

Comprehensive Report Colorectal Cancer

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PURPOSE

The primary purpose of this report is to provide the most current and accurate colorectal tumor incidence and mortality data, to describe the long-term trends of colorectal tumors in the State of Nevada and its counties, and compare them to the United States colorectal cancer incidence and mortality. It is our hope that the report findings will be utilized by advisory boards, public health professionals, policy makers, and community members to develop programs and policies that will protect the health and well-being of individuals in Nevada.

METHODS

Colorectal tumor counts, information on county at diagnosis, age at diagnosis, and year of diagnosis, were obtained from the 12/05/2014 Nevada Central Cancer Registry data extract¹. Age-adjusted rates, and confidence intervals were calculated with SEER*Stat methodology², as well as relative standard error (RSE).

Annual age-adjusted rates from years 1995 to 2012 were calculated for colorectal cases by year, by county, by region, by gender, and by race/ethnicity. For adjustment, population counts were obtained from the 2000 US Standard Population (19 Age-groups)^{3,4}.

Geographical description was included by county and by describing four geo-demographical regions: Urban-high populated counties (Clark County, Washoe County, and Carson City) and All Other counties (Rural, Frontier, low, and very low population density counties).

For analyses, colorectal incidence and mortality age-adjusted overall, by gender, and by race rates were compared between Nevada and the US, age-adjusted rates were compared between age groups (<20, 20-39, 40-64, 65-79, and 80+) within Nevada, and age-adjusted rates were compared between counties and between geo-demographical regions. All age-adjusted rates were calculated for the 1995-2012 diagnosis years (annually) and cumulative age-adjusted rates were calculated for the 2008-2012 diagnosis years. Confidence intervals were calculated and included in tables associated with each figure.

TECHNICAL NOTES

The incidence rate is the basic measure of disease occurrence as it expresses the probability or risk of disease in a defined population over a specific period of time. Age-adjusted rates with a common standard population allow for the comparison of rates in populations across regions with different age distributions. This method allows for the comparison between the US, Nevada, Nevada urban counties, Nevada rural and frontier counties. The annual and cumulative age-adjusted rates were calculated by summing the weighted crude, age-specific rates utilizing the national standard: Year 2000 US Standard Population (19 Age-groups), which were expressed per 100,000 Standard Population.

The reliability of the estimates of incidence age-adjusted rates are reflected by the RSE. RSE is the measure of the extent of the age-adjusted rate is likely to deviate from the true population, expressed as a fraction of the age-adjusted estimate, and is usually displayed as a percentage. A RSE of magnitude $\geq 30\%$ is considered statistically unreliable for this report and a “¥” symbol has been shown in place of a rate with a value equivalent or greater.

The variability of the age-adjusted rates was assessed in terms of confidence intervals. The confidence intervals for this report, the computed intervals, are where we would expect the true age-adjusted rate to be within 95% of the time. Counts more than zero but less than or equal to 5 and their resulting rates and confidence limits were removed due to confidentiality and reliability issues, a “¥” symbol was shown in place of them.

Colorectal cancer case definitions for this report utilized the current NAACCR Standard Site Analysis Categories⁵. For colorectal incidence, this includes ICD-O-3 Codes C180-189, C199, C209, and C260, all histologies except 9590-9989, 9050-9055, and 9140. For colorectal mortality, this includes ICD-9 Codes 153, 154.0-154.1, and 159.0 and ICD-10 Codes C18, C19-C20, and C26.0.

LIMITATIONS

INCIDENCE DATA INTERPRETATION

Due to poor reporting practices in healthcare facilities within Nevada, the completeness or quality of cancer abstracts and timeliness of reporting has declined. In terms of completeness, although required by the NAC, submission of patients' race has not been included in 12.8% of cases reported to NCCR for cancers diagnosed in 2011. In addition, the number of reports received is lower than expected. In terms of timeliness, although required by the NAC, the majority of abstracts were submitted outside of healthcare facilities reporting window for each abstract.

Nevada has two large urban population concentrations and counties among the greatest population dispersion in the nation. This demographic distribution phenomenon results in similar rates between urban counties and the state, and unreliable rates or rates with large variability (large confidence intervals) in smaller, rural and frontier counties. This is primarily due to low frequency cancer cases and small populations.

For Hispanics, "Race" is underreported due to the misunderstanding between "Race" and "Ethnicity." Whether "Hispanic" is written in the race or ethnicity field, after reporting, the ethnicity field will be classified as "Hispanic" and the race field will be left empty. This results in race data being poorly reported.

Native American/Alaska Natives are underrepresented in NCCR. "Studies that estimate misclassification among American Indians/Alaska Natives using cancer registry data report these rates are underreported by 40%–57%, depending on the region of the country." ^{7,8,9}

Reliable survival data depend on the accuracy, completeness, and timeliness of mortality data and cancer data linkages with the state and the National Death Index, and cancer data sharing between other states. The NCCR is actively improving processes in order to attain the data quality necessary for survival calculations.

COMPARING STATE AND COUNTY RATES

Careful interpretation of counties with higher incidence or death rates than other counties or the state is needed to avoid misinterpretation or false conclusions.

Accessibility to medical care and population medical care coverage should be considered when interpreting differing cancer rates. Counties with increased participation in cancer screening result in more diagnosed cancers. In addition, screening leads to earlier detection that have a better prognosis and may find tumors that grow so slowly that they would not have otherwise been recognized in a person's lifetime.

Varying county cancer rates may be explained by the distribution of known risk factors among population in these counties. Although environmental carcinogens are responsible for a few specific cancers, majority of cases appear to be related to lifestyle factors.

Certain racial and ethnic populations are more prone to certain cancers. Thus, a county's racial and ethnic distribution should be considered when making conclusions. Statistical adjustment by race and ethnicity or age-adjusted rates by race and ethnicity can mitigate this issue.

The importance of cancer as a public health problem in a state is more a function of the absolute cancer rate than the state's relative ranking in incidence or mortality. In addition, the true burden of cancer on a healthcare system and economy of a state is determined by the number of people diagnosed with cancer, the number of people dying of cancer, and its social implications. Therefore, higher cancer rates between states may obscure the absolute number of cancer cases.

After adjustment, some uncertainty in computed cancer rates may persist because many factors contribute to the incidence and death rate in a given year or location, and some factors exhibit random behavior. Chance plays a role in determining if and when cancer develops in an individual, whether that cancer is detected, and whether that cancer progresses and leads to death. For these reasons, the reported rates are expected to vary from year to year within a state or county even in the absence of a general trend. Thus, caution is warranted when examining cancer rates for a single year and more so when rates are based on relatively few cases.

A 95% confidence interval is expected to contain the true underlying rate 95% of the time. Confidence intervals are available for age-adjusted rates to assist with interpreting results. Due to variations in the population sizes and number of reported cases and deaths across counties, more uncertainty is present in the incidence and death rates for certain counties. The confidence intervals provide a simple measure of the variability in rates and a basis when making county-specific comparisons. However, it is not recommended to use overlapping confidence intervals as a method to conclude rates are significantly different.

Another consideration when comparing differences between rates is their public health importance. Some rates have large numerators and/or denominators and consequently small standard errors that result in statistically significant differences. Conversely, some rates have large standard errors which are suppressed when they do not meet the maximum 30% relative standard error requirement.

COLORECTAL CANCER MORTALITY

COLORECTAL CANCER MORTALITY

Figure 1: Colorectal Cancer Mortality Trend, Nevada vs. United States, 1995-2012.

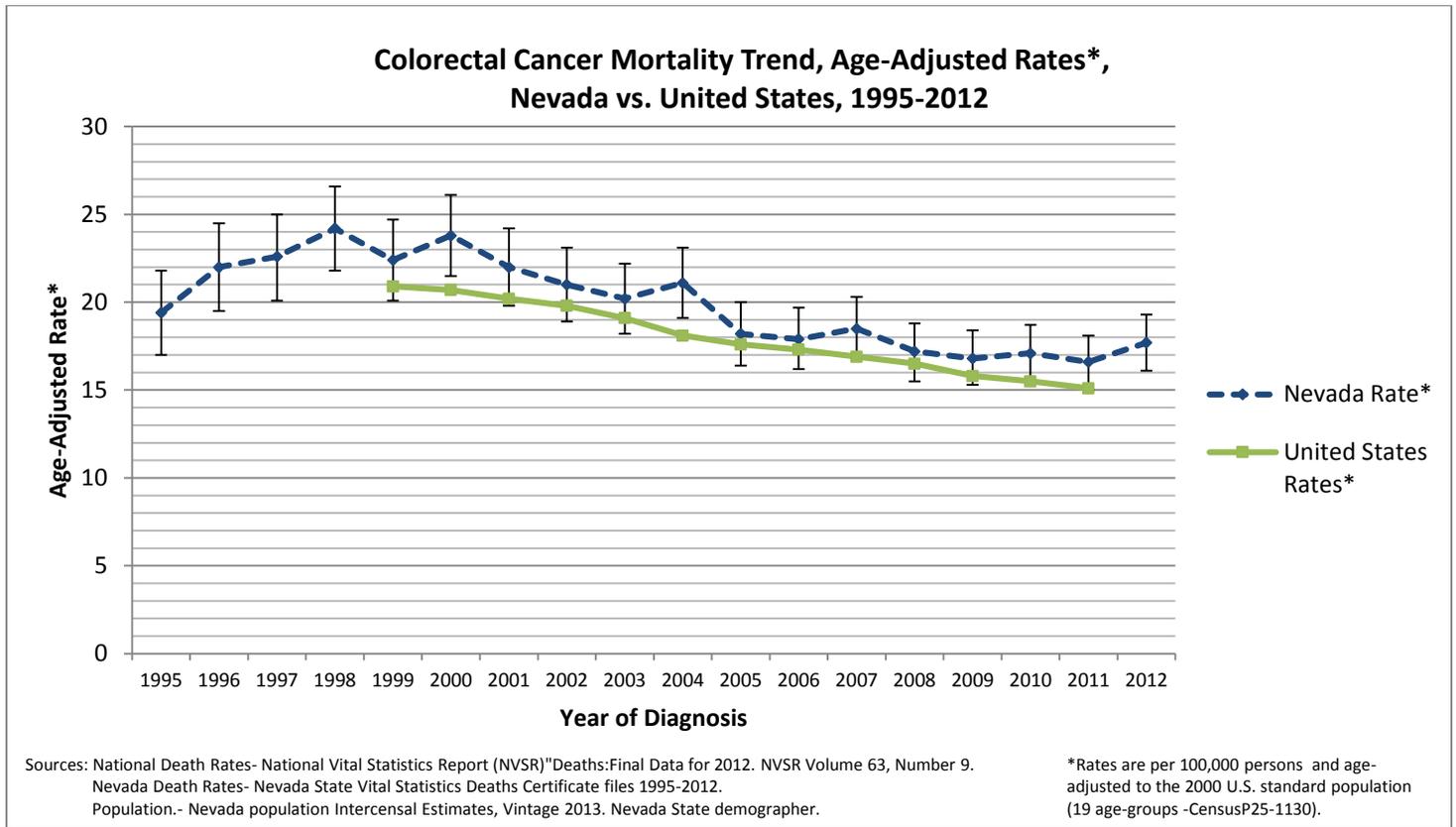


Table 1: Colorectal Cancer Mortality Age-Adjusted Rates* by year, Nevada and United States, 1995-2012.

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Nevada	19.4 (17.0-21.8)	22.0 (19.5-24.5)	22.6 (20.2-25.1)	24.2 (21.8-26.6)	22.4 (20.1-24.7)	23.8 (21.5-26.1)	22.0 (19.8-24.2)	21.0 (18.9-23.1)	20.2 (18.2-22.2)
United States					20.9 (20.8-21.1)	20.7 (20.5-20.8)	20.2 (20.0-20.3)	19.8 (19.6-19.9)	19.1 (19.0-19.3)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Nevada	21.1 (19.1-23.1)	18.2 (16.4-20.0)	17.9 (16.1-19.6)	18.5 (16.7-20.2)	17.2 (15.6-18.9)	16.8 (15.2-18.3)	17.1 (15.5-18.7)	16.6 (15.1-18.2)	17.7 (16.1-19.3)
United States	18.1 (17.9-18.2)	17.6 (17.4-17.7)	17.3 (17.1-17.4)	16.9 (16.8-17.1)	16.5 (16.3-16.6)	15.8 (15.7-15.9)	15.5 (15.4-15.6)	15.1 (15.0-15.2)	

*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. standard population (19 age-groups -CensusP25-1130).

COLORECTAL CANCER MORTALITY BY GENDER

Figure 2: Colorectal Cancer Mortality Trend by Gender, Age-Adjusted Rates*, Nevada vs. United States, 1995-2012.

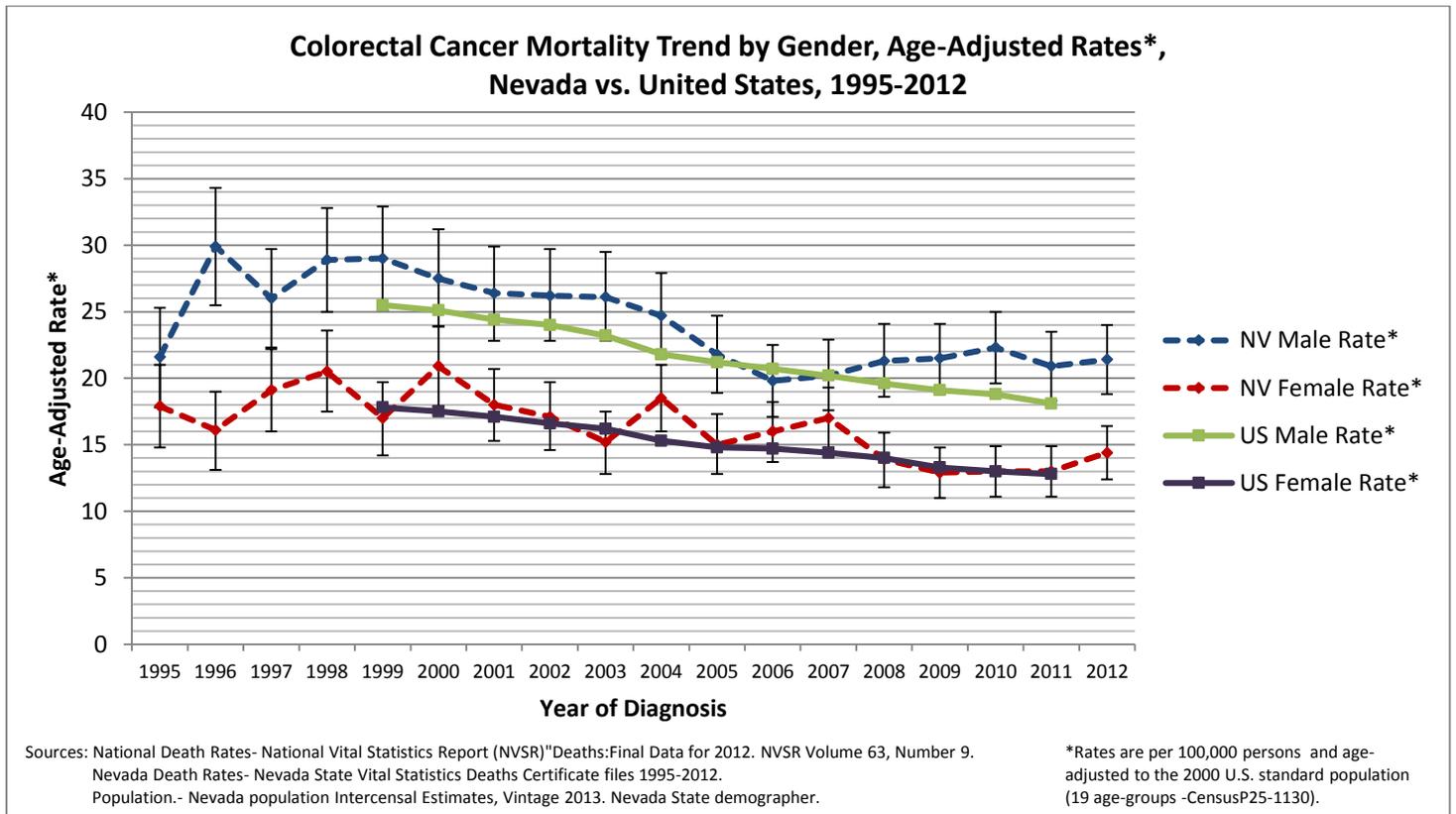


Table 2: Colorectal Cancer Mortality Trend by Gender, Age-Adjusted Rates*, Nevada and United States, 1995-2012.

