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Cancer Profile of Eastern North Carolina
for Breast, Cervical, and Colorectal Cancers
March 2012

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Acknowledgements

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Introduction

In 2009, cancer became the leading cause of death in North Carolina. [1] Some of the primary reasons for this shift include an aging population and successful management of cardiovascular disease (CVD), resulting in an increase in cancer incidence and a decline in CDV death rates. Historically, the eastern region of North Carolina has experienced greater cancer mortality than the rest of North Carolina as a whole.

The Department of Public Health, Brody School of Medicine at East Carolina University in collaboration with the North Carolina (NC) Comprehensive Cancer Program, Division of Public Health in the NC Department of Health and Human Services publishes the “Cancer Profile of Eastern North Carolina for Breast, Cervical, and Colorectal Cancers” with the aim to provide a brief characterization of the relationship between the demographic, social, and behavioral aspects of the region with the incidence and mortality of these screening-preventable cancers. Cancers summaries contained in this report are the focus of active statewide efforts to increase screening and reduce mortality.

For the purpose of the profile, Eastern North Carolina (ENC) is defined as a 29-county region which includes: Beaufort, Bertie, Camden, Carteret, Chowan, Craven, Currituck, Dare, Duplin, Edgecombe, Gates, Greene, Hertford, Hyde, Jones, Lenoir, Martin, Nash, Northampton, Onslow, Pamlico, Pasquotank, Perquimans, Pitt, Tyrrell, Washington, Wayne, and Wilson counties. The Rest of North Carolina (RNC) constitutes the remaining 71 counties.

The Cancer Profile is presented by region and 29-counties in alphabetic order. Each geographic area includes the following description:

- Economic,
- Demographic,
- Cancer surveillance (incidence and mortality rates for breast, cervical, and colorectal cancers), and
- Risk factor information.

County-specific cancer incidence and mortality data are presented by gender and race, if available. Since this document is essentially descriptive, no attempt is made to compare or interpret data between individual counties and no conclusions are provided. We anticipate the reader of this profile may conclude that challenges remain to reduce the burden of cancer in eastern North Carolina that will involve individual, health system, and community-based interaction and collaboration to resolve.
Methods

Types of Cancers

The Cancer Profile focuses on three types of screening-preventable cancers: invasive female breast cancer, cervical cancer, and colorectal (CRC) cancers. Each of these cancers has screening modalities for cancer prevention and/or early detection. Rates for invasive cancer are reported; *in situ* cancer is omitted.

Sources of data

Regional and state demographic and economic data came from several sources. Economic and demographic data were obtained from the North Carolina Department of Commerce [2] for largest industry based on numbers of persons employed (2011), county economic tier designations (2011); the U.S. Census Bureau [4,5] for median household income (2009), percent persons living below the poverty level (2009) in a county, population counts (2010); and the County Health Rankings website [6] for estimated high school graduation defined as percent of ninth grade cohort that graduates in four years (2007-2008), and percent uninsured defined as percent of adults 18-64 without insurance (2007). [6]

Cancer incidence and mortality rates for the region of ENC compared to the RNC were obtained from the NC Central Cancer Registry [7] while the county-specific cancer incidence and mortality data were obtained from the State Cancer Profiles, National Cancer Institute (NCI). [8] Healthy People 2010 data were provided by the Centers for Disease Control and Prevention (CDC). [9] Behavioral risk factor data were obtained from the Behavioral Risk Factor Surveillance System (BRFSS) available through three sources: the North Carolina State Center for Health Statistics (NC DHHS) [10], the County Health Ranking Website [6] and through the NC Health Data Explorer (East Carolina University, Center for Health Systems Research and Development). [11]

Dates of Data

Regional and state demographic and economic data came from several sources [2-6]. These data are range between the years of 2008 and 2010. Industry data were compiled by the North Carolina Department of Commerce [2] from data available through the U.S. Department of Labor, Bureau of Labor Statistics. [12] For example, the population totals are from 2010, median household income data are from 2009, while high school graduation rates are from 2008. Emphasis was placed on obtaining data from the same year(s) and source. Where possible, the most recent data were used for the Cancer Profile.

The latest available incidence and mortality data for ENC, collectively, (29 counties) and the rest of North Carolina (71 counties) were for the 5-year span of 2004-2008 (North Carolina Central Cancer Registry). [7] The latest available county-specific incidence rates were for 2004-2008, while the latest county-specific mortality rates were from 2003-2007 (State Cancer Profiles, NCI, CDC). [8] Behavioral Risk Factor Surveillance System (BRFSS) data reported in the Cancer Profile ranges from the years 2003-2009. [6, 10, 11]
Collection of Data

The team conducted a website search for data sources for county-level economic and demographic data. Cancer incidence and mortality rates and cancer risk factor data were identified from standard sources (Cancer Control Planet and BRFSS). The website search resulted in the creation of an annotated list of potential data sources for the Cancer Profile spreadsheet. Additional resources were derived through contacts already established by the team. For county-specific data, a text template was designed to simplify and systematize the process of inputting county-level data. Utilizing chosen sources, spreadsheets were created and data extracted into Microsoft Excel that included data specific to each section of the county-specific template. For example, all demographic data for 29 counties were compiled into a spreadsheet so that rates and percentages could be easily entered into the text template. Similar spreadsheets were created for county-specific economic, cancer surveillance, and BRFSS data.

Analysis of Data

Some data required further analysis or calculations to derive necessary information for the Cancer Profile. The measure of largest industry by county was derived from industry data that showed the numbers employed by type of industry per county. Data for Eastern North Carolina counties were sorted by number employed by industry (greatest to smallest). The industry with the highest number of employees was reported as the largest industry in the county. Median household income for Eastern North Carolina was calculated by taking the median of the median for each county. It is assumed that the county-specific median values were obtained from a sample and that the 29 county samples are from the same underlying distribution. County-specific estimated high school graduation rate was defined as percent of ninth grade cohort that graduated in four years (2007-2008). The estimated high graduate rate was based on incomplete reporting by some school districts for counties in eastern NC. County Health rankings used public school survey data for the 2007-2008 school year to estimate graduate rates in 2010. County-specific percent uninsured was defined as percent of adults 18-64 without insurance (2007).

Utilizing 2010 Census data, the reporting of percent population by age and race in ENC was derived from totaling the individual county population counts and then calculating it as a percent of the total population of ENC. For example, all total population counts for ENC counties were added together to get the total population of ENC (1,401,803, Census 2010). To derive the total African American population in ENC, the individual county population counts of African American persons were added together and then divided by the total ENC population for the percent African American in ENC.

For the region-specific data, crude (unadjusted) cancer incidence and mortality rates for ENC and RNC 71 counties was produced by the NC Central Cancer Registry, 2011. Rates for the 5 year period 2004-2008 are for adults (age 20 and over), and use bridged-race population estimates obtained from the CDC’s National Center for Health Statistics, Vintage 2009. Rates for female breast cancer and cervix uteri cancer exclude males in population denominators. Regional age-specific rates are presented for white and African Americans. Hispanic ethnicity is included in white race. Rates based on counts less than 16 are unstable. ENC regional cancer rates by gender are age-adjusted as provided by the NC Center for Health Statistics.
County-specific cancer incidence (2004-2008) and mortality (2003-2007) rates were obtained from the State Cancer Profiles from the website Cancer Control P.L.A.N.E.T. (NCI, CDC). [8] The 95% Confidence Intervals (CIs) for the county rates provide a measure of how certain or uncertain the estimated rate is and can be used to generally assess how different one rate is from another. Some incidence and mortality rates were suppressed due to small numbers and instability of rate estimates. County-specific Incidence rates (cases per 100,000 population per year) are age-adjusted to the 2000 US standard population (19 age groups: <1, 1-4, 5-9, ..., 80-84, 85+). Rates are for invasive cancer only. For further information: http://statecancerprofiles.cancer.gov/help/about/descriptions.html#incidence.

Mortality rates were obtained from the State Cancer Profiles from the website Cancer Control P.L.A.N.E.T. These rates are provided by the National Vital Statistics System at the National Center for Health Statistics, CDC. [8] For further information: http://statecancerprofiles.cancer.gov/help/about/descriptions.html#death_rates.

Staff from the Center for Health Systems Research and Develop aggregated BRFSS data for the ENC section of the Profile (29 counties) and RNC (71 counties). [10]

**Limitations of Data**

County industry data, (measured by numbers employed by industry type) used to determine largest industry may be suppressed in particular industries due to laws protecting employer confidentiality. [2] It is unknown how common this was by county.

Data on access to primary care are considered unreliable for the following reasons. Although the relationship between primary care providers and improved health outcomes is supported in the literature, this measure has a number of limitations. First, primary care providers are classified by county, but providers living on the edge of counties or who practice in multiple locations may see patient populations that reside in surrounding counties. Therefore, this measure may either over- or underestimate patient access to primary care in some situations since patient-provider interaction is not restricted by county boundaries. This estimate does, however, suggest access to medical care.

In the Cancer Profile, the cancer incidence and mortality rates for overall ENC cannot be compared to the cancer incidence and mortality rates of individual counties in ENC because the data come from two different sources [7,8], and each source uses different population denominators. NC Central Cancer Registry incidence and mortality rates, used for the Eastern North Carolina Profile are crude rates. [7] National Cancer Institute, State Cancer Profile incidence and mortality rates, used for the County-Level Profiles are age-adjusted. [8] The magnitude of differences between RNC and ENC rates may be compared, as well as rates between ENC counties; the regional rates cannot be compared to county rates.

Suppression of data due to small numbers may mean that the Cancer Profile reports less cancer incidence and mortality data for certain counties, especially in regards to specific gender and/or racial data.

BRFSS results for the ENC Profile as compared to County-Level profiles cannot be compared because of the use of different population denominators and because of different units of measure (in some instances). [6,10,11]
Methods References


EASTERN NORTH CAROLINA PROFILE

Geography

Eastern North Carolina serves a large geographic area of North Carolina that includes 29 of the 100 counties in North Carolina. The 29-county area of Eastern North Carolina (ENC) may be visualized as including counties to the east of US Interstate 95 and north of US Interstate 40, bordering on the state of Virginia to the north. It is sometimes referred to as Northeastern North Carolina but for the purpose of the Cancer Profile, the 29-county region will be referred to as Eastern North Carolina.

Exhibit 1. Map of North Carolina, County and Regional Locations

Source: Center for Health Systems Research and Development, East Carolina University

Economics

Based on number of persons employed, in 2011 the largest industry in ENC was retail trade. [1] Retail trade include stores (for example, Walmart, grocery, convenience, clothing), restaurants (including fast food), and gas stations. The median household income (2009) was $37,284 for a family of four, compared to $43,754 statewide. The median number of persons living below the poverty level was approximately 20% (ranged from 9% to 29%), compared to 16% statewide. [2] Unemployment (civilian, not in labor force, 2009) in the region ranged from 7%-16%, compared to 11% statewide. The median high school graduation rate (2010), based on the cohort of 9th graders that graduated in 4 years, was 76% (ranges from 59%-92%) in ENC, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) ranged from 14%-30%, compared to 21% statewide. [3]
The NC Department of Commerce annually ranks counties based on economic well being and assigns each a tier designation. The 40 most distressed counties are designated as Tier 1, the next 40 as Tier 2, and the 20 least distressed as Tier 3. For 2011, 15 of the 29 ENC counties were designated as Tier 1 (52%), most economically distressed; 11 ENC counties (38%) were designated as Tier 2; and 3 ENC counties (10%) were designated as Tier 3, least economically distressed. Overall, Eastern North Carolina counties comprise approximately 38% of all Tier 1 counties, the most economically distressed counties in the state. [4] Economically, several coastal counties in the region comprise a more affluent demographic group than counties in the interior coastal plain.

**Demographics**

Based on data from the 2010 US Census, ENC had a total population of 1,401,803 persons. The population was 23.3% children (<18), 63.3% adults ages 18-64, and 13.4% elders (≥65). ENC was 32% African American (AA) (22% AA statewide) and 63% white (69% white statewide). Latinos/Hispanics (any race) comprised 6% of the population in Eastern North Carolina (8% statewide). The overall ENC population was 51% female and 49% male. [5]

**Burden of Cancer**

For the years 2004-2008, there were 34,167 newly diagnosed cases of cancer in eastern North Carolina, and 184,700 new cases of cancer in the rest of North Carolina. The total all-cancer incidence rate for ENC was 7% higher than the all-cancer incidence rate for the rest of North Carolina (718.8 per 100,000 persons compared to 671.2 per 100,000 persons). [6] For cancer-specific ENC compared to RNC incidence and mortality rates see Exhibit 4 and 5.

During the same time period, of 84,936 statewide cancer deaths, 14,271 (17%) occurred in the 29 eastern North Carolina counties, and 70,665 deaths occurred in the rest of the state. The total all-cancer mortality rate for ENC was 16% higher than the all-cancer mortality rate for the rest of North Carolina.
Carolina (300.2 per 100,000 persons compared to 256.8 per 100,000 persons). [6] For cancer-specific ENC vs. RNC incidence and mortality rates see Exhibit 4 and 5.

Racial disparities in cancer incidence and mortality rates appear to be more pronounced in the eastern region of the state. For example, in 71-county area of RNC, the African American breast cancer rate was 9% higher than the white rate (39.6 per 100,000 persons compared to 36.1 per 100,000 persons. In ENC, for 2004-2008, the African American breast cancer mortality rate was 47% higher than the white rate (56.6 per 100,000 persons compared to 38.4 per 100,000 persons). See Exhibit 6 and 7. [6]

**Exhibit 4. Cancer Incidence Rates (crude) per 100,000 population, 2004-2008**

<table>
<thead>
<tr>
<th>Type of cancer</th>
<th>ENC</th>
<th>RNC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colon/Rectum</td>
<td>76.2</td>
<td>64.3</td>
</tr>
<tr>
<td>Female Breast</td>
<td>201.5</td>
<td>181.4</td>
</tr>
<tr>
<td>Cervix Uteri</td>
<td>12.6</td>
<td>10.8</td>
</tr>
</tbody>
</table>

Source: NC Central Cancer Registry, 2011

**Exhibit 5. Cancer Mortality Rates (crude) per 100,000 population, 2004-2008**

<table>
<thead>
<tr>
<th>Type of cancer</th>
<th>ENC</th>
<th>RNC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colon/Rectum</td>
<td>27.3</td>
<td>22.7</td>
</tr>
<tr>
<td>Female Breast</td>
<td>44.0</td>
<td>36.1</td>
</tr>
<tr>
<td>Cervix Uteri</td>
<td>4.8</td>
<td>3.3</td>
</tr>
</tbody>
</table>

Source: NC Central Cancer Registry, 2011

**Exhibit 6. Cancer Crude Mortality Rate, Rest of North Carolina (71 counties), by Race, 2004-2008**

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<thead>
<tr>
<th>Type of cancer</th>
<th>Whites</th>
<th>Blacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRC</td>
<td>22.6</td>
<td>25.7</td>
</tr>
<tr>
<td>Female Breast</td>
<td>36.1</td>
<td>39.6</td>
</tr>
<tr>
<td>Cervical</td>
<td>2.9</td>
<td>4.7</td>
</tr>
</tbody>
</table>

Source: NC Central Cancer Registry, 2011
Cancer Surveillance

Colon and Rectal Cancers (CRC)

The incidence and mortality rates of Colon and Rectal cancers in the 29 county eastern region of North Carolina were higher than the remaining 71 counties (RNC) for persons 20 years and over. For 2004-2008, the average crude incidence rate for colorectal cancer in ENC was 17% greater (expressed as a ratio) compared to RNC (76.2 per 100,000 persons compared to 64.3 per 100,000 persons). Similarly, the average crude mortality rate for colorectal cancer was 18% greater in ENC compared to RNC (27.3 per 100,000 persons compared to 22.7 per 100,000 persons) during 2004-2008.[6]

Within Eastern North Carolina, CRC incidence rates were slightly higher for African Americans (1% higher) than for whites (77.6 per 100,000 persons compared to 76.6 per 100,000 persons) for 2004-2008. CRC mortality rates were 25% greater for African Americans than for whites (32.0 per 100,000 persons compared to 25.5 per 100,000 persons) for the same time period.

By gender, ENC CRC incidence rates were higher for males (38% higher) than for females (63.3 per 100,000 persons compared to 43.1 per 100,000 persons) for 2004-2008. CRC mortality rates among males compared to females were 47% greater (23.2 per 100,000 compared to 15.8 per 100,000 persons) for 2004-2008.[6]
Female Breast Cancer

The incidence and mortality rates of female breast cancer in the 29 county eastern region of North Carolina are higher than the remaining 71 counties (RNC) for persons 20 years and over. For 2004-2008, the average crude incidence rate for breast cancer in ENC was 11% greater (expressed as a ratio) compared to RNC (201.5 per 100,000 women compared to 181.4 per 100,000 women). Similarly, the average crude mortality rate for breast cancer was 20% greater in ENC compared to RNC (44.0 per 100,000 women compared to 36.1 per 100,000 women) during 2004-2008. [6]

Within Eastern North Carolina, breast cancer incidence rates were 15% greater for white women than for African American women (212.1 per 100,000 women compared to 183.4 per 100,000) for 2004-2008. However, breast cancer mortality rates were 38% higher among African American women than white women for the same time period (56.6 per 100,000 women compared to 38.4 per 100,000). [6]
Cervix Uteri Cancer

The incidence and mortality rates of cervical cancer in 29 county eastern region of North Carolina are higher than the remaining 71 counties (RNC) for women 20 years and over. For 2004-2008, the average crude incidence rate for cervical cancer in ENC was 15% greater (expressed as a ratio) compared to RNC (12.6 per 100,000 women compared to 10.8 per 100,000 women). Similarly, the average crude mortality rate for cervical cancer was 37% greater in ENC compared to RNC (4.8 per 100,000 women compared to 3.3 per 100,000 women) during 2004-2008.[6]

Within Eastern North Carolina, cervical cancer incidence rates were 17% higher (expressed as a ratio) for African American women than for white women (14.0 per 100,000 women compared to 11.8 per 100,000 women) for 2004-2008. Cervical cancer mortality rates were almost 2-times greater among African American women than white women for the same time period (7.1 per 100,000 women compared to 3.7 per 100,000 women).[6]

![Exhibit 10. Regional Cervical Cancer Incidence and Mortality Rates (ENC vs. RNC) per 100,000, 2004-2008](image)

Source: NC Central Cancer Registry, 2011
Cancer Risk Factors

Risk factors for cancer include obesity, regular alcohol consumption, and exposure to active and passive tobacco exposure. BRFSS, a population-based, national telephone survey conducted by the CDC, found that persons in ENC were more obese (31% vs 28%) and had a higher prevalence of diabetes (11% vs 9%) than persons in the rest of North Carolina. Eastern North Carolina residents were less likely to have consumed alcohol in the past 30 days (39% vs 45%) and never smoked tobacco products (52% vs 54%). Almost 56% of ENC female residents reported a mammogram within the past two years. Eastern North Carolina residents were less likely than the rest of North Carolina to have received a blood stool test for CRC screening (43% vs. 50%).[7]


<table>
<thead>
<tr>
<th></th>
<th>ENC 29</th>
<th>RNC 71</th>
<th>NC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Smoked</td>
<td>52%</td>
<td>54%</td>
<td>54%</td>
</tr>
<tr>
<td>Obese (b)</td>
<td>31%</td>
<td>28%</td>
<td>28%</td>
</tr>
<tr>
<td>Alcohol (c)</td>
<td>39%</td>
<td>45%</td>
<td>44%</td>
</tr>
<tr>
<td>Diabetes (d)</td>
<td>11%</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>Mammogram (e)</td>
<td>56%</td>
<td>54%</td>
<td>55%</td>
</tr>
<tr>
<td>CRC screening (f)</td>
<td>43%</td>
<td>50%</td>
<td>49%</td>
</tr>
</tbody>
</table>

*a Never smoked, 2005-2009
*b Percent obese, 2005-2009
*c During the past 30 days, have you had at least one drink of any alcoholic beverage such as beer, wine, a malt beverage, or liquor?, 2005-2009
*d Even told by doctor to have diabetes, 2005-2009
*e Mammogram in last two years, woman any age, 2006, 2008
*f Colorectal Cancer Screening (Age 50+), A blood stool test is a test that may use a special kit at home to determine whether the stool contains blood. Have you ever had this test using a home kit?, 2006, 2008.

Source: Behavioral Risk Factor Surveillance System, Survey Results, 2005-2009
Eastern North Carolina Profile References


County-Level Profiles
BEAUFORT COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Beaufort County was manufacturing.[1] The median household income (2009) was $38,829 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 19%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Beaufort County was 11%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 75%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 19%, compared to 21% statewide. Forty-seven physicians provided primary care in Beaufort County (2008), which was a population to primary care physician ratio of 986 to 1.[3]

Demographics:
Based on data from the 2010 U.S. Census, Beaufort County had a total population of 47,759 with 58 persons per square mile. The county population was 22% children (<18), 60% adults ages 18-64, and 18% elders. Beaufort County was 26% African American (AA) (22% AA statewide) and 68% white (69% white statewide). Latinos/Hispanics (any race) comprised 7% of the population in Beaufort County (8% statewide) (Exhibit 12). The overall county population was 52% female and 48% male in 2010.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Beaufort County, the CRC age-adjusted incidence rate for 2004-2008 was 62.1 (95% CI 53.4, 71.9) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 38 new cases of CRC diagnosed in Beaufort County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 67.8 (95% CI 54.0, 84.2) for males and 59.1 (95% CI 47.8, 72.6) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 62.2 (95% CI 52.1, 73.9) for whites, and 62.0 (95% CI 45.2, 83.3) for African Americans.[4]

Mortality
In Beaufort County, CRC mortality rates for 2003-2007 were stable and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 16.0 (95% CI 11.7, 21.6) per 100,000, which was lower than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Beaufort County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per
The average annual percentage change in death rates declined at -0.1 percent (95% CI -1.3, 1.1) for 2003-2007. The CRC mortality rates (2003-2007) by gender were 14.6 (95% CI 9.2, 22.2) for females and 19.9 (95% CI 12.2, 30.5) for males per 100,000. The CRC mortality rate (2003-2007) per 100,000 by race was 16.2 (95% CI 11.3, 22.9) for whites, and the rate for African Americans was suppressed due to small numbers of deaths.[4]

| Exhibit 13. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons |
|---------------------------------|-----------------|-----------------|
| CRC Incidence (2004-2008)*      | 62.1            | 46.8            |
| CRC Mortality (2003-2007)       | 16.0            | 17.3            |

*Age-Adjusted
Source: NCI, State Cancer Profiles

Female Breast

Incidence

In Beaufort County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 124.8 (95% CI 107.7, 144.2) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 41 new cases of invasive female breast cancer diagnosed in Beaufort County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 123.4 (95% CI 103.9, 146.0) for whites, and 125.5 (95% CI 92.0, 167.5) for African Americans.[4]

Mortality

In Beaufort County, female breast cancer mortality rates for 2003-2007 increased and were similar to the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 25.8 (95% CI 18.4, 35.4) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Beaufort County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates was stable with no percentage change in the county rate over the five year interval (95% CI -1.5, 1.4) for 2003-2007. The female breast cancer mortality rate (2003-2007) per 100,000 by race was 24.4 (95% CI 16.3, 35.7) for whites, and the rate for African Americans was suppressed due to small numbers of deaths.[4]

| Exhibit 14. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons |
|---------------------------------|-----------------|-----------------|
| Breast Cancer Incidence (2004-2008)* | 124.8            | 123.3            |
| Breast Cancer Mortality (2003-2007)  | 25.8            | 24.8            |

*Age-Adjusted
Source: NCI, State Cancer Profiles
**Cervix**
See Eastern North Carolina rates. Beaufort County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.

