

# Cancer Incidence and Mortality in Nebraska: 2019



**April 2023**

The Nebraska Cancer Registry contains a wealth of information, not all of which is included in this report:

What types of data are available?

- Demographic: age at diagnosis, gender, race/ethnicity, county of residence
- Medical history: date of diagnosis, primary site, cell type, stage of disease at diagnosis
- Therapy: surgery, radiation therapy, chemotherapy, immunotherapy, hormone therapy
- Follow up: length of survival, cause of death

Who may request data from the Nebraska Cancer Registry?

- Medical Researchers
- Health Planners
- Market Researchers
- Health Care Facility Administrators
- Physicians
- Nurses
- Health Care Facility Cancer Committees
- Oncology Conference Planners and Speakers
- Patient Care Evaluators
- Pharmaceutical Companies
- Government Officials
- Concerned Citizens
- Students

How do I make a request?

Contact the Office of Health Statistics at the  
Nebraska Department of Health and Human Services  
Division of Public Health  
P.O. Box 95026, Lincoln, NE 68509-5026  
[DHHS.PublicRecords@nebraska.gov](mailto:DHHS.PublicRecords@nebraska.gov)  
Phone (402)471-8298, Monday-Friday between 8 AM and 5 PM

*Please note: To comply with confidentiality regulations, the Nebraska Department of Health and Human Services reserves the right to limit the amount and type of data that are released in response to a request.*

# NEBRASKA CANCER REGISTRY 2019 ANNUAL REPORT

Nebraska Department of Health and Human Services

Dannette R. Smith, Chief Executive Officer  
Nebraska Department of Health and Human Services

Felicia Quintana-Zinn, Deputy Director  
Epidemiology Unit

Ming Qu, Administrator  
Public Health Research

Connie Ganz, Health Section Administrator I  
Office of Health Statistics

Lifeng Li, MPH  
Epidemiology Surveillance Coordinator

Christophe Irumva, MS  
Health Data Coordinator

Mark A. Watson  
Technical Program Support Manager

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### **Nebraska Cancer Registry Advisory Committee Members**

Jane Meza, Associate Vice Chancellor  
College of Public Health  
University of Nebraska Medical Center

John Casey, MD  
Lincoln, Nebraska Center

Shinobu Watanabe-Galloway, PhD  
College of Public Health  
University of Nebraska Medical Center

Alan Thorson, MD, FACS  
Colon and Rectal Surgery University of  
University of Nebraska Medical Center

Mary J. Chandler, RHIA  
Health Information Management  
Methodist Health System

Kendra L. Ratnapradipa, PhD  
College of Public Health  
University of Nebraska Medical Center

Stephen Dreyer, MD  
Fremont Area Medical Center

Judy Gray  
Consultant

F. William Karrer, MD  
Methodist Cancer Center

Shelly Spencer, CTR  
St. Elizabeth Regional Medical Center

Nagamani Narayana, MS, DMD  
University of Nebraska College of Dentistry

Andy Link  
American Cancer Society

Tamara Robinson, MS  
Nebraska Cancer Coalition

Daniel Lydiatt, MD  
Methodist Cancer

---

Nebraska Cancer Registry  
Data Collection Staff (Westat)

Mary Mesnard, BS, CTR  
Operations Manager

Wilhelmina Ross, MPH, CTR  
Registry Coordinator

Elaine Flores, CTR  
Data Acquisition/Processing

Vanessa McLean, CTR  
Audits/Quality Assurance/Disease Index

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## EXECUTIVE SUMMARY

The Cancer Incidence and Mortality in Nebraska annual report for 2019 provides a comprehensive overview of the impact of cancer in Nebraska. The purpose of the report is to present the most recent statistics that describe cancer incidence and mortality in Nebraska, for the entire state and by county and region; in-depth analyses of selected cancer sites; and comparisons of trends between Nebraska and the United States. Findings from the report include:

- **Overall Cancer Incidence:** In 2019, there were 10,545 diagnoses of cancer among Nebraska residents. This number is lower than the number of cancers that were diagnosed in 2018 (10,825).
- **Cancer Incidence by Gender:** In 2019, prostate, lung, and colorectal cancers were the most frequently diagnosed cases among Nebraska men, while breast, lung, and colorectal cancers were the most frequently diagnosed cases among Nebraska women. Taken together, these cancers accounted for about half of all cancer cases diagnosed among Nebraska residents in 2019.
- **Cancer Incidence by Age:** During the past five years (2015-2019), more than half (57.1%) of all cancers in Nebraska occurred among people 65 years of age and older. Less than 1% were diagnosed among children and adolescents. The average age at diagnosis was 65 years of age.
- **Cancer Incidence by Site:** During the past five years (2015-2019), cancers of the lung and bronchus, stomach, liver, ovary, and myeloma were diagnosed significantly less often among Nebraska residents when compared to the U.S. as a whole, while prostate, melanoma of skin, female breast, colorectal, thyroid, kidney and renal pelvis, and testicular cancers were diagnosed significantly more often.
- **Cancer Incidence by Race:** During the past decade (2010-2019), African-Americans in Nebraska were significantly more likely to be diagnosed with kidney, liver, lung, myeloma, pancreatic, stomach, and prostate cancers than were whites. Liver cancer diagnoses were also significantly more frequent among Native Americans and Asian-American/Pacific Islanders compared to whites.
- **Overall Cancer Mortality:** In 2019, 3,470 Nebraska residents died from cancer, which is a slight decrease from the 2018 cancer death total of 3,498. Cancer was the second leading cause of death in Nebraska in 2019, surpassed by heart disease by 55 deaths.
- **Cancer Mortality by Site:** During the past five years (2015-2019), deaths from cancers of the small intestine, liver, and female breast occurred significantly less often among Nebraska residents when compared to the U.S. as a whole. Lung cancer was the leading cause of cancer mortality in Nebraska in 2019, accounting for 22.4% of all cancer deaths, followed by colorectal cancer. During the past two

decades, prostate and female breast cancer mortality rates in Nebraska have both declined by more than 50%, which is consistent with national trends.

- **Cancer Incidence by County:** Below are the Nebraska counties where cancer incidence during 2015-2019 was significantly different ( $p < .05$ ) from the state. (NOTE: counties with fewer than 20 cases are not included.)

<b>Significantly lower ▼</b>		<b>Significantly higher ▲</b>	
<b>County</b>	<b>Primary Sites</b>	<b>County</b>	<b>Primary Sites</b>
Adams	Prostate	Boone	Colon & rectum
Box Butte	Female breast		Prostate
Cheyenne	Lung & bronchus	Buffalo	Melanoma of skin
Custer	Female breast	Butler	Non-Hodgkin lymphoma
Dakota	Prostate	Cass	Kidney & renal pelvis
Dawes	Prostate		Lung & bronchus
Dawson	Melanoma of skin	Cuming	Prostate
	Prostate	Dodge	Lung & bronchus
Dodge	Melanoma of skin		Thyroid
Hall	Prostate	Douglas	Lung & bronchus
	Melanoma of skin		Female breast
Holt	Lung & bronchus		Melanoma of skin
Keith	Female breast	Franklin	Lung & bronchus
Merrick	Prostate	Gage	Kidney & renal pelvis
Phelps	Prostate		Lung & bronchus
Red Willow	Prostate	Greeley	Prostate
Scotts Bluff	Colon & rectum	Hitchcock	Colon & rectum
Seward	Prostate	Madison	Prostate
Wayne	Female breast	Phelps	Female breast
		Sarpy	Female breast

- **Annual Report Special Topic: Head and Neck Cancers**  
Cancers of Head and Neck start in several places including the sinuses, mouth (tongue, gum, and the roof of the mouth), the back of the mouth and the throat (nasopharynx, oropharynx, and hypopharynx), larynx, lips, and salivary gland. Alcohol and tobacco are major risk factors for cancer of the head and neck. During the past five years (2015-2019), head and neck cancer accounted for 1,437 new cases and 288 deaths among Nebraska residents.

## INTRODUCTION

This publication represents the 31st annual statistical summary of the Nebraska Cancer Registry (NCR) since it began collecting data in 1987. The purpose of this report is to present the registry's most recent data to the citizens of the State of Nebraska. The majority of the data covers cancer diagnoses and cancer deaths that occurred between January 1, 2019 and December 31, 2019, as well as during the past five years (January 1, 2015-December 31, 2019).

The NCR was founded in 1986, when the Nebraska Unicameral authorized funding for a state cancer registry using a portion of funds generated by the state's cigarette tax. The establishment of the registry successfully combined the efforts of many Nebraska physicians, legislators, concerned citizens, and the Nebraska Medical Foundation, all of whom had worked for years toward this goal. The Nebraska Medical Foundation also helped establish the registry with financial assistance. Since 1994, the NCR has received additional funding from the Centers for Disease Control and Prevention (CDC).

The NCR is managed by the Nebraska Department of Health and Human Services (DHHS) in Lincoln. However, registry data is collected and edited by NCR staff in Omaha, under contract to the Methodist Hospital Association. Analysis of registry data and preparation of the annual statistical report are the responsibilities of DHHS.

The purpose of the registry is to gather data that describes how many Nebraska residents are diagnosed with cancer, what types of cancer they have, how far the disease has advanced at the time of diagnosis, what types of treatment they receive, and how long they survive after diagnosis. These data are put to a variety of uses both inside and outside of DHHS. Within DHHS, they are used to identify high-risk populations and long-term disease trends, to compare Nebraska's cancer experience with the rest of the nation, to investigate reports of possible cancer clusters, and to help plan and evaluate cancer control programs. Outside of DHHS, the registry provides data upon request for research studies and public information, and has provided data to the North American Association of Central Cancer Registries (NAACCR), the National Cancer Institute (NCI), the American Cancer Society (ACS), CDC, and the University of Nebraska Medical Center, among others. The NCR also contributes its data to several national cancer incidence databases (see page 5). In recognition of the accuracy and completeness of the data collected, NAACCR has awarded the NCR its gold standard certificate of data quality for 24 consecutive years, from 1995 to 2019.

All individual records in the cancer registry are kept in strict confidence as prescribed by both state and federal law. The NCR follows all of the privacy safeguards in the Health Insurance Portability and Accountability Act (HIPAA), although some of the procedural requirements do not apply to the registry.

DHHS welcomes inquiries about cancer from the public for aggregate statistics or general information from the registry. To obtain cancer data or information about the registry not included in this report, please refer to the instructions provided inside the front cover.

An electronic copy of this report is available on the DHHS website at <http://dhhs.ne.gov/Pages/Cancer-Registry.aspx>

## **METHODOLOGY**

### **Data Collection and Management**

The NCR gathers data on Nebraska residents diagnosed and treated for invasive and in situ tumors. The registry does not include benign tumors (except for benign brain and other nervous system tumors, which became reportable as of January 1, 2004), benign polyps, and basal cell and squamous cell carcinomas of the skin. Information gathered from each case includes the patient's name, address, birth date, race, gender, Social Security number, date of diagnosis, primary site of the cancer (coded according to the International Classification of Diseases for Oncology, 3<sup>rd</sup> edition [ICD-O-3]), stage of disease at diagnosis, facility where the initial diagnosis was made, basis of staging, method of diagnostic confirmation, histological type (also classified according to the ICD-O-3), and initial treatment. The registry does not actively collect follow-up information on registered cases, but many facilities provide it, and it includes the date of last contact with the patient, status of disease, type of additional treatment, and quality of survival. The registry collects information from every hospital in the state where cancer patients are diagnosed and/or treated on an inpatient basis. The registry also includes Nebraska residents who are diagnosed with and/or treated for cancer out of state, as well as cases identified through pathology laboratories, outpatient treatment facilities, physician offices, and death certificates. Death of registered cases is ascertained using death certificates available from DHHS and from the National Death Index.

Nebraska cancer mortality data are obtained from death certificates on file with DHHS. Mortality data are available for every Nebraska resident who dies from cancer, whether death occurs in or outside of Nebraska. The mortality data presented in this report is limited to those deaths where cancer is listed as the underlying (i.e., primary) cause of death. Causes of death are coded according to the Tenth Edition of the International Classification of Disease (ICD-10).

The U.S. cancer incidence data presented in this report were compiled by CDC's National Program of Cancer Registries (NPCR) and NCI's Surveillance, Epidemiology, and End Results (SEER) Program. NPCR provides support for cancer registries in 46 states (including Nebraska), the District of Columbia, and some U.S. territories, and covers 97% of the total U.S. population. The mortality data presented in this report were compiled by the National Center for Health Statistics (NCHS) and include all U.S. resident cancer deaths. Incidence data from NPCR and mortality data from NCHS are available through 2018.

### **Confidentiality**

All data obtained by the NCR from the medical records of individual patients is held in strict confidence by DHHS. As specified in state statute, researchers may obtain case-specific and/or patient-identifiable information from the registry by submitting a written application that describes how the data will be used for scientific study. In situations where contact with a patient or patient's family is proposed, the applicant must substantiate the need for any such contact and submit approval from an Institutional Review Board. In addition, before any individual's name can be given to a researcher, the registry must obtain permission from the individual that they are willing to be a research subject. Upon favorable review by DHHS, the applicant must also agree to maintain the confidentiality

and security of the data throughout the course of the study, to destroy or return the registry data at the end of the study and to present material to the registry prior to publication to ensure that no identifiable information is released.

Aggregate data (i.e., statistical information) from the registry are considered open to the public and are available upon request. Details on how to obtain such data are provided inside the front cover of this report.

## Quality Assurance

The NCR and reporting facilities spend a great deal of time and energy to ensure that the information they gather is both accurate and complete, and these efforts have met with consistent success. For 25 consecutive years (1995-2019), the NCR has met all of the criteria necessary to earn the gold standard certificate of data quality awarded by NAACCR, which is the accrediting body for all U.S. and Canadian central cancer registries. These criteria include:

- 1) Completeness of case ascertainment--The registry must find at least 95% of the total number of cases that are estimated to have occurred.
- 2) Completeness of information--The proportion of registry cases missing information on age at diagnosis, gender, and county of residence must be no more than 2%, and the proportion missing information on race must be no more than 3%.
- 3) Data accuracy--Error rates based on edit checks of selected data items must be no greater than 1%.
- 4) Timeliness--All data for a single calendar year must be submitted to NAACCR for review no more than 23 months after the year has ended.

Gold standard certification also requires that all cases pass strict edits and that the proportion of registry cases found solely through a review of death certificates must be no more than 3% and that the proportion of duplicate cases in the registry must be no more than one per 1,000.

Since the NCR has achieved the highest quality standards, its data are included in several national cancer incidence databases. These databases compile information from cancer registries throughout the United States and Canada that meet the same data quality standards as the NCR. These databases include:

- 1) *Cancer in North America* (<http://www.naacccr.org>)
- 2) *United States Cancer Statistics* (<https://nccd.cdc.gov/uscs/>)
- 3) *Cancer Facts & Statistics* (<http://www.cancer.org/research/cancerfactsstatistics/index>)
- 4) *Cancer Control PLANET* (<http://cancercontrolplanet.cancer.gov/>)

## Definitions

Several technical terms are used in presenting the information in this report. The following definitions are provided here to assist the reader.

