Inequities in Cancer Outcomes

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Introduction

- Poverty is an important contributor to the racial/ethnic disparities evident in the burden of cancer, cancer incidence, stage of diagnosis, and mortality.

- The relationships between poverty and cancer are unsurprising given the differences between socioeconomic groups in tobacco use, use of cancer screening tests, and early access to appropriate cancer treatment.

- The evaluation of these relationships may help develop better cancer prevention and control strategies in the state.

Poverty in the US 1959 - 2015
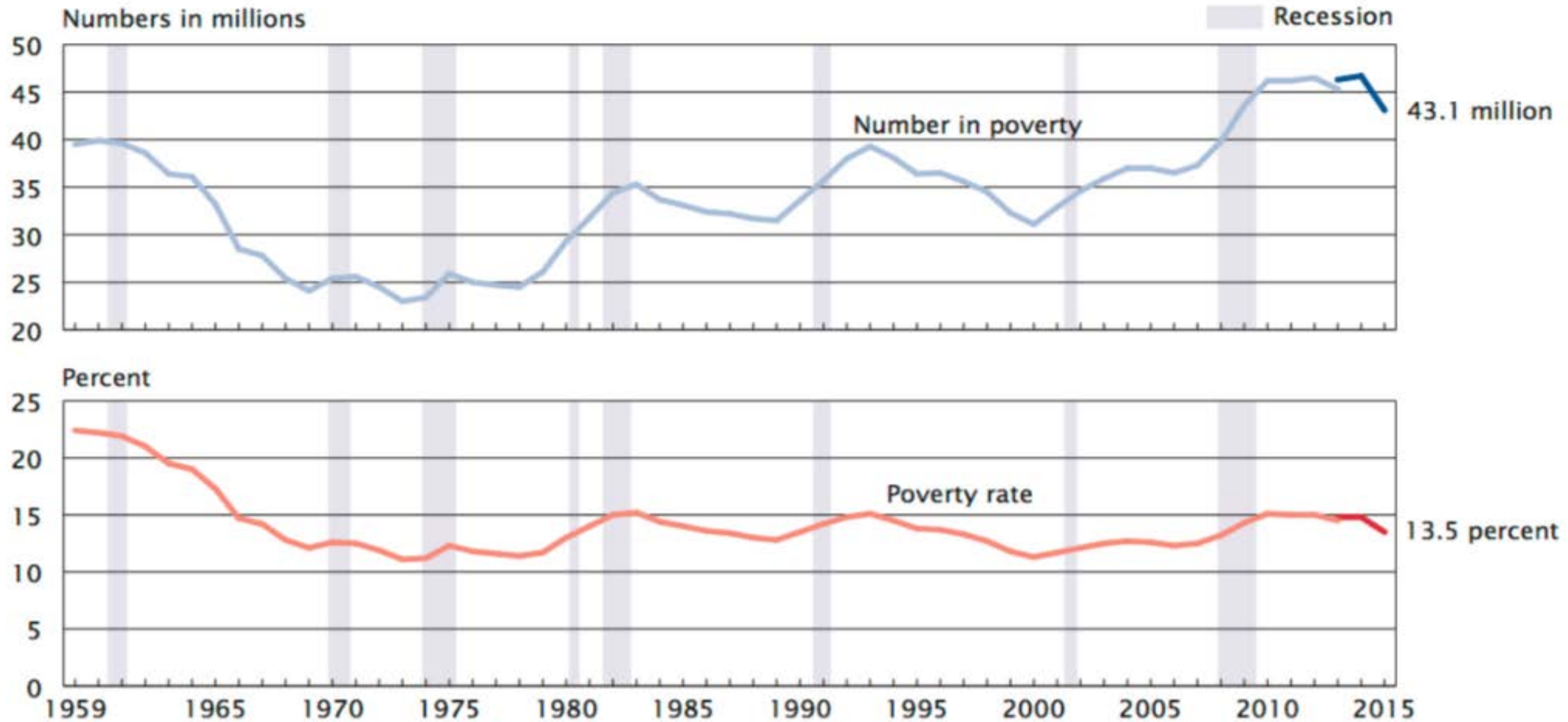
Number in Poverty and Poverty Rate: 1959 to 2015

