b>53.60%</b>
Pancreas	33.60%	21.70%	17.00%	15.60%	<b>15.30%</b>
Prostate	99.60%	99.60%	99.20%	99.00%	<b>99.00%</b>
Thyroid	98.80%	98.70%	98.30%	98.30%	<b>98.30%</b>
Uterine	95.50%	91.90%	89.50%	88.10%	<b>87.40%</b>

**Relative Survival by Cancer Type: 2010-2019 all stages (Ages 0-19 years old)**

<b>Cancer Site</b>	12 Months	24 Months	36 Months	48 Months	<b>60 Months</b>
All Sites	96.60%	94.60%	94.20%	92.60%	<b>91.40%</b>
Bones & Joints	100.0%	100.0%	100.0%	89.00%	<b>89.00%</b>
Brain/CNS	86.50%	80.90%	80.90%	73.60%	<b>73.60%</b>
Hodgkin's Lymphoma	94.50%	94.50%	94.50%	94.50%	<b>94.50%</b>
Leukemia	96.50%	94.70%	92.70%	92.70%	<b>90.40%</b>
Soft Tissue, including Heart	100.00%	100.00%	100.00%	100.00%	<b>100.00%</b>
Testis	100.00%	100.00%	100.00%	100.00%	<b>100.00%</b>
Thyroid	100.0%	100.0%	100.0%	100.0%	<b>85.90%</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 recurrence, but for the 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 diagnosed 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**

**2019 Wyoming Incidence and Mortality Rates**

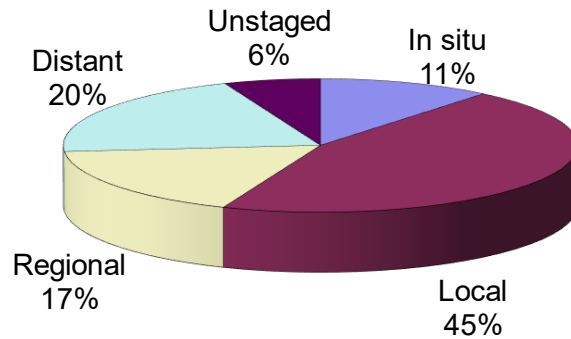
# All Cancer Sites

## Incidence and Mortality Summary

	Male	Female	Total
Invasive Cases	1,469	1,321	2,790
In situ Cases	202	161	363
WY Incidence	446.4	393.7	416.6
US Incidence	470.8	420.6	439.8
Cancer Deaths	560	455	1,015
WY Mortality	162.6	119.8	138.4
US Mortality	178.0	129.6	150.3

\* 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 Wyoming were again all lower than the United States rates for 2019; however, none of the differences were statistically significant.

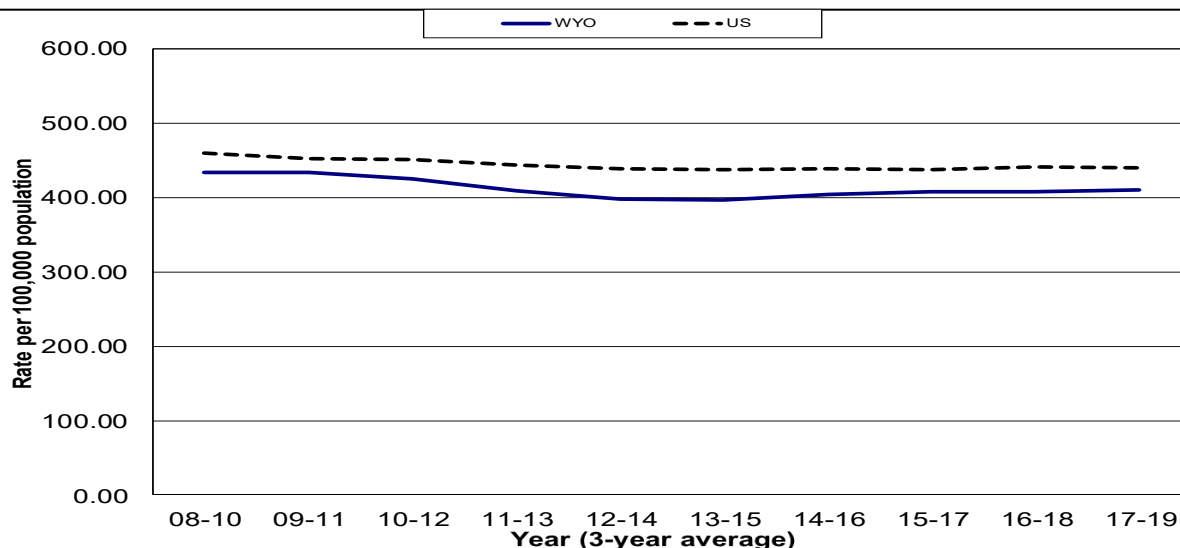
The 12-year incidence trend for Wyoming and the U.S. have both remained level since 2014-2016.

The percent of cancers diagnosed at each stage are basically the same as in 2018

**There were a total of seventeen cancers diagnosed in children under the age of 15 in 2019.**

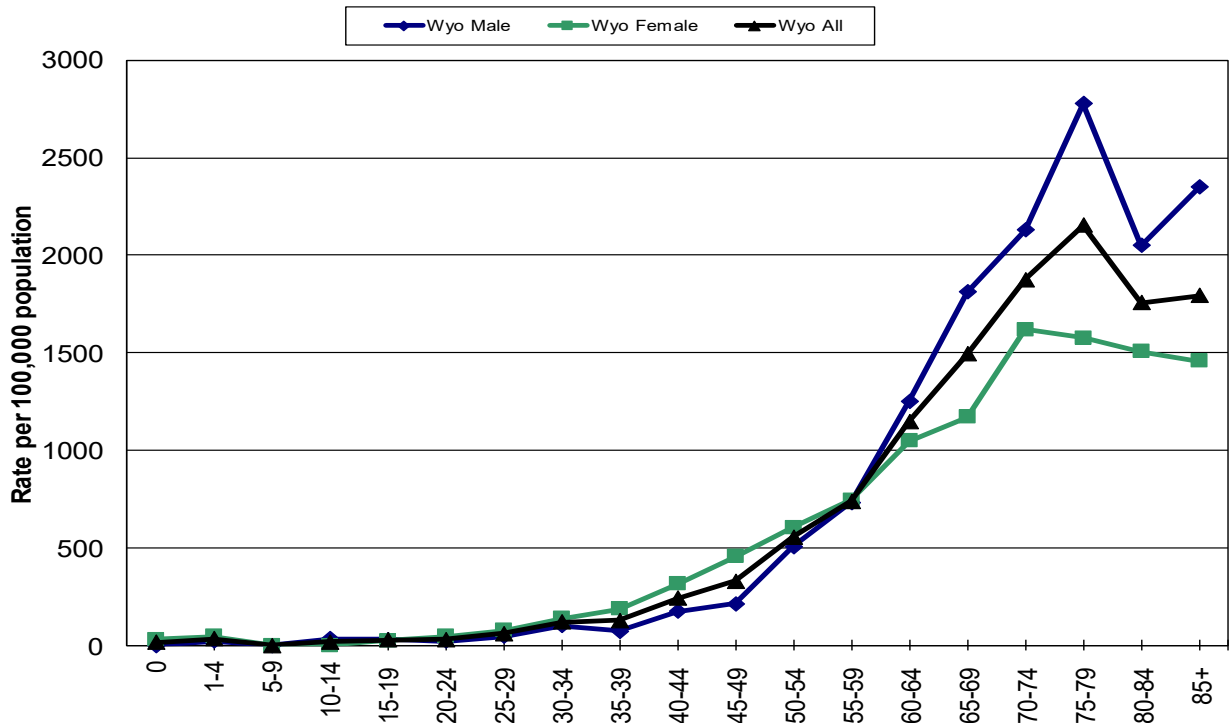
The incidence rate for CHD 1 (463.8) was significantly higher than the state incidence rate (407.5) for 2015-2019. No other difference were significant.

## 12-Year Incidence Trend



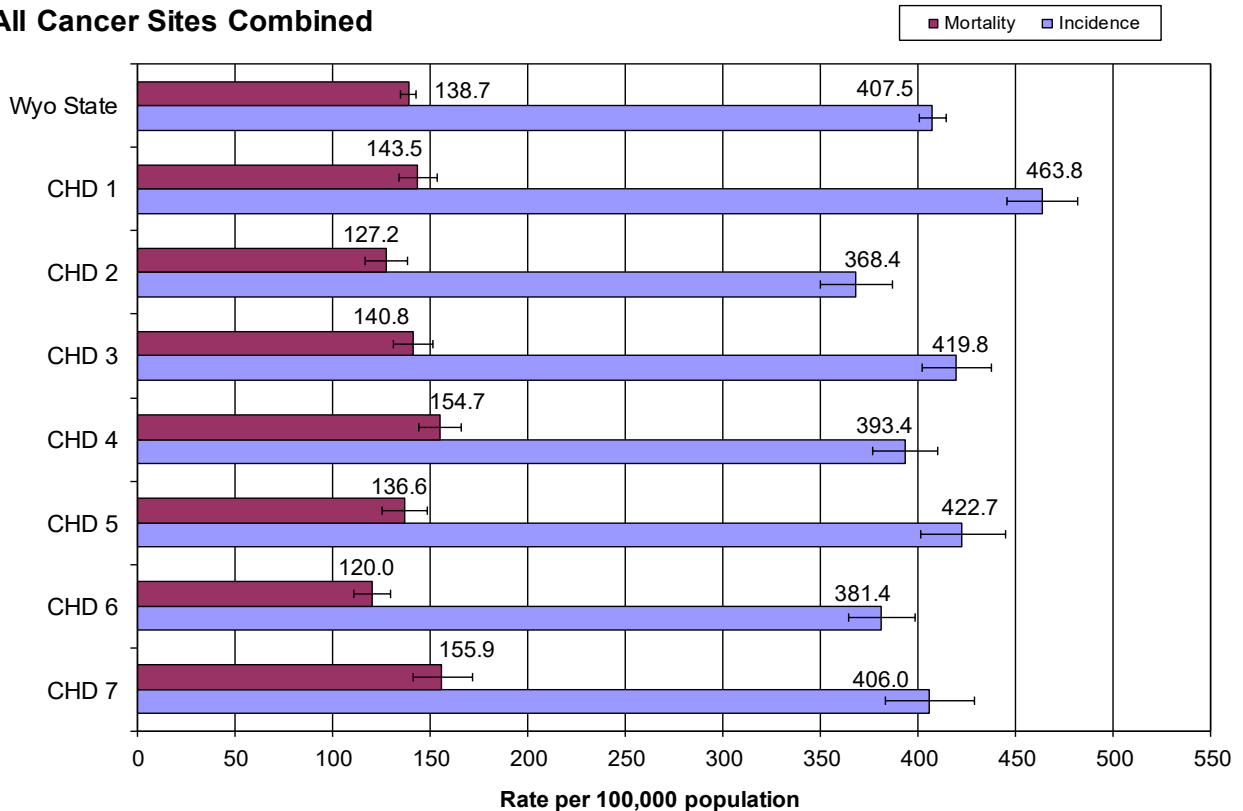


## Age-Specific Incidence Rates - 2019



## Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019

### All Cancer Sites Combined



# Bladder (Urinary)

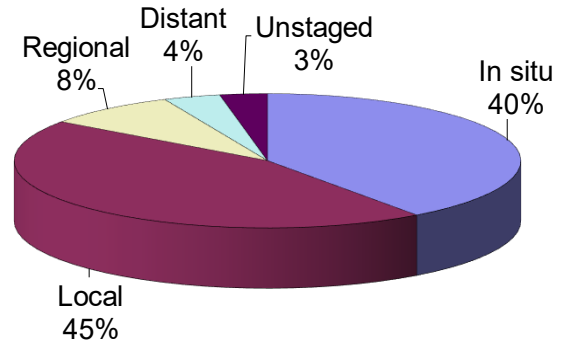
## includes In Situ Cases

### Incidence and Mortality Summary

	Male	Female	Total
All Cases	132	33	165
In situ Cases	50	16	66
WY Incidence	37.0	8.6	22.1
US Incidence	33.3	8.4	19.5
Cancer Deaths	30	2	32
WY Mortality	9.1	0.5	4.1
US Mortality	7.6	2.1	4.4

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

### Stage at Diagnosis



The incidence rates for Wyoming residents were all higher than the National rates in 2019. The mortality rate for Wyoming males was higher than the U.S. rate while the rates for females and total population were both lower than the U.S. rate.

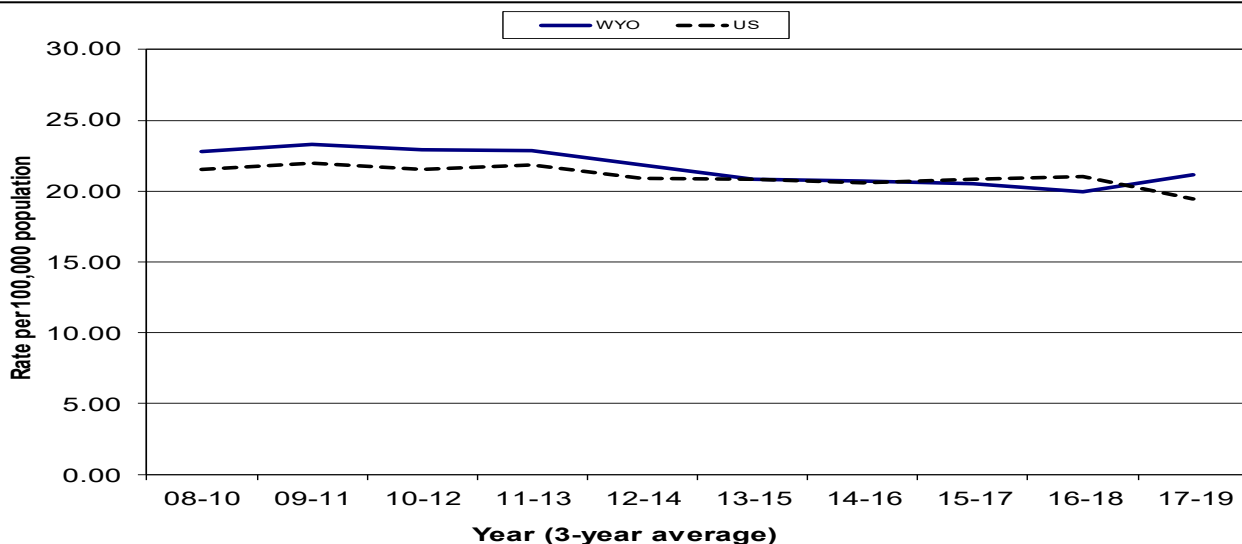
The incidence trend in Wyoming shows an increase from 2016-2018 to 2017-2019, while the national trend decreased during this same time period.

The percent of cancers diagnosed as In situ decreased from 2018 (46%), while the percentage in the Local stage increased (2018 = 38%).

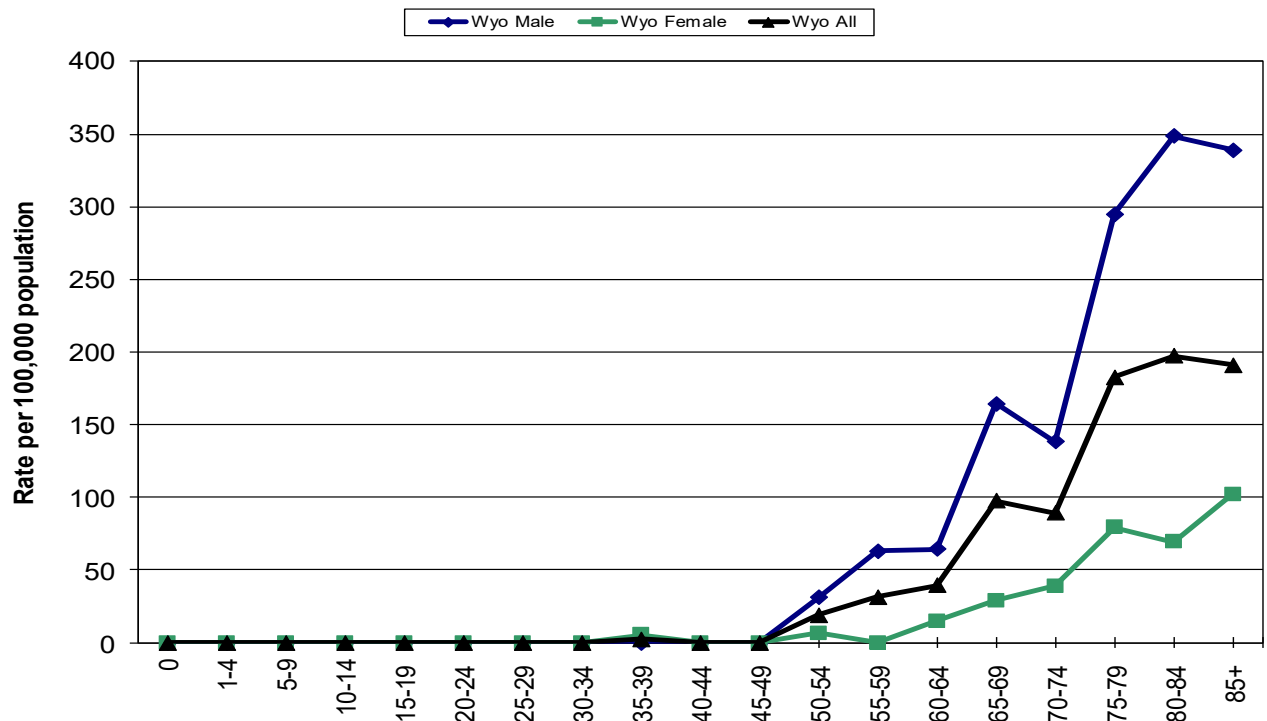
**There was only one diagnosis of bladder cancer in a person under 50 years of age in 2019.**

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

### 12-Year Incidence Trend

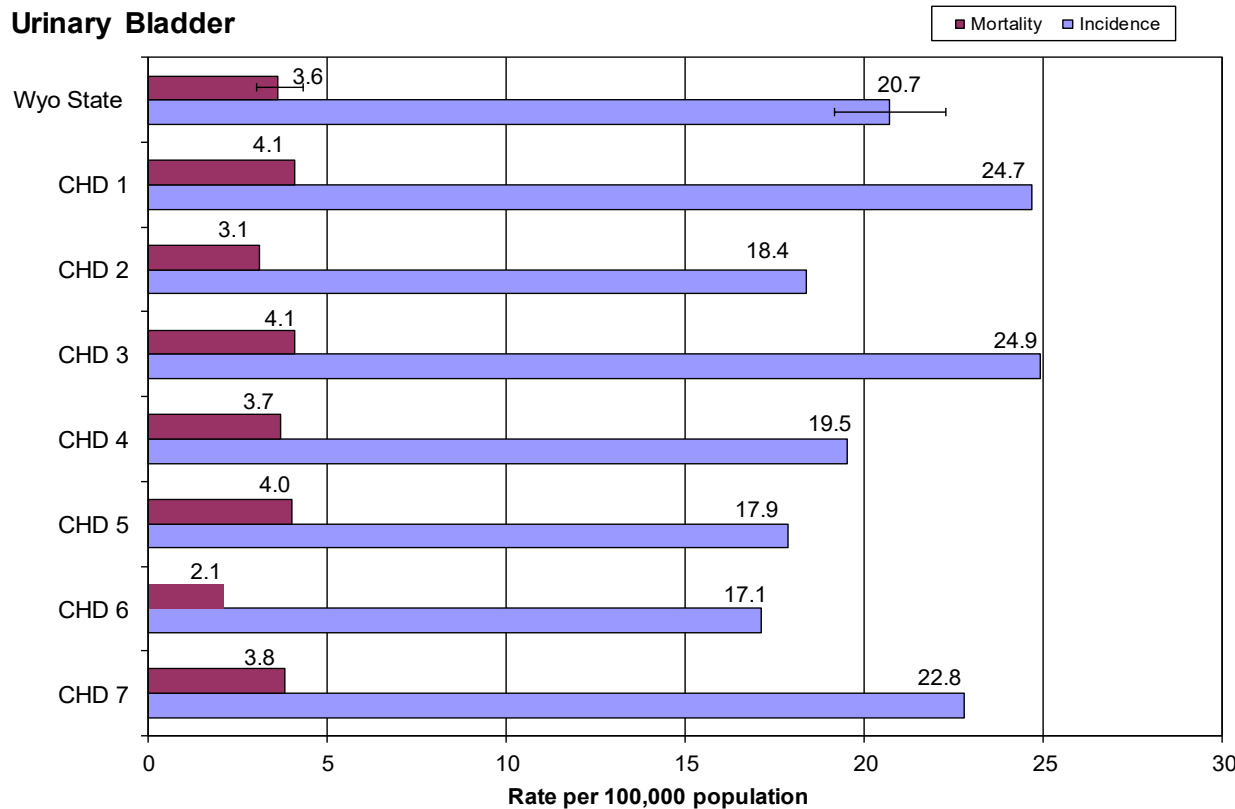


## Age-Specific Incidence Rates - 2019



## Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019

### Urinary Bladder



# Brain/Central Nervous System (CNS)

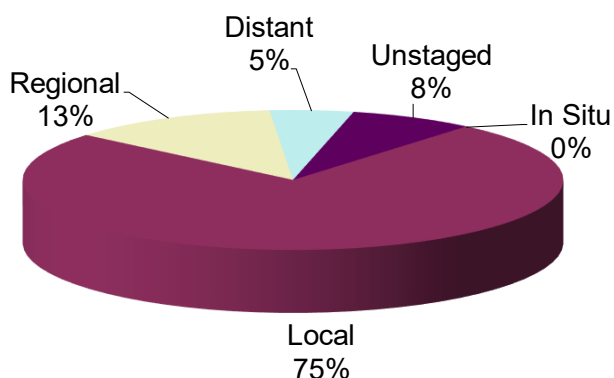
## Incidence and Mortality Summary

	Male	Female	Total
Invasive Cases	19	21	40
WY Incidence	5.5	6.7	6.0
US Incidence	8.2	5.6	6.8
Cancer Deaths	22	5	27
WY Mortality	5.7	1.2	3.4
US Mortality	5.9	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 rates for males and total population were both lower than the national rates, while the female rate was higher. Mortality rates for males, females, and total population were all lower than the national rates.

