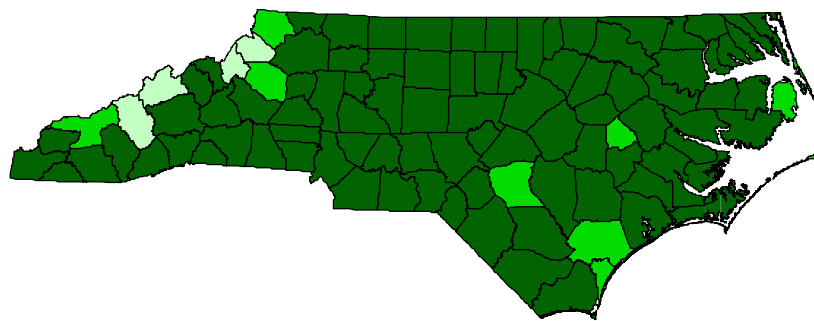
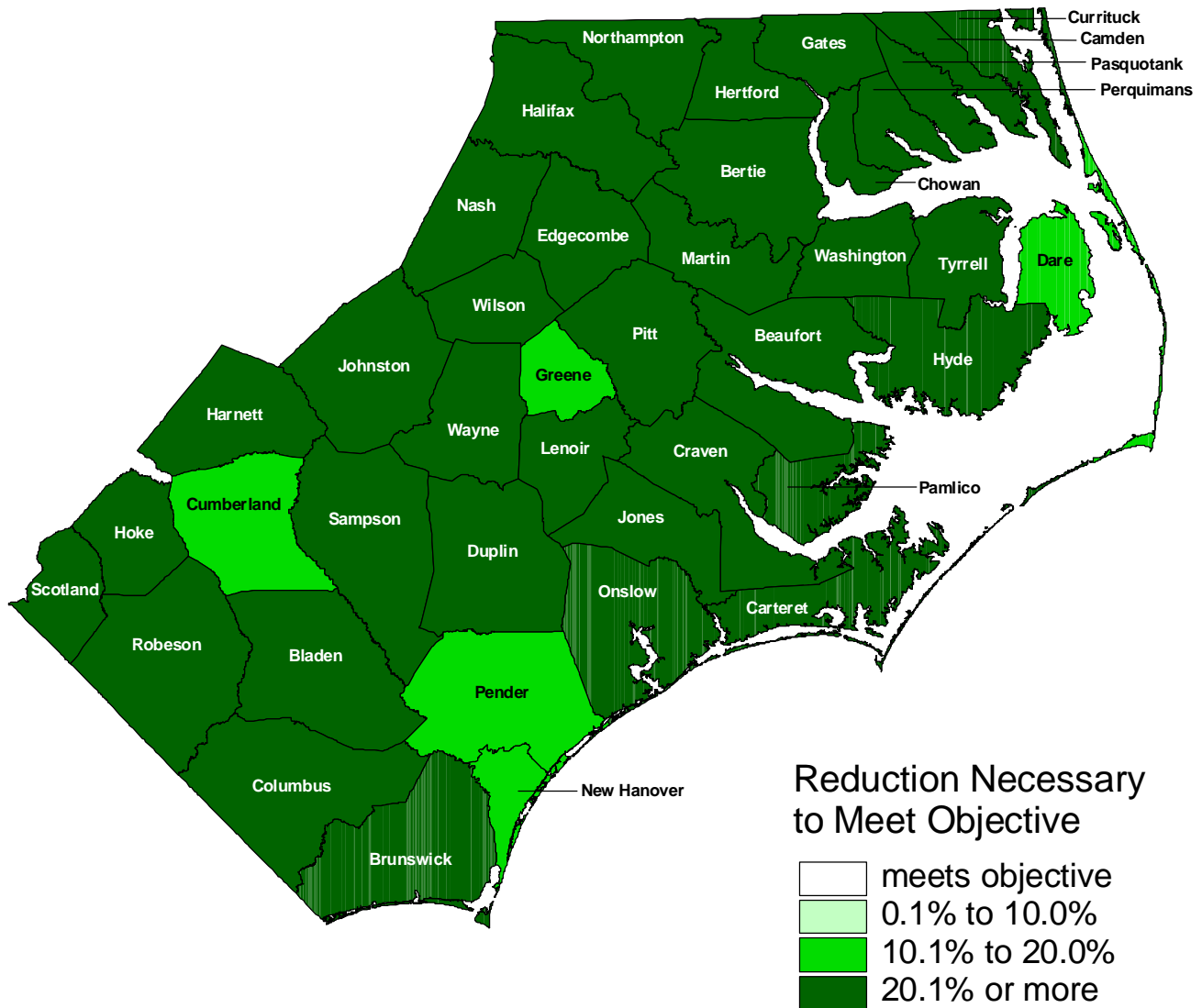


Colorectal Cancer

Map 7.1 Progress Towards Colorectal Cancer Mortality Objective



HP 2010 Objective for Colorectal Cancer Mortality:
 Reduce colorectal cancer deaths to no more than 13.9 per 100,000 population

Colorectal Cancer ICD-9 Codes: 153-154
 Based on Five-Year Average, Age-Adjusted Rates Standardized to US 2000 SM

Data Source: NC State Center for Health Statistics

COLORECTAL CANCER

Colorectal cancer is the third leading cause of cancer mortality among both men and women in the United States (US). Both incidence and mortality rates for colorectal cancer declined during the 1990's as a result of increased detection and removal of pre-cancerous polyps. An estimated 130,200 Americans were diagnosed with colorectal cancer in the year 2000.

