

## **TECHNICAL NOTES**

### **Sources of data:**

***Incidence:*** Incidence data (new cancer cases) are collected from all health care facilities licensed in the State of Kansas. Most cancer cases are identified in hospitals by screening many types of records, such as disease indices, in-hospital pathology reports and radiation logs. When a cancer case is reported from more than one facility, the information is consolidated into one record. Many Kansans with cancers are diagnosed and treated in hospitals outside the State of Kansas. These cancer cases are reported to KCR by data exchange with the neighboring state registries to which the cases are reported. As medical care continues to be more global over the last two decades, KCR has collaborated with pathology laboratories at the national level to increase case ascertainment and validation of case diagnosis. The reporting time lag in identification of Kansans with cancers from central cancer registries in other states varies widely. This report includes cases reported to KCR as of December 1, 2025. Data included in this report may be subject to change in future reports since missed cases are continuously added to the KCR database.

***Population estimates:*** Population estimates for Kansas were obtained from the National Cancer Institute's Surveillance and Epidemiology End Results Program (SEER), <http://seer.cancer.gov/popdata/download.html>.

***Covid-19 and 2020 data:*** Due to the COVID-19 pandemic, reductions in cancer diagnosis and delayed reporting may have affected cancer incidence rates and trends when using 2020 diagnosed cases.

### **Definitions:**

***Age-specific rate:*** The number of new cancer cases as a rate per 100,000 population in a given age group.

***Age-adjusted rate:*** The number of new cancer cases that would have occurred in a standard population. Rates are calculated per 100,000 standardized to the age distribution of the 2000 U.S. standard population.

***Elderly:*** The elderly population is defined as people aged 65 and older.

***Race:*** Self-reported race as documented in an individual's medical records. For the "Cancer Incidence by Race and Hispanic Ethnicity" section of this report, race was classified by combining self-reported race with results of a linkage with Indian Health Service (IHS) administrative records.

***Reportable cancers:*** All invasive neoplasms (behavior code of '3'), *in situ* neoplasms (behavior code of '2') and benign (behavior code of '0') and borderline (behavior code of '1') intracranial and central nervous system (CNS) tumors are reportable to KCR. The following diagnoses are considered non-reportable: carcinoma *in situ* of the cervix, basal and squamous cell carcinomas

of the skin, intraepithelial neoplasia of the cervix, prostate, vagina, vulva and anus. Effective with cases diagnosed 1/1/2000 and forward, Prostatic Intraepithelial Neoplasia (PIN) is not reportable. The anatomic site and histology of cancers are coded according to the third revision of the International Classification of Diseases for Oncology (ICD-O-3).

**Major cancer site groups:** The major invasive and in situ cancer site groups used in this report are determined by SEER Site Recode ICD-O-3/WHO 2008 definitions: ([http://seer.cancer.gov/siterecode/icdo3\\_dwhoheme/index.html](http://seer.cancer.gov/siterecode/icdo3_dwhoheme/index.html)) as described in the table below:

| Major Cancer Site Groups | SEER Site Recode ICD-O-3/WHO 2008 Values                             |
|--------------------------|----------------------------------------------------------------------|
| Bladder                  | 29010                                                                |
| Brain                    | 31010                                                                |
| Cervix                   | 27010                                                                |
| Colorectal               | 21041-21049, 201051, 21052                                           |
| Corpus Uteri (incl NOS)  | 27020, 27030                                                         |
| Esophagus                | 21010                                                                |
| Female Breast            | 26000 (in females only)                                              |
| Hodgkins Lymphoma        | 33011, 33012                                                         |
| Kidney and Renal Pelvis  | 29020                                                                |
| Larynx                   | 22020                                                                |
| Leukemia                 | 35011-35013, 35021-35023, 35031, 35041, 35043                        |
| Liver                    | 21071                                                                |
| Lung and Bronchus        | 22030                                                                |
| Melanoma of Skin         | 25010                                                                |
| Multiple Myeloma         | 34000                                                                |
| Non-Hodgkins Lymphoma    | 33041, 33042                                                         |
| Oral Cavity and Pharynx  | 20010, 20020, 20030, 20040, 20050, 20060, 20070, 20080, 20090, 20100 |
| Ovary                    | 27040                                                                |
| Pancreas                 | 21100                                                                |
| Prostate                 | 28010                                                                |
| Soft Tissue              | 24000                                                                |
| Stomach                  | 21020                                                                |
| Testis                   | 28020                                                                |
| Thyroid                  | 32010                                                                |
| All Other Sites          | Remainder of SEER Site Recode values                                 |

**Stage of disease at diagnosis:** The summary staging classification as defined by SEER is used to determine stage of disease at diagnosis. The stages are defined as follows:

*In situ*      A neoplasm with all the characteristics of malignancy except invasion; it has not penetrated the basement membrane nor extended beyond the epithelial tissue.