**Risk Factors and Screening**
Beaufort county residents reported higher obesity, smoking, and obesity prevalence than NC statewide. Mammography coverage was higher than statewide in Medicare-enrolled women.

**Exhibit 15. Adult Respondents, Beaufort County, North Carolina**

Source: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

**Exhibit 16. Adult Respondents, Beaufort County, North Carolina**

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaufort County</td>
<td>23%</td>
<td>34%</td>
<td>8%</td>
<td>12%</td>
<td>71%</td>
</tr>
<tr>
<td>North Carolina</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Source: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
BERTIE COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Bertie County was manufacturing.[1] The median household income (2009) was $29,693 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 24%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Bertie County was 11%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 74%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 18%, compared to 21% statewide. Nine physicians provided primary care in Bertie County (2008), which was a population to primary care physician ratio of 2,163 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Bertie County had a total population of 21,282 with 30 persons per square mile. The county population was 21% children (<18), 62% adults ages 18-64, and 17% elders. Bertie County was 63% African American (AA) (22% AA statewide) and 35% white (69% white statewide). Latinos/Hispanics (any race) comprised 1% of the population in Bertie County (8% statewide) (Exhibit 17). The overall county population was 51% female and 49% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Bertie County, the CRC age-adjusted incidence rate for 2004-2008 was 66.4 (95% CI 52.4, 83.1) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 16 new cases of CRC diagnosed in Bertie County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 62.5 (95% CI 42.8, 88.7) for males and 68.8 (95% CI 50.0, 93.0) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 49.4 (95% CI 32.6, 73.7) for whites, and 77.5 (95% CI 57.5, 102.4) for African Americans.[4]

Mortality
In Bertie County, CRC mortality rates for 2003-2007 were stable and similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 26.5 (95% CI 17.9, 37.9) per 100,000,
which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Bertie County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per 100,000).[4][5] The average annual percentage change in death rates increased at 0.2 percent (95% CI, 1.1, 1.6) for 2003-2007. The CRC mortality rate (2003-2007) by gender was 27.1 (95% CI 16.1, 43.5) for females and the rate for males was suppressed due to small numbers of deaths. The CRC mortality rate (2003-2007) per 100,000 by race was suppressed for whites due to a small number of deaths, and the rate for African Americans was 25.3 (95% CI 14.4, 41.3).[4]

**Exhibit 18. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons**

<table>
<thead>
<tr>
<th></th>
<th>Bertie County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRC Incidence (2004-2008)*</td>
<td>66.4</td>
<td>46.8</td>
</tr>
<tr>
<td>CRC Mortality (2003-2007)</td>
<td>26.5</td>
<td>17.3</td>
</tr>
</tbody>
</table>

*Age-Adjusted
Source: NCI, State Cancer Profiles

**Female Breast**

**Incidence**

In Bertie County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 127.0 (95% CI 100.9, 158.2) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 17 new cases of invasive female breast cancer diagnosed in Bertie County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 109.4 (95% CI 72.1, 162.3) for whites, and 142.4 (95% CI 106.9, 186.6) for African Americans.[4]

**Mortality**

In Bertie County, female breast cancer mortality rates for 2003-2007 increased and were similar to the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 37.4 (95% CI 24.0, 56.0) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Bertie County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates increased at 0.3 percent (95% CI -1.5, 2.1) for 2003-2007. The female breast cancer mortality rate (2003-2007) per 100,000 by race was suppressed for whites due to small numbers of deaths, and the rate for African Americans was 40.9 per 100,000 (95% CI 23.2, 67.3).[4]

**Exhibit 19. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons**

<table>
<thead>
<tr>
<th></th>
<th>Bertie County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Cancer Incidence (2004-2008)*</td>
<td>127.0</td>
<td>123.3</td>
</tr>
<tr>
<td>Breast Cancer Mortality (2003-2007)</td>
<td>37.4</td>
<td>24.8</td>
</tr>
</tbody>
</table>

*Age-Adjusted
Source: NCI, State Cancer Profiles
Cervix
See Eastern North Carolina rates. Bertie County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.

Risk Factors and Screening
Bertie county residents were more obese with more diabetics compared to NC statewide. Medicare eligible Medicare-enrolled women had higher mammography prevalence than statewide.

*Data were not available for alcohol behavioral factor at the county level.
Source: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009


<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bertie County</td>
<td>17%</td>
<td>36%</td>
<td>*</td>
<td>13%</td>
<td>72%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

*Data unavailable
Source: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
CAMDEN COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Camden County was retail trade.[1] The median household income (2009) was $55,985 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 9%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Camden County was 8%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 80%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 26%, compared to 21% statewide. Two physicians provided primary care in Camden County (2008), which was a population to primary care physician ratio of 4,816 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Camden County had a total population of 9,980 with 42 persons per square mile. The county population was 26% children (<18), 61% adults ages 18-64, and 13% elders. Camden County was 13% African American (AA) (22% AA statewide) and 82% white (69% white statewide). Latinos/Hispanics (any race) comprised 2% of the population in Camden County (8% statewide) (Exhibit 22). The overall county population was 50% female and 50% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Camden County, the CRC age-adjusted incidence rate for 2004-2008 was 55.6 (95% CI 35.7, 82.6) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 5 new cases of CRC diagnosed in Camden County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 for males and females were suppressed due to small numbers of cases. By race, the CRC age-adjusted incidence rate per 100,000 was 48.6 (95% CI 28.6, 77.5) for whites, and the rate for African Americans was suppressed due to small numbers of cases.[4]
**Mortality**

In Camden County, CRC mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

| Exhibit 23. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons |
|-----------------------------------|-----------------|---------------|
|                                   | Camden County   | North Carolina |
| CRC Incidence (2004-2008)*        | 55.6            | 46.8          |
| CRC Mortality (2003-2007)         | **              | 17.3          |

*Age-Adjusted  
**Suppressed due to small numbers  
Source: NCI, State Cancer Profiles

**Female Breast**

**Incidence**

In Camden County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 161.6 (95% CI 116.3, 219.7) per 100,000, which was lower than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 8 new cases of invasive female breast cancer diagnosed in Camden County and 6,189 new cases across the state for 2004-2008. The female breast cancer age-adjusted incidence rate was 178.1 (95% CI 124.9, 247.2) for whites, and the rate for African Americans was suppressed due to small numbers of cases.[4]

**Mortality**

In Camden County, female breast cancer mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

| Exhibit 24. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons |
|-----------------------------------------------|-----------------|---------------|
|                                               | Camden County   | North Carolina |
| Breast Cancer Incidence (2004-2008)*          | 161.6           | 123.3          |
| Breast Cancer Mortality (2003-2007)           | **              | 24.8           |

*Age-Adjusted  
**Suppressed due to small numbers  
Source: NCI, State Cancer Profiles

**Cervix**

See Eastern North Carolina rates. Camden County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
Risk Factors and Screening
Camden county residents had a higher prevalence of obesity and diabetes compared to NC statewide, but report less smoking.

Exhibit 25. Adult Respondents, Camden County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smokera</th>
<th>% Obeseb</th>
<th>% Alcohole</th>
<th>% Diabetesd</th>
<th>% Mammograme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camden County</td>
<td>19%</td>
<td>32%</td>
<td>*</td>
<td>10%</td>
<td>66%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

*Data unavailable

Source: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
CARTERET COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Carteret County was retail trade.[1] The median household income (2009) was $44,036 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 13%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Carteret County was 8%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 79%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 22%, compared to 21% statewide. Seventy-three physicians provided primary care in Carteret County (2008), which was a population to primary care physician ratio of 871 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Carteret County had a total population of 66,469 with 131 persons per square mile. The county population was 19% children (<18), 62% adults ages 18-64, and 19% elders. Carteret County was 6% African American (AA) (22% AA statewide) and 89% white (69% white statewide). Latinos/Hispanics (any race) comprised 3% of the population in Carteret County (8% statewide) (Exhibit 27). The overall county population was 51% female and 49% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Carteret County, the CRC age-adjusted incidence rate for 2004-2008 was 45.9 (95% CI 39.6, 52.9) per 100,000, which was lower than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 40 new cases of CRC diagnosed in Carteret County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 58.0 (95% CI 47.6, 70.2) for males and 35.2 (95% CI 28.0, 44.0) for females. By race, the CRC age-adjusted incidence rate per 100,000 was 45.0 (95% CI 38.7, 52.2) for whites, and the rate for African Americans was suppressed due to small numbers of cases.[4]

Mortality
In Carteret County, CRC mortality rates for 2003-2007 declined and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 18.3 (95% CI 14.4, 23.0) per 100,000, which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Carteret County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per
The average annual percentage change in death rates declined at -1.3 percent (95% CI -2.4, -0.1) for 2003-2007. The CRC mortality rates (2003-2007) by gender were 14.9 (95% CI 10.3, 21.1) for females and 22.1 (95% CI 15.7, 30.3) for males per 100,000. The CRC mortality rate (2003-2007) per 100,000 by race was 17.4 (95% CI 13.5, 22.2) for whites, and the rate for African Americans was suppressed due to small numbers of deaths.[4]

### Exhibit 28. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Carteret County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRC Incidence (2004-2008)*</td>
<td>45.9</td>
<td>46.8</td>
</tr>
<tr>
<td>CRC Mortality (2003-2007)</td>
<td>18.3</td>
<td>17.3</td>
</tr>
</tbody>
</table>

*Age-Adjusted

Source: NCI, State Cancer Profiles

### Female Breast

**Incidence**

In Carteret County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 129.0 (95% CI 114.0, 145.7) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 57 new cases of invasive female breast cancer diagnosed in Carteret County and 6,189 new cases across the state for 2004-2008. The female breast cancer age-adjusted incidence rate was 131.7 (95% CI 116.0, 149.2) for whites, and the rate for African Americans was suppressed due to small numbers of cases.[4]

**Mortality**

In Carteret County, female breast cancer mortality rates for 2003-2007 increased and were similar to the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 24.6 (95% CI 18.4, 32.4) per 100,000, which was lower than the overall statewide female breast cancer mortality rate of 24.8. Carteret County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000). [4][5] The average annual percentage change in death rates declined at -0.9 percent (95% CI -2.1, 0.3) for 2003-2007. The female breast cancer mortality rate (2003-2007) per 100,000 was 23.7 (95% CI 17.5, 31.7) for whites, and the rate for African Americans was suppressed due to small numbers of deaths.[4]

### Exhibit 29. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Carteret County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Cancer Incidence (2004-2008)*</td>
<td>129.0</td>
<td>123.3</td>
</tr>
<tr>
<td>Breast Cancer Mortality (2003-2007)</td>
<td>24.6</td>
<td>24.8</td>
</tr>
</tbody>
</table>

*Age-Adjusted

Source: NCI, State Cancer Profiles

### Cervix

See Eastern North Carolina rates. Carteret County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
Risk Factors and Screening
Carteret County residents reported a higher prevalence of smoking and alcohol consumption compared to NC statewide. Mammography completion was higher than statewide in medicare-eligible women.

Source: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 31. Adult Respondents, Carteret County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carteret County</td>
<td>26%</td>
<td>29%</td>
<td>16%</td>
<td>9%</td>
<td>75%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
CHOWAN COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Chowan County was retail trade.[1] The median household income (2009) was $35,944 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 21%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Chowan County was 11%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 75%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 19%, compared to 21% statewide. Twenty physicians provided primary care in Chowan County (2008), which was a population to primary care physician ratio of 734 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Chowan County had a total population of 14,793 with 86 persons per square mile. The county population was 22% children (<18), 58% adults ages 18-64, and 20% elders. Chowan County was 34% African American (AA) (22% AA statewide) and 62% white (69% white statewide). Latinos/Hispanics (any race) comprised 3% of the population in Chowan County (8% statewide) (Exhibit 32). The overall county population was 53% female and 47% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Chowan County, the CRC age-adjusted incidence rate for 2004-2008 was 51.7 (95% CI 38.6, 68.4) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 11 new cases of CRC diagnosed in Chowan County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 63.6 (95% CI 40.8, 95.2) for males and 44.6 (95% CI 29.4, 66.3) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 45.6 (95% CI 31.0, 65.9) for whites, and 65.6 (95% CI 39.4, 103.2) for African Americans.[4]

Mortality
In Chowan County, CRC mortality rates for 2003-2007 were stable and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 22.1 (95% CI 14.0, 33.8) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Chowan County did not meet the Healthy People 2010 morality rate goal (13.9 CRC deaths per
The average annual percentage change in death rates declined at -1.4 percent (95% CI -3.2, 0.4) for 2003-2007. The CRC mortality rates by gender were suppressed for males and females due to small numbers of deaths. The CRC mortality rate (2003-2007) per 100,000 by race was 21.0 (95% CI 12.0, 35.8) for whites, and the rate for African Americans was suppressed due to small numbers of deaths.[4]

### Exhibit 33. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Chowan County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRC Incidence (2004-2008)*</td>
<td>51.7</td>
<td>46.8</td>
</tr>
<tr>
<td>CRC Mortality (2003-2007)</td>
<td>22.1</td>
<td>17.3</td>
</tr>
</tbody>
</table>

*Age-Adjusted

Source: NCI, State Cancer Profiles

### Female Breast

#### Incidence

In Chowan County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 109.7 (95% CI 83.0, 143.2) per 100,000, which was lower than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 12 new cases of invasive female breast cancer diagnosed in Chowan County and 6,189 new cases across the state for 2004-2008. The female breast cancer age-adjusted incidence rate was 117.4 (95% CI 84.6, 161.2) for whites, and the rate for African Americans was suppressed due to small numbers of cases.[4]

#### Mortality

In Chowan County, female breast cancer mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

### Exhibit 34. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Chowan County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Cancer Incidence (2004-2008)*</td>
<td>109.7</td>
<td>123.3</td>
</tr>
<tr>
<td>Breast Cancer Mortality (2003-2007) **</td>
<td>**</td>
<td>24.8</td>
</tr>
</tbody>
</table>

*Age-Adjusted

**Suppressed due to small numbers

Source: NCI, State Cancer Profiles

### Cervix

See Eastern North Carolina rates. Chowan County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
**Risk Factors and Screening**

Chowan County residents had a higher prevalence of smoking and mammography coverage (in Medicare-enrolled women) compared to NC statewide.

Exhibit 35. Adult Respondents, Chowan County, North Carolina

**Behavioral Risk Factor Surveillance System, 2003-2009**

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker a</th>
<th>% Obese b</th>
<th>% Alcohol c</th>
<th>% Diabetes d</th>
<th>% Mammogram e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chowan County</td>
<td>28%</td>
<td>30%</td>
<td>10%</td>
<td>9%</td>
<td>78%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 36. Adult Respondents, Chowan County, North Carolina

**Behavioral Risk Factor Surveillance System, 2003-2009**

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
CRAVEN COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Craven County was public administration.[1] The median household income (2009) was $41,021 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 16%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Craven County was 10%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 77%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 22%, compared to 21% statewide. One-hundred and seven physicians provided primary care in Craven County (2008), which was a population to primary care physician ratio of 910 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Craven County had a total population of 103,505 with 146 persons per square mile. The county population was 23% children (<18), 62% adults ages 18-64, and 15% elders. Craven County was 22% African American (AA) (22% AA statewide) and 70% white (69% white statewide). Latinos/Hispanics (any race) comprised 6% of the population in Craven County (8% statewide) (Exhibit 37). The overall county population was 50% female and 50% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Craven County, the CRC age-adjusted incidence rate through 2004-2008 was 49.1 (95% CI 43.4, 55.4) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 54 new cases of CRC diagnosed in Craven County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 61.9 (95% CI 52.4, 72.7) for males and 38.7 (95% CI 31.9, 46.6) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 50.5 (95% CI 44.0, 57.9) for whites, and 48.4 (95% CI 35.6, 64.2) for African Americans.[4]

Mortality
In Craven County, CRC mortality rates for 2003-2007 were stable and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 20.6 (95% CI 16.8, 24.9) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Craven County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per 100,000).[4][5] The average annual percentage change in death rates declined at -0.3 percent (95% CI -
1.3-0.6) for 2003-2007. The CRC mortality rates (2003-2007) by gender were 14.9 (95% CI 10.8, 20.2) for females and 28.0 (95% CI 21.4, 35.9) for males per 100,000. CRC mortality rates (2003-2007) per 100,000 by race were 19.3 (95% CI 15.3, 24.2) for whites, and 26.0 (95% CI 16.7, 38.3) for African Americans.[4]

### Exhibit 38. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Craven County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRC Incidence (2004-2008)*</td>
<td>49.1</td>
<td>46.8</td>
</tr>
<tr>
<td>CRC Mortality (2003-2007)</td>
<td>20.6</td>
<td>17.3</td>
</tr>
</tbody>
</table>

*Age-Adjusted

Source: NCI, State Cancer Profiles

### Female Breast

#### Incidence

In Craven County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 125.7 (95% CI 112.9, 139.5) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 74 new cases of invasive female breast cancer diagnosed in Craven County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 135.6 (95% CI 120.4, 152.3) for whites, and 88.7 (95% CI 66.7, 115.7) for African Americans.[4]

#### Mortality

In Craven County, female breast cancer mortality rates for 2003-2007 were similar to the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 25.8 (95% CI 20.2, 32.6) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Craven County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates declined at -0.5 percent (95% CI -1.4, 0.4) for 2003-2007. Female breast cancer mortality rates (2003-2007) per 100,000 by race were 20.0 (95% CI 14.3, 27.2) for whites, and 48.2 (95% CI 32.4, 68.9) for African Americans.[4]

### Exhibit 39. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Craven County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Cancer Incidence (2004-2008)*</td>
<td>125.7</td>
<td>123.3</td>
</tr>
<tr>
<td>Breast Cancer Mortality (2003-2007)</td>
<td>25.8</td>
<td>24.8</td>
</tr>
</tbody>
</table>

*Age-Adjusted

Source: NCI, State Cancer Profiles

### Cervix

See Eastern North Carolina rates. Craven County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
**Risk Factors and Screening**

Craven County residents had a higher prevalence of obesity compared to NC statewide, but report less smoking and alcohol consumption. Mammography coverage in Medicare-enrolled women is higher than statewide.

---

**Exhibit 40. Adult Respondents, Craven County, North Carolina**

*Behavioral Risk Factor Surveillance System, 2003-2009*

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Craven County</td>
<td>20%</td>
<td>30%</td>
<td>10%</td>
<td>8%</td>
<td>81%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

*a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]*

*b. 2008, Percent of adults that report a BMI ≥30 [3]*

*c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]*

*d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]*

*e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]*

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Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

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**Exhibit 41. Adult Respondents, Craven County, North Carolina**

*Behavioral Risk Factor Surveillance System, 2003-2009*

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Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
CURRITUCK COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Currituck County was retail trade.[1] The median household income (2009) was $51,997 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 10%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Currituck County was 7%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 80%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 26%, compared to 21% statewide. Seven physicians provided primary care in Currituck County (2008), which was a population to primary care physician ratio of 3,451 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Currituck County had a total population of 23,547 with 90 persons per square mile. The county population was 24% children (<18), 63% adults ages 18-64, and 13% elders. Currituck County was 6% African American (AA) (22% AA statewide) and 90% white (69% white statewide). Latinos/Hispanics (any race) comprised 3% of the population in Currituck County (8% statewide) (Exhibit 42). The overall county population was 50% female and 50% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Currituck County, the CRC age-adjusted incidence rate for 2004-2008 was 52.9 (95% CI 40.1, 68.5) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 12 new cases of CRC diagnosed in Currituck County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 51.8 (95% CI 33.6, 76.1) for males and 54.1 (95% CI 36.9, 76.7) for females. By race, the CRC age-adjusted incidence rate per 100,000 was 52.6 (95% CI 39.3, 68.9) for whites, and the rate for African Americans was suppressed due to small numbers of cases.[4]

Mortality
In Currituck County, the CRC mortality rate (2003-2007) was 15.9 (95% CI 9.0, 25.8) per 100,000 which was lower than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Currituck County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per 100,000).[4][5] The average annual percentage change in death rates for 2003-2007 was suppressed due to small numbers.
of deaths. The CRC mortality rates (2003-2007) per 100,000 by gender were also suppressed due to small numbers of deaths. The CRC mortality rate (2003-2007) per 100,000 by race was 17.4 (95% CI 9.9, 28.3) for whites, and the rate for African Americans was suppressed due to small numbers of deaths.[4]

### Exhibit 43. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Currituck County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRC Incidence (2004-2008)*</td>
<td>52.9</td>
<td>46.8</td>
</tr>
<tr>
<td>CRC Mortality (2003-2007)</td>
<td>15.9</td>
<td>17.3</td>
</tr>
</tbody>
</table>

*Age-Adjusted  
**Suppressed due to small numbers  
Source: NCI, State Cancer Profiles

**Female Breast**

**Incidence**

In Currituck County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 99.7 (95% CI 76.7, 127.7) per 100,000, which was lower than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 13 new cases of invasive female breast cancer diagnosed in Currituck County and 6,189 new cases across the state for 2004-2008. The female breast cancer age-adjusted incidence rate was 106.1 (95% CI 81.2, 136.6) for whites, and the rate for African Americans was suppressed due to small numbers of cases.[4]

**Mortality**

In Currituck County, female breast cancer mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

### Exhibit 44. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Currituck County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Cancer Incidence (2004-2008)*</td>
<td>99.7</td>
<td>123.3</td>
</tr>
<tr>
<td>Breast Cancer Mortality (2003-2007)</td>
<td>**</td>
<td>24.8</td>
</tr>
</tbody>
</table>

*Age-Adjusted  
**Suppressed due to small numbers  
Source: NCI, State Cancer Profiles

**Cervix**

See Eastern North Carolina rates. Currituck County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
Risk Factors and Screening
Currituck County residents had a higher prevalence of smoking and alcohol consumption compared to NC statewide, but report less diabetes.

