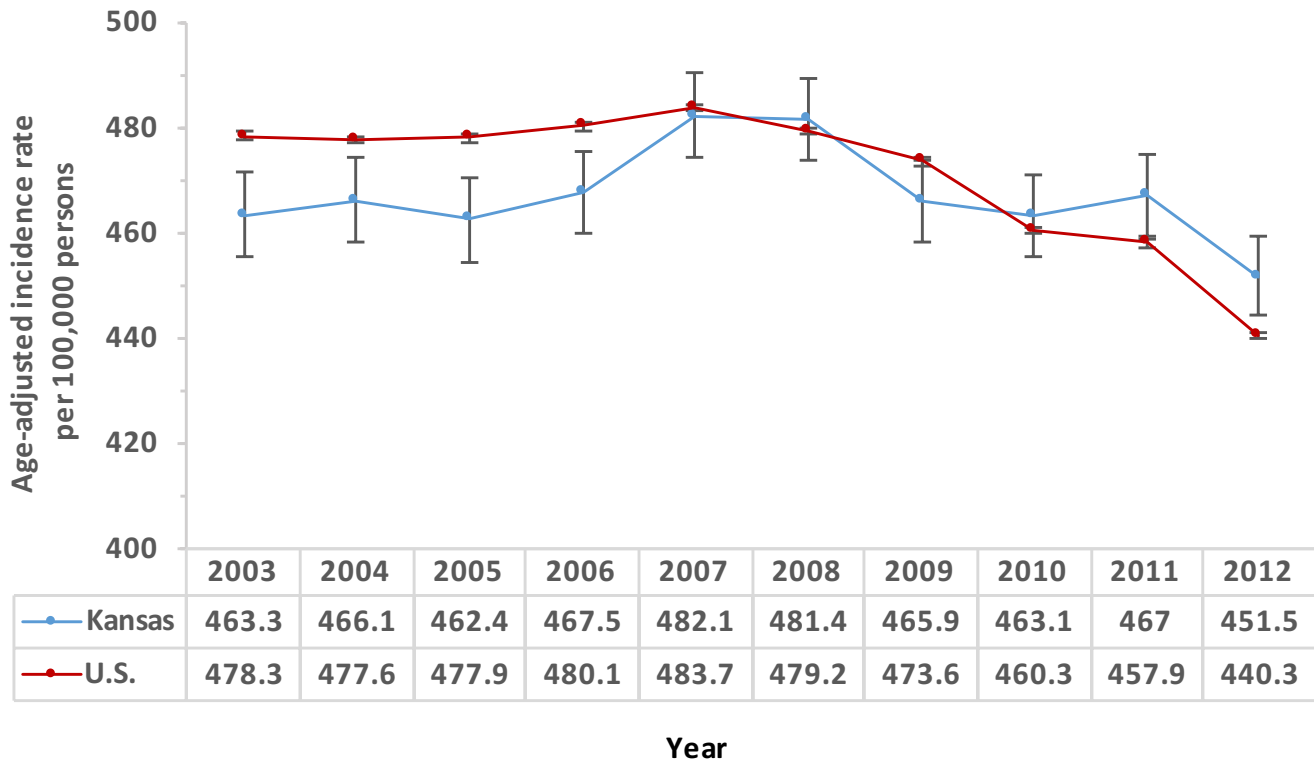


CHAPTER 1: CANCER INCIDENCE

Cancer Incidence

Each year, on average, more than 13,000 invasive cancers are diagnosed among Kansas residents. In Kansas, age-adjusted cancer incidence rates remained relatively stable during the period 2003-2012 with 463.3 cases per 100,000 persons (95% confidence interval: 455.4 to 471.4) in 2003 and 451.5 cases per 100,000 persons (95% confidence interval: 444.0 to 459.1) in 2012. Meanwhile, age-adjusted cancer incidence rates decreased significantly in the U.S. from 483.7 cases per 100,000 persons (95% confidence interval: 483.0 to 484.5) in 2007 to 440.3 cases per 100,000 persons (95% confidence interval: 439.6 to 441.0) in 2012 (Figure 1-1).

