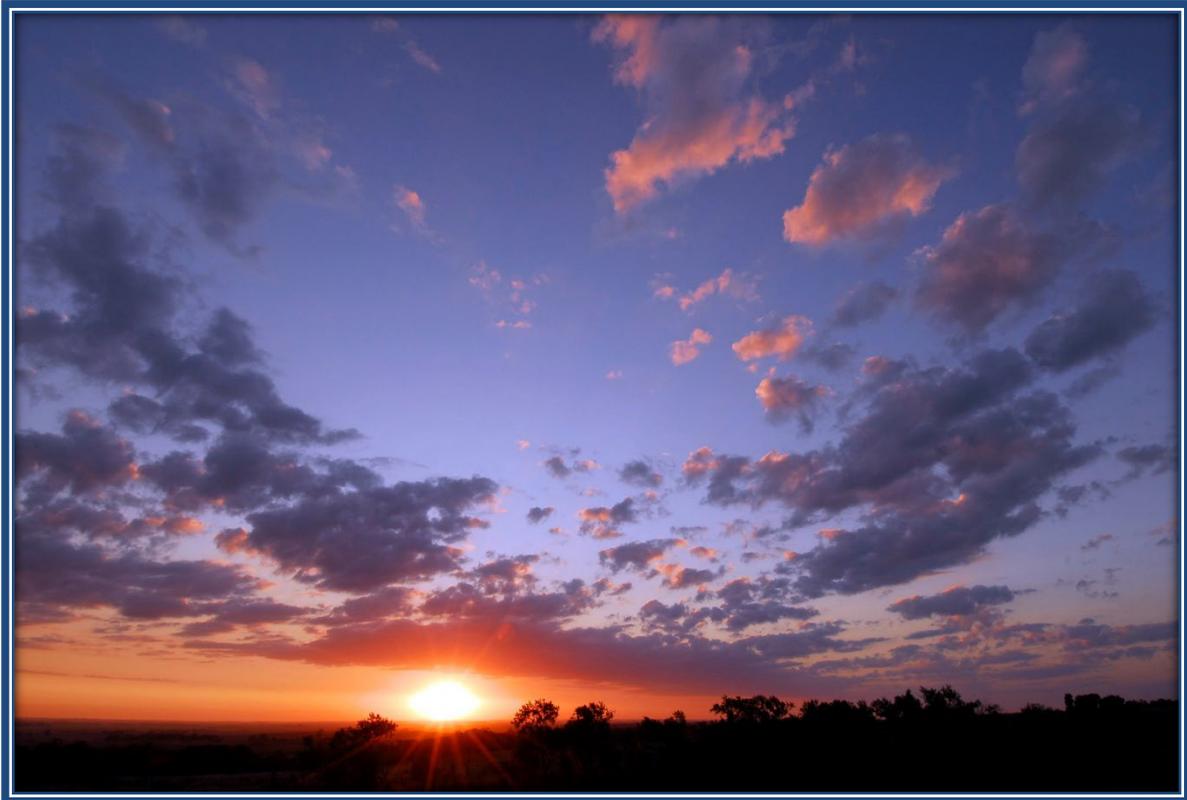


# Cancer in South Dakota

Preliminary report of cancer among South Dakotans in 2021

## South Dakota Cancer Registry



The South Dakota Cancer Registry is funded with a grant from the Centers for Disease Control and Prevention – grant number DP007120. Picture courtesy from the South Dakota Department of Tourism, Pierre, SD



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This report presents numbers and rates of new malignant cancer cases that were diagnosed among South Dakota residents during the year 2021. This data is current as of February 28, 2023. However, data from 2021 is still in the process of being collected so this report should be considered preliminary. Once the majority of the 2021 cases are reported, the South Dakota Cancer Registry (SDCR) will release a final report, which will be posted at <https://www.getscreenedsd.org/sdcr>. The final report will present a more complete incidence of data that is currently available. Statistics on cancer deaths that occurred among South Dakota residents during 2021 is available in the *South Dakota Vital Statistics: State and County Comparison of Leading Health Indicators, 2021*.