Numbers in millions

Recession

Number in poverty

43.1 million

Percent

Poverty rate

13.5 percent

Figure 1.
Real Median Household Income by Race and Hispanic Origin: 1967 to 2015

2015 dollars

Recession

Asian — $77,166

White, not Hispanic — $62,950

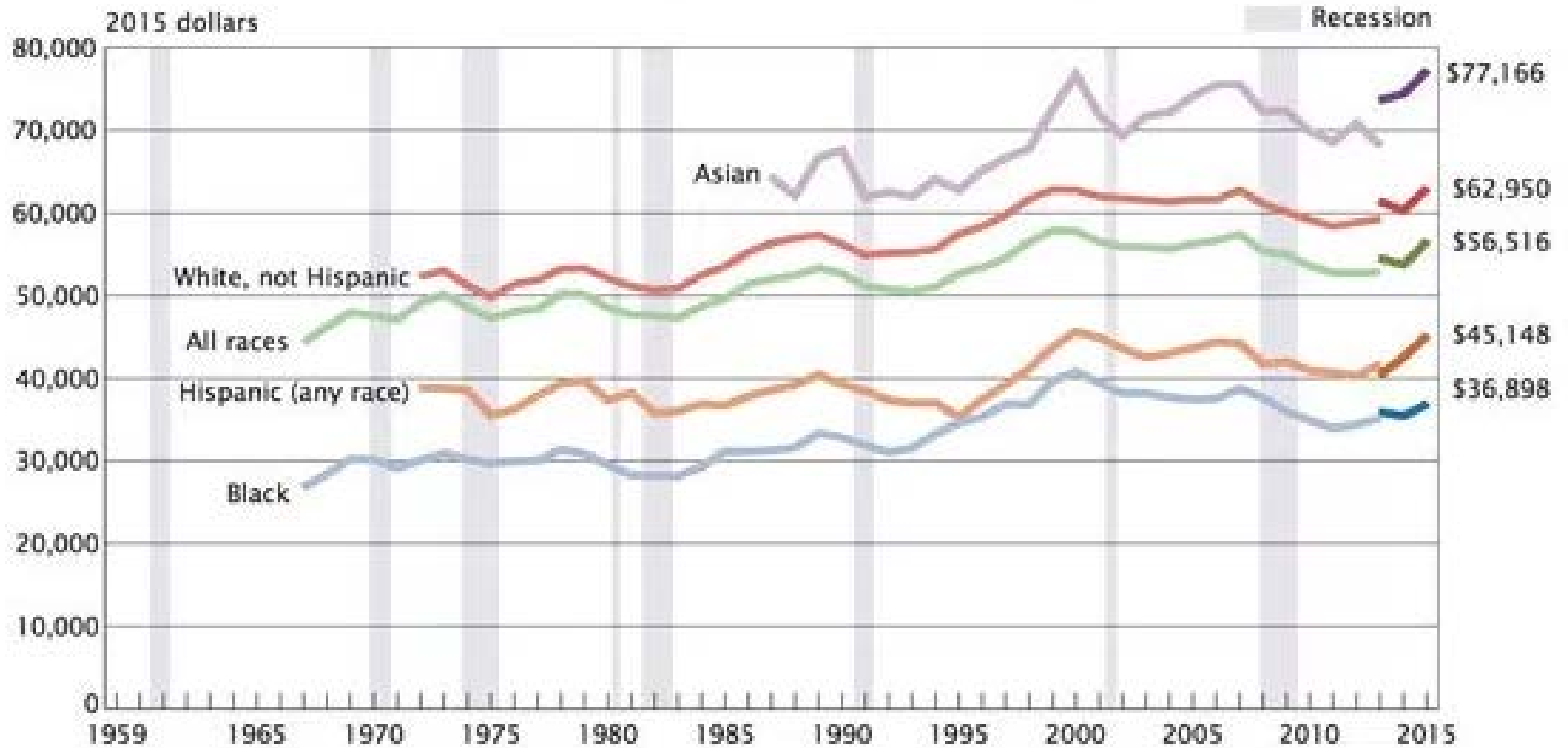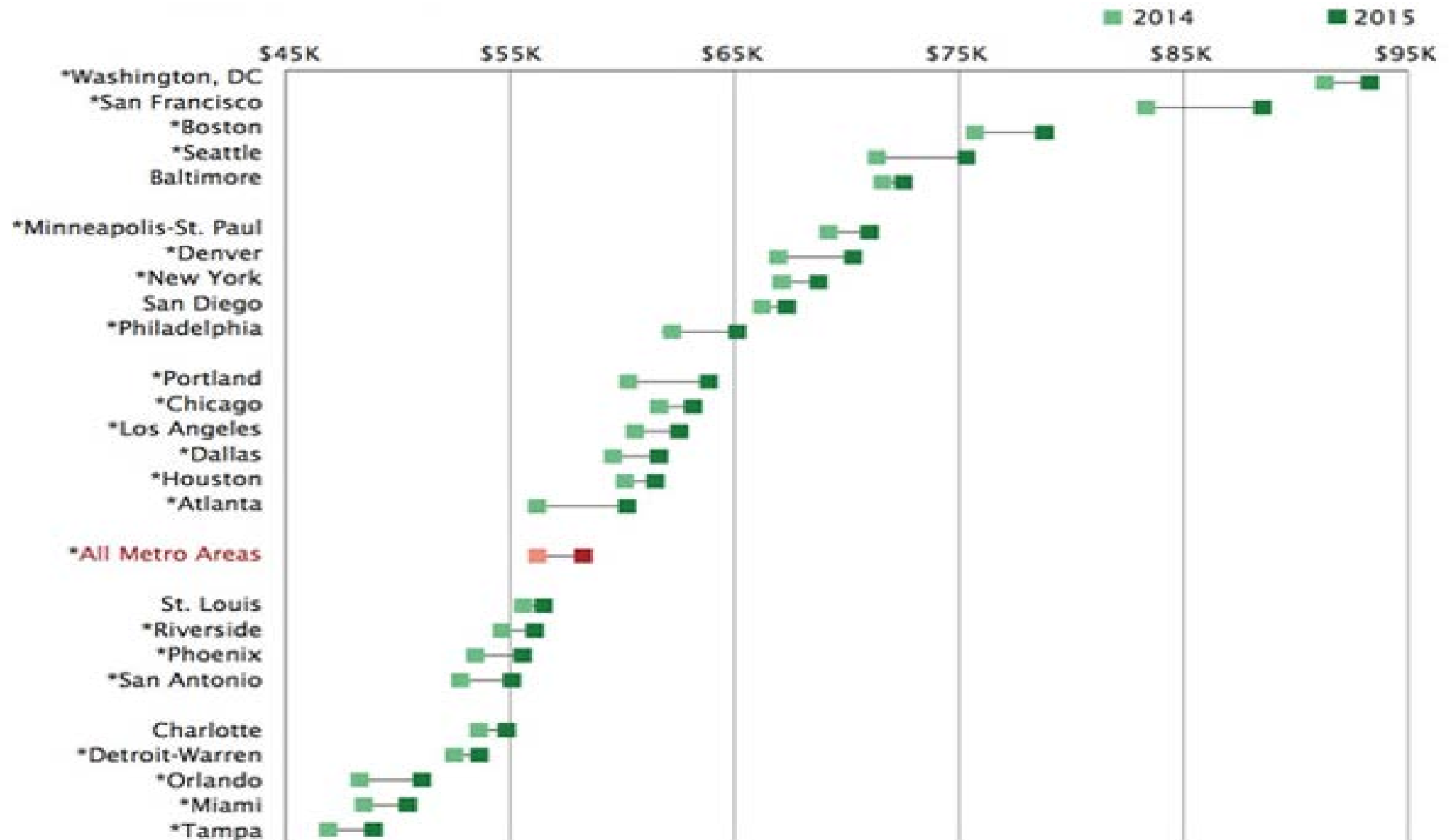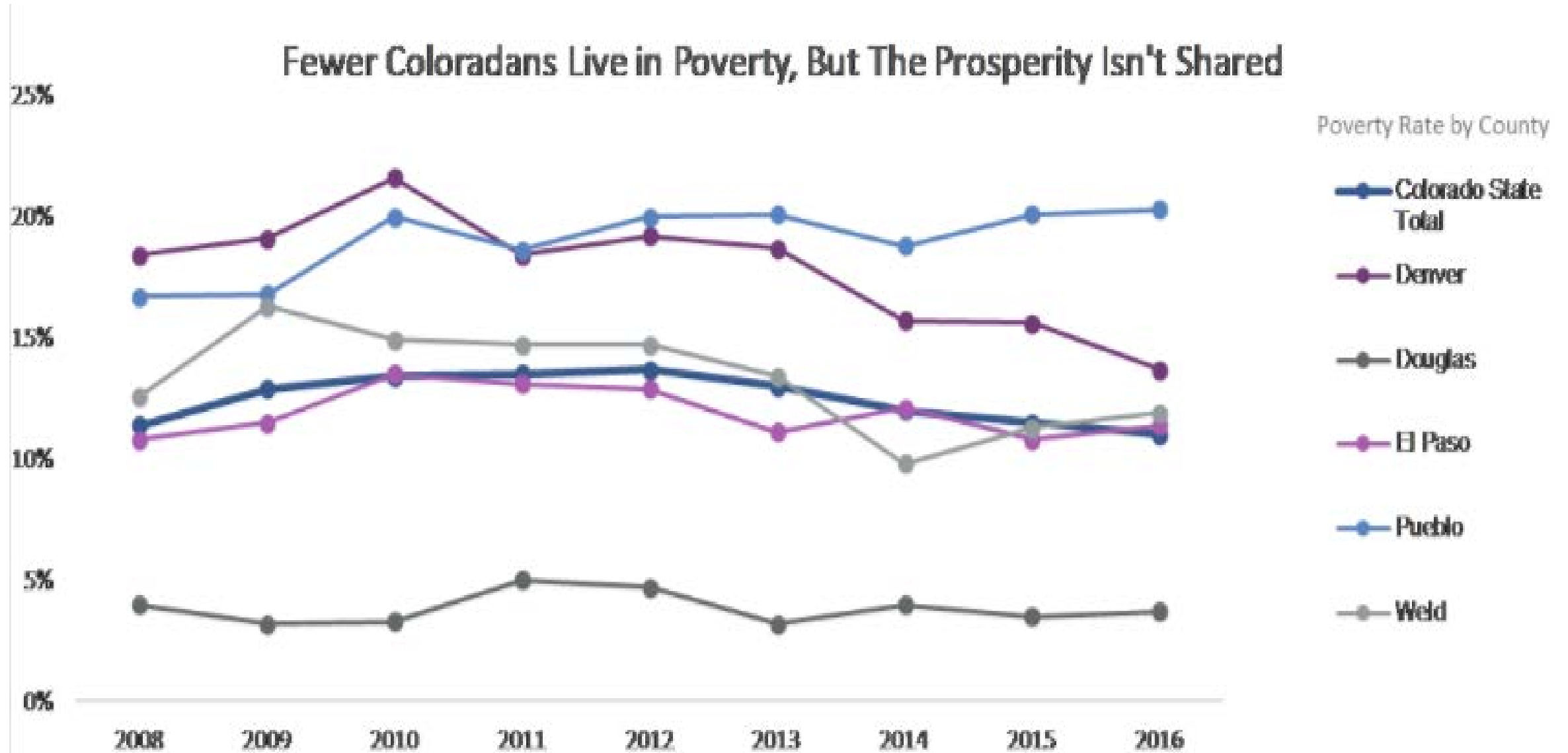All races — $56,516

Hispanic (any race) — $45,148

$36,898

Black

Figure 2.
Percentage of People in Poverty for the United States and Puerto Rico: 2015

Percent by state

- 18.0 or more
- 16.0 to 17.9
- 13.0 to 15.9
- 11.0 to 12.9
- Less than 11.0

U.S. percent is 14.7

United States percentage does not include data for Puerto Rico.

Note: For more information, see <www.census.gov/acs>

Source: U.S. Census Bureau, 2015 American Community Survey, 2015 Puerto Rico Community Survey.
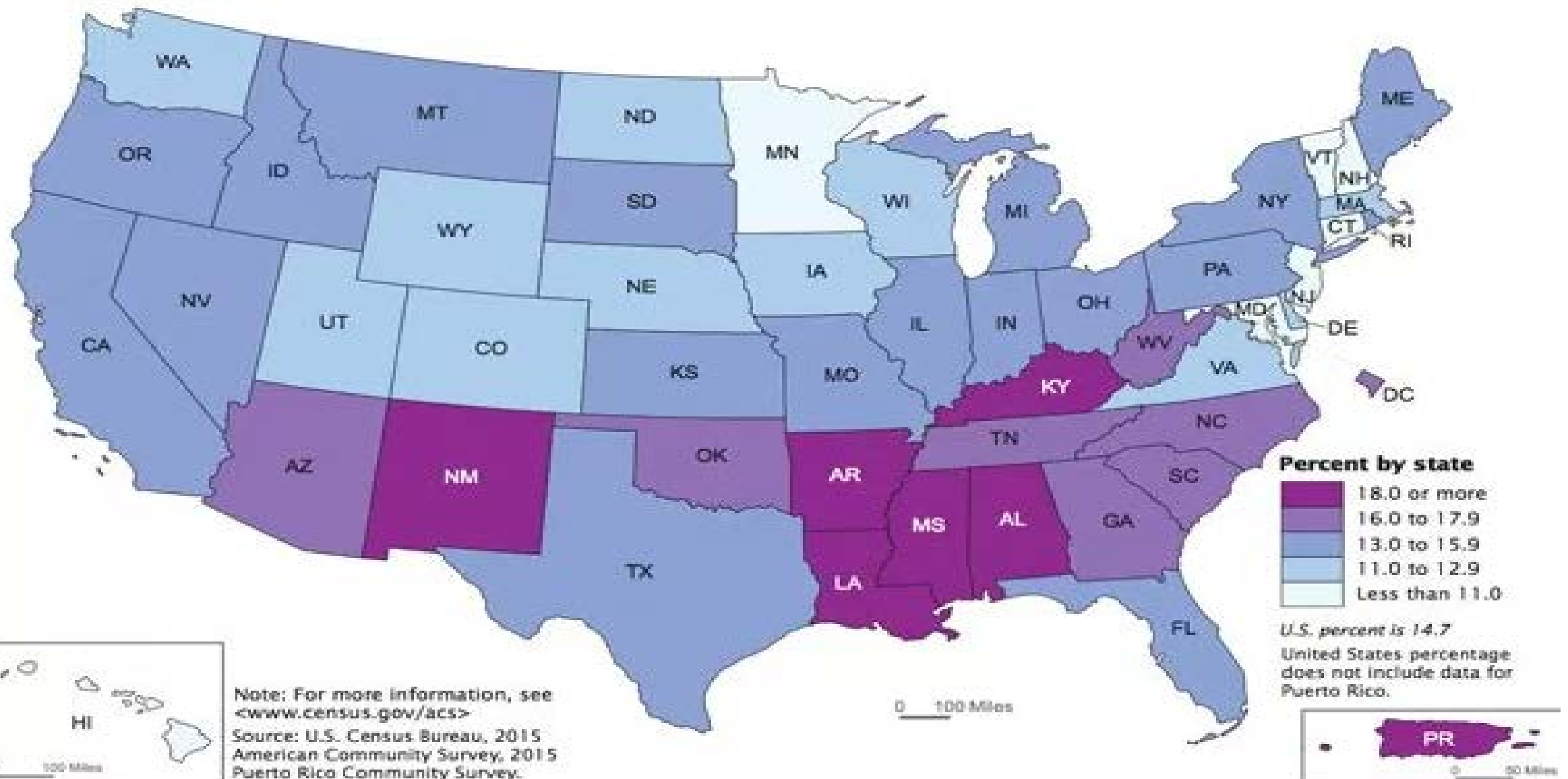
Median Household Income for 25 most populous Metro areas 2014-2015