Exhibit 45. Adult Respondents, Currituck County, North Carolina

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 46. Adult Respondents, Currituck County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currituck County</td>
<td>34%</td>
<td>29%</td>
<td>23%</td>
<td>7%</td>
<td>66%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
DARE COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Dare County was retail trade.[1]
The median household income (2009) was $49,565 for a family of four, compared to $43,754 statewide.
The percentage of persons living below the poverty level in 2009 was 11%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Dare County was 10%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 92%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 27%, compared to 21% statewide. Thirty-two physicians provided primary care in Dare County (2008), which was a population to primary care physician ratio of 1,064 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Dare County had a total population of 33,920 with 89 persons per square mile. The county population was 20% children (<18), 65% adults ages 18-64, and 15% elders. Dare County was 3% African American (AA) (22% AA statewide) and 92% white (69% white statewide). Latinos/Hispanics (any race) comprised 7% of the population in Dare County (8% statewide) (Exhibit 47). The overall county population was 50% female and 50% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Dare County, the CRC age-adjusted incidence rate for 2004-2008 was 38.9 (95% CI 30.7, 48.7) per 100,000, which was lower than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 17 new cases of CRC diagnosed in Dare County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 41.3 (95% CI 29.6, 56.4) for males and 36.4 (95% CI 25.6, 50.5) for females. By race, the CRC age-adjusted incidence rate per 100,000 was 39.0 (95% CI 30.7, 49.0) for whites, and the rate for African Americans was suppressed due to small numbers of cases.[4]

Mortality
In Dare County, CRC mortality rates for 2003-2007 declined and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 12.3 (95% CI 7.8, 18.7) per 100,000 which was lower than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Dare County met the Healthy People 2010 mortality rate goal (13.9 CRC deaths per 100,000).[4][5] The average
annual percentage change in death rates declined at -2.8 percent (95% CI -4.4, -1.2) for 2003-2007. The CRC mortality rates by gender were suppressed due to small numbers of deaths. The CRC mortality rate (2003-2007) per 100,000 by race was 12.1 (95% CI 7.6, 18.5) for whites, and the rate for African Americans was suppressed due to small numbers of deaths.[4]

| Exhibit 48. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons |
|-----------------------------|-----------------------------|
| CRC Incidence (2004-2008)*  |    | North Carolina |
| Dare County                  | 38.9| 46.8            |
| CRC Mortality (2003-2007)    | 12.3| 17.3            |

*Age-Adjusted
Source: NCI, State Cancer Profiles

Female Breast

Incidence
In Dare County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 133.9 (95% CI 112.5, 158.4) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 29 new cases of invasive female breast cancer diagnosed in Dare County and 6,189 new cases across the state for 2004-2008. The female breast cancer age-adjusted incidence rate was 133.1 (95% CI 111.5, 158.0) for whites, and the rate for African Americans was suppressed due to small numbers of cases.[4]

Mortality
In Dare County, the female breast cancer mortality rate (2003-2007) was 28.3 (95% CI 19.0, 41.1) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Dare County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates for 2003-2007 was suppressed due to small numbers of deaths. The female breast cancer mortality rate (2003-2007) per 100,000 by race was 28.1 (95% CI 18.7, 41.0) for whites, and the rate for African Americans was suppressed due to small numbers of deaths.[4]

| Exhibit 49. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons |
|-----------------------------|-----------------------------|
|                                | Dare County | North Carolina |
| Breast Cancer Incidence (2004-2008)* | 133.9 | 123.3 |

*Age-Adjusted
Source: NCI, State Cancer Profiles

Cervix
See Eastern North Carolina rates. Dare County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
Risk Factors and Screening
Dare County residents have a higher prevalence of smoking and alcohol consumption compared to NC statewide, but lower diabetes.

Exhibit 50. Adult Respondents, Dare County, North Carolina

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 51. Adult Respondents, Dare County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker&lt;sup&gt;a&lt;/sup&gt;</th>
<th>% Obese&lt;sup&gt;b&lt;/sup&gt;</th>
<th>% Alcohol&lt;sup&gt;c&lt;/sup&gt;</th>
<th>% Diabetes&lt;sup&gt;d&lt;/sup&gt;</th>
<th>% Mammogram&lt;sup&gt;e&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dare County</td>
<td>34%</td>
<td>25%</td>
<td>28%</td>
<td>5%</td>
<td>65%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
DUPLIN COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Duplin County was manufacturing.[1] The median household income (2009) was $31,026 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 24%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Duplin County was 9%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 72%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007 the adult uninsured population (≥ age 18-64) was 27%, compared to 21% statewide. Twenty-two physicians provided primary care in Duplin County (2008), which was a population to primary care physician ratio of 2,410 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Duplin County had a total population of 58,505 with 72 persons per square mile. The county population was 25% children (<18), 61% adults ages 18-64, and 14% elders. Duplin County was 25% African American (AA) (22% AA statewide) and 57% white (69% white statewide). Latinos/Hispanics (any race) comprised 21% of the population in Duplin County (8% statewide) (Exhibit 52). The overall county population was 51% female and 49% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Duplin County, the CRC age-adjusted incidence rate for 2004-2008 was 35.1 (95% CI 28.4, 42.8) per 100,000, which was lower than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 19 new cases of CRC diagnosed in Duplin County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 44.5 (95% CI 33.3, 58.3) for males and 26.5 (95% CI 19.0, 36.0) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 35.3 (95% CI 27.4, 44.8) for whites, and 33.6 (95% CI 22.1, 49.3) for African Americans.[4]

Mortality
In Duplin County, CRC mortality rates for 2003-2007 declined and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 13.9 (95% CI 9.8, 19.2) per 100,000 which was lower than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Duplin County met the Healthy People 2010 mortality rate goal (13.9 CRC deaths per 100,000).[4][5] The
average annual percentage change in death rates declined at -7.2 percent (95% CI -13.0, -1.0) for 2003-
2007. The CRC mortality rate (2003-2007) by gender was suppressed for females due to small numbers
of deaths, and the rate for males was 19.5 (95% CI 12.1, 29.6) per 100,000. The CRC mortality rate
(2003-2007) per 100,000 by race was 12.2 (95% CI 7.7, 18.4) for whites, and the rate for African
Americans was suppressed due to small numbers of deaths.[4]

| Exhibit 53. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons |
|--------------------------------|---------------------------|
| CRC Incidence (2004-2008)*   | 35.1                      |
| CRC Mortality (2003-2007)     | 13.9                      |

*Age-Adjusted
Source: NCI, State Cancer Profiles

Female Breast

*Incidence*
In Duplin County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was
95.0 (95% CI 79.8, 112.4) per 100,000, which was lower than the overall statewide breast cancer rate of
123.3 (95% CI 121.9, 124.7). On average, there were 28 new cases of invasive female breast cancer
diagnosed in Duplin County and 6,189 new cases across the state for 2004-2008. Female breast cancer
age-adjusted incidence rates were 93.1 (95% CI 75.2, 114.1) for whites, and 100.7 (95% CI 73.1, 135.7) for African Americans.[4]

*Mortality*
In Duplin County, female breast cancer mortality rates for 2003-2007 increased and were similar to the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 29.4 (95% CI 21.4, 39.6) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Duplin County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates increased at 0.3 percent (95% CI -1.4, 0.4) for 2003-2007. Female breast cancer mortality rates (2003-2007) per 100,000 by race were 27.3 (95% CI 18.2, 39.5) for whites, and 34.4 (95% CI 19.4, 57.0) for African Americans.[4]

| Exhibit 54. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons |
|--------------------------------|---------------------------|
| Breast Cancer Incidence (2004-2008)* | 95.0                      |
| Breast Cancer Mortality (2003-2007)   | 29.4                      |

*Age-Adjusted
Source: NCI, State Cancer Profiles

Cervix
See Eastern North Carolina rates. Duplin County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
Risk Factors and Screening
Duplin County residents had a higher prevalence of obesity and diabetes compared to NC statewide, but report less smoking.

Exhibit 55. Adult Respondents, Duplin County, North Carolina

<table>
<thead>
<tr>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duplin County</td>
<td>19%</td>
<td>32%</td>
<td>8%</td>
<td>14%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 56. Adult Respondents, Duplin County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duplin County</td>
<td>19%</td>
<td>32%</td>
<td>8%</td>
<td>14%</td>
<td>62%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
EDGECOMBE COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Edgecombe County was manufacturing.[1] The median household income (2009) was $32,172 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 26%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Edgecombe County was 16%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 78%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 14%, compared to 21% statewide. Twenty-one physicians provided primary care in Edgecombe County (2008), which was a population to primary care physician ratio of 2,495 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Edgecombe County had a total population of 56,552 with 112 persons per square mile. The county population was 25% children (<18), 61% adults ages 18-64, and 14% elders. Edgecombe County was 57% African American (AA) (22% AA statewide) and 39% white (69% white statewide). Latinos/Hispanics (any race) comprised 4% of the population in Edgecombe County (8% statewide) (Exhibit 57). The overall county population was 54% female and 46% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Edgecombe County, the CRC age-adjusted incidence rate for 2004-2008 was 61.5 (95% CI 52.6, 71.6) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 35 new cases of CRC diagnosed in Edgecombe County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 71.2 (95% CI 55.4, 89.8) for males and 56.6 (95% CI 45.6, 69.5) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 49.8 (95% CI 38.6, 63.4) for whites, and 73.3 (95% CI 59.5, 89.1) for African Americans.[4]

Mortality
In Edgecombe County, CRC mortality rates for 2003-2007 were stable and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 22.1 (95% CI 16.9, 28.5) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Edgecombe County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per
The average annual percentage change in death rates declined at -0.3 percent (95% CI -1.3, 0.8) for 2003-2007. The CRC mortality rates (2003-2007) by gender were 17.0 (95% CI 11.3, 24.8) for females and 30.6 (95% CI 20.5, 43.6) for males per 100,000. CRC mortality rates (2003-2007) per 100,000 by race were 22.3 (95% CI 15.0, 32.0) for whites, and 22.0 (95% CI 14.8, 31.4) for African Americans.[4]

### Exhibit 58. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Edgecombe County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRC Incidence (2004-2008)*</td>
<td>61.5</td>
<td>46.8</td>
</tr>
<tr>
<td>CRC Mortality (2003-2007)</td>
<td>22.1</td>
<td>17.3</td>
</tr>
</tbody>
</table>
*Age-Adjusted

Source: NCI, State Cancer Profiles

### Female Breast

#### Incidence

In Edgecombe County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 144.0 (95% CI 125.8, 164.2) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 46 new cases of invasive female breast cancer diagnosed in Edgecombe County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 154.5 (95% CI 126.5, 187.2) for whites, and 136.8 (95% CI 112.8, 164.4) for African Americans.[4]

#### Mortality

In Edgecombe County, female breast cancer mortality rates for 2003-2007 increased and were higher than the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 35.6 (95% CI 27.0, 46.1) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Edgecombe County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates increased at 1.0 percent (95% CI -0.2, 2.2) for 2003-2007. Female breast cancer mortality rates (2003-2007) per 100,000 by race were 34.7 (95% CI 22.6, 51.7) for whites, and 35.7 (95% CI 24.3, 50.7) for African Americans.[4]

### Exhibit 59. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Edgecombe County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Cancer Incidence (2004-2008)*</td>
<td>144.0</td>
<td>123.3</td>
</tr>
<tr>
<td>Breast Cancer Mortality (2003-2007)</td>
<td>35.6</td>
<td>24.8</td>
</tr>
</tbody>
</table>
*Age-Adjusted

Source: NCI, State Cancer Profiles
Cervix
See Eastern North Carolina rates. Edgecombe County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.

Risk Factors and Screening
Edgecombe County residents have a higher prevalence of smoking, obesity and diabetes compared to NC statewide, but report less alcohol consumption. Mammography in Medicare-enrolled females is higher than statewide.

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 60. Adult Respondents, Edgecombe County, North Carolina

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 61. Adult Respondents, Edgecombe County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker a</th>
<th>% Obese b</th>
<th>% Alcohol c</th>
<th>% Diabetes d</th>
<th>% Mammogram e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edgecombe County</td>
<td>28%</td>
<td>37%</td>
<td>9%</td>
<td>13%</td>
<td>71%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
GATES COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Gates County was educational services.[1] The median household income (2009) was $42,742 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 18%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Gates County was 7%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 80%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 25%, compared to 21% statewide. One physician provided primary care in Gates County (2008), which was a population to primary care physician ratio of 11,746 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Gates County had a total population of 12,197 with 36 persons per square mile. The county population was 24% children (<18), 61% adults ages 18-64, and 15% elders. Gates County was 33% African American (AA) (22% AA statewide) and 64% white (69% white statewide). Latinos/Hispanics (any race) comprised 1% of the population in Gates County (8% statewide) (Exhibit 62). The overall county population was 51% female and 49% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Gates County, the CRC age-adjusted incidence rate for 2004-2008 was 60.4 (95% CI 42.8, 83.1) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 8 new cases of CRC diagnosed in Gates County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 55.3 (95% CI 32.4, 89.1) for males and 64.5 (95% CI 39.8, 99.5) for females. By race, the CRC age-adjusted incidence rate per 100,000 was 61.9 (95% CI 39.9, 92.4) for whites, and the rate for African Americans was suppressed due to small numbers of cases.[4]
Mortality

In Gates County, CRC mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

Mortality

In Gates County, female breast cancer mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

Cervix

See Eastern North Carolina rates. Gates County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.

| Exhibit 63. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons |
|-----------------|-----------------|
|                  | Gates County    | North Carolina |
| CRC Incidence (2004-2008)* | 60.4            | 46.8            |
| CRC Mortality (2003-2007)   | **              | 17.3            |
| *Age-Adjusted              | **              | **              |
| **Suppressed due to small numbers | **              | **              |

Source: NCI, State Cancer Profiles

Female Breast

Incidence

In Gates County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 173.4 (95% CI 132.3, 224.0) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 12 new cases of invasive female breast cancer diagnosed in Gates County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 186.8 (95% CI 133.0, 256.7) for whites, and 157.5 (95% CI 97.3, 244.1) for African Americans.[4]

Mortality

In Gates County, female breast cancer mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

| Exhibit 64. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons |
|-----------------|-----------------|
|                  | Gates County    | North Carolina |
| Breast Cancer Incidence (2004-2008)* | 173.4            | 123.3            |
| Breast Cancer Mortality (2003-2007)   | **              | 24.8            |
| *Age-Adjusted              | **              | **              |
| **Suppressed due to small numbers | **              | **              |

Source: NCI, State Cancer Profiles

Cervix

See Eastern North Carolina rates. Gates County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
**Risk Factors and Screening**

Gates County residents have a higher prevalence of obesity and diabetes compared to NC statewide, but report less smoking and alcohol consumption.

---

**Exhibit 65. Adult Respondents, Gates County, North Carolina**

*Behavioral Risk Factor Surveillance System, 2003-2009*

![Bar chart showing prevalence of smoking, obesity, alcohol consumption, diabetes, and mammogram rates for Gates County and North Carolina, 2003-2009.](chart)

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

---

**Exhibit 66. Adult Respondents, Gates County, North Carolina**

*Behavioral Risk Factor Surveillance System, 2005-2009*

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gates County</td>
<td>15%</td>
<td>34%</td>
<td>10%</td>
<td>18%</td>
<td>64%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
GREENE COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Greene County was healthcare and social assistance.[1] The median household income (2009) was $38,733 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 23%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Greene County was 11%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 63%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 30%, compared to 21% statewide. Five physicians provided primary care in Greene County (2008), which was a population to primary care physician ratio of 4,131 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Greene County had a total population of 21,362 with 80 persons per square mile. The county population was 23% children (<18), 64% adults ages 18-64, and 13% elders. Greene County was 37% African American (AA) (22% AA statewide) and 51% white (69% white statewide). Latinos/Hispanics (any race) comprised 14% of the population in Greene County (8% statewide) (Exhibit 67). The overall county population was 46% female and 54% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Greene County, the CRC age-adjusted incidence rate through 2004-2008 was 46.6 (95% CI 34.3, 62.0) per 100,000, which was lower than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 10 new cases of CRC diagnosed in Greene County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 51.9 (95% CI 30.7, 81.4) for males and 44.0 (95% CI 28.6, 65.3) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 46.5 (95% CI 31.3, 66.7) for whites, and 46.7 (95% CI 27.4, 74.2) for African Americans.[4]

Mortality
In Greene County, the CRC mortality rate (2003-2007) was 28.3 (95% CI 18.6, 41.2) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Greene County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per 100,000).[4][5] The average annual percentage change in death rates for 2003-2007 was suppressed due to small numbers of deaths. The CRC mortality rate (2003-2007) by gender was 28.9 (95% CI 16.9-46.6) for females and the
rate for males was suppressed due to the small number of deaths. The CRC mortality rate (2003-2007) per 100,000 by race was 28.3 (95% CI 16.5, 45.5) for whites, and the rate for African Americans was suppressed due to small numbers of deaths.[4]

| Exhibit 68. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons |
|---------------------------------|---------------------------------|
|                                  | Greene County | North Carolina |
| CRC Incidence (2004-2008)*      | 46.6          | 46.8           |
| CRC Mortality (2003-2007)       | 28.3          | 17.3           |

*Age-Adjusted
Source: NCI, State Cancer Profiles

Female Breast

Incidence

In Greene County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 98.9 (95% CI 74.0, 129.9) per 100,000, which was lower than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 11 new cases of invasive female breast cancer diagnosed in Greene County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 95.6 (95% CI 65.1, 135.9) for whites, and 109.2 (95% CI 67.3, 167.6) for African Americans.[4]

Mortality

In Greene County, female breast cancer mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

| Exhibit 69. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons |
|---------------------------------|---------------------------------|
|                                  | Greene County | North Carolina |
| Breast Cancer Incidence (2004-2008)* | 98.9          | 123.3           |
| Breast Cancer Mortality (2003-2007)  | **            | 24.8            |

*Age-Adjusted
**Suppressed due to small numbers
Source: NCI, State Cancer Profiles

Cervix

See Eastern North Carolina rates. Greene County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
Risk Factors and Screening
Green County residents have a higher prevalence of obesity and diabetes compared to NC statewide, but report less smoking and alcohol consumption.

Exhibit 70. Adult Respondents, Greene County, North Carolina

Exhibit 71. Adult Respondents, Greene County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greene County</td>
<td>11%</td>
<td>32%</td>
<td>4%</td>
<td>28%</td>
<td>52%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings;
North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
HALIFAX COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Halifax County was retail trade.[1] The median household income (2009) was $29,966 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 27%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Halifax County was 13%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 75%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 14%, compared to 21% statewide. Forty-six physicians provided primary care in Halifax County (2008), which was a population to primary care physician ratio of 1,198 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Halifax County had a total population of 54,691 with 76 persons per square mile. The county population was 23% children (<18), 61% adults ages 18-64, and 16% elders. Halifax County was 53% African American (AA) (22% AA statewide) and 40% white (69% white statewide). Latinos/Hispanics (any race) comprised 2% of the population in Halifax County (8% statewide) (Exhibit 72). The overall county population was 52% female and 48% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Halifax County, the CRC age-adjusted incidence rate for 2004-2008 was 51.8 (95% CI 44.4, 60.3) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 35 new cases of CRC diagnosed in Halifax County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 64.9 (95% CI 52.1, 79.9) for males and 42.9 (95% CI 34.0, 53.6) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 55.6 (95% CI 44.9, 68.4) for whites, and 49.6 (95% CI 39.0, 62.2) for African Americans.[4]

Mortality
In Halifax County, CRC mortality rates for 2003-2007 were stable and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 21.1 (95% CI 16.4, 26.7) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Halifax County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per 100,000).[4][5] The average annual percentage change in death rates declined at -0.5 percent (95% CI -
1.4, 0.5) for 2003-2007. The CRC mortality rates (2003-2007) by gender were 18.0 (95% CI 12.6, 25.3) for females and 25.5 (95% CI 17.4, 35.9) for males per 100,000. CRC mortality rates (2003-2007) per 100,000 by race were 16.9 (95% CI 11.3, 24.7) for whites, and 25.4 (95% CI 17.9, 35.0) for African Americans.[4]

### Exhibit 73. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Halifax County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRC Incidence (2004-2008)*</td>
<td>51.8</td>
<td>46.8</td>
</tr>
<tr>
<td>CRC Mortality (2003-2007)</td>
<td>21.1</td>
<td>17.3</td>
</tr>
</tbody>
</table>

*Age-Adjusted

Source: NCI, State Cancer Profiles

### Female Breast

#### Incidence

In Halifax County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 137.5 (95% CI 120.7, 156.2) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 50 new cases of invasive female breast cancer diagnosed in Halifax County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 152.2 (95% CI 126.7, 182.0) for whites, and 123.9 (95% CI 101.3, 150.0) for African Americans.[4]

#### Mortality

In Halifax County, female breast cancer mortality rates for 2003-2007 increased and were higher than the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 34.7 (95% CI 26.5, 44.7) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Halifax County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates increased at 0.4 percent (95% CI -0.8, 1.5) for 2003-2007. Female breast cancer mortality rates (2003-2007) per 100,000 by race were 34.2 (95% CI 22.2, 50.9) for whites, and 37.3 (95% CI 25.6, 52.6) for African Americans.[4]

### Exhibit 74. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Halifax County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Cancer Incidence (2004-2008)*</td>
<td>137.5</td>
<td>123.3</td>
</tr>
<tr>
<td>Breast Cancer Mortality (2003-2007)</td>
<td>34.7</td>
<td>24.8</td>
</tr>
</tbody>
</table>

*Age-Adjusted

Source: NCI, State Cancer Profiles

### Cervix

See Eastern North Carolina rates. Halifax County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
Risk Factors and Screening
Halifax County residents had a higher prevalence of obesity and diabetes compared to NC statewide, but report less alcohol consumption.

