

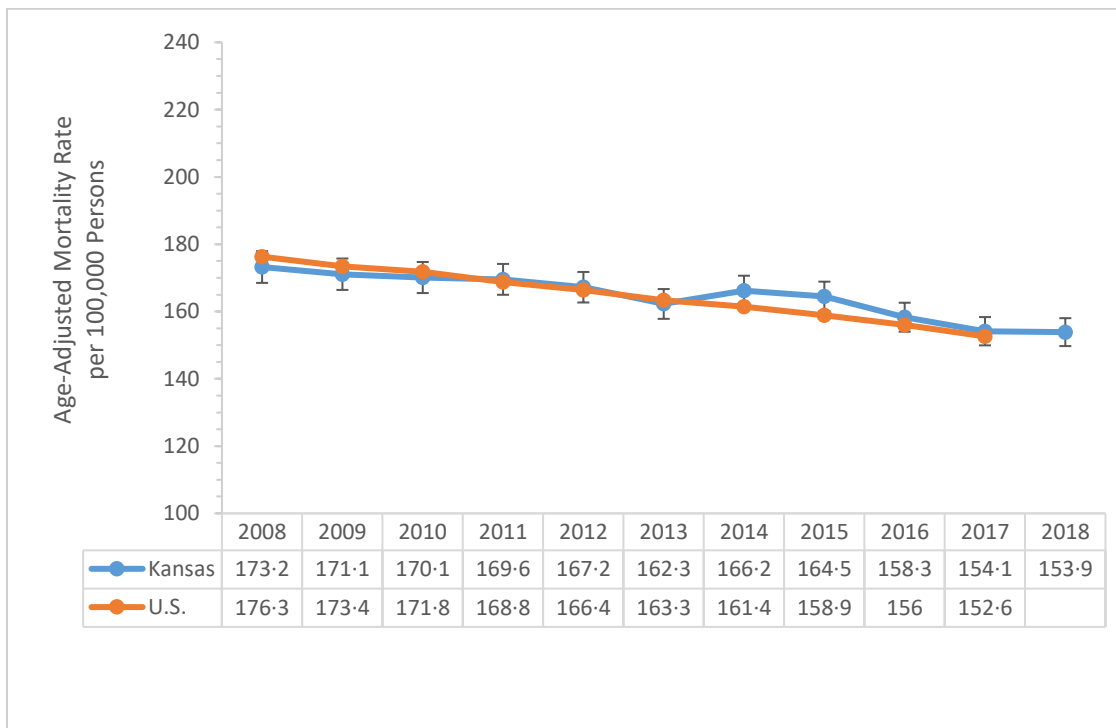
CHAPTER 2: CANCER MORTALITY

Cancer Mortality

More than 5,500 Kansans, on average, die from cancer each year. In Kansas, the age-adjusted cancer mortality rates decreased significantly during the period 2008-2018 from 173.2 deaths per 100,000 persons (95% Confidence Interval (CI): 168.5 to 177.9) in 2008 to 153.9 deaths per 100,000 persons (95% CI: 149.7 to 158.0) in 2018 (Figure 2-1). The age-adjusted cancer mortality rates also decreased significantly in the U.S. during the period 2008-2017 from 176.3 deaths per 100,000 persons in 2008 (95% CI: 175.9 to 176.8) to 152.6 deaths per 100,000 persons (95% CI: 152.2 to 153.0) in 2017 (Figure 2-1). The average Annual Percent Change (APC) in the cancer mortality rates during that period was -1.2 in Kansas and -1.6 in the U.S.



