Cancer in Texas 2017

As Required by
Texas Health and Safety Code Section 82.007

Department of State Health Services
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Executive Summary

As required by Health and Safety Code, Chapter 82, the Department of State Health Services (DSHS) maintains the Texas Cancer Registry (TCR), which is a population-based cancer registry that serves as the foundation for measuring the cancer burden in Texas. It collects, maintains, and disseminates complete, accurate, and quality cancer data by including a record of cancer cases diagnosed and/or treated in Texas. TCR also supports a wide variety of cancer-related research and studies by including information that can be used for early recognition, prevention, cure, and control of cancer.

Each year, the TCR receives approximately 190,000 reports of cancer from more than 500 hospitals, cancer treatment centers, ambulatory surgery centers, and pathology laboratories across Texas. The information collected includes the type and site of diagnosed cancers, cancer stage, the kinds of treatment patients receive, survival of patients following a cancer diagnosis, and patient characteristics and demographics. This information is used to measure comprehensive cancer control efforts, health disparities, and progress in prevention, diagnosis, treatment, survival, and quality of life for cancer patients.

The TCR meets high quality data standards outlined by the Centers for Disease Control and Prevention's (CDC) National Program of Cancer Registries (NPCR). Additionally, Texas' data are gold certified by the North American Association of Central Cancer Registries (NAACCR).

This report highlights the role of the TCR as a central data bank of accurate, precise, and current information that serves as a tool in the early recognition, prevention, cure, and control of cancer. Information is presented on the number of new cases and deaths expected in 2017, and an overview of cancer statistics is provided using the most current data available (cases diagnosed in 2014).

Key points discussed in this report include:

- In 2017, an estimated 120,173 new cancer cases will be diagnosed in Texas, and 44,523 Texans will die from cancer.
- Cancer in adults is the second most common cause of death in Texas (following heart disease), and for children (following fatal injuries).
- Lung cancer is the leading cause of cancer death in Texas for males and females, with an estimated 11,407 deaths expected to occur in 2017.
- Although cancer deaths in Texas have declined in the past few decades, the death rate for non-Hispanic African Americans remains higher

compared to non-Hispanic Whites for the most common types of cancer and for all cancer deaths combined (nearly 20 percent higher).

- During the past two decades, there have been marked decreases in prostate, lung, and colorectal cancer incidence rates in men, and in breast, lung, colorectal, and cervical cancer incidence rates in women, attributed to a reduced number of smokers and an increase in screenings.
- In contrast to the stable decline for most cancer types, incidence rates are increasing for melanoma, thyroid, kidney, and liver cancer.
- The number of cancer survivors has been increasing; as of January 1, 2014, 715,449 Texans who were diagnosed with cancer in the last 19 years are alive today. Breast and prostate cancer survivors constitute 41 percent of this population.

Introduction

The Texas Cancer Incidence Reporting Act (Health and Safety Code, Chapter 82) requires the Department of State Health Services (DSHS) to maintain a cancer registry that includes a record of cancer cases that are diagnosed and/or treated in Texas and collect information that can be used for early recognition, prevention, cure, and control of cancer.

Section 82.007 requires DSHS to publish an annual report to the Legislature of the information obtained under the Act.

The following report includes an overview of cancer-related mortality and incidence rates in Texas, highlighting specific ethnic and age groups with documented impact disparities. The report also includes an overview of the causes of cancer and specific prevention methods for external factors that may result in cancer. Finally, the report also outlines the use of the Texas Cancer Registry (TCR), including local, state, national, and international research uses.

Background

Cancer registries collect information about cancer cases, including information about types and sites, extent of illness, treatments, patient demographics, vital status, and causes of death. The information is used to monitor the cancer burden, identify trends and patterns in populations, and identify high-risk groups and behaviors. Public health officials and policymakers use the data to guide the planning of cancer control programs and set priorities for allocating resources.

The Texas Cancer Registry (TCR) was first established by the 66th Legislature in 1979 and reauthorized by the Texas Cancer Incidence and Reporting Act in 1989. It is the nation's fourth largest cancer registry. Each year, the TCR receives approximately 190,000 reports of cancer from more than 500 hospitals, cancer treatment centers, ambulatory surgery centers, and pathology laboratories across Texas. About 20,000 of these reports are from out-of-state residents seeking care in Texas. These reports are sent to their residing state cancer registry, providing a significant contribution to the national cancer surveillance system. Similarly, the TCR receives reports of Texans with cancer from other state registries.

