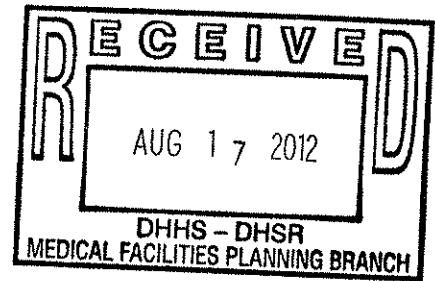


North Carolina State Health Coordinating Council  
c/o Medical Facilities Planning Section  
Division of Health Service Regulation  
809 Ruggles Drive  
Raleigh, North Carolina 27603



Re: Response to Cape Fear Valley Health System's Petition for Adjustment to Eliminate a Need for 119 Acute Care Beds in the Cumberland/Hoke Service Area

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## RESPONSE TO PETITION

### **Introduction**

FirstHealth of the Carolinas, Inc. (FirstHealth) appreciates the opportunity to comment upon the Petition filed by Cape Fear Valley Health System (CFVHS) to eliminate the need determination in the proposed 2013 SMFP for 119 new acute care beds in the Cumberland-Hoke service area. For the reasons stated in these comments, the petition should be denied and the need determination should be included in the 2013 SMFP.

### **Response**

North Carolina's health planning process is designed to serve the needs of North Carolina citizens, not the needs of individual providers. The SHCC historically has not allowed providers' self-interests to trump the health care needs of citizens who are served by regulated assets. Yet that is exactly what CFVHS is asking the SHCC to do in this petition.

CFVHS's petition is premised on CFVHS's self interests. CFVHS figures now that it has gotten what it wanted from the health planning process, it is time to close the door to further expansion. Recently, CFVHS has been approved to develop 41 beds (originally awarded in 2004) in Hoke County, and it has also received approval for a new 65-bed hospital in Northern Cumberland County. In July 2012, CFVHS applied for 28 beds in the 2012 SMFP. CFVHS has awarded the 28 beds to itself even though the CON review will not be finished until the end of November 2012.<sup>1</sup>

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<sup>1</sup> On page 3 of its petition, CFVHS recites the total number of beds that has been awarded to CFVHS in recent years and states: "[t]his total includes the 28 beds which are currently the subject of a *competitive* review. CFVHS assumes they will be awarded to CFVMC." (emphasis added). It is premature for CFVHS to assume the outcome in a competitive CON review. Several scenarios could occur that do not result in 28 beds being awarded

The implicit request in CFVHS's petition is that it would like the SHCC to insulate it from additional competition in Hoke County and eliminate the possibility that another healthcare provider might someday operate a competing hospital in Cumberland County. But what may be good for CFVHS is not necessarily good for the citizens of North Carolina. It is their needs, not CFVHS's, that must be considered. The approval of this petition to eliminate a utilization-based need determination because only a single provider currently exists in the service area will set the stage for every SMFP need determination generated in a single provider service area to be challenged through the petition process. This action will only give an advantage to the single provider by eliminating not only the need determination, but also any competition without going through the Certificate of Need process. In the end, it will be the citizens of North Carolina who suffer as a result because they will not benefit from enhanced access or increased quality or lower prices that normally result from competition.

The unavoidable fact is that Cumberland and Hoke Counties (as well as all the other counties in CFVHS's service area) are growing and there is a need for more beds beyond the 28 that are currently under review. *See, e.g.*, page 44 of CFVHS's 28-bed CON application (excerpts of which are attached as Exhibit A). Nowhere in the petition does CFVHS factor in the needs of the patients who live in Cumberland, Hoke or surrounding areas and who might benefit from additional beds.

For example, on page 42 of the 28-bed CON Application, CFVHS points out that the compound annual growth rate (CAGR) in patient days at CFVMC for six years (2005-2011) is 4.3%, and over three years (2008-2011), it was 5.5%. A CAGR is used to smooth out variations in growth rates. The 5.5% CAGR compares favorably to the 5.64% growth rate in the acute care bed need methodology in the proposed 2013 SMFP. Based on CFVHS's own experience, the 5.64% growth rate is not "overstated" as CFVHS now says on page 2 of its petition.<sup>2</sup>

CFVHS chose to use a weighted population growth rate of 1.43% to project future growth for purposes of the 28-bed application. CFVHS now suggests in the petition that 1.43% is a more accurate predictor of future growth than the 5.64% growth rate used in the proposed 2013 SMFP. But this ignores CFVHS's own actual experience based on the CAGR since 2005. The fact that a CON applicant chose to use a particular growth rate in a CON application does not obligate the SHCC to use that growth rate. A CON applicant may have its own reasons for choosing a particular growth rate; but the growth rates used in the SMFP are not a matter of choice. Nor are they indicative of any bias or desire a CON applicant may have to improve its chances in a CON review. Rather, the growth rates used in the SMFP are objective. They are utilization driven and based on the actual numbers. This is as it should

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to CFVHS. The beds could be awarded to FirstHealth which is the other applicant in the 28-bed review. The CON Section could award some of the 28 beds to FirstHealth and some of the 28 beds to CFVHS. Or the CON Section could decide to award the beds to no one. The 28-bed review, which only began on July 1, 2012, is far from a "done deal."

<sup>2</sup> Nothing in this response should be construed to suggest that FirstHealth believes CFVHS should be approved for the 28 beds. FirstHealth is an applicant in that review and FirstHealth's position is that the 28 beds should be awarded to FirstHealth in Hoke County.

be, because the health planning process is supposed to protect the needs of citizens, not the interests of individual providers.

CFVHS also repeatedly emphasizes its high census (94.8% in the first six months of FY 2012) and the fact that it continually files for temporary increases in licensed bed capacity with the Licensure and Certification Section. But at the same time, CFVHS discounts some of its growth as attributable to "peaks" based on adding new beds. This, according to CFVHS, tends to skew the average. *See* petition, page 2. CFVHS sought and received temporary increases long after the introduction of beds in 2008 and 2011. Most recently, it applied for and received an additional temporary increase on July 2, 2012. *See* Attachment 3 to CFVHS's petition. This means there was continued demand for more beds unrelated to any "peaks" because of new beds, so CFVHS's attempt to downplay some of its own growth is not persuasive.

While CFVHS states that growth as a result of BRAC has not been as strong as expected, CFVHS nevertheless acknowledges that the population in all six counties in its service area is projected to grow, and that of those six counties, Hoke County is growing at the highest population CAGR (3.0% between 2012 and 2016). Significantly, while the petition seems to suggest that BRAC-related growth is "over," both the petition and the 28-bed CON application talks about how the growth has not "yet" been realized. The Fayetteville Observer article that CFVHS attached to its petition as Attachment 4 states in part:

Michael Walden, a professor at N.C. State, and John D. Kasarda, a professor at UNC, said the belief that defense contractors would fill business parks around Fort Bragg immediately after BRAC was a fallacy.

Economic development simply doesn't happen that quickly, they said.

"There's always a lag. This is not at all surprising," Kasarda said. "You may see movement in a year or so, but BRAC won't fully manifest itself for another five to 10 years."

The aim of health planning is to plan for long-term needs. As the article suggests, the full force of BRAC is yet to come, and it is imperative that the region be ready to meet the demand.

While the petition talks about the bed need "flattening" in Cumberland County, *see* petition, pages 3 and 4, resulting in a need for only 8 more beds in FY 2015, the 28-bed application tells a very different story. On page 50 of that application, CFVHS carries out the projections to 2018, showing that CFVMC needs 42 additional beds; that CFV North will need 5 more beds; and Hoke Community Medical Center would need 6 more beds, for a collective need of 53 more beds in 2018. This is based on using the extremely conservative growth rate of 1.43%.

Further, the patient days both before and after 2015 do not appear to be "flattening." As the table on page 4 of the petition shows, from 2011 to 2015, CFVHS projects to add almost 10,000 patient days. Again, this is based on applying the very conservative 1.43% growth rate. Looking further out to 2018, as CFVHS did in the 28-bed application, the total number of days for CFVMC, Hoke Community Medical Center and Cape Fear Valley North

grows to 187,844 (again using the 1.43% growth rate). Thus, between 2011 and 2018, CFVHS projects to add 17,783 patient days. This is not indicative of "flattening."

It is also important to put CFVHS's definition of "flat" growth in 2012 into perspective. While CFVMC's occupancy levels are not growing on a percentage basis as much as they were in the FY 2008-FY 2011 timeframe, occupancy at CFVMC is far from "flat." According to the chart on page 4 of the petition, CFVMC was over 95% occupied in FY 2011, and its FY 2012 utilization is projected to rise to 96.4%. This is not "flat" growth.

CFVHS also cites the arrival of two new hospitals in Hoke County as a reason not to add a need for more beds in the 2013 SMFP. This argument is misleading. CFVHS suggests that the bed need is only for Cumberland County, when the need is for *both* Cumberland and Hoke Counties. It does not matter that Hoke County will become its own service area once a hospital opens; as of January 1, 2013, the effective date of the 2013 SMFP, no hospital will be open in Hoke County. And even if Cumberland County did not need more beds due to the fact that "a significant volume of patient days from CFVMC will shift to Hoke Community Medical Center," *see* petition, page 4, the needs of Hoke County residents for additional access to health care in Hoke County must be taken into consideration. As CFVHS showed on page 44 of the 28-bed CON application, the CAGR for the population of Hoke County between 2012 and 2016 is 3%.

On page 5 of the petition, CFVHS discusses the revised acute care bed need methodology and discussions that the Acute Care Bed Need Work Group held about raising the target occupancy threshold to 80% or even 85%. This information is not relevant because the thresholds have not been raised. CFVHS also says it has been operating at 86% occupancy for the last 12 months, using 49 beds awarded through the temporary increase. But in the CON application for the 28 beds, CFVHS made much of the fact that it was operating at 95.1% occupancy in FY 2011, increasing to 96.4% in FY 2012. *See* 28-bed application, page 51.

CFVHS adjusts its message based on the audience: for the CON Section, CFVHS's message is that its occupancy levels are oppressive; but for the SHCC, CFVHS's message is that its occupancy levels are much more manageable. The disparity in messages is illustrated in the 28-bed application where CFVHS said:

Development of the proposed 28 acute care beds will help address the increasing demand for acute care beds at CFVMC. For the last five years, CFVMC operated its existing licensed acute care beds at well over the target planning occupancy levels for hospitals with ADCs between 200-400 and within the last three years greater than 400 patients per day included in the annual SMFP Acute Care Bed Chapter. The following table shows historical utilization of licensed acute care beds at CFVMC as reported in the annual SMFP.

**Cape Fear Valley Medical Center  
Historical Acute Care Bed Utilization**



**October 2006-September 2011**

	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>
Patient Acute Care Days	136,755	145,017	150,096	155,926	170,061
ADC	374.7	397.3	411.2	427.2	465.9
Licensed Bed Capacity	397	487	490	490	490
Occupancy Licensed Beds	94.4%	81.6%	83.9%	87.2%	95.1%

The previous table shows steady growth in acute care inpatient days, and ADC at CFVMC. Utilization of operational beds exceeded 80% during the last five years. CFVHS also has CON approval for 41 additional beds, which are to be developed at Hoke Community Medical Center in Hoke County, and 65 additional beds which are to be developed in northern Cumberland County. If those 106 beds were to be included in CFVMC's acute care bed capacity, utilization of total licensed and approved acute care beds would exceed the 78% SMFP planning target for facilities with ADC of 400 or more patients per day in FY 2011, as reflected in Exhibit 30, Table 1.

See Exhibit A, pages 40-41.

Later in the application, CFVHS shows that even with all the approved and proposed bed additions, CFVHS's occupancy over a seven-year time frame (2011-2018) is never at or below target occupancy of 78% -- rather, it is always *over* that number. In fact, in the last year for which there are projections, 2018, CFVMC's occupancy is projected to be 84.3%. System-wide, the occupancy level is projected to be 82.5% in 2018. See Exhibit A, p. 50.

The SHCC need not try to reconcile the conflicting messages that CFVHS sends to various sections within DHSR. Rather, the SHCC can rely on the numbers and the demographic data for Cumberland and Hoke Counties which show: (1) CFVMC has experienced a significant increase in patient days; (2) the trend is going to continue far into the future; (3) population in the service area is growing; and (4) there are significant access and health status issues in both Counties. All of these things point to a need for more beds in the Hoke/Cumberland service area.

Turning first to Hoke County, as FirstHealth explained in its July 2012 application for 28 additional beds in Hoke County, Hoke County's population is expected to grow by 27.3%

between 2010 and 2020.<sup>3</sup> The elderly (65+) segment of the population is expected to grow the most (70.1% increase between 2010 and 2020). The 45-64 age range is also growing significantly, with projected growth of 26.8% between 2010 and 2020. These age groups will have significant needs for inpatient services. In the four county service area that FirstHealth identified in the 28-bed application (Hoke, Cumberland, Scotland and Robeson Counties), the 65+ population is expected to grow by 34.4% between 2010 and 2020. Overall, the four-county service area is expected to grow by 4.3% over the 10 year period, and 55% of that growth is expected to come from Hoke County. See Exhibit B, page 71. Hoke County's overall expected population growth (27.3%) far surpasses expected population growth in Harnett County, Cumberland County and even Wake County. Its growth in the 65+ age range is comparable to the growth in that age range in Wake County (70.1% versus 72.5%). See Exhibit B, page 72.

Hoke County has a population that is more diverse than the State as a whole. For example, minorities make up just 27.3 percent of the State's population compared to 49.4 percent in Hoke County, and 52.1% for the four-county service area. See Exhibit B, p. 73. As discussed beginning on page 74 of FirstHealth's 28-bed application, there are several barriers to health care access in Hoke County. There are relatively few primary care physicians in Hoke County. Almost one quarter of the population is in poor health.

In a 2010 "State of the County Health Report," the following was noted about Hoke County:

The average per capita income for residents in Hoke County is about \$16,831 (2009 inflation adjusted dollars) with 21.3% of the population living in poverty (2009). In 2009, 21.3% of people were in poverty. Since 2000 the poverty level has increased 4.3%. . . .

Communities people grow up in are indeed one determinant of their health, both in the short term and in adulthood. Hoke County residents lack critical resources and opportunities to make healthy choices, their health can be compromised. There are six (6) parks in the county and only one fitness center for residents to use for various sports and physical activity. There are no county or city recreational facilities. This forces residents to use recreational facilities in neighboring counties. The Hoke County Health Department continues to offer Health Education/Health Promotion Interventions related to various chronic diseases and the development of community walking trails.

Evidence shows that low-income and/or minorities often face poorer health outcomes than their counterparts. Lack of education is also a strong predictor of health outcomes. Children who live in sub-standard housing, learn in poorly constructed class-rooms and play in areas of heavy traffic congestion are more likely to develop health conditions.

\* \* \*

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<sup>3</sup> A copy of relevant portions of this application is attached as Exhibit B.

Not all communities are on an equal playing field, resulting in disparities in the ability of residents to access health promoting institutions and practice healthy behaviors, and also in subsequent health outcomes. Further investigation and research into health disparities is needed in Hoke County and other counties in North Carolina, that low-income communities and communities-of-color do not benefit from the same environmental supports to healthy outcomes as do others.

\* \* \*

Rates of obesity continue to rise, and the prevalence of chronic diseases such as heart disease and diabetes are higher than ever before.

See Exhibit C, 9-11.

While the development of two new hospitals in Hoke County should help with some of these issues, it is not reasonable to expect a community's health status to change overnight. The health status issues in Hoke County have existed for a long time, and it will take considerable long-term effort on the part of Hoke County residents and health care providers to counteract these trends. In the meantime, however, the State needs to do everything it can to ensure that health care providers have the regulated resources (*i.e.*, beds) necessary to address these issues.

Like Hoke County, Cumberland County also suffers from multiple health status and access issues. In a 2010 Community Health Assessment conducted by the Cumberland County Department of Public Health, it was noted that:

**Heart Disease:**

- **The County's Heart Disease death rate (228.5) exceeded the State's rate (202.2).**
- **59.5 % of Community Health Assessment (CHA) survey respondents cited Heart Disease as a problem in the community.**

**Cancer:**

- **The County's Cancer death rate (203.7) exceeded the State's rate (192.0).**
- **47 % of CHA survey respondents cited Breast Cancer and 43 % perceived Lung Cancer as problems in the community.**

**Diabetes:**

- **The County's Diabetes death rate (39.0) exceeded the State (25.2).**
- **66.7 % of CHA survey respondents cited Diabetes as a problem in the community.**

**Stroke:**

- **The County's Stroke death rate was (51.5) slightly below the State's (54.4).**
- **71 % of CHA survey respondents cited hypertension (High Blood Pressure) as a problem in the community. Hypertension is a contributing factor for Strokes.**
- **49.9 % of CHA survey respondents cited Stroke as a problem in the community.**

**Obesity:**

- According to the Behavior Risk Factor Surveillance System (BRFSS), 69.4 % of County residents were overweight or obese.
- 72.1 % of CHA survey respondents cited adult obesity as a problem in the community.

**Fitness and Nutrition:**

- 76.6 % of CHA survey respondents cited lack of exercise as a problem in the community.
- 72.7 % of CHA survey respondents cited poor eating habits as a problem in the community.

Cumberland County also has high rates of poverty compared to North Carolina as a whole. See Exhibit D, pp. 15 and 16.

All of these factors point to a need for more, rather than less, health care services, including inpatient beds.

CFVHS professes reluctance to add more beds due to the "substantial cost." If CFVHS finds the cost to be prohibitive, it does not have to file a CON application to add the beds. The need determination is not the exclusive property of CFVHS; any qualified applicant can apply to meet the need. Moreover, the cost to add beds is not necessarily substantial when compared to other types of health care expenditures. For example, CFVHS is seeking to add 28 beds at a cost of \$3,809,322 or a per bed cost of \$136,047. See 28-bed application pages 105 and 106. In a 2010 CON application for Project I.D. No. M-8498-10, CFVHS proposed to spend more than \$2.3 million to add one da Vinci robotic surgical device. Further, the SHCC has not historically made decisions on need determinations based on how much the regulated assets cost.

CFVHS then goes on to discuss healthcare reform. See petition, page 5. As CFVHS acknowledges, the full impact of healthcare reform is unknown. Therefore, the SHCC should not allow speculation about PPACA to drive decisions about whether or not to include need determinations for vital services. It is also possible depending on the outcome of the 2012 presidential elections that healthcare reform as presently envisioned will not take effect. No one can predict the future, but we can be certain that the population will continue to grow, age and suffer from ailments that require hospitalization and hospital beds in which to receive treatment. We can also be certain that the numbers used to calculate a need for the 119 beds are based on actual experience, not speculation.

Further, while overall CON filings appear to be down versus past years (most likely due to the recession), a recent snapshot of activity shows that despite uncertainty about health care reform and economic downturn, CON applicants are filing applications for need determinations. CFVHS itself filed for 28 beds in June, 2012. See also August 2012 CON Application Filing Log, attached as Exhibit E.

It is also interesting to note that when healthcare reform was implemented in Massachusetts, "postreform use of major inpatient procedures increased more among nonelderly lower and medium area income populations, Hispanics, and whites, suggesting potential improvements in access to outpatient care for these vulnerable subpopulations." See Exhibit F, *Massachusetts Reform and Disparities in Inpatient Care Utilization*, reported in *Medical Care*, July 2012 - Volume 50 - Issue 7 - p 569-577.

No provider is required to apply to meet the need, so if CFVHS is concerned about how PPACA will impact its reimbursement and utilization, CFVHS can exercise its discretion and not apply for the beds. CFVHS is not the only one who can apply for beds in the Hoke/Cumberland service area.

In its discussion about duplication of health care resources on page 6 of its petition, CFVHS says that removing the need for 119 beds "is the most reasonable health planning decision." A reasonable health planning decision is one that applies accurate data to ensure that North Carolina citizens have access to vital services. A decision, such as the one CFVHS advocates, which reduces access and health care choices for a growing, aging and sick population, is not a reasonable health planning decision.

CFVHS concludes its petition by stating that its desire to delete a need determination for 119 beds is consistent with the SMFP basic principles: (1) safety and quality; (2) access; and (3) value.

Removing a need determination is not consistent with promoting safety and quality, and CFVHS offers no information to show how deleting a need determination would promote safety and quality. Safety and quality are enhanced when citizens have ready access to needed services. Removing a need determination is also utterly inconsistent with promoting equitable access. It is simply not correct for CFVHS to say that "[t]he proposed adjustment will not negatively impact access to inpatient services for residents of Cumberland and Hoke counties," as CFVHS claims on page 7 of the petition. The population is growing, aging and suffering from a variety of conditions that make ready access to high-quality hospital services imperative. Many of the people in these two counties live below the poverty level. See Exhibits C and D. Further, while health care reform will lead to more people having insurance coverage, coverage is not the same thing as access. In North Carolina, the SHCC has a significant responsibility to ensure that the groundwork is laid so that all citizens will continue to have ready access (both geographically and economically) to affordable health care services. That responsibility can be carried out by including need determinations for additional beds in counties that need them. The Hoke/Cumberland service area is a prime example of that need.

With respect to the value principle, while removing a need determination may save CFVHS some money, it certainly does not enhance value for the citizens of Hoke and Cumberland Counties who need timely, proximate and affordable access to health care services, including inpatient beds.

The approval of this Petition to eliminate a utilization-based need determination because only a single provider currently exists in the service area will set the stage for every SMFP need determination generated in a single provider service area to be challenged through the petition process. This action will only give an advantage to the single provider by eliminating not only the need determination, but also any competition without going through the Certificate of Need process. As discussed earlier, the focus of health planning and the CON process must be on the needs of citizens, not on the desire of any provider to insulate itself from competition. The Basic Principles of Acute Care Hospital Goals, as set forth on pages 41-42 of the 2012 SMFP, reinforce this:

1. To facilitate continuing improvement in the state's acute care services; and
2. To expand the availability of appropriate, adequate acute care service to the people of North Carolina.

The SHCC should also be mindful not to give too much power to any one provider to decide the future inventory of regulated assets in a planning area. North Carolina's health planning process must be – and must appear to be – open, fair and free of self-interest.

### **Conclusion**

For the reasons set forth above, FirstHealth respectfully requests the SHCC to deny CFVHS's petition and include in the 2013 SMFP a need determination for 119 new acute care beds in the Hoke/Cumberland service area

**EXHIBIT A**

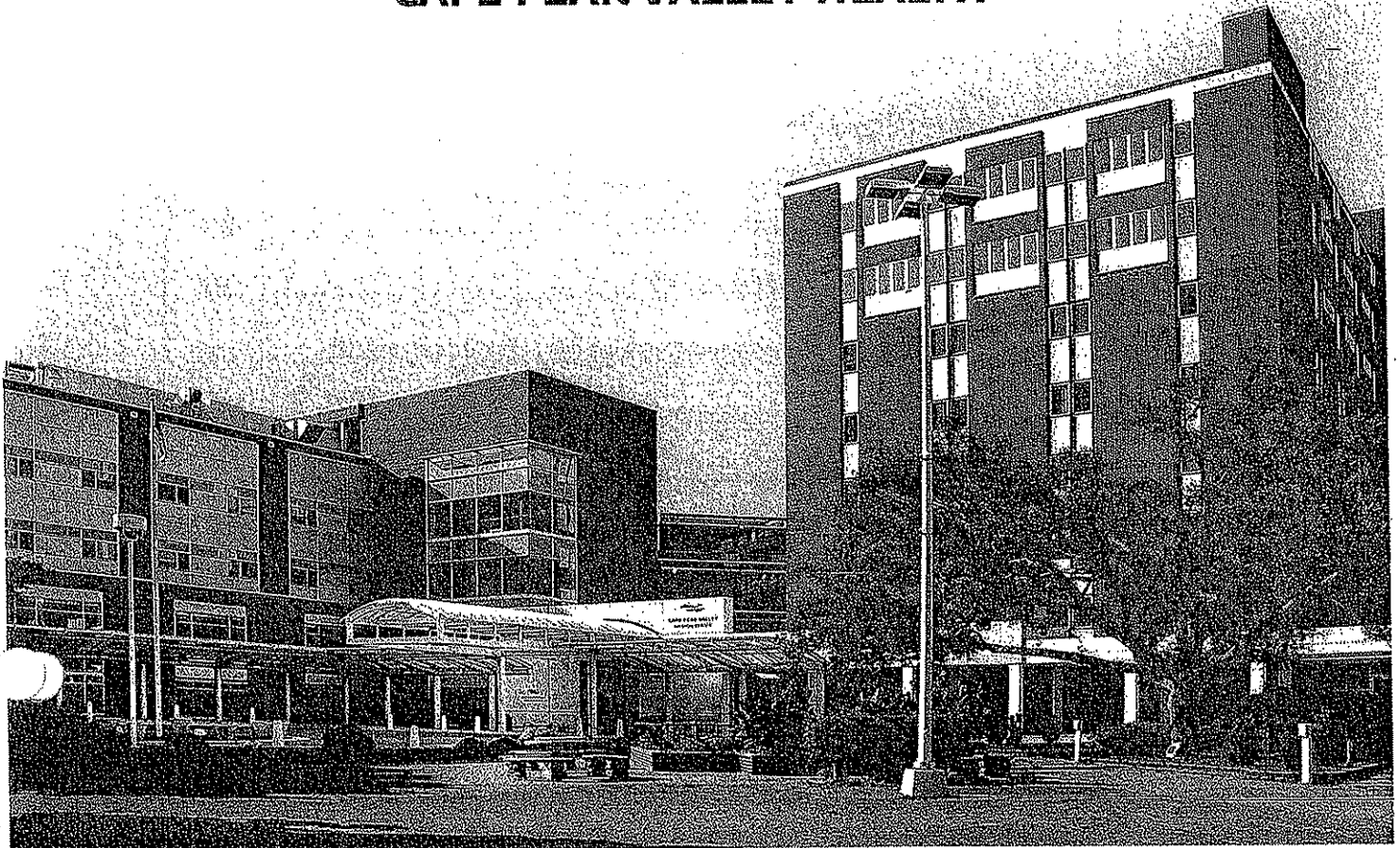
**28 ACUTE CARE BEDS**  
*for* **CAPE FEAR VALLEY MEDICAL CENTER**

# Certificate of Need Application

JUNE 15, 2012



**CAPE FEAR VALLEY HEALTH**





**CAPE FEAR VALLEY MEDICAL CENTER – 28 ACUTE CARE BEDS**

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## **Need for 28 Additional Acute Care Beds at CFVMC**

The following factors influence the current and future demand for additional inpatient beds at CFVMC on Owen Drive. The unmet need for inpatient acute care services at CFVMC is substantiated by a variety of factors including:

- *2012 State Medical Facilities Plan* identification of need for 28 acute care beds in the Cumberland/Hoke Service Area;
- High Utilization of Inpatient Services at CFVMC;
- Population growth in the CFVMC Service Area; and,
- Continued growth and development in Cumberland County.

In addition, the need for additional acute care beds at CFVMC also is supported by:

- Strong physician support included in Exhibit 23; and,
- Letters of support from the community, schools, businesses, local and state government and other healthcare providers included in Exhibits 24-26.

The mission of CFVHS is “Exceptional healthcare for all our patients. That’s what Cape Fear Valley Health System strives to provide. In every moment, we’re improving the quality of every life we touch.” The proposed project is consistent with the mission of CFVHS.

### **2012 State Medical Facilities Plan Identification of Need for 28 Acute Care Beds in the Cumberland Service Area**

The *2012 State Medical Facilities Plan* contains a need determination for 28 acute care beds in the Cumberland Service Area.

The need determination for 28 acute care beds in the Cumberland Service Area in the *2012 SMFP* results from the application of the Acute Care Bed Need Determination Methodology which is based upon an institution specific bed need methodology. CFVMC is the only acute care provider in the *SMFP* defined service area. Therefore, the bed need generated by the methodology in the *SMFP* was generated as a result of the high utilization and growth in patient days experienced at CFVMC. That substantiates the need for the development of the 28 additional acute care beds at CFVMC.

### **High Utilization of Inpatient Services at CFVMC**

Development of the proposed 28 acute care beds will help address the increasing demand for acute care beds at CFVMC. For the last five years, CFVMC operated its existing licensed acute care beds at well over the target planning occupancy levels for hospitals with ADCs between 200-400 and within the last three years greater than 400 patients per day included in the annual *SMFP* Acute Care Bed Chapter. The following table shows historical utilization of licensed acute care beds at CFVMC as reported in the annual *SMFP*.

**Cape Fear Valley Medical Center  
Historical Acute Care Bed Utilization  
October 2006 – September 2011**

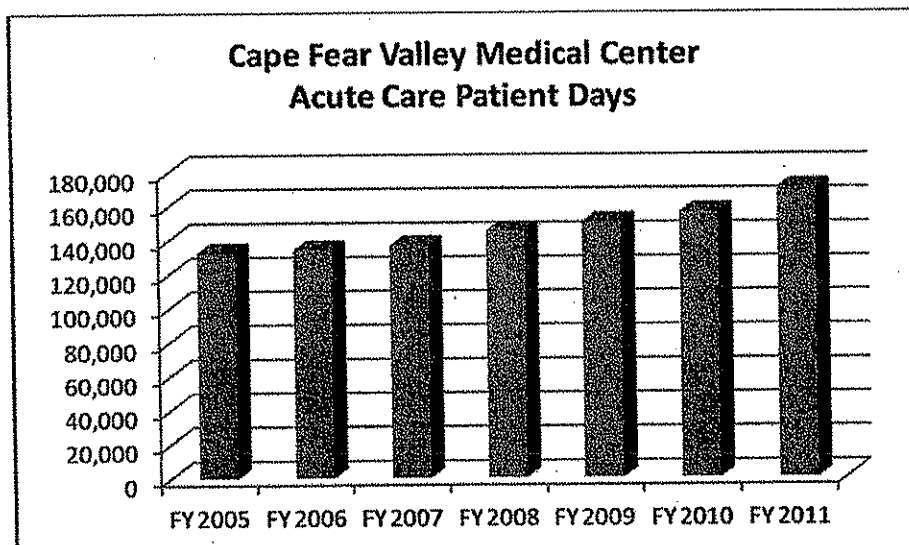
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Patient Acute Care Days (Excludes Normal Newborn, Psy, Rehab, Substance Abuse)	136,755	145,017	150,096	155,926	170,061
ADC	374.7	397.3	411.2	427.2	465.9
Licensed Bed Capacity	397	487	490	490	490
Occupancy Licensed Beds	94.4%	81.6%	83.9%	87.2%	95.1%

Source: SMFPs; Proposed 2013 SMFP; Exhibit 30, Table 1

Note: CFVMC recently received its 8th approval for temporary licensed beds from DHSR to allow CFVMC to continue to meet the needs of patients in Cumberland County and the surrounding service area. See Exhibit 6.

The previous table shows steady growth in acute care inpatient days, and ADC at CFVMC. Utilization of operational beds exceeded 80% during the last five years. CFVHS also has CON approval for 41 additional beds, which are to be developed at Hoke Community Medical Center in Hoke County, and 65 additional beds which are to be developed in northern Cumberland County. If those 106 beds were to be included in CFVMC's acute care bed capacity, utilization of total licensed and approved acute care beds would exceed the 78% SMFP planning target for facilities with an ADC of 400 or more patients per day in FY 2011, as reflected in Exhibit 30, Table 1.

The following graph illustrates the significant increase in patient days at CFVMC over the last seven fiscal years.



Source: Exhibit 30, Table 1

CFVMC opened the Valley Pavilion with 90 new acute care beds the end of September 2008 and opened three additional acute care beds in other existing units at CFVMC in FY 2009, bringing the total number of licensed acute care beds at CFVMC to 490 beds. Utilization of the 490 licensed acute care beds at CFVMC exceeded 83% in FY 2009. In FY 2011, CFVMC’s total acute inpatient days grew to an all time high of 170,061 patient days which resulted in an occupancy rate of 95.1%.

CFVMC's compound annual growth rate “CAGR” for inpatient days continues to increase. A CAGR reflects averages and tends to fluctuate from year to year. One year growth may be high, and the next year growth may be low due to a variety of reasons. One year new beds or a new physician may come on line at a hospital which could result in a spike in growth rates. A CAGR is utilized in planning and projecting future utilization to smooth out those variations. As a result, over time, a CAGR routinely fluctuates up and down. Growth at CFVMC has been constant, resulting in continued increases in the CAGR since 2005 as shown in the following table.

**Cape Fear Valley Medical Center  
CAGR Fiscal Year Trends**

2005+ Continuing Trend	2005-2008	2005-2009	2005-2010	2005-2011
Patient Days CAGR	3.0%	3.1%	3.3%	4.3%
Three Year Trend	2005-2008	2006-2009	2007-2010	2008-2011
Patient Days CAGR	3.0%	3.8%	4.5%	5.5%

Source: Exhibit 30, Table 2

As reflected in the previous table, average annual growth in patient days at CFVMC exceeded 3.0% annually since 2005, and when comparing the three, four, five and six year trends, CAGR increased continually to a 4.3% CAGR for the timeframe 2005-2011.

The previous table also compares CFVMC’s consecutive three year CAGRs, which reflect even greater increases in CAGR. CFVMC realized 3.0% annual growth in patient days for the time frame 2005-2008, which growth increased to 5.5% for the most current three year timeframe 2008-2011.

Beginning in March 2011, CFVMC requested and received eight (8) approvals for a temporary increase of 10 percent in licensed acute care bed capacity from the DHSR Licensure Section pursuant to N.C.G.S. §131E-83. Since March 2011, CFVMC has operated all 490 licensed acute care beds plus 49 additional temporary acute care beds pursuant to those eight requests. The most current approval, received May, 2012 will expire on July 1, 2012. Copies of relevant documentation are included in Exhibit 6. Those temporary increases have been due to the extremely high utilization of acute care inpatient services at CFVMC, as shown in the following table.

**Cape Fear Valley Medical Center  
Average Daily Census for Acute Care  
FY 2011 and First Six Months of FY 2012**

	FY 2011	Oct11-Mar12
ADC	465.9	464.3
Occupancy Level - 490 Licensed Acute Care Beds	95.1%	94.8%

Source: Exhibit 30, Table 3; CFVMC Internal Data

As reflected in the previous table, total occupancy at CFVMC for the first six months of FY 2012 was 94.8%.

Cape Fear Valley Medical Center Emergency Department visits are shown in the following table.

**Cape Fear Valley Medical Center  
Emergency Department Utilization  
October 2005 – September 2011**

	FY 2008	FY 2009	FY 2010	FY 2011	CAGR 2008-2011
Visits	116,433	118,290	122,828	127,603	3.1%
Annual Growth		1.6%	3.8%	3.9%	

Source: CFVMC LRAs

The previous table shows continued growth in emergency department visits from FY 2008 through FY 2011. FY 2011 was the busiest year on record in the Emergency Department at CFVMC. ED utilization in FY 2012 continues to grow. In addition, in FY 2011, the number of patients admitted to acute care beds from the Emergency Department was 18.1% of total Emergency Department patients. Year to date in 2012, Emergency Department admissions have increased to over 20% of total emergency visits as reflected in Exhibit 30, Table 18. In addition, data in Exhibit 30, Table 18 reflect the delay patients experience waiting for an acute care bed due to the high utilization of acute care beds at CFVMC. Utilization of acute care services at CFVMC supports the need for 28 additional acute beds at CFVMC.

**Population Growth in CFVMC Service Area**

The impact of the Base Realignment and Closure Act (BRAC)<sup>5</sup> passed by Congress in November 2005 has been felt throughout the CFVMC Service Area. Population growth in

<sup>5</sup> The Base Realignment and Closure Act passed by Congress in November 2005 resulted in the relocation of Forces Command (FORSCOM) and the U S Army Reserve Command (USARCOM) from Fort McPherson to Fort Bragg by 2011. This move resulted in 4,644 additional military positions and 1,722 additional Department of Defense civilian positions to Fort Bragg or 6,366 total positions. Including family members, it is estimated that 18,169 people relocated to the region.

southern Cumberland County, Hoke County, and southern Harnett County has impacted the utilization of CFVMC, and led to expansion of inpatient beds at CFVMC, and the development of Hoke Community Medical Center in Hoke County. Population projections reflect continued growth in the CFVMC Service Area as shown in the following table.

**Cape Fear Valley Medical Center Service Area Population**

County	2012	2013	2014	2015	2016	CAGR 12-16
Bladen	35,599	35,777	35,953	36,132	36,310	0.5%
Cumberland	340,032	345,979	351,471	356,543	361,228	1.5%
Harnett	122,844	126,480	130,113	133,746	137,380	2.8%
Hoke	50,546	52,130	53,716	55,299	56,887	3.0%
Robeson	137,222	138,583	139,941	141,301	142,662	1.0%
Sampson	63,826	64,000	64,172	64,345	64,516	0.3%
TOTAL CFVMC Service Area	750,069	762,949	775,366	787,366	798,983	1.6%

Source: NC Office State Budget and Management, Exhibit 30, Table 7

As shown in the previous table, population growth in Cumberland County and in the entire Service Area is projected to be 1.6% annually during the next four years. Growth in Harnett and Hoke Counties continue to be higher at 2.8% and 3.0%, respectively. While the process to realign military bases has come to an end, the expected overall impact has not been realized as described in a recent article in the Fayetteville Observer included in Exhibit 32. Substantial benefits have been realized in the region, however, the in-migration to the region of defense contractors has not yet happened. The original expectation of BRAC was that "most of the projected growth in population related to BRAC will result from job creation for military contractors in addition to the significant military construction spending." That growth has not yet been realized. While it is expected that the population will continue to grow; the growth rate will be lower and the growth will occur over a longer timeframe.<sup>6</sup>

### Market Share Analysis

CFVMC is the only acute care provider in Cumberland County, and provides a large majority of inpatient services to residents of the county. The following table illustrates historical inpatient market share for Cumberland and surrounding counties from FY 2007 through FY 2011.

<sup>6</sup> [http://www.fayobserver.com/articles/2012/01/29/1151310?sac=Local Exhibit 32](http://www.fayobserver.com/articles/2012/01/29/1151310?sac=Local%20Exhibit%2032)

**Cape Fear Valley Medical Center  
County Market Share**

<b>Admissions</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
Cumberland	84.9%	86.1%	85.6%	85.0%	86.2%
Hoke	42.7%	45.0%	43.2%	41.8%	42.8%
Harnett	12.8%	13.5%	13.8%	13.3%	13.3%
Robeson	10.5%	10.7%	10.5%	10.3%	10.7%
Bladen	7.2%	9.1%	15.3%	14.7%	17.9%
Sampson	11.9%	14.8%	14.3%	13.2%	13.0%
<b>Patient Days</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
Cumberland	81.4%	82.0%	81.5%	81.8%	84.2%
Hoke	38.9%	44.6%	42.5%	40.9%	42.4%
Harnett	13.8%	14.2%	14.9%	14.2%	15.6%
Robeson	10.7%	11.9%	12.2%	12.7%	12.8%
Bladen	8.7%	10.8%	20.4%	20.9%	22.1%
Sampson	11.7%	15.3%	16.1%	14.5%	14.8%

*Source: Thomson Reuters*

As shown in the previous table, CFVMC meets the inpatient needs of:

- 86% of the residents of Cumberland County
- 42.8% of the inpatient needs of the residents of Hoke County
- 13% of inpatient needs of the residents of Harnett County
- 10.7% of the inpatient needs of residents of Robeson County
- 17.9% of the inpatient need of residents of Bladen County, and
- 13% of inpatient needs of the residents of Sampson County.

Market share in all six counties has increased during the five year time frame.

As shown in the previous table, CFVMC provides 86.2% of all inpatient days for residents of Cumberland County. Some of the out-migration from Cumberland County, 13.8% of total Cumberland County admissions, may be due to the high occupancy levels at CFVMC.

The new acute care beds at CFVMC will provide opportunities for growth in the future, including recapture of market share leaving Cumberland County and, meeting the inpatient needs of the growing population in southwest Cumberland County and the surrounding area.

**Economic Growth and Development**

***Cumberland County Economic Growth and Development***

Today, Cumberland County is the economic growth center of southeastern North Carolina, offering an unusually favorable combination of labor factors. There is an occupationally balanced, highly productive work force, an ideal geographic position, and a nationally

CAPE FEAR VALLEY MEDICAL CENTER – 28 ACUTE CARE BEDS

CFVMC-Owen Drive, CFV North and HCMC Projected Acute Care Patient Days

CFVMC Projected Acute Care Patient Days	Current		Projected					
	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
CFVMC Projected Interim and Future Patient Days (Includes volume to be shifted to CFV North Volume and HCMC)	170,061	172,494	174,963	177,466	180,005	182,581	185,194	187,844
Projected Growth Rate (Table 7)		1.43%	1.43%	1.43%	1.43%	1.43%	1.43%	1.43%
ADC	465.9	472.6	479.3	486.2	493.2	500.2	507.4	514.6
Occupancy Rate	95.1%	96.4%	97.8%	87.0%	79.0%	80.2%	81.3%	82.5%
Projected Bed Need @ 78% (SMFP Planning Target)	597	606	615	623	632	641	650	660
Licensed Bed Capacity (Includes All Licensed, Approved and Proposed Acute Care Beds)	490	490	490	559	624	624	624	624
Additional Bed Need	107	116	125	64	8	17	26	36
<b>CFV North Projected Patient Days Opening April 1, 2015</b>				<b>PY 1</b>	<b>PY2</b>	<b>PY3</b>	<b>PY4</b>	<b>PY5</b>
Project Years						4/15-3/16	4/16-3/17	4/17-3/18
CFV North Projected Patient Days						12,591	14,353	16,986
Converted to FY				<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
Adjusted FY - CFV North Projected Patient Days					6,296	13,472	15,670	16,986
ADC						36.9	42.9	46.5
Occupancy Rate						56.8%	66.0%	71.6%
Projected Bed Need @ 66.7%						55	64	70
Licensed Bed Capacity					65	65	65	65
Additional Bed Need						-10	-1	5
<b>HCMC Projected Patient Days Opening May 1, 2014</b>				<b>PY 1</b>	<b>PY2</b>	<b>PY3</b>	<b>PY4</b>	<b>PY5</b>
Project Years					5/14-4/15	5/15-4/16	5/16-4/17	5/17-4/18
Projected Patient Days					7,463	9,674	11,524	11,524
Converted to FY				<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
Adjusted FY - HCMC Projected Patient Days				3,110	8,384	10,445	11,524	11,524
ADC					23.0	28.6	31.6	31.6
Occupancy Rate					56.0%	69.8%	77.0%	77.0%
Projected Bed Need @ 66.7%					34	43	47	47
Licensed Bed Capacity				41	41	41	41	41
Additional Bed Need					-7	2	6	6
<b>CFVMC - 28 Beds Opening October 1, 2014</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
				<b>PY 1</b>	<b>PY2</b>	<b>PY3</b>	<b>PY4</b>	<b>PY5</b>
CFVMC Projected Interim and Future Patient Days Less Volume Shifted to CFV North and HCMC	170,061	172,494	174,963	174,357	165,326	158,664	158,000	159,334
Admissions	31,468	31,918	32,375	32,263	30,592	29,359	29,236	29,483
ALOS (FY 2011 held constant)	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
ADC	465.9	472.6	479.3	477.7	452.9	434.7	432.9	436.5
Occupancy Rate	95.1%	96.4%	97.8%	92.2%	87.4%	83.9%	83.6%	84.3%
Projected Bed Need @ 78%	597	606	615	612	581	557	555	560
Licensed Bed Capacity	490	490	490	518	518	518	518	518
Additional Bed Need	107	116	125	94	63	39	37	42
<b>CFVMC + CFV North</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
CFVMC Projected Interim and Future Patient Days Less Volume Shifted to CFV North and HCMC	170,061	172,494	174,963	174,357	171,621	172,136	173,670	176,320
ADC	465.9	472.6	479.3	477.7	470.2	471.6	475.8	483.1
Occupancy Rate	95.1%	96.4%	97.8%	92.2%	80.7%	80.9%	81.6%	82.9%
Projected Bed Need @ 78%	597	606	615	612	603	605	610	619
Licensed Bed Capacity	490	490	490	518	583	583	583	583
Additional Bed Need	107	116	125	94	20	22	27	36

Source: Table 3



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Notes to previous table:

- 1) The 1.43% growth is lower than the five year average growth at CFVMC reflected in Table 1.
- 2) Current capacity of the licensed beds is running well over 90%.
- 3) The above data includes patient days for CFVMC acute care beds only, does not include LTAC, Rehab, mental health, or newborn volume.
- 4) Numbers may not foot due to rounding.
- 5) Projections for HCMC and CFV North are based upon utilization projections from HCMC CON Application Project I.D.# N-8499-10 and CFV North CON Application Project I.D. # M-8689-11

As shown in the following table, utilization of all CFVHS acute care beds in Cumberland and Hoke Counties is projected to exceed the 2012 SMFP planning target of 78.0% for facilities with an average daily census greater than 400 patients per day in FY 2018, the third operating year of CFV North, which will be the final project developed. In addition total utilization exceeds the 75.2% utilization target in the CON Acute Care Criterion and Standards.

**Cape Fear Valley Medical Center, CFV North, and Hoke Community Medical Center  
Projected Acute Care Inpatient Days  
October 2010 – September 2017**

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
CFVHS - Projected Interim and Future Patient Days (Includes All Cumberland and Hoke County Acute Care Bed Facilities )	170,061	172,494	174,963	177,466	180,005	182,581	185,194	187,844
ADC	465.9	472.6	479.3	486.2	493.2	500.2	507.4	514.6
Licensed Bed Capacity	490	490	490	559	624	624	624	624
Occupancy Rate	95.1%	96.4%	97.8%	87.0%	79.0%	80.2%	81.3%	82.5%

Source: Exhibit 30, Table 3

Note: Does not include HRSR (LTAC) utilization; Numbers may not foot due to rounding

The following sections provide the detailed assumptions and calculations utilized to project future CFVMC's acute inpatient bed days.

**CFVMC Total Patient Days Methodology**

CFVMC projected future beds need using the following formula.

$$\text{CFVMC Projected Acute Inpatient Days} = (\text{CFVMC FY 2011 Acute Inpatient Days} \times \text{Weighted Population Growth Rate}) - \text{Patient Day Volume Shifted to CFV North and Hoke Community Medical Center}$$

**Step 1. Determine CFVMC Base Acute Inpatient Days**

CFVMC utilized Thomson inpatient days as reflected in the Proposed 2013 SMFP as the base to project future acute inpatient days. FY 2011 Thomson inpatient days at CFVMC totaled 170,061 acute inpatient days, as reflected in the Proposed 2013 SMFP.

**VIII. CAPITAL COSTS AND FINANCING**

1. Estimated Capital Costs of Proposed Project

- (a) Both the lessor and the lessee, as applicable, shall individually complete Application Section VIII.

**Project cost schedules are summarized on the Project Cost Schedule following question 2.(c).**

- (b) Provide all assumptions and the specific methodology used to project capital costs.

**All costs are supported with certified estimates, contracts, owner estimates with published sources.**

2. (a) Provide an itemized list of all medical equipment, which is valued at more than \$10,000, that is included in the proposed project, regardless of whether the equipment will be leased or purchased. Provide the estimated cost or fair market value of each item of medical equipment valued at more than \$10,000.

**Project proposes no equipment valued at more than \$10,000. An itemized list of furniture and equipment for patient rooms is included in Exhibit 29.**

- (b) Indicate if the equipment is replacement equipment or additional equipment.

**All equipment will be new for the proposed 28 acute care bed project.**

- (c) State the method of depreciation that will be used (i.e., straight line, etc.) and the rationale for the method of depreciation.

**The American Hospital Association publishes its *Estimated Useful Lives of Depreciable Hospital Assets* every four to five years. The most current guide is dated August 15, 2008. The depreciation guidelines for equipment are 5-7 years. Seven years depreciable lives have been used for the equipment and 30 years for the planned hospital facility.**

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**PROJECT CAPITAL COST**

<b>A. <u>Site Costs</u></b>			
(1)	Full purchase price of land	\$ _____	
	# Acres _____ Price per Acre \$ _____		
(2)	Closing costs	\$ _____	
(3)	Site Inspection and Survey	\$ _____	
(4)	Legal fees and subsoil investigation	\$ _____	
(5)	Site Preparation Costs [Include]		
	Soil Borings		
	Clearing and Grading		
	Roads and Parking		
	Sidewalks		
	Water and Sewer		
	Excavation and Backfill		
	Termite Treatment		
	<b>Sub-Total Site Preparation Costs</b>	\$ _____	
(6)	Other (Specify)	\$ _____	
(7)	<b>Sub-Total Site Costs</b>		\$ _____ 0
<b>B. <u>Construction Contract</u></b>			
(8)	Cost of Materials [Include]		
	General Requirements		
	Concrete/Masonry		
	Woods/Doors & Windows/Finishes		
	Thermal & Moisture Protection		
	Equipment/Specialty Items		
	Mechanical/Electrical		
	<b>Sub-Total Cost of Materials</b>	\$ <u>1,183,985</u>	
(9)	Cost of Labor	\$ <u>968,715</u>	
(10)	Other (Design/Constr. Contingency 20%)	\$ <u>418,000</u>	
(11)	<b>Sub-Total Construction Contract</b>		\$ <u>2,570,700</u>
<b>C. <u>Miscellaneous Project Costs</u></b>			
(12)	Building Purchase	\$ _____	
(13)	Fixed Equipment Purchase/Lease	\$ <u>570,112</u>	
(14)	Movable Equipment Purchase/Lease	\$ _____	
(15)	Furniture	\$ _____	
(16)	Landscaping	\$ _____	
(17)	Consultant Fees		
	Architect/Engineering Fees	\$ <u>218,510</u>	
	Legal Fees	\$ <u>100,000</u>	
	Market Analysis	\$ _____	
	Other (CON and other Fees)	\$ <u>50,000</u>	
	<b>Total Consultant Fees</b>	\$ <u>368,510</u>	
(18)	Financing Costs	\$ _____	
(19)	Interest During Construction	\$ _____	
(20)	Other (Contingency)	\$ <u>300,000</u>	
(21)	<b>Sub-Total Miscellaneous</b>		\$ <u>1,238,622</u>
<b>D.</b>	<b>Total Capital Cost of Project (Sum A-C above)</b>		\$ <u>3,809,322</u>

3. Anticipated Sources of Financing for the Project

Respond for all costs to be incurred to implement this project. The total financing should equal the total capital costs in VIII.1(D) above.

	<u>Amount</u>
(a) Public Campaign	\$ _____
(b) Bond Issue	\$ _____
(c) Conventional Loans	\$ _____
(d) Government or HUD Loans	\$ _____
(e) Grants	\$ _____
(f) Bequests and Endorsements	\$ _____
(g) Private Foundations	\$ _____
(h) Accumulated Reserves	\$ <u>3,809,322</u>
(i) Owner's Equity of _____	\$ _____
(j) Other (Specify)	\$ _____
(k) Total	\$ <u>3,809,322</u>

4. Submit copies of letter(s) from lending institution(s) which indicate a willingness to finance the proposed project (both construction and permanent financing). The letter(s) should include:

- (a) Purpose of the loan(s);
- (b) Proposed interest rate(s) (fixed or variable);
- (c) Proposed term (period) of the loan(s);
- (d) Proposed amount of the loan(s); and
- (e) Verification that the lender has examined the financial position of the borrower and found it to be adequate to support the proposal. The examination should reflect other project activity, actual or proposed, that might relate to this specific proposal.

**Not applicable, the project will be funded with accumulated reserves.**

5. Provide amortization schedule(s) for each proposed loan setting forth:

- (a) Amount of principal,
- (b) Term/number of payment periods (Long term loan may be annualized),
- (c) Amount of interest, and
- (d) Outstanding balance for each payment period.
- (e) Verification that the schedule is acceptable to the lender in 3 above.

**Not applicable, the project will be funded with accumulated reserves.**

6. Submit documentation of the availability of accumulated reserves, such as a letter from the appropriate official who is fiscally responsible for the funds.

**Please see letter included in Exhibit 4.**

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7. Submit documentation of the availability of the bond financing from the appropriate financial institution if bond financing is to be used.

**Not applicable, the project will be funded with accumulated reserves.**

8. If not financing the project through commercial loan, accumulated reserves, or bond, please describe the source of financing in detail and provide documentation of the commitment of the funds.

**Not applicable, the project will be funded with accumulated reserves.**

9. (a) Supply a copy of the most recent audited financial report, with attached notes, for each applicant incurring an obligation for a capital expenditure. If audited statements are unavailable, please provide unaudited statements. If there are no statements for the subsidiary corporation, please provide parent company's statements, personal financial statements, or any other financial reports which document the financial status of the applicant.

**Please see Exhibit 5 for a copy of CFVHS's most recent audited financial statements for Fiscal Years 2010 and 2011.**

- (b) Indicate the line items on the reports to show the dollar amounts specifically available for this project.

**Copies of CCHS's FY2010 and FY2011 audited financial statements are included in Exhibit 5. The line item listed as "Cash and cash equivalents," represents the available amount to fund the proposed project.**

10. List all CON proposals which are approved but not operational or are under review submitted by the legal applicant or their parent company and describe the impact of the proposed project on these CON proposals.

**Cape Fear Valley Health System  
CON Proposals which are Approved but not Operational or are Under Review**

STATUS	PROJECT ID#	HOSPITAL/FACILITY	PROJECT DESCRIPTION	SCHEDULED COMPLETION DATE	APPROVED CAPITAL COST
Approved	N-8352-09	Hoke Imaging LLC	Establish Diagnostic Center	2013	\$2,515,165
Approved	N-8499-10	Hoke Healthcare LLC	Construct a hospital with 41 acute care beds	2014	\$102,241,673
Approved	M-8498-10	Cape Fear Valley Health System	Acquire daVinci S 4 Surgical System	TBD <sup>20</sup>	\$2,353,560
Approved	M-8689-11	Cape Fear Valley Health System	Construct a hospital with 65 acute care beds	2015	\$87,332,825

<sup>20</sup> Pending issuance of Certificate of Need

**EXHIBIT B**

# FirstHealth of the Carolinas, Inc.

## Certificate of Need Application

### Acute Care Bed Expansion

June 15, 2012

#### EXECUTIVE SUMMARY

FirstHealth proposes to expand its approved acute care hospital in Hoke County by twenty-eight acute care beds, which will result in FHCH operating a total of thirty-six acute care beds:

- Developing Eight Acute Care Beds

As a part of its approved CON application (Project ID # N-8497-10), FirstHealth will move forward to develop an eight acute care bed inpatient unit adjacent to the Emergency Department. This unit will be used for all inpatient admissions at FHCH until the completion of the thirty-six acute care bed inpatient wing (36-bed wing).

- Developing Twenty- Eight (28) Acute Care Beds

With the approval of this CON application, FHCH will construct and operate a 36-bed wing, which will include a four bed ICU. This inpatient wing layout is ideal for both patient care and staffing efficiencies.

- Observation Beds

FHCH is approved to develop a four bed observation unit. However, FHCH will not operate an Observation Unit until the 36-bed wing is operation. With the completion of the 36-bed wing, FirstHealth will move its eight acute care beds into the 36-bed wing and operate the eight beds adjacent to the Emergency Department as observation beds.

- Inpatient Acute Care Services

The thirty-six private, acute care beds will be utilized for both medical and surgical patient admissions. The inpatient unit will provide routine, general and telemetry levels of medical-surgical services. Intensive care services will be provided in a 4-bed unit, which is included in the thirty-six total acute care beds. Patients who require hemodynamic monitoring and/or ventilator support (except for short term emergency cases) and have conditions that require continuous nursing assessment, intervention and medication titration will be transferred to tertiary care facilities or the hospital of the patient's choosing.

The project is expected to be operational in FY2015 and total project costs are estimated at \$17.5 million.

000002

## 2. Service Area Population Growth Trends

### a. Hoke County Demographics

#### Projected Hoke County Population Growth

From 2000 to 2010, the population of Hoke County grew by 41.5 percent. Based on NCOSBM projections, Hoke County's population is projected to grow by an additional 27.3 percent from 2010 to 2020. In particular:

- The 45-64 population grew by 73.4 percent from 2000 to 2010, representing 21.6 percent of Hoke County's population. NCOSBM projects that the 45-64 population will increase by 26.8 percent from 2010 to 2020.
- The elderly population (65+ years old) grew by 36.9 percent from 2000 to 2010, to represent 7.5 percent of Hoke County's total population. NCOSBM projects that the elderly population will be the fastest growing population, increasing by 70.1 percent from 2010 to 2020.

#### Projected Population Growth Hoke County

	2000	2010	2020 (Projected)	2000 - 2010	2010 - 2020
				Percent Growth	Percent Growth
<18 Population	10,034	14,351	18,268	43.0%	27.3%
18-44 Population	15,080	19,401	23,223	28.7%	19.7%
45-64 Population	5,938	10,297	13,056	73.4%	26.8%
65+ Population	2,598	3,557	6,049	36.9%	70.1%
<b>Total Population</b>	<b>33,650</b>	<b>47,606</b>	<b>60,596</b>	<b>41.5%</b>	<b>27.3%</b>
Percent <18	29.8%	30.1%	30.1%		
Percent 18-44	44.8%	40.8%	38.3%		
Percent 45-64	17.6%	21.6%	21.5%		
Percent 65+	7.7%	7.5%	10.0%		

Source: NC State Office of Budget and Management, May 2012 projections.

The rapid growth in the 45 to 64 and 65+ population will result in a significant increase in demand for healthcare services including inpatient care. These population groups have higher use rates for acute care services than younger population groups. Thus, need for additional acute care beds in Hoke County will increase as a result of both population growth and aging.



**b. Overall Service Area Demographics**

From 2000 to 2010, the population of service area, which includes Cumberland, Hoke, Robeson, and Scotland counties, grew by 10.0 percent. Based on NCOSBM projections, the service area's population is projected to grow by an additional 4.3 percent from 2010 to 2020. In particular:

- The < 18 population grew by 4.3 percent from 2000 to 2010, representing 26.9 percent of the service area's population. NCOSBM projects that the < 18 population will increase by 6.7 percent from 2010 to 2020, to become 27.5 percent of the service area's total population.
- The elderly population (65+ years old) grew by 30.0 percent from 2000 to 2010, to represent 10.1 percent of the service area's total population. NCOSBM projects that the elderly population will be the fastest growing population, increasing by 34.4 percent from 2010 to 2020.

**Projected Population Growth  
 Service Area**

	2000	2010	2020 (Projected)	2000 - 2010 Percent Growth	2010 - 2020 Percent Growth
<18 Population	140,556	146,556	156,414	4.3%	6.7%
18-44 Population	218,753	215,220	212,273	-1.6%	-1.4%
45-64 Population	94,174	128,690	126,441	36.7%	-1.7%
65+ Population	42,366	55,071	74,029	30.0%	34.4%
<b>Total Population</b>	<b>495,849</b>	<b>545,537</b>	<b>569,157</b>	<b>10.0%</b>	<b>4.3%</b>
Percent <18	28.3%	26.9%	27.5%		
Percent 18-44	44.1%	39.5%	37.3%		
Percent 45-64	19.0%	23.6%	22.2%		
Percent 65+	8.5%	10.1%	13.0%		

Source: NC State Office of Budget and Management, May 2012 projections.

Like Hoke County, the rapid growth in the 65+ population for the total service area will result in a significant increase in demand for healthcare services including inpatient care. These population groups have higher use rates for acute care services than younger population groups. Thus, need for additional acute care beds in Hoke County will increase as a result of both population growth and aging.

The four-county service area's population is expected to increase by 4.3 percent over the 10 year period represented in the previous table, from 545,537 in 2010 to 569,157 in 2020, with 55.0 percent  $[(12,990 / 23,620) \times 100 = 55.0\%]$  of the overall service area's growth occurring from Hoke County growth.

It should be noted that although the 65+ age group currently accounts for only 10.1 percent of the overall service area's population in 2010 and 7.5 percent of the Hoke County population, the 65+ age group accounts for 51.0 percent of projected inpatient admissions at FHCH.

**c. Service Area Population Growth Trends Discussion**

**Hoke County Population**

NCOSBM projects that Hoke County will have the highest projected population percentage growth increase in North Carolina between 2010 and 2020. Hoke County's population is projected to increase by 27.3 percent, which is nearly three times higher than the North Carolina's projected population increase of 10.9 percent. Cumberland County is ranked 54<sup>th</sup> in population growth at 4.1 percent. The dramatic growth in the Hoke County population supports the addition of acute care services.

Rank	County	% Growth
#1	Hoke	27.3%
#2	Harnett	24.8%
#3	Wake	21.2%
#54	Cumberland	4.1%
	<b>North Carolina</b>	<b>10.9%</b>

**Hoke County 65+ Population**

NCOSBM projects that Hoke County will have the second highest projected 65+ population percentage growth increase in North Carolina between 2010 and 2020. Hoke County's 65+ population is projected to increase by 70.1 percent, which is almost double the North Carolina's projected 65+ population increase of 41.1 percent. Cumberland County is ranked 36<sup>th</sup> in 65+ population growth at 37.9 percent. The dramatic growth in the Hoke County 65+ population supports the addition of acute care services.

Rank	County	% Growth
#1	Wake	72.5%
#2	Hoke	70.1%
#3	Orange	69.8%
#36	Cumberland	37.9%
	<b>North Carolina</b>	<b>41.1%</b>

**3. Demographic and Health Status Factors Influencing Demand for Acute Care Services Hoke**

County, and the service area as a whole, has a very diverse population. Hoke County has large percentages of its population that are African American and Native American. By contrast, Native Americans account for just 1.7 percent of Cumberland County population. Additionally, Hoke County has a higher percentage of minorities than Cumberland County. Minorities make up 49.4 percent of Hoke County's population and 46.2 percent of Cumberland County's population.

Hoke County and the proposed service area, as a whole, are also more diverse than the state as a whole. As the table below illustrates, minorities make up just 27.3 percent of the state's population, compared to 49.4 percent for Hoke County and 52.1 for the service area as a whole. African Americans and Native Americans make up a larger portion of the service area's population. These groups account for 33.8 percent and 10.1 percent of Hoke County and 34.1 percent and 12.4 percent of the service area's populations respectively. Approving additional beds for Hoke County is the best way to ensure these underserved groups have increased access to care.

Service Area Diversity

	County		4-County Service Area	NC
	Hoke	Cumberland		
American Indian/Alaska Native	10.1%	1.7%	12.4%	1.6%
Asian/Pacific Islander	1.5%	2.8%	2.1%	2.4%
African American	33.8%	37.5%	34.1%	21.9%
Two or More Races	4.0%	4.2%	3.6%	1.9%
White	50.6%	53.8%	47.9%	72.3%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: NC State Office of Budget and Management, May 2012 projections.

Hoke County shows evidence of all of the factors that contribute to a barrier to health care access. The following tables identify social and economic measures were chosen to be studied because they represent characteristics of a community that will lead to poorer health and act as barriers to accessing healthcare.

In this table the counties within FHCH's service area with respect to health status factors are compared. These are factors that can be directly influenced or improved by greater access to acute care services or are factors that result in a greater level of demand for acute care services.

**North Carolina  
 County Comparisons  
 Demographic Data**

	<b>% Uninsured Adults</b>	<b>Population per Primary Physician</b>	<b>% in Fair or Poor Health</b>	<b>Preventable Hospital Stays</b>
<b>Hoke</b>	22%	4,365:1	24%	71
<b>Robeson</b>	25%	1,479:1	27%	103
<b>Scotland</b>	19%	869:1	25%	87
<b>Cumberland</b>	16%	820:1	19%	56

Source: [www.countyhealthrankings.org](http://www.countyhealthrankings.org) by the University of Wisconsin Population Health Institute and the Robert Wood Johnson Foundation, 2012.

Based on these factors, Hoke, Robeson and Scotland Counties demonstrate factors that warrant further efforts to increase accessibility inpatient services. Cumberland County health status factors above are better than the other service area counties.

It is expected that many barriers to health care may continue after the development of the two approved Hoke County hospitals; however, permitting FHCH to expand prior to its operation will allow FirstHealth the opportunity to immediately meet the needs of the community.

**EXHIBIT C**



**Hoke County  
Community Health Assessment  
2011**

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# Hoke County Community Health Assessment 2011

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## Acknowledgements

The 2011 Community Health Assessment report was prepared by Hoke County Public Health Assessment Team and the Healthy Hoke Task Force “*A Healthy Carolinians Partnership*”

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# Hoke County Community Health Assessment 2011

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## Healthy Hoke Task Force Partners

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Hoke County Health Center

Raeford City Council

Senior Services of Hoke County

Hoke County Schools Student Support Services

Day Mark Recovery Center

Hoke County Sheriff's Office

Sandhills Community College

Hoke Partnership for Children and Families

Hoke County Veterans Services Office

Hoke County Parks and Recreation

Blue Springs/Hoke County CDC

Hoke County Juvenile Justice

Hoke County Department of Social Services

FirstHealth of the Carolinas Community Health Services

Hoke County Schools Indian Education

NC Cooperative Extension – Hoke Center

Hoke County Economic Development Commission

Two Hoke County High School Student Representatives

Four individual members of the community at large

# **Introduction**

# Hoke County Community Health Assessment 2011

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## Introduction

The Hoke County Health Department and The Healthy Hoke Task Force "*A Healthy Carolinians Partnership*" are pleased to present the 2011 Community Health Assessment. The State of North Carolina requires local health departments and local Healthy Carolinians Partnerships to submit a Community Health Assessment document every four years.

This document is part of an effort to identify the major health concerns of Hoke County, through the collection of both qualitative and quantitative data. Primarily conducted by the health department, this document will be made available to many different agencies and individuals in the community.

Within this document are facts and figures taken from various sources. Information was collected through convenience sampling, which entailed conducting community opinion surveys with community members at churches, health clinics, health fairs and other community events.

The data collected from the surveys was compared with data from the State Center for Health Statistics. The Office of Healthy Carolinians Health Education Division of the North Carolina Department of Health and Human Services, has developed a Guide Book to be used in the preparation of this document which was revised December 2008. This document may be viewed at any time, by contacting Hoke County Health Center.

## What is the Community Assessment?

In an effort to improve and promote the health of North Carolina's communities, each county in North Carolina is required to conduct a community assessment. The overall goal of the Community Assessment is to determine the top health priorities of the area, and then to identify ways to address them. The contributing factors to these health problems must also be determined in order to establish preventive measures.

The process of doing community assessments was developed by the North Carolina Community Health Assessment Initiative or NC-CHAI and was established in order to set guidelines for what was formerly known as the community diagnosis. The community assessment is a biennial process required of local health departments and is crucial for the planning and implementation of projects and programs by both public and private health care providers, businesses, and community members.

The community assessment is designed to be a collaborative process between key agencies in the communities.

# **Hoke County Demographics**

This section of the Community Health Assessment discusses health statistics from secondary data with respect to births and deaths in Hoke County. Data is taken from the North Carolina State Center for Health Statistics County Data Book 2009, the North Carolina Vital Statistics 2009 Volume 1 and 2. Information from these sources allows us to compare information from Hoke County with similar information from our peer counties (Scotland and Greene) where indicated, and in North Carolina. The findings will help our community determine health priorities and concerns.