*Localized*      An invasive malignant neoplasm confined entirely to the organ of origin. It may include intraluminal extension where specified.

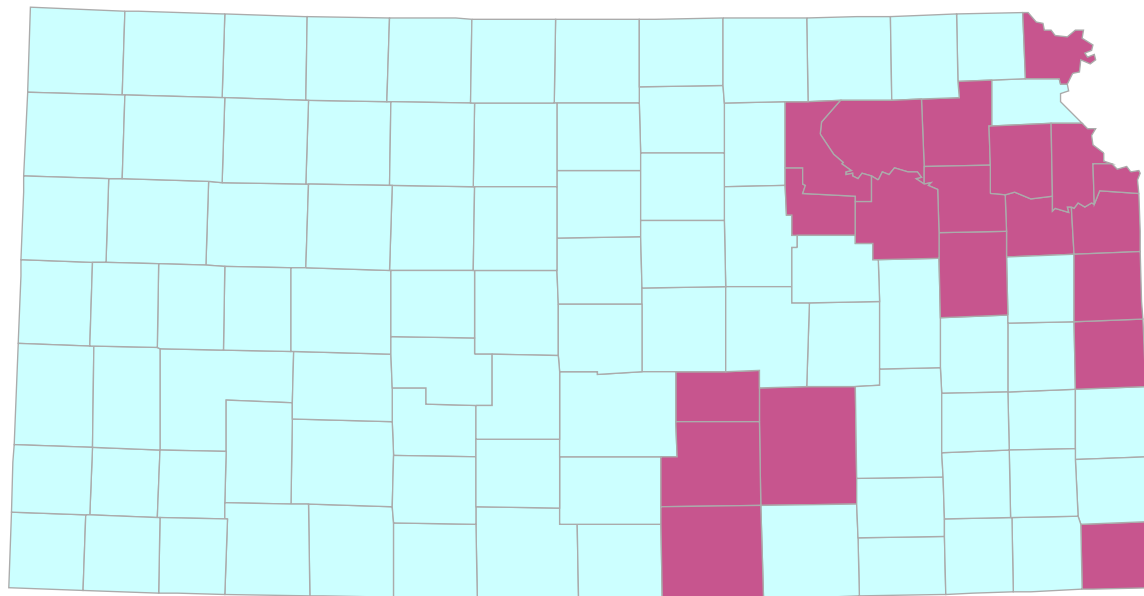
*Regional* A malignant neoplasm that 1) has extended beyond the limits of the organ of origin directly into surrounding organs or tissues; 2) involves regional lymph nodes by way of the lymphatic system; or 3) has both regional extension and involvement of regional lymph nodes.

*Distant* A malignant neoplasm that has spread to parts of the body remote from the primary tumor either by direct extension or by discontinuous metastasis to distant organs, tissues, or via the lymphatic system to distant lymph nodes.

*Unstaged* Insufficient information to determine the stage of disease at diagnosis.

*Collaborative Staging:* The collaborative staging schema as defined by The American Joint Committee on Cancer (AJCC) and the North American standards setters was adopted for cases diagnosed from January 1, 2004 to December 31, 2015. Details of the schema can be obtained from <https://seer.cancer.gov/tools/collabstaging/>.

**Metropolitan & Nonmetropolitan Counties:** The 2023 Beale Codes (also known as Rural-Urban Continuum Codes, <http://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx>) were used to classify Kansas counties as metropolitan (metro) or nonmetropolitan (non-metro). Metro counties include Butler, Cherokee, Doniphan, Douglas, Geary, Harvey, Jackson, Jefferson, Johnson, Leavenworth, Linn, Miami, Osage, Pottawatomie, Riley, Sedgwick, Shawnee, Sumner, Wabaunsee and Wyandotte. The map below shows the distribution of metro counties throughout the state.



