

NEBRASKA

Good Life. Great Mission.

DEPT. OF HEALTH AND HUMAN SERVICES



Pete Ricketts, Governor

December 15, 2021

Patrick O'Donnell, Clerk of the Legislature
State Capitol, Room 2018
P.O. Box 94604
Lincoln, NE 68509

RE: 2018 Annual Cancer Registry Report

Dear Mr. O'Donnell:

In accordance with Neb. Rev. Stat. § 81-650, please find attached a copy of the Cancer Incidence and Mortality in Nebraska: 2018. This report provides the cancer incidence breakdowns by gender, age, site, and race as well as cancer mortality in Nebraska from January 1, 2014 to December 31, 2018.

Sincerely,

A handwritten signature in blue ink that reads "Gary Anthonie, M.D.".

Gary J. Anthonie, M.D.
Chief Medical Officer
Director, Division of Public Health
Department of Health and Human Services

Helping People Live Better Lives

Cancer Incidence and Mortality in Nebraska: 2018



May 2021

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.NebraskaCancerRegistry@nebraska.gov
Phone 402-471-0553, 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 2018 ANNUAL REPORT

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A special thank you to Nebraska Cancer Registry Advisory Committee members who provided advice and assistance to the Nebraska Cancer Registry, and also reviewed this report.

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EXECUTIVE SUMMARY

The Cancer Incidence and Mortality in Nebraska annual report for 2018 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 2018, there were 10,825 diagnoses of cancer among Nebraska residents. This number is higher than the number of cancers that were diagnosed in 2017 (10,490).
- **Cancer Incidence by Gender:** In 2018, 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 2018.
- **Cancer Incidence by Age:** During the past five years (2014-2018), more than half (56.6%) 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 (2014-2018), cancers of the lung and bronchus, stomach, liver, in situ female breast, thyroid, and soft tissues were diagnosed significantly less often among Nebraska residents when compared to the U.S. as a whole, while colorectal, melanoma of skin, prostate, kidney and renal pelvis, female breast, and small intestine cancers were diagnosed significantly more often. The number of melanomas diagnosed among Nebraska residents set a new single-year record in 2018, with 655 cases.
- **Cancer Incidence by Race:** During the past decade (2009-2018), African-Americans in Nebraska were significantly more likely to be diagnosed with colorectal, kidney, liver, lung, myeloma, pancreatic, stomach, and prostate cancers than were whites. Liver cancer diagnoses were also significantly more frequent among Native Americans, Asian-American/Pacific Islanders and Hispanics compared to whites.
- **Overall Cancer Mortality:** In 2018, 3,498 Nebraska residents died from cancer, which is a slight increase from the 2017 cancer death total of 3,479. Cancer was the second leading cause of death in Nebraska in 2018, surpassed by heart disease by 65 deaths.
- **Cancer Mortality by Site:** During the past five years (2014-2018), deaths from cancers of the stomach, liver, and lung occurred significantly less often among Nebraska residents when compared to the U.S. as a whole. Deaths caused by the cancer of esophagus, kidney, and soft tissues were significantly higher among

Nebraska residents compared with the U.S. Lung cancer was the leading cause of cancer mortality in Nebraska in 2018, 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 2014-2018 was significantly different ($p < .05$) from the state. (NOTE: counties with fewer than 20 cases are not included.)

Significantly lower ▼		Significantly higher ▲	
County	Primary Sites	County	Primary Sites
Buffalo	Lung & bronchus	Boone	Prostate
Dakota	Prostate	Burt	Prostate
Dawes	Female breast Prostate	Cass	Lung & bronchus Kidney & renal pelvis
Dawson	Prostate Melanoma of skin	Cuming	Prostate
Hall	Female breast Prostate	Dodge	Lung & bronchus Thyroid
Holt	Lung & bronchus Female breast	Douglas	Lung & bronchus Female breast Melanoma of skin Pancreas
Lincoln	Female breast	Franklin	Lung & bronchus
Madison	Urinary bladder	Gage	Lung & bronchus
Phelps	Prostate	Greeley	Prostate
Red Willow	Prostate	Hitchcock	Colon & rectum
Scotts Bluff	Female breast Colon & rectum	Madison	Prostate
York	Lung & bronchus	Nance	Colon & rectum
		Phelps	Female breast
		Platte	Colon & rectum
		Richardson	Lung & bronchus
		Sarpy	Female breast
		Thayer	Colon & rectum

- **Annual Report Special Topic:** The pancreas is an organ about six inches long located behind the stomach. It secretes insulin into the bloodstream to control blood sugar and pancreatic juice into the intestine to help digest food. Tobacco use, obesity, exposure to certain chemicals, as well as diabetes, chronic pancreatitis, liver cirrhosis, and infection with *the Helicobacter pylori* bacteria are known risk factors for cancer of the pancreas. During the past five years (2014-2018), pancreatic cancer accounted for 1,443 new cases and 1,246 deaths among Nebraska residents, making it the third leading cause of cancer deaths in Nebraska during this time.

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, 2018 and December 31, 2018, as well as during the past five years (January 1, 2014-December 31, 2018).

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 23 consecutive years, from 1995 to 2017.

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, and Social Security number, date of diagnosis, primary site of the cancer (coded according to the International Classification of Diseases for Oncology, 3rd 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 US 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 US territories, and covers 97% of the total US population. The mortality data presented in this report were compiled by the National Center for Health Statistics (NCHS) and include all US resident cancer deaths. Incidence data from NPCR and mortality data from NCHS are available through 2017.

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 23 consecutive years (1995-2017), 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 US 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.naaccr.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 US 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 2018 bridged-race population estimates developed by the US Census Bureau and the National Center for Health Statistics. Incidence and mortality rates for multiple years (2014-2018) (see Tables 1, 2, 5, 6, 9-20) were calculated using population estimates for the years 2014-2018 combined, while rates for 2009-2018 (see Tables 3 and 7) were calculated using population estimates for the years 2009-2018 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, 2020. 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, 2020; Nebraska data available on the CDC/NPCR website include cases that were reported through November 30, 2020.

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.

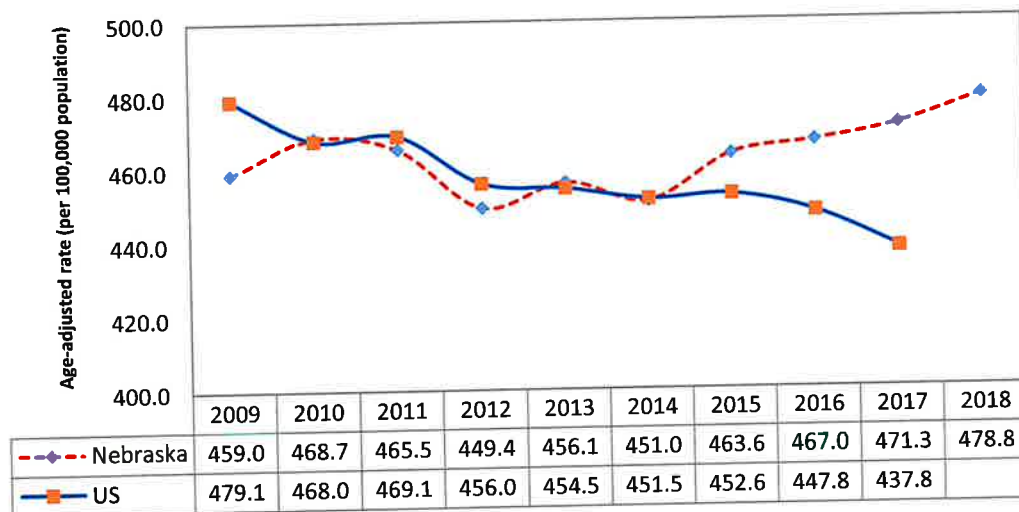
CANCER INCIDENCE IN NEBRASKA

The Nebraska Cancer Registry recorded 10,825 diagnoses of cancer among Nebraska residents in 2018, an increase from the 10,490 diagnoses recorded in 2017. The 2018 number translates into an incidence rate of 478.8 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 (50.1%) of all diagnoses. Recent registry experience suggests that as the registry continues to record cases, the final count for 2018 will likely increase by 100 to 300 cases.

Table 1 presents the number and rate of cancers diagnosed among Nebraska residents during 2018 and 2014-2018, for all sites combined and for cancers of specific sites. The most current estimates of US 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, soft tissue, lung, and thyroid (Nebraska rates are lower than the US) and for cancers of the colon and rectum, female breast, melanoma of skin, prostate, kidney and renal pelvis, and small intestine (Nebraska rates are higher than the US). Table 2 presents the number of cancers diagnosed in Nebraska during 2014-2018 by age at diagnosis. Table 3 presents Nebraska incidence data by race and ethnicity for the years 2009-2018.

Cancer (All Sites)

Incidence Rates, Nebraska (2009-2018) & US (2009-2017)



**TABLE 1: Cancer Incidence
Number of Cases and Rates, by Selected Primary Site and Gender
Nebraska (2018 and 2014-2018) & US (2013-2017)**

Site	NEBRASKA 2018			NEBRASKA 2014-2018			US 2013-2017		
	Male No.	Female No.	Total No.	Male No.	Female No.	Total No.	Male No.	Female No.	Total No.
All Sites	5,658	5,166	10,825	26,447	24,893	51,341	488.5	422.2	448.7
Oral Cavity & Pharynx	211	89	300	1,011	402	1,413	18.0	6.5	11.8
Esophagus	87	19	106	427	101	528	7.8	1.8	4.5
Stomach	82	41	123	383	198	581	8.8	4.6	6.5
Small Intestine	14	30	44	136	129	265	2.8	2.2	2.5
Colon & Rectum	499	446	946	2,425	2,264	4,690	43.9	33.7	38.4
Liver & Intrahepatic Bile Ducts	93	36	129	472	178	650	12.9	4.6	8.4
Pancreas	144	135	279	758	685	1,443	14.7	11.4	12.9
Larynx	47	17	64	257	74	331	5.6	1.2	3.2
Lung & Bronchus	678	617	1,295	3,283	3,019	6,302	67.5	51.3	58.3
Soft Tissue	42	31	73	232	133	365	4.0	2.8	3.4
Melanoma of the Skin	342	313	655	1,532	1,355	2,887	28.6	17.7	22.3
Breast (invasive cases)	20	1,542	1,562	85	7,263	7,348	1.3	125.9	67.3
Uterine Cervix	---	59	---	---	354	---	---	7.6	---
Uterine Corpus & Unspecified	---	316	---	---	1,586	---	---	27.0	---