Legend: 2014, 2015

X-axis: $45K, $55K, $65K, $75K, $85K, $95K

Metro areas (top to bottom):
- *Washington, DC
- *San Francisco
- *Boston
- *Seattle
- Baltimore
- *Minneapolis-St. Paul
- *Denver
- *New York
- San Diego
- *Philadelphia
- *Portland
- *Chicago
- *Los Angeles
- *Dallas
- *Houston
- *Atlanta
- *All Metro Areas
- St. Louis
- *Riverside
- *Phoenix
- *San Antonio
- Charlotte
- *Detroit-Warren
- *Orlando
- *Miami
- *Tampa

Colorado Poverty rate by county 2008 - 2016

Fewer Coloradans Live in Poverty, But The Prosperity Isn't Shared

Poverty Rate by County
- Colorado State Total
- Denver
- Douglas
- El Paso
- Pueblo
- Weld

Source: American Community Survey

Poverty rate in Colorado by Race 2007 - 2016

Racial Disparities Apparent in Colorado's Poverty Rate

Poverty Rate by Race

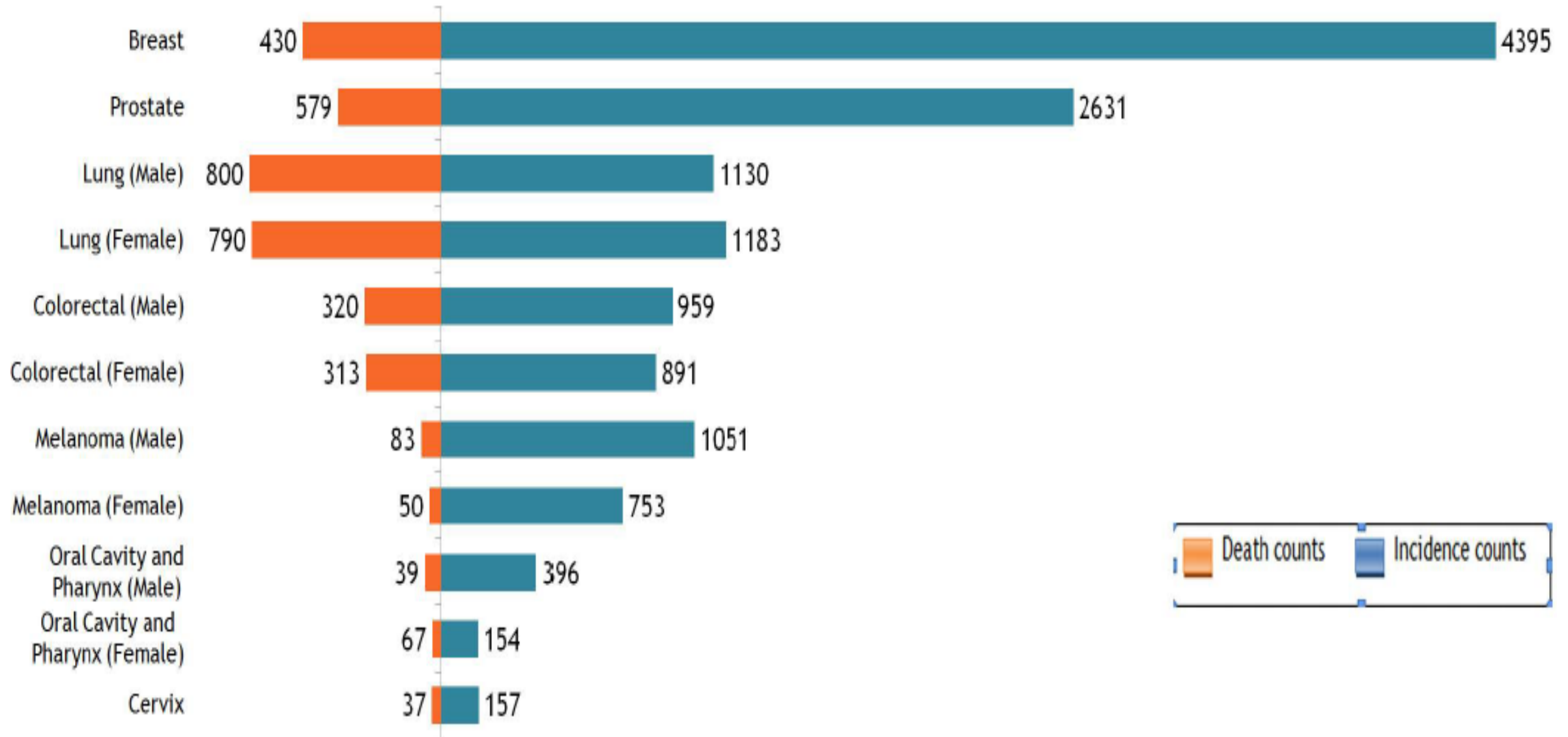White   Hispanic or Latino   Black   American Indian
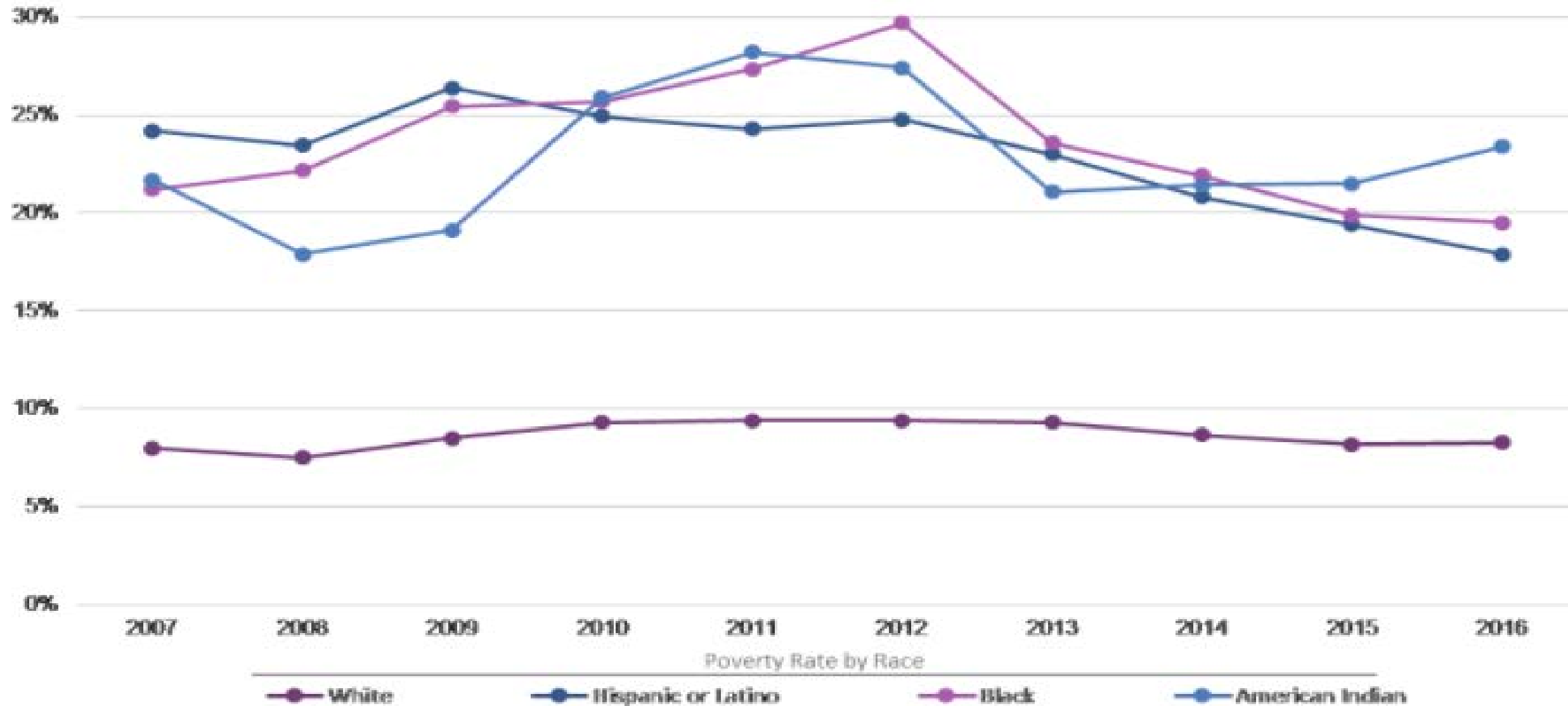
Poverty and Cancer Incidence in CO