As with the other major types of cancer affecting adults, the risk of cancer increases with age. About 90% of colorectal cancers are identified among those over age 50. Other major risk factors for colorectal cancer include obesity, a sedentary lifestyle, and a high-fat, low-fiber diet. A family history of colorectal cancer in a first-degree relative and a personal history of polyps or ulcerative colitis have also been associated with an increased risk.

Incidence and mortality rates for colorectal cancer vary across ethnic groups. Native Alaskans, Japanese, African Americans, and whites have the highest incidence rates in the nation. While the high mortality rates for Native Alaskans and Japanese are proportionate with incidence rates for these groups, death rates for white and African-American men are disproportionately high. Currently, minorities in the US die at a rate that is 85% higher than the rate for whites. Racial disparities in colorectal cancer mortality also exist in eastern North Carolina (ENC). The current age-adjusted colorectal cancer rate for non-white males exceeds the rate for white males by 24%. Non-white females have a colorectal cancer rate that is 38% higher than the rate for white females. The elimination of racial disparities in colorectal cancer presents a major public health challenge. The *Healthy People 2010* goal of reducing colorectal cancer mortality also presents a challenge, particularly in ENC. Currently, none of the counties in the region currently meet the national objective. In order to meet the objective by 2010, 36 of the 41 counties in the region will have to reduce their current mortality rates by more than 20%, and the five remaining counties will have to reduce their rates by 10% to 20%.

HP 2010 OBJECTIVE FOR COLORECTAL CANCER MORTALITY

Objective: Reduce colorectal cancer deaths to no more than 13.9 per 100,000 population

Baseline: 21.2 colorectal cancer deaths per 100,000 population in 1998

Currently, none of the counties in the region meet the objective for colorectal cancer mortality.

Crude Mortality Rates for Colorectal Cancer, 1994-1998:

As Table 7.1 shows, the five-year average, crude death rate for colorectal cancer is approximately 21.0 deaths per 100,000 population in ENC and in all other North Carolina counties (ONC) and the US. Gates County has the highest crude death rate in the region for colorectal cancer at 40.6 deaths per 100,000 population. The next highest rates are found in the counties of Tyrrell (37.7), Northampton (36.6), Lenoir (34.6), and Bertie (34.3). High crude colorectal death rates are found in the northern and central areas of the region (see Map 7.2)

Age-Adjusted Mortality Rates for Colorectal Cancer, 1994-1998:

The five-year average, age-adjusted colorectal cancer mortality rate in ENC (22.7) is 9% greater than the rate for ONC (20.8) and 6% higher than the rate for the US (22.0). In addition to having the highest crude colorectal cancer death rate, Gates County also has the highest age-adjusted death rate in the region, with 37.9 deaths per 100,000 population. The next highest rates are found in the counties of Lenoir (32.2), Bertie (31.5), Tyrrell (29.8), and Northampton (29.8). As the Map 7.2 shows, high age-adjusted death rates are clustered in the northern and central areas of the region, following the same pattern as the crude colorectal cancer mortality rates.

Trends in Colorectal Cancer Mortality, 1979-1998:

The age-adjusted colorectal cancer rate for ENC has fluctuated over the last two decades, while the rates in ONC and the US have slowly declined (see Figure 7.1). Most of the counties in the region (88%) and the state (82%) will have to reduce their current colorectal mortality rates by more than 20% in order to meet the national objective by 2010 (see Map 7.1).

Disparities in Colorectal Cancer Mortality, 1979-1998:

Figure 7.2 and Map 7.3 show that colorectal cancer mortality varies by gender and race. In general, males and non-whites have higher death rates than females and whites. Over the last 20 years, the colorectal death rate for males in the ENC has increased more rapidly than the female rate. Males currently die at a rate 40% higher than females. As the accompanying figures also demonstrate, mortality rates have declined for whites in recent years but not for minorities, and these trends have resulted in the growing disparities seen in Figure 7.2. Racial disparities in colorectal cancer mortality are large and growing at the regional, state, and national level. The death rate for non-whites in ENC exceeds the rate for whites by 29%. As compared to ONC, racial disparities are less severe in eastern North Carolina because whites in ENC have higher mortality rates than their counterparts in ONC. Eliminating these disparities in colorectal cancer mortality by 2010 will be a major challenge.