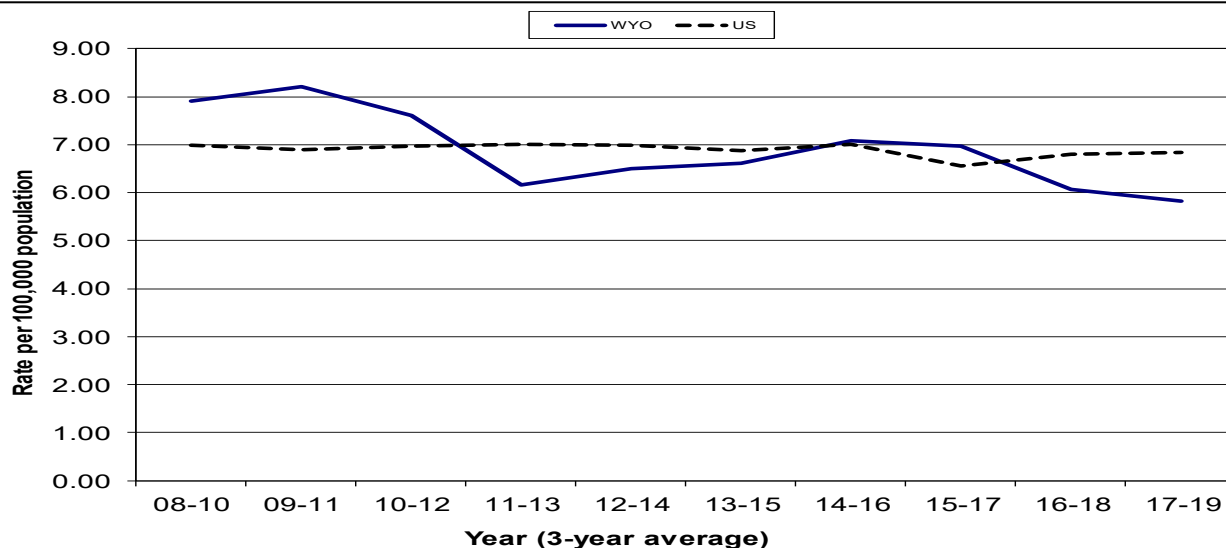
The 12-year trend shows continued decreases from 2015-2017 to 2017-2019, while the national trend seems to be leveling off from 2016-2018 to 2017-2019.

The percentage of cases diagnosed as Local decreased from 2018 (85%), while the percentage of cases classified as Unstaged and Distant increased from 2018 (3% and 0% respectively).

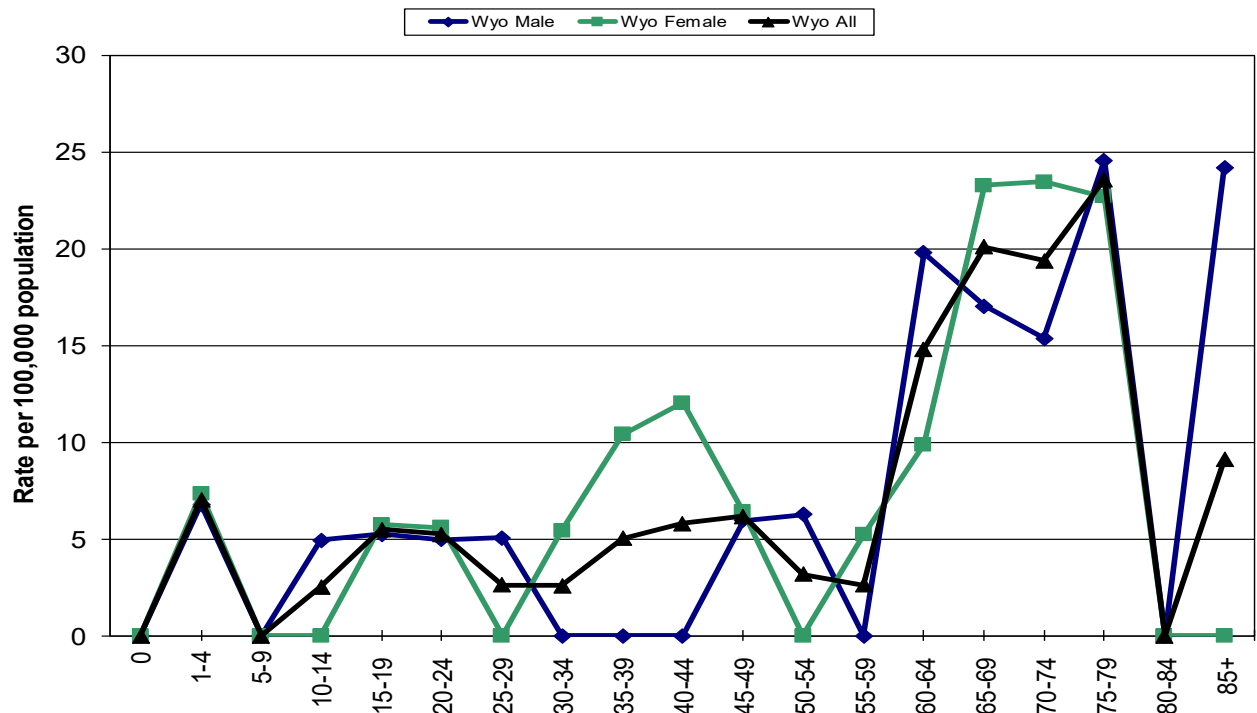
**There were five brain tumors diagnosed in children/adolescents under 20 years of age in 2019.**

No statistically significant differences were found between the CHD rates and the state rates.

## 12-Year Incidence Trend

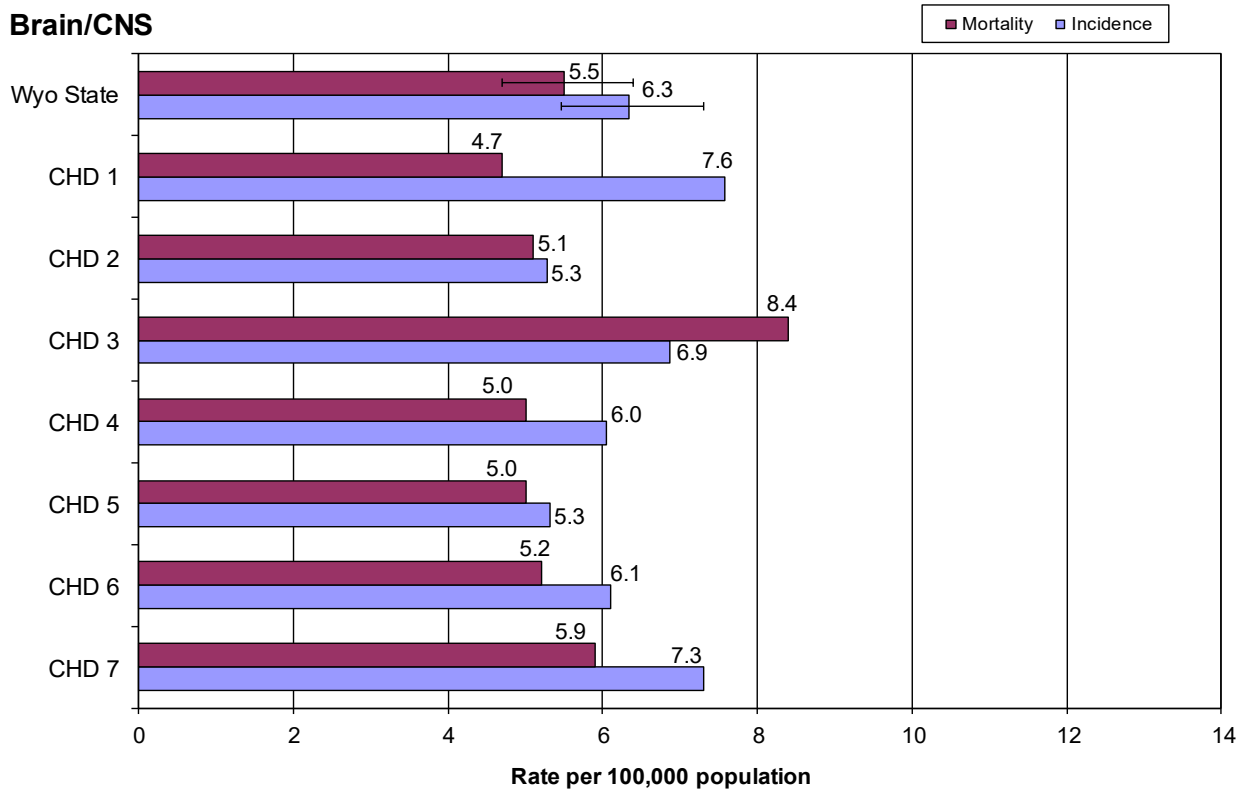


## Age-Specific Incidence Rates - 2019



## Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019

### Brain/CNS



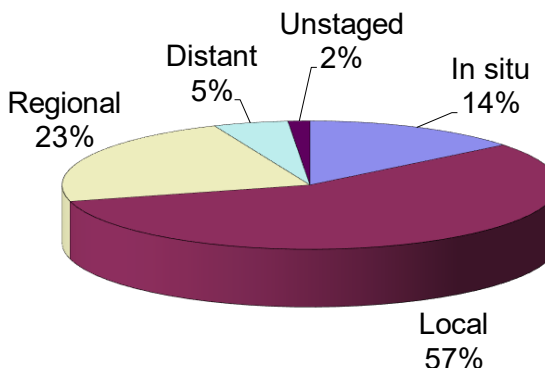
# Breast (Female Only)

## Incidence and Mortality Summary

	Female
Invasive Cases	418
In situ Cases	68
WY Incidence	116.2
US Incidence	129.4
Cancer Deaths	62
WY Mortality	17.5
US Mortality	19.3

\* 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 Wyoming females were both lower than the national rate in 2019. Neither difference was statistically significant.

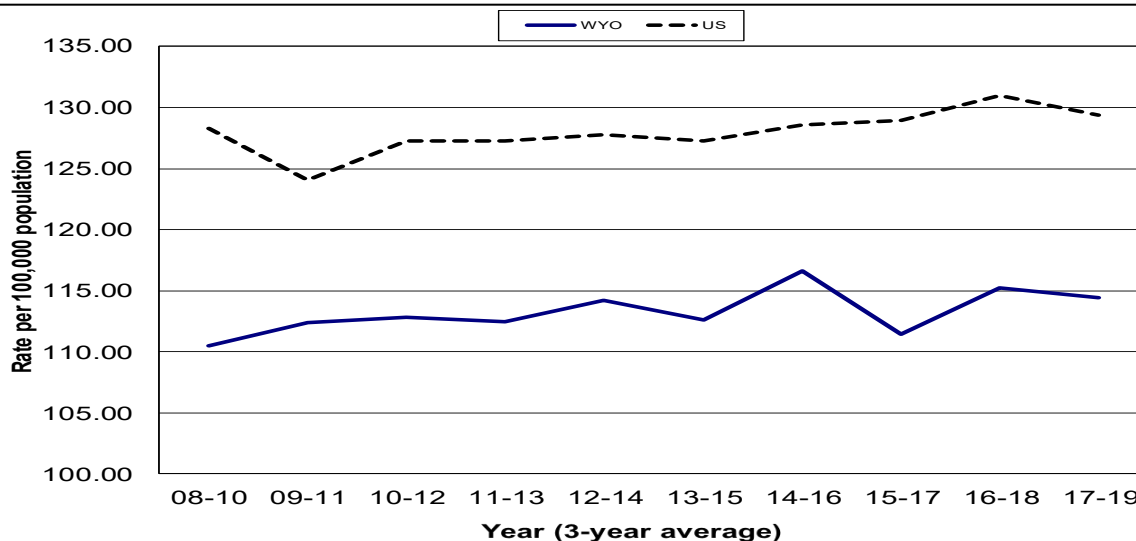
The 12-year incidence trend shows a slight decrease from 2016-2018 to 2017-2019 for both Wyoming and the U.S. rates.

The percentage of cases diagnosed at each stage in 2019 is nearly identical to 2018.

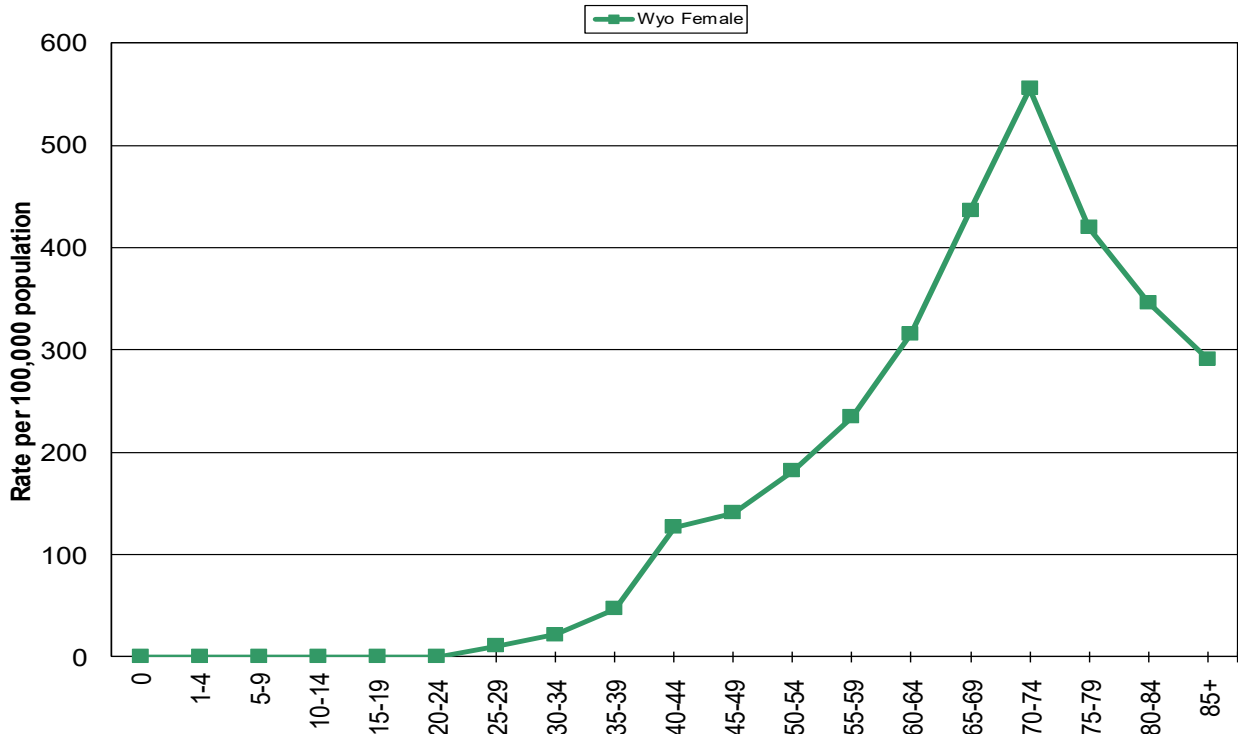
No statistically significant differences were found for incidence or mortality between CHDs and the state.

**There were three cases of invasive breast cancer and one death among Wyoming males in 2019, and fifteen cases diagnosed in women under the age of 40.**

## 12-Year Incidence Trend

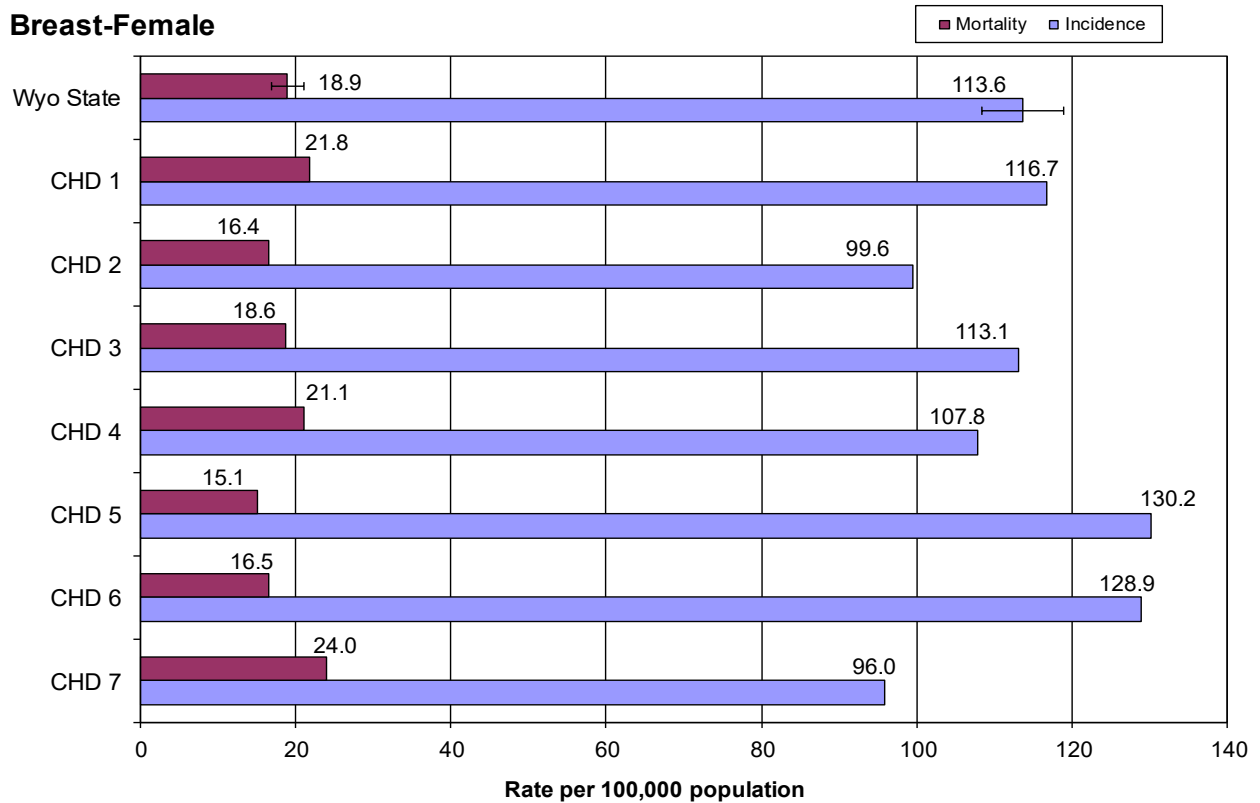


## Age-Specific Incidence Rates - 2019



## Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019

### Breast-Female



# Colorectal

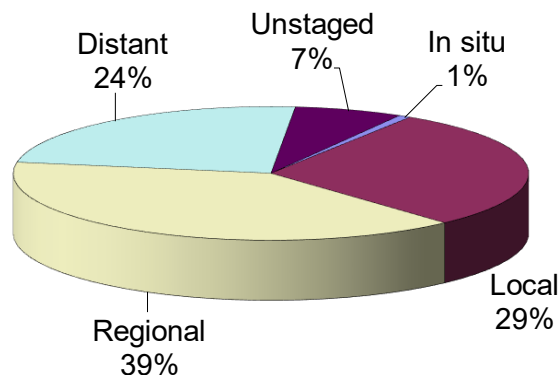
(Colorectal = Colon and Rectum)

## Incidence and Mortality Summary

	Male	Female	Total
Invasive Cases	151	111	262
WY Incidence	44.8	29.7	37.2
US Incidence	40.1	32.0	36.1
Cancer Deaths	45	44	89
WY Mortality	13.3	11.6	12.4
US Mortality	15.5	10.8	13.0

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

## Stage at Diagnosis



The incidence rates for males and total population were higher than the national rate, while the rate for female incidence was lower than the national rate. The reverse was true for mortality where males and total population rates were both lower than the U.S., while the female mortality rate was a bit higher.