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Nevada Male	21.6 (17.9-25.4)	29.9 (25.5-34.3)	26.0 (22.3-29.7)	28.9 (25-32.8)	29.0 (25.1-32.9)	27.5 (23.8-31.1)	26.4 (22.9-30.0)	26.2 (22.7-29.6)	26.1 (22.7-29.4)
Nevada Female	17.9 (14.8-21.0)	16.1 (13.2-19.1)	19.1 (16-22.2)	20.5 (17.4-23.5)	17.0 (14.3-19.8)	20.9 (17.9-23.9)	18.0 (15.3-20.7)	17.1 (14.5-19.6)	15.2 (12.9-17.6)
United States Male					25.5 (25.2-25.8)	25.1 (24.8-25.4)	24.4 (24.1-24.7)	24.0 (23.7-24.3)	23.2 (22.9-23.5)
United States Female					17.8 (17.5-18.0)	17.5 (17.3-17.7)	17.1 (16.9-17.3)	16.6 (16.4-16.8)	16.2 (16.0-16.4)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Nevada Male	24.7 (21.5-27.9)	21.8 (18.9-24.7)	19.8 (17.1-22.5)	20.2 (17.5-22.8)	21.3 (18.5-24.0)	21.5 (18.9-24.2)	22.3 (19.6-25.0)	20.9 (18.3-23.5)	21.4 (18.8-24.0)
Nevada Female	18.5 (16.0-21.0)	15.0 (12.7-17.2)	16.0 (13.8-18.3)	17.0 (14.7-19.2)	13.9 (11.9-16.0)	12.9 (11.0-14.8)	13.0 (11.1-14.9)	13.0 (11.1-14.9)	14.4 (12.4-16.4)
United States Male	21.8 (21.5-22.1)	21.2 (21.0-21.5)	20.7 (20.4-20.9)	20.2 (20.0-20.5)	19.6 (19.4-19.9)	19.1 (18.8-19.3)	18.8 (18.5-19.0)	18.1 (17.8-18.3)	
United States Female	15.3 (15.2-15.5)	14.8 (14.6-15.0)	14.7 (14.5-14.9)	14.4 (14.2-14.5)	14.0 (13.8-14.1)	13.3 (13.1-13.4)	13.0 (12.8-13.2)	12.8 (12.6-12.9)	

*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. standard population (19 age-groups -CensusP25-1130).

COLORECTAL CANCER MORTALITY BY GENDER, 2008-2012

Figure 3: Colorectal Cancer Mortality (Cumulative Annual 5 years period) Age-Adjusted Rates* by Gender, Nevada vs. United States.

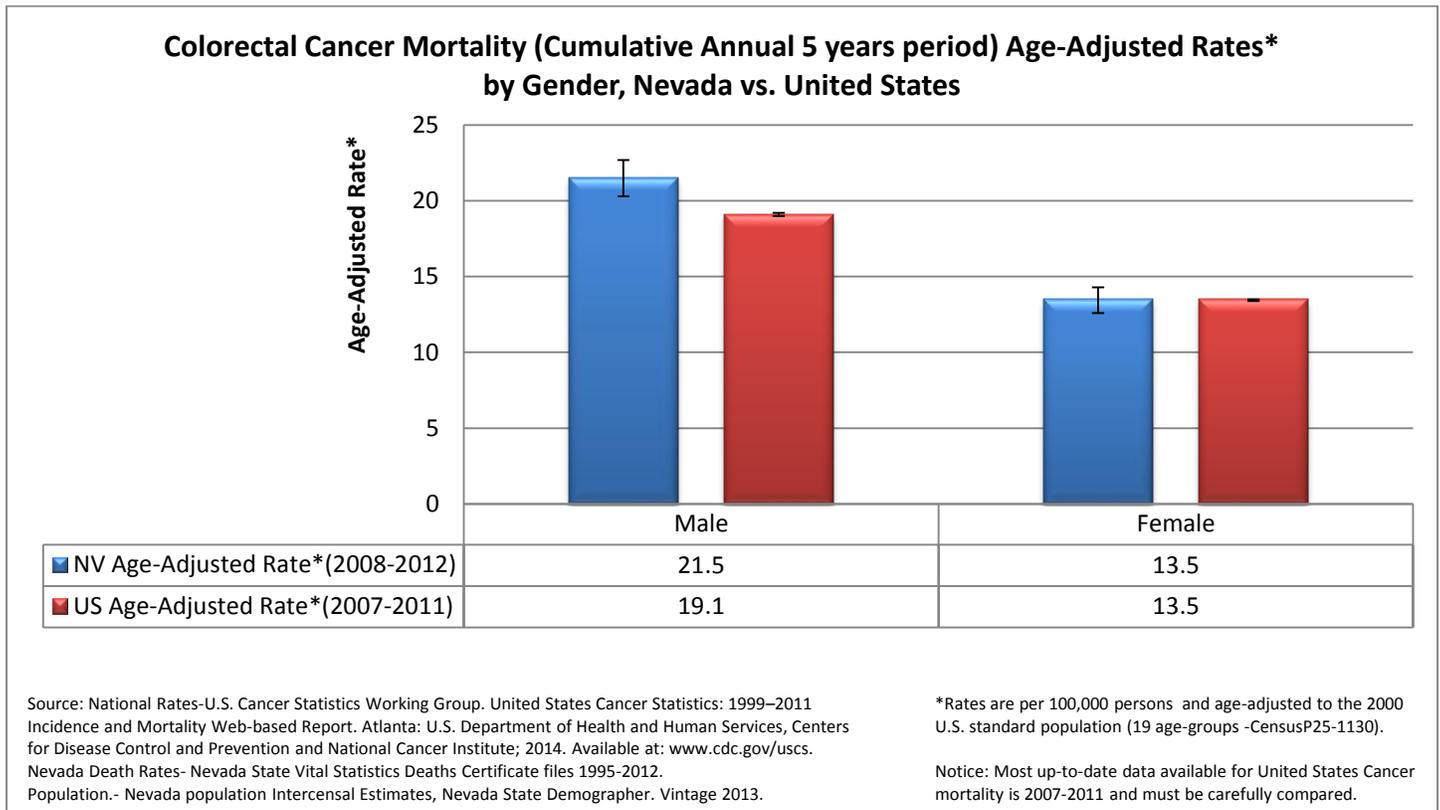


Table 3: Colorectal Cancer Mortality by Region and Gender. Cumulative Annual Age-Adjusted Rates* Nevada Geo-demographical Regions.

Colorectal Cancer Mortality (All Ages, All Races) by Gender - Age-Adjusted Rates*, Nevada, 2008-2012 (Regions ordered by population size)				
Gender	Clark	Washoe	Carson City	Rural
Male	21.9 (20.5-23.3)	19.9 (16.9-22.9)	26.4 (17.8-35.1)	20.2 (17.0-23.4)
Female	13.2 (12.2-14.3)	13.9 (11.6-16.1)	14.8 (9.2-20.4)	14.1 (11.6-16.6)
All Genders	17.1 (16.3-18.0)	16.5 (14.7-18.4)	19.5 (14.7-24.3)	17.0 (15.0-19.0)

‡ Counts more than zero or less than or equal to 5 or Rates with Relative Standard Error (RSE) >30% are suppressed; due to reliability and/or confidentiality issues.

* Rates are per 100,000 persons and age-adjusted to the 2000 US Census standard population.

COLORECTAL CANCER MORTALITY TREND BY RACE/ETHNICITY

Figure 4: Colorectal Cancer Mortality Trend by Race/Ethnicity, Confidence Intervals, Age-Adjusted Rates*, Nevada, 1995-2012.

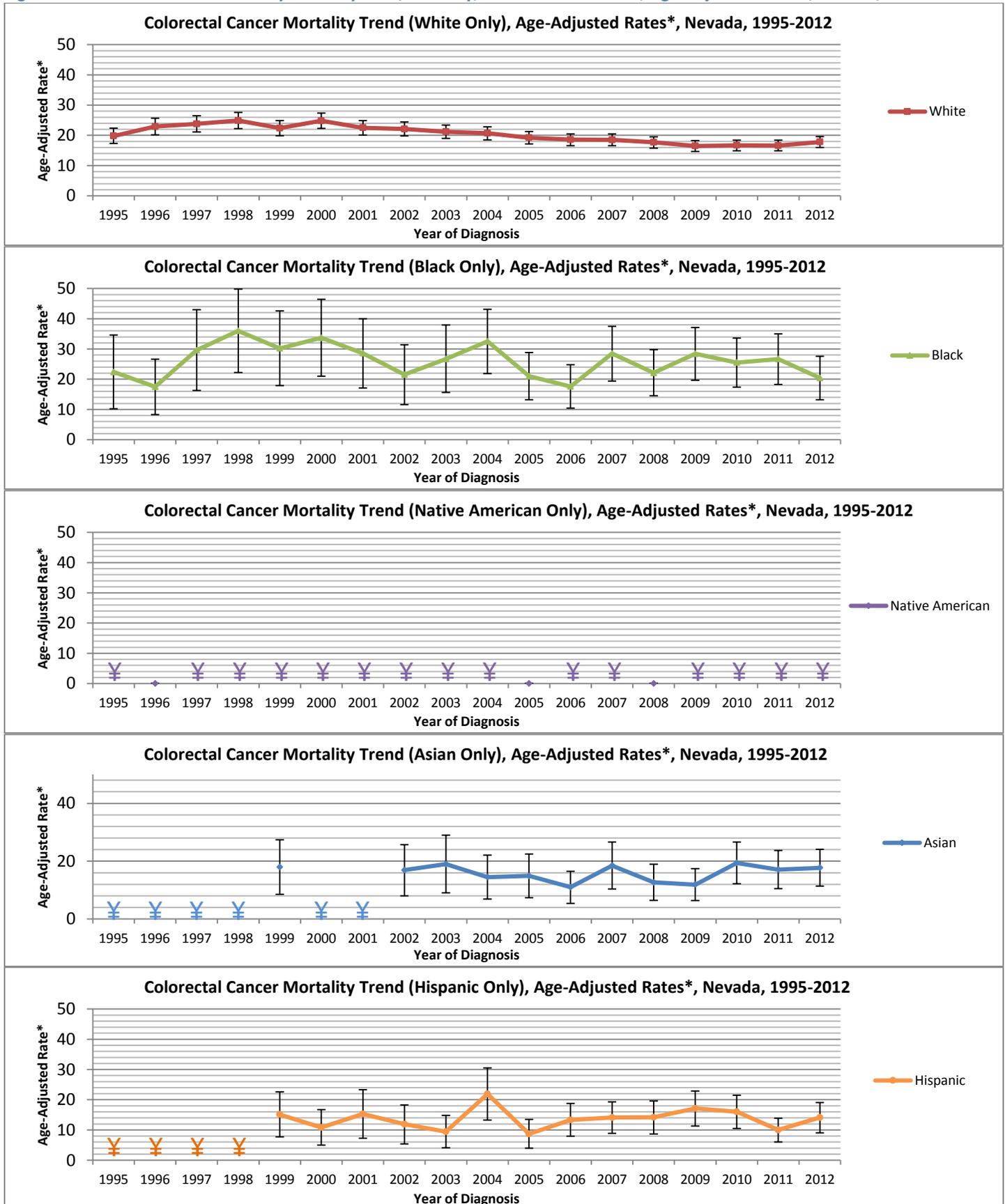


Figure 5: Colorectal Cancer Mortality Trend by Race/Ethnicity, Age-Adjusted Rates*, United States, 1999-2011.

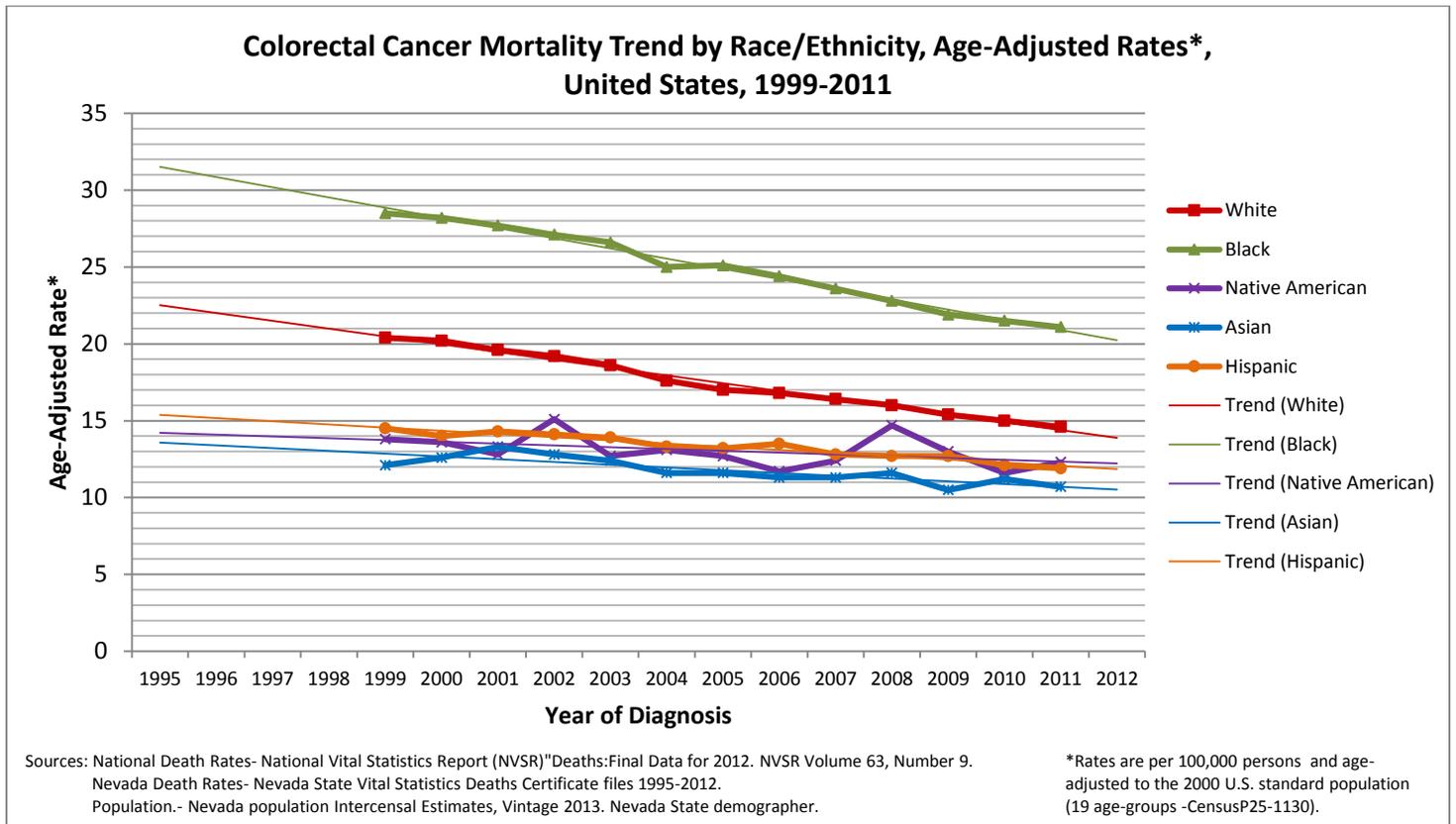


Table 4: Colorectal Cancer Mortality Annual Age-Adjusted Rates* by Race/Ethnicity, Nevada, 1995-2012.