Table 7.1 Colorectal Cancer Mortality in Eastern North Carolina, 1994-1998

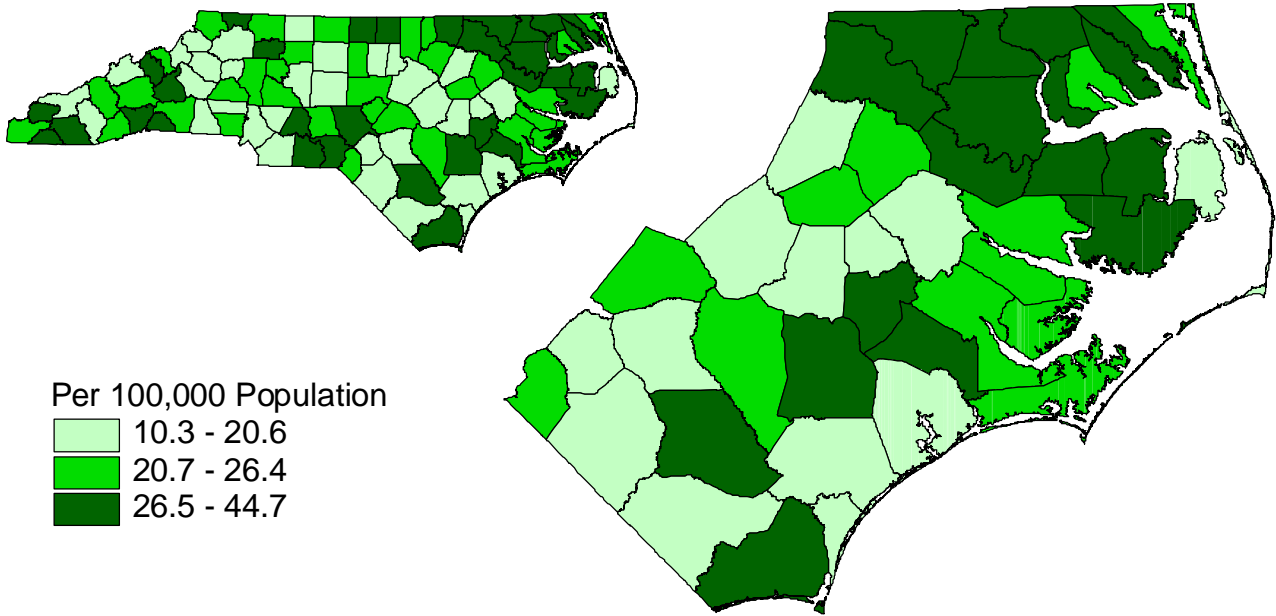
County	Totals			Race-Gender Specific Age-Adjusted Death Rates							
	Deaths	Rates		Non-White Males		Non-White Females		White Males		White Females	
		Crude	Adjusted	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate
Beaufort	50	23.1	20.0	7	30.0	11	25.8	14	20.9	18	16.1
Bertie	35	34.3	31.5	8	39.6	10	27.2	8	34.4	9	28.9
Bladen	40	26.6	24.1	6	27.1	8	24.5	11	24.5	15	22.8
Brunswick	89	28.3	23.2	8	40.9	6	21.0	46	29.2	29	15.9
Camden	9	28.6	26.3	0	0.0	2	54.7	2	15.8	5	32.5
Carteret	66	22.7	20.3	4	65.3	4	32.1	31	24.2	27	16.1
Chowan	24	34.0	25.0	4	40.0	3	18.2	6	18.1	11	29.5
Columbus	49	19.0	18.2	7	23.3	8	16.6	12	17.3	22	18.0
Craven	100	23.0	25.9	17	52.2	17	29.0	29	20.6	37	21.5
Cumberland	151	10.3	17.3	29	28.7	29	17.2	52	21.1	41	11.7
Currituck	21	25.9	29.4	1	27.7	3	51.2	7	27.2	10	26.6
Dare	20	15.1	17.1	0	0.0	0	0.0	10	18.2	10	16.8
Duplin	64	29.5	27.0	7	26.0	11	26.2	26	40.8	20	19.3
Edgecombe	72	25.8	26.6	16	45.5	20	24.4	19	30.9	17	18.9
Gates	20	40.6	37.9	6	69.8	5	42.6	4	25.4	5	27.1
Greene	14	16.3	16.1	1	4.7	2	10.8	5	21.7	6	16.0
Halifax	81	28.7	26.6	11	21.1	30	37.3	24	36.0	16	15.3
Harnett	100	25.3	27.9	6	28.9	15	36.8	44	38.0	35	19.8
Hertford	36	32.5	29.3	13	58.1	9	24.0	9	37.2	5	11.2
Hoke	23	16.4	20.3	6	23.0	4	12.7	6	21.0	7	20.6
Hyde	9	34.2	28.9	2	51.1	2	31.8	3	29.0	2	14.7
Johnston	93	18.7	19.4	9	32.9	7	15.3	35	19.2	42	17.8
Jones	15	32.6	28.8	2	32.7	4	31.7	3	20.3	6	33.1
Lenoir	102	34.6	32.2	20	53.4	20	28.0	37	49.0	25	20.1
Martin	40	31.1	27.0	6	27.2	12	34.1	11	27.0	11	19.5
Nash	87	20.3	20.9	9	21.5	19	29.8	23	17.3	36	18.9
New Hanover	124	17.4	17.5	7	17.8	12	16.4	57	23.2	48	13.6
Northampton	38	36.6	29.8	6	31.5	12	30.3	8	26.1	12	30.1
Onslow	76	10.3	23.8	8	46.0	8	25.3	29	26.5	31	19.7
Pamlico	14	23.5	17.5	0	0.0	0	0.0	5	17.0	9	25.8
Pasquotank	50	29.4	27.9	9	43.1	7	18.7	24	50.7	10	12.7
Pender	33	18.3	16.2	5	31.7	8	25.0	11	12.8	9	10.6
Perquimans	14	26.0	18.9	3	37.8	1	8.0	5	20.9	5	18.2
Pitt	109	18.2	23.5	16	30.0	29	32.2	29	22.9	35	17.8
Robeson	102	18.3	22.0	21	23.7	35	23.2	29	36.8	17	12.9
Sampson	66	25.6	23.2	6	19.3	12	23.5	21	27.4	27	22.6
Scotland	41	23.5	25.9	5	31.0	6	17.7	10	23.6	20	31.9
Tyrrell	7	37.7	29.8	2	57.3	1	22.4	2	30.5	2	21.1
Washington	19	28.1	25.6	3	31.3	5	32.2	5	26.7	6	19.7
Wayne	105	18.8	22.3	23	42.4	21	23.1	32	27.7	29	15.1
Wilson	73	21.4	21.3	13	33.2	16	23.7	18	20.3	26	18.6
ENC 29	1,370	22.7	24.4	217	36.2	284	27.2	428	26.4	441	18.7
ENC 41	2,281	20.5	22.7	332	31.9	434	24.3	762	25.7	753	17.6
ONC	5,237	20.6	20.8	410	31.9	551	26.1	2,088	23.9	2,188	16.7
PNC	3,855	19.7	21.3	366	32.2	492	26.1	1,446	24.3	1,551	17.0
WNC	1,382	23.6	19.7	44	30.2	59	25.7	642	23.4	637	16.1
NC	7,518	20.6	21.4	742	31.9	985	25.2	2,850	24.4	2,941	17.0
US, 1996	56,497	21.3	22.0	3,484	29.1	3,834	22.2	24,367	26.1	24,812	18.2