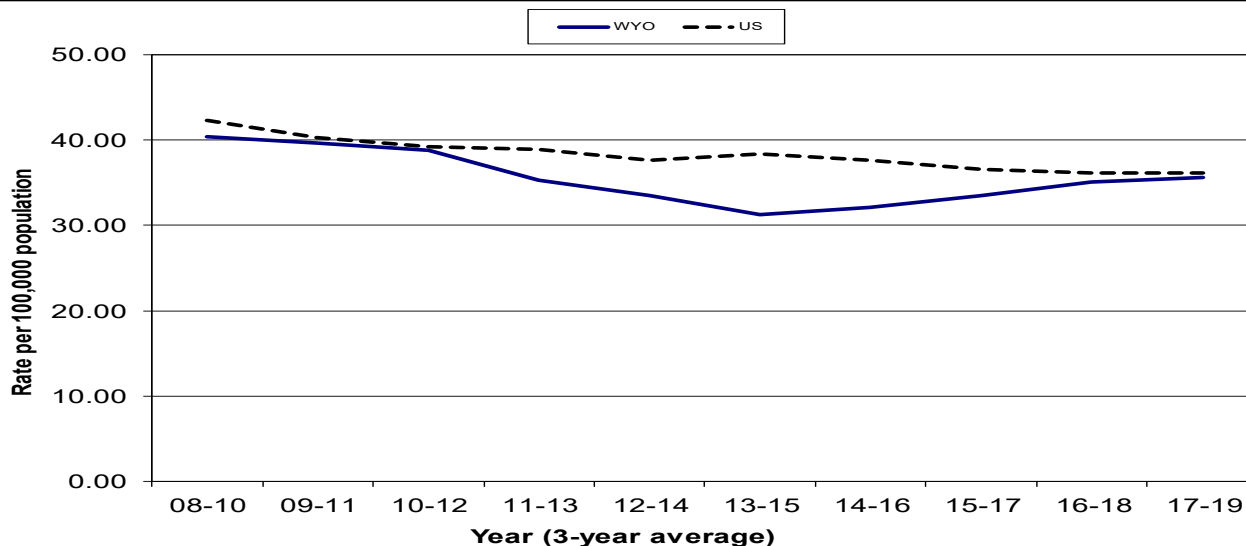
The 12-year incidence graph shows that the Wyoming and U.S. rates both leveling off between 2016-2018 to 2017-2019.

The percentage of colorectal cancers diagnosed at each stage in 2019 were very similar to the percentages in 2018.

**There were only four cases diagnosed in people under 35 years of age in 2019.**

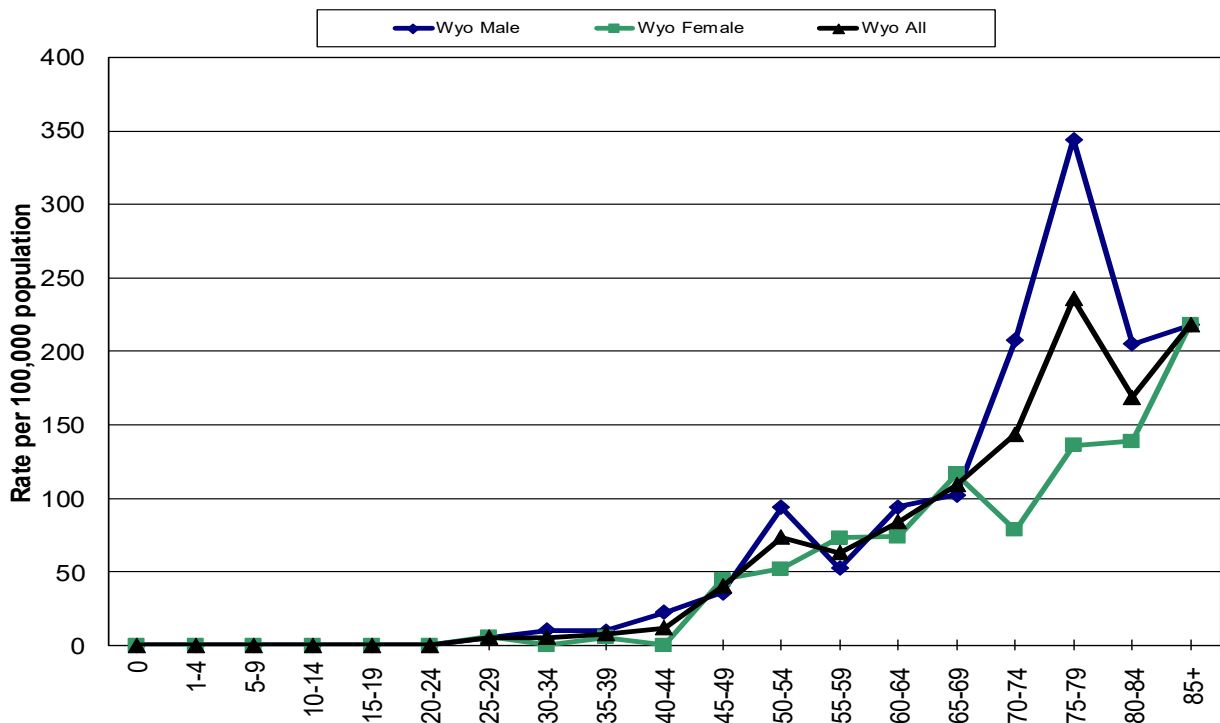
No statistically significant differences were found between the CHD rates and the state rate for incidence or mortality.

## 12-Year Incidence Trend



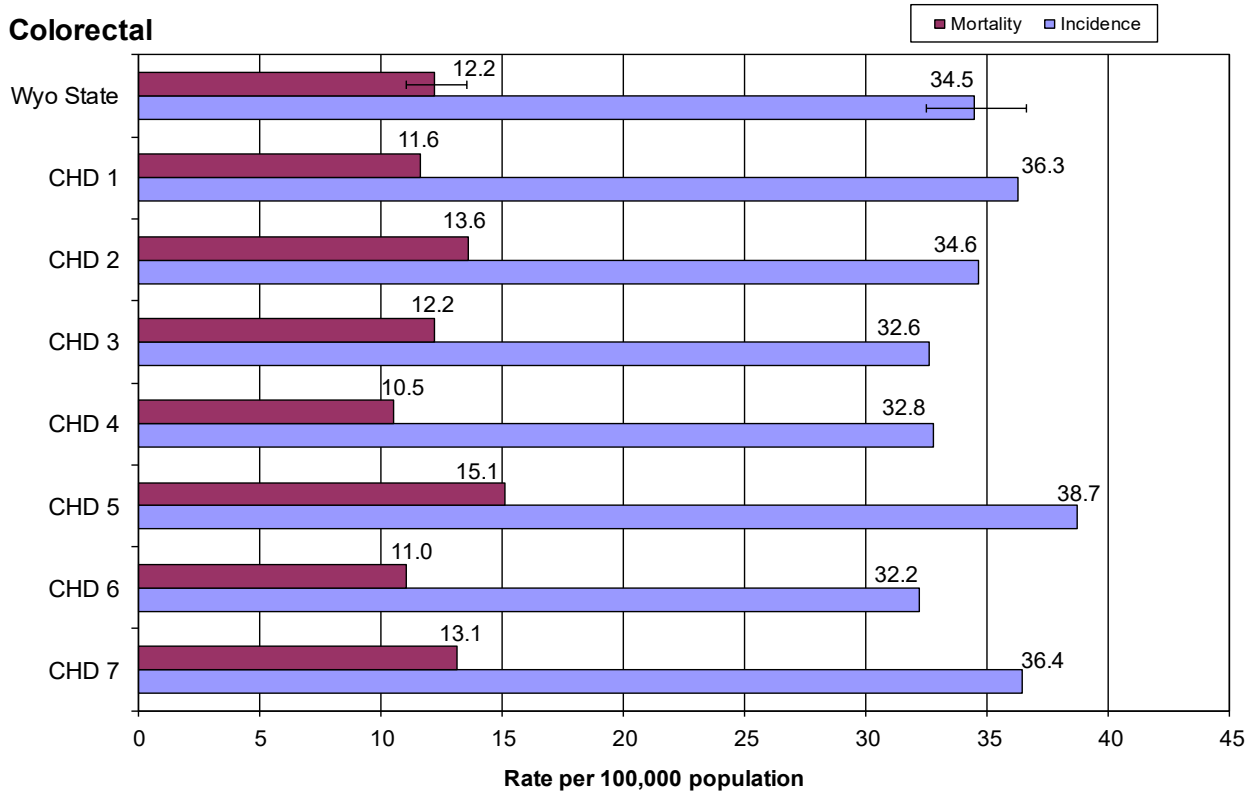


## Age-Specific Incidence Rates - 2019



## Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019

### Colorectal



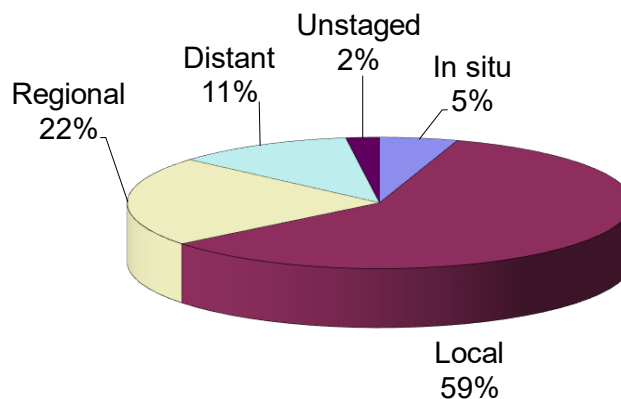
# Kidney/Renal Pelvis

## Incidence and Mortality Summary

	Male	Female	Total
Invasive Cases	85	48	133
WY Incidence	25.0	12.3	18.5
US Incidence	22.8	11.5	16.8
Cancer Deaths	25	9	34
WY Mortality	6.9	2.2	4.3
US Mortality	5.3	2.3	3.7

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

## Stage at Diagnosis



The incidence rates for each Wyoming population were higher than the national rate in 2019. The mortality rates for males and total population were both higher than the national rate, while the female rate was basically the same as the national rate.

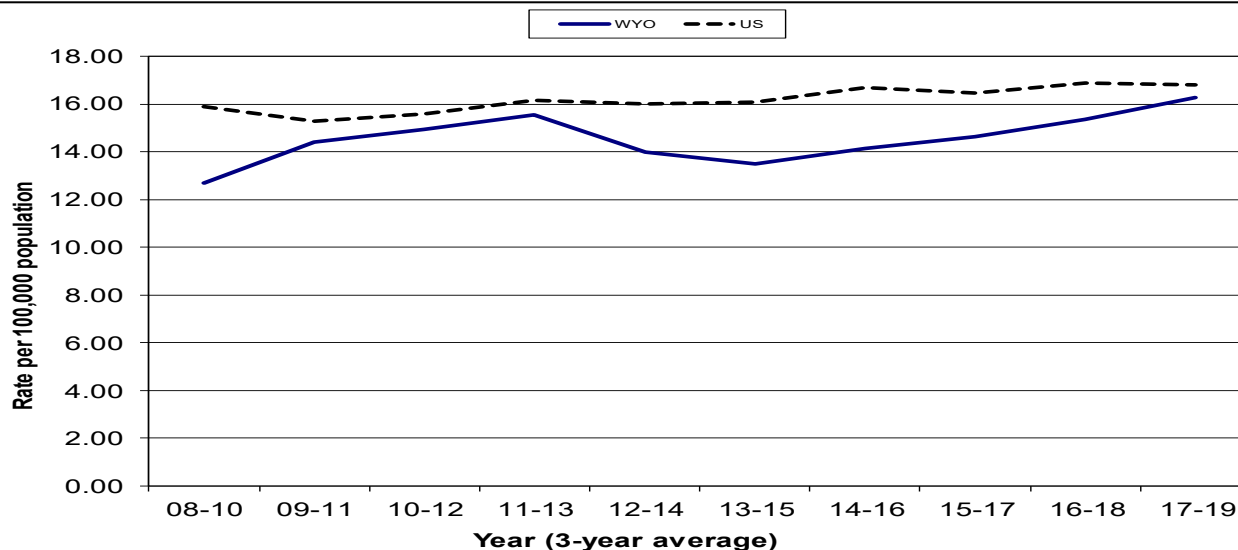
The 12-year incidence trend shows an increase that started in 2013-2015 continuing for Wyoming. The national rate was level from 2016-2018 to 2017-2019.

The percent of cases diagnosed as Distant is down from 2018 (17%), while Regional and Local are a little higher than 2018 (20% and 55% respectively).

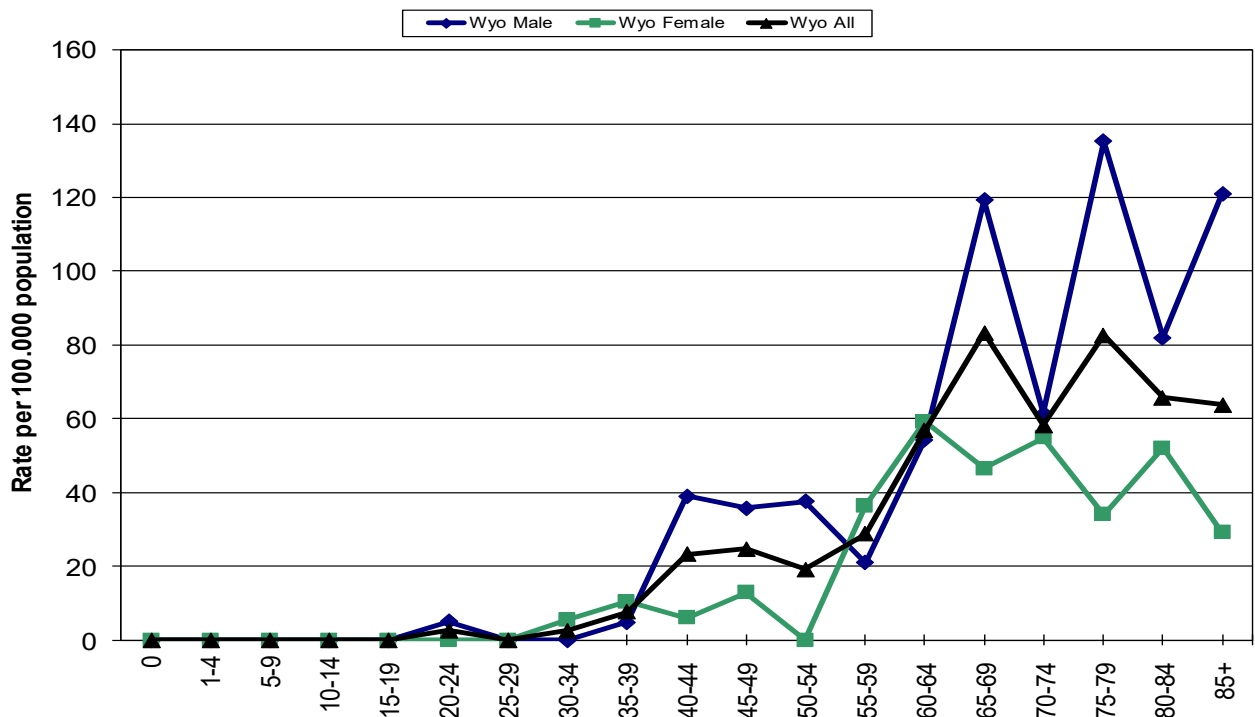
**There was only one case diagnosed in persons under 30 years of age in 2019.**

No statistically significant differences were found between the CHD rates and the state rates.

