



# **2023 Texas Cancer Registry Annual Report**

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**As Required by  
Texas Health and Safety Code,  
Section 82.007**



**TEXAS**  
Health and Human  
Services

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Texas Department of  
State Health Services

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# Executive Summary

The Department of State Health Services (DSHS) is required to maintain the Texas Cancer Registry (TCR) — a statewide population-based registry that serves as the foundation for measuring the cancer burden in Texas. [Health and Safety Code, Section 82.007](#) requires DSHS to publish TCR information in an annual report. The following are key findings:

- In 2023, an estimated 140,436 new cases of cancer will be diagnosed in Texas, and an estimated 47,887 Texans will die from cancer.
- In 2023, an estimated 1,317 new cases and 146 cancer deaths are expected to occur in Texas children (birth to 14 years).
- In 2023, 614 new cases and 80 cancer deaths are expected in Texas adolescents (15 to 19 years).
- The most diagnosed cancers in Texas are breast cancer for women and prostate cancer for men.
- Lung cancer is the leading cause of cancer death in Texas. An estimated 10,372 lung cancer deaths are expected to occur in 2023.
- An estimated 67 percent of Texans survive five or more years after being diagnosed with cancer.
- The number of cancer survivors continues to increase over time; 952,543 Texans who were diagnosed with cancer in the last 25 years were alive as of January 1, 2020.

TCR data are used for a variety of purposes:

- Cancer surveillance
- Cancer research
- Epidemiologic studies
- Health care management
- Community efforts

DSHS has put in significant effort to make cancer data widely available within the bounds of federal and state privacy laws. DSHS will continue this effort to help address the cancer burden in Texas.

# Introduction

DSHS is required to maintain a cancer registry that includes a record of cancer cases that are diagnosed and/or treated in Texas, and to collect information that can be used for prevention, early detection, diagnosis, treatment, and survivorship of cancer.

[Health and Safety Code, Section 82.007](#) requires DSHS to submit an annual report to provide a summary of the information collected by the TCR. The report highlights the role of the TCR and provides an overview of key cancer statistics using the most current and complete data available (cases diagnosed through 2020) as well as the estimated number of new cases and deaths expected in 2023.

General information on the types, causes, and prevention of cancer is available on the American Cancer Society website [cancer.org](https://www.cancer.org).

Data from cancer registries are used to monitor the cancer burden in the population, identify trends and patterns, and identify high-risk groups and behaviors. Cancer registries collect information about cancer cases including:

- Location of the cancer in the body
- Specific types(s) of cells affected
- Spread of the disease
- Patient demographics
- Whether the patient survives
- Ultimate cause of death

The TCR was first established in 1979 and is one of the largest cancer registries in the United States (US). In 2022, the TCR received 290,695 reports of cancer from 622 hospitals, cancer treatment centers, ambulatory surgery centers, and pathology laboratories across Texas. Of these, 11,012 reports were for out-of-state residents. These reports are sent to their residing state cancer registry. Similarly, the TCR receives reports of Texans diagnosed with cancer in another state.

In 2021, the TCR joined the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) Program. The TCR is now one of 12 state registries that receive funding from both SEER and the Center for Disease Control and Prevention (CDC) National Program of Cancer Registries. The SEER contract provides about

\$8.9 million in funding for the TCR over seven years. The TCR also receives funding from the Cancer Prevention and Research Institute of Texas.

# 1. Cancer in Texas

The TCR examines cancer incidence, mortality, survival, and prevalence to assess the burden of cancer in Texas. The most recent year for which high quality and complete cancer data are available is 2020.

Cancer incidence and mortality rates are most often expressed as the number of new cases or deaths, respectively, per 100,000 individuals in the population at risk. Childhood cancer rates are typically presented as the number of cases or deaths per one million children.

Because cancer incidence and mortality increase with age, incidence and mortality are commonly expressed as age-adjusted rates, which allow for fairer comparisons between groups with different age distributions.

## Cancer Incidence

*Incidence* is the number of new cancers diagnosed. The age-adjusted incidence rate for all invasive cancers in Texas in 2020 was 380 cases per 100,000 population.<sup>1</sup> This was a lower incidence rate than in 2019 (424 cases per 100,000 population).<sup>2</sup> The decreased incidence in 2020 was largely a result of the COVID-19 pandemic, which disrupted health services and led to delays and reductions in cancer screening, diagnosis, and reporting to central cancer registries.<sup>3</sup> The full impacts of these delays in cancer screening and medical treatment will take years to fully understand.