- An average of 21,500 malignant cancers are diagnosed annually in Colorado.

- The poorest areas of the state had higher incidence rates of cancers of the oral cavity and pharynx, colon/rectum, lung, and cervix, and lower incidence rates of melanoma, breast cancer, and prostate cancer.
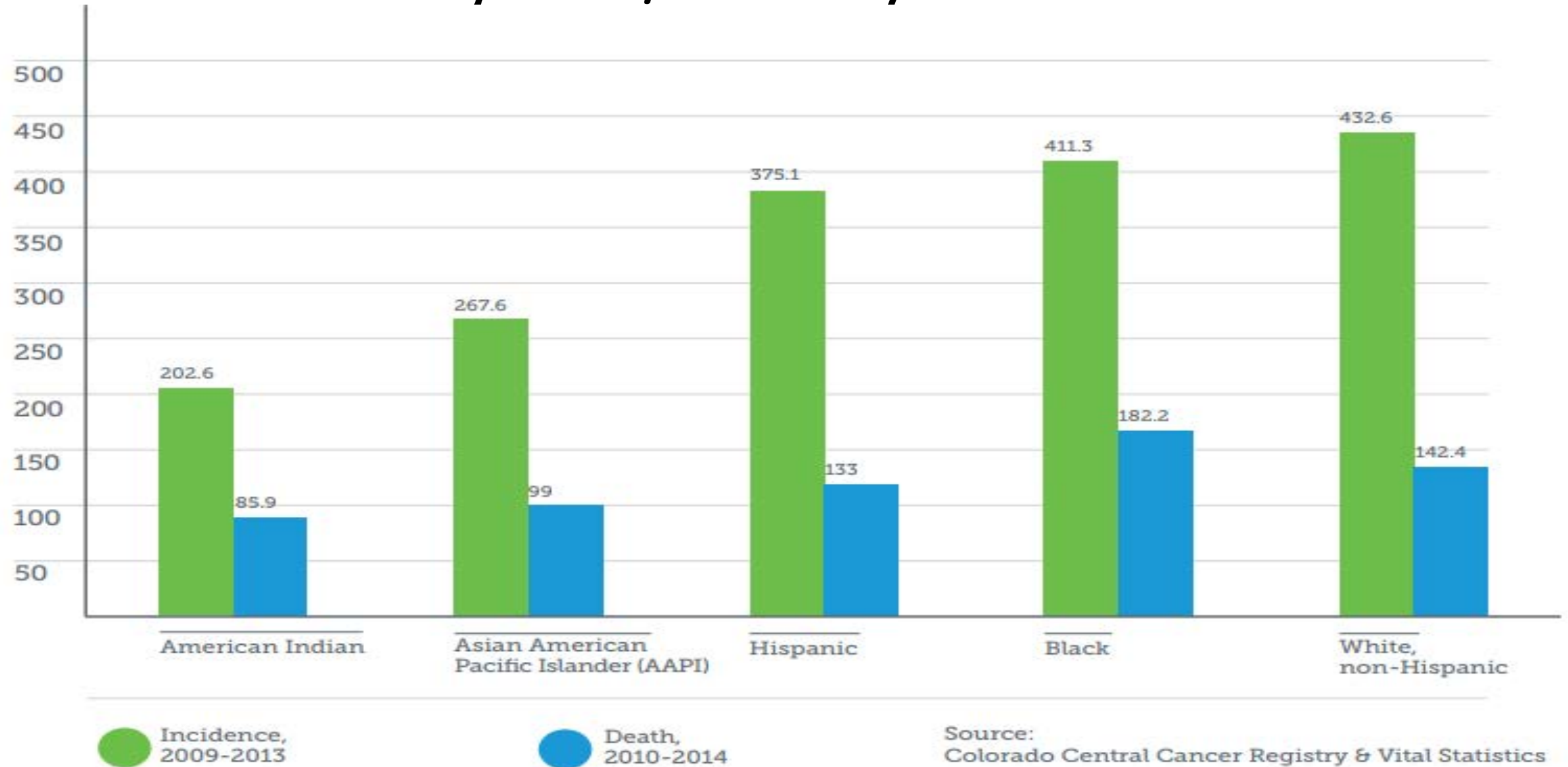
Decrease in cancer Death rates in CO

- Since the late 1980s, cancer death rates continued to decline.

- From 2005 to 2014, death rate fell 16% for all cancers, 19% for breast cancers, 25% for prostate cancers, 26% for lung cancers and 27% for colorectal cancers.

- Although the reasons for declining cancer rates over the years are multifaceted, efforts guided by the Colorado Cancer Plan have played an integral part in this progress.