# Hoke County Community Health Assessment 2011

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## Demographics and Socioeconomic Indicators

Hoke County, which lies in the southeastern part of North Carolina, was formed in 1911 from portions of Cumberland and Robeson Counties. It was named in honor of Robert F. Hoke, a Major/General in the Confederate States Army. With approximately 392 square miles, Hoke is bordered by Cumberland, Moore, Robeson, Scotland, and Richmond Counties. Raeford, its largest city, serves as the County Seat.

In 1918, the United States was looking for a place that had suitable terrain, a good source of water, close to a rail road, and a climate for year around training. They found the place called Camp Bragg had all of these qualities and on September 30, 1922, this place was renamed to Fort Bragg and became a permanent army post. Fort Bragg is now the largest army installation in the world, holding about 10% of the U.S active army forces (Hoke County Land Use Plan, 2005).

According to the 2010 Census, Hoke County's population is approximately 46,952. From 2000 to present Hoke County has seen a major influx of military and migrant workers, increasing the population by 25.7%. The North Carolina Economic Development Commission (2009) predicts that due to the BRAC realignment, Hoke County's population will grow 16% by 2010.

Following is the 2010 Census update breakdown of ethnic groups in Hoke County:

White: 45.3 %	African American: 33.5 %
American Indian/Eskimo: 9.6 %	Asian/Pacific Islander: 1.0 %
Hispanic/Latino Origin: 12.4 %	White not Hispanic: 40.8%
Two or More Races: 4.5% <i>(Also see Figure 1, page11, for Racial and Ethnicity Population)</i>	

According to the US Census Bureau the county has a makeup of 48.7% males and 51.3% females. The population has increased 47.2 % during the years 1990-2000. From 2000-2009 the population has increased 34.2%. Hoke County has a large number of young people with approximately 32.5% of the population 19 and under. The Four Year Cohort Graduation Rate is 71.7%, which is a 1.9% change between years (69.8%, 2009-2010). The following is a breakdown for each school year: 2005-2006 - 47.1%; 2006-2007 - 63.7%; 2007-2008 - 69.0%; 2008-2009 - 62.2%; 2009-2010- 65.4%. In 2011, 381 Hoke County High School Students graduated. In 2005-2009 - 79.6 % of the population 25 and over were high school graduates, 13.8% had bachelor's degrees or higher. The Dropout rate for grades 7-13 in LEA or Charter Schools, 2005-2009 is 15.1%. Its senior population (65 and over) currently stands at about 7.4% of the population which is a decrease since the 2007 assessment of 7.7%. The Hispanic population has risen 2.6% since the 2007 assessment. The leading causes of deaths among the Hoke County Hispanic population are Cancer, Certain conditions originating from the perinatal period and Motor Vehicle injuries. Many Hispanics lack health insurance coverage and therefore

## Hoke County Community Health Assessment 2011

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preventive health care needs are not met. Since 2000, agencies have hired interpreters to accommodate the needs of the Hispanic population.

The average per capita income for residents in Hoke County is about \$16,831 (2009 inflation adjusted dollars) with 21.3% of the population living in poverty (2009). In 2009, 21.3% percent of people were in poverty. Since 2000 the poverty level has increased 4.3 %. According to the US Census Bureau 2005-2009 American Community Survey 25.3% of related children under 18 were below the poverty level compared to 23% in the 2007 Assessment. People 65 years and older are 20.2% below the poverty level compared to 17% in the 2007 Assessment. Since 2007, 16.5% of all families (2007, 15%) and 40.7% (2007, 39%) of families with a female householder and no husband present had incomes below the poverty level. The unemployment rate as of September 2011 is 9.6% which is .4% lower than the state not seasonally adjusted rate of 10%. The state seasonally adjusted rate is 10.5%. Since the 2007 Community Health Assessment the unemployment rate has increase 5%.

In 2005-2009, 61.8% of the employed population 16 years and older, the leading industries in Hoke County were: Educational services, and health care and social assistance 20.4%, and Manufacturing, 13.2%. Among the most common occupations were: Management, professional, and related occupations, 24.8%; Service occupations, 23.8%; Sales and office occupations, 22.1%; Construction, extraction, maintenance and repair occupations, 12.0%; and Production, transportation, and material moving occupations, 15.8%. Private wage and salary workers were 71.2% of the population employed of which 22.3% were Federal, state, or local government workers; and 6.2 % were Self-employed in own not incorporated business workers. (2005-2009 American Community Survey-5 Year Estimates) In comparison to the 2006-2008 American Community Survey-3 Year Estimates there is an increase in some employed professions such as: Manufacturing, 12 percent. Among the most common occupations were: Sales and office occupations, 22 percent; and Production, transportation, and material moving occupations, 13 percent. Sixty-seven percent of the people employed were Private wage and salary workers. There is a decrease in the following: Educational services, and health care and social assistance, 22 percent; Management, professional, and related occupations, 25 percent; Service occupations, 24 percent; and Federal, state, or local government workers were 26 percent.

There are 7 medical clinics in Hoke County providing family practice services; four private pediatricians to address the medical needs of children; an OB/GYN to care for female health issues to include pregnancy; with a total of 15 physicians for the area. There are 5 dentists and two eye clinics. There are no 24-hour medical services available to our citizens, which forces them to drive to bordering counties for after-hour emergencies. In 2010, Cape Fear Valley Medical Center opened an after hour Urgent Care Clinic which operates from 4:00 PM to 12:00 Midnight. Also, they have opened an Express Care Clinic at the Wal-Mart in Raeford which is opened from 8 AM to 7 PM.

Communities people grow up in are indeed one determinant of their health, both in the short term and in adulthood. Hoke County residents lack critical resources and opportunities to make healthy choices, their health can be compromised. There are six (6) parks in the county and only one fitness center for residents to use for various sports and physical activity. There are no

## Hoke County Community Health Assessment 2011

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county or city recreational facilities. This forces residents to use recreational facilities in neighboring counties. The Hoke County Health Department continues to offer Health Education/Health Promotion Interventions related to various chronic diseases and the development of community walking trails.

Evidence shows that low-income and/or minorities often face poorer health outcomes than their counterparts. Lack of education is also a strong predictor of health outcomes. Children who live in substandard housing, learn in poorly constructed classrooms and play in areas of heavy traffic congestion are more likely to develop health conditions.

To further complicate matters, social and community factors interact: the resources available (or not) in your community help determine what level of education is attainable and what income may be possible. Your income and education level helps determine if you can take advantage of your community's resources and alleviate any of its negative impacts on your family's well-being.

Community variables such as where supermarkets are located to where health clinics are built, and from the proximity of highways to the quality of local housing stock can affect the health of the community. With the expected increase in the military population in Hoke County, it is beginning to show signs of growth in business establishments and new housing developments. In addition, research has shown that an individual's risk for negative health outcomes increases with each additional risk factor they face. Evidence from a growing body of research also suggests that the role of community in health outcomes begins at an early age.

According to the State Center for Health Statistic, the Life Expectancies by Age, Race and Sex for Hoke County (2006-2008) show a difference of about 2 years compared to the 1990-1992 data for ages 35-59. *(See graph on pages 12 & 13, Figure 2 & 3)*

Not all communities are on an equal playing field, resulting in disparities in the ability of residents to access health promoting institutions and practice healthy behaviors, and also in subsequent health outcomes. Further investigation and research into health disparities is needed in Hoke County and other counties in North Carolina, that low-income communities and communities-of-color do not benefit from the same environmental supports to healthy outcomes as do others.

Residents' assessment of their own health can provide a population-level measure of health-related quality of life. Residents reporting poor or fair health often struggle with unmet health needs, chronic conditions or disparate health care access relative to their neighbors. Health insurance has been linked to the ability of residents to access medical care. Such medical care can provide residents with the tools to manage their own health and seek advice and treatment for health conditions as they arise. A community whose adults assess their health positively and feel confident that they can manage health conditions, live healthy lifestyles and access care when necessary, is better able to promote healthy outcomes for its children. Children's receipt of regular, preventive medical care is often correlated not only with whether they have insurance coverage but also with their parents' insurance status. Parents without health insurance are less likely to seek regular medical care for their children and are more likely to experience illnesses

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that can make it difficult for them to care for their children. Finally, a lack of health insurance puts families at risk for financial stress and even bankruptcy.

Rates of obesity continue to rise, and the prevalence of chronic diseases such as heart disease and diabetes are higher than ever before. The Hoke County Health Department along with many of their partners such as the Healthy Hoke Task Force, North Carolina Cooperative Extension-Hoke Center, Hoke County Schools, FirstHealth of the Carolinas Community Health Services, Community Outreach Advocates, INC, Cape Fear Regional Bureau for Community Action, INC and the Faith Community are taking a leadership role to help positively affect the health of their residents.

**Hoke County Population Breakdown by Ethnicity  
2006-2008**

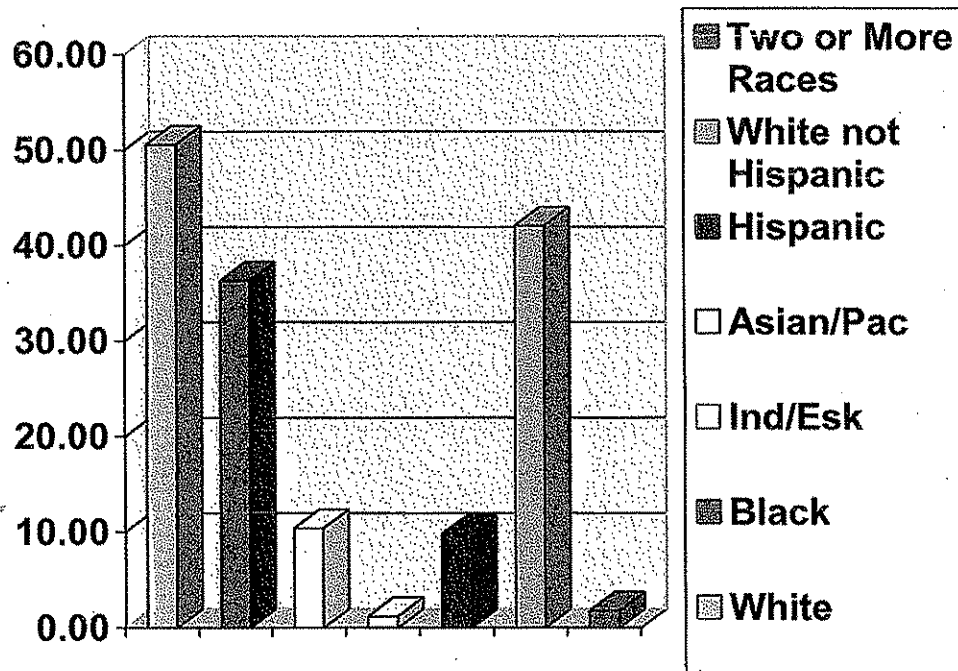


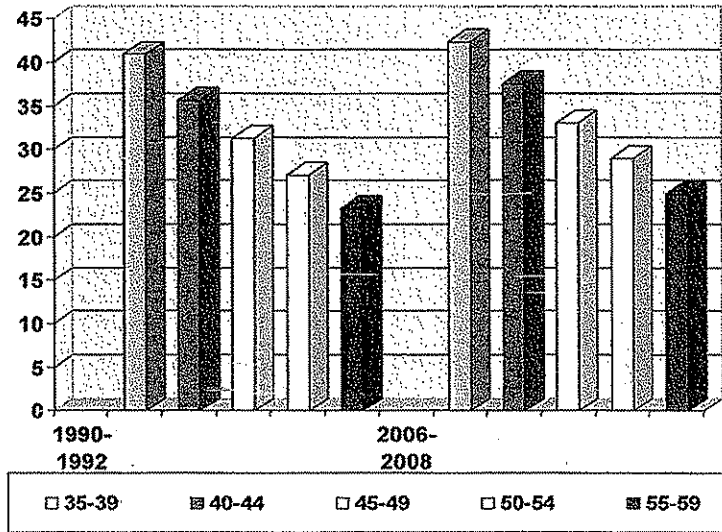
Figure 1



# Hoke County Community Health Assessment 2011

## Hoke County Life Expectancies by Age, Race & Sex

Figure 2



## Life Expectancies Comparisons by Age, Race & Sex

1990-1992							
Age Groups	Hoke Co.	NC	% Difference	Scotland Co.	% Difference	Greene Co.	% Difference
	Total						
35-59	40.3	42.4	-5.0%	40.8	-1.2%	43.1	-6.5%
40-44	35.7	37.8	-5.6%	36.5	-2.2%	38.4	-7.0%
45-49	31.3	33.2	-5.7%	32	-2.2%	32	-2.2%
50-54	27.1	28.9	-6.2%	28	-3.2%	28	-3.2%
55-59	23.2	24.7	-6.1%	24	-3.3%	24	-3.3%
	White						
35-59	40.9	43.3	-5.5%	42.3	-3.3%	43.9	-6.8%
40-44	36.2	38.6	-6.2%	37.9	-4.5%	39	-7.2%
45-49	31.1	34	-8.5%	33.2	-6.3%	34.3	-9.3%
50-54	27	29.5	-8.5%	28.9	-6.6%	29.6	-8.8%
55-59	23	25.2	-8.7%	24.4	-5.7%	25.1	-3.3%
	African Am						
35-59	39.8	38.4	3.6%	38.6	3.1%	41.7	-4.6%
40-44	35.4	34.1	3.8%	34.3	3.2%	37.2	-4.8%
45-49	31.5	29.9	5.4%	30.1	4.7%	32.9	-4.3%
50-54	27.5	26	5.8%	26.4	4.2%	28.5	-3.5%
55-59	23.7	22.5	5.3%	23	3.0%	24.7	-4.0%

## Hoke County Community Health Assessment 2011

2006-2008							
Age Groups	Hoke Co.	NC	% Difference	Scotland Co.	% Difference	Greene Co.	% Difference
	Total						
35-59	42.3	44.2	-4.3%	40.7	3.9%	43.9	-3.6
40-44	37.6	39.5	-4.8%	36.3	3.6%	39	-3.6
45-49	33.1	35	-5.4%	32	3.1%	34.4	-3.8
50-54	29	30.6	-5.2%	27.8	4.3%	30.2	-4.0
55-59	24.9	26.4	-5.7%	23.8	4.6%	26.1	-4.6
	White						
35-59	43.3	44.8	-3.3%	41.7	3.8%	43.9	-1.4
40-44	38.6	40.1	-3.7%	37.5	2.9%	39.1	-1.3
45-49	34	35.5	-4.2%	33.2	2.4%	34.6	-1.7
50-54	29.7	31.1	-4.5%	28.9	2.8%	30.2	-1.7
55-59	25.2	26.8	-6.0%	25.1	0.4%	26	-3.1
	African Am						
35-59	40.8	41.4	-1.4%	39	4.6%	44.1	-7.5
40-44	36.3	36.9	-1.6%	34.6	4.9%	39.1	-7.2
45-49	31.8	32.5	-2.2%	30.1	5.6%	34.5	-7.8
50-54	27.8	28.3	-1.8%	26.1	6.5%	30.4	-8.6
55-59	24	24.4	-1.6%	22.1	8.6%	26.5	-9.4

**Figure 3**

# Leading Causes of Death

For the period, 2005-2009, Hoke County's death rate for all causes were 6.0% compared to North Carolina's rate of 8.4% per 100,000 population.

In 2009, Hoke County's total death rate was 5.4% with 247 deaths (excluding fetal deaths) compared to North Carolina's rate of 100% per 100,000 population. The leading cause of death in Hoke County was Heart Disease with 62 deaths for a death rate of 148.8 compared to North Carolina's death rate of 192.2% per 100,000 population. The ten leading causes of death in Hoke County can be found on the following pages 15-23. The graphs and tables show the order, comparison with the State and Peer Counties and trends from the previous Community Health Assessment.

## Hoke County Community Health Assessment 2011

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### Heart Disease

#### Overview

Heart disease is the leading cause of death for both men and women. Life itself is completely dependent on the efficient operation of the heart. There are many kinds of heart disease and they can affect the heart in several ways; however, the ultimate problem with all varieties of heart disease is that, in one way or another, they can disrupt the vital pumping action of the heart.

Every year about 785,000 Americans have a first heart attack and another 470,000 who have already had one or more heart attacks have another attack. In 2010, heart disease will cost the United States \$316.4 billion. This total includes the cost of health care services, medications, and lost productivity. Heart disease is the leading cause of death for people of most ethnicities in the United States, including African-Americans, American

The graph (*Figure 7*) shows and compares the rate of deaths caused by heart disease during 2005-2009 for Hoke County, peer county, and North Carolina. In the period 2001-2005, Hoke County had a considerably higher heart disease death rate in comparison to the State rate. Overall, throughout this four year timeframe, Hoke County and NC's rates have begun to decline since 2005.

Although there has been a decrease in heart disease death rates in Hoke County in the previous years, this chronic illness still remains the leading cause of death for the residents in the county. Some risk factors of heart disease consist of high blood pressure and cholesterol, diabetes, obesity/overweight, smoking, and lack of physical activity. Based on these risk factors, heart disease

### Cancer

#### Overview

Cancer is a class of diseases in which a group of cells display uncontrolled growth, invasion, and sometimes metastasis which means spreading to other locations in the body through lymph or blood. These three properties of cancers are singled out from benign tumors which are self-limited and do not invade or spread. Most cancers form a tumor but some, like leukemia, do not. The branch of medicine concerned with the study, diagnosis, treatment, and prevention of cancer is oncology. Cancer affects people at all ages with the risk for most types increasing with age. Cancer caused about 13% of all human deaths in 2007 (7.6 million) in the United States (World Health Association).

Cancers are caused by abnormalities in the genetic material of the transformed cells. These abnormalities may be due to the effects of tobacco smoke, radiation, chemicals, or infection. Other cancer-promoting genetic abnormalities may randomly occur through errors in DNA copying or are inherited, thus present in all cells from birth.

## Hoke County Community Health Assessment 2011

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*Figure 7* on page 16 shows and compares the rate of deaths caused by cancer during 2005-2009 for Hoke County, Peer County, and North Carolina. In 2009, Hoke County's rate was lower than peer counties rate. Since 2005, Hoke County began to see a decrease in the number of cancer death rates. Overall, NC has remained stable with the rate of yearly deaths caused by cancer for 2004-2007.

Cancer is the second leading cause of death in Hoke County. Although, there are many different types of cancer, lung was the leading cause of cancer incidences in Hoke County according to the NC Central Cancer Registry, 2003-2007. According to the National Cancer Institute, avoiding the risk factors that can lead to or cause cancer and increasing the protective factors which can assist in preventing cancer should be learned and performed by all individuals. Regular exercise and eating healthy meals and snacks will increase one's protective factors. Some risk factors can be avoided such as smoking and drinking alcohol; however, genetics cannot be altered. These life style changes can lower the risk of being diagnosed with cancer.

### **Motor Vehicle Injuries**

#### **Overview**

In the United States, motor vehicle-related injuries are the leading cause of death for people ages 1-34, and nearly 5 million people sustain injuries that require an emergency department visit each year. The economic impact also is notable: motor vehicle crashes cost around \$230 billion in 2000 (Centers for Disease Control and Prevention). However, motor vehicle-related deaths have been declining over the past 30 years. North Carolina laws such as mandatory seat belt usage for children, front seat drivers, and passengers; 0.08 blood alcohol level; and graduated drivers' licensing have made North Carolina roads safer for all residents. Highway safety programs have increased the enforcement of these laws such as "Booze It & Lose It" and "Click It or Ticket It," effectively changing the cultural habits for safe driving (NC Department of Transportation).

*Figure 7* shows and compares the rate of deaths caused by motor vehicle accidents (MVA) during 2005-2005 for Hoke County, peer county, and North Carolina. Overall, the Peer County and NC have lower MVA death rates for this four year timeframe. However, Hoke County had a higher rate of MVA deaths in 2001-2005 time frame. Although, there was a slight decrease in the MVA deaths, it is the third leading cause of deaths in Hoke County. In Hoke County, the local sheriff's department and police department are working closely together to patrol drivers who may be operating vehicles while under the influence. There has been and will continue to be an increase in the number of law enforcement vehicles and officers throughout Hoke County insuring road safety for all.

### **Chronic Obstructive Lower Respiratory Disease (COPD)**

#### **Overview**

Chronic lower respiratory diseases refer to chronic (ongoing) diseases that affect the airway and lungs. The most common disease of the lung is Chronic Pulmonary Disease (COPD) commonly known as emphysema or chronic bronchitis. COPD is the fourth leading cause of death in the United States; however, the good news is that COPD is often preventable and treatable. Emphysema is usually caused by smoking. Having emphysema means some of the air sacs in the lungs are damaged, making it hard for the body to get the oxygen it needs. Chronic bronchitis occurs when the cells lining the inside of the lungs' airways are red and swollen. The

## Hoke County Community Health Assessment 2011

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airways in the lungs have become narrow and partly clogged with mucus that cannot be cleared. COPD develops over time and has no cure. At the onset, there is minimal shortness of breath, but over time, people with COPD may need oxygen treatment to help with shortness of breath. Cigarette smoking is the main cause of COPD. People who smoke are 12 times as likely to die of COPD as opposed to those who have never smoked. Emphysema and chronic bronchitis also are strongly associated with lung cancer. (American Lung Association)

According to the National Institutes of Health, approximately 12 million adults in the United States are diagnosed with COPD, and 120,000 die from it each year while an additional 12 million adults in the United States are undiagnosed.

*Figure 7 on page 16 shows and compares the rate of deaths caused by chronic lower respiratory disease during 2005-2009 for Hoke County, Peer County, and North Carolina. The data tells that Hoke has lower rates than NC and peer county. However, Hoke County saw a higher rate of chronic lower respiratory disease deaths in 2001- 2005 time frame.*

The NC Chronic Disease and Injury Section reported that for the years of 2003-2007, NC spent over \$400 million in hospitalization charges for COPD. Approximately 38.1 percent of adults in North Carolina who are current smokers reported having COPD. Although, COPD is a preventable disease, it is still Hoke County's fourth leading cause of death with the last recordable numbers being on the rise. To prevent COPD, (1) stop or do not start smoking, (2) avoid second-hand smoke, (3) protect yourself against harmful chemicals and fumes in the home and workplace, and (4) get as much clean air as possible.

### **Cerebrovascular Disease (Stroke) Overview**

Cerebrovascular disease is a group of brain dysfunctions related to disease of the blood vessels supplying the brain. A stroke is an interruption of the blood supply to any part of the brain. A stroke is sometimes called a "brain attack." During a stroke, blood flow to a part of the brain is interrupted because a blood vessel in the brain is blocked or bursts. If blood flow is stopped for longer than a few seconds, the brain cannot get blood and oxygen (National Stroke Association).

High blood pressure is the number one risk factor for strokes. The following also increases one's risk for stroke: diabetes, family history of stroke, heart disease, high cholesterol, and increasing age. Men have more strokes than women, but women have a risk of stroke during pregnancy and the weeks immediately after pregnancy. The following factors can increase the risk of bleeding into the brain, which makes you more likely to have a stroke: alcohol use, bleeding disorders, cocaine use, and head injury. The most common stroke signs and symptoms are: (1) sudden numbness or weakness to the face, arm or leg, (2) sudden confusion or trouble speaking and understanding others, (3) sudden trouble seeing in one or both eyes, (4) sudden dizziness, trouble walking or loss of balance and coordination, and (5) sudden severe head ache with no known cause. Knowing what to look for and reacting quickly could save one's life.

The (*figure 7*) below shows and compares the rate of deaths caused by cerebrovascular disease during 2005-2009 for Hoke County, Peer County, and North Carolina. The data explains that in this four year time frame, the peer county had a noticeably higher rate of deaths caused by

## Hoke County Community Health Assessment 2011

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cerebrovascular disease but has been showing a decline thereafter. Overall, NC has seen a decline in the rate of cerebrovascular disease-related deaths for 2005-2009.

In 2007, less than 20 percent of NC adults reported that they knew signs and symptoms of a stroke. North Carolina is part of the nation's "stroke belt," an eight to twelve-state region in the southern part of the country where stroke death rates are much higher than the rest of the United States. More than one-third of all hospitalized stroke patients in North Carolina are under the age of 65.

In 2010, Americans will pay approximately \$73.7 billion dollars for stroke-related medical care and disability (National Stroke Association). Hoke County had a total of 57 stroke-related deaths during 2005-2009, which breaks down to approximately 14 deaths per year. Up to 80 percent of all strokes are preventable by making life style changes such as controlling your high blood pressure, losing weight or maintaining a healthy weight and not smoking. By incorporating these changes into their lives, Hoke County residents could prevent the likelihood of suffering from a stroke which could lead to an economically burdensome condition. (National Stroke Association)

### **Nephritic Syndrome**

#### **Overview**

Nephritic syndrome is a group of symptoms including protein in the urine (more than 3.5 grams per day), low blood protein levels, high cholesterol levels, high triglyceride levels, and swelling. Nephritic syndrome is caused by various disorders that damage the kidneys, particularly the basement membrane of the glomerulus. This immediately causes abnormal excretion of protein in the urine (National Institute of Health).

The most common cause in children is minimal change disease. Minimal change disease is a kidney disorder that can lead to nephritic syndrome. Membranous Glomerulonephritis is the most common cause in adults. Membranous nephropathy is a kidney disorder which involves changes and inflammation of the structures inside the kidney that help filter waste and fluids. The inflammation leads to problems with kidney function (US National Library of Medicine). This condition also can occur as a result of infection (such as strep throat, hepatitis, or mononucleosis), use of certain drugs, cancer, genetic disorders, immune disorders, or diseases that affect multiple body systems including diabetes. Nephritic syndrome can affect all age groups. In children, it is most common from age 2 to 6. This disorder occurs slightly more often in males than females.

*Figure 7* shows and compares the rate of deaths caused by nephritic syndrome during 2005-2009 for Hoke County, peer county, and North Carolina. The data indicates that nephritic syndrome death rates in Hoke County have increased since the 2001-2005 time frame. The peer county rate is higher than both Hoke County and the state rate for this four year time frame.

Studies have been unable to determine a prevention of nephritic syndrome but there are some risk factors. The risk factors are: (1) pre-existing medical conditions that can damage your kidneys such as diabetes and lupus, (2) non-steroid, anti-inflammatory drugs and drugs used to fight infections, and (3) certain infections such as HIV, Hepatitis B and C, and malaria. If you are diagnosed with nephritic syndrome, the coping process can be helped by changing your diet

## Hoke County Community Health Assessment 2011

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to include decreasing the amount of fat and cholesterol, eating a low-salt diet and increasing the amount of calcium you eat daily (Mayo Foundation for Medical Education and Research).

### **Other Unintentional Injuries**

According to the CDC motor vehicle crashes, falls, homicides, domestic violence, child abuse and neglect, and drug overdoses are just some of the tragedies we hear about every day in communities and on the news. Injuries and violence are widespread in society. Many people accept them as fate or as "part of life," but the fact is that most events resulting in injury, death or disability are predictable and therefore preventable.

The Centers for Disease Control and Prevention's (CDC) National Center for Injury Prevention and Control (Injury Center) was established in 1992 to lead injury and violence prevention efforts. The field of injury and violence prevention is relatively young when compared to other areas of public health, but the burden of injury and violence coupled with the enormous cost of these problems to society make them a pressing public health concern.

Older adults and children are most vulnerable to sustaining injury requiring medical attention, but for Americans ages 1-44, injuries are the leading cause of death in the United States. For this reason, the Injury Center is leading a coordinated public health approach to injury and violence prevention, guided by the belief that everyone should have access to the best information and resources to help them live life to its fullest potential.

In 2007 in the United States, injuries, including all causes of unintentional and violence-related injuries combined, accounted for 51% of all deaths among persons ages 1-44 years of age – that is more deaths than non-communicable diseases and infectious diseases combined.

#### **Injury Facts according to CDC:**

- More than 180,000 deaths from injury each year — 1 person every 3 minutes
- Leading cause of death for people ages 1-44 in the US
- More than 2.8 million people hospitalized with injury each year
- More than 29 million people treated in Emergency Department for injury each year
- More than \$406 billion annually in medical costs and lost productivity

*Figure 7* shows and compares the rate of deaths caused by other unintentional injuries during 2005-2009 for Hoke County, Peer County, and North Carolina. The data indicates that in 2005- 2009, Hoke County had a slightly higher rate of other unintentional injuries related deaths as compared to the 2001- 2005 time frame. The peer county and NC death rates related to unintentional injuries are higher for the 2005-2009 four year time frame.

### **Diabetes**

#### **Overview**

Diabetes is a disease in which the body does not produce or properly use insulin. Insulin is a hormone produced in the pancreas, an organ near the stomach. Insulin is needed to turn sugar and other food into energy. When a person has diabetes, the body either does not make enough insulin or cannot use its own insulin as well as it should, or both. This causes sugars to build up too high in the blood.



## Hoke County Community Health Assessment 2011

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Diabetes consists of two types, Type 1 and Type 2. Type 1 diabetes usually occurs in children and young adults. In Type 1, the pancreas makes little or no insulin. Without daily injections of insulin, people with Type 1 diabetes will not survive. Type 2 diabetes is the most common form. It appears most often in middle-aged adults; however, adolescents and young adults are developing Type 2 diabetes at an alarming rate. It develops when the body does not make enough insulin and does not efficiently use the insulin it makes (American Diabetes Association). Both forms of diabetes may be inherited in genes. A family history of diabetes can greatly increase the risk of developing diabetes. Untreated diabetes can lead to many serious medical problems such as: blindness, kidney disease, nerve disease, limb amputations, and cardiovascular disease.

*Figure 7* shows and compares the rate of deaths caused by diabetes during 2005-2009 for Hoke County, Peer County, and North Carolina. The data indicates that in 2005-2009, Hoke County had a lower rate of diabetes related deaths but has seen a decline since 2005. The peer county and NC death rates related to diabetes are higher four year time frame.

According to the American Diabetes Association, Type 2 diabetes can be prevented by changing to a healthier diet, increasing your levels of physical activity and losing and or maintaining a healthy weight. Hoke County's diabetes related death rates are declining and can continue to decline with self-motivation and community support encouraging a positive lifestyle change.

Hoke County Health Center and FirstHealth of the Carolinas Hospital System offer other community classes on a variety of diabetic related topics: managing diabetes, diabetes & eye disease, diabetes & foot health, and diabetic nutrition classes for the general population. The Hoke County Health Center offers a monthly Diabetes Support Group for persons with Diabetes. They are in the process of becoming certified with American Diabetes Association (ADA) for Diabetes Self-Management.

### **Septicemia Overview**

Septicemia is bacteria in the blood (bacteremia) that often occurs with severe infections. Septicemia is a serious, life-threatening infection that gets worse very quickly. It can arise from infections throughout the body, including infections in the lungs, abdomen, and urinary tract. It may come before or at the same time as infections of the:

- Bone (osteomyelitis)
- Central nervous system (meningitis)
- Heart (endocarditis)
- Other tissues

The outlook depends on the bacteria involved and how quickly the patient is hospitalized and treatment begins. The death rate is high -- more than 50% for some infections. Getting treated for infections can prevent septicemia. The *Haemophilus influenzae B* (HIB) vaccine and *S. pneumoniae* vaccine have already reduced the number of septicemia cases in children. Both are

## Hoke County Community Health Assessment 2011

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recommended childhood immunizations. In rare cases, people who are in close contact with someone who has septicemia may be prescribed preventive antibiotics. (*Medline Plus A Service of the US Library of Medicine NIH*)

*Figure 7* shows and compares the rate of deaths caused by Septicemia disease during 2005-2009 for Hoke County, Peer County, and North Carolina. The data indicates that Septicemia disease death rates in Hoke County are higher than North Carolina rates, but lower than peer county rate. In the 2001-2005 time frame it was not included in the 10 leading causes of death.

### **Alzheimer's disease**

#### **Overview**

Alzheimer's disease is a progressive, degenerative disease of the brain, which causes thinking and memory to become seriously impaired. It is the most common form of dementia. Dementia is a condition having a number of symptoms that include loss of memory, judgment, reasoning, and changes in mood, behavior, and communication abilities. Alzheimer's disease was first identified by Dr. Alois Alzheimer in 1906 (Alzheimer's Association). Alzheimer's disease eventually affects all parts of a person's life. Since individuals respond differently, it is difficult to predict the symptoms each person will have, the order in which they will appear, or the speed of the disease's progression. However, it has been determined that mental abilities, emotions and moods, behaviors, and physical abilities are all affected by Alzheimer's disease.

*Figure 7* shows and compares the rate of deaths caused by Alzheimer's disease during 2005-2009 for Hoke County, Peer County, and North Carolina. The data indicates that Alzheimer's disease death rates in Hoke County have increased since the 2007 Community Health Assessment. In the 2001-2005 time frame it was not included in the 10 leading causes of death. The peer county and state Alzheimer's disease death rates are lower than Hoke County.

According to the Centers for Disease Control, an estimated five million Americans have Alzheimer's disease, which has doubled since 1980. By 2050, it is estimated that 13.4 million persons will be diagnosed with Alzheimer's disease. According to the National Institute on Aging, research is being conducted on the possibility of preventing Alzheimer's disease or the onset thereof. The key factors contributing to Alzheimer's disease include: genetic makeup, environment, life history, and current lifestyle. Some of these risk factors cannot be controlled but studying an individual's health, life style and environment can be a key to preventing Alzheimer's disease.

Studies have shown that being physically active, having a healthy diet, being socially active and stimulating the brain, as well as managing pre-existing and chronic diseases throughout life and during your older years can promote a more promising aging process. There are limited resources in Hoke County for Alzheimer's disease.

**Ten Leading Causes of Death  
2005-2009  
Age Adjusted & Unadjusted Rates**

Figure 4

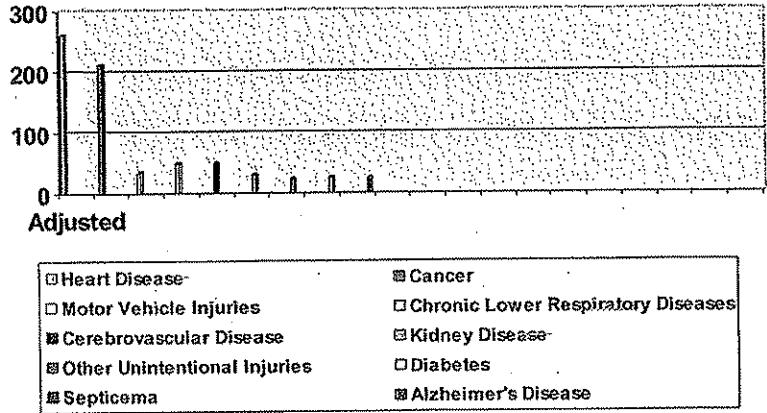
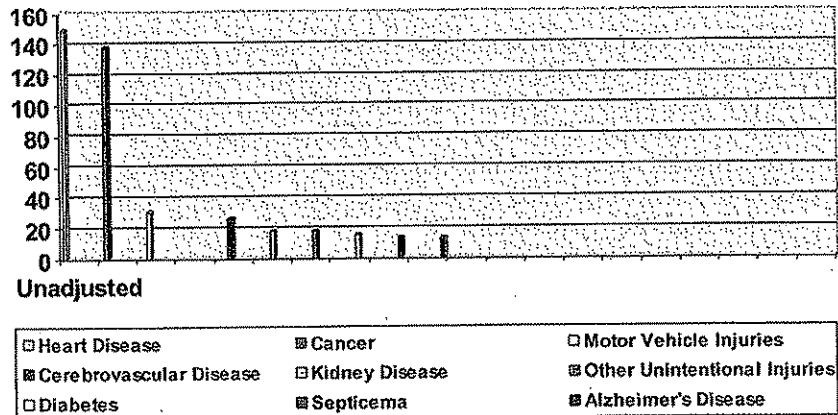


Figure 5



# Hoke County Community Health Assessment 2011

## Leading Causes of Death Trends Time Period: 2001-2005 & 2005-2009

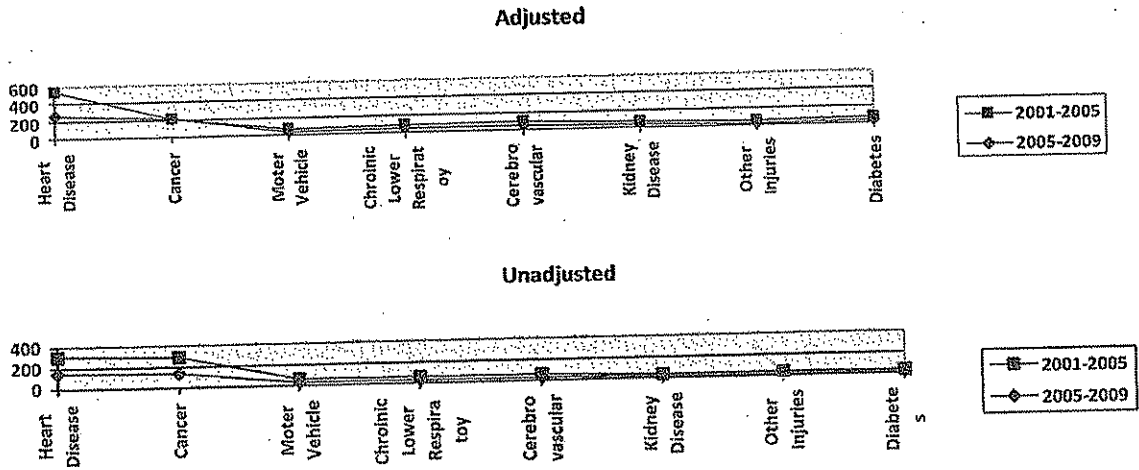


Figure 6

## Leading Causes of Death Comparison 2005-2009 Unadjusted Death Rates

Diseases	Hoke County	Scotland County	North Carolina
Heart Disease	148.8	248.0	192.2
Cancer	137.7	255.6	190.7
Motor Vehicle Injuries	30.5	21.7	17.8
Chronic Lower Respiratory	27.7	46.0	46.9
Cerebrovascular	26.3	70.4	50.0
Kidney Disease	18	22.7	18.7
Other Intentional Injuries	18	29.8	28.5
Diabetes	15.2	35.2	24.1
Septicemia	13.4	53	-10
Alzheimer's	13.4	11	-8

Figure 7

**Health Priorities  
for County**

# Hoke County Community Health Assessment 2011

## Pregnancies and Births

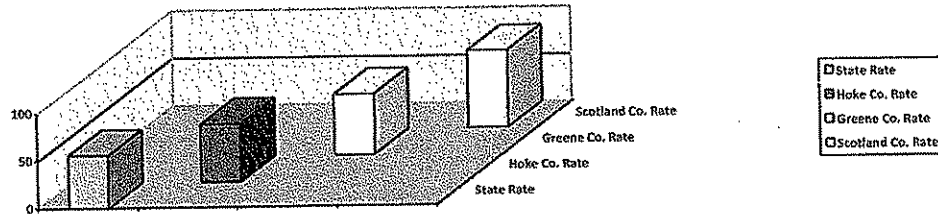
### Live Births

For the period 2005-2009, Hoke County's live birth rate was 19.6% compared to North Carolina's rate of 14.1% (per 1,000 population). In 2009, Hoke County had a total of 1,079 pregnancies and a total of 931 live births (635 white and 296 minorities).

For the period 2005-2009, Hoke County's low birth weight rate was 8.8% compared to the North Carolina rate of 9.1% per 1000 population. In 2009, there were 318 births out of wedlock with a rate of 34.2% compared to the North Carolina's rate of 42.3% per 1000 population. In Hoke County there was 1 birth from pregnancies to mothers aged 10-14 and 111 live births from pregnancies to mothers aged 15-19. Hoke County ranks 39<sup>th</sup> in the State for Adolescent Pregnancies. On pages 18-19, Figures 8-13, you will find graphs which compares Hoke County adolescent pregnancies, live births, birth rates and trends with North Carolina and Peer Counties.

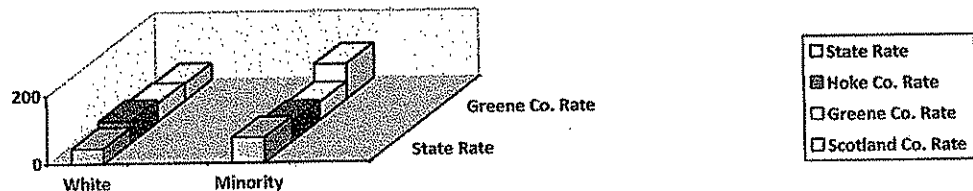
### Total Pregnancy Rates for Females Ages 15-19 (2009) Per 1000 (Hoke County Rate Compared to the State & Peer Counties Rate)

Figure 8



### Pregnancy Rates for Females Ages 15-19 (2009) by Race Per 1000 (Hoke County's Rate Compared to the State & Peer Counties Rate)

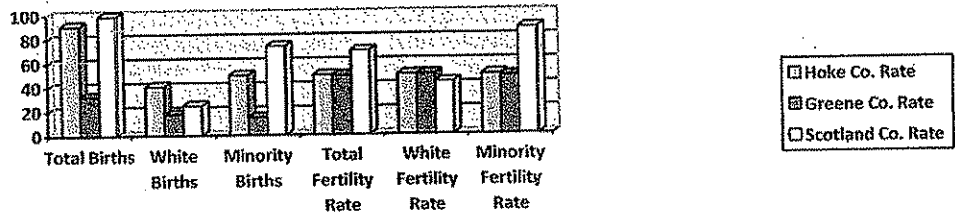
Figure 9



# Hoke County Community Health Assessment 2011

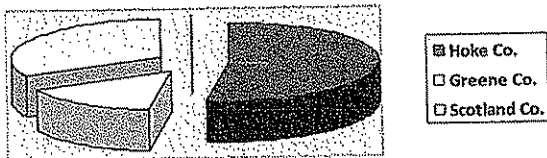
## Total Births & Fertility Rates for Females Ages 15-19 (2009) by Race Hoke County Rate Compared to Peer Counties Rate

Figure 10

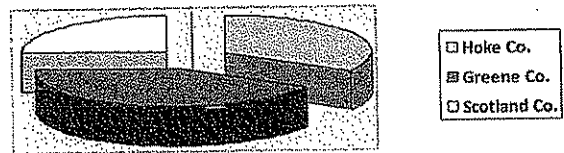


## Pregnancy and Birth Rate Trends per 1000 Population for Females Ages 15-17 (2005- 2009) Hoke County Rates Compared to Peer County Rate

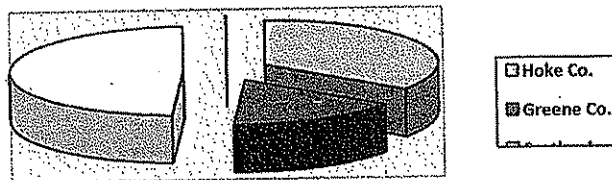
Number of Live Births



Live Birth Rates



Number of Pregnancies



Figures 11, 12, 13 & 14

## Hoke County Community Health Assessment 2011

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### Infant Mortality

For the period 2005-2009, Hoke County's infant death rate (under one year) was 8.3% (per 1000 population) and the fetal death rate (in utero development after 20<sup>th</sup> week) rate was 7.5% compared to North Carolina's fetal death rate of 6.7% per 1000 population. Hoke County neonatal deaths (births to the first 28 days of life) were at a rate of 4.7% compared to North Carolina's rate of 5.6% per 1000 population. Hoke County's post neonatal death rate (from 28 days to 1 year of life) was 3.3% compared to North Carolina's rate of 2.7% per 1000 population.

In 2009, 7 infant deaths (under 1 year) were reported in Hoke County, a rate of 7.5% and 7 fetal deaths (in utero development after 20<sup>th</sup> week) a rate of 7.5% (per 1000 population) compared to North Carolina's infant death rate 7.9% and fetal death rate of 6.7% per 1000 population.

Infant Mortality	Year	White Rate	Minority Rate	Total Rate
Hoke County	2007	7.9	10.4	8.8
	2008	5.3	19.3	10.3
	2009	1.6	20.3	7.5
	2010	2.2	8.6	3.2
North Carolina	2007	6.3	13.9	8.5
	2008	6	13.5	8.2
	2009	5.4	14.1	7.9
	2010	5.3	12.7	7

(NC State Center for Health Statistics)



## Hoke County Community Health Assessment 2011

The goal of the **Communicable Disease Program** is to stop the spread of disease by investigating sources of infection and reduce transmission through public education. This is done through the cooperation of physicians, and medical laboratories.

There are sixty-six non sexually transmitted reportable diseases. There are blood borne diseases such as Hepatitis B and C and enteric diseases such as salmonella and shigellosis. Hepatitis A is a food borne disease. Vector borne diseases include West Nile Virus. Eastern Equine Encephalitis, Rocky Mountain Spotted Fever and Lyme Disease. Some communicable diseases are air borne like SARS (Severe Acute Respiratory Syndrome) and Tuberculosis. There are also agents of terrorism such as anthrax, smallpox and plague.

Medical providers, laboratories and the state communicable disease branch, reports diseases to the health department. The communicable disease staff determines if the reported disease meets the case definition set by the Centers for Disease Control and Prevention. Persons with certain diseases are restricted in activities to decrease transmission.

On pages 30-32 you will data of some communicable disease reported for Hoke County in comparison to North Carolina and peer counties.

### Communicable Disease (Hoke County Cases and Rates Compared to State & Peer Counties)

NC Tuberculosis Cases and Rates by County Reported, 2006-2010

County	Year	# of Cases	Rate	County	Year	# of Cases	Rate
Hoke	2006	4	11.8	Scotland	2006	3	8.3
	2007	1	2.3		2007	5	13.2
	2008	2	4.6		2008	4	10.6
	2009	3	6.6		2009	0	0
	2010	1	2.2		2010	0	0
Greene	2006	0	0	North Carolina	2006	374	4.6
	2007	0	0		2007	345	3.8
	2008	4	18.6		2008	335	3.6
	2009	2	9.7		2009	250	2.7
	2010	6	28.2		2010	296	3.1

NC Primary and Secondary Syphilis Cases by County of Report, 2006-2010

County	Year	# of Cases	Rate	County	Year	# of Cases	Rate
Hoke	2006	1	2.4	Scotland	2006	0	0
	2007	0	0		2007	1	2.4
	2008	1	2.3		2008	0	0
	2009	0	0		2009	1	2.8
	2010	1	2.2		2010	0	0
Greene	2006	0	0	NC Total	2006	309	3.5
	2007	2	9.7		2007	324	3.6
	2008	0	0		2008	287	3.1
	2009	2	9.7		2009	580	6.2
	2010	0	0		2010	396	4.2

## Hoke County Community Health Assessment 2011

NC Early Syphilis (Primary, Secondary, Early Latent) Cases by County of Report, 2006-2010

County	Year	# of Cases	Rate	County	Year	# of Cases	Rate
Hoke	2006	1	2.4	Scotland	2006	0	0
	2007	0	0		2007	1	2.7
	2008	2	4.6		2008	1	2.7
	2009	1	2.2		2009	1	2.8
	2010	2	4.4		2010	1	2.8
Greene	2006	0	0	NC Total	2006	602	6.8
	2007	3	14.5		2007	569	6.3
	2008	0	0		2008	509	5.5
	2009	3	14.5		2009	937	10
	2010	0	0		2010	724	7.7

NC Gonorrhea Cases by County of Report, 2006-2010

County	Year	# of Cases	Rate	County	Year	# of Cases	Rate
Hoke	2006	47	114.1	Scotland	2006	121	332.7
	2007	66	156.1		2007	156	428.3
	2008	86	197		2008	99	271.4
	2009	70	155		2009	101	278.3
	2010	52	115.2		2010	95	261.8
Greene	2006	41	202.3	NC Total	2006	17311	195.2
	2007	54	261.2		2007	16666	183.9
	2008	52	251.8		2008	15012	162.3
	2009	39	188.8		2009	14811	157.9
	2010	53	256.6		2010	14153	150.9

NC Chlamydia Cases by County of Report, 2006-2010

County	Year	# of Cases	Rate	County	Year	# of Cases	Rate
Hoke	2006	124	300.9	Scotland	2006	164	451
	2007	14	269.5		2007	241	661.6
	2008	200	458.2		2008	236	646.9
	2009	223	493.9		2009	182	501.5
	2010	114	252.5		2010	177	487.7
Greene	2006	82	404.6	NC Total	2006	33615	379.1
	2007	110	532		2007	30612	337.7
	2008	135	653.6		2008	37885	409.7
	2009	118	571.2		2009	43734	466.2
	2010	92	445.3		2010	42167	449.6

## Hoke County Community Health Assessment 2011

**NC HIV Disease Cases by County Rank Order (by Year Diagnosed), 2008-2010**  
(Rank based on three year average rate)

County	Year	# of Cases	Rate	County	Year	# of Cases	Rate
Hoke	2008	7	16	Scotland	2008	8	21.9
	2009	10	22.1		2009	4	11
	2010	10	22.1		2010	5	13.8
Rank	12			Rank	31		
Average Rate	20.1			Average Rate	15.6		
Greene	2008	2	9.7	NC Total	2008	1812	19.6
	2009	2	9.7		2009	1628	17.4
	2010	2	9.7		2010	1487	15.9
Rank	50			Average Rate	17.6		
Average Rate	9.7						

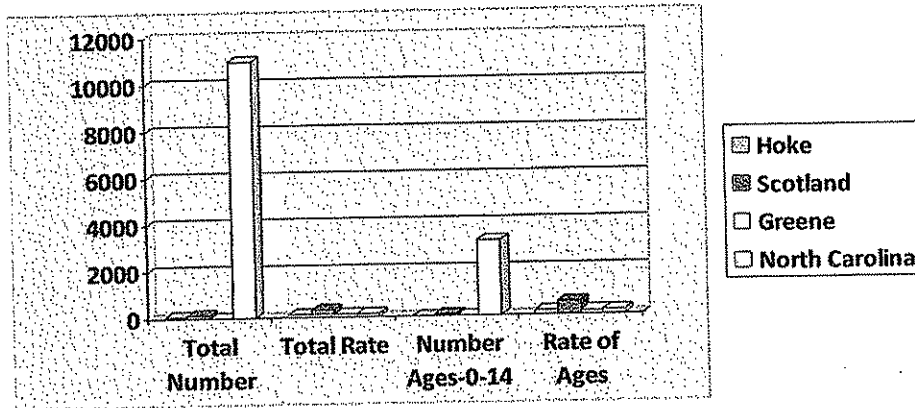
**NC AIDS Cases by County Rank Order (by Year Diagnosed), 2008-2010**  
(Rank based on three year average rate)

County	Year	# of Cases	Rate	County	Year	# of Cases	Rate
Hoke	2008	7	16	Scotland	2008	5	9.2
	2009	4	8.9		2009	5	9.2
	2010	7	15.5		2010	8	11
Rank	13			Rank	27		
Average Rate	13.5			Average Rate	11		
Greene	2008	2	9.7	NC Total	2008	934	10.1
	2009	2	9.7		2009	938	10
	2010	4	19.4		2010	796	8.5
Rank	15			Average Rate	9.5		
Average Rate	12.9						

NC HIV Disease (HIV/AIDS) Cases Living as of 12/31/2010

## Hoke County Community Health Assessment 2011

### 2009 North Carolina Hospital Discharges with a Primary Diagnosis of Asthma Numbers and Rates per 100,000 Population All Ages and Ages 0-14 (Hoke County Rare Compared to State and Peer Counties)



### 2009 Inpatient Hospital Utilization and Charges by Principal Diagnosis Hoke County Compared to the State

Hoke County Diagnosis	Total Cases	Discharge Rate	Average Days Stay	Total Charges
Septicemia	134	2.9	28.8	\$6,648,095
AIDS	4	0.1	8.8	\$210,310
Colon, Rectum, Anus	5	0.1	7.8	\$205,496
Trachea, Bronchus, Lung	7	0.2	9	\$358,134
Female Breast	4	0.1	1.8	\$42,216
Prostate	6	0.1	1.7	\$13,181
Diabetes	86	1.9	6.7	\$2,343,122
Heart Disease	313	6.8	5.5	\$13,060,071
Cerebrovascular	82	1.8	4.5	\$2,409,745

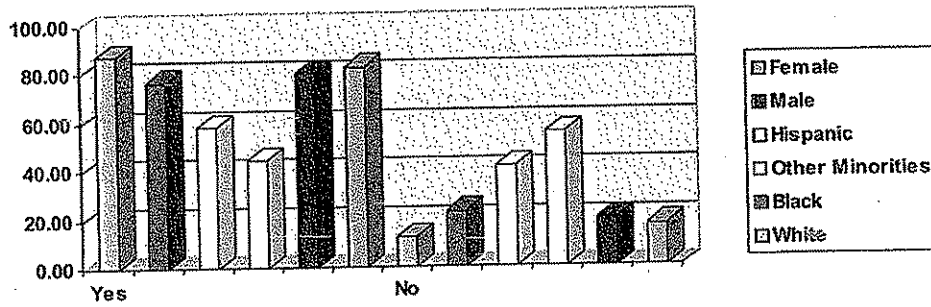
## Hoke County Community Health Assessment 2011

North Carolina				
Diagnosis	Total Cases	Discharge Rate	Average Day Stay	Total Charges
Septicemia	23,362	2.5	8.4	\$952,434,053
AIDS	1,670	0.2	8.8	\$60,107,392
Colon, Rectum, Anus	3841	0.4	8.1	\$156,914,619
Trachea, Bronchus, Lung	4489	0.5	7	\$161,350,727
Female Breast	1698	0.2	2.8	\$36,538,812
Prostate	2727	0.3	2.3	\$68,369,384
Diabetes	16642	1.8	4.7	\$318,424,354
Heart Disease	107,137	11.4	4.7	\$3,755,289,120
Cerebrovascular	28758	3.1	4.7	\$742,345,102
Pneumonia/Influenza	33137	3.5	5.2	\$645,773,897
Chronic Obstructive Pulmonary Disease	31572	3.4	4.1	\$470,008,579
Chronic Liver Disease/Cirrhosis	2391	0.3	6.2	\$74,670,992
Nephritis,Nephrosis,Nephrotic Synd.	13081	1.4	8.1	\$296,261,829

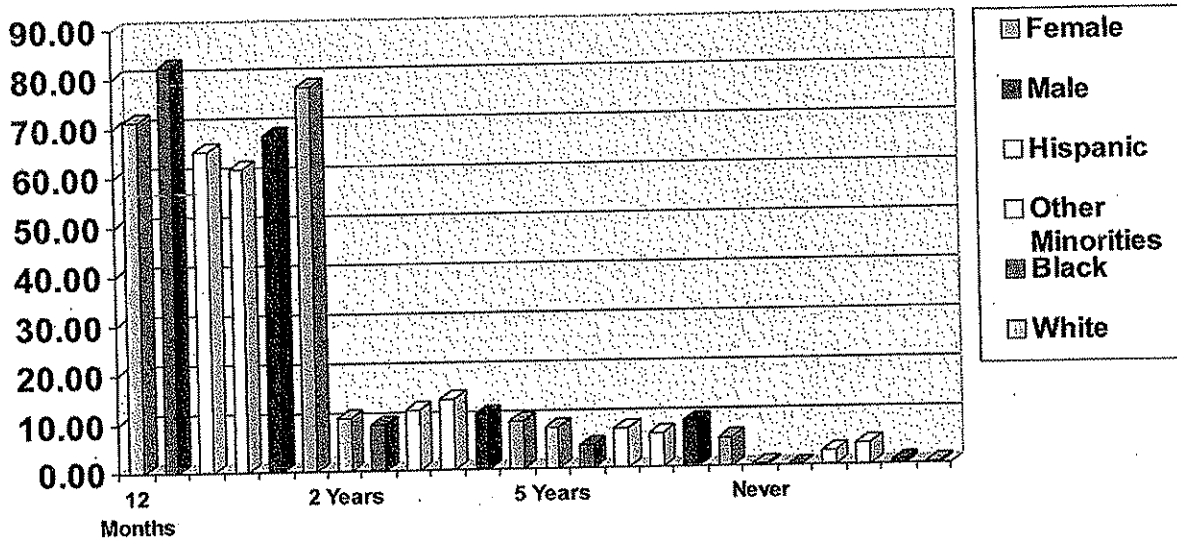
# Hoke County Community Health Assessment 2011

The following graphs show Health Care Access in Eastern North Carolina according to the BRFSS 2009:

Question: Do you have any kind of health care coverage, including health insurance, prepaid plans-HMO's, or government plans such as Medicare?



Question: About how long has it been since you last visited a doctor for a routine checkup?  
 (A routine checkup is a general physical exam, not an exam for a specific injury, illness or condition)



## Hoke County Community Health Assessment 2011

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### Obesity

Obesity is a major concern at the county, state, and national level. The current economy and American lifestyle make it even more difficult to address. To raise the awareness of the issue, the Hoke County Health Center and the Healthy Hoke Task Force Diabetes and Chronic Disease Subcommittee are focusing in the following areas: (1) to increase the awareness of the obesity problem and to suggest ways to change it; (2) to assist in the development of programs aimed at educating and informing the community about healthy eating and moving lifestyles. Program information to combat the important health issue in Hoke County can be found in the Collaborative Efforts Section of this document. Below is a table which shows the Body Mass Index Grouping –Obese for Eastern North Carolina according to NC CATCH Indicator Fact Sheet.

According to the Center for Disease Control overweight and obesity are both labels for ranges of weight that are greater than what is generally considered healthy for a given height. The terms also identify ranges of weight that have been shown to increase the likelihood of certain diseases and other health problems.

For adults, overweight and obesity ranges are determined by using weight and height to calculate a number called the "body mass index" (BMI). BMI is used because, for most people, it correlates with their amount of body fat.

- An adult who has a BMI between 25 and 29.9 is considered overweight.
- An adult who has a BMI of 30 or higher is considered obese.

Eastern Region				
Year	Total	Obese Rate	Recommended Range	Overweight
2004	4777	29.5	31.8	37.4
2005	5304	28.7	33	36.8
2006	4970	29.3	31	38.3
2007	4547	31	30.6	36.1
2008	5066	32	30.6	36
North Carolina				
2004	14228	25.2	35.5	37.9
2005	16417	25.9	35.5	36.7
2006	14883	26.6	35.1	36.2
2007	14090	28.7	33.6	35.9
2008	15135	29.5	32.7	36.2

# The Hoke County Health Center





## Hoke County Community Health Assessment 2011

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**Hoke County Health Center** currently has 36 employees, and is located in its new location at 683 East Palmer Road. The Health Center offers a wide array of services for every member of the community. Here is a complete list of services available at the clinic:

**Adult Health Services:** Cholesterol, blood pressure, blood sugar screenings, and immunizations are available from 8:00 a.m. until 4:30 p.m., Monday through Friday by appointment.

**Child Health:** A full time Pediatrician is on staff to provide well checks-ups and immunizations for children from birth to 21 years of age. Child immunizations offered from 8:00 a.m. until 4:30 p.m., Monday through Friday by appointment.

**Maternity Health:** Every Tuesday, 8:00 a.m. to 3:30 p.m. Provides New Obstetrical and Third Trimester Pregnancy Education as well as complete prenatal care through Cape Fear Valley Medical Center/ Duke OBGYN.

**Family Planning:** Provides annual physicals, birth control methods, family planning counseling and education for all childbearing adult men, women, and teens. Family Planning Medicaid Waiver available. While supplies last, multiple vitamins are available for women in childbearing age. Please call for an appointment. Appointment times range from 8:45 am to 3:30 pm.

**Care Coordination for Children Services (CC4C):** Is a new program transitioning the Child Service Coordination (CSC) program into a population management model in partnership with Community Care Networks and Local Care Management Entities. In addition to community based interventions for children to maximize health outcomes the program will target the highest risk and highest cost for care management. Services are provided for all Medicaid children birth to 5 years if ages that are determined to be high risk and qualify for services.

**Pregnancy Care Management (PCM):** Is a new program transitioning Maternity Care Coordination (MCC). This program is a free service which targets the Medicaid eligible population of pregnant women. It is designed to support families by increasing awareness of prenatal health care; to coordinate and link patients with other health providers and community resources; and transitional care after delivery hospitalization.

**The Office of Health Education /Health Promotion:** Is provided through our Health Educators' who offer schools, community groups and individuals' supportive information about lifestyle changes to enhance or maintain their well being. Services are provided upon request. **The Health Education/Health Promotion Office** also, oversees the coordination of the *Healthy Hoke Task Force a Healthy Carolinians' Coalition*. A Diabetes Support Group is held on the second Tuesday of every month, 5:30 pm - 6:30 pm at the health center.

**Communicable Disease Program:** TB screening every day except Thursday, 8:00 a.m. until 4:30 pm by appointment. HIV counseling and screening, Monday through Friday, 8:00 a.m. until 4:30 pm by appointment. STD education and preventive services are offered daily as well as assessment, diagnosis and treatment.

## Hoke County Community Health Assessment 2011

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**Women, Infants and Children (WIC):** Special supplemental food and nutrition program for pregnant, breast feeding women who have had a baby in the last 12 months, and postpartum women who have had a baby in the last 6 months, infants and children up to the age of 5, who qualify within both the medical and financial guidelines set by the state. The WIC Program is funded by the USDA. Offers nutritional counseling and breastfeeding education.

**Environmental Health:** The primary purpose of Environmental Health is to protect the public health through the application of principles of environmental science and epidemiology to identify, control, and/or eliminate pathogenic agents (Biological, Chemical, and Physical) and to limit the incidence and spread of disease in the community.

This is accomplished by the administration of preventive measures designed to monitor, identify, and abate potential and imminent health hazards through a cooperative application of state environmental health laws and rules.

The Hoke County Health Department's Environmental Health Division regulates the following facilities:

- On-Site Wastewater
- Drinking Water Wells
- Restaurants, Food Stands, and Drink Stands
- Child Day Care
- Meat Markets
- Residential Care
- Nursing Homes, Rest Homes, and Hospitals
- Summer Camps
- Lodging (Motels and Hotels)
- Local Confinement
- Educational Institutions
- Migrant Housing
- Public Pools
- Tattoo Artist
- Lead Investigation

The division evaluates, designs, and inspects on-site sewage disposal systems for private property owners and commercial property.

The division analyzes water supplies for commercial and private property.

The division conducts communicable disease investigations, and solid waste investigations. If you are planning to build a home, open a restaurant, start a daycare, you need to contact us!

Everywhere.....Everyday.....Everyone.

Jeff Eudy – Environmental Health Coordinator

Roland Little – Environmental Health Specialist

## Hoke County Community Health Assessment 2011

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Lori Morrison – Environmental Health Specialist  
 Jason Lycans – Environmental Health Specialist

### Total Number of Facilities-11/7/2011

Type	No. Facilities	Insp. Freq.	No. Inspections
Adult Day Service	1	X1	1
Bed and Breakfast Home	1	X1	1
Child Daycares	47	X2	94
Elderly Nutrition Sites	4	X4	6
Food Stand	3	X1	3
Food Stand	14	X2	28
Food Stand	4	X3	12
Food Stand	1	X4	4
Institutional Food Service	1	X4	8
Limited Food Service	1	X4	1
Local Confinement Facilities	2	X1	2
Lodging Establishment	2	X1	2
Meat Market	7	X3	21
Mobile Food Units	4	X1	4
Nursing Homes	3	X2	6
Private School Lunchrooms	1	X4	4
Public School Lunchrooms	12	X4	48
Pushcarts	1	X1	1
Residential Care Facility	87	X1	87
Restaurant	1	X1	1
Restaurant	17	X2	34
Restaurant	4	X3	12
Restaurant	14	X4	56
Schools	15	X1	15
Seasonal Swimming Pools	4	X1	4
Seasonal Wading Pools	2	X1	2
Summer Camps	2	X1	2
Tattoo	8	X1	8
Year-Round Spas	1	X2	2
Year-Round Swimming Pools	1	X2	2

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481

# **Collaborative Efforts**

## Hoke County Community Health Assessment 2011

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### Health Priorities

The primary areas of focus continue to be Adolescent Pregnancy and STD Prevention, Chronic Disease with emphasis on Diabetes, Heart Disease, Hypertension, Obesity and Overweight. Although the Community Health Opinion Surveys showed that there is a need for more education related to Men's Health, Aging, Asthma, Cancer and Mental Health.

### Healthy Hoke Task Force

The Healthy Hoke Task Force began meeting in Spring of 2000, with the goal of addressing urgent health and safety issues for the citizens of Hoke County. The Task Force is comprised of representatives from key agencies in the county and meetings are held quarterly. In October 2002, the Task Force received their certification from the NC Department of Health and Human Services, Office of Health Education/Healthy Carolinians which was effective for three years. The Healthy Hoke Task Force received its second recertification in 2009 which will be effective until 2013.

The Task Force continuously supports the Hoke County Health Department, Hoke County Diabetes Coalition and Healthy Hoke Task Force Chronic Disease Subcommittee Annual Diabetes Health Fair held in November of each year as well as other community events. Since 2005, the Hoke County Health Center has been the fiscal agent for the Healthy Hoke Task Force. These changes have offered a more sustainable way to share fiscal and programmatic responsibilities.

The Healthy Hoke Task Force, due to the fact that it was started with support and technical assistance from the Office of Healthy Carolinians, has adhered closely to the Healthy People 2010 established goals. The group has identified specific Healthy Carolinians 2010 objectives and established county goals in relationship to those identified. It is anticipated that, as the collaboration gains structure, improves communication mechanisms, and has greater interaction, additional local objectives relating to the Healthy Carolinians 2010 will be identified with specific action steps undertaken to achieve the goals.

### Adolescent Pregnancy and STD Prevention

Hoke County is ranked thirty-nine (39) in the state of North Carolina for the number of **teenage pregnancies**. The sexually transmitted disease rate remains high. Young persons are being educated about the consequences of being a parent, and about the deadly risk of transmitting sexually transmitted diseases through various community agencies.

The Healthy Hoke Task Force continues to initiate the *Baby Think It Over Program (BTIO)* with community groups and churches. The 2009-10 Baby Think It Over Program (BTIO) was once again a great success. The (BTIO) coordinators have effectively completed five (5) High School and three (3) summer programs (see Figure 1) as of to date and have scheduled two (2) spring sessions with the Hoke County High School's Parenting and Child Developmental classes for the 2010-11 school year. In addition, program fees or stop loss fees of \$5.00 gave continued to shrink the amount of participants losing or not returning items. The fees are making a difference in program sustainability and promoting student responsibility as well as a vested interest among parents whose children participate in the program.

## Hoke County Community Health Assessment 2011

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The overall goal of *Baby Think It Over Program* (BTIO) is to reduce the initiation of premature sex, STD/HIV, and most of all, the teen pregnancy rate in Hoke County. Statistically, teen mothers are less likely to complete their education and more likely to be poor and receive public assistance. Studies have shown, that children of teens are prone to have poor health, lower cognitive development and higher rates of behavioral problems as well as suffer the likelihood of abuse and neglected. Moreover, a child born to a teen parent will most likely run the risk of repeating this cycle.