TABLE 1 (continued): Cancer Incidence

Site	NEBRASKA 2018			NEBRASKA 2014-2018			US 2013-2017		
	Male No.	Female No.	Total Rate	Male No.	Female No.	Total Rate	Male Rate	Female Rate	Total Rate
Ovary	---	90	8.2	---	540	9.8	---	10.9	---
Prostate	1,635	---	141.8	6,828	---	123.4	104.5	---	---
Testis	68	---	7.3	326	---	7.2	5.7	---	---
Urinary Bladder	375	103	8.2	1,757	554	35.1	34.6	8.6	20.0
Kidney & Renal Pelvis	259	162	14.1	1,284	707	24.7	22.8	11.7	16.8
Brain & Central Nervous System (invasive cases only)	65	80	7.6	399	334	8.0	7.6	5.5	6.5
Thyroid Gland	77	266	27.5	370	1,116	7.4	7.3	21.1	14.3
Hodgkin Lymphoma	20	14	1.5	160	105	3.4	3.0	2.3	2.6
Non-Hodgkin Lymphoma	214	208	17.2	1,179	989	23.5	23.3	16.0	19.3
Myeloma	94	57	4.7	429	286	8.5	8.5	5.6	6.9
Leukemia	213	116	9.8	947	630	18.8	18.1	11.1	14.2
Brain & Central Nervous System (benign & uncertain cases only)	74	142	12.9	381	736	7.7	9.4	16.5	13.2
Breast (in situ cases only)	---	307	28.6	---	1,465	27.2	0.1	29.8	15.7

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

**TABLE 2: Cancer Incidence
Number of Cases and Percentage Distribution, by Selected Primary Site and Age at Diagnosis
Nebraska (2014-2018)**

	0-17 Yrs.		18-44 Yrs.		45-64 Yrs.		65+ Yrs.		TOTAL	
	Number	%	Number	%	Number	%	Number	%	Number	%
All Sites	455	0.9	3,911	7.6	17,927	34.9	29,048	56.6	51,341	100.0
Oral Cavity & Pharynx	6	0.4	87	6.2	652	46.1	668	47.3	1,413	100.0
Esophagus	0	0.0	7	1.3	197	37.3	324	61.4	528	100.0
Stomach	1	0.2	37	6.4	191	32.9	352	60.6	581	100.0
Small Intestine	1	0.4	30	11.3	92	34.7	142	53.6	265	100.0
Colon & Rectum (Colorectal)	9	0.2	293	6.2	1,567	33.4	2,821	60.1	4,690	100.0
Liver & Intrahepatic Bile Ducts	4	0.6	17	2.6	296	45.5	333	51.2	650	100.0
Pancreas	1	0.1	54	3.7	406	28.1	982	68.1	1,443	100.0
Larynx	0	0.0	9	2.7	131	39.6	191	57.7	331	100.0
Lung & Bronchus	3	0.0	57	0.9	1,818	28.8	4,424	70.2	6,302	100.0
Soft Tissue	28	7.7	68	18.6	109	29.9	160	43.8	365	100.0
Melanoma of the Skin	6	0.2	508	17.6	1,072	37.1	1,301	45.1	2,887	100.0
Female Breast (invasive cases only)	0	0.0	648	8.9	3,095	42.6	3,520	48.5	7,263	100.0
Female Breast (in situ cases only)	0	0.0	139	39.3	157	44.4	58	16.4	354	100.0
Uterine Cervix	0	0.0	115	7.3	765	48.2	706	44.5	1,586	100.0
Uterine Corpus & Unspecified	6	1.1	71	13.1	211	39.1	252	46.7	540	100.0
Ovary	0	0.0	10	0.1	2,610	38.2	4,208	61.6	6,828	100.0
Prostate	4	1.2	265	81.3	45	13.8	12	3.7	326	100.0
Testis	0	0.0	32	1.4	492	21.3	1,787	77.3	2,311	100.0
Urinary Bladder	18	0.9	147	7.4	814	40.9	1,012	50.8	1,991	100.0
Kidney & Renal Pelvis	97	13.2	125	17.1	231	31.5	280	38.2	733	100.0
Brain & Central Nervous System (invasive cases only)	14	0.9	548	36.9	620	41.7	304	20.5	1,486	100.0
Thyroid Gland	27	10.2	129	48.7	57	21.5	52	19.6	265	100.0
Hodgkin Lymphoma	13	0.6	145	6.7	660	30.4	1,350	62.3	2,168	100.0
Non-Hodgkin Lymphoma	0	0.0	22	3.1	232	32.4	461	64.5	715	100.0
Myeloma	119	7.5	145	9.2	405	25.7	908	57.6	1,577	100.0
Leukemia	42	3.8	176	15.8	402	36.0	497	44.5	1,117	100.0
Brain & Central Nervous System (benign & uncertain)	0	0.0	137	9.4	741	50.6	587	40.1	1,465	100.0
Female Breast (in situ cases only)										

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

**TABLE 3: Cancer Incidence
Number of Cases and Rates, All Sites and Top Ten Primary Sites, by Race and Ethnicity
Nebraska (2009-2018)**

Rank	White			African-American			Native American			Asian/Pacific Islander			Hispanic		
	Site	Number	Rate	Site	Number	Rate	Site	Number	Rate	Site	Number	Rate	Site	Number	Rate
	All Sites	92,286	461.1	All Sites	3,457	509.0	All Sites	572	410.7	All Sites	817	298.7	All Sites	2,394	285.4
1	Female Breast	13,033	127.5	Prostate	644	201.9	Female Breast	84	105.3	Female Breast	116	64.6	Female Breast	335	77.6
2	Prostate	11,958	120.7	Lung & Bronchus	480	75.9	Lung & Bronchus	76	68.0	Lung & Bronchus	91	40.4	Prostate	243	74.4
3	Lung & Bronchus	11,779	57.3	Female Breast	423	116.5	Colon & Rectum	59	44.1	Colon & Rectum	83	33.8	Colon & Rectum	222	28.5
4	Colon & Rectum	8,727	43.3	Colon & Rectum	350	53.8	Prostate	41	72.2	Thyroid	65	16.2	Lung & Bronchus	164	26.7
5	Melanoma	4,592	24.4	Kidney & Renal Pelvis	190	27.8	Kidney & Renal Pelvis	40	22.6	Liver & Intrahepatic Bile Ducts	55	21.6	Thyroid	139	11.1
6	Urinary Bladder	4,338	21.0	Non-Hodgkin Lymphoma	116	16.3	Liver & Intrahepatic Bile Ducts	38	21.9	Prostate	54	58.5	Kidney & Renal Pelvis	124	14.4
7	Non-Hodgkin Lymphoma	4,109	20.5	Pancreas	110	18.1	Leukemia	22	12.1	Non-Hodgkin Lymphoma	35	14.4	Non-Hodgkin Lymphoma	120	15.2
8	Kidney & Renal Pelvis	3,442	17.3	Liver & Intrahepatic Bile Ducts	101	13.6	Uterine Corpus & Unspecified	17	17.9	Leukemia	34	10.9	Leukemia	116	9.2
9	Uterine Corpus & Unspecified	2,911	27.6	Myeloma	99	15.5	Non-Hodgkin Lymphoma	17	13.4	Oral Cavity & Pharynx	32	9.6	Uterine Corpus & Unspecified	77	15.2
10	Leukemia	2,890	14.7	Leukemia	89	12.0	Thyroid	15	6.7	Uterine Corpus & Unspecified	26	15.8	Brain & Central Nervous System	72	6.0

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 US population.

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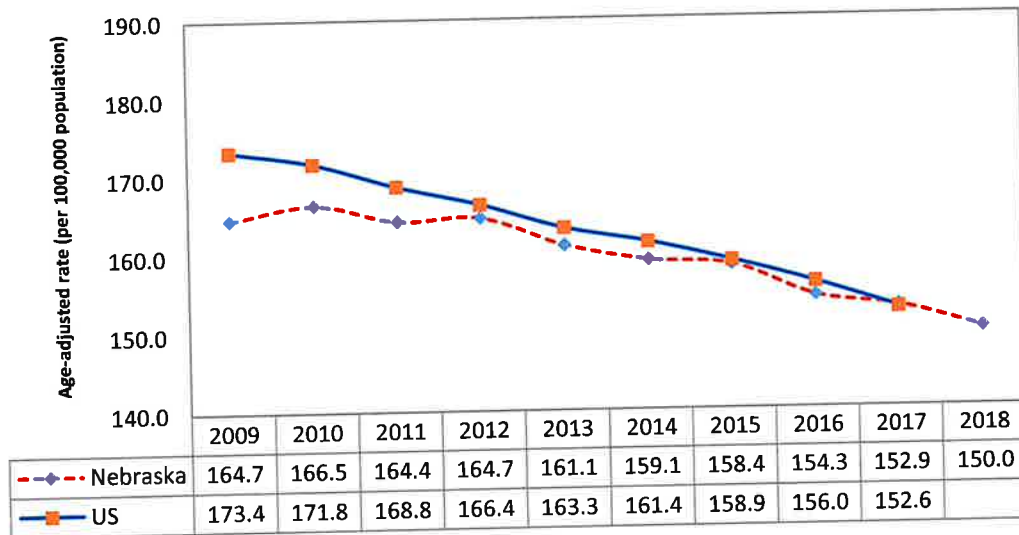
CANCER MORTALITY IN NEBRASKA

In 2018, 3,498 Nebraska residents died from cancer, a slight increase from the state's 2017 tally of 3,479 cancer deaths. The 2018 count translates into a rate of 150.0 cancer deaths per 100,000 population. Cancer was the second leading cause of mortality among Nebraska residents in 2018, surpassed by heart disease with 65 deaths. By primary site, cancers of the lung, colon and rectum, pancreas and female breast accounted for just under half (46.7%) of Nebraska's cancer deaths in 2018.

Table 4 presents the number and rate of cancer deaths that occurred among Nebraska residents during 2018 and 2014-2018, for all sites combined and for specific sites. The most recent US cancer mortality rates, which cover the years 2013 through 2017, are also included. Comparison of the most recent state and national mortality rates for the past five years shows significant lower rates ($p < .01$) for cancers of the stomach, liver, and lung in Nebraska than in the US. Table 5 presents the number of Nebraska cancer deaths during 2014-2018 by age at death. Table 6 presents Nebraska cancer mortality data by race and ethnicity for the years 2009-2018.