On the following pages, Table 1 presents the number of new cases and the age-adjusted incidence rate for all cancers combined by primary site and gender for the year 2021. During that year, there were a total of 3,433 invasive and *in situ* bladder cancers diagnosed among South Dakota residents which translates into an age-adjusted rate of 315.5 per 100,000 population. By primary site, cancers of the female breast, lung, prostate, colorectal (colon and rectum), and bladder accounted for 1,825 diagnoses, more than half (53.0%) of all new malignancies.

By gender, female breast cancer was the most frequently diagnosed cancer. It accounted for 30.4% of all new cases among women, followed by lung cancer and colorectal cancer. Among men, cancer of the prostate occurred most frequently, accounting for 23.6% of all new malignancies, followed by lung cancer and colorectal cancer.

Table 2 presents the number of cases diagnosed in 2021 by the SEER Summary Stage. This table reflects *in situ* cases that are not used to calculate incidence rates, but are collected by the SDCR. Summary staging categorizes how far a cancer has spread from its point of origin. Summary staging uses all information available in the medical record by using a combination of the most precise clinical and pathological documentation based on the extent of disease.

This report is available online at <https://www.getscreenedsd.org/sdcr>.

**Table 1: Age-Adjusted Incidence Rates by Site and Gender  
South Dakota, 2021 (Preliminary)**

|  | TOTAL |                   | MALE  |                   | FEMALE |                   |
|--|-------|-------------------|-------|-------------------|--------|-------------------|
|  | Cases | Age-Adjusted Rate | Cases | Age-Adjusted Rate | Cases  | Age-Adjusted Rate |
| <b>All Sites</b>                       | 3433  | 315.5             | 1659  | 308.5             | 1774   | 328.8             |
| Bladder                                | 166   | 14.9              | 124   | 23.9              | 42     | 7.2               |
| Kidney and Renal Pelvis                | 147   | 13.9              | 100   | 19.5              | 47     | 8.4               |
| Ureter                                 | 3     | 0.3               | 1     | 0.1               | 2      | 0.4               |
| Other Urinary Organs                   | 7     | 0.6               | 6     | 1.2               | 1      | 0.2               |
| Bones and Joints                       | 3     | 0.3               | 2     | 0.5               | 1      | 0.2               |
| Soft Tissue (Including Heart)          | 19    | 1.6               | 10    | 1.6               | 9      | 1.5               |
| Brain and Nervous System               | 37    | 4.0               | 17    | 3.9               | 10     | 4.4               |
| Eye and Orbit                          | 3     | 0.4               | 0     | 0.0               | 3      | 0.8               |
| Breast, Female                         | 537   | 104.0             |       |                   | 537    | 104.0             |
| Cervix Uteri                           | 20    | 4.2               |       |                   | 20     | 4.2               |
| Corpus and Uterus, NOS                 | 113   | 19.6              |       |                   | 113    | 19.6              |
| Ovary                                  | 37    | 6.2               |       |                   | 37     | 6.2               |
| Vagina                                 | 3     | 0.5               |       |                   | 3      | 0.5               |
| Vulva                                  | 16    | 3.0               |       |                   | 16     | 3.0               |
| Other Female Genital Organs            | 16    | 2.8               |       |                   | 16     | 2.8               |
| Breast, Male                           | 6     | 0.8               | 6     | 0.8               |        |                   |