Figure 2-1. Age-adjusted cancer mortality rates, Kansas and the U.S. 2008-2018



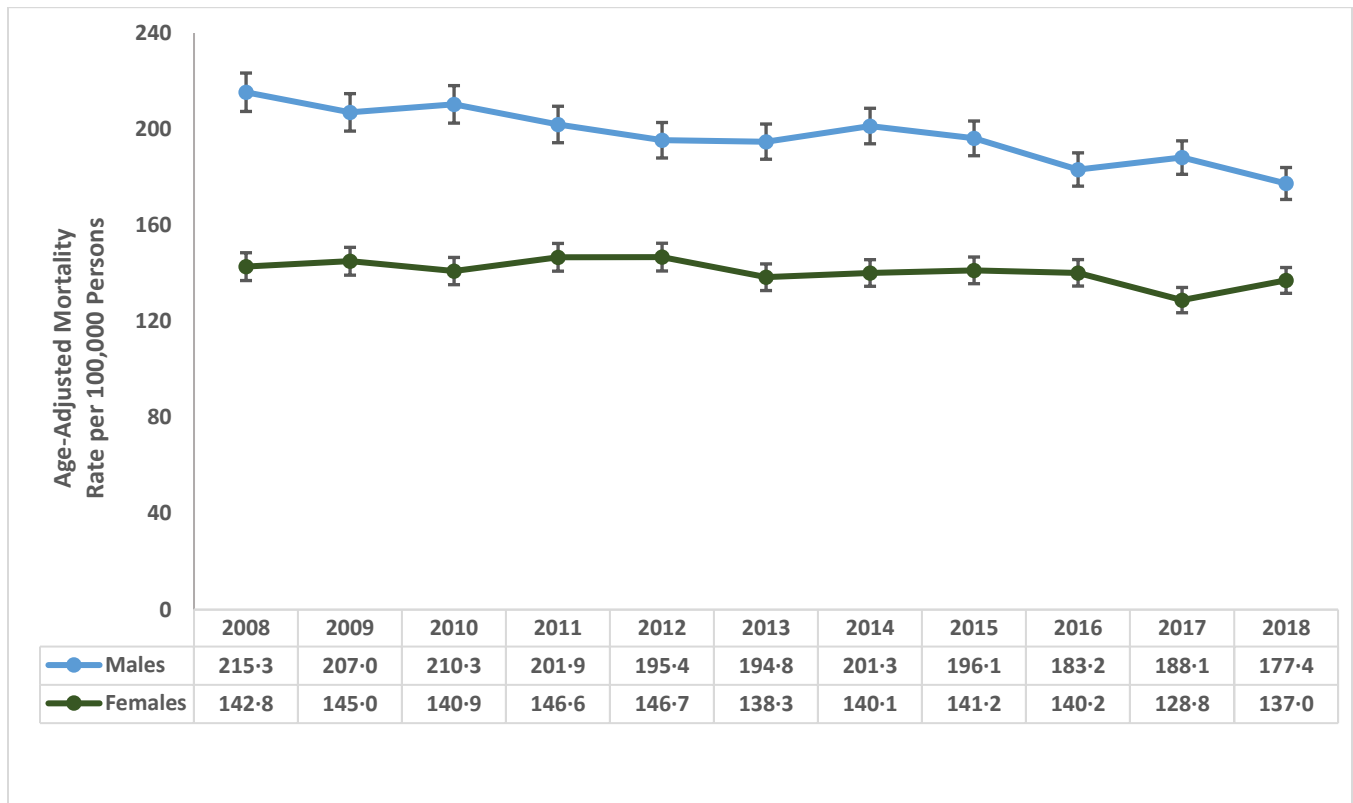
Source: For Kansas rates, 2008-2018 Kansas Vital Statistics, Bureau of Epidemiology and Public Health Informatics, KDHE. For US rates, U.S. U.S. Cancer Statistics Working Group. U.S. Cancer Statistics Data Visualizations Tool, based on 2019 submission data (1999-2017): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; www.cdc.gov/cancer/dataviz, released in June 2020. U.S. 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% CIs. Overall cancer mortality was defined as ICD-10 codes C00-C97. The average Annual Percent Change (APC) in the annual rates was calculated using the Joinpoint software; see Technical Appendix for more details on trend analysis.

Cancer Mortality among Gender Groups

In Kansas, the age-adjusted cancer mortality rates were approximately 30 percent to 50 percent higher for men than for women throughout the period 2008-2018 (Figure 2-2). The age-adjusted cancer mortality rates among Kansas males decreased significantly from 215.3 deaths per 100,000 persons (95% CI: 207.3 to 223.3) in 2008 to 177.4 deaths per 100,000 persons (95% CI: 170.7 to 184.0) in 2017 (Figure 2-2). The average Annual Percent Change (APC) in the cancer mortality rates among Kansas males was -1.6 during the period 2008-2018.

