

CANCER IN TEXAS 2023



TEXAS
Health and Human
Services

Texas Department of State
Health Services

Acknowledgments

The Texas Cancer Registry (TCR) thanks all cancer reporters for their dedication, hard work, and collaboration. Their efforts help us meet national high-quality and timeliness standards and they play a significant role in contributing to TCR's mission and the fight against cancer.

About the Texas Cancer Registry

TCR is a statewide, population-based cancer registry. It is the primary source for cancer data in Texas.

TCR serves as the foundation for measuring the cancer burden in Texas; comprehensive cancer-control efforts; health disparities; and the progress in cancer prevention, diagnosis, treatment, and survivorship. It also supports a wide variety of cancer-related research. Public health, academic institutions, and the private sector cannot address these priorities without timely, complete, and accurate cancer data, which TCR provides.

TCR is one of the largest cancer registries in the United States. It is one of 12 state registries funded by both the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) program and the Centers for Disease Control and Prevention's National Program of Cancer Registries (NPCR).

TCR currently meets the NPCR high-quality data standards, and is Gold Certified by the North American Association of Central Cancer Registries (NAACCR). TCR joined the SEER program in 2021.

TCR's goal is to collect, maintain, and disseminate the highest quality cancer data that will contribute to improving diagnoses, treatments, survival, and quality of life for all cancer patients.

TCR Funding

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- The National Cancer Institute's SEER Program provides financial support under Contract #75N91021D00011.

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Estimates for New Cancer Cases

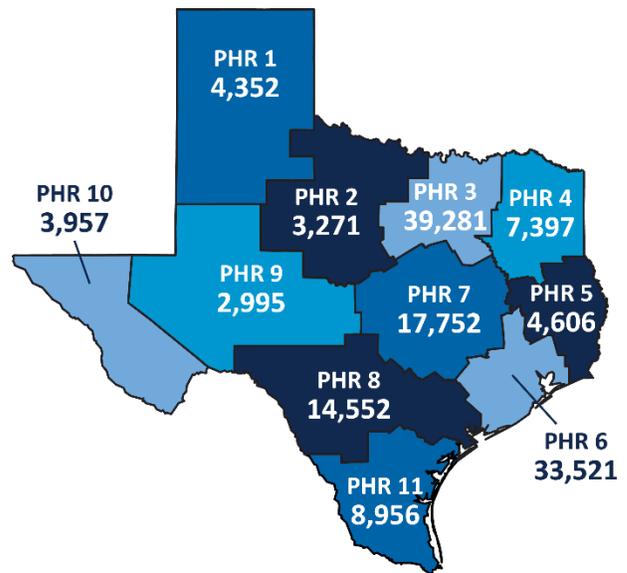
In 2023, an estimated 140,435 new cancer cases are expected to be diagnosed in Texas (67,648 in women and 72,787 in men).

The most common cancers are breast, prostate, lung and bronchus, and colorectal. These four cancers make up about 47% of all cancer diagnoses.

An estimated 1,317 new cancer cases will be diagnosed in children (ages 0 to 14 years). An additional 614 new cases are estimated in adolescents (ages 15 to 19 years).

Among children and adolescents, the most common types of cancer are leukemias, brain and other central nervous system tumors, and lymphomas.

Estimated New Cancer Cases by Public Health Region, 2023



Estimated New Cancer Cases by Sex for Leading Sites, Texas, 2023

Women

Cancer Site	Estimated New Cases	% of Total
Breast	20,319	30.0
Lung and Bronchus	7,267	10.7
Colon and Rectum	5,530	8.2
Corpus Uterus	4,366	6.5
Thyroid	2,743	4.0
Non-Hodgkin Lymphoma	2,568	3.8
Kidney and Renal Pelvis	2,533	3.7
Pancreas	2,098	3.1
Leukemia	1,935	2.9
Melanoma of the Skin	1,904	2.8

Men

Cancer Site	Estimated New Cases	% of Total
Prostate	17,584	24.2
Lung and Bronchus	8,479	11.6
Colon and Rectum	6,979	9.6
Kidney and Renal Pelvis	4,252	5.8
Urinary Bladder	3,840	5.3
Non-Hodgkin Lymphoma	3,216	4.4
Liver and Intrahepatic Bile Duct	3,156	4.3
Melanoma of the Skin	3,094	4.3
Oral Cavity and Pharynx	2,776	3.8
Leukemia	2,695	3.7

For more information, visit dshs.texas.gov/tcr/data/estimates.aspx

Impact of the COVID-19 Pandemic on Cancer Incidence Rates and Trends

The COVID-19 pandemic caused significant health care disruptions, leading to delays and reductions in cancer screening, diagnoses, and reporting to some central cancer registries. To evaluate the impact of COVID-19 on cancer incidence rates and trends, SEER conducted an evaluation of 2020 U.S. cancer data. These analyses showed that cancer incidence rates for several cancer sites experienced a significant decline at the onset of the pandemic, followed by a recovery. However, the incidence rates did not return to pre-pandemic levels. Among the different cancer types analyzed, thyroid and screening-detected cancers showed the most substantial decrease. In contrast, cancers mainly detected by symptoms, such as pancreatic cancer, exhibited a less obvious decline.

TCR conducted similar analyses and determined that these findings align with trends seen in Texas-specific cancer data. See graphs of age-adjusted incidence rates in Texas for all cancer sites combined and for female breast cancer below.

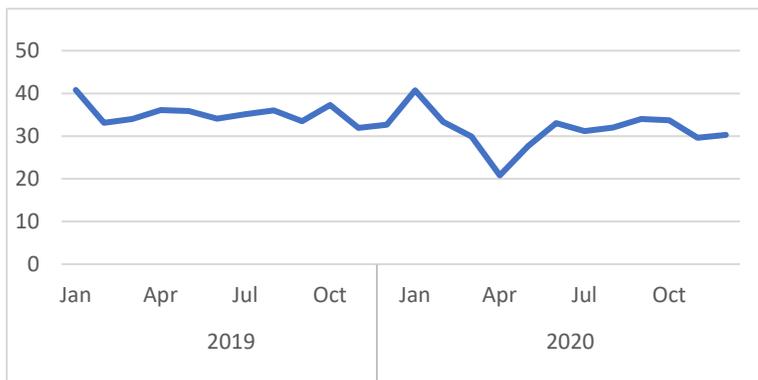
Because cancer incidence rates for 2020 were impacted by the COVID-19 pandemic, including 2020 data in analyses of trends over time could introduce errors and reduce the accuracy of trend estimates. Therefore, TCR will exclude 2020 incidence rates when modeling cancer incidence trends moving forward.

Although an atypical year of data may impact trend analyses, the stand-alone 2020 cancer incidence rates still interest the cancer community and its partners. Texas cancer incidence rates will remain available on TCR’s website and in data products with an important caveat about the role of the COVID-19 pandemic.

TCR remains committed to ongoing evaluations of COVID-19’s impact on Texas cancer data and will adapt our methods as needed. See the TCR website for more information as it becomes available.

