

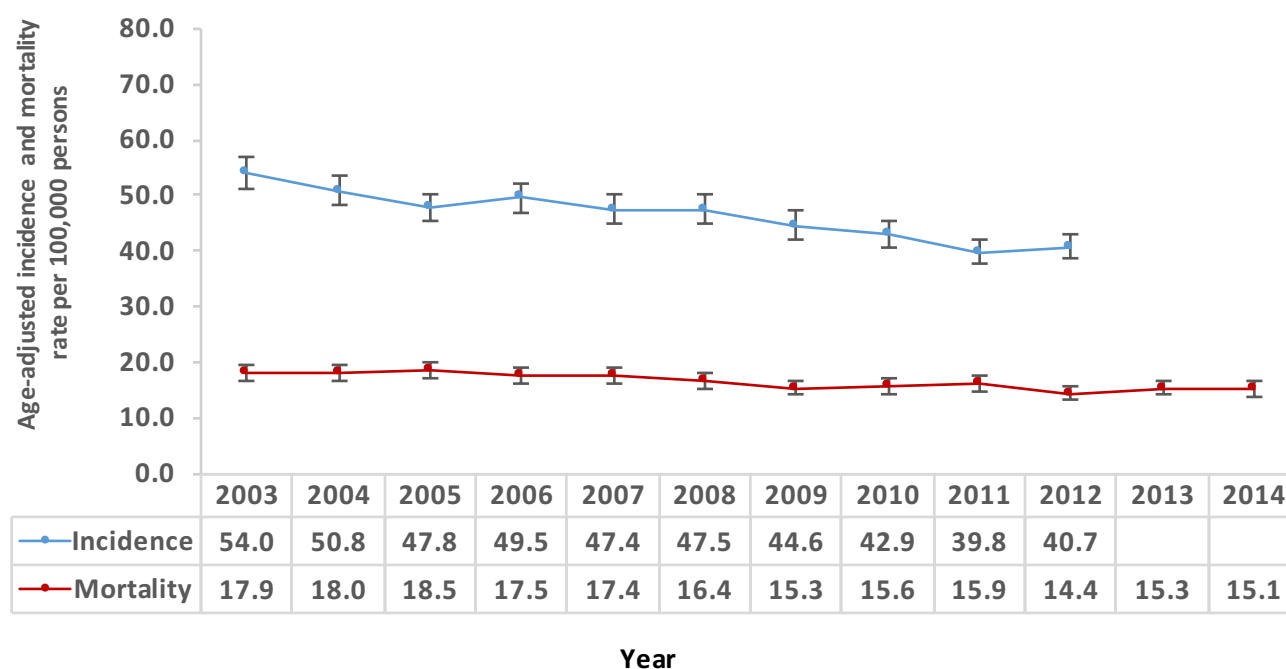
CHAPTER 4: PROFILES OF SELECTED CANCERS – COLORECTAL

Colorectal cancer develops from precancerous polyps in the colon (large intestine) or rectum. The exact cause of most colorectal cancers is not yet known; however, research has shown that increased physical activity and maintaining a healthy weight can decrease the risk for colorectal cancer.⁶ In Kansas, colorectal cancer is the second leading cause of cancer death among males and the third leading cause of cancer death among females, and the third most commonly diagnosed cancer among both males and females.

Colorectal Cancer Incidence and Mortality

Each year, on average, nearly 1,400 colorectal cancers are diagnosed among Kansas residents and more than 500 Kansans die of the disease. Age-adjusted colorectal cancer incidence decreased significantly during the period 2003-2012 from 54.0 cases per 100,000 persons (95% confidence interval: 51.3 to 56.7) in 2003 to 40.7 cases per 100,000 persons (95% confidence interval: 38.5 to 43.1) in 2012 (Figure 4-1). Age-adjusted colorectal cancer mortality remained stable during the same time period from 17.9 deaths per 100,000 persons (95% confidence interval: 16.4 to 19.5) in 2003 to 15.1 deaths per 100,000 persons in 2014 (95% confidence interval: 13.8 to 16.6) as no statistically significant difference was observed.

Figure 4-1. Age-adjusted colorectal cancer incidence and mortality rates, Kansas 2003-2014.