Although the age-adjusted cancer mortality rates among Kansas females in 2008 (142.8 deaths per 100,000 persons; 95% CI: 137.0 to 148.5) and 2018 (137.0 deaths per 100,000 persons; 95% CI: 131.7 to 142.4) look similar, the trend analysis of the cancer mortality rates during the period 2008-2018 showed a significant APC of -0.7.

Figure 2-2. Age-adjusted cancer mortality rates among gender groups, Kansas 2008-2018

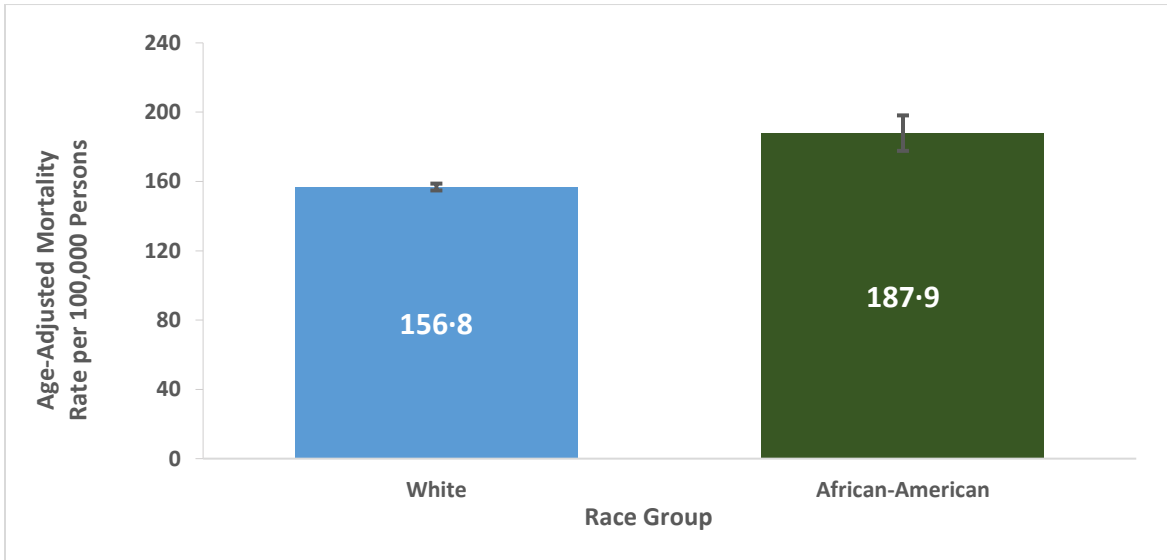


Source: 2008-2018 Kansas Vital Statistics, Bureau of Epidemiology and Public Health Informatics, KDHE. Rates were age-adjusted to the U.S. 2000 standard population using the direct method. See Technical Appendix for details on how rates were calculated. Vertical bars indicate 95% CIs. Overall cancer mortality was defined as ICD-10 codes C00-C97.

Cancer Mortality among Race Groups

The age-adjusted cancer mortality rates were significantly higher for African American Kansans (187.9 deaths per 100,000 persons; 95% CI: 177.7 to 198.1) than for White Kansans (156.8 deaths per 100,000 persons; 95% CI: 154.8 to 158.8) during the period 2014-2018 (Figure 2-3).