### ***Incidence rate***

Incidence rate is the number of new cases of a disease that occur within a specific population during a given time period, divided by the size of the population. For example, if 10 residents of a county with 20,000 residents are diagnosed with colorectal cancer during a single year, then the incidence rate of colorectal cancer for that county for that year is .0005. Since cancer incidence rates are usually expressed per 100,000 population, this figure is then multiplied by 100,000 to yield a rate of 50 per 100,000 per year.

### ***Mortality rate***

Mortality rate is the number of deaths that occur within a specific population during a given time period, divided by the size of the population. Like incidence rates, mortality rates are usually expressed as the number of deaths per 100,000 population per year.

### ***Age-adjusted rate***

Age-adjustment is a simple mathematical procedure that makes it possible to compare rates between populations that have different age distributions, and to compare rates within a single population over time. All of the incidence and mortality rates in this report are age-adjusted using the U.S. population in 2000 as the standard. Statewide and national rates are age-adjusted using 19 age groups (<1, 1-4, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84, 85+ years), while county and regional rates are age-adjusted using 11 age groups (<1, 1-4, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+ years).

### ***Stage of Disease at Diagnosis***

#### ***In situ***

Tumors diagnosed as in situ consist of invasive cells that are growing in place. In situ tumors are confined to the cell group of origin, and have not penetrated the supporting structure of the organ on which they arose.

#### ***Invasive***

Tumors diagnosed as invasive have spread beyond the cell group of the organ where they began, and may have spread further. The organ where a malignancy began is also known as the primary site. Invasive tumors are subdivided into three categories:

**Localized**--A localized invasive tumor has not spread beyond the organ where it started.

**Regional**--A regional invasive tumor has spread beyond the organ where it began, by direct extension to immediately adjacent organs or tissues and/or by spread to regional lymph nodes.

**Distant**--A distant invasive tumor has spread beyond the primary site to distant parts of the body.

### **5-Year Relative Survival Rate**

The 5-year relative survival rate refers to the ratio of the proportion of people who are alive for 5 years after their cancer diagnosis to the proportion of people in the general population alive over the same time interval. It's an estimate of the percentage of patients who would be expected to survive the effects of their cancer excluding the risk of dying from other causes.

### **Data Analysis**

All of the rates presented in this report were calculated using Vintage 2020 bridged-race population estimates developed by the U.S. Census Bureau and the National Center for Health Statistics. Incidence and mortality rates for multiple years (2015-2019) (see Tables 1, 2, 5, 6, 9-20) were calculated using population estimates for the years 2015-2019 combined, while rates for 2010-2019 (see Tables 3 and 7) were calculated using population estimates for the years 2010-2019 combined. Rates that are based on more than one year of data should be interpreted as an average annual rate.

All of the data presented in this report are current through December 31, 2021. However, because some cases diagnosed during or even before 2018 may not yet have been reported to the registry, the incidence data presented in this report should be considered subject to change. **In addition, the incidence data reported in previous editions of this report should be considered no longer complete.**

Internet users should also be aware that the cancer statistics for Nebraska that are published in this report and those that are posted on non-DHHS websites (see page 5) may differ. Some discrepancies may be the result of differences in the dates at which the data were compiled. As noted above, Nebraska incidence data published in this report include all cases reported to the registry through December 31, 2021; Nebraska data available on the CDC/NPCR website include cases that were reported through November 30, 2021.

With the exception of bladder cancer, in situ female breast cancer, and benign brain tumors, all of the site-specific incidence rates in this report were calculated with invasive cases only, to maintain comparability with statistics from the NPCR and other cancer registries throughout the United States. For bladder cancer, incidence rates were calculated with invasive and in situ cases combined. All incidence and mortality rates in this report were calculated per 100,000 population, and were age-adjusted according to the age distribution of the population of the United States in 2000. Statewide rates were also calculated for males and females separately, and for both sexes combined. The number of cases for any county with fewer than three cases is not shown in order to reduce the possibility of identifying a specific person.

To evaluate the statistical significance of the differences between rates, confidence intervals for rates were calculated using the formula  $CI = r \pm (RC \times SE)$ , where CI = confidence interval, r = rate, RC = 1.96 (for 95% confidence intervals) or 2.58 (for 99% confidence intervals), and SE = standard error. The standard error for a rate was determined by dividing the rate by the square root of the number of events (cancer diagnoses or deaths). A statistically significant difference exists and is indicated in those instances where the confidence intervals of a pair of rates being compared to each other do not overlap.

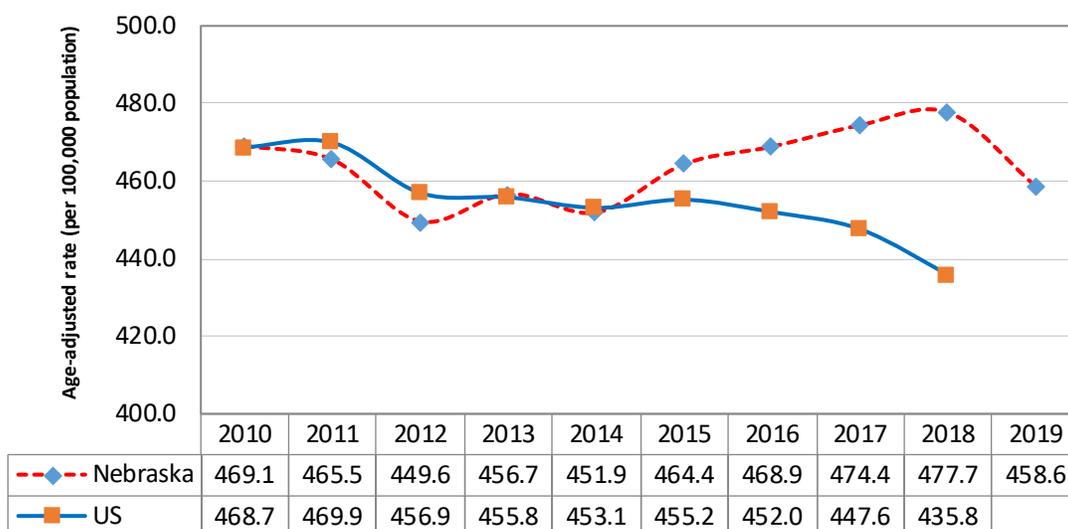
## CANCER INCIDENCE IN NEBRASKA

The Nebraska Cancer Registry recorded 10,545 diagnoses of cancer among Nebraska residents in 2019, a decrease from the 10,825 diagnoses recorded in 2018. The 2019 number translates into an incidence rate of 458.6 cases per 100,000 population. By primary site, cancers of the prostate, female breast, lung, colon and rectum occurred most frequently, accounting for about half (48.8%) of all diagnoses. Recent registry experience suggests that as the registry continues to record cases, the final count for 2019 will likely increase by 100 to 300 cases.

Table 1 presents the number and rate of cancers diagnosed among Nebraska residents during 2019 and 2015-2019, for all sites combined and for cancers of specific sites. The most current estimates of U.S. cancer incidence for the same time period are also included. Comparison of the most recent state and national incidence rates for the past five years shows significant differences ( $p < .01$ ) for cancers of the stomach, liver, myeloma, lung, and ovary (Nebraska rates are lower than the U.S.) and for cancers of the colon and rectum, female breast, melanoma of skin, prostate, kidney and renal pelvis, testis, and thyroid gland (Nebraska rates are higher than the U.S.). Table 2 presents the number of cancers diagnosed in Nebraska during 2015-2019 by age at diagnosis. Table 3 presents Nebraska incidence data by race and ethnicity for the years 2010-2019.

### Cancer (All Sites)

Incidence Rates, Nebraska (2010-2019) & US (2010-2018)



**TABLE 1: Cancer Incidence**  
**Number of Cases and Rates, by Selected Primary Site and Gender**  
 Nebraska (2019 and 2015-2019) & U.S. (2014-2018)

Site	NEBRASKA 2019						NEBRASKA 2015-2019						U.S. 2014-2018		
	Male		Female		Total		Male		Female		Total		Male	Female	Total
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	Rate	Rate	Rate
All Sites	5,528	501.3	5,014	428.8	10,545	458.6	27,046	510.7	25,287	442.9	52,338	470.1	487.4	422.7	448.6
Oral Cavity & Pharynx	192	17.0	80	6.8	272	11.8	1,015	18.8	418	7.0	1,433	12.6	18.0	6.5	11.9
Esophagus	104	9.1	33	2.6	137	5.7	453	8.4	113	1.8	566	4.9	7.8	1.8	4.5
Stomach	82	7.8	36	2.8	118	5.1	395	7.7	202	3.3	597	5.3	8.7	4.6	6.5
Small Intestine	28	2.7	30	2.5	58	2.5	131	2.6	141	2.5	272	2.5	2.9	2.2	2.5
Colon & Rectum	448	42.4	401	33.4	849	37.8	2,371	46.3	2,253	38.1	4,626	42.0	43.5	33.4	38.0
Liver & Intrahepatic Bile Ducts	88	7.8	52	4.6	140	6.1	488	8.7	200	3.3	688	5.8	13.0	4.7	8.6
Pancreas	166	14.8	139	11.1	305	12.7	788	15.0	696	11.3	1,484	13.0	14.9	11.5	13.1
Larynx	44	4.1	10	0.8	54	2.3	256	4.6	67	1.1	323	2.7	5.4	1.2	3.1
Lung & Bronchus	647	57.9	607	46.8	1,254	51.6	3,251	61.2	3,067	49.9	6,318	54.8	65.7	50.8	57.3
Soft Tissue	32	3.4	38	3.3	70	3.3	214	4.4	149	2.8	363	3.5	4.0	2.8	3.3
Melanoma of the Skin	367	34.9	278	26.4	645	29.9	1,646	32.7	1,399	26.9	3,045	29.2	28.9	18.0	22.6
Breast (invasive cases)	18	1.5	1,483	129.5	1,501	68.0	88	1.6	7,376	131.7	7,464	69.3	1.3	126.8	67.7
Uterine Cervix	---	---	79	9.1	---	---	---	---	357	7.8	---	---	---	7.7	---
Uterine Corpus & Unspecified	---	---	343	28.7	---	---	---	---	1,630	27.9	---	---	---	27.4	---

**TABLE 1 (continued): Cancer Incidence**

Site	NEBRASKA 2019						NEBRASKA 2015-2019						U.S. 2014-2018		
	Male		Female		Total		Male		Female		Total		Male	Female	Total
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	Rate	Rate	Rate
Ovary	---	---	107	9.1	---	---	---	---	518	9.3	---	---	---	10.7	---
Prostate	1,540	130.4	---	---	---	---	7,239	128.0	---	---	---	---	106.2	---	---
Testis	58	6.3	---	---	---	---	312	6.8	---	---	---	---	5.7	---	---
Urinary Bladder	388	35.9	99	7.3	487	20.2	1,820	35.4	551	8.6	2,371	20.6	34.0	8.5	19.7
Kidney & Renal Pelvis	251	22.8	166	14.2	417	18.3	1,292	24.4	743	13.2	2,035	18.5	23.1	11.8	17.1
Brain & Central Nervous System (invasive cases only)	85	8.0	67	6.4	152	7.1	403	8.0	337	6.4	740	7.1	7.6	5.5	6.5
Thyroid Gland	86	8.4	207	21.2	293	14.7	397	7.9	1,136	23.8	1,533	15.8	7.3	20.7	14.1
Hodgkin Lymphoma	31	3.1	30	3.1	61	3.1	157	3.3	113	2.3	270	2.8	3.0	2.3	2.6
Non-Hodgkin Lymphoma	257	24.0	178	14.7	437	19.0	1,200	23.3	1,010	16.9	2,212	19.8	23.1	15.9	19.1
Myeloma	76	7.0	56	4.3	133	5.6	421	8.2	283	4.6	705	6.2	8.6	5.7	7.0
Leukemia	200	19.2	121	10.3	321	14.3	969	19.0	619	10.8	1,588	14.5	18.1	11.0	14.2
Brain & Central Nervous System (benign & uncertain cases only)	68	6.8	143	12.5	211	9.8	380	7.6	745	13.6	1,125	10.8	10.0	17.8	14.1
Breast (in situ cases only)	---	---	358	32.9	---	---	---	---	1,557	28.9	---	---	0.1	29.4	15.4

Total rates are per 100,000 population and are age-adjusted to the 2000 U.S. population.

Gender-specific rates are per 100,000 male or female population and are age-adjusted to the 2000 U.S. population.

**TABLE 2: Cancer Incidence  
Number of Cases and Percentage Distribution, by Selected Primary Site and Age at Diagnosis  
Nebraska (2015-2019)**

	<u>0-17 Yrs.</u>		<u>18-44 Yrs.</u>		<u>45-64 Yrs.</u>		<u>65+ Yrs.</u>		<u>TOTAL</u>	
	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
All Sites	456	0.9	4,020	7.7	17,960	34.3	29,902	57.1	52,338	100.0
Oral Cavity & Pharynx	6	0.4	92	6.4	668	46.6	667	46.5	1,433	100.0
Esophagus	0	0.0	6	1.1	204	36.0	356	62.9	566	100.0
Stomach	†	†	36	6.0	200	33.5	360	60.3	597	100.0
Small Intestine	†	†	29	10.7	88	32.4	154	56.6	272	100.0
Colon & Rectum (Colorectal)	12	0.3	313	6.8	1,504	32.5	2,797	60.5	4,626	100.0
Liver & Intrahepatic Bile Ducts	5	0.7	22	3.2	290	42.2	371	53.9	688	100.0
Pancreas	†	†	48	3.2	434	29.2	1,001	67.5	1,484	100.0
Larynx	0	0.0	9	2.8	127	39.3	187	57.9	323	100.0
Lung & Bronchus	†	†	53	0.8	1,814	28.7	4,448	70.4	6,318	100.0
Soft Tissue	33	9.1	67	18.5	102	28.1	161	44.4	363	100.0
Melanoma of the Skin	8	0.3	550	18.1	1,106	36.3	1,381	45.4	3,045	100.0
Female Breast (invasive cases only)	0	0.0	664	9.0	3,073	41.7	3,639	49.3	7,376	100.0
Uterine Cervix	0	0.0	145	40.6	153	42.9	59	16.5	357	100.0
Uterine Corpus & Unspecified	0	0.0	116	7.1	765	46.9	749	46.0	1,630	100.0
Ovary	6	1.2	67	12.9	199	38.4	246	47.5	518	100.0
Prostate	0	0.0	6	0.1	2,670	36.9	4,563	63.0	7,239	100.0
Testis	5	1.6	254	81.4	45	14.4	8	2.6	312	100.0
Urinary Bladder	0	0.0	31	1.3	509	21.5	1,831	77.2	2,371	100.0
Kidney & Renal Pelvis	20	1.0	171	8.4	800	39.3	1,044	51.3	2,035	100.0
Brain & Central Nervous System (invasive cases only)	96	13.0	126	17.0	232	31.4	286	38.6	740	100.0
Thyroid Gland	17	1.1	563	36.7	637	41.6	316	20.6	1,533	100.0
Hodgkin Lymphoma	24	8.9	135	50.0	52	19.3	59	21.9	270	100.0
Non-Hodgkin Lymphoma	14	0.6	140	6.3	674	30.5	1,384	62.6	2,212	100.0
Myeloma	0	0.0	25	3.5	223	31.6	457	64.8	705	100.0
Leukemia	112	7.1	149	9.4	402	25.3	925	58.2	1,588	100.0
Brain & Central Nervous System (benign & uncertain)	37	3.3	168	14.9	399	35.5	521	46.3	1,125	100.0
Female Breast (in situ cases only)	0	0.0	155	10.0	769	49.4	633	40.7	1,557	100.0

NOTE: Due to rounding, percentages may not sum to 100.0.