Nevada	1995	1996	1997	1998	1999	2000	2001	2002	2003
White	19.8 (17.3-22.4)	22.9 (20.2-25.7)	23.8 (21.1-26.5)	24.9 (22.2-27.6)	22.4 (19.9-24.9)	24.8 (22.3-27.4)	22.5 (20.1-24.9)	22.1 (19.8-24.4)	21.2 (19.0-23.4)
Black	22.4 (10.2-34.6)	17.5 (8.3-26.6)	29.6 (16.3-43.0)	36.0 (22.2-49.8)	30.2 (17.9-42.6)	33.7 (21.0-46.4)	28.6 (17.1-40.0)	21.5 (11.6-31.4)	26.7 (15.6-37.9)
Native American	¥	0	¥	¥	¥	¥	¥	¥	¥
Asian	¥	¥	¥	¥	18.0 (8.5-27.4)	¥	¥	16.9 (8.0-25.7)	19.0 (9.1-29.0)
Hispanic	¥	¥	¥	¥	15.1 (7.7-22.6)	10.8 (5.0-16.7)	15.3 (7.3-23.3)	11.9 (5.4-18.3)	9.4 (4.1-14.8)

Nevada	2004	2005	2006	2007	2008	2009	2010	2011	2012
White	20.7 (18.5-22.8)	19.2 (17.2-21.3)	18.6 (16.6-20.5)	18.5 (16.6-20.5)	17.7 (15.8-19.5)	16.5 (14.7-18.3)	16.7 (14.9-18.4)	16.6 (14.9-18.4)	17.8 (16.0-19.6)
Black	32.5 (21.9-43.1)	21.0 (13.2-28.8)	17.6 (10.4-24.8)	28.5 (19.4-37.5)	22.1 (14.5-29.8)	28.4 (19.7-37.1)	25.5 (17.4-33.6)	26.7 (18.3-35.0)	20.4 (13.2-27.6)
Native American	¥	0	¥	¥	0	¥	¥	¥	¥
Asian	14.5 (6.9-22.1)	14.9 (7.4-22.5)	11.0 (5.4-16.5)	18.5 (10.4-26.6)	12.7 (6.5-19.0)	11.9 (6.4-17.4)	19.4 (12.2-26.6)	17.1 (10.5-23.7)	17.7 (11.4-24.1)
Hispanic	21.9 (13.3-30.5)	8.7 (4.0-13.5)	13.3 (7.9-18.8)	14.1 (8.9-19.3)	14.2 (8.7-19.6)	17.1 (11.3-22.9)	16.0 (10.5-21.5)	10.0 (6.0-13.9)	14.1 (9.0-19.1)

*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. standard population (19 age-groups -CensusP25-1130).

Table 5: Colorectal Cancer Mortality Annual Age-Adjusted Rates* by Race/Ethnicity, United States, 1999-2011.

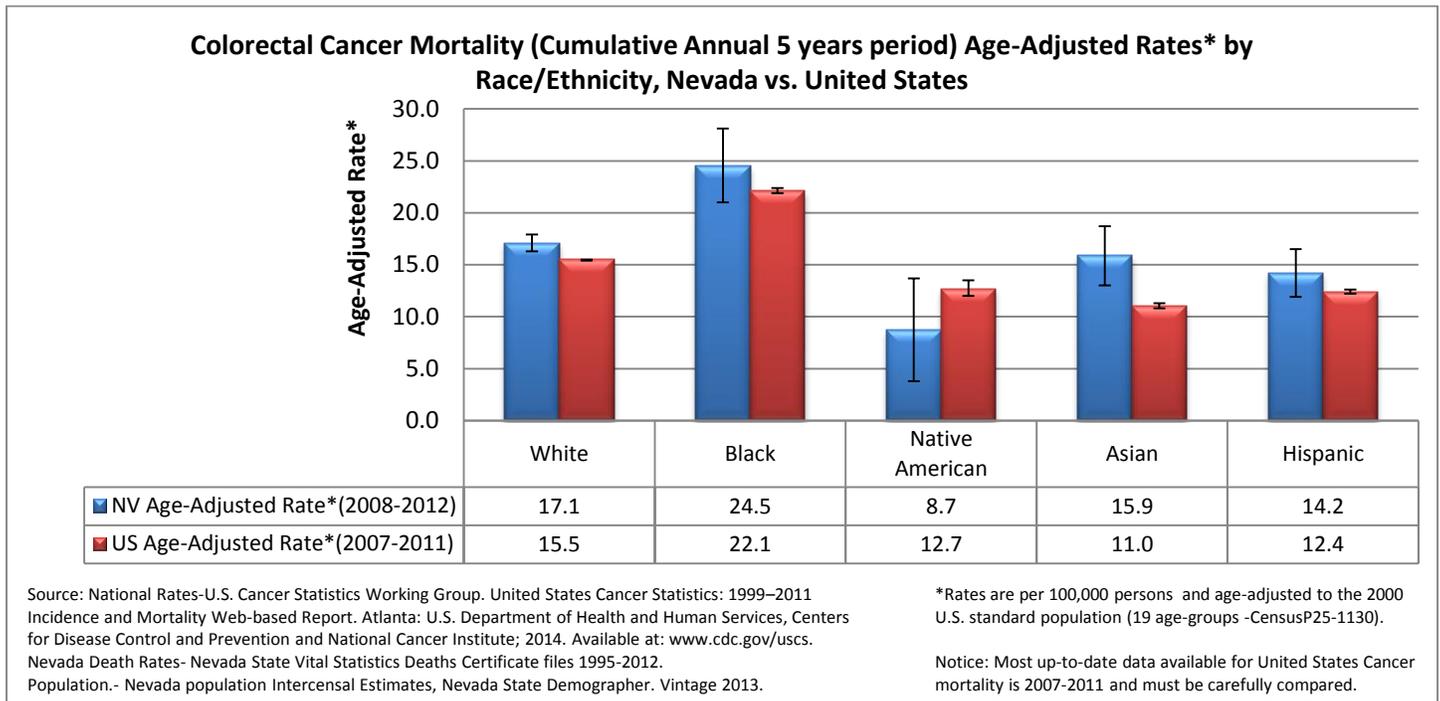
United States	1995	1996	1997	1998	1999	2000	2001	2002	2003
White					20.4 (20.2-20.6)	20.2 (20.0-20.3)	19.6 (19.4-19.8)	19.2 (19.1-19.4)	18.6 (18.4-18.8)
Black					28.5 (27.8-29.2)	28.2 (27.5-28.8)	27.7 (27.1-28.4)	27.1 (26.4-27.7)	26.6 (26.0-27.3)
Native American					13.8 (11.7-16.2)	13.6 (11.6-15.7)	12.8 (11.0-14.9)	15.1 (13.2-17.3)	12.7 (10.9-14.7)
Asian					12.1 (11.2-13.0)	12.6 (11.7-13.5)	13.3 (12.5-14.2)	12.8 (12.0-13.6)	12.4 (11.6-13.2)
Hispanic					14.5 (13.8-15.1)	14.0 (13.4-14.7)	14.3 (13.7-15.0)	14.1 (13.6-14.8)	13.9 (13.3-14.5)

United States	2004	2005	2006	2007	2008	2009	2010	2011	2012
White	17.6 (17.5-17.8)	17.0 (16.8-17.2)	16.8 (16.6-16.9)	16.4 (16.3-16.6)	16.0 (15.8-16.1)	15.4 (15.2-15.5)	15.0 (14.9-15.2)	14.6 (14.5-14.8)	
Black	25.0 (24.4-25.6)	25.1 (24.5-25.7)	24.4 (23.8-25.0)	23.6 (23.0-24.1)	22.8 (22.3-23.4)	21.9 (21.4-22.4)	21.5 (21.0-22.0)	21.1 (20.6-21.6)	
Native American	13.1 (11.3-15.0)	12.7 (11.0-14.6)	11.7 (10.1-13.4)	12.4 (10.8-14.1)	14.7 (13.0-16.6)	13.0 (11.4-14.7)	11.6 (10.1-13.1)	12.3 (10.9-13.8)	
Asian	11.6 (10.9-12.3)	11.6 (10.9-12.3)	11.3 (10.6-12.0)	11.3 (10.6-11.9)	11.6 (11.0-12.3)	10.5 (9.9-11.1)	11.2 (10.6-11.8)	10.7 (10.2-11.3)	
Hispanic	13.3 (12.7-13.8)	13.2 (12.7-13.8)	13.5 (12.9-14.0)	12.8 (12.3-13.3)	12.7 (12.2-13.2)	12.7 (12.2-13.2)	12.1 (11.7-12.5)	11.9 (11.5-12.4)	

*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. standard population (19 age-groups -CensusP25-1130).

COLORECTAL CANCER MORTALITY TREND BY RACE/ETHNICITY, 2008-2012

Figure 6: Colorectal Cancer Mortality (Cumulative Annual 5 years period) Age-Adjusted Rates* by Race/Ethnicity, Nevada vs. United States.



COLORECTAL CANCER MORTALITY BY REGION, BY RACE/ETHNICITY IN NEVADA, 2008-2012

Table 6: Colorectal Cancer Mortality by Region and by Race/Ethnicity, Age-Adjusted Rates*, Nevada Geo-demographical Regions, 2008-2012

Colorectal Cancer Mortality (All Ages, All Races) by Races - Age-Adjusted Rates*, 2008-2012 (Regions ordered by population size)				
Race/Ethnicity	Clark	Washoe	Carson City	Rural
White	16.8 (15.9-17.8)	17.5 (15.5-19.6)	20.2 (15.1-25.4)	17.1 (15.0-19.2)
Black	25.1 (21.3-28.8)	¥	¥	0
Native American	¥	¥	0	¥
Asian	16.5 (13.3-19.7)	¥	¥	¥
Hispanic	14.6 (12.0-17.2)	¥	¥	18.7 (8.5-28.9)
All Races/Ethnicities	17.1 (16.3-18.0)	16.5 (14.7-18.4)	19.5 (14.7-24.3)	17.0 (15.0-19.0)

¥ Counts more than zero or less than or equal to 5 or Rates with Relative Standard Error (RSE) >30% are suppressed; due to reliability and/or confidentiality issues.

* Rates are per 100,000 persons and age-adjusted to the 2000 US Census standard population.

COLORECTAL CANCER MORTALITY TREND BY AGE GROUPS, 1995-2012

Figure 7: Colorectal Cancer Mortality Trend by Age Groups, Age-Adjusted Rates*, Nevada, 1995-2012.

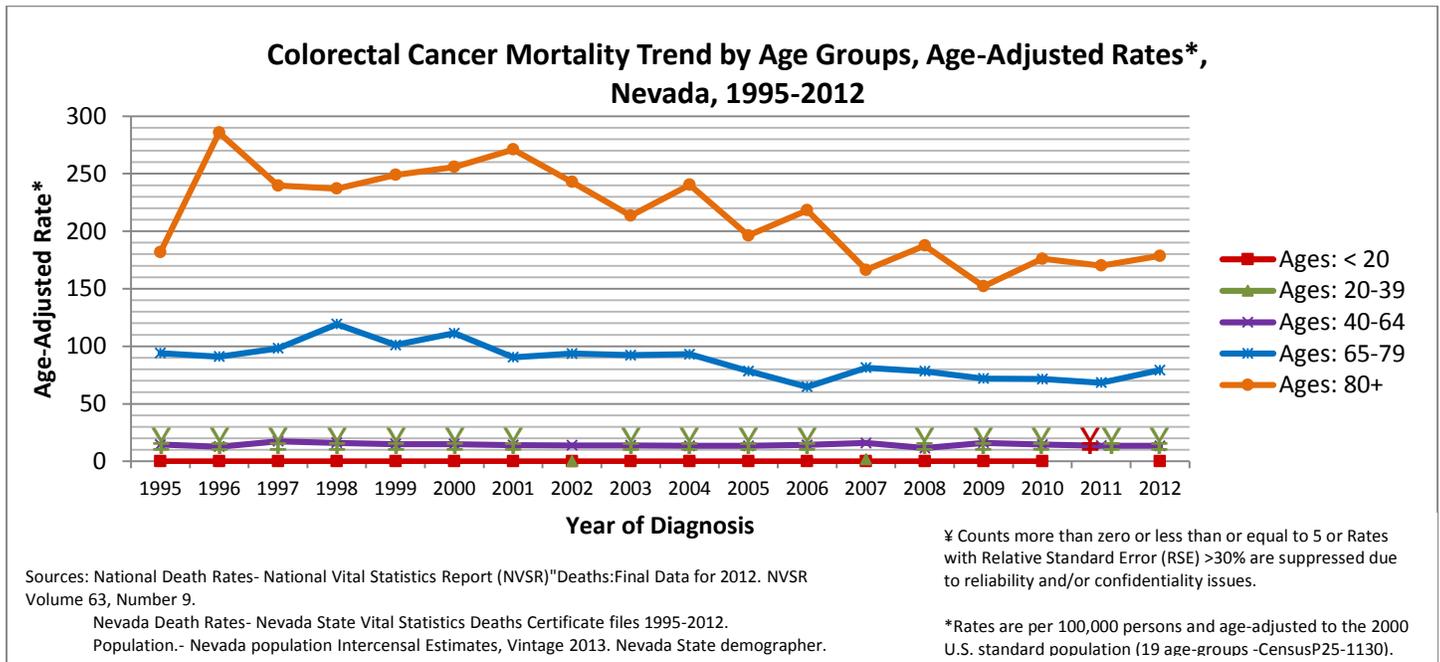


Table 7: Colorectal Cancer Mortality Annual Age-Adjusted Rates* by Age Groups, Nevada, 1995-2012.

Nevada	1995	1996	1997	1998	1999	2000	2001	2002	2003
< 20	0	0	0	0	0	0	0	0	0
20 - 39	‡	‡	‡	‡	‡	‡	‡	0	‡
40 - 64	14.5 (11.1-17.9)	12.8 (9.7-15.9)	17.4 (13.9-20.9)	16.1 (12.9-19.4)	15.0 (12.0-18.1)	15.0 (12.0-17.9)	14.2 (11.4-17.1)	13.8 (11.0-16.5)	13.9 (11.3-16.6)
65 - 79	94.1 (78.1-110.2)	91.0 (75.7-106.4)	98.2 (82.6-113.7)	119.2 (102.6-135.8)	101.1 (86.0-116.2)	111.3 (95.9-126.8)	90.4 (76.6-104.1)	93.7 (80.0-107.5)	92.3 (78.7-106)
80 +	181.9 (132.5-231.3)	285.7 (226.0-345.4)	239.7 (186.9-292.6)	237.0 (186.0-288.0)	248.9 (198.6-299.2)	255.8 (206.7-305.0)	271.1 (222.4-319.8)	242.8 (198.4-287.2)	213.5 (173.5-253.6)

Nevada	2004	2005	2006	2007	2008	2009	2010	2011	2012
< 20	0	0	0	0	0	0	0	‡	0
20 - 39	‡	‡	‡	1.8 (0.8-2.8)	‡	‡	‡	‡	‡
40 - 64	13.5 (11.0-16.1)	13.4 (10.9-15.9)	14.3 (11.8-16.9)	15.9 (13.3-18.5)	11.5 (9.2-13.7)	16.1 (13.5-18.6)	14.5 (12.0-16.9)	13.6 (11.3-15.9)	13.4 (11.1-15.7)
65 - 79	93.1 (79.7-106.5)	78.4 (66.4-90.3)	64.7 (54.0-75.4)	81.3 (69.4-93.3)	78.3 (66.9-89.7)	72.0 (61.1-82.9)	71.5 (60.8-82.2)	68.4 (58.0-78.8)	79.3 (68.4-90.2)
80 +	240.3 (199.1-281.4)	196.2 (160.0-232.4)	218.3 (181-255.7)	166.4 (134.5-198.2)	187.5 (154.5-220.5)	152.2 (123.1-181.3)	176.1 (145.1-207.1)	170.1 (140.0-200.2)	178.6 (148.1-209.0)

*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. standard population (19 age-groups -CensusP25-1130).