The *Baby Think It Over Program* is design to explore the consequences of adolescent parenting through simulation. It is said, we remember 10% of what is read; 20% of what we here; 50% what we see and 90% doing the job ourselves even if it is only through simulation. "Research demonstrates that performing a structured experience will later serve as a reminder system which reiterates the consequences of a past action when faced with a similar situation.

The BTIO curriculum has changed over the years since we have started initiating the program. The community programs is delivered from four (4) to two (2) comprehensive sessions to focus more on what is needed for participants to maintain an abstinence life style or to protect themselves (i.e., STD/ HIV prevention, Birth Control Methods, Making Responsible Choices, role playing and coping skills). The high school sessions have been reduced from six (6) to three (3) due to class time. However, the BTIO program will still consist of the same focus areas as the summer sessions but with an added content about the importance of breast feeding. The coordinators program the simulators on hard to give the participants the maxim effect of the program.

### ***Simulation Comparison Results 2004 & 2010***

Although, the overall pregnancy rate in the Nation have seen a significant reduction in teen pregnancy and early initiation of sex. The pregnancy rate has decreased in Hoke County from 32 in 2009 to 39 in 2010 in the state of North Carolina. However, what is most disturbing are the trends of how adolescents living in Hoke County view the initiation of sex and teen pregnancy have remained constant since the program begun in 2004.

The following trend results are a comparison of outcomes from 2004 and 2010 program year. The summary table below (Figure 2 & 3) provides a wealth of information depicting knowledge, attitudes and behaviors of the 2004 and 2010 BTIO program.

### **The following are questions and response depicted in the chart below:**

Query -13. I would be very upset if I found out I was pregnant (or: if I found out my girlfriend was pregnant).

Query -15. Having a baby negatively affects a couple's relationship.

Query -18. Birth control interferes with sexual activity.

Query -21. Caring for a baby does not require much money.

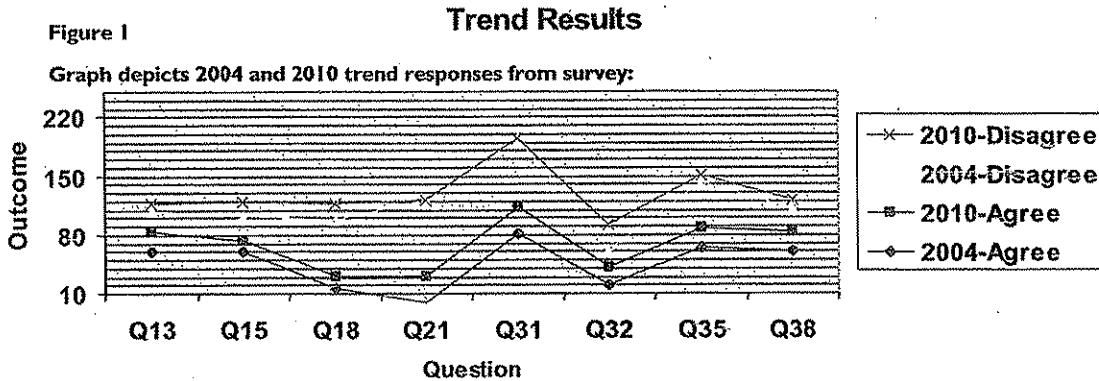
Query -31. Taking care of an infant is a large responsibility.

Query -32. I have discussed parenting/birth control issues at Home, School, Church or Other.

Query -35. What is the best age to have children?

Query -38. To what degree does your faith affect your sexual behavior?

# Hoke County Community Health Assessment 2011



Below is a comparison of outcomes from 2004 and 2010 program years. Figure 2 and 3 provides a wealth of information depicting the trends on where program participants attain their information which shaped their knowledge, attitudes and behaviors about parenting and birth control issues.

**Figure 2  
Graph depicts 2004 trend responses from survey:**

**Figure 3  
Graph depicts 2010 trend responses from survey:**

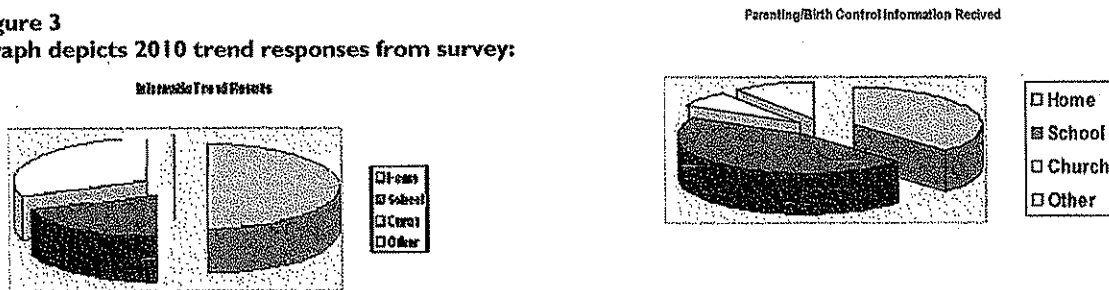


Figure 2 illustrate that in 2004 participants said that they obtain most of their information about parenting and birth control issues via home and school but not as much information at church or through other means (i.e., peers and outreach groups). However in figure 3, we can see that there was a significant change in how teens acquire their information. Participants said that they received the majority of their information from home followed by church and school. This is not an indication on what type (negative/positive) of information but the trend marks a positive step towards parents' discussing parenting and birth control issues with their teen age children.

Disturbingly, in 2010 the trend signifies a negative direction when it comes to the schools informing students about parenting and birth control issues than in 2004. It seems that as the home and other means increased its uphill struggle; the school decreased its efforts. Some may view this development as a good sign but we need all 4 components (i.e., Home, School, Church or Other) working to reduce the rate of teen pregnancy in Hoke County.

## Hoke County Community Health Assessment 2011

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Most encouraging is that the Hoke County Schools has recognized their central role in changing these trends and has implemented its new health curriculum; "Reproductive Health and Safety" which is design to meet the health needs of its students from 7<sup>th</sup>, 8<sup>th</sup>, and 9<sup>th</sup> grades. This change in school health will be a welcome addition in the fight against reducing risky behaviors as well as teen pregnancy.

**\*\*With each program the coordinators are constantly evaluating and learning different ways to improve the program to make it more effective for the next program/year.**

**The Hoke County Health Center** continues to holds an Annual Maternity Health Fair in October, which is available to all pregnant women in the county. The Hoke County Health Center, Hoke County Civic League, H.E.R.O.S. (HIV Educational Resource Services) of Hoke County, Cape Fear Regional Bureau for Community Action, Healthy Hoke Task Force and Community Outreach Advocates, continue to observe World AIDS Day with a candlelight ceremony each year. An Information Health Fair is also held at the Hoke County Public Library. The Health Education staff continues to provide education outreach on various health topics related to disease prevention.

In order to encourage **employee health and wellness** walking trails have been established in the community, churches and county agencies. The number of deaths due to **chronic disease** remains high in Hoke County (see copy of graph on page 11). The Healthy Hoke Task Force (a part of Healthy Carolinians) has formed two subcommittees. A Chronic Disease committee to focus on the health concerns of Diabetes, Heart Disease, Hypertension, Obesity and Overweight; and Adolescent Health Prevention.

The Annual Diabetes Health Fair continues to be held during National Diabetes Month in November. The Health Fair consisted of exhibitors, free screenings for diabetes, high blood pressure and cholesterol. The Hoke County Center has also established a Diabetes Support Group which provides monthly education to interested diabetics in the county. Health related articles and public service announcements are submitted to the local newspaper and radio station during National Health Month Observances. Also, during this month, in partnership with the NC Cooperative Extension Hoke Center, a *Holiday Dessert Workshop* is held for Diabetics.

In 2009 and 2010, The Faith Based Community Action Group held two successful *Annual Men's Health Fair* in June in connection with Men's Health Week. A variety of educational sessions with dynamic presentations such as How Chronic Disease Medications Affect Your Sexual Health and Healthy Lifestyle Choices were given at the health fair. PSA, Blood Pressure, Diabetes and Cholesterol Screenings were available to all participants at no cost. The health fair was not held this year due to lack of community involvement.

In January 2009, the Hoke County Health Center held its first *Eat Smart Move More Weigh Less "It's All About You" Wellness Program*. This program is a 19 week program designed to promote weight loss while making healthy lifestyle changes. We modified the lesson to be completed in 16 weeks. A total of 38 participants loss 184 pounds. Two sessions were held weekly at lunch and in the evening. Participants paid a registration fee of \$20.00 to cover program expenses. A second session of the Eat Smart Move More Weigh Less Program was held in June 2009 with 32 participants losing 136 pounds. This program was modified to include



## Hoke County Community Health Assessment 2011

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12 weekly sessions twice a week. In September 2010, the "It's All About You" Wellness Program was once again offered for 14 weeks to residents of Hoke County at a cost of \$20.00. A total of 10 participants lost 87.6 pounds. Two sessions were held weekly at lunch and in the evening on Wednesday.

In August 2011, we were identified by the North Carolina Department of Health and Human Services-Diabetes Prevention and Control Branch and North Carolina State University Cooperative Extension Service to be one of four pilot counties for the Eat Smart Move More Weigh Less Program. Also in 2011, applied to be a part of Cohort V Diabetes Self-Management ADA Recognition Program through the NC DHHS Diabetes Prevention and Control Branch.

The *Annual Bicycle Helmet Safety Day* was discontinued this year due to budget issues. We have partnered with other community and county agencies to address the health and safety of the young children and the adolescent population.

The University of North Carolina at Pembroke Nursing Program has an agreement with the Health Department for student nurses to complete an internship with a public health focus. Approximately 12 students in their senior year of college participated in this internship. Some of these projects involved the areas of physical inactivity and obesity, diabetes, health of older adults and the community health assessment.

### **Sparrow Project**

The geographic area served is in south central North Carolina, a primarily rural, low-income region of the state, specifically the following counties: Randolph, Montgomery, Moore, Richmond, Anson, Scotland, Robeson, Bladen, Sampson, Cumberland, Harnett, Lee, and Hoke. Two major metropolitan areas include Fayetteville and Lumberton. The African American population in these counties is approximately 265,000 based on NC 2000 census data.

Heart disease and stroke are the first and third leading causes of death in North Carolina and recent data indicates that the decline in deaths due to these conditions is slowing as the population ages and grows increasing overweight and obese. Data from the same source indicate that North Carolina's minority population exercises at a rate far below that of majority populations. In a 2003 survey one third of African American respondents failed to participate in even one form of exercise, e.g., walking gardening, calisthenics, etc in the previous month. In the South Central regions even fewer African Americans reported monthly exercise, with rates of non-exercise as high as 38.5 percent. Reported rates of fruits and vegetable consumption among African Americans are lower in the South Central region as well. Finally, rates of tobacco use among African American exceed state averages, with current smoking rates in Cumberland County approaching 30% among African American.

The Sparrow Project was a community-based, three-year CVD/stroke education and prevention program targeting at-risk African Americans through the provision of a holistic, workshop-based curriculum focusing on lifestyle change, with an emphasis on diet modification, exercise, and smoking cessation, and conducted through partnerships with local African American churches. The proposed project collaborators will include 3-4 African American churches in each county, providing access to hundreds of members of the target population. This

## Hoke County Community Health Assessment 2011

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project was awarded funds through the Health and Wellness Trust Fund to implement a second phase of the program in other churches. Due to budget cuts at the state level this is one of the programs which was eliminated. The first church participating in Hoke County was Rock Hill Missionary Baptist Church.

### FIRSTHEALTH OF THE CAROLINAS COMMUNITY HEALTH SERVICES PROGRAMS – HOKE COUNTY

#### Healthy Living in the Mid-Carolinas (Healthy Living)

In 2011, the Healthy Living in the Mid-Carolinas initiative, funded by the Kate B. Reynolds Charitable Trust Fund, continued to promote tobacco cessation and facilitate healthy behavior change in physical activity and eating habits in Hoke County. Healthy Living programs target low-income populations to help individuals learn how to make changes happen, and learn the skills to build healthy habits.

#### *People Living Active Year-round (PLAY)*

PLAY, our new physical activity program in the Healthy Living in the Mid-Carolinas Initiative helps participants realize that being fit can be fun. FirstHealth Community Health Services has developed a free program that will teach you how to PLAY and learn how to stay motivated. PLAY mixes physical activities like jumping rope, doing the Hula Hoop and playing catch with a Frisbee along with working out with resistance bands, some simple stretching exercises and cardiovascular activities. Participants are able to keep the equipment used during each session. There is no program fee. PLAY is not an exercise program. During 2011, Hoke County PLAY classes were held at the Hoke County Cooperative Extension.

#### *The Happy Kitchen*

As a six-week cooking nutrition class, the program helps participants learn to prepare tasty, healthy and inexpensive meals that provide good nutrition. In the six 1 ½ hour weekly sessions, participants learn how to shop on a budget, read nutrition labels, make healthy choices from each food group and cooking skills to prepare a healthy recipe. Participants receive a free bag of ingredients after each class to prepare the recipe at home. There is no program fee. In 2011, five classes with 73 participants were conducted at the Hoke County Cooperative Extension, SCC Hoke Center, Raeford Heritage Village and local churches. Cooking demos were conducted at the NC Turkey Festival.

#### *FirstQuit*

FirstQuit assist tobacco-users in making a quit plan that includes tools to deal with cravings and support to be tobacco-free. FirstQuit services, including support groups and quit classes, are available in Hoke County. There is a \$50 program fee that operates on a sliding scale. The program fee covers educational sessions, a quit guide and 4 weeks of nicotine replacement therapies.

## Hoke County Community Health Assessment 2011

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### **Teen Tobacco Use Prevention and Cessation Initiative**

Funded by the NC Health and Wellness Trust Fund (HWTF), TRU- Tobacco. Reality. Unfiltered-is a movement started by young people to stomp out tobacco use. TRU is about taking a stand and making a difference. Currently FirstHealth sponsors the TRU clubs at area high schools. TRU recruits teenagers to teach younger children about the hazards of tobacco, and supports 100% tobacco-free schools in Hoke County. In 2011, special projects in Hoke County included Through With Chew Week activities, an Earth Day Cigarette Butt Clean-Up, a Tackle Tobacco 100% Tobacco-Free School Assessment and a school-wide Great American Smoke out Celebration along with many other school tobacco education activities.

### **Safe Kids Mid-Carolinas Region**

Established in 2008, this program addresses injury prevention efforts for children ages 0-14 in Hoke, Montgomery, Moore, Richmond and Scotland counties. A direct affiliate of Safe Kids Worldwide, areas of interest include child passenger safety, fire safety, water safety, poison prevention, pedestrian and wheeled vehicle safety. FirstHealth serves as the lead agency coordinating over 25 community partners to achieve goals and complete community awareness events.

### **Mobile Health**

Mobile Health Services conducts cholesterol, diabetes and blood pressure, EKG, ultrasound (AAA, CAD, PVD), osteoporosis (bone density) and PSA (prostate cancer) screenings. Services are rendered based on a sliding fee scale. During 2011, approximately 387 screenings were conducted at churches, worksites, local businesses and community festivals.

#### Ongoing Efforts:

Mobile Health Services is providing FREE glucose screenings. For individuals with abnormal readings (through a grant from the Moore Regional Hospital Auxiliary) Mobile staff is able to distribute monitors and strips to individuals. This is to stress follow-up with a provider and regular monitoring habits. The nurse follows-up with each patient via phone call to determine if they have sought medical attention and if they are monitoring on a regular basis

### **2020 Vision Groups**

FirstHealth's vision statement is Working Together – First In Quality – First In Health. As a result, FirstHealth Community Health Services works with organizations in Hoke, Richmond, Moore and Montgomery counties on First In Health initiatives. Each county has formed a 2020 Vision Group. During 2010-2011, the Hoke County Vision 2020 group continued to advance its worksite wellness activities to address obesity through the promotion of physical activity and good nutrition. The group coordinated a spring and fall local corporate HokeFit competition involving a step counting and "Eat Your Colors" fruit and vegetable challenge. A website ([www.hokefit.org](http://www.hokefit.org)) was developed to promote the seasonal challenges. Kick-off celebrations and awards ceremonies were coordinated to recognize outstanding individual and corporate participation. Celebrations included a walk and cooking demonstration. HokeFit also conducted a community-wide BMI awareness campaign with height/weight charts. In August 2011, healthy weight loss recipes were shared weekly with worksite partners. Approximately 800 Hoke County employees have participated in HokeFit events.

## Hoke County Community Health Assessment 2011

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### **FirstHealth has launched a few new efforts in attempt to bring resources to Hoke County for Diabetics:**

(1) FirstHealth Diabetes Self-Management has obtained an AADE accreditation site for Hoke County. This allows the Diabetes Self-Management program to see patients in a group and/or one-on-one in Hoke County. The program is in the Raeford Family Care Clinic one day per week seeing patients now. If volume increases, hours could also increase based on demand for the service. ANY patient can be referred to the program. It is independent of the Family Care Center. Any physician, including the Health Department, can make a patient referral to the program. If the individual doesn't have the ability to pay, then we will assist them to obtain charity care status. Individuals will receive one-on-one and group education services by a registered dietician or diabetes educator.

(2) FirstHealth has launched a new diabetes focused project funded by Kate B. Reynolds for Diabetes and Mental Health. Any patient who enrolls into the DSM program will be screened for depression. If the individual scores abnormal, they will be referred to a behavioral health coach for follow-up. The behavioral coach will conduct an assessment and determine the patient's need for additional services (medications, counseling, etc....). In addition, this grant has some funds dedicated to gap medications and medical supplies for patients enrolled in the program. This can assist patients with devices, testing supplies, and medications until they are enrolled in an assistance program. This grant is for Hoke, Richmond and Montgomery counties only.

(3) Stanford Chronic Disease Management Classes – FirstHealth partnered with Community Care of the Sandhills as part of the Kate B Reynolds project to offer the evidence-based chronic disease management classes in Hoke, Richmond and Montgomery counties. The classes are scheduled to begin in January. ANY individual living with ANY chronic disease (and family members) can be referred to participate in this program.

(4) Telemedicine – we now have the capability to see patients in diabetic crisis via telemedicine from Raeford Family Care Clinic location to the Diabetes Self-Management office in Taylortown.

### **HOKE COUNTY SCHOOLS**

- Established student and staff Fitness Centers: Scurlock and East Hoke Middle
- Professional Development: Reproductive Health and Safety Education
- Staff Wellness Program
- New North Carolina Essential Standards for Healthful Living
- Supplemental Nutrition Education Assistance Program (partnership with Cooperative Extension)
- Health Screenings
- Classroom and community presentations
- Weight Watchers Club
- Monthly Health News Letter
- School Health Champion Award



**HOKE COUNTY PARTNERSHIP FOR CHILDREN FAMILIES**

**Pre-Kindergarten Program** expanded the Title I pre-kindergarten program with 5 classes each serving (18) 4 year old in local elementary schools.

**Mobile Preschool Program-** provides essential skills to help prepare children for entry into kindergarten. This service is specifically for those children not attending a Head Start, Title I or other early educational program.

**Books for Kids-** this program addresses the need to provide parents of young children with high quality reading material to promote reading to their young children on a daily basis. **"Families All Read" Family Literacy Project** -encourages family literacy by offering training to parents and children on making reading fun. **Teachers** – provides cash incentives to **Child Care for ESL Family Literacy Activity-** will provide child care subsidy for families with young children who participate in this literacy activity.

**Child Passenger Safety Seat Program-** will facilitate car seat safety classes and distribute approximately forty infant/toddler convertible car seats, high back booster seats and no back boosters to eligible Hoke County residents with children ages birth to five.

**Parents As Teachers-** administered by Hoke County Cooperative Extension this program provides parents the tools to assist them in becoming more effective teachers of their young children.

**Pediatric Expansion-** addresses the shortage of pediatric care in the county. This program provides a full time pediatrician at the Hoke County Health Department. **Dental Care Access Project-** will provide preventive and restorative dental care as well as dental education and supplies for services for indigent and underinsured children ages 0-5.

**Speech Connections (Enhanced Therapy Services)** – provides speech/language and occupational therapy services to children 0-5 years of age who are diagnosed with developmental delays and /or specific disorders. This program will provide speech/language and occupational therapy to meet the needs of the children.

**Pediatric Developmental Therapy (Enhanced Therapy Services)-**provides speech/language, physical and occupational therapy to children 0-5 in a developmental day program.

**Program Coordinator/Evaluation-**provides consultation services and assistance to the partnership in developing an evaluation plan and developing or identifying tools for use in evaluation. Evaluation results will be presented to partnership board members to determine if projects should be approved for continuation each year. Provides the ongoing coordination and monitoring of projects and activities funded by the partnership in Hoke County.

## Hoke County Community Health Assessment 2011

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**Partnership Administration**-provides the administration of all activities, day-to- day operation and accountability of all resources.

**Statewide Contract: Scholarship Program**- funded through Smart Start and administered through the Department of Social Services. This program assists parents of children that do not qualify for assistant through Department of Social Services Child Care Subsidy Funds.

**Hoke Quality Enhancement Program will provide:**

- Training in the 9 topic areas required by NC Division of Child Development;
- Resource Library Lending for childcare providers, parents, Pre-K teachers and early childhood education students;
- Technical assistance to improve accessibility to high quality early childhood education;
- Technical assistance for potential Family Child Care Home Businesses; and
- Training and technical assistance on preventing abuse and neglect complaints.

**Hoke Consumer Education & Referral:**

The Consumer Education and referral staff will provide direct services to families by providing customized childcare referrals and information on how to choose quality childcare programs.

**NC Cooperative Extension-Hoke Center**

- **North Carolina Cooperative Extension Hosted - People Living Healthy Living Active -** 21 Participants participated in physical Activity class, learning ways to make physical activity fun, Participants actively participated in basic work-out.
- **January – May 2011 – 280 3<sup>rd</sup> grade students participated in SNAP-Ed. (Supplemental Nutrition Assistance Program** The program consists of 9 sessions that are designed to educate and inspire young children to eat smart. Hands-on activities, games, and physical activity are incorporated into each lesson. Each 30-45 minute lesson includes a taste test of either a snack the student can make after-school or a healthy meal parents can make for dinner. Recipes and nutrition and physical activity handouts are sent home to the parents. Evaluation of the lessons includes a pre and post nutrition knowledge survey.

Educational Lesson Topics May Include:

Eat Smart with My Pyramid  
Fruit and Vegetable Challenge  
Label Detectives  
Re-Think Your Drink  
Move More with My Pyramid  
A Rainbow of Fruits and Vegetables  
Stop Light Foods

- **May- July 2011 - SNAP-ED for Older adults- Food as the Fountain of Health. Steps to Health Older Adult** program consists of 11 sessions, incorporating a Pre and Post Nutrition Knowledge and Behavior Change Survey and 10 educational sessions, each 30

## Hoke County Community Health Assessment 2011

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- 45 minutes in length. Sessions are divided into two 5-week educational modules related to Nutrition and Food Budgeting. Topics included health benefits of exercise, serving size of fruit and vegetables and plate portions of fruits and vegetables. Topics and activities focus on decreasing participants' risks of diet-related chronic disease such as heart disease, stroke, diabetes, and obesity. This was at the L. E McLaughlin Center; Sessions included interactive, hands-on activities, taste tests and food demonstrations, and weekly challenges.

Thirty-seven seniors participated in the program April 25- July 25. Post Surveys showed 62.2% of the participants were engaging in more physical activity, were incorporating more fruits and vegetables in their diets, were using food labels to make healthier food choices and were trying the healthy recipes at home.

- **2009 garden at Hawkeye elementary August 2010** – Two community gardens one at Don Steed Elementary and one at the Raeford Museum, 2011 assisted youth with a community garden at Turlington Alternative School

**Community Health  
Opinion Survey  
Summary**



## 2011 Community Health Opinion Survey Results

The purpose of this assessment was to learn more about the health and quality of life in Hoke County, North Carolina. The Hoke County Health Department and the Healthy Carolinians of Hoke County (Healthy Hoke Task Force) will use the outcomes depicted in this survey as well as the secondary data collected within this document to develop plans that will address the outcomes which reflect the major health and community issue in Hoke County.

Five Hundred (500) 2011 Community Opinion Surveys were distributed and collected within Hoke County via Health Department awareness programs and local community events (i.e. Expo, National Night Out, Diabetes Health Fair, and the Annual Maternity Fair, etc.) as well as through e-mail and online format. The following result depicts a sample of views and attitudes by citizens, who live, work and receive services in Hoke County.

According to the demographics, out of the 500 surveys collected, only 65 males participated versus 410 females and 25 subjects that were non-responsive to whether they were male or female. In addition to, the data revealed that there was a diverse population that contribute their views in this assessment, 304 African Americans', 63 Caucasians', 54 Native Americans', 20 Latina or Mexicans', 3 Asian Americans' or Pacific Islanders', 26 Other, and 30 subjects were non-responsive. According to the surveys the highest level of education completed is a high school diploma or GED and the average household income before taxes last year among the participants was less than 14,999. (See Demographics)

The most common community health problems indicate were: Aging, Asthma, Cancer, Dental Health, Diabetes, Heart Diseases/Heart Attacks, Gun Related Injuries, Mental Health, Motor Vehicle Accidents, Obesity/Overweight, STDs and HIV/AIDs, Stroke, and Teenage Pregnancy. Participants that presented they had adolescent children were asked whether they felt comfortable with talking to their teens about risky behaviors; the data suggested that more females (133) than males (15) felt comfortable talking to their children. In addition, subjects were queried about their smoking habits and Asthma. The data point toward some correlation between people who smoked or were exposed to second hand smoke and having asthma. In addition, subjects were asked about their physical activity and nutritional habits. More women seemed to be making healthier lifestyle choices than men. Women eat 5 or more cups of vegetables and fruit were as men eat 2 cups of fruit and vegetables in a week. The average days during the week for physical activity is 3 days and the average time spent watching TV; playing video games/computer for recreation is 2 to 3 hours. (See Community Health Problems and Issues)

Likewise, the community issues also revealed a wealth of information about how citizens feel about the quality of life in Hoke County. Overwhelmingly, participants assessed believed that there is unease about low income/ poverty and dropping out of school. On the contrary, there were mixed opinions about other issues such as: lack of transportation, pollution of air and water, lack of healthy family activities, and animal control issues. (See Community issues by Zip Code)

Similarly, participants were asked about if Hoke County was a safe/good place to raise a

## Hoke County Community Health Assessment 2011

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family. The views and attitudes towards this question uncovered that the majority felt that Hoke County is a good place to raise a family. However, there was mixed opinions about issues related to the poor economy, violent crimes, unemployment, poverty, air, and water quality. (See Quality of Life)

Participants were also asked about emergency preparedness, the outcomes gleaned from this question was that the greater part of Hoke County citizens were not prepared for an emergency. Most of the participants have smoke detectors only in their homes but no Carbon Monoxide Detectors nor do they have a family emergency plan or supply kit on hand in case of a man made or natural disaster. (See Emergency Preparedness)

# Conclusion

## Hoke County Community Health Assessment 2011

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### Conclusion

Upon evaluating the health needs of Hoke County, the first thing that comes to mind is more education. Because of the high rate of **teenage pregnancies** and **sexually transmitted diseases**, (Hoke County is ranked thirty-third (39<sup>th</sup>) in the state of North Carolina for the number of teenage pregnancies), there is still a need for emphasis to be placed on community outreach. Young persons need to be educated about the consequences of being a parent, and about the deadly risks of transmitting sexually transmitted diseases. There has to be more recreational activities offered for the at-risk population in hopes of getting them involved. It is also very important for community leaders to come together to address affordable health care for all regardless of income.

Based on examination of the community assessment data collected in 2007 and 2011 there were many notable variations in growth as well as need for improvement. Compared to the 2007 assessment outcomes, there was a more diverse population that took part between the 2007 and 2011 data collection results. However in the 2007 assessment, there was some enhanced data collection practices resulting in a greater numbers of Hoke County citizens involvement in the data exploration process. When analyzing the average level of education, income, health insurance coverage, and access to health care, the data showed that there were minor to slight changes in these areas from 2007 to 2011.

In conclusion during the next four years the Hoke County Health Center and the Healthy Carolinians of Hoke County (Healthy Hoke Task Force) will necessitate plans to get more men and other diverse populations to contribute in the assessment process. We should implement supplementary programs to address the most common community health problems indicate such as: Aging, Asthma, Cancer, Dental Health, Diabetes, Heart Diseases/Heart Attacks, Gun Related Injuries, Mental Health, Motor Vehicle Accidents, Obesity/Overweight, STDs and HIV/AIDs, Stroke, and Teenage Pregnancy. Similarly, we want to further encourage/promote healthier lifestyle changes within our community as well as address chronic diseases such as Asthma. Not only do we feel the need to educate the public, but action must also be taken to actually help people make positive changes in their lifestyles. Lifestyle change does not occur overnight. Hoke County had a high number of deaths due to **injuries**. It is necessary to continue to educate the parents about the importance of safety for children. Also, Child Safety Seat Checks will be held to demonstrate the proper way of installing car seats.

Likewise, there is a community based call for a conscious effort to advocate for ways to tackle the most pressing issues that are affecting most of our citizens which is: low income/ poverty, dropping out of school, lack of transportation, pollution of air and water, lack of healthy family activities, and animal control issues. Furthermore, there needs to be a campaign to address the essential issue of making our citizens prepared for all types of emergencies whether man made or natural.

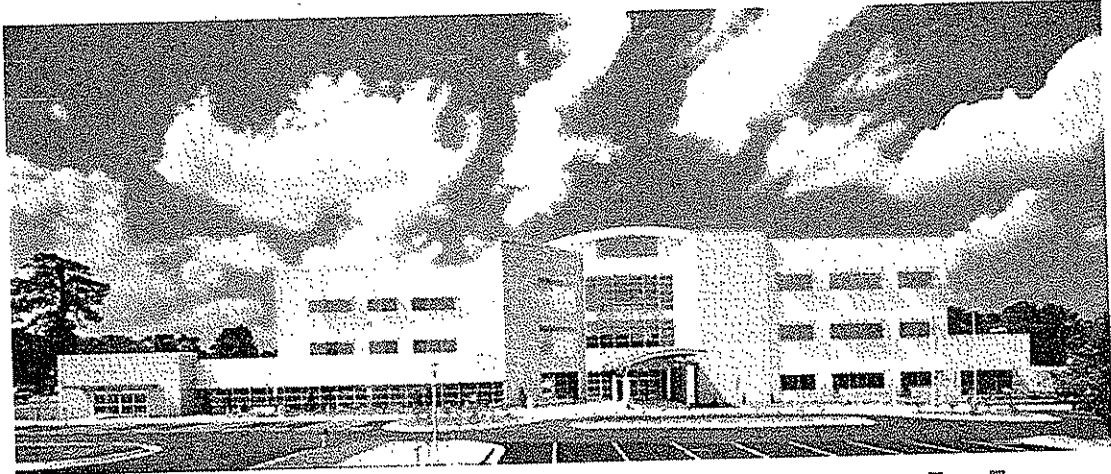
## Hoke County Community Health Assessment 2011

In closing, Hoke County Health Center plans to address the major health issues of our county through collaboration and education. Working together with other community representatives and the Healthy Hoke Task Force, plans will be made to lower these rates and improve the quality of life of our residents.

Based on the outcome from the 2007 and 2011 assessment, there is also a need to focus more on the health issues and concerns that presented little to no changes (i.e. health insurance coverage, and access to health care etc.) and foster innovative ways to bridge these disparities gaps.

# Appendices

**EXHIBIT D**



# Community Health Assessment



CUMBERLAND  
COUNTY  
NORTH CAROLINA

DEPARTMENT OF PUBLIC HEALTH



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## **Foreword**

The Community Health Assessment (CHA) describes the health of the community by identifying and presenting information on the community's health status, needs, and resources. Its goal is to describe the health needs of the community and to develop strategies to address those needs. The CHA also identifies areas where better information is needed, especially information on health disparities among various subpopulations, and the quality of health care.

The Community Health Assessment (CHA) is the basis for all local public health planning, giving the local health unit the opportunity to identify and interact with key community leaders, organizations and concerned residents about health priorities and needs. This information forms the basis of improving the health status of the community through a strategic community action plan.

This report opens with an overview of the County that contains brief descriptions of location, employment, economy, education, transportation, housing and recreation.

The CHA is comprised of core indicators determined by the State that assess the community in terms of leading causes of mortality and morbidity. The State Center for Health Statistics is largely the source of this data. Local data was compared with the State and measured by the Healthy People 2010 goals.

## **Acknowledgements**

The Cumberland County Department of Public Health would like to express gratitude to all of our community partners and others who volunteered their time and efforts to help with the Community Health Assessment.

### **Community Health Assessment Advisory Group**

Melvin Lindsay, Fayetteville- Cumberland Parks and Recreation  
Vince Wagner, Cumberland County Mental Health  
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Special thanks are given to Dr. Akbar Aghajanian, Professor of Sociology and Director of the Fayetteville State Research Center for Health Disparities, Sharmila Udyavar, Coordinator for the CHA survey, Melvin Lindsay for providing Parks and Recreation information and his dedication towards helping to select health priorities, Vince Wagner for sharing your information on assessments, Mitizi Johnson for helping to select health problems and Katheryn Jenifer for your willingness to assist in selecting the health priorities.

Special thanks to some of our community partners:

United Way – Crystal McNair- (Sharing previous survey data from United Way)  
Fayetteville Community Development – Adolph Thomas (Selecting Health Problems) AGSI  
Consulting- Troy Williams (Selecting Health Problems)

## Executive Summary

Every four years, local Public Health Departments are required to complete a Community Health Assessment (CHA). The CHA is a tool used to assess and analyze the community's health status and identify needs and available services. This information is helpful for identifying trends, planning, developing new programs and utilizing resources that are available in public health.

The Health Department formed an advisory committee and a work group comprised of representatives from the community and the health department. After the initial meeting, the work group met with the CHA Coordinator several times. The Coordinator communicated with the advisory committee via email throughout the CHA process.

### Methodology:

A community survey to assess the health of the population was conducted by the Health Disparities Institute at Fayetteville State University. Over 1,500 surveys were completed. The data from the survey will be utilized in the Community Health Assessment conducted by the Cumberland County Health Department. The survey measured perceptions and attitudes of Cumberland County residents towards a variety of health and allied health issues that impact their lives.

Primary data regarding community health and health perceptions was collected using surveys. Six undergraduate students from different academic streams at Fayetteville State University were recruited as part of a summer project to administer this survey at various locations and collect primary data. They were provided training in survey methodology and data collection techniques. A team of at least two to three student interviewers' were assigned to a given location accompanied by a supervisor. The supervisors were trained staff employed at the Survey Research Center. At the location, the group would setup a station using a portable table, chairs, writing pads, pencils and surveys. They also carried healthy snack incentives (fruit snacks, granola bars, nut packs etc.) which they offered interviewee's after the completed survey was returned. They were trained in their approach and would offer the survey only to those who were agreeable to cooperate in the process. They were under constant surveillance by the supervisor during this period.

The minority populations, particularly the Black and Hispanic populations were oversampled with a view to understanding the health needs and concerns of this population due to the many disparities that afflict them disproportionately. A similar effort was made to oversample population with High School Diploma or less as well as those from the lower income bracket in an attempt to understand their health concerns. The sample that was ultimately selected was mainly a convenient random sample and in some cases snowball sampling was also used. In order to have representative data from people of different socio economic status and backgrounds a variety of locations in Fayetteville and Stedman-Wade were used.

Also, existing health and community data was obtained from State and federal agencies. Sources of data are cited throughout the CHA report.

The Community Health Assessment process identified nine health indicators that stood out for Cumberland County. These were health indicators that exceeded the State rates and/or were cited as "perceived" health problems in the community via of the CHA survey. The "perceived" health problems were supported by secondary data.

Five community health priorities were selected from a list of nine health indicators. Advisory committee members, work group members and community members scored each of the nine health indicators. Average scores were calculated and each health indicator was selected based on the rank in descending order.

#### Health Indicators:

##### Heart Disease:

- ⊕ The County's Heart Disease death rate (228.5) exceeded the State's rate (202.2).
- ⊕ 59.5 % of Community Health Assessment (CHA) survey respondents cited Heart Disease as a problem in the community.

##### Cancer:

- ⊕ The County's Cancer death rate (203.7) exceeded the State's rate (192.0).
- ⊕ 47 % of CHA survey respondents cited Breast Cancer and 43 % perceived Lung Cancer as problems in the community.

##### Diabetes:

- ⊕ The County's Diabetes death rate (39.0) exceeded the State (25.2).
- ⊕ 66.7 % of CHA survey respondents cited Diabetes as a problem in the community.

##### Stroke:

- ⊕ The County's Stroke death rate was (51.5) slightly below the State's (54.4).
- ⊕ 71 % of CHA survey respondents cited hypertension (High Blood Pressure) as a problem in the community. Hypertension is a contributing factor for Strokes.
- ⊕ 49.9 % of CHA survey respondents cited Stroke as a problem in the community.

##### Obesity:

- ⊕ According to the Behavior Risk Factor Surveillance System (BRFSS), 69.4 % of County residents were overweight or obese.
- ⊕ 72.1 % of CHA survey respondents cited adult obesity as a problem in the community.

##### Fitness and Nutrition:

- ⊕ 76.6 % of CHA survey respondents cited lack of exercise as a problem in the community.
- ⊕ 72.7 % of CHA survey respondents cited poor eating habits as a problem in the community.

Health priorities selected to be addressed in the action plan:

1. Heart Disease
2. Obesity
3. Teen Pregnancy Prevention
4. Cancer
5. Diabetes

## County Overview

Cumberland County, located in the eastern part of the state, is 65 miles south of Raleigh in an area often referred to as the Sandhills. Cumberland County has a total area of 658.11 square miles, with 652.43 square miles of land area.

The origin of Cumberland County was centered around a group of Highland Scots who migrated into the Upper Cape Fear Valley Region from Wilmington from 1729-1736. These Scots were soon followed by Scotch-Irish, Lutherans, and Moravians from Pennsylvania. These early settlers found that the area had physiographical features such as topography, climate, soils, drainage, and geology that were suited to their needs. The early settlers established a settlement along the Cape Fear River and its tributaries, which served as vital transportation links to other major settlements. Cumberland County was chartered in 1754, containing two settlements Campbellton and Cross Creek, which were located at the confluence of Cross Creek and the Cape Fear River. These settlements were later merged, forming one settlement which was originally named Campbellton. In 1783, Campbellton was renamed Fayetteville in honor of Marquis de La Fayette, a French general that served in the American Colonies Revolutionary Army. Fayetteville became the focal point of activity in Cumberland County, as well as the Upper Cape Fear Region. The first North Carolina State House was constructed in the city and the General Assembly met there in 1789, 1790, and 1793, during which time, the United States Constitution was ratified and the University of North Carolina was chartered. Fayetteville was rebuilt after two separate calamities. The Great Fire of 1831 destroyed over 600 buildings and during the civil war, the city found itself in the path of General Sherman's union troops, who wreaked destruction and burned the N.C. Arsenal, located still today on Arsenal Avenue in Haymount. Currently, Fayetteville is Cumberland County's county seat and its largest municipality. Other municipalities in Cumberland County are Eastover, Falcon, Godwin, Hope Mills, Linden, Spring Lake, Stedman and Wade.

## Fort Bragg

Fayetteville has been the home of Fort Bragg since 1918, when 127,000 acres of sand hills and pine trees were designated as a U.S. army installation. The Fort grew slowly, reaching a total of 5,400 soldiers by the summer of 1940. With the threat of World War II and the passage of the Selective service Act, a reception station was built and Fort Bragg exploded to a population of 67,000 soldiers within a year.\*

Fort Bragg is the home to the XVIII Airborne Corps, which was established on 25 August 1944, when the blue airborne tab was added at Orbourne, St. George, England. The XVIII Airborne Corps was reactivated in 1951 at Fort Bragg. Fort Bragg then became widely known as "Home of the Airborne." The XVIII Airborne Corps is the only Airborne Corps in the Defense of the United States. The XVIII subordinate units are the 16<sup>th</sup> Military Police Brigade, 20<sup>th</sup> Engineer Brigade, 4<sup>th</sup> Medical brigade, 82<sup>nd</sup> Sustainment Brigade, 108<sup>th</sup> Air Defense Artillery Brigade, 525<sup>th</sup> Battlefield Surveillance Brigade, 50<sup>th</sup> Signal Battalion and 192<sup>nd</sup> Explosive Ordnance disposal battalion.

The 82<sup>nd</sup> Airborne Division "All American" returned from Europe in 1946 after World War II and took up its station at Fort Bragg. The 82<sup>nd</sup> Subordinate Brigades are the 1-82<sup>nd</sup> Brigade Combat Team, 2- 82<sup>nd</sup> Brigade Combat Team, 3 – 82<sup>nd</sup> Brigade Combat Team, 4 82<sup>nd</sup> Brigade Combat Team, 82<sup>nd</sup> Combat Aviation Brigade and 18<sup>th</sup> Fire brigade.

In addition, Fort Bragg is the home of the 10<sup>th</sup> Special Forces group, the US Army Special Operations Command, the Joint Special Operations Command, US Army Civil Affairs and Psychological Operations Command, US Army Parachute Team (Golden Knights), Womack Army Medical Center, US Dental Activity and a host of other specialty units.\* Fort Bragg will be the largest army post by population in the country with more than 65,000 military, civilian and contractor jobs by 2011.

Pope Air Force Base located here in 1919 and is now home to the 43<sup>rd</sup> Airlift wing and two tenant units; the 23<sup>rd</sup> Fighter Group and the 18<sup>th</sup> Air Support Operation Group. The 43<sup>rd</sup> Airlift Wing at Pope AFB provides contingency airlift to the 82<sup>nd</sup> Airborne Division and other specialty units at Fort Bragg. Pope AFB has played a leading role in the development of U. S. tactics and air power throughout history. Today, Fort Bragg and Pope AFB form one of the largest military complexes in the world. In early 2008 BRAC (Base Realignment and Closure Commission) actions began on Pope AFB, the 43<sup>rd</sup> Airlift Wing stands-down and the 23<sup>rd</sup> Fighters group departed for Moody AFB, the 440<sup>th</sup> Air reserve Component Wing stands-up and the active duty Air Operations group was formed. The Air Force will continue to do most of the things it has done in the past, loading army personnel and cargo onto aircraft at Green Ramp, flying C-130 cargo planes and training combat controllers. Additionally, during 2008 through 2011, Fort Bragg will receive more than 12,500 residents due to BRAC. The FORSCOM Headquarters is being moved to Fort Bragg. With this move we expect to have many new additions to the area of military personnel, family members and military contractors.\*

Fort Bragg and Pope Air Force Base combined provides a substantial economic boost to Cumberland County. Military contribution to retail sales is approximately \$2 billion dollars.

\*North Carolina Southeast Regional Data Book, Vol. XL, 2009.

### **Environment**

Cumberland County consists of 664 square miles located in the upper coastal plain section of the State. The area is better known as the "Sandhills". Elevations in the County range from 40 to 486 feet above sea level. Cumberland County has progressed from its beginnings as a river front distribution center to a highly commercialized area offering a variety of services to its citizens. Fayetteville is located in the Coastal Plain at the foot of North Carolina's Piedmont plateau. The city, located next to the Cape Fear River, is 107 feet above sea level.



## Climate

The climate of Cumberland County is comparable to other communities in the Carolinas. Generally, these areas are known for their long, pleasant spring and fall seasons; a short and mild winter season; and a hot summer season.

It is not unusual for temperatures to reach 80 degrees during any month of the year. Normally temperatures drop to the freezing point only at isolated times during the months December through February.

Precipitation averages 42 inches a year. In spring and summer, rainfall usually comes in the form of heavy showers, lasting for short periods. In the fall and winter, rain tends to fall slowly and steadily over 24 to 48 hour time spans. Normally, snow and sleet occur in trace amounts, once or twice in a winter season and freezing rain is rare. An accumulated total of snow or sleet during a winter season averages less than 2 ½ inches.

The 'Air Quality Index' score is based on data gathered from the EPA, USGS, and local authorities. Although no city in the US ranked a score of poor or worst, there is still a wide spectrum of air quality index scores. Please note the score is only an estimate -- weather, the seasons, and local conditions can radically affect the air quality anytime during the year.<sup>3</sup>  
Sources 3: EPA, USGS, and Synergos Technologies, Inc.

## Air Quality

Starting in December 2002, Cumberland County participated in an Early Action Compact, an agreement between the North Carolina Department of Environment and Natural Resources (NCDENR), local government and organizations, and the United States Environmental Protection Agency (EPA), that addressed strategies to attain the 1997 8-hour ozone primary and secondary standards (set at 0.08 parts per million and expanded to 0.085 ppm). The Compact provided for a set of "Milestones" that had to be met by December 2007 in order to maintain a "non-attainment deferred" designation through the process and achieve attainment by the end of the agreement. Through the implementation of federal, state and local strategies, Cumberland County fulfilled its obligation to improve air quality by the established deadline and was designated "in attainment" for ground level ozone on April 15, 2008 with a 2005-2007 three year average ozone design value of 0.082 ppm.

However, on March 12, 2008 the EPA strengthened the National Ambient Air Quality Standards (NAAQS) for ground level ozone by setting the primary and secondary standards to 0.075 ppm and a final designation date of March 2010. The decision to set the standards to 0.075 ppm did not reflect the recommendations of the Clean Air Scientific Advisory Committee (CASAC) Ozone Review Panel and on January 6, 2010 EPA proposed to change the Primary ground level ozone standards based on scientific evidence and consider a range of 0.060-0.070 ppm and set a separate Secondary standard by August 31, 2010 with a final designation by July 2011.

As of September 15, 2010, the deadline to set ozone standards has been changed twice, with a current deadline of December 31, 2010.

The air quality in Cumberland County has been constantly improving since the EAC was signed in 2002, with ground level ozone design values of 0.077 ppm for the 2006-2008 average and 0.075 ppm for the 2007-2009 three year average. These values are still not enough to guarantee that Cumberland County will maintain an attainment status for ground level ozone and EPA has indicated that this time Compacts will not be considered.

Should this area be designated non-attainment for any of the NAAQS, new requirements will be in effect that will have a significant impact on our region. These requirements include, but are not limited to, transportation planning conformity analysis and new source reviews for new or expanding industrial facilities.

### **Cumberland County Government**

The County of Cumberland functions under a Board of Commissioners – County Manager form of government. The Board of County Commissioners consists of seven members. Two members are elected from District 1 which follows the 17<sup>th</sup> House District line, three members from District 2 which follows the 18<sup>th</sup> House District line, and two members at large. Each member of the board is elected for a four-year term. The terms are staggered with two members from District 1 and two members at large elected in a biennial general election, and three members from district 2 elected two years later. The chairman and vice chairman are elected by the members on a yearly basis. The Board is the policy-making and legislative authority for the County. They are responsible for adopting the annual budget, establishing the tax rate, approving zoning and planning issues and other matters related to health, welfare and safety of citizens.

Although the governments of the City and County are separate, many local government agencies serve the residents of both, including the Schools, Libraries, Health Department, Mental Health and Department of Social Services. Commissioners serve on the Board of Health, Board of Mental Health, Board of Department of Social Services and Cape Fear Valley Health System's Hospital Board.

The board of commissioners meets twice a month, the first Monday of each month at 9:00 a.m. and the third Monday of the month at 7:00 p.m. The board holds special meetings, when necessary. The meetings are advertised in advance. The meetings are open to the public and are held in the Commissioners' meeting room on the first floor of the County Courthouse located on Dick Street. The agenda for each regular scheduled Board meeting is normally available on the Thursday prior to the Monday meeting on the county web site; [www.co.cumberland.nc.us](http://www.co.cumberland.nc.us).

The County manager is appointed by, and serves at the pleasure of the Board of Commissioners. The county manager is the Chief Executive Officer and has the responsible for implementing policies and procedures of the Board, delivery of services, managing daily operations and appointment of subordinate department managers.

## Economy

Fort Bragg and Pope Air Force Base are the backbone of the county's economy, pouring about \$4.5 billion a year into the region's economy.

The county has a heritage of agriculture but began the transition to manufacturing in early 1920's. Using the agriculture base, many commodities were packaged and shipped throughout North America. These companies were soon joined by chemical, textile, and furniture operations. Existing industry lists include bio-tech/pharmaceutical (gelatin), automotive (tires and filters), plastics (resins and films); call centers (in-bound/out-bound), and major distribution centers for Wal-Mart and Maidenform. Military contractors use the areas veteran population to provide research and development, information technology, logistics and many other services to the military worldwide.\*

### Major Private Employers

Company	Employees
Cape Fear Valley Health System	1,000 +
Wal-Mart	1,000 +
The Goodyear Tire & Rubber	1,000 +
Food Lion, LLC	500-999
Purolator Filters NA, LLC	500-999
ITT Industries	500-999
M.J. Soffee, LLC	500-999
Eaton Corp.	500-999
El Dupont De Nemours & Co.	500-999
Fayetteville Publishing Co.	350
L3 Communications Integrated Systems	25-499
AT&T Mobility	800
The Logistics Co.	1,125
Time Warner	325
Lowes	307
KCA Corporation	500-999
Shee Atika Languages, LLC	250-499

Fayetteville-Cumberland County Chamber of Commerce 3<sup>rd</sup> Quarter 2009

### Largest Corporate Taxpayers

Company	Property assessment	Total Tax Bill
Goodyear Tire & Rubber	\$255,883,537	\$1,942,598.43
Wal-Mart	\$105,100,076	\$903,860.66
Cross Creek Mall LLC	\$85,996,121	\$739,566.63
Carolina Telephone	\$79,905,421	\$687,186.62
Progress Energy	\$61,869,155	\$532,074.73
Purolator Products	\$51,157,102	\$439,957.08
Piedmont Natural Gas	\$48,988,945	\$421,304.93
Centurion Aviation Services	\$45,085,010	\$387,516.00
DAK Americas LLC	\$39,690,616	\$341,339.29
South River EMC	\$32,331,652	\$278,052.21

Source: discoverfayetteville.com (Cumberland Co. Tax Administration, based on 2008 figures)

### Major Public Employers

Company	Employees
Cumberland Co. Board of Education	1,000 +
U.S. Department of Defense	1,000 +
Non-Appropriated Fund Activity-Army	500-999
Army & Air Force Exchange Service	500-999
Veterans Administration Hospital	1,000 +
OSC-Central Payroll	500-999
US Postal Service	500-999
County of Cumberland	1,000 +
City of Fayetteville	1,000 +
Public Works Commission	500-999
Fayetteville Technical Community College	1,000 +
Methodist University Branch	250-499
Fayetteville State University	950* (FSU)

Source: Fayetteville-Cumberland County Chamber of Commerce; discoverfayetteville.com

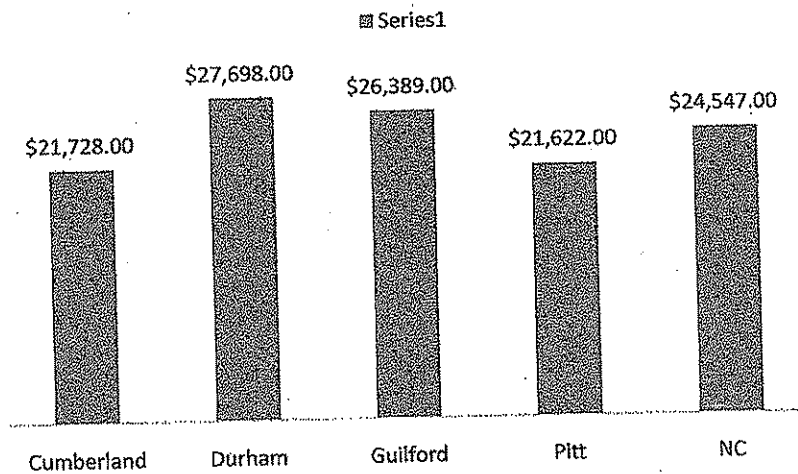
## Economic Indicators

### Per Capita Income (2009 inflation Adjusted dollars):

Per capita personal income is the income that is received by persons from all sources. From 2005-2009 the per capita personal income for Cumberland County was \$21,728.00, compared to the State's per capita personal income of \$24,547. The per capita personal income for Cumberland County was lower than peer counties Durham (\$27,698), Guilford (\$26,389.00) and about the same for Pitt (\$21,622.00).

**Per Capita Income**  
2005 -2009

Cumberland	\$21,728.00
Durham	\$27,698.00
Guilford	\$26,389.00
Pitt	\$21,622.00
NC	\$24,547.00



In 2008, Cumberland County's per capita personal income ranked 5<sup>th</sup> in the state moving up from the 11<sup>th</sup> ranking in 2005. Hopefully this trend will continue for the Fayetteville-Cumberland region as businesses move into area to support the new military installations moving to Fort Bragg due to BRAC 2005. Durham County ranked 9<sup>th</sup> in the state in 2008 and 9<sup>th</sup> in the state in 2005, Guilford Co. ranked 10<sup>th</sup> in the state in 2008 and 7<sup>th</sup> in the state in 2005, Pitt Co. ranked 28<sup>th</sup> in the state in 2008 moving up from 32<sup>nd</sup> ranking in 2005.

**Poverty Rates  
2008**

In 2008, 15.8 percent of Cumberland County residents lived below the poverty level compared to 14.6 percent of North Carolina residents. Cumberland County had a higher percentage (22.5%) of children in poverty compared to the State percentage of children in poverty (19.9%). Cumberland County's poverty rate was slightly higher than peer counties Durham and Guilford. Pitt County's percentage of residents living in poverty was higher than Cumberland and the State. Cumberland had a higher percentage of children in poverty compare to peer counties, Durham and Guilford. Pitt County's percentage of children in poverty was higher than Cumberland, Durham and Guilford counties. Individuals living in poverty often have a higher rate of illness and undesired health outcomes.

**Poverty Rates 2008**

County/State	Percentage of residents living in poverty	Percentage of children in poverty
<b>Cumberland County</b>	15.8 %	22.5 %
<b>North Carolina</b>	14.6 %	19.9 %

Source: <http://quickfacts.census.gov/qfd/states/37/37051.html>,  
<http://datacenter.kidscount.org/bystate/stateprofile.aspx?state=NC&cat=1445&group>

**Poverty Rates 2008**

Peer Counties	Percentage of residents living in poverty	Percentage of children in poverty
<b>Durham County</b>	13.8 %	17.9 %
<b>Guilford County</b>	13.6 %	18.8 %
<b>Pitt County</b>	22.0 %	25.5 %

Source: <http://quickfacts.census.gov/qfd/states/37/37051.html>,  
<http://datacenter.kidscount.org/data/bystate/stateprofile.aspx?state=NC&cat=1445&group>

Other key indicators of poverty are children that receive free and reduced lunch and children that receive work first cash assistance. Families must be at or below 130 percent of the federal poverty level for their children to be enrolled in the free school lunch program and under 185 % of the federal poverty rate to enroll in the reduced price program. In 2007, 62.4% of children in Cumberland County were enrolled in free or reduced lunch programs compared to 54.8% of children Statewide. Cumberland County percentage of children enrolled in free and reduced lunch was higher than peer counties Durham (58.4%), Guilford (55.6%) and slightly lower than Pitt County (63.7%).

**Public Assistance (2007)**

County /State	Percent of children enrolled in free and reduced lunch	Percent of children receiving work first
<b>Cumberland County</b>	62.4 %	2.6 %
<b>North Carolina</b>	54.8 %	2.1 %

Source: <http://datacenter.kidscount.org/bystate/stateprofile.aspx?state=NC&cat=1445&group>

**Public Assistance (2007)**

Peer Counties	Percent of children enrolled in free and reduced lunch	Percent of children receiving work first
<b>Durham County</b>	58.4 %	2.1 %
<b>Guilford County</b>	55.6 %	2.9 %
<b>Pitt County</b>	63.7 %	2.4 %

Source: <http://datacenter.kidscount.org/data/bystate/stateprofile.aspx?state=NC&cat=1445&group>

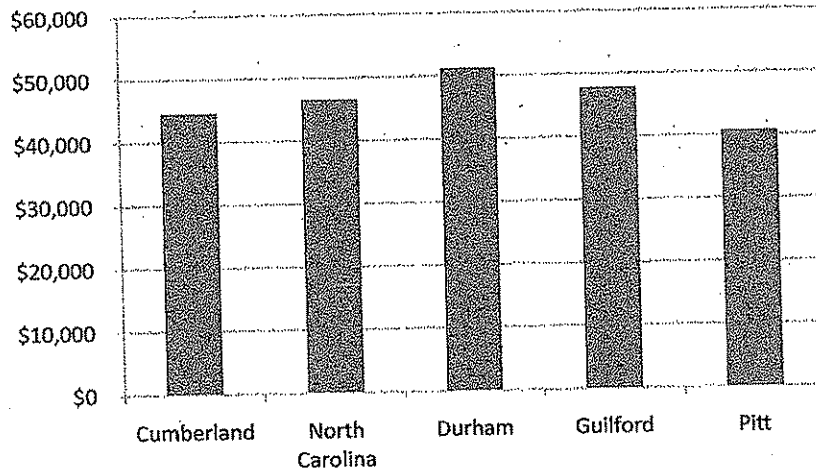
**Median Household Income  
2008**

Median household income is the middle income of all households, half of the households earn more and half earn less. Household income is the total income of all income earners over age 15 living in a household. In 2008, the median household income for Cumberland was \$44,658 compared to the State's \$46,574. Peer counties Durham (\$51,292) and Guilford (\$47,836) were higher than Cumberland County. Pitt County's (\$40,742) median household income was lower than Cumberland County.

Sources: <http://datacenter.kidscount.org/data/bystate/statsprofile>

**Median Household Income  
2008**

<b>Cumberland</b>	<b>\$44,658</b>
<b>North Carolina</b>	<b>\$46,574</b>
<b>Durham</b>	<b>\$51,292</b>
<b>Guilford</b>	<b>\$47,836</b>
<b>Pitt</b>	<b>\$40,742</b>





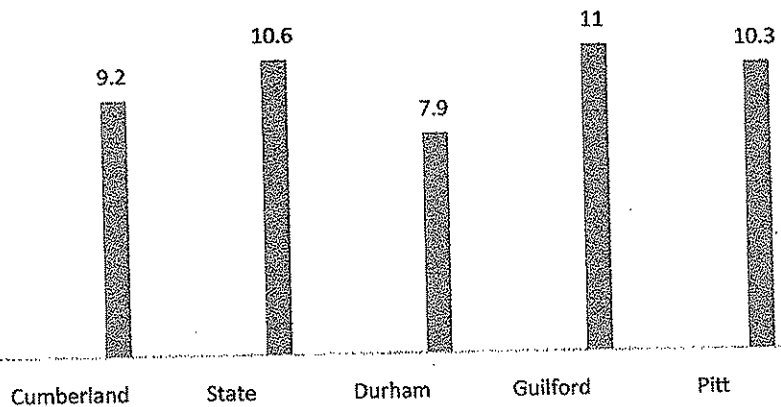
### Work Force 2009

The state of the economy has a major impact on employment. Most analyst states that the worst is over when referring to the recession. However, there are no reliable indications that the recession is over when experts continue to forecast additional job lay-offs and unemployment continues to rise. In 2009, Cumberland County's work force was 134,414, 122,088 individuals were employed and 12,326 individuals were unemployed. The unemployment rate was 9.2 % compared to the State's unemployment rate of 10.6 %. The county's unemployment rate (9.2 %) was higher than Durham County (7.9 %) but lower than Guilford (11.0 %) and Pitt (10.3 %) counties. The economic impact on residents, communities, businesses and municipalities is directly linked to individuals having jobs.

### Civilian Work Force Estimates 2009

	Cumberland	State	Durham	Guilford	Pitt
<b>Labor Force</b>	134,414	4,544,622	139,351	242,502	79,975
<b>Employed</b>	122,088	4,060,764	128,277	215,925	71,730
<b>Unemployed</b>	12,326	483,858	11,074	26,577	8,245
<b>Rate %</b>	9.2	10.6	7.9	11.0	10.3

### Unemployment Rate



## Housing

Historically, one of the greatest wealth building opportunities for families living in America was home ownership. Home equity was by far one of the largest means of obtaining wealth for middle class Americans. Recently, however, recession and foreclosures have caused a negative impact on financial institutions, home-owners and the community as a whole.

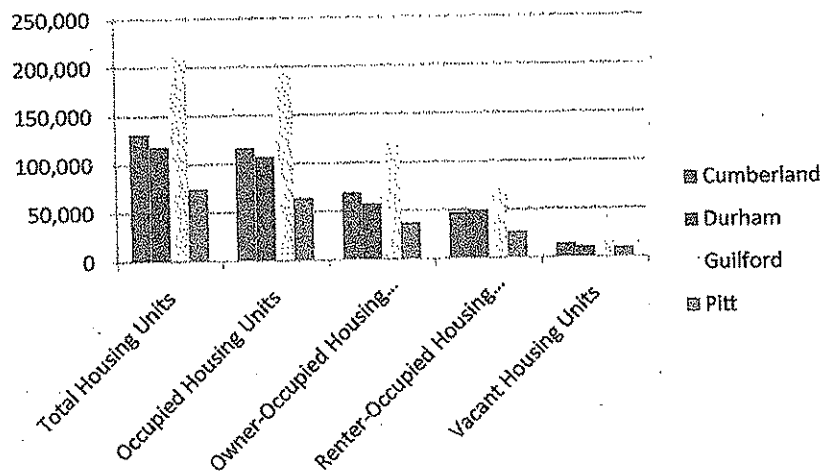
In 2009, Cumberland County had 116,373 occupied housing units. Fifty-nine percent (69,230) of the units were owner-occupied and Forty-one per cent (47,143) of the units were renter occupied.

Guilford County had 120,971 (63%) owner-occupied housing units, Cumberland County had 69,230 (59%) owner-occupied housing units, Pitt County had 37,261 (58%) owner-occupied housing units and Durham County had 58,059 (54%) owner-occupied housing units. Cumberland County ranked second in owner-occupied housing units compared to peer counties.

**Housing Units, 2009**

2009	Cumberland	Durham	Guilford	Pitt
Total Housing Units	131,303	118,343	211,869	74,693
Occupied Housing Units	116,373	107,118	193,440	64,447
Owner-Occupied Housing Units	69,230	58,059	120,971	37,261
Renter-Occupied Housing Units	47,143	49,059	72,469	27,186
Vacant Housing Units	14,930	11,225	18,429	10,246

Source: <http://www.esri.com>



## Education

Cumberland County School's mission emphasizes safety in all schools and student achievement will continually increase with no differences among subgroups. Cumberland County has the fourth largest school system in the state with over 54,000 children taking classes. It is also the second largest employer in Cumberland County (behind the military). See charts below for a brief summary of facts and figures for Cumberland County schools effective May 17, 2010.

### Schools:

Total Number of Schools	85
Elementary Schools	52
Middle Schools	15
High Schools	14
Year-Round Classical Schools	1
Special Schools	3

### Enrollment:

Total enrollment (not including Pre-K)	52,187
Pre-K Students	953
Elementary School Students	24,271
Middle School Students	11,815
High School Students	16,101
Dropout Rate	2.62%

### Employees:

Total Employed (Full Time)	6,782
Certified Teachers	3,559
National Board Certified teachers	225
Student Support Staff	1,513
Other	1,710

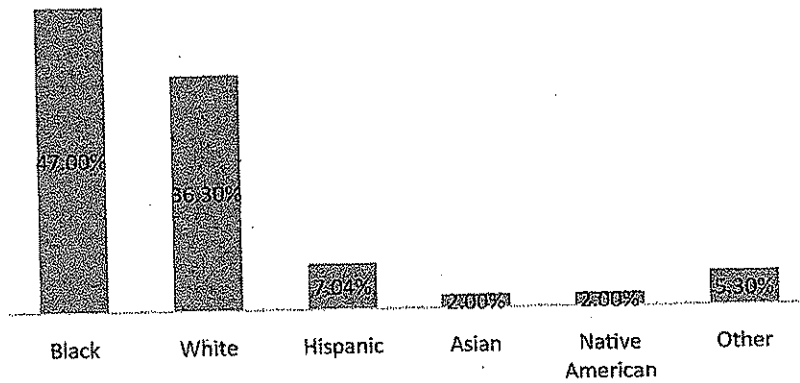
**Transportation:**

Total Number of Yellow School Buses	477
Bus Routes Traveled Daily	1,300
Total Students Carried Daily	24,845

**Student Demographics (Ethnicity)**

Black	47.00%
White	36.3%
Hispanic	7.04%
Asian	2.0%
Native American	2.0%
Other	5.3%
Military Connected Students (11,449)	21.5%

**Student Demographics**



**Special Services:**

Students receiving free or reduced lunch	54.42%
Students receiving Exceptional Children's Services	13.56%
Students enrolled in AG programs	9.30%

**Graduates (class of 2009)**

Total Number of Graduates	3,408
Graduates Pursuing Higher Education	2,832
Graduates Entering the Military	271
Military Academy appointments	5
Graduates awarded military scholarships to attend the university of their choice	73
Total amount of scholarship dollars awarded (academic, athletic, and military)	\$36,535,318

**Budget:**

Total Annual Budget	\$426 Million
State	62.0%
Local	22.0%
Federal	14.5%
Competitive Grants	1.5%
Per Pupil Expenditure	\$8,136.00

Source: [www.ccs.k12.nc.us/StatsFacts.htm](http://www.ccs.k12.nc.us/StatsFacts.htm)

### Choice Programs

Choice programs are offered at thirty-five elementary, seven middle schools and fourteen high schools. The choice programs are offered on a year-round schedule or curriculum that focuses on a certain area. Parents have to apply to these schools and they have to provide transportation for their children.

#### Cumberland County Public Schools Governed Choice Programs

Academy of Information Technology
Academy of Engineering Technologies
Academy of Agriculture and Natural Science
School of the Arts
International Baccalaureate Academy
Academy of Math and Science
Health and Life Sciences
Academy of Natural Science
Academy of Global Studies
Academy of Finance
Academy of Fire Science
Classical Studies
Early College
Ford Partnership for Advanced Studies
Academy of Integrated Systems Technology/Applied Engineering
Academy of Health Sciences

Source: <http://www.ccs.k12.nc.us>

**SAT Scores  
(2010)**

About 1,729 (54.1%) of Cumberland County students took the SAT test with an average SAT score of 1,393. Approximately 57,841 (63.0%) of students across the State took the SAT test with an average SAT score of 1,485. The average SAT score for Durham County schools was 1,420, about 1,390 (71.6%) of the students took the SAT test. Approximately 2,993 (63.8) of Guilford County students took the SAT test, the average SAT score was 1,461. About 683 (57.0) of the students took the SAT test in Pitt County, the average SAT score was 1,458. See Chart below.