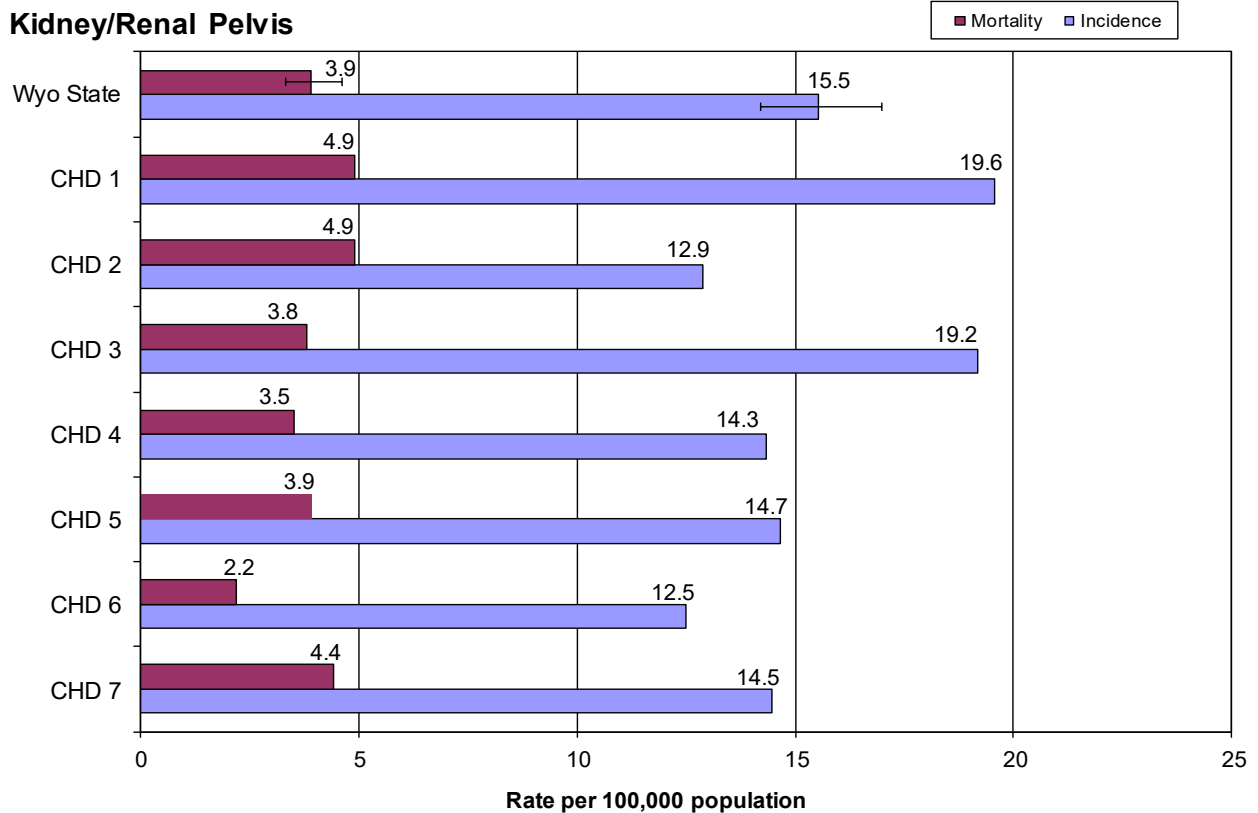
## 12-Year Incidence Trend



## Age-Specific Incidence Rates - 2019



## Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019



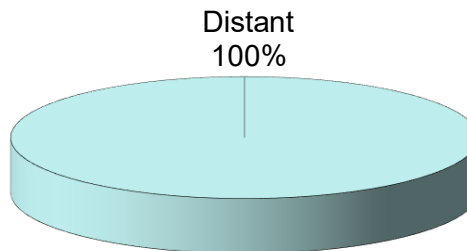
# Leukemia

## Incidence and Mortality Summary

	Male	Female	Total
Invasive Cases	62	38	100
WY Incidence	18.2	11.0	14.3
US Incidence	17.4	10.6	13.7
Cancer Deaths	26	23	49
WY Mortality	8.7	6.1	7.3
US Mortality	8.4	4.7	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



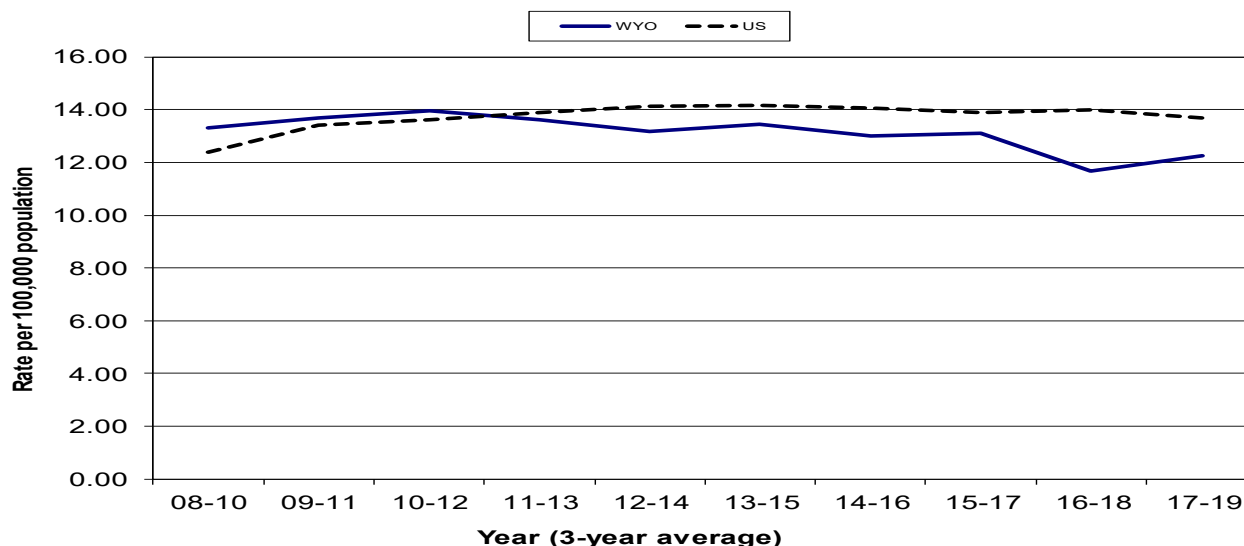
The incidence and mortality rates for leukemia in Wyoming for males, females, and total population were all higher than the national rates in 2019.

The incidence trend for Wyoming shows a slight increase from 2016-2018 to 2017-2019. The national rate decreased slightly during this same time period.

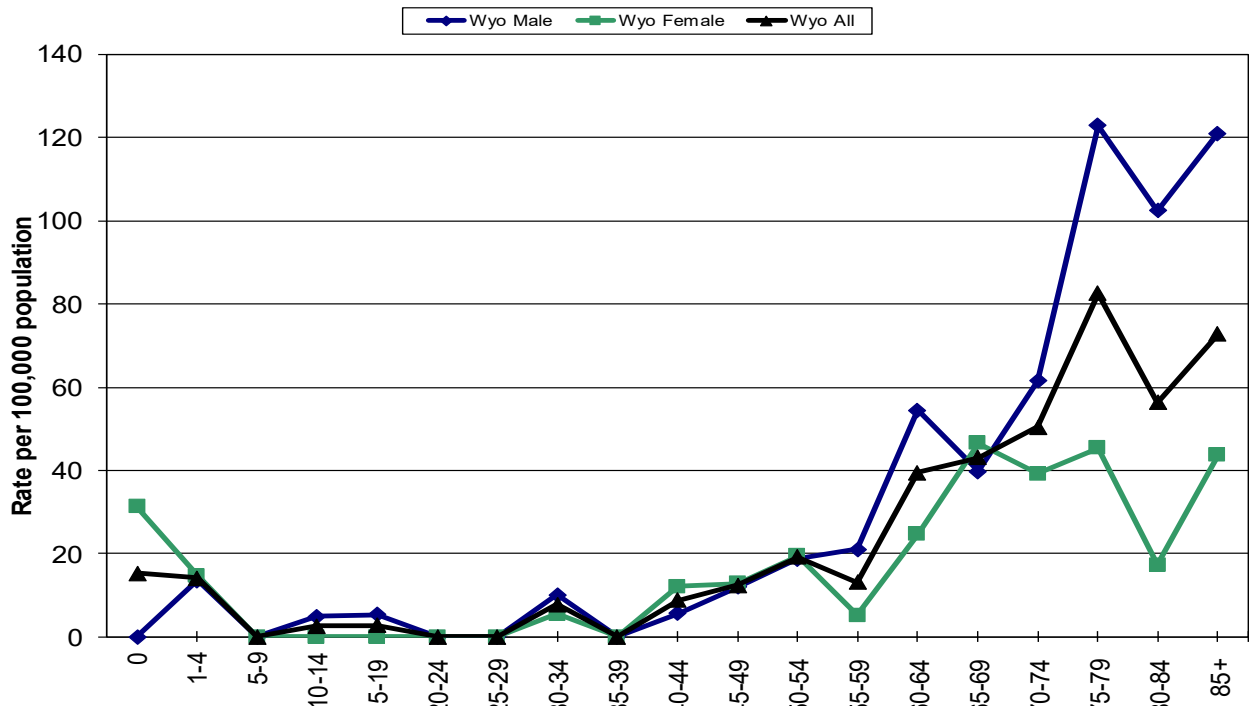
**There were seven cases of leukemia diagnosed and one death in children/adolescents under 20 years of age in 2019.**

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

## 12-Year Incidence Trend

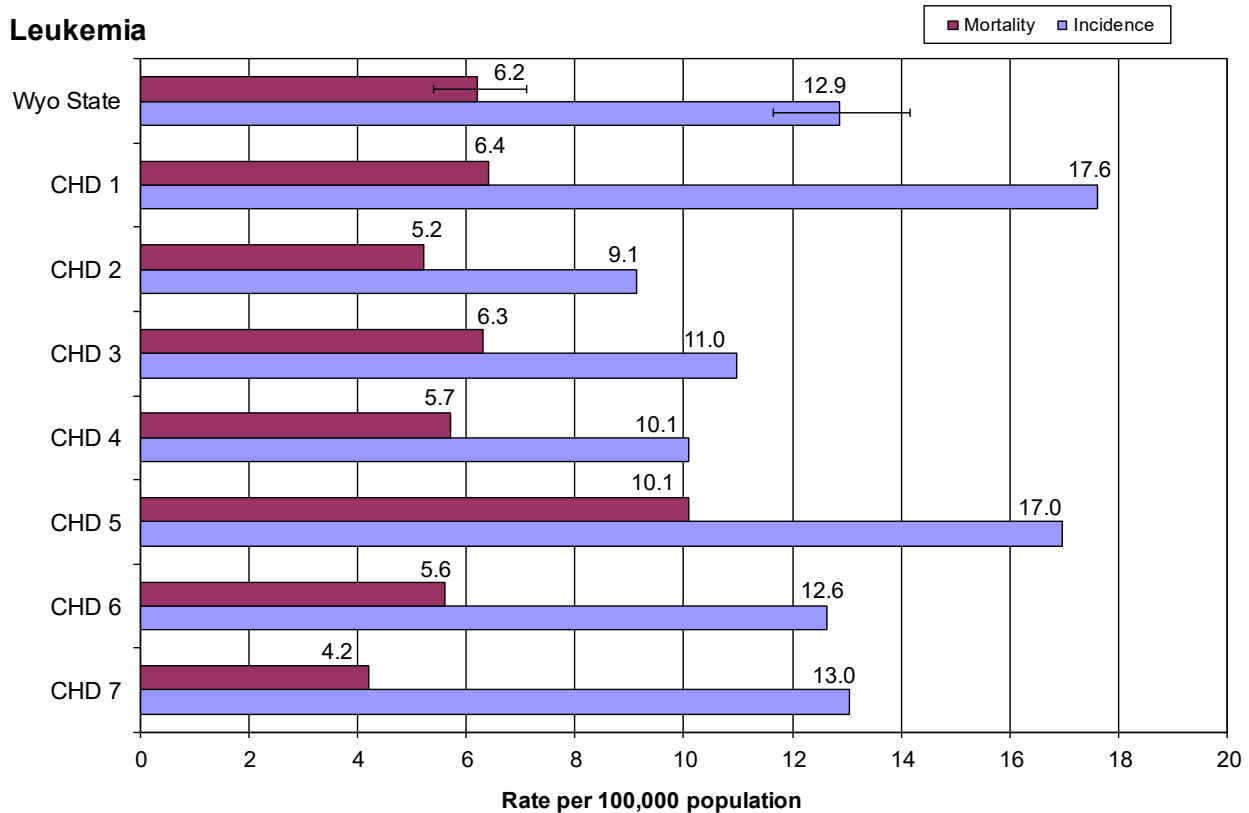


## Age-Specific Incidence Rates - 2019



## Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019

### Leukemia



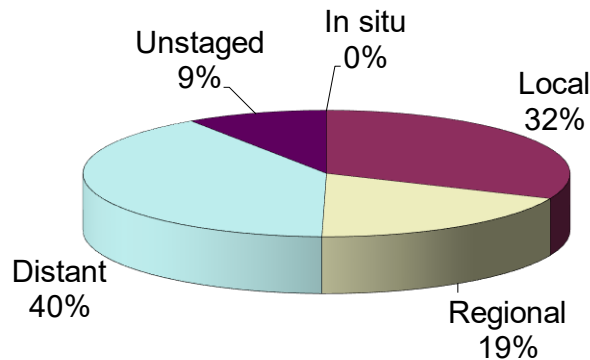
# Lung and Bronchus

## Incidence and Mortality Summary

	Male	Female	Total
Invasive Cases	155	175	330
WY Incidence	41.5	45.0	43.0
US Incidence	53.6	45.5	48.9
Cancer Deaths	123	102	225
WY Mortality	34.0	26.2	29.7
US Mortality	42.1	30.6	35.7

\* 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 for males, females and total population in Wyoming were all lower than the national rates. However, none of the differences were statistically significant.

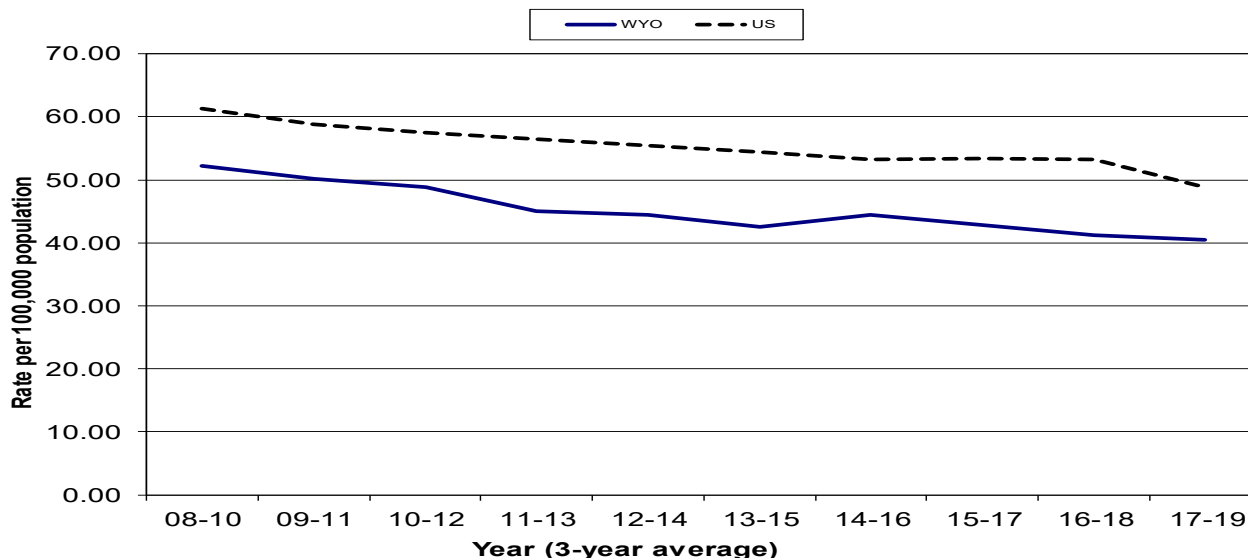
The 12-year incidence trend shows a continuing of a downward trajectory that started in 2014-2016. Nationally, the trend dipped from 2016-2018 to 2017-2019 after being level for several years.

The percent of cases diagnosed as Distant and Regional decreased from 2018 (45% and 21%) while the percentage diagnosed as Local increased from 2018 (28%).

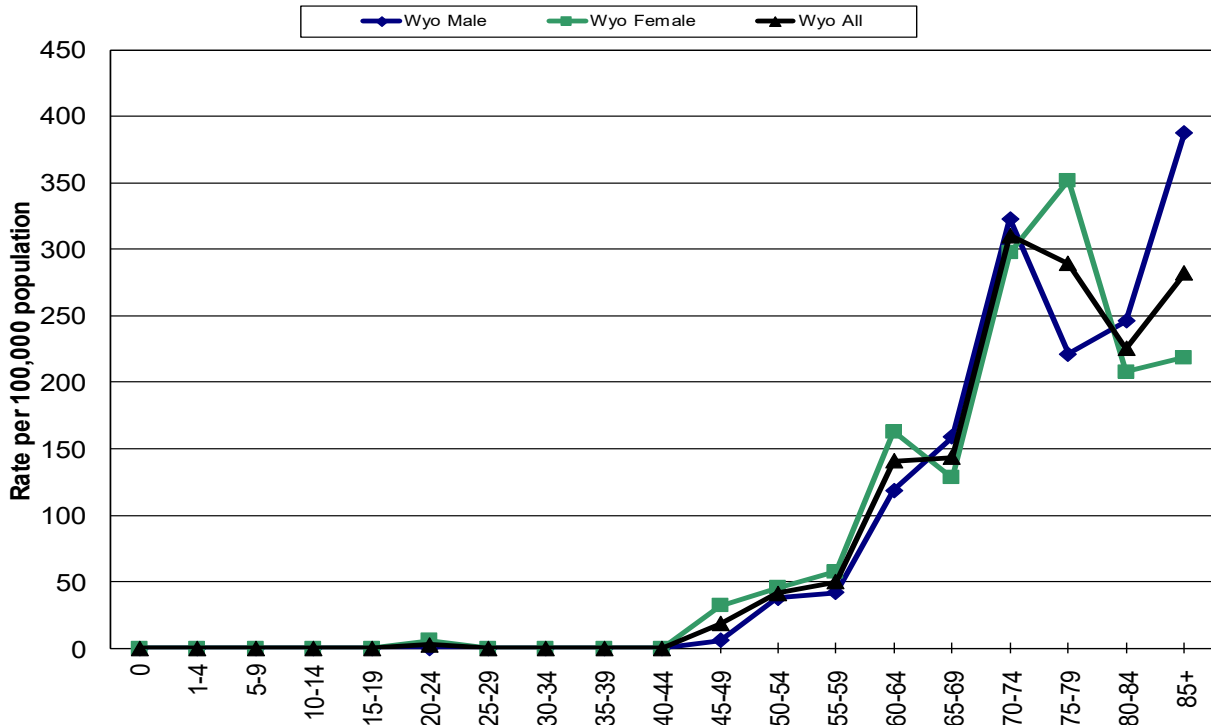
**For the fifth time since 2001, more women were diagnosed with lung cancer than men in 2019, and there was one case diagnosed in an individual under 30 years of age.**

No statistically significant differences were found between the CHD rates and the state rate.

## 12-Year Incidence Trend

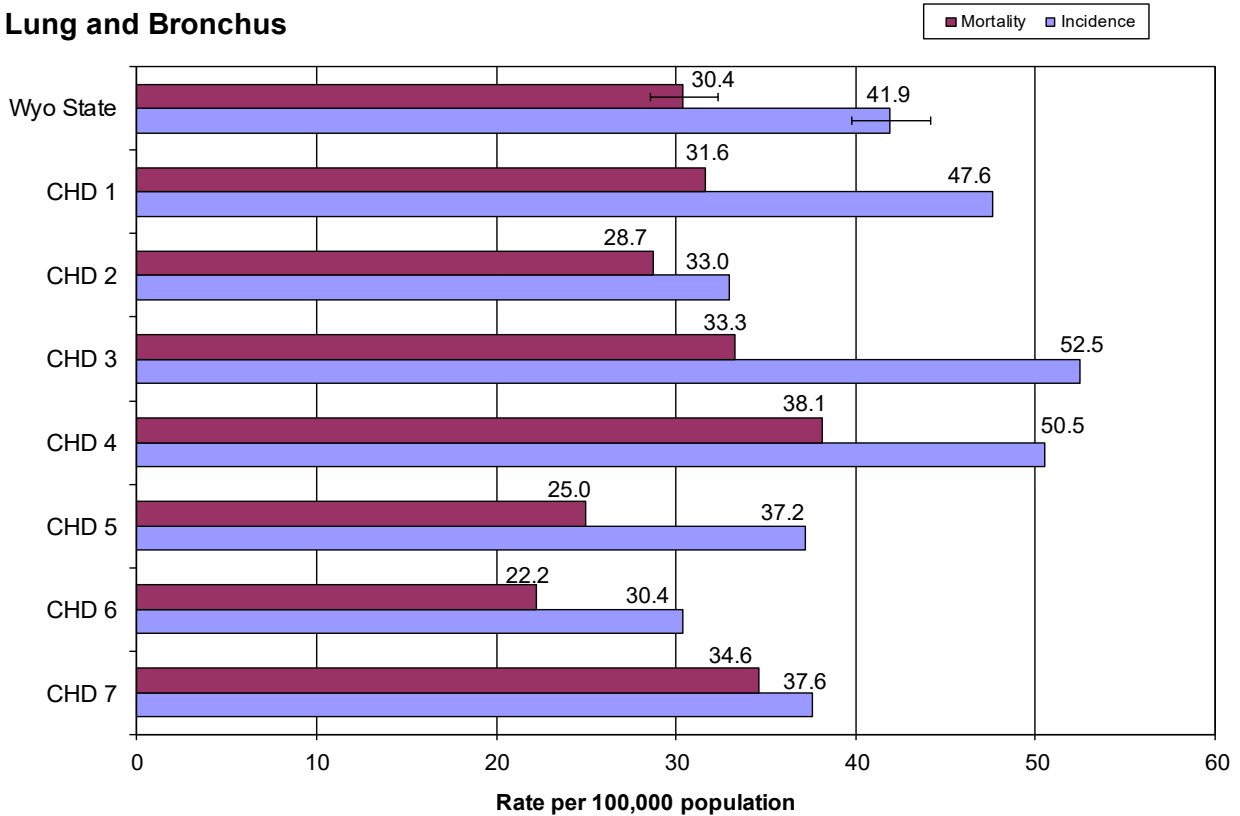


## Age-Specific Incidence Rates - 2019



## Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019

### Lung and Bronchus



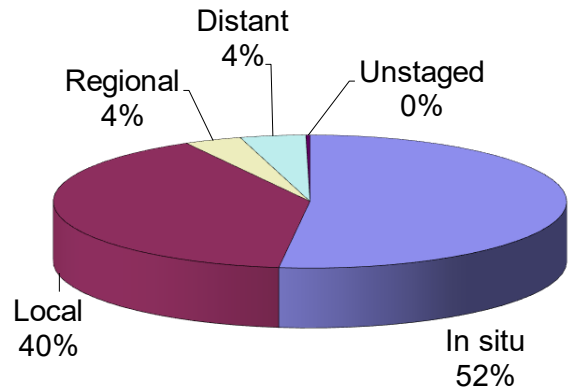
# Melanoma (of the skin)

## Incidence and Mortality Summary

	Male	Female	Total
Invasive Cases	104	82	186
In situ Cases	137	64	201
WY Incidence	29.4	24.5	26.8
US Incidence	35.5	22.7	28.2
Cancer Deaths	9	8	17
WY Mortality	2.7	2.0	2.3
US Mortality	3.5	1.6	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



The incidence and mortality rates for melanoma in males and total population were both lower than the national rate in 2019, while the rates for females were slightly higher than the national rates.