| Penis                                  | 6     | 1.3               | 6     | 1.3               |        |                   |
| Prostate                               | 391   | 65.6              | 391   | 65.6              |        |                   |
| Testis                                 | 19    | 4.7               | 19    | 4.7               |        |                   |
| Oral Cavity and Pharynx                | 88    | 8.0               | 70    | 12.7              | 18     | 3.2               |
| Anus, Anal Canal and Anorectum         | 11    | 1.1               | 4     | 0.5               | 7      | 1.6               |
| Colorectal                             | 335   | 31.8              | 145   | 29.4              | 190    | 34.2              |
| Esophagus                              | 48    | 4.3               | 33    | 5.9               | 15     | 2.8               |
| Gallbladder                            | 9     | 0.8               | 3     | 0.6               | 6      | 1.1               |
| Liver and Bile Ducts                   | 55    | 4.4               | 34    | 5.8               | 21     | 3.1               |
| Other Biliary                          | 16    | 1.3               | 10    | 1.7               | 6      | 1.0               |
| Pancreas                               | 92    | 8.2               | 49    | 9.7               | 43     | 7.2               |
| Peritoneum, Omentum and Mesentery      | 3     | 0.3               | 0     | 0.0               | 3      | 0.6               |
| Retroperitoneum                        | 1     | 0.1               | 0     | 0.0               | 1      | 0.2               |
| Small Intestine                        | 23    | 2.2               | 15    | 3.1               | 8      | 1.3               |
| Stomach                                | 46    | 4.6               | 25    | 5.0               | 21     | 4.2               |
| Larynx                                 | 18    | 1.4               | 17    | 2.9               | 1      | 0.1               |
| Lung and Bronchus                      | 396   | 34.2              | 193   | 35.6              | 203    | 33.6              |
| Mesothelioma                           | 5     | 0.5               | 1     | 0.1               | 4      | 0.9               |
| Nose, Nasal Cavity and Middle Ear      | 1     | 0.1               | 0     | 0.0               | 1      | 0.3               |
| Melanoma of the Skin                   | 185   | 17.7              | 113   | 21.2              | 72     | 15.1              |
| Other Skin                             | 11    | 1.0               | 4     | 0.7               | 7      | 1.2               |
| Hodgkin's Lymphoma                     | 12    | 1.3               | 7     | 1.4               | 5      | 1.2               |
| Non-Hodgkin's Lymphoma                 | 141   | 12.9              | 65    | 11.9              | 76     | 14.0              |
| Leukemia                               | 122   | 10.9              | 67    | 12.6              | 55     | 9.9               |
| Myeloma                                | 44    | 4.1               | 24    | 4.6               | 20     | 3.6               |
| Myeloproliferative and Myelodysplastic | 34    | 3.2               | 18    | 4.1               | 16     | 2.7               |
| Thyroid                                | 80    | 9.4               | 25    | 5.5               | 55     | 13.4              |
| Other Endocrine                        | 9     | 1.0               | 2     | 0.5               | 7      | 1.4               |
| Other Sites                            | 99    | 9.1               | 52    | 10.7              | 47     | 8.2               |

Rates are per 100,000 persons and age-adjusted to the 2000 US standard population and the 2021 SD estimated population. Bladder in-situ cases are included in the age-adjusted rates with the invasive cancers.  
Source: South Dakota Department of Health