**SAT Scores  
2010**

Cumberland County	Durham County	Guilford County	Pitt County	North Carolina
1,393	1,420	1,461	1,458	1,485

Source: <http://www.ncpublicschools.org>, click on data/statistics, click on NC SAT Report

**Education Attainment  
(25 years and older)**

Source: <http://factfinder.census.gov/> 2005-2009 American Community Survey

	High School Diploma or Higher	Bachelor's Degree or Higher
Cumberland Co.	88.0 %	21.2 %
Durham Co.	86.1 %	44.0 %
Guilford Co.	86.3 %	32.2 %
Pitt Co.	85.0 %	28.7 %
State	83.0 %	25.8 %

88.0 % of Cumberland County residents 25 years and older attained a high school diploma or higher, however only 21.2 % attained at least a Bachelor's degree. Peer counties and the State High School Diploma attainment rate was lower than the County, but residents from peer counties and the State had a higher rate of residents who attained a Bachelor's degree or higher.

## Cumberland County Schools

### 4-Year Cohort Graduation Rate Report 2006-07 Entering 9th Graders Graduating in 2009-10 or Earlier

LEA (Local Education Agencies) Code: 260  
(Reflects data as of August 4, 2010)

Subgroup	Denominator	Numerator	Percent
All Students	4206	3158	75.1
Male	2081	1464	70.4
Female	2125	1694	79.7
American Indian	64	47	73.4
Asian	70	61	87.1
Black	2129	1569	73.7
Hispanic	263	192	73.0
Multi-Racial	156	112	71.8
White	1524	1177	77.2
Economically Disadvantaged	1802	1251	69.4
Limited English Proficient	42	20	47.6
Students With Disabilities	440	242	55.0

Source: <http://www.dpi.state.nc.us>, click on Cohort graduation rates

The four-year cohort graduation rate reflects the percentage of ninth graders who graduate from high school four years later.

- ⚡ Graduation rates were lower among male students than among female students.
- ⚡ Students with limited English proficiency, disabilities and economically disadvantaged had lower graduation rates.
- ⚡ Asian students had the highest graduation rate, white students ranked second and there was little difference in the Black, American Indian and Hispanic graduation rates.



## Private Schools

Abney Chapel Christian School	488-7525
Adventist Christian School	484-6091
Bal-Perazim Christian Academy	487-4220
Berean Baptist Academy	868-2511
College Lakes Christian Academy	488-8344
Cornerstone Christian Academy	867-1166
Eastover Christian Academy	864-4447
Elite Scholars Academy	323-5506
Fayetteville Academy	868-5131
Fayetteville Christian School	483-3905
Flaming Sword Christian Academy	764-3500
Freedom Christian Academy	485-7777
Guy's Schools	484-8308
Harvest Preparatory Academy	433-3026
LEJ Diagnostic Center	485-5655
Liberty Christian Academy	424-1205
Montessori School	323-4183
New Life Christian Academy	868-9640
Northview Baptist Academy	488-4748
Northwood Temple Academy	822-7711
Parks Chapel Christian Academy	488-9456
Renaissance Classical Christian Academy	221-0400
Second Chance Learning Center	860-4958
St. Ann Catholic School	483-3902
St. Patrick Catholic School	323-1865
Stedman Christian Academy	483-2611
Temple Christian Academy	321-3160
Trinity Christian School	488-6779
Village Christian Academy	483-5500

Source: <http://www.discoverfayetteville.com>

## Higher Education

Fayetteville State University  
Information: [www.uncfsu.edu](http://www.uncfsu.edu)  
Phone: (910) 672-1474

Methodist College  
Information: [www.methodist.edu](http://www.methodist.edu)  
Phone: (910) 630-7000

Fayetteville Technical Community College  
Information: [www.faytechcc.edu](http://www.faytechcc.edu)  
Phone: (910) 768-8400

Campbell University  
Information: [www.campbell.edu](http://www.campbell.edu) Phone: (800) 949-8627

University of North Carolina at Pembroke  
Information: [www.uncp.edu](http://www.uncp.edu)  
Phone: (910) 521-6000

## **Local Transportation**

### **Passenger Rail Service**

Fayetteville is served by passenger trains of the Amtrak system with four trains stopping daily in route between New York and Miami. Amtrak's Carolinian Line in Raleigh provides passenger service within North Carolina and on to Richmond and Washington.

### **Fayetteville Area System of Transit – FAST**

Fayetteville's public transportation system, FAST, is a community-wide bus system linking places of interest within the urban area, including shopping centers, hospitals, schools, and institutions of higher learning, industrial parks, office parks, businesses and Fort Bragg.

FAST operates ten bus routes and two shuttle routes between the hours of 5:45 am - 7:30 pm. Most routes begin and end at the Transfer Center located at 147 Old Wilmington Road, Fayetteville.

In addition to the fixed-route buses, FAST operates a complimentary Para transit service for those qualifying under the Americans with Disabilities Act. This service operates the same time and in the same area as the fixed-route system. Individuals desiring to use this service must be certified in accordance with the ADA provisions.

The Fayetteville Area System of Transit also operates a coordinated transportation system. Transportation is provided to those human services agencies that have entered into a contract with the City of Fayetteville for those services. Transportation is provided to all areas of Cumberland County.

Source: <http://www.fayettevillechamber.org>, Click on Economic Development, Quality of Life, Local Transportation

### Fayetteville Taxi/Limousine/Shuttle Service

28 taxicab companies, 4 airport shuttle companies & 9 limousine companies serve in and around Cumberland County.

Taxi, Limousine & Shuttle Services	
Name	Phone Number
A Beep-Beep Taxi	910-850-8368
A-Class Taxi	910-223-2999
B & S Taxi	910-273-1980
C & B Taxi	910-867-7536
C & D Taxi	910-323-8831
Lm Taxi & Shuttle Service	910-237-1499
Old Army Taxi	910-485-2333
Yellow & Checker Cab	910-488-5555
On Time Taxi	910-484-0110
Platinum Limousine Service	910-860-4566
Real Limousine Service	910-263-0889
Class Limousine Service	910-438-0970
Crown Limo Service	910-483-5135
Diamond Limousine Service	910-630-1220
Imperial Limousine Service	910-867-0344

Source: <http://www.fayettevillencchamber.org> click on Economic development, Quality of Life, Transportation

## Recreation

Fayetteville-Cumberland Parks & Recreation Department offers a wide variety of leisure activities, programs and facilities. The department serves a diverse population and programs activities for all ages. These include summer camps, sports camp, youth athletics, adult athletics, and recreational classes for youth and adults, parks, and out-door programs. Fayetteville-Cumberland Parks & Recreation Department has twelve recreation centers with fitness equipment (treadmills, stationary bikes, elliptical and weight machines) that the public can use at no cost to help support healthier lifestyles. Also, for those who enjoy being out-doors there is The Cape Fear River Trail is a 10-foot wide paved path for walkers, joggers and bicyclists. It winds for nearly four miles through trees, plants and wildlife with a view of the river. The trail is designated as part of the East Coast Greenway.

### Regional Parks:

- Arnette
- J. Bayard Clark
- Mazarick

Amenities: Go to [www.fcpr.us](http://www.fcpr.us)

### Community Parks:

- Christina Smith
- College lakes
- Lake Rim
- Westover

Amenities: go to [www.fcpr.us](http://www.fcpr.us)

### Community/School Parks:

- Douglas Byrd School/Park

### Neighborhood Parks:

- Eastover Community Park
- Gilmore Park
- Glen Reilly Park
- Hall Park
- Honeycutt Park
- Mable C Smith Park
- Massey Hill Park
- Myers Park
- Seabrook Park

### Neighborhood/School Parks:

- EE Miller Elementary
- Lake Rim Elementary

- Pine Forest Middle
- Stedman Elementary
- Stoney Point Elementary
- Cliffdale Elementary
- Glendale Elementary
- Max Abbott Middle
- Montclair Elementary
- Nick Jeralds Middle
- Ponderosa Elementary
- Reid Ross Classical

### Linear Parks:

- Cross Creek
- Downtown Linear Park
- Martin Luther King, Jr.

### Special Use Parks:

- JP Riddle Stadium
- Arsenal Park
- Cape Fear Botanical Gardens
- Cape Fear River Trail
- Rowan Park/Amphitheater
- Senior Citizens Center

### Riverside Dog Park

### Sports Complexes:

- Tokay Park
- Lamon Street Park
- Douglas Byrd Park

Source: [www.fcpr.us](http://www.fcpr.us)

### **Swimming Holes:**

- Waldo's Beach
- Chalmers Pool (Seabrook Park)
- Smith Lake
- Fantasy Lake

### **Tennis Courts:**

- Arnette Park
- Mazarick Park Tennis Center
- Rowan Park
- Tokay park
- Lake Rim Park
- Cumberland County Schools (when school is not in session)

### **Golf Courses:**

- 15 Public golf courses
- 18 semi-private golf courses
- 6 private golf courses

Go to [www.discoverfayetteville.com](http://www.discoverfayetteville.com), click on out-doors for locations and phone numbers.

## **PUBLIC AND PRIVATE FACILITIES**

9	Swimming Pools & Water Parks	10	Public & Private Tennis Centers
1	Ice Skating Rinks (Ft. Bragg)	2	Roller & In-line Skating Rinks
4	Bowling Lanes	8	Amusement Places
6	Movie theatres	1	YMCA
3	Gymnastic Schools	2	Country Clubs
8	Health Club	4	Museums

Source: [www.discoverfayetteville.com](http://www.discoverfayetteville.com)

## Demographic Information

In 2009, Cumberland County had an estimated population of 315,207 persons with a population density of 483.0 persons per square mile. 87 % of the population was urban and 13 % was rural. The population grew by 4.0 % from April 1, 2000 to July 1, 2009.

### Population Characteristic

#### Gender:

- # 49 % (152,595) of the population was male and 51 % (162,612) of the population was female.

#### Race:

- # 55.5% (174,815) of the County's population was White.
- # 37.5% (118,259) of the County's population was Black/African American.
- # 1.6% (5142) of the County's population was Native American and Alaska Native.
- # 2.1% (6757) of the County's population was Asian.
- # 0.3% (910) of the County's population was Native Hawaiian/ Pacific Islander.
- # 3.0% (9,324) of the County's population reported two or more races.
- # 6.3% (19,954) of the County's population was Hispanic or Latino.

#### Age:

- # 8.8% (27,755) of the County's population was under 5 years old.
- # 13.9% (43,986) of the County's population was 5 to 14 years old.
- # 7.6% (23,973) of the County's population was 15-19 years old
- # 27% (84,590) of the County's population was under 18 years old.
- # 14.0% (44,574) of the County's population was 25 to 34 years old.
- # 73.0% (230,617) of the County's population was over 18 years old.
- # 11.7% (37,121) of the County's population was 62 years and over.
- # 9.5% (29,994) of the County's population was 65 years old and over.

- # The Median age for the County was 29 years old.

#### Age and Gender:

- # 35% (109,415) of the County's population 18 years and over were males.
- # 38% (121,202) of the County's population 18 years and over were females.
- # 3.8% (12,265) of the County's population 65 years and over were males.
- # 5.6% (17,729) of the County's population 65 years and over were females.

In 2009, North Carolina had an estimated population of 9,380,884, with a population density of 192.4 persons per square mile. The population for the State grew by 16.6% from April 1, 2000 to July 1, 2009.

### **Population Characteristics (State)**

#### **Gender:**

- ‡ 49 % (4,590,185) of the population was male and 51 % of the population was females.

#### **Race:**

- ‡ 73.7 % (6,917,452) of the population was White.
- ‡ 21.6 % (2,027,898) of the population was Black/African American.
- ‡ 1.3 % (117,497) of the population was Native American/Alaska Native.
- ‡ 2.0 % (192,121) of the population was Asian.
- ‡ 0.1 % (7,162) of the population was Native Hawaiian/Pacific Islander.
- ‡ 1.3% (118,754) of the population reported two or more races.
- ‡ 7.7 % (717,662) of the population was Hispanic or Latino.

- ‡ North Carolina's median age was 37 years old.

#### **Age:**

- ‡ 7.1 % (664,837) of the population was under 5 years old.
- ‡ 13.2 % (1,242,343) of the population was 5 to 14 years old.
- ‡ 6.8 % (645,512) of the population was 15 to 19 years old.
- ‡ 24.3 % (2,277,967) of the population was under 18 years old.
- ‡ 13.1 % (1,235,447) of the population was 25 to 34 years old.
- ‡ 75.7 % (7,102,917) of the population was 18 years and over.
- ‡ 15.7 % (1,475,113) of the population was 62 years and over.
- ‡ 12.7 % (1,192,025) of the population was 65 years and over.

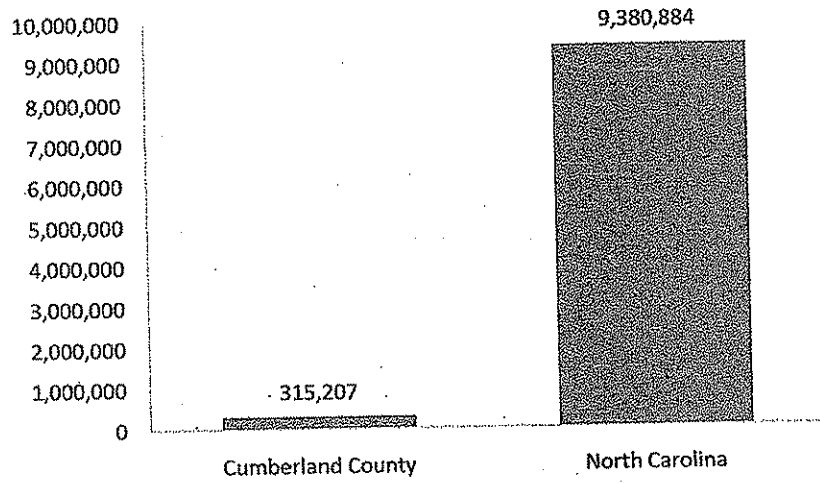
#### **Age and Gender:**

- ‡ 36.5 % (3,424,950) of population 18 years and over were males.
- ‡ 39.2 % (3,677,967) of the population 18 years and over were females.
- ‡ 5.3 % (498,731) of the population 65 years and over were males.
- ‡ 7.3 % (693,294) of the population 65 years and over were females.



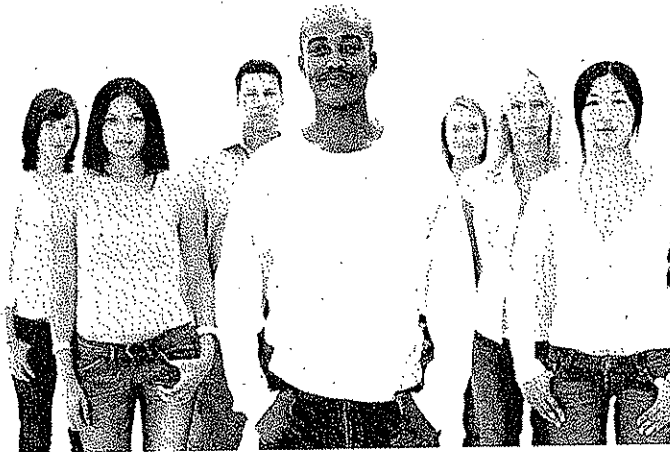
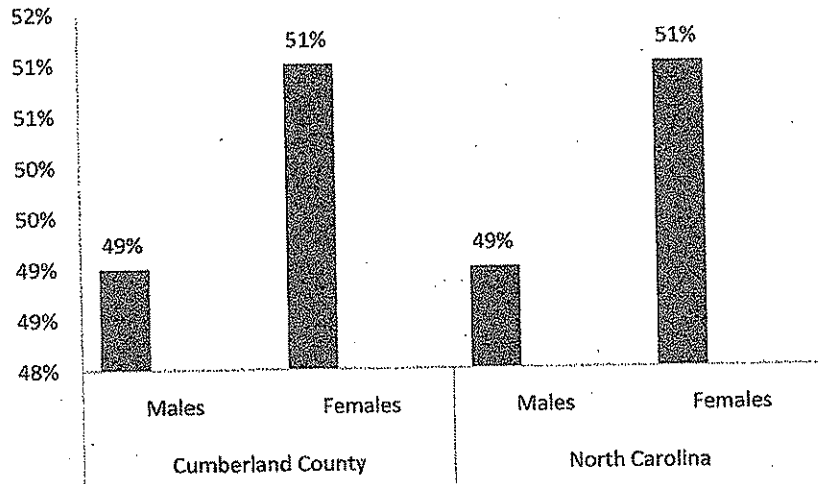
## Population

In 2009, Cumberland County's population was 315,207 compared to the State's population, 9,380,884.



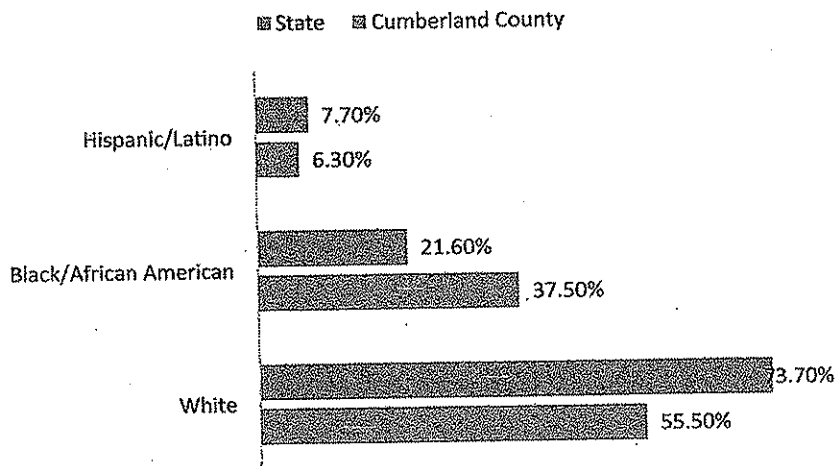
## Gender

In 2009, Cumberland County and the State had the same percentage break-down of males and females.



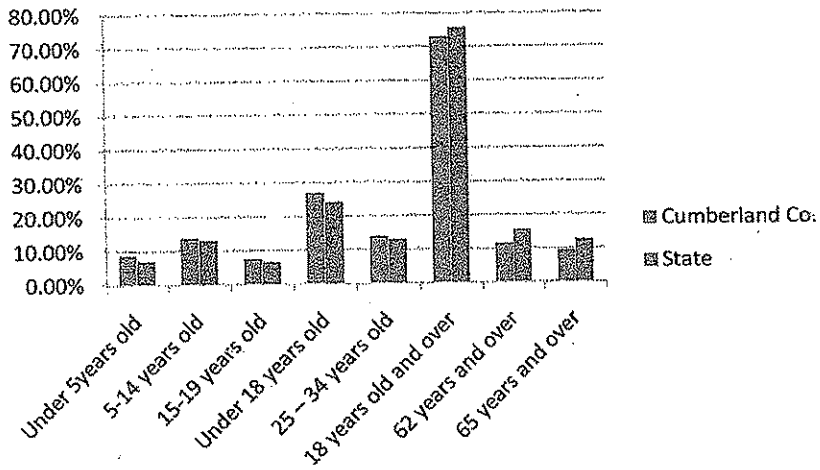
### Race

- 55.5 % of the County's population was white compared to 73.7 % of the State's population.
- The County's Black/African American population (37.5 %) was higher than the State's Black/African American population (21.6%).
- The State's Hispanic/Latino population (7.7 %) was slightly higher than the County's Hispanic/Latino population (6.3 %).



## Age

- ± 8.8 % of the County's population was under 5 years old, whereas the State's under 5 years old population was slightly lower at 7.1 %.
- ± 13.9% of the County's population was 5 to 14 years old, whereas the State's 5 to 14 years old population was slightly lower at 13.2 %.
- ± 7.6 % of the County's population was 15 to 19 years old, whereas the State's 15 to 19 years old population was slightly lower at 6.8 %.
- ± 27 % of the County's population was under 18 years of age whereas 24.3 % of the State's population was under 18 years of age.
- ± 14.0 % of the County's population was 25 to 34 years old compared to 13.1 % of the State's population 25 to 34 years old.
- ± 73.0 % of the County's population was 18 years and over, which was slightly lower than the State's population 18 years and over which was 75.5 %.
- ± 11.7 % of the County's population was 62 years and over compared to 15.7 % of the State's population 62 years and over which was 15,7 %.
- ± 9.5 % of the County's population was 65 years and over compared to the State's 65 years and over population which was 12.7 %.



## Health Status

### 2009 BRFSS Survey Results: Cumberland County

According to the BRFSS, Cumberland County residents responded to the following survey questions:

Would you say that in general your health is?

Total Respondents	Excellent	Very Good	Good	Fair	Poor
382	61 (21.2%)	100 (29.1%)	130 (31.2%)	64 (12.7%)	27 (5.8%)

During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, i.e. self-care, work, or recreation?

Total Respondents	None	1-2 days	3-7 days	8-29 days	30 days
379	288 (78.4%)	19 (5.4%)	19 (4.4%)	32 (6.4%)	21 (5.3%)

### Health Care Access

Do you have any kind of health care coverage, including health insurance, pre-paid plans such as HMOs or government plans such as Medicare?

Total Respondents	Yes	No
383	343 (85.9%)	40 (14.1%)

Was there a time during the last 12 months when you needed to see a doctor, but could not because of the cost?

Total Respondents	Yes	No
383	47 (13.6%)	336 (86.4%)

### Caregiver Status

During the past month, did you provide care or assistance to a friend or family member who has a health problem, long-term illness or disability?

Total Respondents	Yes	No
382	102 (25.8%)	280 (74.2%)

## Community Health Assessment Survey

### **The community's perception and or attitude towards diseases and disabilities:**

Among the various cancers that afflict the Cumberland County population, breast cancer was perceived to be the major one. About 46.9% of residents felt that it was a problem in the community followed by lung cancer (42.9%).

59.5% of Cumberland County residents feel that heart disease is a problem in the community. The community survey shows 71.1% of residents feel that hypertension is a problem and 66.7% residents feel that diabetes is a problem in the community

57.6% of Cumberland County residents feel that sexually transmitted diseases are a problem in the community, 47.2% perceive HIV/AIDS as a problem.

According to the residents, depression is a large problem in the community with almost 61% classifying it as a problem. 56.6% residents perceive mental health problems as an issue in the community.

59 % of respondents cited arthritis as a problem in the community.

55.1 % of respondents cited Learning and Developmental Disabilities as a problem in the community.

Risky health behaviors that can affect health and quality of life include alcohol, drug abuse and tobacco use. Cumberland County survey respondents (80%) pointed out that smoking/tobacco is a problem in the community. Alcohol (72%) and drug (75%) abuse were also cited as problems in the community.

77% of survey respondents cited lack of exercise as a problem in Cumberland County.

72.7% respondents perceived poor eating habits as a problem in the community.

2008 teen pregnancy rates in North Carolina were 58.6; whereas those for Cumberland County were 74.5. 70.4% survey respondents indicated teen pregnancy as a problem in the community.

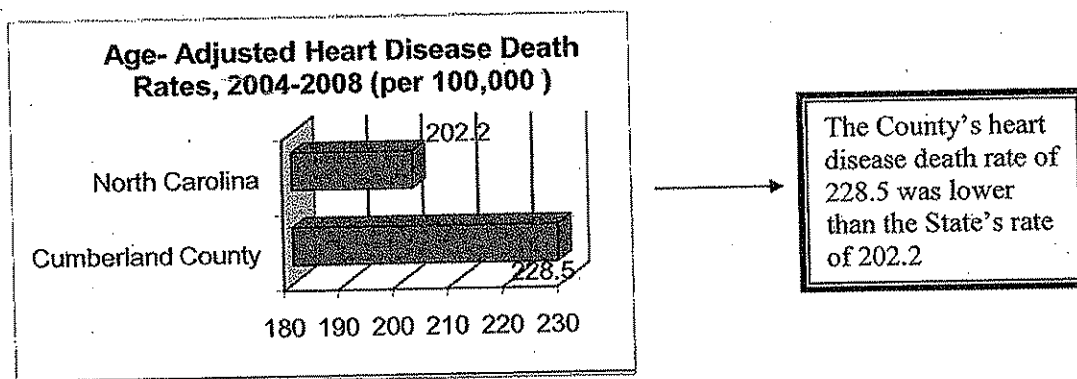
## Chronic Disease

### Brief Overview

Chronic diseases continue to negatively impact our community, state, and nation. Additionally, 7 out of 10 Americans die each year from chronic diseases. Heart disease, cancer, and stroke make up more than 50 percent of all deaths yearly. Locally, in the past five years, 2004-2008, the five leading causes of death for Cumberland County and for the state of North Carolina were Heart Disease, Cancer, Chronic Lower Respiratory Disease, Cerebrovascular Disease (stroke), and Diabetes. By maintaining a healthy lifestyle and by seeking quality and affordable healthcare, many chronic diseases can be controlled and or managed.

### Heart Disease

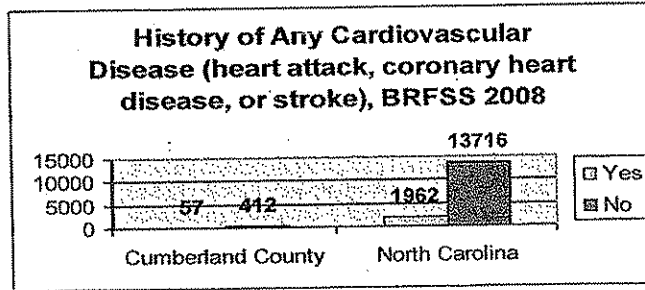
Heart disease continues to be the leading cause of death in Cumberland County, with 2,381 deaths. Risk factors for heart disease include elevated cholesterol, high blood pressure, diabetes, tobacco use, being overweight/obese, inadequate physical activity, and not eating a diet rich in fruits and vegetables.



- Males in the County and State had heart disease death rates higher than females in the County and State.
- White males had a higher heart disease death rate than minority males in the County. However, Minorities had a higher disease death rate than whites in the state.
- Minority males in the County had lower heart disease death rates than minority males in the State.
- Minority females in the County had higher heart disease death rates than minority females in the State.

**BRFSS Results:**

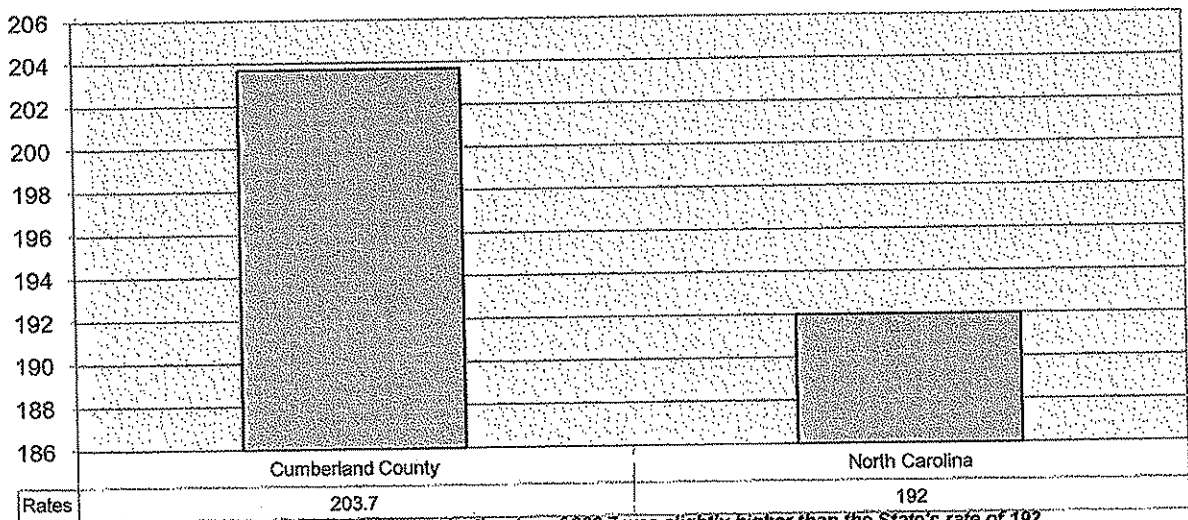
- According to the BRFSS, 469 residents of Cumberland County responded to the question asked about their history of having any cardiovascular disease. Fifty seven residents, 9.1% responded that they have a history of cardiovascular disease while four hundred and twelve residents, 90.0% responded that they didn't have a history of cardiovascular disease.



**Cancer**

The second leading cause of death in Cumberland County was cancer, which resulted in 2,310 deaths. The trachea, bronchus, lung, colon, rectum, anus, and female breast were the most common sites. The burden of cancer can be prevented or reduced with early detection and access to health care.

**Age-Adjusted Cancer Death Rates 2004-2008 (per 100,000)**



\*The County's cancer death rates of 203.7 was slightly higher than the State's rate of 192.



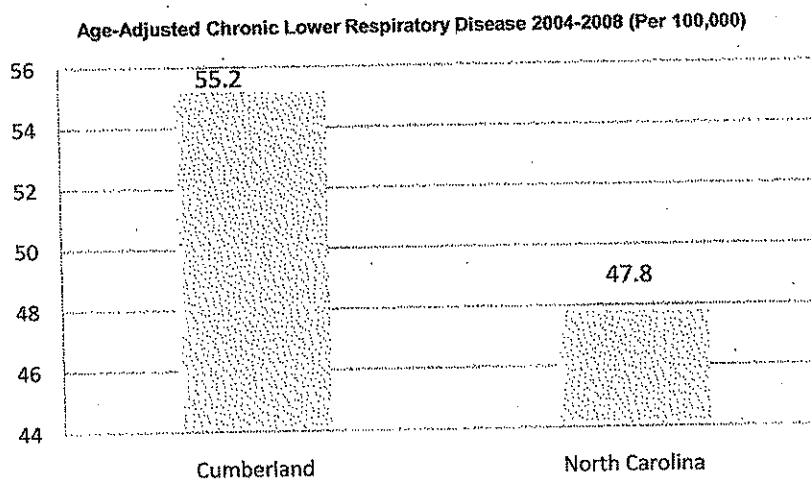
- ✦ Males had a higher cancer death rate than females in the County and State.
- ✦ Whites had a higher cancer death rate of 204.8, than minorities' death rate of 201.3 in the County. However, minorities' had a higher cancer death rate of 215.6 than whites' death rate of 186.5 in the State.
- ✦ White males and females had higher cancer death rates than minority males and females in the County.

**BRFFS Results:**

- ✦ 38.4 % of women between the ages of 40 – 44 reported that they have had a mammogram within the past 2 years and a clinical breast exam within a year. Mammograms are key in detecting Breast Cancer early.
- ✦ 83 % of women reported having a pap smear in the last 3 years. Having a pap smear is necessary in detecting HPV, a virus that causes cervical cancer.
- ✦ 74.7 % of Cumberland County citizens 50 and older have reported having had a sigmoidoscopy or a colonoscopy. Either test is very important in detecting colon cancer.

**Chronic Lower Respiratory Disease**

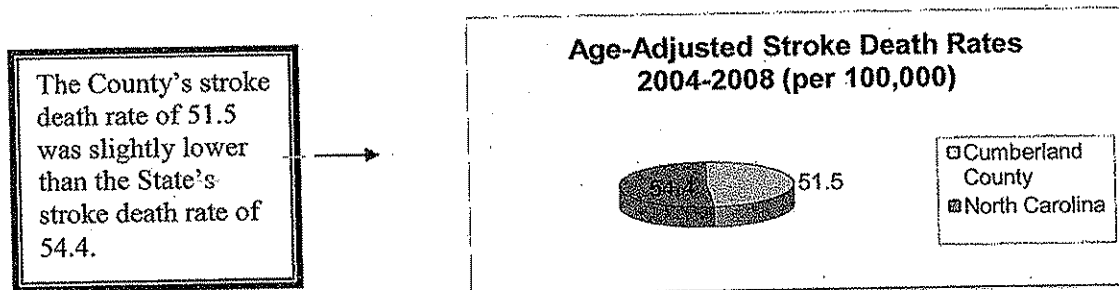
The third leading cause of death in Cumberland County was Chronic Lower Respiratory Disease, with 566 deaths. The County has a higher Chronic Lower Respiratory disease death rate of 55.2 compared to the States rate of 47.8.



- ✦ Males in the County and State had a much higher death rate from Chronic Lower Respiratory disease than females in the County and State.
- ✦ Whites in the County and State had a much higher death rate from Chronic Lower Respiratory disease than minorities in the County and State.

### Cerebrovascular Disease (Stroke)

The fourth leading cause of death in Cumberland County was Cerebrovascular Disease, (Stroke) with 522 deaths. Stroke is one of the leading causes of serious long-term disabilities.

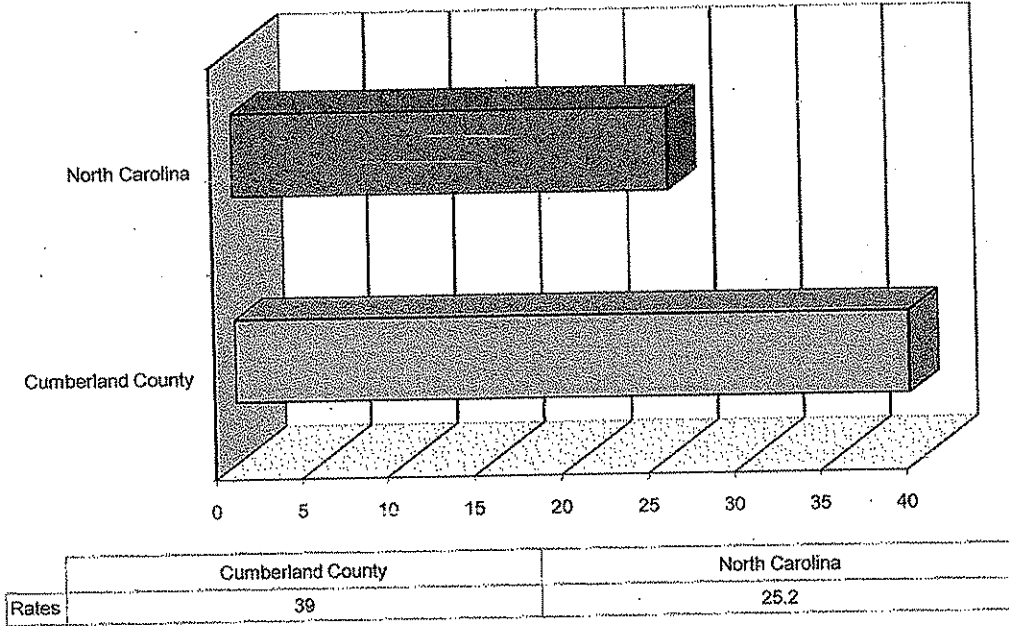


- ✦ Minorities in the County and State had a higher stroke death rate than Whites in the County and State.
- ✦ Minority males in the County and State had a higher stroke death rate than minority females in the County and State.

### Diabetes

Diabetes is the fifth leading cause of death in Cumberland County, accounting for 429 deaths. Diabetes is also a main contributor to other causes of death and disability such as heart disease, stroke, kidney disease, blindness, nervous system disease, amputation, and high blood pressure. According to data from the 2007 National Diabetes Fact Sheet from the American Diabetes Association, 23.6 million children and adults in the United States have diabetes.

Age-Adjusted Diabetes Death Rates 2004-2008 (per 100,000)



\* The County's diabetes death rates of 39.0 was slightly higher than the State's rate of 25.2

- ❖ Males in the County and State had a higher death rate from diabetes than females in the County and State.
- ❖ Minorities in the County and State had a higher death rate from diabetes than whites in the County and State.
- ❖ Minority males in the County had a higher death rate from diabetes than minority males in the state.

**BRFSS Results:**

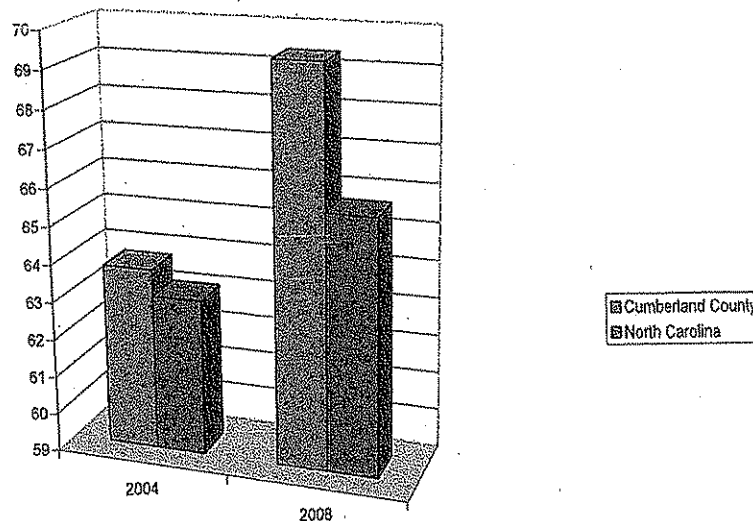
Out of 476 Cumberland County residents that responded, 11.8 % of Cumberland County residents responded to being told by a doctor they had diabetes, 2.1% reported having gestational diabetes, and 1.3 % reported that they were boarder line diabetic. Early detection is important in diagnosing diabetes.

## Overweight/Obesity

BMI or Body Mass Index is used in defining overweight and obesity. The recommended body mass index range is 18.5 to 24.9. A body mass index of 25.0 to 29.9 is considered overweight. A body mass index of greater than 30 is considered obese. Obesity and being overweight are the leading risk factors for many chronic diseases including diabetes, heart disease, stroke, and cancer.

- According to the 2008 BRFSS, 69.4% of respondents in Cumberland County were overweight or obese. For the State, 65.7% of respondents were overweight or obese.
- Between 2004 and 2008 the rates of overweight and obesity went from 63.8% to 69.4% in Cumberland County and the states rates went from 63.1% to 65.7%

2004 and 2008 BRFSS, Percentages of Obese Adults

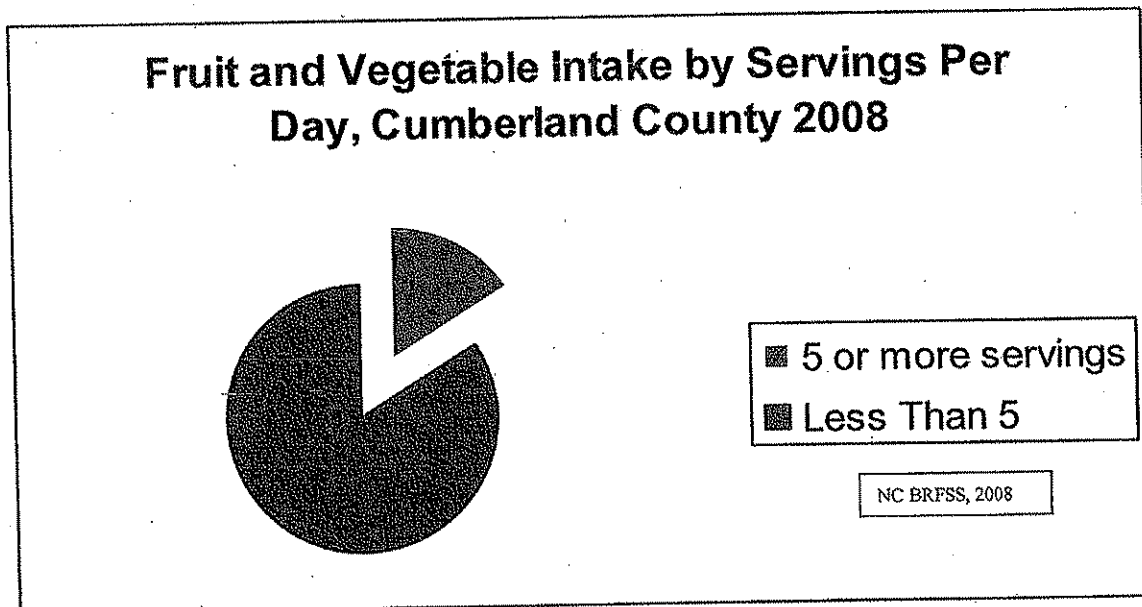
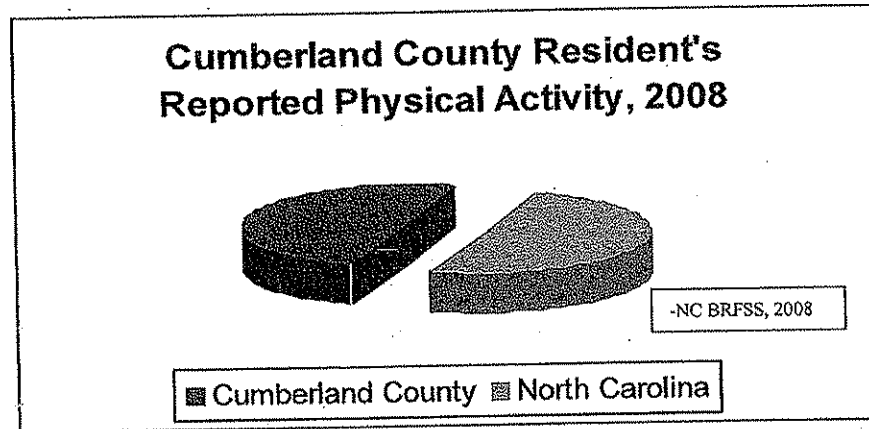


	2004	2008
Cumberland County	63.8	69.4
North Carolina	63.1	65.7

***What's happening?*** Obesity has become a serious issue and major health concern not only in our community but our nation. Poor eating habits and a lack of daily physical activity are some of the contributing factors for our society being overweight.

### Exercise:

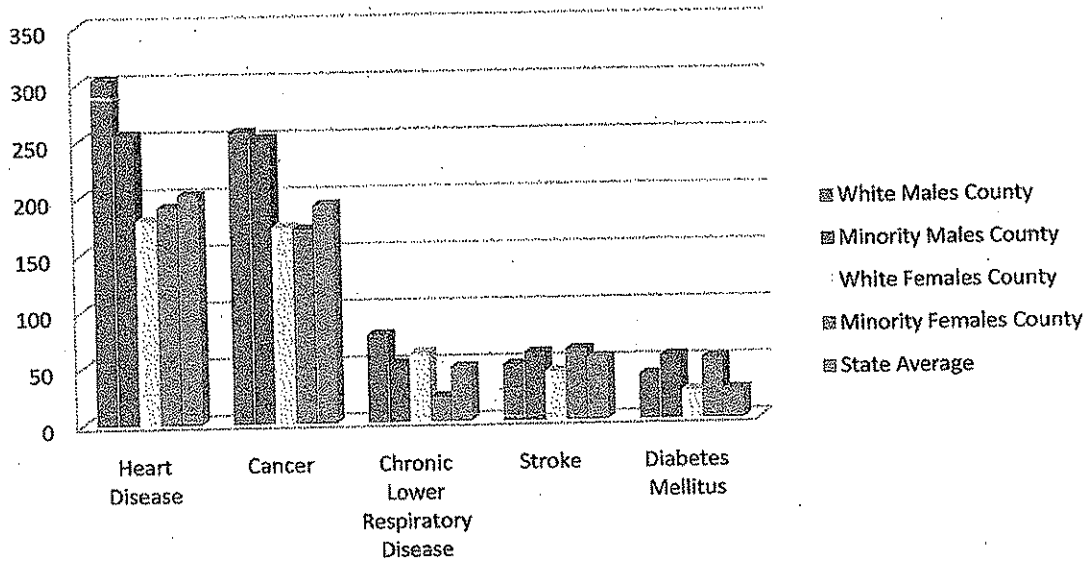
In 2008, 73.2% of respondents reported participating in physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise. The states rate was similar.



### Nutrition:

83.5 percent of respondents in Cumberland County reported not consuming five or more servings of fruits and vegetable per day. Eating fruits and vegetables is a key element in weight management/weight loss, and preventing heart disease and other chronic conditions.

**Cumberland County Leading Causes of Mortality (2004-2008) Age-Adjusted Death Rates for Selected Causes**



**Leading Causes of Deaths 2004 - 2008**

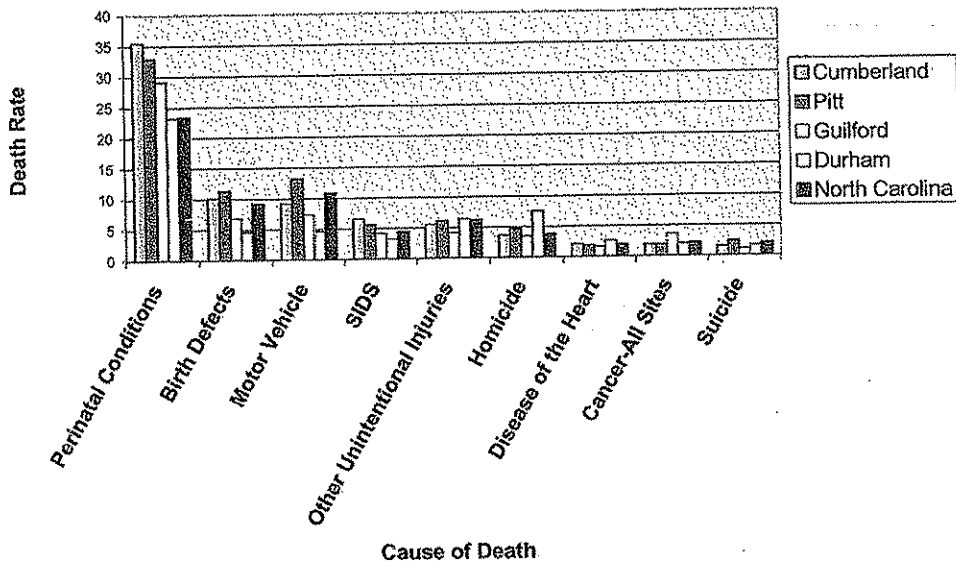
Cause of Death	Ages 00-19				
	Cumberland	Pitt	Guilford	Durham	NC
Conditions originating in the prenatal period	35.5	32.9	29.1	23.2	23.4
Congenital anomalies (birth defects)	10.1	11.3	6.8	4.6	9.2
Motor Vehicle Injuries	9.2	13.2	7.3	4.6	10.8
SIDS	6.5	5.6	4.1	3.2	4.4
Other Unintentional Injuries	5.5	6.1	4.1	6.4	6.2
Homicide	3.6	4.7	3.4	7.5	3.8
Diseases of the Heart	2.1	1.9	1.6	2.6	2
Cancer-All Sites	1.9	1.9	3.6	2	2.2
Suicide	1.5	2.4	1.1	1.7	2

Source: <http://www.schs.state.nc.us/SCHS/data/databook-mortality>

Observations:

- A condition originating in the prenatal period was the leading cause of death in ages 00-19 in the County, followed by Congenital Anomalies (Birth Defects), and Motor Vehicle Injuries. Whereas, conditions originating in the Prenatal Period, was the leading cause of death in the State, followed by Motor Vehicle Injuries and Congenital Anomalies (Birth Defects).

Leading Causes of Death.2004- 2008 Ages 0-19



Leading Causes of Deaths 2004 – 2008

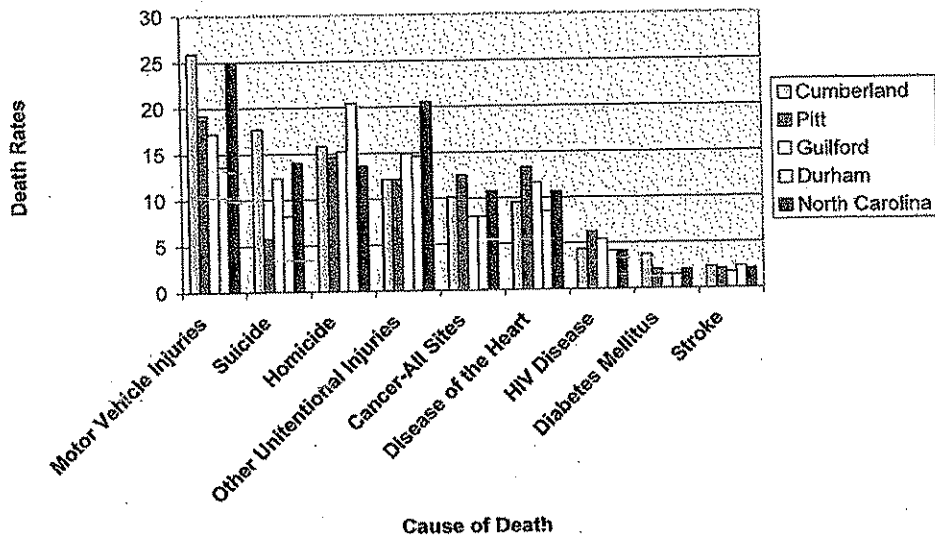
Cause of Death	Ages 20-39				
	Cumberland	Pitt	Guilford	Durham	NC
Motor Vehicle Injuries	25.9	19.2	17.2	13.6	24.8
Suicide	17.7	5.8	12.3	8.2	14
Homicide	15.8	14.6	15.2	20.4	13.6
Other Unintentional Injuries	12.1	12.1	14.9	14.6	20.5
Cancer-All Sites	10.1	12.5	8	8	10.7
Diseases of the Heart	9.5	13.3	11.6	8.5	10.6
HIV Disease	4.3	6.2	5.4	4.1	4.1
Diabetes Mellitus	3.7	2.1	1.5	1.5	2
Cerebrovascular Disease	2.3	2.1	1.7	2.4	2.1

Source: <http://www.schs.state.nc.us/SCHS/data/databook-mortality>

Observations:

- Motor Vehicle Injuries were the leading cause of death in ages 20 – 39 years in the County, followed by Suicide and Homicide. Whereas, Motor Vehicle Injuries were the leading causes of death in the State, followed by Other Unintentional Injuries and Suicide.

Leading Cause of Death 2004 - 2008 Ages 20-39



Leading Causes of Deaths 2004 – 2008

Cause of Death	Ages 40-64				
	Cumberland	Pitt	Guilford	Durham	NC
Cancer-All Sites	191.2	185.9	161.8	173.4	189.2
Diseases of the Heart	154.3	142.7	113.9	96.6	126.4
Diabetes Mellitus	28.4	31.1	17.7	23	21.5
Cerebrovascular Disease	27.3	33.5	22.4	21.1	23.5
Other Unintentional Injuries	25.9	24.6	25.4	24.9	28.2
Chronic Lower Respiratory Disease	22.9	17.7	20.2	12.4	21.9
Motor Vehicle Injuries	21.2	21.8	14.5	13	18
Chronic Liver Disease and Cirrhosis	20.3	13.5	16		17.3
HIV Disease	18.5	14.4			18.1

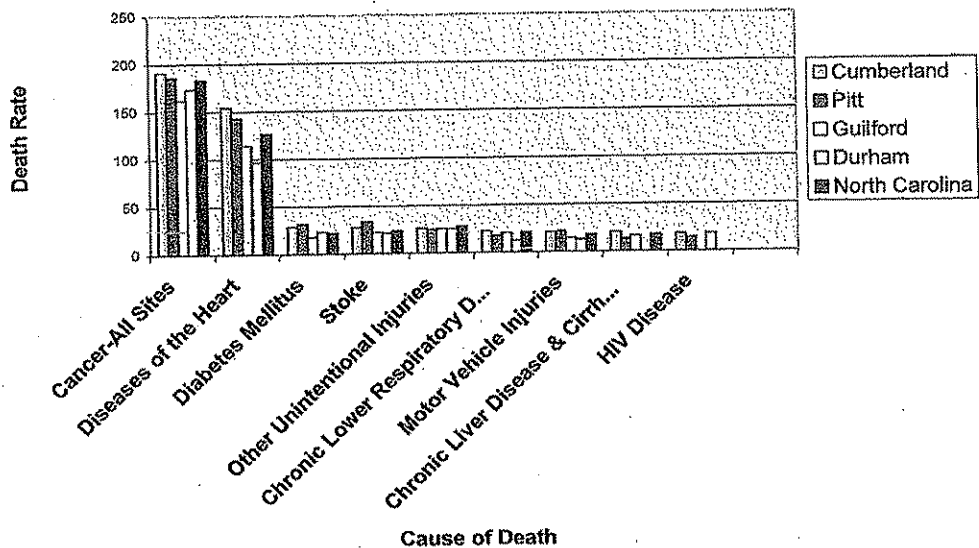
Source: <http://www.schs.state.nc.us/SCHS/data/databook> -mortality



Observations:

- ↘ Cancer was the leading cause of death in ages 40 – 64 in the County and State.
- ↘ Heart Disease was the second leading cause of death in ages 40 – 64 in the County and State:
- ↘ Diabetes was the third leading cause of death in ages 40 – 64 in the County, whereas Other Unintentional Injuries was the third leading cause of death in ages 40 – 64 in the State.

Leading Causes of Death 2004- 2008 Ages 40-64



Leading Causes of Deaths 2004 – 2008

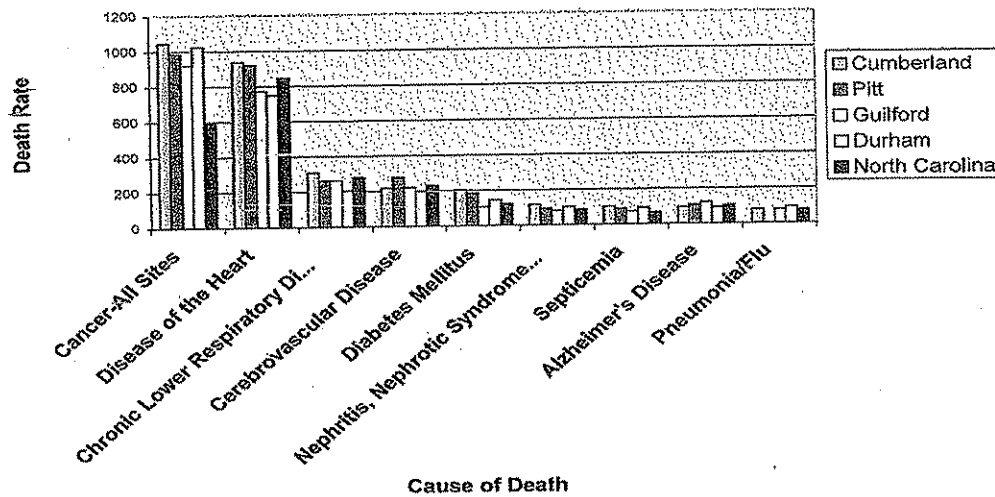
Cause of Death	Death Rate				
	Cumberland	Pitt	Guilford	Durham	NC
Cancer-All Sites	1044.7	987	917.9	1024.8	593.6
Disease of the Heart	936.3	919.1	771.5	747	846.9
Chronic Lower Respiratory Disease	308.4	262.1	262.5	202.6	279.0
Cerebrovascular Disease	217.8	276.7	217.6	196.5	229.8
Diabetes Mellitus	201.7	184.5	104.2	146.4	122.1
Nephritis, nephritic syndrome, and nephrosis	116.1	93.8	78.7	102.3	86.6
Septicemia	100.8	87.4	71.7	93.3	66.5
Alzheimer's Disease	94.1	106.8	120	89.2	103.1
Pneumonia and Influenza	77.1		78.3	91.3	75.4

Source: <http://www.schs.state.nc.us/SCHS/data/databook-mortality>

Observations:

- ❖ Cancer in All Sites was the leading cause of death in ages 65 – 84 in the County and State.
- ❖ Heart Disease was the second leading cause of death in ages 65 – 84 in the County and State.
- ❖ Chronic Lower Respiratory Diseases was the third leading cause of death in ages 65 – 84 in the County and State.

Leading Causes of Death 2004-2008 ages 65-84



Leading Causes of Deaths 2004 – 2008

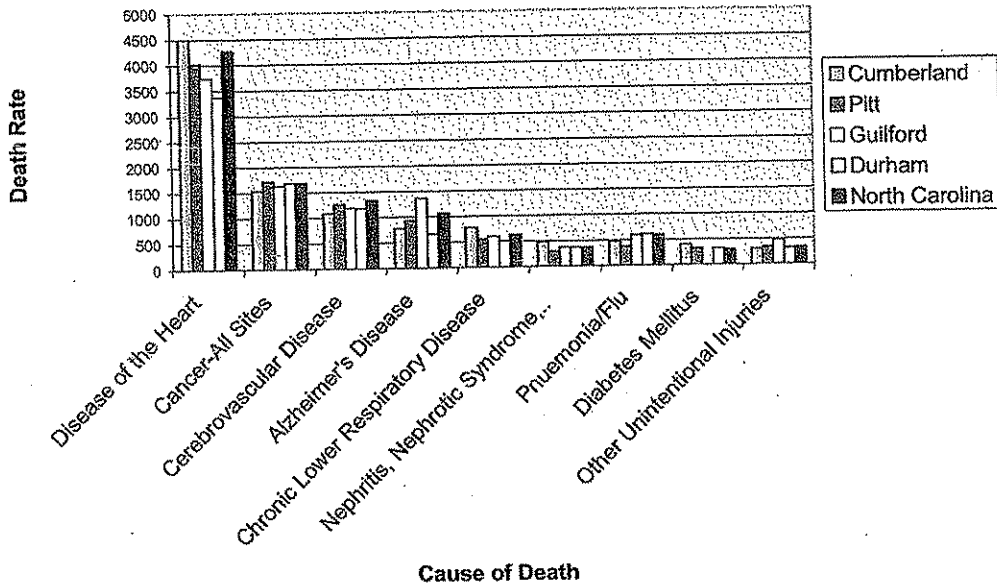
Cause of Death	Death Rate				
	Cumberland	Pitt	Guilford	Durham	NC
<b>Diseases of the Heart</b>	4497.8	4027	3736.1	3366.5	<b>4265.8</b>
<b>Cancer-All Sites</b>	1540.2	1721	1629.1	1680.3	<b>1676.6</b>
<b>Cerebrovascular Disease</b>	1081.4	1259.8	1182.2	1173.3	<b>1329.7</b>
<b>Alzheimer's Disease</b>	778.3	922.4	1354.7	654.4	<b>1063.5</b>
<b>Chronic Lower Respiratory Disease</b>	778.3	551.2	596.8	507	<b>633</b>
<b>Nephritis, nephritic syndrome, and nephrosis</b>	483.4	292.5	373.3	365.5	<b>364.7</b>
<b>Pneumonia and Influenza</b>	475.2	371.2	593.9	613.2	<b>592.7</b>
<b>Diabetes Mellitus</b>	401.4	326.2		318.4	<b>301.9</b>
<b>Other Unintentional Injuries</b>	303.1	337.5	472.3	271.2	<b>332.0</b>

Source: <http://www.schs.state.nc.us/SCHS/data/databook> -mortality

Observations:

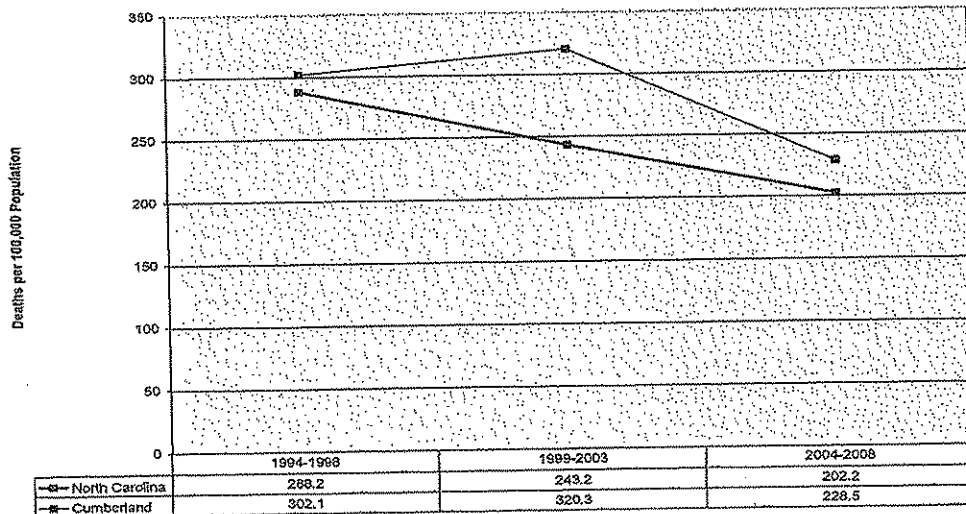
- Heart Disease was the leading cause of death followed by Cancer-All Sites, and Cerebrovascular Disease (Stroke) in ages 85 and older in the County and State.