Colorectal Cancer ICD-9 Codes: 153-154
Age-Adjusted Rates Standardized to US 2000 SM
Total Number of Deaths and Rates for Five-Year Period, except US

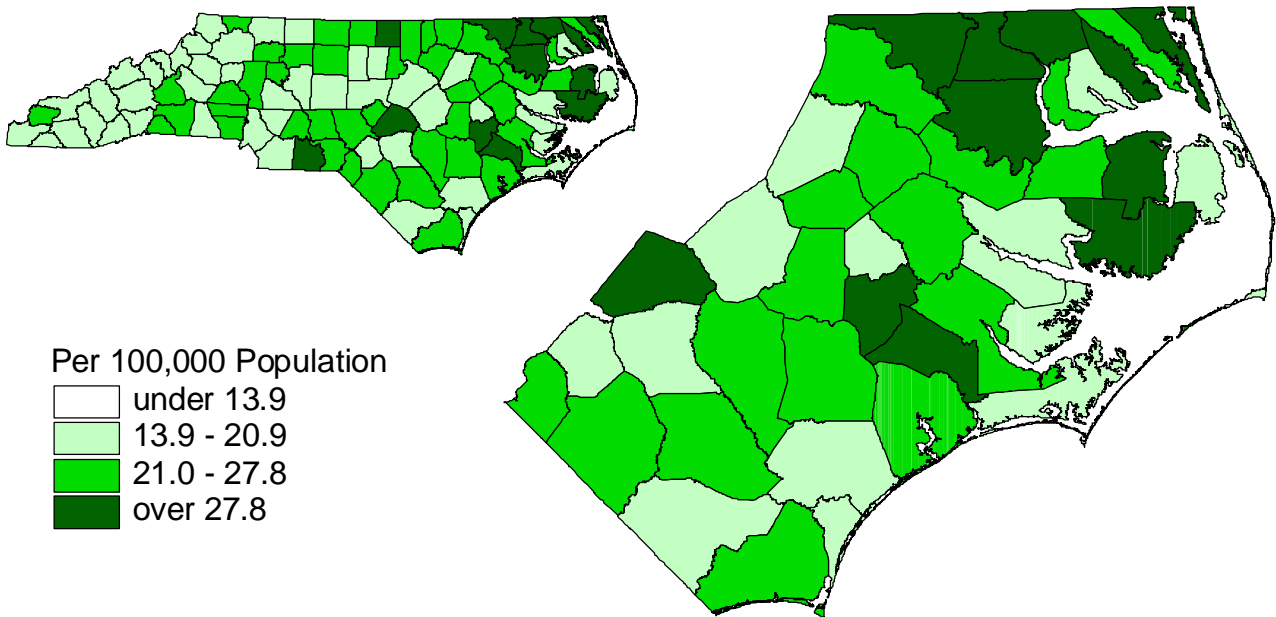
NC Data Source: NC State Center for Health Statistics
US Data Source: National Center for Health Statistics