The TCR used Texas cancer incidence data from 2015 to 2020 to estimate the number of new invasive cancer cases expected to be diagnosed in 2023. This method accounts for expected delays in case reporting and considers geographic

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<sup>1</sup> Analysis run in SEER\*Stat. Texas Cancer Registry, Cancer Epidemiology and Surveillance Branch. Austin, TX. Texas Department of State Health Services, 2023.

<sup>2</sup> This incidence rate is different than the 2019 rate in last year's annual legislative report, because updated data were used to evaluate 2019 cases in the 2023 report.

<sup>3</sup> Centers for Disease Control and Prevention. U.S. Cancer Statistics: Highlights from 2020 Mortality and Incidence with Comparison to 2019 Incidence to Assess the Effect of the COVID-19 Pandemic. Accessed August 2023. Available at <https://www.cdc.gov/cancer/uscs/about/data-briefs/no35-USCS-highlights-2020.htm>.

variations in sociodemographic and lifestyle factors, medical settings, and cancer screening behaviors as predictors of incidence.<sup>4</sup>

In 2023, an estimated 140,436 new cancer cases are expected to be diagnosed in Texas. Although cancer incidence rates overall continue to decline, the number of newly diagnosed cancer cases continues to increase with the aging and growth of the Texas population and other population changes in cancer risk factors.

For women in both the US and Texas, breast cancer is the most commonly diagnosed cancer. In Texas women, an estimated 20,319 cases of breast cancer are expected to be diagnosed in 2023, followed by lung cancer (7,267 cases) and cancer of the uterus (4,366 cases). Cancers of the colon and thyroid are expected to be the fourth and fifth leading cancers in women in 2023.

Among men in both the US and Texas, prostate cancer is the most commonly diagnosed cancer. In Texas men, an estimated 17,584 cases of prostate cancer are expected to be diagnosed in 2023, followed by lung cancer (8,479 cases) and colon cancer (4,644 cases). Kidney and renal pelvis and urinary bladder cancer are expected to be the fourth and fifth leading cancers in men in 2023.

## Cancer Mortality

*Mortality* is the number of new cancer deaths occurring in a specified population during a specific time period. Cancer and heart disease have long been the top two causes of death in Texas and the US. In 2020, cancer was the second most common cause of death (age-adjusted rate of 140 deaths per 100,000 people).<sup>5</sup>

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<sup>4</sup> Zhu, L., Pickle, L. W., Ghosh, K., Naishadham, D., Portier, K., Chen, H-S., Kim, H-J., et al. (2012). Predicting US- and state-level cancer counts for the current calendar year. *Cancer*, 118(4), 1100-1109.

<sup>5</sup> Statistics use data year 2020. Centers for Disease Control and Prevention. National Center for Health Statistics, National Vital Statistics System, CDC WONDER Online Database. Mortality 2018-2021. Accessed August 2023. Available at <http://wonder.cdc.gov/ucd-icd10-expanded.html>.

The TCR used Texas cancer mortality data from 2016 to 2020 to estimate the number of cancer deaths expected to occur in 2023. An estimated 47,887 Texans, or over 131 people per day, are expected to die from cancer in 2023.<sup>6</sup>

Lung cancer is the leading cause of cancer death in the US and Texas, and it is expected to account for 22 percent of all estimated cancer deaths in Texas in 2023. Cigarette smoking is the leading risk factor for lung cancer. The duration of smoking and the number of cigarettes smoked per day significantly impact cancer risk. According to the CDC, 15 percent of adult Texans and 7 percent of Texas high school students currently smoke cigarettes.<sup>7</sup>

Colon cancer is expected to be the second leading cause of cancer death in Texas in 2023, with an estimated 3,648 deaths. Breast, pancreatic, and liver (including intrahepatic bile duct) cancers are expected to be, respectively, the third, fourth, and fifth leading causes of cancer deaths in Texas in 2023.

## Cancer Survival

*Five-year relative survival* is a commonly used measure of cancer survival, as 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 percent, which means that Texans who are diagnosed with cancer are, on average, 67 percent as likely as those without cancer to live for at least five years after being diagnosed.<sup>8</sup> In the US, the equivalent five-year relative survival is 68 percent.<sup>9</sup> However, survival rates can vary significantly by cancer type and stage at diagnosis.

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<sup>6</sup> Texas Cancer Registry, Cancer Epidemiology and Surveillance Branch. 2023 Texas Expected Cancer Cases and Deaths. Austin, TX. Texas Department of State Health Services, 2023.