Cancer (All Sites)

Mortality Rates, Nebraska (2009-2018) & US (2009-2017)



**TABLE 4: Cancer Mortality
Number of Deaths and Rates, by Selected Primary Site and Gender
Nebraska (2018 and 2014-2018) & US (2013-2017)**

Site	NEBRASKA 2018			NEBRASKA 2014-2018			US 2013-2017		
	Male No.	Female No.	Total Rate	Male No.	Female No.	Total Rate	Male Rate	Female Rate	Total Rate
All Sites	1,849	1,649	150.0	9,138	8,226	154.1	189.5	135.7	158.3
Oral Cavity & Pharynx	42	24	2.7	185	102	2.5	3.9	1.3	2.5
Esophagus	82	15	4.1	418	87	4.5	7.0	1.4	3.9
Stomach	32	16	2.1	162	81	2.2	4.1	2.2	3.1
Colon & Rectum (Colorectal)	185	170	15.1	855	793	14.6	16.6	11.8	13.9
Liver & Intrahepatic Bile Ducts	60	30	3.9	328	171	4.3	9.6	4.0	6.6
Pancreas	135	136	11.7	659	587	11.2	12.7	9.6	11.0
Larynx	10	3	0.5	85	27	1.0	1.7	0.4	1.0
Lung & Bronchus	417	368	33.3	2,272	1,963	37.7	49.3	33.2	40.2
Melanoma of the Skin	37	27	2.8	188	89	2.5	3.5	1.5	2.4
Breast	1	221	9.8	11	1,188	10.7	0.3	20.3	11.3
Uterine Cervix	---	29	---	---	122	---	---	2.3	---

TABLE 4 (continued): Cancer Mortality

Site	NEBRASKA 2018			NEBRASKA 2014-2018			US 2013-2017		
	Male No.	Female No.	Total Rate	Male No.	Female No.	Total Rate	Male Rate	Female Rate	Total Rate
Uterine Corpus & Unspecified	---	76	5.6	---	292	4.7	---	4.8	---
Ovary	---	75	6.4	---	403	6.6	---	6.9	---
Prostate	203	---	20.2	859	---	18.0	---	---	19.1
Kidney & Renal Pelvis	69	29	2.1	338	158	2.5	4.3	2.3	3.7
Urinary Bladder	71	33	2.3	321	138	2.0	4.0	2.1	4.4
Brain & Other Nervous System	70	41	3.5	315	221	3.9	4.9	3.6	4.4
Thyroid	3	5	0.4	24	20	0.3	0.4	0.5	0.5
Hodgkin Lymphoma	8	1	0.1	21	10	0.2	0.3	0.2	0.3
Non-Hodgkin Lymphoma	66	41	3.0	350	262	4.1	5.4	4.2	5.5
Leukemia	93	64	5.1	455	320	5.1	6.9	4.8	6.4
Myeloma	33	33	2.5	206	141	2.2	3.0	2.6	3.3

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

**TABLE 5: Cancer Mortality
Number of Deaths and Percentage Distribution, by Selected Primary Site and Age at Death
Nebraska (2014-2018)**

	0-17 Yrs.		18-44 Yrs.		45-64 Yrs.		65+ Yrs.		TOTAL	
	Number	%	Number	%	Number	%	Number	%	Number	%
All Sites	58	0.3	447	2.6	4,186	24.1	12,673	73.0	17,364	100.0
Oral Cavity & Pharynx	0	0.0	9	3.1	94	32.8	184	64.1	287	100.0
Esophagus	0	0.0	7	1.4	159	31.5	339	67.1	505	100.0
Stomach	1	0.4	15	6.2	66	27.2	161	66.3	243	100.0
Colon & Rectum (Colorectal)	0	0.0	60	3.6	369	22.4	1,219	74.0	1,648	100.0
Liver & Intrahepatic Bile Ducts	0	0.0	15	3.0	182	36.5	302	60.5	499	100.0
Pancreas	0	0.0	22	1.8	316	25.4	908	72.9	1,246	100.0
Lung & Bronchus	0	0.0	27	0.6	1,069	25.2	3,139	74.1	4,235	100.0
Melanoma of the Skin	0	0.0	9	3.2	80	28.9	188	67.9	277	100.0
Female Breast	0	0.0	60	5.1	326	27.4	802	67.5	1,188	100.0
Uterine Cervix	0	0.0	18	14.8	62	50.8	42	34.4	122	100.0
Uterine Corpus & Unspecified	0	0.0	2	0.7	83	28.4	207	70.9	292	100.0
Ovary	0	0.0	11	2.7	118	29.3	274	68.0	403	100.0
Prostate	0	0.0	0	0.0	83	9.7	776	90.3	859	100.0
Kidney & Renal Pelvis	1	0.2	6	1.2	140	28.2	349	70.4	496	100.0
Urinary Bladder	0	0.0	3	0.7	50	10.9	406	88.5	459	100.0
Brain & Central Nervous System	20	3.7	54	10.1	184	34.3	278	51.9	536	100.0
Thyroid	0	0.0	0	0.0	11	25.0	33	75.0	44	100.0
Hodgkin Lymphoma	0	0.0	3	9.7	11	35.5	17	54.8	31	100.0
Non-Hodgkin Lymphoma	1	0.2	15	2.5	107	17.5	489	79.9	612	100.0
Leukemia	14	1.8	27	3.5	106	13.7	628	81.0	775	100.0
Myeloma	0	0.0	2	0.6	66	19.0	279	80.4	347	100.0

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

**TABLE 6: Cancer Mortality
Number of Deaths and Rates, All Sites and Top Ten Primary Sites, by Race and Ethnicity
Nebraska (2009-2018)**

Rank	White		African-American		Native American		Asian/Pacific Islander		Hispanic	
	Site	Number	Site	Number	Site	Number	Site	Number	Site	Number
	All Sites	32,750	All Sites	1,202	All Sites	168	All Sites	253	All Sites	623
	Rate	157.8	Rate	201.3	Rate	139.6	Rate	103.5	Rate	95.8
1	Lung & Bronchus	8,311	Lung & Bronchus	313	Lung & Bronchus	42	Lung & Bronchus	49	Lung & Bronchus	101
	Rate	40.3	Rate	52.6	Rate	38.8	Rate	21.1	Rate	17.7
2	Colon & Rectum	3,178	Colon & Rectum	131	Colon & Rectum	26	Liver & Intrahepatic Bile Ducts	42	Colon & Rectum	52
	Rate	15.2	Rate	23.2	Rate	18.5	Rate	15.6	Rate	8.4
3	Pancreas	2,255	Pancreas	92	Female Breast	14	Colon & Rectum	19	Liver & Intrahepatic Bile Ducts	51
	Rate	10.9	Rate	16.0	Rate	22.1	Rate	8.0	Rate	7.3
4	Female Breast	2,201	Female Breast	87	Liver & Intrahepatic Bile Ducts	8	Pancreas	14	Leukemia	38
	Rate	19.4	Rate	25.8	Rate	6.1	Rate	5.9	Rate	4.5
5	Prostate	1,690	Prostate	85	Leukemia	6	Leukemia	13	Female Breast	34
	Rate	19.3	Rate	41.3	Rate	4.1	Rate	5.2	Rate	8.6
6	Leukemia	1,432	Liver & Intrahepatic Bile Ducts	64	Stomach	6	Female Breast	12	Pancreas	34
	Rate	7.0	Rate	8.7	Rate	3.8	Rate	6.9	Rate	5.3
7	Non-Hodgkin Lymphoma	1,223	Myeloma	44	Prostate	5	Stomach	11	Brain & CNS	34
	Rate	5.8	Rate	7.8	Rate	12.3	Rate	4.0	Rate	3.9
8	Brain & CNS	1,007	Esophagus	32	Uterine Cervix	5	Oral Cavity & Pharynx	11	Stomach	31
	Rate	5.1	Rate	4.8	Rate	3.9	Rate	3.2	Rate	4.1
9	Esophagus	948	Stomach	30	Kidney & Renal Pelvis	5	Prostate	8	Prostate	30
	Rate	4.5	Rate	5.2	Rate	3.5	Rate	7.3	Rate	15.9
10	Kidney & Renal Pelvis	930	Leukemia	30	Pancreas	5	Ovary	7	Non-Hodgkin Lymphoma	28
	Rate	4.4	Rate	5.0	Rate	3.3	Rate	5.0	Rate	5.4

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 US population.
Abbreviation: CNS, central nervous system

INCIDENCE AND MORTALITY FOR SELECTED PRIMARY SITES

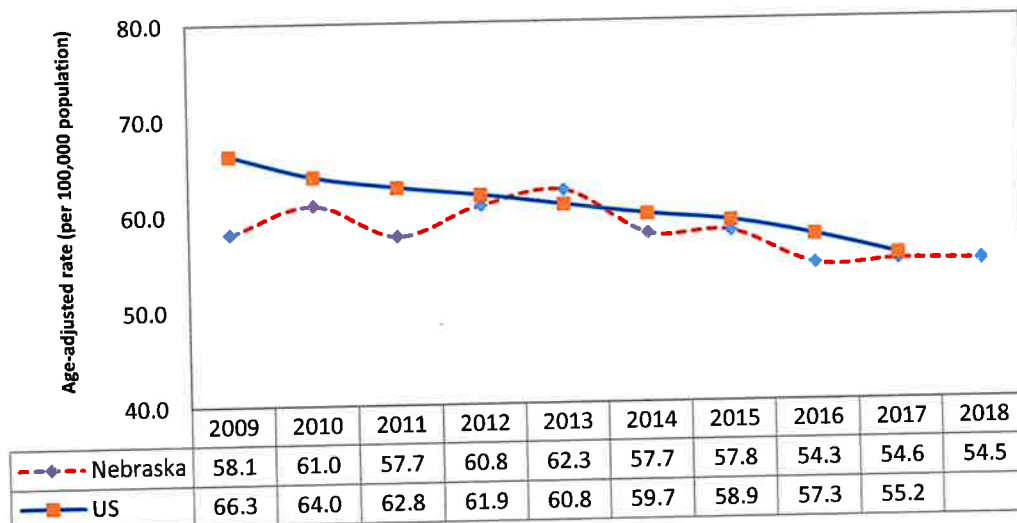
Lung and Bronchus

Although lung cancer was only the third most frequently diagnosed cancer among Nebraska residents in 2018, it was the year's leading cause of cancer mortality, accounting for 22% of the state's cancer deaths. During the past five years (2014-2018), lung cancer has averaged about 6,302 diagnoses and over 4,235 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 20%.

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 US 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.