Figure 2-3. Age-adjusted cancer mortality rates among race groups, Kansas 2014-2018

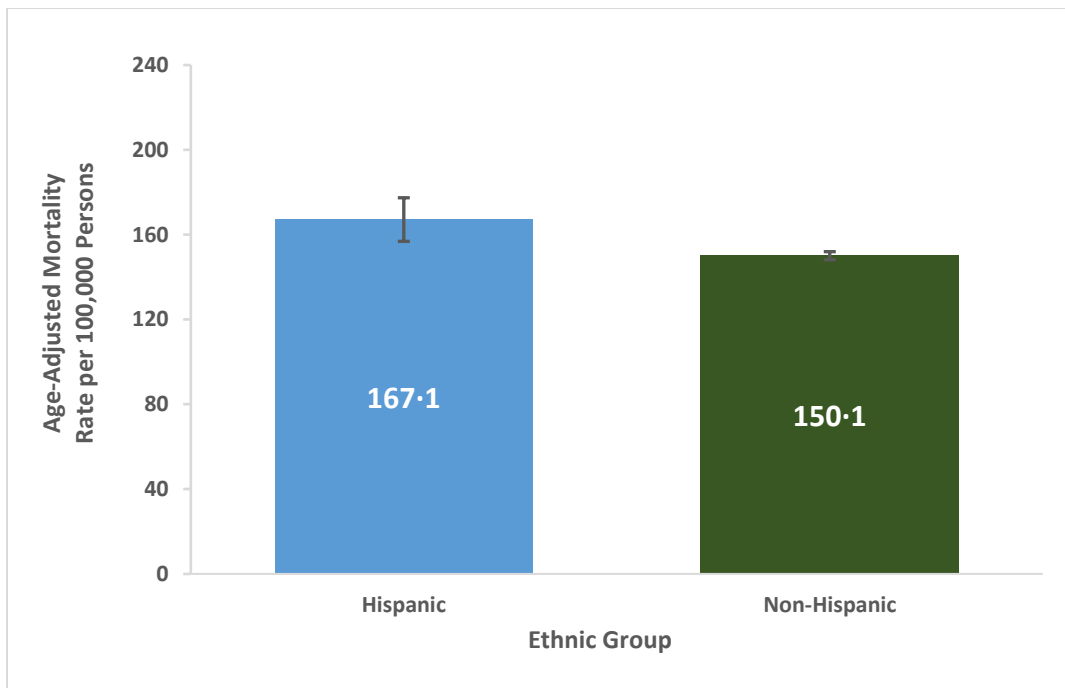


Source: 2014-2018 Kansas Vital Statistics, Bureau of Epidemiology and Public Health Informatics, KDHE. Rates were age-adjusted to the U.S. 2000 standard population using the direct method. See Technical Appendix for details on how rates were calculated. Vertical bars indicate 95% CIs. Overall cancer mortality was defined as ICD-10 codes C00-C97.

Cancer Mortality among Ethnic Groups

The age-adjusted cancer mortality rates were significantly higher for Hispanic Kansans (167.1 deaths per 100,000 persons; 95% CI: 156.9 to 177.4) than for non-Hispanic Kansans (150.1 deaths per 100,000 persons; 95% CI: 148.2 to 152.0) during the period 2014-2018 (Figure 2-4).

Figure 2-4. Age-adjusted cancer mortality rates among ethnic groups, Kansas 2014-2018