† Counts and percentages are suppressed if fewer than 5 cases were reported in a specific category due to confidentiality concerns.

**TABLE 3: Cancer Incidence  
Number of Cases and Rates, All Sites and Top Ten Primary Sites, by Race and Ethnicity  
Nebraska (2010-2019)**

Rank	Site	White		African-American			Native American			Asian/Pacific Islander			Hispanic		
		Number	Rate	Site	Number	Rate									
	All Sites	93,527	461.0	All Sites	3,506	499.9	All Sites	588	393.7	All Sites	870	297.3	All Sites	2,542	284.2
1	Female Breast	13,213	128.0	Prostate	654	198.0	Female Breast	85	98.5	Female Breast	128	68.3	Female Breast	355	76.8
2	Prostate	12,220	120.6	Lung & Bronchus	473	72.2	Lung & Bronchus	78	65.8	Lung & Bronchus	97	41.0	Prostate	262	75.6
3	Lung & Bronchus	11,875	56.7	Female Breast	453	122.5	Colon & Rectum	69	46.7	Colon & Rectum	88	31.9	Colon & Rectum	233	27.8
4	Colon & Rectum	8,624	42.3	Colon & Rectum	338	50.1	Kidney & Renal Pelvis	49	26.1	Thyroid	69	16.3	Lung & Bronchus	173	26.4
5	Skin Melanoma	4,872	25.5	Kidney & Renal Pelvis	191	26.7	Prostate	43	67.5	Liver & Intrahepatic Bile Ducts	55	19.8	Thyroid	142	10.7
6	Urinary Bladder	4,423	21.0	Pancreas	120	19.2	Liver & Intrahepatic Bile Ducts	37	20.6	Prostate	54	53.7	Kidney & Renal Pelvis	137	15.2
7	Non-Hodgkin Lymphoma	4,122	20.3	Non-Hodgkin Lymphoma	115	16.0	Leukemia	22	11.5	Non-Hodgkin Lymphoma	38	14.0	Non-Hodgkin Lymphoma	131	15.5
8	Kidney & Renal Pelvis	3,493	17.4	Myeloma	102	15.6	Uterine Corpus & Unspecified	17	17.2	Leukemia	38	11.9	Leukemia	125	9.6
9	Uterine Corpus & Unspecified	2,961	27.7	Liver & Intrahepatic Bile Ducts	96	12.7	Non-Hodgkin Lymphoma	17	12.8	Oral Cavity & Pharynx	36	10.8	Uterine Corpus & Unspecified	85	15.6
10	Leukemia	2,926	14.7	Leukemia	91	12.0	Thyroid	14	6.1	Uterine Corpus & Unspecified	28	15.6	Liver & Intrahepatic Bile Ducts	75	8.7

Rates are per 100,000 population, excluding gender-specific sites (prostate, female breast, uterine corpus), which are per 100,000 male or female population. All rates are age-adjusted to the 2000 U.S. population.

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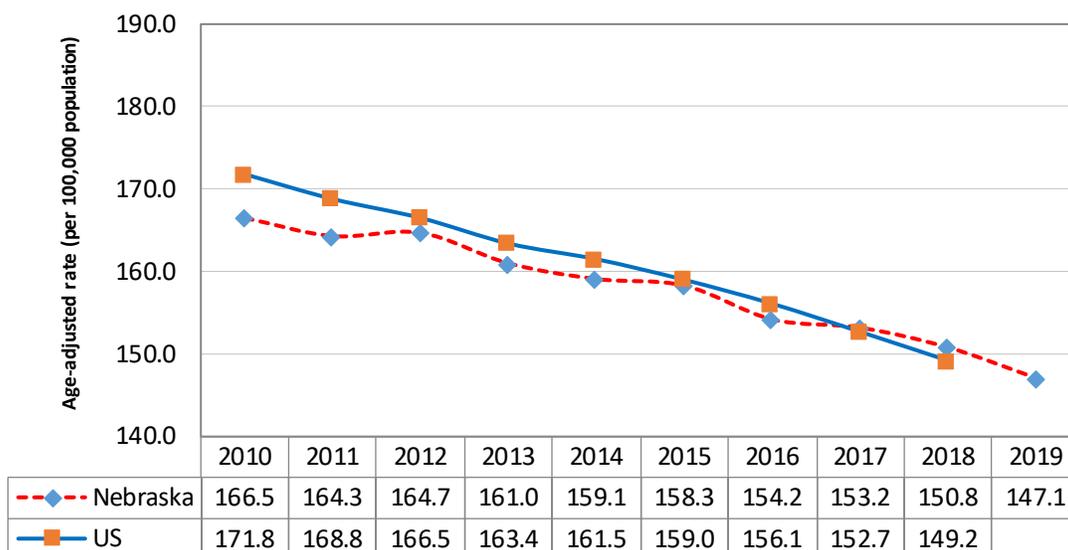
## CANCER MORTALITY IN NEBRASKA

In 2019, 3,470 Nebraska residents died from cancer, a slight decrease from the state's 2018 tally of 3,498 cancer deaths. The 2019 count translates into a rate of 147.1 cancer deaths per 100,000 population. Cancer was the second leading cause of mortality among Nebraska residents in 2019, surpassed by heart disease with 55 deaths. By primary site, cancers of the lung, colon and rectum, female breast, and pancreas accounted for just under half (47.7%) of Nebraska's cancer deaths in 2019.

Table 4 presents the number and rate of cancer deaths that occurred among Nebraska residents during 2019 and 2015-2019, for all sites combined and for specific sites. The most recent U.S. cancer mortality rates, which cover the years 2015 through 2019, are also included. Comparison of the most recent state and national mortality rates for the past five years shows significantly lower rates ( $p < .01$ ) for cancers of the small intestine, liver, and female breast in Nebraska than in the U.S. Table 5 presents the number of Nebraska cancer deaths during 2015-2019 by age at death. Table 6 presents Nebraska cancer mortality data by race and ethnicity for the years 2010-2019.

### Cancer (All Sites)

Mortality Rates, Nebraska (2010-2019) & US (2010-2018)



**TABLE 4: Cancer Mortality**  
**Number of Deaths and Rates, by Selected Primary Site and Gender**  
 Nebraska (2019 and 2015-2019) & U.S. (2014-2018)

Site	NEBRASKA 2019						NEBRASKA 2015-2019						U.S. 2014-2018		
	Male		Female		Total		Male		Female		Total		Male	Female	Total
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	Rate	Rate	Rate
All Sites	1,810	171.6	1,660	129.7	3,470	147.1	9,097	178.5	8,294	132.3	17,391	151.8	185.6	133.6	155.6
Oral Cavity & Pharynx	39	3.8	12	0.9	51	2.3	192	3.6	96	1.5	288	2.5	3.9	1.3	2.5
Esophagus	92	8.7	23	1.7	115	4.9	428	8.2	98	1.5	526	4.6	6.9	1.4	3.9
Stomach	32	3.1	20	1.6	52	2.3	167	3.3	89	1.5	256	2.3	4.0	2.2	3.0
Colon & Rectum (Colorectal)	180	17.4	156	11.5	336	14.3	862	17.0	785	12.1	1,647	14.4	16.3	11.5	13.7
Liver & Intrahepatic Bile Ducts	63	5.5	38	2.9	101	4.1	324	5.9	176	2.8	500	4.3	9.7	4.0	6.6
Pancreas	137	12.8	126	10.0	263	11.1	677	13.3	611	9.7	1,288	11.3	12.7	9.6	11.0
Larynx	20	1.8	8	0.6	28	1.2	78	1.5	29	0.5	107	0.9	1.7	0.4	0.9
Lung & Bronchus	424	39.0	354	27.7	778	32.6	2,192	42.4	1,939	31.2	4,131	36.0	46.9	32.0	38.5
Melanoma of the Skin	37	3.6	19	1.5	56	2.4	188	3.7	92	1.4	280	2.5	3.4	1.4	2.3
Breast	5	0.5	272	22.0	277	12.0	15	0.3	1,209	19.6	1,224	10.8	0.3	20.1	11.1
Uterine Cervix	---	---	17	1.7	---	---	---	---	114	2.1	---	---	---	2.2	---

**TABLE 4 (continued): Cancer Mortality**

Site	NEBRASKA 2019						NEBRASKA 2015-2019						U.S. 2014-2018		
	Male		Female		Total		Male		Female		Total		Male	Female	Total
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	Rate	Rate	Rate
Uterine Corpus & Unspecified	---	---	64	5.4	---	---	---	---	310	5.0	---	---	---	4.9	---
Ovary	---	---	58	4.5	---	---	---	---	383	6.2	---	---	---	6.7	---
Prostate	180	17.6	---	---	---	---	865	17.8	---	---	---	---	19.0	---	---
Kidney & Renal Pelvis	66	6.1	37	2.9	103	4.4	335	6.4	163	2.5	498	4.3	5.3	2.3	3.6
Urinary Bladder	63	6.2	32	2.4	95	4.0	330	6.8	143	2.1	473	4.0	7.4	2.1	4.3
Brain & Other Nervous System	57	5.3	60	5.1	117	5.2	313	6.0	236	4.1	549	5.0	5.4	3.6	4.4
Thyroid	6	0.5	12	1.0	18	0.8	22	0.4	26	0.4	48	0.4	0.5	0.5	0.5
Hodgkin Lymphoma	†	†	†	†	5	0.2	20	0.4	11	0.2	31	0.3	0.4	0.2	0.3
Non-Hodgkin Lymphoma	71	6.9	49	3.7	120	5.1	360	7.3	248	3.8	608	5.3	7.0	4.1	5.4
Leukemia	96	9.2	57	4.3	153	6.3	459	9.1	313	4.9	772	6.7	8.4	4.7	6.3
Myeloma	38	3.7	35	2.6	73	3.0	199	4.0	154	2.4	353	3.0	4.1	2.6	3.2

Total rates are per 100,000 population and are age-adjusted to the 2000 U.S. population.

Gender-specific rates are per 100,000 male or female population and are age-adjusted to the 2000 U.S. population.

† Counts and rates are suppressed if fewer than 5 cases were reported in a specific category due to confidentiality concerns.

**TABLE 5: Cancer Mortality**  
**Number of Deaths and Percentage Distribution, by Selected Primary Site and Age at Death**  
**Nebraska (2015-2019)**

	<u>0-17 Yrs.</u>		<u>18-44 Yrs.</u>		<u>45-64 Yrs.</u>		<u>65+ Yrs</u>		<u>TOTAL</u>	
	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
All Sites	64	0.4	442	2.5	4,120	23.7	12,765	73.4	17,391	100.0
Oral Cavity & Pharynx	0	0.0	10	3.5	101	35.1	177	61.5	288	100.0
Esophagus	0	0.0	5	1.0	166	31.6	355	67.5	526	100.0
Stomach	†	†	19	7.4	68	26.6	168	65.6	256	100.0
Colon & Rectum (Colorectal)	0	0.0	60	3.6	368	22.3	1,219	74.0	1,647	100.0
Liver & Intrahepatic Bile Ducts	†	†	14	2.8	188	37.6	297	59.4	500	100.0
Pancreas	0	0.0	18	1.4	309	24.0	961	74.6	1,288	100.0
Lung & Bronchus	0	0.0	23	0.6	1,029	24.9	3,079	74.5	4,131	100.0
Melanoma of the Skin	0	0.0	14	5.0	84	30.0	182	65.0	280	100.0
Female Breast	0	0.0	55	4.5	332	27.5	822	68.0	1,209	100.0
Uterine Cervix	0	0.0	19	16.7	53	46.5	42	36.8	114	100.0
Uterine Corpus & Unspecified	0	0.0	7	2.3	87	28.1	216	69.7	310	100.0
Ovary	0	0.0	11	2.9	111	29.0	261	68.1	383	100.0
Prostate	0	0.0	0	0.0	83	9.6	782	90.4	865	100.0
Kidney & Renal Pelvis	†	†	7	1.4	130	26.1	359	72.1	498	100.0
Urinary Bladder	0	0.0	†	†	47	9.9	423	89.4	473	100.0
Brain & Central Nervous System	21	3.8	57	10.4	174	31.7	297	54.1	549	100.0
Thyroid	0	0.0	0	0.0	13	27.1	35	72.9	48	100.0
Hodgkin Lymphoma	0	0.0	†	†	8	25.8	20	64.5	31	100.0
Non-Hodgkin Lymphoma	0	0.0	18	3.0	101	16.6	489	80.4	608	100.0
Leukemia	15	1.9	26	3.4	109	14.1	622	80.6	772	100.0
Myeloma	0	0.0	†	†	66	18.7	286	81.0	353	100.0

NOTE: Due to rounding, percentages may not sum to 100.0.

† Counts and percentages are suppressed if fewer than 5 cases were reported in a specific category due to confidentiality concerns.