**Table 2: Incidence Counts by SEER Summary Stage and Primary Site  
South Dakota, 2021 (Preliminary)**

| <b>Primary Site</b>                    | <i>In Situ</i> | <b>Localized</b> | <b>Regional</b> | <b>Distant</b> | <b>Unstaged/<br/>Unknown</b> | <b>Total</b> |
|--|----------------|------------------|-----------------|----------------|------------------------------|--------------|
| <b>Total</b>                           | 479            | 1569             | 774             | 894            | 100                          | 3816         |
| Bladder                                | 96             | 39               | 15              | 13             | 3                            | 166          |
| Kidney and Renal Pelvis                | 2              | 95               | 23              | 24             | 5                            | 149          |
| Ureter                                 | 4              | 1                | 1               | 1              | 0                            | 7            |
| Other Urinary Organs                   | 4              | 2                | 1               | 2              | 2                            | 11           |
| Bones and Joints                       | 0              | 0                | 2               | 1              | 0                            | 3            |
| Soft Tissue (Including Heart)          | 0              | 10               | 7               | 1              | 1                            | 19           |
| Brain and Nervous System               | 0              | 33               | 3               | 0              | 1                            | 37           |
| Eye and Orbit                          | 0              | 3                | 0               | 0              | 0                            | 3            |
| Breast, Female                         | 115            | 383              | 132             | 22             | 0                            | 652          |
| Cervix Uteri                           | 0              | 3                | 11              | 5              | 1                            | 20           |
| Corpus and Uterus, NOS                 | 0              | 88               | 17              | 8              | 0                            | 113          |
| Ovary                                  | 0              | 11               | 13              | 12             | 1                            | 37           |
| Vagina                                 | 4              | 1                | 1               | 1              | 0                            | 7            |
| Vulva                                  | 17             | 10               | 4               | 2              | 0                            | 33           |
| Other Female Genital Organs            | 1              | 1                | 3               | 11             | 1                            | 17           |
| Breast, Male                           | 0              | 3                | 2               | 1              | 0                            | 6            |
| Penis                                  | 3              | 2                | 4               | 0              | 0                            | 9            |
| Prostate                               | 0              | 268              | 72              | 42             | 9                            | 391          |
| Testis                                 | 0              | 13               | 6               | 0              | 0                            | 19           |
| Oral Cavity & Pharynx                  | 22             | 24               | 51              | 12             | 1                            | 110          |
| Anus, Anal Canal and Anorectum         | 4              | 6                | 2               | 3              | 0                            | 15           |
| Colorectal                             | 5              | 109              | 144             | 71             | 11                           | 340          |
| Esophagus                              | 0              | 9                | 15              | 23             | 1                            | 48           |
| Gallbladder                            | 0              | 1                | 2               | 6              | 0                            | 9            |
| Liver and Bile Ducts                   | 0              | 20               | 13              | 19             | 3                            | 55           |
| Other Biliary                          | 0              | 3                | 5               | 6              | 2                            | 16           |
| Pancreas                               | 0              | 20               | 21              | 45             | 6                            | 92           |
| Peritoneum, Omentum and Mesentery      | 0              | 0                | 2               | 1              | 0                            | 3            |
| Retroperitoneum                        | 0              | 0                | 1               | 0              | 0                            | 1            |
| Small Intestine                        | 0              | 8                | 11              | 4              | 0                            | 23           |
| Stomach                                | 0              | 21               | 5               | 15             | 5                            | 46           |
| Larynx                                 | 4              | 9                | 6               | 3              | 0                            | 22           |
| Lung and Bronchus                      | 2              | 115              | 91              | 185            | 5                            | 398          |
| Mesothelioma                           | 0              | 0                | 3               | 2              | 0                            | 5            |
| Nose, Nasal Cavity and Middle Ear      | 0              | 0                | 1               | 0              | 0                            | 1            |
| Melanomas of the Skin                  | 195            | 157              | 17              | 8              | 3                            | 380          |
| Other Skin                             | 0              | 6                | 2               | 0              | 3                            | 11           |
| Hodgkin's Lymphoma                     | 0              | 2                | 4               | 6              | 0                            | 12           |
| Non-Hodgkin's Lymphoma                 | 0              | 35               | 31              | 71             | 4                            | 141          |
| Leukemia                               | 0              | 0                | 0               | 122            | 0                            | 122          |
| Multiple Myeloma                       | 0              | 2                | 0               | 42             | 0                            | 44           |
| Myeloproliferative and Myelodysplastic | 0              | 0                | 0               | 34             | 0                            | 34           |
| Thyroid                                | 1              | 50               | 28              | 1              | 1                            | 81           |
| Other Endocrine                        | 0              | 5                | 2               | 2              | 0                            | 9            |
| Other Sites                            | 0              | 1                | 0               | 67             | 31                           | 99           |