2023 Beale Code Classification:  Metro  Nonmetro

Suggested citation: Kansas Cancer Registry, Cancer Incidence in Kansas, 2004-2023

**Regions:** For cancer incidence, the patient’s usual place of residence at the time the cancer is diagnosed is recorded in the registry database. Due to a small population in most counties in Kansas, these counties are grouped into twelve regions where each region has a population base of at least 100,000. The region assignment which groups counties of similar size and density, referral and business patterns, and proximity of aggregated counties was established in consultation with Dr. Steven Pickard at KDHE and Dr. Bob Nunley from the Kansas Geographic Bureau. These twelve regions encompass the following counties:

| Region    | Counties                                                                                                                                            |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Region 1  | Cheyenne, Decatur, Ellis, Gove, Graham, Logan, Norton, Osborne, Phillips, Rawlins, Rooks, Russell, Sheridan, Sherman, Smith, Thomas, Trego, Wallace |
| Region 2  | Clark, Finney, Ford, Grant, Gray, Greeley, Hamilton, Haskell, Kearny, Lane, Meade, Morton, Scott, Seward, Stanton, Stevens, Wichita                 |
| Region 3  | Barber, Barton, Comanche, Edwards, Ellsworth, Harper, Hodgeman, Kingman, Kiowa, Ness, Pawnee, Pratt, Rice, Rush, Stafford                           |
| Region 4  | Clay, Cloud, Dickinson, Jewell, Lincoln, Mitchell, Ottawa, Republic, Saline, Washington                                                             |
| Region 5  | Harvey, McPherson, Reno, Sedgwick                                                                                                                   |
| Region 6  | Butler, Cowley, Sumner                                                                                                                              |
| Region 7  | Atchison, Brown, Doniphan, Jackson, Jefferson, Leavenworth, Marshall, Nemaha                                                                        |
| Region 8  | Geary, Pottawatomie, Riley                                                                                                                          |
| Region 9  | Anderson, Chase, Chautauqua, Coffey, Elk, Greenwood, Linn, Lyon, Marion, Morris, Osage, Wabaunsee                                                   |
| Region 10 | Douglas, Franklin, Miami, Shawnee                                                                                                                   |
| Region 11 | Johnson, Wyandotte                                                                                                                                  |
| Region 12 | Allen, Bourbon, Cherokee, Crawford, Labette, Montgomery, Neosho, Wilson, Woodson                                                                    |

### **Data Quality:**

KCR works to ensure that cancer case information is as complete and accurate as possible. Currently, KCR performs visual edits on abstracted data received from reporting facilities, computer edits on key data items (e.g., primary site, histology), and re-abstraction on a random sample of medical records. KCR data are certified annually by the National Program of Cancer Registries (NPCR) and the North American Association of Central Cancer Registries (NAACCR).

### **Confidentiality of Data:**

The identities of patients, physicians, and facilities are protected by Kansas State Law. Tight restrictions on access to confidential data ensure the protection of persons who develop cancer.

## **References:**

- KDHE (Kansas Department of Health and Environment): Kansas Statutes (KSA 65-1,168-174a), [http://ksrevisor.org/statutes/ksa\\_ch65.html](http://ksrevisor.org/statutes/ksa_ch65.html) & Regulations (KAR 28-70-1 to KAR 28-70-4), [https://sos.ks.gov/publications/pubs\\_kar.aspx](https://sos.ks.gov/publications/pubs_kar.aspx)
- SEER (Surveillance, Epidemiology and End Results Program), National Institutes of Health, National Cancer Institute, <https://seer.cancer.gov/>
- AACCR (American Association of Central Cancer Registries) 1994. Standards for Completeness, Quality, Analysis, and Management of Data. Standards for Cancer Registries, Vol. III, edited by JE Seiffert.
- NAACCR (North American Association of Central Cancer Registries). Standards for Completeness, Quality, Analysis, Management, Security and Confidentiality of Data. Standards for Cancer Registries, Vol. III, edited by J Hofferkamp.
- International Classification of Diseases for Oncology, Third Edition (ICD-O-3) 2000. World Health Organization.
- SEER Kansas County-Level Population File for 1995-2019, Released December 2020
- Collaborative Staging, <https://www.facs.org/quality-programs/cancer-programs/american-joint-committee-on-cancer/collaborative-staging-schema-v0205/>
- CDC Wonder, <http://wonder.cdc.gov/>
- Cancer Control P.L.A.N.E.T., <http://cancercontrolplanet.cancer.gov/>
- Unites States Cancer Statistics (USCS), <https://cdc.gov/cancer/uscs/>
- Annual Report to the Nation on the Status of Cancer, [http://seer.cancer.gov/report\\_to\\_nation/](http://seer.cancer.gov/report_to_nation/)
- Cancer in North America (CINA), <https://www.naacr.org/cancer-in-north-america-cina-volumes/>
- Central Brain Tumor Registry of the United States (CBTRUS), <http://www.cbtrus.org/>