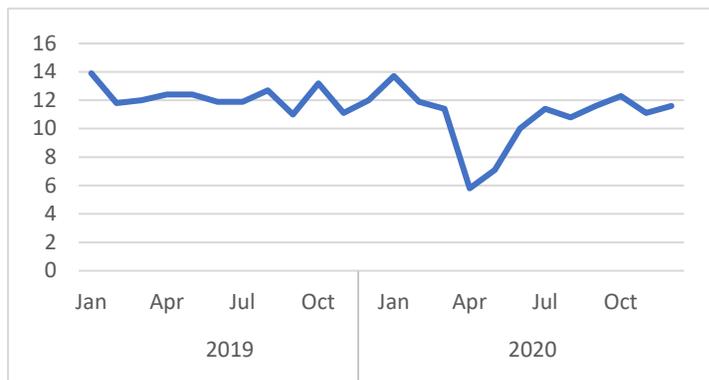
All Cancer Sites Combined, Texas 2019-2020

Age-Adjusted Incidence Rates per 100,000 People



Female Breast Cancer, Texas 2019-2020

Age-Adjusted Incidence Rates per 100,000 Women



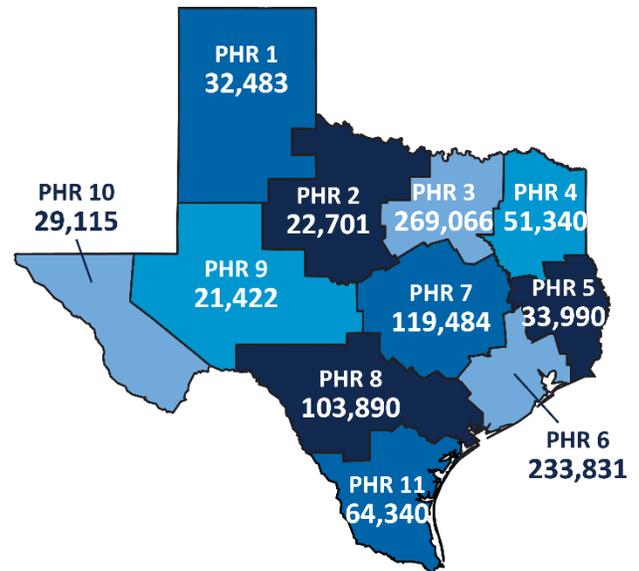
Living with Cancer

The number of cancer survivors in Texas is increasing for many reasons. More people are being diagnosed with cancer, treatment is improving, and cancers are being caught earlier. Also, the number of people living with cancer increases as the population grows.

An estimated 978,396 Texans are cancer survivors (516,713 women and 461,683 men). These are Texans diagnosed with cancer between 1995-2019 who were alive as of January 1, 2020. Some of these people were cancer free, while others were receiving treatment.

Prostate and female breast cancer survivors make up about 40% of survivors.

Cancer Survivors by Public Health Region as of January 1, 2020



Cancer Survivors by Sex for Select Sites, Texas, as of January 1, 2020

Women		Men	
Cancer Site	Survivors	Cancer Site	Survivors
Breast	217,031	Prostate	184,503
Colon and Rectum	41,889	Colon and Rectum	46,998
Thyroid	39,131	Kidney and Renal Pelvis	29,525
Corpus Uterus	39,227	Urinary Bladder	26,989
Non-Hodgkin Lymphoma	21,676	Melanoma of the Skin	25,425
Lung and Bronchus	20,888	Non-Hodgkin Lymphoma	24,031
Melanoma of the Skin	20,548	Lung and Bronchus	18,492
Kidney and Renal Pelvis	20,007	Leukemia	18,176
Cervix	17,039	Oral Cavity and Pharynx	18,141
Leukemia	14,015	Testis	13,496

For more information, visit dshs.texas.gov/tcr/data/prevalence.aspx

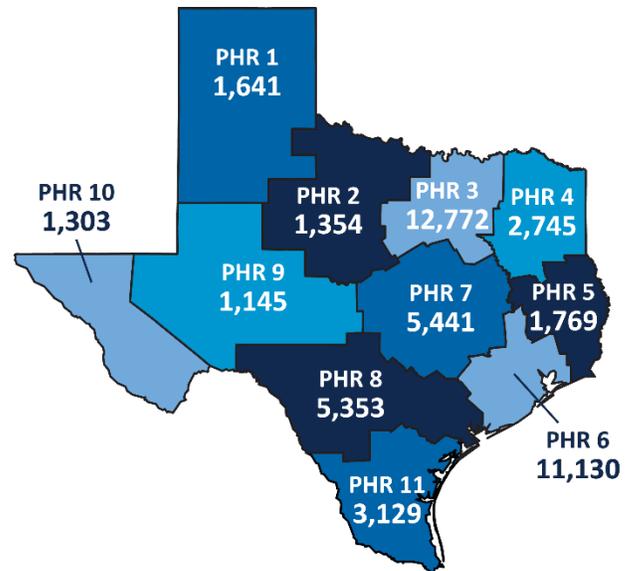
Estimates for Cancer Deaths

In 2023, an estimated 47,887 Texans are expected to die of cancer (22,014 women and 25,873 men). Some of these people were diagnosed with cancer in previous years.

Lung and bronchus cancer is the most common cause of cancer death in Texas, followed by colorectal, breast, and pancreas cancers. These four cancers account for about 46% of all cancer deaths.

An estimated 146 Texas children (ages 0-14) will die of cancer in 2023. An additional 80 adolescents (ages 15-19) are expected to die of the disease. Cancer remains a leading cause of death from disease for children and adolescents in both Texas and the U.S.

Estimated Cancer Deaths by Public Health Region, 2023



Estimated Cancer Deaths by Sex for Leading Sites, Texas, 2023

Women

Cancer Site	Estimated Deaths	% of Total
Lung and Bronchus	4,518	20.5
Breast	3,471	15.8
Colon and Rectum	1,959	8.9
Pancreas	1,662	7.5
Ovary	1,068	4.9
Liver and Intrahepatic Bile Duct	933	4.2
Corpus Uterus	847	3.8
Leukemia	764	3.5
Non-Hodgkin Lymphoma	682	3.1
Brain and Other Nervous System	599	2.7

Men

Cancer Site	Estimated Deaths	% of Total
Lung and Bronchus	5,855	22.6
Colon and Rectum	2,582	10.0
Prostate	2,397	9.3
Liver and Intrahepatic Bile Duct	1,998	7.7
Pancreas	1,819	7.0
Leukemia	1,103	4.3
Non-Hodgkin Lymphoma	958	3.7
Kidney and Renal Pelvis	909	3.5
Esophagus	872	3.4
Urinary Bladder	842	3.3

For more information, visit dshs.texas.gov/tcr/data/estimates.aspx

Relative Cancer Survival

Cancer survival rates refer to the percentage of patients who live for a specified time after their cancer diagnosis. While these rates can provide an overall picture of survival, each person's situation is unique and survival analysis cannot predict what will happen to any individual person.

TCR generates relative survival rates, which measure survival in the absence of other causes of death by comparing the survival among patients with cancer to the expected survival rates in a comparable population without cancer. For these analyses, populations are matched on age, year, sex, race/ethnicity, and county-level socioeconomic status. Five-year relative survival is a common measure of cancer survival. It represents the percentage of cancer patients who have survived for five years after diagnosis compared to the expected survival of people without cancer.