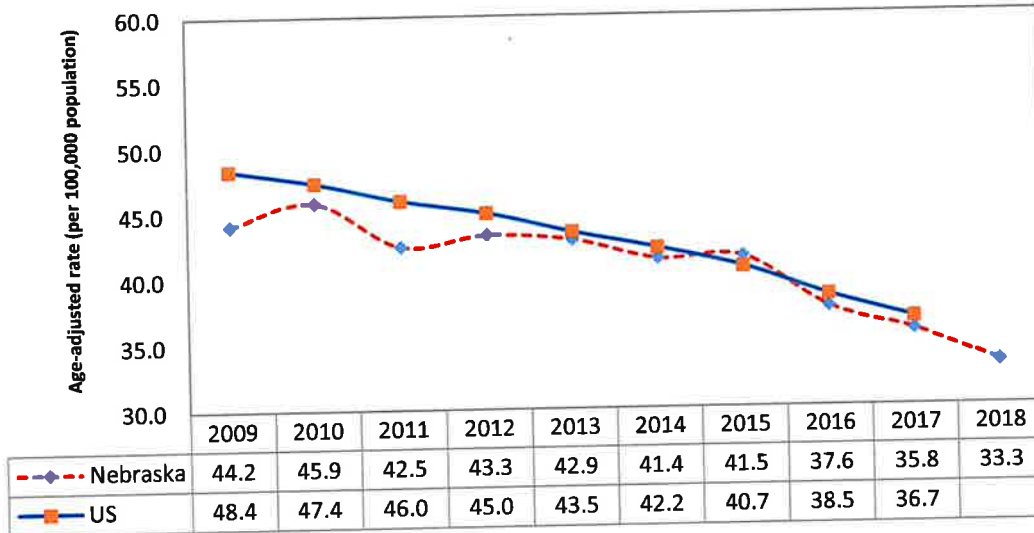
Lung and Bronchus Cancer

Incidence Rates, Nebraska (2009-2018) & US (2009-2017)



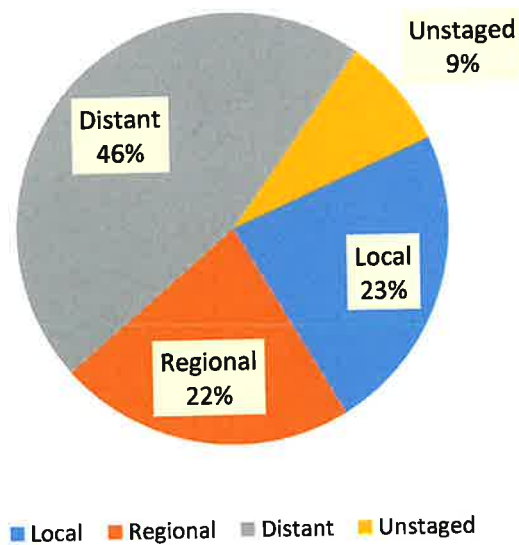
Lung and Bronchus Cancer

Mortality Rates, Nebraska (2009-2018) & US (2009-2017)



Lung and Bronchus Cancer

Percentage of Cases, by Stage of Disease at Diagnosis
Nebraska, 2014-2018



Breast (Female only)

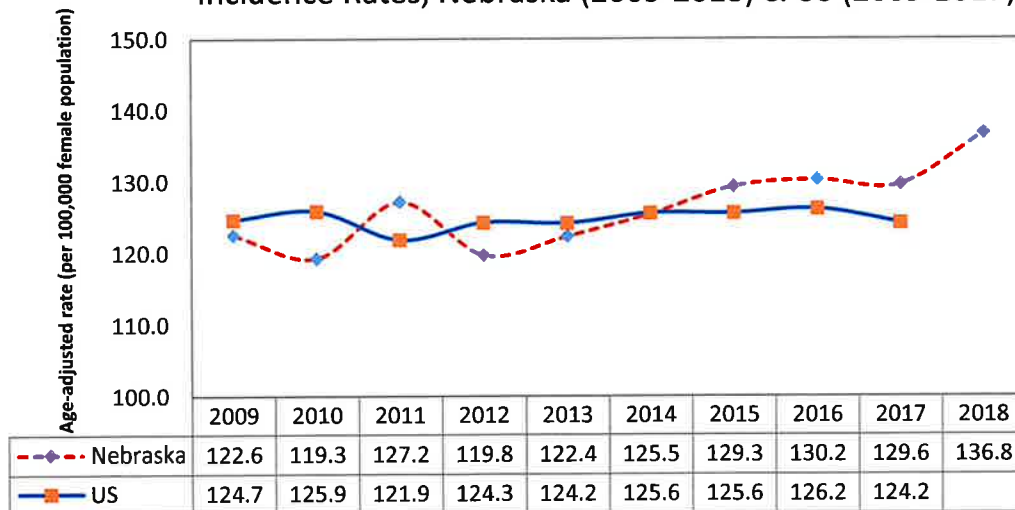
Breast cancer is the most common type of cancer among women and the second most frequent cause of female cancer deaths. Between 2014 and 2018, 7,263 Nebraska women were diagnosed with invasive breast cancer (another 1,465 were diagnosed with in situ breast cancer) and 1,188 women died from breast cancer. Since 1990, the rate of breast cancer deaths in Nebraska and the US 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 89%.

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 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.

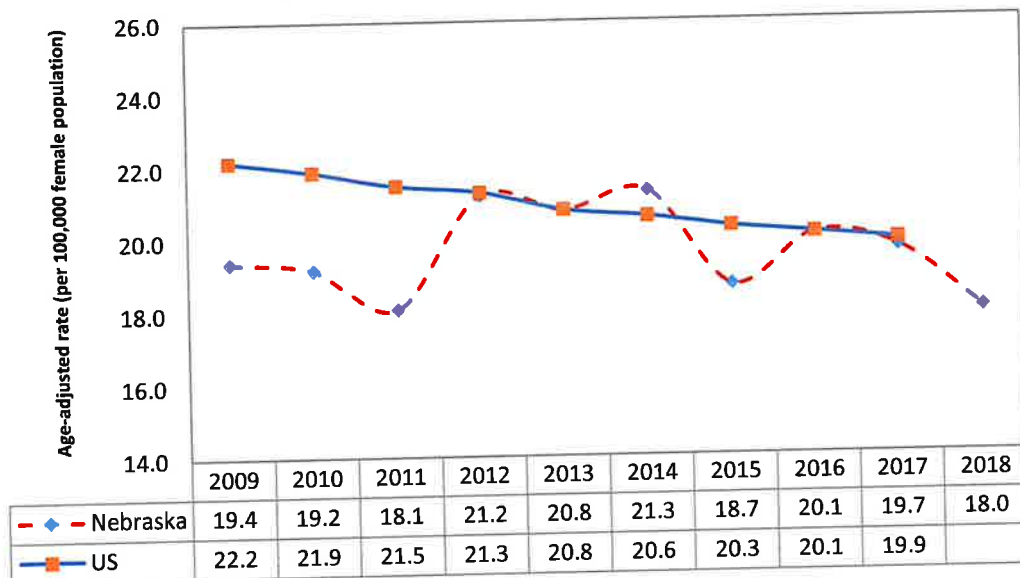
Female Breast Cancer

Incidence Rates, Nebraska (2009-2018) & US (2009-2017)



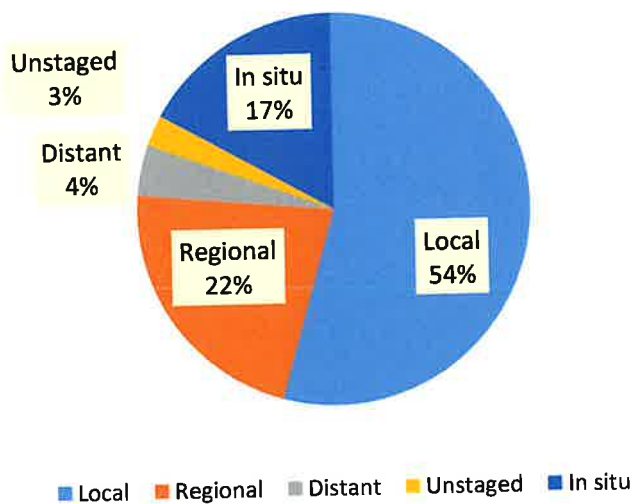
Female Breast Cancer

Mortality Rates, Nebraska (2009-2018) & US (2009-2017)



Female Breast Cancer

Percentage of Cases, by Stage of Disease at Diagnosis
Nebraska, 2014-2018



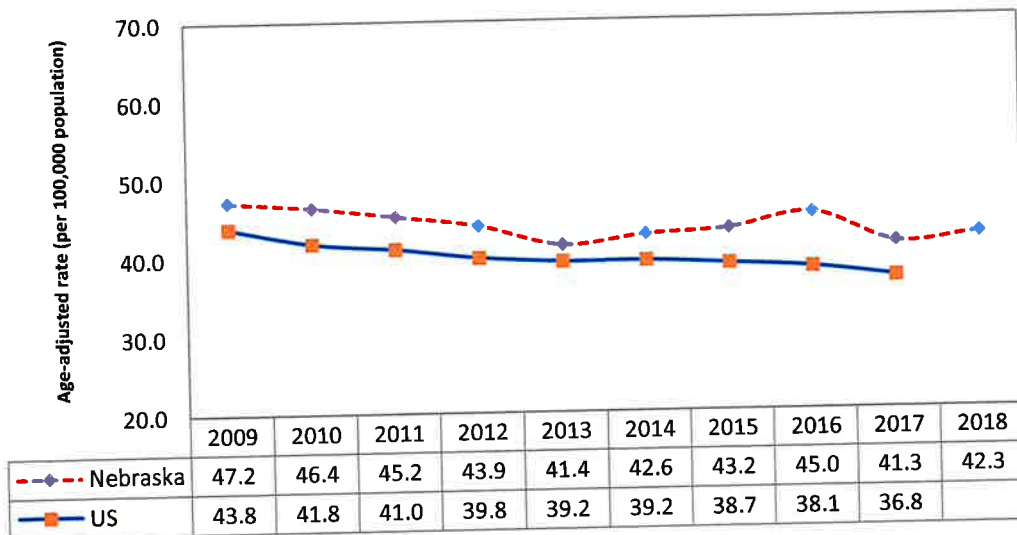
Colon and Rectum (Colorectal)

In 2018, colorectal cancer was the fourth most frequently diagnosed cancer among Nebraska residents, accounting for 946 new cases. It was also the second leading cause of cancer mortality in the state, accounting for 355 deaths.

The risk of developing colorectal cancer increases with age. More than half (60.1%) of all colorectal cancer cases that occurred in Nebraska during 2014-2018 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%.