- The 2016-2020 Colorado Cancer Plan is intended as a framework for continued improvements by the year 2020 and grows from the long and successful history of cancer control in Colorado.
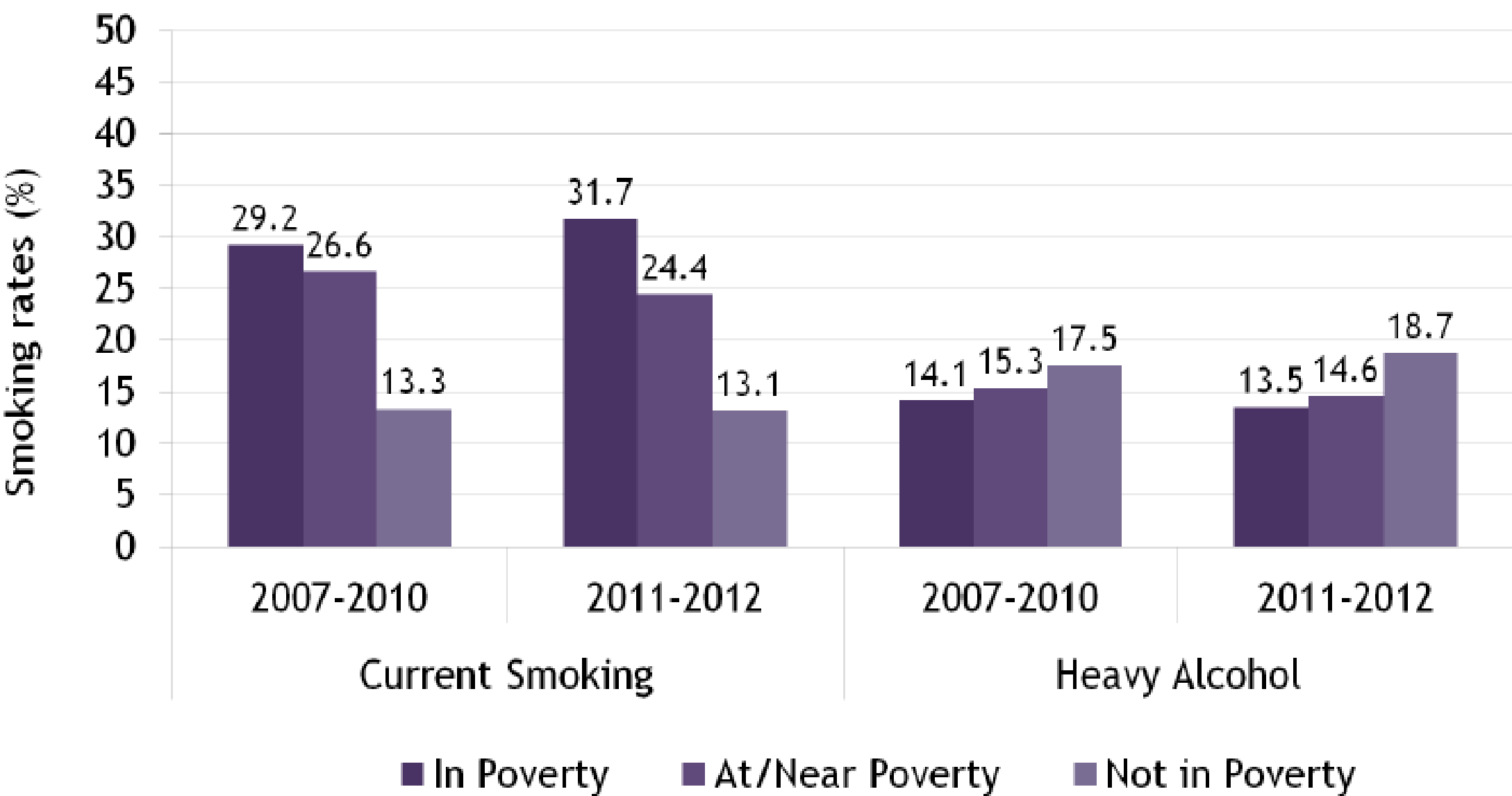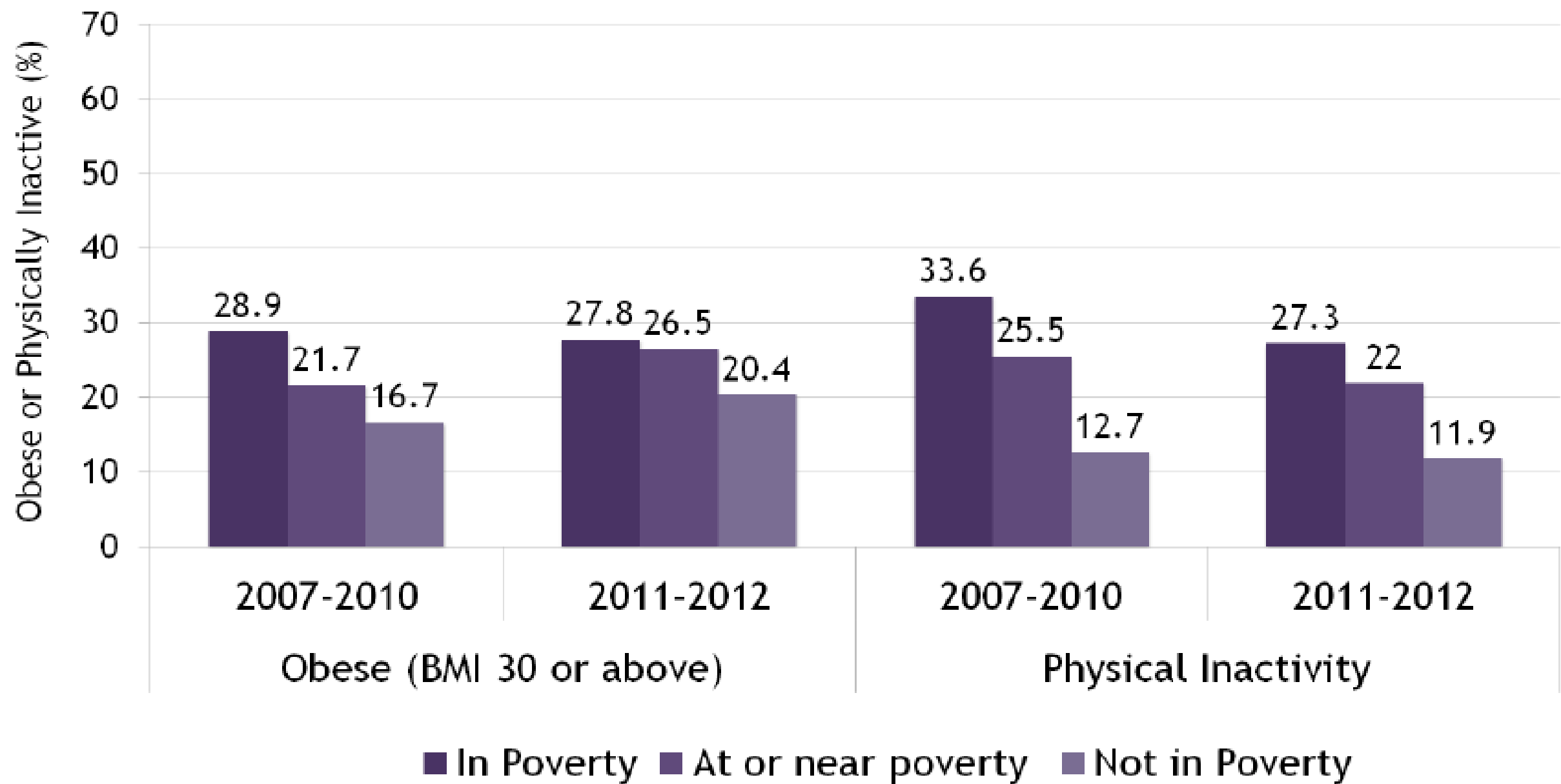
Incidence and DR for selected Cancers in CO 2012

Cancer	Death counts	Incidence counts
Breast	430	4395
Prostate	579	2631
Lung (Male)	800	1130
Lung (Female)	790	1183
Colorectal (Male)	320	959
Colorectal (Female)	313	891
Melanoma (Male)	83	1051
Melanoma (Female)	50	753
Oral Cavity and Pharynx (Male)	39	396
Oral Cavity and Pharynx (Female)	67	154
Cervix	37	157

Colorado Five-Year Annual Average, Age-Adjusted Incidence and Death Rates by Race/Ethnicity

Race/Ethnicity	Incidence, 2009-2013	Death, 2010-2014
American Indian	202.6	85.9
Asian American Pacific Islander (AAPI)	267.6	99
Hispanic	375.1	133
Black	411.3	182.2
White, non-Hispanic	432.6	142.4

Incidence, 2009-2013

Death, 2010-2014

Source:
Colorado Central Cancer Registry & Vital Statistics
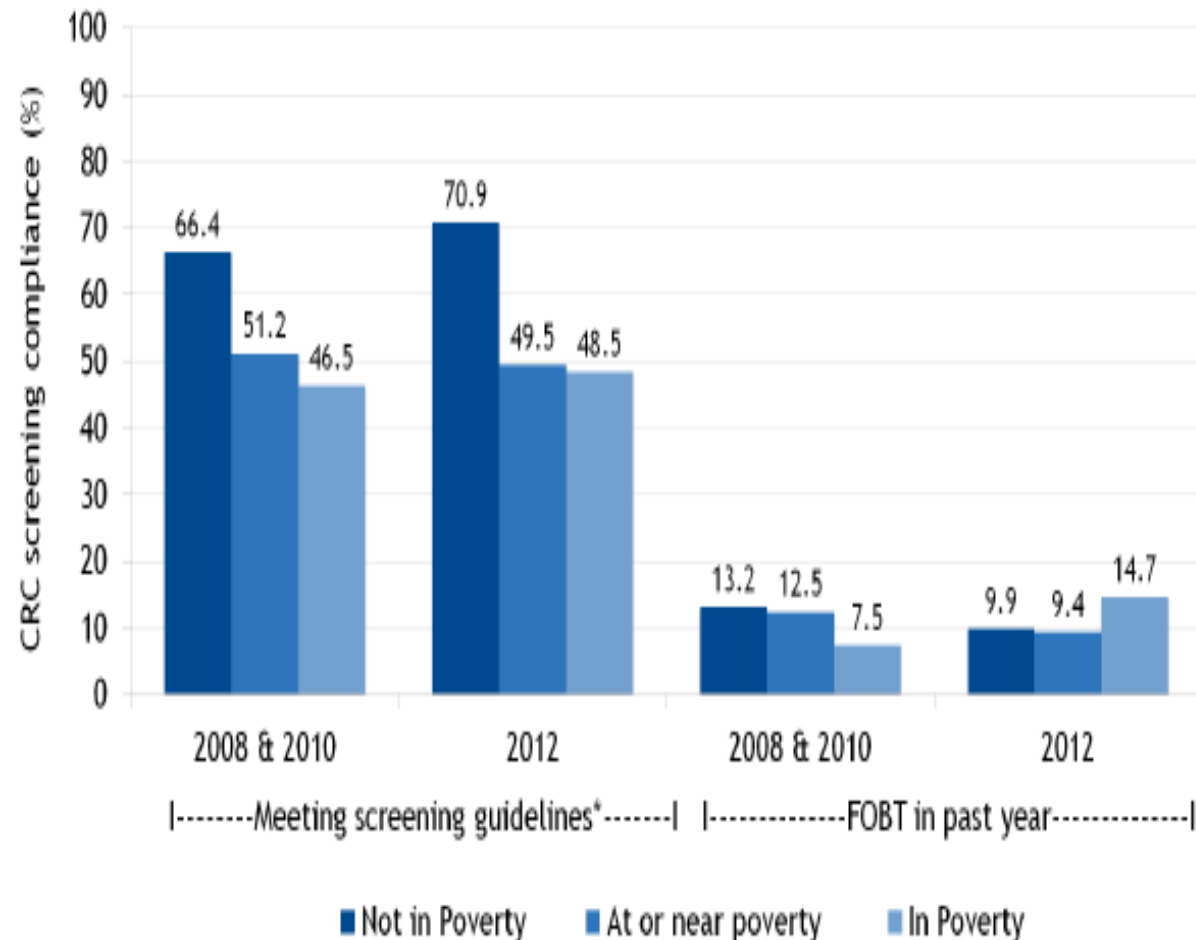
Smoking rate and Heavy alcohol use in Ages 18+ in CO