Figure 1-1. Age-adjusted cancer incidence rates, Kansas and the U.S. 2003-2012.

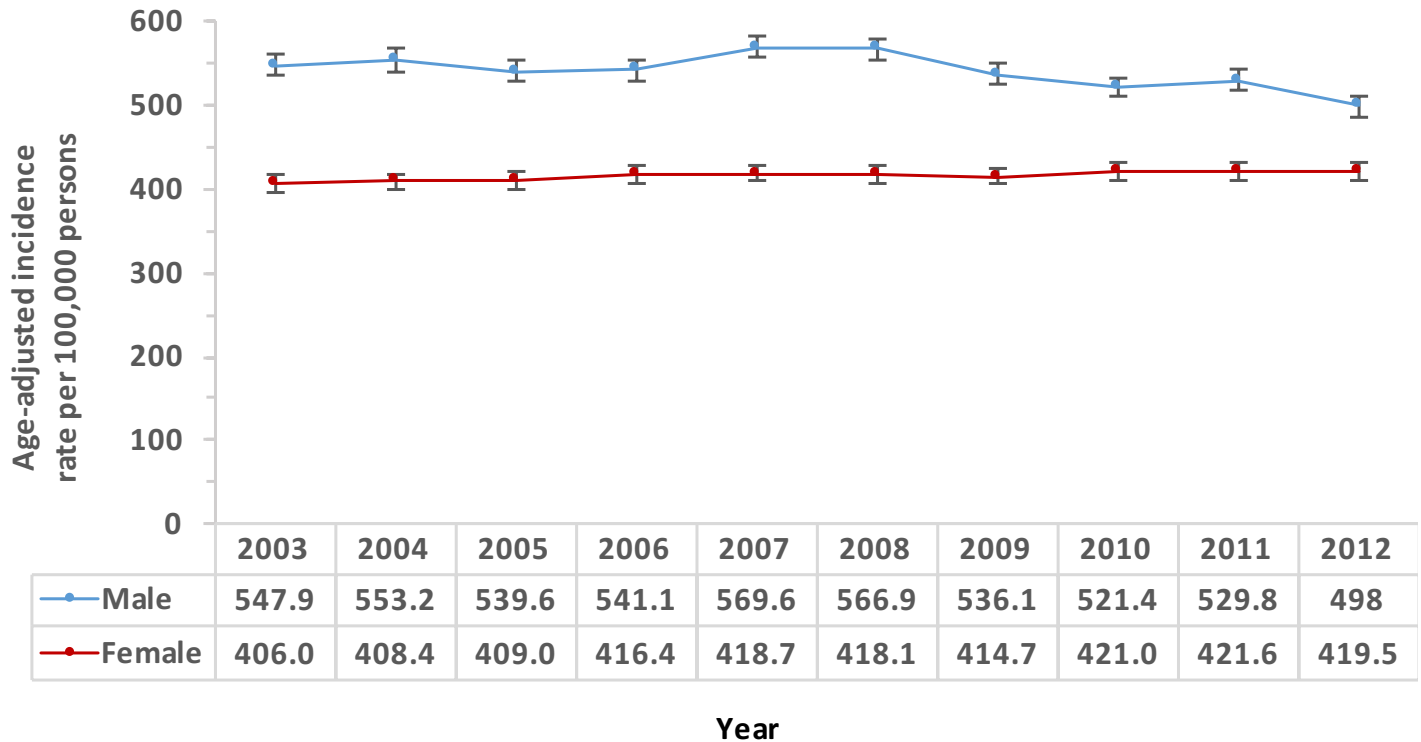


Source: 2003-2012 Kansas Cancer Registry. U.S. Cancer Statistics: 1999-2012 Incidence, WONDER Online Database, US DHHS, CDC; 2016. <http://wonder.cdc.gov> Rates were age-adjusted to the U.S. 2000 standard population using the direct method. See Technical Appendix for details on how rates were calculated. Vertical bars indicate 95% confidence intervals. Cancer incidence was defined according to ICD-O-3 codes with a behavior code indicating invasive malignancy; includes in situ bladder cancer.