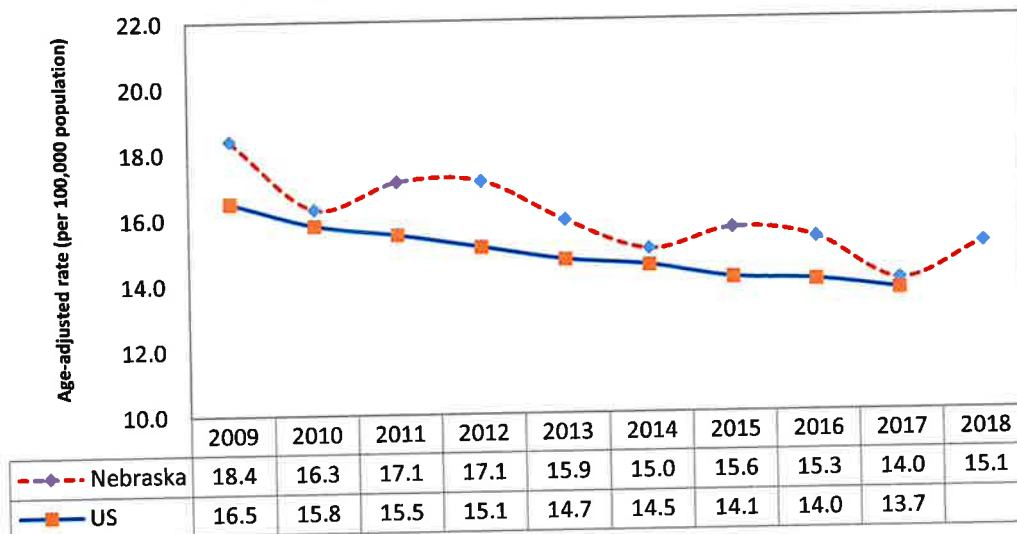
Screening for asymptomatic polyps and tumors is known to prevent colorectal cancer cases and deaths, and there are a number of recommended test options. Among them include several types of stool tests, flexible sigmoidoscopy, colonoscopy, CT colonography (virtual colonoscopy), and double-contrast barium 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 recommends screening. 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 (2009-2018) & US (2009-2017)



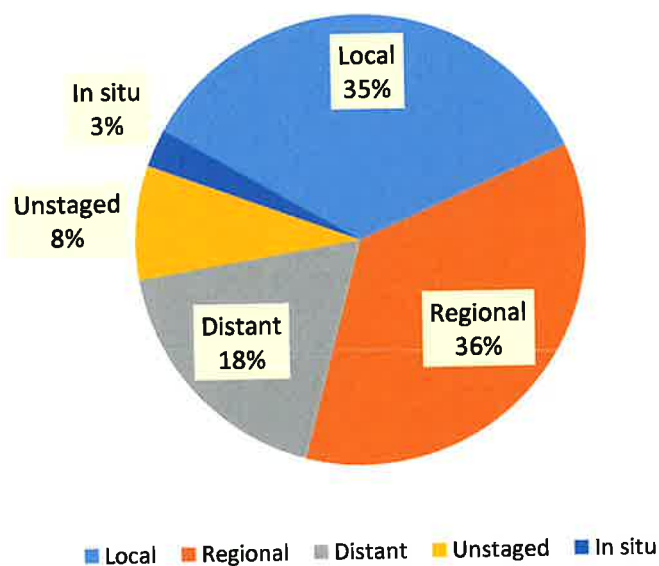
Colon and Rectum (Colorectal) Cancer

Mortality Rates, Nebraska (2009-2018) & US (2009-2017)



Colon and Rectum (Colorectal) Cancer

Percentage of Cases, by Stage of Disease at Diagnosis Nebraska, 2014-2018



Prostate

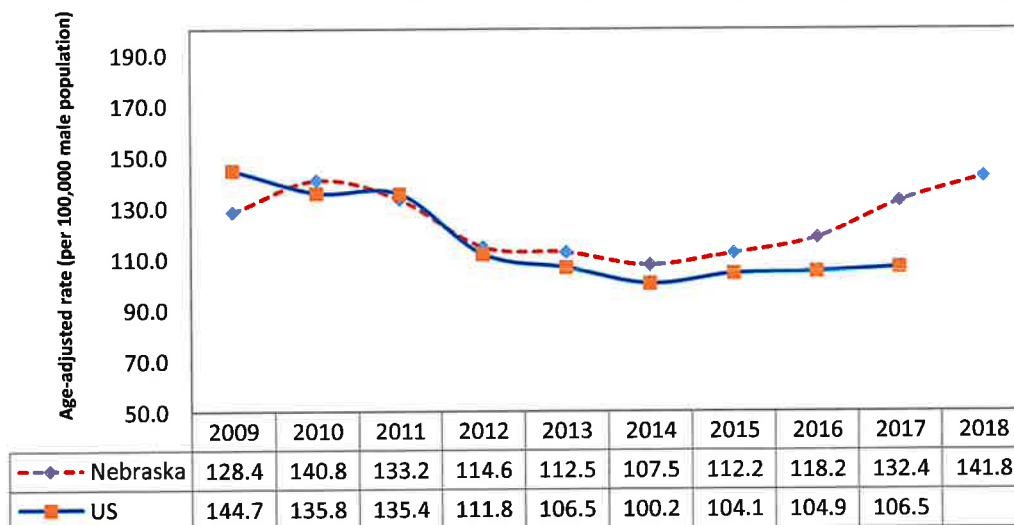
With 1,635 diagnoses in 2018 prostate cancer was the most common cancer among Nebraska men, accounting for about 29% of all new cancers. During the past five years (2014-2018), it has also been the second leading cause of cancer deaths among Nebraska men, accounting for 859 deaths. Since the mid-1990s, 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 (more than 60% of Nebraska men diagnosed with prostate cancer during 2014-2018 were 65 or older) and is significantly greater among African-Americans. During the past decade (2009-2018), the incidence rate of prostate cancer among African-American men in Nebraska has been 67% 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 98%.

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 recommend 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.

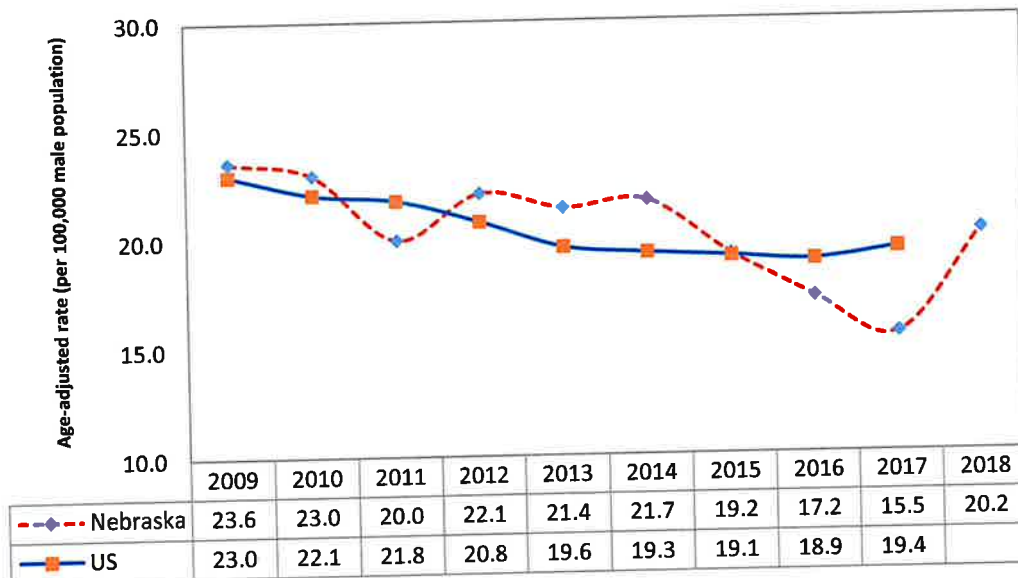
Prostate Cancer

Incidence Rates, Nebraska (2009-2018) & US (2009-2017)



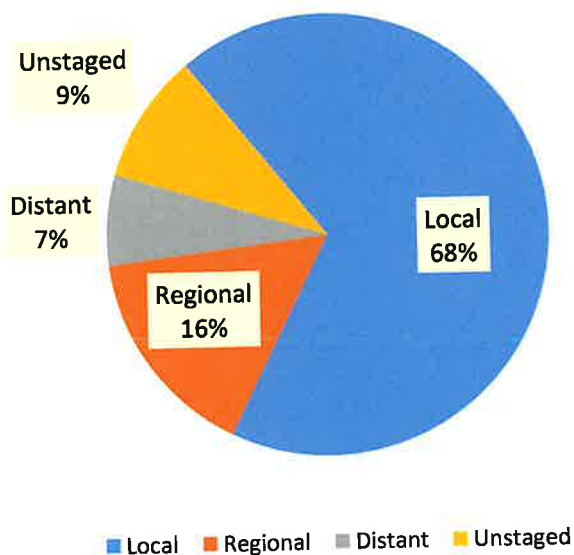
Prostate Cancer

Mortality Rates, Nebraska (2009-2018) & US (2009-2017)



Prostate Cancer

Percentage of Cases, by Stage of Disease at Diagnosis
Nebraska, 2014-2018



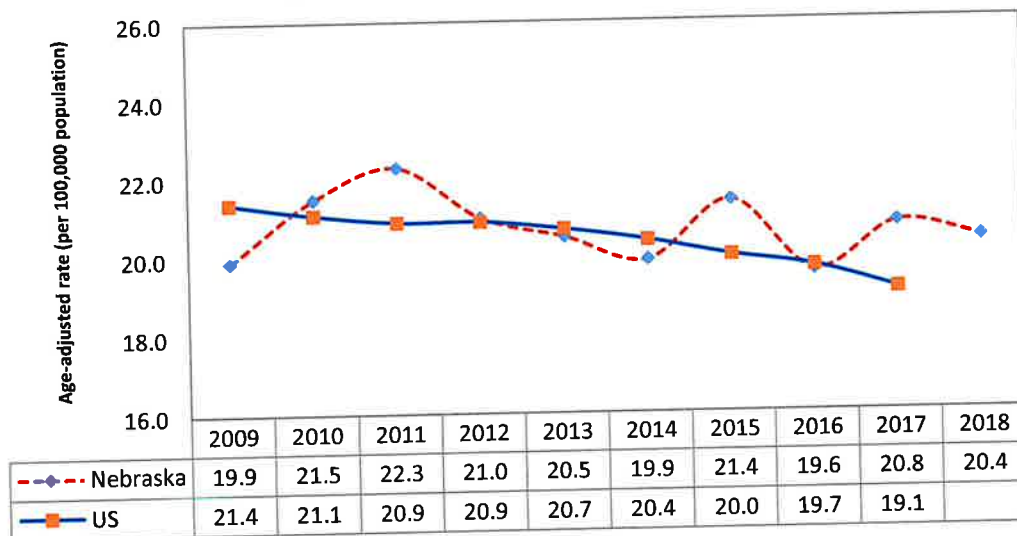
Urinary Bladder

Between 2014 and 2018, 2,311 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 (459 Nebraska residents died from it during 2014-2018), 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 2014-2018 were at least 65 years old when diagnosed.