**TABLE 6: Cancer Mortality  
Number of Deaths and Rates, All Sites and Top Ten Primary Sites, by Race and Ethnicity  
Nebraska (2010-2019)**

Rank	Site	White		African-American			Native American			Asian/Pacific Islander			Hispanic		
		Number	Rate	Site	Number	Rate	Site	Number	Rate	Site	Number	Rate	Site	Number	Rate
	All Sites	32,329	153.4	All Sites	1,200	195	All Sites	170	133.1	All Sites	266	103.4	All Sites	657	93.5
1	Lung & Bronchus	8,115	38.7	Lung & Bronchus	313	50.8	Lung & Bronchus	42	36.6	Lung & Bronchus	53	21.5	Lung & Bronchus	105	16.7
2	Colon & Rectum	3,134	14.8	Colon & Rectum	128	21.8	Colon & Rectum	26	19.1	Liver & Intrahepatic Bile Ducts	41	14.5	Colon & Rectum	58	8.5
3	Female Breast	2,248	19.6	Female Breast	100	28.8	Female Breast	12	17.7	Colon & Rectum	19	7.9	Liver & Intrahepatic Bile Ducts	52	6.8
4	Pancreas	2,237	10.6	Pancreas	99	16.3	Liver & Intrahepatic Bile Ducts	11	8.2	Pancreas	17	7.3	Stomach	39	4.8
5	Prostate	1,651	18.5	Prostate	86	40.3	Prostate	7	14.8	Leukemia	14	5.4	Pancreas	38	5.5
6	Leukemia	1,427	6.8	Liver & Intrahepatic Bile Ducts	58	7.8	Uterine Cervix	6	4.6	Female Breast	13	7.8	Leukemia	35	4.1
7	Non-Hodgkin Lymphoma	1,192	5.6	Myeloma	46	8	Leukemia	6	4	Stomach	13	4.7	Brain & CNS	34	3.6
8	Brain & CNS	1,001	5	Leukemia	33	5.3	Stomach	5	3.3	Oral Cavity & Pharynx	12	3.5	Female Breast	32	7
9	Esophagus	971	4.6	Stomach	31	5.2	Kidney & Renal Pelvis	5	3.3	Prostate	8	10	Prostate	30	15.1
10	Kidney & Renal Pelvis	911	4.3	Kidney & Renal Pelvis	27	4.6	Pancreas	5	3.2	Ovary	7	4.7	Non-Hodgkin Lymphoma	28	4.9

Rates are per 100,000 population, excluding gender-specific sites (prostate, female breast, ovary), which are per 100,000 male or female population. All rates are age-adjusted to the 2000 U.S. population.

Abbreviation: CNS, central nervous system

## INCIDENCE AND MORTALITY FOR SELECTED PRIMARY SITES

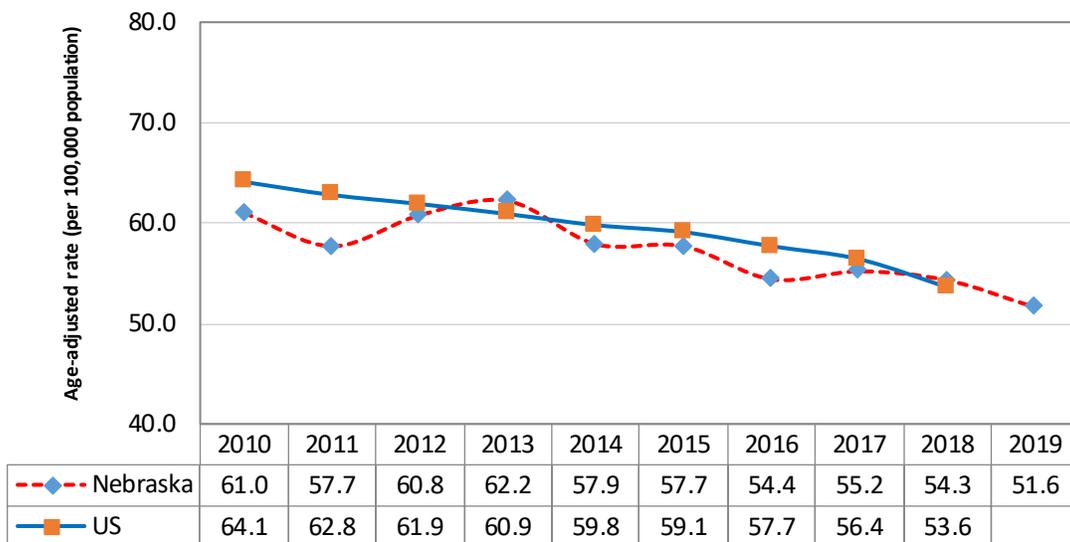
### Lung and Bronchus

Although lung cancer was only the third most frequently diagnosed cancer among Nebraska residents in 2019, it was the year's leading cause of cancer mortality, accounting for 22% of the state's cancer deaths. During the past five years (2015-2019), lung cancer has averaged about 6,318 diagnoses and over 4,131 deaths in Nebraska per year. Although lung cancer is more likely to strike men than women, the lung cancer death rate for Nebraska men has fallen by over 40% since 1990, while remaining almost unchanged for Nebraska women. Due to the small number of cases that are detected at an early stage of the disease, the 5-year relative survival rate for people diagnosed with lung cancer is about 23%.

Cigarette smoking is the major risk factor for lung cancer and causes about 80% of lung cancer deaths. People who smoke cigarettes are 15 to 30 times more likely to die from lung cancer than non-smokers. Quitting smoking at any age reduces the risk of lung cancer, although the risk for smokers is higher than the risk for a lifelong non-smoker. The U.S. Preventive Services Task Force (USPSTF) and ACS have both endorsed screening for lung cancer, using low-dose computed tomography (LDCT). ACS recommended only for people 55-74 years of age who currently smoke or who have quit within the past 15 years, are in good health, and have at least a 30 pack per year smoking history. The USPSTF recommend screening for people aged 50-80 and who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years.

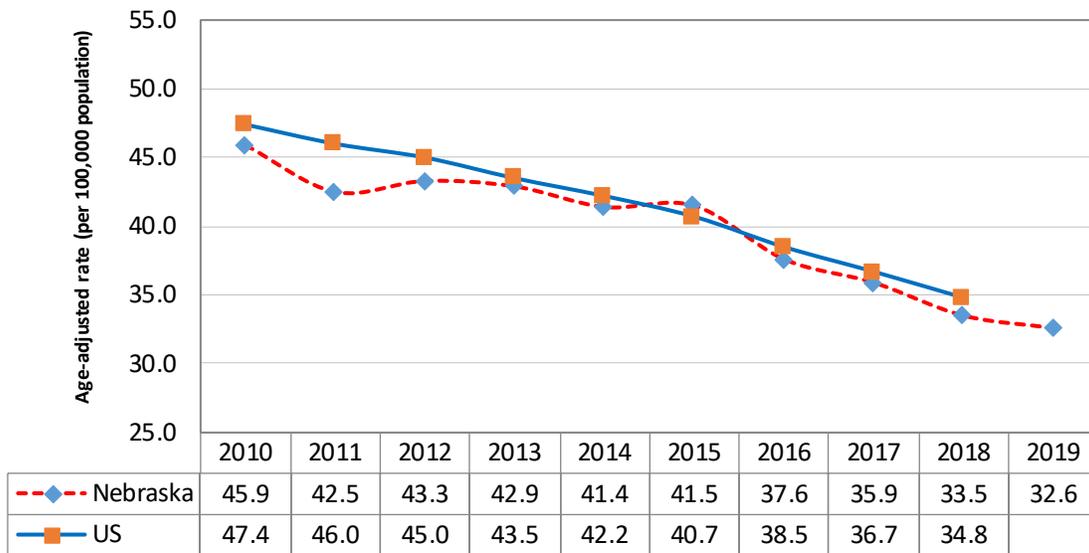
### Lung and Bronchus Cancer

Incidence Rates, Nebraska (2010-2019) & US (2010-2018)



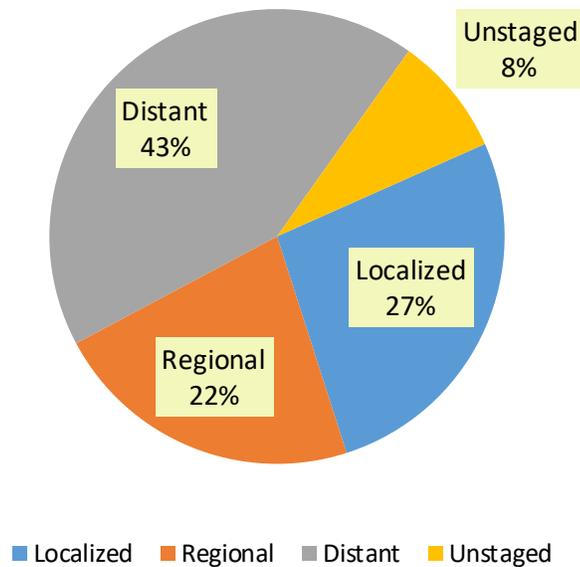
## Lung and Bronchus Cancer

Mortality Rates, Nebraska (2010-2019) & US (2010-2018)



## Lung and Bronchus Cancer

Percentage of Cases, by Stage of Disease at Diagnosis  
Nebraska, 2015-2019



## Breast (Female only)

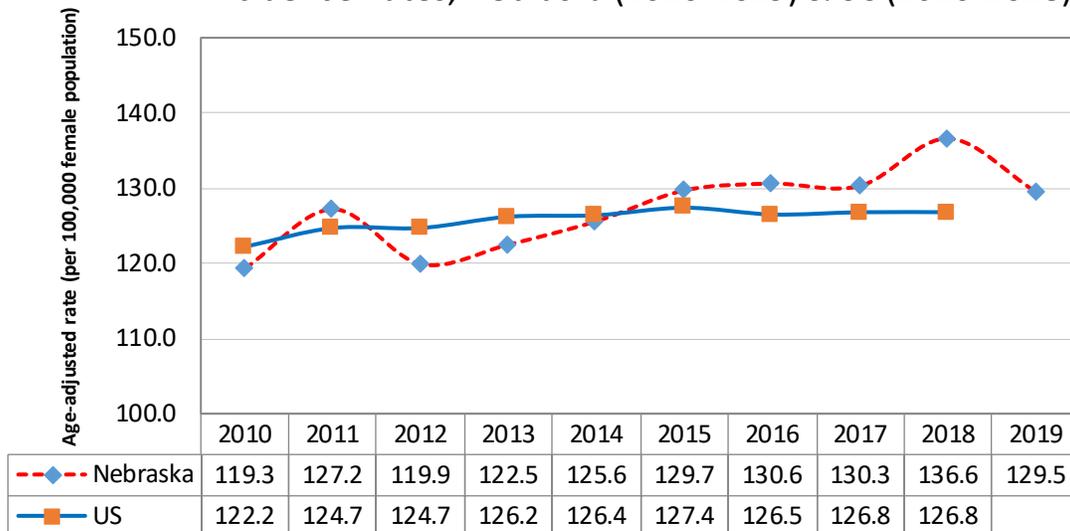
Breast cancer is the most common type of cancer among women and the second most frequent cause of female cancer deaths. Between 2015 and 2019, 7,376 Nebraska women were diagnosed with invasive breast cancer (another 1,557 were diagnosed with in situ breast cancer) and 1,209 women died from breast cancer. Since 1990, the rate of breast cancer deaths in Nebraska and the U.S. has declined significantly. Recent declines in the rate of breast cancer diagnoses have been attributed to the decreasing use of post-menopausal hormone replacement therapy, early detection through screening, and increased awareness. The 5-year relative survival rate for women diagnosed with female breast cancer is about 90%.

Age is an important risk factor for breast cancer, with more than 80% of all cases occurring among women age 50 and older. Other risk factors include genetic mutations, a personal or family history of breast cancer, some forms of benign breast disease, early menstruation, late menopause, never having children or having a first child after age 30, and for post-menopausal women, obesity and long-term hormone replacement therapy.

Screening for breast cancer is known to save lives, although opinion varies on how and when to screen. USPSTF guidelines recommend mammography for women aged 50-74 on an every-other-year schedule. However, ACS guidelines recommend that women 40-44 have the choice for annual mammography; women 45-54 have annual mammography; and women 55 and older have the choice to continue annual mammography or to have it on an every-other-year schedule, continuing as long as their overall health is good and life expectancy is 10 or more years. For some women who have an increased risk of breast cancer, the ACS recommends annual magnetic resonance imaging (MRI) in addition to mammography, usually starting at age 30.

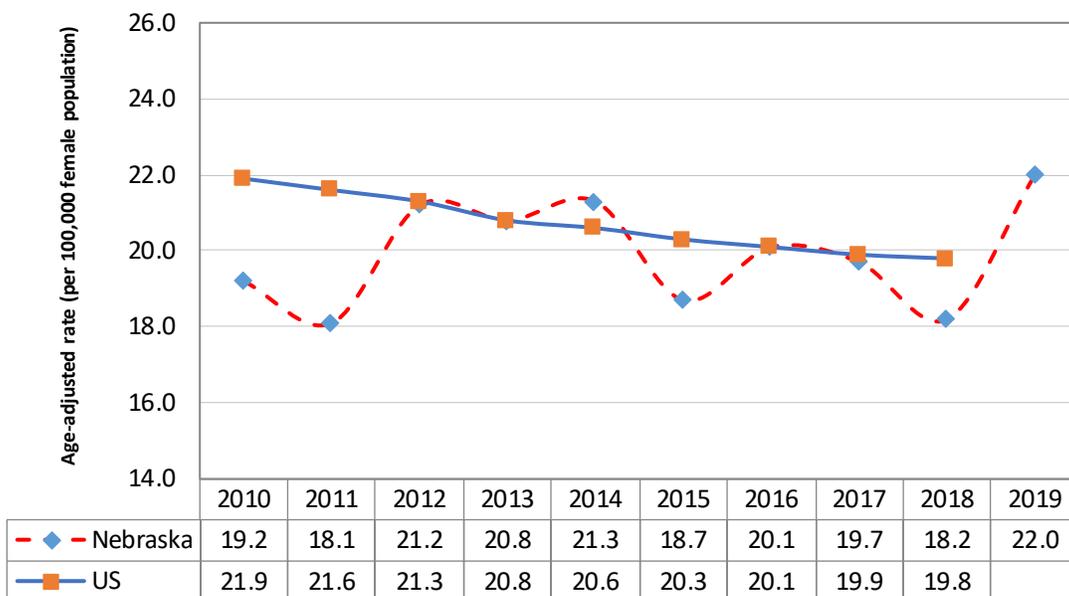
## Female Breast Cancer

Incidence Rates, Nebraska (2010-2019) & US (2010-2018)



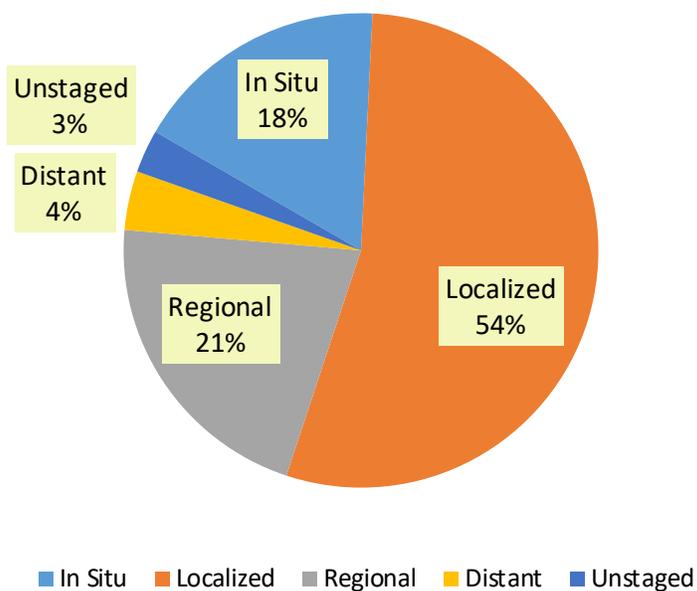
## Female Breast Cancer

Mortality Rates, Nebraska (2010-2019) & US (2010-2018)