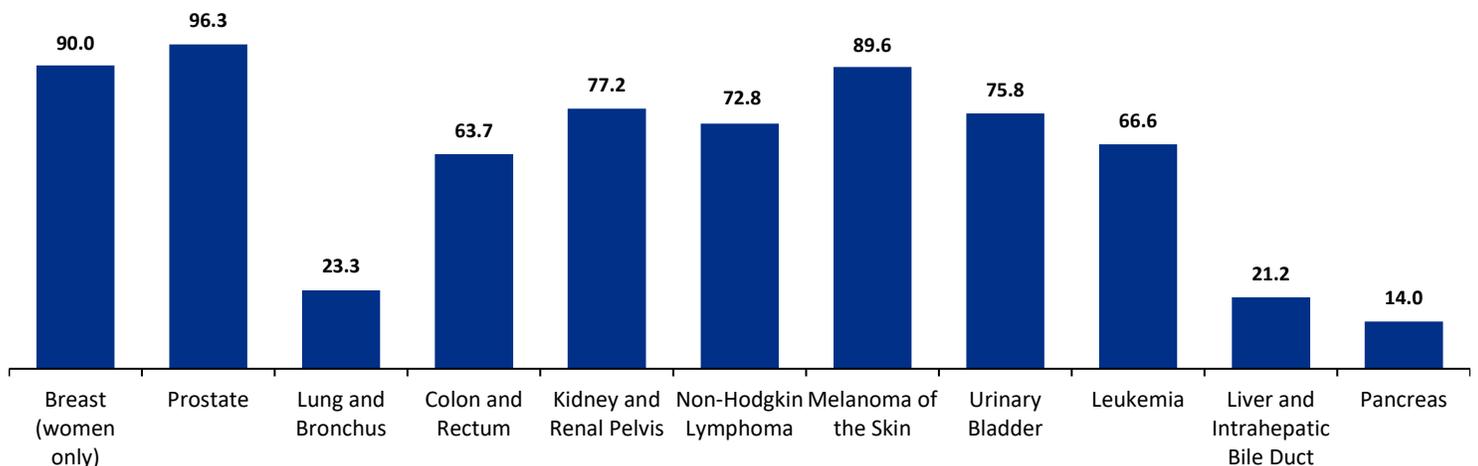
The estimated five-year relative cancer survival rate in Texas is 67%, which means that Texans who are diagnosed with cancer are, on average, 67% as

likely as those without cancer to live for at least five years after being diagnosed. In the U.S., the equivalent five-year relative cancer survival is 68%.

Survival rates vary significantly by stage at diagnosis. For patients diagnosed with localized cancer, the five-year relative survival rate is 89%. If cancer has spread to surrounding tissues or organs and/or regional lymph nodes, the five-year relative survival rate is 66%. If cancer has spread to distant organs or tissues, the five-year relative survival rate is 35%.

Survival rates also vary significantly by cancer type, as shown in the graph below. This graph is based on cancers diagnosed from 2013-2019, followed through December 2020. Five-year relative survival rates for the most commonly diagnosed cancers—prostate and female breast cancers—are 96.3% and 90%, respectively. The lowest five-year survival rates among the leading cancer sites are for liver and intrahepatic bile duct and pancreatic cancers (21.2% and 14%, respectively).

Five-Year Relative Survival Percentage by Cancer Type



Potential Years of Life Lost

Potential years of life lost estimates the number of years a person could have lived had they not died prematurely of cancer. It helps measure the impact of specific cancers and the overall burden of cancer in a population. It also gives more weight to cancers that occur in young people.

Some cancer sites have a large overall number of years of life lost due to the relatively large number of people who die from that cancer.

For example, lung cancer led to a total of 644,339 years of life lost from 2016-2020 in Texas, averaging 15 years of life lost for each case.

Cancers with a relatively high average number of potential years of life lost per cancer death are those usually diagnosed at younger ages. For example, cervical cancer led to an average of 29.3 years of life lost for each case, with a total 58,710 years of life lost in Texas.

Potential Years of Life Lost Due to Cancer, Texas, 2016-2020

Cancer Site	Deaths	Total Person Years of Life Lost	Average Years of Life Lost per Cancer Death
All Sites	197,648	3,296,381	16.7
Brain and Other Nervous System	5,830	130,062	22.3
Female Breast	14,548	292,397	20.1
Cervix	2,002	58,710	29.3
Colon and Rectum	18,834	323,987	17.5
Corpus Uterus	3,481	67,859	19.5
Esophagus	4,527	74,771	16.5
Hodgkin Lymphoma	374	7,542	20.2
Kidney and Renal Pelvis	5,712	93,771	16.4
Leukemia	7,615	134,877	17.7
Liver and Intrahepatic Bile Duct	11,709	207,486	17.7
Lung and Bronchus	43,074	644,339	15.0
Melanoma of the Skin	2,424	41,840	17.3
Myeloma	4,233	59,967	14.2
Non-Hodgkin Lymphoma	6,626	97,526	14.7
Oral Cavity and Pharynx	3,581	62,751	17.5
Ovary	4,461	84,608	19.0
Pancreas	14,307	226,184	15.8
Prostate	9,673	103,473	10.7
Stomach	4,416	82,527	18.7
Urinary Bladder	4,771	56,766	11.5

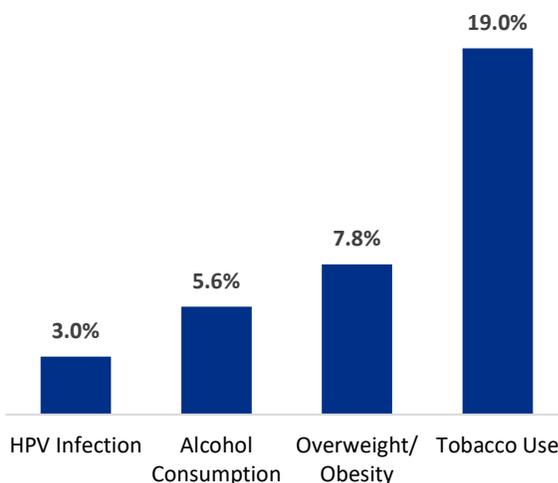
For more information, visit dshs.texas.gov/tcr/data/years-life-lost.aspx

Special Section: Cancers with Modifiable Risk Factors

Cancer is caused by internal factors—including genetics, hormones, and immune conditions—and external factors, such as tobacco use, excess body weight, infectious agents, excess alcohol consumption, chemicals, and ultraviolet (UV) radiation. These causal factors may act together to initiate the development of cancer. Ten or more years often pass between exposure to external factors and detectable cancer.

Many external risk factors are modifiable through lifestyle changes. The American Cancer Society (ACS) estimates that at least 42% of cancers in the U.S. could be avoided. This includes 19% that are caused by tobacco use and 18% that are attributable to a combination of alcohol consumption, poor diet, excess body weight, and physical inactivity. In addition, approximately 45% of cancer deaths are linked with modifiable risk factors. Tobacco use accounts for nearly 29% of cancer deaths. Alcohol consumption, poor diet, excess body weight, and physical inactivity account for 16% of cancer deaths.

Percent of Cancers Attributed to Modifiable Risk Factors



TCR examined cancers associated with the following modifiable risk factors: alcohol consumption, human papillomaviruses (HPV) infection, overweight/obesity, and tobacco use. Cancer registries do not routinely collect information on these modifiable risk factors. Therefore, the data analyses TCR conducted are not examining individual-level alcohol consumption, HPV infection, weight status, and tobacco use and their associations with cancer risk. Instead, TCR generated age-adjusted incidence rates for cancer types that are associated with each respective modifiable risk factor. To estimate the number of expected cancer cases attributable to each risk factor, TCR applied established proportions from the literature to the number of expected cases for each cancer site.

Cancers Associated with Modifiable Risk Factors

Cancer Type	HPV	Alcohol	Tobacco	Obesity
Acute Myeloid Leukemia			✓	
Anus	✓			
Urinary Bladder			✓	
Cervix	✓		✓	
Colon		✓	✓	✓
Endometrial				✓
Esophagus		✓	✓	✓
Female Breast		✓		✓
Kidney and Renal Pelvis			✓	✓
Larynx		✓	✓	
Liver		✓	✓	✓
Lung, Bronchus, and Trachea			✓	
Oral cavity and pharynx	✓	✓	✓	
Pancreas			✓	✓
Penis	✓			
Rectum	✓	✓	✓	✓
Stomach			✓	
Vagina	✓			
Vulva	✓			

Overweight/Obesity-Associated Cancers

In 2021, 70% of Texas adults were classified as overweight or obese, and in 2022 Texas had the 18th highest rate of adult obesity in the U.S. Overweight/obesity is linked to seven different types of cancer: post-menopausal breast cancer, colorectal cancer, kidney (renal cell) cancer, endometrial cancer, pancreatic cancer, liver cancer, and adenocarcinoma of the esophagus. While not all cases of these cancers can be attributed to being overweight or obese, excess body weight is a key modifiable risk factor and is thought to contribute to 8% of all cancer cases, second only to tobacco use in preventable causes of cancer.