Leading Cause of Death 2004-2008 Ages 85 +

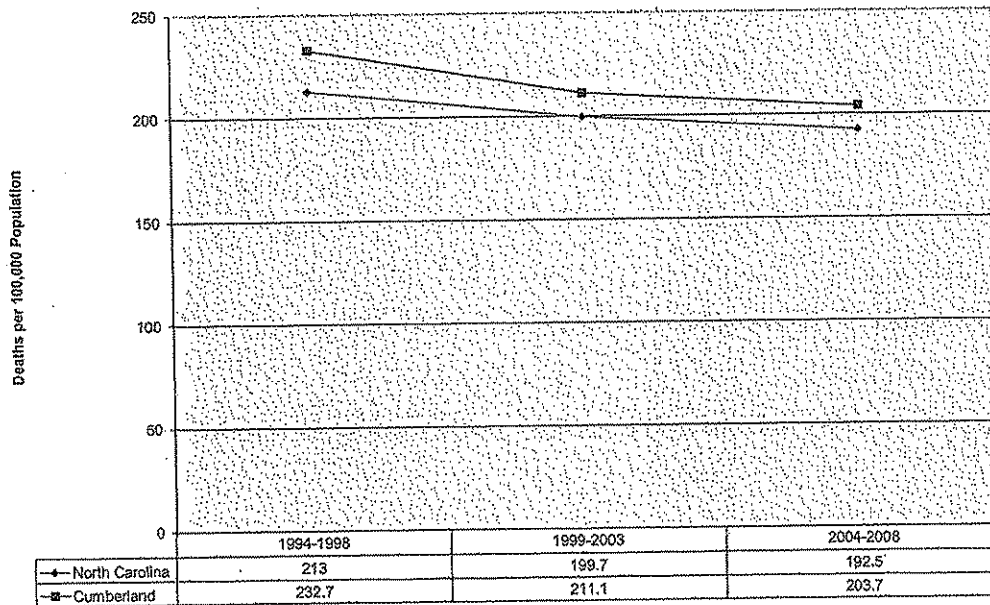


North Carolina Statewide and County Trends in Key Health Indicators-Death Rates and Incidence Rates

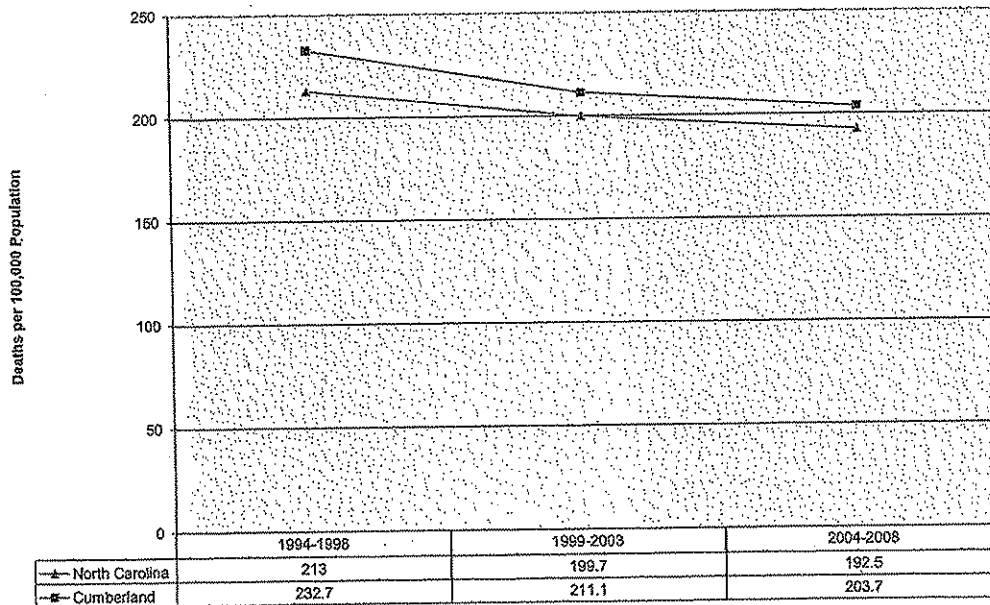
Age-Adjusted Heart Disease Death Rates



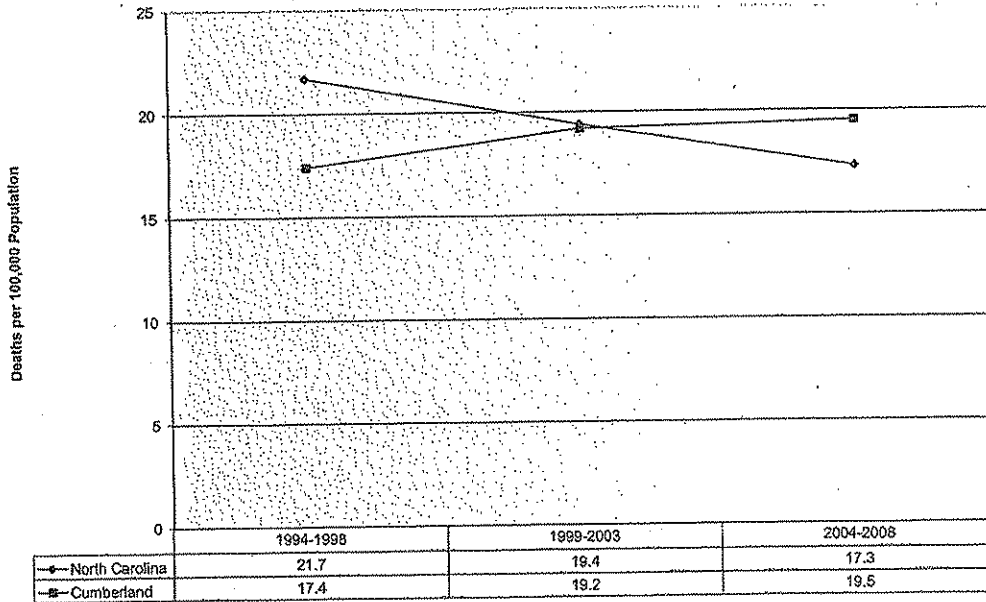
### Age-Adjusted Stroke Death Rates



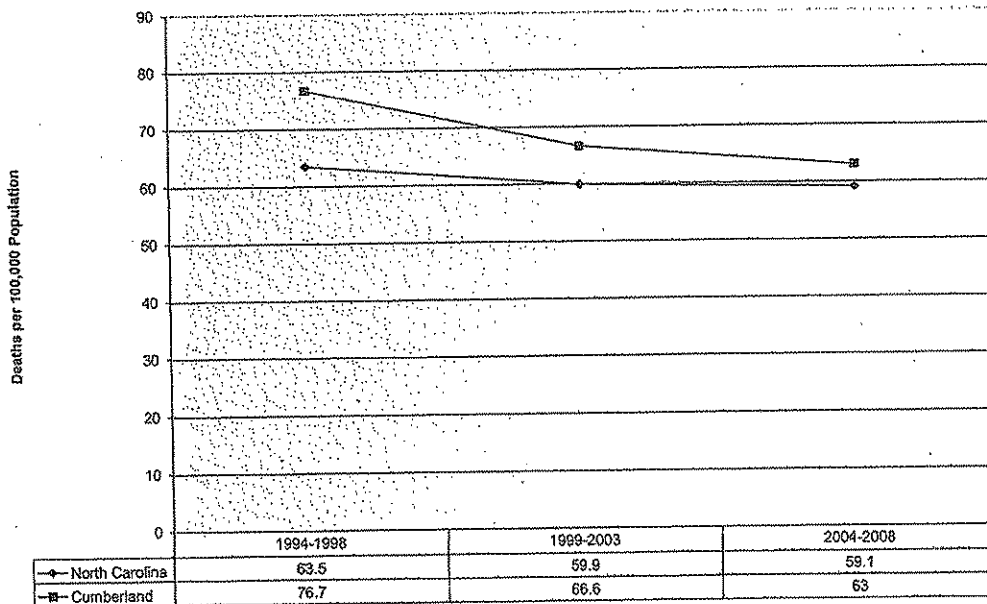
### Age-Adjusted Total Cancer Death Rates



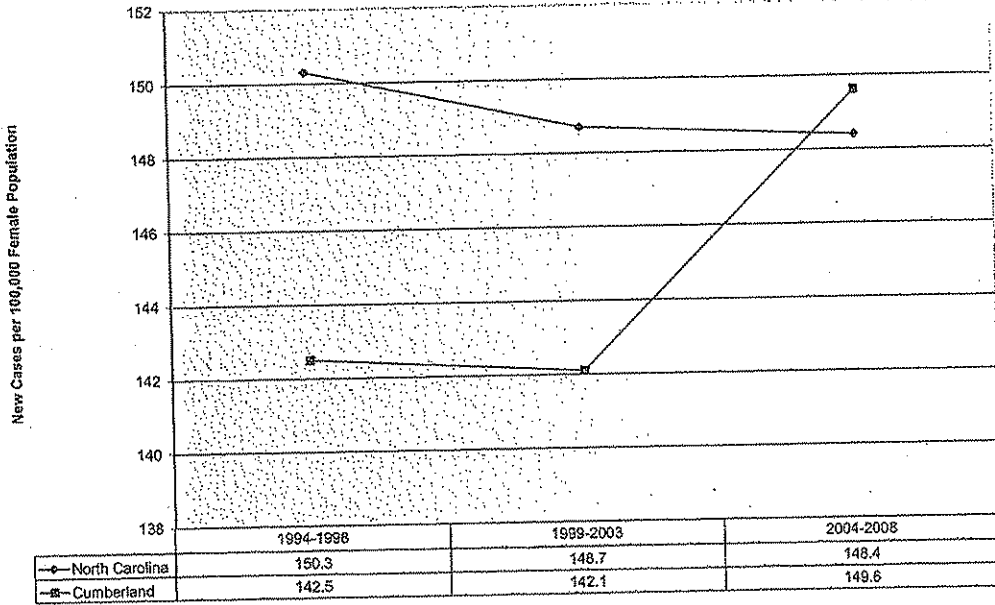
Age-Adjusted Colon, Rectum, Anus Cancer Death Rates



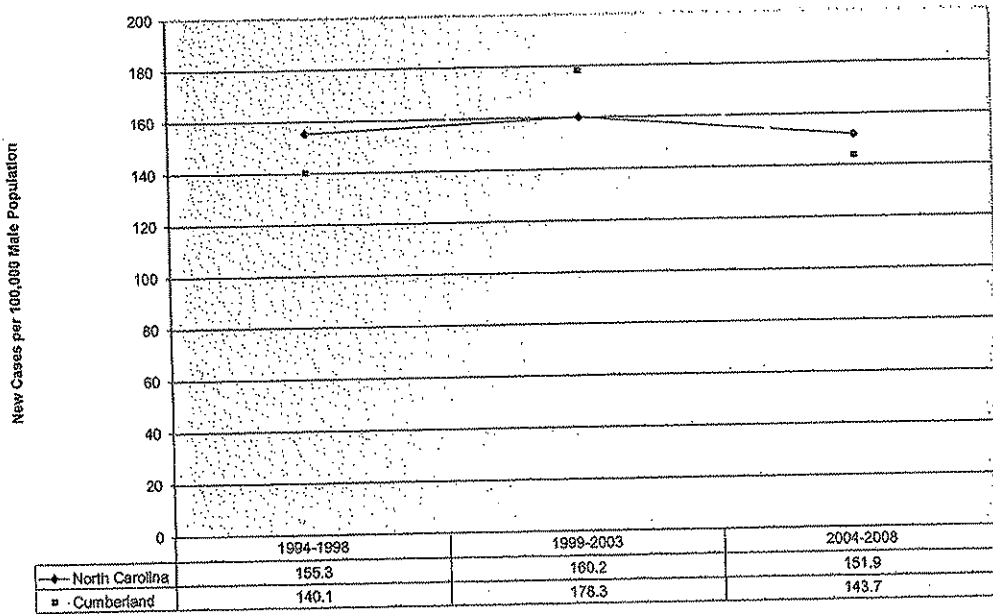
Age-Adjusted Trachea, Bronchus, & Lung Cancer Death Rates



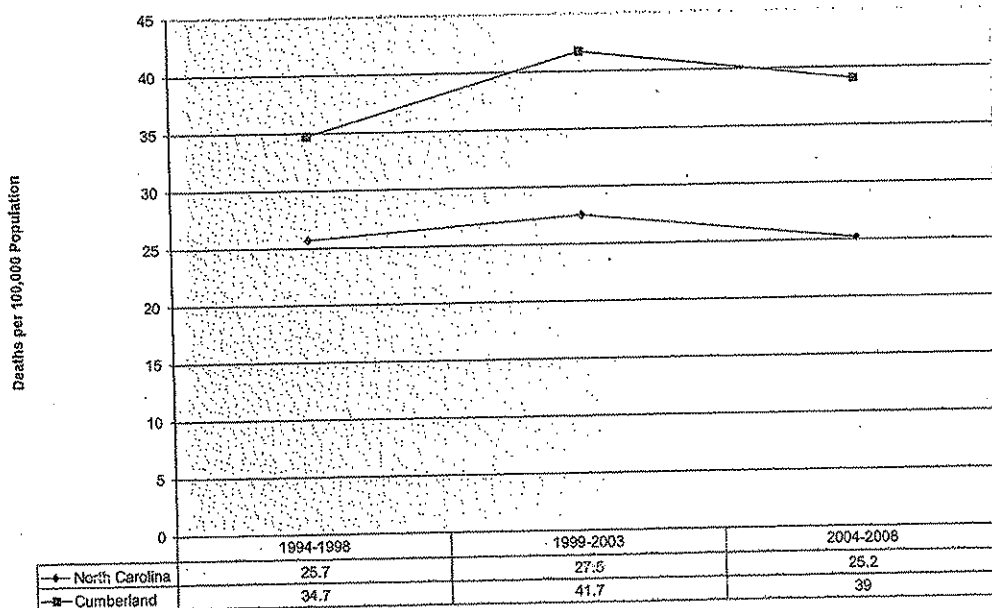
### Age-Adjusted Breast Cancer



### Age-Adjusted Prostate Cancer Incidence Rates



Age-Adjusted Diabetes Death Rates



### Trend Observations

#### Heart Disease:

- ⚡ Over the past fifteen years Heart Disease has continued to be the number one cause of death in the County;
- ⚡ Cumberland County heart disease death rate continues to exceed the State heart disease death rate.
- ⚡ There has been some progress in the decline of heart disease deaths in the County over the last fifteen years.
- ⚡ Cumberland County's heart disease death rate declined by 24 % between 1994 and 2008.

#### Stroke:

- ⚡ Cumberland County's stroke death rates continued to exceed the State's stroke death rate.
- ⚡ The Cumberland County's stroke death rates declined 9 % between years 1994-2003.
- ⚡ The Cumberland County's stroke death rates declined 12 % between years 1994-2008.
- ⚡ Although the County's stroke death rates have exceeded the State, there has been some progress in the County's stroke death rates going down.

#### Cancer:

- ⚡ Cumberland County's cancer death rates have continued to exceed the State's cancer death rates over the past fifteen years.
- ⚡ Cumberland County's cancer death rates declined 9 % between years 1994-2003.
- ⚡ Cumberland County's cancer death rates declined 12 % between years 1994-2008.
- ⚡ Cumberland County's cancer death rates have improved from 1994-2008.

**Diabetes:**

- ⊕ Cumberland County's diabetes death rates have continued to exceed the State diabetes death rates.
- ⊕ Cumberland County's diabetes death rates were 16.7 % lower during years 1994-1998 than years 1999-2003.
- ⊕ Cumberland County's diabetes death rates were lower during years 1994-1998 than during years 2004-2008.

**Age-Adjusted Death Rate per 100,000  
2004-2008  
Peer Counties (Durham, Guilford and Pitt)**

**Leading Causes of Death:**

In the past five years, 2004-2008, the five leading causes of death for Cumberland County and for the Peer Counties , Durham, and Pitt were Heart Disease, Cerebrovascular Disease (Stroke), Cancer, Diabetes, and Chronic Lower Respiratory Diseases. The five leading causes of death for Guilford County were Heart Disease, Cancer, Stroke, Chronic Lower Respiratory Diseases and Alzheimer's disease. By maintaining a healthy lifestyle and seeking quality and affordable healthcare, many chronic diseases can be controlled and or managed.

**Heart Disease**

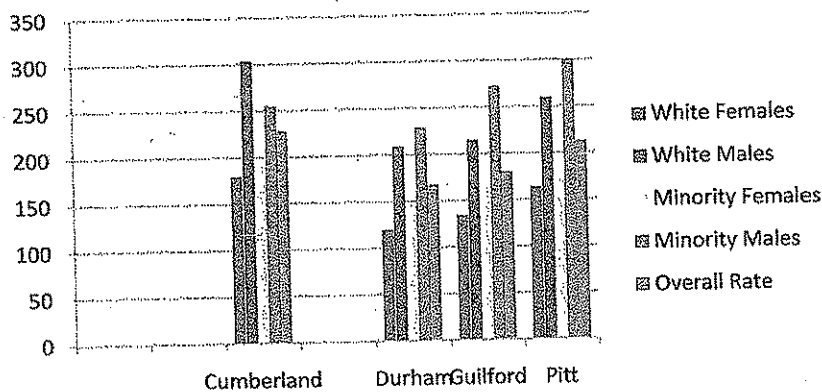
- Cumberland County's overall Heart Disease death rate was higher than Peer Counties.

**Gender and Racial Disparities:**

- Males in Cumberland County and peer counties had a higher heart disease death rate than females in Cumberland and Peer Counties.
- White males in Cumberland County had a higher heart disease death rate than white males in Peer Counties.
- Minority males in Cumberland County had a higher heart disease death rate than minority males in Durham County, but had a lower heart disease death rate than minority males in Guilford and Pitt Counties.
- White females in Cumberland County had a higher heart disease death rate than white females in Peer Counties.
- Minority females in Cumberland County and Peer Counties had a higher heart disease death rate than white females in Cumberland and Peer Counties.
- Minority females in Cumberland County had a higher heart disease death rate than minority females in Peer Counties.



2004-2008 Race-Specific and Sex-Specific age-adjusted death rates				
	Cumberland	Durham	Guilford	Pitt
Heart Disease				
White Females	180.2	119.8	134.4	164.1
White Males	303.9	209.1	215.2	259.5
Minority Females	191.3	149.4	166.1	171.5
Minority Males	255.2	229.4	273.4	300.5
Overall Rate	228.5	167.5	180.6	213.1



## Cancer

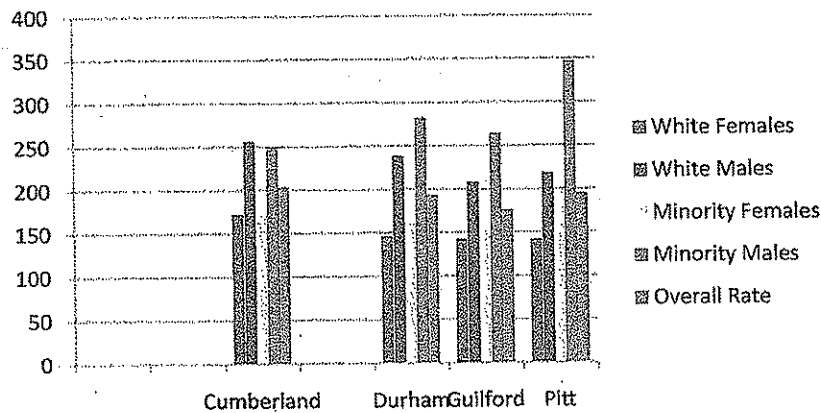
The Second leading cause of death in Cumberland County was cancer, with 2,310 deaths.

- Cumberland County's overall cancer death rate was higher than Peer Counties.

Gender and Racial disparities:

- Males in Cumberland County and Peer Counties had a higher cancer death rate than females in Cumberland and Peer Counties, with the exception of breast cancer.
- White males and white females in Cumberland County had a higher cancer death rate than white males and white females in Peer Counties.
- Minority males in Cumberland County had a lower cancer death rate than minority males in Peer Counties.
- Minority females in Cumberland County had a higher cancer death rate than minority females in Durham and Guilford Counties and a lower cancer death rate than minority females in Pitt County.

Cancer	Cumberland	Durham	Guilford	Pitt
White Females	173.2	146.7	142.7	142.2
White Males	256.9	239.2	208.8	218.9
Minority Females	171.2	164.3	153	198.2
Minority Males	250.8	282.9	265.1	347.2
Overall Rate	203.7	194.2	176.8	195.3

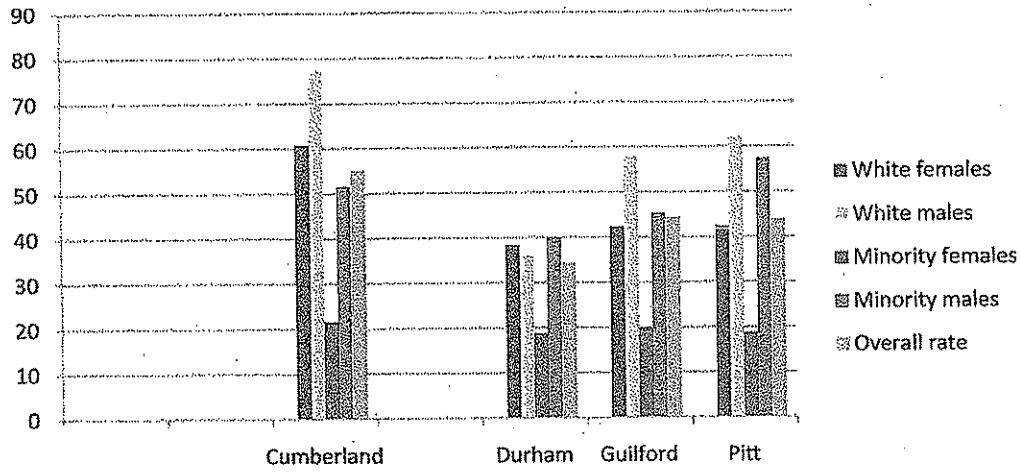


### Chronic Lower Respiratory Disease

The third leading cause of death in Cumberland County was Chronic Lower Respiratory Disease with 566 deaths.

- Cumberland County's overall Chronic Lower Respiratory disease death rate was higher than Durham, Guilford, and Pitt Counties.
- White males in Cumberland County had a higher Chronic Lower Respiratory Disease death rate than white males in the peer counties.
- White females in Cumberland County had a higher Chronic Lower Respiratory Disease death rate than white females in the peer counties.
- Minority males in Cumberland County had a higher Chronic Lower Respiratory Disease death rate than minority males in Durham County and Guilford County but a lower stroke death rate than minority males in Pitt counties.
- Minority females in Cumberland County had a higher Chronic Lower Respiratory Disease death rate than minority females in the peer counties.

2004-2008 Race-specific and Sex-Specific age-adjusted death rates				
Chronic Lower Respiratory Disease	Cumberland	Durham	Guilford	Pitt
White Females	60.9	38.5	42.4	42.4
White Males	77.3	36.1	57.9	62.1
Minority Females	21.6	18.8	20.0	18.9
Minority Males	51.7	40.1	45.4	57.5
Overall Rate	55.2	34.4	44.4	44.0

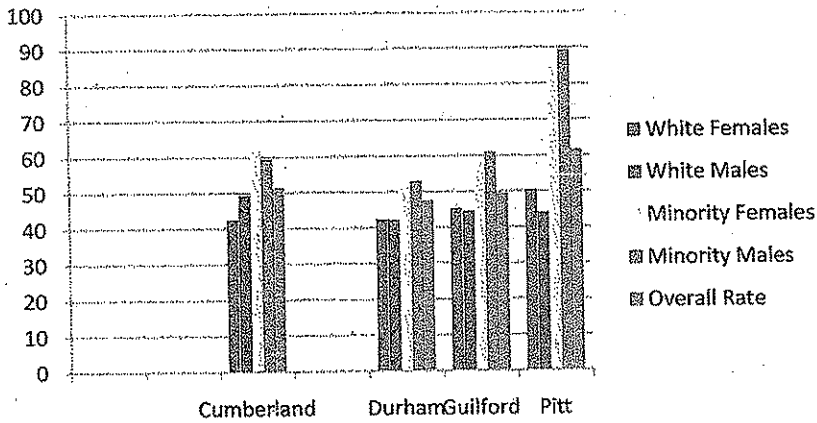


### Cerebrovascular Disease (Stroke)

The fourth leading cause of death in Cumberland County was Cerebrovascular disease, (stroke) with 522 deaths. Stroke is also a leading cause of serious long term disabilities.

- Cumberland County’s overall stroke death rate was higher than Durham and Guilford Counties, but lower than Pitt County.
- White males in Cumberland County had a higher stroke death rate than white males in the Peer Counties.
- White females in Cumberland County had a similar stroke death rate than white females in Durham County, and a lower stroke death rate than white females in Guilford and Pitt counties.
- Minority males in Cumberland County had a higher stroke death rate than minority males in Durham County but a lower stroke death rate than minority males in Guilford and Pitt Counties.
- Minority females in Cumberland County had a higher stroke death rate than minority females in Durham and Guilford counties, but a lower stroke death rate than minority females in Pitt County.

2004-2008 Race-specific and Sex-specific age-adjusted death rates				
Cerebrovascular Disease	Cumberland	Durham	Guilford	Pitt
White Females	42.6	42.5	45.5	50.5
White Males	49.3	42.3	44.6	44.2
Minority Females	62.2	51.2	58	84.7
Minority Males	59.5	53.1	61	89.5
Overall Rate	51.5	47.5	49.6	61.6

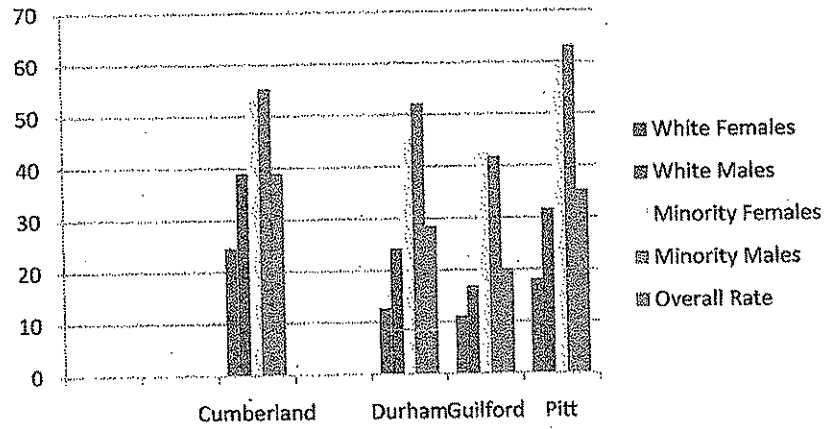


## Diabetes

Diabetes was the fifth leading cause of death in Cumberland County accounting for 429 deaths.

- Cumberland County's overall diabetes death rate was higher than Peer Counties.
- Minority males and females in Cumberland County and Peer Counties had a very high diabetes death rate than white males and females in Cumberland County and Peer Counties.
- White males in Cumberland County had a higher diabetes death rate than white males in the Peer Counties.
- Minority males in Cumberland County had a higher diabetes death rate than minority males in Durham and Guilford Counties. Minority males in Pitt County had the highest diabetes death rate.
- Minority females in Cumberland County had a higher diabetes death rate than Durham and Guilford counties, However Minority females in Pitt County had the highest diabetes rate.

2004-2008 Race-specific and Sex-specific age-adjusted death rates				
Diabetes Mellitus	Cumberland	Durham	Guilford	Pitt
White Females	24.6	12.7	11.1	18.2
White Males	39.1	24.3	17	31.7
Minority Females	53.2	45.4	42.6	59.8
Minority Males	55.4	52.2	41.9	63.2
Overall Rate	39	28.5	20.2	35.3



## **Initiatives and resources to address chronic diseases**

The Cumberland County Department of Public Health's Health Promotion Program has partnered with several organizations/agencies within the community to assist in developing and implementing healthy eating and physical activity policies. See activities below:

- Ten African -American churches established healthy eating and/or physical activity policies in their church to reduce obesity/overweight and encourage eating healthy foods among the congregations. A total of 30 AA Churches have established healthy eating/physical activity policies since 2004.
- Ten nutrition programs focusing on healthy eating (increasing fruits and vegetables) and portion size were conducted in local community/agencies.
- Ten churches established physical activity policies to encourage moving more/exercise among congregation.
- Cumberland County Public Health partnered with a local breast cancer prevention foundation to provide breast cancer prevention education and mammograms. Sixteen breast cancer prevention out-reach programs were conducted in the local community.
- Cumberland County Public Health referred clients to diabetes management classes at Better Health.
- Cumberland County Public Health provided diabetes screening and education to clinic patients.
- Cumberland County Public Health partnered with two African American Churches to implement a diabetes prevention program.
- Cumberland County Public Health partnered with several local restaurants to implement "Winner's Circle".
- Cumberland County Public Health partnered with two worksites to implement Eat Smart Move More.

# Maternal & Child Health: Perinatal Health Indicators

## FACTS ABOUT BIRTH WEIGHT

- ◆ Low Birth Weight is defined as a birth weight of less than 2,500 grams (5.5 lbs.)
- ◆ Low birth weight is a contributing factor to infant death and disability.

[www.healthycarolinians.org](http://www.healthycarolinians.org)

### HOW HAS CUMBERLAND CHANGED?

The total low birth weight rate was 9.0% in the 2006 Health Assessment compared to the 9.8 in this Health Assessment.

### HOW CAN CUMBERLAND REDUCE THE INCIDENCE OF LOW BIRTH WEIGHT?

- Increase the number of women who receive early prenatal care.
- Reduce the number of women who smoke during pregnancy.

### Birth Weight Observations:

- ⬇ The County's total low birth weight of 9.8% is higher than the State's rate of 9.1%.
- ⬇ The County's total low birth weight of 9.8% is higher than the 9.4% rate of peer counties Durham and Guilford. However, the County's rate is lower than Pitt County's rate of 11.4%.
- ⬇ The County's total very low birth rate of 2.1% is higher than the State's rate of 1.8%.
- ⬇ The County's total very low birth rate of 2.1% is higher than Durham County (2.0%), the same as Guilford County (2.1%), and lower than Pitt County (2.8%).
- ⬇ The County's Black low birth weight rate of 14.28% is slightly lower than the State's total birth weight rate of 14.4%.
- ⬇ The County's Black low birth weight rate was higher than peer county Guilford (13.2%), and lower than peer counties Durham (14.9%) and Pitt (15.6%).

*NC Health 2010  
Objective*

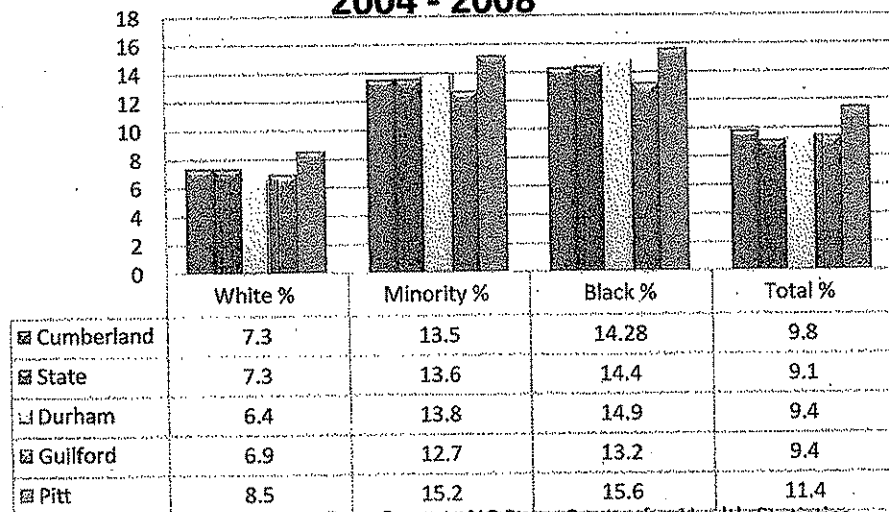
*Reduce incidence of  
low birth weight*

*2010 Target:  
7.0% of live births*

*Cumberland's rate  
of 9.8% does not  
meet the 2010  
target.*

[www.healthycarolinians.org](http://www.healthycarolinians.org)

## Low Birth Weight By Race 2004 - 2008



Data Source: NC State Center for Health Statistics

**CUMBERLAND AND NC**  
**Low Birth Weight by Race: 2004 – 2008**

	<b>Total Incidence</b>	<b>Total Rate</b>	<b>White Incidence</b>	<b>White Rate</b>	<b>Minority Incidence</b>	<b>Minority Rate</b>	<b>Black Incidence</b>	<b>Black Rate</b>
<b>Cumberland</b>	2728	9.8	1196	7.3	1532	13.5	1404	14.2
<b>NC</b>	57,823	9.1	33,941	7.4	23,882	13.6	21,304	14.4

**CUMBERLAND AND PEER COUNTIES**  
**Low Birth Weight by Race: 2004 – 2008**

	<b>Total Incidence</b>	<b>Total Rate</b>	<b>White Incidence</b>	<b>White Rate</b>	<b>Minority Incidence</b>	<b>Minority Rate</b>	<b>Black Incidence</b>	<b>Black Rate</b>
<b>Cumberland</b>	2728	9.8	1196	7.3	1532	13.5	1404	14.2
<b>Durham</b>	1983	9.4	792	6.4	1191	13.8	1085	14.9
<b>Guilford</b>	2877	9.4	1212	6.9	1665	12.7	1509	13.2
<b>Pitt</b>	1255	11.4	532	8.5	723	15.2	702	15.6

**CUMBERLAND, NC, AND PEER COUNTIES**  
**Very Low Birth Weight by Race: 2004 – 2008**

	<b>Total Incidence</b>	<b>Total Rate</b>	<b>Black Incidence</b>	<b>Black Rate</b>
<b>Cumberland</b>	575	2.1	333	3.4
<b>NC</b>	11,649	1.8	5,198	3.5
<b>Durham</b>	424	2.0	276	3.8
<b>Guilford</b>	645	2.1	392	3.4
<b>Pitt</b>	310	2.8	180	4.0



**WHAT IS CUMBERLAND DOING TO ENCOURAGE WOMEN TO SEEK EARLY PRENATAL CARE?**

Implementation of the Baby Store, an incentive based program that rewards patients of the health department with "Baby Bucks" that can be redeemed in the Baby Store for new baby items.

Patients earn Baby Bucks by keeping appointments with the Maternity and Child Health Clinics at the Health Dept., as well as enrolling in the Maternity Care Coordination and WIC program. Baby Bucks are also issued for participation in classes offered through the Health Education Dept. such as Prepared Childbirth and Parenting.

**HOW HAS CUMBERLAND CHANGED?**

Our rate of 87% is slightly lower than the 87.7% in the 2006 Health Assessment.

**Observations:**

- ✦ The County had 87.0% of women receive prenatal care in the first trimester of pregnancy compared to 82.1% for the State.
- ✦ The County rate of 87.0% is lower than peer county Durham (89.8%) and Pitt (88.6%) and higher than peer county Guilford (83.3%).
- ✦ 81.8% of the County's Black women received prenatal care in the first trimester of pregnancy compared to the 75.0% of the State's Black women.
- ✦ The County rate of 81.8% of Black women who received prenatal care in the first trimester of pregnancy is lower than peer county Durham (83.5%), and higher than peer counties Guilford (79.7%) and Pitt (82.0%).
- ✦ 84.4% of the County's Native American women received prenatal care in the first trimester of pregnancy compared to the 77.7% of the State's Native American women.
- ✦ The County rate of 84.4% of Native American women who received prenatal care in the first trimester is lower than peer counties Durham (85.2%) and Pitt (100%), and higher than peer county (82.0%).

*NC Health 2010 Objective*

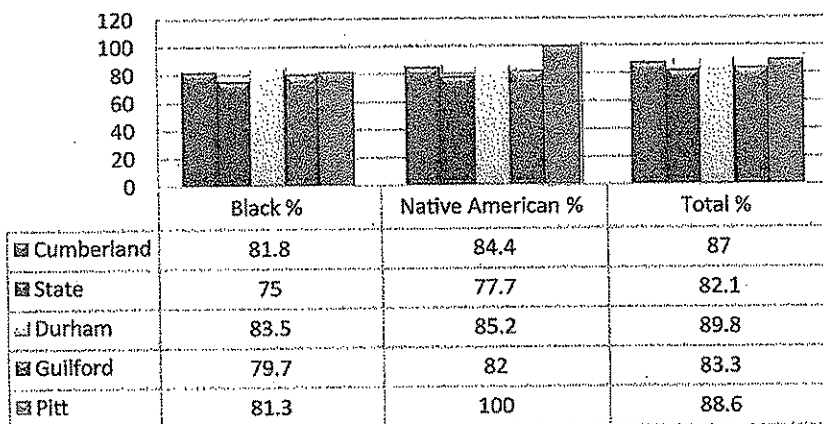
*Increase the proportion of pregnant women who receive prenatal care beginning in the first trimester of pregnancy*

*2010 Target: 90%*

*Cumberland's rate of 87% is close to the 2010 target.*

[www.healthycarolinians.org](http://www.healthycarolinians.org)

**Early Prenatal Care 2004 - 2008**



Data Source: NC State Center for Health Statistics-

**CUMBERLAND AND NC**  
**Early Prenatal Care: 2004 – 2008**

	<b>Total Incidence</b>	<b>Total Rate</b>	<b>Black Incidence</b>	<b>Black Rate</b>	<b>Native American Incidence</b>	<b>Native American Rate</b>
<b>Cumberland</b>	24,108	87.0%	8,076	81.8%	434	84.4%
<b>NC</b>	519,098	82.1%	110,866	75.0%	6,635	77.7%
<b>Durham</b>	18,939	89.8%	6,098	83.5%	52	85.2%
<b>Guilford</b>	25,550	83.3%	9,125	79.7%	132	82.0%
<b>Pitt</b>	9,753	88.6%	3,655	81.0%	32	100%

Data Source: NC State Center for Health Statistics



Cumberland County Department of Public Health Baby Store  
 Operated by Health Education

**FACTS ABOUT BABIES BORN TO WOMEN WHO SMOKE:**

- ◆ Babies have a 30% chance of being born prematurely.
- ◆ Babies are likely to be born at a low birth weight (less than 2500 grams).
- ◆ Babies are 1.4 – 3.0 times more likely to die from Sudden Infant Death Syndrome (SIDS).

**FACTS ABOUT SECONDHAND SMOKE:**

- ◆ Pregnant women exposed to secondhand smoke have a 20% greater chance of having a low birth weight baby than a pregnant woman who is not exposed.
- ◆ Infants exposed to secondhand smoke are more likely to die from SIDS.

Data: Centers for Disease Control

**HOW HAS CUMBERLAND CHANGED?**

Cumberland has improved with a rate of 10.4%, which is lower than the 12.3% rate in the 2006 Community Health Maternity patients who smoke are referred to the NC Quitline.

**Observations on Mothers Who Smoke:**

- ◆ The County had 10.4% of births to mothers who smoked compared to 11.5% of mothers who smoked in the State.
- ◆ The County's 10.4% of births to mothers who smoked is higher than peer counties Durham (4.5%), Guilford (8.9%), and Pitt (9.5%).

NC Health 2010 Objective

Reduce cigarette smoking among pregnant women

2010 Target: 7.0%

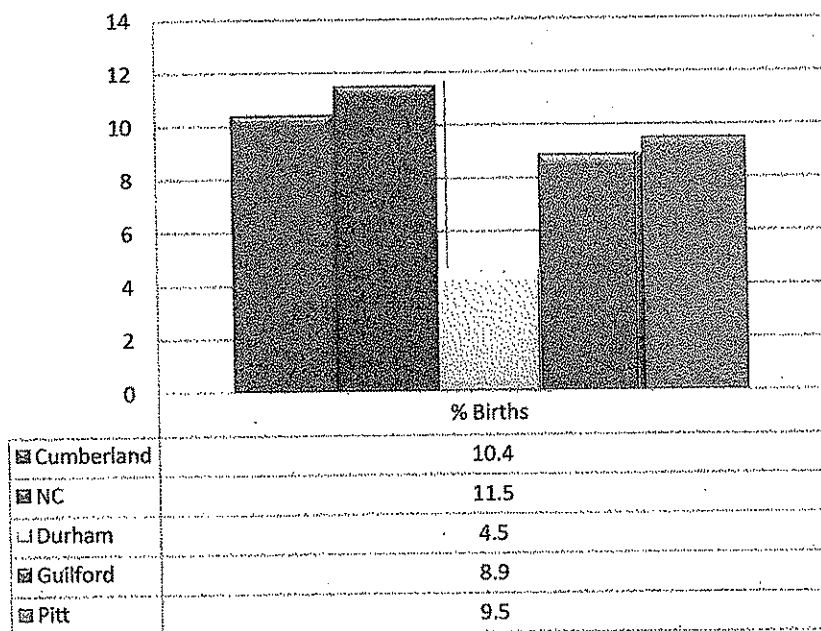
Cumberland's rate of 10.4% does not meet the 2010 target.

[www.healthymeasures.org](http://www.healthymeasures.org)

Residence	Incidence
Cumberland	2887
NC	72,513
Durham	940
Guilford	2714
Pitt	1042

Data Source: NC State Center for Health Statistics

**Births By Mothers Who Smoke 2004 - 2008**



Data Source: NC State Center for Health Statistics

**FACTS ABOUT SHORT INTERVAL BIRTHS:**

- ◆ Short interval birth is defined by the NC State Center for Health Statistics as births 6 months or less apart.
- ◆ This is an indicator of a need for family planning services.

Data: NC State Center for Health Statistics

**FACTS ABOUT HIGH PARITY:**

- ◆ High Parity is defined as having been pregnant more than five times.
- ◆ This is an indicator of a need for family planning services.

Data: Centers for Disease Control  
NC State Center for Health Statistics

**HOW HAS CUMBERLAND CHANGED?**

- ◆ Cumberland has improved in short interval births since the 2002-2006 assessment rate of 13.1%.
- ◆ There has also been improvement with high parity since the last assessment of 16.3% among women under age 30 and 20.4% among women over age 30.

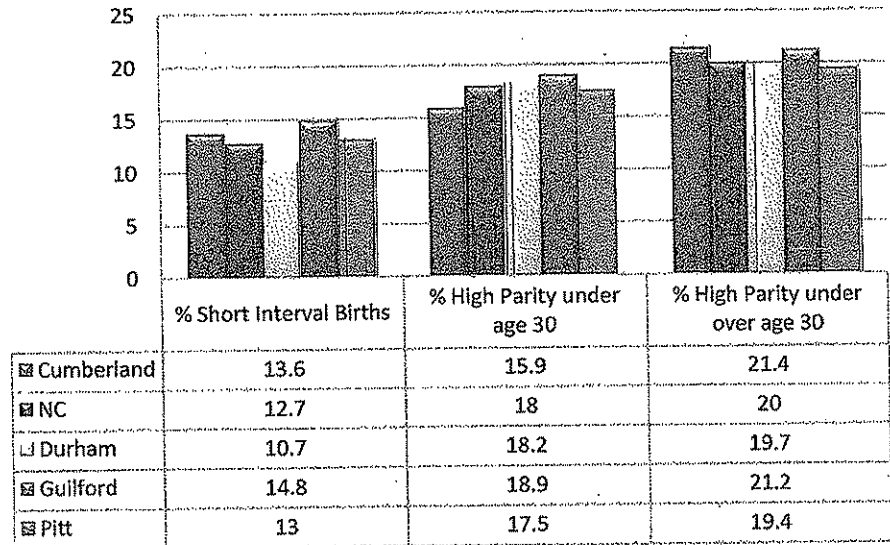
**Observations on Short Interval Births**

- ⚡ The County's rate of 13.6% of short interval births is higher than the State's rate of 12.7%.
- ⚡ Peer counties Durham (10.7%) and Pitt (13.0%) have lower percentages of short intervals compared to Cumberland. However, peer county Guilford's 14.8% of short interval births is higher than Cumberland's.

**Observations on High Parity:**

- ⚡ 15.9% of the County's women less than 30 years old were at risk due to high parity, compared to the State's 18.0%.
- ⚡ The County had a lower percentage of women under 30 years old at risk due to high parity than peer counties Durham (18.2%), Guilford (18.9%), and Pitt (17.5%).
- ⚡ 21.4% of the County's women greater than 30 years were at risk due to high parity, compared to the State's 20.0%.
- ⚡ The County had a higher percentage of women over 30 years old at risk due to high parity than peer counties Durham(19.7%), Guilford (21.2%), and Pitt (19.4%).

**Short Interval Births & High Parity  
2004 - 2008**



Data Source: NC State Center for Health Statistics

**CUMBERLAND AND NC**  
Short Interval Births: 2004 – 2008

	Short Interval Births	Percent Short Interval
Cumberland	2430	13.6
NC	53,431	12.7

**CUMBERLAND AND PEER COUNTIES**  
Short Interval Births: 2004 – 2008

	Short Interval Births	Percent Short Interval
Cumberland	2430	13.6
Durham	1457	10.7
Guilford	3134	14.8
Pitt	928	13.0

Data Source: NC State Center for Health Statistics

**CUMBERLAND AND NC**  
High Parity: 2004 – 2008

	Under 30 Incidence	Under 30 Rate	Over 30 Incidence	Over 30 Rate
Cumberland	3356	15.9	1416	21.4
NC	74,440	18.0	43,711	20.0

**CUMBERLAND AND PEER COUNTIES**  
High Parity: 2004 – 2008

	Under 30 Incidence	Under 30 Rate	Over 30 Incidence	Over 30 Rate
Cumberland	3356	15.9	1416	21.4
Durham	2211	18.2	1769	19.7
Guilford	3556	18.9	2502	21.2
Pitt	1305	17.5	6901	19.4

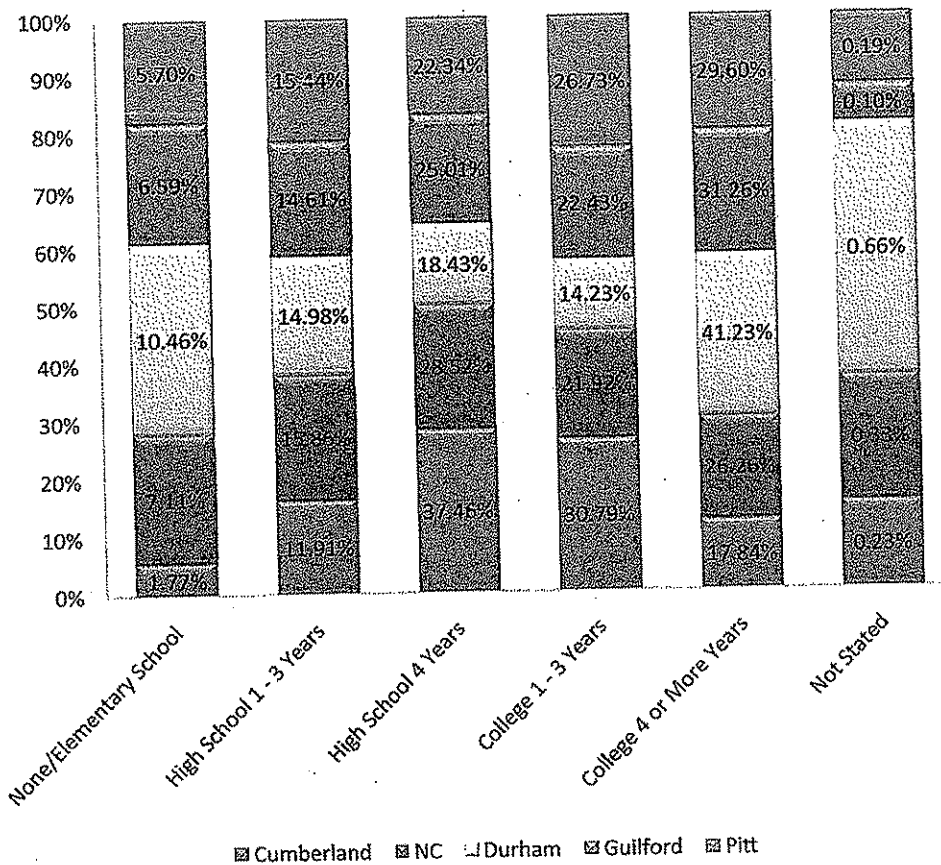
Data Source: NC State Center for Health Statistics



**Observations on the Education of Women Who Gave Birth between 2004 - 2008:**

- ✦ 37.46% of the women who gave birth, completed 4 years of high school compared to the State's 28.52%.
- ✦ Peer counties Durham (18.43%), Guilford (25.01%), and Pitt (22.34%) had lower percentages of high school graduates who gave birth.
- ✦ 17.84% of the County's women who gave birth had completed 4 or more years of college compared to the State's 26.26%.
- ✦ Peer counties Durham (41.23%), Guilford (31.25%), and Pitt (29.6%) had higher percentages of women who gave birth that had completed 4 or more years of college than the County and the State.

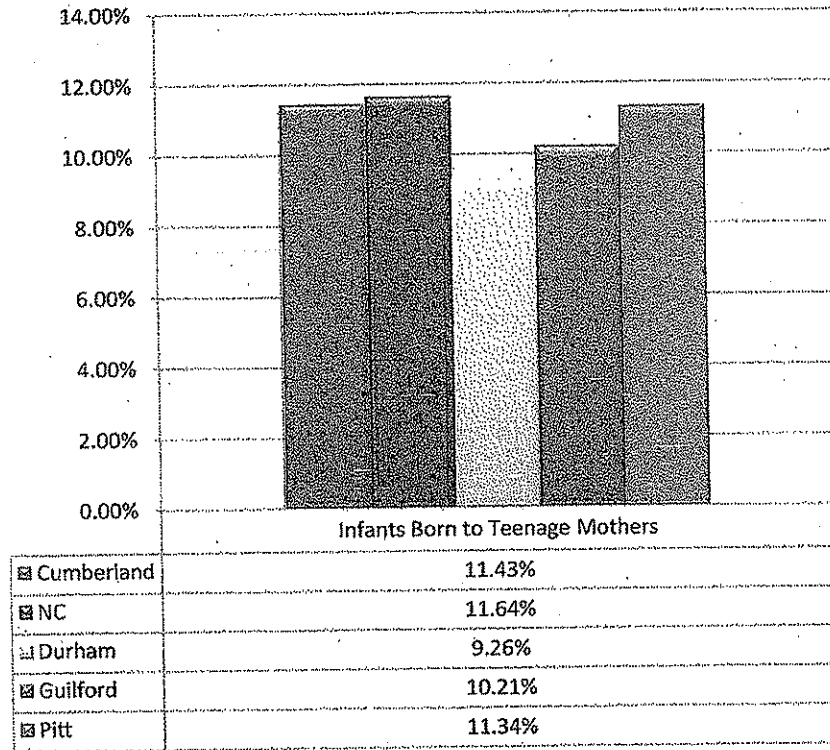
**Education of Women Who Gave Birth  
2004 - 2008**



Data Source: NC State Center for Health Statistics: Basic Automated Birth Yearbook (BABYBook)

**Observations on Babies Born to Teenage Mothers:**

- ✦ 11.40% of the County's infants were born to teenage mothers compared to the 11.64% of the State's infants born to teenage mothers.
- ✦ Peer Counties Durham (9.26%), Guilford (10.21%), and Pitt (11.34%) had lower percentages of infants born to teenage mothers than the County and State.



Data Source: NC State Center for Health Statistics: Basic Automated Birth Yearbook (BABYBook)

**COMMENTS:**

Peer counties Durham and Guilford have strong community-based teen pregnancy prevention programs. This is a contributing factor to their lower teen pregnancy rates.

# Maternal & Child Health: Infant Mortality

## FACTS ABOUT FETAL DEATH:

- ◆ Fetal death is the loss of the fetus after 20 weeks of gestation and before birth.
- ◆ Contributing factors:
  - Late or no prenatal care
  - Smoking
  - Alcohol Use
  - Drug Use
  - Stress
  - Teen pregnancy
  - Previous pre-term births

Data: NC State Center for Health Statistics

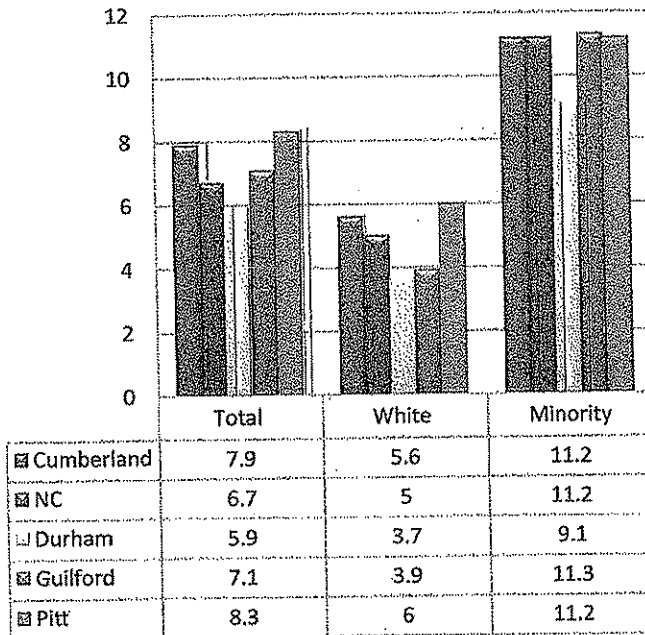
## HOW HAS CUMBERLAND CHANGED?

Cumberland has improved with a slight decline since the 2006 Community Health Assessment, where the rate was 8.0 per 1000 live births.

## Observations on Fetal Death:

- ✦ The County's total fetal death rate of 7.9 per 1000 live births is higher than the State's rate of 6.7.
- ✦ The County's total fetal death rate is higher than peer counties Durham (5.9) and Guilford (7.1); however, the County's rate is lower than peer county Pitt.
- ✦ The County's minority fetal death rate is the same as the State's.
- ✦ Peer county Guilford's rate of 11.3 is higher than the County's, while peer county Pitt shares the same rate of 11.2 with the County. Peer county Durham has a lower rate than the County at 9.1.
- ✦ The Count and State Minority fetal death rate is twice as high as the county and State White rate.

## Fetal Death 2004 - 2008



Data Source: NC State Center for Health Statistics



<b>CUMBERLAND AND NC Fetal Death: 2004 – 2008</b>						
	<b>Total Incidence</b>	<b>Total Rate</b>	<b>White Incidence</b>	<b>White Rate</b>	<b>Minority Incidence</b>	<b>Minority Rate</b>
<b>Cumberland</b>	221	7.9	92	5.6	129	11.2
<b>NC</b>	4264	6.7	2270	5.0	1994	11.2

<b>CUMBERLAND AND PEER COUNTIES Fetal Death: 2004 – 2008</b>						
	<b>Total Incidence</b>	<b>Total Rate</b>	<b>White Incidence</b>	<b>White Rate</b>	<b>Minority Incidence</b>	<b>Minority Rate</b>
<b>Cumberland</b>	221	7.9	92	5.6	129	11.2
<b>Durham</b>	125	5.9	46	3.7	79	9.1
<b>Guilford</b>	220	7.1	69	3.9	151	11.3
<b>Pitt</b>	92	8.3	38	6.0	54	11.2

Data Source: NC State Center for Health Statistics

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**CONCLUSIONS:**

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Low birth weight is a contributing factor to infant death and disability. Numerous barriers often stand between pregnant women receiving the health care they need. For example, the cost of healthcare services, lack of transportation to healthcare, access to transportation, and the lack of or limited health care providers in the community.

**FACTS ABOUT NEONATAL DEATH:**

- ◆ Neonatal death is the death of an infant before 28 days of life.
- ◆ Neonatal death accounts for approximately 70% of infant mortality in NC.
- ◆ Contributing factors:
  - Birth defects
  - Low birth weight

Data: NC State Center for Health Statistics

**HOW HAS CUMBERLAND CHANGED?**

Cumberland has improved with a decline in the rates since the 2006 Community Health Assessment, where the rate was 8.3 per 1000 live births.

\*See Conclusion

**Observation on Neonatal Death:**

- ⚡ The County's total neonatal death rate of 7.5 per 1000 live births is higher than the State's rate of 5.7.
- ⚡ Peer counties Durham and Guilford have lower rates than the County at 5.9 and 7.1 respectively. The County had a lower rate than peer county Pitt (8.3).
- ⚡ The County's minority neonatal death rate of 11.0 is higher than the State's rate of 9.9.
- ⚡ Peer counties Durham (7.0) and Guilford (9.4) had lower minority rates than the County, whereas peer county Pitt (12.4) had a higher rate.

NC Health 2010 Objective

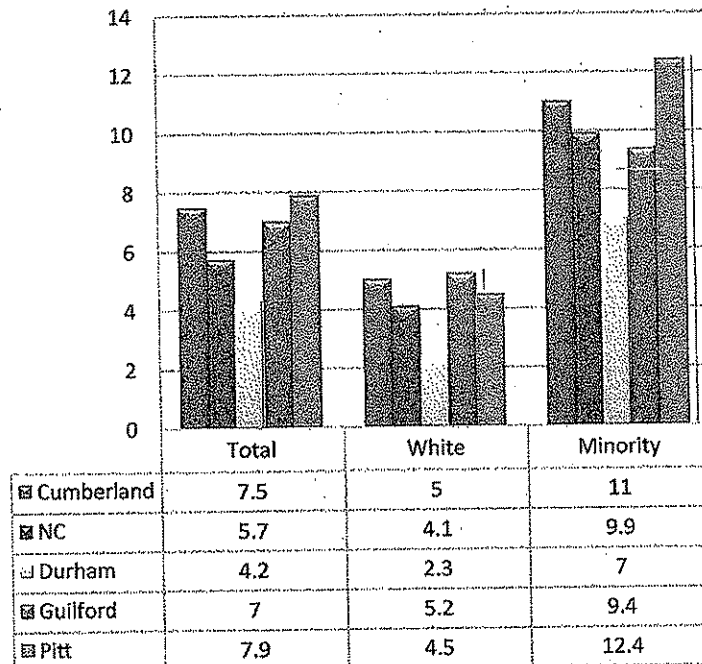
Reduce neonatal mortality

2010 Target: 5.9 per 1000 live births

Cumberland's rate of 7.5 does not meet the 2010 target.

[www.healthycarolinians.org](http://www.healthycarolinians.org)

**Neonatal Death 2004 - 2008**



Data Source: NC State Center for Health Statistics

<b>CUMBERLAND AND NC Neonatal Death: 2004 – 2008</b>						
	<b>Total Incidence</b>	<b>Total Rate</b>	<b>White Incidence</b>	<b>White Rate</b>	<b>Minority Incidence</b>	<b>Minority Rate</b>
<b>Cumberland</b>	207	7.5	82	5.0	125	11.0
<b>NC</b>	3611	5.7	1875	4.1	1736	9.9

Data Source: NC State Center for Health Statistics

<b>CUMBERLAND AND PEER COUNTIES Neonatal Death: 2004 – 2008</b>						
	<b>Total Incidence</b>	<b>Total Rate</b>	<b>White Incidence</b>	<b>White Rate</b>	<b>Minority Incidence</b>	<b>Minority Rate</b>
<b>Cumberland</b>	207	7.5	82	5.0	125	11.0
<b>Durham</b>	89	4.2	29	2.3	60	7.0
<b>Guilford</b>	214	7.0	91	5.2	123	9.4
<b>Pitt</b>	87	7.9	28	4.5	59	12.4

Data Source: NC State Center for Health Statistics

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**CONCLUSIONS:**

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\*The decline in rates may be attributed to expanded education to women on preconception health, including the consumption of folic acid.

Preconception health education is conducted in high schools, colleges/universities, as well as to medical professionals in-house. These programs include education on folic acid, obesity prevention, annual medical exams, and alcohol/drug prevention.

**FACTS ABOUT  
POST-NEONATAL DEATH:**

- ◆ Postneonatal death is death occurring between 28 days and the first year of life.
- ◆ Postneonatal death includes death due to:
  - SIDS
  - Accidents
  - Homicides

Data: NC State Center for Health Statistics

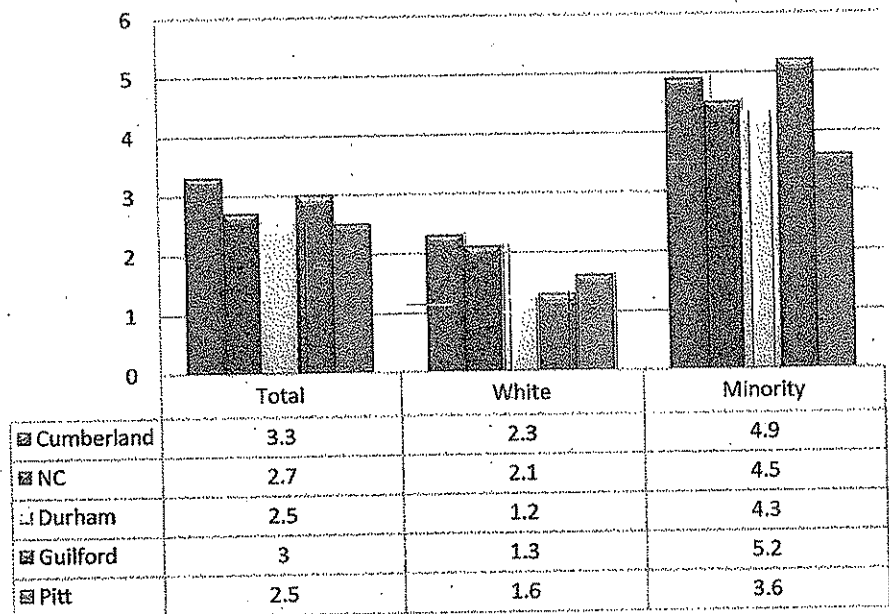
**HOW HAS CUMBERLAND  
CHANGED?**

Cumberland has not improved since the 2006 Community Health Assessment, where the rate was 2.7 per 1000 live births.

**Observations on Post neonatal Death:**

- ⚡ The County's post neonatal death rate of 3.3 per 1000 live births is higher than the State's rate of 2.7.
- ⚡ Peer counties Durham (2.5), Guilford (3.0), and Pitt (2.5) had lower postnatal death rates than the County.
- ⚡ The 4.9 minority post neonatal death rate for the County is higher than the State's rate of 4.5.
- ⚡ Peer counties Durham (4.3) and Pitt (3.6) had lower rates of minority post neonatal death than the County. Peer county Guilford had a higher rate of 5.2.

**Post Neonatal Death  
2004 - 2008**



Data Source: NC State Center for Health Statistics

**CUMBERLAND VERSUS NC**  
 Post – Neonatal Death: 2004 – 2008

	<b>Total Incidence</b>	<b>Total Rate</b>	<b>White Incidence</b>	<b>White Rate</b>	<b>Minority Incidence</b>	<b>Minority Rate</b>
<b>Cumberland</b>	93	3.3	37	2.3	55	4.9
<b>NC</b>	1722	2.7	943	2.1	779	4.5

**CUMBERLAND VERSUS PEER COUNTIES**  
 Post – Neonatal Death: 2004 – 2008

	<b>Total Incidence</b>	<b>Total Rate</b>	<b>White Incidence</b>	<b>White Rate</b>	<b>Minority Incidence</b>	<b>Minority Rate</b>
<b>Cumberland</b>	93	3.3	37	2.3	55	4.9
<b>Durham</b>	52	2.5	15	1.2	37	4.3
<b>Guilford</b>	91	3.0	23	1.3	68	5.2
<b>Pitt</b>	27	2.5	10	1.6	17	3.6

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**CONCLUSIONS:**

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Increased outreach efforts focused on improving preconception health, including the consumption of folic acid, could improve the County's rates.

Increasing awareness and understanding of SIDS and safe sleep practices could also contribute to improving the County's rates.

Increasing the proper usage of child passenger restraints through existing partnerships with the Fayetteville and Fort Bragg Fire Departments, and community coalitions like Safe Kids Cumberland County. These agencies and coalition focus on educating the community on proper child restraint use.

**FACTS ABOUT  
INFANT DEATH:**

- ◆ Infant death is death occurring within the first year of life.
- ◆ Contributing factors to infant death include:

- Preterm Birth
- Low Birth Weight
- Late Access to Prenatal Care
- Teen Pregnancy
- Tobacco & Drug Use

Data: Healthy Carolinians

**HOW HAS CUMBERLAND  
CHANGED?**

Cumberland has improved since the 2006 Community Health Assessment, where the rate was 11.0 per 1000 live births.

**Observations on Infant Death:**

- ⚡ The County's rate of 10.8 per 1000 live births is higher than the State's rate of 8.4.
- ⚡ Peer counties Durham (6.7), Guilford (9.9), and Pitt (10.4) had rates lower than the County.
- ⚡ The County's minority infant death rate of 15.9 per 1000 live births is higher than the State's rate of 14.3.
- ⚡ Peer county Pitt's rate of 16.0 is slightly higher than the County.
- ⚡ Peer counties Durham (11.2) and Guilford (14.5) have lower rates than the County.

*NC Health 2010  
Objective*

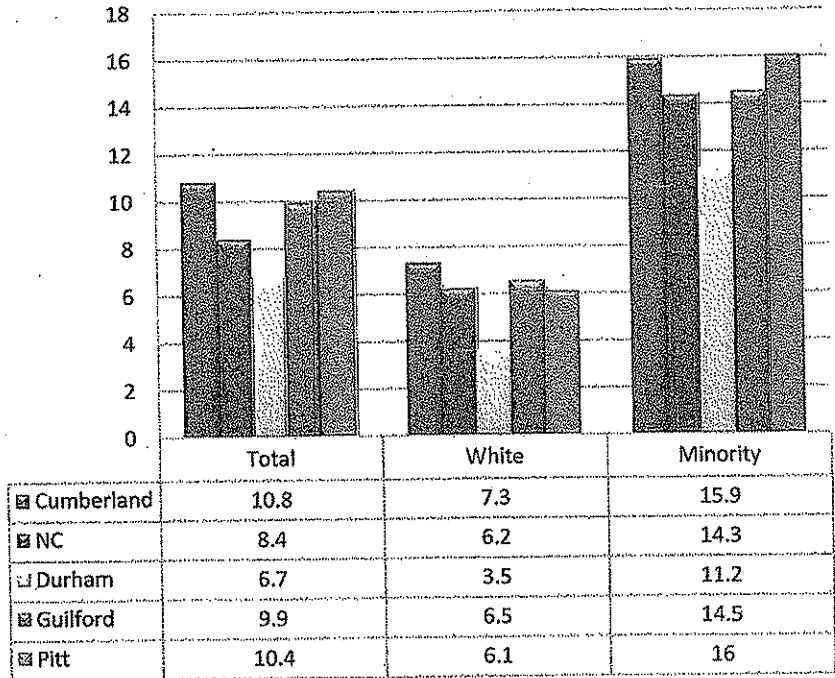
*Reduce infant  
deaths within  
the first year of  
life*

*2010 Target:  
7.4 per 1000 live  
births*

*Cumberland's  
rate of 10.8 does  
not meet the  
2010 target.*

[www.healthyCarolinas.org](http://www.healthyCarolinas.org)

**Infant Death: 2004 - 2008**



Data Source: NC State Center for Health Statistics

**CUMBERLAND AND NC  
Infant Death: 2004 – 2008**

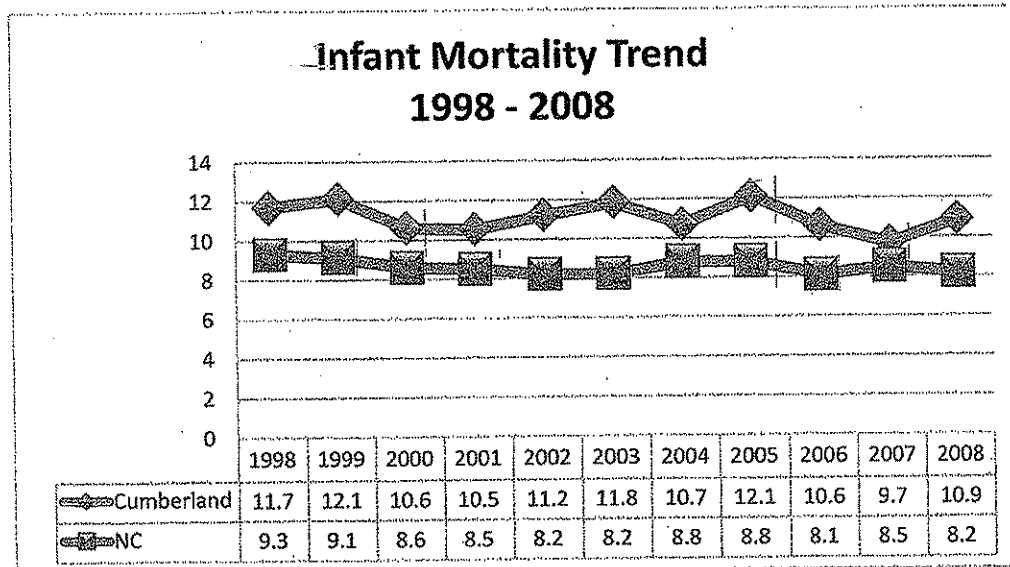
	Total Incidence	Total Rate	White Incidence	White Rate	Minority Incidence	Minority Rate
Cumberland	2269	10.8	119	7.3	180	15.9
NC	5333	8.4	2818	6.2	2515	14.3

Data Source: NC State Center for Health Statistics

**CUMBERLAND AND PEER COUNTIES  
Infant Death: 2004 – 2008**

	Total Incidence	Total Rate	White Incidence	White Rate	Minority Incidence	Minority Rate
Cumberland	2269	10.8	119	7.3	180	15.9
Durham	141	6.7	44	3.5	97	11.2
Guilford	305	9.9	114	6.5	191	14.5
Pitt	114	10.4	38	6.1	76	16.0

Data Source: NC State Center for Health Statistics



Data Source: NC State Center for Health Statistics



# Maternal & Child Health: Breastfeeding

## FACTS ABOUT BREASTFEEDING FOR BABIES

- ◆ Breast milk changes as your baby grows to provide specific nutrition needs.
- ◆ Breast milk is easy to for babies to digest.
- ◆ Breast milk helps to protect babies from illnesses.
- ◆ Breastfeeding reduces the risk of Sudden Infant Death Syndrome (SIDS).

## Facts about Breastfeeding for Mothers

- ◆ Reduces the risk of Breast and Ovarian Cancer, Type 2 Diabetes, and Post-Partum Depression

Data: US Dept. of Health and Human Services, Office of Women's Health

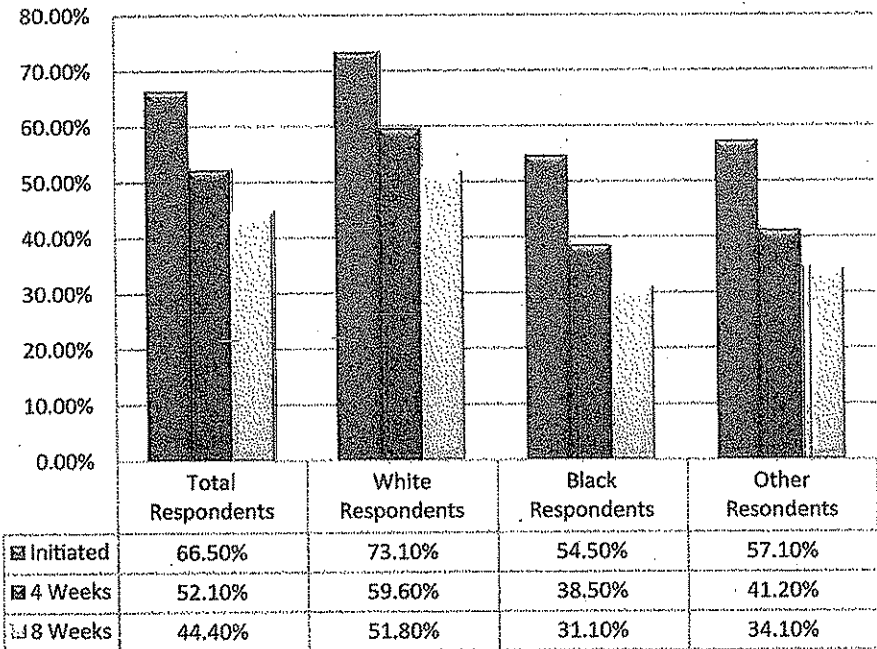
## HOW HAS CUMBERLAND CHANGED?

The total percentage of women who initiate breastfeeding has declined from the 2004-2006 survey of 67.7% reporting yes. However, there was an increase in the percentage of women who continued to breastfeed 4 and 8 weeks after delivery where the percentages were 51.4% and 41.1%, respectively in the previous survey.

## Observations on Breastfeeding:

- ◆ Of the total respondents, 66.5% of women in the Southeast region reported initiating breastfeeding in the Pregnancy Risk Assessment Monitoring Surveillance (PRAMS) Survey.
- ◆ Among the total PRAMS Survey respondents for the State, 73.7% of women reported initiating breastfeeding.
- ◆ White respondents reported higher rates of breastfeeding and reported to breastfeed longer than other groups in the Southeast region as well as the State.