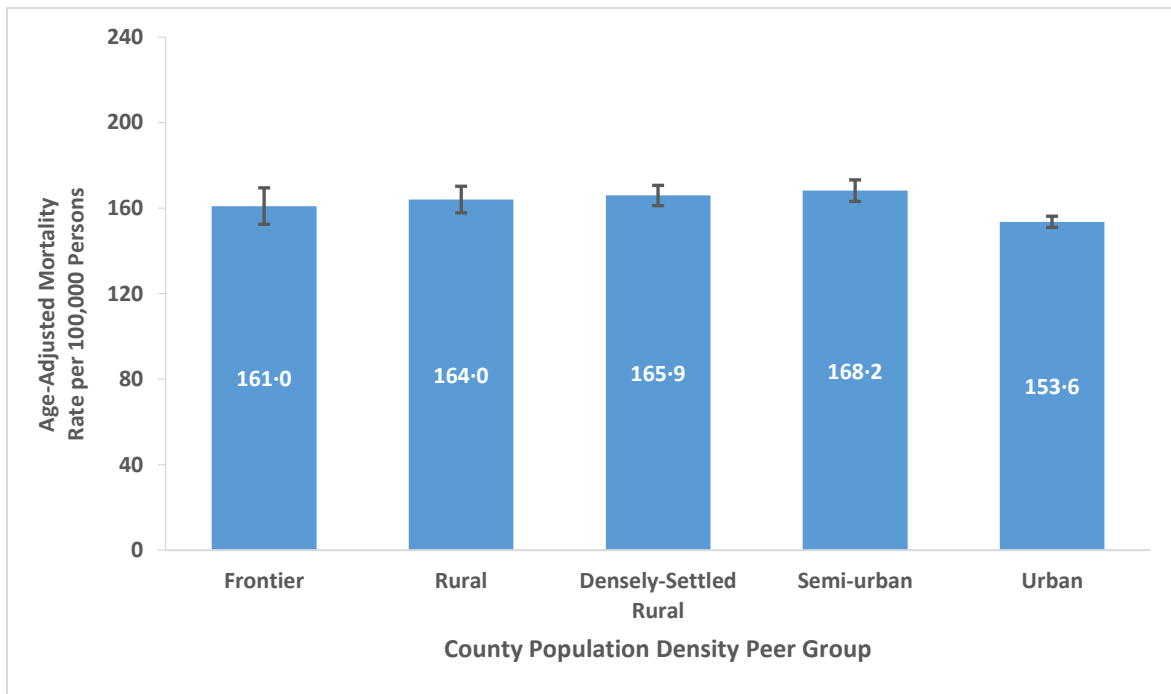


Source: 2014-2018 Kansas Vital Statistics, Bureau of Epidemiology and Public Health Informatics, KDHE. Rates were age-adjusted to the U.S. 2000 standard population using the direct method. See Technical Appendix for details on how rates were calculated. Vertical bars indicate 95% CIs. Overall cancer mortality was defined as ICD-10 codes C00-C97. 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 Mortality among County Population Density Groups

In Kansas, there were slight differences in age-adjusted cancer mortality rates among county population density groups during the period 2014-2018 (Figure 2-5). The age-adjusted cancer mortality rate in the urban counties (153.6 deaths per 100,000 persons; 95% CI: 151.0 to 156.2) was significantly lower than rates in the other county population density groups except the frontier county population density group.

Figure 2-5. Age-adjusted cancer mortality rates among county population density peer groups, Kansas 2014-2018

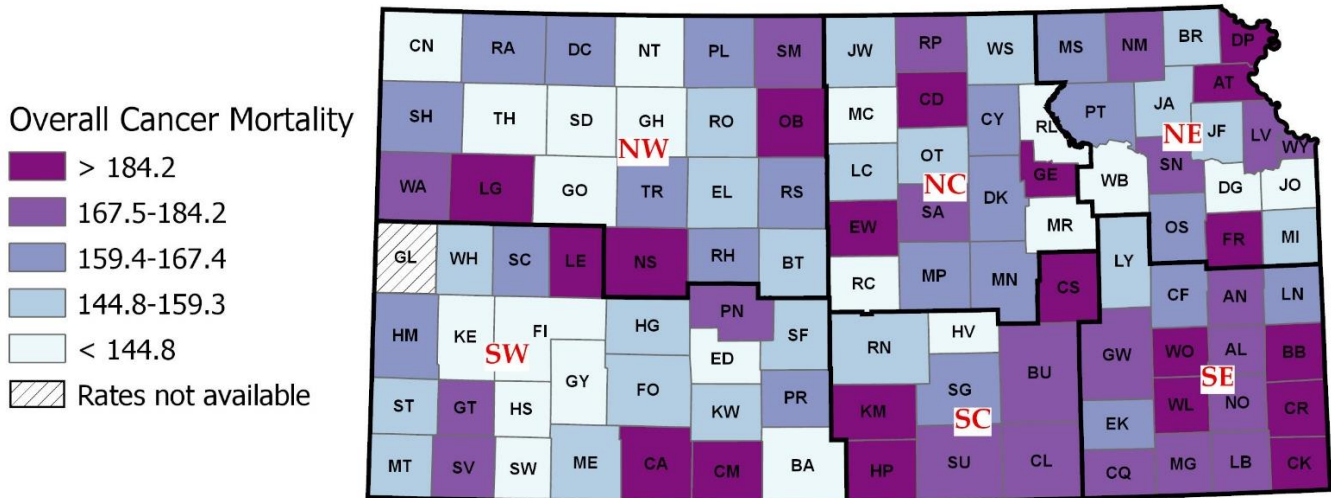


Source: 2014-2018 Kansas Vital Statistics, Bureau of Epidemiology and Public Health Informatics, KDHE. Rates were age-adjusted to the U.S. 2000 standard population using the direct method. See Technical Appendix for details on how rates were calculated. County population density peer groups are based 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% CIs. Overall cancer mortality was defined as ICD-10 codes C00-C97.