Source: 2003-2012 Kansas Cancer Registry. 2003-2014 Kansas Vital Statistics, Bureau of Epidemiology and Public Health Informatics, KDHE. Cancer incidence data for 2013 and 2014 were not available at the time the document was created. 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. Colorectal cancer incidence was defined as ICD-O-3 codes C180-C189, C199, C209, or C260 (excluding histology codes 9590-9989) with a behavior code indicating invasive malignancy. Colorectal cancer mortality was defined as ICD-10 codes C18-C20 or C260.

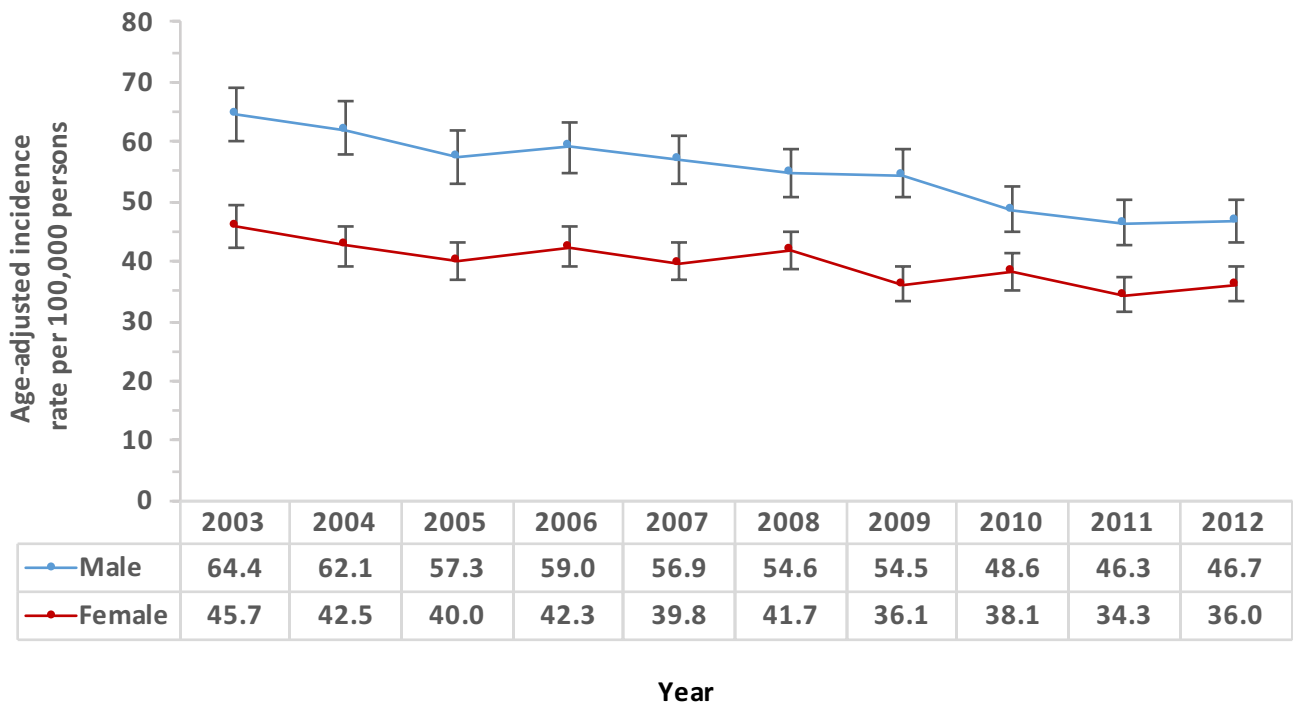
⁶ "Basic Information about Colorectal Cancer." Division of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention. www.cdc.gov/cancer/colorectal/basic_info/index.htm

Colorectal Cancer Incidence among Gender Groups

Age-adjusted colorectal cancer incidence rates were significantly higher for males as compared to females during the period 2003-2012 (Figure 4-2). Age-adjusted colorectal cancer incidence rates decreased significantly for men during this time period from 64.4 cases per 100,000 males (95% confidence interval: 60.0 to 69.1) in 2003 to 46.7 cases per 100,000 males (95% confidence interval: 43.1 to 50.4) in 2012. Age-adjusted colorectal cancer incidence rates also decreased significantly for women during the same time period from 45.7 cases per 100,000 females (95% confidence interval: 42.4 to 49.2) in 2003 to 36.0 cases per 100,000 females in 2012 (95% confidence interval: 33.2 to 39.1).