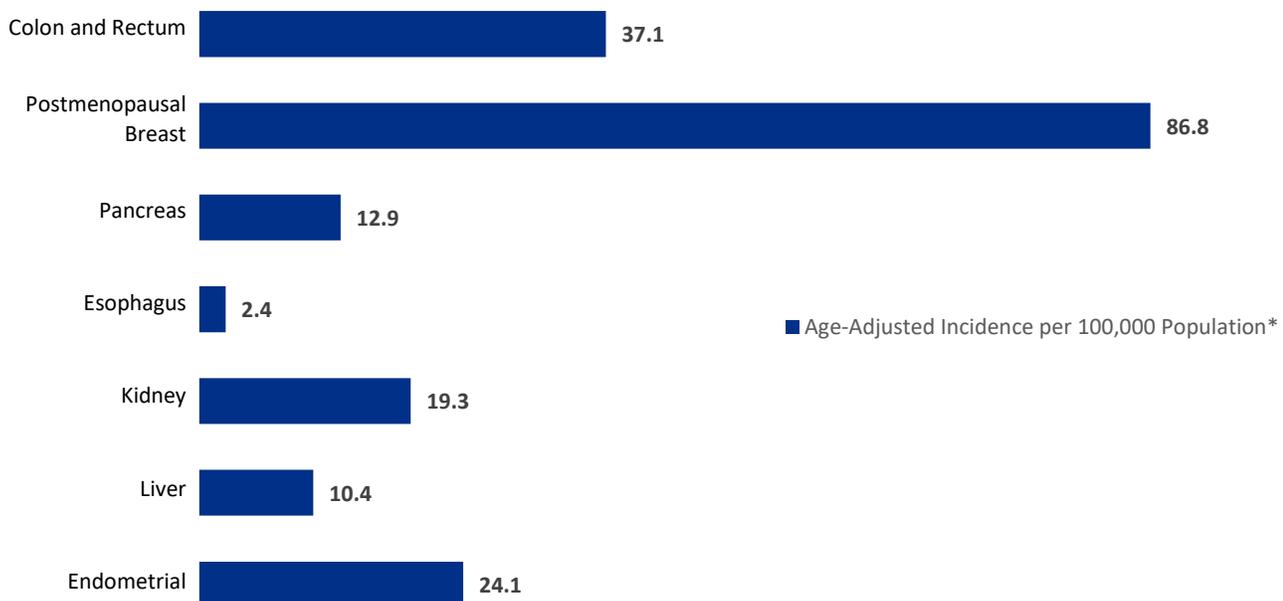
The link between overweight/obesity and cancer risk is complex and varies with the specific type of cancer but is thought to involve increased insulin and hormone levels and chronic inflammation. While some overweight/obesity-related cancers,

such as breast, colorectal, and kidney cancer, are common, others are relatively rare. The extent to which being overweight or obese increases the risk of cancer also varies with cancer site.

To quantify overweight/obesity-associated cancers in Texas, age-adjusted incidence rates for Texas were calculated for 2016-2020. Note that the correlation between individual-level body mass index (BMI) data and cancer risk was not assessed.

Among these cancer sites, postmenopausal breast cancers occurred at the highest rate in Texas from 2016-2020. Given that 11% of postmenopausal breast cancers are caused by being overweight or obese, TCR estimates that 1,563 cases of postmenopausal breast cancers per year can be attributed to excess body weight.

Incidence Rates for Overweight and Obesity-Associated Cancers by Site, Texas, 2016-2020



*For postmenopausal breast cancer, cases are restricted to women diagnosed 50 years of age and over. Rates are shown per 100,000 women of all ages for comparison with other sites

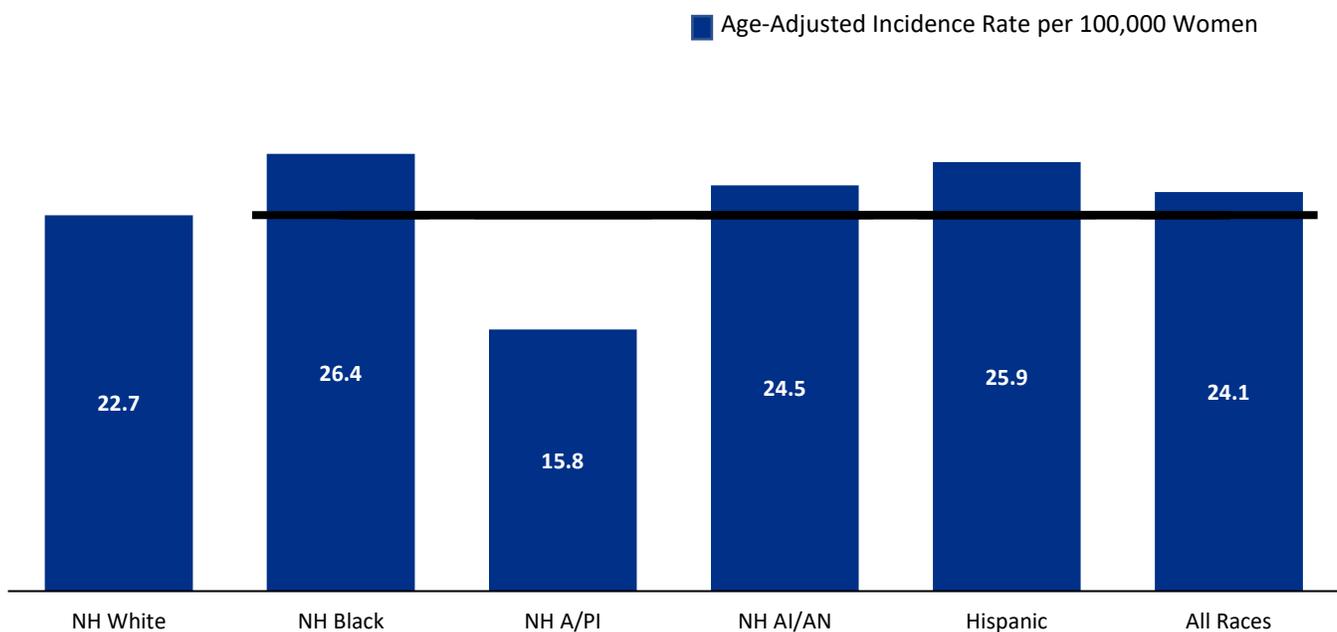
Overweight/Obesity-Associated Cancers

Of all the overweight/obesity-associated cancers in this summary, the highest proportion of diagnoses caused by overweight/obesity is among endometrial cancers, at 60%. From 2016-2020, endometrial cancers occurred at a rate of 24.1 cases per 100,000 Texas women. TCR estimates that approximately 2,620 endometrial cancers caused by

being overweight or obese will be diagnosed in Texas in 2023. Rates of endometrial cancer in Texas are highest among non-Hispanic (NH) Black women. Rates among NH Black women and Hispanic women are significantly higher than among NH white and NH Asian/Pacific Islander women.