<sup>7</sup> Centers for Disease Control and Prevention. State Tobacco Activities Tracking and Evaluation (STATE) System. State Highlights. Accessed July 2023. Available at [cdc.gov/statesystem/statehighlights.html](https://cdc.gov/statesystem/statehighlights.html). Statistics use data year 2019.

<sup>8</sup> Texas Cancer Registry, Cancer Epidemiology and Surveillance Branch. Relative Survival by Primary Cancer Site and Survival Time Period, Sex, Race/Ethnicity, and Stage at Diagnosis, 2013–2019. Austin, TX. Texas Department of State Health Services, 2023.

<sup>9</sup> American Cancer Society. Cancer Facts & Figures 2022. Atlanta: American Cancer Society; 2022; p. 18.



The following key statistics (based on cancer diagnoses from 2013-2019, followed through December 2020) highlight survival rate variation in Texas.

- For patients diagnosed with localized cancer, the five-year relative survival rate is 89 percent.
- If cancer has spread to surrounding tissues or organs and/or regional lymph nodes, the five-year relative survival rate is 66 percent.
- If cancer has spread to distant organs or tissues, the five-year relative survival rate is 35 percent.
- Lung and bronchus, liver and intrahepatic bile duct, and pancreatic cancers have the lowest five-year relative survival rates among all cancers (23 percent, 21 percent, and 14 percent, respectively).
- In contrast, five-year relative survival rates for the most commonly diagnosed cancers, prostate and female breast cancers, are 96 percent and 90 percent, respectively.

## **Prevalence of Cancer**

*Cancer prevalence* estimates the number of people alive on a certain date who have ever been diagnosed with cancer.

An estimated 952,543 Texans are cancer survivors (i.e., Texans diagnosed with cancer between 1995-2019 who were alive as of January 1, 2020, per TCR data). Some of these individuals were cancer free, while others may have been receiving ongoing treatment.

The cancer sites with the highest number of survivors in Texas are female breast, prostate, colon and rectum, thyroid, kidney and renal pelvis, non-Hodgkin lymphoma, and melanoma. Prostate and female breast cancers constitute about 40 percent of the cancer survivor population.

## 2. Cancer in Children and Adolescents

The types of cancers that develop in children are often different than the types that develop in adults. Unlike many cancers in adults, childhood cancers are not strongly linked to lifestyle or environmental risk factors.<sup>10</sup> The causes of most childhood cancers are largely unknown.

Although advances in cancer treatment and survival have improved in recent decades, cancer is still the leading cause of disease-related death in Texas past infancy among children (birth to 14 years) and adolescents (15 to 19 years). In 2023, an estimated 1,317 new cases and 146 cancer deaths are expected to occur among children (birth to 14 years), and an additional 614 new cases and 80 cancer deaths are expected among adolescents (15 to 19 years).

Per TCR data, the 2020 annual cancer incidence rate among children in Texas was 195 cases per 1 million population. For this group, the most common cancers were:

- Leukemias
- Brain and central nervous system cancers
- Lymphomas
- Soft tissue sarcomas
- Neuroblastoma<sup>11</sup>

These five cancer types are also the most common childhood cancers in the US.<sup>12</sup>

The 2020 annual incidence rate among Texas adolescents was 269 cases per 1 million population. For this group, the most common cancers were:

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<sup>10</sup> American Cancer Society. What Are the Differences between Cancers in Children and Adults? 2019. Accessed June 2023. Available at [cancer.org/cancer/cancer-in-children/differences-adults-children.html](https://cancer.org/cancer/cancer-in-children/differences-adults-children.html).

<sup>11</sup> "Children" defined as ages 0-14 years. Texas Cancer Registry, Cancer Epidemiology and Surveillance Branch. Childhood and Adolescent Cancer in Texas, 2011-2020. Austin, TX. Texas Department of State Health Services, 2023.

<sup>12</sup> American Cancer Society. Types of Cancer that Develop in Children. 2019. Accessed June 2023. Available at [cancer.org/cancer/cancer-in-children/types-of-childhood-cancers.html](https://cancer.org/cancer/cancer-in-children/types-of-childhood-cancers.html).