Figure 4-2. Age-adjusted colorectal cancer incidence rates by gender and year, Kansas 2003-2012.

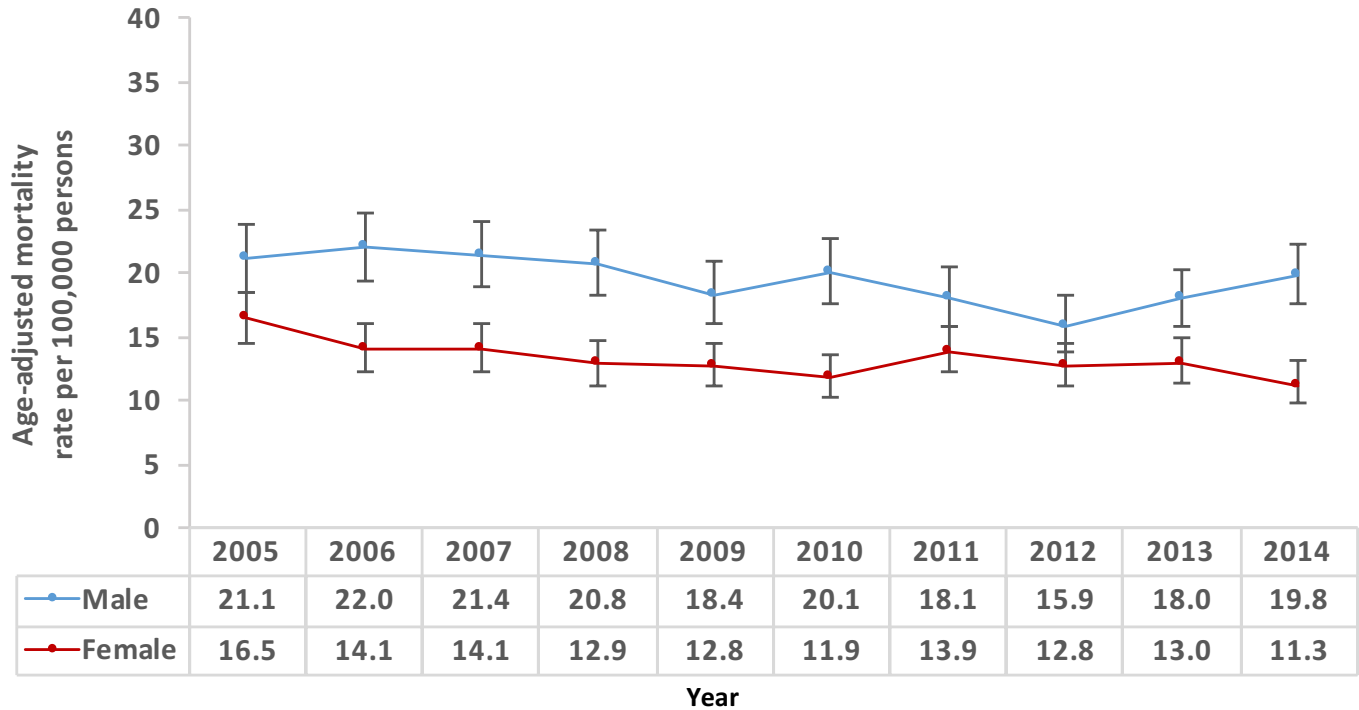


Source: 2003-2012 Kansas Cancer Registry. Rates were age-adjusted to the U.S. 2000 standard population using the direct method. See Technical Appendix for details on how rates were calculated. Vertical bars indicate 95% confidence intervals. Colorectal cancer incidence was defined as ICD-O-3 codes C180-C189, C199, C209, or C260 (excluding histology codes 9590-9989) with a behavior code indicating invasive malignancy.