## Female Breast Cancer

Percentage of Cases, by Stage of Disease at Diagnosis  
Nebraska, 2015-2019



## Colon and Rectum (Colorectal)

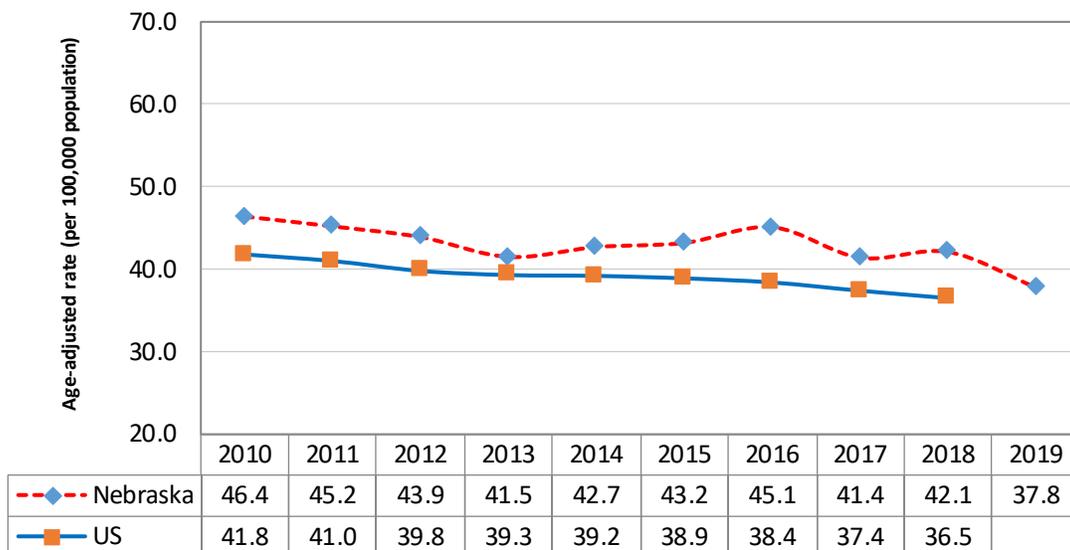
In 2019, colorectal cancer was the fourth most frequently diagnosed cancer among Nebraska residents, accounting for 849 new cases. It was also the second leading cause of cancer mortality in the state, accounting for 336 deaths.

The risk of developing colorectal cancer increases with age. More than half (60.5%) of all colorectal cancer cases that occurred in Nebraska during 2015-2019 were 65 or older at diagnosis. Other risk factors include a personal or family history of colorectal cancer or polyps, a personal history of chronic inflammatory bowel disease, and certain hereditary colorectal cancer syndromes. Modifiable risk factors include physical inactivity, obesity, smoking, a high-fat diet (especially fat from animal sources), and heavy alcohol use. The 5-year relative survival rate for people diagnosed with colorectal cancer is about 64%.

Screening for asymptomatic polyps and tumors is known to prevent colorectal cancer cases and deaths, and there are a number of recommended test options. Among them include several types of stool tests, flexible sigmoidoscopy, colonoscopy, CT colonography (virtual colonoscopy), and double-contrast barium enema. Recommended frequency varies by type of test. For people of average risk without symptoms, the USPSTF recommends screening for those 45-75 years of age, which is consistent with the ACS screening recommendation. However, the ACS also recommends that people at increased risk (i.e., a personal or family history of colorectal cancer or polyps, a personal history of chronic inflammatory bowel disease, or a family history of hereditary colorectal cancer syndromes) may be advised to begin screening before age 45 and/or be screened more often.

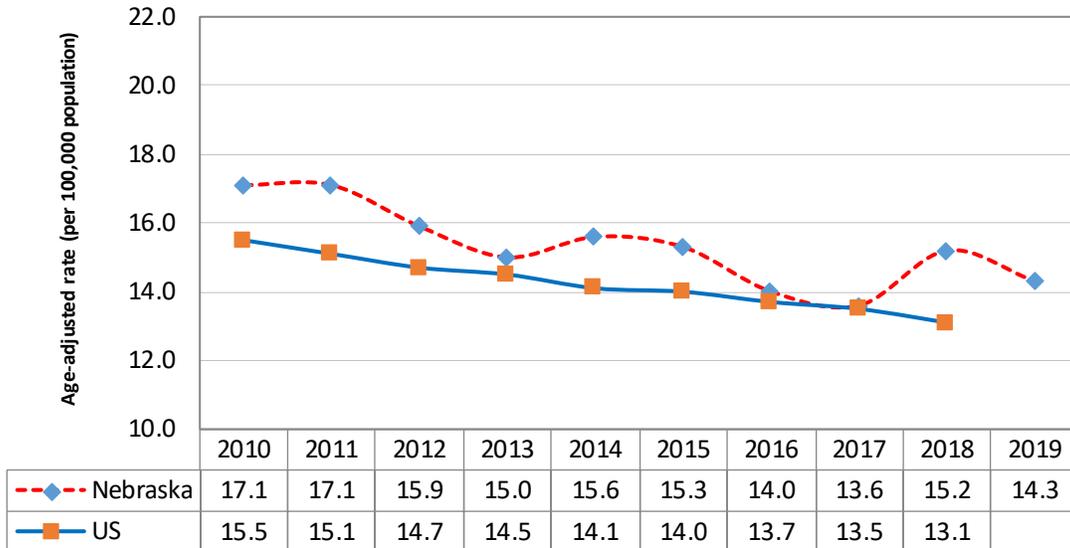
## Colon and Rectum (Colorectal) Cancer

Incidence Rates, Nebraska (2010-2019) & US (2010-2018)



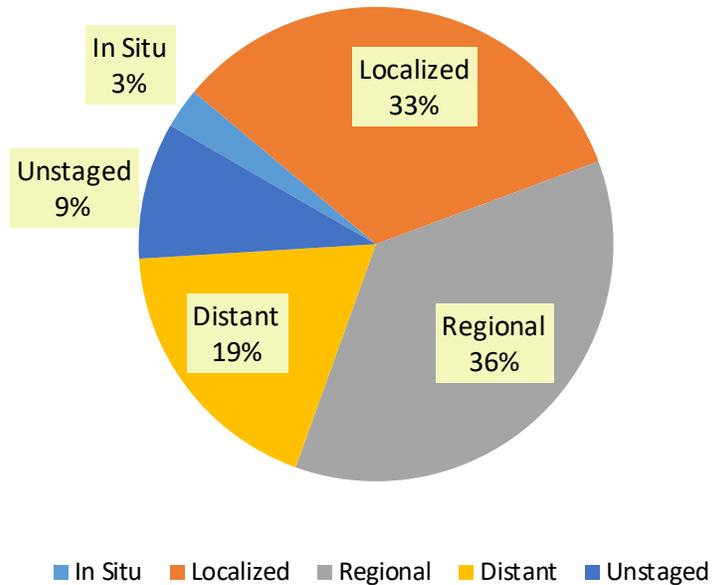
## Colon and Rectum (Colorectal) Cancer

Mortality Rates, Nebraska (2010-2019) & US (2010-2018)



## Colon and Rectum (Colorectal) Cancer

Percentage of Cases, by Stage of Disease at Diagnosis  
Nebraska, 2015-2019



## Prostate

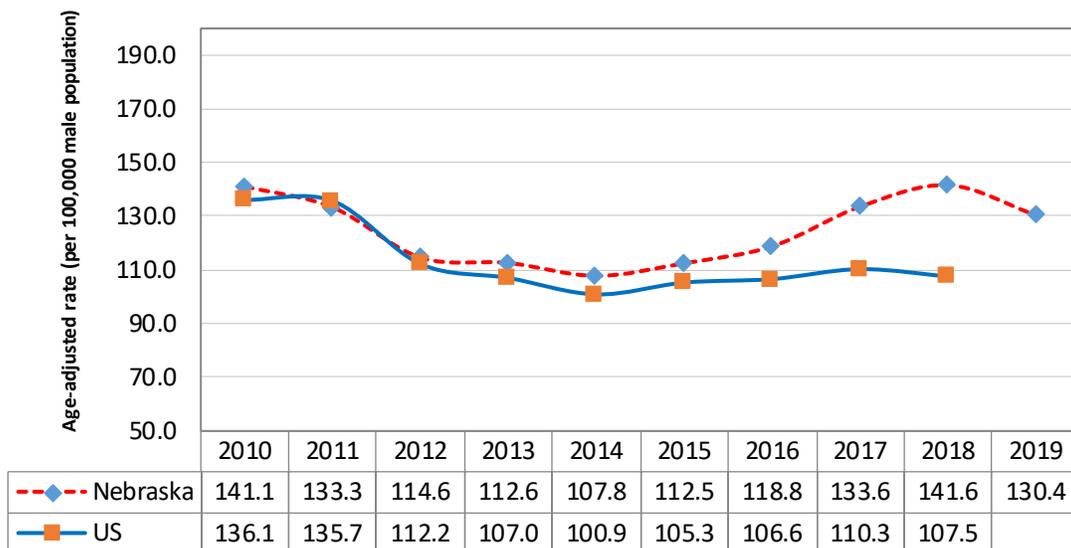
With 1,540 diagnoses in 2019, prostate cancer was the most common cancer among Nebraska men, accounting for about 28% of all new cancers. During the past five years (2015-2019), it has also been the second leading cause of cancer deaths among Nebraska men, accounting for 865 deaths. Since the mid-1990s, prostate cancer death rates have declined substantially, both in Nebraska and throughout the United States.

Little is known about what causes prostate cancer. Risk increases with age (about 63% of Nebraska men diagnosed with prostate cancer during 2015-2019 were 65 or older) and is significantly greater among African-Americans. During the past decade (2010-2019), the incidence rate of prostate cancer among African-American men in Nebraska has been 64% higher than among whites. Men with a close relative (father, brother, or son) who has had prostate cancer, especially at a young age, are also at increased risk. The 5-year relative survival rate for people diagnosed with prostate cancer is about 97%.

Current ACS guidelines recommend that men make an informed decision with their health care provider about whether to be screened for prostate cancer. This discussion should begin at age 50 for men who are at average risk of prostate cancer and have a life expectancy of at least 10 years. This discussion should begin at age 45 for men at high risk (African-Americans and men with a father, brother, or son diagnosed with prostate cancer before age 65) and at age 40 for men of even higher risk (men with several first-degree relatives diagnosed before age 65). For men who choose to be screened, the ACS recommends the prostate-specific antigen (PSA) blood test with or without a digital rectal exam. By contrast, the USPSTF recommends screening for prostate cancer for men aged 55 to 69 should be an individual decision and need discussion with the health providers about the potential benefits and risks.

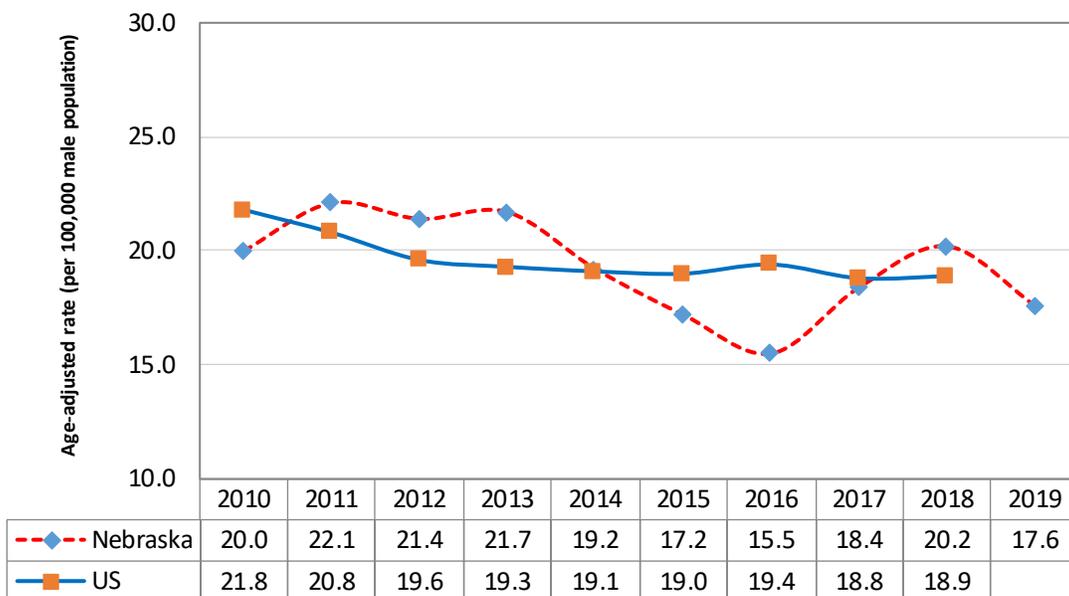
## Prostate Cancer

Incidence Rates, Nebraska (2010-2019) & US (2010-2018)



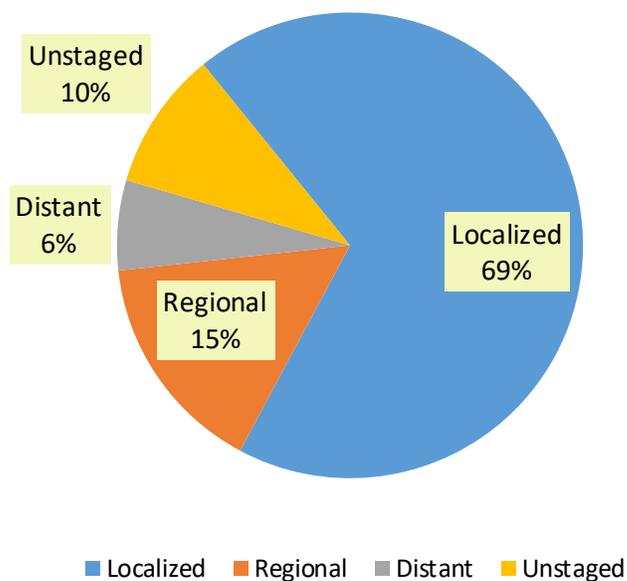
## Prostate Cancer

Mortality Rates, Nebraska (2010-2019) & US (2010-2018)



## Prostate Cancer

Percentage of Cases, by Stage of Disease at Diagnosis  
Nebraska, 2015-2019



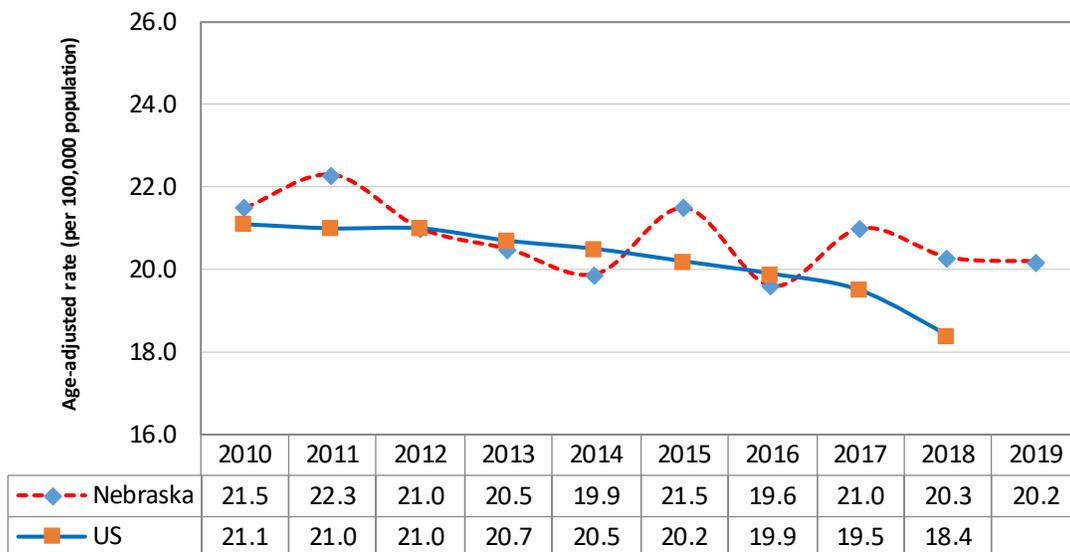
## Urinary Bladder

Between 2015 and 2019, 2,371 Nebraska residents were diagnosed with bladder cancer. Bladder cancer occurs much more frequently among men than women (by about a 3-to-1 ratio), and it now ranks as the fourth most common site of cancer diagnoses among Nebraska men. However, deaths from bladder cancer occur far less often (473 Nebraska residents died from it during 2015-2019), which is the result of a high percentage of early-stage diagnoses and the existence of effective treatments. Survival prospects have improved considerably in recent decades, to the point where the most current national data show that the five-year relative survival rate for all bladder cancer patients is about 75%.