Endometrial Cancer Rates in Texas by Race/Ethnicity, Texas, 2016–2020

Black line represents NH white rate



NH=Non-Hispanic; A/PI=Asian/Pacific Islander; AI/AN=American Indian/Alaska Native

Tobacco-Associated Cancers

Tobacco use increases the risk of cancer throughout the body. Its use is associated with increased risk of at least 12 different types of cancers at the following sites:

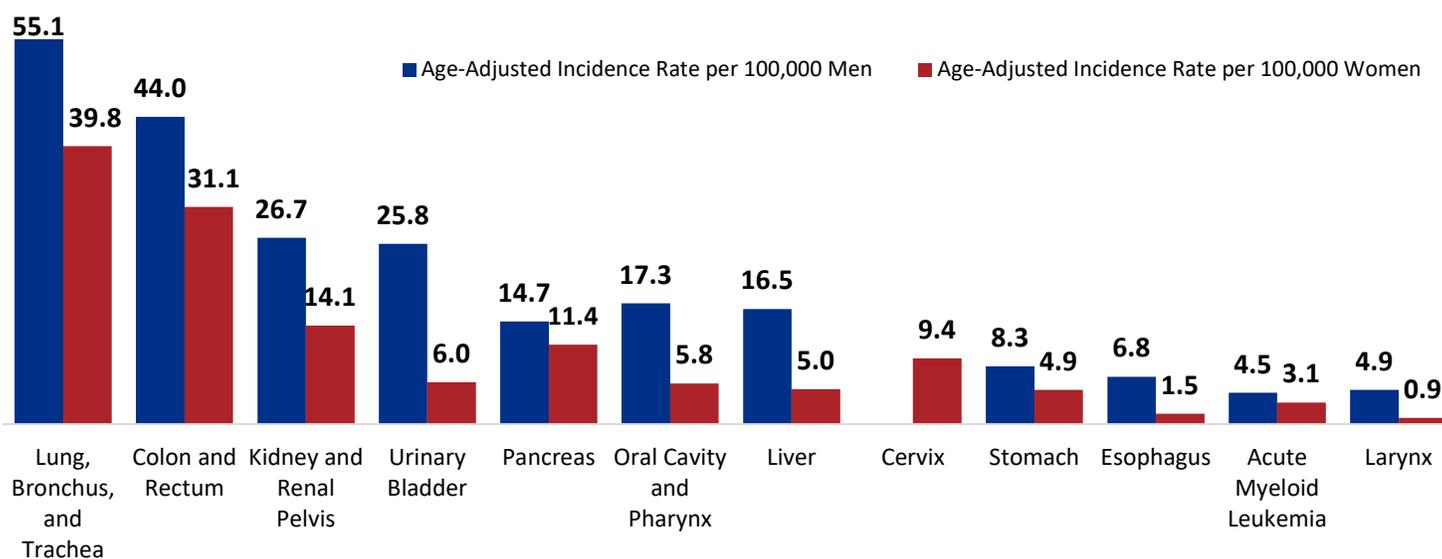
- Blood (acute myeloid leukemia)
- Colon and rectum
- Cervix
- Esophagus
- Kidney and renal pelvis
- Larynx (voice box)
- Liver
- Lung, bronchus, and trachea
- Oral cavity and pharynx
- Pancreas
- Stomach
- Urinary bladder

attributable to tobacco use, cigarette smoking specifically. This ranks tobacco as the single most preventable cause of cancer. In Texas, tobacco use causes an estimated 20,000 cancer cases each year. About three in 10 cancer deaths are caused by tobacco use.

Tobacco-associated cancers are more common in men than in women. In Texas, the age adjusted incidence rates for men are 1.7 times higher than for women. In 2016-2020, tobacco-associated cancer incidence rates were 69% higher in men than women. For all 12 tobacco-associated cancer sites, the age-adjusted incidence rate is higher in men than women. In addition, incidence rates for laryngeal, esophageal, and bladder cancers are almost five times higher in men than women.

An estimated 19% of all new cancers in adults (23.6% in men, 14.5% in women) are likely

Age-Adjusted Incidence Rates for Cancer Sites by Sex, Texas, 2016-2020



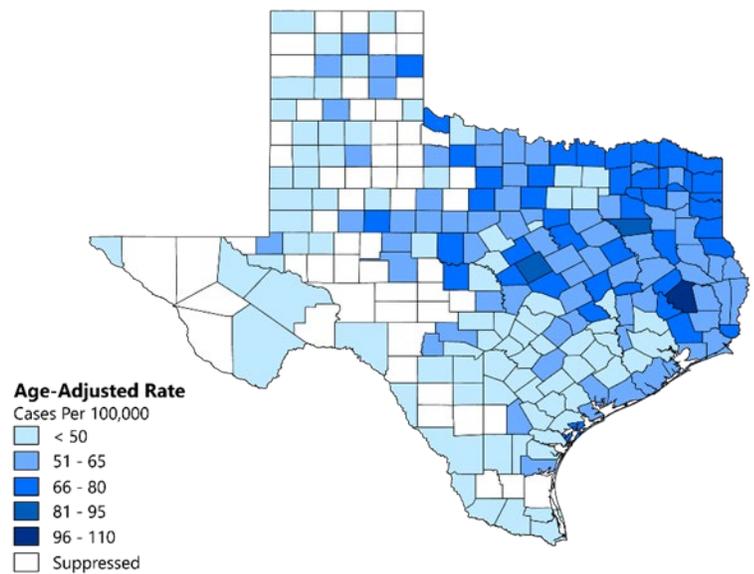
Tobacco-Associated Cancers

Lung, Bronchus, and Trachea Cancer in Texas

The lung, bronchus, and trachea cancer incidence rate in Texas is 46.5 cases per 100,000 population. Overall, counties in the eastern part of Texas have the highest incidence rates compared to other areas. Tobacco use causes nearly nine in 10 lung, bronchus, and trachea cancer cases and cancer deaths each year. By the end of 2023, out of 15,759 Texans expected to be diagnosed with lung, bronchus, and trachea cancer, 12,875 are estimated to be caused by tobacco use. Lung, bronchus, and trachea cancer is the leading cause of cancer death for both men and women.

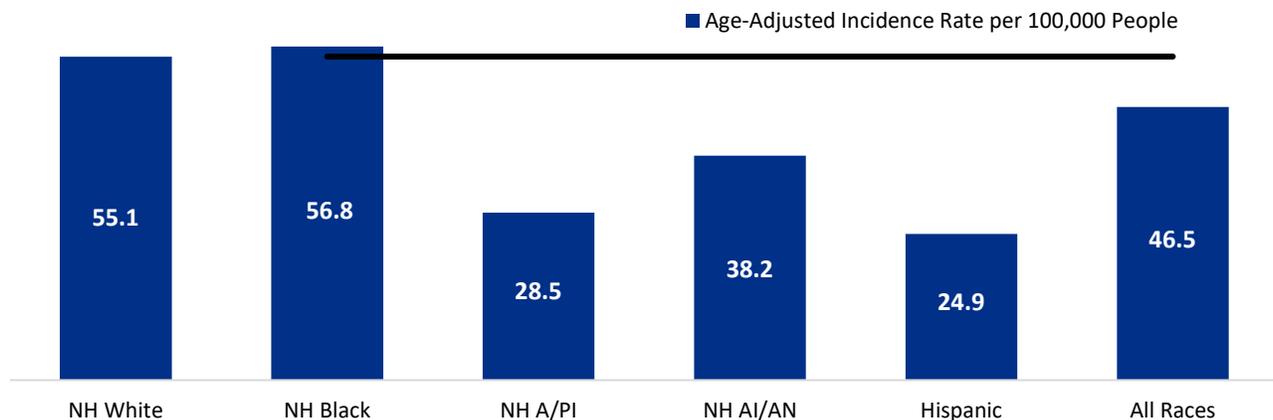
The age adjusted lung, bronchus, and trachea cancer incidence rate for NH Blacks was significantly higher than for all other races/ethnicities.