- Brain and central nervous system cancers
- Other malignant epithelial neoplasms and melanomas (of which thyroid carcinoma is the predominant cancer in this category)
- Lymphomas
- Leukemias
- Germ cells, trophoblastic tumors, and neoplasms of gonads

The same five cancer types are also the most common in US adolescents.<sup>13</sup>

The relative five-year survival rate among children and adolescents diagnosed with cancer is approximately 86 percent. An estimated 26,544 Texans are survivors of childhood and adolescent cancer (calculated as Texans diagnosed with childhood and adolescent cancer between 1995–2019 who were alive as of January 1, 2020).<sup>14</sup>

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<sup>13</sup> "Adolescent" defined as ages 15-19 years. Texas Cancer Registry, Cancer Epidemiology and Surveillance Branch. Childhood and Adolescent Cancer in Texas, 2011-2020. Austin, TX. Texas Department of State Health Services, 2023.

<sup>14</sup> Texas Cancer Registry, Cancer Epidemiology and Surveillance Branch. Childhood and Adolescent Cancer in Texas, 2011-2020. Austin, TX. Texas Department of State Health Services, 2023.

## 3. Texas Cancer Registry Data Uses

### Cancer Surveillance

Surveillance enables health professionals to evaluate and address the cancer burden in a population. TCR data are used to assess patterns in cancer occurrence, detect important trends, and evaluate the impact of cancer prevention programs.

### Cancer Research

In 2022, TCR staff completed 325 data requests, and there were 13,530 queries for TCR cancer statistics using a web-based query system<sup>15</sup> for the following primary purposes:

- Comprehensive cancer control planning
- Health event investigations
- Epidemiologic studies
- Collaboration with cancer screening programs
- Study of incidence and mortality by stage, geographic area, or other factors
- Comparative effectiveness of various cancer care interventions
- Needs assessments and program planning and evaluation

### Epidemiologic Studies

Epidemiologic studies are crucial for identifying risk factors and determining optimal treatment approaches to clinical practice. The TCR provides data that support epidemiologic studies on the causes of cancer, cancer prevention and control, and cancer survivorship.

TCR data are used to describe the demographic characteristics of people who develop a specific type of cancer, compare the cancer burden to other public health

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<sup>15</sup> Web Query Tool: Selectable Cancer Incidence/Mortality Rates and Mapping. Texas Cancer Registry, Texas Department of State Health Services. Available at [cancer-rates.info/tx](https://cancer-rates.info/tx).

issues, evaluate trends in cancer incidence and mortality over time, and examine factors affecting cancer survival outcomes.<sup>16,17,18,19</sup>

TCR data are used to support some of the largest, longest, and most well-known cohort studies.<sup>20,21,22</sup> For these epidemiologic studies, TCR staff conduct regular data linkages between the cohort study data and TCR data to provide accurate and high-quality cancer outcome data.

Data linkages with the TCR are also used to examine other research topics, including the risk of cancer among kidney donors, the association between circadian

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<sup>16</sup> Jordan, K. H., Fisher, J. L., & Paskett, E. D. (2022). Distinct sociodemographic differences in incidence and survival rates for human papillomavirus (HPV)-like, non-HPV-like, and “other”-like oral cavity and pharynx cancers: An analysis of Surveillance, Epidemiology, and End Results (SEER) Program data. *Front Oncol.*, *12*, 980900.

<sup>17</sup> Gudenkauf, F. J., & Thrift, A. P. (2022). Preventable causes of cancer in Texas by race/ethnicity: Major modifiable risk factors in the population. *PLoS One*, *17*(10), e0274905. <https://doi.org/10.1371/journal.pone.0274905>.

<sup>18</sup> Jacob, J. S., & Hunt, R. D. (2023). Increasing incidence of pediatric mycosis fungoides from 2000 to 2017: A national population-based study of the Surveillance, Epidemiology, and End Results database and Texas Cancer Registry. *J Am Acad Dermatol.*, *88*(1), 185-187. <https://doi.org/10.1016/j.jaad.2022.03.046>.

<sup>19</sup> Olateju, O. A., Zeng, Z., Adenaiye, O. O., Varisco, T. J., Zakeri, M., & Sujit, S. S. (2022). Investigation of racial differences in survival from non-small cell lung cancer with immunotherapy use: A Texas study. *Front Oncol.*, *12*, 1092355. <https://doi.org/10.3389/fonc.2022.1092355>.

<sup>20</sup> Brigham and Women’s Hospital, Harvard Medical School, Harvard T. H. Chan School of Public Health. Nurses’ Health Study. 2023. Accessed September 2023. Available at <https://nurseshealthstudy.org/>.

<sup>21</sup> National Cancer Institute. NIH-AARP Diet and Health Study. 2022. Accessed June 2023. Available at [dietandhealth.cancer.gov](https://dietandhealth.cancer.gov).