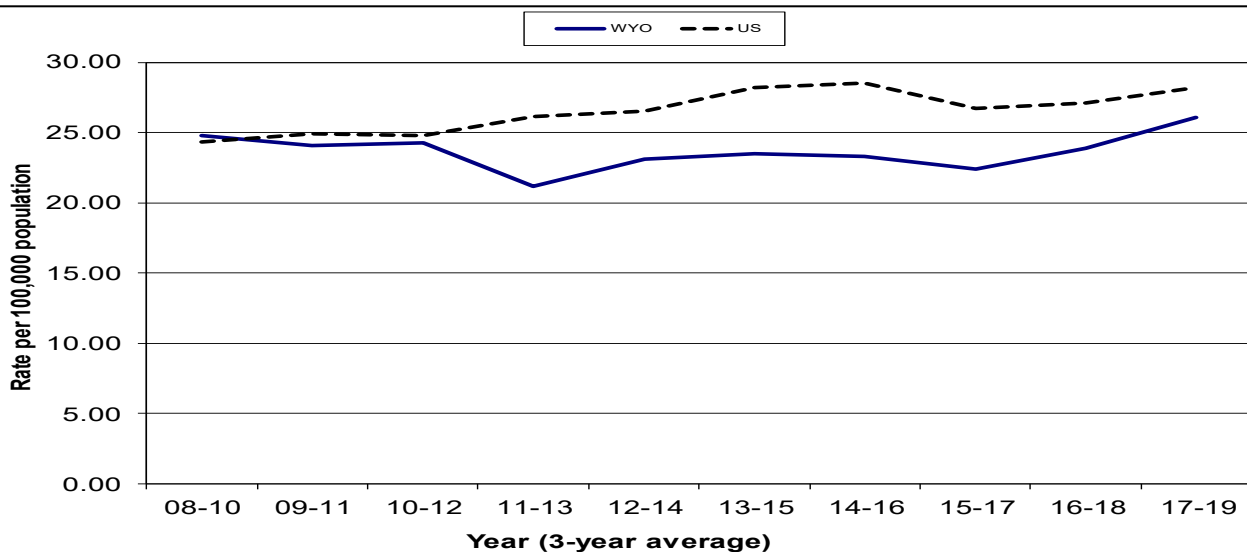
The Wyoming and National trends both continued to on an upward trajectory that began in 2015-2017.

**There were six cases of melanoma in individuals under 30 years of age in 2019, with one case in a person between 10-14 years of age.**

The percentage of cases diagnosed as Local decreased from 2018 (46%) while the percent diagnosed at the In situ stage increased (47%).

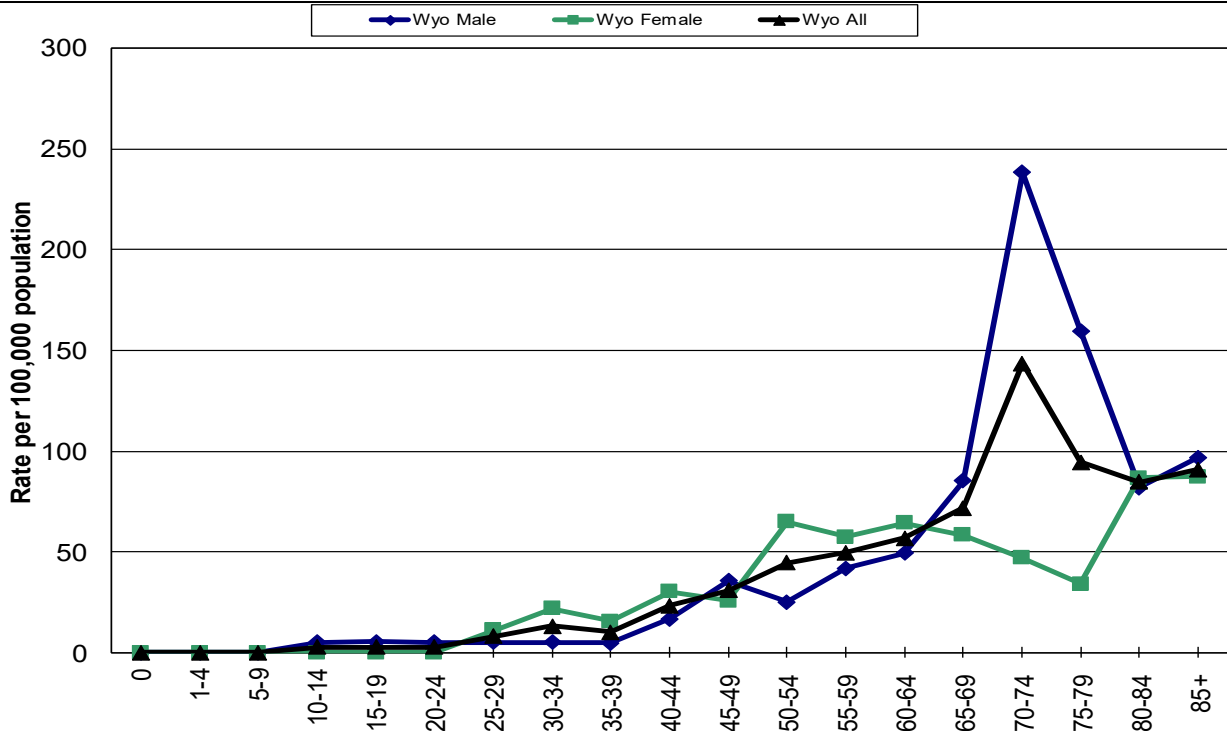
No statistically significant differences were found between the CHD and state rates.

## 12-Year Incidence Trend



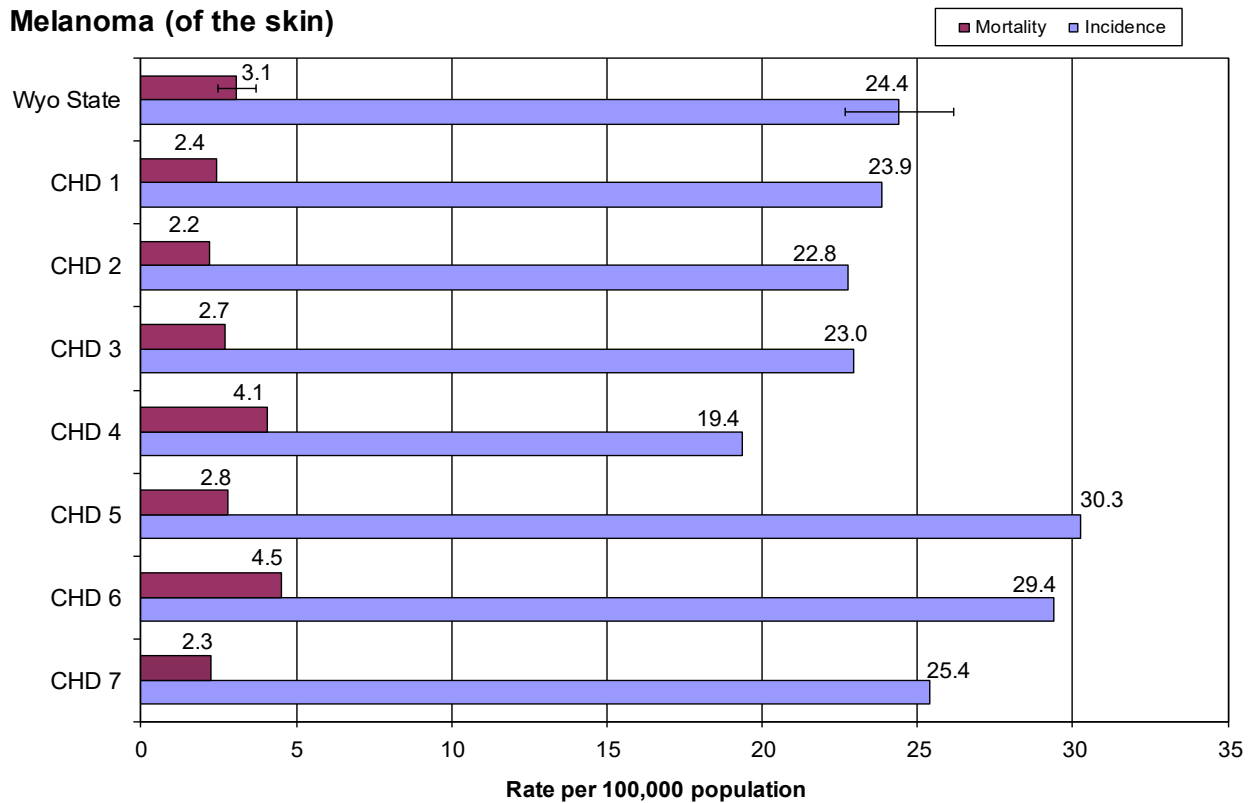


### Age-Specific Incidence Rates - 2019



### Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019

#### Melanoma (of the skin)



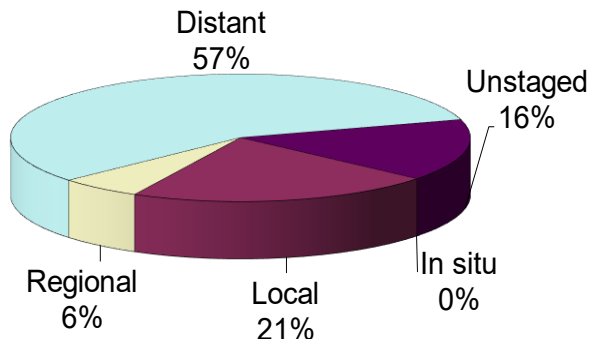
# Non-Hodgkin Lymphoma (NHL)

## Incidence and Mortality Summary

	Male	Female	Total
Invasive Cases	70	51	121
WY Incidence	20.7	14.8	17.5
US Incidence	23.2	16.0	19.3
Cancer Deaths	18	20	38
WY Mortality	5.4	5.4	5.4
US Mortality	7.1	4.0	5.4

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

## Stage at Diagnosis



The incidence rates for Non-Hodgkin lymphoma in Wyoming were all lower than the national rates in 2019. However, the mortality rate for males was lower than the national rate, the female rate was higher than the national rate, and the rate for total population was equal to the national rate.

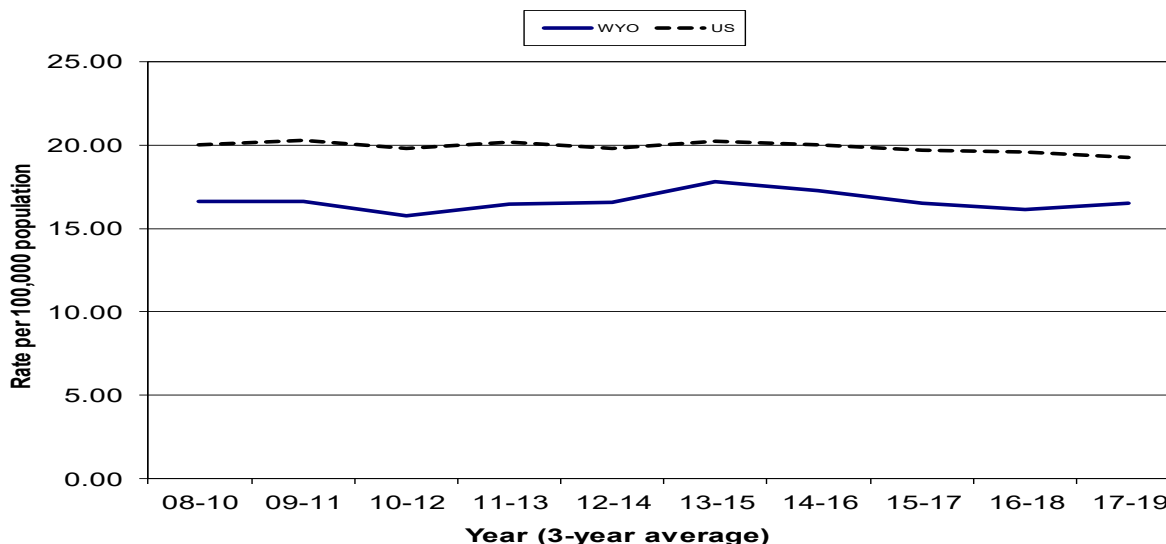
The incidence trend for Wyoming shows a slight increase from 2016-2018 to 2017-2019, while the national continued to slowly decrease during this time period.

**Only one case of NHL was diagnosed in a person under the age of 25 in 2019.**

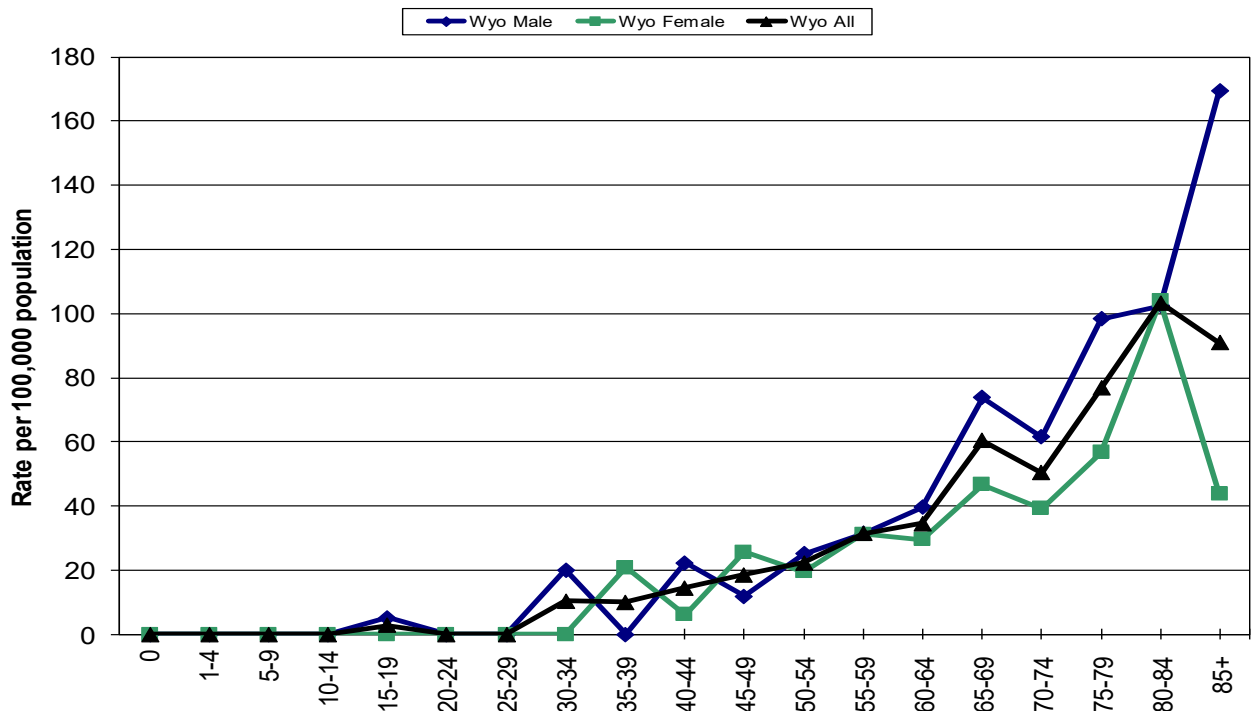
The percentage of cases diagnosed as Distant increased from 2018 (48%), while the cases diagnosed as Local decreased (28%).

No statistically significant differences were found between the CHD rates and the state rates.

## 12-Year Incidence Trend

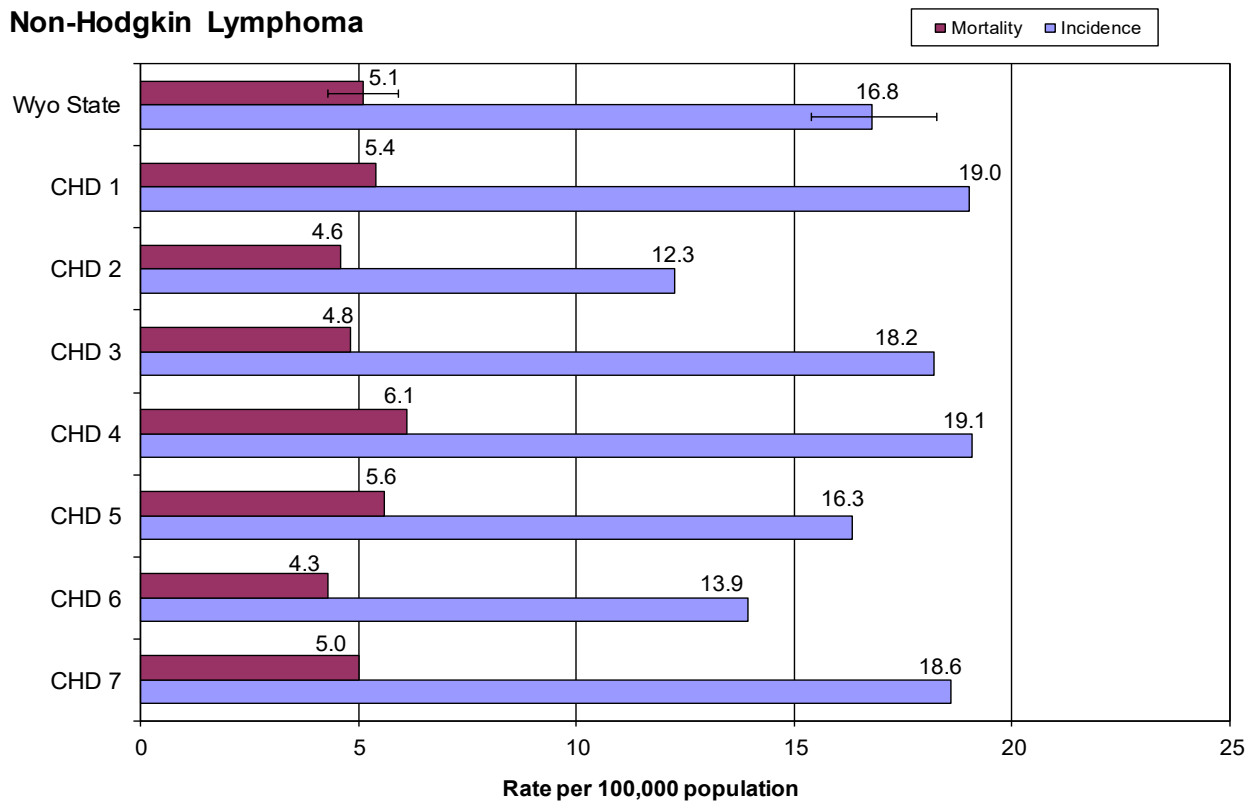


## Age-Specific Incidence Rates - 2019



## Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019

### Non-Hodgkin Lymphoma



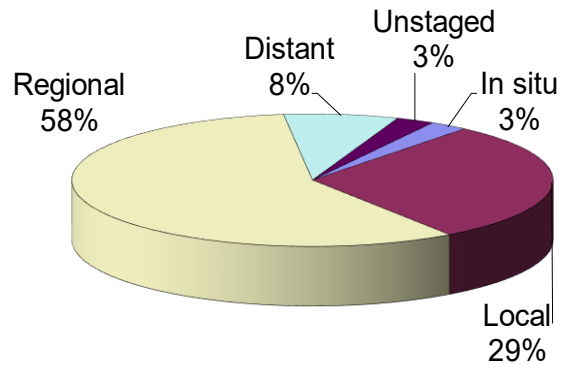
# Oral Cavity and Pharynx

## Incidence and Mortality Summary

	Male	Female	Total
Invasive Cases	52	24	76
WY Incidence	13.4	7.4	10.7
US Incidence	18.3	6.8	12.3
Cancer Deaths	6	3	9
WY Mortality	1.3	0.8	1.1
US Mortality	3.9	1.4	2.5

\* 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 cancer of the oral cavity and pharynx in males and total population were both lower than the national rate, while the rate for females was higher than the national rate in 2019. For mortality all of the Wyoming rates were lower than the national rates.