CO Adults Obese or Physically Inactive

CRC Screening goal in CO: 80%

Figure 1: Percent of Colorado Residents, Ages 50-75, who Reported a Colorecta Screening, by Poverty Level, 2008-2010 and 2012

| | Men and women ages 50-75 in poverty (under 250% FPL) who are adherent with colorectal cancer screening guidelines[4] | 2020 Target: 67.8% |
| | Baseline: 56.6% (2014 BRFSS) | |

| | Men and women ages 50-75 who live in rural or frontier counties who are adherent with colorectal cancer screening guidelines[4] | 2020 Target: 70% |
| | Baseline: 58.4% (2014 BRFSS) | |

| | Men and women ages 50-75 who have Medicaid who are adherent with colorectal cancer screening guidelines[4] | 2020 Target: 51.8% |
| | Baseline: 43.2% (2014 BRFSS) | |

| | Hispanic/Latino men and women aged 50-75 who are adherent with colorectal screening guidelines[4] | 2020 Target: 65% |
| | Baseline: 54.1% (2014 BRFSS) | |

Cancer Screening data in Colorado

Figure 1: Colorado Women Age 50 years and Older who Received a Mammogram in the Past Two Years, 2008-2010 and 2012
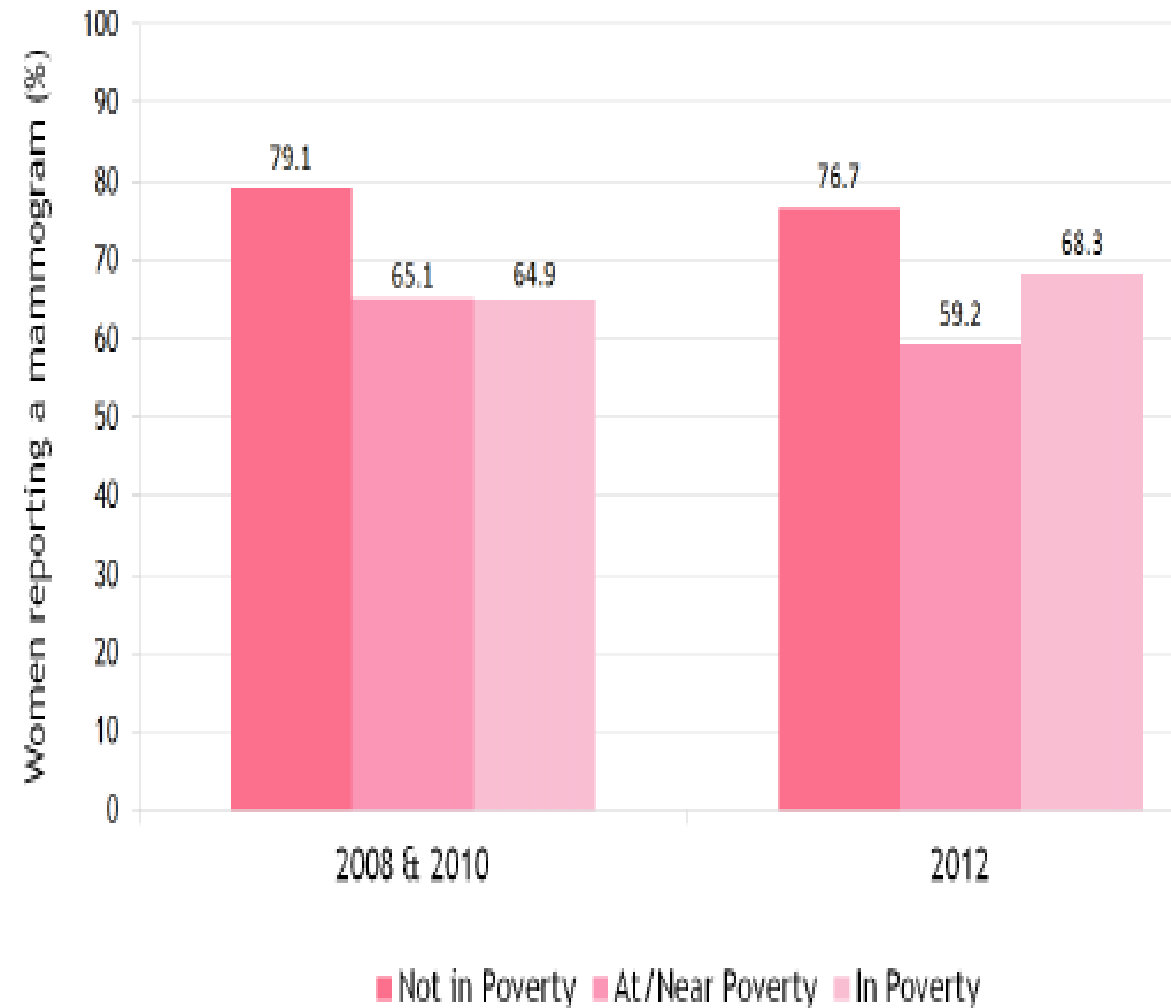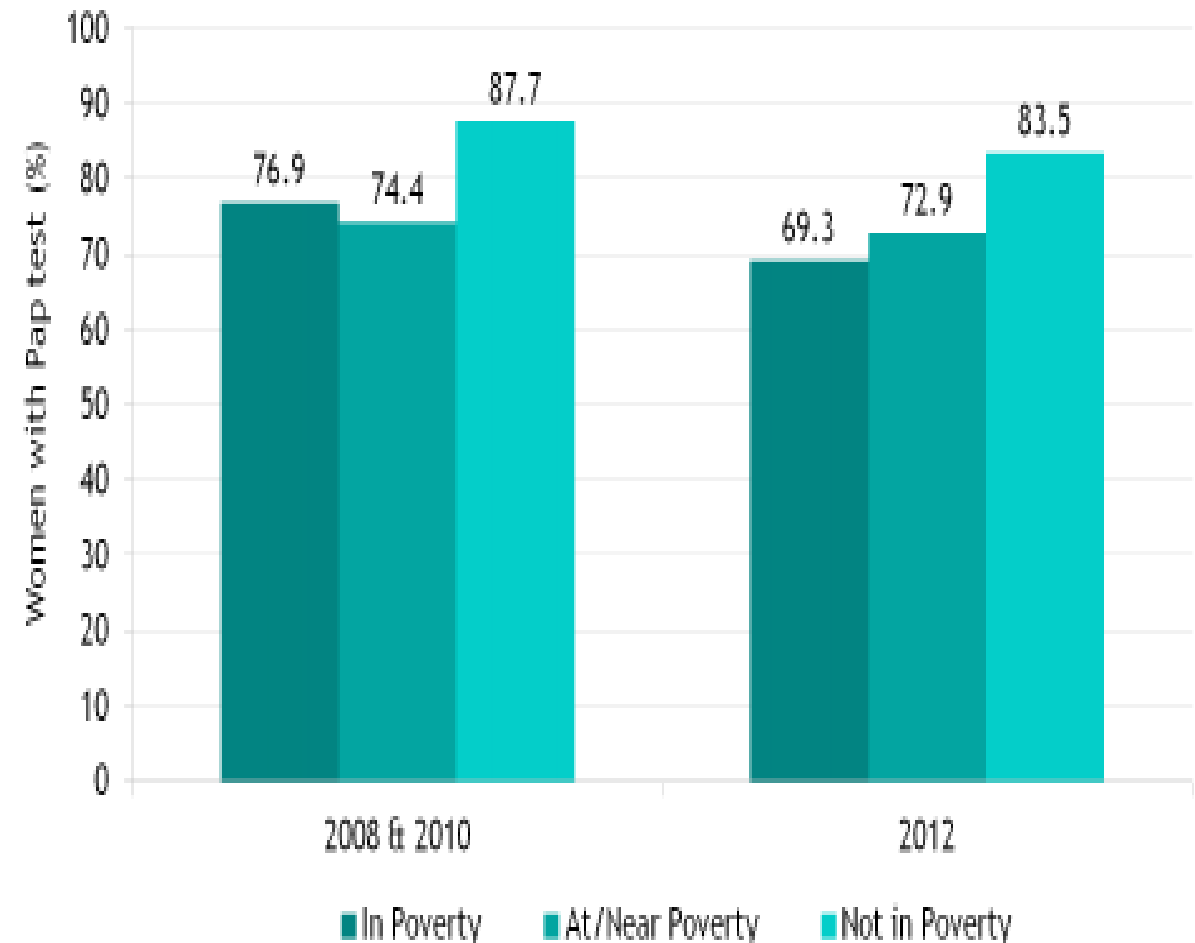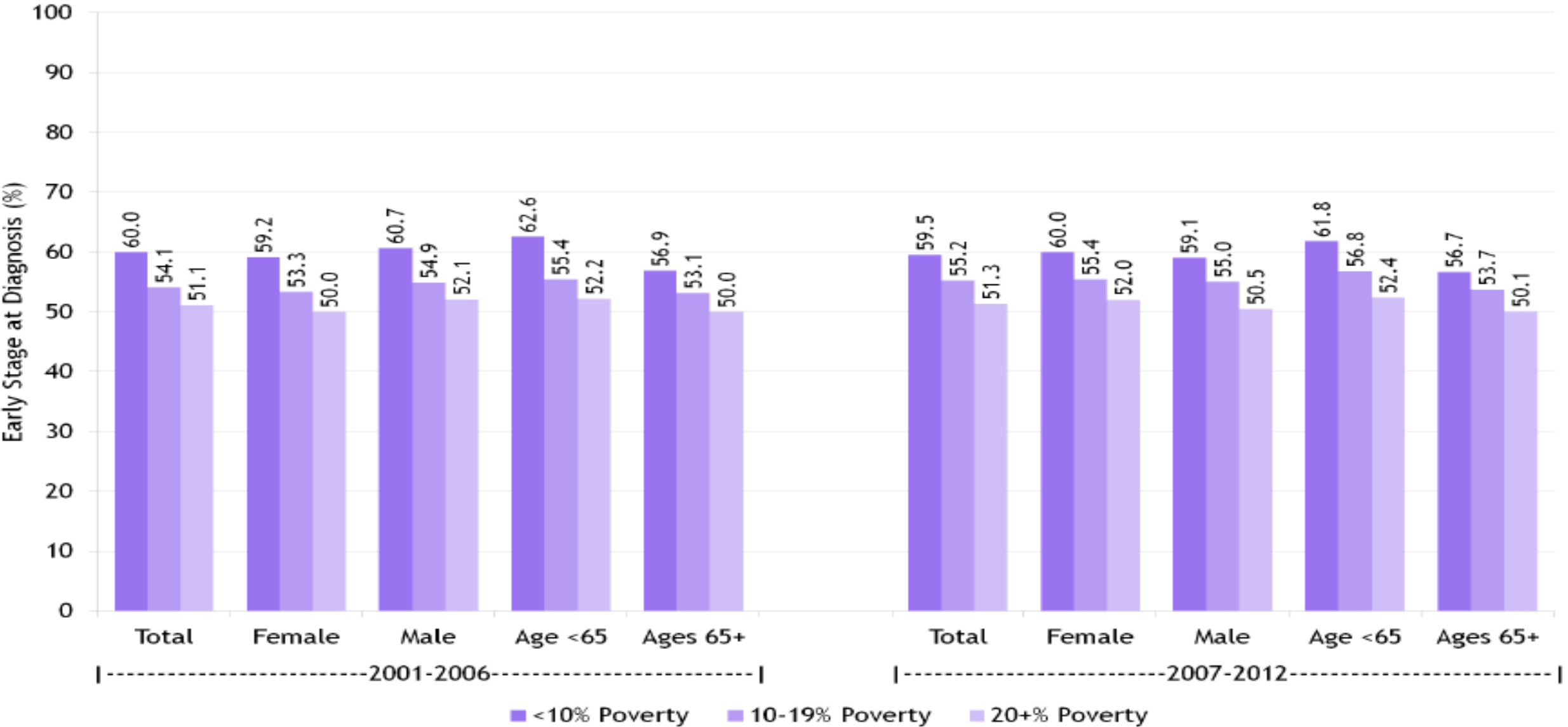