Cancer Incidence among Gender Groups

In Kansas, age-adjusted cancer incidence rates were significantly higher for males as compared to females during the period 2003-2012 (Figure 1-2). Age-adjusted cancer incidence rates were approximately 30 percent higher for men than for women throughout this period. The large difference in age-adjusted incidence rates between males and females is similar at the national level.³

Figure 1-2. Age-adjusted cancer incidence rates among gender groups, Kansas 2003-2012.



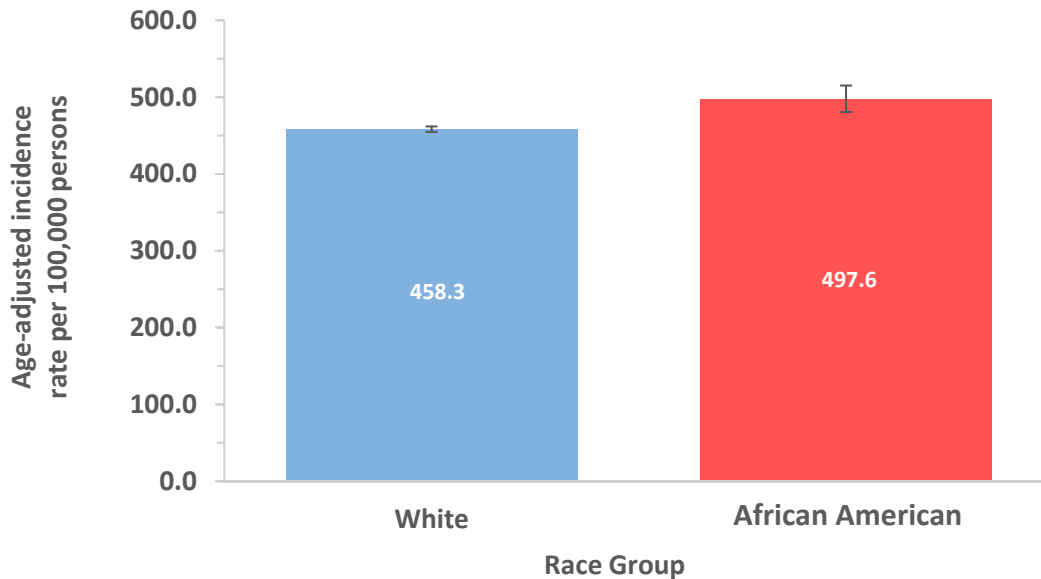
Source: 2003-2012 Kansas Cancer Registry. Rates were age-adjusted to the U.S. 2000 standard population using the direct method. See Technical Appendix for details on how rates were calculated. Vertical bars indicate 95% confidence intervals. Cancer incidence was defined according to ICD-O-3 codes with a behavior code indicating invasive malignancy; includes in situ bladder cancer.

³ Ehemann C, Henley SJ, Ballard-Barbash R, Jacobs EJ, Schymura MJ, Noone AM, Pan L, Anderson RN, Fulton JE, Kohler BA, Jemal A, Ward E, Plescia M, Ries LAG, Edwards BK. Annual Report to the Nation on the Status of Cancer, 1975-2008, Featuring Cancers Associated with Excess Weight and Lack of Sufficient Physical Activity. Cancer. Epub 2012 Mar 28.