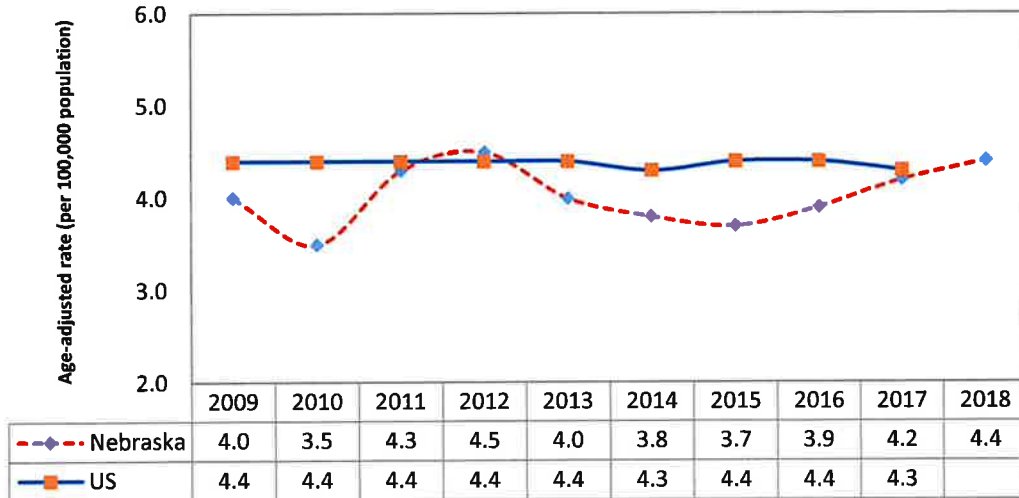
Urinary Bladder Cancer

Incidence Rates, Nebraska (2009-2018) & US (2009-2017)



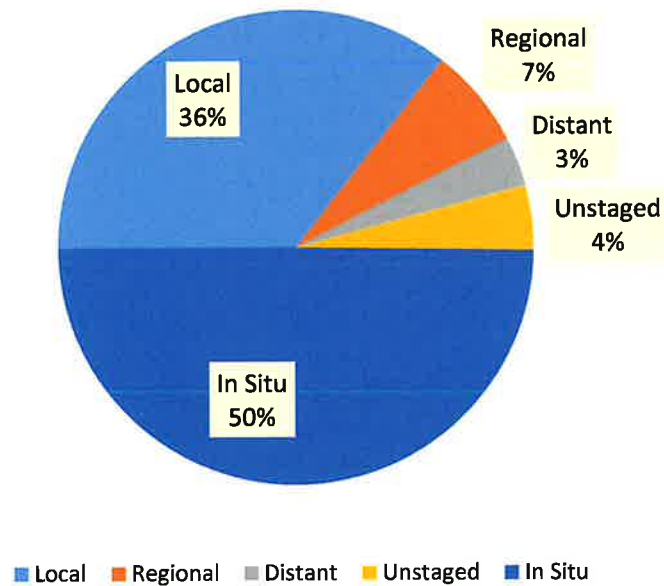
Urinary Bladder Cancer

Mortality Rates, Nebraska (2009-2018) & US (2009-2017)



Urinary Bladder Cancer

Percentage of Cases, by Stage of Disease at Diagnosis
Nebraska, 2014-2018



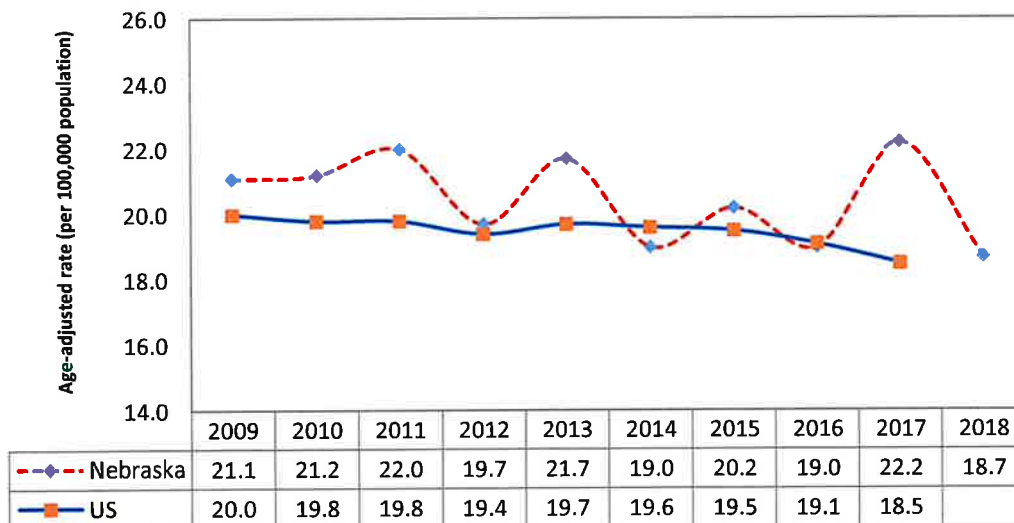
Non-Hodgkin Lymphoma

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 2,168 diagnoses and 612 deaths among Nebraska residents between 2014 and 2018 (for Hodgkin lymphoma, the comparable figures are 265 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 2009 to 2018 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 69%.

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.

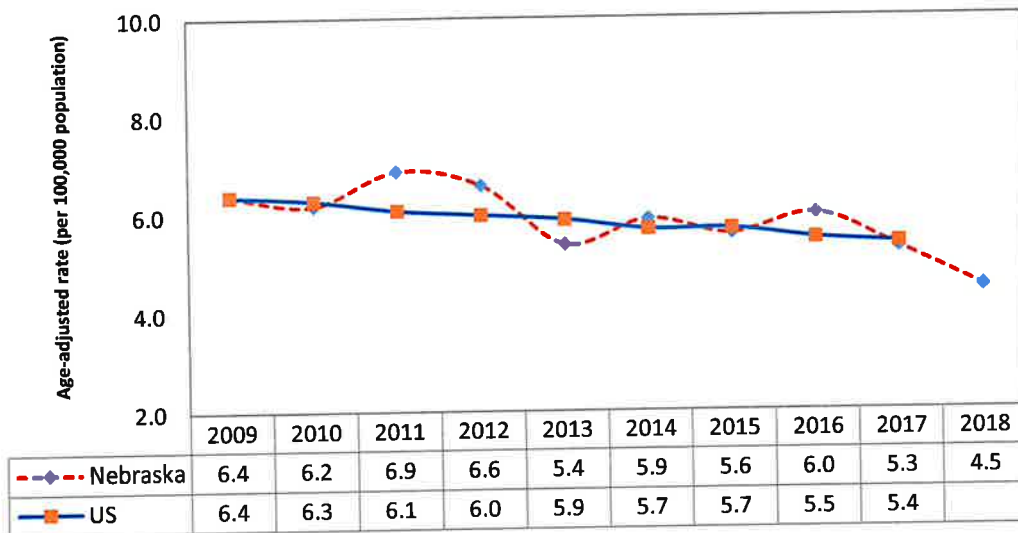
Non-Hodgkin Lymphoma

Incidence Rates, Nebraska (2009-2018) & US (2009-2017)



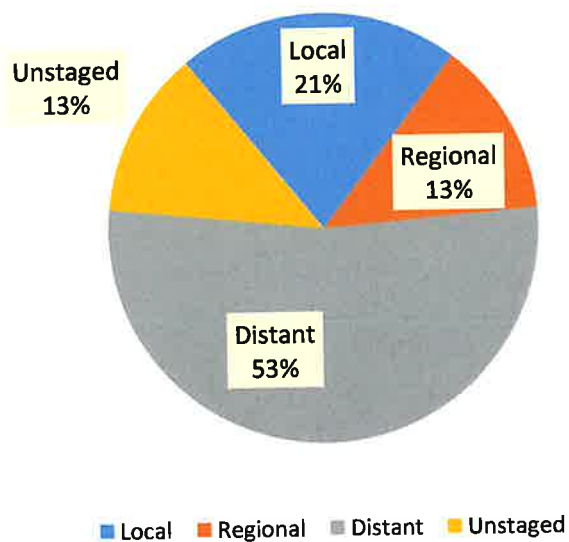
Non-Hodgkin Lymphoma

Mortality Rates, Nebraska (2009-2018) & US (2009-2017)



Non-Hodgkin Lymphoma

Percentage of Cases, by Stage of Disease at Diagnosis
Nebraska, 2014-2018



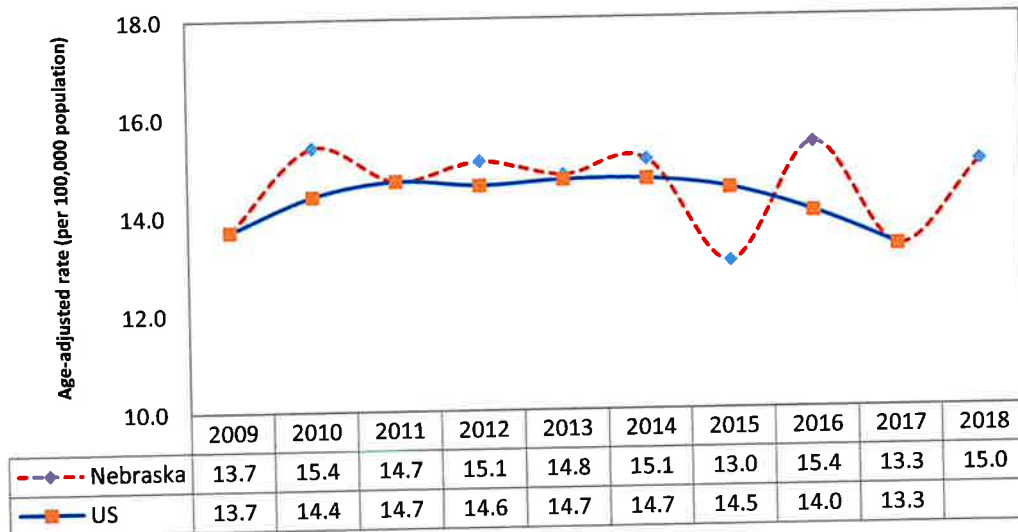
Leukemia

Between 2014 and 2018, leukemia accounted for 1,577 diagnoses and 775 deaths among Nebraska residents. Although leukemia is one of the most common types of cancer diagnosed among children and adolescents, over half (57.6%) of the leukemia cases that occurred in Nebraska between 2014 and 2018 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 over 56%.