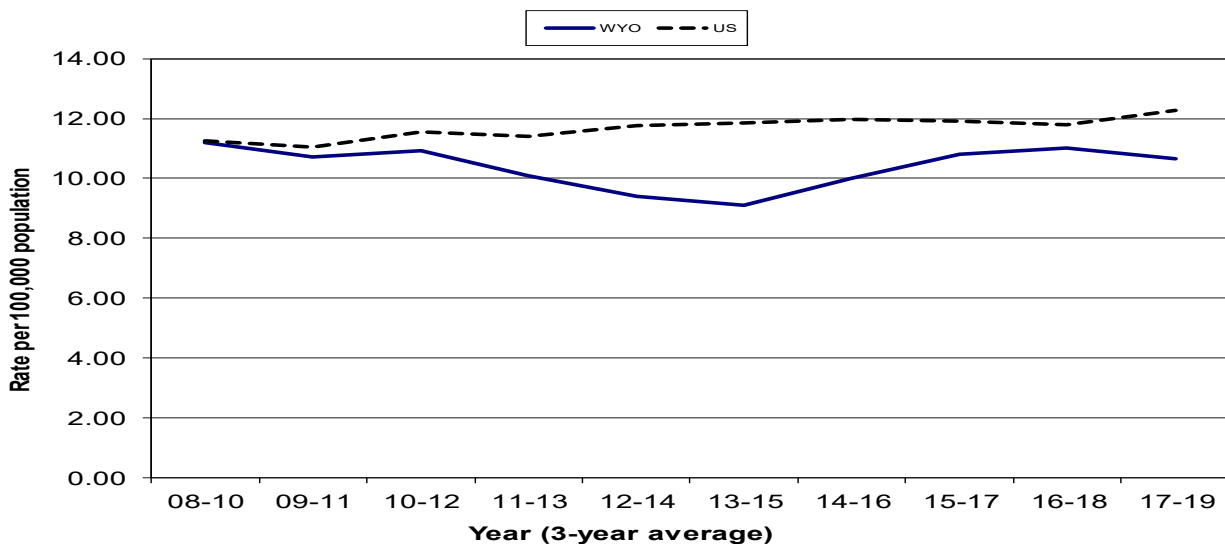
The incidence trend for Wyoming decreased a bit between 2016-2018 and 2017-2019, while the national trend increased slightly during this time.

**There was only one case diagnosed in a person under 30 years of age in 2019.**

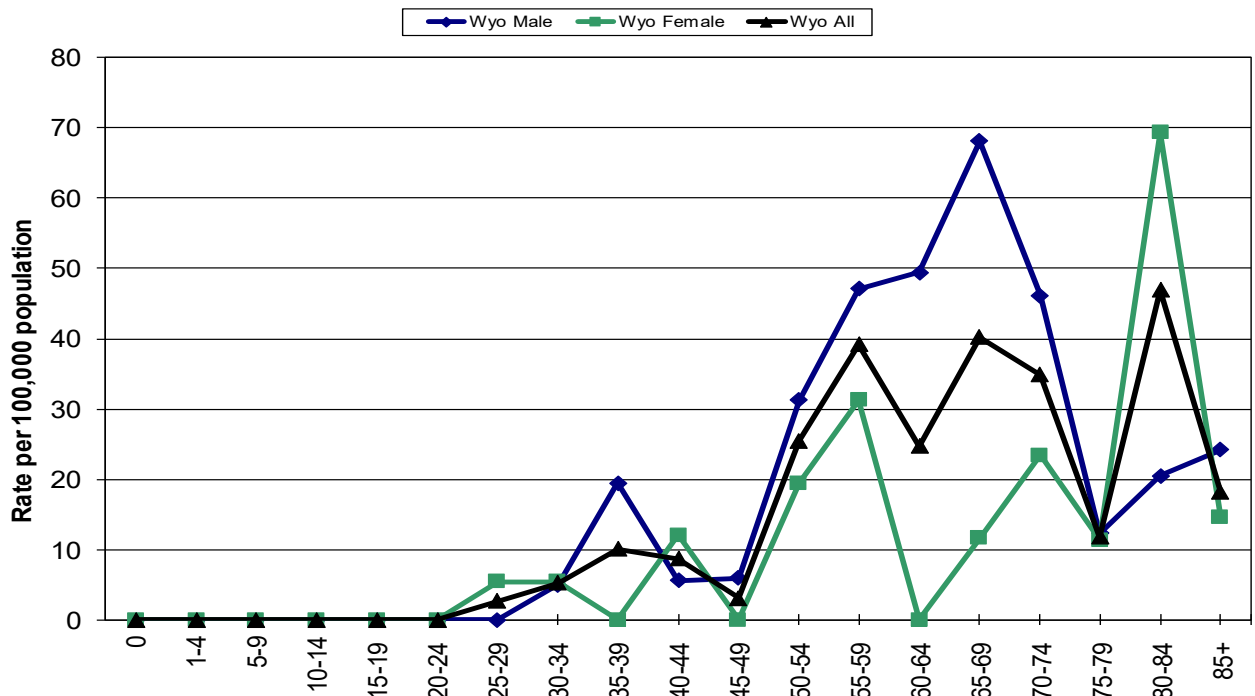
The percent of cancers at the Regional stage increased substantially from 2018 (48%), while the percent of cases diagnosed at the Local stage decreased from 2018 (40%).

No statistically significant differences were found between the CHD rates and the state rate.

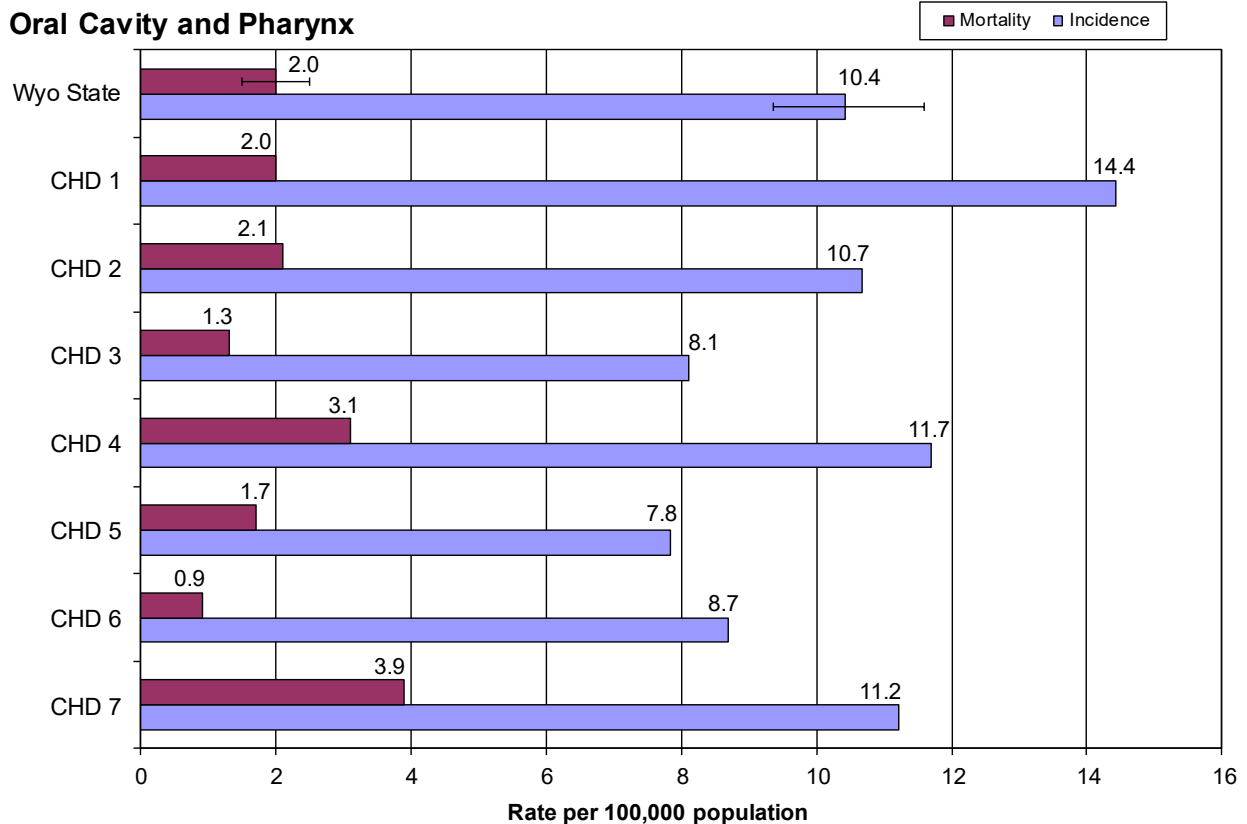
## 12-Year Incidence Trend



## Age-Specific Incidence Rates - 2019



## Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019



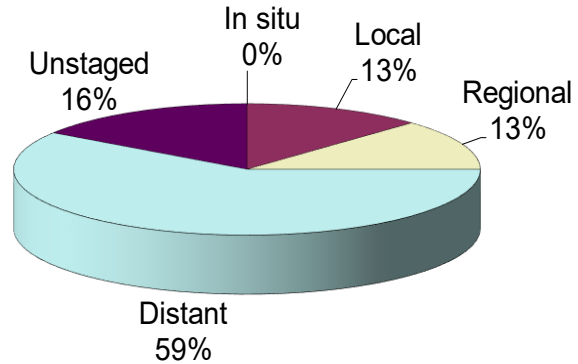
# Ovary

## Incidence and Mortality Summary

	Female
Invasive Cases	32
WY Incidence	8.9
US Incidence	10.0
Cancer Deaths	26
WY Mortality	6.8
US Mortality	6.5

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

## Stage at Diagnosis



The incidence in Wyoming females for ovarian cancer was lower than the national rate, while the mortality rate for Wyoming females was slightly higher than the national rate in 2019.

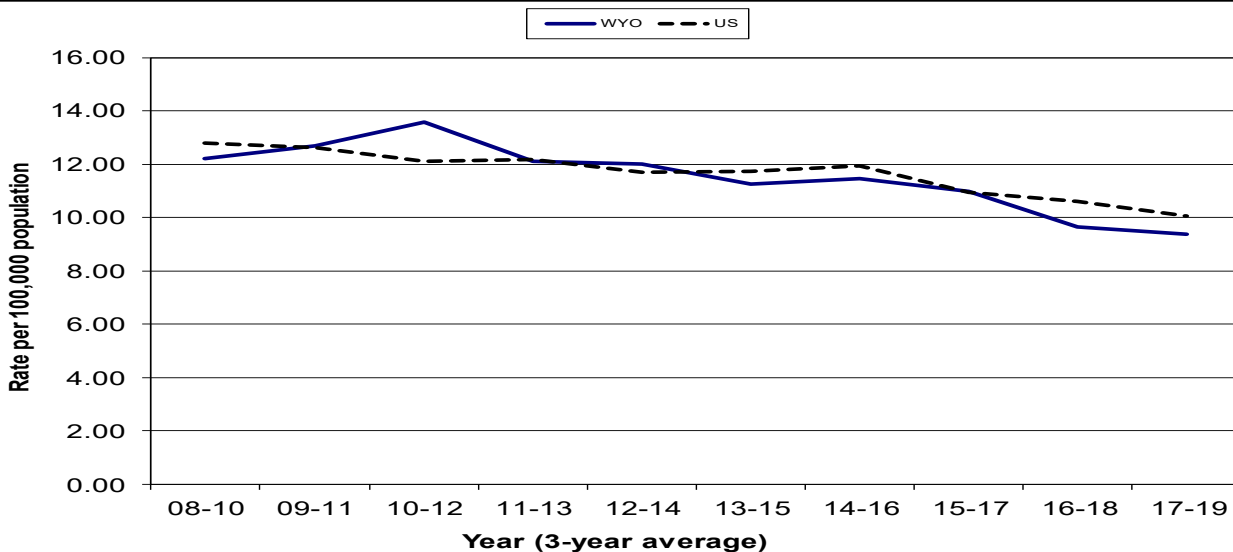
The 12-year incidence trend for Wyoming and the U.S. continued to decrease in 2017-2019, though at a somewhat slower pace.

**There was one case diagnosed in a Wyoming woman under 30 years of age in 2019.**

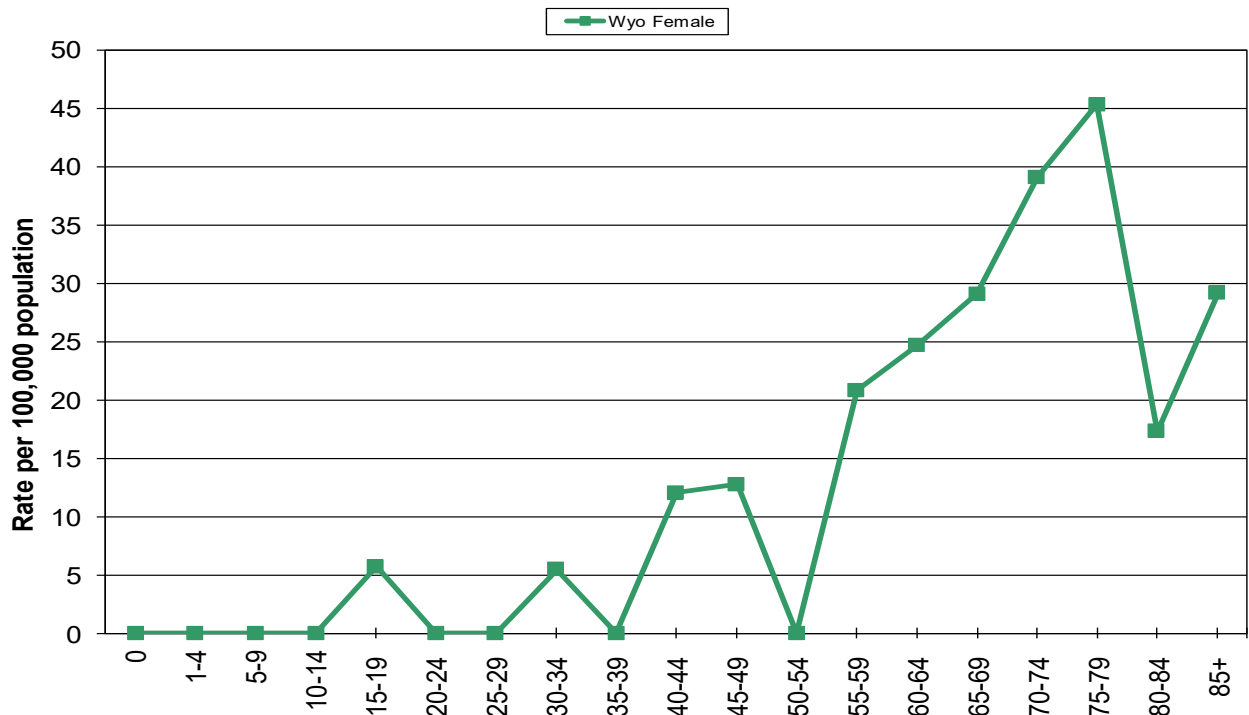
There was a significant increase in the percent of cases diagnosed as Unstaged from 2018 (7%). Additionally, the percent of cases diagnosed as Distant increased from 2018 (50%), while Local and Regional both decreased (20% and 23% respectively).

No statistically significant differences were found between the CHD rates and the state rate.

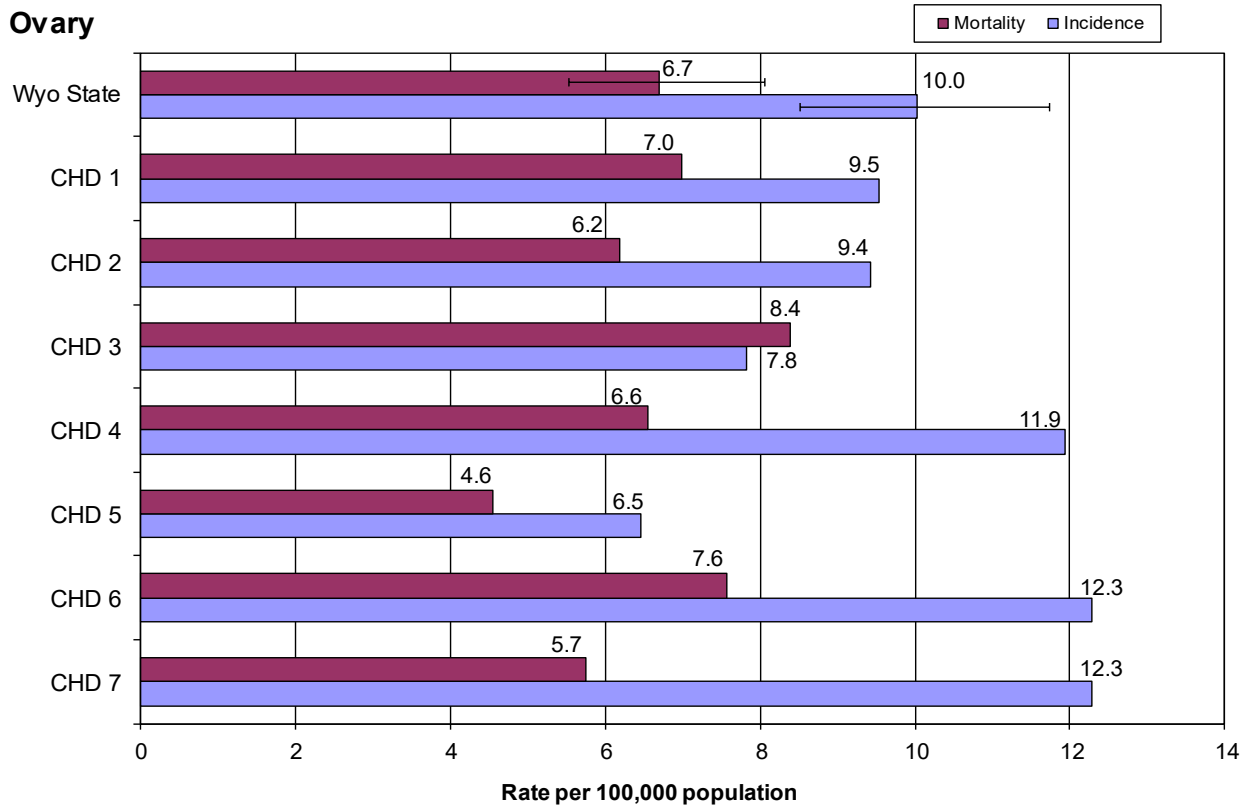
## 12-Year Incidence Trend



## Age-Specific Incidence Rates - 2019



## Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019



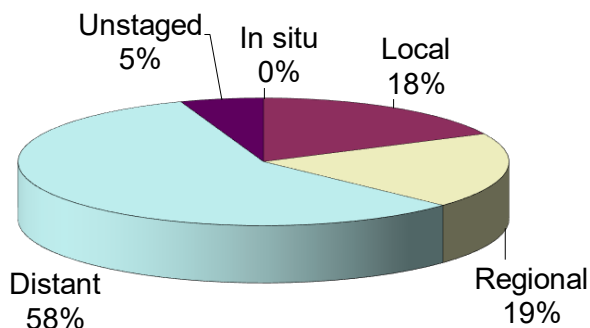
# Pancreas

## Incidence and Mortality Summary

	Male	Female	Total
Invasive Cases	47	26	73
WY Incidence	13.0	7.1	9.8
US Incidence	15.2	11.3	13.1
Cancer Deaths	50	32	82
WY Mortality	15.0	8.5	11.4
US Mortality	12.8	9.5	11.0

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

## Stage at Diagnosis



The incidence rate in each Wyoming population was lower than the national rate in 2019. The mortality rates for Wyoming males and total population were both higher than the national rates, with only the female mortality being lower than the national rate.