Cancer Incidence among Race Groups

Age-adjusted cancer incidence rates were significantly higher for African American Kansans (497.6 cases per 100,000 persons; 95% confidence interval: 480.7 to 515.1) than for white Kansans (458.3 cases per 100,000 persons; 95% confidence interval: 454.8 to 461.9) during the time period 2008-2012 (Figure 1-3). Incidence rates for Kansans of other race categories are not shown because the number of cases were insufficient for computing statistically reliable rates for these race groups.

Figure 1-3. Age-adjusted cancer incidence rates among race groups, Kansas 2008-2012

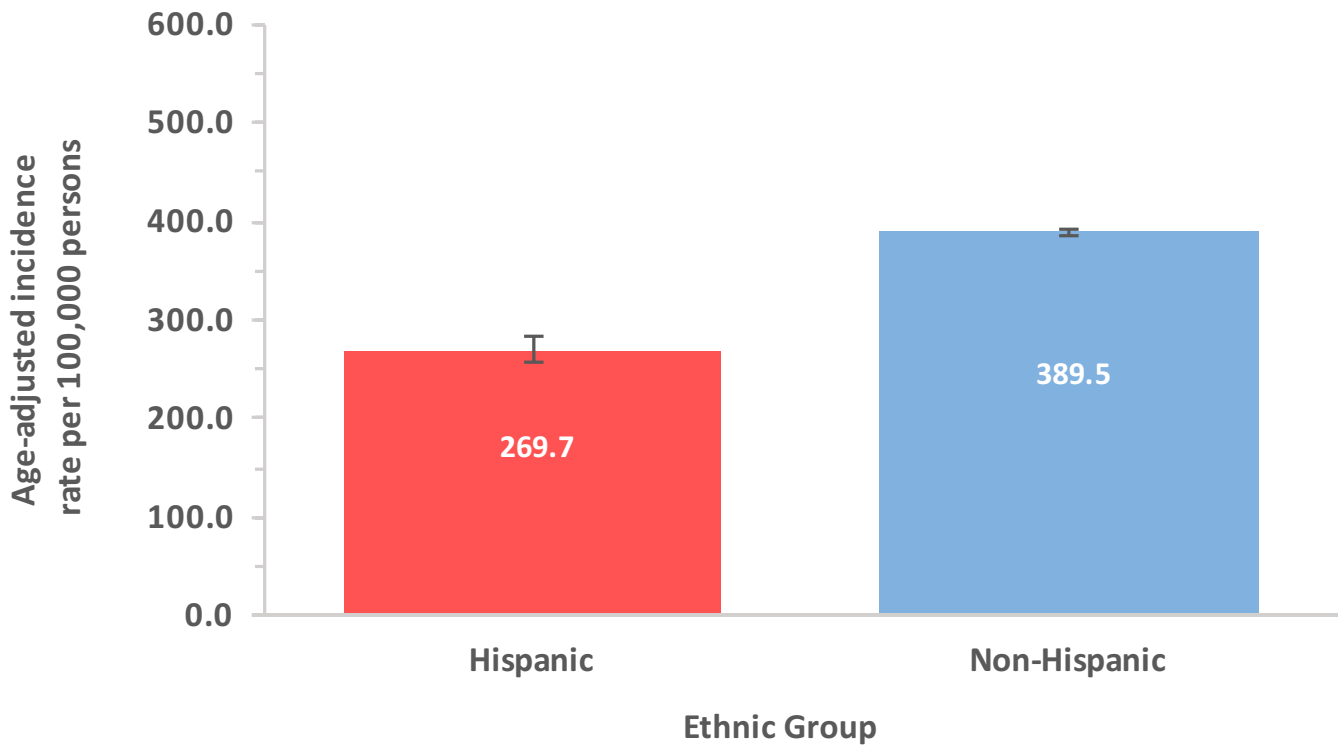


Source: 2008-2012 Kansas Cancer Registry. Rates were age-adjusted to the U.S. 2000 standard population using the direct method. See Technical Appendix for details on how rates were calculated. Vertical bars indicate 95% confidence intervals. Cancer incidence was defined according to ICD-O-3 codes with a behavior code indicating invasive malignancy; includes in situ bladder cancer.