Colorectal Cancer Mortality among Gender Groups

Age-adjusted colorectal cancer mortality rates were significantly higher for males as compared to females during the period 2005-2014. In 2014, there were 19.8 deaths per 100,000 males (95% confidence interval: 17.6 to 22.3) and 11.3 deaths per 100,000 females (95% confidence interval: 9.8 to 13.1) (Figure 4-3). Age-adjusted colorectal cancer mortality rates did not change significantly for males but has decreased significantly for females from 2005 to 2014.

Figure 4-3. Age-adjusted colorectal cancer mortality rates among gender groups, Kansas 2005-2014.

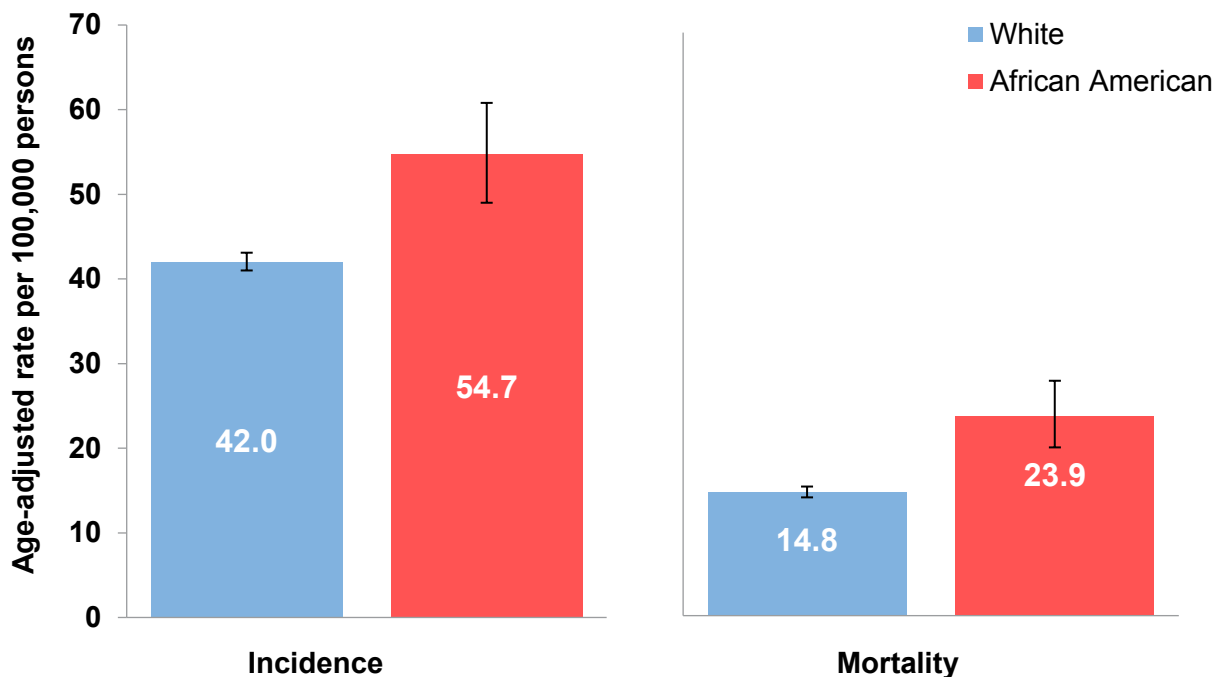


Source: 2005-2014 Kansas Vital Statistics, Bureau of Epidemiology and Public Health Informatics, KDHE. Rates were age-adjusted to the U.S. 2000 standard population using the direct method. See Technical Appendix for details on how rates were calculated. Vertical bars indicate 95% confidence intervals. Colorectal cancer mortality was defined as ICD-10 codes C18-C20 or C260.

Colorectal Cancer Incidence and Mortality among Race Groups

The age-adjusted colorectal cancer incidence rate was significantly higher among African American Kansans (54.7 cases per 100,000 persons; 95% confidence interval: 49.0 to 60.8) as compared to white Kansans (42.0 cases per 100,000 persons; 95% confidence interval: 41.0 to 43.1) during the period 2008-2012 (Figure 4-4). Similarly, the age-adjusted colorectal cancer mortality rate was significantly higher for African American Kansans (23.9 deaths per 100,000 persons; 95% confidence interval: 20.2 to 28.2) as compared to white Kansans (14.8 deaths per 100,000 persons; 95% confidence interval: 14.2 to 15.5) during the period 2010-2014.