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.

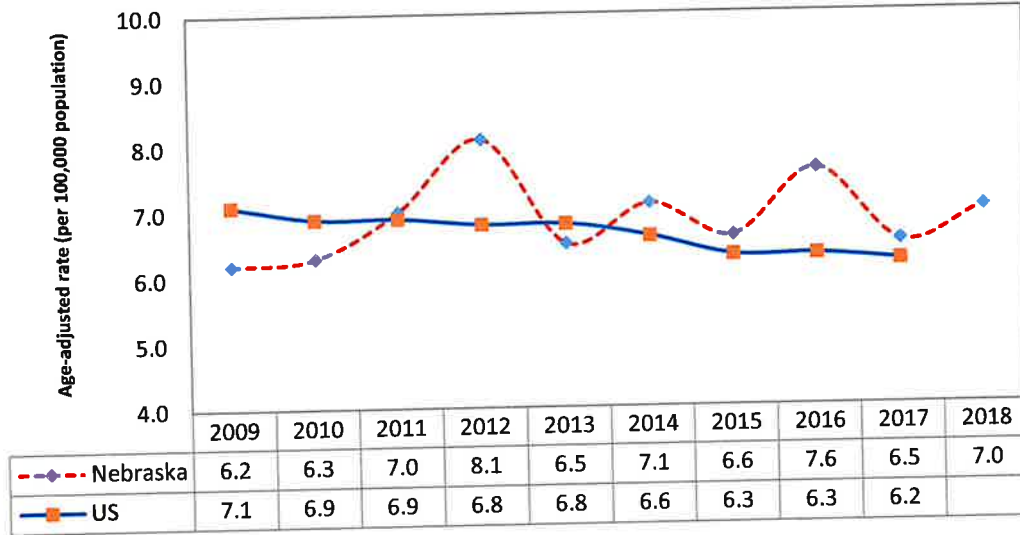
Leukemia

Incidence Rates, Nebraska (2009-2018) & US (2009-2017)



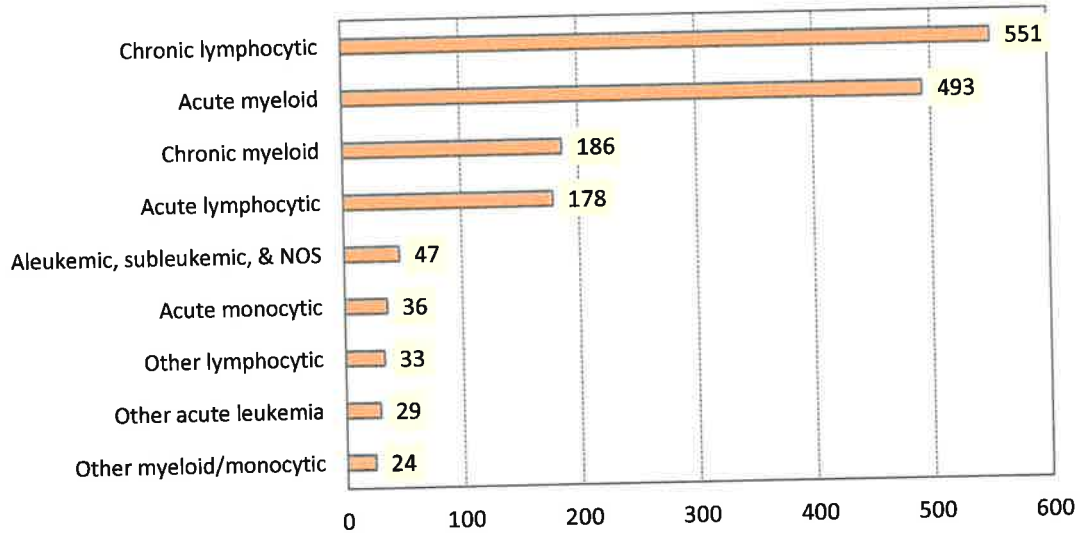
Leukemia

Mortality Rates, Nebraska (2009-2018) & US (2009-2017)



Leukemia

Number of Cases by Histologic Type, Nebraska, 2014-2018



Abbreviation: NOS, not otherwise specified

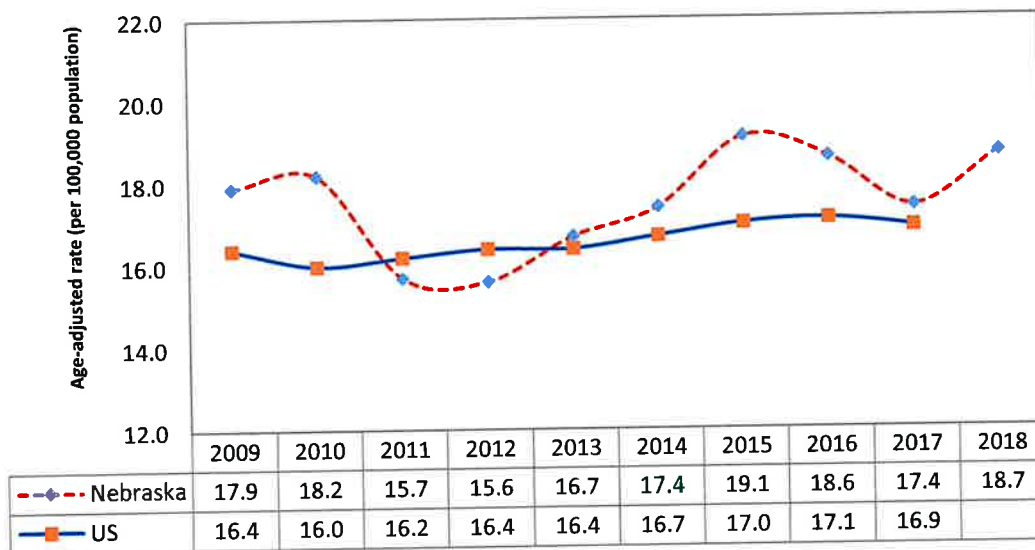
Kidney and Renal Pelvis

Cancers of the kidney and renal pelvis accounted for 1,991 diagnoses in Nebraska between 2014 and 2018, and also accounted for 496 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 72%.

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 to the older people more often. More than half (50.8%) of all cases that were diagnosed during 2014-2018 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, since 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.

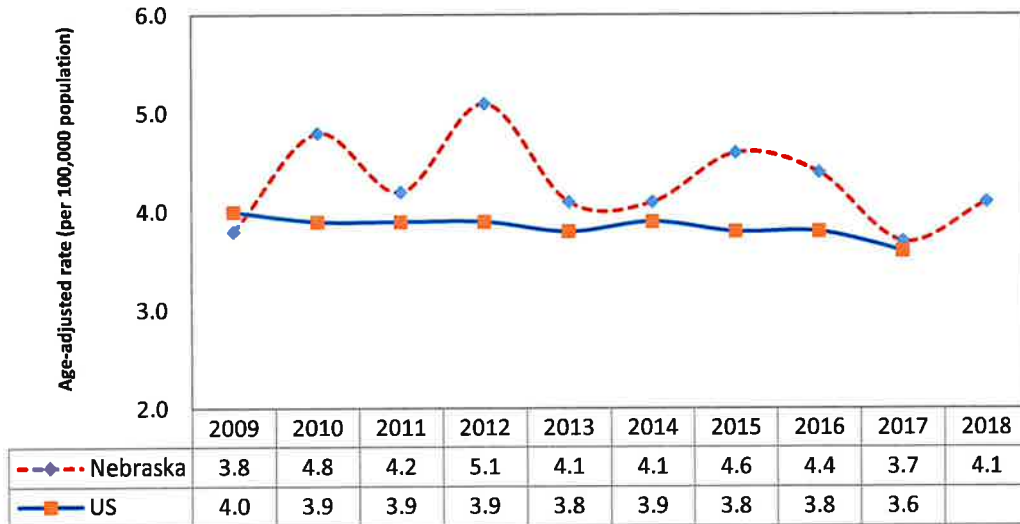
Kidney and Renal Pelvis Cancer

Incidence Rates, Nebraska (2009-2018) & US (2009-2017)



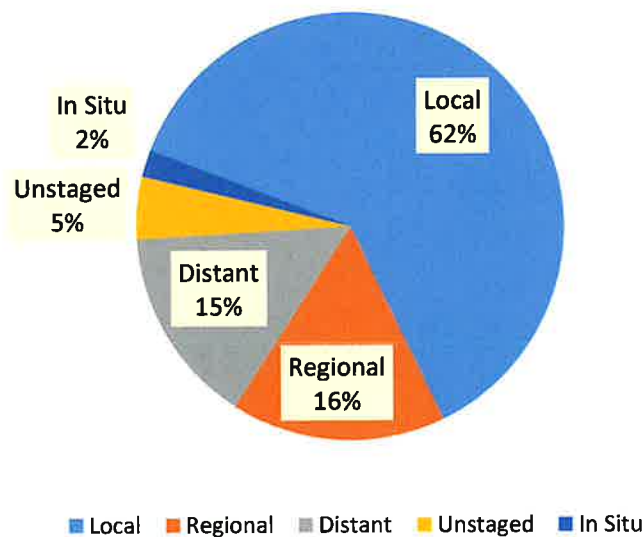
Kidney and Renal Pelvis Cancer

Mortality Rates, Nebraska (2009-2018) & US (2009-2017)



Kidney and Renal Pelvis Cancer

Percentage of Cases, by Stage of Disease at Diagnosis
Nebraska, 2014-2018



Melanoma of the Skin

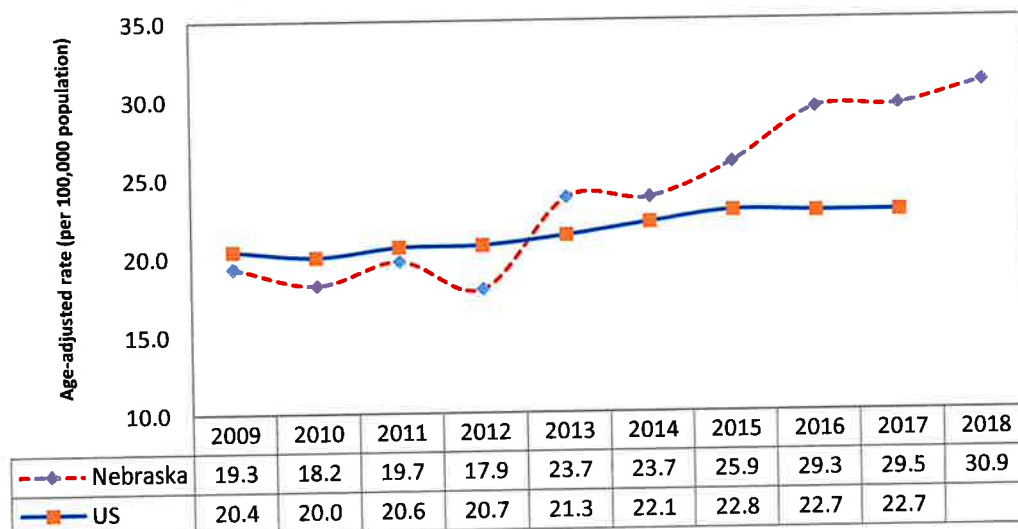
There are several different types of skin cancer, but melanomas are the most serious. Nationally, melanomas comprise about 1% of all skin cancer diagnoses but the vast majority of all skin cancer deaths. In Nebraska, melanomas of the skin accounted for 2,887 diagnoses and 277 deaths between 2014 and 2018. 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 90%.