Cancer Incidence among Ethnic Groups

In Kansas, age-adjusted cancer incidence rates were significantly lower for Hispanics (269.7 cases per 100,000 persons; 95% confidence interval: 255.7 to 284.4) as compared to non-Hispanics (389.5 cases per 100,000 persons; 95% confidence interval: 386.2 to 392.7) during the period 2008-2012 (Figure 1-4).

Figure 1-4. Age-adjusted cancer incidence rates among ethnic groups, Kansas 2008-2012.

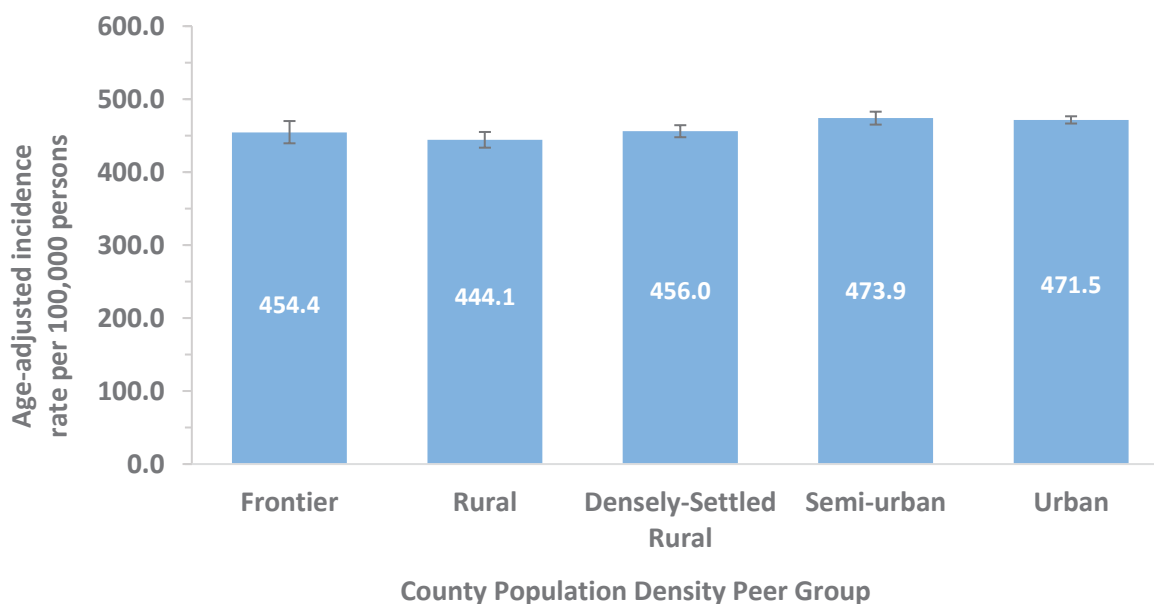


Source: 2008-2012 Kansas Cancer Registry. Rates were age-adjusted to the U.S. 2000 standard population using the direct method. See Technical Appendix for details on how rates were calculated. Vertical bars indicate 95% confidence intervals. Cancer incidence was defined according to ICD-O-3 codes with a behavior code indicating invasive malignancy; includes in situ bladder cancer. Hispanics were defined as persons of Mexican, Puerto Rican, Cuban, South or Central American, Other Spanish, Spanish not otherwise specified, or Dominican Republic ethnicity. Persons with Spanish surname only or unknown ethnicity were excluded.

Cancer Incidence among County Population Density Groups

In Kansas, there were no significant differences in age-adjusted cancer incidence rates among different county population density groups during the time period 2008-2012 (Figure 1-5).

Figure 1-5. Age-adjusted cancer incidence rates among county population density peer groups, Kansas 2008-2012.