Invasive Lung, Bronchus, and Trachea Cancer Incidence in Texas by County, 2016-2020



Age-Adjusted Incidence Rates for Lung, Bronchus, and Trachea Cancer by Race/Ethnicity, Texas, 2016-2020

Black line represents NH white rate



NH=Non-Hispanic; A/PI=Asian/Pacific Islander; AI/AN=American Indian/Alaska Native

Alcohol-Associated Cancers

Alcohol consumption is linked to an elevated risk of several types of cancer. These include those affecting the oral cavity and pharynx, larynx, liver, esophagus, female breast, and colon and rectum. Even moderate alcohol intake, defined as having no more than one drink per day, as well as binge drinking, is associated with a modest increase in the risk of these cancers. As alcohol consumption increases, the higher an individual's risk of developing an alcohol-associated cancer, particularly if regular alcohol is consumed over a prolonged period.

In terms of alcohol consumption patterns in Texas, self-reported data indicate that the state has a lower rate of adults reporting alcohol consumption in the past month compared to the U.S. average, as well as lower rates of heavy drinking. Texas, however, has a higher proportion of adults that engage in binge drinking when compared to the

Definitions

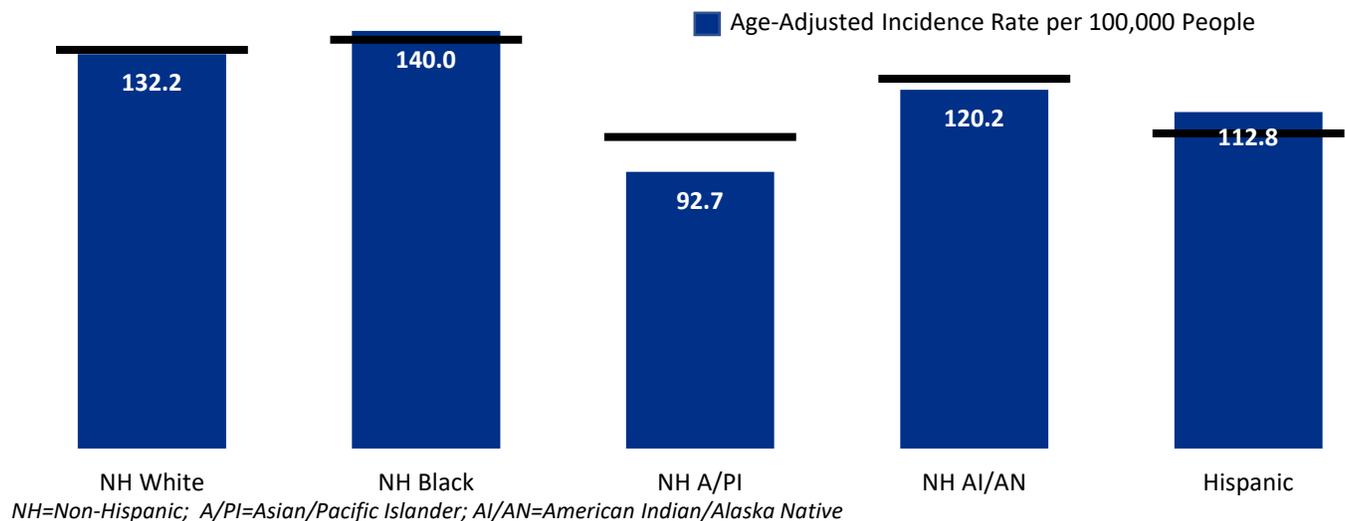
Term	Men	Women
Moderate alcohol use	Up to 2 drinks a day	Up to 1 drink a day
Heavy alcohol use	15 or more drinks a week, or 5 or more per day	8 or more drinks a week, or 4 or more per day
Binge drinking	5 or more drinks in one sitting	4 or more drinks in one sitting

In the U.S., one drink is defined as 14 grams of alcohol. This equals 12 ounces of regular beer, 8-10 ounces of malt liquor, 5 ounces of wine, or 1.5 ounces of 80-proof distilled spirits (liquor).

U.S. average. When evaluating cancer incidence rates for alcohol-associated cancers, the incidence rates in Texas were lower than the U.S. average for all race and ethnicity groups, except for Hispanics and NH Blacks. This underlines the complex interplay of demographics and alcohol-related cancer risk in the state.

Alcohol Associated Cancer Site Incidence Rates by Race/Ethnicity, Texas, 2016-2020

Black lines represent U.S. incidence rates



HPV-Associated Cancers

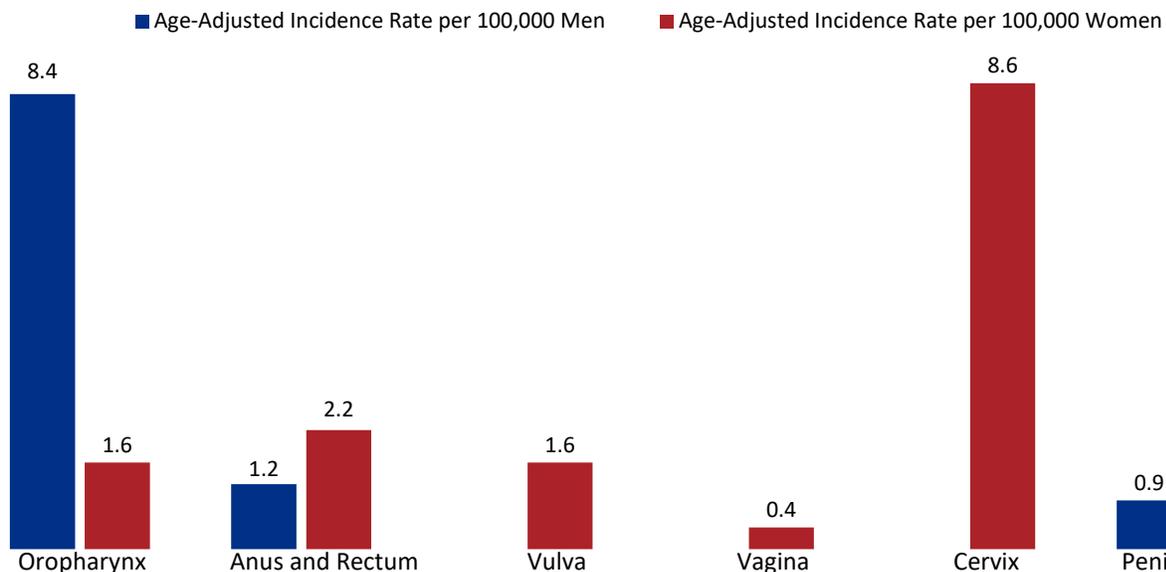
HPV is the most common sexually transmitted infection in the U.S. More than 40 types of HPV can infect the genital areas and the lining of the mouth and throat. Although most HPV infections are asymptomatic and clear spontaneously, persistent infections can progress to precancer or cancer.

Some high-risk HPV infections can cause carcinomas of the cervix and squamous cell cancers of the oropharynx, anus and rectum, vulva, vagina, and penis. Cancer registries do not routinely collect information about HPV status, so in this report, HPV-associated cancers are defined as those that occur in parts of the body where HPV is often found.

The CDC estimates that about 90% of cervical and anal cancers; 70% of oropharyngeal, vaginal, and vulvar cancers; and 60% of penile cancers are likely caused by HPV.

In Texas, the average age-adjusted incidence rate for all HPV-associated cancers is 12.4 per 100,000 population. The most common HPV-associated cancer among men is oropharyngeal (cancers of the back of the throat, including the base of the tongue and tonsils), with rates five times higher than in women. The most common HPV-associated cancer among women is cervical, with rates in Texas higher than the U.S. average.