COLORECTAL CANCER MORTALITY BY AGE GROUPS, 2008-2012

Figure 8: Colorectal Cancer Mortality by Age Groups, Cumulative Annual Age-Adjusted Rates*, Nevada, 2008-2012.

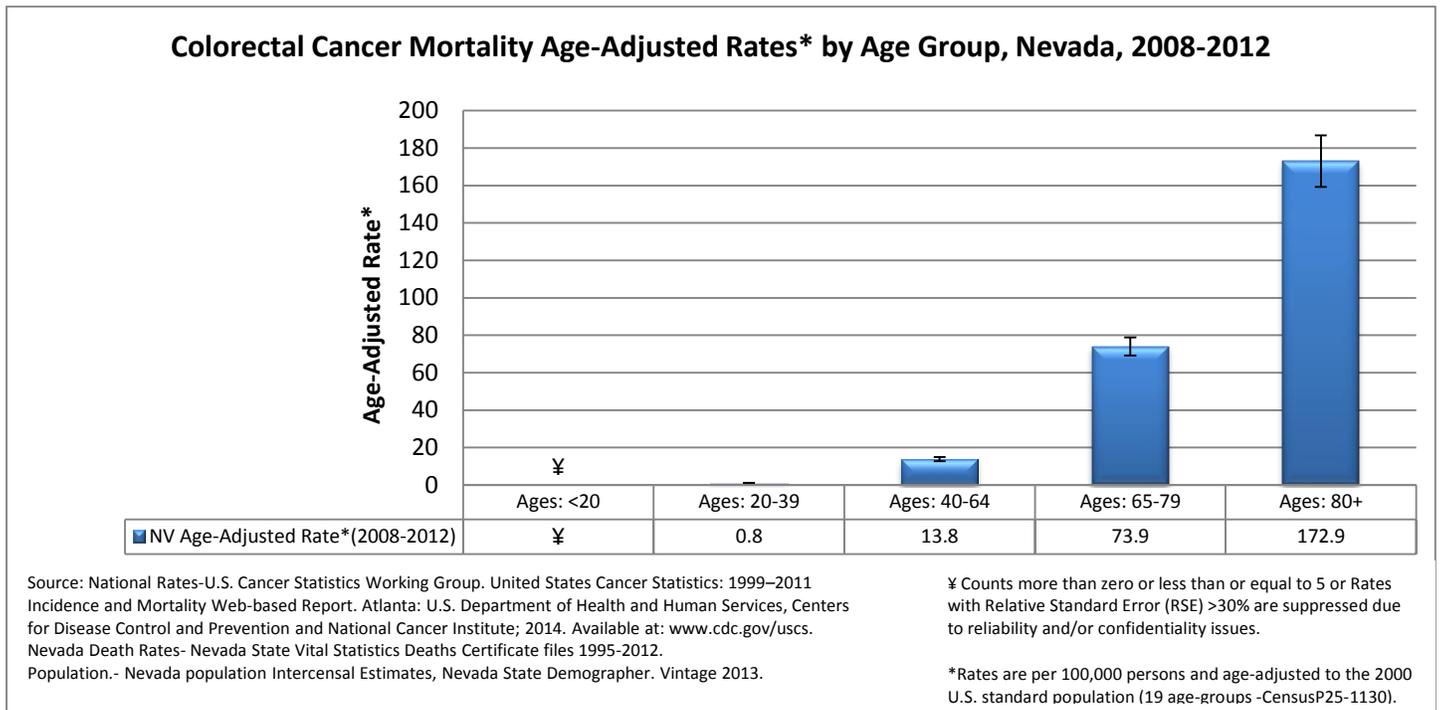


Table 8: Colorectal Cancer Mortality by Region and by Age Groups, Age-Adjusted Rates*, Nevada Geo-demographical Regions, 2008-2012

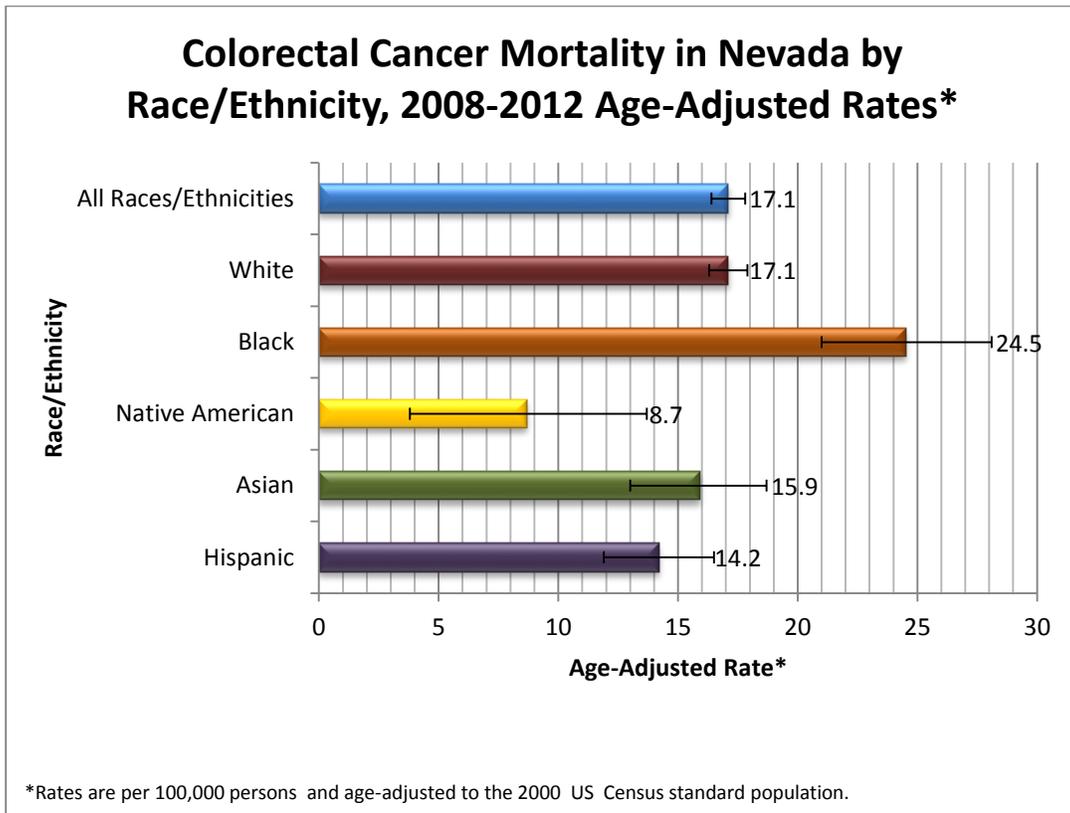
Colorectal Cancer Mortality (All Races) by Age Group - Age-Adjusted Rates*, 2008-2012 (Regions ordered by population size)				
Age Groups	Clark	Washoe	Carson City	Rural
< 20	¥	0	0	0
20 - 39	0.8 (0.5-1.2)	¥	¥	¥
40 - 64	14.5 (13.2-15.7)	11.2 (8.8-13.5)	17.5 (9.6-25.3)	12.9 (9.9-15.9)
65 - 79	73.4 (67.6-79.2)	78.7 (65.5-92.0)	77.7 (44.5-111.0)	70.8 (57.8-83.8)
80 +	170.1 (153.7-186.5)	167.5 (132.3-202.7)	192.1 (111.8-272.3)	189.3 (149.3-229.3)
All Ages	17.1 (16.3-18.0)	16.5 (14.7-18.4)	19.5 (14.7-24.3)	17.0 (15.0-19.0)

¥ Counts more than zero or less than or equal to 5 or Rates with Relative Standard Error (RSE) >30% are suppressed; due to reliability and/or confidentiality issues.

* Rates are per 100,000 persons and age-adjusted to the 2000 US Census standard population.

COLORECTAL CANCER MORTALITY SNAPSHOT

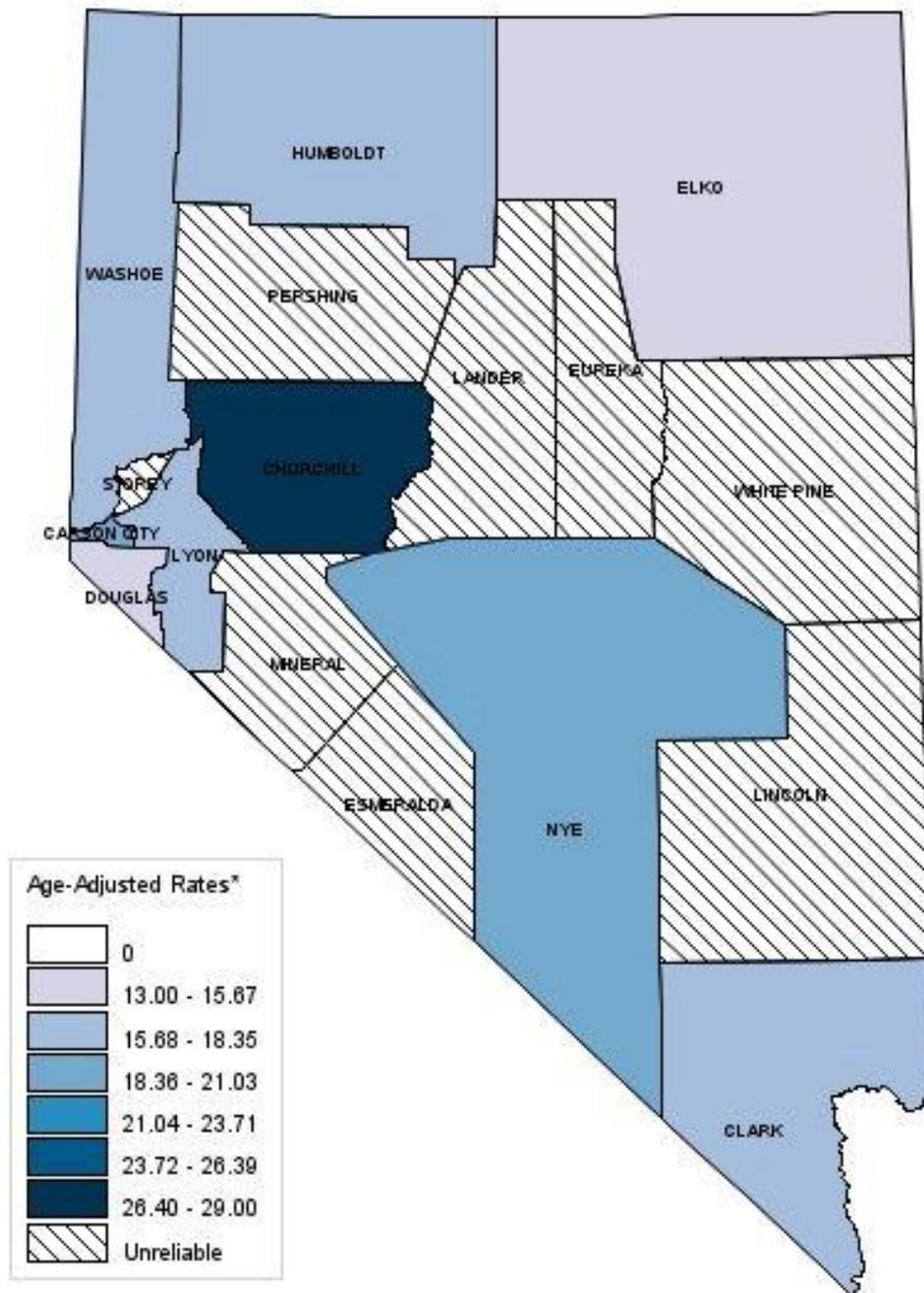
Table 9: Colorectal Cancer Mortality Causes Annual Age-Adjusted Rates* by Race/Ethnicity, Nevada, 2008-2012.



COLORECTAL CANCER MORTALITY BY GEOGRAPHICAL DISTRIBUTION

Figure 9: Colorectal Cancer Mortality Cumulative Annual Age-Adjusted Rates* by County, Nevada, 2008-2012.

Nevada Colorectal Cancer Mortality, 2008-2012 (All Ages, All Races) by County



*Rates are per 100,000 persons and age-adjusted to the 2000 US Census standard population (19 age grps.-CensusP25-1130).

Figure 10: Colorectal Cancer Mortality by County, Age-Adjusted Rates*, Nevada, 2008-2012.

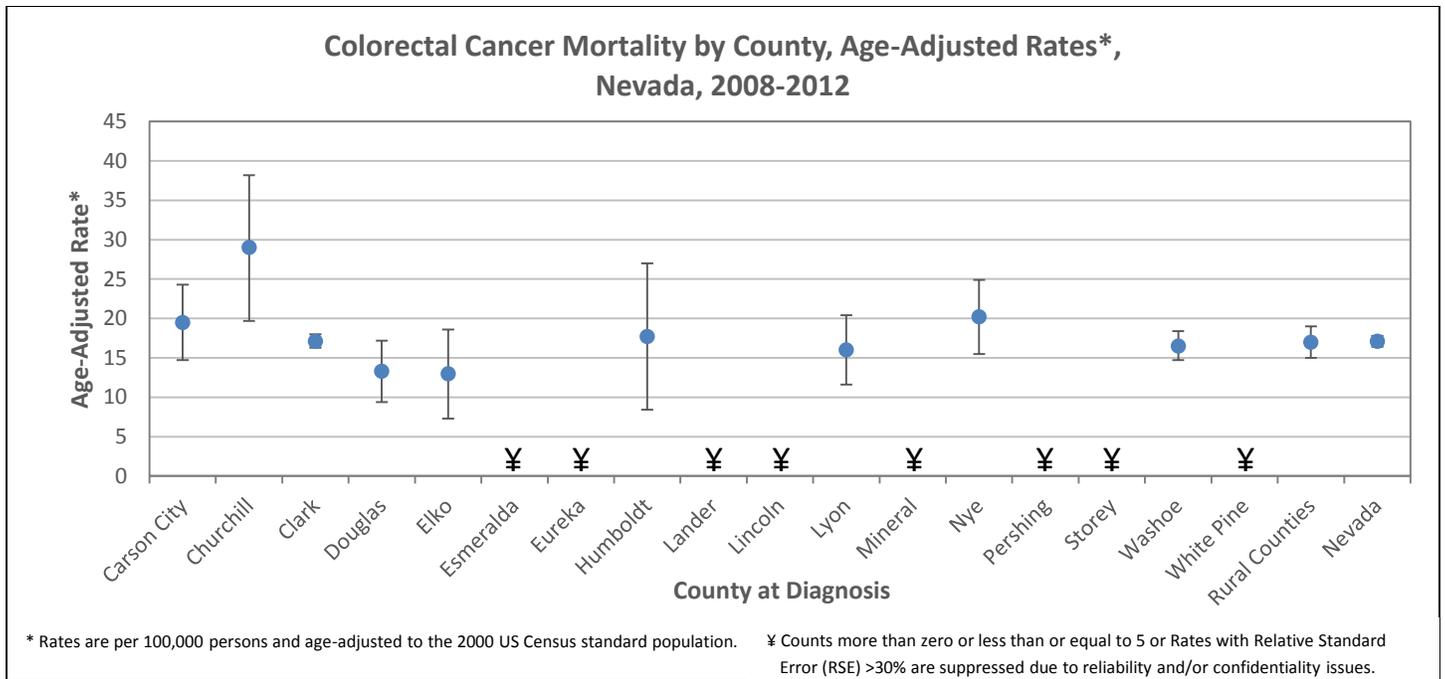


Table 10: Colorectal Cancer Mortality Cumulative Annual Age-Adjusted Rates* by County, Nevada, 2008-2012.