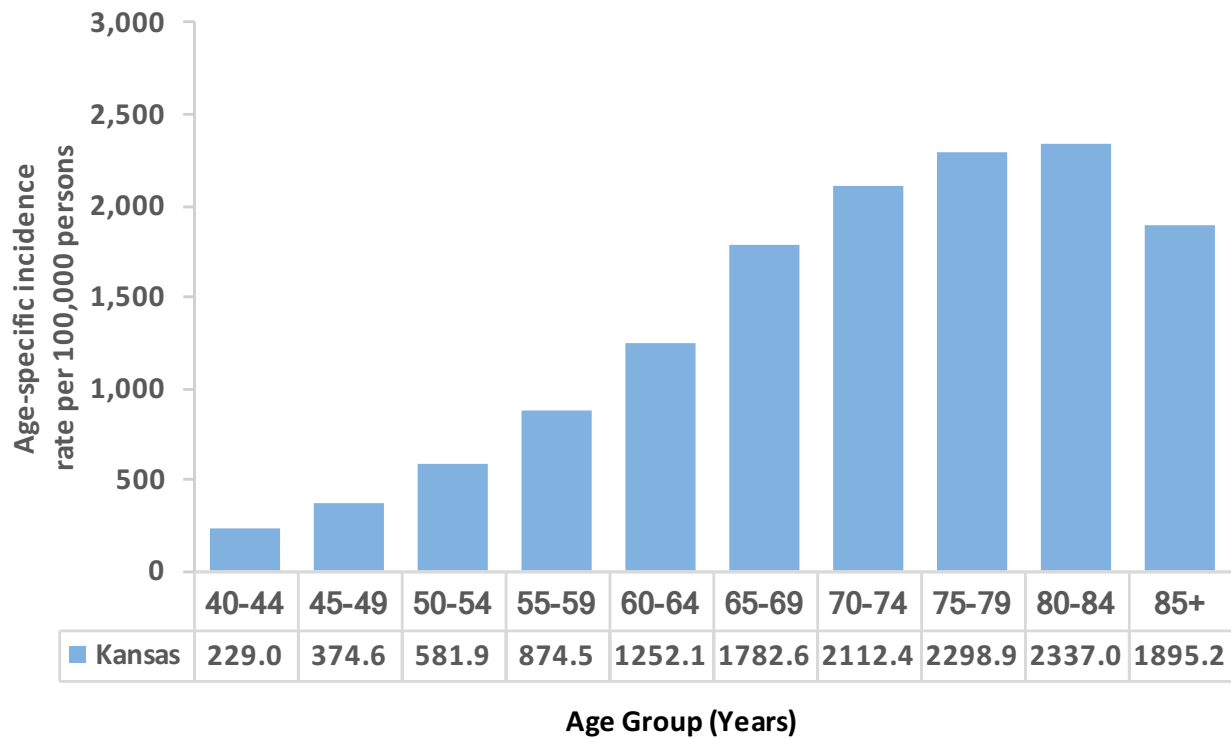


Source: 2008-2012 Kansas Cancer Registry. Rates were age-adjusted to the U.S. 2000 standard population using the direct method. See Technical Appendix for details on how rates were calculated. County population density peer groups are based on the population for each county in the 2000 population and are defined as follows: Frontier (fewer than 6 persons per square mile), Rural (6 to 19.9 persons per square mile), Densely-Settled Rural (20 to 39.9 persons per square mile), Semi-Urban (40 to 149.9 persons per square mile), and Urban (150 or more persons per square mile). Vertical bars indicate 95% confidence intervals. Cancer incidence was defined according to ICD-O-3 codes with a behavior code indicating invasive malignancy; includes in situ bladder cancer.

Cancer Incidence among Age Groups

In Kansas, cancer incidence increased dramatically with age as shown by the data in the period of 2008-2012 (Figure 1-6). Cancer incidence rates peaked among Kansans aged 80-84 years old (2337.0 cases per 100,000 persons; 95% confidence interval: 2281.2 to 2393.8), and then decreased thereafter.