Source: South Dakota Department of Health

**Appendix A: SEER Incidence Site Analysis Categories**

| Site Group  | ICD-O-3 Site                            | ICD-O-3 Histology (Type)             | Recode                               |       |
|---|---|--------------------------------------|--------------------------------------|-------|
| <b>Oral Cavity and Pharynx</b>                    |   |                                      |                                      |       |
| Lip   | C000-C009                               | excluding 9050-9055, 9140, 9590-9992 | 20010                                |       |
| Tongue  | C019-C029                               |                                      | 20020                                |       |
| Salivary Gland                                    | C079-C089                               |                                      | 20030                                |       |
| Floor of Mouth                                    | C040-C049                               |                                      | 20040                                |       |
| Gum and Other Mouth                               | C030-C039, C050-C059, C060-C069         |                                      | 20050                                |       |
| Nasopharynx                                       | C110-C119                               |                                      | 20060                                |       |
| Tonsil  | C090-C099                               |                                      | 20070                                |       |
| Oropharynx  | C100-C109                               |                                      | 20080                                |       |
| Hypopharynx                                       | C129, C130-C139                         |                                      | 20090                                |       |
| Other Oral Cavity and Pharynx                     | C140, C142-C148                         |                                      | 20100                                |       |
| <b>Digestive System</b>                           |   |                                      |                                      |       |
| Esophagus   | C150-C159                               | excluding 9050-9055, 9140, 9590-9992 | 21010                                |       |
| Stomach   | C160-C169                               |                                      | 21020                                |       |
| Small Intestine                                   | C170-C179                               |                                      | 21030                                |       |
| Colon and Rectum                                  |   |                                      |                                      |       |
| Colon Excluding Rectum                            |   |                                      |                                      |       |
| Cecum   | C180                                    | excluding 9050-9055, 9140, 9590-9992 | 21041                                |       |
| Appendix  | C181                                    |                                      | 21042                                |       |
| Ascending Colon                                   | C182                                    |                                      | 21043                                |       |
| Hepatic Flexure                                   | C183                                    |                                      | 21044                                |       |
| Transverse Colon                                  | C184                                    |                                      | 21045                                |       |
| Splenic Flexure                                   | C185                                    |                                      | 21046                                |       |
| Descending Colon                                  | C186                                    |                                      | 21047                                |       |
| Sigmoid Colon                                     | C187                                    |                                      | 21048                                |       |
| Large Intestine, NOS                              | C188-C189, C260                         |                                      | 21049                                |       |
| Rectum and Rectosigmoid Junction                  |   |                                      |                                      |       |
| Rectosigmoid Junction                             | C199                                    | excluding 9050-9055, 9140, 9590-9992 | 21051                                |       |
| Rectum  | C209                                    |                                      | 21052                                |       |
| Anus, Anal Canal and Anorectum                    | C210-C212, C218                         |                                      | 21060                                |       |
| Liver and Intrahepatic Bile Duct                  |   |                                      |                                      |       |
| Liver   | C220                                    | excluding 9050-9055, 9140, 9590-9992 | 21071                                |       |
| Intrahepatic Bile Duct                            | C221                                    |                                      | 21072                                |       |
| Gallbladder                                       | C239                                    |                                      | 21080                                |       |
| Other Biliary                                     | C240-C249                               |                                      | 21090                                |       |
| Pancreas  | C250-C259                               |                                      | 21100                                |       |
| Retroperitoneum                                   | C480                                    |                                      | 21110                                |       |
| Peritoneum, Omentum and Mesentery                 | C481-C482                               |                                      | 21120                                |       |
| Other Digestive Organs                            | C268-C269, C488                         |                                      | 21130                                |       |
| <b>Respiratory System</b>                         |   |                                      |                                      |       |
| Nose, Nasal Cavity and Middle Ear                 | C300-C301, C310-C319                    |                                      | excluding 9050-9055, 9140, 9590-9992 | 22010 |
| Larynx  | C320-C329                               | 22020                                |                                      |       |
| Lung and Bronchus                                 | C340-C349                               | 22030                                |                                      |       |
| Pleura  | C384                                    | 22050                                |                                      |       |
| Trachea, Mediastinum and Other Respiratory Organs | C339, C381-C383, C388, C390, C398, C399 | 22060                                |                                      |       |