Nevada Colorectal Cancer Mortality (All Ages, All Races) by County - Counts/Age-Adjusted Rates*, 2008-2012		
County	Counts	Age Adj. Rate*
Carson City	63	19.5 (14.7-24.3)
Churchill	38	29.0 (19.7-38.2)
Clark	1,538	17.1 (16.3-18.0)
Douglas	45	13.3 (9.4-17.2)
Elko	20	13.0 (7.3-18.6)
Esmeralda	¥	¥
Eureka	¥	¥
Humboldt	14	17.7 (8.4-27.0)
Lander	¥	¥
Lincoln	7	¥
Lyon	50	16.0 (11.6-20.4)
Mineral	9	¥
Nye	71	20.2 (15.5-24.9)
Pershing	¥	¥
Storey	¥	¥
Washoe	313	16.5 (14.7-18.4)
White Pine	11	¥
Rural Counties	275	17.0 (15.0-19.0)

¥ Counts more than zero or less than or equal to 5 or Rates with Relative Standard Error (RSE) >30% are suppressed; due to reliability and/or confidentiality issues.

* Rates are per 100,000 persons and age-adjusted to the 2000 US Census standard population.

COLORECTAL CANCER INCIDENCE

COLORECTAL CANCER INCIDENCE

Figure 11: Colorectal Cancer Incidence Trend, Nevada vs. United States, 1995-2012.

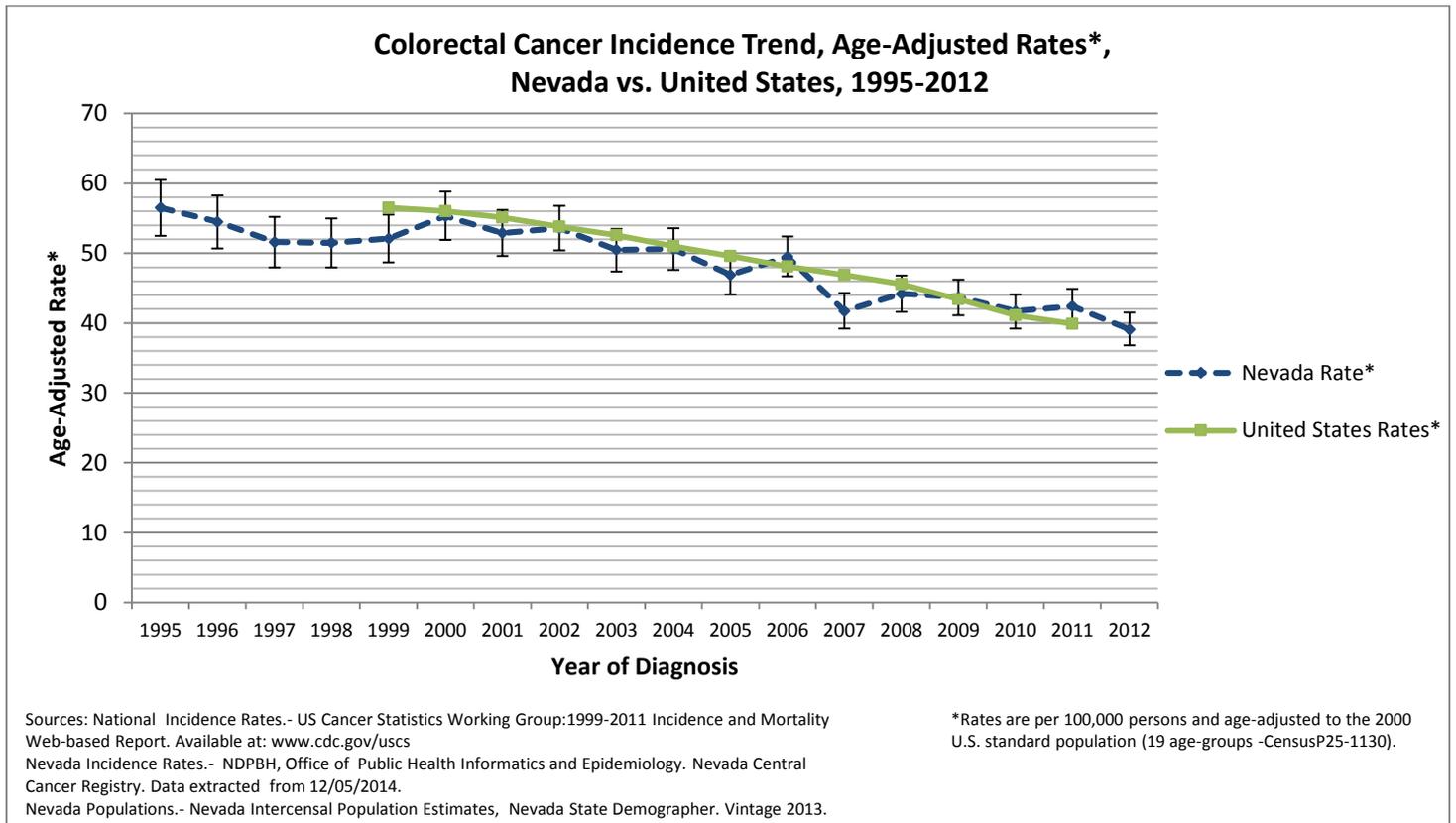


Table 11: Colorectal Cancer Incidence Age-Adjusted Rates* by year, Nevada and United States, 1995-2012.

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Nevada	56.5 (52.5-60.5)	54.5 (50.7-58.3)	51.6 (48.0-55.2)	51.5 (48.0-55.0)	52.1 (48.7-55.5)	55.3 (51.8-58.7)	52.9 (49.6-56.2)	53.6 (50.4-56.8)	50.5 (47.5-53.6)
United States					56.5 (56.2-56.8)	56.0 (55.7-56.3)	55.1 (54.8-55.4)	53.8 (53.5-54.1)	52.6 (52.3-52.9)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Nevada	50.6 (47.6-53.6)	46.9 (44.1-49.7)	49.5 (46.6-52.3)	41.7 (39.1-44.2)	44.2 (41.6-46.8)	43.7 (41.2-46.3)	41.7 (39.3-44.2)	42.4 (39.9-44.8)	39.1 (36.7-41.4)
United States	51.0 (50.8-51.3)	49.6 (49.3-49.8)	48.1 (47.8-48.3)	46.9 (46.6-47.1)	45.6 (45.3-45.8)	43.4 (43.1-43.6)	41.1 (40.9-41.4)	39.9 (39.7-40.1)	

*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. standard population (19 age-groups -CensusP25-1130).

COLORECTAL CANCER INCIDENCE BY GENDER

Figure 12: Colorectal Cancer Incidence Trend by Gender, Age-Adjusted Rates*, Nevada vs. United States, 1995-2012.

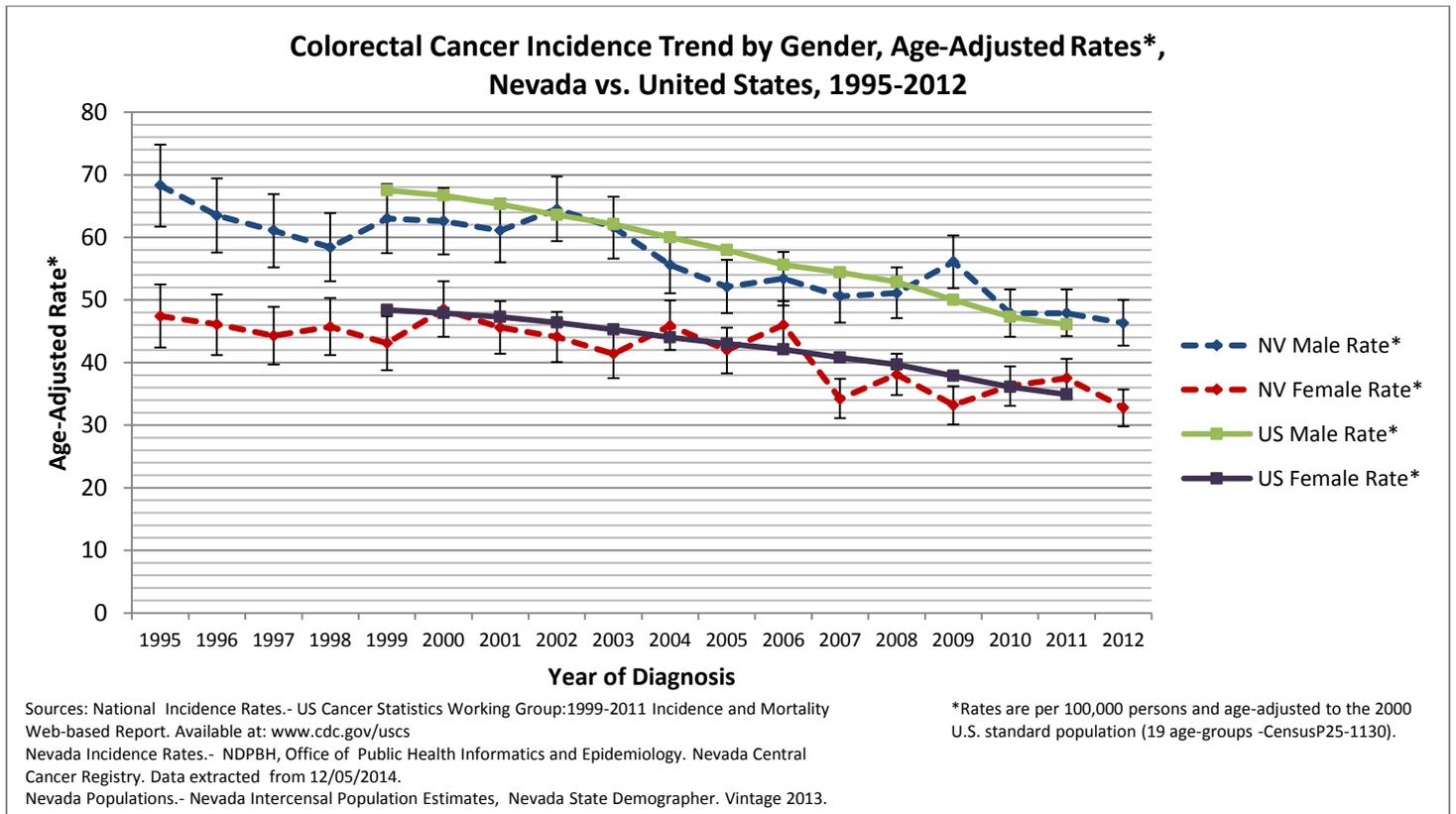


Table 12: Colorectal Cancer Incidence Trend by Gender, Age-Adjusted Rates*, Nevada and United States, 1995-2012.

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Nevada Male	68.3 (61.8-74.9)	63.5 (57.6-69.4)	61.1 (55.3-67.0)	58.4 (52.9-63.8)	63.0 (57.5-68.5)	62.6 (57.3-67.9)	61.1 (56.0-66.2)	64.5 (59.3-69.6)	61.6 (56.7-66.6)
Nevada Female	47.4 (42.3-52.4)	46.1 (41.3-51.0)	44.3 (39.7-48.9)	45.7 (41.1-50.2)	43.1 (38.8-47.4)	48.5 (44.0-52.9)	45.6 (41.4-49.8)	44.1 (40.1-48.1)	41.4 (37.6-45.3)
United States Male					67.5 (67.0-68.0)	66.7 (66.2-67.2)	65.3 (64.8-65.8)	63.6 (63.2-64.1)	62.1 (61.7-62.6)
United States Female					48.4 (48.1-48.8)	47.9 (47.6-48.3)	47.3 (47.0-47.7)	46.4 (46.0-46.7)	45.3 (45.0-45.6)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Nevada Male	55.6 (51.0-60.1)	52.1 (47.8-56.3)	53.4 (49.1-57.7)	50.6 (46.5-54.8)	51.1 (47.0-55.1)	56.1 (51.9-60.3)	47.9 (44.1-51.7)	47.9 (44.1-51.6)	46.3 (42.6-49.9)
Nevada Female	45.9 (41.9-49.8)	42.0 (38.4-45.7)	46.0 (42.2-49.7)	34.2 (31.0-37.3)	38.1 (34.8-41.4)	33.2 (30.2-36.3)	36.3 (33.2-39.5)	37.5 (34.4-40.7)	32.8 (29.9-35.8)
United States Male	60.0 (59.6-60.5)	58.0 (57.6-58.4)	55.6 (55.2-56.0)	54.4 (54.0-54.8)	52.9 (52.5-53.3)	50.0 (49.6-50.4)	47.3 (47.0-47.7)	46.1 (45.8-46.5)	
United States Female	44.0 (43.7-44.3)	43.0 (42.7-43.3)	42.1 (41.8-42.4)	40.8 (40.5-41.1)	39.7 (39.4-40.0)	37.9 (37.7-38.2)	36.1 (35.8-36.4)	34.9 (34.6-35.1)	

*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. standard population (19 age-groups -CensusP25-1130).

COLORECTAL CANCER INCIDENCE BY GENDER, 2008-2012

Figure 13: Colorectal Cancer Incidence (Cumulative Annual 5 years period) Age-Adjusted Rates* by Gender, Nevada vs. United States.