Figure 1-5. Age-adjusted cancer incidence rates among county population density peer groups, Kansas 2008-2012.

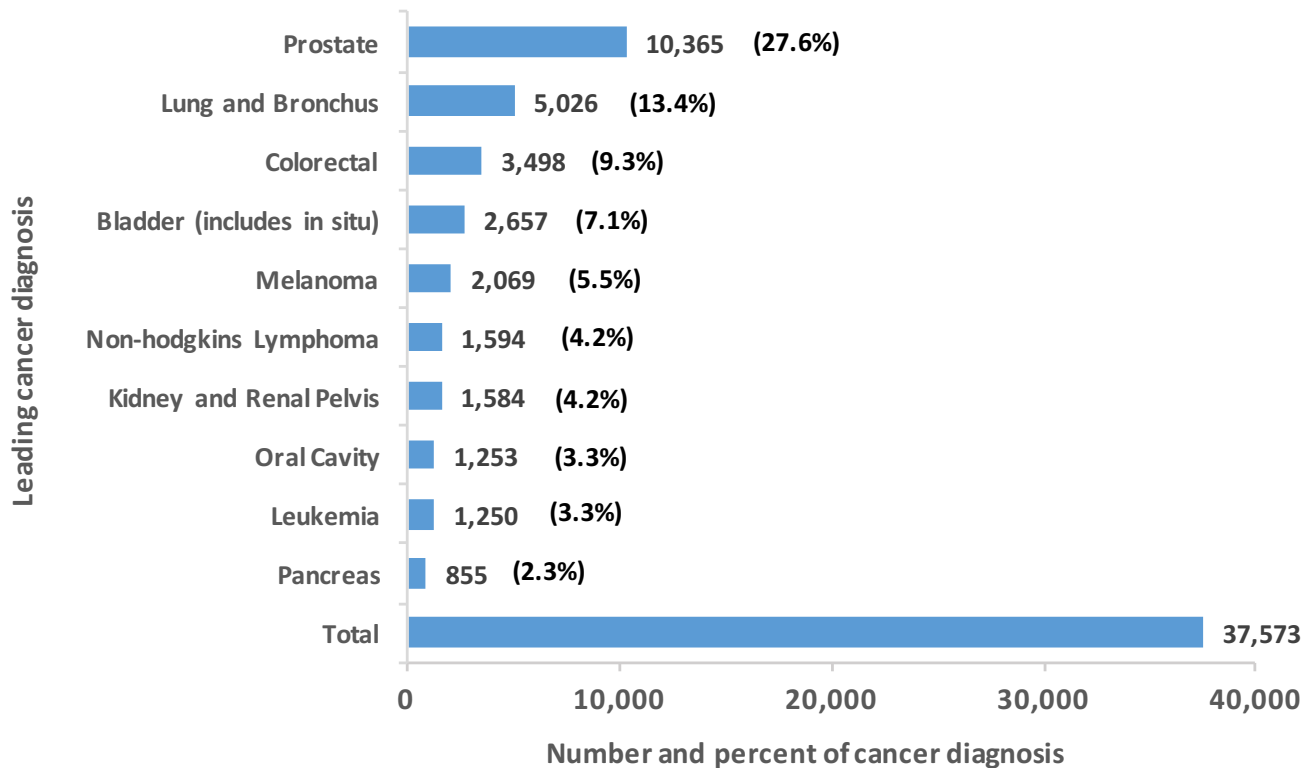


Source: 2008-2012 Kansas Cancer Registry. See Technical Appendix for details on how rates were calculated. Cancer incidence was defined according to ICD-O-3 codes with a behavior code indicating invasive malignancy; includes in situ bladder cancer.