Exhibit 75. Adult Respondents, Halifax County, North Carolina

Halifax County North Carolina

% Smoker % Obese % Alcohol % Diabetes % Mammogram

Sources: Halifax County North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 76. Adult Respondents, Halifax County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halifax County</td>
<td>22%</td>
<td>37%</td>
<td>8%</td>
<td>15%</td>
<td>65%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
HERTFORD COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Hertford County was manufacturing.[1] The median household income (2009) was $31,879 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 25%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Hertford County was 9%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 68%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 16%, compared to 21% statewide. Twenty-eight physicians provided primary care in Hertford County (2008), which was a population to primary care physician ratio of 834 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Hertford County had a total population of 24,669 with 70 persons per square mile. The county population was 21% children (<18), 63% adults ages 18-64, and 16% elders. Hertford County was 61% African American (AA) (22% AA statewide) and 36% white (69% white statewide). Latinos/Hispanics (any race) comprised 3% of the population in Hertford County (8% statewide) (Exhibit 77). The overall county population was 51% female and 49% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Hertford County, the CRC age-adjusted incidence rate for 2004-2008 was 64.4 (95% CI 51.8, 79.4) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 18 new cases of CRC diagnosed in Hertford County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 64.6 (95% CI 44.5, 90.5) for males and 67.7 (95% CI 50.9, 88.8) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 70.4 (95% CI 51.2, 95.7) for whites, and 61.5 (95% CI 44.8, 82.4) for African Americans.[4]

Mortality
In Hertford County, CRC mortality rates for 2003-2007 increased and were higher than the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 29.9 (95% CI 21.4, 40.9) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Hertford County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per 100,000).[4][5] The average annual percentage change in death rates increased at 0.1 percent (95% CI -
1.0, 1.2) for 2003-2007. The CRC mortality rates (2003-2007) by gender were 26.9 (95% CI 17.0, 41.2) for females and 35.4 (95% CI 20.7, 56.4) for males per 100,000. The CRC mortality rate (2003-2007) per 100,000 by race was suppressed for whites due to small numbers of deaths, and the rate for African Americans was 36.8 (95% CI 24.0, 54.0).[4]

Exhibit 78. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Hertford County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRC Incidence (2004-2008)*</td>
<td>64.4</td>
<td>46.8</td>
</tr>
<tr>
<td>CRC Mortality (2003-2007)</td>
<td>29.9</td>
<td>17.3</td>
</tr>
</tbody>
</table>

*Age-Adjusted

Source: NCI, State Cancer Profiles

Female Breast

Incidence

In Hertford County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 113.3 (95% CI 90.1, 141.0) per 100,000, which was lower than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 17 new cases of invasive female breast cancer diagnosed in Hertford County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 134.4 (95% CI 94.4, 187.5) for whites, and 100.9 (95% CI 72.8, 136.5) for African Americans.[4]

Mortality

In Hertford County, female breast cancer mortality rates for 2003-2007 increased and were similar to the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 38.7 (95% CI 25.9, 56.1) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Hertford County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates increased at 0.6 percent (95% CI -1.3, 2.5) for 2003-2007. The female breast cancer mortality rate (2003-2007) per 100,000 by race was suppressed for whites due to small numbers of deaths, and the rate for African Americans was 43.8 (95% CI 25.9, 69.7).[4]

Exhibit 79. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Hertford County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Cancer Incidence (2004-2008)*</td>
<td>113.3</td>
<td>123.3</td>
</tr>
<tr>
<td>Breast Cancer Mortality (2003-2007)</td>
<td>38.7</td>
<td>24.8</td>
</tr>
</tbody>
</table>

*Age-Adjusted

Source: NCI, State Cancer Profiles
Cervix
See Eastern North Carolina rates. Hertford County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.

Risk Factors and Screening
Hertford County residents had a higher prevalence of smoking, obesity, and diabetes compared to NC statewide. Mammography in medicare-enrolled women was higher than statewide.

Exhibit 80. Adult Respondents, Hertford County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>Hertford County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Smoker</td>
<td>24%</td>
<td>22%</td>
</tr>
<tr>
<td>% Obese</td>
<td>34%</td>
<td>29%</td>
</tr>
<tr>
<td>% Alcohol</td>
<td>7%</td>
<td>12%</td>
</tr>
<tr>
<td>% Diabetes</td>
<td>16%</td>
<td>9%</td>
</tr>
<tr>
<td>% Mammogram</td>
<td>69%</td>
<td>67%</td>
</tr>
</tbody>
</table>

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 81. Adult Respondents, Hertford County, North Carolina

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
HYDE COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Hyde County was public administration.[1] The median household income (2009) was $33,097 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 24%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Hyde County was 8%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 66%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 20%, compared to 21% statewide. There are 0 physicians in primary care in Hyde County (2008), which was a population to primary care physician ratio of 5,260 to 0.*[3] *Data unreliable

Demographics
Based on data from the 2010 U.S. Census, Hyde County had a total population of 5,810 with 10 persons per square mile. The county population was 19% children (<18), 66% adults ages 18-64, and 15% elders. Hyde County was 32% African American (AA) (22% AA statewide) and 64% white (69% white statewide). Latinos/Hispanics (any race) comprised 7% of the population in Hyde County (8% statewide) (Exhibit 82). The overall county population was 45% female and 55% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Hyde County, the CRC age-adjusted incidence rate for 2004-2008 was 56.3 (95% CI 34.3, 88.7) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 4 new cases of CRC diagnosed in Hyde County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 for males and females were suppressed due to small numbers of cases. By race, the CRC age-adjusted incidence rate per 100,000 was 69.8 (95% CI 40.5, 115.0) for whites, and the rate for African Americans was suppressed due to small numbers of cases.[4]
Mortality
In Hyde County, CRC mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

Exhibit 83. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Hyde County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorectal Incidence (2004-2008)*</td>
<td>56.3</td>
<td>46.8</td>
</tr>
<tr>
<td>Colorectal Mortality (2003-2007)</td>
<td>**</td>
<td>17.3</td>
</tr>
</tbody>
</table>

*Age-Adjusted  
**Suppressed due to small numbers  
Source: NCI, State Cancer Profiles

Female Breast

Incidence
In Hyde County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 141.8 (95% CI 86.5, 221.4) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 4 new cases of invasive female breast cancer diagnosed in Hyde County and 6,189 new cases across the state for 2004-2008. Incidence rates by race were suppressed due to small numbers of cases.[4]

Mortality
In Hyde County, female breast cancer mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

Exhibit 84. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Hyde County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Cancer Incidence (2004-2008)*</td>
<td>141.8</td>
<td>123.3</td>
</tr>
<tr>
<td>Breast Cancer Mortality (2003-2007)</td>
<td>**</td>
<td>24.8</td>
</tr>
</tbody>
</table>

*Age-Adjusted  
**Suppressed due to small numbers  
Source: NCI, State Cancer Profiles

Cervix
See Eastern North Carolina rates. Hyde County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
Risk Factors and Screening
Hyde County residents had a higher prevalence of obesity and diabetes compared to NC statewide. Mammography in Medicare-enrolled women was lower than the statewide prevalence.

*Data were not available for smoker and alcohol behavioral factors at the county level.
Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 85. Adult Respondents, Hyde County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyde County</td>
<td>*</td>
<td>31%</td>
<td>*</td>
<td>20%</td>
<td>57%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

*Data unavailable

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
JONES COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Jones County was transportation and warehousing.[1] The median household income (2009) was $35,079 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 18%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Jones County was 10%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 70%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 24%, compared to 21% statewide. Seven physicians provided primary care in Jones County (2008), which was a population to primary care physician ratio of 1,423 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Jones County had a total population of 10,153 with 22 persons per square mile. The county population was 22% children (<18), 61% adults ages 18-64, and 17% elders. Jones County was 32% African American (AA) (22% AA statewide) and 63% white (69% white statewide). Latinos/Hispanics (any race) comprised 4% of the population in Jones County (8% statewide) (Exhibit 87). The overall county population was 52% female and 48% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Jones County, the CRC age-adjusted incidence rate for 2004-2008 was 40.7 (95% CI 26.7, 60.1) per 100,000, which was lower than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 5 new cases of CRC diagnosed in Jones County, and 4,720 new cases across the state for 2004-2008. The CRC incidence rates by gender and race were suppressed due to small numbers of cases.[4]
Mortality
In Jones County, CRC mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

| Exhibit 88. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons |
|-------------------------------|--------|-----------------|
|                               | Jones County | North Carolina |
| CRC Incidence (2004-2008)*    | 40.7     | 46.8            |
| CRC Mortality (2003-2007)     | **       | 17.3            |

*Age-Adjusted
**Suppressed due to small numbers
Source: NCI, State Cancer Profiles

Female Breast
Incidence
In Jones County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 94.7 (95% CI 64.1, 136.2) per 100,000, which was lower than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 6 new cases of invasive female breast cancer diagnosed in Jones County and 6,189 new cases across the state for 2004-2008. The female breast cancer age-adjusted incidence rate was 95.4 (95% CI 57.6, 150.7) for whites, and the rate for African Americans was suppressed due to small numbers of cases.[4]

Mortality
In Jones County, female breast cancer mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

| Exhibit 89. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons |
|-------------------------------|--------|-----------------|
|                               | Jones County | North Carolina |
| Breast Cancer Incidence (2004-2008)* | 94.7     | 123.3           |
| Breast Cancer Mortality (2003-2007) | **       | 24.8            |

*Age-Adjusted
**Suppressed due to small numbers
Source: NCI, State Cancer Profiles

Cervix
See Eastern North Carolina rates. Jones County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
Risk Factors and Screening

Jones County residents had a higher prevalence of obesity and diabetes compared to NC statewide. Mammography in medicare-enrolled women was slightly higher than statewide prevalence.

Exhibit 90. Adult Respondents, Jones County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jones County</td>
<td>*</td>
<td>32%</td>
<td>6%</td>
<td>15%</td>
<td>68%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

*Data were not available for smoker behavioral factor at the county level.

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 91. Adult Respondents, Jones County, North Carolina

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

*Data unavailable

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
LENOIR COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Lenoir County was manufacturing.[1] The median household income (2009) was $34,213 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 21%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Lenoir County was 11%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 74%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 17%, compared to 21% statewide. Forty-eight physicians provided primary care in Lenoir County (2008), which was a population to primary care physician ratio of 1,181 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Lenoir County had a total population of 59,495 with 149 persons per square mile. The county population was 24% children (<18), 60% adults ages 18-64, and 16% elders. Lenoir County was 41% African American (AA) (22% AA statewide) and 53% white (69% white statewide). Latinos/Hispanics (any race) comprised 7% of the population in Lenoir County (8% statewide) (Exhibit 92). The overall county population was 53% female and 47% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Lenoir County, the CRC age-adjusted incidence rate for 2004-2008 was 66.3 (95% CI 58.0, 75.5) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 47 new cases of CRC diagnosed in Lenoir County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 81.4 (95% CI 66.4, 98.8) for males and 58.8 (95% CI 48.7, 70.5) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 59.7 (95% CI 50.8, 70.8) for whites, and 76.3 (95% CI 61.5, 93.7) for African Americans.[4]

Mortality
In Lenoir County, CRC mortality rates for 2003-2007 were stable and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 21.4 (95% CI 16.8, 26.9) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Lenoir County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per
The average annual percentage change in death rates declined at -0.4 percent (95% CI -1.4, 0.6) through 2003-2007. The CRC mortality rates (2003-2007) by gender were 19.1 (95% CI 13.8, 26.2) for females and 23.1 (95% CI 15.7, 32.7) for males per 100,000. CRC mortality rates (2003-2007) per 100,000 by race were 21.3 (95% CI 15.6, 28.5) for whites, and 22.5 (95% CI 14.8, 32.8) for African Americans.[4]

Exhibit 93. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Lenoir County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRC Incidence (2004-2008)*</td>
<td>66.3</td>
<td>46.8</td>
</tr>
<tr>
<td>CRC Mortality (2003-2007)</td>
<td>21.4</td>
<td>17.3</td>
</tr>
</tbody>
</table>

*Age-Adjusted
Source: NCI, State Cancer Profiles

Female Breast

Incidence

In Lenoir County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 148.1 (95% CI 131.3, 166.7) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 58 new cases of invasive female breast cancer diagnosed in Lenoir County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 151.8 (95% CI 130.0, 176.6) for whites, and 142.5 (95% CI 116.4, 173.0) for African Americans.[4]

Mortality

In Lenoir County, female breast cancer mortality rates for 2003-2007 increased and were similar to the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 30.5 (95% CI 23.2, 39.5) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Lenoir County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates declined at -0.4 percent (95% CI -1.4, 0.6) for 2003-2007. Female breast cancer mortality rates (2003-2007) per 100,000 by race were 23.5 (95% CI 15.7, 34.4) for whites, and 41.1 (95% CI 27.8, 58.7) for African Americans.[4]

Exhibit 94. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Lenoir County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Cancer Incidence (2004-2008)*</td>
<td>148.1</td>
<td>123.3</td>
</tr>
<tr>
<td>Breast Cancer Mortality (2003-2007)</td>
<td>30.5</td>
<td>24.8</td>
</tr>
</tbody>
</table>

*Age-Adjusted
Source: NCI, State Cancer Profiles
Cervix
See Eastern North Carolina rates. Lenoir County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.

Risk Factors and Screening
Lenoir County residents had a higher prevalence of smoking, obesity and diabetes compared to NC statewide, but report less mammography in medicare-enrolled women.

![Exhibit 95. Adult Respondents, Lenoir County, North Carolina Behavioral Risk Factor Surveillance System, 2003-2009](image)

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 96. Adult Respondents, Lenoir County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker a</th>
<th>% Obese b</th>
<th>% Alcohol c</th>
<th>% Diabetes d</th>
<th>% Mammogram e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lenoir County</td>
<td>24%</td>
<td>33%</td>
<td>7%</td>
<td>14%</td>
<td>62%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
MARTIN COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Martin County was manufacturing.[1] The median household income (2009) was $31,514 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 21%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Martin County was 10%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 77%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 16%, compared to 21% statewide. Fifteen physicians provided primary care in Martin County (2008), which was a population to primary care physician ratio of 1,566 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Martin County had a total population of 24,505 with 53 persons per square mile. The county population was 22% children (<18), 60% adults ages 18-64, and 18% elders. Martin County was 44% African American (AA) (22% AA statewide) and 53% white (69% white statewide). Latinos/Hispanics (any race) comprised 3% of the population in Martin County (8% statewide) (Exhibit 97). The overall county population was 53% female and 47% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Martin County, the CRC age-adjusted incidence rate for 2004-2008 was 50.8 (95% CI 40.0, 63.8) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 16 new cases of CRC diagnosed in Martin County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 80.8 (95% CI 59.5, 107.6) for males and 31.4 (95% CI 20.6, 46.4) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 54.4 (95% CI 40.1, 72.6) for whites, and 44.8 (95% CI 29.7, 65.3) for African Americans.[4]

Mortality
In Martin County, the CRC mortality rate (2003-2007) was 26.3 (95% CI 18.8, 36.1) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Martin County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per 100,000).[4][5] The average annual percentage change in death rates for 2003-2007 was suppressed due to small numbers of
deaths. The CRC mortality rates (2003-2007) by gender were 19.7 (95% CI 11.7, 31.7) for females and 35.1 (95% CI 21.4, 54.2) for males per 100,000. CRC mortality rates (2003-2007) per 100,000 by race were 19.6 (95% CI 11.5, 31.7) for whites, and 34.5 (95% CI 21.3, 53.2) for African Americans.[4]  

<table>
<thead>
<tr>
<th>Exhibit 98. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CRC Incidence (2004-2008)</strong></td>
</tr>
<tr>
<td>Martin County</td>
</tr>
<tr>
<td>North Carolina</td>
</tr>
<tr>
<td><strong>CRC Mortality (2003-2007)</strong></td>
</tr>
<tr>
<td>Martin County</td>
</tr>
<tr>
<td>North Carolina</td>
</tr>
</tbody>
</table>

*Age-Adjusted  
Source: NCI, State Cancer Profiles  

Female Breast  

**Incidence**  
In Martin County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 114.4 (95% CI 91.8, 141.1) per 100,000, which was lower than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 19 new cases of invasive female breast cancer diagnosed in Martin County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 125.9 (95% CI 95.5, 164.0) for whites, and 97.5 (95% CI 66.2, 138.8) for African Americans.[4]  

**Mortality**  
In Martin County, the female breast cancer mortality rate (2003-2007) was 29.7 (95% CI 18.7, 45.1) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Martin County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000). [4][5] The average annual percentage change in death rates for 2003-2007 was suppressed due to small numbers of deaths. The female breast cancer mortality rate (2003-2007) per 100,000 by race was suppressed for whites due to small numbers of deaths, and the rate for African Americans was 50.7 (95% CI 29.1, 82.4). [4]  

<table>
<thead>
<tr>
<th>Exhibit 99. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Martin County</td>
</tr>
<tr>
<td>North Carolina</td>
</tr>
<tr>
<td>Martin County</td>
</tr>
<tr>
<td>North Carolina</td>
</tr>
</tbody>
</table>

*Age-Adjusted  
Source: NCI, State Cancer Profiles  

Cervix  
See Eastern North Carolina rates. Martin County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
Risk Factors and Screening
Martin County residents had a higher prevalence of obesity and diabetes compared to NC statewide, but report less smoking.

Exhibit 100. Adult Respondents, Martin County, North Carolina

Sources: County Health Rankings, North Carolina County Health Rankings;
North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 101. Adult Respondents, Martin County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Martin County</td>
<td>16%</td>
<td>33%</td>
<td>6%</td>
<td>16%</td>
<td>66%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings;
North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
NASH COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Nash County was manufacturing.[1] The median household income (2009) was $39,770 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 16%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Nash County was 13%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 72%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 19%, compared to 21% statewide. Ninety-three physicians provided primary care in Nash County (2008), which was a population to primary care physician ratio of 1,566 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Nash County had a total population of 95,840 with 177 persons per square mile. The county population was 24% children (<18), 62% adults ages 18-64, and 14% elders. Nash County was 37% African American (AA) (22% AA statewide) and 56% white (69% white statewide). Latinos/Hispanics (any race) comprised 6% of the population in Nash County (8% statewide) (Exhibit 102). The overall county population was 52% female and 48% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Nash County, the CRC age-adjusted incidence rate for 2004-2008 was 55.1 (95% CI 48.9, 62.0) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 58 new cases of CRC diagnosed in Nash County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 72.6 (95% CI 61.7, 84.9) for males and 41.6 (95% CI 34.5, 49.7) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 55.0 (95% CI 47.7, 63.1) for whites, and 54.9 (95% CI 43.4, 68.5) for African Americans.[4]

Mortality
In Nash County, CRC mortality rates for 2003-2007 were stable and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 20.4 (95% CI 16.6, 24.8) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Nash County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per
100,000).[4][5] The average annual percentage change in death rates declined at -0.2 percent (95% CI -1.2, 0.8) for 2003-2007. The CRC mortality rates (2003-2007) by gender were 16.5 (95% CI 12.2, 22.1) for females and 25.5 (95% CI 19.0, 33.5) for males per 100,000. CRC mortality rates (2003-2007) per 100,000 by race were 18.4 (95% CI 14.3, 23.4) for whites, and 25.6 (95% CI 17.7, 35.8) for African Americans.[4]

### Exhibit 103. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Nash County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRC Incidence (2004-2008)*</td>
<td>55.1</td>
<td>46.8</td>
</tr>
<tr>
<td>CRC Mortality (2003-2007)</td>
<td>20.4</td>
<td>17.3</td>
</tr>
</tbody>
</table>

*Age-Adjusted  
Source: NCI, State Cancer Profiles

**Female Breast**

**Incidence**

In Nash County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 132.7 (95% CI 119.5, 147.1) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 75 new cases of invasive female breast cancer diagnosed in Nash County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 133.6 (95% CI 117.4, 151.6) for whites, and 130.5 (95% CI 107.6, 156.8) for African Americans.[4]

**Mortality**

In Nash County, female breast cancer mortality rates for 2003-2007 declined and were similar to the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 27.9 (95% CI 22.0, 34.9) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Nash County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates declined at -2.0 percent (95% CI -3.9, -0.1) for 2003-2007. Female breast cancer mortality rates (2003-2007) per 100,000 by race were 23.9 (95% CI 17.4, 32.2) for whites, and 36.1 (95% CI 24.3, 51.6) for African Americans.[4]

### Exhibit 104. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons

<table>
<thead>
<tr>
<th></th>
<th>Nash County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Cancer Incidence (2004-2008)*</td>
<td>132.7</td>
<td>123.3</td>
</tr>
<tr>
<td>Breast Cancer Mortality (2003-2007)</td>
<td>27.9</td>
<td>24.8</td>
</tr>
</tbody>
</table>

*Age-Adjusted  
Source: NCI, State Cancer Profiles
**Cervix**
See Eastern North Carolina rates. Nash County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.

**Risk Factors and Screening**
Nash County residents had a higher prevalence of smoking, obesity and diabetes compared to NC statewide, but reported greater mammography in the Medicare-enrolled females than statewide.