Cancer Mortality among Kansas Counties

The distribution of the age-adjusted overall cancer mortality rates by county in Kansas shows that the Atchison, Bourbon, Chase, Cherokee, Clark, Cloud, Comanche, Crawford, Doniphan, Ellsworth, Franklin, Geary, Harper, Kingman, Lane, Logan, Ness, Osborne, Wilson, and Woodson counties constitute the highest quantile (the highest 20% of Kansas counties) of the overall cancer mortality rates in Kansas (Figure 2-9).

Figure 2-9. Age-adjusted cancer overall mortality rates by county, Kansas 2014-2018

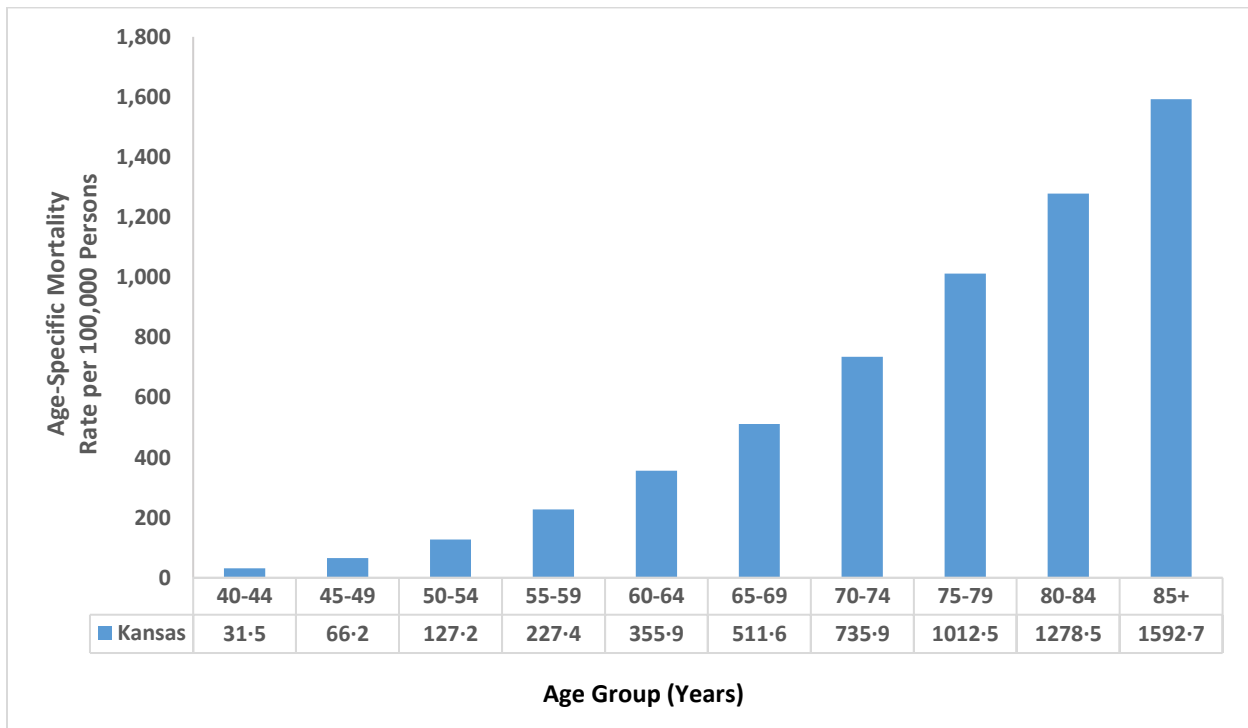


Source: 2014-2018 Kansas Vital Statistics, Bureau of Epidemiology and Public Health Informatics, KDHE. Rates are the number of cases per 100,000 persons and they were age-adjusted to the U.S. 2000 standard population using the direct method. See Technical Appendix for details on how rates were calculated. Overall cancer mortality was defined as ICD-10 codes C00-C97. The map also shows the boundaries of KDHE district offices.