The TCR first met Centers for Disease Control and Prevention (CDC) "high quality" data standards in 2004, and achieved gold certification from the North American Association of Central Cancer Registries (NAACCR) in 2006.

The data standards and gold certification have been maintained each year since, except in 2013 when NAACCR silver level certification was attained.

Cancer in Texas

Cancer is a group of diseases characterized by the uncontrolled growth and spread of abnormal cells. If the spread is not controlled, it can result in death.

The Texas Cancer Registry (TCR) uses cancer incidence (the occurrence, rate, and/or number of newly diagnosed cases) and mortality (the occurrence, rate, and/or number of deaths) to assess the burden of cancer in Texas. To assess cancer incidence, Health and Safety Code, Chapter 82, requires that certain health care providers report all new cancer cases diagnosed or treated in Texas to the TCR. To assess mortality, the TCR obtains death certificate data to analyze information about the individuals who died from cancer. Because cancer is strongly associated with age, most measures of the cancer burden are expressed as age-adjusted incidence and mortality rates.

The TCR used Texas cancer incidence data from 1995 to 2014 to estimate the number of new invasive cancer cases expected to be diagnosed in 2017. This method accounts for expected delays in case reporting and considers geographic variations in sociodemographic and lifestyle factors, medical settings, and cancer screening behaviors as predictors of incidence.[1]

In 2017, an estimated 120,173 new cancer cases are expected to be diagnosed in Texas. Breast and prostate cancer are the most commonly diagnosed cancers in women and men, respectively, with more than 17,000 cases of breast cancer and 14,000 cases of prostate cancer expected to be diagnosed in 2017. Lung and colorectal cancer are the second and third most commonly diagnosed cancers in women (almost 7,000 and 3,000 new cases expected in 2017, respectively) and men (about 9,000 and 5,500, respectively).

Cancer is the second most common cause of death in Texas.[2] In 2017, an estimated 44,523 Texans are expected to die of cancer, amounting to more than 120 people per day. Lung cancer is the leading cause of cancer death in Texas for males and females, accounting for 26 percent of all expected

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[1]Zhu, L., et al., *Predicting US- and state-level cancer counts for the current calendar year.* Cancer, 2012. **118**(4): p. 1100-1109.

[2]Texas Department of State Health Services. *Leading Causes of Death by Race/Ethnicity in Texas, 2014*. 2016. https://www.dshs.texas.gov/chs/vstat/vs14/t16.aspx. Accessed 6/21/2017.

cancer deaths in 2017. Cigarette smoking is the leading risk factor for lung cancer. The duration of smoking and number of cigarettes smoked per day significantly impact cancer risk. According to the Centers for Disease Control and Prevention (CDC), 15.2 percent of adult Texans were currently smoking cigarettes in 2015, ranking Texas the 13th lowest in smoking prevalence among the 50 states.[3] After lung cancer, colorectal cancer is expected to be the second leading cause of cancer death in Texas in 2017, with an estimated 3,337 deaths expected.

715,449 Texans who were diagnosed with cancer in the last 19 years are alive as of January 1, 2014. 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 breast, prostate, colorectal, thyroid, non-Hodgkin's lymphoma, melanoma, and kidney. Breast and prostate cancers constitute about 40 percent of the cancer survivor population.

In addition to tracking statewide trends, TCR data also demonstrates certain types of cancer disproportionately impact specific populations in Texas.

Cancer Health Disparities in Texas

According to Healthy People 2020, a health disparity is "a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage. Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion."[4]

Lower socioeconomic status is associated with financial and structural barriers to health care, including inadequate health insurance coverage, reduced access to preventive services, and lower health literacy. People with inadequate health insurance are more likely to be diagnosed with advanced cancer and less likely to survive. People with lower socioeconomic status are more likely to engage in behaviors that increase cancer risk, such as tobacco use, physical inactivity, and poor diet, because of environmental and community factors that provide fewer opportunities for physical activity and less access to fresh fruits and vegetables.

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[3]Centers for Disease Control and Prevention. *State Tobacco Activities Tracking and Evaluation (STATE) System*. https://www.cdc.gov/statesystem. Accessed 7/11/2017.