### Exhibit 105. Adult Respondents, Nash County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>Nash County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Smoker</td>
<td>23%</td>
<td>22%</td>
</tr>
<tr>
<td>% Obese</td>
<td>32%</td>
<td>29%</td>
</tr>
<tr>
<td>% Alcohol</td>
<td>14%</td>
<td>12%</td>
</tr>
<tr>
<td>% Diabetes</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
<td>% Mammogram</td>
<td>72%</td>
<td>67%</td>
</tr>
</tbody>
</table>

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

### Exhibit 106. Adult Respondents, Nash County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>Nash County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Smoker</td>
<td>23%</td>
<td>22%</td>
</tr>
<tr>
<td>% Obese</td>
<td>32%</td>
<td>29%</td>
</tr>
<tr>
<td>% Alcohol</td>
<td>14%</td>
<td>12%</td>
</tr>
<tr>
<td>% Diabetes</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
<td>% Mammogram</td>
<td>72%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Northampton County was retail trade.[1] The median household income (2009) was $31,355 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 25%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Northampton County was 11%, compared to 10.6% statewide. The estimated high school graduation rate was 83%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 15%, compared to 21% statewide. Four physicians provided primary care in Northampton County (2008), which was a population to primary care physician ratio of 5,155 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Northampton County had a total population of 22,099 with 41 persons per square mile. The county population was 21% children (<18), 59% adults ages 18-64, and 20% elders. Northampton County was 58% African American (AA) (22% AA statewide) and 39% white (69% white statewide). Latinos/Hispanics (any race) comprised 1% of the population in Northampton County (8% statewide) (Exhibit 107). The overall county population was 52% female and 48% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Northampton County, the CRC age-adjusted incidence rate for 2004-2008 was 43.9 (95% CI 33.7, 56.5) per 100,000, which was lower than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 13 new cases of CRC diagnosed in Northampton County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 58.6 (95% CI 40.5, 82.4) for males and 32.0 (95% CI 21.2, 47.5) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 36.3 (95% CI 23.6, 55.3) for whites, and 48.7 (95% CI 34.1, 67.9) for African Americans.[4]

Mortality
In Northampton County, CRC mortality rates for 2003-2007 were stable and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 18.9 (95% CI 12.6, 27.5) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7).
Northampton County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per 100,000).[4][5] The average annual percentage change in death rates declined at -1.2 percent (95% CI -2.5, 0.2) for 2003-2007. The CRC mortality rates (2003-2007) by gender were suppressed due to small numbers of deaths. The CRC mortality rate (2003-2007) per 100,000 by race was suppressed for whites due to small numbers of deaths, and the rate for African Americans was 22.3 (95% CI 13.0, 36.2).[4]

<table>
<thead>
<tr>
<th>Exhibit 108. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CRC Incidence (2004-2008)</strong></td>
</tr>
<tr>
<td>43.9</td>
</tr>
<tr>
<td><strong>CRC Mortality (2003-2007)</strong></td>
</tr>
</tbody>
</table>

*Age-Adjusted
Source: NCI, State Cancer Profiles

**Female Breast**

**Incidence**

In Northampton County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 122.2 (95% CI 97.4, 152.0) per 100,000, which was lower than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 19 new cases of invasive female breast cancer diagnosed in Northampton County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 134.0 (95% CI 93.7, 187.9) for whites, and 113.6 (95% CI 82.9, 152.9) for African Americans.[4]

**Mortality**

In Northampton County, female breast cancer mortality rates for 2003-2007 increased and were similar to the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 35.1 (95% CI 22.8, 52.4) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Northampton County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates increased at 0.3 percent (95% CI -1.5, 2.1) for 2003-2007. The female breast cancer mortality rate (2003-2007) per 100,000 by race was suppressed for whites due to small numbers of deaths, and the rate for African Americans was 39.5 (95% CI 23.1, 64.2).[4]

<table>
<thead>
<tr>
<th>Exhibit 109. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>122.2</td>
</tr>
<tr>
<td><strong>Breast Cancer Mortality (2003-2007)</strong></td>
</tr>
</tbody>
</table>

*Age-Adjusted
Source: NCI, State Cancer Profiles
Cervix
See Eastern North Carolina rates. Northampton County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.

Risk Factors and Screening
Northampton County residents had a higher prevalence of obesity and diabetes compared to NC statewide.

Exhibit 110. Adult Respondents, Northampton County, North Carolina

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 111. Adult Respondents, Northampton County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker(^a)</th>
<th>% Obese(^b)</th>
<th>% Alcohol(^c)</th>
<th>% Diabetes(^d)</th>
<th>% Mammogram(^e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northampton County</td>
<td>22%</td>
<td>36%</td>
<td>9%</td>
<td>15%</td>
<td>69%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]

b. 2008, Percent of adults that report a BMI ≥30 [3]

c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]

d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]

e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
ONSLOW COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Onslow County was retail trade.[1] Camp Lejeune, a Marine military base, is located within Onslow County. The median household income (2009) was $41,161 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 15%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Onslow County was 8%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 85%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 25%, compared to 21% statewide. One-Hundred and eight physicians provided primary care in Onslow County (2008), which was a population to primary care physician ratio of 1,567 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Onslow County had a total population of 177,772 with 233 persons per square mile. The county population was 25% children (<18), 67% adults ages 18-64, and 8% elders. Onslow County was 16% African American (AA) (22% AA statewide) and 74% white (69% white statewide). Latinos/Hispanics (any race) comprised 10% of the population in Onslow County (8% statewide) (Exhibit 112). The overall county population was 46% female and 54% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Onslow County, the CRC age-adjusted incidence rate for 2004-2008 was 47.0 (95% CI 40.9, 53.7) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 46 new cases of CRC diagnosed in Onslow County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 60.4 (95% CI 50.0, 72.1) for males and 35.0 (95% CI 28.2, 42.9) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 49.9 (95% CI 42.9, 57.7) for whites, and 35.8 (95% CI 24.0, 51.0) for African Americans.[4]

Mortality
In Onslow County, CRC mortality rates for 2003-2007 declined and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 15.7 (95% CI 12.2, 19.8) per
Onslow County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per 100,000).[4][5] The average annual percentage change in death rates declined at -1.5 percent (95% CI -2.9, -0.2) for 2003-2007. The CRC mortality rates (2003-2007) by gender were 12.8 (95% CI 8.8, 17.9) for females and 18.7 (95% CI 13.0, 25.9) for males per 100,000. The CRC mortality rate (2003-2007) per 100,000 by race was 15.7 (95% CI 11.8, 20.3) for whites, and the rate for African Americans was suppressed due to small numbers of deaths.[4]

**Exhibit 113. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons**

<table>
<thead>
<tr>
<th></th>
<th>Onslow County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRC Incidence (2004-2008)*</td>
<td>47.0</td>
<td>46.8</td>
</tr>
<tr>
<td>CRC Mortality (2003-2007)</td>
<td>15.7</td>
<td>17.3</td>
</tr>
</tbody>
</table>

*Age-Adjusted
Source: NCI, State Cancer Profiles

**Female Breast**

**Incidence**

In Onslow County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 128.8 (95% CI 116.0, 142.7) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 75 new cases of invasive female breast cancer diagnosed in Onslow County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 127.9 (95% CI 113.4, 143.7) for whites, and 138.6 (95% CI 107.7, 175.2) for African Americans.[4]

**Mortality**

In Onslow County, female breast cancer mortality rates for 2003-2007 increased and were similar to the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 24.3 (95% CI 18.9, 30.8) per 100,000, which was lower than the overall statewide female breast cancer mortality rate of 24.8. Onslow County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates declined at -1.0 percent (95% CI -2.4, 0.5) for 2003-2007. Female breast cancer mortality rates (2003-2007) per 100,000 by race were 21.6 (95% CI 15.8, 28.8) for whites, and 35.4 (95% CI 21.3, 55.1) for African Americans.[4]

**Exhibit 114. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons**

<table>
<thead>
<tr>
<th></th>
<th>Onslow County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Cancer Incidence (2004-2008)*</td>
<td>128.8</td>
<td>123.3</td>
</tr>
<tr>
<td>Breast Cancer Mortality (2003-2007)</td>
<td>24.3</td>
<td>24.8</td>
</tr>
</tbody>
</table>

*Age-Adjusted
Source: NCI, State Cancer Profiles
**Cervix**
See Eastern North Carolina rates. Onslow County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.

**Risk Factors and Screening**
Onslow County residents had a higher prevalence of smoking, obesity and alcohol consumption compared to NC statewide.


<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onslow County</td>
<td>25%</td>
<td>31%</td>
<td>16%</td>
<td>8%</td>
<td>69%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009


a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
PAMLICO COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Pamlico County was retail trade.[1] The median household income (2009) was $39,918 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 19%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Pamlico County was 9%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 85%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 25%, compared to 21% statewide. Eight physicians provided primary care in Pamlico County (2008), which was a population to primary care physician ratio of 1,555 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Pamlico County had a total population of 13,144 with 39 persons per square mile. The county population was 18% children (<18), 60% adults ages 18-64, and 22% elders. Pamlico County was 20% African American (AA) (22% AA statewide) and 76% white (69% white statewide). Latinos/Hispanics (any race) comprised 3% of the population in Pamlico County (8% statewide) (Exhibit 117). The overall county population was 49% female and 51% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Pamlico County, the CRC age-adjusted incidence rate for 2004-2008 was 32.9 (95% CI 22.3, 47.9) per 100,000, which was lower than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 7 new cases of CRC diagnosed in Pamlico County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rate per 100,000 was 50.5 (95% CI 31.9, 78.1) for males and the rate for females was suppressed due to small numbers of cases. By race, the CRC age-adjusted incidence rate per 100,000 was 34.0 (95% CI 21.7, 52.2) for whites, and the rate for African Americans was suppressed due to small numbers of cases.[4]
**Mortality**

In Pamlico County, CRC mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

| Exhibit 118. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons |
|---------------------------------|------------------|
|                                | Pamlico County   | North Carolina |
| CRC Incidence (2004-2008)*      | 32.9             | 46.8           |
| CRC Mortality (2003-2007)       | **               | 17.3           |

*Age-Adjusted
**Suppressed due to small numbers
Source: NCI, State Cancer Profiles

**Female Breast**

**Incidence**

In Pamlico County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 113.0 (95% CI 83.7, 151.1) per 100,000, which was lower than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 11 new cases of invasive female breast cancer diagnosed in Pamlico County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 86.5 (95% CI 59.5, 124.8) for whites, and 207.8 (95% CI 122.7, 337.6) for African Americans.[4]

**Mortality**

In Pamlico County, the female breast cancer mortality rate in (2003-2007) was 35.0 (95% CI 19.2, 60.2) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Pamlico County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[3][4] The average annual percentage change in death rates, as well as the female breast cancer mortality rates (2003-2007) per 100,000 by race, were suppressed due to small numbers of deaths.

| Exhibit 119. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons |
|---------------------------------|------------------|
|                                | Pamlico County   | North Carolina |
| Breast Cancer Incidence (2004-2008)* | 113.0             | 123.3           |
| Breast Cancer Mortality (2003-2007)     | 35.0             | 24.8           |

*Age-Adjusted
Source: NCI, State Cancer Profiles

**Cervix**

See Eastern North Carolina rates. Pamlico County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
Risk Factors and Screening
Pamlico County residents had a higher prevalence of smoking and Medicare-enrolled mammography compared to NC statewide.

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 120. Adult Respondents, Pamlico County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pamlico County</td>
<td>30%</td>
<td>29%</td>
<td>9%</td>
<td>9%</td>
<td>81%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
PASQUOTANK COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Pasquotank County was retail trade.[1] The median household income (2009) was $39,370 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 18%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Pasquotank County was 10%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 76%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 21%, compared to 21% statewide. Forty physicians provided primary care in Pasquotank County (2008), which was a population to primary care physician ratio of 1,036 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Pasquotank County had a total population of 40,661 with 179 persons per square mile. The county population was 23% children (<18), 63% adults ages 18-64, and 14% elders. Pasquotank County was 38% African American (AA) (22% AA statewide) and 57% white (69% white statewide). Latinos/Hispanics (any race) comprised 4% of the population in Pasquotank County (8% statewide) (Exhibit 122). The overall county population was 51% female and 49% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Pasquotank County, the CRC age-adjusted incidence rate for 2004-2008 was 49.3 (95% CI 40.1, 59.9) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 20 new cases of CRC diagnosed in Pasquotank County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 55.3 (95% CI 40.7, 73.4) for males and 42.8 (95% CI 31.8, 56.4) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 44.4 (95% CI 33.9, 57.3) for whites, and 61.6 (95% CI 44.1, 83.5) for African Americans.[4]

Mortality
In Pasquotank County, CRC mortality rates for 2003-2007 declined and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 17.7 (95% CI 12.3, 24.5) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Pasquotank County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per
The average annual percentage change in death rates declined at -1.5 percent (95% CI -2.9, 0.0) for 2003-2007. The CRC mortality rate (2003-2007) by gender was 17.9 (95% CI 11.1, 27.6) for females and the rate for males was suppressed due to small numbers of deaths. The CRC mortality rate (2003-2007) per 100,000 by race was 19.0 (95% CI 12.4, 28.2) for whites, and the rate for African Americans was suppressed due to small numbers of deaths.[4]

| Exhibit 123. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons |
|-------------------------------------------------|---------------------------------|-------------------------|
| | Pasquotank County | North Carolina |
| CRC Incidence (2004-2008)* | 49.3 | 46.8 |
| CRC Mortality (2003-2007) | 17.7 | 17.3 |

*Age-Adjusted
Source: NCI, State Cancer Profiles

**Female Breast**

**Incidence**

In Pasquotank County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 123.3 (95% CI 103.6, 145.8) per 100,000, which was the same as the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 29 new cases of invasive female breast cancer diagnosed in Pasquotank County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 110.5 (95% CI 87.4, 138.2) for whites, and 146.7 (95% CI 111.1, 190.0) for African Americans.[4]

**Mortality**

In Pasquotank County, female breast cancer mortality rates for 2003-2007 increased and were similar to the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 32.1 (95% CI 22.5, 44.7) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Pasquotank County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates declined at -0.3 percent (95% CI -1.4, 0.9) for 2003-2007. The female breast cancer mortality rate (2003-2007) per 100,000 by race was 30.3 (95% CI 19.0, 46.2) for whites, and the rate for African Americans was suppressed due to small numbers of deaths.[4]

| Exhibit 124. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons |
|-------------------------------------------------|---------------------------------|-------------------------|
| | Pasquotank County | North Carolina |
| Breast Cancer Incidence (2004-2008)* | 123.3 | 123.3 |
| Breast Cancer Mortality (2003-2007) | 32.1 | 24.8 |

*Age-Adjusted
Source: NCI, State Cancer Profiles
Cervix
See Eastern North Carolina rates. Pasquotank County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.

Risk Factors and Screening
Pasquotank County residents had a higher prevalence of smoking, obesity, and alcohol consumption compared to NC statewide. Mammography in Medicare-enrolled women is higher than statewide.

Exhibit 125. Adult Respondents, Pasquotank County, North Carolina

Sources: County Health Rankings, North Carolina County Health Rankings;
North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 126. Adult Respondents, Pasquotank County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pasquotank County</td>
<td>30%</td>
<td>32%</td>
<td>16%</td>
<td>8%</td>
<td>72%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings;
North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
PERQUIMANS COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Perquimans County was educational services.[1] The median household income (2009) was $37,284 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 17%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Perquimans County was 10%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 83%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 23%, compared to 21% statewide. Four physicians provided primary care in Perquimans County (2008), which was a population to primary care physician ratio of 3,193 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Perquimans County had a total population of 13,453 with 54 persons per square mile. The county population was 21% children (<18), 57% adults ages 18-64, and 22% elders. Perquimans County was 25% African American (AA) (22% AA statewide) and 72% white (69% white statewide). Latinos/Hispanics (any race) comprised 2% of the population in Perquimans County (8% statewide) (Exhibit 127). The overall county population was 52% female and 48% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Perquimans County, the CRC age-adjusted incidence rate for 2004-2008 was 52.7 (95% CI 39.1, 70.5) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 10 new cases of CRC diagnosed in Perquimans County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 82.3 (95% CI 56.8, 117.1) for males and 29.8 (95% CI 16.9, 51.1) for females. By race, the CRC age-adjusted incidence rate per 100,000 was 53.6 (95% CI 38.0, 75.0) for whites, and the rate for African Americans was suppressed due to small numbers of cases.[4]

Mortality
In Perquimans County, the CRC mortality rate (2003-2007) was 23.1 (95% CI 13.3, 37.7) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Perquimans County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per 100,000).[4][5]
The average annual percentage change in death rates was suppressed due to small numbers of deaths for 2003-2007. The CRC mortality rates by gender and race were suppressed due to small numbers of deaths.[4]

**Exhibit 128. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons**

<table>
<thead>
<tr>
<th></th>
<th>Perquimans County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRC Incidence (2004-2008)*</td>
<td>52.7</td>
<td>46.8</td>
</tr>
<tr>
<td>CRC Mortality (2003-2007)</td>
<td>23.1</td>
<td>17.3</td>
</tr>
</tbody>
</table>

*Age-Adjusted

Source: NCI, State Cancer Profiles

**Female Breast**

**Incidence**

In Perquimans County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 113.9 (95% CI 83.5, 152.8) per 100,000, which was lower than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 11 new cases of invasive female breast cancer diagnosed in Perquimans County and 6,189 new cases across the state for 2004-2008. The female breast cancer age-adjusted incidence rate was 126.8 (95% CI 88.6, 177.4) for whites, and the rate for African Americans was suppressed due to small numbers of cases.[4]

**Mortality**

In Perquimans County, female breast cancer mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

**Exhibit 129. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons**

<table>
<thead>
<tr>
<th></th>
<th>Perquimans County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Cancer Incidence (2004-2008)*</td>
<td>113.9</td>
<td>123.3</td>
</tr>
<tr>
<td>Breast Cancer Mortality (2003-2007)</td>
<td>**</td>
<td>24.8</td>
</tr>
</tbody>
</table>

*Age-Adjusted

**Cervix**

See Eastern North Carolina rates. Perquimans County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
**Risk Factors and Screening**

Perquimans County residents had a higher prevalence of smoking and obesity compared to NC statewide. Mammography is higher in Medicare-enrolled women than statewide.

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**Exhibit 130. Adult Respondents, Perquimans County, North Carolina**

**Behavioral Risk Factor Surveillance System, 2003-2009**

![Exhibit 130. Adult Respondents, Perquimans County, North Carolina](image-url)

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

---

**Exhibit 131. Adult Respondents, Perquimans County, North Carolina**

**Behavioral Risk Factor Surveillance System, 2003-2009**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Perquimans County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Smoker</td>
<td>25%</td>
<td>22%</td>
</tr>
<tr>
<td>% Obese</td>
<td>32%</td>
<td>29%</td>
</tr>
<tr>
<td>% Alcohol</td>
<td>13%</td>
<td>12%</td>
</tr>
<tr>
<td>% Diabetes</td>
<td>5%</td>
<td>9%</td>
</tr>
<tr>
<td>% Mammogram</td>
<td>81%</td>
<td>67%</td>
</tr>
</tbody>
</table>

- **a.** 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
- **b.** 2008, Percent of adults that report a BMI ≥30 [3]
- **c.** 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
- **d.** 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
- **e.** 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
PITT COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Pitt County was health care and social assistance.[1] The median household income (2009) was $36,339 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 26%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Pitt County was 10%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 66%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 22%, compared to 21% statewide. There were 364 physicians in primary care in Pitt County (2008), which was a population to primary care physician ratio of 428 to 1.[3] The ECU Brody School of Medicine and affiliated teaching hospital, Vidant County Medical Center are located in Pitt County.

Demographics:
Based on data from the 2010 U.S. Census, Pitt County had a total population of 168,148 with 258 persons per square mile. The county population was 23% children (<18), 67% adults ages 18-64, and 10% elders. Pitt County was 34% African American (AA) (22% AA statewide) and 59% white (69% white statewide). Latinos/Hispanics (any race) comprised 6% of the population in Pitt County (8% statewide) (Exhibit 132). The overall county population was 53% female and 47% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Pitt County, the CRC age-adjusted incidence rate for 2004-2008 was 49.0 (95% CI 43.6, 54.7) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 62 new cases of CRC diagnosed in Pitt County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 57.7 (95% CI 48.6, 68.0) for males and 44.0 (95% CI 37.3, 51.4) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 44.2 (95% CI 38.1, 51.0) for whites, and 58.8 (95% CI 48.4, 70.6) for African Americans.[4]

Mortality
In Pitt County, CRC mortality rates for 2003-2007 declined and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 18.3 (95% CI 15.0, 22.1) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Pitt County
did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per 100,000).[4][5] The average annual percentage change in death rates declined at -7.2 percent (95% CI -12.5, -1.6) for 2003-2007. The CRC mortality rates (2003-2007) by gender were 14.7 (95% CI 11.0, 19.3) for females and 25.0 (95% CI 18.7, 32.7) for males per 100,000. CRC mortality rates (2003-2007) per 100,000 by race were 14.6 (95% CI 11.1, 18.8) for whites, and 26.6 (95% CI 19.6, 35.2) for African Americans.[4]

<table>
<thead>
<tr>
<th>Exhibit 133. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>CRC Incidence (2004-2008)*</td>
</tr>
<tr>
<td>CRC Mortality (2003-2007)</td>
</tr>
</tbody>
</table>

*Age-Adjusted
Source: NCI, State Cancer Profiles

Female Breast

Incidence
In Pitt County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 145.2 (95% CI 133.0, 158.3) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 104 new cases of invasive female breast cancer diagnosed in Pitt County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 143.9 (95% CI 128.9, 160.2) for whites, and 144.8 (95% CI 124.0, 168.0) for African Americans.[4]

Mortality
In Pitt County, female breast cancer mortality rates for 2003-2007 declined and were similar to the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 26.3 (95% CI 21.2, 32.3) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Pitt County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates declined at -1.1 percent (95% CI -2.1, 0.0) for 2003-2007. Female breast cancer mortality rates (2003-2007) per 100,000 by race were 20.4 (95% CI 14.9, 27.1) for whites, and 38.3 (95% CI 27.8, 51.3) for African Americans.[4]

<table>
<thead>
<tr>
<th>Exhibit 134. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Breast Cancer Incidence (2004-2008)*</td>
</tr>
</tbody>
</table>

*Age-Adjusted
Source: NCI, State Cancer Profiles

Cervix
See Eastern North Carolina rates. Pitt County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
Risk Factors and Screening
Pitt County residents had a higher prevalence of obesity compared to NC statewide, but reported less smoking.