## Southeast Region Breastfeeding Practices 2006 - 2008

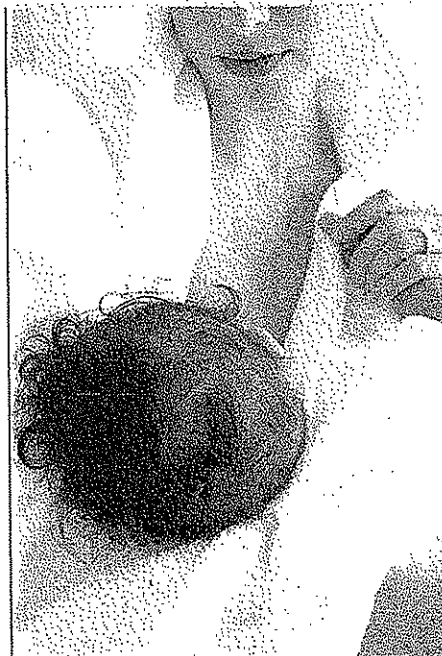


Data Source: NC State Center for Health Statistics



**SOUTHEAST REGION**  
Breastfeeding: 2004 – 2008

	Total #	Total # Yes Response	Total %	White #	White # Yes Response	White %	Black #	Black # Yes Response	Black %	Other #	Other # Yes Response	Other %
Initiated Breastfeeding	582	396	66.5%	360	273	73.1	177	98	54.5%	45	25	57.2%
Breastfeeding 4 Weeks After Birth	582	312	52.1%	360	221	59.6%	177	72	38.5%	45	19	41.2%
Breastfeeding 8 Weeks After Birth	582	250	44.4%	360	179	51.8%	177	57	31.1%	45	14	34.1%



# Maternal & Child Health Infant Sleep Position

## FACTS ABOUT SLEEPING POSITIONS:

- ◆ Placing infants on their backs to sleep reduces the risk of Sudden Infant Death Syndrome (SIDS).
- ◆ Healthy babies who are placed on their backs are not at risk for choking on spit-up or saliva.
- ◆ Placing baby on their stomach during play/awake time, will reduce the chance of flat spots on the baby's head.

Data: National Institute of Child Health and Human Development

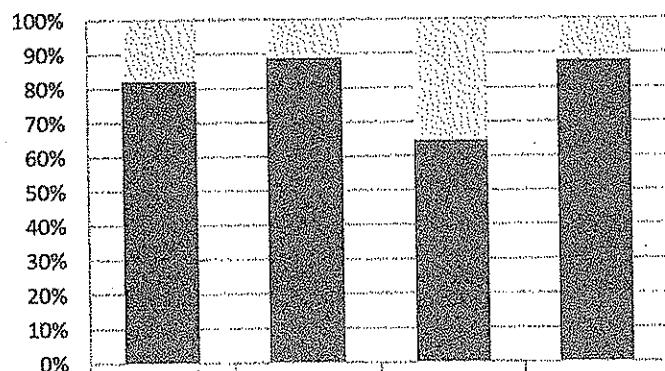
## HOW HAS CUMBERLAND CHANGED?

A lesser percentage of women surveyed responded to placing their babies on their stomachs to sleep than in the 2004-2006 survey. There was a slight decline in the percentage of women who reported placing their babies on their back to sleep.

## Observations on Infant Sleep Position:

- ◆ In the 2006 – 2008 Pregnancy Risk Assessment Monitoring Surveillance (PRAMS) Survey, 65.3% of total respondents in the Southeast region reported placing their infant on their back to sleep.
- ◆ 68.6% of total State respondents reported placing their infants on their back to sleep.
- ◆ 17.7% of total respondents reported placing their infants on their stomachs to sleep, while 17.1% reported placing their infants on their sides to sleep.
- ◆ Among the State's respondents, 15.3% reported placing their infants on their sides to sleep, and 16.1% reported placing their infants on their stomachs to sleep.
- ◆ Among respondents in the Southeast region and the State, White respondents reported higher rates of placing infants on their back to sleep.

## Southeast Region Sleeping Practices 2006 - 2008



	Total Respondents	White Respondents	Black Respondents	Other Respondents
Stomach Sleeping Position	17.7	11.2	35.4	12.1
Back Sleeping Position	65.3	71.7	48.9	67.3
Side Sleeping Position	17	17.1	15.7	20.5

Data Source: NC State Center for Health Statistics

# CHARTS FOR INFANT SLEEP POSITIONS

TOTAL RESPONDENTS FOR INFANT SLEEP POSITION		
539 Total Participants	Number	Percentage
Side Sleep Position	89	17%
Back Sleep Position	353	65.3%
Stomach Sleep Position	97	17.7%

WHITE RESPONDENTS FOR INFANT SLEEP POSITION		
351 White Participants	Number	Percentage
Side Sleep Position	57	17.1%
Back Sleep Position	247	71.7%
Stomach Sleep Position	47	11.2%

BLACK RESPONDENTS FOR INFANT SLEEP POSITION		
152 Black Participants	Number	Percentage
Side Sleep Position	26	15.7%
Back Sleep Position	79	48.9%
Stomach Sleep Position	47	35.4%

OTHER RESPONDENTS FOR INFANT SLEEP POSITION		
36 Other Participants	Number	Percentage
Side Sleep Position	6	20.5%
Back Sleep Position	27	67.3%
Stomach Sleep Position	3	12.1%

# Maternal & Child Health: Children's Annual Preventative Health Check

## FACTS ABOUT MEDICAID:

- ◆ Medicaid is a health insurance program for individuals and families who cannot afford the cost of health care.
- ◆ Medicaid serves low-income parents, children, seniors, and people with disabilities.

## FACTS ABOUT NC HEALTH CHOICE FOR CHILDREN:

- ◆ NC Health Choice is a free or reduced price comprehensive health care program for children.
- ◆ Parents who make too much money for Medicaid, but still cannot afford the costs of private insurance may qualify for NC Health Choice.

Data: NC Health and Human Services Division of Medical Assistance

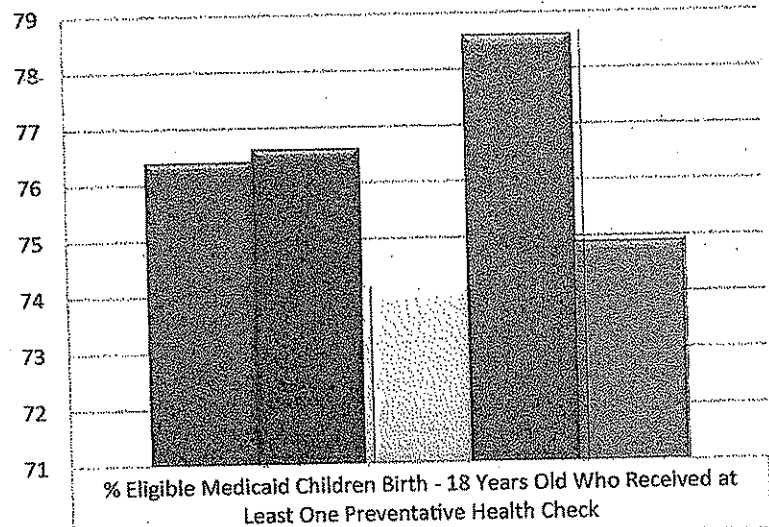
## HOW HAS CUMBERLAND CHANGED?

Cumberland has improved since 2001 - 2004 where 71.5% of children were seen for at least one preventative health check.

## Observations:

- ◆ 76.4% of County Medicaid eligible children birth to 18 years of age received at least one preventative health check compared to 76.6% of the State Medicaid eligible children birth to age 18 who received at least one preventative health check.
- ◆ The County had a higher percentage of Medicaid eligible children birth to 18 years of age who received at least one preventative health check than peer counties Durham (74.1%) and Pitt (74.9%). Peer county Guilford (78.6%) had a lower percentage of Medicaid eligible children birth to 18 years of age who received at least one preventative health check.

## Preventative Health Screening 2005 - 2008



■ Cumberland	76.4
■ NC	76.6
■ Durham	74.1
■ Guilford	78.6
■ Pitt	74.9

Data Source: NC Dept. of Health and Human Services Division of Medical Assistance

# Maternal & Child Health: Dental Health

## FACTS ABOUT DENTAL AND ORAL HEALTH:

- ❗ Healthy teeth make it easier to speak clearly and chew foods well.
- ❗ Natural teeth can be kept for a lifetime, if properly taken care of.
- ❗ Good oral health is important for good overall health.

## FACTS ABOUT DENTAL DECAY:

- ❗ Dental decay is caused by acid produced by bacteria living in the mouth.
- ❗ Dental decay causes cavities and gum disease.

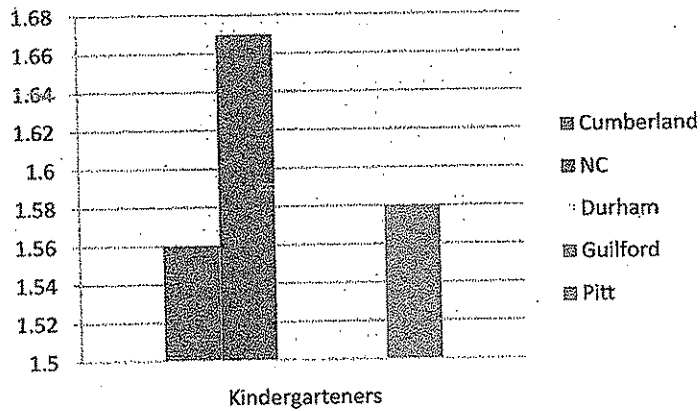
Data: NC Health and Human Services Oral Health Division

## HOW HAS CUMBERLAND CHANGED?

Cumberland has improved since 2004 - 2005 where the rate of Kindergarteners with decayed, missing, or filled teeth was 1.61 and 4% of 5<sup>th</sup> Graders were found with untreated dental decay.

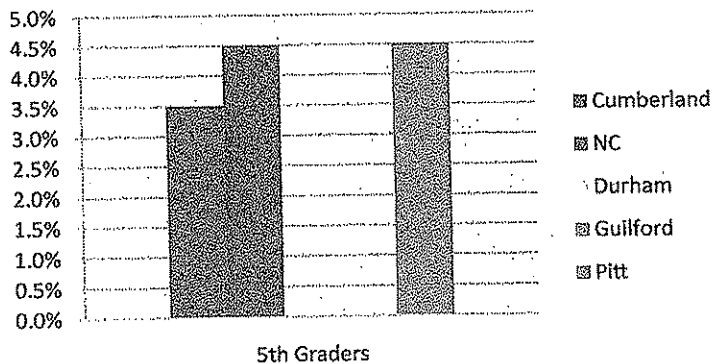
### Observations on Kindergarteners:

- ⚡ The County's rate of 1.56 Kindergarteners with decayed, missing, or filled teeth is lower than the State's rate of 1.67.
- ⚡ Peer county Pitt's rate of 1.58 is slightly higher than the County.
- ⚡ Peer counties Durham and Guilford did not have sufficient data for comparison.



### Observations on Fifth Graders:

- ⚡ Of the County's 5<sup>th</sup> graders screened, 3.5% were found with untreated dental decay compared to the states rate of 4.5%.
- ⚡ Peer county Pitt rate of 4.5% of 5<sup>th</sup> graders with untreated dental decay is higher than the County's.
- ⚡ Peer counties Durham and Guilford did not have sufficient data for comparison.



Data Source: NC Health and Human Services Oral Health Division



# Maternal & Child Health Childhood Obesity Ages 2 – 18

## FACTS ABOUT OVERWEIGHT AND OBESITY:

- ❗ Obese children and adolescents are more at risk for health problems as adults.
- ❗ Obese children and adolescents often have risk factors associated with cardiovascular disease such as:

- High Blood Pressure
- High Cholesterol
- Type 2 Diabetes

- ❗ Overweight children are more at risk to become obese adults.

Data: Centers for Disease Control

## HOW HAS CUMBERLAND CHANGED?

Cumberland has improved since 2003, where 13.1% of children 2 – 18 were overweight and 10.3% were obese.

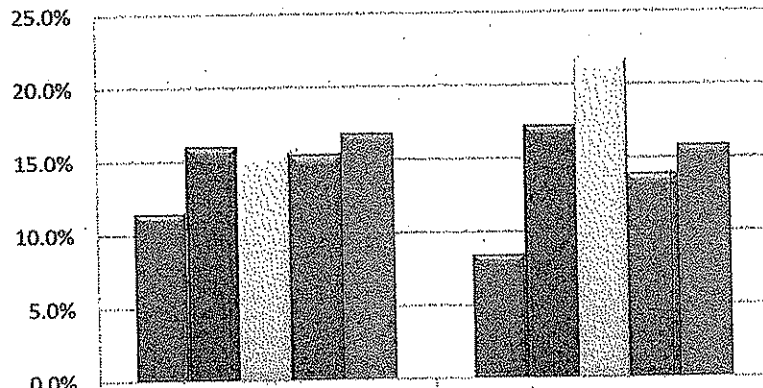
### Observations on Overweight:

- ⬇ 11.0% of the County's children ages 2 – 18 were overweight compared to the State's 16.0%.
- ⬇ Peer counties Durham (15.6%), Guilford (15.4%), Pitt (16.8%) had higher percentages of overweight children ages 2 – 18 than the County.

### Observations on Obesity:

- ⬇ 8.4% of the County's children ages 2 – 18 were obese compared to the State's 17.2%.
- ⬇ Peer counties Durham (21.7%), Guilford (13.9%), and Pitt (15.8%) had higher percentages of obese children ages 2 – 18 than the County.

## Overweight & Obesity Ages 2 - 18 2004 - 2008



	Overweight	Obese
▣ Cumberland	11.4%	8.4%
▣ NC	16.0%	17.2%
▣ Durham	15.6%	21.7%
▣ Guilford	15.4%	13.9%
▣ Pitt	16.8%	15.8%

Note: For the year 2006, children up to age 20 were included in the data  
Data Source: Eat Smart Move More NC

# Maternal & Child Health: Lead Screening

## FACTS ABOUT LEAD:

- ❗ Prolonged exposure to lead can be harmful to the developing brain of young children.
- ❗ An elevated blood lead level is 10 – 15 µg/dL.

Data: Centers for Disease Control

## WHERE CAN LEAD BE FOUND?

- ❗ In the paint of homes built before 1978
- ❗ Plastic/vinyl mini-blinds
- ❗ Water that comes through lead-soldered pipes
- ❗ Soil contaminated with lead
- ❗ Recalled toys
- ❗ Workplaces that use lead

Data: NC Dept. of Environmental & Natural Resources, Children's Environmental Health Branch

## HOW HAS CUMBERLAND CHANGED?

Cumberland has improved since 2002 – 2004 where 1.4% of children ages 1 and 2 had blood lead levels of 10 µg/dL or more.

## Observations:

- ⬇ 48.4% of the County's children ages 1 and 2, enrolled in Medicaid, received a blood test or lead compared to the 65.9% of the State's 1 and 2 year olds enrolled in Medicaid.
- ⬇ Peer counties Durham (64.4%), Guilford (73.7%), and Pitt (68.3%) had higher percentages of children ages 1 and 2, enrolled in Medicaid, who received a direct blood test for Lead than the County.
- ⬇ 0.6% of the County's children ages 1 and 2 tested for lead had blood lead levels greater than 10 micrograms per deciliter compared to the 0.7% of the State.
- ⬇ The County had a lower percentage of children with blood lead levels greater than 10 micrograms per deciliter than peer counties Durham (0.65%), Guilford (0.75%), and Pitt (0.83%).

*NC Health 2010 Objective*

*Reduce the percent of 1 and 2 year old children with blood levels greater than or equal to 10 micrograms per deciliter.*

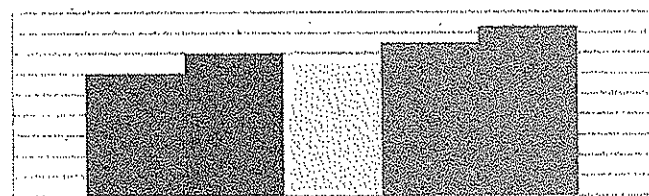
*2010 Target:  
Less than 0.5%*

*Cumberland's rate of 0.68% does not meet the 2010 target.*

www.healthycarolina.org

## Blood Lead Levels: Children Ages 1 to 2 2005 -2008

0.90%  
0.80%  
0.70%  
0.60%  
0.50%  
0.40%  
0.30%  
0.20%  
0.10%  
0.00%



County	Percentage
Cumberland	0.60%
NC	0.70%
Durham	0.65%
Guilford	0.75%
Pitt	0.83%

Data Source: NC Dept. of Environmental and Natural Resources  
Children's Environmental Health Branch

## **Pregnancies and Births 2008**

### **Cumberland and Peer Counties**

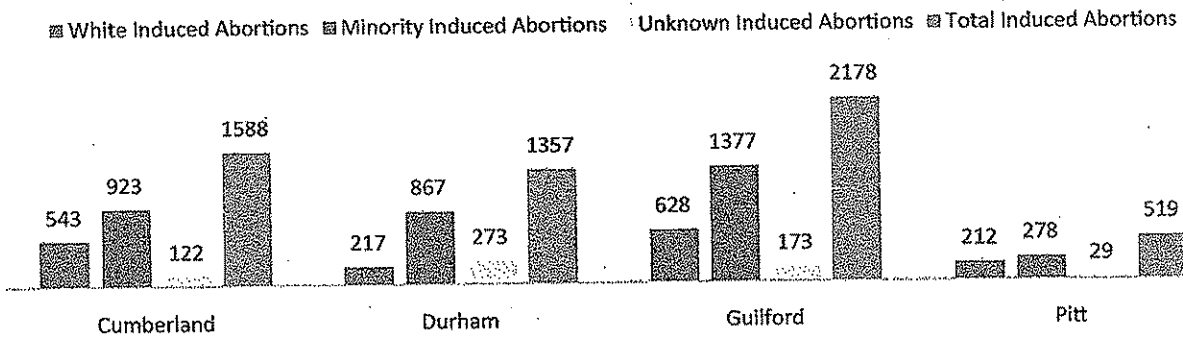
- Cumberland County's total induced abortions were 1588, which was significantly higher than Durham (1357) and Pitt (519) counties. Cumberland County's total induced abortions were lower than Guilford County's (2178) total induced abortions.
- Cumberland County's (3354) white live births were higher than Durham (2682) and Pitt (1323) counties but lower than Guilford County's white live births (3536).
- Cumberland County (2348) minority live births were lower than Guilford county's (2845) minority live births but higher than Durham (1942) and Pitt (1022) counties minority live births.
- Cumberland County's total fetal deaths of 49 were slightly higher than Guilford County's total fetal deaths of 48.
- Cumberland County's minority fetal deaths of 28 were slightly lower than Guilford County's minority fetal deaths of 33.
- Cumberland County's total pregnancies of 7339 were higher than Durham (6004) and Pitt (2872) counties.



### 2008 Induced Abortions

County	White Induced Abortions	Minority Induced Abortions	Unknown Induced Abortions	Total Induced Abortions
<b>Cumberland</b>	543	923	122	1588
<b>Durham</b>	217	867	273	1357
<b>Guilford</b>	628	1377	173	2178
<b>Pitt</b>	212	278	29	519

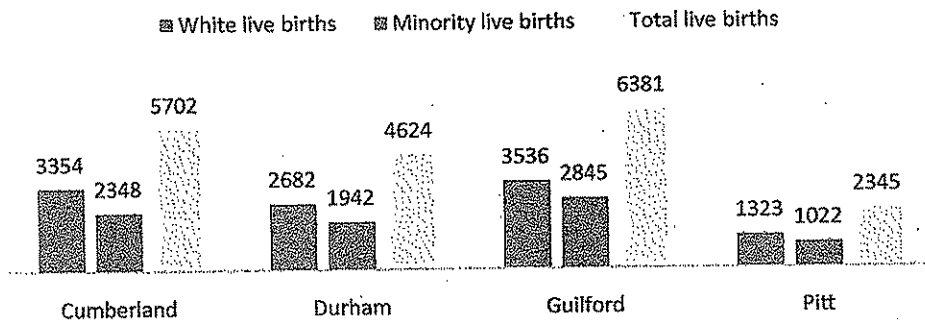
### 2008 Induced Abortions



### 2008 Live Births

County	White Live Births	Minority Live Births	Total Live Births
<b>Cumberland</b>	3354	2348	5702
<b>Durham</b>	2682	1942	4624
<b>Guilford</b>	3536	2845	6381
<b>Pitt</b>	1323	1022	2345

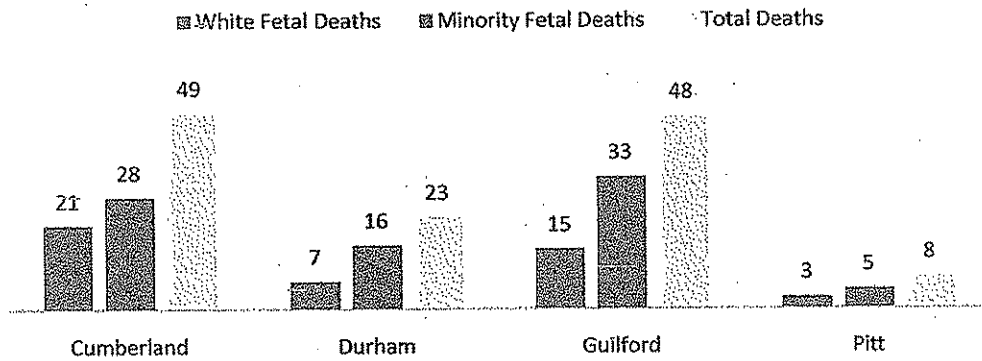
### 2008 Live Births



### 2008 Fetal Deaths

County	White Fetal Deaths	Minority Fetal Deaths	Total Deaths
<b>Cumberland</b>	21	28	49
<b>Durham</b>	7	16	23
<b>Guilford</b>	15	33	48
<b>Pitt</b>	3	5	8

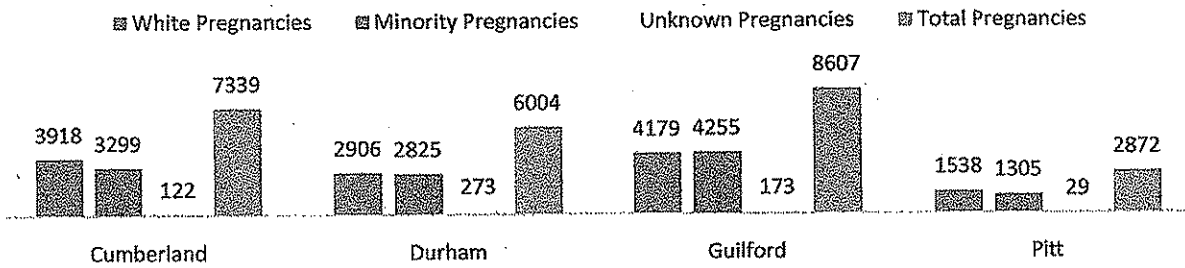
### 2008 Fetal Deaths



### 2008 Total Pregnancies

County	White Pregnancies	Minority Pregnancies	Unknown Pregnancies	Total Pregnancies
<b>Cumberland</b>	3918	3299	122	7339
<b>Durham</b>	2906	2825	273	6004
<b>Guilford</b>	4179	4255	173	8607
<b>Pitt</b>	1538	1305	29	2872

### 2008 Total Pregnancies



Cumberland 2008

	PREGNANCY OUTCOME												TOTAL PREGNANCIES			
	INDUCED ABORTIONS				LIVE BIRTHS				FETAL DEATHS							
	TOTAL	White	Minority	Unknown	TOTAL	White	Minority	Unknown	TOTAL	White	Minority	Unknown	TOTAL	White	Minority	Unknown
<b>TOTAL - ALL AGES</b>	1,588	543	923	122	5,702	3,354	2,348	0	49	21	28	0	7,339	3,918	3,299	122
<b>Ages 10 - 14</b>	11	3	8	0	4	1	3	0	0	0	0	0	15	4	11	0
<b>Ages 15 - 19</b>	235	75	147	13	646	323	323	0	11	6	5	0	892	404	475	13
<b>Ages 20 - 24</b>	587	204	343	40	2,067	1,200	867	0	16	4	12	0	2,670	1,408	1,222	40
<b>Ages 25 - 29</b>	363	119	217	27	1,710	1,033	677	0	14	6	8	0	2,087	1,158	902	27
<b>Ages 30 - 34</b>	184	62	104	18	825	529	296	0	4	3	1	0	1,013	594	401	18
<b>Ages 35 - 39</b>	102	41	54	7	372	226	146	0	3	1	2	0	477	268	202	7
<b>Ages 40 - 44</b>	25	15	7	3	73	41	32	0	1	1	0	0	99	57	39	3
<b>Ages 45 &amp; UP</b>	1	0	0	1	5	1	4	0	0	0	0	0	6	1	4	1
..... Age 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
..... Age 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
..... Age 11	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0
..... Age 12	2	0	2	0	0	0	0	0	0	0	0	0	2	0	2	0
..... Age 13	2	1	1	0	1	0	1	0	0	0	0	0	3	1	2	0
..... Age 14	7	2	5	0	2	1	1	0	0	0	0	0	9	3	6	0
..... Age 15	11	3	8	0	18	6	12	0	1	0	1	0	30	9	21	0
..... Age 16	27	3	24	0	40	20	20	0	0	0	0	0	67	23	44	0
..... Age 17	43	14	28	1	95	36	59	0	0	0	0	0	138	50	87	1
..... Age 18	60	19	35	6	180	100	80	0	3	1	2	0	243	120	117	6
..... Age 19	94	36	52	6	313	161	152	0	7	5	2	0	414	202	206	6
<b>UNMARRIED - TOTAL</b>	1,079	321	692	66	2,171	755	1,416	0	29	8	21	0	3,279	1,084	2,129	66
<b>Unmarried 10 - 14</b>	10	2	8	0	4	1	3	0	0	0	0	0	14	3	11	0
<b>Unmarried 15 - 19</b>	204	62	132	10	474	178	296	0	8	4	4	0	686	244	432	10
<b>Unmarried 20 - 24</b>	417	116	279	22	912	306	606	0	12	2	10	0	1,341	424	895	22
<b>Unmarried 25 - 29</b>	223	71	140	12	523	179	344	0	7	1	6	0	753	251	496	12
<b>Unmarried 30 - 34</b>	98	28	62	8	172	65	107	0	0	0	0	0	270	93	169	8
<b>Unmarried 35 - 39</b>	61	18	39	4	72	24	48	0	1	0	1	0	134	42	88	4
<b>Unmarried 40 - 44</b>	15	9	5	1	14	2	12	0	1	1	0	0	36	12	17	1
<b>Unmarried 45 &amp; UP</b>	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1
<b>Unknown Marital Status</b>	57	18	29	10	1	0	1	0	0	0	0	0	58	18	30	10

Durham 2008

	PREGNANCY OUTCOME												TOTAL PREGNANCIES			
	INDUCED ABORTIONS				LIVE BIRTHS				FETAL DEATHS							
	TOTAL	White	Minority	Unknown	TOTAL	White	Minority	Unknown	TOTAL	White	Minority	Unknown	TOTAL	White	Minority	Unknown
<b>TOTAL - ALL AGES</b>	1,357	217	867	273	4,624	2,682	1,942	0	23	7	16	0	6,004	2,906	2,825	273
Ages 10 - 14	5	0	4	1	9	5	4	0	0	0	0	0	14	5	8	1
Ages 15 - 19	178	30	130	18	419	155	264	0	3	1	2	0	600	186	396	18
Ages 20 - 24	432	62	294	76	913	436	477	0	3	1	2	0	1,348	499	773	76
Ages 25 - 29	331	51	203	77	1,291	790	501	0	4	2	2	0	1,626	843	706	77
Ages 30 - 34	190	37	107	46	1,273	836	437	0	7	2	5	0	1,470	875	549	46
Ages 35 - 39	111	23	61	27	595	384	211	0	6	1	5	0	712	408	277	27
Ages 40 - 44	30	5	17	8	117	70	47	0	0	0	0	0	147	75	64	8
Ages 45 & UP	1	0	0	1	7	6	1	0	0	0	0	0	8	6	1	1
..... Age 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
..... Age 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
..... Age 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
..... Age 12	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0
..... Age 13	2	0	2	0	2	2	0	0	0	0	0	0	4	2	2	0
..... Age 14	3	0	2	1	6	3	3	0	0	0	0	0	9	3	5	1
..... Age 15	5	1	4	0	26	14	12	0	0	0	0	0	31	15	16	0
..... Age 16	22	0	17	5	34	15	19	0	0	0	0	0	56	15	36	5
..... Age 17	15	2	12	1	74	34	40	0	1	0	1	0	90	36	53	1
..... Age 18	65	10	47	8	122	41	81	0	1	0	1	0	188	51	129	8
..... Age 19	71	17	50	4	163	51	112	0	1	1	0	0	235	69	162	4
<b>UNMARRIED - TOTAL</b>	952	155	679	118	2,029	873	1,156	0	16	5	11	0	2,997	1,033	1,846	118
Unmarried 10 - 14	5	0	4	1	9	5	4	0	0	0	0	0	14	5	8	1
Unmarried 15 - 19	155	28	114	13	385	128	257	0	3	1	2	0	543	157	373	13
Unmarried 20 - 24	333	51	251	31	666	266	400	0	3	1	2	0	1,002	318	653	31
Unmarried 25 - 29	231	37	160	34	523	250	273	0	3	1	2	0	757	288	435	34
Unmarried 30 - 34	106	18	69	19	275	134	141	0	5	2	3	0	386	154	213	19
Unmarried 35 - 39	57	12	38	7	138	70	68	0	2	0	2	0	197	82	108	7
Unmarried 40 - 44	13	3	7	3	30	18	12	0	0	0	0	0	43	21	19	3
Unmarried 45 & UP	1	0	0	1	3	2	1	0	0	0	0	0	4	2	1	1
Unknown Marital Status	178	13	97	68	1	0	1	0	1	0	1	0	180	13	99	68

Guilford 2008

	PREGNANCY OUTCOME												TOTAL PREGNANCIES			
	INDUCED ABORTIONS				LIVE BIRTHS				FETAL DEATHS							
	TOTAL	White	Minority	Unknown	TOTAL	White	Minority	Unknown	TOTAL	White	Minority	Unknown	TOTAL	White	Minority	Unknown
<b>TOTAL - ALL AGES</b>	2,178	628	1,377	173	6,381	3,536	2,845	0	48	15	33	0	8,607	4,179	4,255	173
Ages 10 - 14	14	1	12	1	14	5	9	0	0	0	0	0	28	6	21	1
Ages 15 - 19	313	95	198	20	651	251	400	0	2	1	1	0	966	347	599	20
Ages 20 - 24	832	234	533	65	1,527	685	842	0	12	3	9	0	2,371	922	1,384	65
Ages 25 - 29	488	144	302	42	1,754	1,035	719	0	16	8	8	0	2,258	1,187	1,029	42
Ages 30 - 34	261	76	167	18	1,494	955	539	0	11	3	8	0	1,766	1,034	714	18
Ages 35 - 39	186	47	116	23	780	508	272	0	4	0	4	0	970	555	392	23
Ages 40 - 44	40	16	23	1	156	95	61	0	1	0	1	0	197	111	85	1
Ages 45 & UP	3	0	2	1	5	2	3	0	0	0	0	0	8	2	5	1
Age 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Age 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Age 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Age 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Age 13	2	1	1	0	1	0	1	0	0	0	0	0	3	1	2	0
Age 14	12	0	11	1	13	5	8	0	0	0	0	0	25	5	19	1
Age 15	14	4	8	2	28	8	20	0	0	0	0	0	42	12	28	2
Age 16	32	9	21	2	61	18	43	0	2	1	1	0	95	28	65	2
Age 17	48	13	33	2	110	44	66	0	0	0	0	0	158	57	99	2
Age 18	96	29	61	6	179	79	100	0	0	0	0	0	275	108	161	6
Age 19	123	40	75	8	273	102	171	0	0	0	0	0	396	142	246	8
<b>UNMARRIED - TOTAL</b>	1,797	506	1,190	101	2,906	1,119	1,787	0	38	10	28	0	4,741	1,635	3,005	101
Unmarried 10 - 14	13	1	11	1	14	5	9	0	0	0	0	0	27	6	20	1
Unmarried 15 - 19	296	89	187	20	592	201	391	0	2	1	1	0	890	291	579	20
Unmarried 20 - 24	742	204	498	40	1,109	391	718	0	12	3	9	0	1,863	598	1,225	40
Unmarried 25 - 29	395	112	261	22	682	288	394	0	10	4	6	0	1,087	404	661	22
Unmarried 30 - 34	187	52	127	8	329	148	181	0	9	2	7	0	525	202	315	8
Unmarried 35 - 39	110	28	74	8	143	68	75	0	2	0	2	0	255	96	151	8
Unmarried 40 - 44	19	8	10	1	36	17	19	0	1	0	1	0	56	25	30	1
Unmarried 45 & UP	2	0	2	0	1	1	0	0	0	0	0	0	3	1	2	0
Unknown Marital Status	71	17	37	17	2	2	0	0	0	0	0	0	73	19	37	17

Pitt 2008

	PREGNANCY OUTCOME												TOTAL PREGNANCIES			
	INDUCED ABORTIONS				LIVE BIRTHS				FETAL DEATHS							
	TOTAL	White	Minority	Unknown	TOTAL	White	Minority	Unknown	TOTAL	White	Minority	Unknown	TOTAL	White	Minority	Unknown
<b>TOTAL - ALL AGES</b>	519	212	278	29	2,345	1,323	1,022	0	8	3	5	0	2,872	1,538	1,305	29
Ages 10 - 14	1	0	1	0	8	2	6	0	0	0	0	0	9	2	7	0
Ages 15 - 19	70	30	34	6	255	87	168	0	2	0	2	0	327	117	204	6
Ages 20 - 24	226	114	100	12	648	280	368	0	0	0	0	0	874	394	468	12
Ages 25 - 29	111	34	75	2	666	434	232	0	4	2	2	0	781	470	309	2
Ages 30 - 34	59	18	38	3	509	348	161	0	1	1	0	0	569	367	199	3
Ages 35 - 39	28	9	17	2	216	144	72	0	0	0	0	0	244	153	89	2
Ages 40 - 44	10	5	4	1	41	26	15	0	1	0	1	0	52	31	20	1
Ages 45 & UP	2	0	2	0	2	2	0	0	0	0	0	0	4	2	2	0
..... Age 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
..... Age 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
..... Age 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
..... Age 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
..... Age 13	0	0	0	0	4	1	3	0	0	0	0	0	4	1	3	0
..... Age 14	1	0	1	0	4	1	3	0	0	0	0	0	5	1	4	0
..... Age 15	2	0	2	0	12	4	8	0	0	0	0	0	14	4	10	0
..... Age 16	4	1	2	1	29	10	19	0	0	0	0	0	33	11	21	1
..... Age 17	6	1	5	0	42	14	28	0	0	0	0	0	48	15	33	0
..... Age 18	20	9	9	2	63	22	41	0	2	0	2	0	85	31	52	2
..... Age 19	38	19	16	3	109	37	72	0	0	0	0	0	147	56	88	3
<b>UNMARRIED - TOTAL</b>	419	180	221	18	1,103	372	731	0	5	1	4	0	1,527	553	956	18
Unmarried 10 - 14	1	0	1	0	8	2	6	0	0	0	0	0	9	2	7	0
Unmarried 15 - 19	66	29	32	5	234	69	165	0	2	0	2	0	302	98	199	5
Unmarried 20 - 24	203	105	89	9	462	142	320	0	0	0	0	0	665	247	409	9
Unmarried 25 - 29	90	30	59	1	228	91	137	0	2	1	1	0	320	122	197	1
Unmarried 30 - 34	34	11	21	2	117	47	70	0	0	0	0	0	151	58	91	2
Unmarried 35 - 39	14	2	12	0	44	18	26	0	0	0	0	0	58	20	38	0
Unmarried 40 - 44	4	2	2	0	10	3	7	0	1	0	1	0	15	5	10	0
Unmarried 45 & UP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unknown Marital Status	30	10	17	3	0	0	0	0	0	0	0	0	30	10	17	3

## Live Birth Rates

**Observations:**

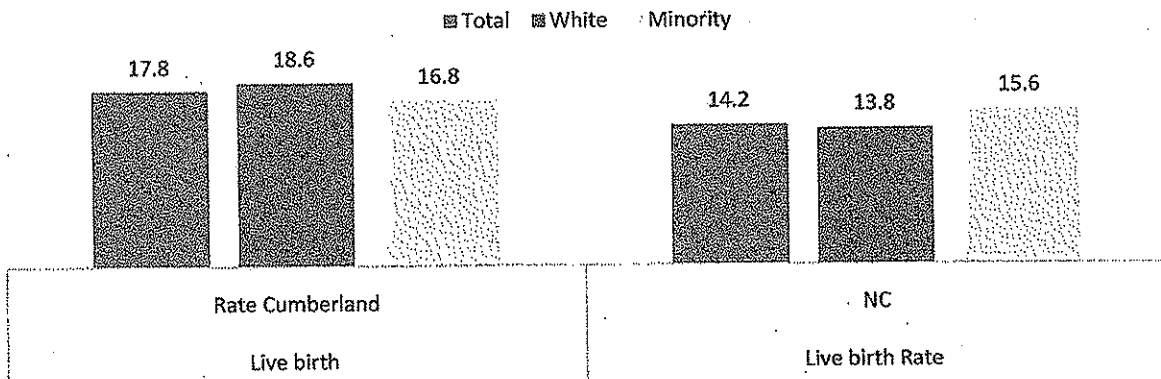
- Cumberland County's total live birth rate of 17.8 was higher than the State rate of 14.2.
- Cumberland County's white live birth rate of 18.6 was much higher than the State rate of 13.8.
- Cumberland County's minority live birth rate of 16.8 was slightly higher than the State rate of 15.6.

**Live Birth Rates per 1,000 Population 2004-2008**

Number of Births		Rate of Births		
Indicator	# of Births Cumberland	# of Births NC	Live birth Rate Cumberland	Live birth Rate NC
<b>Total</b>	27,696	632,103	17.8	14.2
<b>White</b>	16,348	456,054	18.6	13.8
<b>Minority</b>	11,348	176,049	16.8	15.6

Source: <http://www.schs.state.nc.us/SCHS/data/databook> Click Live Births.

**Live Birth Rates per 1,000 Population 2004-2008**



## Live Birth Rates Peer Counties

### Observations

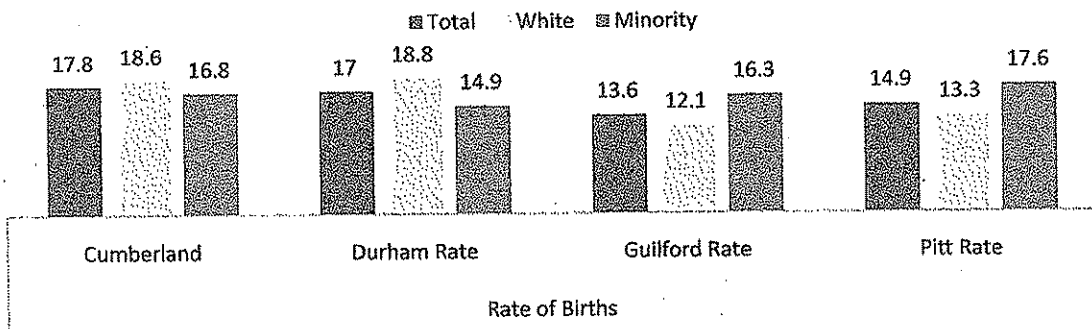
- Cumberland County's total live birth rate of 17.8 was higher than Guilford County's total live birth rate of 13.6.
- Cumberland County's white live birth rate of 18.6 was slightly lower than Durham County's rate of 18.8.
- Cumberland County's white live birth rate of 18.6 was higher than Pitt County's rate of 13.3.
- Cumberland County's minority live birth rate of 16.8 was higher than Durham (14.9) and Guilford (16.3) counties minority live birth rates but Cumberland rate was slightly lower than Pitt (17.6) county.

**Live Birth Rates per 1,000 Population 2004-2008**

Indicator	Number of Births				Rate of Births			
	# of Births Cumberland	# of Births Durham	# of Births Guilford	# of Births Pitt	Cumberland Rate	Durham Rate	Guilford Rate	Pitt Rate
<b>Total</b>	27,696	21,093	30,657	11,004	17.8	17.0	13.6	14.9
<b>White</b>	16,348	12,461	17,504	6,257	18.6	18.8	12.1	13.3
<b>Minority</b>	11,348	8,632	13,153	4,747	16.8	14.9	16.3	17.6

Source: <http://www.schs.state.nc.us/SCHS/data/databook> Click Live Births.

**Live Birth Rates per 1,000 Population 2004-2008**





**Pregnancy Rates (Ages 15-44)  
2008**

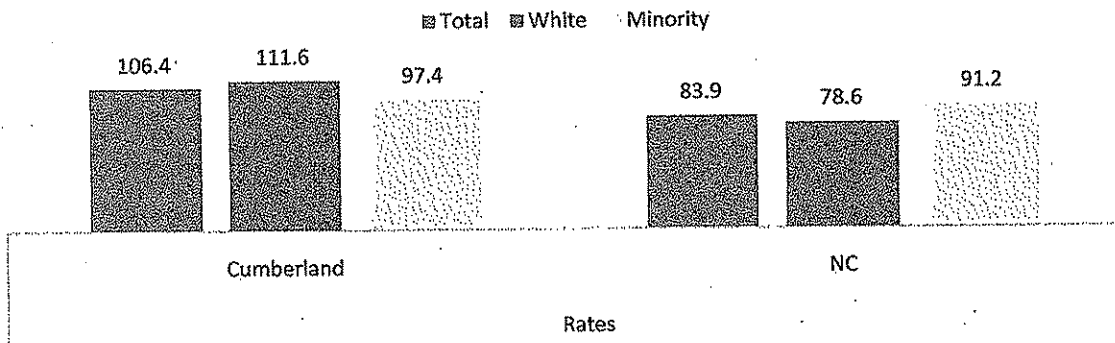
**Observations:**

- Cumberland County's total pregnancy rate of 106.4 was much higher than the State's total pregnancy rate of 83.9.
- Cumberland County's white pregnancy rate of 111.6 was significantly higher than the State rate of 78.6.
- Cumberland County's minority pregnancy rate of 97.4 was higher than the State rate of 91.2.

**Pregnancy Rates (Ages 15-44) in 2008**

Indicator	Number of Pregnancies		Rates	
	Cumberland	NC	Cumberland	NC
<b>Total</b>	7339	158870	106.4	83.9
<b>White</b>	3918	104865	111.6	78.6
<b>Minority</b>	3299	50980	97.4	91.2

**2008 Pregnancy Rates per 1,000 Population for  
Females Ages 15-44**



## Pregnancy Rates (Ages 15-44) 2008

### Observations:

- Cumberland County's total pregnancy rate was slightly higher than Durham County's rate of 102.3 and significantly higher than Guilford County's rate of 85.2 and Pitt County's rate of 74.3
- Cumberland County's white pregnancy rate was higher than Durham, Guilford and Pitt counties.
- Cumberland County's minority pregnancy rate was higher than Durham, Guilford and Pitt counties.

### Pregnancy Rates (Ages 15-44) in 2008

Indicator	Number of Pregnancies				Rates			
	Cumberland	Durham	Guilford	Pitt	Cumberland	Durham	Guilford	Pitt
<b>Total</b>	7339	6004	8607	2872	106.4	102.3	85.2	74.3
<b>White</b>	3918	2906	4179	1538	111.6	108.4	73.0	64.1
<b>Minority</b>	3299	2825	4255	1305	97.4	88.6	97.1	89.2

### 2008 Pregnancy Rates per 1,000 Population for Females Ages 15-44



**Fertility Rates (Ages 15-44)  
2008**

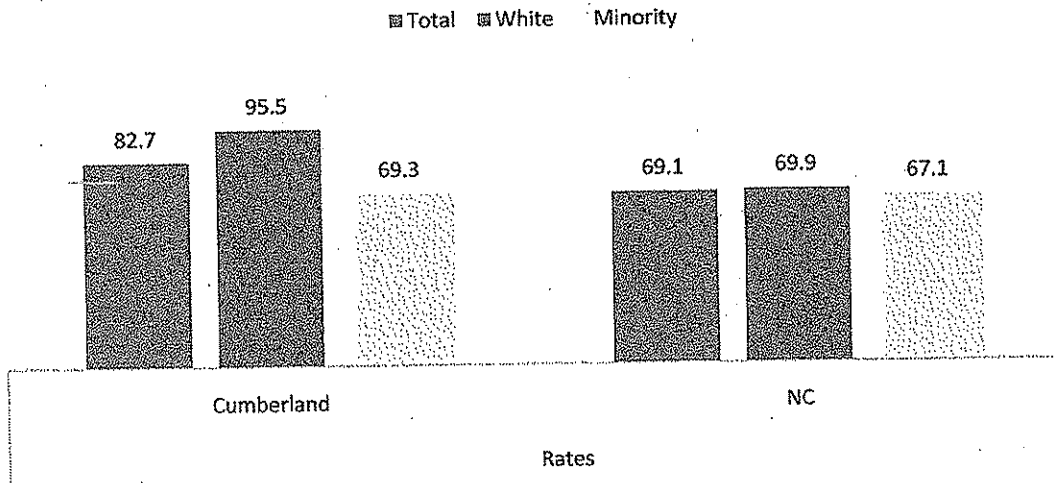
**Observation:**

- Cumberland County's total fertility rate of 82.7 is higher than the State rate of 69.1.
- Cumberland County's white fertility rate of 95.5 is significantly higher than the State rate of 69.9.
- Cumberland County's minority fertility rate of 69.3 is slightly higher than the State of rate of 67.1.

**Fertility Rates per 1,000 Population Females Ages 15-44**

Indicator	Fertility Cases		Rates	
	Cumberland	NC	Cumberland	NC
<b>Total</b>	5702	130758	82.7	69.1
<b>White</b>	3354	93228	95.5	69.9
<b>Minority</b>	2348	37530	69.3	67.1

**2008 Fertility Rates per 1,000 Population for  
Females Ages 15-44**



**Fertility Rates (Ages 15-44)  
2008**

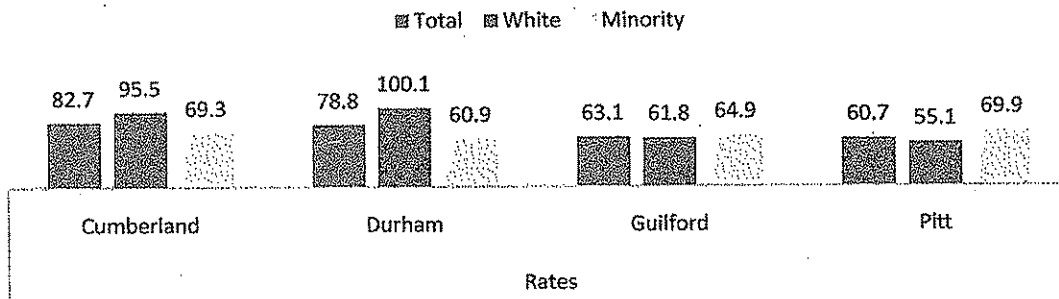
**Observation:**

- Cumberland County's total fertility rate of 82.7 is significantly higher than Guilford County's total fertility rate of 63.1.
- Cumberland County's white fertility rate of 95.5 is significantly higher than Pitt County's white fertility rate of 55.1.
- Cumberland County's white fertility rate of 95.5 is slightly lower than Durham County's fertility rate of 100.1.
- Cumberland County's minority fertility rate of 69.3 is slightly lower than Pitt County's fertility rate of 69.9.

**2008 Fertility Rates per 1,000 per Population Ages 15-44**

Indicator	Fertility Cases				Rates			
	Cumberland	Durham	Guilford	Pitt	Cumberland	Durham	Guilford	Pitt
<b>Total</b>	5702	4624	6381	2345	82.7	78.8	63.1	60.7
<b>White</b>	3354	2682	3536	1323	95.5	100.1	61.8	55.1
<b>Minority</b>	2348	1942	2845	1022	69.3	60.9	64.9	69.9

**2008 Fertility Rates per 1,000 Population for  
Females Ages 15-44**



**Abortion Rates (Ages 15-44)  
2008**

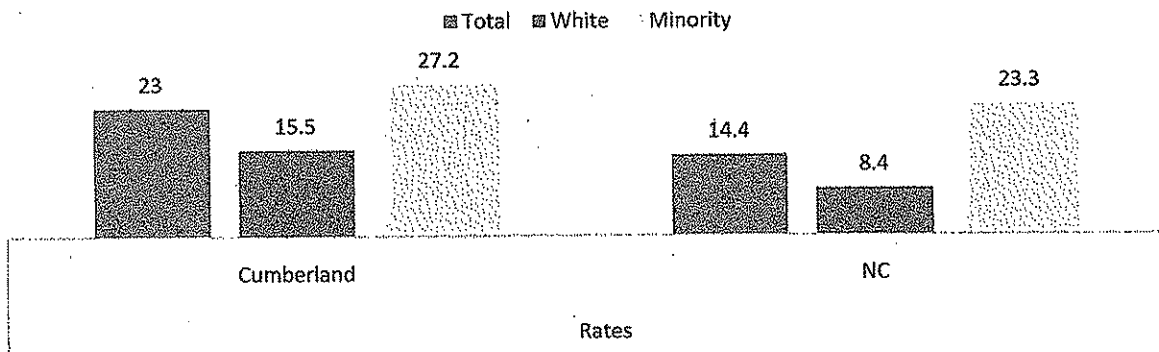
**Observation:**

- Cumberland County's total abortion rate of 23.0 was higher than the State rate of 14.4.
- Cumberland County's white abortion rate of 15.5 was significantly higher than the State rate of 8.4.
- Cumberland County's minority abortion rate of 27.2 was slightly higher than the State rate of 23.3.

**Abortion Rates per 1,000 Population in Females Ages 15-44 (2008)**

Indicator	Abortion Cases		Rates	
	Cumberland	NC	Cumberland	NC
Total	1588	27234	23.0	14.4
White	543	11169	15.5	8.4
Minority	923	13040	27.2	23.3

**2008 Abortion Rates per 1,000 Population for  
Females Ages 15-44**



**Abortion Rates (Ages 15-44)  
2008**

**Observation:**

- Cumberland County's total abortion rate of 23.0 is slightly lower than Durham County's abortion rate of 23.1.
- Cumberland County's white abortion rate of 15.5 is significantly higher than Durham County's rate of 8.1 and Pitt County's rate of 8.8.
- Cumberland County's minority abortion rate of 27.2 is equal to Durham County's rate but is lower than Guilford County's rate of 31.4.

**Abortion Rates per 1,000 Population in Females Ages 15-44 (2008)**

Indicator	Abortion Cases				Rates			
	Cumberland	Durham	Guilford	Pitt	Cumberland	Durham	Guilford	Pitt
<b>Total</b>	1588	1357	2178	519	23.0	23.1	21.5	13.4
<b>White</b>	543	217	628	212	15.5	8.1	11.0	8.8
<b>Minority</b>	923	867	1377	278	27.2	27.2	31.4	19.0

**2008 Abortion Rates per 1,000 Population for  
Females Ages 15-44**



## Pregnancy Rates (Ages 15-19) 2008

### Observations:

- Cumberland County's total pregnancy rate of 74.5 was significantly higher than the State rate of 58.6.
- Cumberland County's white pregnancy rate of 71.8 was significantly higher than the State rate of 47.8.
- Cumberland County's minority pregnancy rate of 74.8 is slightly lower than the State rate of 77.7.

### 2008 Pregnancy Rates per 1,000 for Females Ages 15-19

Indicator	Number of Pregnancies		Rates	
	Cumberland	NC	Cumberland	NC
<b>Total</b>	892	19398	74.5	58.6
<b>White</b>	404	10699	71.8	47.8
<b>Minority</b>	475	8345	74.8	77.7

### 2008 Pregnancy Rates per 1,000 for Females Ages 15-19



**Pregnancy Rates (Ages 15-19)  
2008**

**Observations:**

- Cumberland County's total pregnancy rate of 74.5 is higher than Durham County's total pregnancy rate of 63.3.
- Cumberland County's white pregnancy rate of 71.8 is significantly higher than Durham (50.0) Guilford (36.1) and Pitt (24.5) Counties white pregnancy rate.
- Cumberland County minority pregnancy rate of 74.8 is slightly higher than Durham (68.8) Guilford (69.5) and Pitt (68.5) Counties white pregnancy rate.

**2008 Pregnancy Rate per 1,000 Females Ages 15-19**

Indicator	Number of Pregnancies					Rates				
	Cumberland	Durham	Guilford	Pitt	NC	Cumberland	Durham	Guilford	Pitt	NC
<b>Total</b>	892	600	966	327	19398	74.5	63.3	53.0	42.2	58.6
<b>White</b>	404	186	347	117	10699	71.8	50.0	36.1	24.5	47.8
<b>Minority</b>	475	396	599	204	8345	74.8	68.8	69.5	68.5	77.7

**2008 Pregnancy Rates per 1,000 Females Ages 15-19**





**Fertility Rates (Ages 15-19)  
2008**

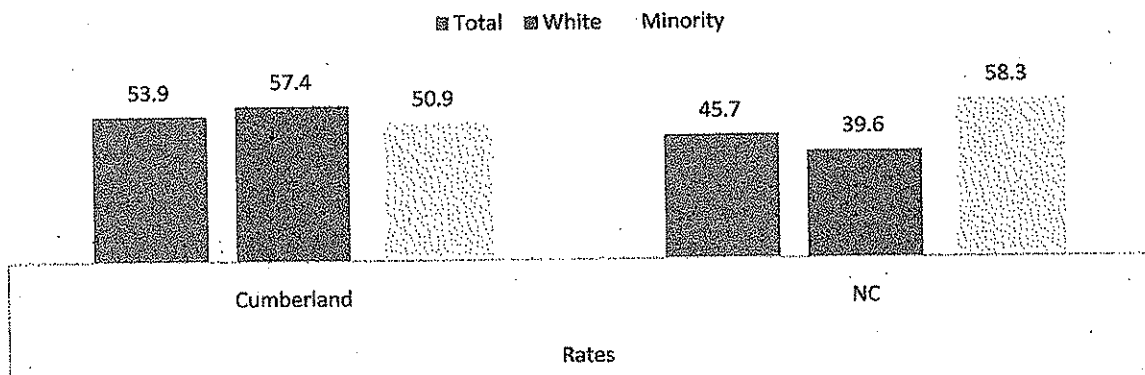
**Observations:**

- Cumberland County's total fertility rate of 53.9 is higher than the State rate of 45.7.
- Cumberland County's white fertility rate of 57.4 is significantly higher than the State rate of 39.6.
- Cumberland County's minority fertility rate of 50.9 is slightly lower than the State rate of 58.3.

**2008 Fertility Rates per 1,000 in Females Ages 15-19**

Indicator	Fertility Cases		Rates	
	Cumberland	NC	Cumberland	NC
<b>Total</b>	646	15128	53.9	45.7
<b>White</b>	323	8859	57.4	39.6
<b>Minority</b>	323	6269	50.9	58.3

**2008 Fertility Rates per 1,000 Population in Females  
Ages 15-19**



## Fertility Rates (Ages 15-19) 2008

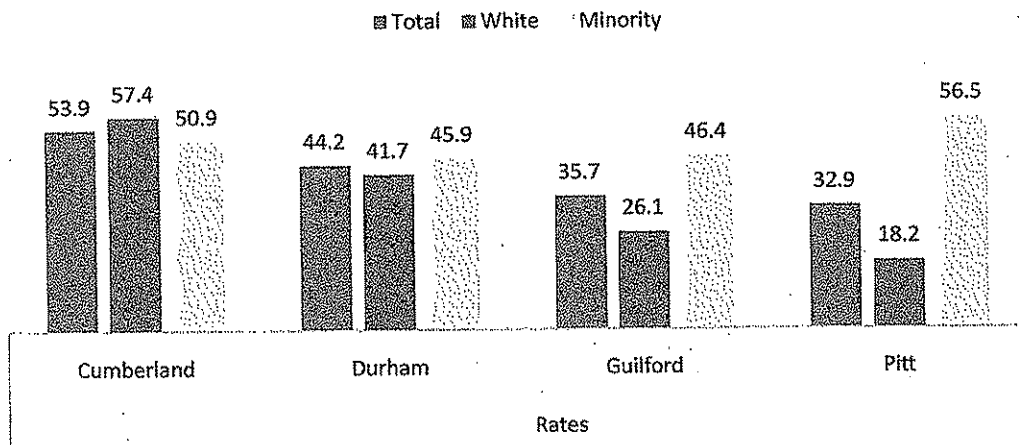
### Observations

- Cumberland County's total fertility rate of 53.9 is slightly higher than Durham County's total fertility rate of 44.2.
- Cumberland County's white fertility rate of 57.4 is significantly higher than Guilford County's rate of 26.1 and Pitt County's rate of 18.2.
- Cumberland County's minority fertility rate of 50.9 is slightly higher than Durham County's rate of 45.9 and Guilford County's rate of 46.4 but slightly lower than Pitt County's rate of 56.5.

### 2008 Fertility Rates per 1,000 in Females Ages 15-19

Indicator	Fertility Cases					Rates				
	Cumberland	Durham	Guilford	Pitt	NC	Cumberland	Durham	Guilford	Pitt	NC
<b>Total</b>	646	419	651	255	15128	53.9	44.2	35.7	32.9	45.7
<b>White</b>	323	155	251	87	8859	57.4	41.7	26.1	18.2	39.6
<b>Minority</b>	323	264	400	168	6269	50.9	45.9	46.4	56.5	58.3

### 2008 Fertility Rates per 1,000 Population for Females Ages 15-19



**Abortion Rates (Ages 15-19)  
2008**

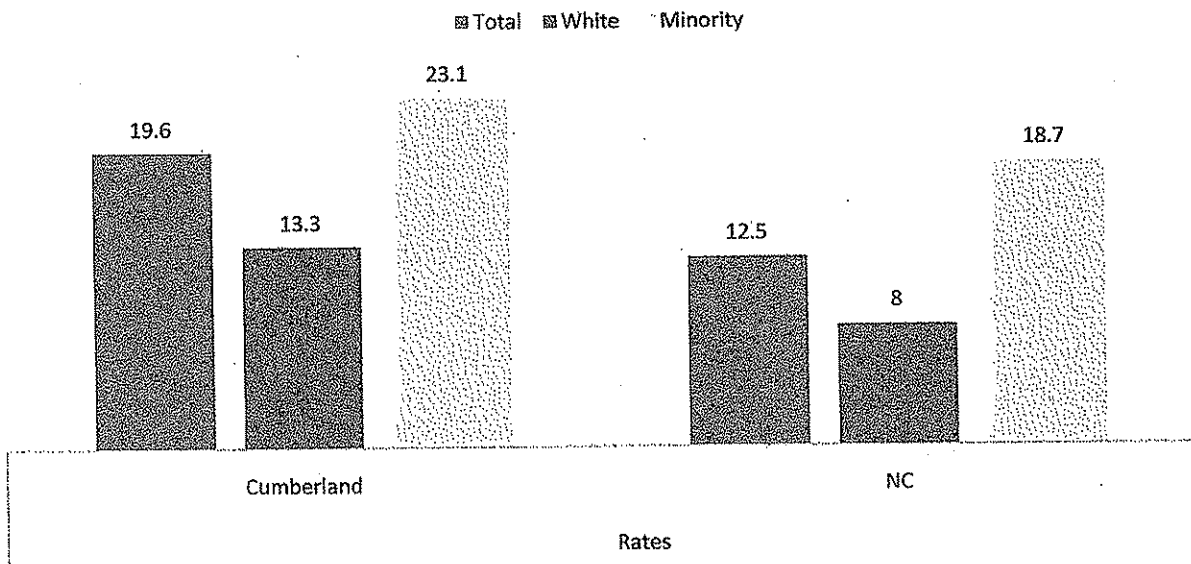
**Observation:**

- Cumberland County's total abortion rate of 19.6 is higher than the State rate of 12.5.
- Cumberland County's white abortion rate of 13.3 is higher than the State of 8.0.
- Cumberland County's minority rate of 23.1 is higher than the state rate of 18.7.

**2008 Abortion Rates per 1,000 in Females Ages 15-19**

Indicator	Abortion Cases		Rates	
	Cumberland	NC	Cumberland	NC
<b>Total</b>	235	4147	19.6	12.5
<b>White</b>	75	1783	13.3	8.0
<b>Minority</b>	147	2010	23.1	18.7

**2008 Abortion Rates per 1,000 in Females Ages 15-19**



**Abortion Rates (Ages 15-19)  
2008**

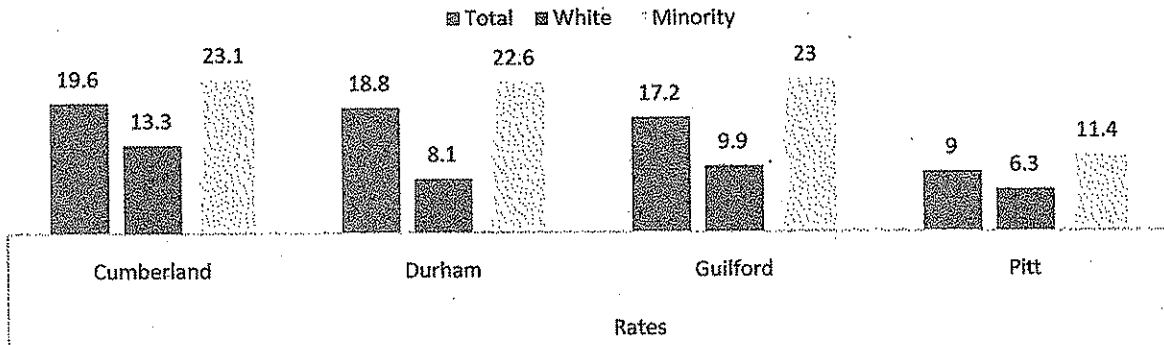
**Observation:**

- Cumberland County's total abortion rate of 19.6 is more than the double Pitt County's rate of 9.0.
- Cumberland County's white abortion rate of 13.3 is more than the double Pitt County's white abortion rate of 6.3.
- Cumberland County's minority abortion rate of 23.1 is slightly higher than Durham County's minority abortion rate of 22.6 and Guilford County's abortion rate of 23.0.

**2008 Abortion Rates per 1,000 in Females Ages 15-19**

Indicator	Abortion Cases					Rates				
	Cumberland	Durham	Guilford	Pitt	NC	Cumberland	Durham	Guilford	Pitt	NC
<b>Total</b>	235	178	313	70	4147	19.6	18.8	17.2	9.0	12.5
<b>White</b>	75	30	95	30	1783	13.3	8.1	9.9	6.3	8.0
<b>Minority</b>	147	130	198	34	2010	23.1	22.6	23.0	11.4	18.7

**2008 Abortion Rates per 1,000 in Females Ages 15-19**

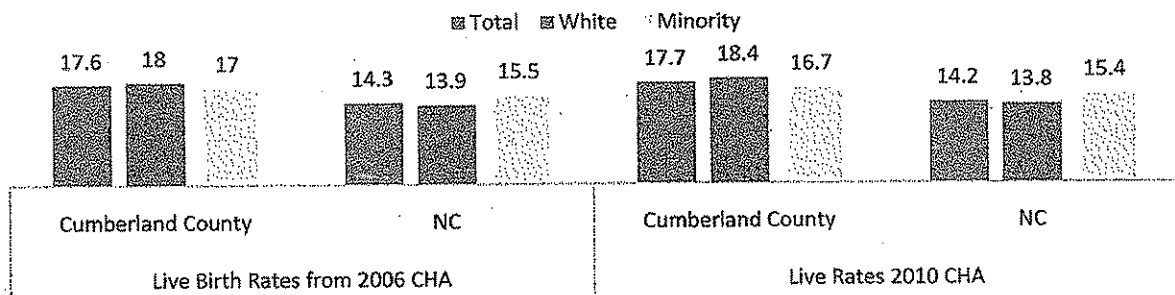


**Cumberland County and NC Trends  
Comparison of 2006 CHA (2000-2004) and 2010 CHA (2004-2008)**

**Live Birth Rates** - According to the 2006 (2000-2004) Community Health Assessment (CHA) the total live birth rate for Cumberland County increased from 17.6 to 17.7, and the total live births for NC decreased from 14.3 to 14.2. The white live birth rate for Cumberland County increased from 18 to 18.4 and for NC the rate decreased from 13.9 to 13.8. The minority live birth rate in Cumberland County decreased from 17.0 to 16.7 and the rate decreased from 15.5 to 15.4 for NC.

Indicator	Live Birth Rates from 2006 CHA		Live Rates 2010 CHA	
	Cumberland County	NC	Cumberland County	NC
<b>Total</b>	17.6	14.3	17.7	14.2
<b>White</b>	18	13.9	18.4	13.8
<b>Minority</b>	17	15.5	16.7	15.4

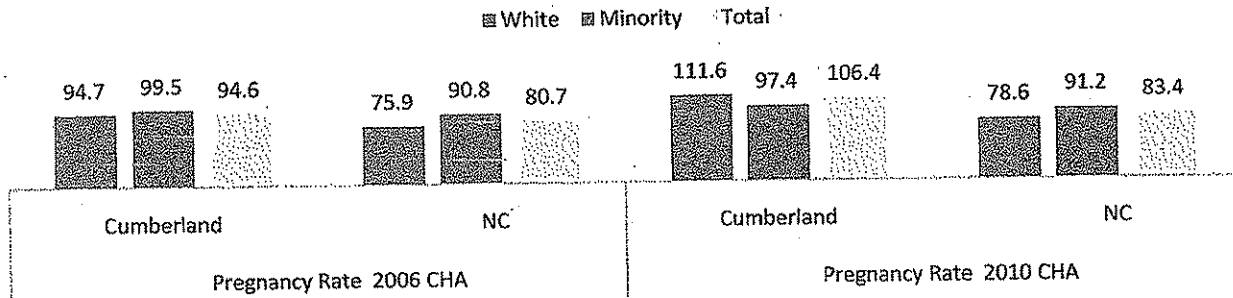
**Live Birth Rate Comparison of Cumberland County  
and NC CHA 2006 & CHA 2010**



**Pregnancy Rates (15-44)**- According to the 2006 (2000-2004) CHA the white pregnancy rate for Cumberland County increased from 94.7 to 111.6 and for NC the white pregnancy rate increased from 75.9 to 78.6. The minority pregnancy rate for Cumberland County decreased from 99.5 to 97.4 and the NC rate increased from 90.8 to 91.2. The total pregnancy rate for Cumberland County increased from 97.6 to 106.4 and for NC the total pregnancy rate increased from 80.7 to 83.4.