Figure 4-4. Age-adjusted colorectal cancer incidence (2008-2012) and mortality (2010-2014) rates among race groups, Kansas 2008-2014.

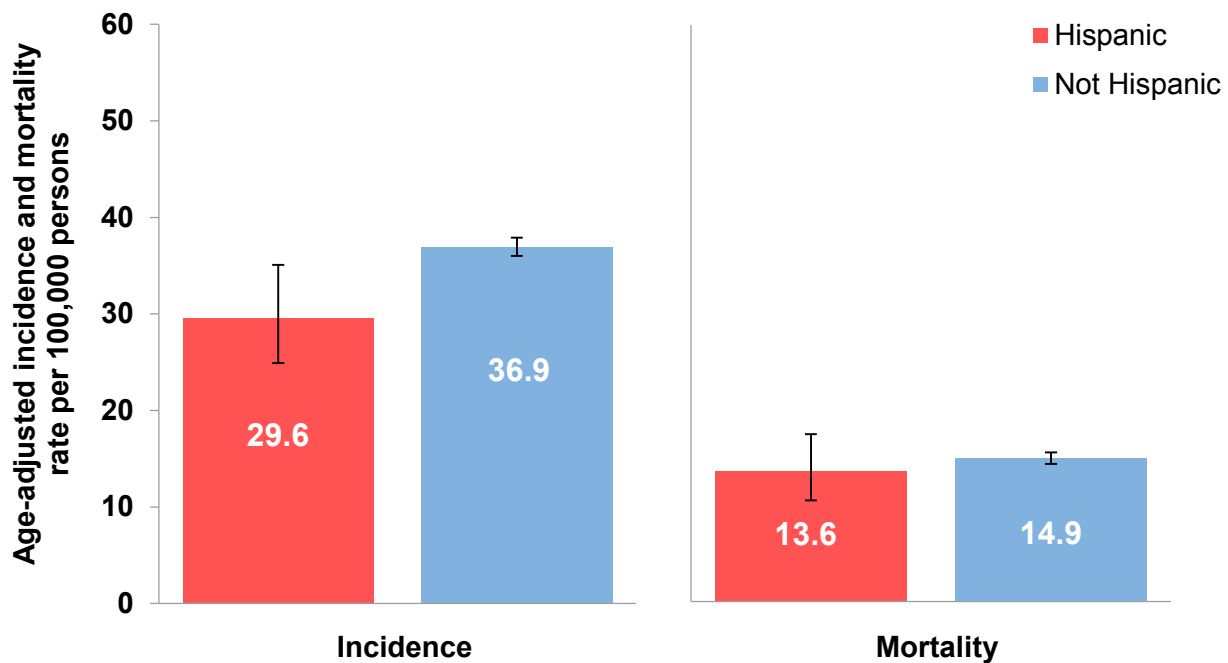


Source: 2008-2012 Kansas Cancer Registry. 2010-2014 Kansas Vital Statistics, Bureau of Epidemiology and Public Health Informatics, KDHE. Rates were age-adjusted to the U.S. 2000 standard population using the direct method. See Technical Appendix for details on how rates were calculated. Vertical bars indicate 95% confidence intervals. Colorectal cancer incidence was defined as ICD-O-3 codes C180-C189, C199, C209, or C260 (excluding histology codes 9590-9989) with a behavior code indicating invasive malignancy. Colorectal cancer mortality was defined as ICD-10 codes C18-C20 or C260, incidence rates for 2010-2014 were not available at the time the document was created.

Colorectal Cancer Incidence and Mortality among Ethnic Groups

The age-adjusted colorectal cancer incidence rate was significantly lower for Hispanic Kansans (29.6 cases per 100,000 persons; 95% confidence interval: 24.9 to 35.1) than for non-Hispanic Kansans (36.9 cases per 100,000 persons; 95% confidence interval: 36.0 to 37.9) during the period 2008-2012 (Figure 4-5). However, the age-adjusted colorectal cancer mortality rate did not differ significantly between Hispanic Kansans and non-Hispanic Kansans during the period 2010-2014.