Figure 1: Colorado Women (Age 18+) with a Pap Test in the Past Three Years, by Poverty Level, 2008-2010 and 2012
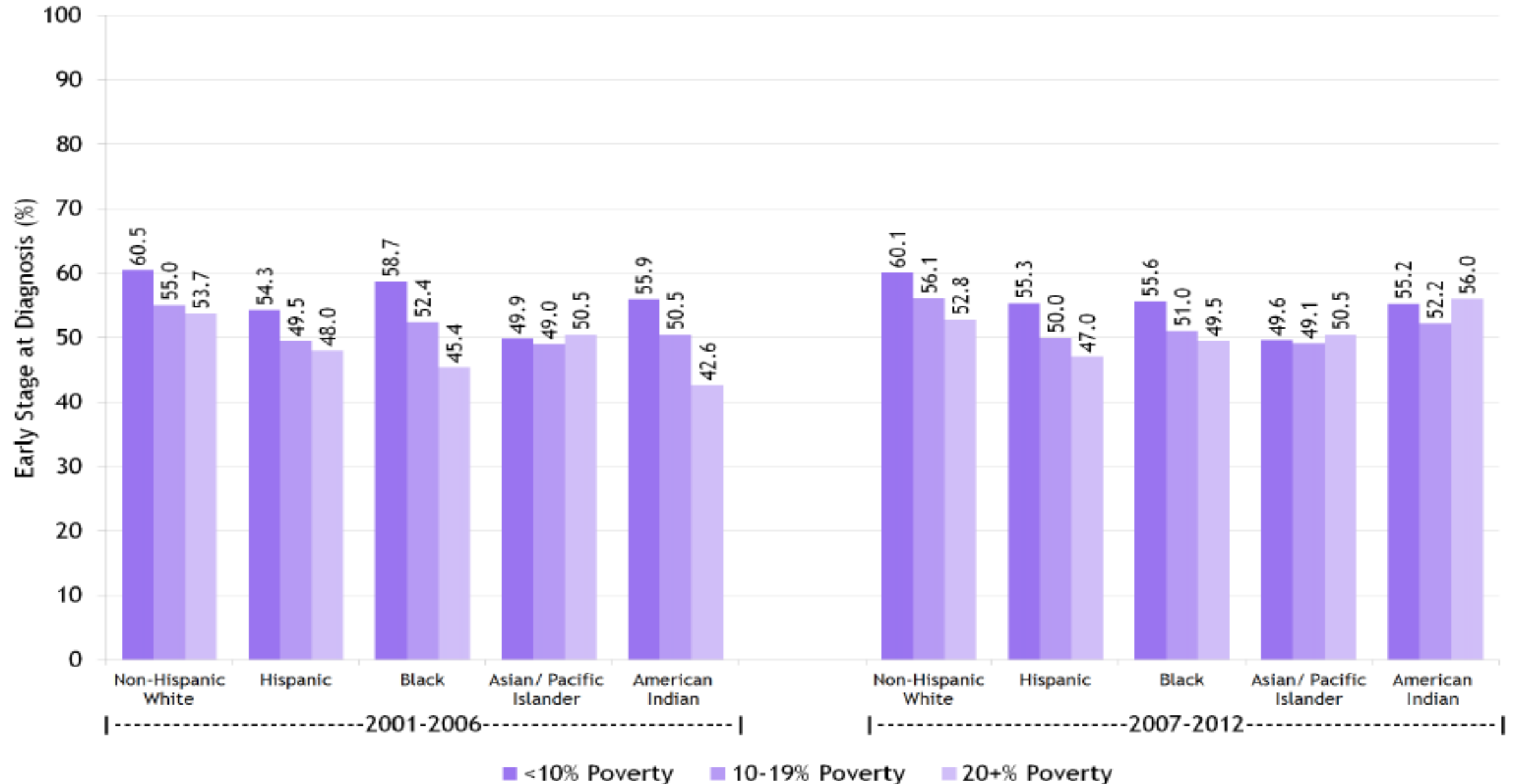
Early Stage at Diagnosis by Area Poverty Level, Gender and Age 2001- 2006 and 2007-2012
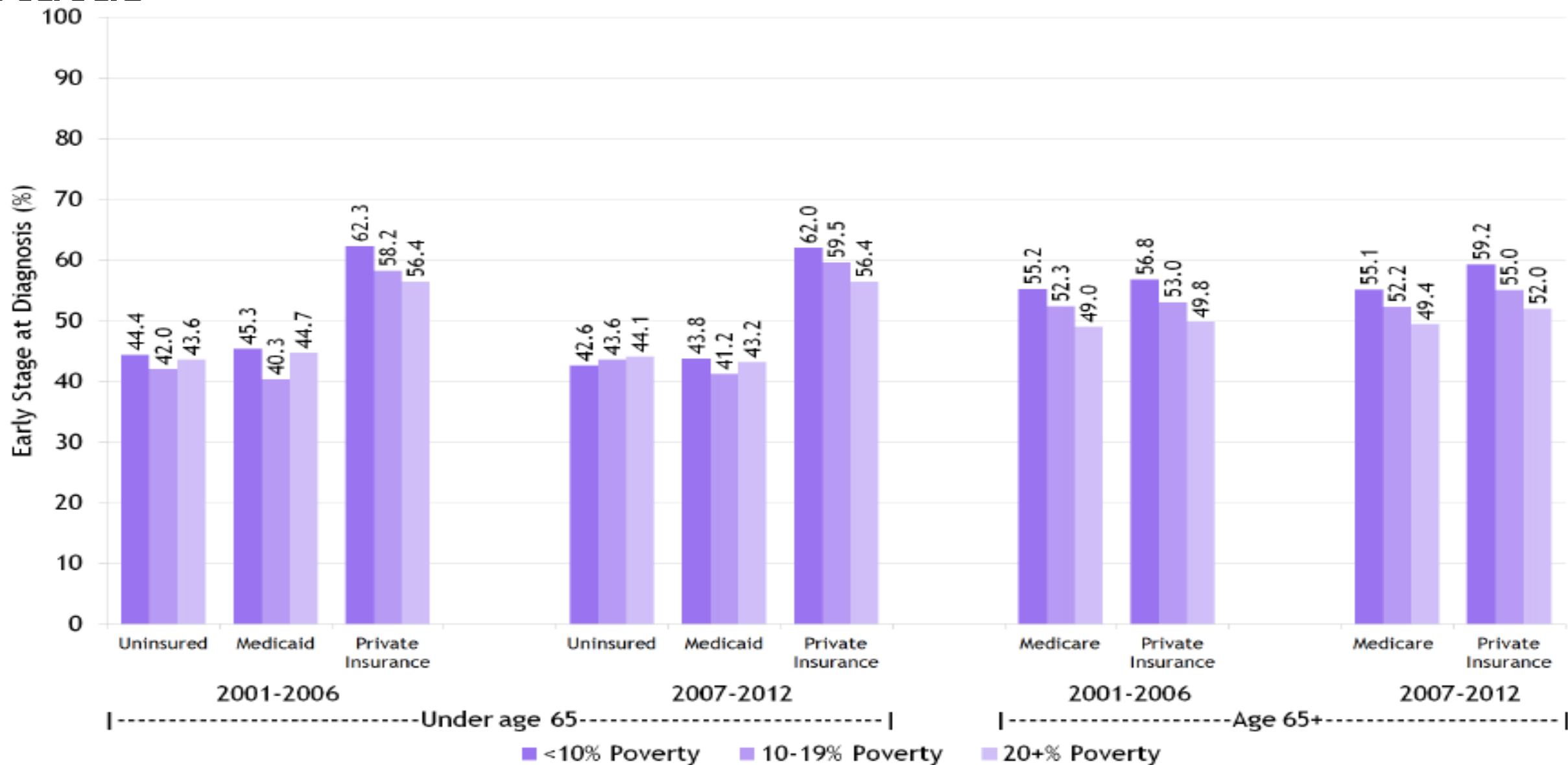
Early Stage at Diagnosis by APL, Gender and Age