Map 7.2 Crude and Age-Adjusted Colorectal Cancer Mortality Rates: North Carolina and Eastern North Carolina, 1994-1998

Crude Rate



Age-Adjusted Rate

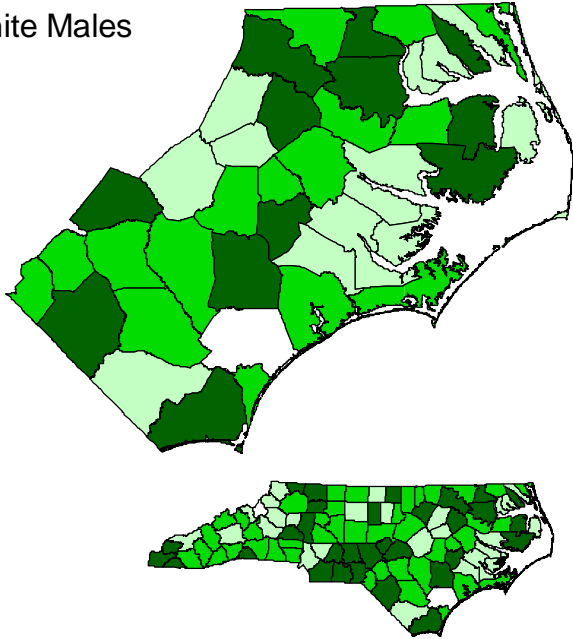


Colorectal Cancer ICD-9 Codes: 153-154
Five-Year Average, Age-Adjusted Rates Standardized to US 2000 SM

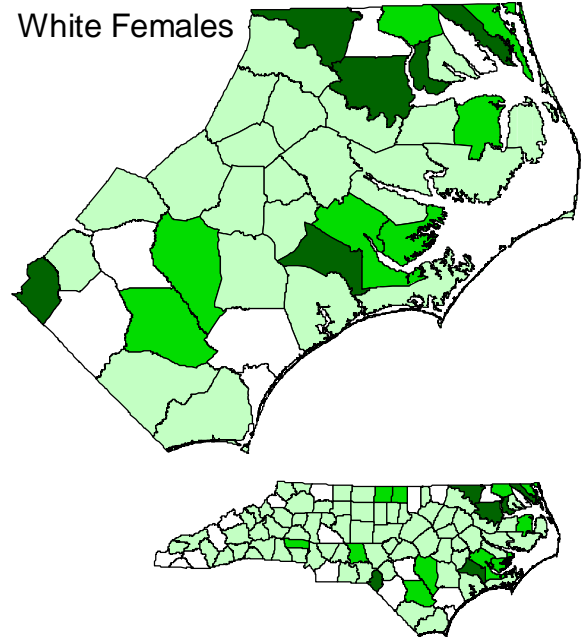
Data Source: NC State Center for Health Statistics

**Map 7.3 Race-Gender Specific, Age-Adjusted Colorectal Cancer Mortality Rates:
North Carolina and Eastern North Carolina, 1994-1998**