**Appendix A: SEER Incidence Site Analysis Categories (continued)**

|  |                                   |   |              |
|--|-----------------------------------|---|--------------|
| <b>Bones and Joints</b>                  | <b>C400-C419</b>                  | <b>excluding 9050-9055, 9140, 9590-9992</b>   | <b>23000</b> |
| <b>Soft Tissue Including Heart</b>       | <b>C380, C470-C479, C490-C499</b> | <b>excluding 9050-9055, 9140, 9590-9992</b>   | <b>24000</b> |
| <b>Skin Excluding Basal And Squamous</b> |                                   |   |              |
| Melanoma of the Skin                     | C440-C449                         | 8720-8790   | 25010        |
| Other Non-Epithelial Skin                | C440-C449                         | excluding 8000-8005, 8010-8046, 8050-8084, 8090-8110, 8720-8790, 9050-9055, 9140, 9590-9992 | 25020        |
| <b>Breast</b>                            | <b>C500-C509</b>                  | <b>excluding 9050-9055, 9140, 9590-9992</b>   | <b>26000</b> |
| <b>Female Genital System</b>             |                                   |   |              |
| Cervix Uteri                             | C530-C539                         | excluding 9050-9055, 9140, 9590-9992  | 27010        |
| Corpus and Uterus, NOS                   |                                   |   |              |
| Corpus Uteri                             | C540-C549                         | excluding 9050-9055, 9140, 9590-9992  | 27020        |
| Uterus, NOS                              | C559                              |   | 27030        |
| Ovary                                    | C569                              |   | 27040        |
| Vagina                                   | C529                              |   | 27050        |
| Vulva                                    | C510-C519                         |   | 27060        |
| Other Female Genital Organs              | C570-C589                         |   | 27070        |
| <b>Male Genital System</b>               |                                   |   |              |
| Prostate                                 | C619                              | excluding 9050-9055, 9140, 9590-9992  | 28010        |
| Testis                                   | C620-C629                         |   | 28020        |
| Penis                                    | C600-C609                         |   | 28030        |
| Other Male Genital Organs                | C630-C639                         |   | 28040        |
| <b>Urinary System</b>                    |                                   |   |              |
| Urinary Bladder                          | C670-C679                         | excluding 9050-9055, 9140, 9590-9992  | 29010        |
| Kidney and Renal Pelvis                  | C649, C659                        |   | 29020        |
| Ureter                                   | C669                              |   | 29030        |
| Other Urinary Organs                     | C680-C689                         |   | 29040        |
| <b>Eye and Orbit</b>                     | <b>C690-C699</b>                  | <b>excluding 9050-9055, 9140, 9590-9992</b>   | <b>30000</b> |
| <b>Brain and Other Nervous System</b>    |                                   |   |              |
| Brain                                    | C710-C719                         | excluding 9050-9055, 9140, 9590-9992  | 31010        |
| Cranial Nerves Other Nervous System      | C710-C719<br>C700-C709, C720-C729 | 9530-9539<br>excluding 9050-9055, 9140, 9590-9992   | 31040        |
| <b>Endocrine System</b>                  |                                   |   |              |
| Thyroid                                  | C739                              | excluding 9050-9055, 9140, 9590-9992  | 32010        |
| Other Endocrine Including Thymus         | C379, C740-C749, C750-C759        |   | 32020        |