Exhibit 135. Adult Respondents, Pitt County, North Carolina

Sources: County Health Rankings, North Carolina County Health Rankings;
North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 136. Adult Respondents, Pitt County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>Pitt County</th>
<th>North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Smoker</td>
<td>20%</td>
<td>22%</td>
</tr>
<tr>
<td>% Obese</td>
<td>33%</td>
<td>29%</td>
</tr>
<tr>
<td>% Alcohol</td>
<td>11%</td>
<td>12%</td>
</tr>
<tr>
<td>% Diabetes</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>% Mammogram</td>
<td>66%</td>
<td>67%</td>
</tr>
</tbody>
</table>

Notes:

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings;
North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

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TYRRELL COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Tyrrell County was public administration.[1] The median household income (2009) was $30,058 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 29%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Tyrrell County was 10%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 59%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 29%, compared to 21% statewide. There are 0 physicians in primary care in Tyrrell County (2008), which was a population to primary care physician ratio of 4,104 to 1.*[3] *Data unreliable.

Demographics:
Based on data from the 2010 U.S. Census, Tyrrell County had a total population of 4,407 with 11 persons per square mile. The county population was 18% children (<18), 65% adults ages 18-64, and 17% elders. Tyrrell County was 38% African American (AA) (22% AA statewide) and 55% white (69% white statewide). Latinos/Hispanics (any race) comprised 5% of the population in Tyrrell County (8% statewide) (Exhibit 137). The overall county population was 45% female and 55% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Tyrrell County, the CRC age-adjusted incidence rate for 2004-2008 was suppressed due to small numbers of cases. On average, there were 3 or fewer new cases of CRC diagnosed in Tyrrell County, and 4,720 new cases across the state for 2004-2008. The CRC incidence rates by gender and race were suppressed due to small numbers of cases.[4]

Mortality
In Tyrrell County, CRC mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

Female Breast
Incidence
In Tyrrell County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 139.8 (95% CI 77.8, 234.3) per 100,000, which was higher than the overall statewide breast cancer rate
of 123.3 (95% CI 121.9-124.7). On average, there were 3 new cases of invasive female breast cancer diagnosed in Tyrrell County and 6,189 new cases across the state for 2004-2008. Incidence rates by race were suppressed due to small numbers of cases.[4]

*Mortality*
In Tyrrell County, female breast cancer mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.[4]

<table>
<thead>
<tr>
<th>Exhibit 138. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Breast Cancer Incidence (2004-2008)</strong></td>
</tr>
<tr>
<td><strong>Breast Cancer Mortality (2003-2007)</strong></td>
</tr>
</tbody>
</table>

*Age-Adjusted
**Suppressed due to small numbers

Source: NCI, State Cancer Profiles

*Cervix*
See Eastern North Carolina rates. Tyrrell County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
Risk Factors and Screening
Tyrrell County residents had a higher prevalence of obesity compared to NC statewide. Data on other behavioral factors were not available through BRFSS.

Exhibit 139. Adult Respondents, Tyrrell County, North Carolina

*Data were not available for smoker, diabetes, or mammogram behavioral factors at the county level.
Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 140. Adult Respondents, Tyrrell County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smokera</th>
<th>% Obeseb</th>
<th>% Alcoholc</th>
<th>% Diabeted</th>
<th>% Mammograme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tyrrell County</td>
<td>*</td>
<td>32%</td>
<td>7%</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]
*Data unavailable

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
WASHINGTON COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Washington County was health care and social assistance.[1] The median household income (2009) was $33,190 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 23%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Washington County was 11%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 81%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 16%, compared to 21% statewide. Five physicians provided primary care in Washington County (2008), which was a population to primary care physician ratio of 2,592 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Washington County had a total population of 13,228 with 38 persons per square mile. The county population was 23% children (<18), 59% adults ages 18-64, and 18% elders. Washington County was 50% African American (AA) (22% AA statewide) and 46% white (69% white statewide). Latinos/Hispanics (any race) comprised 4% of the population in Washington County (8% statewide) (Exhibit 141). The overall county population was 53% female and 47% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Washington County, the CRC age-adjusted incidence rate for 2004-2008 was 50.6 (95% CI 35.9, 69.5) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 8 new cases of CRC diagnosed in Washington County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 65.4 (95% CI 40.5, 100.2) for males and 40.3 (95% CI 23.9, 64.8) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 47.1 (95% CI 29.4, 73.3) for whites, and 52.1 (95% CI 30.3, 83.6) for African Americans.[4]

Mortality
In Washington County, CRC mortality rates for 2003-2007 were stable and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 24.0 (95% CI 14.7, 37.4) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7).
Washington County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per 100,000). The average annual percentage change in death rates declined at -0.8 percent (95% CI -2.7, 1.1) for 2003-2007. The CRC mortality rates by gender and race were suppressed due to small numbers of deaths.

<table>
<thead>
<tr>
<th>Exhibit 142. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington County</td>
</tr>
<tr>
<td>CRC Incidence (2004-2008)*</td>
</tr>
<tr>
<td>CRC Mortality (2003-2007)</td>
</tr>
</tbody>
</table>

*Age-Adjusted  
Source: NCI, State Cancer Profiles

Female Breast  
_Incidence_  
In Washington County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 136.9 (95% CI 104.2, 177.4) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 12 new cases of invasive female breast cancer diagnosed in Washington County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 146.7 (95% CI 103.6, 205.8) for whites, and 110.5 (95% CI 67.8, 170.4) for African Americans.

_Mortality_  
In Washington County, female breast cancer mortality rates (2003-2007) per 100,000 were suppressed due to small numbers of deaths.

<table>
<thead>
<tr>
<th>Exhibit 143. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington County</td>
</tr>
<tr>
<td>Breast Cancer Incidence (2004-2008)*</td>
</tr>
<tr>
<td>Breast Cancer Mortality (2003-2007)</td>
</tr>
</tbody>
</table>

*Age-Adjusted  
**Suppressed due to small numbers  
Source: NCI, State Cancer Profiles

_Cervix_  
See Eastern North Carolina rates. Washington County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
Risk Factors and Screening
Washington County residents had a higher prevalence of obesity compared to NC statewide, but reported less mammography among medicare-enrolled women.

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 145. Adult Respondents, Washington County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker</th>
<th>% Obese</th>
<th>% Alcohol</th>
<th>% Diabetes</th>
<th>% Mammogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington County</td>
<td>21%</td>
<td>33%</td>
<td>9%</td>
<td>9%</td>
<td>62%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
WAYNE COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Wayne County was health care and social assistance.[1] The median household income (2009) was $40,291 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 20%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Wayne County was 9%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 76%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 20%, compared to 21% statewide. Ninety-nine physicians provided primary care in Wayne County (2008), which was a population to primary care physician ratio of 1,146 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Wayne County had a total population of 122,623 with 222 persons per square mile. The county population was 25% children (<18), 62% adults ages 18-64, and 13% elders. Wayne County was 31% African American (AA) (22% AA statewide) and 59% white (69% white statewide). Latinos/Hispanics (any race) comprised 10% of the population in Wayne County (8% statewide) (Exhibit 146). The overall county population was 51% female and 49% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Wayne County, the CRC age-adjusted incidence rate for 2004-2008 was 53.8 (95% CI 47.9, 60.2) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 62 new cases of CRC diagnosed in Wayne County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 67.2 (95% CI 57.1, 78.6) for males and 42.7 (95% CI 35.7, 50.5) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 52.0 (95% CI 45.1, 59.7) for whites, and 59.0 (95% CI 47.9, 71.9) for African Americans.[4]

Mortality
In Wayne County, CRC mortality rates for 2003-2007 declined and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 20.1 (95% CI 16.5, 24.3) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Wayne County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per
The average annual percentage change in death rates declined at -1.0 percent (95% CI -1.9, -0.2) for 2003-2007. The CRC mortality rates (2003-2007) by gender were 15.4 (95% CI 8.6, 18.9) for females and 26.3 (95% CI 19.8, 34.1) for males per 100,000. CRC mortality rates (2003-2007) per 100,000 by race were 19.5 (95% CI 15.3, 24.6) for whites, and 21.9 (95% CI 15.2, 30.4) for African Americans.[4]

| Exhibit 147. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons |
|---------------------------------|-----------------|-----------------|
|                                 | Wayne County    | North Carolina  |
| CRC Incidence (2004-2008)*      | 53.8            | 46.8            |
| CRC Mortality (2003-2007)       | 20.1            | 17.3            |

*Age-Adjusted
Source: NCI, State Cancer Profiles

Female Breast
Incidence
In Wayne County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 135.1 (95% CI 122.6, 148.5) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 87 new cases of invasive female breast cancer diagnosed in Wayne County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 136.1 (95% CI 120.7, 153.0) for whites, and 133.2 (95% CI 111.6, 157.8) for African Americans.[4]

Mortality
In Wayne County, female breast cancer mortality rates for 2003-2007 increased and were higher than the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 31.7 (95% CI 25.8, 38.6) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Wayne County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates was stable with no percentage change in the county rate over the five year interval (95% CI -1.2, 1.2) for 2003-2007. Female breast cancer mortality rates (2003-2007) per 100,000 by race were 26.9 (95% CI 20.4, 34.9) for whites, and 42.8 (95% CI 30.9, 57.8) for African Americans.[4]

| Exhibit 148. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons |
|---------------------------------|-----------------|-----------------|
|                                 | Wayne County    | North Carolina  |
| Breast Cancer Incidence (2004-2008)* | 135.1            | 123.3            |
| Breast Cancer Mortality (2003-2007) | 31.7            | 24.8            |

*Age-Adjusted
Source: NCI, State Cancer Profiles
Cervix
See Eastern North Carolina rates. Wayne County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.

Risk Factors and Screening
Wayne County residents had a higher prevalence of obesity and diabetes compared to NC statewide, but reported less mammography in Medicare-enrolled women.

![Exhibit](source)

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 150. Adult Respondents, Wayne County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker&lt;sup&gt;a&lt;/sup&gt;</th>
<th>% Obese&lt;sup&gt;b&lt;/sup&gt;</th>
<th>% Alcohol&lt;sup&gt;c&lt;/sup&gt;</th>
<th>% Diabetes&lt;sup&gt;d&lt;/sup&gt;</th>
<th>% Mammogram&lt;sup&gt;e&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wayne County</td>
<td>23%</td>
<td>32%</td>
<td>10%</td>
<td>11%</td>
<td>64%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
WILSON COUNTY

Social and Economic Indicators
Based on number of persons employed, in 2011 the largest industry in Wilson County was manufacturing.[1] The median household income (2009) was $39,511 for a family of four, compared to $43,754 statewide. The percentage of persons living below the poverty level in 2009 was 20%, compared to 16% statewide.[2] Unemployment (civilian, not in labor force, 2009) in Wilson County was 12%, compared to 10.6% statewide. The estimated high school graduation rate (2010) was 67%, based on the cohort of ninth graders that graduated from high school in four years, compared to 78% in North Carolina. In 2007, the adult uninsured population (≥ age 18-64) was 20%, compared to 21% statewide. Forty-nine physicians provided primary care in Wilson County (2008), which was a population to primary care physician ratio of 1,586 to 1.[3]

Demographics
Based on data from the 2010 U.S. Census, Wilson County had a total population of 81,234 with 220.6 persons per square mile. The county population was 25% children (<18), 61% adults ages 18-64, and 14% elders. Wilson County was 39% African American (AA) (22% AA statewide) and 52% white (69% white statewide). Latinos/Hispanics (any race) comprised 10% of the population in Wilson County (8% statewide) (Exhibit 151). The overall county population was 52% female and 48% male.[2]

Cancer Surveillance
Colon and Rectal Cancers (CRC)
Incidence
In Wilson County, the CRC age-adjusted incidence rate for 2004-2008 was 55.9 (95% CI 48.9, 63.6) per 100,000, which was higher than the overall statewide CRC rate of 46.8 (95% CI 46.1, 47.4). On average, there were 47 new cases of CRC diagnosed in Wilson County, and 4,720 new cases across the state for 2004-2008. The CRC age-adjusted incidence rates per 100,000 were 75.1 (95% CI 62.5, 89.5) for males and 42.1 (95% CI 34.3, 51.3) for females. By race, the CRC age-adjusted incidence rates per 100,000 were 53.5 (95% CI 45.2, 62.9) for whites, and 62.6 (95% CI 49.7, 77.9) for African Americans.[4]

Mortality
In Wilson County, CRC mortality rates for 2003-2007 were stable and were similar to the North Carolina rates (all races, both sexes). The CRC mortality rate (2003-2007) was 18.1 (95% CI 14.2, 22.7) per 100,000 which was higher than the overall statewide CRC mortality rate of 17.3 (95% CI 17.0, 17.7). Wilson County did not meet the Healthy People 2010 mortality rate goal (13.9 CRC deaths per
The average annual percentage change in death rates declined at -0.6 percent (95% CI -1.6, 0.4) for 2003-2007. The CRC mortality rates (2003-2007) by gender were 14.3 (95% CI 10.0, 19.9) for females and 22.5 (95% CI 15.9, 31.0) for males per 100,000. CRC mortality rates (2003-2007) per 100,000 by race were 15.0 (95% CI 10.8, 20.4) for whites, and 25.4 (95% CI 17.3, 35.8) for African Americans.

| Exhibit 152. Colorectal Cancer Incidence and Mortality Rates per 100,000 persons |
|---------------------------------------------|------------------|------------------|
| CRC Incidence (2004-2008)*                 | Wilson County    | North Carolina   |
|                                            | 55.9             | 46.8             |
| CRC Mortality (2003-2007)                  | 18.1             | 17.3             |

*Age-Adjusted
Source: NCI, State Cancer Profiles

**Female Breast**

**Incidence**

In Wilson County, the breast cancer (female, invasive) age-adjusted incidence rate for 2004-2008 was 137.4 (95% CI 122.6, 153.5) per 100,000, which was higher than the overall statewide breast cancer rate of 123.3 (95% CI 121.9-124.7). On average, there were 64 new cases of invasive female breast cancer diagnosed in Wilson County and 6,189 new cases across the state for 2004-2008. Female breast cancer age-adjusted incidence rates were 145.9 (95% CI 126.6, 167.5) for whites, and 124.9 (95% CI 101.9, 151.5) for African Americans.

**Mortality**

In Wilson County, female breast cancer mortality rates for 2003-2007 increased and were higher than the North Carolina rates (all races). The female breast cancer mortality rate (2003-2007) was 33.2 (95% CI 26.2, 41.6) per 100,000, which was higher than the overall statewide female breast cancer mortality rate of 24.8. Wilson County did not meet the Healthy People 2010 mortality rate goal (22.3 female breast cancer deaths per 100,000).[4][5] The average annual percentage change in death rates increased at 0.2 percent (95% CI -0.8, 1.3) for 2003-2007. Female breast cancer mortality rates (2003-2007) per 100,000 by race were 23.7 (95% CI 16.4, 33.3) for whites, and 51.1 (95% CI 36.8, 69.2) for African Americans.

| Exhibit 153. Invasive Female Breast Cancer Incidence and Mortality Rates per 100,000 persons |
|---------------------------------------------|------------------|------------------|
|                                            | 137.4            | 123.3            |
| Breast Cancer Mortality (2003-2007)        | 33.2             | 24.8             |

*Age-Adjusted
Source: NCI, State Cancer Profiles

**Cervix**

See Eastern North Carolina rates. Wilson County data for cervical cancer incidence and mortality rates were suppressed due to small numbers.
Risk Factors and Screening
Wilson County residents had a higher prevalence of obesity and diabetes compared to NC statewide, but reported less mammography in Medicare-enrolled women.

Exhibit 154. Adult Respondents, Wilson County, North Carolina

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009

Exhibit 155. Adult Respondents, Wilson County, North Carolina

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Smoker&lt;sup&gt;a&lt;/sup&gt;</th>
<th>% Obese&lt;sup&gt;b&lt;/sup&gt;</th>
<th>% Alcohol&lt;sup&gt;c&lt;/sup&gt;</th>
<th>% Diabetes&lt;sup&gt;d&lt;/sup&gt;</th>
<th>% Mammogram&lt;sup&gt;e&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilson County</td>
<td>19%</td>
<td>32%</td>
<td>11%</td>
<td>12%</td>
<td>64%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>22%</td>
<td>29%</td>
<td>12%</td>
<td>9%</td>
<td>67%</td>
</tr>
</tbody>
</table>

a. 2003-2009, Percent of adults that report smoking ≥100 cigarettes and currently smoking [3]
b. 2008, Percent of adults that report a BMI ≥30 [3]
c. 2003-2009, Percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average [3]
d. 2005-2009, Percent, Has a doctor told you that you have diabetes, Yes response. [6][7]
e. 2006-2007, Percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period [3]

Sources: County Health Rankings, North Carolina County Health Rankings; North Carolina Data Health Explorer; NC DHHS, SCHS, BRFSS Survey Results, 2005-2009
County-Level Profile References


*Data on access to primary care are considered unreliable for the following reasons. Although the relationship between primary care providers and improved health outcomes is supported in the literature, this measure has a number of limitations. First, primary care providers are classified by county, but providers living on the edge of counties or who practice in multiple locations may see patient populations that reside in surrounding counties. Therefore, this measure may either over- or underestimate patient access to primary care in some situations since patient-provider interaction is not restricted by county boundaries.


Mammography

Methods
Number and distribution of mammography facilities was used as a surrogate measure of access to breast cancer screening. Mammography facility data were collected between November and December 2011. Licensed mammography facilities in the region were identified by utilizing the search function for the Mammography Facility Database on the U.S. Food and Drug Administration (FDA) website. [1] The Mammography Facility Database is updated weekly based on information received from the four FDA-approved accreditation bodies: the American College of Radiology (ACR), and the States of Arkansas, Iowa, and Texas. The database includes mammography facilities meeting baseline quality standards for equipment, personnel, and practices under the Mammography Quality Standards Act of 1992 (MQSA). Mammography facilities that were located in the 29-county region of Eastern North Carolina were included in a Microsoft Excel spreadsheet. Some FDA-approved facilities may not be listed at the time the data were obtained. Addresses of each facility were input into an online longitude and latitude locator. [2] Longitude and latitude coordinates were added to the Microsoft Excel spreadsheet. Staff from the Department of Geography at East Carolina University geocoded the points and these locations were added to the North Carolina map in order to create a visual depiction of mammography access in Eastern North Carolina. See Exhibit 156 for the Northeastern Region FDA-Approved Mammography Facilities map.

Results
Thirty-eight licensed mammography facilities operate in Eastern North Carolina; 21 of the 29 ENC counties have at least 1 facility, 8 ENC counties have no mammography facilities.[1]
Exhibit 156. FDA-Approved Mammography Facilities

Colposcopy Service

Methods
Number and distribution of providers (serving BCCCP eligible or uninsured patients) for colposcopy was used as a surrogate for measuring cervical cancer prevention and care. There is no database of facilities that provide colposcopies in North Carolina. Colposcopy provider data was collected between November and December 2011. Locations were identified by contacting North Carolina Breast Cervical Cancer Control Program (BCCCP) providers directly through email or telephone call. About half of the Eastern North Carolina BCCCP providers were located using the search function of the NC BCCCP website and contacted by telephone.[3] Other BCCCP providers were contacted through an email sent by the state BCCCP coordinators in charge of the region that included the county. BCCCP providers were asked if they provide on-site colposcopy services and if they refer out to other providers, which provider specifically. If not indicated by the BCCCP provider, referral facilities were called by ECU staff and asked if they accept BCCCP as a form of payment for colposcopies (i.e. Is the facility a BCCCP vendor?). Addresses of each facility were input into an online longitude and latitude locator.[2] Longitude and latitude coordinates were added to the Microsoft Excel spreadsheet. Staff from the Department of Geography at East Carolina University geocoded the points and these locations were added to the North Carolina map in order to create a visual depiction of colposcopy access in Eastern North Carolina. See Exhibit 157 for the Northeastern Region Colposcopy Referral Sites map. Exclusion criteria for the colposcopy map were colposcopy locations existing outside the eastern region (2 locations excluded) and/or incomplete location contact information (2 locations excluded).

Results
There are 22 colposcopy providers that participate in the BCCCP program in Eastern North Carolina. Fourteen colposcopy providers in the region do not participate in the BCCCP program.[3] Colposcopy locations that did not respond to telephone calls about BCCCP acceptance as a payment option were marked as “unknown BCCCP status.” BCCCP participation was unknown at five colposcopy provider sites in Eastern North Carolina. Two counties that did not report were Hyde and Jones. Onslow does not participate in the BCCCP program [3], although Onslow County Health Department reported colposcopy providers.
Exhibit 157. Northeastern Region Colposcopy Referral Sites

**Colonoscopy**

**Methods**
Number and distribution of providers of endoscopy services were included as surrogates for access to colorectal cancer screening, early detection, and diagnosis. Endoscopy center data were collected from the Division of Health Service Regulation website in late January 2012 (database last updated January 2012) [4]; hospitals that provide ambulatory surgery (endoscopy allowed) and/or endoscopy (only endoscopy can be performed in this surgical bed) were collected from the Division of Health Service Regulation website in early February 2012 (database last updated February 2012) [5]; and office based colonoscopy providers were collected through the BlueCross BlueShield of North Carolina website, “Find a doctor or facility” function with the search “Office Based Colonoscopy Providers” [6] Fifteen of the free standing endoscopy facilities were identified through the Department of Health and Human Services, Division of Health Service Regulation database, “Ambulatory Surgical Facilities, Licensed by the State of North Carolina.” Facilities with at least one endoscopy bed located in an ENC county were included.[4] Sixteen hospitals had both endoscopy beds (dedicated) and ambulatory surgery beds (endoscopy allowed) and 4 hospitals had ambulatory surgery beds (endoscopy allowed) but no dedicated endoscopy beds.[5] Four office-based endoscopy facilities were identified through the BlueCross BlueShield of North Carolina website, “Find a doctor or facility” function with the search “Office Based Colonoscopy Provider.”[6] Locations within the 29-county area were included. Addresses of each facility were entered into an online longitude and latitude locator.[2] Longitude and latitude coordinates were added to the Microsoft Excel spreadsheet. Staff from the Department of Geography at East Carolina University geocoded the points and these locations were added to the North Carolina map in order to create a visual depiction of colonoscopy access in Eastern North Carolina. See Exhibit 158 for the Northeastern Region Colonoscopy Locations map.