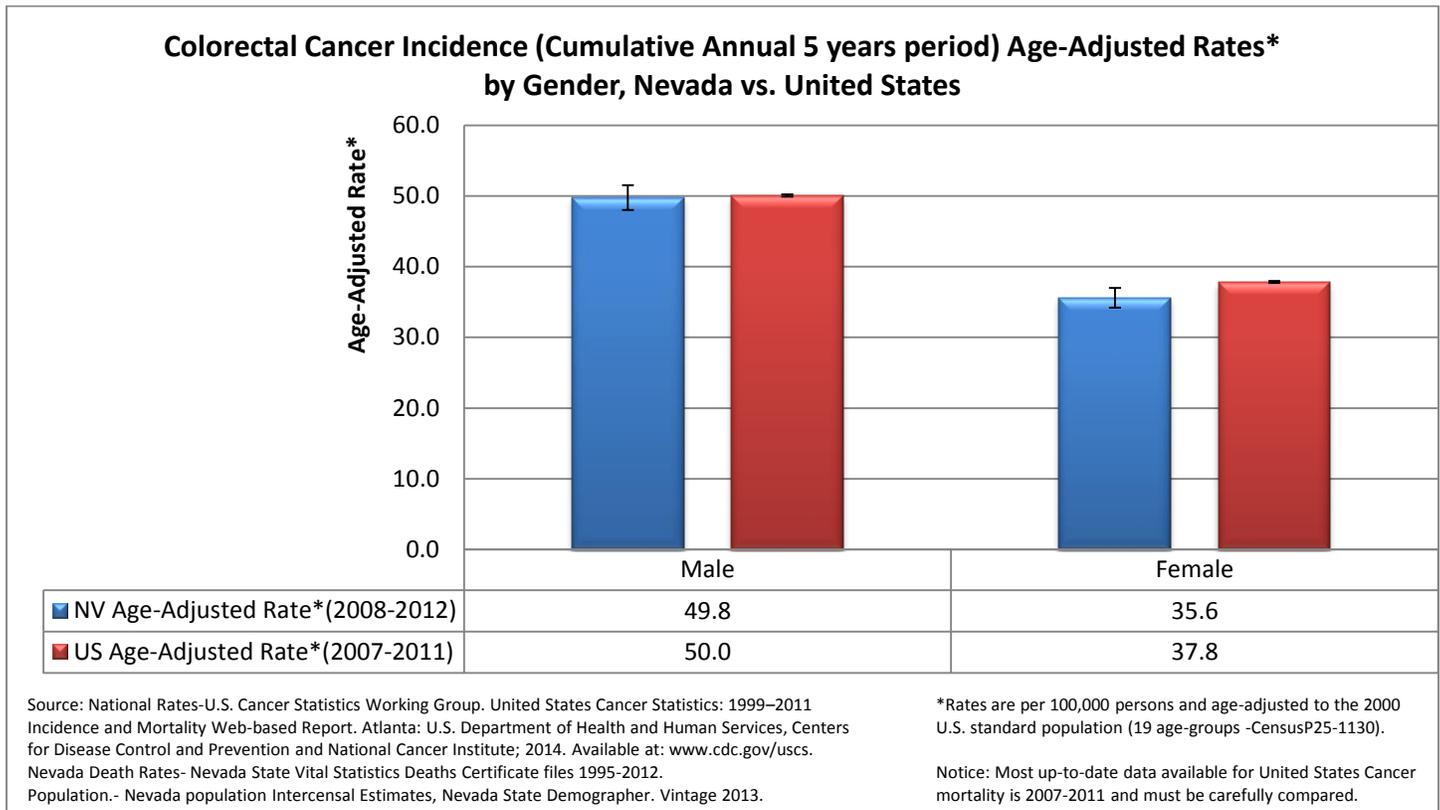


Table 13: Colorectal Cancer Incidence by Region and Gender. Cumulative Annual Age-Adjusted Rates* Nevada Geo-demographical Regions.

Colorectal Cancer Incidence (All Ages, All Races) by Gender - Age-Adjusted Rates*, Nevada, 2008-2012 (Regions ordered by population size)				
Gender	Clark	Washoe	Carson City	Rural
Male	50.3 (48.2-52.4)	45.2 (40.9-49.5)	65.7 (52.2-79.2)	48.8 (44.0-53.5)
Female	34.4 (32.8-36.1)	39.3 (35.6-43.1)	37.5 (28.6-46.4)	36.6 (32.5-40.7)
All Genders	41.8 (40.4-43.1)	42.2 (39.3-45.0)	49.8 (42.0-57.5)	42.5 (39.4-45.6)

‡ Counts more than zero or less than or equal to 5 or Rates with Relative Standard Error (RSE) >30% are suppressed; due to reliability and/or confidentiality issues.

* Rates are per 100,000 persons and age-adjusted to the 2000 US Census standard population.

COLORECTAL CANCER INCIDENCE TREND BY RACE/ETHNICITY

Figure 14: Colorectal Cancer Incidence Trend by Race/Ethnicity, Confidence Intervals, Age-Adjusted Rates*, Nevada, 1995-2012.

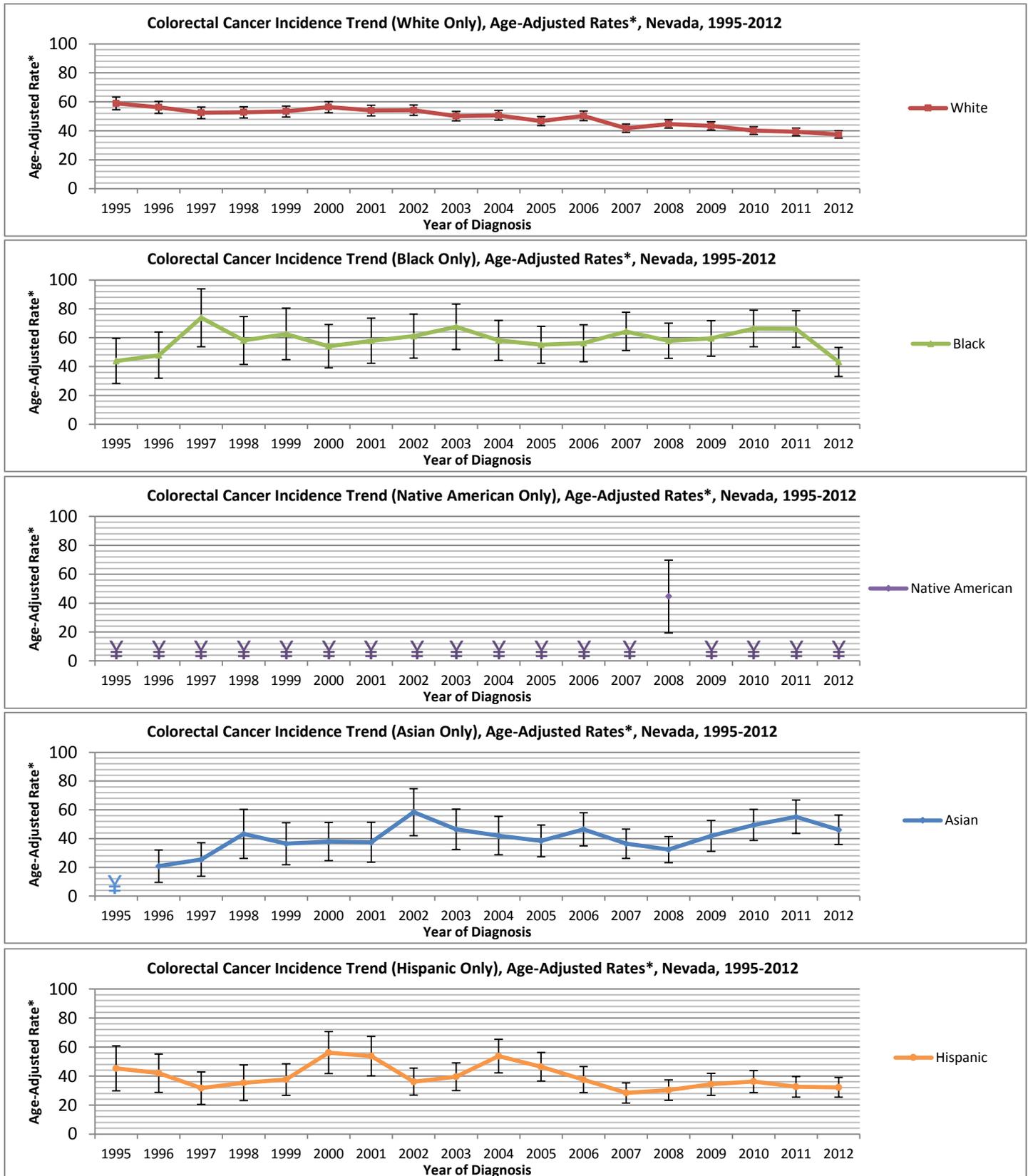


Figure 15: Colorectal Cancer Incidence Trend by Race/Ethnicity, Age-Adjusted Rates*, United States, 1999-2011.

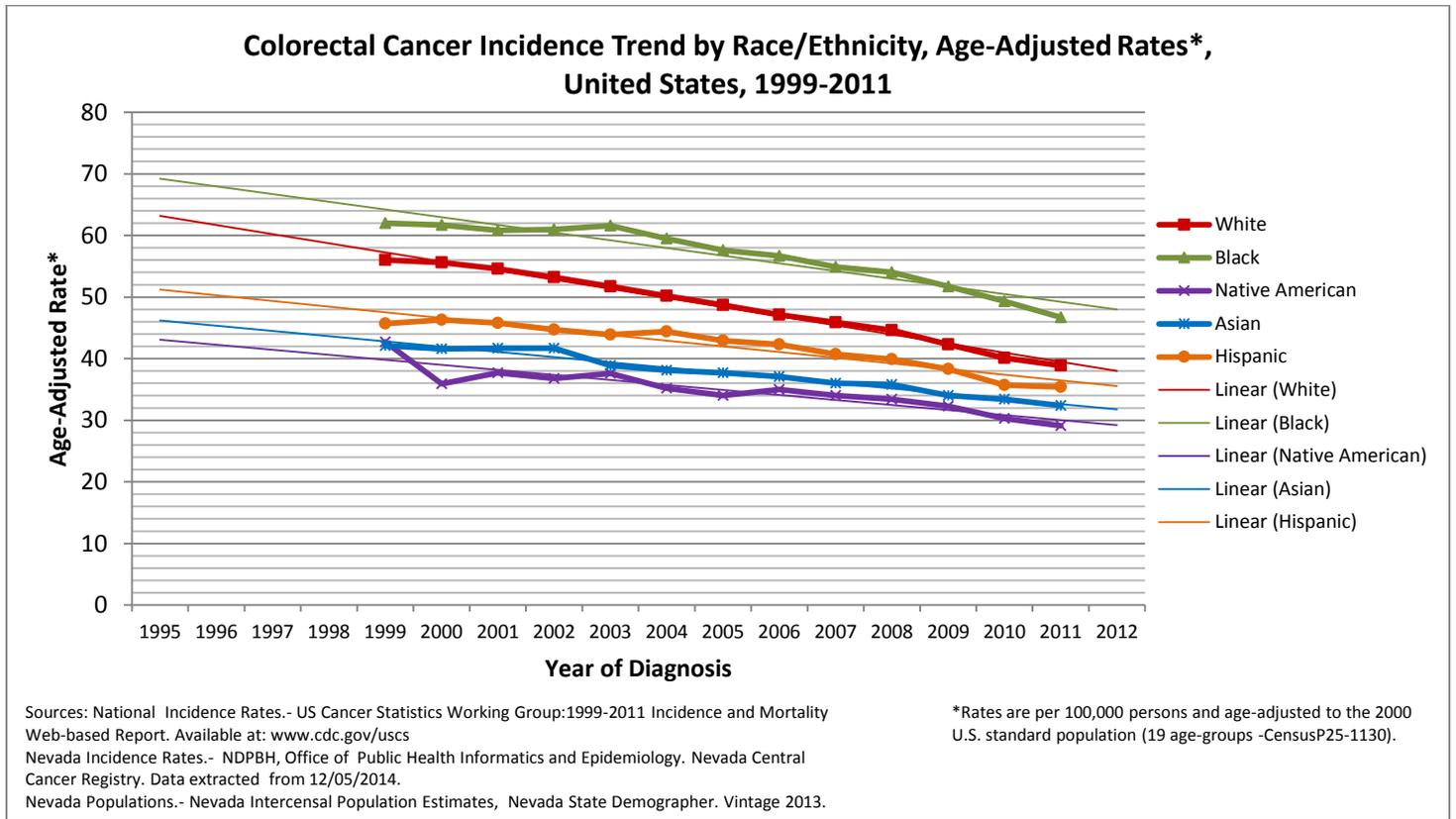


Table 14: Colorectal Cancer Incidence Annual Age-Adjusted Rates* by Race/Ethnicity, Nevada, 1995-2012.

Nevada	1995	1996	1997	1998	1999	2000	2001	2002	2003
White	58.9 (54.5-63.3)	56.2 (52.0-60.4)	52.5 (48.5-56.5)	52.8 (48.9-56.6)	53.4 (49.6-57.1)	56.4 (52.5-60.2)	54.0 (50.3-57.6)	54.3 (50.7-57.9)	50.2 (46.8-53.5)
Black	43.9 (28.2-59.6)	47.8 (31.8-63.9)	73.8 (53.7-93.9)	58.1 (41.5-74.7)	62.5 (44.7-80.4)	54.1 (39.1-69.1)	57.9 (42.3-73.5)	61.1 (45.8-76.4)	67.6 (51.9-83.3)
Native American	¥	¥	¥	¥	¥	¥	¥	¥	¥
Asian	¥	20.8 (9.5-32.1)	25.4 (13.7-37.2)	43.3 (26.3-60.3)	36.5 (21.9-51.1)	37.9 (24.6-51.2)	37.5 (23.6-51.4)	58.4 (42.0-74.7)	46.4 (32.4-60.5)
Hispanic	45.3 (29.8-60.8)	42.0 (28.8-55.2)	31.7 (20.5-42.8)	35.3 (23.1-47.6)	37.6 (26.7-48.4)	56.1 (41.7-70.6)	53.7 (40.1-67.3)	36.1 (26.8-45.5)	39.5 (30.0-49.0)

Nevada	2004	2005	2006	2007	2008	2009	2010	2011	2012
White	50.6 (47.3-54.0)	46.7 (43.6-49.8)	50.3 (47.1-53.6)	41.7 (38.9-44.6)	44.7 (41.8-47.6)	43.4 (40.5-46.2)	40.1 (37.4-42.8)	39.3 (36.6-41.9)	37.5 (34.9-40.1)
Black	58.2 (44.3-72.0)	55.1 (42.3-67.9)	56.2 (43.4-69.0)	64.3 (51.0-77.7)	57.9 (45.7-70.1)	59.5 (47.1-71.9)	66.3 (53.7-79.0)	66.1 (53.4-78.7)	43.2 (33.1-53.3)
Native American	¥	¥	¥	¥	44.6 (19.3-69.8)	¥	¥	¥	¥
Asian	42.1 (28.7-55.5)	38.4 (27.4-49.4)	46.5 (34.9-58.0)	36.5 (26.3-46.6)	32.4 (23.3-41.4)	41.9 (31.2-52.6)	49.5 (38.7-60.3)	55.2 (43.6-66.8)	46.1 (35.9-56.4)
Hispanic	53.8 (42.2-65.3)	46.4 (36.6-56.3)	37.5 (28.5-46.5)	28.4 (21.4-35.3)	30.3 (23.2-37.3)	34.3 (26.7-41.9)	36.2 (28.6-43.7)	32.6 (25.4-39.7)	32.2 (25.4-39.1)

*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. standard population (19 age-groups -CensusP25-1130).

Table 15: Colorectal Cancer Incidence Annual Age-Adjusted Rates* by Race/Ethnicity, United States, 1999-2011.