Cancer Mortality among Age Groups

In Kansas, cancer mortality increased dramatically with age during the period of 2014-2018 (Figure 2-6). Cancer mortality rates were highest among Kansans aged 85 years and older (1592.7 cases per 100,000 persons; 95% CI: 1549.5 to 1636.8).

Figure 2-6. Age-specific cancer mortality rates for Kansas residents 40 years and older, Kansas 2014-2018

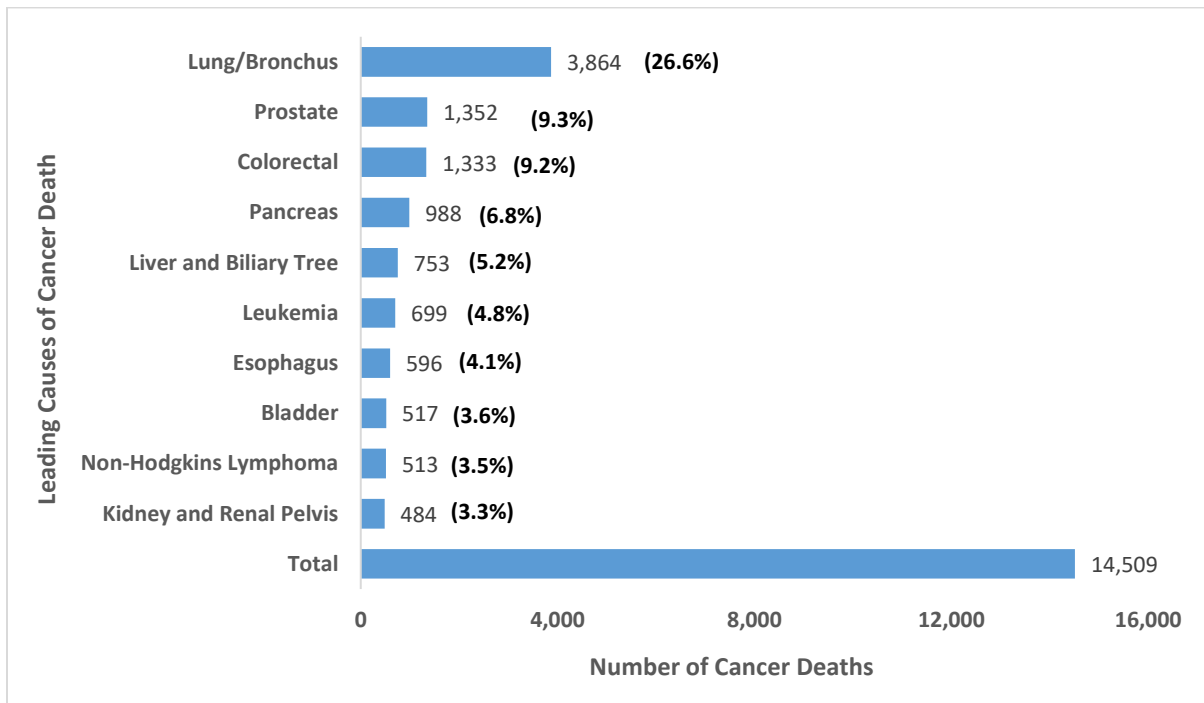


Source: 2014-2018 Kansas Vital Statistics, Bureau of Epidemiology and Public Health Informatics, KDHE. See Technical Appendix for details on how rates were calculated. Overall cancer mortality was defined as ICD-10 codes C00-C97.