HPV Associated Cancer Incidence Rates by Site and Sex, Texas, 2016-2020



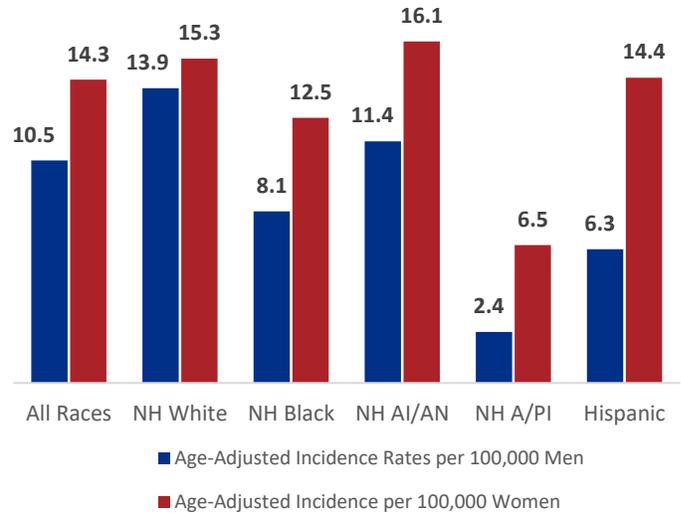
HPV-Associated Cancers

Incidence rates of HPV-associated cancers were higher in women than in men in Texas across all race/ethnicity groups. Cervical cancer incidence rates were highest among those 40-49 years of age (17.5 cases per 100,000 women). Oropharyngeal cancer incidence rates were highest among those 60-69 years of age (20.1 cases per 100,000).

Incidence rates of vulvar, vaginal, and penile cancers continued to increase with each age group. About 3,650 new cases of HPV-associated cancers occur in Texas each year (2,120 in women and 1,530 in men). Many of these cancers (cervical, vaginal, vulvar, and anal precancers and cancers) are preventable with currently available vaccines. Effective screening can prevent cervical cancer through detection and treatment of precancerous lesions.

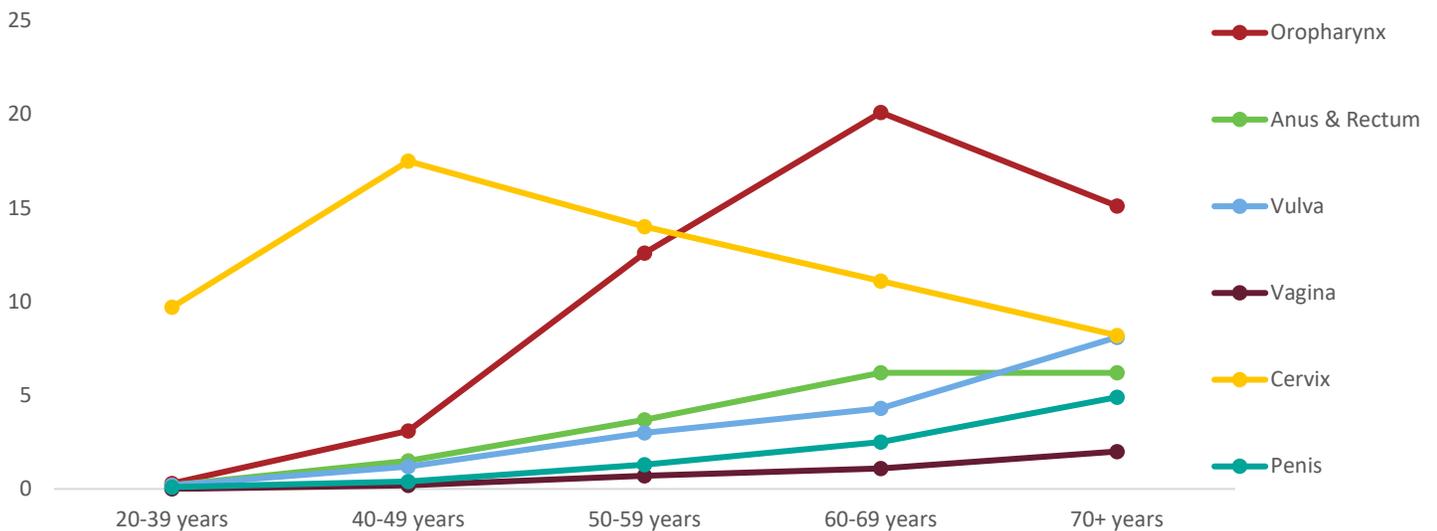
HPV-Associated Cancer Incidence Rates by Race/Ethnicity and Sex, Texas, 2016-2020

NH=Non-Hispanic; A/PI=Asian/Pacific Islander; AI/AN=American Indian/Alaska Native



HPV-Associated Cancer Incidence Rates by Site and Age at Diagnosis, Texas, 2016-2020

Age-adjusted incidence per 100,000 people



Online Statistics and Data Visualization Tools

The Texas Cancer Registry (TCR) strives to make data available and accessible to anyone with an interest in Texas cancer data. The following online resources use TCR data to provide information on cancer in Texas and the U.S.



TCR Website

dshs.texas.gov/tcr

The TCR website offers a wide variety of data products, including statistical tables, reports, and fact sheets. It also includes information for those interested in obtaining data for research.

TCR Web Query Tool

cancer-rates.info/tx

The TCR web query tool allows users to customize cancer incidence and mortality rate tables and maps by cancer site, sex, year, race/ethnicity, county, public health region, council of government, metro statistical area, or micro statistical area. In addition, rates and counts can be examined by early and late stage for breast, colorectal, and cervical cancers.

U.S. Cancer Statistics: Data Visualizations

gis.cdc.gov/Cancer/USCS/DataViz.html

The Data Visualizations tool provides information on the numbers and rates of new cancer cases and deaths at the national,

state, and county levels. You can see the numbers by sex, age, race/ethnicity, trends over time, survival, and prevalence.

SEER*Explorer

seer.cancer.gov/statistics-network/explorer

SEER*Explorer is an interactive website that provides easy access to a wide range of SEER cancer statistics. It provides detailed statistics for a cancer site by sex, race/ethnicity, age, and, for a selected number of cancer sites, by stage and histology.

NCCR*Explorer

nccrexplorer.ccdi.cancer.gov

NCCR*Explorer is an interactive tool that provides incidence and survival statistics for cancers in children, adolescents, and young adults diagnosed from 1999 onward using data from the NCCR. Detailed statistics are provided by sex, race/ethnicity, and age, allowing for comparison across cancer sites and subsites.

CDC/NCI State Cancer Profiles

statecancerprofiles.cancer.gov

State Cancer Profiles characterizes the cancer burden in a standardized manner to motivate action, integrate surveillance into cancer control planning, characterize areas and demographic groups, and expose health disparities.

Cancer Statistics Website

cancerstatisticscenter.cancer.org

The Cancer Statistics Center website is primarily based on the data and analysis provided in the American Cancer Society's (ACS) annual Cancer Statistics paper, published in *CA: A Cancer Journal for Clinicians*, and its consumer-friendly companion report, *Cancer Facts & Figures*.

CiNA Explorer

apps.naaccr.org/explorer

CiNA Explorer is an interactive tool that provides easy access to a wide range of North American cancer statistics. Detailed statistics are available for a NAACCR region or registry by cancer site, sex, race/ethnicity, age, and stage.

Research Using TCR Data

The TCR Epidemiology Group averages over 390 requests for cancer data from researchers, medical professionals, students, and the public each year. In 2022, the group received 325 requests.

In the past five years, 393 published research journal articles used TCR data.

Approximately 89 current studies use TCR data. These studies are approved by either the Texas Department of State Health Services Institutional Review Board and Research Executive Steering Committee or the BRANY (Biomedical Research Alliance of New York) Central Institutional Review Board.

In total, TCR data support \$145 million in grant funding. Here are brief descriptions of select studies.

SEER-Medicare

healthcaresdelivery.cancer.gov/seermedicare

TCR cancer incidence data, along with other SEER registry data, are linked to Medicare claims data every two years. This is a collaborative effort between SEER and the Centers for Medicare and Medicaid Services. These linked data provide detailed information about Medicare beneficiaries diagnosed with cancer.