**Appendix A: SEER Incidence Site Analysis Categories (continued)**

|                                  |  |  |              |
|----------------------------------|--|--|--------------|
| <b>Lymphoma</b>                  |  |  |              |
| Hodgkin's Lymphoma               |  |  |              |
| Hodgkin's - Nodal                | C024, C098-C099, C111, C142, C379, C422, C770-C779   | 9650-9667  | 33011        |
| Hodgkin's - Extranodal           | All other sites  |  | 33012        |
| Non-Hodgkin's Lymphoma (NHL)     |  |  |              |
| NHL - Nodal                      | C024, C098,C099, C111,C142, C379,C422, C770-C779   | 9590-9597, 9670-9671, 9673, 9675, 9678-9680, 9684, 9687-9691, 9695, 9698-9702, 9705, 9708-9709, 9712, 9714-9719, 9724-9729, 9735, 9737-9738, 9811-9818, 9823, 9827, 9837 | 33041        |
| NHL - Extranodal                 | All sites except C024, C098-C099, C111, C142, C379, C422, C770-C779                        | 9590-9597, 9670-9671, 9673, 9675, 9678-9680, 9684, 9687, 9688, 9689-9691, 9695, 9698-9702, 9705, 9708-9709, 9712, 9714-9719, 9724-9729, 9735, 9737, 9738                 | 33042        |
|                                  | All sites except C024, C098-C099, C111, C142, C379, C420-C422, C424, C770-C779             | 9811-9818, 9823, 9827, 9837  |              |
| <b>Myeloma</b>                   |  | <b>9731-9132, 9734</b>   | <b>34000</b> |
| <b>Leukemia</b>                  |  |  |              |
| Lymphocytic Leukemia             |  |  |              |
| Acute Lymphocytic Leukemia       | C420, C421, C424   | 9826, 9835-9836<br>9811-9818, 9837   | 35011        |
| Chronic Lymphocytic Leukemia     | C420, C421, C424   | 9823   | 35012        |
| Other Lymphocytic Leukemia       |  | 9820, 9832-9834, 9940  | 35013        |
| Myeloid and Monocytic Leukemia   |  |  |              |
| Acute Myeloid Leukemia           |  | 9840, 9861, 9865-9867, 9869, 9871-9874, 9895-9897, 9898, 9910-9911, 9920   | 35021        |
| Acute Monocytic Leukemia         |  | 9891   | 35031        |
| Chronic Myeloid Leukemia         |  | 9863, 9875, 9876, 9945, 9946   | 35022        |
| Other Myeloid/Monocytic Leukemia |  | 9860, 9930   | 35023        |
| <b>Other Leukemia</b>            |  |  |              |
| Other Acute Leukemia             |  | 9801, 9805-9809, 9931  | 35041        |
| Aleukemic, Subleukemic and NOS   |  | 9733, 9742, 9800, 9831, 9870, 9948, 9963, 9964   | 35043        |
|                                  | C420, C421, C424   | 9827   |              |
| <b>Mesothelioma</b>              |  | <b>9050-9055</b>   | <b>36010</b> |
| <b>Kaposi Sarcoma</b>            |  | <b>9140</b>  | <b>36020</b> |
| <b>Miscellaneous</b>             |  | <b>9740-9741, 9750-9769, 9950, 9960-9962, 9965-9967, 9970-9971, 9975, 9980, 9982-9987, 9989, 9991-9992</b>   | <b>37000</b> |
|                                  | <b>C760-C768, C809</b>   | <b>excluding 9050-9055, 9140, 9590-9992</b>  |              |
|                                  | <b>C420-C424</b>   |  |              |
|                                  | <b>C770-C779</b>   |  |              |
| <b>Invalid</b>                   | <b>Site or histology code not within valid range or site code not found in this table.</b> |  | <b>99999</b> |

Source: <http://seer.cancer.gov/siterecode>

This table was updated for Hematopoietic codes based on WHO Classification of Tumors of Hematopoietic and Lymphoid Tissues (2008).