Cigarette smoking is the most important known risk factor for bladder cancer. Smokers develop bladder cancer three times more often than non-smokers, and about half of all cases are attributable to smoking. Risk factors also include occupational exposures to certain chemicals used to make dyes (benzidine and beta-naphthylamine), as well as working in the manufacture of rubber and leather. Like most cancers, the risk of bladder cancer increases with age: 77% of the cases that occurred in Nebraska during 2015-2019 were at least 65 years old when diagnosed.

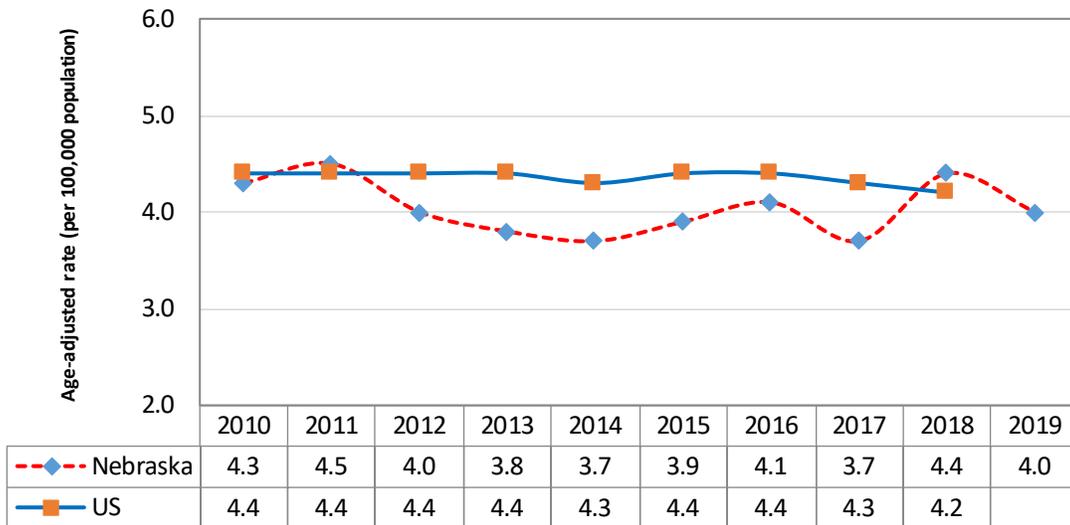
## Urinary Bladder Cancer

Incidence Rates, Nebraska (2010-2019) & US (2010-2018)



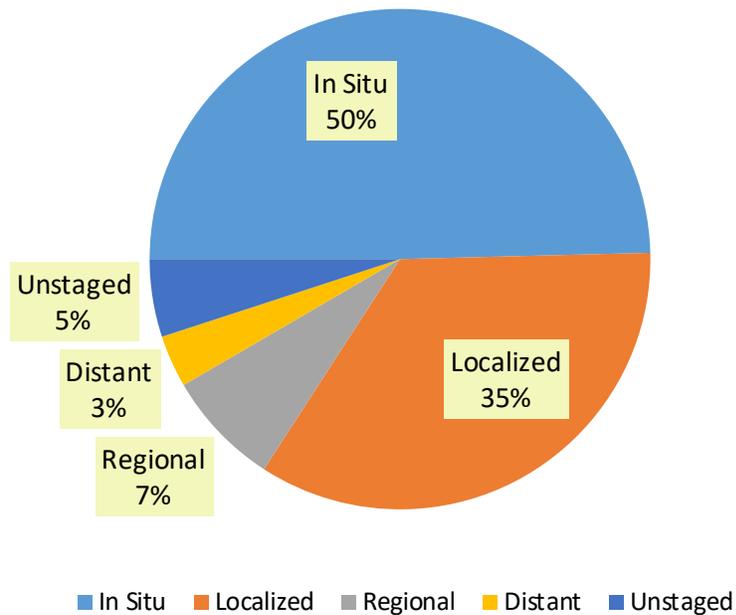
## Urinary Bladder Cancer

Mortality Rates, Nebraska (2010-2019) & US (2010-2018)



## Urinary Bladder Cancer

Percentage of Cases, by Stage of Disease at Diagnosis  
Nebraska, 2015-2019



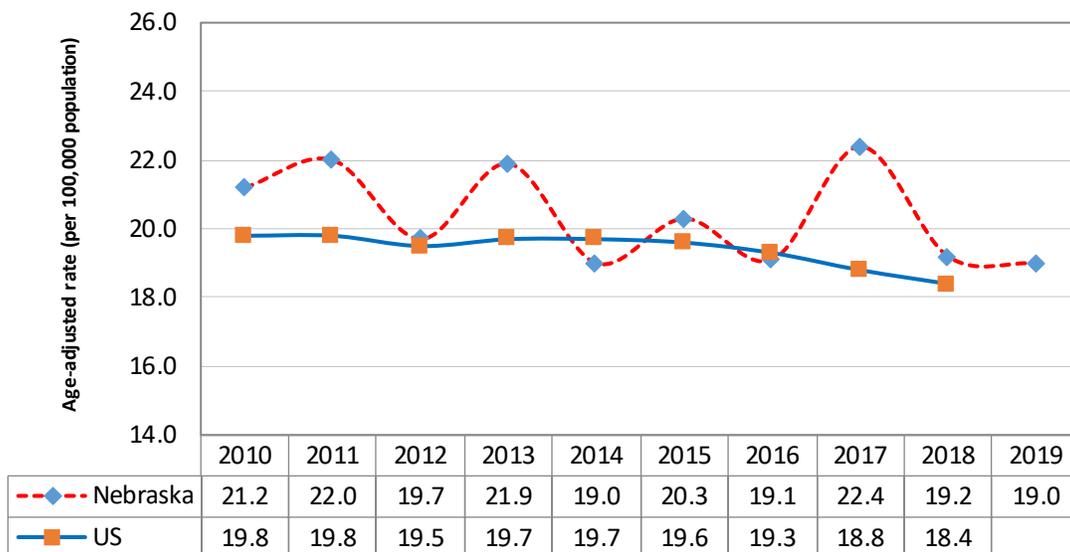
## Non-Hodgkin Lymphoma

Lymphomas are cancers that affect the white blood cells of the immune system, and are usually classified as either Hodgkin or non-Hodgkin lymphoma. Non-Hodgkin lymphoma is by far the more common disorder of the two, accounting for 2,212 diagnoses and 608 deaths among Nebraska residents between 2015 and 2019 (for Hodgkin lymphoma, the comparable figures are 270 diagnoses and 31 deaths). National statistics indicate that the incidence rate for non-Hodgkin lymphoma has increased by about 80% since the mid-1970s, and some of this increase is related to the appearance of AIDS. However, both state and national data show that non-Hodgkin lymphoma deaths have been increasing since at least 1950, which indicates that factors other than AIDS are also responsible. The current trends from 2010 to 2019 have shown that both incidence as well as mortality rate of non-Hodgkin lymphoma have steadily declined at the state and national level. The five-year relative survival rate for non-Hodgkin lymphoma is about 72%.

The causes of non-Hodgkin lymphoma are unknown, although there is evidence that viral exposures and reduced immune function are associated with the disease. People whose immune systems have been suppressed by drugs, particularly those who have received an organ transplant, are at high risk of non-Hodgkin lymphoma, and it also occurs more frequently among people with congenital and acquired immunologic disorders, including AIDS. The increased incidence of the disease among people with congenital disorders of the immune system suggests that hereditary factors may increase risk. Some studies have found that occupational exposure to certain herbicides is a risk factor as well.

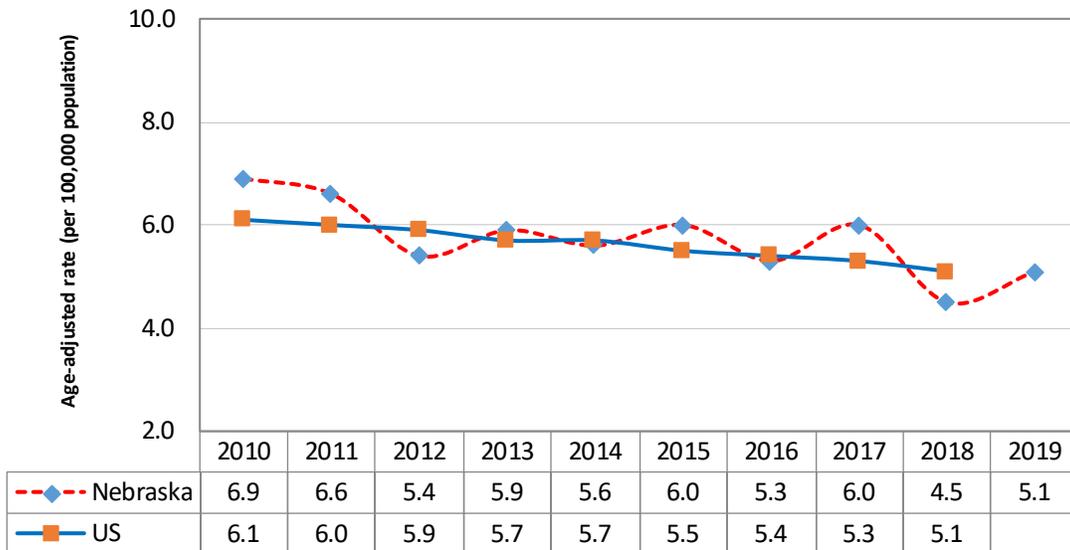
## Non-Hodgkin Lymphoma

Incidence Rates, Nebraska (2010-2019) & US (2010-2018)



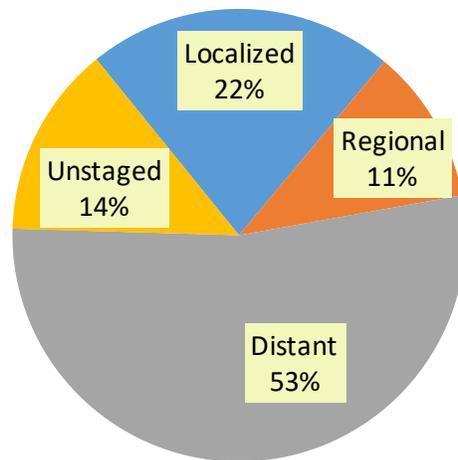
## Non-Hodgkin Lymphoma

Mortality Rates, Nebraska (2010-2019) & US (2010-2018)



## Non-Hodgkin Lymphoma

Percentage of Cases, by Stage of Disease at Diagnosis  
Nebraska, 2015-2019



■ Localized ■ Regional ■ Distant ■ Unstaged

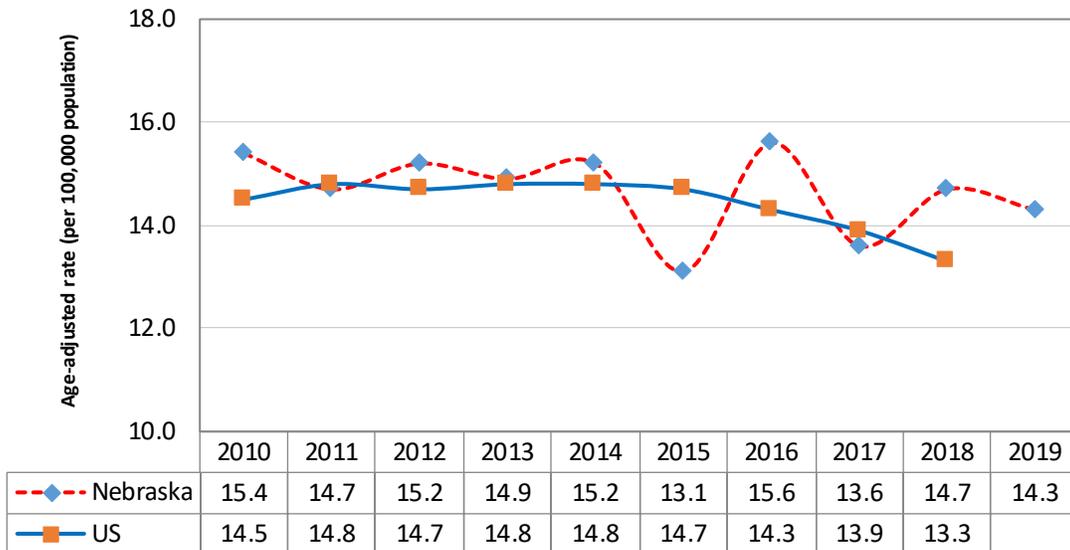
## Leukemia

Between 2015 and 2019, leukemia accounted for 1,588 diagnoses and 772 deaths among Nebraska residents. Although leukemia is one of the most common types of cancer diagnosed among children and adolescents, over half (58.2%) of the leukemia cases that occurred in Nebraska between 2015 and 2019 were 65 years of age or older at diagnosis. There are many different types of leukemia: acute lymphocytic leukemia is the most frequently diagnosed among children and teens, while acute myeloid and chronic lymphocytic are the most common types among adults. Survival times vary widely by type: overall, the relative five-year survival rate for all leukemia patients in the United States is approximately 60%.