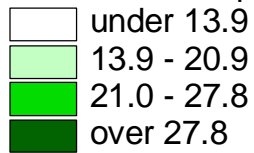
White Males



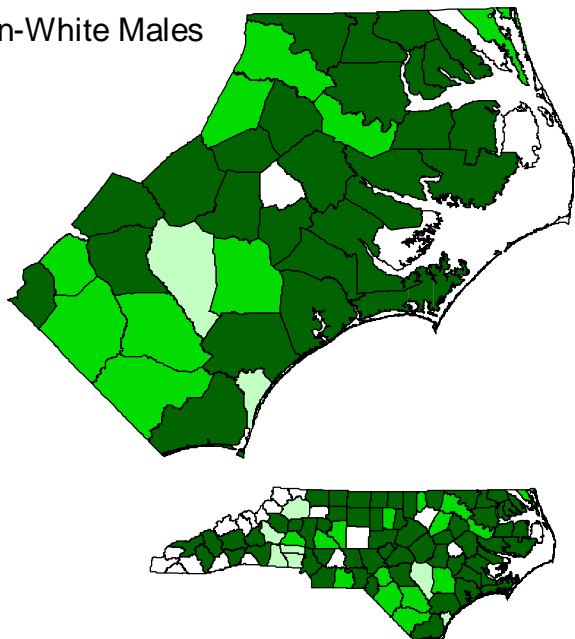
White Females



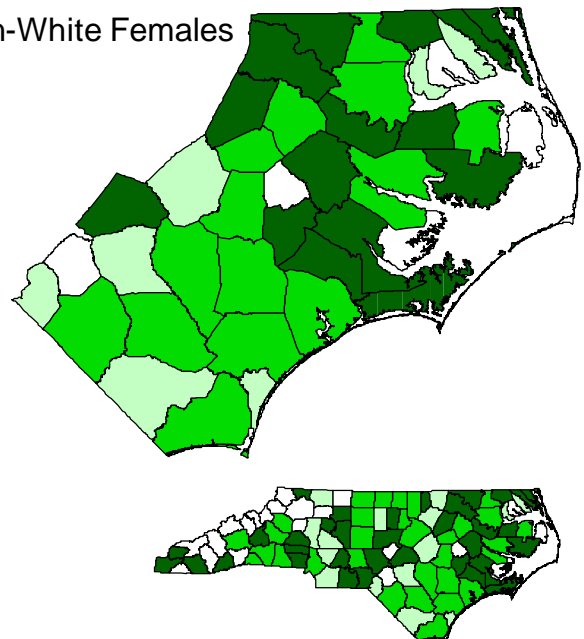