Figure 4-5. Age-adjusted colorectal cancer incidence (2008-2012) and mortality (2010-2014) among ethnic groups, Kansas 2008-2014.



Source: 2008-2012 Kansas Cancer Registry. 2010-2014 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% confidence intervals. Colorectal cancer incidence was defined as ICD-O-3 codes C180-C189, C199, C209, or C260 (excluding histology codes 9590-9989) with a behavior code indicating invasive malignancy, incidence rates for 2010-2014 were not available at the time the document was created. Colorectal cancer mortality was defined as ICD-10 codes C18-C20 or C260. 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.

Colorectal Cancer Late Stage Diagnosis

Among gender groups in Kansas, the age-adjusted late stage colorectal cancer incidence rate dropped significantly for both males and females from 2003-2007 (30.4 cases per 100,000 persons; 95% CI: 29.1 to 31.8 and 22.7 cases per 100,000 persons; 95% CI: 21.6 to 23.7, respectively) to 2008-2012 (26.2 cases per 100,000 persons; 95% CI: 25.0 to 26.7 and 19.3 cases per 100,000 persons; 95% CI: 18.4 to 20.3, respectively). (Table 4-1).

Among race groups in Kansas, the age-adjusted late stage colorectal cancer incidence rate dropped significantly among Whites from 2003-2007 (25.9 cases per 100,000 persons; 95% CI: 25.0 to 26.7) to 2008-2012 (22.0 cases per 100,000 persons; 95% CI: 21.3 to 22.8). However, the late stage age-adjusted colorectal cancer incidence rate did not differ significantly for African Americans and Asian/Pacific Islanders between 2003-2007 and 2008-2012 (Table 4-1).

Among ethnicity groups in Kansas, the age-adjusted late stage colorectal cancer incidence rate dropped significantly among Non-Hispanics from 2003-2007 (24.6 cases per 100,000 persons; 95% CI: 23.7 to 25.4) to 2008-2012 (19.7 cases per 100,000 persons; 95% CI: 18.9 to 20.4). In comparison, the late stage age-adjusted colorectal cancer incidence rate did not differ significantly for Hispanic population during the same time period (Table 4-1).

Among population density groups in Kansas, the age-adjusted late stage colorectal cancer incidence rate dropped significantly among Kansans who lived in rural counties from 2003-2007 (29.0 cases per 100,000 persons; 95% CI: 27.6 to 30.6) to 2008-2012 (24.1 cases per 100,000 persons; 95% CI: 22.7 to 25.5). Similarly, the late stage age-adjusted colorectal cancer incidence rate also dropped significantly among Kansans who lived in urban counties during the same time period (24.4 cases per 100,000 persons; 95% CI: 23.4 to 25.5 and 21.5 cases per 100,000 persons; 95% CI: 20.6 to 22.4, respectively) (Table 4-1).

Table 4-1. Age-adjusted late stage colorectal cancer incidence rates by years and selected characteristics, Kansas, 2003-2012.

Characteristics	2008-2012			2003-2007		
	Age-adjusted Rate	95% Confidence Interval		Age-adjusted Rate	95% Confidence Interval	
Gender						
Male	26.2	25.0	27.4	30.4	29.1	31.8
Female	19.3	18.4	20.3	22.7	21.6	23.7
Race						
White	22.0	21.3	22.8	25.9	25.0	26.7
African American	29.6	25.5	34.2	31.9	27.4	37.0
Asian/Pacific Islander	16.4	11.2	23.9	21.9	14.5	32.8
Ethnicity						
Hispanic	15.2	11.9	19.2	17.2	13.2	22.1
Non-Hispanic	19.7	18.9	20.4	24.6	23.7	25.4
Population Density						
Rural	24.1	22.7	25.5	29.0	27.6	30.6
Urban	21.5	20.6	22.4	24.4	23.4	25.5

* a. Late stage was defined as the combination of regional and distant stage of diagnosis.

b. Due to insufficient count, data for American Indian/Alaska Native was not displayed in the table.

Source: 2003-2012 Kansas Cancer Registry. Colorectal cancer incidence was defined as ICD-O-3 codes C180-C189, C199, C209, or C260 (excluding histology codes 9590-9989) with a behavior code indicating invasive malignancy.