The major causes of most types of leukemia are unknown. Nevertheless, several risk factors have been identified, and include genetic abnormalities (such as Down syndrome), exposure to ionizing radiation, and workplace exposure to benzene and other related solvents. Adult T-cell acute lymphocytic leukemia is strongly associated with infection by a retrovirus, the human T-cell lymphoma/leukemia virus, type I (HTLV-I). Cigarette smoking is a risk factor for acute myeloid leukemia, while people who have a family history of chronic lymphocytic leukemia carry an increased risk of the disease themselves.

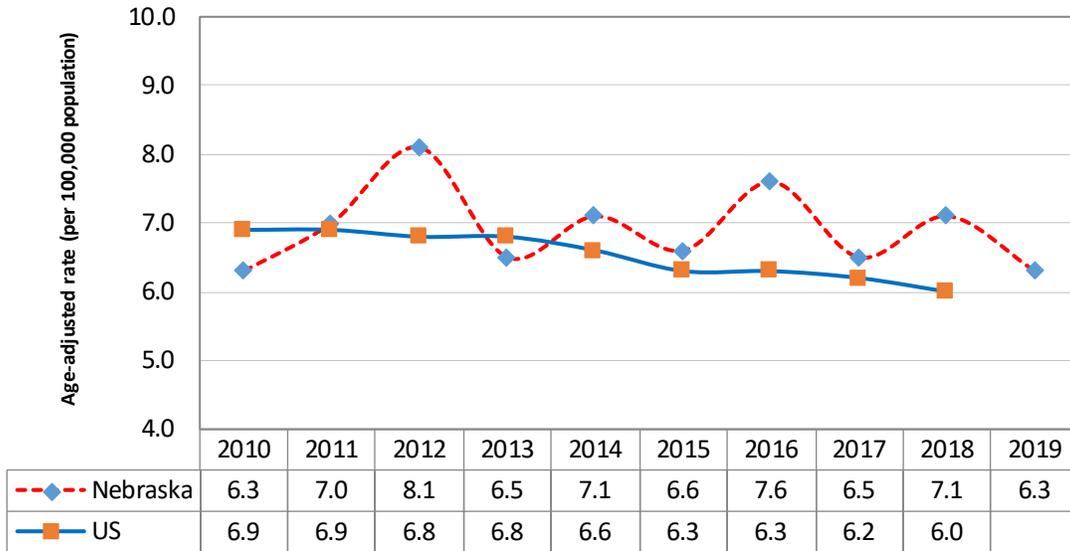
## Leukemia

Incidence Rates, Nebraska (2010-2019) & US (2010-2018)



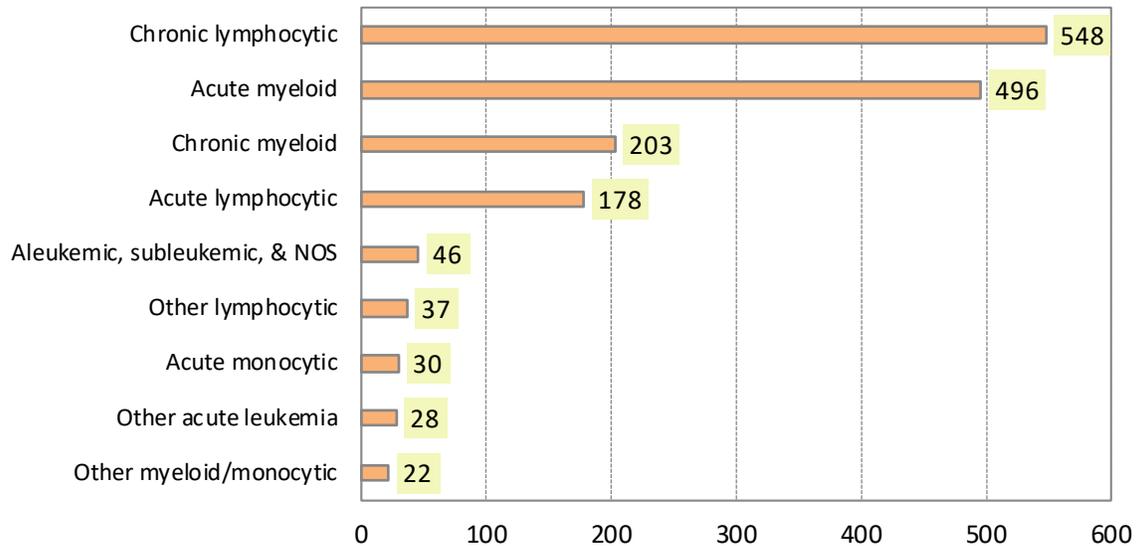
## Leukemia

Mortality Rates, Nebraska (2010-2019) & US (2010-2018)



## Leukemia

Number of Cases by Histologic Type, Nebraska, 2015-2019



Abbreviation: NOS, not otherwise specified

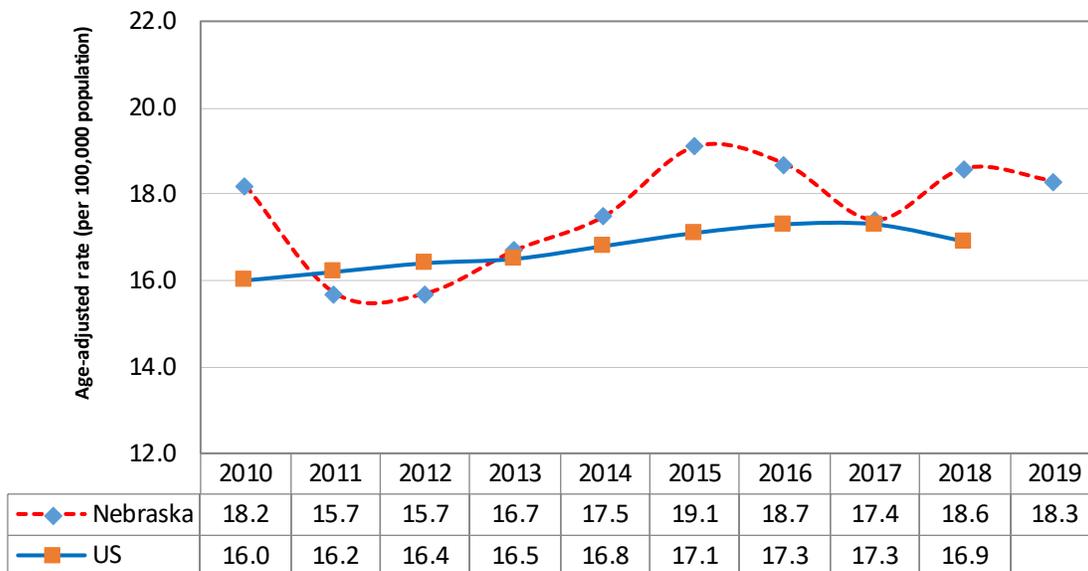
## Kidney and Renal Pelvis

Cancers of the kidney and renal pelvis accounted for 2,035 diagnoses in Nebraska between 2015 and 2019, and also accounted for 498 deaths in Nebraska during the same years. State and national trends since 1990 show a significant increase in the rate of diagnosis of these cancers, but little change in the mortality rate. The chances of survival for people with kidney cancer are relatively high, with the most current national statistics showing that the five-year relative survival rate for cancers of the kidney and renal pelvis is now over 75%.

Preventable risk factors for cancer of the kidney include cigarette smoking and obesity. Current estimates indicate that cigarette smoking is responsible for about 20 percent of all kidney cancer deaths. Similar to other types of cancers, kidney cancer occurred more often in older people. More than half (51.3%) of all cases that were diagnosed during 2015-2019 were over the age of 65. Other non-preventable risk factors for cancer of the kidney include a family history of kidney cancer and high blood pressure. However, because people with high blood pressure are often treated with drugs, it is unclear whether their increased risk is related to their high blood pressure or the drugs. Nevertheless, people who need drugs to lower their blood pressure should take them.

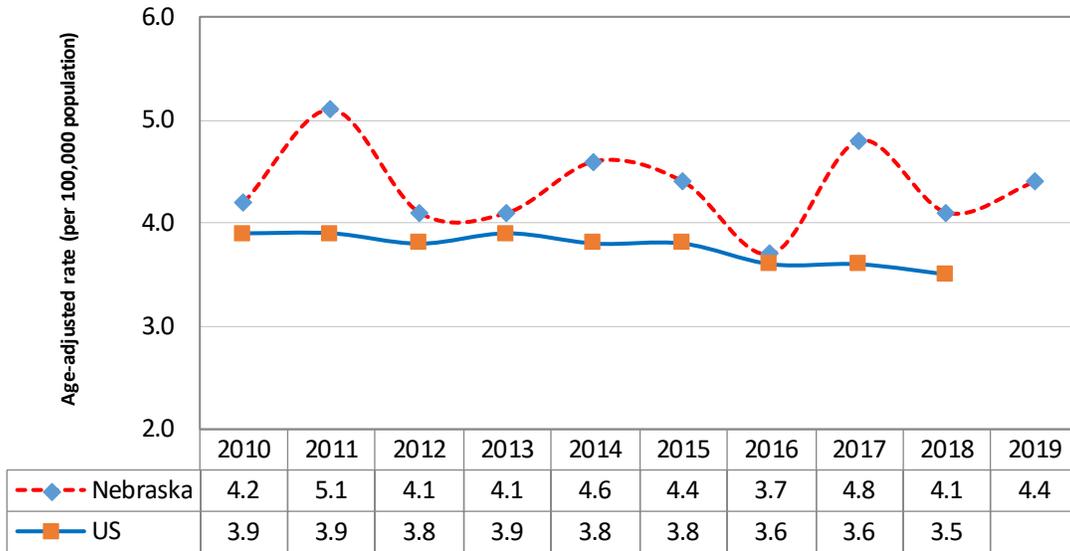
### Kidney and Renal Pelvis Cancer

Incidence Rates, Nebraska (2010-2019) & US (2010-2018)



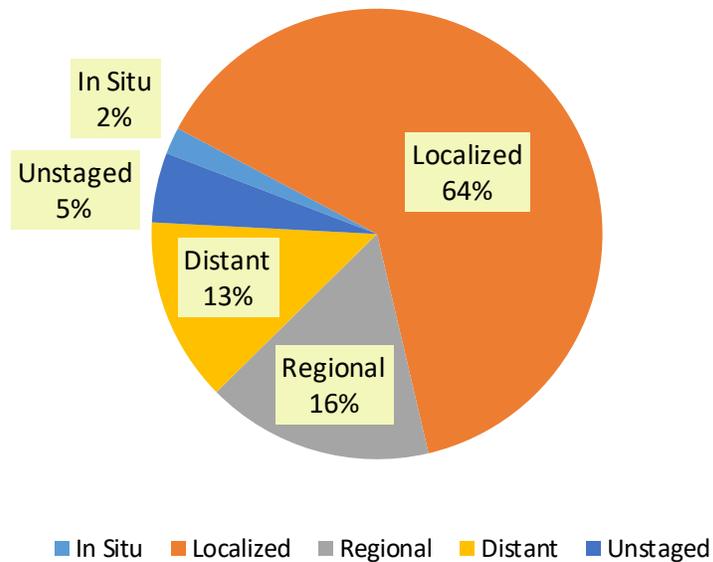
## Kidney and Renal Pelvis Cancer

Mortality Rates, Nebraska (2010-2019) & US (2010-2018)



## Kidney and Renal Pelvis Cancer

Percentage of Cases, by Stage of Disease at Diagnosis  
Nebraska, 2015-2019



## Melanoma of the Skin

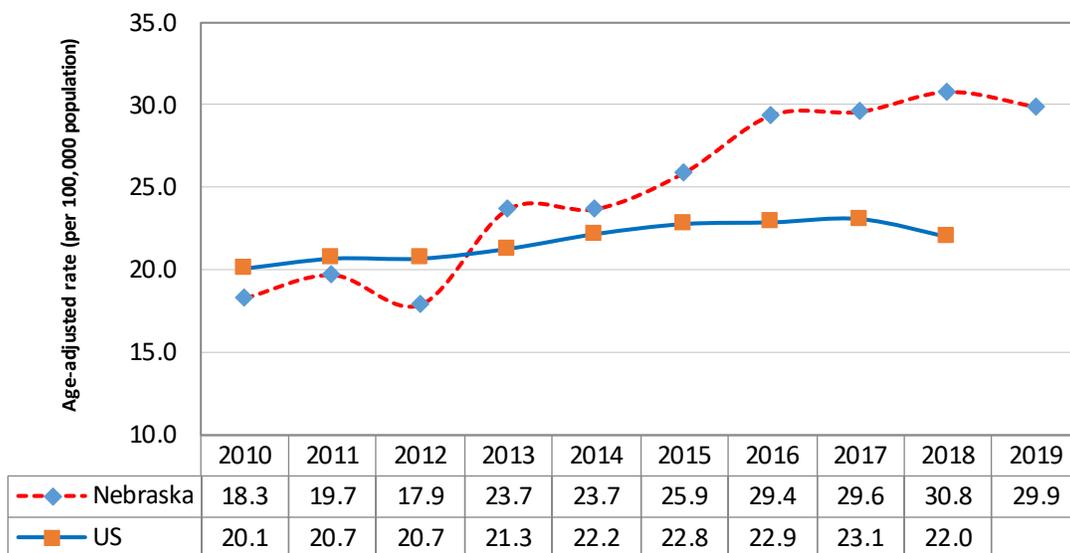
There are several different types of skin cancer, but melanomas are the most serious. Nationally, melanomas comprise about 1% of all skin cancer diagnoses but the vast majority of all skin cancer deaths. In Nebraska, melanomas of the skin accounted for 3,045 diagnoses and 280 deaths between 2015 and 2019. The incidence of melanoma continues to increase significantly in Nebraska and throughout the United States. Because most melanomas are discovered early in their development and can be surgically removed, the relative five-year survival rate is now about 92%.

Melanoma is related to exposure to ultraviolet radiation (most of which comes from the sun), particularly exposures during childhood that resulted in severe sunburns. The risk of developing melanoma is particularly high among people with light skin. Sun exposure is not the only risk factor. Family history of melanoma and the presence of numerous dysplastic nevi (large moles with irregular coloration and shape) also increase a person's risk of the disease.

Skin melanomas are among the most preventable and treatable of all cancers. Wearing protective clothing and using sunscreen are the best methods for preventing the disease, and children in particular should have such protection. In addition, early detection can greatly reduce the risk of melanoma mortality. Recognition of changes in skin growths or the appearance of new growths is the best way to find melanomas early in their development. The ACS suggests that adults practice skin self-examination on a monthly basis, and that suspicious lesions should be evaluated promptly by a physician.