- Coloradans who lived in poorer neighborhoods and who were uninsured were more likely to have had a more advanced stage of cancer at the time of diagnosis.

- Even when cancer does develop, risk of dying from it can be reduced by diagnosing cancer at an early stage and by applying effective treatments. However, poverty presents many barriers to cancer prevention, early diagnosis, and treatment.

Early Stage at Diagnosis by Area Poverty Level and Race

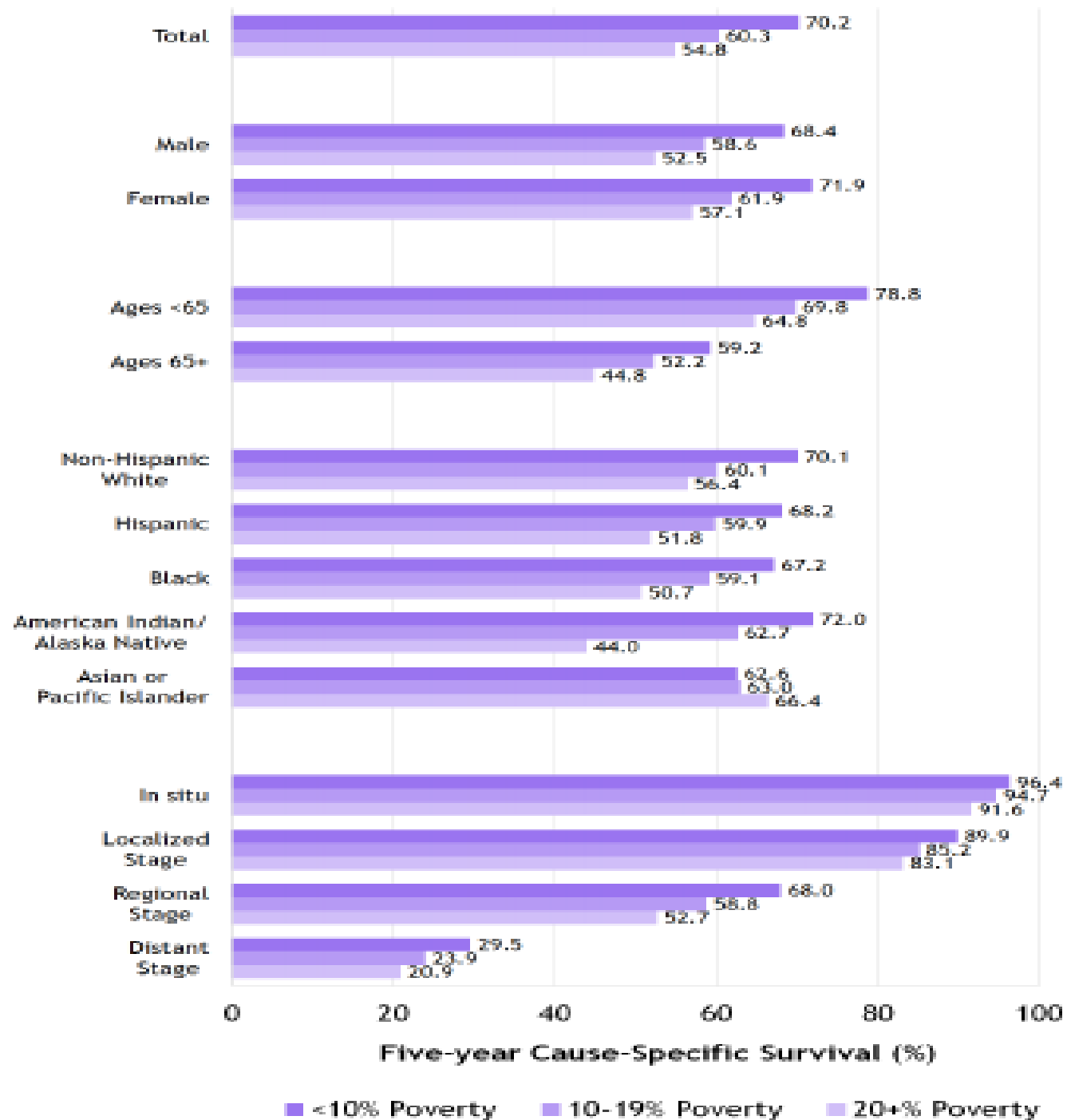# Early Stage at Diagnosis by Area Poverty Level and Insurance Status

Early Stage at Diagnosis by APL and Insurance Status

- Cancers among those younger than 65 years were more likely to be diagnosed early in those with private insurance compared to those who had no insurance or Medicaid.

- Differences in utilization of screening examinations were less apparent after Medicare age (65 years).

	<10% Poverty	10-19% Poverty	20+% Poverty
Total	70.2	60.3	54.8
Male	68.4	58.6	52.5
Female	71.9	61.9	57.1
Ages <65	78.8	69.8	64.8
Ages 65+	59.2	52.2	44.8
Non-Hispanic White	70.1	60.1	56.4
Hispanic	68.2	59.9	51.8
Black	67.2	59.1	50.7
American Indian/ Alaska Native	72.0	62.7	44.0
Asian or Pacific Islander	62.6	63.0	66.4
In situ	96.4	94.7	91.6
Localized Stage	89.9	85.2	83.1
Regional Stage	68.0	58.8	52.7
Distant Stage	29.5	23.9	20.9

Five-year Cause-Specific Survival (%)

■ <10% Poverty   ■ 10-19% Poverty   ■ 20+% Poverty

Survival data from CONCORD-2 study 2001 - 2009

- 5-year breast cancer net survival was very high (88.2%).

- Survival remained remarkably high from 2001 through 2009.

- Between 2001 and 2003, survival was 89.1% for white females and 76.9% for black females.

- Between 2004 and 2009, survival was 89.6% for white females and 78.4% for black females.

- Education index, income index, Gini coefficient, availability of cancer control policies and programs, as well as health system performance have an association with and are good predictors of the mortality to incidence ratio (MIR) of lung, breast, cervical, and colorectal cancers.

Conclusion

- Monitoring trends in cancer survival can highlight populations in need of improved cancer prevention, screening, and treatment.

- Reducing racial disparities and inequities remains a challenge that requires broad, coordinated efforts at the federal, state, and local levels.

- Colorado cancer rates, preventive measures, and the underlying relationship between poverty and cancer in this report are consistent with those in previous reports (1995-2000).

References:

- 1. Colorado Department of Public Health and Environment. (2014). Colorado Comprehensive Cancer Program. Cancer & Poverty in Colorado: 2001-2012.
- 2. Disparities in breast cancer survival in the United States (2001-2009): Findings from the CONCORD-2 study.

  Miller JW, Smith JL, Ryerson AB, Tucker TC, Allemani C.
- 3. Social determinants of cancer incidence and mortality around the world: an ecological study. McDaniel, JT, Huhu K, Ruiz J, alobi G
- 4. www.census.gov/library/publications/2017
- 5. www.colorado.gov/pacific/cancerplan