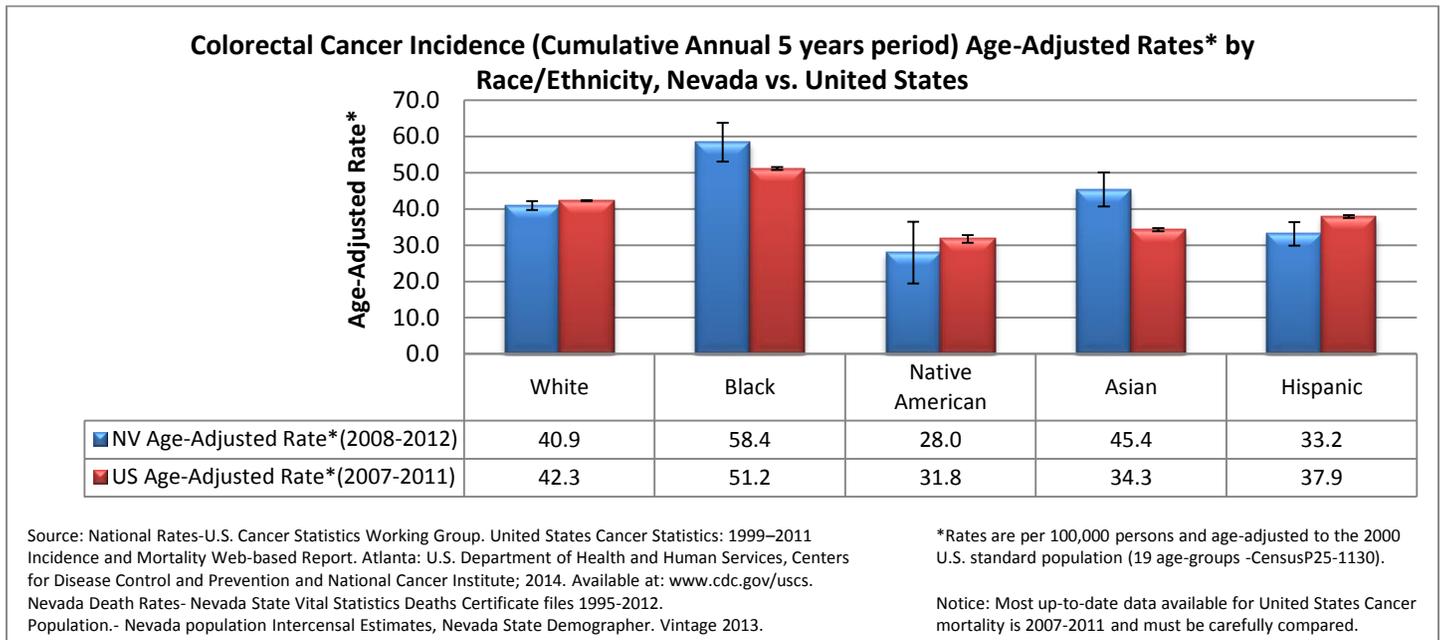
United States	1995	1996	1997	1998	1999	2000	2001	2002	2003
White					56.0 (55.7-56.4)	55.6 (55.3-55.9)	54.6 (54.3-54.9)	53.2 (52.9-53.5)	51.7 (51.4-52.0)
Black					62.0 (60.9-63.1)	61.7 (60.6-62.7)	60.8 (59.8-61.9)	61.0 (59.9-62.0)	61.6 (60.6-62.6)
Native American					42.7 (39.0-46.6)	35.9 (32.7-39.3)	37.7 (34.5-41.0)	36.8 (33.7-40.0)	37.6 (34.6-40.7)
Asian					42.1 (40.5-43.7)	41.6 (40.1-43.1)	41.7 (40.3-43.3)	41.7 (40.3-43.1)	38.9 (37.6-40.2)
Hispanic					45.7 (44.6-46.9)	46.3 (45.2-47.4)	45.8 (44.7-46.9)	44.7 (43.7-45.8)	43.9 (42.9-44.9)

United States	2004	2005	2006	2007	2008	2009	2010	2011	2012
White	50.2 (49.9-50.4)	48.7 (48.4-49.0)	47.1 (46.8-47.4)	45.9 (45.6-46.2)	44.6 (44.3-44.8)	42.3 (42.0-42.5)	40.1 (39.8-40.3)	38.9 (38.7-39.2)	
Black	59.5 (58.6-60.5)	57.6 (56.7-58.5)	56.7 (55.9-57.6)	54.9 (54.0-55.7)	54.0 (53.2-54.9)	51.7 (50.9-52.6)	49.3 (48.5-50.1)	46.7 (45.9-47.4)	
Native American	35.2 (32.4-38.2)	34.0 (31.3-36.8)	35.0 (32.3-37.9)	34.0 (31.4-36.7)	33.4 (30.9-36.0)	32.3 (30.0-34.8)	30.3 (28.1-32.6)	29.1 (27.0-31.4)	
Asian	38.1 (36.8-39.4)	37.7 (36.5-38.9)	37.1 (36.0-38.3)	36.0 (34.9-37.1)	35.8 (34.8-36.9)	34.0 (33.0-35.1)	33.4 (32.4-34.4)	32.4 (31.4-33.3)	
Hispanic	44.4 (43.4-45.4)	42.9 (42.0-43.9)	42.3 (41.4-43.2)	40.7 (39.8-41.5)	39.9 (39.1-40.8)	38.3 (37.5-39.1)	35.7 (35.0-36.5)	35.4 (34.7-36.1)	

*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. standard population (19 age-groups -CensusP25-1130).

COLORECTAL CANCER INCIDENCE TREND BY RACE/ETHNICITY, 2008-2012

Figure 16: Colorectal Cancer Incidence (Cumulative Annual 5 years period) Age-Adjusted Rates* by Race/Ethnicity, Nevada vs. United States.



COLORECTAL CANCER INCIDENCE BY REGION, BY RACE/ETHNICITY IN NEVADA, 2008-2012

Table 16: Colorectal Cancer Incidence by Region and by Race/Ethnicity, Age-Adjusted Rates*, Nevada Geo-demographical Regions, 2008-2012

Colorectal Cancer Incidence (All Ages, All Races) by Races - Age-Adjusted Rates*, 2008-2012 (Regions ordered by population size)				
Race/Ethnicity	Clark	Washoe	Carson City	Rural
White	39.3 (37.8-40.7)	43.5 (40.4-46.7)	49.1 (41.0-57.1)	43.6 (40.3-47.0)
Black	59.3 (53.7-64.9)	52.6 (28.9-76.2)	¥	¥
Native American	¥	45.6 (20.8-70.4)	¥	36.4 (19.1-53.7)
Asian	48.2 (42.8-53.5)	28.3 (18.2-38.5)	¥	¥
Hispanic	36.0 (32.1-39.9)	22.3 (15.3-29.3)	¥	21.9 (12.9-30.8)
All Races/Ethnicities	41.8 (40.4-43.1)	42.2 (39.3-45.0)	49.8 (42.0-57.5)	42.5 (39.4-45.6)

¥ Counts more than zero or less than or equal to 5 or Rates with Relative Standard Error (RSE) >30% are suppressed; due to reliability and/or confidentiality issues.

* Rates are per 100,000 persons and age-adjusted to the 2000 US Census standard population.

COLORECTAL CANCER INCIDENCE TREND BY AGE GROUPS, 1995-2012

Figure 17: Colorectal Cancer Incidence Trend by Age Groups, Age-Adjusted Rates*, Nevada, 1995-2012.

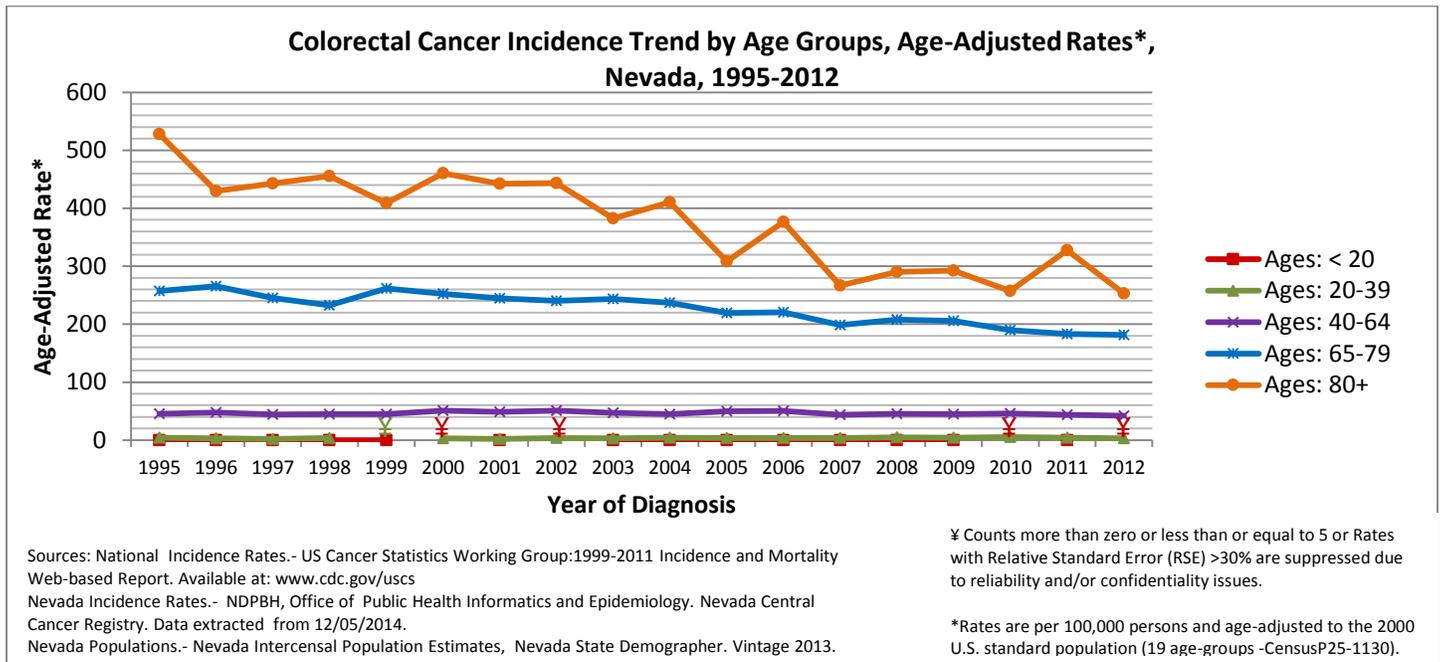


Table 17: Colorectal Cancer Incidence Annual Age-Adjusted Rates* by Age Groups, Nevada, 1995-2012.

Nevada	1995	1996	1997	1998	1999	2000	2001	2002	2003
< 20	0	0	0	0	0	‡	0	‡	0
20 - 39	4.5 (2.6-6.4)	3.3 (1.7-4.9)	2.1 (0.9-3.3)	3.8 (2.2-5.4)	‡	3.2 (1.8-4.7)	2.2 (1.0-3.3)	3.5 (2.0-5.0)	2.9 (1.6-4.3)
40 - 64	45.2 (39.2-51.2)	47.7 (41.7-53.7)	44.2 (38.6-49.7)	44.8 (39.4-50.3)	44.7 (39.4-50.0)	50.8 (45.3-56.3)	48.7 (43.4-53.9)	50.7 (45.5-55.9)	47.0 (42.1-51.9)
65 - 79	257.0 (230.6-283.4)	265.6 (239.5-291.7)	245.4 (220.8-269.9)	232.5 (209.3-255.7)	261.5 (237.3-285.6)	252.5 (229.3-275.8)	244.8 (222.2-267.4)	240.2 (218.1-262.3)	243.5 (221.7-265.3)
80 +	527.8 (444.2-611.4)	429.7 (357.5-501.9)	442.9 (370.8-515.0)	455.6 (385.2-526.0)	408.9 (345.5-472.2)	460.5 (395.6-525.5)	442.0 (380.7-503.2)	443.4 (385.1-501.8)	382.5 (329.2-435.7)

Nevada	2004	2005	2006	2007	2008	2009	2010	2011	2012
< 20	0	0	0	0	0	0	‡	0	‡
20 - 39	4.4 (2.8-6.0)	3.6 (2.1-5.0)	3.8 (2.4-5.3)	3.6 (2.1-5.0)	4.9 (3.3-6.6)	4.1 (2.6-5.6)	5.2 (3.5-6.8)	4.0 (2.5-5.4)	3.2 (1.9-4.5)
40 - 64	44.8 (40.1-49.5)	50.0 (45.1-54.9)	50.4 (45.6-55.2)	43.8 (39.5-48.2)	45.3 (40.9-49.7)	45.1 (40.8-49.4)	46.1 (41.8-50.4)	43.6 (39.5-47.8)	42.1 (38.0-46.2)
65 - 79	237.2 (216.0-258.3)	219.3 (199.3-239.4)	220.6 (200.8-240.4)	198.4 (180.0-216.8)	207.9 (189.4-226.5)	205.5 (187.3-223.7)	189.7 (172.4-206.9)	183.3 (166.5-200.0)	181.5 (165.0-197.9)
80 +	410.5 (357.2-463.7)	308.3 (263.9-352.7)	376.5 (328.0-425.1)	266.7 (226.8-306.5)	290.4 (249.7-331.2)	292.4 (252.1-332.7)	257.2 (219.8-294.5)	327.5 (285.9-369.1)	253.0 (216.8-289.3)

*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. standard population (19 age-groups -CensusP25-1130).

COLORECTAL CANCER INCIDENCE BY AGE GROUPS, 2008-2012

Figure 18: Colorectal Cancer Incidence by Age Groups, Cumulative Annual Age-Adjusted Rates*, Nevada, 2008-2012.

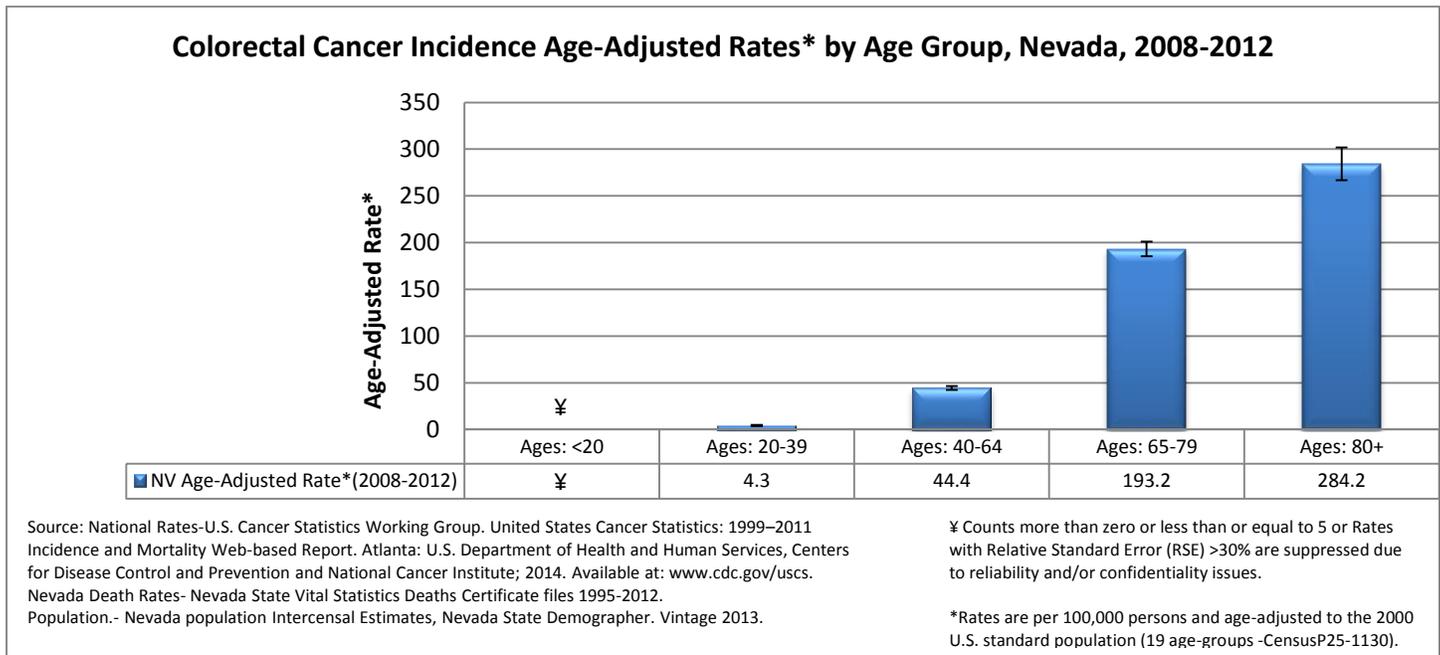


Table 18: Colorectal Cancer Incidence by Region and by Age Groups, Age-Adjusted Rates*, Nevada Geo-demographical Regions, 2008-2012