<sup>22</sup> American Cancer Society. ACS Cancer Prevention Studies. 2023. Accessed September 2023. Available at <https://www.cancer.org/research/population-science/cancer-prevention-and-survivorship-research-team/acs-cancer-prevention-studies.html>.

disruption and the risk of colorectal cancer among Black women, and the risk of cancer among individuals infected with human immunodeficiency virus.<sup>23,24,25</sup>

Additionally, TCR data have been used in tandem with data from 322 other population-based registries in 70 countries to better understand worldwide survival rates for different cancers.<sup>26,27</sup>

## Health Care Management

Hospital and cancer treatment center administrators use TCR data to evaluate patient services, identify patterns in cancer care, and plan accordingly.

## Community Efforts

TCR data are used in support of community efforts, such as public awareness, education, and fundraising.

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<sup>23</sup> Engels, E. A., Fraser, G. E., Kasiske, B. L., Snyder, J. J., Utt, J., Lynch, C. F., Li, J., Pawlish, K. S., Brown, S., Yu, K. J., & Pfeiffer, R. M. (2022). Cancer risk in living kidney donors. *Am J Transplant*, 22(8), 2006-2015. <https://doi.org/10.1111/ajt.17082>.

<sup>24</sup> Barber, L. E., VoPham, T., White, L. F., Roy, H. K., Palmer, J. R., & Bertrand, K. A. (2022). Circadian disruption and colorectal cancer incidence in Black women. *Cancer Epidemiol Biomarkers Prev*. <https://doi.org/10.1158/1055-9965.Epi-22-0808>.

<sup>25</sup> Haas, C. B., Engels, E. A., Horner, M. J., Freedman, N. D., Luo, Q., Gershman, S., Qiao, B., Pfeiffer, R. M., & Shiels, M. S. (2022). Trends and risk of lung cancer among people living with HIV in the USA: a population-based registry linkage study. *Lancet HIV*, 9(10), e700-e708. [https://doi.org/10.1016/s2352-3018\(22\)00219-3](https://doi.org/10.1016/s2352-3018(22)00219-3).

<sup>26</sup> London School of Hygiene & Tropical Medicine. Cancer Survival Group, CONCORD. 2022. Accessed July 2023. <https://csg.lshtm.ac.uk/>.

<sup>27</sup> Nikšić, M., Minicozzi, P., Weir, H. K., Zimmerman, H., Schymura, M. J., Rees, J. R., Coleman, M. P., Allemani, C., US CONCORD Working Group. (2022) Pancreatic cancer survival trends in the US from 2001 to 2014: a CONCORD-3 study. *Cancer Comm (London, England)*, 43(1), 87-99. <https://doi.org/10.1002/cac2.12375>.

## Cancer Cluster Investigations

The CDC defines a cancer cluster as a greater than expected number of the same or etiologically related cancer cases that occurs within a group of people in a geographic area over a defined period of time.<sup>28</sup>

TCR data are used to respond to concerns about suspected cancer clusters. Between 2019 and 2022, TCR data were used to complete seven cancer cluster investigation reports.<sup>29</sup>

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<sup>28</sup> Foster, S. L., Lavery, A. M., Condon, S. K., Etheredge, A. A., Kennedy, B. S., Svendsen, E. R., & Breyse, P. (2022). Guidelines for Examining Unusual Patterns of Cancer and Environmental Concerns. Centers for Disease Control and Prevention. Accessed August 17, 2023. Available at <https://www.cdc.gov/nceh/cancer-environment/guidelines/summary.html>

<sup>29</sup> Texas Department of State Health Services. Cancer Cluster Investigations. 2022. Accessed September 2023. Available at [dshs.texas.gov/epitox/CancerClusters.shtm](https://dshs.texas.gov/epitox/CancerClusters.shtm).

## 4. Accessing Texas Cancer Data

DSHS has made significant efforts to make TCR data available and accessible. Data tables and summaries with detailed information about cancer incidence, mortality, survival, and prevalence in Texas, as well as special reports on topics such as obesity- and tobacco-associated cancers, are available at [dshs.texas.gov/tcr/data/cancer-statistics.aspx](https://dshs.texas.gov/tcr/data/cancer-statistics.aspx). DSHS has put in significant effort to make cancer data widely available within the bounds of federal and state privacy laws. DSHS will continue this effort to help address the cancer burden in Texas.



## **List of Acronyms**

<b>Acronym</b>	<b>Full Name</b>
CDC	Centers for Disease Control and Prevention
DSHS	Department of State Health Services
SEER	Surveillance, Epidemiology, and End Results Program
TCR	Texas Cancer Registry
US	United States