[4]HealthyPeople.gov. *Disparities*. https://www.healthypeople.gov/2020/about/foundation-health-measures/Disparities. Accessed 7/11/2017.

In 2014, 26 percent of African Americans and 24 percent of Hispanic Americans lived below the poverty line in the United States, compared to only 10 percent of non-Hispanic White people.[5] And although cancer deaths in Texas have declined in recent decades, the 2010-2014 death rate for non-Hispanic African Americans was nearly 20 percent higher for all cancers combined compared to non-Hispanic Whites.

Table 1 outlines age-adjusted mortality and incidence rates for non-Hispanic African American men. Among non-Hispanic African American men, mortality rates (per 100,000) were higher than for non-Hispanic White men for several common cancers. Prostate cancer mortality rates for these men were more than two times higher than for any other racial/ethnic group. Similarly, incident rates (per 100,000) were also higher for non-Hispanic African American men compared to non-Hispanic White men.

Table 1. Selected Age-Adjusted Cancer Mortality and Incidence Rates Among Males per 100,000, 2010-2014.

Mortality Rates	Non-Hispanic African American Men	Non-Hispanic White Men
Lung	74.3	58.1
Prostate	37	17.9
Colon and Rectum	28.2	17.4

Incidence Rates	Non-Hispanic African American Men	Non-Hispanic White Men
Prostate	160.1	100.6
Lung	92.8	75.6
Colon and Rectum	59.6	45.6
Pancreas	16.3	13.9

Table 2 outlines age-adjusted mortality and incidence rates among women. Mortality rates (per 100,000) for non-Hispanic African American women were higher than for non-Hispanic White women. Even though non-Hispanic White women have a higher incidence of breast cancer, non-Hispanic African American women have a higher mortality rate.

[5]DeNavas-Walt, C., Procter, B.D. Income and Poverty in the United States. U.S. Census Bureau, *Current Population Reports.* 2014.

Table 2. Selected Age-Adjusted Cancer Mortality and Incidence Rates Among Women per 100,000, 2010-2014.

Mortality Rates	Non-Hispanic African American Women	Non-Hispanic White Women
Uterus	7.6	3.3
Breast	30.8	20.5
Colon and Rectum	17.6	11.9

Incidence Rates	Non-Hispanic African American Women	Non-Hispanic White Women
Uterus	2.5	1.1
Breast	120.3	122.5
Colon and Rectum	49.4	38.6

During the same time period (2010-2014), Hispanics had the highest liver cancer incidence in Texas.[6] The rate for Hispanic men (per 100,000) was 25.6 compared to 12.2 for non-Hispanic White men; and 10.3 for Hispanic women compared to 4.3 for non-Hispanic White women. Hispanic women also had higher cervical cancer incidence and mortality rates compared to non-Hispanic White women.

To determine trends for other ethnic groups using TCR data, certain difficulties arise. Primarily, cancer information for Asians, Pacific Islanders, American Indians, and Native Alaskans is sometimes misclassified as the racial/ethnic status of many of these individuals is not always correctly identified in medical and death records. The TCR has made efforts to collect more accurate information through linkage with other data sources, such as the Indian Health Service, and using analytic tools, such as NAACCR's Hispanic and Asian/Pacific Islander Identification Algorithm. DSHS continues to improve the data collection process to detect and analyze trends in TCR data among specific populations, including specific ethnic groups, as well as age groups.

Cancer in Children & Adolescents

Although advances in treatment have increased, cancer is still the second leading cause of death (following fatal injuries) in Texas children 5 to 14 years old.[7] In 2017, an estimated 1,176 new cases and 219 cancer deaths

[6] This includes incidence of intrahepatic bile duct cancer.

[7] Xu JQ, Murphy SL, Kochanek KD, Bastian BA. *Deaths: Final data for 2014*. National vital statistics reports. 2016 **65**(4).

are expected to occur among children (birth to 14 years), and an additional 560 new cases and 55 cancer deaths are expected among adolescents (15 to 19 years). From 2007 to 2013, the overall five-year survival rate for childhood cancers was approximately 85 percent.

The most common cancers among children and adolescents in Texas vary by age. Among children from birth to 14 years during the period of 2010-14, brain and central nervous system cancers, as well as acute lymphocytic leukemia were the most common cancers. Among adolescents 15 to 19 years in the same time period, brain and central nervous system cancers, Hodgkin's lymphoma, and thyroid cancer were the most common.