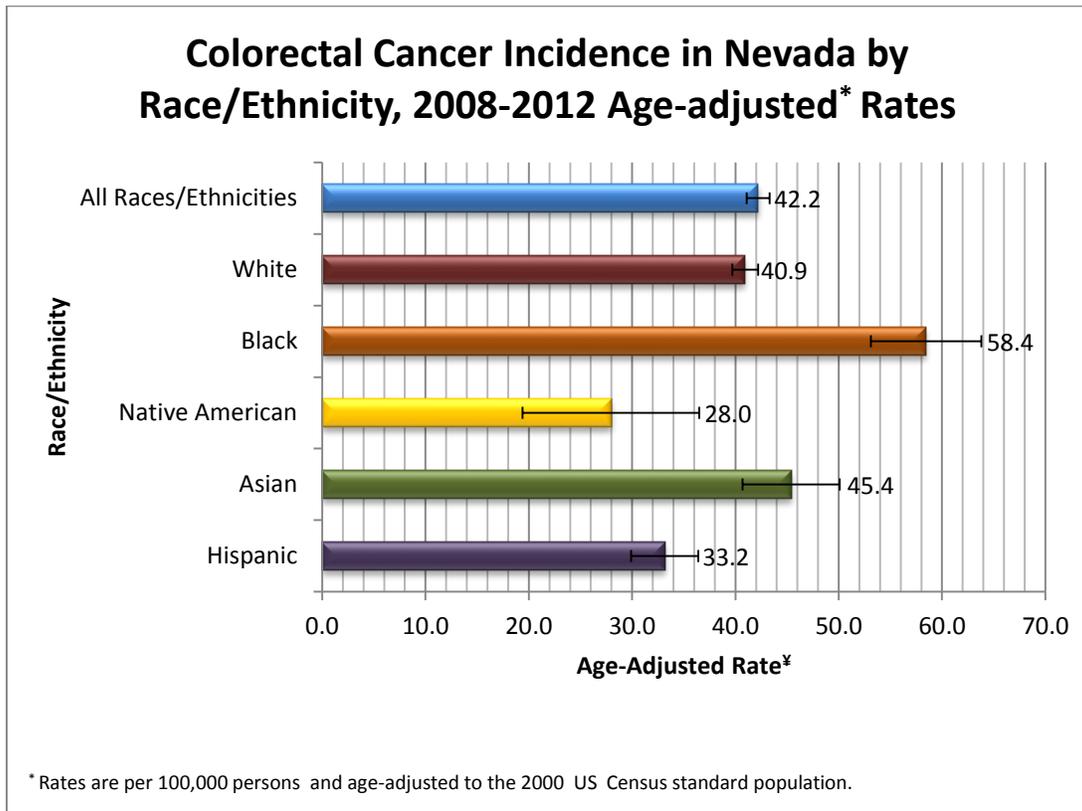
Colorectal Cancer Incidence (All Races) by Age Group - Age-Adjusted Rates*, 2008-2012 (Regions ordered by population size)				
Age Groups	Clark	Washoe	Carson City	Rural
< 20	¥	¥	0	0
20 - 39	4.4 (3.6-5.2)	3.9 (2.2-5.6)	¥	3.9 (1.7-6.1)
40 - 64	44.4 (42.2-46.7)	42.5 (37.9-47.1)	49.6 (36.0-63.3)	45.4 (39.8-51.0)
65 - 79	191.0 (181.8-200.3)	191.1 (170.5-211.7)	246.8 (188.1-305.4)	195.0 (173.5-216.5)
80 +	276.4 (255.6-297.3)	308.7 (261.0-356.4)	340.5 (233.6-447.4)	282.8 (234.2-331.5)
All Ages	41.8 (40.4-43.1)	42.2 (39.3-45.0)	49.8 (42.0-57.5)	42.5 (39.4-45.6)

¥ Counts more than zero or less than or equal to 5 or Rates with Relative Standard Error (RSE) >30% are suppressed; due to reliability and/or confidentiality issues.

* Rates are per 100,000 persons and age-adjusted to the 2000 US Census standard population.

COLORECTAL CANCER INCIDENCE SNAPSHOT

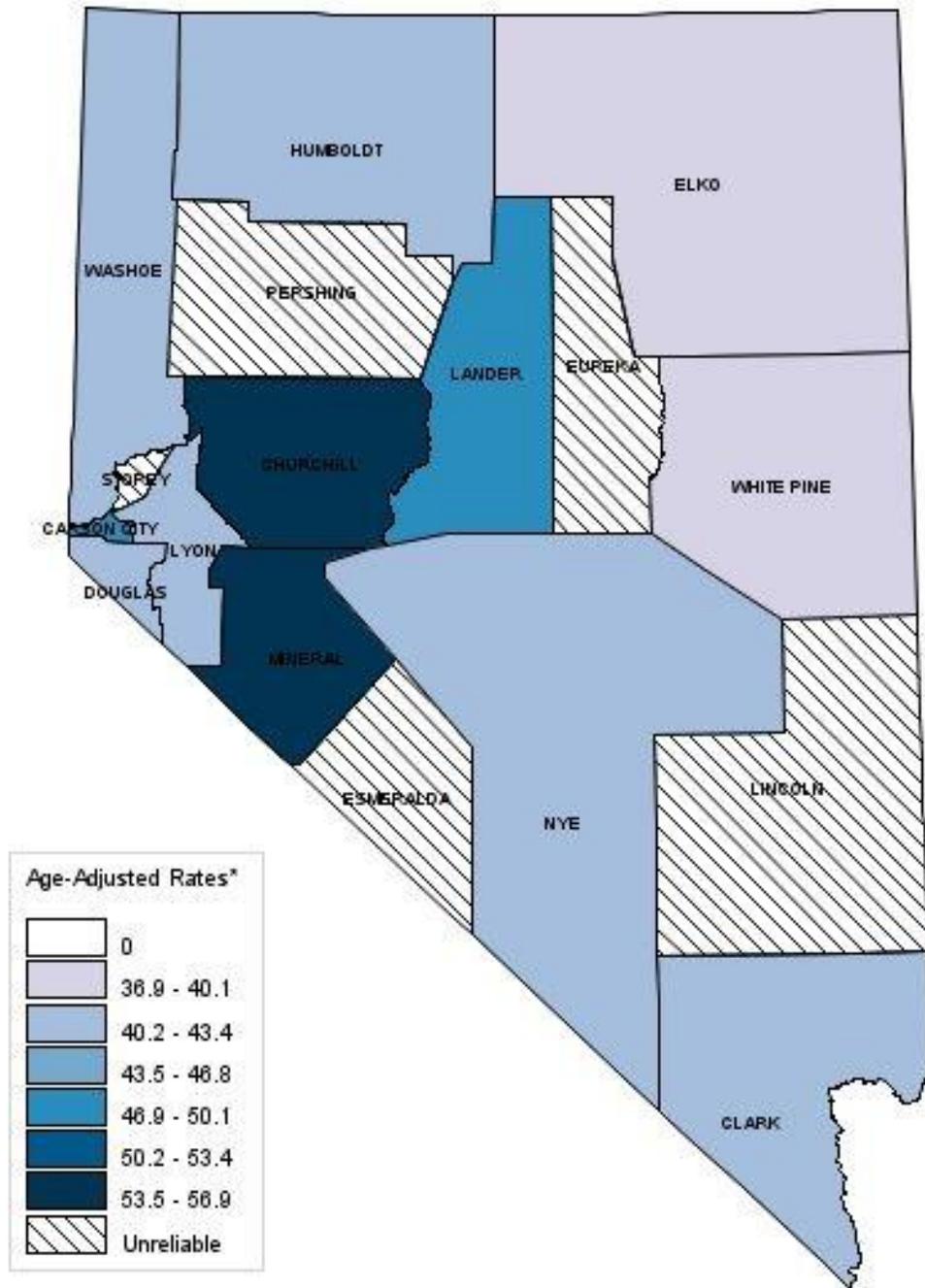
Table 19: Colorectal Cancer Incidence Causes Annual Age-Adjusted Rates* by Race/Ethnicity, Nevada, 2008-2012.



COLORECTAL CANCER INCIDENCE BY GEOGRAPHICAL DISTRIBUTION

Figure 19: Colorectal Cancer Incidence Cumulative Annual Age-Adjusted Rates* by County, Nevada, 2008-2012.

Nevada Colorectal Cancer Incidence, 2008-2012 (All Ages, All Races) by County



*Rates are per 100,000 persons and age-adjusted to the 2000 US Census standard population (19 age grps.-CensusP25-1130).

Figure 20: Colorectal Cancer Incidence by County, Age-Adjusted Rates*, Nevada, 2008-2012.

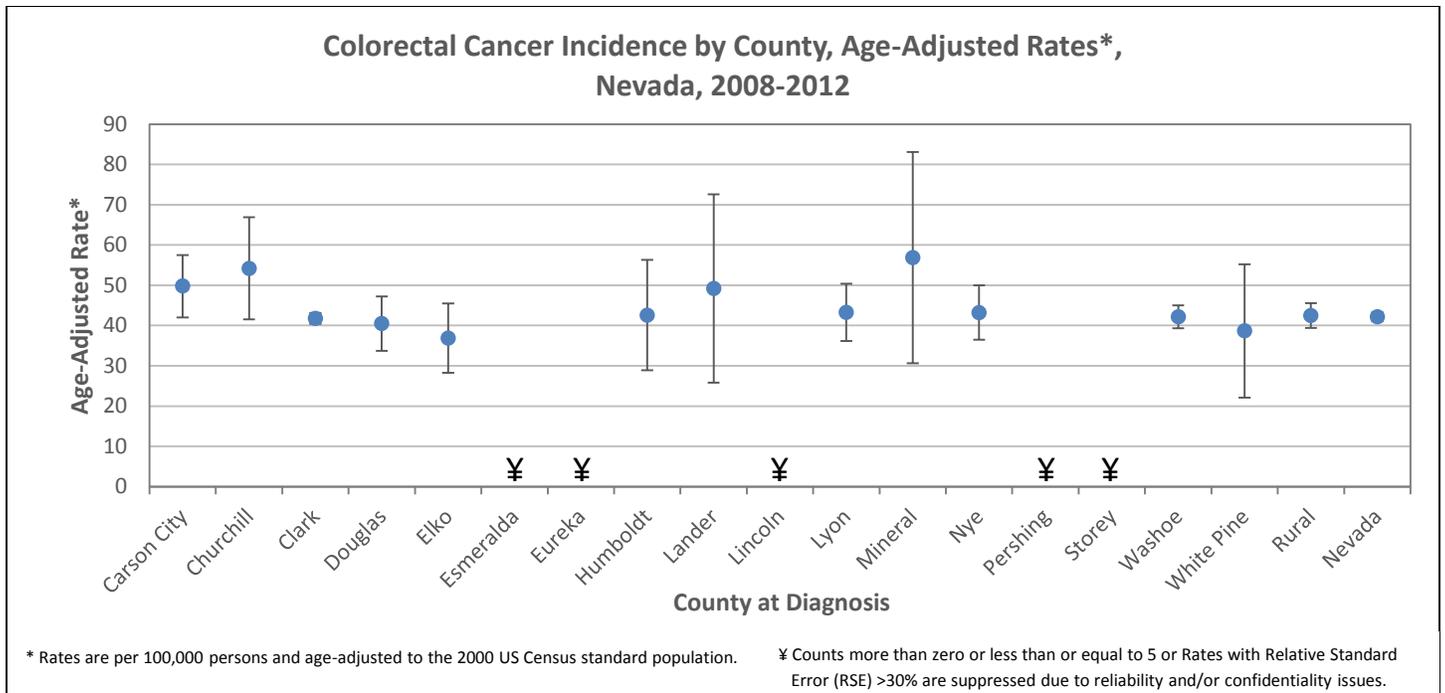


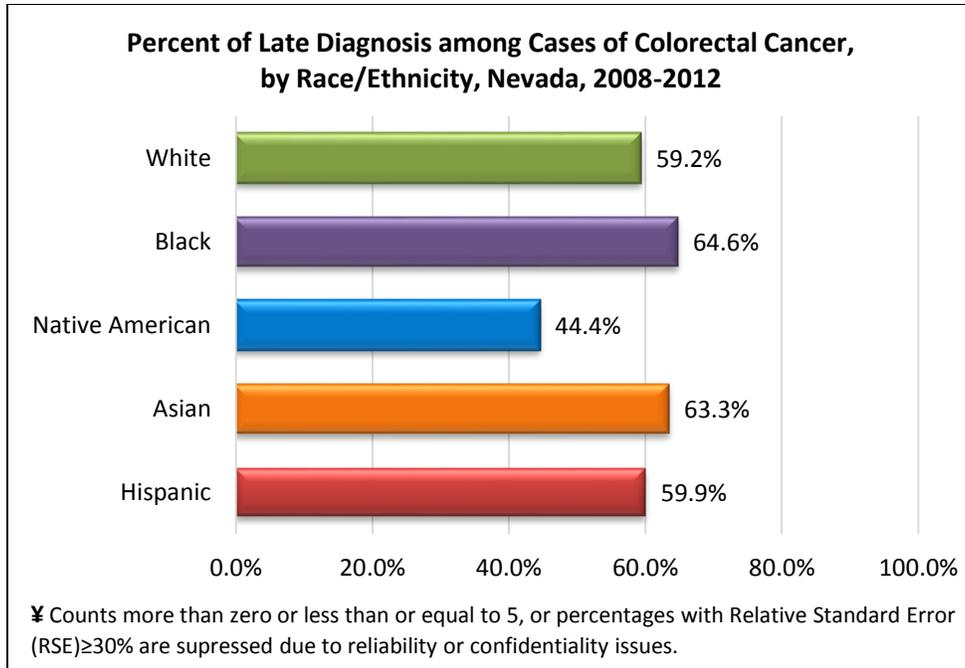
Table 20: Colorectal Cancer Incidence Cumulative Annual Age-Adjusted Rates* by County, Nevada, 2008-2012.

Nevada Colorectal Cancer Incidence (All Ages, All Races) by County - Counts/Age-Adjusted Rates*, 2008-2012		
County	Counts	Age Adj. Rate*
Carson City	159	49.8 (42.0-57.5)
Churchill	70	54.2 (41.5-66.9)
Clark	3,902	41.8 (40.4-43.1)
Douglas	139	40.5 (33.7-47.2)
Elko	71	36.9 (28.3-45.5)
Esmeralda	8	¥
Eureka	8	¥
Humboldt	37	42.6 (28.9-56.3)
Lander	17	49.2 (25.8-72.6)
Lincoln	10	¥
Lyon	141	43.3 (36.2-50.4)
Mineral	18	56.9 (30.6-83.1)
Nye	157	43.2 (36.5-50.0)
Pershing	9	¥
Storey	6	¥
Washoe	838	42.2 (39.3-45.0)
White Pine	21	38.7 (22.1-55.2)
Rural Counties	712	42.5 (39.4-45.6)

¥ Counts more than zero or less than or equal to 5 or Rates with Relative Standard Error (RSE) >30% are suppressed; due to reliability and/or confidentiality issues.

* Rates are per 100,000 persons and age-adjusted to the 2000 US Census standard population.

Figure 21: Percent of Late Diagnosis among Cases of Colorectal Cancer, by Race/Ethnicity, Nevada, 2008-2012



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