Approximately 95% of Texans ages 65 and older in TCR are matched with Medicare files. The cancer data provide information on participant demographics, cancer incidence, stage of disease, first course of therapy, and survival, while the Medicare claims data include information on hospital stays, physician services, and hospital outpatient visits. These data are used for epidemiologic and health services research related to the diagnosis and treatment procedures, costs, and survival of cancer patients.

TCR has provided data for this linkage since 2009.

Virtual Pooled Registry – Cancer Linkage System

naaccr.org/about-vpr-cls

The North American Association of Central Cancer Registries Virtual Pooled Registry Cancer Linkage System (VPR-CLS) is a national system designed to facilitate data linkages between existing study cohorts and central cancer registries such as TCR. This is a secure, web-based system designed for minimal risk linkages, with the goal of providing timely access to cancer outcome data and a secure and standardized linkage process. TCR supports numerous research studies that are using this system.



Transplant Cancer Match Study

transplantmatch.cancer.gov

Solid organ transplantation is a life-saving procedure for individuals with end-stage organ disease, but the need for long-term immunosuppressive medications following the procedure substantially increases cancer risk. Investigators at the NCI and the Health Resources and Services Administration are examining cancer risk, treatment, and outcomes among transplant recipients.

Research Using TCR Data, Continued

For this study, U.S. transplant registry data are linked with data from multiple U.S. cancer registries, including TCR, to determine which individuals in the national transplant registry develop cancer. TCR has participated in data linkages for this study since 2008.

World Trade Center Health Registry

nyc.gov/site/911health/index.page

The World Trade Center (WTC) Health Registry was established to evaluate long-term health consequences, including cancer, of the 9/11 disaster among rescue and recovery workers and those who lived, worked, or went to school in the World Trade Center area.

Registrants are linked with multiple U.S. cancer registries, including TCR, to verify any self-reported cancer and identify unreported incident cancer. TCR has conducted data linkages for this study since 2008.

asked for information about diet, lifestyle, and other health-related behaviors, making this one of the largest long-term studies of diet and health ever conducted.

NIH-AARP cohort data are linked to multiple U.S. cancer registries, including TCR, to provide the NCI researchers with information on cancer outcomes for participants in their cohort. TCR has conducted data linkages for this study since 2006.

Black Women's Health Study

bu.edu/bwhs

The Black Women's Health Study (BWHS) is the largest long-term study of Black women to date. This NCI-funded study aims to identify risk factors of cancer and other diseases in Black women. To achieve these aims, the BWHS cohort data are linked to multiple U.S. cancer registries, including TCR, to provide important cancer diagnostic, prognostic, and treatment information. About every two years, the study's cohort data are linked to TCR. TCR has conducted data linkages for this study since 2008.

American Cancer Society's Cancer Prevention Study-3

cancer.org/research/cps3-cancer-prevention-study-3.html

The American Cancer Society's Cancer Prevention Study-3 (CPS-3) is a long-term study of more than 300,000 participants. The study aims to examine the relationship between lifestyle, nutritional, medical, environmental, genetic, and other factors that may cause or prevent cancer. Since 2013, TCR links the CPS-3 cohort data every three years to identify new cancer cases and obtain important information about the cancer.



NIH-AARP Diet and Health Study

dietandhealth.cancer.gov

The NCI developed the NIH-AARP Diet and Health Study to examine the relationship between diet, lifestyle, and health among adults who were AARP members when the study began in 1995-96. More than 500,000 people returned questionnaires that

Research Using TCR Data, Continued

HIV/AIDS Cancer Registry Match Study

hivmatch.cancer.gov

People who are living with the human immunodeficiency virus (HIV) or who have acquired immunodeficiency syndrome (AIDS) are at increased risk for certain cancers. The HIV/AIDS Cancer Match Study, led by the NCI, aims to better understand the patterns of cancer risk among people living with HIV in the U.S.

The study involves data linkages between multiple U.S. state HIV and cancer registries, including those in Texas. TCR has participated in data linkages for this study since 2011.

Childhood Cancer Survivor Study

ccss.stjude.org

Based out of St. Jude Children's Research Hospital, the Childhood Cancer Survivor Study (CCSS) aims to understand how the diagnosis of childhood cancer and any associated treatments impact the long-term health of survivors. Through the VPR-CLS, the TCR provided data on subsequent tumors among CCSS participants in 2021 and will continue to do so into the future.

Mexican American (Mano a Mano) Cohort Study

mdanderson.org/research/departments-labs-institutes/departments-divisions/epidemiology/research/mano-a-mano.html

The Mexican American (Mano a Mano) Cohort Study, led by investigators at the MD Anderson Cancer Center, is investigating behavioral and genetic risk



factors for cancer among people of Mexican descent. TCR has conducted a data linkage each year for the researchers since 2011.

Parkland-UT Southwestern PROSPR Research Center: Colon Cancer and Cervical Cancer Screening

healthcaredelivery.cancer.gov/prospr

Population-based Research Optimizing Screening through Personalized Regimens (PROSPR) is an NCI-funded network of centers conducting research to improve cancer screening. At the Parkland-UT Southwestern PROSPR Center, investigators focus on improving screening people in Dallas County who lack insurance or are underinsured. Initially focused on colorectal cancer, the PROSPR Center expanded its mission to include cervical cancer screening. Since 2013, TCR links with the Parkland-UT PROSPR's data to help investigators determine whether cancer patients receive recommended tests and treatment.

Data Sources and References

Data Sources

All data are from TCR unless otherwise noted.

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Mortality Data: Texas Cancer Registry (dshs.texas.gov/tcr) SEER*Stat Database, 1990-2020 Mortality, Texas statewide. Texas Department of State Health Services, Cancer Epidemiology and Surveillance Branch, created March 2023.

Expected Survival Data: U.S. population life tables by socioeconomic status/geography/race-ethnicity groups (Non-Hispanic (NH) white, NH Black, NH American Indian/Alaskan Native, NH Asian and Pacific Islander, and Hispanics) 1992-2018, Ages 0-99, State-county (modeled by varied state-county-SES).

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Additional Resources for Cancer Information

The following organizations provide additional information on cancer that might be helpful to the general public, patients, caregivers, and survivors. The TCR's referral to these organizations is informational and does not imply endorsement by TCR or DSHS.

American Cancer Society

800-227-2345, [cancer.org](https://www.cancer.org)

The American Cancer Society can answer questions to empower you with accurate, up-to-date information to help you make educated health decisions.



CancerCare

800-813-4673, [cancercares.org](https://www.cancercares.org)

CancerCare provides professional support services and information to help people manage the emotional, practical, and financial challenges of cancer.

HealthCare.gov

800-318-2596, [healthcare.gov](https://www.healthcare.gov)

HealthCare.gov provides information on health insurance options, including insurance exchanges, Medicaid, and Medicare.

LIVESTRONG

855-220-7777, [livestrong.org](https://www.livestrong.org)

LIVESTRONG provides direct services to anyone affected by cancer and connects people and communities with needed services.

National Cancer Institute

800-422-6237, [cancer.gov](https://www.cancer.gov)

The National Cancer Institute leads, conducts, and supports cancer research to advance scientific knowledge and help all people live longer, healthier lives.

Texas County Indigent Health Care Programs

800-222-3986, Ext 6467

The County Indigent Health Care Program helps low-income Texans who don't qualify for other state or federal health care programs have access to health care services.

2-1-1 Texas

211 or 877-541-7905, [211texas.org](https://www.211texas.org)

2-1-1 Texas provides accurate, well-organized, and easy-to-find information from state and local health and human services programs, including Medicaid, Children's Health Insurance Program (CHIP), Breast and Cervical Cancer Services, and Temporary Assistance for Needy Families (TANF).

Texas Cancer Registry
dshs.texas.gov/TCR