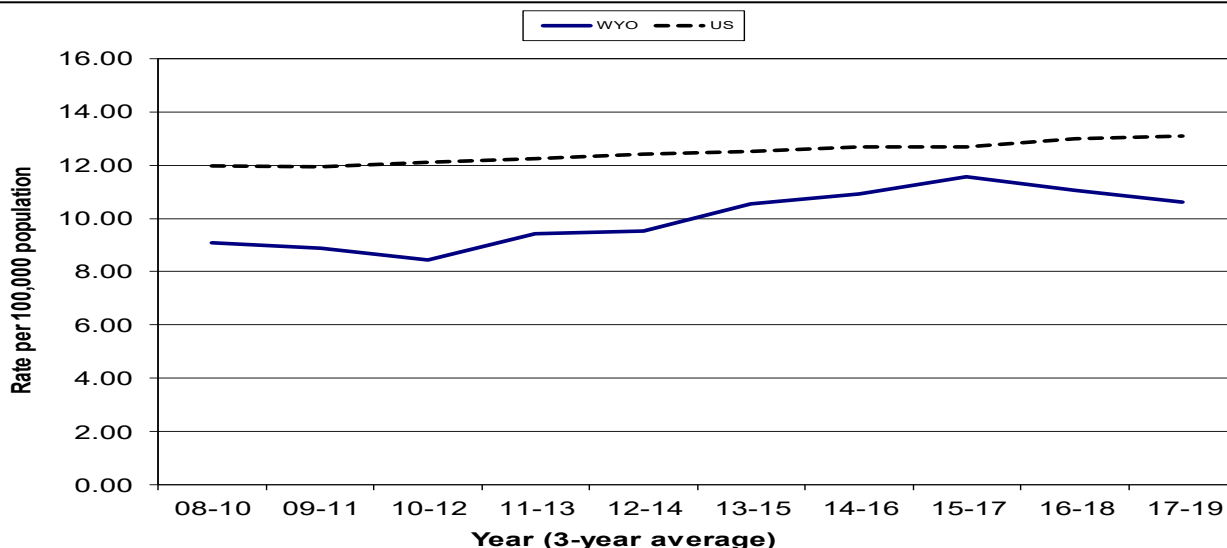
The incidence trend for Wyoming shows a continuing decrease that began in 2015-2017. The national rates continues to slowly increase over time.

**There was only one case diagnosed in a Wyoming resident under the age of 40 in 2019.**

The percentage of cancers diagnosed as Distant increased from 2018 (46%), while the percent of cases staged as Regional decreased (29%).

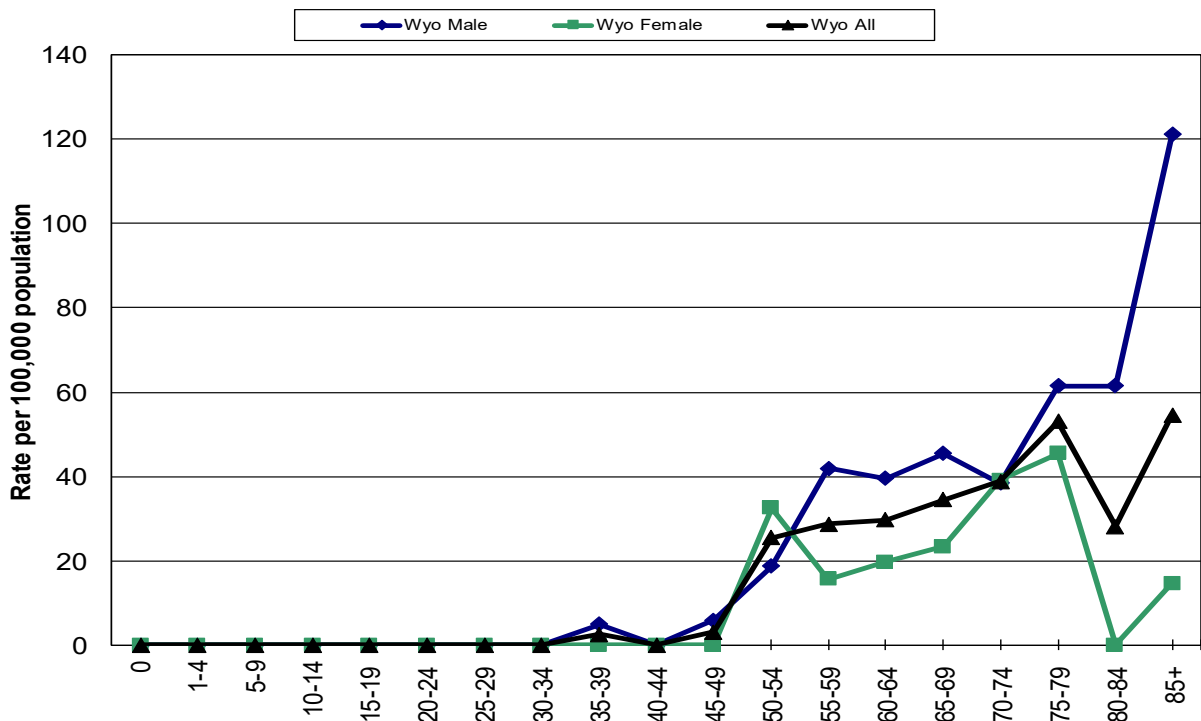
No statistically significant differences were found between the CHD rates and the state rate for incidence or mortality.

## 12-Year Incidence Trend



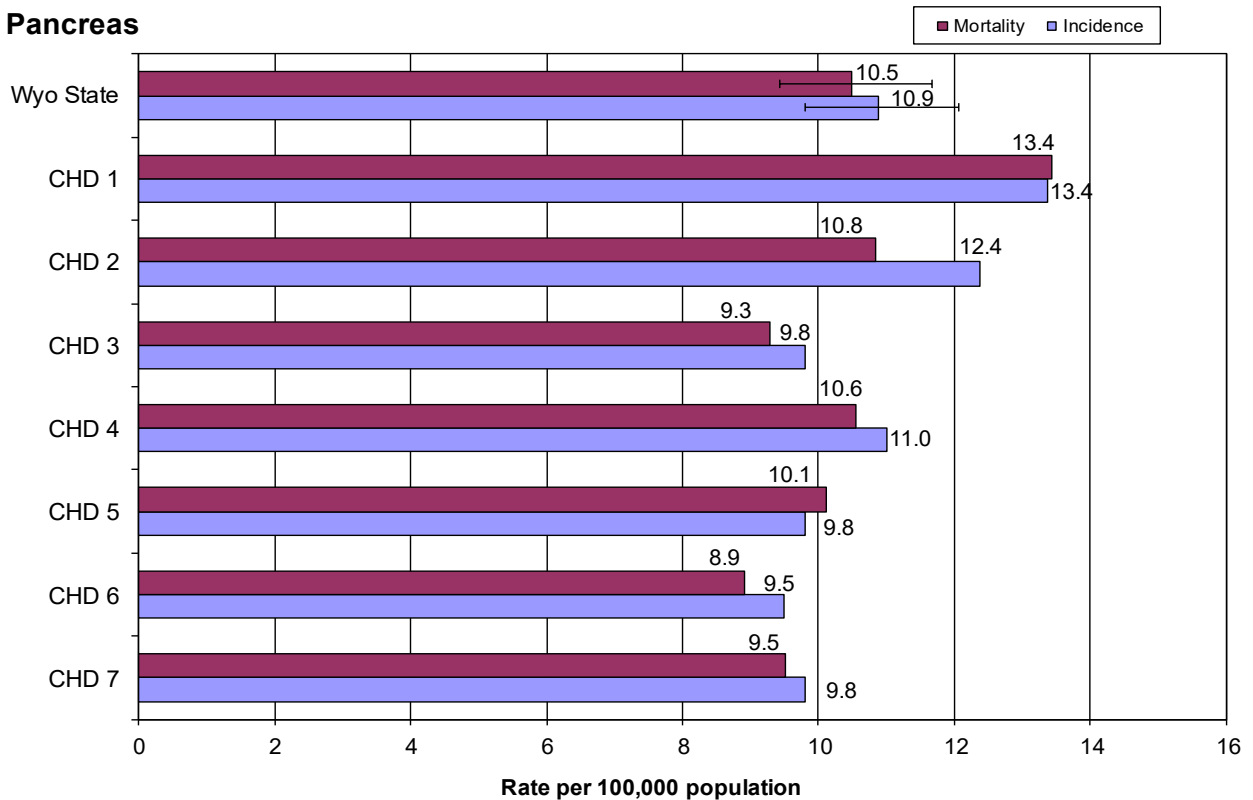


### Age-Specific Incidence Rates - 2019



### Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019

#### Pancreas



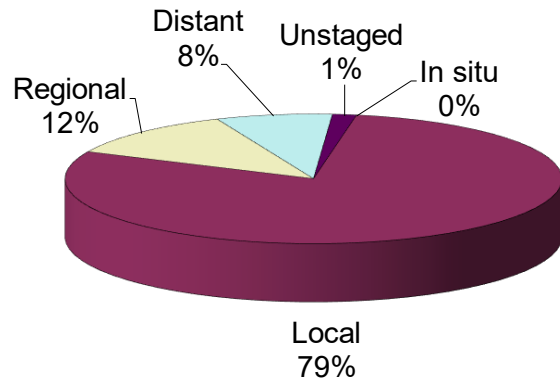
# Prostate

## Incidence and Mortality Summary

	Male
Invasive Cases	449
WY Incidence	112.9
US Incidence	102.3
Cancer Deaths	57
WY Mortality	17.9
US Mortality	17.7

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

## Stage at Diagnosis



The incidence and mortality rates for prostate cancer in Wyoming males were both higher than the national rate in 2019.

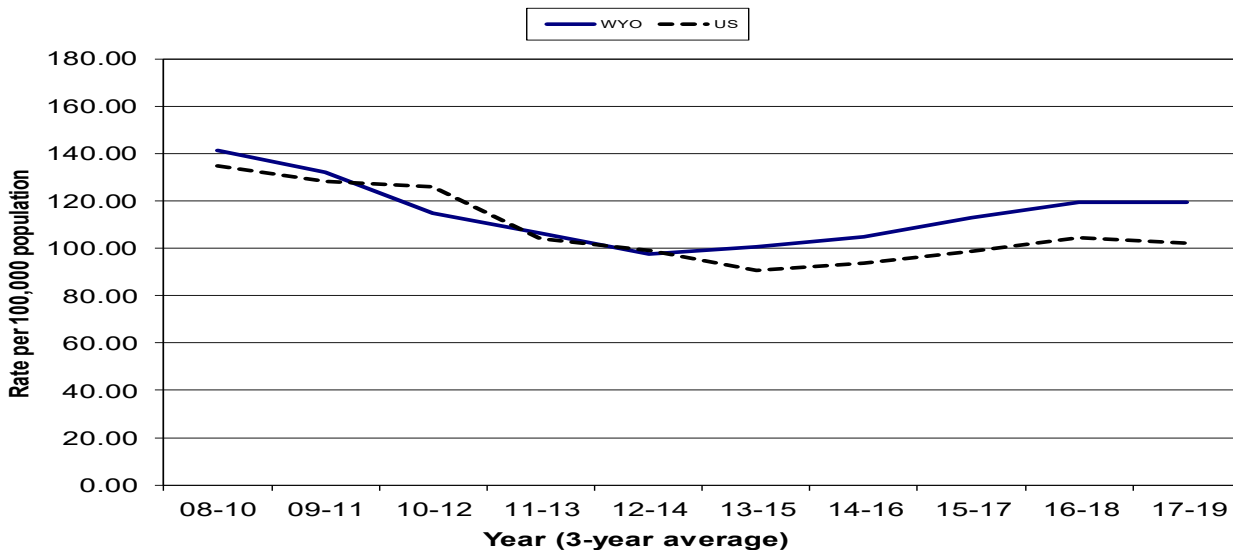
The incidence trend shows the Wyoming was level between 2016-2018 and 2017-2019. The national rate appears to have decreased slightly during the same time.

**There were no cases or deaths from prostate cancer in Wyoming men under the age of 45 in 2019.**

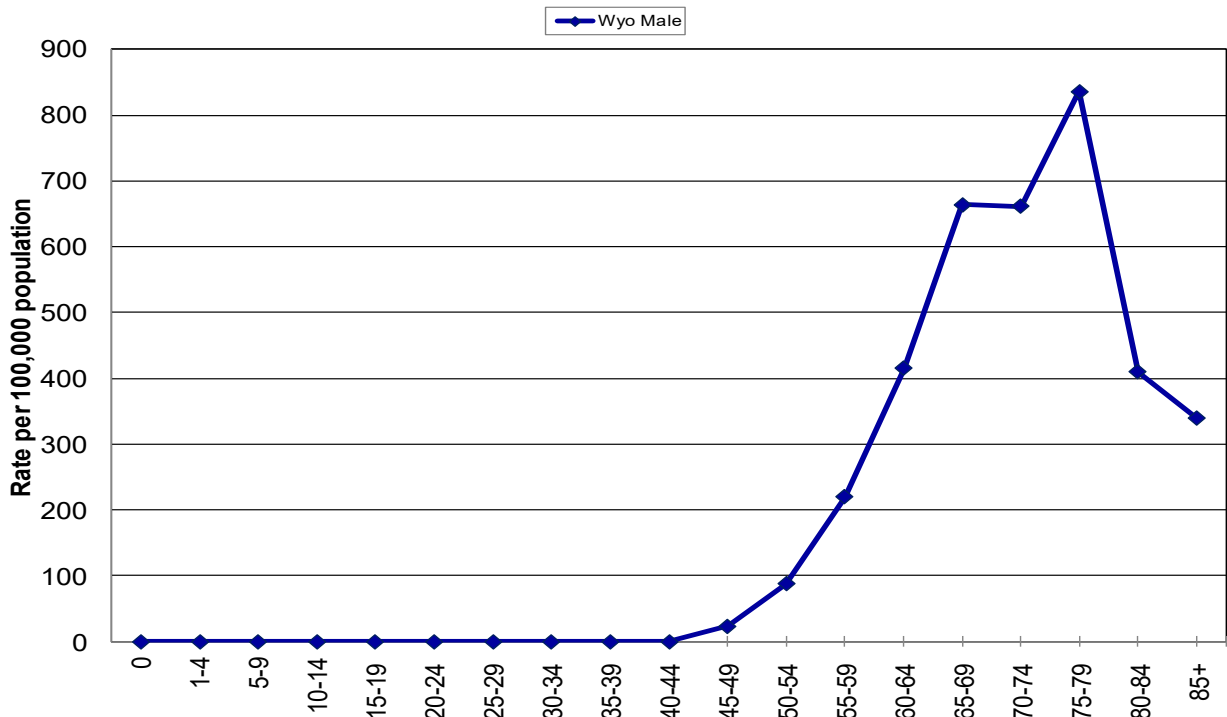
The percentage of cases diagnosed at each stage in 2019 were basically the same as 2018.

No statistically significant differences were found between the CHD rates and the state rates.

## 12-Year Incidence Trend

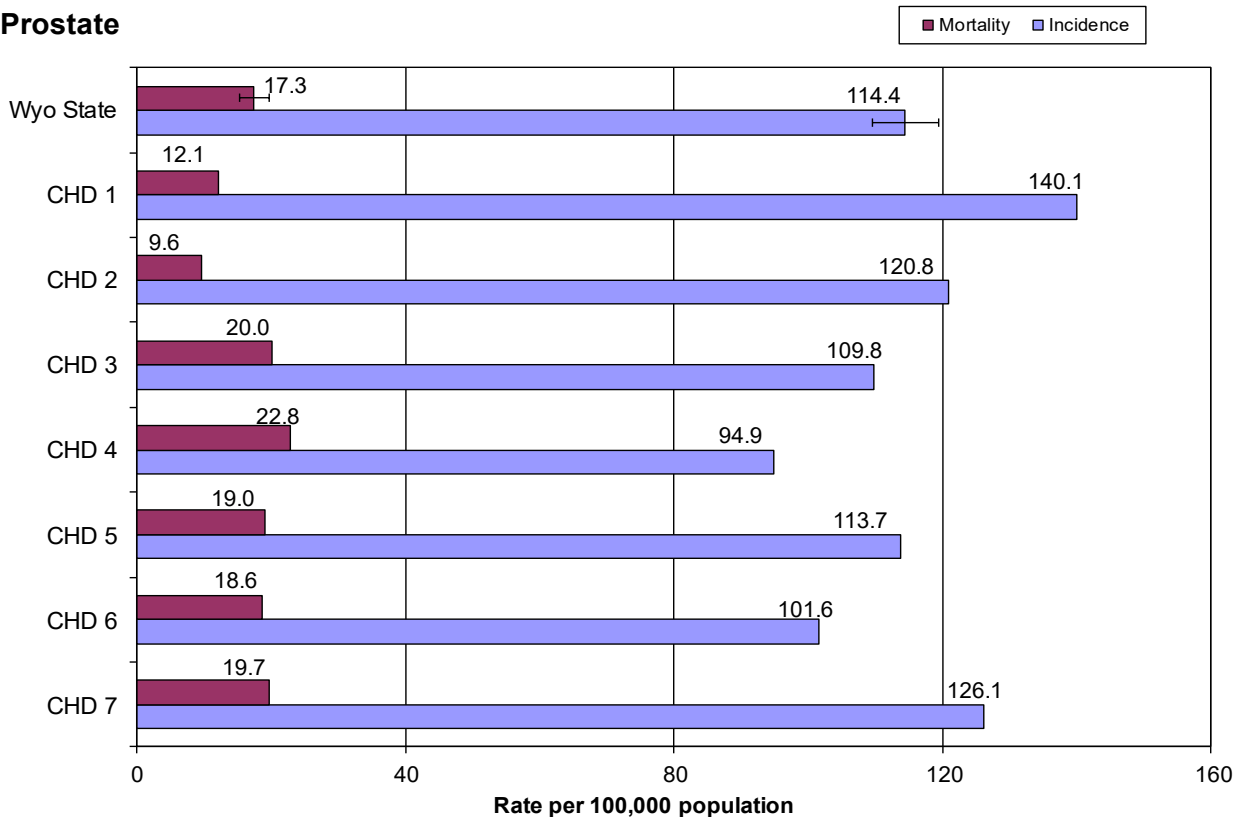


## Age-Specific Incidence Rates - 2019



## Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019

### Prostate



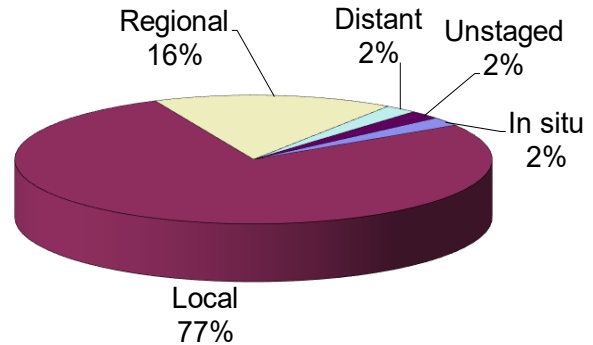
# Thyroid

## Incidence and Mortality Summary

	Male	Female	Total
Invasive Cases	26	34	90
WY Incidence	8.1	23.1	15.4
US Incidence	7.8	21.3	14.4
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 higher than the national rates in 2019. None of the Wyoming mortality rates were calculated due to low numbers.