Causes and Prevention of Cancer

Cancer is caused by both internal factors (genetics, hormones, and immune conditions) and external factors (tobacco use, obesity, infectious organisms, chemicals, and 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.

A substantial number of cancer cases could be prevented. Cancers caused by cigarette smoking, for instance, could be significantly reduced if not completely prevented. The observed declining lung cancer incidence in men and women is a direct result of the reduced number of smokers.[8] In Texas since 1995, the incidence of lung cancer has decreased by 43 percent in men and 20 percent in women. Differences in the decline between men and women reflect historical differences in tobacco use; cigarette smoking peaked about 20 years later in women than in men.[9] In the U.S., there have been approximately 18 million deaths between 1964 and 2012 due to smoking, with a substantial number of deaths occurring before 65 years of age.[10]

Other external factors are also preventable. The World Cancer Research Fund estimates that one-third of the cancer cases that occur in economically developed places, like Texas, are related to being overweight or obese and could be prevented by maintaining a healthy body weight.

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[8]Howlader, N., A. Noone, and M. Krapcho, *SEER Cancer Statistics Review, 1975-2014.* National Cancer Institute. 2017.

[9]Thun, M.J., et al., *50-Year Trends in Smoking-Related Mortality in the United States.* New England Journal of Medicine, 2013. **368**(4): p. 351-364.

[10]Centers for Disease Control and Prevention, *The health consequences of smoking—50 years of progress: a report of the Surgeon General.*, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health: Atlanta, GA.

Many of the melanoma cases that are diagnosed annually also are preventable. Individuals with exposure to ultraviolet rays through sunlight or indoor tanning are at higher risk of developing skin cancer, including melanoma, which is the most aggressive type of skin cancer. Children, in particular, should be protected from the sun exposure because severe sunburns in childhood greatly increase the risk of developing melanoma later in life.

In contrast to the stable declines for most cancer types, incidence rates for melanoma, thyroid, kidney, and liver cancer increased from 1995 to 2014. For melanoma, incidence rates have increased by 28 percent in men and 13 percent in women in Texas. Thyroid cancer is the most rapidly increasing cancer in the U.S. and has been increasing worldwide in recent decades.[11] The incidence rate for thyroid cancer in Texas has increased 123 percent in men and 118 percent in women since 1995. The rise is thought to be due in part to increased detection through more sensitive diagnostic procedures.

Liver (including bile duct) cancer incidence rates are nearly three times higher in men than women. The incidence rate in Texas men has more than doubled from 7.1 per 100,000 in 1995 to 16.2 per 100,000 in 2014. The majority of cases are due to heavy alcohol use and alcohol-related cirrhosis, hepatitis B and hepatitis C, and non-alcoholic fatty liver disease associated with obesity. Screening for liver cancer has not been shown to reduce mortality, but many doctors screen high-risk people with ultra-sound and blood tests.

Screening offers the ability for secondary prevention by detecting cancer early, before symptoms appear. Screening for colorectal and cervical cancers can prevent cancer by allowing the removal of precancerous lesions.[12] For example, the recent decline in colorectal cancer incidence and mortality rates has been attributed to the introduction and uptake of colonoscopy.[13]

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[11]American Cancer Society. *Cancer Facts and Figures 2017.* 2017. https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2017.html. Accessed 6/21/2017.

[12]Siegel, R., C. DeSantis, and A. Jemal, *Colorectal cancer statistics, 2014.* CA: A Cancer Journal for Clinicians, 2014. **64**(2): p. 104-117.

[13]Edwards, B., E. EWard, and B. Kohler, *Annual report to the nation on the status of cancer, 1975-2006, featuring colorectal cancer trends and impact of interventions (risk factors, screening, and treatment) to reduce future rates.* Cancer, 2010(107): p. 1142-1152.

Texas Cancer Registry Data Uses

Health Care Management

Data routinely collected by the TCR help administrators of hospitals and cancer treatment centers to evaluate services being offered, identify patterns in cancer care, and plan accordingly. For example, administrators can examine reports that identify changes in care over time and evaluate referral patterns to see when patients are directed or choose to be treated at their own or other health care centers. These data are crucial for planning resource allocation and staff recruitment.