Leading Causes of Cancer-Related Death by Gender

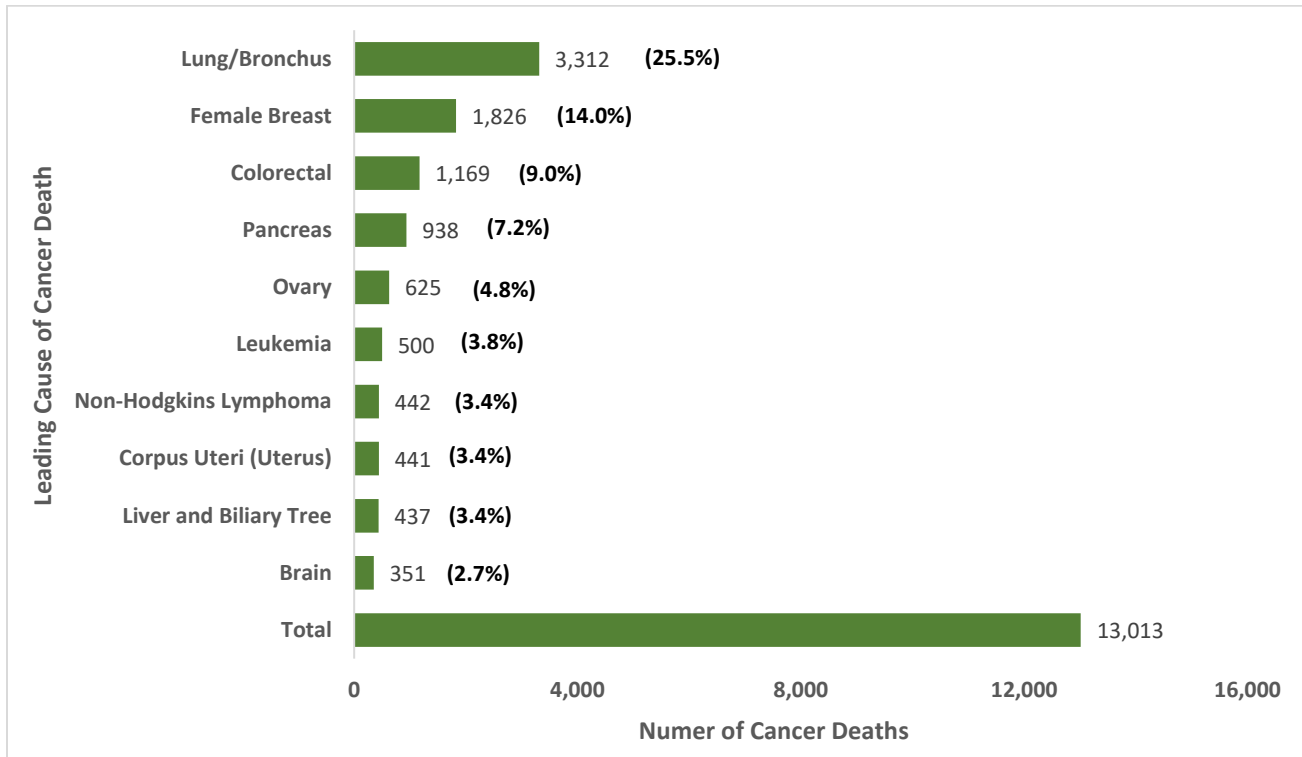
The most common causes of cancer-related death among Kansas males during the period 2014-2018 were lung and bronchus (26.6%), prostate (9.3%), and colorectal (9.2%) cancer (Figure 2-7). Among Kansas females, the leading causes of cancer-related death during this period were lung and bronchus (25.5%), breast (14.0%), and colorectal (9.0%) cancer (Figure 2-8).

Figure 2-7. Top 10 causes of cancer death among males, Kansas 2014-2018



Source: 2014-2018 Kansas Vital Statistics, Bureau of Epidemiology and Public Health Informatics, KDHE. See Technical Appendix for details on how leading causes of cancer death were defined.

Figure 2-8. Top 10 causes of cancer death among females, Kansas 2014-2018



Source: 2014-2018 Kansas Vital Statistics, Bureau of Epidemiology and Public Health Informatics, KDHE. See Technical Appendix for details on how leading causes of cancer death were defined.