**Results**
There are 39 facilities in Eastern North Carolina that have the capability to provide endoscopy services. Thirty-one licensed endoscopy facilities (hospitals and free-standing Ambulatory Surgery Facilities that offer endoscopy) operate in Eastern North Carolina. [4-5] Four hospitals have ambulatory surgery beds (endoscopy allowed) but do not have dedicated endoscopy beds. [5] There are 4 office-based colonoscopy providers in the ENC region.[6] Nineteen of the 29 ENC counties have the capability to provide endoscopy services.
Exhibit 158. Northeastern Region Colonoscopy Locations

Sources:
NC DHHS-DHSR, Hospitals licensed by NC, 2012
NC DHHS-DHSR, Ambulatory Surgical Facilities with endoscopy beds licensed by NC, 2012
Blue Cross Blue Shield-Find a Doctor or Facility-Office based Colonoscopy Center, 2012
Hospitals

Methods
The number and distribution of hospitals in the region were indicated on the map to show access to acute care.[7] Hospital locations were obtained from the North Carolina Hospital Association website (Accessed January 2012). [8] Hospitals providing acute care were included; military hospitals, long-term care facilities, mental health facilities, and drug/alcohol treatment centers were excluded. See Exhibit 159 for the Hospital Locations in Eastern North Carolina map.

Results
Twenty-two hospitals provide acute care in the ENC region. Nineteen of the 29 ENC counties have at least 1 hospital, 10 counties have no hospital. Vidant Medical Center (formerly Pitt County Memorial Hospital) located in Greenville, NC is the largest hospital in the region (745 beds), with the only trauma center east of Raleigh. Many of the hospitals in Eastern North Carolina are small, rural hospitals (median number of beds, 131 beds). [8]
Exhibit 159. Hospital Locations in Eastern North Carolina

Legend
- Hospital Locations
- Eastern North Carolina 29 Counties

Note: excludes military, mental health, long term care, and drug-alcohol treatment facilities

Source: Center for Health Systems Research and Development, East Carolina University
Federally Qualified Health Centers and Look-Alike Sites

Methods
Number and distribution of Federally Qualified Health Centers and Look-Alike sites are indicated on the map as a surrogate measure for access to primary care and screening for medically-underserved populations.[7] Federally Qualified Health Center and Look-Alike site locations were obtained from the Health Resources and Services Administration (HRSA) Data Warehouse- Health Centers and Look-alike Sites Site Directory (Accessed January 2012).[9] HRSA extracts the most recent Federally Qualified Health Center and Look-Alike data available for download on a daily basis and uploads it to the website. HRSA-supported health centers are often referred to as “Community Health Centers” or “Federally Qualified Health Centers (FQHCSs)” and are considered “330” or “Section 330” sites. Sites in this category receive funding from HRSA’s Health Center Cluster grant program or a related program. Also included are sites that qualify for HRSA grant funding under the Health Center Cluster program group, but that do not currently receive any funding from those programs; these sites are often called a “Look-Alike” site or sometimes “FQHC Look-Alike.”[9] Both Federally Qualified Health Centers and Look-Alke sites were included in the map. Excluded from the map were dental care facilities, migrant health centers, and other types of non-primary care facilities. See Exhibit 160 for the Federally Qualified Health Centers (FQHC) in Eastern North Carolina map.

Results
Forty Federally Qualified Health Centers and Look-Alike sites provide primary care in the region. Eighteen of the 29 ENC counties have at least 1 Community Health Center, 11 counties have no federally qualified health centers and look-alike sites. [9]
Exhibit 160. Federally Qualified Health Centers (FQHC) in Eastern North Carolina

Legend
- FQHC Clinics and Look-Alike Sites
- Eastern North Carolina 29 Counties

Note: excludes dental care, migrant health, and other non-primary care facilities

Source: Center for Health Systems Research and Development, East Carolina University
Access to Care References


7. Center for Health Systems Research and Development, East Carolina University, Greenville, NC. (http://www.ecu.edu/chsrd/). 2012


Appendices
Demographic Data by County

Exhibit 161. Median Household Income, by County, 2010

Source: U.S. Census, 2010

Exhibit 162. Percent Persons Below Poverty Level, by County, 2009

Source: U.S. Census, 2010
Exhibit 163. Percent Unemployment (Age 16+ Unemployed but Seeking Work), by County, 2009

Source: County Health Rankings, 2011

Exhibit 164. Percent High School Graduation (Ninth Grade Cohort that Graduates in 4 Years), by County, 2008-2009

Source: County Health Rankings website, 2011
Cancer Incidence and Mortality Rates by county

Exhibit 165. Percent Uninsured Adults (Population Under Age 65 without Health Insurance), by County, 2007

Source: County Health Rankings website, 2011

Exhibit 166. 2004-2008 Colorectal Cancer Incidence Rates per 100,000 persons, by County

*Incidence rate from Tyrrell County suppressed due to small counts
Source: Cancer Control Planet, State Cancer Profiles, 2011

125
Exhibit 167. 2003-2007 Colorectal Cancer Mortality rates per 100,000 persons, by County

*CRC Mortality rates suppressed for Camden, Gates, Hyde, Jones, Pamlico, and Tyrrell counties due to small number of deaths

Source: Cancer Control Planet, State Cancer Profiles, 2011

Exhibit 168. 2003-2007 Female Breast Cancer Incidence rates per 100,000 women, by County

Source: Cancer Control Planet, State Cancer Profiles, 2011
*Female Breast Cancer mortality rates suppressed for Camden, Chowan, Currituck, Gates, Greene, Hyde, Jones, Perquimans, Tyrrell and Washington counties due to small number of deaths.

Source: Cancer Control Planet, State Cancer Profiles, 2011
### Exhibit 170. 2004-2008 Colorectal Cancer Age-Adjusted Incidence Rates per 100,000 persons, by County

<table>
<thead>
<tr>
<th>County</th>
<th>Incidence Rate</th>
</tr>
</thead>
<tbody>
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<td>Bertie</td>
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<tr>
<td>Lenoir</td>
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<tr>
<td>Beaufort</td>
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<tr>
<td>Edgecombe</td>
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<td>Hyde</td>
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<tr>
<td>Wilson</td>
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<td>Camden</td>
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<td>Nash</td>
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<tr>
<td>Wayne</td>
<td>53.8</td>
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<td>Perquimans</td>
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<td>Craven</td>
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<td>North Carolina</td>
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*Incidence rate from Tyrrell County suppressed due to small counts

Source: Cancer Control Planet, State Cancer Profiles, 2011

### Exhibit 171. 2003-2007 Colorectal Cancer Age-Adjusted Mortality Rates per 100,000 persons, by County

<table>
<thead>
<tr>
<th>County</th>
<th>Mortality Rate</th>
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<td>Perquimans</td>
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<tr>
<td>Beaufort</td>
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</tr>
<tr>
<td>Currituck</td>
<td>15.9</td>
</tr>
<tr>
<td>Onslow</td>
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</tr>
<tr>
<td>Duplin</td>
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</tr>
<tr>
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<td>17.3</td>
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</tbody>
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*CRC Mortality rates suppressed for Camden, Gates, Hyde, Jones, Pamlico, and Tyrrell counties due to small number of deaths

Source: Cancer Control Planet, State Cancer Profiles
### Exhibit 172. 2004-2008 Female Breast Cancer Age-Adjusted Incidence Rates per 100,000 women, by County

<table>
<thead>
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<th>County</th>
<th>Rate</th>
<th>County</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
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<td>Craven</td>
<td>125.7</td>
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<td>148.1</td>
<td>Beaufort</td>
<td>124.8</td>
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<td>123.3</td>
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<td>Wilson</td>
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<tr>
<td>Onslow</td>
<td>128.8</td>
<td>North Carolina</td>
<td>123.3</td>
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</table>

Source: Cancer Control Planet, State Cancer Profiles, 2011

### Exhibit 173. 2003-2007 Female Breast Cancer Age-Adjusted Mortality Rates per 100,000 persons, by County

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<thead>
<tr>
<th>County</th>
<th>Rate</th>
<th>County</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hertford</td>
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<td>Martin</td>
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</tr>
<tr>
<td>Bertie</td>
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<td>Duplin</td>
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<td>35.6</td>
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<td>28.3</td>
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<td>Northampton</td>
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</tbody>
</table>

*Female Breast Cancer mortality rates suppressed for Camden, Chowan, Currituck, Gates, Greene, Hyde, Jones, Perquimans, Tyrrell and Washington counties due to small number of deaths.

Source: Cancer Control Planet, State Cancer Profiles, 2011

All Races (includes Hispanic), Both Sexes, All Ages

Incidence Rates† for North Carolina, 2004 - 2008

Colon & Rectum

Age-Adjusted Annual Incidence Rate
(Cases per 100,000)

Quantile Interval

US (SEER + NPCR)
Rate (95% C.I.)
47.6 (47.5 - 47.7)

North Carolina
Rate (95% C.I.)
46.8 (46.1 - 47.4)

Created by statecancerprofiles.cancer.gov on 04/04/2012 9:41 am.
State Cancer Registries may provide more current or more local data.
Data presented on the State Cancer Profiles Web Site may differ from statistics reported by the State Cancer Registries (for more information).

† Incidence rates (cases per 100,000 population per year) are age-adjusted to the 2000 US standard population (19 age groups: <1, 1-4, 5-9, ..., 80-84, 85+). Rates are for invasive cancer only (except for bladder which is invasive and in situ) or unless otherwise specified. Rates calculated using SEER*Stat. Population counts for denominators are based on Census populations as modified by NCI. The US populations included with the data release have been adjusted for the population shifts due to hurricanes Katrina and Rita for 62 counties and parishes in Alabama, Mississippi, Louisiana, and Texas. The 1969-2008 US Population Data File is used with SEER November 2010 data. The 1969-2008 US Population Data File is used with NPCR January 2011 data.

* Data have been suppressed to ensure confidentiality and stability of rate estimates. Counts are suppressed if fewer than 15 cases were reported in a specific area-sex-race category.

** Data have been suppressed for states with a population below 50,000 per sex for American Indian/Alaska Native or Asian/Pacific Islanders because of concerns regarding the relatively small size of these populations in some states.

All Races (includes Hispanic), Both Sexes, All Ages

Age-Adjusted Death Rates for North Carolina, 2004 - 2008
Colon & Rectum

Created by statecancerprofiles.cancer.gov on 04/04/2012 9:40 am.
State Cancer Registries may provide more current or more local data.
Data presented on the State Cancer Profiles Web Site may differ from statistics reported by the State Cancer Registries (for more information).
Source: Death data provided by the National Vital Statistics System public use data file. Death rates calculated by the National Cancer Institute using SEER*Stat. Death rates (deaths per 100,000 population per year) are age-adjusted to the 2000 US standard population (19 age groups: <1, 1-4, 5-9, ..., 80-84, 85+). The Healthy People 2010 goals are based on rates adjusted using different methods but the differences should be minimal. Population counts for denominators are based on the Census 1969-2008 US Population Data File as modified by NCI. The US populations included with the data release have been adjusted for the population shifts due to hurricanes Katrina and Rita for 62 counties and parishes in Alabama, Mississippi, Louisiana, and Texas.
* Data have been suppressed to ensure confidentiality and stability of rate estimates. Counts are suppressed if fewer than 16 cases were reported in a specific area-sex-race category.
** Data have been suppressed for states with a population below 50,000 per sex for American Indian/Alaska Native or Asian/Pacific Islanders because of concerns regarding the relatively small size of these populations in some states.
Healthy People 2010 Goal 03-05: Reduce the colorectal cancer death rate to 13.9.
Healthy People 2010 Objectives provided by the Centers for Disease Control and Prevention.

Incidence Rates for North Carolina, 2004 - 2008
Cervix
All Races (includes Hispanic), Female, All Ages

Age-Adjusted
Annual Incidence Rate
(Cases per 100,000)

Quantile Interval

- 10.9 to 19.7
- 9.4 to 10.8
- 8.9 to 9.3
- 7.8 to 8.8
- 7.1 to 7.7
- 5.3 to 7.0
- Suppressed

US (SEER + NPCR)
Rate (95% CI)
8.1 (8.0 - 8.1)

North Carolina
Rate (95% CI)
7.9 (7.5 - 8.3)

Created by statecancerprofiles.cancer.gov on 04/04/2012 9:36 am.
State Cancer Registries may provide more current or more local data.
Data presented on the State Cancer Profiles Web Site may differ from statistics reported by the
State Cancer Registries (for more information).

' Incidence rates (cases per 100,000 population per year) are age-adjusted to the 2000 US standard population
(19 age groups: <1, 1-4, 5-9, ..., 80-84, 85+). Rates are for invasive cancer only (except for bladder which is
invasive and in situ) or unless otherwise specified. Rates calculated using SEER*Stat. Population counts for
denominators are based on Census populations as modified by NCI. The US populations included with the data
release have been adjusted for the population shifts due to hurricanes Katrina and Rita for 52 counties and parishes
in Alabama, Mississippi, Louisiana, and Texas. The 1969-2008 US Population Data File is used with SEER November 2010

* Data have been suppressed to ensure confidentiality and stability of rate estimates. Counts are suppressed
if fewer than 15 cases were reported in a specific area-sex-race category.

** Data have been suppressed for states with a population below 50,000 per sex for American Indian/Alaska Native
or Asian/Pacific Islanders because of concerns regarding the relatively small size of these populations in some states.

Age-Adjusted Death Rates for North Carolina, 2004 - 2008
Cervix
All Races (includes Hispanic), Female, All Ages

Created by statecancerprofiles.cancer.gov on 04/04/2012 9:35 am.
State Cancer Registries may provide more current or more local data.
Data presented on the State Cancer Profiles Web Site may differ from statistics reported by the
State Cancer Registries (for more information).
Source: Death data provided by the National Vital Statistics System public use data file. Death rates calculated
by the National Cancer Institute using SEER*Stat. Death rates (deaths per 100,000 population per year) are
age-adjusted to the 2000 US standard population (19 age groups: <1, 1-4, 5-9, ..., 80-84, 85+). The Healthy
People 2010 goals are based on rates adjusted using different methods but the differences should be minimal.
Population counts for denominators are based on the Census 1969-2008 US Population Data File as modified by NCI.
The US populations included with the data release have been adjusted for the population shifts due to hurricanes
Katrina and Rita for 62 counties and parishes in Alabama, Mississippi, Louisiana, and Texas.
* Data have been suppressed to ensure confidentiality and stability of rate estimates. Counts are suppressed
if fewer than 16 cases were reported in a specific area-sex-race category.
** Data have been suppressed for states with a population below 50,000 per sex for American Indian/Alaska Native
or Asian/Pacific Islanders because of concerns regarding the relatively small size of these populations in some states.
Healthy People 2010 Goal 03-04: Reduce the death rate from cancer of the uterine cervix to 2.0.
Healthy People 2010 Objectives provided by the Centers for Disease Control and Prevention.

Incidence Rates† for North Carolina, 2004 - 2008
Breast
All Races (includes Hispanic), Female, All Ages

Age-Adjusted
Annual Incidence Rate
(Cases per 100,000)

Quantile Interval

- 136.3 to 173.4
- 127.7 to 136.2
- 119.1 to 127.6
- 113.2 to 119.0
- 103.0 to 113.1
- 78.2 to 102.9

US (SEER + NPCR) Rate (95% C.I.)
121.0 (120.8 - 121.3)

North Carolina Rate (95% C.I.)
123.3 (121.9 - 124.7)

Created by statecancerprofiles.cancer.gov on 04/04/2012 9:32 am.
State Cancer Registries may provide more current or more local data.
Data presented on the State Cancer Profiles Web Site may differ from statistics reported by the
State Cancer Registries (for more information).

† Incidence rates (cases per 100,000 population per year) are age-adjusted to the 2000 US standard population
(19 age groups: <1, 1-4, 5-9, ..., 80-84, 85+). Rates are for invasive cancer only (except for bladder which is
invasive and in situ) or unless otherwise specified. Rates calculated using SEER*Stat. Population counts for
denominators are based on Census populations as modified by NCI. The US populations included with the data
release have been adjusted for the population shifts due to hurricanes Katrina and Rita for 62 counties and parishes
in Alabama, Mississippi, Louisiana, and Texas. The 1969-2008 US Population Data File is used with SEER November 2010

Age-Adjusted Death Rates for North Carolina, 2004 - 2008
Breast
All Races (includes Hispanic), Female, All Ages

Source: Death data provided by the National Vital Statistics System public use data file. Death rates calculated by the National Cancer Institute using SEER*Stat. Death rates (deaths per 100,000 population per year) are age-adjusted to the 2000 US standard population (19 age groups: <1, 1-4, 5-9, ..., 80-84, 85+). The Healthy People 2010 goals are based on rates adjusted using different methods but the differences should be minimal. Population counts for denominators are based on the Census 1969-2008 US Population Data File as modified by NCI. The US populations included with the data release have been adjusted for the population shifts due to hurricanes Katrina and Rita for 62 counties and parishes in Alabama, Mississippi, Louisiana, and Texas.

* Data have been suppressed to ensure confidentiality and stability of rate estimates. Counts are suppressed if fewer than 16 cases were reported in a specific area-sex-race category.

** Data have been suppressed for states with a population below 50,000 per sex for American Indian/Alaska Native or Asian/Pacific Islanders because of concerns regarding the relatively small size of these populations in some states.

Healthy People 2010 Goal 03-03: Reduce the breast cancer death rate to 22.3.
Healthy People 2010 Objectives provided by the Centers for Disease Control and Prevention.
This document contains the following information about cancer diagnosis, treatment or support in Eastern North Carolina:

- Colonoscopy Locations in Eastern North Carolina, 2011
- Colposcopy Referral Sites in Eastern North Carolina, 2011
- FDA Approved Mammography Facilities in Eastern North Carolina, 2011
- Hospital Locations in Eastern North Carolina, 2012
- Federally Qualified Health Centers and Look-Alike Sites in Eastern North Carolina, 2012

Disclaimer: The information in this resource guide does not fully reflect cancer services for screening preventable cancers in eastern North Carolina.
Colonoscopy Locations in Eastern North Carolina, 2011

**Beaufort County**

Vidant Beaufort Hospital  
*Endoscopy and Ambulatory Surgery Beds*  
628 East 12th Street  
Washington, NC 27889  
(252)975-4100

Vidant Pungo Hospital  
*Ambulatory Surgery beds*  
202 East Water Street  
Belhaven, NC 27810  
(252)943-2111

**Bertie County**

Vidant Bertie Hospital  
*Ambulatory Surgery beds*  
1403 S. King Street  
Windsor, NC 27983  
(252)794-6600

**Carteret County**

The Surgical Center of Morehead City  
*NC Licensed Ambulatory Surgical Facility-offers endoscopy*  
3714 Guardian Avenue  
Morehead City, NC 28557  
(252)247-0314

Carteret County General Hospital  
*Endoscopy and Ambulatory Surgery beds*  
3500 Arendell St.  
Morehead City, NC 28557  
(252)808-6000

**Chowan County**

Vidant Chowan Hospital  
*Endoscopy and Ambulatory Surgery Beds*  
211 Virginia Rd.  
Edenton, NC 27932  
(252)482-8451

**Craven County**

CCHC Endoscopy Center  
*Office-Based Colonoscopy Facility*  
975 Newman Road  
New Bern, NC 28562  
(252)514-6685

CarolinaEast Internal Medicine  
*Office-based Colonoscopy Facility*  
2604 Martin Luther King Jr Blvd  
New Bern, NC 28562  
(252)638-4023

CarolinaEast Health System  
*Endoscopy and Ambulatory Surgery Beds*  
2000 Neuse Blvd  
New Bern, NC 28561  
(252)633-8640

**Dare County**

The Outer Banks Hospital  
*Endoscopy and Ambulatory Surgery Beds*  
4800 S Croatan Highway  
Nags Head, NC 27959  
(252)449-4500

**Duplin County**

Vidant Duplin Hospital  
*Endoscopy and Ambulatory Surgery Beds*  
401 N. Main St.  
Kenansville, NC 28349  
(910)296-0941

**Edgecombe County**

Tarboro Endoscopy Center  
*NC Licensed Ambulatory Surgical Facility-offers endoscopy*  
201 Clinic Drive  
Tarboro, NC 27886  
(252)823-2105
Vidant Edgecombe Hospital
*Endoscopy and Ambulatory Surgery beds*
111 Hospital Drive
Tarboro, NC 27886
(252)641-7740

**Halifax County**

Halifax Regional Medical Center
*Endoscopy and Ambulatory Surgery beds*
250 Smith Church Rd
Roanoke Rapids, NC 27870
(252)535-8011

Halifax Gastroenterology P.C.
*Office-Based Colonoscopy Facility*
1007 Gregory Drive
Roanoke Rapids, NC 27870
(252)535-6478

**Hertford County**

Vidant Roanoke-Chowan Hospital
*Endoscopy and Ambulatory Surgery beds*
500 South Academy St.
Ahoskie, NC 27910
(252)209-3000

**Lenoir County**

Kinston Medical Specialists
*NC Licensed Ambulatory Surgical Facility-offers endoscopy*
701 Doctors Dr., Suite NC
Kinston, NC 28501
(252)233-3231

Park Endoscopy Center, LLC
*NC Licensed Ambulatory Surgical Facility-offers endoscopy*
2602 N. Heritage St
Kinston, NC 28501
(252)527-6565

Lenoir Memorial Hospital
*Endoscopy and Ambulatory Surgery beds*
100 Airport Rd
Kinston, NC 28501
(252)522-7797

**Martin County**

Martin General Hospital
*Endoscopy and Ambulatory Surgery beds*
310 S. McCaskey Rd
Williamston, NC 27892
(252)809-6179

**Nash County**

Boice-Willis Clinic Endoscopy Center
*NC Licensed Ambulatory Surgical Facility-offers endoscopy*
Rocky Mount Medical Park
901 N. Winstead Ave
Rocky Mount, 27804
(252)937-0220

**Onslow County**

Onslow Memorial Hospital
*Endoscopy and Ambulatory Surgery beds*
317 Western Blvd.
Jacksonville, NC 28546
(252)557-2345

East Carolina Gastroenterology
Endoscopy Center
*NC Licensed Ambulatory Surgical Facility-offers endoscopy*
4, Office Park Dr.
Jacksonville, NC 28546
(910)353-6158

**Pasquotank County**

Albemarle Gastro Associates
*Office-Based Colonoscopy Facility*
405 Hastings Lane
Elizabeth City, NC 27909
(252)335-5588