Cancer Surveillance

Cancer surveillance enables health professionals to evaluate and address the cancer burden. Public health professionals, health care providers, researchers, policy makers, and others use TCR data to assess patterns in the occurrence of cancer, detect important trends within populations, and assess the impact of cancer prevention programs. Cancer registry data can be used to conduct needs and capacity assessments that allow for evidence-based decision-making for allocating limited cancer resources.

Cancer Research

The TCR receives hundreds of data requests each year from researchers across the state and nation. TCR data are requested for public health and other types of research for the following primary purposes:

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

In addition, TCR data are available for generating cancer incidence and mortality rates and maps, which are accessible on a web-based query system.[14] In 2016, the system was accessed 17,983 times.

Epidemiology Studies

Epidemiology studies are crucial for identifying risk factors and determining optimal treatment approaches to clinical practice. The TCR provides data

[14] http://www.cancer-rates.info/tx/

that support epidemiology studies on the causes of cancer, cancer prevention and control, and survivorship. While the TCR does not provide financial support for research, TCR data make cancer epidemiology research possible.

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 issues, and evaluate trends in cancer incidence and mortality over time.[15, 16] For instance, TCR data contributed to the evidence of a continuous drop in incidence and mortality of cervical cancer after an increase in Pap test screening, underscoring the importance of preventive strategies.[17]

TCR data have been used to support some of the largest, longest, and most well-known cohort studies in the nation through regular data linkages. One current study supported by data linkages with TCR data are the Mexican American Cohort Study being conducted by MD Anderson Cancer Center.[18] This research study is investigating behavioral and genetic risk factors for cancer among people of Mexican descent, and is developing strategies to prevent and reduce morbidity and mortality.

TCR data have also been linked to other datasets to evaluate lifestyle factors that may contribute to cancer and help identify strategies to reduce those risks.[19, 20, 21] Linked data can also be used to evaluate regional differences in access to cancer treatment that affect survival, study health disparities

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[15]Wyatt, S., et al., *All-Cancers Mortality Rates Approaching Diseases of the Heart Mortality Rates as Leading Cause of Death in Texas.* Southern Medical Journal, 2014. **107**(1): p. 19-23.

[16]Ostrom, Q.T., et al., *CBTRUS Statistical Report: Primary Brain and Central Nervous System Tumors Diagnosed in the United States in 2006-2010.* Neuro-Oncology, 2013. **15**(suppl 2): p. ii1-ii56.

[17]Jemal, A., et al., *Annual Report to the Nation on the Status of Cancer, 1975–2009, Featuring the Burden and Trends in Human Papillomavirus (HPV)–Associated Cancers and HPV Vaccination Coverage Levels.* Journal of the National Cancer Institute, 2013. **105**(3): p. 175-201

[18] Wu et al. IRB #11-074; Chow et al. *Cohort Profile: The Mexican American Mano a Mano Cohort*. International Journal of Epidemiology. 2015: 1-11.

[19]Bosire, C., et al., *Coffee consumption and the risk of overall and fatal prostate cancer in the NIH-AARP Diet and Health Study.* Cancer Causes & Control, 2013. **24**(8): p. 1527-1534.

[20]Kabat, G.C., et al., *Lifestyle and Dietary Factors in Relation to Risk of Chronic Myeloid Leukemia in the NIH-AARP Diet and Health Study.* Cancer Epidemiology Biomarkers & Prevention, 2013. **22**(5): p. 848-854.

[21]Lynch, B.M., et al., *Sedentary Behavior and Prostate Cancer Risk in the NIH–AARP Diet and Health Study.* Cancer Epidemiology Biomarkers & Prevention, 2014. **23**(5): p. 882-889.

among different groups, and determine whether diagnostic evaluations are being performed according to guidelines.[22, 23, 24]

Examples of TCR data being used to investigate health disparities include a 2017 study investigating potential disparities in colorectal cancer incidence and survival by race/ethnicity,[25] and a 2014 study evaluating disparities in the cancer burden by region, including increased incidence of liver cancer in South Texas, differences in breast cancer mortality based on the racial and ethnic composition of neighborhoods, and disparities in insurance coverage by race.[26, 27, 28, 29, 30]

Additionally, TCR data have been used in tandem with data from 278 other population-based registries in 67 countries to better understand the worldwide survival rates for different cancers as a part of the CONCORD-2 study.[31]

Community Efforts

The TCR also works locally with a diverse group of partners to provide data in support of community efforts, such as public awareness and education and fundraising. Partner examples include:

- Cancer Prevention and Research Institute of Texas
- Texas Kids Count

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[22]Kneuertz, P.J., et al., *Regional disparities affect treatment and survival of patients with intrahepatic cholangiocarcinoma—A Texas Cancer Registry analysis.* Journal of Surgical Oncology, 2014. **110**(4): p. 416-421.