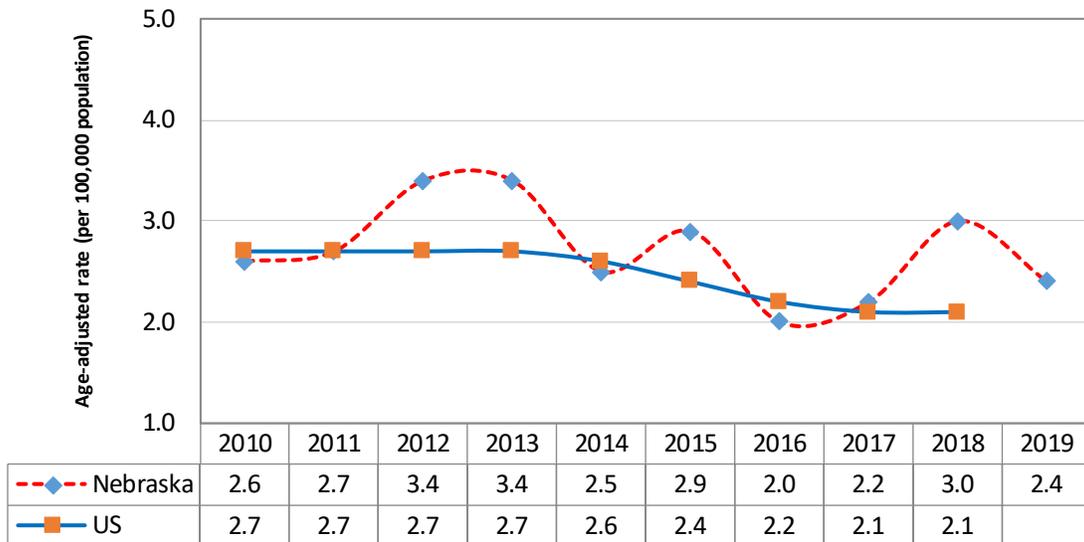
## Melanoma of the Skin

Incidence Rates, Nebraska (2010-2019) & US (2010-2018)



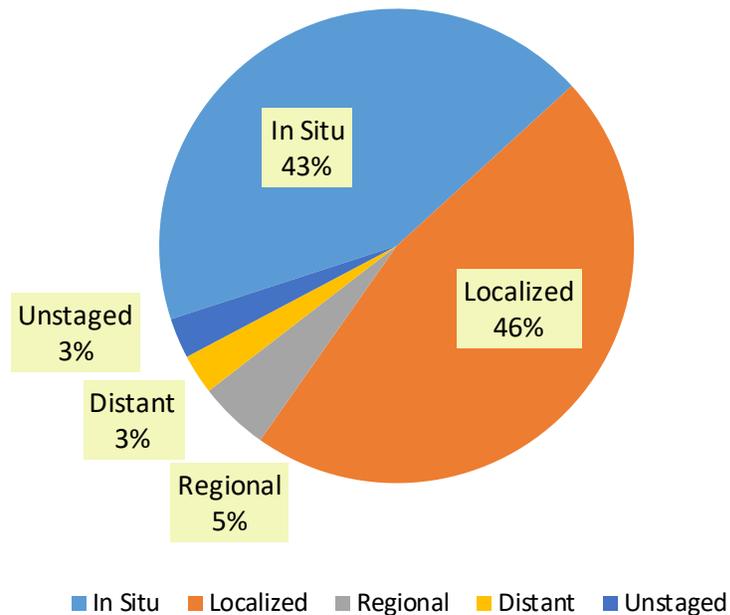
## Melanoma of the Skin

Mortality Rates, Nebraska (2010-2019) & US (2010-2018)



## Melanoma of the Skin

Percentage of Cases, by Stage of Disease at Diagnosis  
Nebraska, 2015-2019



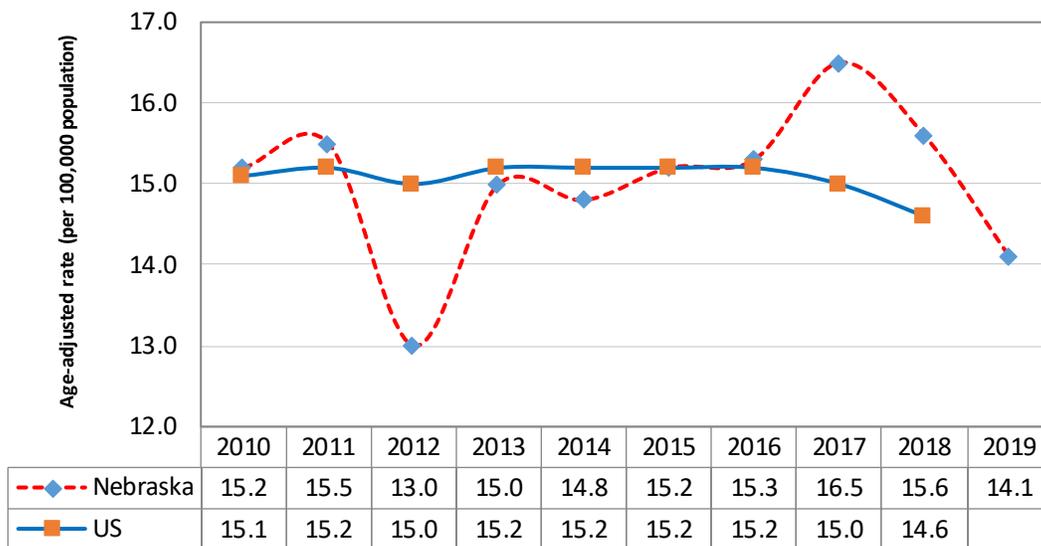
## Head and Neck Cancers

Head and neck cancers describe a variety of malignant tumors that develop in or around the throat, larynx, nose, sinuses, and mouth. There are five major types of head and neck cancers named after the part of the body where they develop including oral cavity, throat (pharynx), voice box (larynx), paranasal sinuses and nasal cavity, and salivary glands. Between 2015 and 2019, cancers of head and neck accounted for 1,760 diagnoses and 395 deaths among Nebraska residents. Nationwide, head and neck cancers account for about 4% of all cancers. Risk for head and neck cancers increases with age, and more than half (52%) of Nebraskans diagnosed with the disease during 2015-2019 were 65 years of age or older. The relative five-year survival rate for oral cavity and pharynx cancer is 64% and 59% for larynx cancer.

Two major risk factors for cancers of the head and neck are alcohol and tobacco use. About 70% of oropharynx cancer is linked to human papillomavirus (HPV), a common sexually transmitted virus. Other risk factors include ultraviolet (UV) light exposure, occupational exposures to substances such as wood dust, formaldehyde, etc., radiation exposure, and Epstein-Barr virus infection. There are no recommendations from the USPSTF, ACS, or any other medical professional organizations for routine screening for head and neck cancers. Regular dentist visits, avoidance of indoor tanning, getting the HPV vaccination, stopping smoking, and limiting alcohol intake will reduce the risk for head and neck cancers.

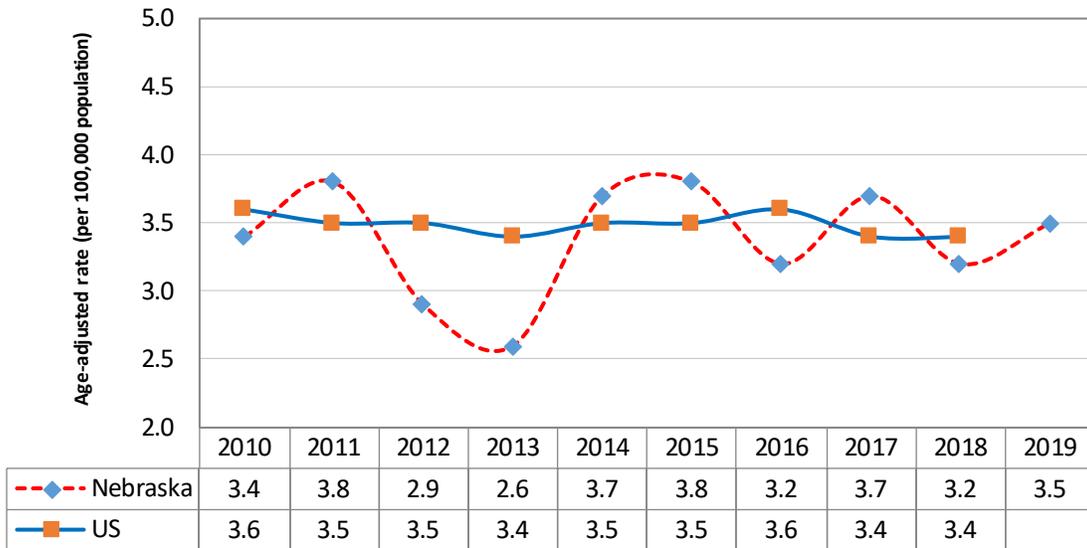
## Head and Neck Cancers

Incidence Rates, Nebraska (2010-2019) & US (2010-2018)



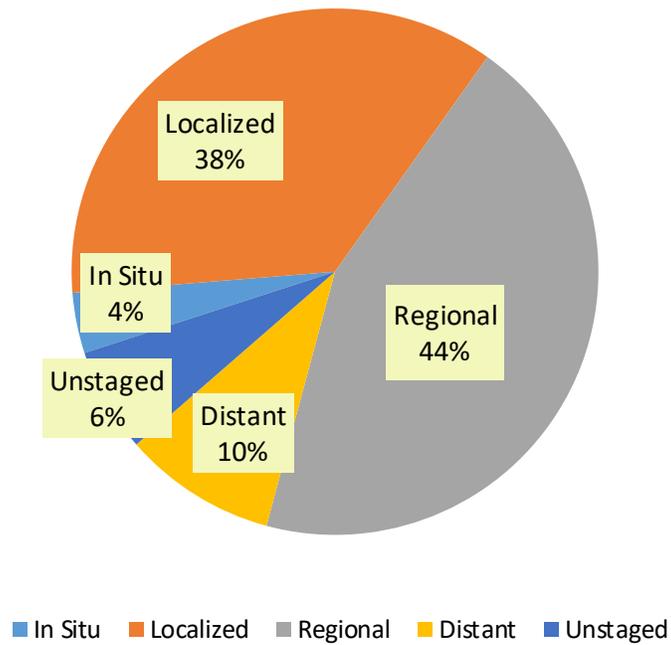
## Head and Neck Cancer

Mortality Rates, Nebraska (2010-2019) & US (2010-2018)



## Head and Neck Cancer

Percentage of Cases, by Stage of Disease at Diagnosis  
Nebraska, 2015-2019



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## REPORTING FACILITIES

Ainsworth--Brown County Hospital  
Albion--Boone County Health Center  
Alliance--Box Butte General Hospital  
Alma--Harlan County Health System  
Atkinson--West Holt Memorial Hospital, Inc.  
Auburn--Nemaha County Hospital  
Aurora--Memorial Hospital  
Bassett--Rock County Hospital  
Beatrice--Beatrice Community Hospital & Health Center, Inc.  
Benkelman--Dundy County Hospital  
Blair--Memorial Community Hospital  
Bridgeport--Morrill County Community Hospital  
Broken Bow--Jennie Melham Memorial Medical Ctr.  
Callaway--Callaway District Hospital  
Cambridge--Tri Valley Health System  
Central City--Litzenberg Memorial County Hospital  
Chadron--Chadron Community Hospital & Health Services  
Columbus--Columbus Community Hospital, Inc.  
Cozad--Cozad Community Hospital  
Creighton--Creighton Area Health Services  
Crete--Crete Area Medical Center  
David City--Butler County Health Care Center  
Fairbury--Jefferson Community Health Center, Inc.  
Falls City--Community Medical Center, Inc.  
Franklin--Franklin County Memorial Hospital  
Fremont--Fremont Area Medical Center  
Friend--Warren Memorial Hospital  
Geneva--Fillmore County Hospital  
Genoa--Genoa Community Hospital/LTC  
Gordon--Gordon Memorial Hospital District  
Gothenburg--Gothenburg Memorial Hospital  
Grand Island--CHI Health St. Francis  
Grant--Perkins County Health Services  
Hastings--Mary Lanning Memorial Hospital  
Hebron--Thayer County Health Services  
Henderson--Henderson Health Care Services  
Holdrege--Phelps Memorial Health Center  
Imperial--Chase County Community Hospital  
Kearney--CHI Health Good Samaritan  
Kearney--CHI Health Good Samaritan Pathology  
Kimball--Kimball Health Services & Hospital  
Lexington--Tri-County Area Hospital District  
Lincoln--Bryan-LGH Medical Center East & West  
Lincoln--CHI Health Saint Elizabeth  
Lincoln--Pathology Medical Services  
Lincoln--Williamsburg Radiation Center  
Lincoln--CHI Health Nebraska Heart  
Lincoln--UNMC College of Dentistry  
Lynch--Niobrara Valley Hospital Corp.  
McCook--Community Hospital  
Minden--Kearney County Health Services  
Nebraska City--CHI Health St. Mary's  
Neligh--Antelope Memorial Hospital

Norfolk--Faith Regional Health Services East & West  
North Platte--Great Plains Regional Medical Center  
North Platte--Pathology Services  
Oakland--Oakland Memorial Hospital  
Ogallala--Ogallala Community Hospital  
Omaha--CHI Health Bergan Mercy  
Omaha--CHI Health Immanuel  
Omaha--Children's Hospital  
Omaha--VA Nebraska-Western Iowa Health Care System  
Omaha--Methodist Hospital Pathology Center  
Omaha--Nebraska Medical Center  
Omaha--Nebraska Methodist Hospital  
Omaha--CHI Health Creighton University Med. Ctr.  
Omaha--Boys Town National Research Hospital  
Omaha--CHI Health Lakeside  
Omaha--CHI Health Bergan Mercy Pathology  
Omaha--Bishop Clarkson Hospital Pathology  
Omaha--Creighton Pathology Associates  
Omaha--Physicians Lab  
O'Neill--Avera St. Anthony's Hospital  
Ord--Valley County Hospital  
Osceola--Annie Jeffrey Memorial County Health Ctr.  
Oshkosh--Garden County Health Services  
Osmond--Osmond General Hospital  
Papillion--CHI Health Midlands  
Pawnee City--Pawnee County Memorial Hospital  
Pender--Pender Community Hospital  
Plainview--CHI Health Plainview  
Red Cloud--Webster County Community Hospital  
Schuyler--CHI Health Schuyler  
Scottsbluff--Regional West Medical Center  
Scottsbluff--Western Pathology Consultants  
Seward--Memorial Hospital  
Sidney--Memorial Health Center  
St. Paul--Howard County Community Hospital  
Superior--Brodstone Memorial Hospital  
Syracuse--Community Memorial Hospital  
Tecumseh--Johnson County Hospital  
Tilden--Tilden Community Hospital  
Valentine--Cherry County Hospital  
Wahoo--Saunders County Health Services  
Wayne--Providence Medical Center  
West Point--St. Francis Memorial Hospital  
Winnebago--USPHS Indian Hospital  
York--York General Hospital

### Other States:

Sioux City, IA--Mercy Medical Center

State cancer registries participating in the National Interstate Data Exchange Agreement, and the state cancer registries of Illinois, Kansas, Minnesota, Missouri, and South Dakota.

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