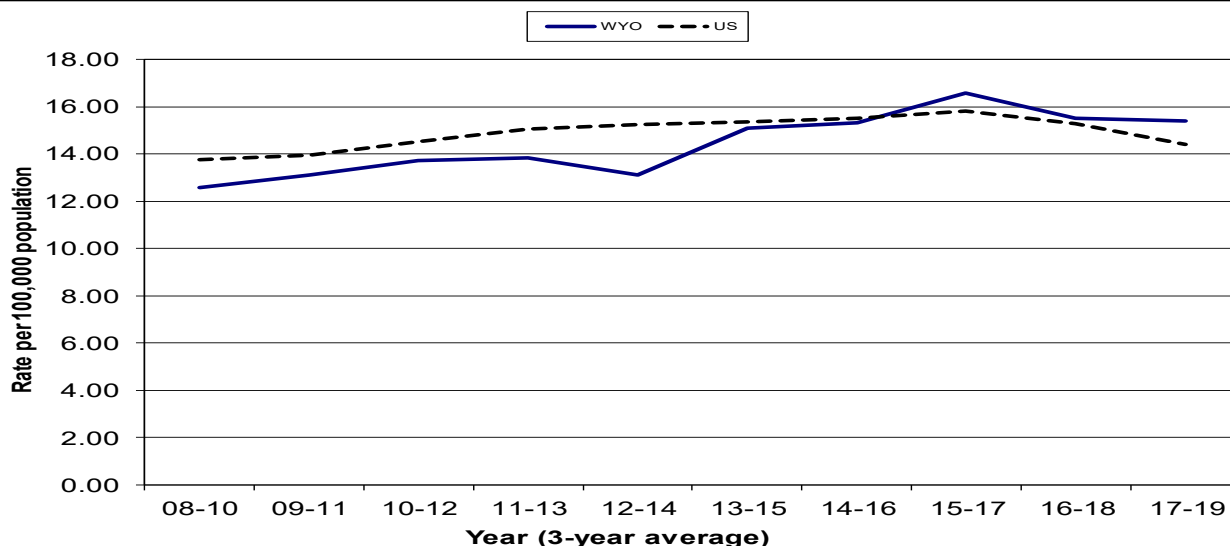
The trend of thyroid cancer incidence in Wyoming leveled off between 2016-2018 and 2017-2019, while the national rate continued to decrease.

**There were five cases of thyroid cancer diagnosed in Wyoming residents under the age of 25 in 2019.**

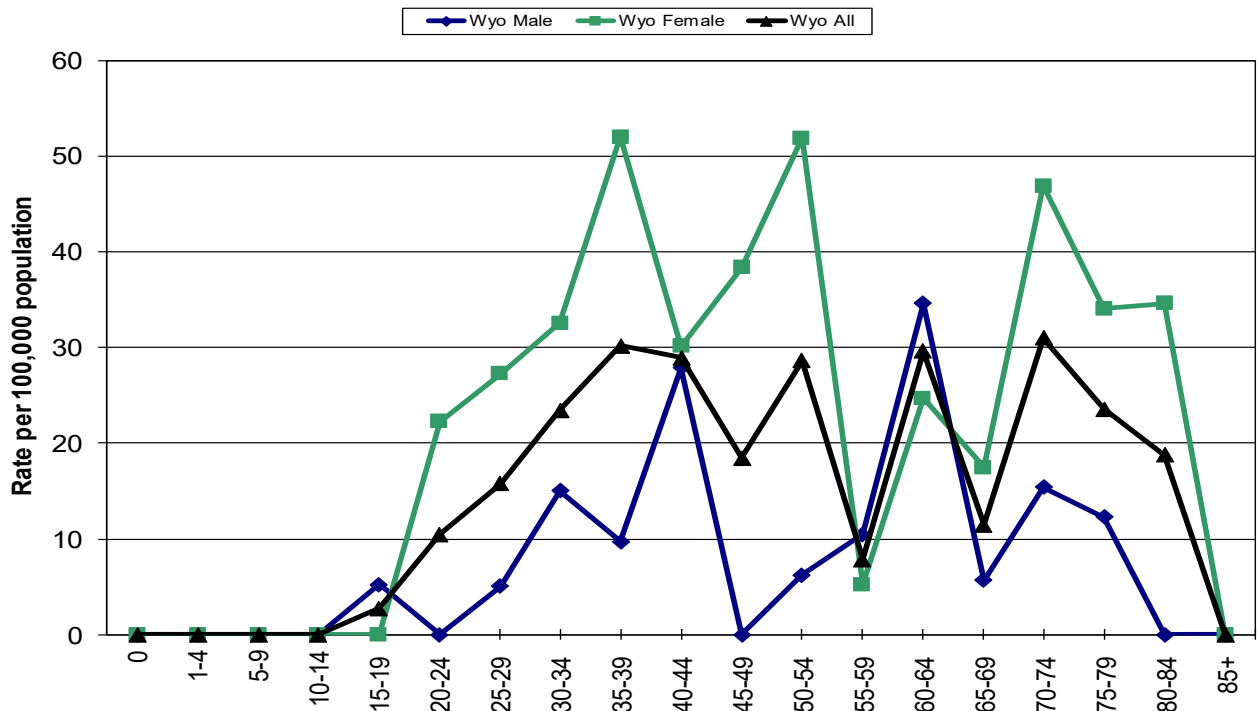
The percentage diagnosed as Distant decreased from 2018 (7%), while Unstaged and In situ both increased slightly from 2018 (0% for both).

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

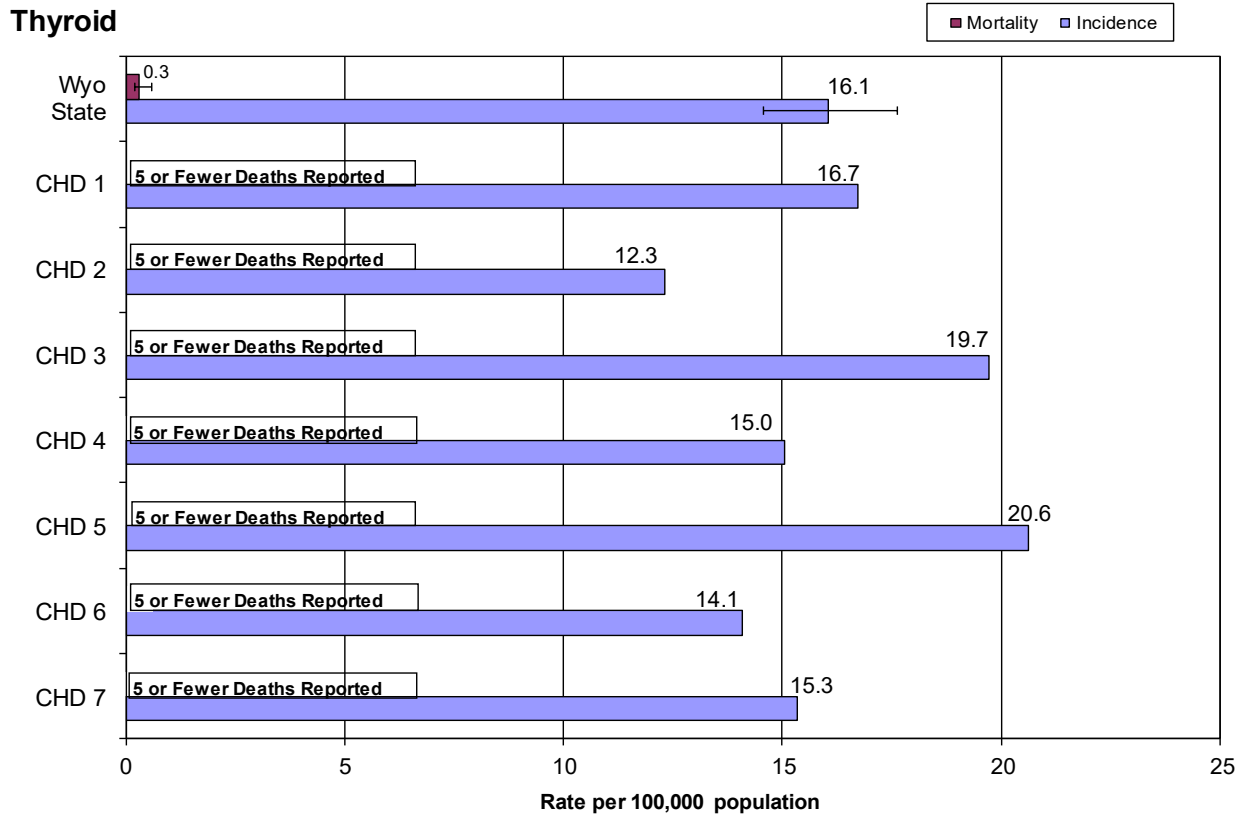
## 12-Year Incidence Trend



## Age-Specific Incidence Rates - 2019



## Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019



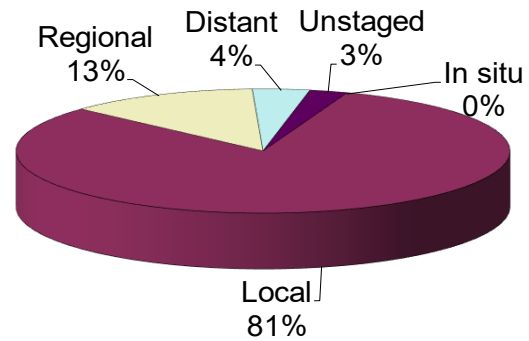
# Uterine (Corpus Uteri + Uterus)

## Incidence and Mortality Summary

	Female
Invasive Cases	80
WY Incidence	20.9
US Incidence	27.8
Cancer Deaths	23
WY Mortality	5.5
US Mortality	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 rate for Wyoming females was lower than the national rate in 2019, while the mortality rate was higher than the national rate.

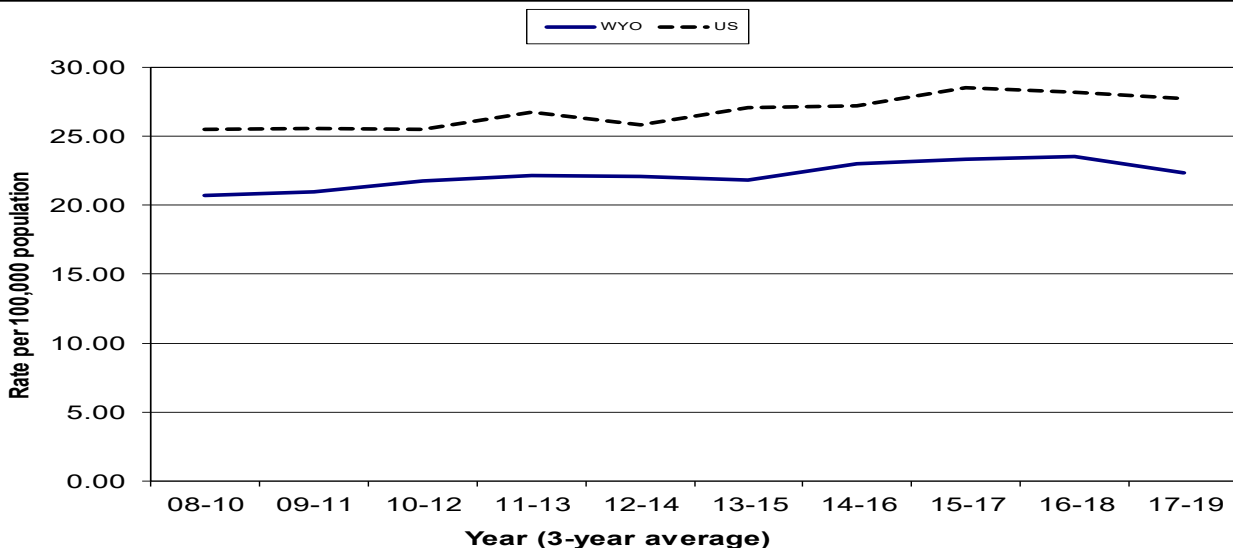
The Wyoming incidence trend decreased slightly between 2016-2018 to 2017-2019. The national trend continued a slow decrease that began in 2015-2017.

**There was one case diagnosed in Wyoming women under the age of 40 in 2019.**

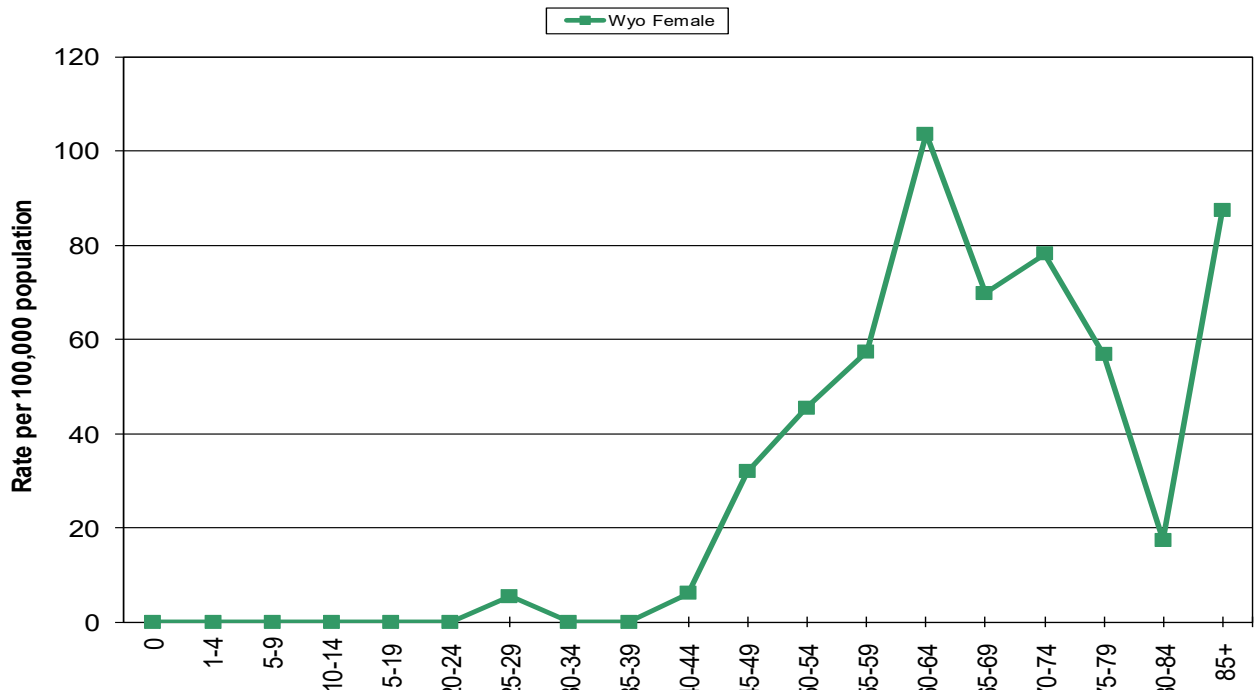
The percentage diagnosed as Local increased from 2018 (77%), while the percent diagnosed as Regional decreased from 2018 (17%).

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

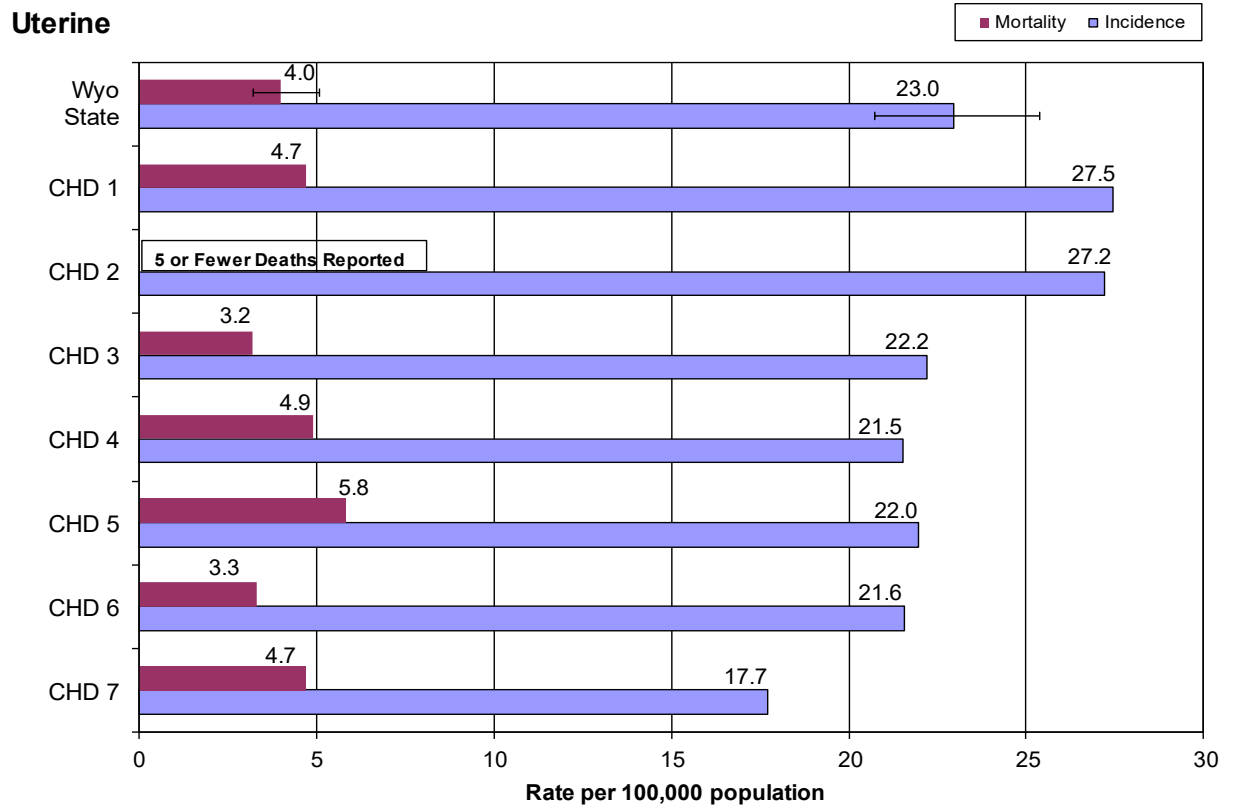
## 12-Year Incidence Trend



## Age-Specific Incidence Rates - 2019



## Cancer Health District Incidence and Mortality 5-Year Average, 2015-2019







# Appendix A

## References

Surveillance, Epidemiology, and End Results (SEER) Program ([www.seer.cancer.gov](http://www.seer.cancer.gov)) version 8.3.6. SEER\*Stat Database: Incidence - SEER 21 Limited-Field Research Data + Hurricane Katrina Impacted Louisiana Cases, Nov 2018 Sub (2000-2016) <Katrina/Rita Population Adjustment> Linked To County Attributes - Total U.S., 1969-2017 Counties, National Cancer Institute, DCCPS, Surveillance Research Program, Cancer Statistics Branch, released April 2019, based on the November 2018 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:

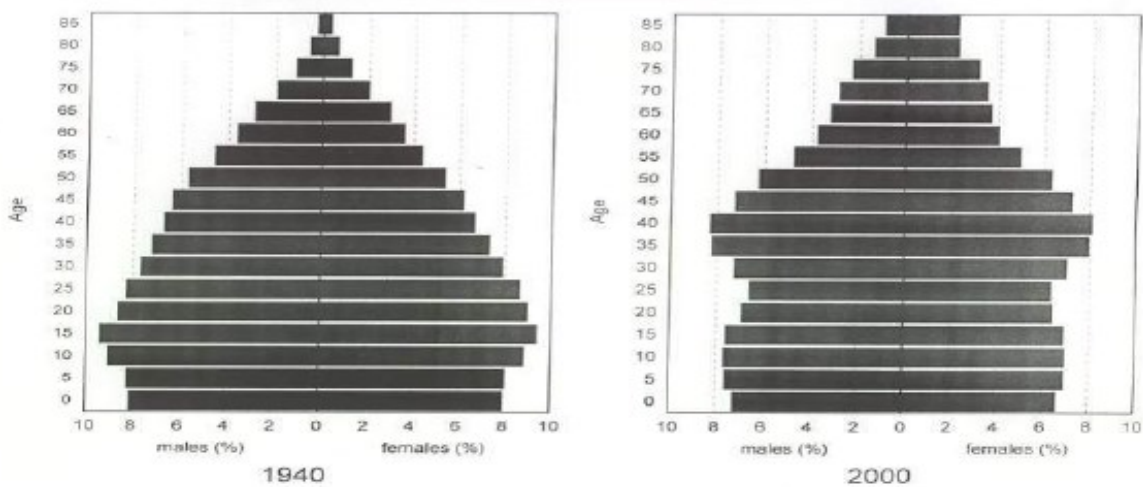


Chart B:

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