Per 100,000 Population



Non-White Males



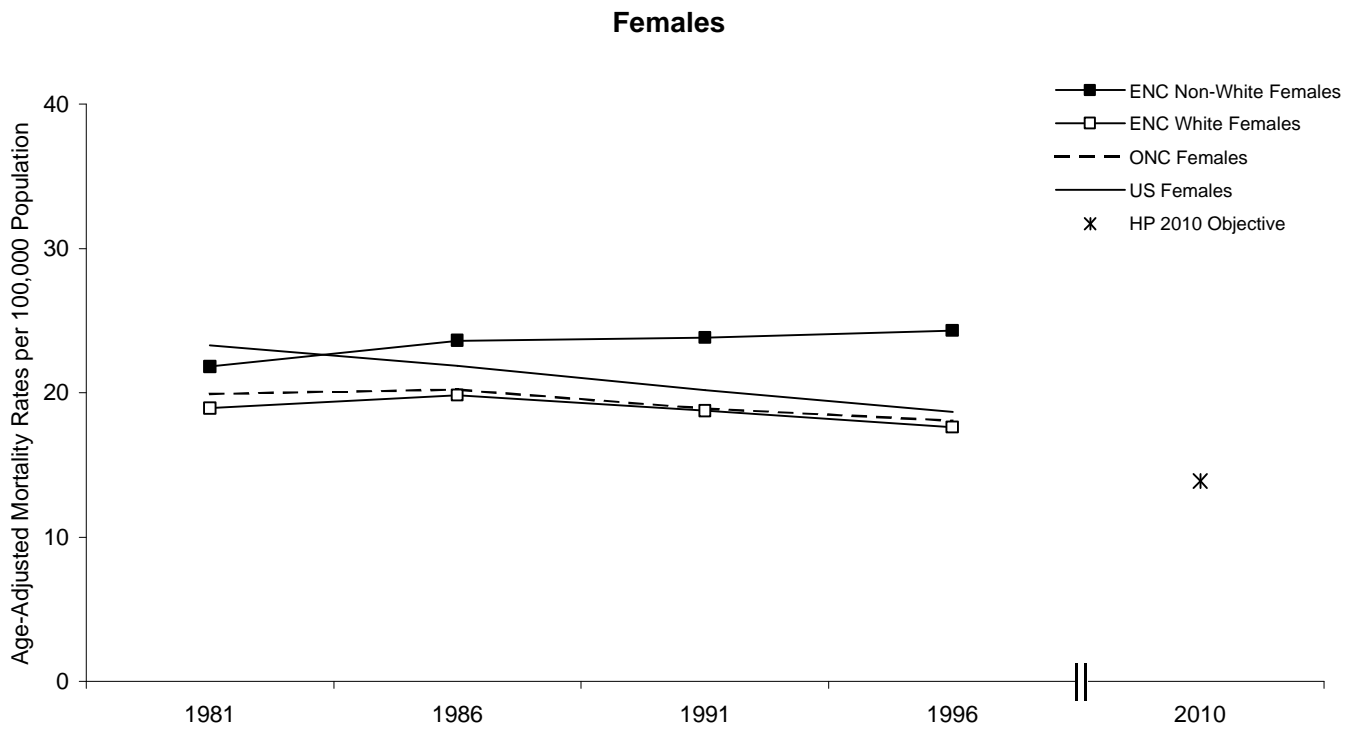
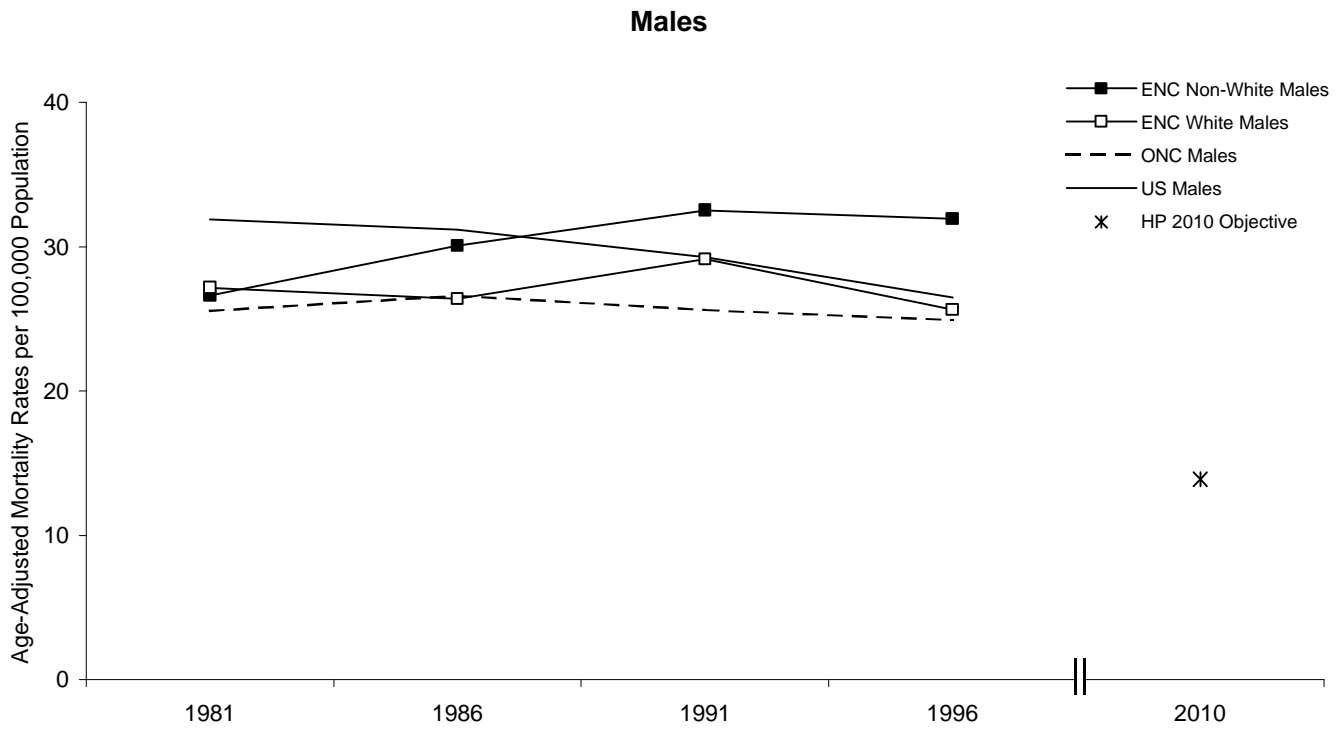
Non-White Females