Northside Park Gastroenterology
*Office-Based Colonoscopy Facility*
102 Northside Park Drive
Elizabeth City, NC 27909
(252)335-4619
Albemarle Hospital  
_Endoscopy and Ambulatory Surgery beds_  
1144 North Road Street  
Elizabeth City, NC 27906  
(252)335-0531

**Pitt County**

Vidant Medical Center  
_Endoscopy and Ambulatory Surgery beds_  
2100 Stantonsburg Rd  
Greenville, NC 27835  
(252)847-4451

Atlantic Gastroenterology Endoscopy Center, PA  
_NC Licensed Ambulatory Surgical Facility_-  
offers endoscopy  
2465 Emerald Place  
Greenville, NC 27834-578  
(252)758-2424

Carolina Digestive Diseases  
_NC Licensed Ambulatory Surgical Facility_-  
offers endoscopy  
704 W.H. Smith Blvd  
Greenville, NC 27834  
(252)758-8181

East Carolina Endoscopy Center  
_NC Licensed Ambulatory Surgical Facility_-  
offers endoscopy  
2100 Stantonsburg Road  
Greenville, NC 27834  
(252)744-6600

Gastroenterology East, PA  
_NC Licensed Ambulatory Surgical Facility_-  
offers endoscopy  
2210 Hemby Lane  
Greenville, NC 27834  
(252)551-3000

Quadrangle Endoscopy Center  
_NC Licensed Ambulatory Surgical Facility_-  
offers endoscopy  
1850 W. Arlington Blvd  
Greenville, NC 27834  
(252)757-3636

**Washington County**

Washington County  
_Endoscopy and Ambulatory Surgery beds_  
958 US Hwy 64 East  
Plymouth, NC 27962  
(252)793-4135

**Wayne County**

Wayne Memorial Hospital  
_Endoscopy and Ambulatory Surgery beds_  
2700 Wayne Memorial Drive  
Goldsboro, NC 27534-9459  
(919)736-1110

Goldsboro Endoscopy Center, Inc  
_NC Licensed Ambulatory Surgical Facility_-  
offers endoscopy  
2705 Medical Office Place  
Goldsboro, NC 27534  
(919)580-9111

**Wilson County**

Wilson Medical Center  
_Endoscopy and Ambulatory Surgery beds_  
1705 Tarboro Street SW  
Wilson, NC 27893  
(252)399-8040

CGS Endoscopy Center  
_NC Licensed Ambulatory Surgical Facility_-  
offers endoscopy  
2520 Airport Blvd., Suite F  
Wilson, NC 27896  
(252)206-5622

Wilson Digestive Diseases Center, P.A.  
_NC Licensed Ambulatory Surgical Facility_-  
offers endoscopy  
2402 Camden Street  
Wilson, NC 27892  
(252)237-5060
Colposcopy Referral Sites in Eastern North Carolina, 2011

**Beaufort County**

Washington Women’s Care
*Accepts BCCCP? No*
1204 Brown Street
Washington, NC 27889
(252)946-6544

OBGYN of Washington- A subsidiary of Beaufort Regional Health System
*Accepts BCCCP? Yes*
2010 N. Brown Street
Washington, NC 27889
(252)975-1188

**Bertie County**

Bertie County Rural Health
Dr. Ricky Brookes
*Accepts BCCCP? Yes*
222 County Farm Road
Windsor, NC 27983
(252)794-3042

**Carteret County**

Carteret Ob-Gyn
*Accepts BCCCP? Yes*
3511 John Platt Drive
Morehead City, NC 28557
(252)247-4297

Southside Healthcare for Women
Dr. William Rawls
*Accepts BCCCP? Yes*
3106 Arendell St.
Morehead City, NC 28557
(252)808-2500

Dr. Darryl L. Falls
*Accepts BCCCP? No*
1508 Arendell St.
Morehead City, NC 28557
(252)726-7374

**Craven County**

Craven County Health Department
*Accepts BCCCP? Yes*
2818 Neuse Boulevard
New Bern, NC 28561
(252)636-4920

East Carolina Women’s Center, P.A.
*Accepts BCCCP? Yes*
200 Stonebridge Square
Havelock, NC 28532
(252)633-3942

**Currituck County**

Family Practice & Ob-Gyn
Dr. Norman Dahm
*Accepts BCCCP? No*
8845 Caratoke Highway
Harbinger, NC 27941
(252)491-8550

**Dare County**

Coastal Women’s Clinic
*Accepts BCCCP? No*
4810 S. Croatan Hwy
Nags Head, 27959
(252)261-4885

Outer Banks Center for Women
*Accepts BCCCP? No*
4917 South Croatan Highway
Nags Head, 27959
(252)449-2100

**Duplin County**

Goshen Medical Center-Faison
*Accepts BCCCP? Yes*
444 S. West Center St.
Faison, NC 28341
(910)267-0421
Goshen Medical Center-Women’s Health  
Accepts BCCCP? Yes  
212 Duplin St.  
Keenansville, NC 28349  
(910)296-0790

Goshen Medical Center-Warsaw  
Accepts BCCCP? Yes  
603 E. College St.  
Warsaw, NC 28398  
(910)293-3900

**Edgecombe County**

Tarboro Women’s Care  
Accepts BCCCP? Yes  
2704 N. Main St.  
Tarboro, NC 27886  
(252)823-6333

**Halifax County**

Women's Health Specialists, P.A.  
Accepts BCCCP? Yes  
1381 Medical Center Drive  
Roanoke Rapids, NC 27870  
(252)535-1414

**Hertford County**

OB-GYN Women’s Care of Ahoskie  
Accepts BCCCP? Yes  
700 Academy St. S  
Ahoskie, NC 27910  
(252)862-4054

**Lenoir County**

Lenoir County Health Department  
Accepts BCCCP? Yes  
130 South Queen Street  
Kinston, NC 28502  
(252)559-6450

Kinston Community Health Center  
Accepts BCCCP? No  
324 N. Queen Street  
Kinston, NC 28501  
(252)208-1485

Lenoir Women’s Care (Kinston)  
Accepts BCCCP? No  
103 Airport Rd  
Kinston, NC 28501  
(252)527-7208

Dr. Joan Baker  
Accepts BCCCP? No  
608 Airport Road Suite B  
Kinston, NC 28504  
(252)520-0020

**Martin County**

Martin County Health Department  
Accepts BCCCP? Yes  
210 West Liberty Street  
Williamson, NC 27892  
(252)793-1619

Roanoke Women’s Healthcare  
Melissa Greene, CNM  
Accepts BCCCP? Yes  
104 Medical Drive  
Williamston, NC 27892  
(252)809-6341

**Nash County**

Nash OB/GYN Associates  
Accepts BCCCP? Yes  
200 Nash Medical Arts Mall  
Rocky Mount, NC 27804  
(252)443-5941

Englewood OB/GYN Associates  
Accepts BCCCP? Not indicated  
140 N. Englewood Dr.  
Rocky Mount, NC 27804  
(252)937-6611
Rocky Mount GYN and Women’s Health
Accepts BCCCP? Not indicated
132 Foy Dr.
Rocky Mount, NC 27804
(252)443-6622

Women’s Health of Rocky Mount
Accepts BCCCP? Not indicated
804 English Rd, Suite 2010
Rocky Mount, NC 27804
(252)451-7060

Rocky Mount-OIC Medical Center
Accepts BCCCP? Yes
111 Fairview Road
Rocky Mount, NC 27803
(252)446-3333

Crist Clinic for Women
Accepts BCCCP? No
250 Memorial Drive
Jacksonville, NC 28540
(910)353-2115

Women’s Healthcare Associates
Accepts BCCCP? No
245 Memorial Drive
Jacksonville, NC 28540
(910)353-4333

Albemarle Regional Health Services-Pasquotank
Accepts BCCCP? Yes
711 Roanoke Avenue, Elizabeth City, NC 27909
252-338-4400

East Carolina Brody Outpatient Clinic
Accepts BCCCP? No
Emergency Road
Greenville, NC 27834
(252)744-2350

ECU Physicians-Family Medicine Center
Accepts BCCCP? No
101 Heart Drive
Greenville, NC 27834
(252)744-4611

James D. Bernstein Community Health Center
Accepts BCCCP? No
261 Belvoir Hwy
Greenville, NC 27834-8661
(252) 695-6352

Tyrrell County

Tyrrell County Health Department
Accepts BCCCP? Yes
408 Bridge Street
Columbia, NC 27925
(252) 793-3023

Washington County

Washington County Health Department
Accepts BCCCP? Yes
198 NC Hwy 45 North
Plymouth, NC 27962
(252) 793-3023

Wayne County

Wayne Women’s Clinic
Accepts BCCCP? Not indicated
102 Handley Park Court
Goldsboro, NC 27534
(919) 734-3344

Goldsboro OBGYN, Associates, PLLC
Accepts BCCCP? Yes
2608 Hospital Rd
Goldsboro, NC 27534
(919)735-3464
**Wilson County**

Wilson County Health Department  
*Accepts BCCCP? Yes*  
1801 Glendale Drive  
Wilson, NC 27893  
(252)237-3141

Harvest Family Health Center  
*Accepts BCCCP? No*  
8282 NC 58 S  
Elm City, NC 27822  
(252) 443-7744

Wilson OB/GYN  
*Accepts BCCCP? Not indicated*  
2500 Horton Boulevard Southwest  
Wilson, NC 27893  
(252) 206-1000
FDA Approved Mammography Facilities in Eastern North Carolina, 2011

**Beaufort County**

Vidant Pungo Hospital  
202 East Water Street  
Belhaven, NC 27810  
(252)944-2210

Eastern Radiologist Inc-Washington, NC  
630 East Eleventh St.  
Washington, NC 27889  
(252)946-2137

**Bertie County**

Vidant Bertie Hospital  
1403 S. King Street  
Windsor, NC 27983  
(252)794-6626

**Carteret County**

CGH Imaging Center  
3402 Arendell Street  
Morehead City, NC 28557  
(252)808-6551

Carteret OB GYN Associates  
3511 John Platt Dr.  
Morehead City, NC 28557  
(252)247-4197

**Chowan County**

East Carolina Health-Chowan, Inc DBA  
Chowan Hospital  
211 Virginia Rd.  
Edenton, NC 27932  
(252)482-6245

**Craven County**

Naval Health Clinic-Cherry Point Building  
4389 Beaufort Rd PSC Box 8023  
Cherry Point, NC 28533  
(252)466-0250

CCHC Imaging  
1030 Medical Park Ave  
New Bern, NC 28562  
(252)637-5480

Carolina Diagnostic Center  
640 McCarthy Blvd  
New Bern, NC 28562  
(252)634-6440

Eastern Carolina Internal Medicine PA  
2604 Dr. Martin Luther King Jr Blvd  
New Bern, NC 28562  
(252)633-1010

**Dare County**

Regional Medical Services, Inc  
5200 N Croatan Hwy  
Kitty Hawk, NC 27949  
(252)255-6040

The Outer Banks Hospital  
4800 S. Croatan Hwy  
Nags Head, NC 27959  
(252)449-5918

**Duplin County**

Goshen Medical Center, Inc  
444 SW Center St.  
Faison, NC 28341  
(910)267-0421

Vidant Duplin Hospital  
401 N. Main St.  
Kenansville, NC 28349  
(910)296-2665

**Edgecombe County**

Vidant Edgecombe Hospital  
111 Hospital Dr.  
Tarboro, NC 27886  
(252)641-7795
Greene County

Greene County Health Care-Snow Hill Medical Center
302 N. Greene Street
Snow Hill, NC 28580
(252)747-2921

Halifax County

Mammography Center
210 Smith Church Rd, Ste
Roanoke Rapids, NC 27870
(252)535-3417

Hertford County

Roanoke-Chowan Hospital
500 S Academy St.
Ahoskie, NC 27910
(252)209-3401

Jones County

Carolina East Internal Medicine
137 Medical Lane
Pollocksville, NC 28573
(252)633-1010

Lenoir County

Eastern Radiologists, Inc
701 Doctors Dr., Ste M
Kinston, NC 28501
(252)507-7077

Martin County

Martin General Hospital
310 S McCaskey Rd
Williamston, NC 27892
(252)809-6332

Nash County

Nash Breast Care Center
250 Nash Medical Arts Mall, Ste B
Rocky Mount, NC 27804
(252)962-6100

Rocky Mount Family Medical Center
804 English Rd., Suite 100
Rocky Mount, NC 27804
(252)443-3133 x243

Rocky Mount Gynecology and Women’s Health, P.A.
132 Foy Drive
Rocky Mount, NC 27804
(252)433-6622

Boice Willis Clinic, P.A.
901 North Winstead Ave
Rocky Mount, NC 27804
(252)937-0482

Onslow

Naval Hospital
100 Brewster Blvd. Radiology Department
Camp Lejeune, NC 28547
(910)450-4455

Onslow Imaging Center for Women-Onslow Memorial Hosp., Inc
121 Memorial Drive
Jacksonville, NC 28546
(910)577-2690

Onslow Radiology Center
299 Doctor’s Drive
Jacksonville, NC 28546
(910)577-1171

Onslow Imaging Center for Women-Onslow Memorial Hosp., Inc
121 Memorial Drive
Jacksonville, NC 28546
(910)577-2690
Pasquotank County

Albemarle Hospital
1144 North Road Street
Elizabeth City, NC 27909
(252)384-4128

Pitt County

Physicians East P.A. Greenville Women’s Clinic
2251 Stantonsburg Rd
Greenville, NC 27834
(252)757-3131

Physicians East-Greenville Obstetrics and Gynecology
101 Bethesda Dr.
Greenville, NC 27834
(252)758-4181

Physicians East Diagnostic Center
1850 West Arlington Blvd
Greenville, NC 27834
(252)413-6601

Eastern Radiologists, Inc Breast Imaging Center
2101 West Arlington Blvd. Suite 100
Greenville, NC 27834
(252)752-5000

Washington County

Washington County Hospital
958 US Highway 64
East Plymouth, NC 27962
(252)793-7706

Wayne County

Wayne Memorial Hospital
2700 Wayne Memorial Drive
Goldsboro, NC 27530
(919)731-6013

Wayne Radiologist, P.A.
2700 Medical Office Place
Goldsboro, NC 27534
(919)734-1866 x5310

Wilson County

Wilson Medical Center Outpatient Imaging
1711 Medical Park Dr.
Wilson, NC 27893
(252)399-8900

Family Medicine
2546 Ward Blvd.
Wilson, NC 27893
(252)399-0707
Hospital Locations in Eastern North Carolina, 2012

**Beaufort County**

Vidant Beaufort Hospital  
628 East 12th Street  
Washington, NC 27889  
(252)975-4100

Vidant Pungo Hospital  
202 E. Water St.  
Belhaven, NC 27810  
(252)943-2111

**Bertie County**

Vidant Bertie Hospital  
1403 S. King Street  
Windsor, NC 27983  
(252)794-6626

**Carteret County**

Carteret County General Hospital  
3500 Arendell St.  
Morehead City, NC 28557  
(252)808-6000

**Chowan County**

Vidant Chowan Hospital  
211 Virginia Rd.  
Edenton, NC 27932  
(252)482-8451

**Craven County**

CarolinaEast Health System  
2000 Neuse Blvd  
New Bern, NC 28561  
(252)633-8640

**Dare County**

The Outer Banks Hospital  
4800 S Croatan Highway  
Nags Head, NC 27959  
(252)449-4500

**Duplin County**

Vidant Duplin Hospital  
401 N. Main St.  
Kenansville, NC 28349  
(910)296-0941

**Edgecombe County**

Vidant Edgecombe Hospital  
111 Hospital Drive  
Tarboro, NC 27886  
(252)641-7740

**Halifax County**

Halifax Regional Medical Center  
250 Smith Church Rd  
Roanoke Rapids, NC 27870  
(252)535-8011

Our Community Hospital  
Bruce Medical Plaza  
921 Junior High Rd  
Scotland Neck, NC 27874  
(252)826-4144

**Hertford County**

Vidant Roanoke-Chowan Hospital  
500 South Academy St.  
Ahoskie, NC 27910  
(252)209-3000
Lenoir County
Lenoir Memorial Hospital, Inc
100 Airport Rd
Kinston, NC 28501
(252)522-7797

Martin County
Martin General Hospital
310 S. McCaskey Rd
Williamston, NC 27892
(252)809-6179

Nash County
Nash Health Care Systems
2460 Curtis Ellis Dr.
Rocky Mount, NC 27804
(252)962-8000

Onslow County
Onslow Memorial Hospital
317 Western Blvd.
Jacksonville, NC 28546
(252)557-2345

Pasquotank County
Albemarle Health
1144 North Road Street
Elizabeth City, NC 27909
(252)335-0531

Pitt County
Vidant Medical Center
2100 Stantonsburg Rd
Greenville, NC 27835
(252)847-4451

Washington County
Washington County Hospital
958 US Hwy 64 East
Plymouth, NC 27962
(252)793-4135

Wayne County
Wayne Memorial Hospital
2700 Wayne Memorial Drive
Goldsboro, NC 27534-9459
(919)736-1110

Wilson County
Wilson Medical Center
1705 Tarboro Street SW
Wilson, NC 27893
(252)399-8040
Federally Qualified Health Centers and Look-Alike Sites in Eastern North Carolina, 2012

**Beaufort County**

Agape Community Health Center
120 W. Martin Luther King Jr. Dr.
Washington, NC 27889-4906
(252)940-0602

**Bertie County**

Lewiston Community Health Center
307 S. Main St.
Lewiston, NC 27849-9656
(252)348-2545

Windsor Community Health Center
104 Rhodes Ave
Windsor, NC 27983-9656
(252)794-3325

Colerain Primary Care
109 W River St.
Colerain, NC 27924-9006
(252)356-2404

**Chowan County**

Gateway Community Health Centers-Tyner
2896 Virginia Rd
Tyner, NC 27980-9777
(252)384-4805

**Duplin County**

Community Health Services
325 North Carolina 55 Wes
Mount Olive, NC 28365
(919)658-5900

Goshen Medical Center-Beulaville
119 Crossover Rd
Beulaville, NC 28518-8801
(910)298-3125

Goshen Medical Center-Women’s Health
212 Duplin St.
Kenansville, NC 28349-9024
(910)296-0790

Plainview Health Services
360 E Charity Rd
Rose Hill, NC 28458-8303
(910)289-3086

Goshen Medical Center-Wallace Medical Services
112 Medical Village Dr.
Wallace, NC 28466
(910)285-2330

Goshen Medical Center-Warsaw Wellness Center
113 S Pine St
Warsaw, NC 28398-1924
(910)293-7246

Goshen Medical Center-Warsaw
603 E College St
Warsaw, NC 28398-2104
(910)293-3900

**Edgecombe County**

Freedom Hill Community Health Center
162 NC Highway 33 E
Tarboro, NC 27886-8582
(252)341-0514

Rocky Mount OIC Family Medical Center
111 S Fairview Rd
Rocky Mount, NC 27801-6971
(252)446-3333
**Gates County**

Gateway Community Health Centers-Gatesville  
501 Main St.  
Gatesville, NC 27938-9424  
(252)357-2167

**Greene County**

Greene County Health Care/Snow Hill Medical Center  
302 N Greene St  
Snow Hill, NC 28580-1412  
(252)747-8162

Kate B. Reynolds Medical Center  
205 Martin Luther King Jr. Pkwy  
Snow Hill, NC 28580-1320  
(252)747-4199

Walstonburg Medical Center  
204 S Main St  
Walstonburg, NC 27888-8900  
(252)753-3771

**Halifax County**

Rural Health Group at Lake Gaston  
108 Mosby Ave  
Littleton, NC 27850-9411  
(252)586-5411

Rural Health Group at Roanoke Rapids  
2066 NC Highway 125  
Roanoke Rapids, NC 27870-9436  
(252)586-5000

Rural Health Group at Scotland Neck  
919 Jr High School Rd  
Scotland Neck, NC 27874-1219  
(252)826-3143

Rural Health Group at Twin County  
204 Evans Rd.  
Hollister, NC 27844  
(252)586-5151

**Hertford County**

Roanoke Chowan Community Health Center Ahoskie  
240 S. Academy St.  
Ahoskie, NC 27910-2451  
(252)332-3548

Murfreesboro Primary Care  
305 Beechwood Blvd  
Murfreesboro, NC 27855-1134  
(252)398-3638

**Jones County**

Goshen Medical Center-Trenton  
104 E Lakeview Dr.  
Trenton, NC 28585-8893  
(252)448-4321

**Lenoir County**

Kinston Community Health Center  
324 N Queen St  
Kinston, NC 28501-4932  
(252)522-9485

**Nash County**

Rural Health Group at Whitakers  
105 SE Railroad St.  
Whitakers, NC 27891  
(252)437-2171

**Northampton County**

Rural Health Group at Jackson  
9425 NC Highway 305  
Jackson, NC 27845-9679  
(252)534-1661

Rural Health Group at Rich Square  
200 S Main St  
Rich Square, NC 27869  
(252)539-2082
Onslow County

Goshen Medical Center-New River  
1200 Hargett St  
Jacksonville, NC 28540-5933  
(910)219-1082

Pamlico County

Pamlico Community Health Center  
13531 Highway 55 E  
Alliance, NC 28509  
(252)745-2070

Pitt County

Grimesland Community Resource Center  
550 River St  
Grimesland, NC 27837  
(252)752-1857

James D. Bernstein Community Health Center  
261 Belvoir Rd  
Greenville, NC 27834-8661  
(252)695-6352

JR Harvey Health Resources Center  
540 Queen St  
Grifton, NC 28530-7338  
(252)524-3475

Wayne County

Goshen Medical Center-East Pointe  
200 W Ash St Ste 202  
Goldsboro, NC 27530-3679  
(919)587-0364

Goshen Medical Center-Fremont  
109 S Sycamore St  
Fremont, NC 27830-8710  
(919)242-4382

Goshen Medical Center-Goldsboro  
2701 Medical Office Pl  
Goldsboro, NC 27534-9458  
(919)739-8680

Goshen Medical Center-Lambert  
130 NE Center St  
Mount Olive, NC 28365-1701  
(919)658-2505

Wilson County

Harvest Family Health Center  
8282 S NC Highway 58  
Elm City, NC 27822-8079  
(252)433-7744

Wilson Community Health Center  
303 Green St E  
Wilson, NC 27893-4105  
(252)243-9800

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