Most Commonly Diagnosed Cancers by Gender

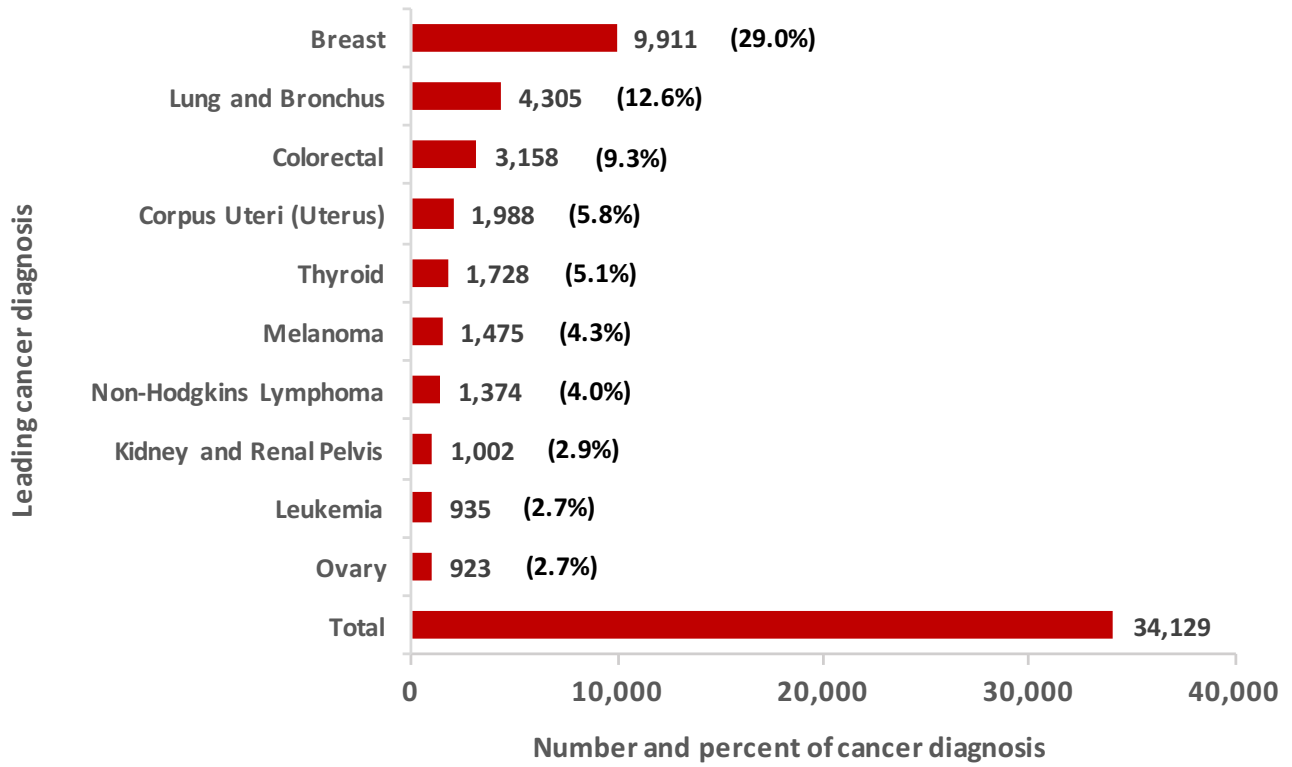
The most commonly diagnosed cancers among Kansas males during the time period 2008-2012 were prostate (27.6%), lung (13.4%), and colorectal (9.3%) cancer (Figure 1-7). Among Kansas females, the most commonly diagnosed cancers during this time period were breast (29.0%), lung (12.6%), and colorectal (9.3%) cancer (Figure 1-8).

Figure 1-7. Top 10 cancer diagnoses among males, Kansas 2008-2012



Source: 2008-2012 Kansas Cancer Registry. See Technical Appendix for details on how leading cancer diagnoses were defined.

Figure 1-8. Top 10 cancer diagnoses among females, Kansas 2008-2012



Source: 2008-2012 Kansas Cancer Registry. See Technical Appendix for details on how leading cancer diagnoses were defined.