Indicator	Pregnancy Rate 2006 CHA		Pregnancy Rate 2010 CHA	
	Cumberland	NC	Cumberland	NC
<b>White</b>	94.7	75.9	111.6	78.6
<b>Minority</b>	99.5	90.8	97.4	91.2
<b>Total</b>	94.6	80.7	106.4	83.4

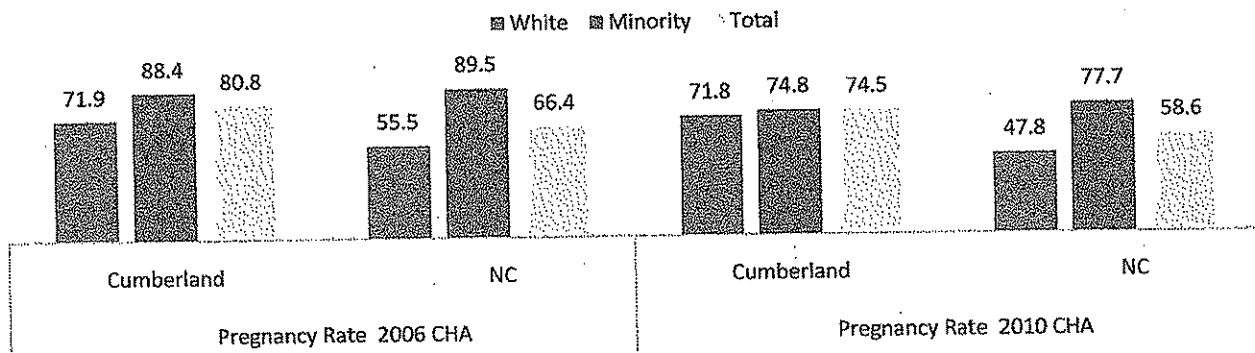
## Pregnancy Rates for Ages 15-44 of Cumberland County and NC, CHA 2006 & CHA 2010



Indicator	Pregnancy Rate 2006 CHA		Pregnancy Rate 2010 CHA	
	Cumberland	NC	Cumberland	NC
White	71.9	55.5	71.8	47.8
Minority	88.4	89.5	74.8	77.7
Total	80.8	66.4	74.5	58.6

**Pregnancy Rates (15-19)-** According to the 2006 (2000-2004) CHA the white pregnancy rate for Cumberland County slightly decreased from 71.9 to 71.8 and for NC the rate decreased from 55.5 to 47.8. The minority rate for Cumberland County decreased from 88.4 to 74.8 and for NC the rate decreased from 89.5 to 77.7. The total pregnancy rate for Cumberland County decreased from 80.8 to 74.5 and for NC the rate decreased from 66.4 to 58.6.

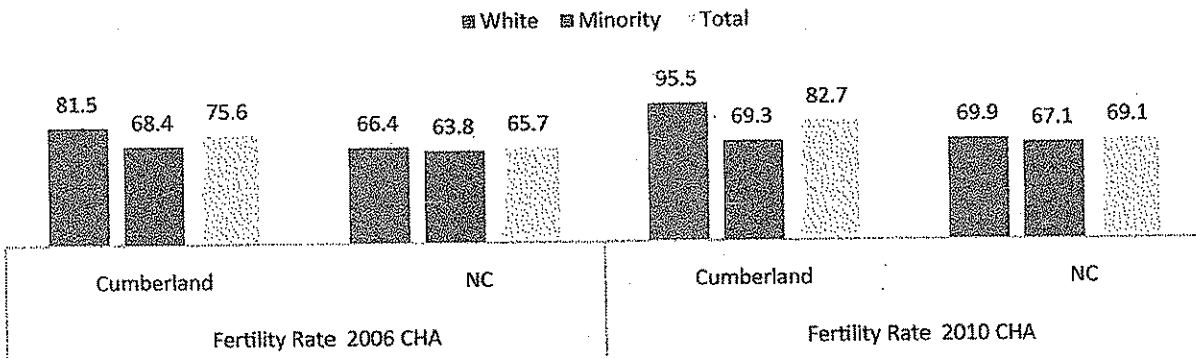
## Pregnancy Rates for Ages 15-19 of Cumberland County and NC, CHA 2006 & CHA 2010



**Fertility Rates (15-44)** In Cumberland County the white fertility rate from the 2006 CHA increased from 81.5 to 95.5 and for NC the rate increased from 66.4 to 69.9. The minority fertility rates for Cumberland County increased from 68.4 to 69.3 and for NC the rate increased from 63.8 to 67.1. The total fertility rate for Cumberland County increased from 75.6 to 82.7 and for NC the rate increased from 65.7 to 69.1.

Indicator	Fertility Rate 2006 CHA		Fertility Rate 2010 CHA	
	Cumberland	NC	Cumberland	NC
<b>White</b>	81.5	66.4	95.5	69.9
<b>Minority</b>	68.4	63.8	69.3	67.1
<b>Total</b>	75.6	65.7	82.7	69.1

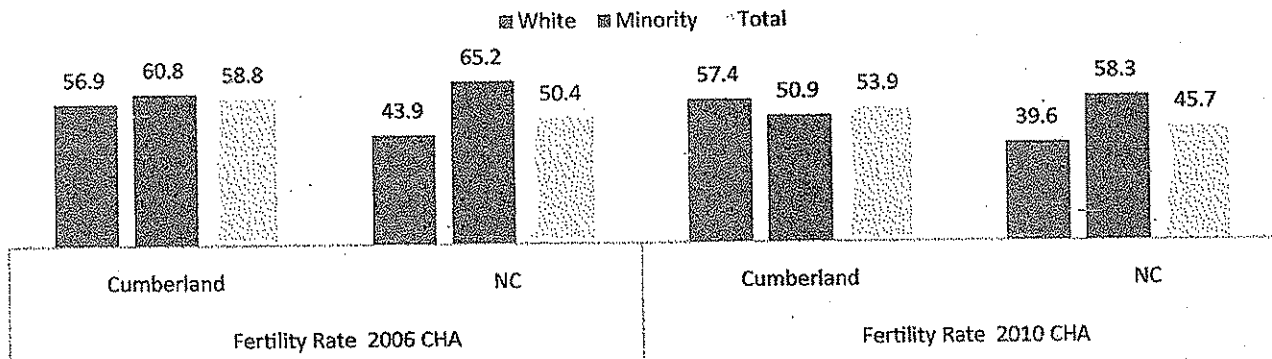
### Fertility Rates for Ages 15-44 of Cumberland County and NC, CHA 2006 & CHA 2010



**Fertility Rates (15-19)-** In Cumberland County the white fertility rate from the 2006 CHA increased from 56.9 to 57.4 and for NC the fertility rate decreased from 43.9 to 39.6. The minority fertility rate for Cumberland County decreased from 60.8 to 50.9 and for NC the rate decreased from 65.2 to 58.3. The total fertility rate for Cumberland County decreased from 58.8 to 53.9 and for NC the rate decreased from 50.4 to 45.7.

Indicator	Fertility Rate 2006 CHA		Fertility Rate 2010 CHA	
	Cumberland	NC	Cumberland	NC
<b>White</b>	56.9	43.9	57.4	39.6
<b>Minority</b>	60.8	65.2	50.9	58.3
<b>Total</b>	58.8	50.4	53.9	45.7

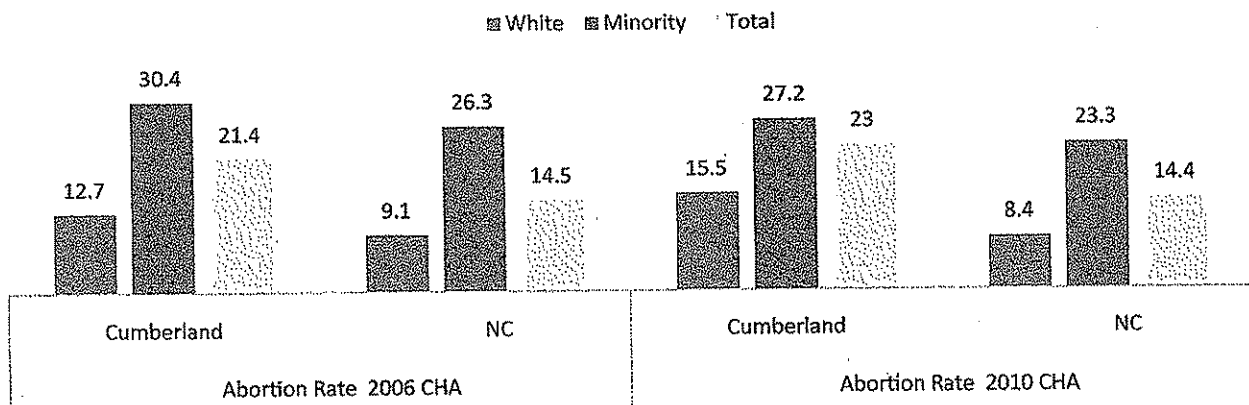
## Fertility Rates for Ages 15-19 of Cumberland County and NC, CHA 2006 & CHA 2010



**Abortion Rates (15-44)-** In Cumberland County the white abortion rate from the 2006 CHA increased from 12.7 to 15.5 and the rate for NC decreased from 9.1 to 8.4. The minority abortion rate for Cumberland County decreased from 30.4 to 27.2 and the rate for NC decreased from 26.3 to 23.3. As far as the total abortion rate for Cumberland County, the rate increased from 21.4 to 23.0 and for NC it slightly decreased from 14.5 to 14.4.

Indicator	Abortion Rate 2006 CHA		Abortion Rate 2010 CHA	
	Cumberland	NC	Cumberland	NC
<b>White</b>	12.7	9.1	15.5	8.4
<b>Minority</b>	30.4	26.3	27.2	23.3
<b>Total</b>	21.4	14.5	23.0	14.4

## Abortion Rates for Ages 15-44 of Cumberland County and NC, CHA 2006 & CHA 2010

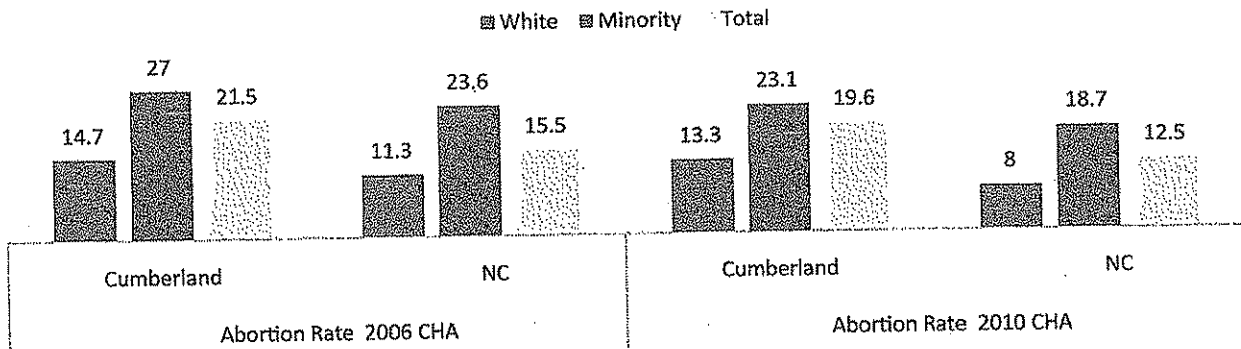




**Abortion Rates (15-19)-** In Cumberland County the white abortion rate from the 2006 CHA decreased from 14.7 to 13.3 and for NC the rate decreased from 11.3 to 8.0. The minority abortion rate for Cumberland county decreased from 27 to 23.1 and for NC the rate decreased from 23.6 to 18.7. The total abortion rate for Cumberland County decreased from 21.5 to 19.6 and for NC the total abortion rate decreased from 15.5 to 12.5.

Indicator	Abortion Rate 2006 CHA		Abortion Rate 2010 CHA	
	Cumberland	NC	Cumberland	NC
White	14.7	11.3	13.3	8.0
Minority	27	23.6	23.1	18.7
Total	21.5	15.5	19.6	12.5

### Abortion Rates Ages for 15-19 of Cumberland County and NC, CHA 2006 & CHA 2010



## **Healthy People 2010 Health Objectives**

Cumberland County's family planning services are an on-going necessity to support the Prevention/reduction of the County's teen pregnancy rates, birth rates and abortion rates. Our efforts will also support the following Healthy People 2010 objectives:

### **Increase the proportion of adolescents who abstain from sexual intercourse.**

Target: 50.8 percent.

Baseline, 1997: 39.1 percent of adolescents, grades 9 through 12, abstained from sexual intercourse.

Target setting method: 30 percent improvement.

### **Increase the proportion of adolescents who use condoms, if currently sexually active.**

Target: 75 percent.

Baseline, 1997: 62.2 percent of adolescents, grades 9 through 12, used condoms.

Target setting method: 20.5 percent improvement.

### **Reduce the rate of unplanned pregnancies in adolescent female ages 10 to 19.**

Target: 10 per 1000

Baseline, 1998: 15.6 pregnancies per 1000 females ages 10 to 19 years.

Target setting method: 36 percent improvement.

#### **Source**

**Healthy Carolinians (2010). Select 2010 Health Objectives. Health Promotion -Responsible Sexual Behavior.**

**<http://www.healthycarolinians.org/objectives/health/promotion.aspx#sexual>**

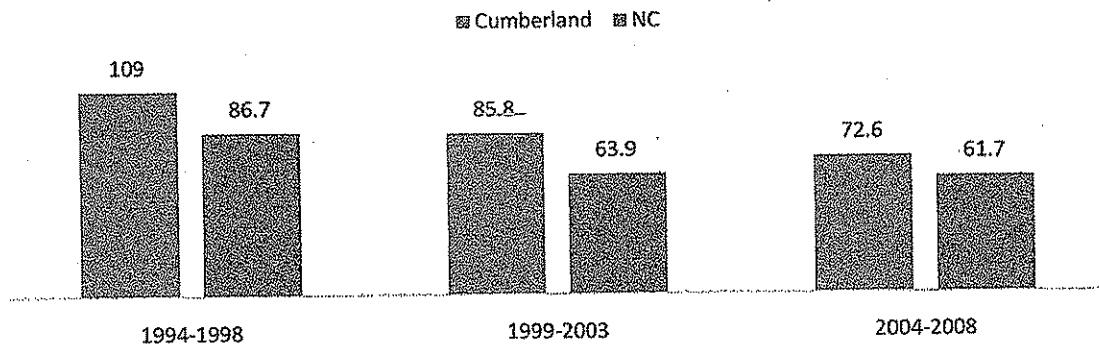
**Cumberland County Trends  
Cumberland County and NC:**

Cumberland County's rate of teen pregnancies has decreased over the years. The rate for Cumberland County still continues to be significantly higher than the State rate but progress has been made. In 1994-1998 the teen pregnancy rate was 109.0 but that rate has fallen significantly to 72.6 for years 2004-2008. NC teen pregnancy rate has also seen a significant decrease over the years from 86.7 (1994-1998) to 61.7 (2004-2008).

**Cumberland County & NC Trends for Teen Pregnancies in Females Ages 15-19**

Year	Cumberland	NC
1994-1998	109.0	86.7
1999-2003	85.8	63.9
2004-2008	72.6	61.7

**Cumberland County & NC Trends for Teen  
Pregnancies in Females Ages 15-19**

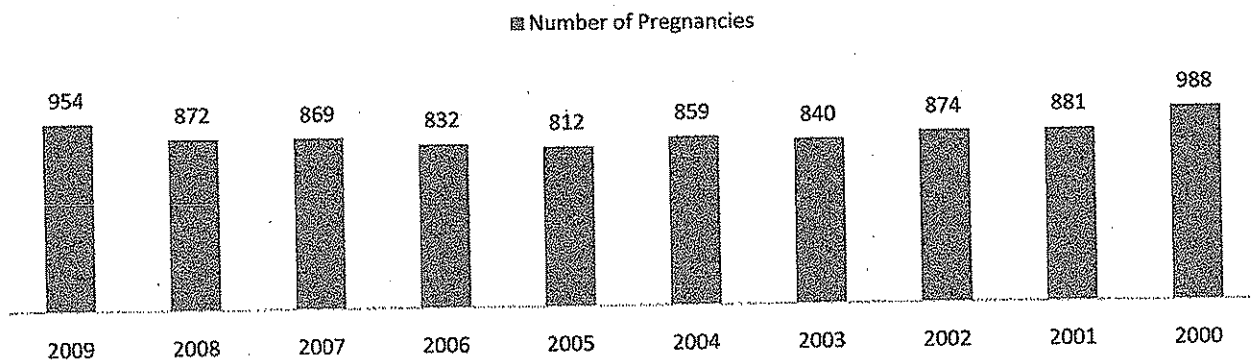


### Total Pregnancies for Cumberland County Teens (15-19) 2000-2009

In 2000 the total number of pregnancies for Cumberland County teens ages 15-19 was 988. The number decreased a great deal to 881 in year 2001. From 2001 to 2003 the numbers continued to decrease. In 2004 the teen pregnancy numbers slightly increased from 840 to 859. Around 2005 the number of pregnancies in Cumberland County decreased once more but then increase again in 2006. The trend shows that from 2006 to 2009 the number of teen pregnancies in Cumberland County has increased, it's quickly approaching the number of pregnancies reported in 2000. The largest increase has been reported between year 2008 (872) and 2009 (954).

Year	Number of Pregnancies
2009	954
2008	872
2007	869
2006	832
2005	812
2004	859
2003	840
2002	874
2001	881
2000	988

### Number of Pregnancies for Cumberland County Teens (15-19) 2000-2009



## **Initiatives and Resources in Cumberland County**

**Family Planning Services at Cumberland County Department of Public Health** – Family planning services are offered to youth ages 12-19. Classes are Tuesdays from 12 noon-1pm. The Family Planning Health Educator educates the clients on contraceptive methods, male and female anatomy, abstinence, breast health, immunizations, signs and symptoms of STD's and pelvic/pap exams. A Pre & Post test is given to the clients during the class and an evaluation is given at the end of class. Educational brochures and condoms are also passed out in the class.

**School-Based Family Planning Classes** - The Cumberland County Department of Public Health markets the family planning services available for teens by partnering with Cumberland County Schools. The Family Planning Health Educator visits local high schools to educate teens on family planning methods and services provided by the health department. The school-based classes educate teens on abstinence, contraceptive methods, STD's, breast health and testicular exams and more.

**Teen Pregnancy Prevention Month (Social Marketing)** - May is Teen Pregnancy Prevention Month. In order to promote this campaign, the Family Planning Health Educator from Cumberland County Department of Public Health visits local high schools and has students design creative abstinence slogans that are judged by community members, the chosen slogans are displayed on tee shirts to market the abstinence message. Cumberland County Department of Public Health partnered with radio station Foxy 99 and Cumberland County Schools to promote the campaign.

**Parents Matter**- Cumberland County Department of Public Health also implements Parents Matter, a program that encourages parents to communicate with their youth about puberty growth and development, abstinence, sexual behaviors, pregnancy, STD's and much more. Parents attend 5 consecutive sessions to learn about issues that concern young adolescents, today, the sessions usually last approximately 2-2 ½ hours. Cumberland County Department of Public Health partnered with Planned Parenthood of Central North Carolina to promote this program.

**Planned Parenthood of Central NC**- Offers Teen Connection a peer education program and partnered with the Health Department to implement Cumberland Connects, an adolescent pregnancy prevention project designed to address multiple factors that will impact teen pregnancy.

**Racial Disparity  
2008**

**Teen Pregnancy: Cumberland and Peer Counties**

According to the 2008 pregnancy by county of residence statistics, minority girls ages 10-14 in Cumberland County had a total of 8 induced abortions compared to Guilford County which had 12 induced abortions. Durham County had 4 cases of minority induced abortions while Pitt County's induced abortions were much smaller with just 1 case reported. This may be due to population size because Guilford county is largest, and there induced abortion and their total abortion number was 12 which was higher than the other counties listed, yet Pitt county is the smallest based on population and their induced abortion cases reported was 1.

All counties (Cumberland, Durham, Guilford and Pitt) minority induced abortion numbers were higher than that of the white population for ages 10-14. Minority live births for ages 10-14 in Cumberland, Guilford, and Pitt counties were higher than that of the white live birth numbers. For ages 15-19 minorities induced abortions for Cumberland, Durham, Guilford and Pitt counties were higher than that of the white population. Live births for minorities and whites ages 15-19 in Cumberland County were tied with each population having 323 live births. Durham, Guilford and Pitt counties number of live births were higher for minorities than whites. Guilford County's total pregnancy cases for ages 15-19 was 966 and Cumberland County' total was 892. In Durham County there were a total of 600 pregnancies and Pitt total pregnancies for ages 15-19 was 327.

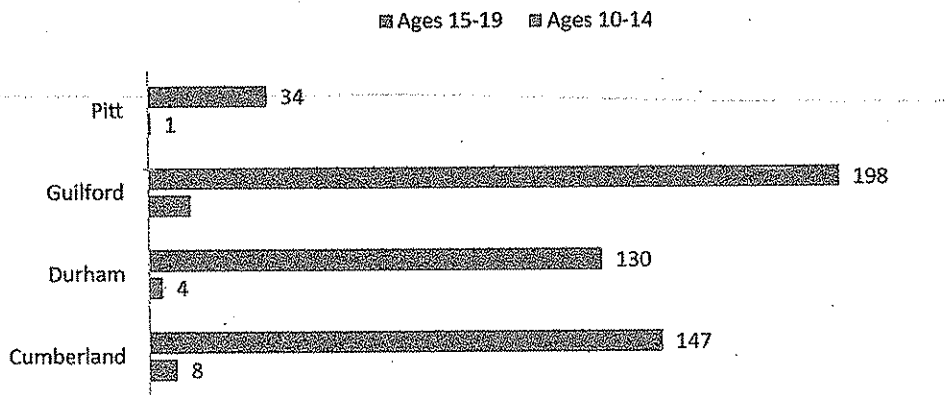
**Observations:**

- Cumberland County's minority induced abortions for teens ages 10-14 was 8 which is double the number for Durham County (4).
- Cumberland County's minority induced abortion for teen's ages 10-14 was lower than Guilford County (12).
- Cumberland County's (147) minority induced abortions among teens ages 15-19 was significantly higher than Pitt County (34).
- Cumberland County's minority induced abortions among teen's ages 15-19 was lower than Guilford County (198).

### 2008 Minority Induced Abortions among Teens

Indicator	Counties			
	Cumberland	Durham	Guilford	Pitt
<b>Ages 10-14</b>	8	4	12	1
<b>Ages 15-19</b>	147	130	198	34

### 2008 Minority Induced Abortions Among Teens



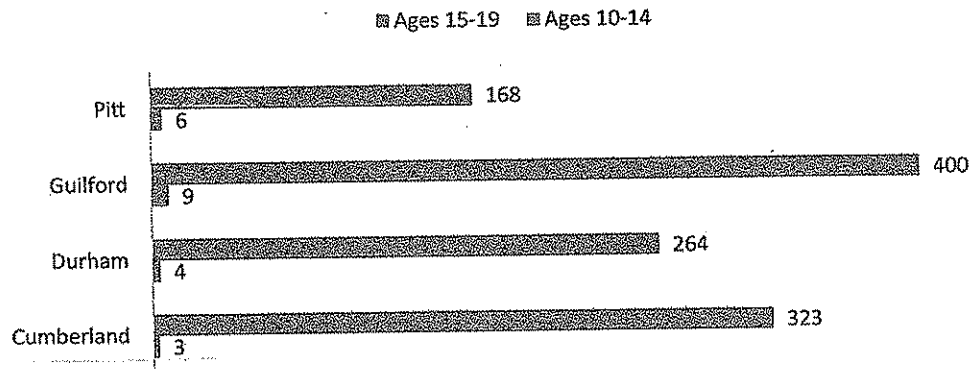
#### Observations:

- Cumberland County's (3) minority live births for teens ages 10-14 was lower than Durham (4), Guilford (9) and Pitt (6) counties.
- Cumberland County's (323) minority live births for teens ages 15-19 was higher than Durham (264) and Pitt (168) counties.
- Cumberland County's (323) minority live births for teens ages 15-19 was lower than Guilford county (400).

### 2008 Minority Live Births among Teens

Indicator	Counties			
	Cumberland	Durham	Guilford	Pitt
<b>Ages 10-14</b>	3	4	9	6
<b>Ages 15-19</b>	323	264	400	168

## 2008 Minority Live Births Among Teens



### Observations:

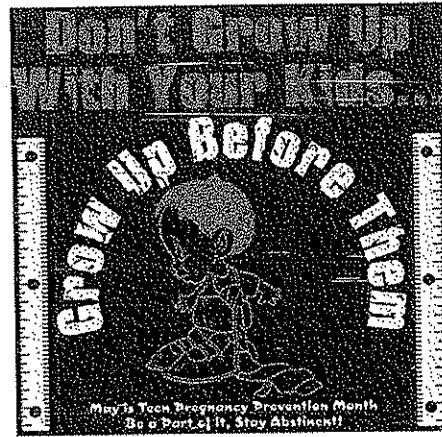
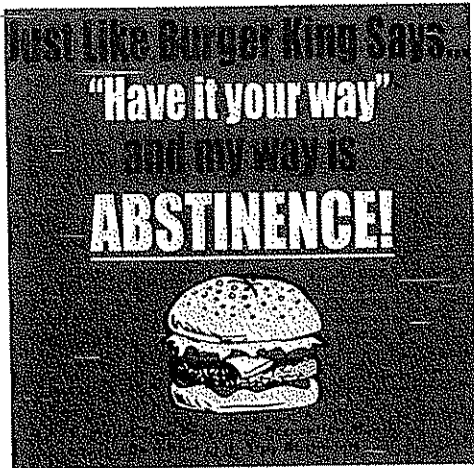
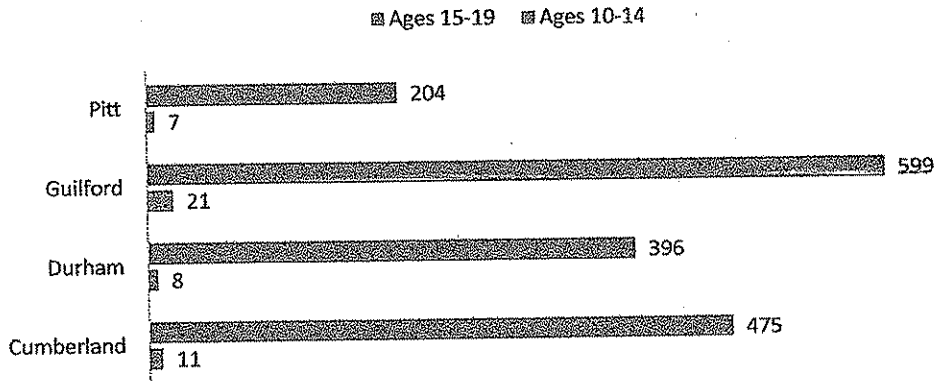
- Cumberland County's (11) minority total pregnancies for teens ages 10-14 were higher than Durham (8) and Pitt (7) counties.
- Cumberland County's (11) minority total pregnancies for teens ages 10-14 were lower than Guilford County's (21) minority total pregnancies.
- Cumberland County's (475) minority total pregnancies among teens ages 15-19 were higher than Durham (396) and Pitt County (204).
- Cumberland County's (475) minority total pregnancies among teens ages 15-19 was lower than Guilford County (599).

## 2008 Minority Total Pregnancies among Teens

Indicator	Counties			
	Cumberland	Durham	Guilford	Pitt
<b>Ages 10-14</b>	11	8	21	7
<b>Ages 15-19</b>	475	396	599	204



## 2008 Minority Total Pregnancies Among Teens



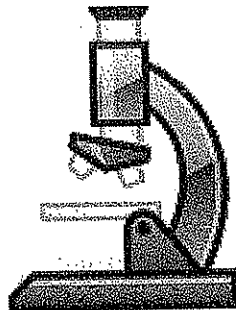
These are the three winning tee shirt designs from the 2009 Pregnancy Prevention Campaign.

## Communicable Diseases

Cumberland County Department of Public Health reports diagnosis of certain communicable diseases, including sexually transmitted diseases (STDs) to the state. The state reports and provides statewide statistics about disease trends. Based on data and trends, Cumberland County continues to battle against sexually transmitted and other diseases.

The Department of Public Health's DIS (Disease Intervention Specialist) staff collaborates with the HIV/STD Health Educator on intervention strategies to prevent/reduce HIV/STDs.

The Health Department offers confidential HIV antibody testing and makes referrals to local HIV case managers. Resources for HIV patients are limited in this county. The Department of Public Health currently collaborates with other community-based AIDS service organizations to promote HIV/STD prevention/risk reduction education as well as enhancing more accessible testing at the community level.



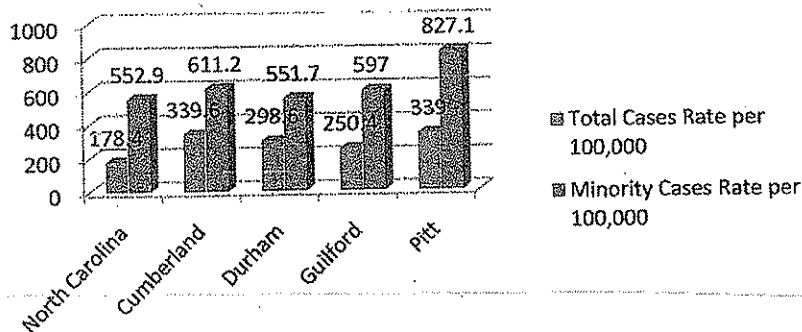
**NC RESIDENT GONORRHEA CASES AND RATES PER 100,000  
POPULATION  
2004-2008**

RESIDENCE	TOTAL GONORRHEA CASES	RATE PER 100,000	MINORITY GONORRHEA CASES	RATE PER 100,000
<b>NORTH CAROLINA</b>	79,172	178.4	62,494	552.9
<b>CUMBERLAND</b>	5,275	339.6	4,128	611.2

PEER COUNTIES	TOTAL GONORRHEA CASES	RATE PER 100,000	MINORITY GONORRHEA CASES	RATE PER 100,000
<b>DURHAM</b>	3,712	298.6	3,196	551.7
<b>GUILFORD</b>	5,644	250.4	4,808	597.0
<b>PITT</b>	2,504	339.0	2,226	827.1

RESIDENCE	Total Cases	Rate per 100,000	Minority Cases	Rate per 100,000
<b>North Carolina</b>		178.4		552.9
<b>Cumberland</b>		339.6		611.2
<b>Durham</b>		298.6		551.7
<b>Guilford</b>		250.4		597
<b>Pitt</b>		339.0		827.1

## Gonorrhea Cases Rate per 100,000 2004-2008



The total number of gonorrhea cases per 100,000 is markedly higher in Pitt County than Durham, Cumberland, and Guilford Counties and the state of North Carolina. Amongst minorities, the rate of gonorrhea per 100,000 is, on average, three times higher than other races for all four counties and the state of North Carolina. Methods of reporting may be the cause of such disparities in these rates. Minorities are more likely to visit public health departments for treatment of STD's and thereby increase the number of cases reported to the state.

- ◆ Cumberland County's Gonorrhea rate (339.6) for 2004-2008 was almost doubled the state's rate (178.4) and the minority rate (611.2) was significantly higher than the state's (552.9) rate.
- ◆ Cumberland County's gonorrhea rate (339.6) and Pitt County (peer co.) rate (339.0) for gonorrhea from 2004-2008 differed slightly.
- ◆ Pitt's minority gonorrhea rate (827.00) was significantly larger than Cumberland (611.2), Durham (551.7) and Guilford (597.0) from 2004-2008.

**NC RESIDENT PRIMARY AND SECONDARY SYPHILIS CASES  
AND RATES PER 100,000 POPULATION  
2004-2008**

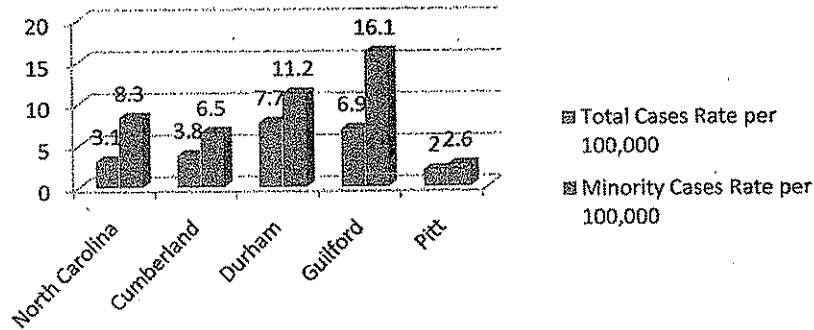
<b>RESIDENCE</b>	<b>TOTAL SYPHILIS CASES</b>	<b>RATE PER 100,000</b>	<b>MINORITY SYPHILIS CASES</b>	<b>RATE PER 100,000</b>
<b>NORTH CAROLINA</b>	<b>1,384</b>	<b>3.1</b>	<b>934</b>	<b>8.3</b>
<b>CUMBERLAND</b>	<b>59</b>	<b>3.8</b>	<b>44</b>	<b>6.5</b>

**Primary and Secondary Syphilis Rates 2004-2008**

<b>PUR COUNTRIES</b>	<b>TOTAL SYPHILIS CASES</b>	<b>RATE PER 100,000</b>	<b>MINORITY SYPHILIS CASES</b>	<b>RATE PER 100,000</b>
<b>DURHAM</b>	96	7.7	65	<b>11.2</b>
<b>GUILFORD</b>	15	6.9	130	<b>16.1</b>
<b>PITT</b>	<b>15</b>	<b>2.0</b>	7	<b>2.6</b>

	<b>Total Cases Rate per 100,000</b>	<b>Minority Cases Rate per 100,000</b>
<b>North Carolina</b>	3.1	8.3
<b>Cumberland</b>	3.8	6.5
<b>Durham</b>	7.7	11.2
<b>Guilford</b>	6.9	16.1
<b>Pitt</b>	2.0	2.6

## Primary and Secondary Syphilis Rates per 100,000 2004-2008



The rates per 100,000 of total cases of primary and secondary syphilis were the highest in Durham County throughout the 2004-2008 year period. Minority cases surpass those of non-minorities for primary and secondary syphilis, as is the case for many if not all sexually transmitted diseases.

The Syphilis Elimination Effort is designed to bring together health care providers, policy makers, community leaders and state and local public health agencies, to reduce syphilis rates throughout North Carolina. Working together, we have a unique opportunity to control this devastating disease, reduce the transmission of HIV, and protect unborn infants.

During 2004-2008, rates of Primary and Secondary Syphilis increased the most among 15-24 year old men and women. Compared to NC (3.1) Cumberland's rate was (3.8) for the same year and while the minority primary and secondary syphilis rate (6.5) was lower.

During the same timeframe Durham County (7.7) rate and Guilford County's (6.9) minority rate for primary and secondary syphilis was almost doubled that for Cumberland (6.5).

## MORBIDITY

Communicable Diseases can spread rapidly when they proliferate undetected through a population. Cumberland County Department of Public Health and the NC HIV/STD Prevention and Care Planning Branch works in partnership with local, state, and national health officials, university schools of public health, non-governmental organizations; clinicians and other health agencies to promptly identify, prevent, control and monitor infectious diseases that pose a threat to public health, including emerging and re-emerging infectious diseases. North Carolina works closely with all disciplines to integrate and collaborate on comprehensive prevention, diagnosis and treatment services for sexually transmitted diseases, viral hepatitis, and tuberculosis and HIV at the patient level. Cumberland County's AIDS, Gonorrhea and Syphilis rates were higher than the State's between 2004 -2008. Furthermore between 2006 and 2008 Cumberland County and Guilford a peer county ranked fourth for HIV disease.

### COMMUNICABLE DISEASE RATES PER 100,000 POPULATIONS 2004-2008

INDICATOR	CASES		RATES	
	CUMBERLAND	NC	CUMBERLAND	NC
<b>GONORRHEA-TOTAL</b>	5,275	79,172	339.6	178.4
<b>GONORRHEA-MINORITY</b>	4,128	62,494	611.2	552.9
<b>SYPHILIS-TOTAL</b>	59	1,384	3.8	3.1
<b>SYPHILIS-MINORITY</b>	44	934	6.5	8.3

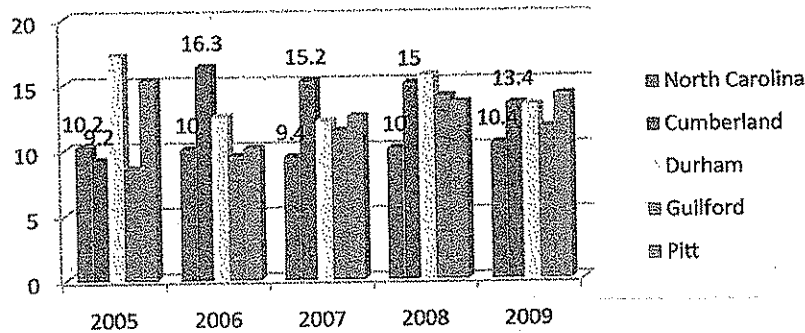
### N.C. AIDS CASES BY COUNTY 2005-2009

COUNTIES	2005	2006	2007	2008	2009
	RATE	RATE	RATE	RATE	RATE
<b>NC</b>	10.2	10.0	9.4	10.0	10.4
<b>CUMBERLAND</b>	9.2	16.3	15.2	15.0	13.4
<b>DURHAM</b>	17.2	12.5	12.1	15.6	13.3
<b>GUILFORD</b>	8.5	9.5	11.4	14.0	11.6
<b>PITT</b>	15.3	10.1	12.5	13.5	14.1

Source:

NC Epidemiologic Profile for HIV/STD Prevention and Care Branch Planning (2009)

## N.C. AIDS Cases Rates per 100,000 2005-2009



### Observations

In 2005 Cumberland County's AIDS rate (9.2) was slightly lower than the state's rate (10.2) for the same year per 100,000. From 2006-2009 Cumberland County's rate significantly out ranked NC and some of the peer counties rates like Durham, and Guilford was high than Cumberland.

17, 995 AIDS cases have been reported in North Carolina cumulatively from the beginning of the epidemic through December 2008.

961 AIDS cases were diagnosed in the adult/adolescent population of North Carolina in 2008 (12.9 cases per 100,000 adult/adolescent population).

In North Carolina approximately 25% of all individuals diagnosed with HIV infection are diagnosed with AIDS at the same time or within 6 months.

There is a growing concern about the impact of HIV/AIDS in the South. In 2007 the South had the greatest number of new AIDS cases overall (46%) and the greatest number of people estimated to be living with AIDS. (Kaiser 2008)

### **Comparisons (Peer Counties)**

In 2009 Pitt County's AIDS rate (14.1) was higher than North Carolina, Cumberland (13.4), Durham (13.3) and Guilford Counties.

Source:

NC Epidemiologic Profile for HIV/STD Prevention and Care Branch Planning (2009)



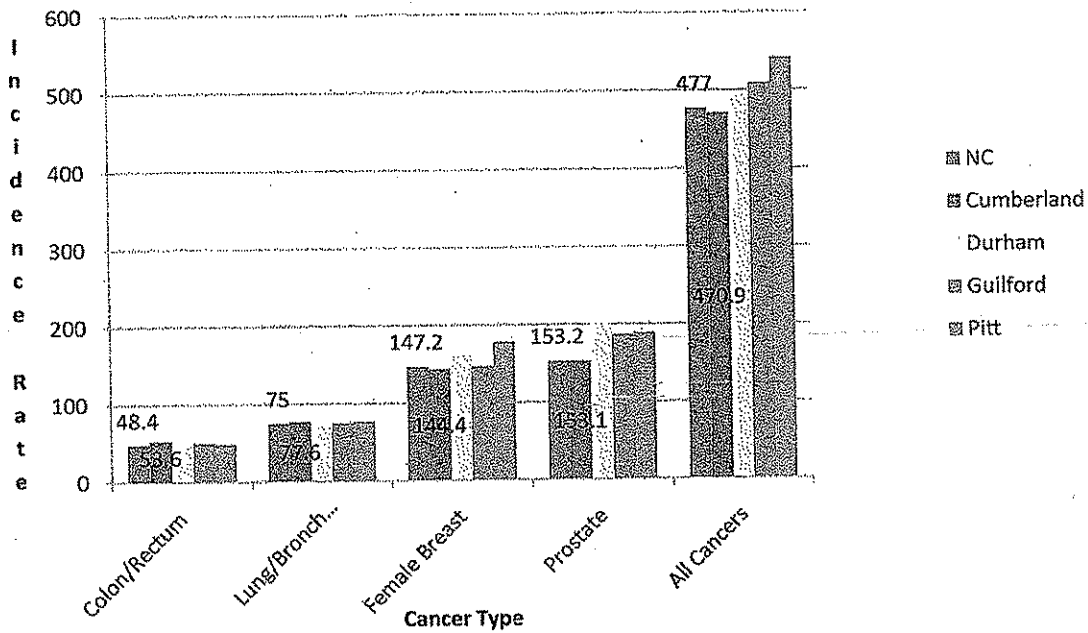
2002-2006 CANCER INCIDENCE RATES BY COUNTY FOR SELECTED SITES  
 PER 100,000 POPULATION  
 AGE-ADJUSTED TO THE 2000 US CENSUS

COUNTY	COLON/RECTUM		LUNG/BRONCHUS		FEMALE BREAST		PROSTATE		ALL CANCERS	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
NORTH CAROLINA	20,843	48.4	32,376	75.0	35,163	147.2	29,402	153.2	207,251	477.0
CUMBERLAND	631	53.6	92.4	77.6	1,036	144.4	810	153.1	5,808	470.9

PEER COUNTIES	COLON/RECTUM		LUNG/BRONCHUS		FEMALE BREAST		PROSTATE		ALL CANCERS	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
DURHAM	452	44.7	711	72.6	947	161.7	875	201.6	5,097	494.0
GUILFORD	1,112	50.7	1,644	75.3	1,819	147.0	1,783	187.3	11,287	510.1
PITT	289	48.6	453	77.4	607	178.9	490	189.3	3,260	541.9

RESIDENCE	Colon/Rectum	Lung/Bronchus	Female Breast	Prostate	All Cancers
North Carolina	48.4	75	147.2	153.2	477
Cumberland	53.6	77.6	144.4	153.1	470.9
Durham	44.7	72.6	161.7	201.6	494
Guilford	50.7	75.3	147	187.3	510.1
Pitt	48.6	77.4	178.9	189.3	541.9

### Cancer Incidence Rates per 100,000 population 2002-2006



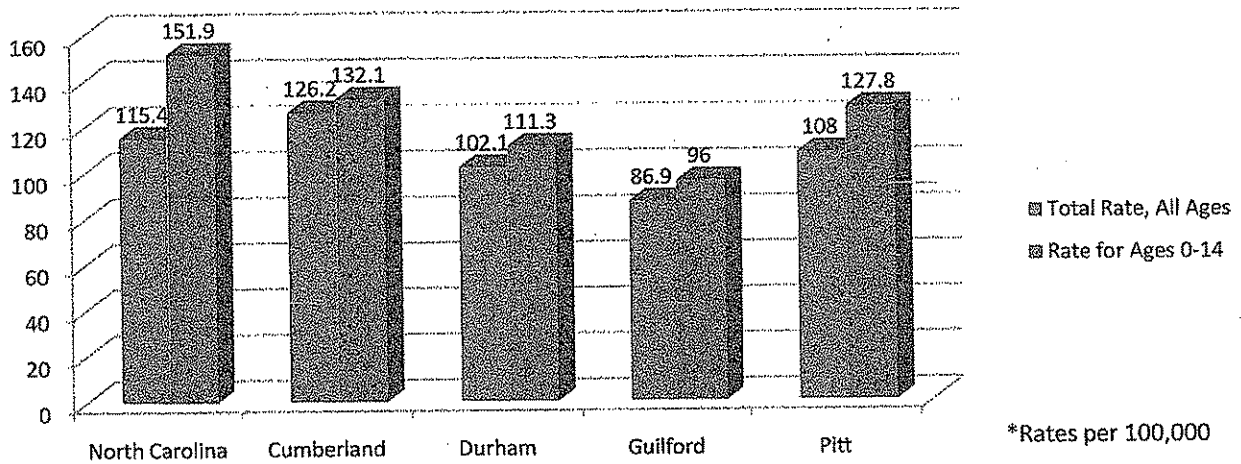
The incidence rates for NC, Cumberland, Durham, Guilford and Pitt were combined into one graph. The incidence rates for Cumberland County and the State of North Carolina are displayed on the graph. The incidence rate for all cancers in Pitt, Guilford, and Durham counties exceeds the incidence rate for the state. However, Cumberland County's incidence rate for all cancers, including colon/rectum, lung/bronchus, female breast, and prostate, is exceptionally close to the incidence rate for the state. It's important to remember that the census and social status of Cumberland County is continuously changing. Due to an influx and exodus of military personnel, health problems will disproportionately affect Cumberland County each year.

## ASTHMA HOSPITALIZATIONS 2008

PEER COUNTRIES	CASES	RATES	CASES	RATES
<b>DURHAM</b>	266	102.1	62	<b>111.3</b>
<b>GUILFORD</b>	407	86.9	87	<b>96.0</b>
<b>PITT</b>	168	<b>108.0</b>	39	<b>127.8</b>

RESIDENCE	Total Rate All Ages	Rate Ages 0-14
North Carolina	115.4	151.9
Cumberland	126.2	132.1
Durham	102.1	111.3
Guilford	86.9	96
Pitt	108	127.8

### 2008 North Carolina Hospital Discharges with a Primary Diagnosis of Asthma



The rate per 100,000 of hospital discharges with a primary diagnosis of asthma was the lowest in Guilford County for ages 0-14 in 2008. As expected, the state of North Carolina had highest rate per 100,000 of hospital discharges with a primary diagnosis of asthma was in 2008 for 0-14 year olds; this rate exceeds the others because the state as a whole has a higher population than the four counties combined.

## **Health Disparities (Racial and Gender)**

### **Heart Disease:**

- Males in the County and State had heart disease death rates higher than females in the County and State.
- White males had a higher heart disease death rate than minority males in the County. However, Minorities had a higher disease death rate than whites in the state.

### **Cancer:**

- Males had a higher cancer death rate than females in the County and State.
- Whites had a higher cancer death rate of 204.8, than minorities' death rate of 201.3 in the County. However, minorities' had a higher cancer death rate of 215.6 than whites' death rate of 186.5 in the State.

### **Cerebrovascular Disease (Stroke):**

- Minorities in the County and State had a higher stroke death rate than Whites in the County and State.
- Minority males in the County and State had a higher stroke death rate than minority females in the County and State.

### **Diabetes:**

- Males in the County and State had a higher death rate from diabetes than females in the County and State.
- Minorities in the County and State had a higher death rate from diabetes than whites in the County and State.
- Minority males in the County had a higher death rate from diabetes than minority males in the state.

### **Low Birth:**

- The County's Minority low birth weight was twice as high as the white low birth weight.
- The County and State Minority fetal, neonatal and post-neonatal death rates are twice as high as the County and State white rate.
- The County and State minority infant death rate is twice as high as the County and State white rate.

There exist perplexing racial and gender disparities in some of the health indicators. Numerous barriers can stand between minorities and whites. For example, the inability to pay for services can delay or even forgo health care services altogether. Also, minorities may be overwhelmed by the stress of poverty. The challenge is to mobilize the community to take ownership of the health disparities and to design and implement programs that the community feels can be successful.

## **Health Priorities**

Based on the leading causes of death (secondary data from the State) and the 2010 Community Health Assessment Community Survey the most significant health problems are listed below:

Heart Disease

Cancer

Diabetes

Stroke

Obesity

Fitness and Nutrition

Teen Pregnancy

HIV/STDs

Chronic Lower Respiratory Disease

Five health priorities were selected to be addressed in the community action plan. They are listed by the health issues that received the highest score:

Heart Disease

Obesity

Teen Pregnancy

Cancer

Diabetes

## **Healthcare Resources/Services**

### **Cumberland County Department of Public Health:**

The County Department of Public health offers an array of services to the citizens that include:

#### **CHILD SERVICE COORDINATION PROGRAM (CSC)**

Child Service Coordination is a voluntary home visitation program that provides free services to children age's birth to 5 years of age. Children are eligible based on development, growth, health or social concerns. A Child Service Coordinator is a special nurse or social worker trained to teach parenting and provide services such as developmental screens and stimulation activities. The goal is to ensure that all children get a safe and healthy start in life.

#### **MATERNITY CARE COORDINATION PROGRAM (MCC)**

Maternity Care Coordination is a voluntary program that assists pregnant women in getting prenatal care and community resources to meet their needs. All pregnant women in Cumberland County are eligible regardless of income. Maternity Care Coordinators are highly skilled nurses and social workers. Services are free and include prenatal education, blood pressure checks, referrals to services such as housing, WIC, Medicaid, prenatal classes, etc. Women enrolled in the program receive a **Postpartum-Newborn Home Visit** to ensure that both mom and baby are doing well.

#### **WOMEN'S PREVENTIVE HEALTH SERVICES**

##### **Breast & Cervical Cancer Control Program:**

The Breast and Cervical Cancer Control Program is designed to reduce death and disability among women caused by breast and cervical cancer. Public awareness, education, early diagnosis and treatment are key elements in reducing the effects caused by breast and cervical cancer. This program focuses on low-income women 50-64 years of age. Women enrolled in the program, receive a pap smear, and mammogram screening. Women are also offered screening for high blood pressure, diabetes, osteoporosis, and preventive education.

##### **Family Planning Clinic:**

Family Planning clinic provides services to all women who desire to postpone or space their pregnancy. The program provides pre-pregnancy counseling, education, physical examination, birth control counseling, and supplies. All services are strictly confidential. Pregnancy testing is available Monday through Thursday from 8:00 a.m. – 9:00 a.m. Appointments are required for all other services except pregnancy testing. Fees for service are based on family size and income.

#### **COMMUNICABLE DISEASE CONTROL**

##### **Immunization Clinic:**

The immunization clinic provides all required childhood and adult immunizations. Immunization ("shot") records are available and may be requested at any time during normal business hours. Vaccines for international travel are available. Clinic hours are Monday-Friday 8:00 a.m.-4:00 p.m. Contact the clinic regarding schedule changes.

**Epidemiology Clinic:**

The Epidemiology clinic provides screenings for reportable communicable diseases. Services include medication for prevention and treatment of tuberculosis and other communicable diseases, investigation of cases, education to patients and community upon request, and screening for refugees who settle in this country.

**Sexually Transmitted Diseases (STD/HIV):**

The STD clinic provides services to anyone who is suspected of having a sexually transmitted disease. Services include screening, diagnosis, treatment counseling, education and case finding. HIV/AIDS testing and counseling is also available and free of charge. Services are confidential. Clinic services are available daily on a walk-in, first-come, first serve basis (contact clinic regarding schedule changes).

**HEALTH EDUCATION:**

The Health Education Division provides innovative educational programs that promote the physical, emotional, and social well-being of individuals and communities. Health Education is responsible for planning, organizing, and implementing programs for clinic patients, community groups, civic organizations, private agencies, worksites, and schools. Other services include developing and marketing health promotion and risk reduction activities; consulting with other health professionals; and collaborating with other agencies to implement policy and environmental changes within the community.

**ADULT HEALTH:**

The Adult Health Clinic provides comprehensive medical care for health maintenance and care of those with acute and chronic disease. The primary care services are open to Cumberland County residents and individuals designated by Carolina Access Insurance coverage. A sliding scale service is available to those who financially qualify and Third party insurance is accepted. Appointments and walk-in services are available.

**MEDICAL/ENVIRONMENTAL LABORATORY:**

The Medical Laboratory is nationally certified by **Clinical Laboratory Improvement Amendment (CLIA)** and enrolled in a proficiency program through the College of American Pathologist (CAP). The NC State Laboratory inspects the lab yearly for certification in the Water Program, which the lab performs for the Environmental Health Division. All lab staff members are certified through the American Society of Clinical Pathologists (ASCP). Testing is performed in all areas of the medical laboratory to include: Chemistry, Hematology, Urinalysis, Serology, Immunology, and Microbiology.

**SCHOOL HEALTH PROGRAM:**

The school health program is staff by school health nurses. The nurses are responsible for providing the following services: vision and hearing screenings, making referrals, responding to communicable disease concerns, offering medical expertise to teacher/staff and monitoring students with routine and special health concerns.

### **VITAL RECORDS:**

The Vital Records Department ensures that all birth and death certificates for Cumberland County are filed according to the Vital Statistics laws of North Carolina. A copy is forwarded to the Register of Deeds at the Cumberland County Courthouse where certified copies are available to the public (for certified copies, please call 678-7794). The Health Department records are not open to the public and are maintained for only two years in compliance with the state guideline. Other services include:

- Information to the general public concerning the guidelines and regulations of the NC Vital Statistic Laws that may pertain to a particular situation.
- Assistance in providing information to obtain certificates from other states and countries.

Assistance is provided to local hospitals and funeral homes on proper registration.

### **NUTRITION DEPARTMENT**

#### **WOMEN, INFANT, AND CHILDREN (WIC):**

The Nutrition Division provides the federally funded Women, Infants, and Children Program (WIC). WIC program services are provided at five sites in Cumberland County: Department of Public Health, Ft. Bragg Soldier Support Center, and Hope Mills at Millview Place on Hope Mills Road, Spring Lake Family Resource Center, and Cape Fear Valley Medical Center. The WIC program provides nutrition education and healthy foods to pregnant, postpartum, and breastfeeding women, infants, and children up to age five. Participants must meet residency, income, and medical/nutritional risk eligibility requirements. WIC staff members also make referrals to community agencies and medical providers. Breastfeeding education is provided to each expecting mother on the program. The Nutrition Division also has Registered Dietitians (RD) on staff that provides nutrition counseling to clients referred from the health department maternity and child health clinics. The division also participates in some community events and at times may provide other community education services.

#### **Cape Fear Valley Health System:**

Fayetteville is home to the eleventh largest hospital system in the state. Cape Fear Valley Health System is comprised of four main healthcare facilities:

- Cape Fear Valley Medical Center, a 426-bed hospital that includes The Heart Center and The Cancer Center.
- Behavioral Health Care (BHC) offers inpatient and outpatient psychiatric care as well as substance abuse treatment.
- Southeastern Regional Rehabilitation (SRRC), a rehabilitation hospital.
- Highsmith-Rainey Specialty Hospital, an acute-care hospital.



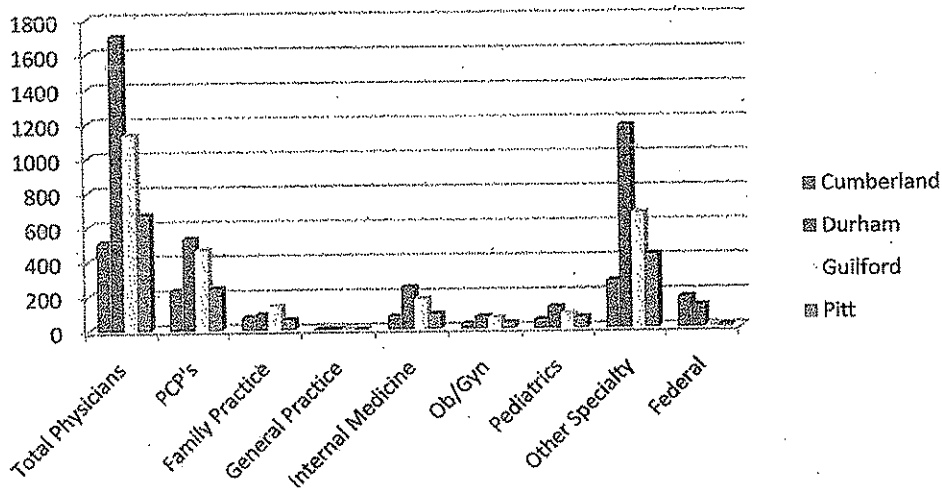
**Womack Army Medical Center:**

The Army Medical Center is committed to providing quality, cost-efficient care for "The Total Army Family." Womack Army Medical Center, WAMC, is proud to serve the more than 160,000 eligible beneficiaries in the region, the largest beneficiary population in the Army.

**Veterans Administration Medical Center:**

The VA Medical Center is a Clinical Core Level III facility, with 90 general medical, surgical and mental health beds and a 69-bed long-term care unit. The Fayetteville location is in Southeastern North Carolina in an area populated by more than 155,000 veterans in 21 counties.

## 2008 Total and Primary Care Physicians

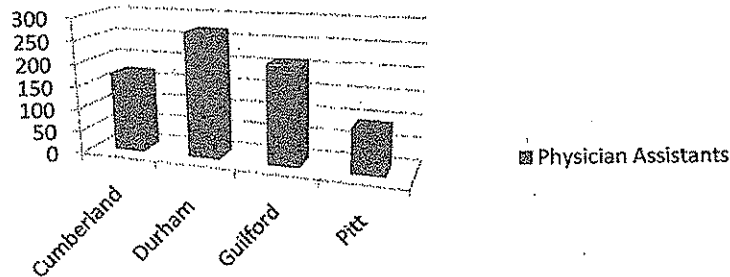


	Total Physicians	PCP's	Family Practice	General Practice	Internal Medicine	OB/Gyn	Pediatrics	Other Specialty	Federal
<b>Cumberland</b>	510	230	73	3	75	29	50	274	175
<b>Durham</b>	1705	530	89	6	243	68	124	1172	128
<b>Guilford</b>	1133	465	138	4	175	64	84	665	7
<b>Pitt</b>	668	243	59	0	88	33	63	425	14

Based upon the North Carolina Health Professions Data System information, the number of Primary Care Physicians in Cumberland County pales in comparison to Pitt, Guilford, and Durham Counties. Durham County benefits from its close proximity to Raleigh; a large metropolitan area attracts more health professionals and has additional opportunities for research and medical advancement.

	Physician Assistants
<b>Cumberland</b>	173
<b>Durham</b>	272
<b>Guilford</b>	214
<b>Pitt</b>	95

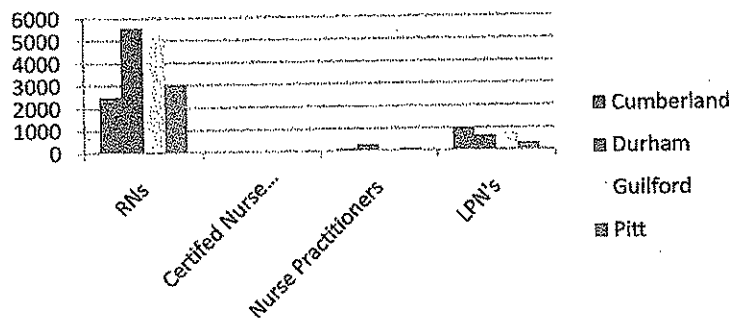
## Physician Assistants 2008



Durham County clearly surpasses Cumberland and Pitt Counties with the number of Physician Assistants they possess. My hypothesis is that the number of physician assistants and physicians has increased in Cumberland County since 2008 due to the relocation of numerous medical officers to Fort Bragg.

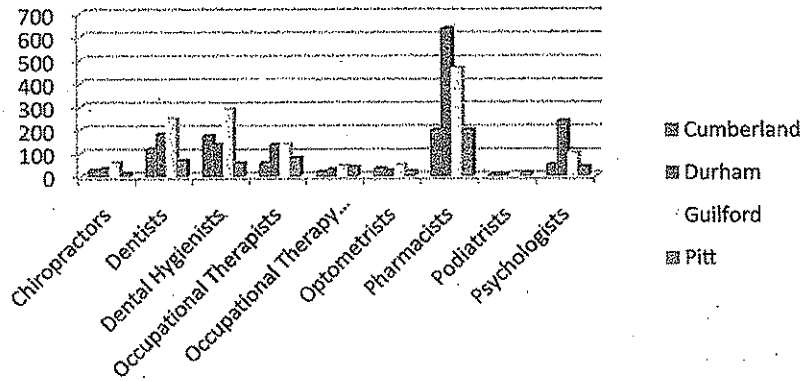
	RN's	Certified Nurse Midwives	Nurse Practitioners	LPN's
<b>Cumberland</b>	2506	9	87	998
<b>Durham</b>	5572	13	282	657
<b>Guilford</b>	5308	11	188	773
<b>Pitt</b>	3051	16	113	325

## Nursing Professions 2008



The scale for this chart could not be adjusted to include certified nurse midwives due to their scarcity in the four counties observed. Registered Nurses clearly outnumber Licensed Practical Nurses, Nurse Practitioners and Certified Nurse Midwives; as is the case throughout the country.

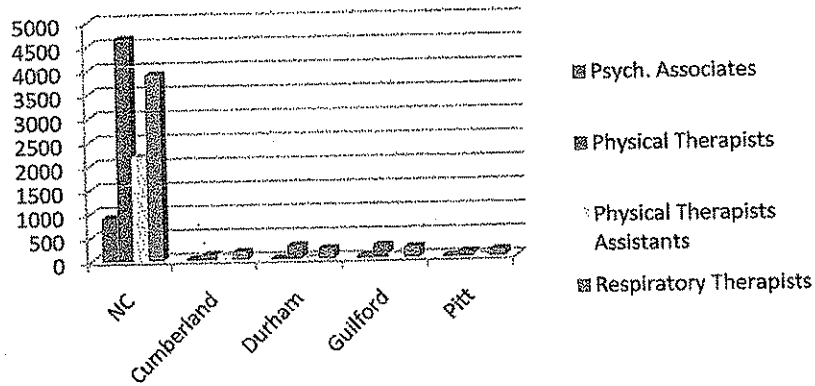
## 2008 Health Professionals



This graph provides an illustration of the number of health professionals within Cumberland, Durham, Guilford and Pitt Counties with the following specialties: chiropractors, dentists, dental hygienists, occupational therapists, occupational therapy assistants, optometrists, pharmacists, podiatrists, and psychologists. Varying from previous graphs, the highest number of dentists and dental hygienists are not found in Durham County but Guilford County. Durham surpasses all others with the number of pharmacists and psychologists; Cumberland and Pitt Counties number of specialists were relatively the same.

	Psych Associates	Physical Therapists	Physical Therapists Assistants	Respiratory Therapists
<b>North Carolina</b>	896	4643	2182	3887
<b>Cumberland</b>	28	113	108	167
<b>Durham</b>	21	276	27	210
<b>Guilford</b>	50	259	84	219
<b>Pitt</b>	29	104	55	139

## 2008 Health Professionals



Due to the scale of this graph, it appears that the healthcare specialists listed are nearly non-existent in Cumberland, Durham, Guilford, and Pitt Counties. However, the amount of these specialists throughout the state of North Carolina so greatly exceeds that amount within the counties that the graph is skewed. Where there are 113 physical therapists in Cumberland County, the entire state of North Carolina has 4,643 physical therapists.

### Nursing Home Facilities:

**North Carolina State Veterans Nursing Home**  
 214 Cochran Ave.  
 Fayetteville, NC 28301

**The Rehabilitation and Health Care Ctr at Village Green**  
 1601 Purdue Drive  
 Fayetteville, NC 28304

**Whispering Pines Nursing & Rehabilitation Center**  
 523 Country Club Drive  
 Fayetteville, NC 28301

**Woodlands Nursing & Rehabilitation Center**  
 400 Pelt Drive  
 Fayetteville, NC 28301

**Care Clinic:**

The Care Clinic provides free basic primary health care for uninsured Cumberland County Adults who have limited incomes. Services include primary medical care, dental extractions, chiropractic care, limited pharmacy services, routine laboratory tests, social services, education, and referral to other resources in the community.

**Carolina Collaborative Community Care (4-C):**

Carolina Collaborative Community Care offers case management and disease management services to improve health outcomes and reduce Medicaid care cost. Clients must be a Carolina access Medicaid enrollee to receive services.

**Population without Health Insurance  
2005**

In 2005, 18.8% or 52,244 of the County population ages 0-64 years were uninsured, ranking the County 56<sup>th</sup> in the State. 12.5% or 11,247 of the County population ages 0-17 years were uninsured, ranking the County 60<sup>th</sup> in the State and 21.8% or 40,996 of the County's population ages 18-64 years were uninsured, ranking the County 58<sup>th</sup> in the State.

According to the 2009 BRFSS survey results, (236) 83.2% of adults under 65 years of age responded that they had health insurance coverage whereas, (40) 16.8% stated that they did not have health insurance coverage. Those under 65 years of age and employed reported that (134) 87.1 % had health insurance coverage and (19) 12.9 % reported that they did not have health insurance coverage.

According to respondents from the community health survey (2010), about 71 % of the respondents had health insurance coverage of some sort whereas 29 % of the respondents did not have any health insurance coverage.

## Crime

According to the N.C. Department of Justice, the crime index rate includes the total number of violent crimes (murder, rape, robbery and aggravated assault) and property crimes (Burglary, larceny and motor vehicle theft). Violent crimes are defined in the Uniform Crime reporting (UCR) program as those offenses which involve force or threat of force.

Indicator	County Rate	State Rate	Number of Events in the County	Number of Events in the State
Index Crime Rate, 2008	7,537.7	4,581.0		
Index Crime Rate, 2009	7,153.5	4,178.4		
Violet Crime Rate, 2008	833.3	477.0		
Violent Crime Rate, 2009	668.9	417.2		
Property Crime Rate, 2008	6,704.4	4,103.9		
Property Crime Rate, 2009	6,484.6	3,761.2		
Juvenile with complaints approved for court (2007)			578	11,726
Juveniles in Youth Development Centers (2008)			53	469

### Observations:

- The County's index, violet, and property crime rates were much higher than the State for years 2008 and 2009.
- 75.4 % of the community health assessment survey respondents cited crime as a community problem.

## Homelessness

Homelessness is a major problem in Cumberland County. According to the estimates of the point-in-time survey conducted in January of 2010, the County had 1,033 homeless people. In an effort to combat homelessness Cumberland County and the City of Fayetteville developed a ten year plan to end homelessness. The plan maps out strategies to guide the City/County in providing homeless men, women and children with coordinated services and housing options.

- 69.1 % of the community health assessment survey respondents cited homelessness as a problem in the community.

## Community Resources

### Utility Assistance:

Alms House  
(910)425-0902  
(Need picture ID)

Salvation Army  
(910) 307-0359

### Meal Assistance:

Abney Chapel of Community Service Center  
(910) 483-4384

City Rescue Mission  
(910) 323-0446

Hands That Help Ministry  
(910) 237-3390

Salvation Army  
(910) 307-0359

### Housing Assistance:

Green's Shelter for Women  
(910) 717-7009

City Rescue Mission  
(910) 323-0446

Cumberland Interfaith Hospitality Network, Inc.  
(910) 826-2454 Ext.22

Fayetteville Metropolitan Housing Authority  
(910) 483-6980

Robin's Meadow Apartments  
(910) 485-8026

The Salvation Army  
(910) 485-8026

Women's Center  
(910) 323-3377



**Crisis Intervention:**

Care Family Violet Center  
(910) 677-2532

Operation Blessings Crisis Pregnancy Center  
(910) 483-1119

Rape Crisis Center  
(910) 485-7273

Save the Babies House of Refuge  
(910) 486-0057

**Drug addiction/Recovery:**

Hope Harbor Christian Mission  
(910) 424-8800

Myover Reese Fellowship Homes  
(910) 486-8718

The Oxford House for Men  
(910) 822-1995

The Oxford House for Women  
(910) 433-9123

## **Distribution Plan**

A draft copy of the CHA document will be submitted to the Advisory Committee and the Health Director for review. A final copy of the CHA document will be forwarded to the Health Education/Healthy Carolinians office once approved by Health Director.