Colorectal Cancer ICD-9 Codes: 153-154
Five-Year Average, Age-Adjusted Rates Standardized to US 2000 SM

Data Source: NC State Center for Health Statistics

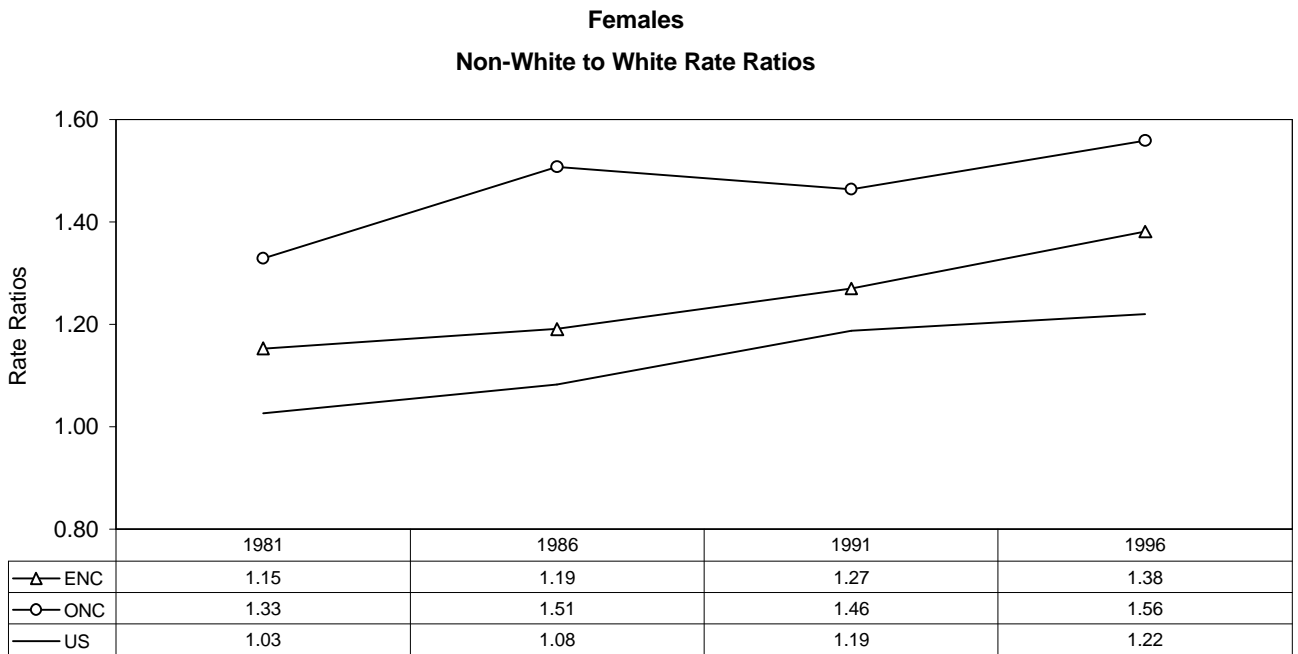
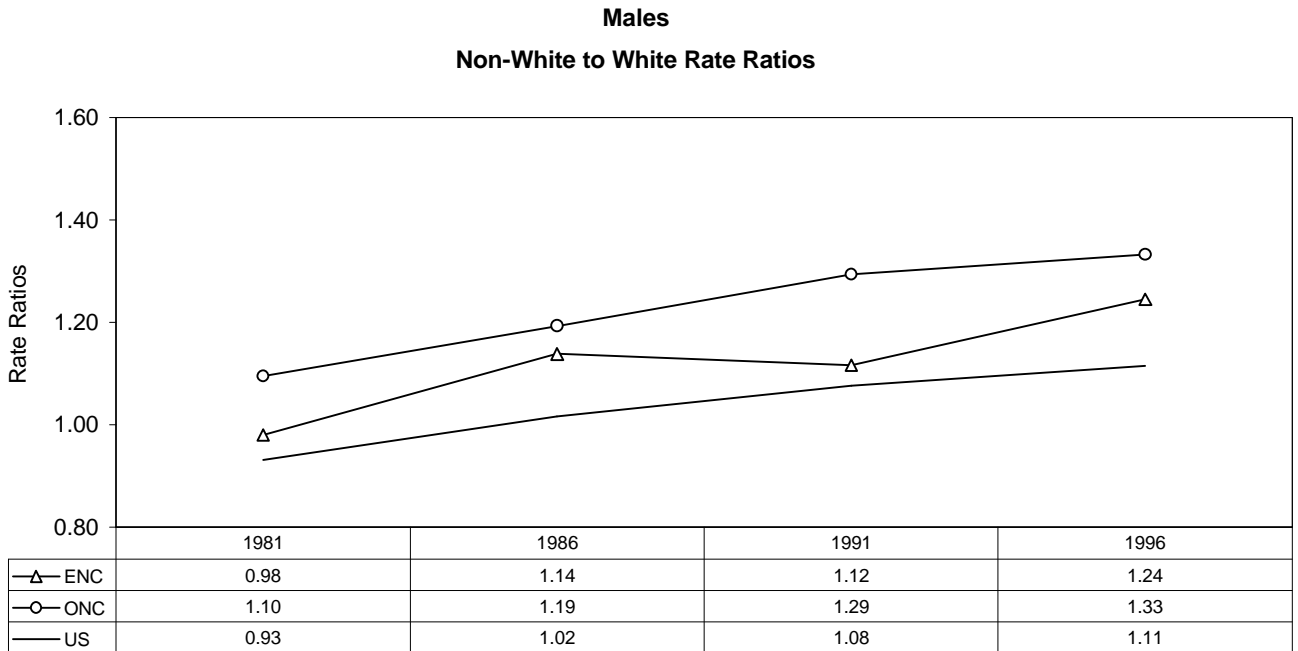
Figure 7.1 Age-Adjusted Colorectal Cancer Mortality Rates by Gender: Regional and National Trends, 1979-1998



Colorectal Cancer ICD-9 Codes: 153-154
 Five-Year Average, Age-Adjusted Rates Standardized to US 2000 SM
 US Rates for Middle Year of Five Year Periods

NC Data Source: NC State Center for Health Statistics
 US Data Source: National Center for Health Statistics

Figure 7.2 Racial Disparities in Age-Adjusted Colorectal Cancer Mortality Rates by Gender: Regional and National Trends, 1979-1998



Colorectal Cancer ICD-9 Codes: 153-154
Based on Five-Year Average, Age-Adjusted Rates Standardized to US 2000 SM
US Rates for Middle Year of Five Year Periods

NC Data Source: NC State Center for Health Statistics
US Data Source: National Center for Health Statistics

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American Cancer Society
(<http://www.cancer.org>)

CancerNet
National Cancer Institute
(<http://cancernet.nci.nih.gov>)

Center to Reduce Cancer Health Disparities
National Cancer Institute
(<http://crchd.nci.nih.gov>)

Centers for Disease Control and Prevention
(<http://www.cdc.gov>)

Healthy People 2010
(<http://web.health.gov/healthypeople>)

National Cancer Institute
(<http://www.nci.nih.gov>)

National Center for Health Statistics
(<http://www.cdc.gov/nchs>)

North Carolina Center for Health Statistics
(<http://www.schs.state.nc.us/SCHS>)

Appendix G

ICD-9 Codes for Colorectal Cancer

153: Malignant neoplasm of colon

154: Malignant neoplasm of rectum, rectosigmoid junction, and anus