[23]Suneja, G., et al., *Cancer Treatment Disparities in HIV-Infected Individuals in the United States.* Journal of Clinical Oncology, 2014.

[24]Ost, D.E., et al., *Quality gaps and comparative effectiveness in lung cancer staging and diagnosis.* Chest, 2014. **145**(2): p. 331-345.

[25]Wang, D. Y., et al. (2017). *Rising Incidence of Colorectal Cancer Among Young Hispanics in Texas*. Journal of Clinical Gastroenterology, 51(1), 34-42.

[26]Ramirez, A., et al., *Incidence of Hepatocellular Carcinoma in Texas Latinos, 1995–2010: An Update.* PLoS One, 2014.

[27]Pruitt, S.L., Simon J Craddock Lee, Jasmin A. Tiro, Lei Xuan, John M. Ruiz, *Residential Racial Segregation and Mortality Among Black, White, and Hispanic Urban Breast Cancer Patients in Texas, 1995 to 2009* Cancer, 2015.

[28]DeSantis, C., D. Naishadham, and A. Jemal, *Cancer statistics for African Americans, 2013.* CA: A Cancer Journal for Clinicians, 2013. **63**(3): p. 151-166.

[29]White, M.C., et al., *Disparities in Cancer Mortality and Incidence Among American Indians and Alaska Natives in the United States.* American Journal of Public Health, 2014. **104**(S3): p. S377-S387.

[30]Highfield, L., *Spatial Patterns of Breast Cancer Incidence and Uninsured Women of Mammography Screening Age.* The Breast Journal, 2013. **19**(3): p. 293-301.

[31]Allemani, C., et, al. *Global surveillance of cancer survival 1995–2009: analysis of individual data for 25 676 887 patients from 279 population-based registries in 67 countries (CONCORD-2).* The Lancet, 2015. **385**(9972): p. 977-1010.

- Relay for Life (American Cancer Society)
- Susan G. Komen Foundation
- Make a Wish Foundation
- MD Anderson's Center for Community Engagement
- Leukemia and Lymphoma Society

Cancer Cluster Investigations

Providing data for responding to community concerns about suspected cancer clusters is another important activity performed by cancer registries. The CDC defines a cancer cluster as a greater-than-expected number of cancer cases occur within a group of people, geographic area, or period of time.[32]

The public may suspect a cancer cluster when they learn about multiple family members, friends, neighbors, or coworkers who have been diagnosed. While most suspected clusters are found to not be true cancer clusters, each inquiry is thoroughly evaluated. Since 2015, TCR data have been used to complete more than a dozen cancer cluster investigations. To date, no cancer clusters were identified. Investigation reports can be found at www.dshs.texas.gov/epitox/CancerClusters.shtm.

Accessing Texas Cancer Data

To aid in state, national, and international efforts, DSHS has made significant efforts to make TCR data available and accessible. Most information about incidence and mortality in adults and children, cancer estimates, and cancer clusters is available at www.dshs.texas.gov/tcr/. DSHS will continue to consider and develop ways to make TCR available and usable to the public so that continued progress may be made in addressing cancer in Texas.

Conclusion

Cancer continues to have a significant impact on Texans, those seeking care in the state, and institutions providing care. Central to the fight against cancer is the accurate and complete collection and analysis of cancer-related data. The Texas Cancer Registry continues to be an important component in assessing Texas' cancer burden and contributing to national and international cancer surveillance, research, control, and prevention.

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[32]Centers for Disease Control and Prevention, *Investigating Suspected Cancer Clusters and Responding to Community Concerns Guidelines from CDC and the Council of State and Territorial Epidemiologists.* Morbidity and Mortality Weekly Report, 2013. **62**.