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.

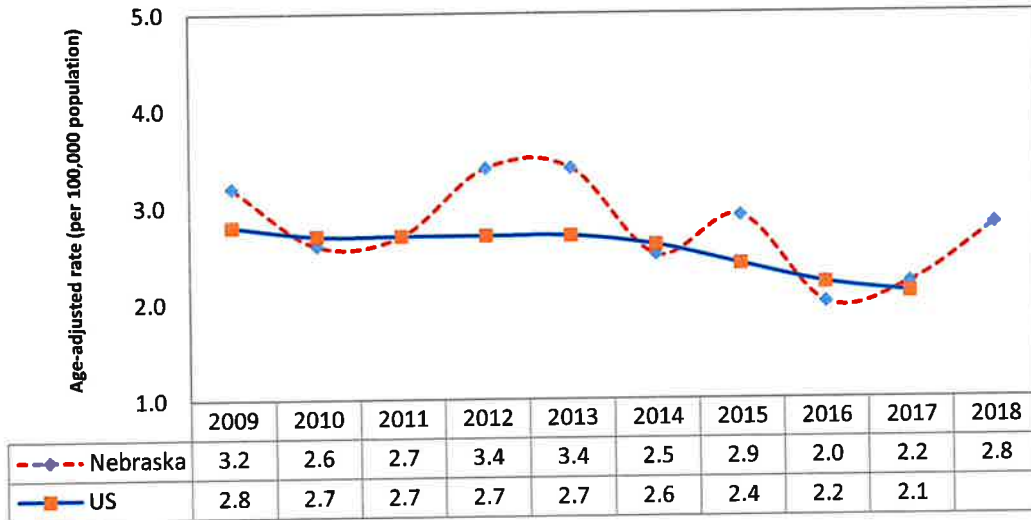
Melanoma of the Skin

Incidence Rates, Nebraska (2009-2018) & US (2009-2017)



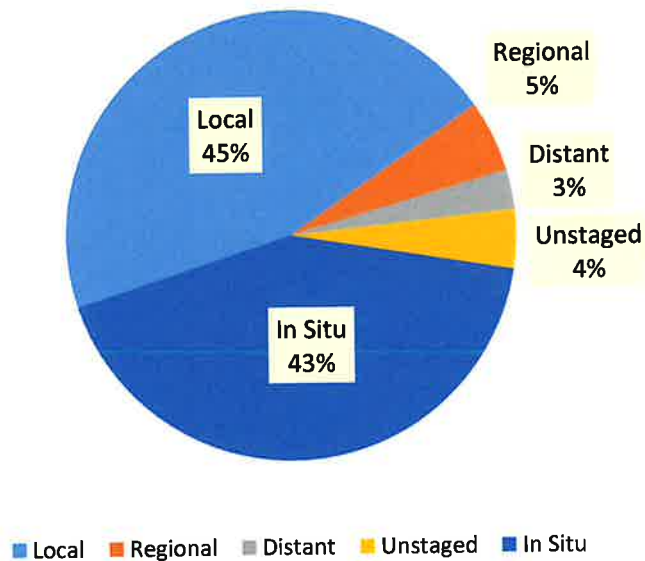
Melanoma of the Skin

Mortality Rates, Nebraska (2009-2018) & US (2009-2017)



Melanoma of the Skin

Percentage of Cases, by Stage of Disease at Diagnosis
Nebraska, 2014-2018



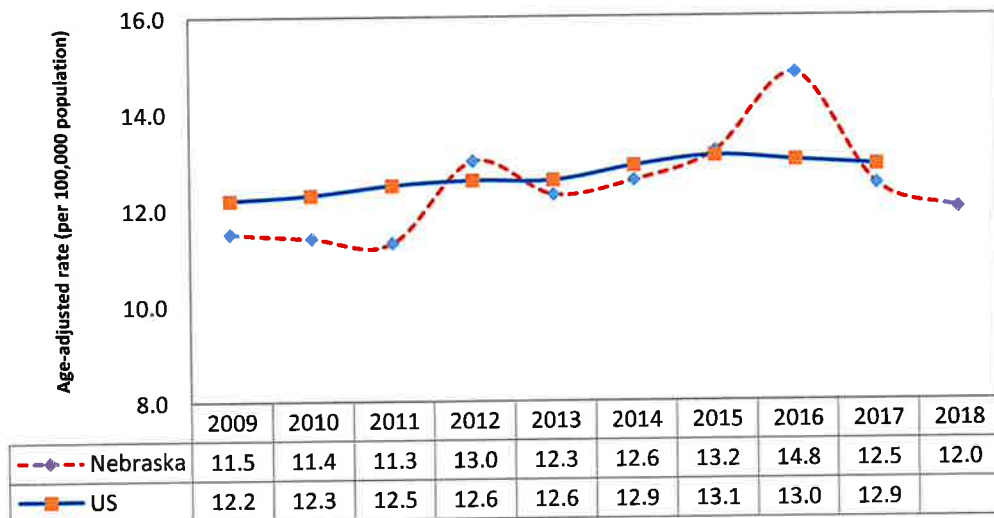
Pancreatic Cancer

Between 2014 and 2018, cancer of the pancreas accounted for 1,443 diagnoses and 1,246 deaths among Nebraska residents. Risk for pancreatic cancer increases with age, and over two-thirds (68%) of Nebraskans diagnosed with the disease during 2014-2018 were 65 years of age or older. Both statewide and nationally, cancer of the pancreas is the third-leading cause of cancer deaths. Since it is most commonly diagnosed at an advanced stage, the survival rate is extremely poor compared to that of most other cancer types (9.5%).

Preventable risk factors for cancer of the pancreas include cigarette smoking, which accounts for 20-30% of new cases, along with obesity and workplace exposure to certain chemicals used in the metalworking and dry-cleaning industries. Other risk factors for cancer of the pancreas include certain inherited genetic syndromes, a family history of the disease, and health conditions that include diabetes, chronic pancreatitis, cirrhosis of the liver, and stomach infection caused by the bacteria *Helicobacter pylori*. Since the pancreas is deep inside the body and tumors are difficult to find early, there are no recommendations from the USPSTF, ACS, or any other medical professional organizations for routine screening for pancreatic cancer.

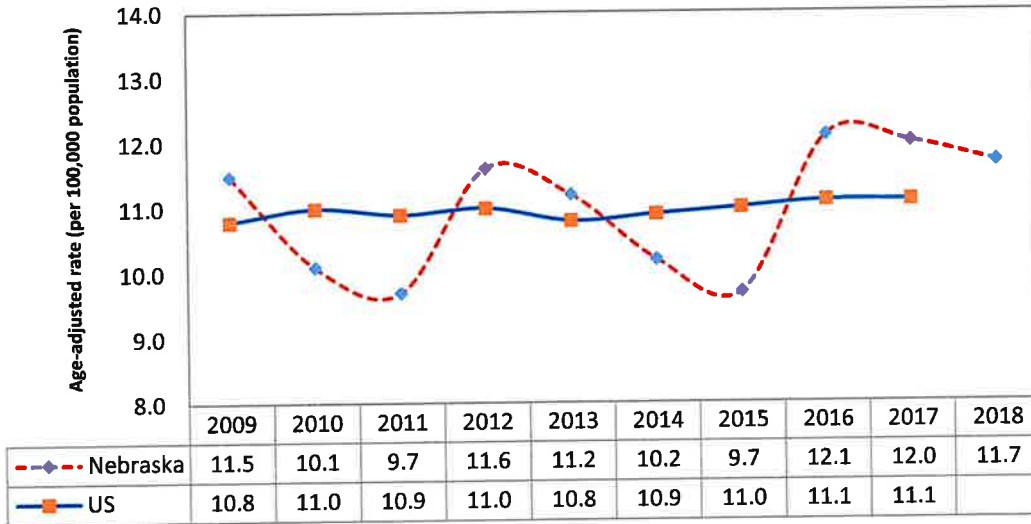
Pancreatic Cancer

Incidence Rates, Nebraska (2009-2018) & US (2009-2017)



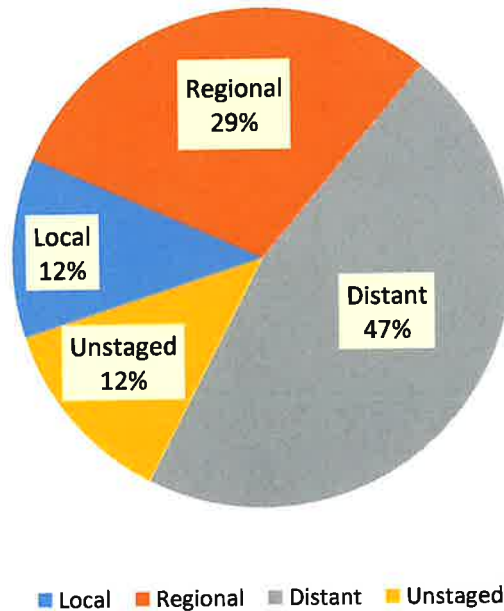
Pancreatic Cancer

Mortality Rates, Nebraska (2009-2018) & US (2009-2017)



Pancreatic Cancer

Percentage of Cases, by Stage of Disease at Diagnosis
Nebraska, 2014-2018



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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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