Copies of the final CHA report will be distributed to the following:

Health Director and Senior Management Team

The Board of Health

County Manager

Advisory Committee

CHA Work Group

Cumberland County Main Library

Internet (the complete CHA report will be posted on the Cumberland County Health Department website)

Media (A press release of the CHA findings will be sent to the local media, and the website will be listed to get a copy of the full CHA report)

## Cumberland County Community Health Opinion Survey

The purpose of this survey is to learn more about health and quality of life in Cumberland County. We will use this information to identify needs, concerns and our most pressing health problems. A community action plan will be developed and implemented to address our most challenging health concerns.

1. Thinking about your community, what kind of place is it to live? (check only one)

\_\_\_ Excellent    \_\_\_ Good    \_\_\_ Fair    \_\_\_ Poor

2. In your opinion, does your community have a problem with any of these diseases or disabilities?

Diseases and Disabilities	No Problem	Minor Problem	Major Problem	I Don't Know
Lead poisoning				
Breast cancer				
Lung cancer				
Prostate cancer				
Other cancers				
Diabetes				
Heart disease				
High blood pressure				
HIV/AIDS				
Pneumonia/flu				
Stroke				
Mental health problems				
Dental problems (adult)				
Dental problems (child)				
Learning and developmental disabilities				
Sexually Transmitted Diseases				
Adult asthma				
Childhood asthma				
Adult obesity				
Childhood obesity				
Depression				
Diseases people get from animals (rabies, West Nile)				
Arthritis				

3. In your opinion, do people in your community have a problem finding/using these services?

Health and Human Services	No Problem	Minor Problem	Major Problem	I Don't know
Routine health care				
Hospital services				
Dental care				
Mental health care/counseling				
Emergency medical care				
Pharmacy/drug stores				
Drug & alcohol treatment				
Health promotion education programs				
Transportation to health care				
Health insurance coverage				
Enrolling in Medicaid/Medicare				
Food assistance (\$ or food)				
Housing assistance				
Help with electricity, fuel, or water bills				
911 emergency services				
Long term care facilities				
Care for pregnant women				
Childhood immunizations				
After school care				
Child care for infants and preschoolers				
Car seats for infants and children				
Home health care				
Parenting skills education				
Adult day care/respite care				
Nutrition help (such as Meals-on-Wheels)				

4. Why do you think people may not use the services in question 3? ✓ the appropriate column.

Barriers to Service	No Problem	Minor Problem	Major Problem	I Don't Know
Person's dislike of the provider				
Cost of services				
Lack of information about services				
Lack of transportation				
Inconvenient times				
Lack of childcare				
Inconvenient locations				
Language barriers				
Wait too long for service				
Concerns about confidentiality				

Perceptions about quality of service				
Prior bad experience				
People were not friendly				
Lack of handicap access				
Reluctance to go outside family for help				
Racial/Ethnic discrimination				

5. In your opinion, are the issues below a problem in your community?

Issue	No Problem	Minor Problem	Major Problem	I Don't Know
Alcohol abuse				
Drug abuse				
Smoking/Tobacco use				
Not using seatbelts				
Homelessness				
Poor eating habits				
Lack of exercise				
Violent Behavior				
Child abuse				
Juvenile delinquency				
Suicide				
Work safety				
Youth access to and use of weapons				
Teen pregnancy				
Men's health				

6. In your opinion, does your community have a problem with any of the concerns listed below? (Please check in the box whether you think it is not a problem, a minor problem, or a major problem.)

Living in Our Community	No Problem	Minor Problem	Major Problem	I Don't know
Traffic safety				
Affordable, safe housing				
Employment opportunities				
Recreational programs & facilities				
Quality education (K-12)				
Education & training for adults				
Water supply and quality				
Racial/ethnic discrimination				
Legal services				
Crime				
Air quality				
Animal Control				
Public transportation				

Food safety				
Solid waste disposal				
Emergency preparedness(smoke detectors, family emergency plan i.e.)				

7. Are you covered by a health insurance plan? Yes No  
*If yes, what type of coverage do you have?*  
 Medicare (includes supplemental policy)  Medicaid  
 Private insurance  Other

8. Where do you go for routine healthcare when you are sick?  
 Doctor's office  Hospital Emergency Room  Free clinic  
 Health Department  Chiropractor  
 Other \_\_\_\_\_  
 Urgent Care  I don't seek health care

*In order to understand the results of this survey, we need to know more about you. We do not ask your name on this survey.*

9. What is your zip code? \_\_\_\_\_

10. What is your age? (please check one)  
 0-17  18-34  
 35-54  55-64  
 65-74  75 or older

11. Are you? (please check one)  
 Female  
 Male

12. What is your race/ethnicity? (please check)  
 White  Black  
 Native American  Asian/Pacific Islander  
 Hispanic/Latino  Other \_\_\_\_\_

13. What was your household income last year? (please check one)  
 Less than \$10,000  \$10,000-19,999  
 \$20,000-29,999  \$30,000-49,999  
 \$50,000-74,999  \$75,000 or more

**14. What is the highest level of schooling you have completed?**

- Less than 12<sup>th</sup> grade
- High school graduate or equivalent (GED)
- Vocational training
- Associate degree in college
- 4 year college degree (bachelors)
- Advanced degree in college (masters, doctorate)

**The End!**

Thank you very much for completing the Community Health Survey

## **Cumberland County Health Department Community Survey Results**

According to the 2009 American Community Survey conducted by the U.S. Census Bureau, the population of Cumberland County is 315,207 with a median age of 29.7 years. Females make up about 52% of this population. The racial composition of this county is comprised of whites at 57.9%; blacks at 38.6%; Native Americans at 3.4%; Asians at 3.1% and some other race at 3.9. The Hispanic population in Cumberland County stands at 6.3% as of 2009.

A community survey to assess the health of this population was conducted by the Health Disparities Institute at Fayetteville State University. The data from this survey will be utilized in the Community Health Assessment conducted by the Cumberland County Health Department. This survey measures perceptions and attitudes of Cumberland County residents towards a variety of health and allied health issues that impact their lives.

Methodology primary data regarding community health and health perceptions was collected using surveys. Six undergraduate students from different academic streams at Fayetteville State University were recruited as part of a summer project to administer this survey at various locations and collect primary data. They were provided training in survey methodology and data collection techniques. A team of at least two to three student interviewers' were deputed to a given location accompanied by a supervisor. The supervisors were trained staff employed at the Survey Research Center. At the location, the group would use setup a station using a portable table, chairs, writing pads, pencils and surveys. They also carried healthy snack incentives (fruit snacks, granola bars, nut packs etc.) which they offered interviewee's after the completed survey was returned. They were trained in their approach and would offer the survey only to those who were agreeable to cooperate in the process. They were under constant surveillance by the supervisor during this period.

The minority populations particularly the Black and Hispanic populations were oversampled with a view to understanding the health needs and concerns of this population due to the many disparities that afflict them disproportionately. A similar effort was made to oversample population with High School Diploma or less as well as those from the lower income bracket in an attempt to understand their health concerns. The sample that was ultimately selected was mainly a convenient random sample and in some cases snowball sampling was also used. In order to have representative data from people of different socio economic status and backgrounds we used a variety of locations in Fayetteville and Stedman-Wade. The table lists the locations, the percentage sampled at each location and the highest concentration of race/ethnicity at each location. At least at 11 of the locations were there more Black respondents than respondents of other races.

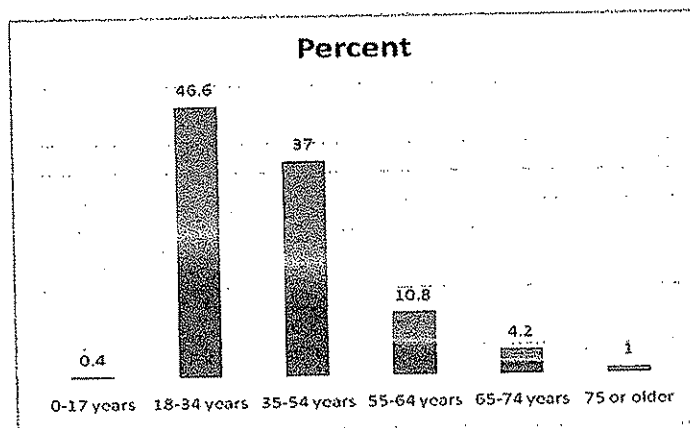


## Locations

Location	Number Surveyed	Percent	Highest % race/ethnicity at this location
Area Health Education Center	34	2.8	White 69.7%
Bingo Hall	57	4.7	Black 60.7%
Cape Fear Church	20	1.6	White 42.1%
Christ Gospel Church	34	2.8	Black 88.2%
Circle B Grove Street	22	1.8	Black 66.7%
Cliffdale Public Library	54	4.4	Black 49.1%
Compare Foods	99	8.1	Black 47.5%
Cumberland Medical Associates	16	1.3	White 56.3%
Department of Social Services	172	14	Black 70.4%
Dick's Sporting Goods	30	2.4	White 60%
Fayetteville State University	81	6.6	Black 67.9%
Cumberland County Health Department	422	34.4	Black 54.8%
Hope Mills Public Library	38	3.1	White 58.3%
Location Not Specified	98	8.0	Black 61.9%
New Covenant Church	12	1.0	Black 91.7%
Spring Lake Public Library	17	1.4	Black 76.5%
Stedman Wade Clinic	19	1.6	White 63.2%

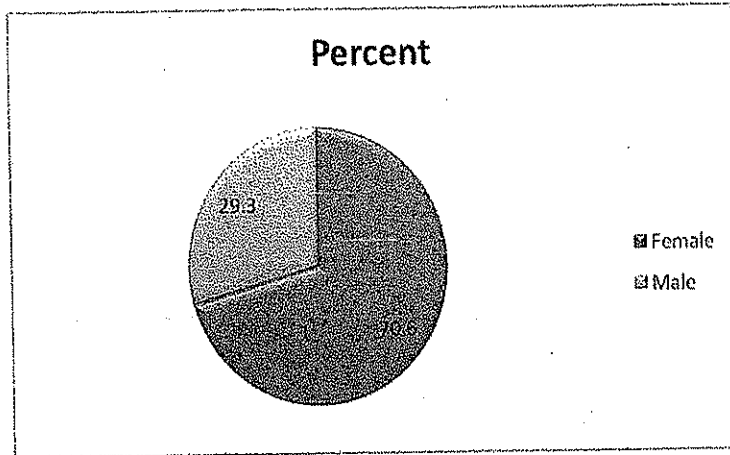
## Demographic Information of Respondents

### a. Age



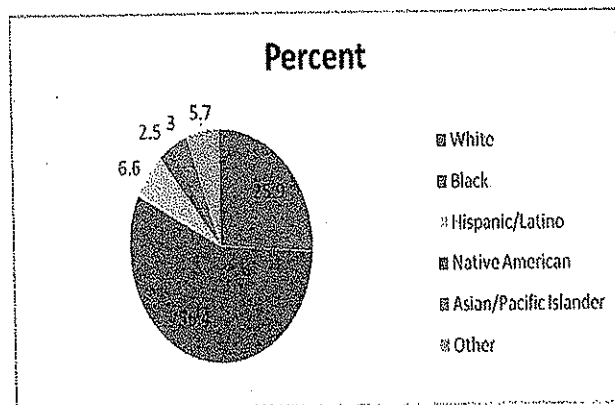
About 47% of respondents were in the age group of 18-34 years followed by 37% respondents in the age group of 35-54 years. 1% of the group was made up of individuals 75 years of age or older.

b. Sex/Gender



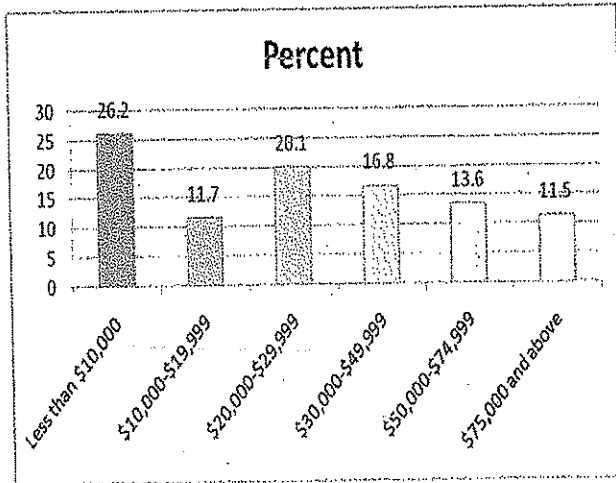
The majority of the respondents, about 71% were female; 29% of the sample was male respondents.

c. Race/Ethnicity



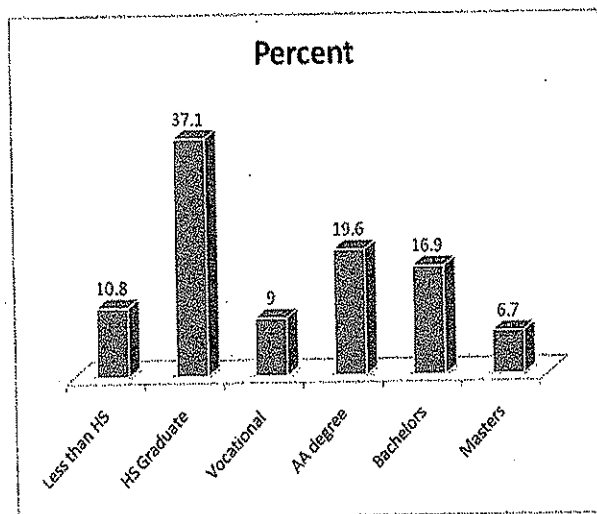
As we had oversampled for the minority race groups, the largest group in the sample was that of African Americans (56%), followed by 26% Whites and 6.6% who claimed Hispanic/Latino ethnicity.

d. Household Income in last year



The income distribution among the sample was fairly well spread out. We had tried to oversample the lower income groups in an effort to understand their health concerns and hence the largest category was that of individuals whose household income was less than \$10,000 and this comprised about 26.2% of the sample followed by 20% whose household income was between \$20,000 and \$29,999 per annum.

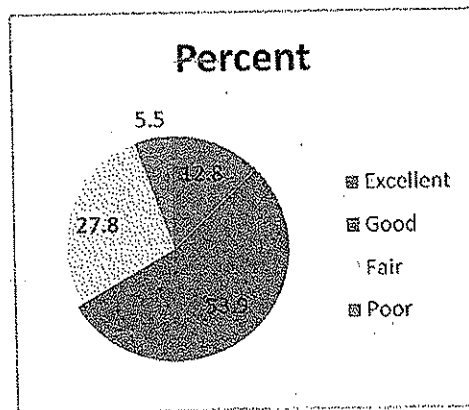
e. Highest level of schooling you have completed



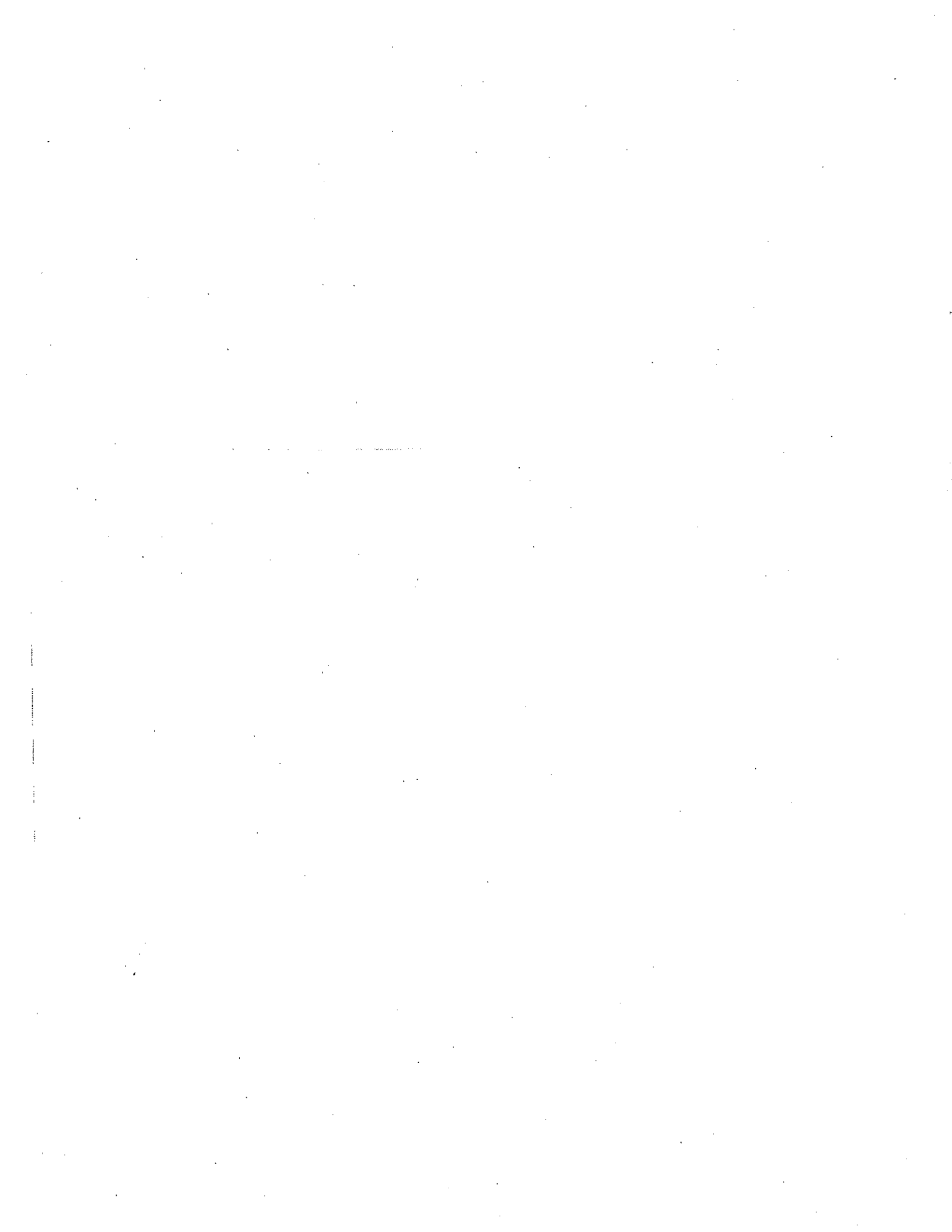
37% of the sample consisted of individuals who had a High School Diploma or GED; 20% had an Associate's degree and about 11% had less than a High School Diploma.

**Respondents' Perception on "what kind of place the community is to live in?"**

1. Thinking about your community, what kind of a place is it to live?



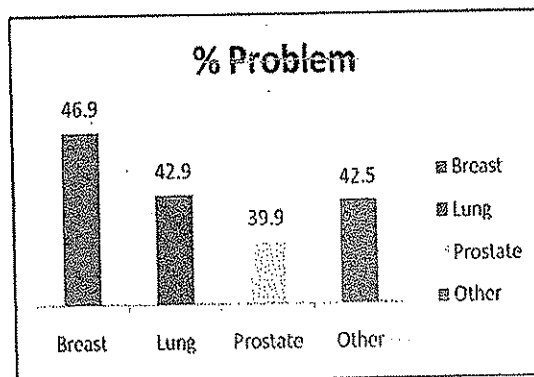
The majority of Cumberland County residents (54%) perceive their community to be a good place to live in. About 5.5% feel that it is a poor place. The percentage of residents that feel it is a fair place is 27.8%.



## Diseases and Disabilities in the Community

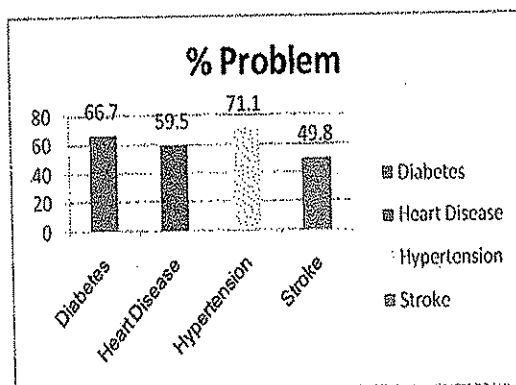
Condition	No Problem	Minor Problem	Major Problem
Lead Poisoning	42.9	12.4	3.4
Breast Cancer	23.8	20.4	26.5
Lung Cancer	24.3	19.0	23.9
Prostate Cancer	24.4	19.3	20.6
Other Cancers	21.5	18.8	23.7
Diabetes	14.7	17.7	49.0
Heart Disease	17.7	17.9	41.6
Hypertension	12.1	19.4	51.7
HIV/AIDS	20.1	15.5	31.7
Pneumonia/Flu	22.2	26.9	18.8
Stroke	19.6	22.4	27.4
Mental Health	17.3	22.0	34.6
Adult Dental Problems	15.1	26.6	32.6
Child Dental Problems	18.6	26.3	27.1
Learning & Developmental Disabilities	18.6	26.3	27.1
Sexually Transmitted Diseases	17.1	15.9	41.7
Adult Asthma	18.4	26.2	18.8
Childhood Asthma	16.3	24.6	27.9
Adult Obesity	14.3	17.4	54.7
Childhood Obesity	16.4	18.6	49.7
Depression	14.1	21.6	39.3
Rabies/West Nile	30.0	19.9	5.8
Arthritis	14.5	29.6	29.0

- a. Respondents perception that breast cancer, lung cancer, prostate cancer and other cancers are a problem in their community:



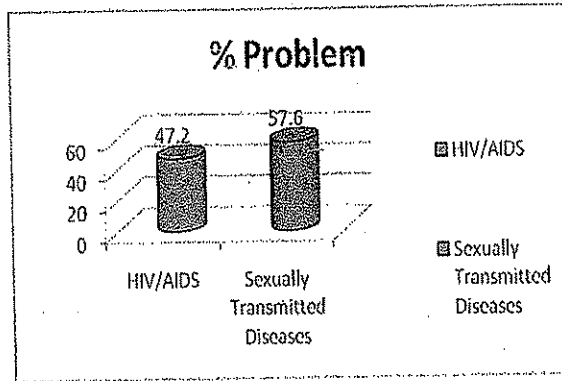
Among the various cancers that afflict the Cumberland County population, breast cancer was perceived to be the major one. About 46.9% of residents felt that it was a problem in the community followed by lung cancer (42.9%). According to the North Carolina Division of Public Health release of 2009, cancer was the top cause of death among North Carolinians. Among the cancers, breast cancer was among the most deadly cancers with colorectal and lung cancer.

- b. Respondents perception that diabetes, heart disease, hypertension and stroke are a problem in their community:



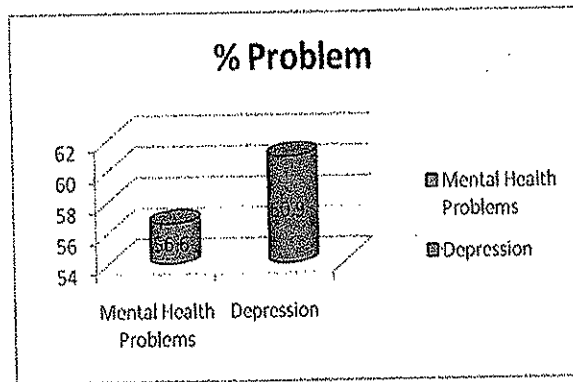
The North Carolina Division of Public Health listed heart disease as the second most common cause of death after cancer in North Carolina. 59.5% of Cumberland County residents feel that heart disease is a problem in the community. The community survey shows 71.1% of residents feel that hypertension is a problem and 66.7% residents feel that diabetes is a problem in the community.

- c. Respondents perception that HIV/AIDS and Sexually Transmitted Diseases are a problem in their community:



57.6% of Cumberland County residents feel that sexually transmitted diseases are a problem in the community, 47.2% perceive HIV/AIDS as a problem.

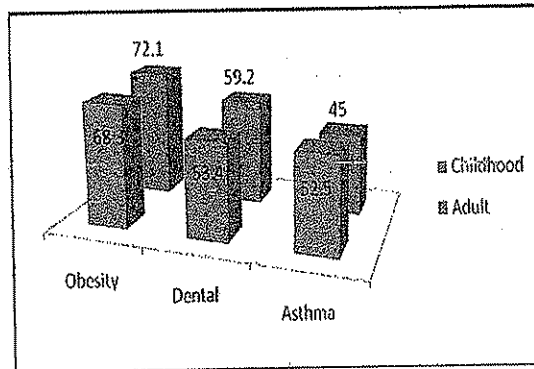
- d. Respondents perception that Mental Health Problems and Depression are a problem in their community:



According to the residents, depression is a large problem in the community with almost 61% classifying it as a problem. 56.6% residents perceive mental health problems as an issue in the community.

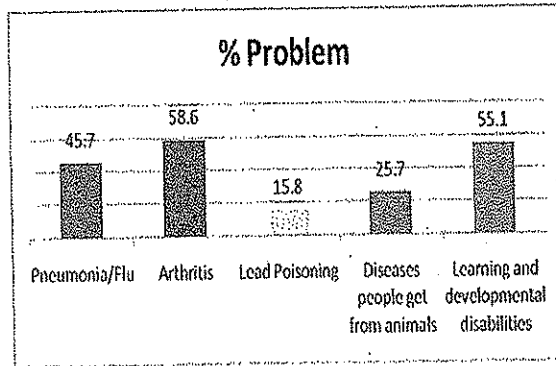
- e. Respondents perception that childhood and adult dental problems, childhood and adult asthma and childhood and adult obesity are a problem in their community:





Respondents perceive adult obesity (72.1%) and adult dental problems (68.3%) as bigger problems in the community. 68.3% respondents feel that childhood obesity is a problem in the community. Childhood asthma is perceived to be a bigger problem in the community (52.5%) than adult asthma (45%).

- f. Respondents perception that lead poisoning, pneumonia/flu, learning and developmental disabilities, arthritis, and diseases people get from animals such as rabies and West Nile

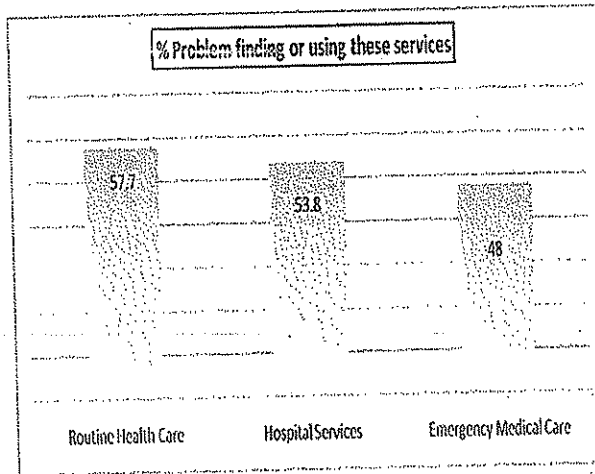


Respondents identified arthritis as a large problem in the community, with about 59% respondents classifying it as such. About 55.1% respondents felt that learning and developmental disabilities were a problem in Cumberland County.

## Health and Human Services in Cumberland County

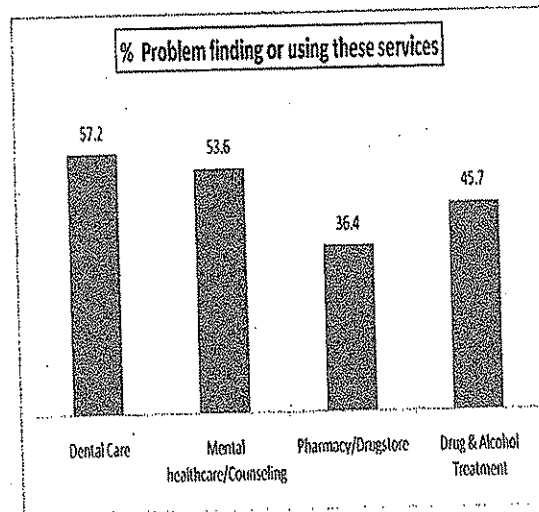
Problem Finding or Using Services	No Problem	Minor Problem	Major Problem
<b>Routine Health Care</b>	25.9	24.4	33.3
<b>Hospital Services</b>	31.8	22.9	30.9
<b>Dental Care</b>	26.9	23.0	34.2
<b>Mental Healthcare/Counseling</b>	24.7	22.3	31.3
<b>Emergency Medical Care</b>	36.4	22.7	25.3
<b>Pharmacy/Drug Stores</b>	47.8	19.5	16.9
<b>Drug &amp; Alcohol Treatment</b>	25.8	20.2	25.5
<b>Health Promotion Education Programs</b>	27.5	21.2	24.3
<b>Transportation to Healthcare</b>	23.6	21.9	31.4
<b>Health Insurance Coverage</b>	18.4	15.8	48.4
<b>Enrolling in Medicare/Medicaid</b>	23.9	20.5	32.9
<b>Food Assistance(\$ or food)</b>	27.1	22.4	29.5
<b>Housing Assistance</b>	22.9	20.1	32.7
<b>Help with electricity, fuel or water bills</b>	21.9	20.0	34.2
<b>911 Emergency Services</b>	44.2	18.7	14.7
<b>Long Term Care Facilities</b>	26.7	19.9	20.5
<b>Care for Pregnant Women</b>	37.0	19.5	14.2
<b>Childhood Immunizations</b>	43.9	17.6	12.3
<b>Afterschool Care</b>	31.7	20.7	21.9
<b>Childcare for Infants/Preschoolers</b>	32.1	20.8	20.4
<b>Car Seats for Infants/Children</b>	35.2	18.4	15.7
<b>Home Healthcare</b>	30.2	20.3	17.7
<b>Parenting Skills Education</b>	26.5	18.3	24.8
<b>Adult Day Care/Respite Care</b>	25.3	17.2	19.2
<b>Nutrition Help (such as Meals on Wheels)</b>	25.7	17.4	19.5

- a. Respondents perception that people in the community have a problem finding and using services such as Routine Health Services, Hospital services and Emergency medical care



Obtaining routine healthcare was perceived as a problem by about 58% of respondents. Finding or utilizing hospital services was perceived as a problem by 53.8% respondents.

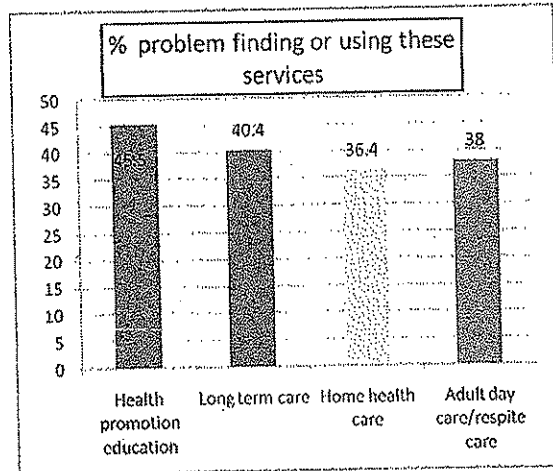
- b. Respondents perception that people in the community have a problem finding and using services such as Dental care, Mental health care/counseling, Pharmacy/drug stores, or drug and alcohol treatment.



About 57.2% respondents within the community find that obtaining and using dental care services is a problem. Among the above categories, this service seems to be perceived as the most difficult service to find or utilize. This was followed by mental healthcare/counseling

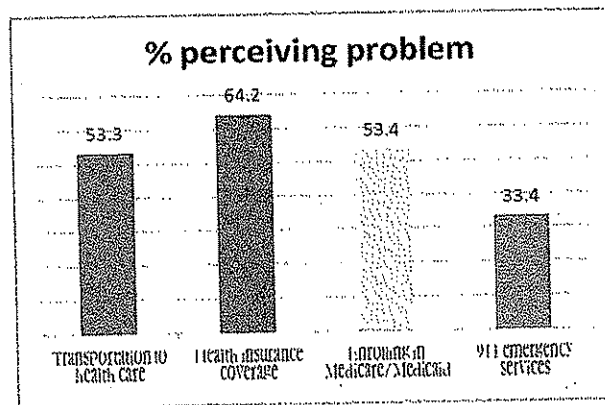
(53.6%), drug and alcohol treatment (45.7%). Finding or utilizing the services of pharmacy/drugstore was the least problematic (36.4%).

- c. Respondents perception that people in the community have a problem finding and using services such as Health promotion education programs, transportation to healthcare, long term care facilities, home health care, adult day care/respite care.



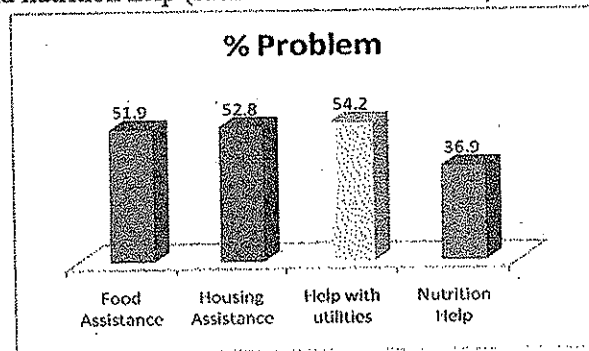
Cumberland County residents who responded to the survey perceived finding or utilizing Health Promotion Education services as a problem in the community (45.5%). About 40.4% respondents felt that long term care was a problem in the community.

- d. Respondents perception that people in the community have a problem finding and using services such as transportation to health care, enrolling in Medicaid/Medicare, Health Insurance Coverage, and 911 Emergency Services



Health insurance coverage was perceived as a major problem in the community with 64.2% responding that finding or utilizing this service was a problem. Enrolling in Medicare/Medicaid was perceived as a problem by 53.4% respondents.

- e. Respondents perception that people in the community have a problem finding and using services such as food assistance (\$ or food), housing assistance, help with electricity, fuel, or water bills and nutrition help (such as Meals-on-Wheels)



54.2% respondents felt that help with utilities was a problem in the community followed by housing assistance (52.8%) and food assistance (52%).

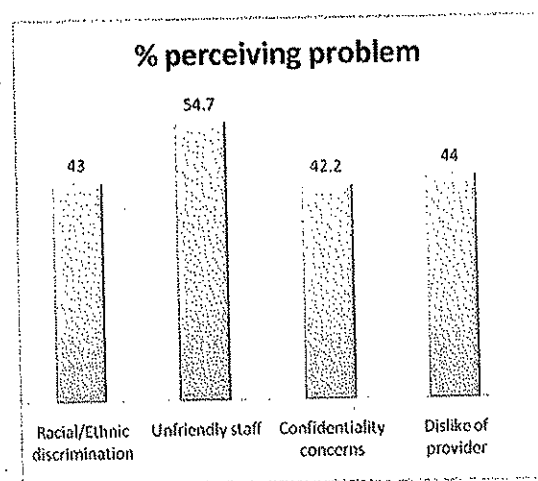
- f. Respondents perception that people in the community have a problem finding and using services such as Childhood immunizations, after school care, care for pregnant women, child care for infants and preschoolers, car seats for infants and children, and parenting skills education.

Services	Minor Problem	Major Problem
Childhood Immunizations	17.6	12.3
After School Care	20.7	21.9
Care for Pregnant women	19.5	14.2
Child care for Infants & preschoolers	20.8	20.4
Car seats for infants and children	18.4	15.7
Parenting skills education	18.3	24.8

## Barriers to Healthcare Services in Cumberland County

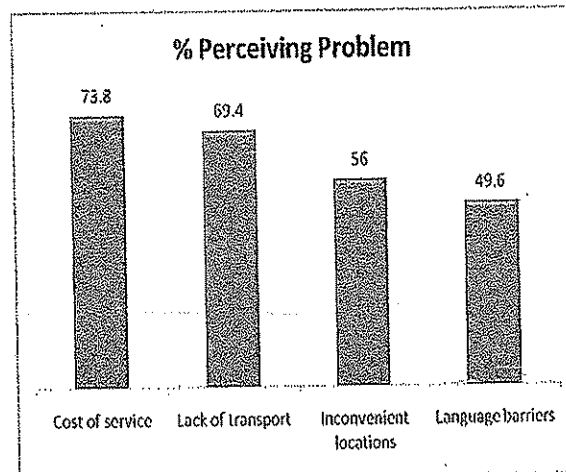
People may not use Healthcare Provider Services due to	No Problem	Minor Problem	Major Problem
Dislike of provider	19.9	29.5	14.5
Cost of services	9.5	14.6	59.2
Lack of information about services	12.4	21.7	49.1
Lack of transportation	11.7	23.6	45.8
Inconvenient timings	16.9	26.8	30.8
Lack of childcare	15.4	21.9	37.3
Inconvenient locations	19.0	24.8	31.2
Language barriers	22.1	24.0	25.6
Wait too long for services	12.2	23.7	44.4
Concerns about confidentiality	28.9	19.6	22.6
Perceptions about quality of services	20.0	26.1	26.4
Prior bad experiences	16.0	26.3	28.4
Unfriendly personnel	18.5	26.5	26.2
Lack of handicap access	27.2	21.4	15.4
Reluctance to go outside of family for help	18.5	23.6	24.1
Racial/ethnic discrimination	24.0	21.5	21.5

- a. Respondents perception that people in the community have a problem finding and using services such as persons dislike of the provider, concerns about confidentiality, prior bad experience and racial/ethnic discrimination



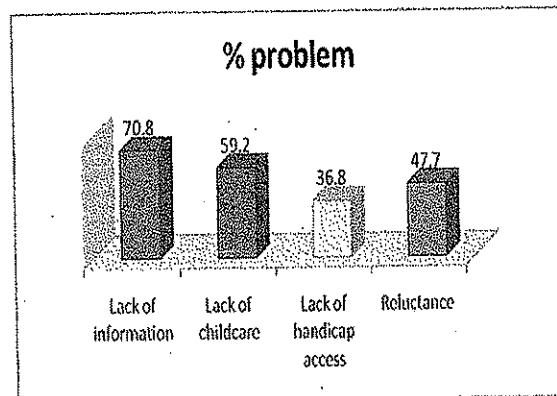
Barriers to healthcare services were perceived as unfriendly staff/personnel by respondents (55%), dislike of provider (44%), racial/ethnic discrimination (43%) and concerns about confidentiality (42%).

- b. Respondents perception that people in the community have a problem finding and using services such as cost of services, lack of transportation, inconvenient locations and language barriers



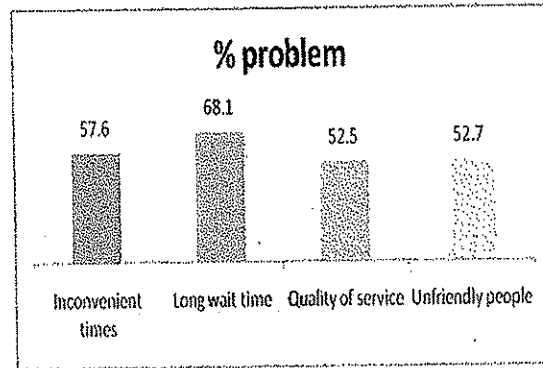
Cost of services was perceived as a major barrier to healthcare services by respondents (74%). Lack of transportation was also a problem to utilizing healthcare according to 69.4% respondents.

- c. Respondents perception that people in the community have a problem finding and using services such as lack of information about services, lack of childcare, lack of handicap access, and reluctance to go outside of family for help.



One of the major barriers perceived by the respondents is lack of information about available healthcare in Cumberland County. 70.8% respondents felt that this was a problem that prevented them from accessing available healthcare. Lack of childcare was cited as a barrier by almost 60% of respondents that prevented them from accessing available healthcare. About 48% respondents felt that reluctance to seek help outside the family might be a barrier to seeking healthcare.

- d. Respondents perception that people in the community have a problem finding and using services such as inconvenient times, wait too long for service, perceptions about quality of service, and people were not friendly



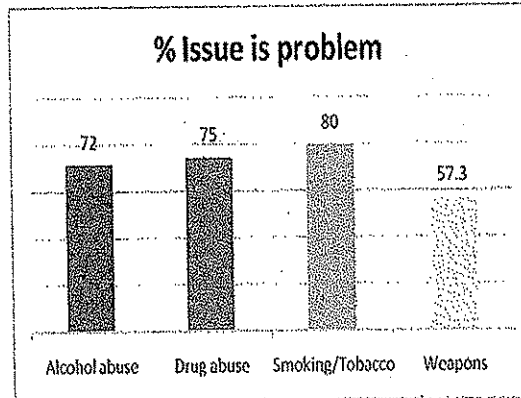
Research has shown that long wait time is associated with lower patient satisfaction. Cumberland county survey respondents (68%) felt that long wait times was a barrier that prevented patients from seeking healthcare. 57.6% respondents cited inconvenient timings as a barrier to seeking healthcare.

### Issues that are perceived to be a problem in the community

Issue is problem in the community	No Problem	Minor Problem	Major Problem
Alcohol Abuse	13.8	23.0	48.8
Drug Abuse	11.9	18.9	55.7
Smoking/Tobacco Use	9.9	18.4	61.2
Not using seatbelts	18.5	32.7	29.9
Homelessness	15.9	25.1	44.0
Poor eating habits	12.4	19.1	53.6
Lack of exercise	11.6	19.0	57.6
Violent behavior	14.8	24.5	41.8
Child abuse	18.1	19.7	36.4
Juvenile delinquency	16.0	19.8	42.2
Suicide	22.1	21.6	17.2
Work Safety	23.9	23.8	18.2
Youth Access To and Use of Weapons	16.6	18.8	38.5
Teen Pregnancy	13.6	17.9	52.5
Men's Health	15.3	21.5	32.8

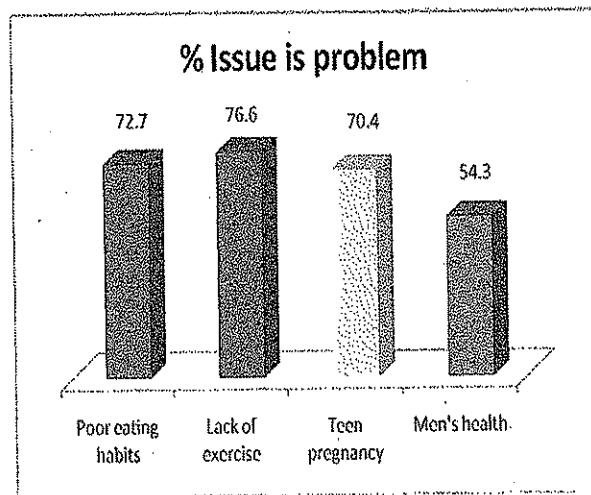


- a. Respondents' perception that alcohol abuse, drug abuse, smoking/tobacco use and youth access to and use of weapons is a problem in the community:



Risky health behaviors that can affect health and quality of life include alcohol, drug abuse and tobacco use. Cumberland County survey respondents (80%) pointed out that smoking/tobacco is a problem in the community. Alcohol (72%) and drug (75%) abuse were also cited as problems in the community.

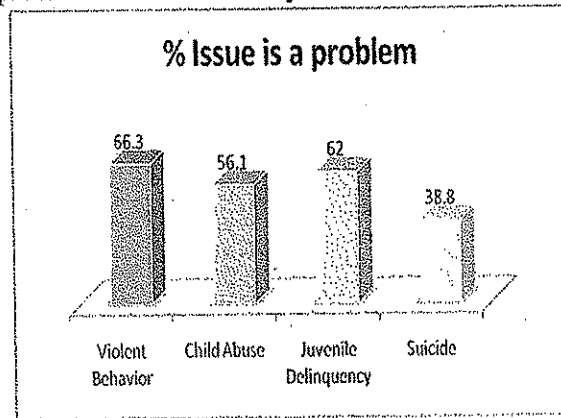
- b. Respondents' perception that poor eating habits, lack of exercise, teen pregnancy and men's health are a problem in the community.



25-29% of adults in North Carolina are classified as obese with a BMI of 30 or more. In 2006-2008, 64.4% adults over the age of 18 years were classified as overweight or obese. According to 77% survey respondents lack of exercise was cited a problem in Cumberland County. 72.7% respondents perceived poor eating habits as a problem in the community. 2008 teen pregnancy rates in North Carolina were 58.6; whereas

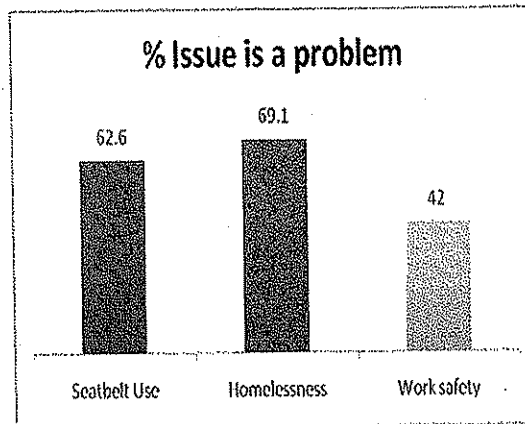
those for Cumberland County were 74.5. 70.4% survey respondents indicated teen pregnancy as a problem in the community.

- c. Respondents' perception that violent behavior, child abuse, juvenile delinquency and suicide are a problem in the community.



66.3% respondents agreed that violent behavior was a problem in the Cumberland County community. Juvenile delinquency was cited as a problem by 62% of the respondents. 56% respondents perceive child abuse as a problem in the community.

- d. Respondents' perception that Not using seatbelts, Homelessness and Work safety are a problem in the community.

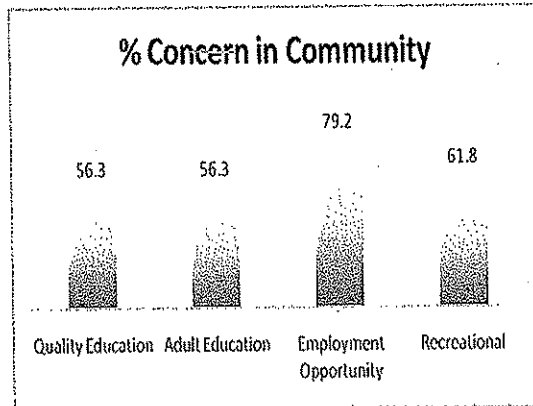


According to the 2009 Point in Time Homelessness results, there were a total of 965 individuals in Fayetteville/Cumberland County that were homeless (total population 309, 542). 41% of the homeless in Cumberland County are children. 69% of survey respondents classified homelessness as a problem in Cumberland County.

## Living in the Community

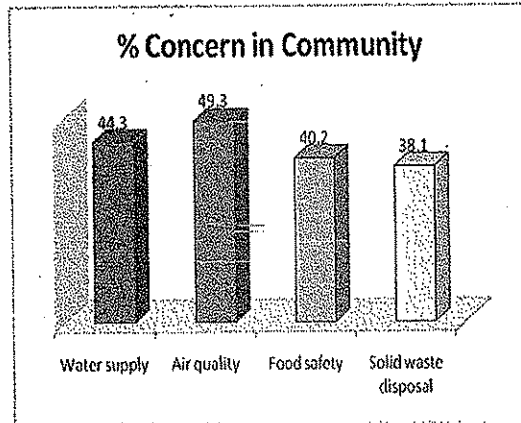
Problem in the Community	No Problem	Minor Problem	Major Problem
Traffic Safety	25.0	32.5	30.7
Affordable safe housing	19.8	28.7	38.8
Employment opportunities	12.0	19.7	59.5
Recreational programs and facilities	24.5	24.8	37.0
Quality education (K-12)	28.3	25.7	30.6
Education/Training for adults	24.6	27.7	28.6
Water supply and quality	36.8	26.4	17.9
Racial/ethnic discrimination	27.7	27.9	24.6
Legal services	0.1	25.7	24.3
Crime	14.5	27.6	47.8
Air Quality	31.3	30.5	18.8
Animal Control	29.9	30.8	20.6
Public transportation	25.5	27.5	30.3
Food Safety	35.4	26.0	14.2
Solid waste disposal	37.2	23.3	14.8
Emergency preparedness (smoke detectors, family emergency plan etc.)	34.5	24.4	17.7

- a. Respondents' perception that Quality education (K-12), Education and training for adults, Employment opportunities and Recreational programs and facilities are a concern in the community.



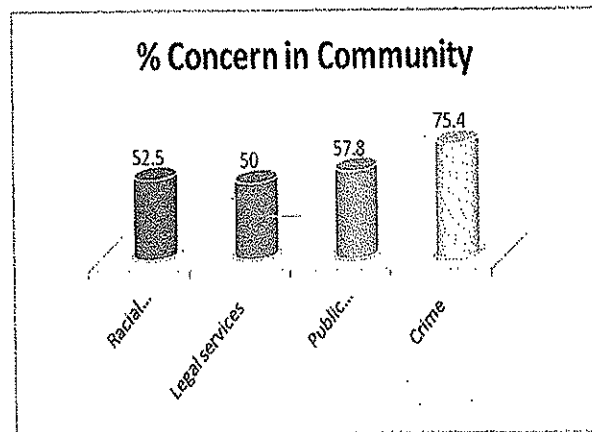
Employment opportunities are considered as a major concern by survey respondents (79.2%). Respondents also felt that avenues for recreation or recreational facilities were of concern in the community (61.8%). K-12 education was deemed as concern by 56.3% of the respondents.

- b. Respondents' perception that water supply and quality, air quality, food safety, and solid waste disposal are a concern in the community.



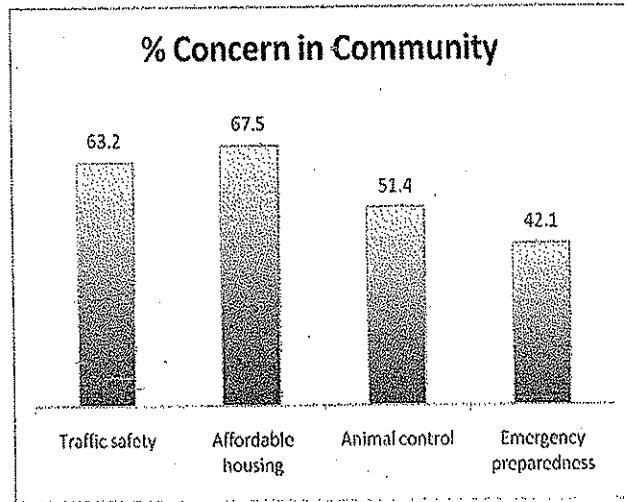
About 50% of respondents were concerned with air quality and pollution issues in the community. Water supply was deemed as a concern by about 44% of respondents.

- c. Respondents' perception that racial/ethnic discrimination, legal services, public transportation and crime are a concern in the community.



Crime is a major concern to the community according to 75.4% respondents. Public transportation was also cited as a concern by almost 58% respondents. About 53% respondents perceived racial discrimination as a problem in the community.

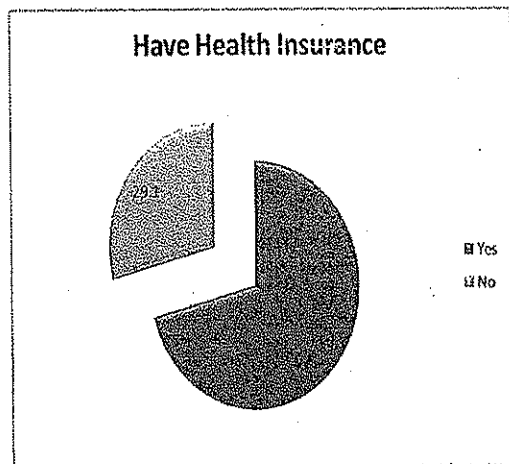
- d. Respondents perception that traffic safety, affordable, safe housing, animal control and emergency preparedness (smoke detectors, family emergency plan i.e.) are a concern in the community



Affordable housing was deemed as a concern in the Cumberland County community by 67.5% of the respondents; traffic safety by 63.2% respondents and animal control by 51.4% of respondents.

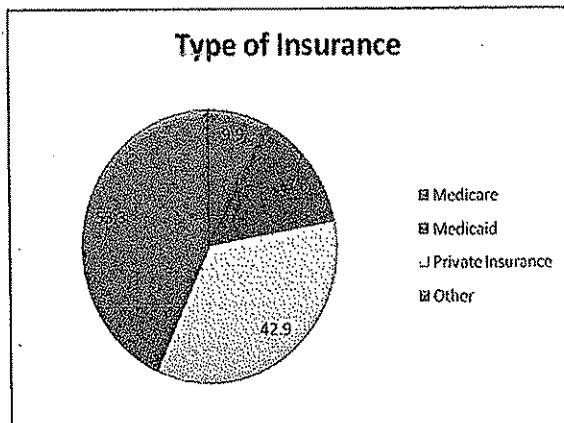
## Health Insurance Coverage and Plan

### a. Covered by Health Insurance?



About 71% of the respondents had health insurance coverage of some sort whereas 29% of respondents did not have any health insurance coverage.

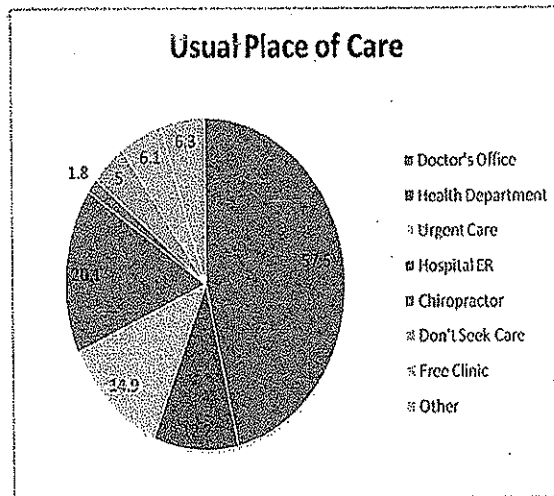
### b. Type of Health Insurance



The majority of respondents (53.3%) had health insurance coverage under the other category, which could include military or federal health insurances such as Tricare etc. This is not surprising considering that Fort Bragg (a major military base) is located within the county. About 43% of respondents had private insurance coverage; 17.5% had Medicaid and 10% respondents had Medicare coverage.

## Usual Place of Healthcare

a. Where do you go for routine healthcare when you are sick?



The majority of the survey respondents (57.5%) indicated that they utilized the doctor's office as a usual place of care. Almost 20% respondents used the Emergency Room as a usual place of care and 14.9% used the Urgent Care. The Cumberland County Health Department was a usual place of care for 12.2% respondents. Free Clinics were utilized by 6.1 % of respondents and 5% did not have a usual place of care.

**EXHIBIT E**



**Certificate of Need Section**  
**Monthly List by ID (Application Log)**  
 Printed for period August, 2012

Project ID# FID#	Application Received	Fee	County	Proposed Capital Expenditure	Facility/ Project Description
1 J-010022-12 943290	08/15/2012	\$8,617.00	Johnston	\$2,205,533.00	Johnston Memorial Hospital Develop 8 inpatient rehab beds
2 J-010016-12 923517	08/15/2012	\$5,000.00	Orange	\$122,500.00	University of North Carolina Hospitals Acquire a PET MR pursuant to Policy AC-3 in the 2012 SMFP
3 J-010017-12 923517	08/15/2012	\$10,081.00	Orange	\$2,677,000.00	University of North Carolina Hospitals Develop 12 inpatient rehab beds for a total of 42
4 K-010019-12 944655	08/15/2012	\$5,000.00	Vance	\$42,363.00	VANCE COUNTY DIALYSIS Cost overrun for Project I.D. #K-8574-10 (add six stations)
5 J-010021-12 923421	08/15/2012	\$14,516.00	Wake	\$4,172,000.00	Duke Raleigh Hospital Develop 12 inpatient rehab beds
6 J-010025-12 120435	08/15/2012	\$5,000.00	Wake	\$745,108.00	North Carolina Diagnostic Imaging - Cary Develop new diagnostic center by acquiring one mammography unit and one ultrasound unit for existing outpatient imaging center
7 J-010018-12 943528	08/15/2012	\$50,000.00	Wake	\$25,234,051.00	WakeMed Develop 12 new inpatient rehab beds and replace 29 existing beds for a total of 110 beds upon completion of this project and Project ID #J-863J-11 (add 14 beds)
8 M-010026-12 120434	08/15/2012	\$5,000.00	Cumberland	\$729,087.00	FMC Fayetteville Home Dialysis Develop a new free-standing peritoneal dialysis training and support program
9 O-010020-12 945252	08/15/2012	\$5,000.00	Pender	\$412,238.00	Southeastern Dialysis Center, Inc. - Burgaw Cost overrun on Project I.D. #O-8579-10 (add two stations)
10 R-010015-12 933102	08/15/2012	\$16,977.00	Chowan	\$4,992,200.00	Vidant Chowan Hospital Renovate space to expand outpatient services
11 R-010023-12 980550	08/15/2012	\$5,396.00	Dare	\$1,132,000.00	The Outer Banks Hospital, Inc. Acquire Outer Banks Cancer Center in Nags Head, including a linear accelerator and CT simulator
12 P-010024-12 943044	08/15/2012	\$5,000.00	Onslow	\$198,718.00	Brynn Marr Hospital Relocate 12 inpatient psychiatric beds from Broughton Hospital pursuant to Policy PSY-1 for children and adolescents

Certificate of Need Section  
Monthly List by ID (Application Log)  
Printed for period August, 2012

Project ID/ FID#	Application Received	County	Proposed Capital Expenditure	Facility/ Project Description
Total	\$135,537.00		\$42,662,798.00	

**EXHIBIT F**

# Massachusetts Reform and Disparities in Inpatient Care Utilization

Amresh D. Hanchate, PhD,\*† Karen E. Lasser, MD, MPH,†‡ Alok Kapoor, MD, MSc,†  
Jennifer Rosen, MD,§ Danny McCormick, MD, MPH,|| Meredith M. D'Amore, MPH,† and  
Nancy R. Kressin, PhD\*†

**Background:** The 2006 Massachusetts health reform substantially decreased uninsurance rates. Yet, little is known about the reform's impact on actual health care utilization among poor and minority populations, particularly for receipt of inpatient surgical procedures that are commonly initiated by outpatient physician referral.

**Methods:** Using discharge data on Massachusetts hospitalizations for 21 months before and after health reform implementation (7/1/2006–12/31/2007), we identified all nonobstetrical major therapeutic procedures for patients aged 40 or older and for which  $\geq 70\%$  of hospitalizations were initiated by outpatient physician referral. Stratifying by race/ethnicity and patient residential zip code median (area) income, we estimated prereform and postreform procedure rates, and their changes, for those aged 40–64 (non-elderly), adjusting for secular changes unrelated to reform by comparing to corresponding procedure rate changes for those aged

70 years and above (elderly), whose coverage (Medicare) was not affected by reform.

**Results:** Overall increases in procedure rates (among 17 procedures identified) between prereform and postreform periods were higher for nonelderly low area income (8%,  $P=0.04$ ) and medium area income (8%,  $P<0.001$ ) cohorts than for the high area income cohort (4%); and for Hispanics and blacks (23% and 21%, respectively;  $P<0.001$ ) than for whites (7%). Adjusting for secular changes unrelated to reform, postreform increases in procedure utilization among nonelderly were: by area income, low=13% (95% confidence interval (CI)=[9%, 17%]), medium=15% (95% CI [6%, 24%]), and high=2% (95% CI [-3%, 8%]); and by race/ethnicity, Hispanics=22% (95% CI [5%, 38%]), blacks=5% (95% CI [-20%, 30%]), and whites=7% (95% CI [5%, 10%]).

**Conclusions:** Postreform use of major inpatient procedures increased more among nonelderly lower and medium area income populations, Hispanics, and whites, suggesting potential improvements in access to outpatient care for these vulnerable subpopulations.

**Key Words:** health reform, disparities, utilization, inpatient care, access to care, socioeconomic status, race, ethnicity

(*Med Care* 2012;50: 569–577)

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The authors declare no conflict of interest.

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Presented at: Plenary session—oral presentation at the Society of General Internal Medicine, Minneapolis, MN, April 29, 2010; poster presentation at AcademyHealth, Boston, MA, June 29, 2010 and American Heart Association Quality of Care and Outcomes Research, Scientific Sessions, Washington, DC, May 13, 2011; oral presentation at the Society of General Internal Medicine, Phoenix, AZ, May 5, 2011.

The views expressed in this article are those of the authors and do not necessarily represent the views of the National Institutes of Health, Boston University or Department of Veterans Affairs.

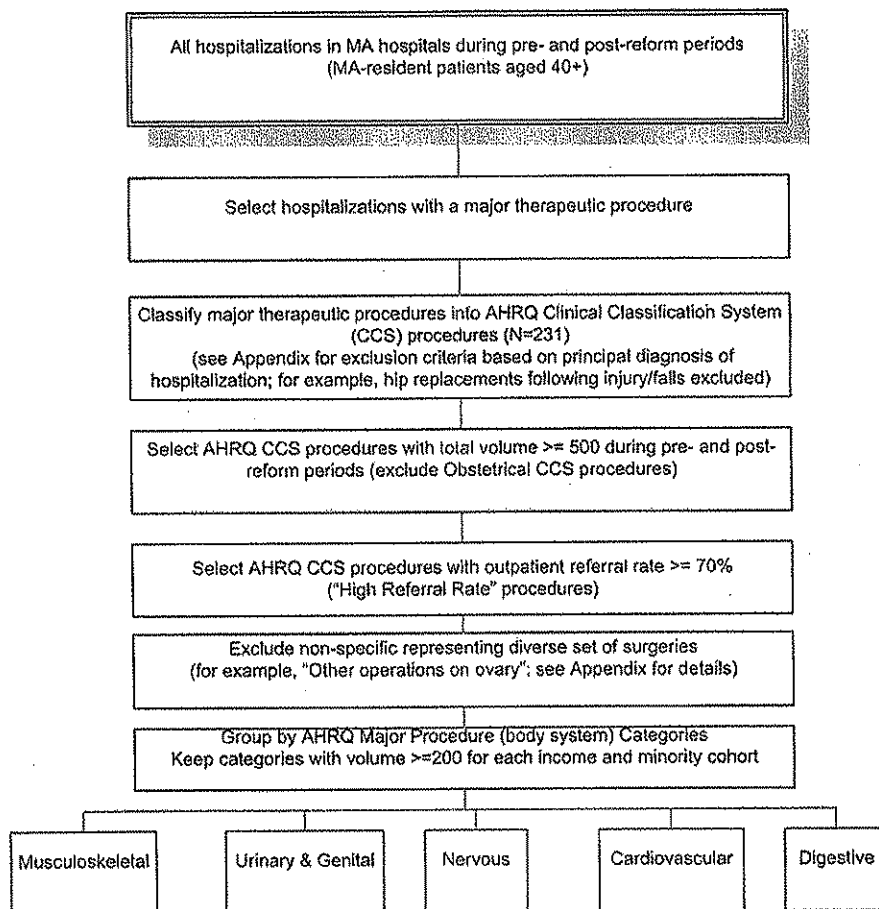
Reprints: Amresh D. Hanchate, PhD, Health/Care Disparities Research Program, Section of General Internal Medicine, Boston University School of Medicine, 801 Massachusetts Ave, #2092, Boston, MA 02118. E-mail: hanchate@bu.edu.

Supplemental Digital Content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's Website ([www.lww-medicalcare.com](http://www.lww-medicalcare.com)).

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A central policy assumption in the United States is that expanding health insurance coverage will improve access to health care and outcomes, and make each more equitable for all Americans.<sup>1</sup> Massachusetts (MA) is the site of a key policy-relevant natural experiment<sup>2–8</sup>; recent legislation has resulted in nearly all (96.5%) of the state's residents obtaining health insurance.<sup>9</sup> However, little is known about MA reform's impact on health care utilization, particularly among poor and minority populations, whose access to care the reform sought to increase.

The number of uninsured MA residents fell sharply after the reform was implemented.<sup>10</sup> Among adults aged 18–64, the population targeted by the reform, uninsurance rates declined from 8.4% (2006) to 3.4% (2009) overall, but from 18%–9% among the poorest population quintile, from 15%–5% among blacks, and 20%–13% among Hispanics.<sup>9,11,12</sup> However, the limited evidence of the reform's impact on access to and use of health care, based largely on population surveys, provides a mixed picture. Self-reported rates of a usual source of care and of preventive care visits



**FIGURE 1.** Identification and grouping of high referral rate procedures. CCS indicates Clinical Classifications Software; MA, Massachusetts.

improved postreform; however, lower income respondents and Hispanics with limited English proficiency reported higher rates of unmet need due to difficulty in finding a health care provider or due to unaffordable cost.<sup>12-14</sup> Although the evidence of the impact of health reform on emergency department use is mixed, hospitalizations for conditions preventable by appropriate outpatient care decreased.<sup>15-18</sup>

There have not yet been reports on the use of inpatient surgical procedures whose receipt is sensitive to outpatient physician referral. Changes in receipt of such surgical procedures after MA health reform could be a measure of access to outpatient care that may improve with expanded insurance coverage.<sup>19</sup> Thus, we focused on the use of such procedures among vulnerable subpopulations—those living in low-income areas and racial/ethnic minorities. These groups are known to underutilize elective inpatient care,<sup>20-22</sup> and were specifically targeted for larger gains in coverage expansion from the MA health reform.<sup>23</sup> We hypothesized that the entire reform package, including increased population rates of insurance coverage, would be associated with increased

rates of receipt of surgical procedures most commonly initiated through outpatient physician referral, and that such gains would be greater among vulnerable populations.

## METHODS

### Overview

We estimated longitudinal population rates of receipt of referral-dependent procedures by combining comprehensive state-level inpatient administrative data with census population data. We estimated prereform and postreform rates of procedure use among nonelderly subpopulations stratified by cohorts defined by race/ethnicity and income of the area of patient residence. To isolate the impact of health reform from secular trends, we contrasted postreform change among the nonelderly with changes among the elderly. We chose this control group because most elderly residents were covered by Medicare both prereform and postreform, and therefore the change in their procedure use reflects secular changes unrelated to health reform.

## Prereform and Postreform Periods

The MA health reform was multifaceted and included measures to expand insurance coverage, such as individual and employer mandates, establishment of an insurance exchange, income-related premium subsidies for newly created private insurance, and loosened eligibility criteria for Medicaid coverage.<sup>2</sup> Implementation of MA health reform began on 7/1/2006 with expansion of Medicaid to cover previously “enrollment capped” low-income populations, culminating in a penalty-enforced mandate of individual insurance coverage effective 1/1/2008.<sup>24</sup> We examined inpatient procedure use for 21 months (1/1/2008–9/30/2009) following this mandate (“postreform” period) and contrasted it with data for 21 months (10/1/2004–6/30/2006) preceding reform (“prereform” period), excluding the middle, transition period.

## Data Sources and High Referral Rate (HRR) Procedures

We focused on hospitalizations for surgical procedures that are predominantly scheduled by outpatient referral, that we term “HRR procedures.” While similar to the previously defined concept of “referral-sensitive procedures,”<sup>19</sup> we found that for some referral-sensitive procedures (eg, coronary artery bypass graft) the proportion arising from outpatient referral was no higher than 50% (See Appendix, Supplemental Digital Content, <http://links.lww.com/MLR/A311>). Using all hospitalizations with discharges during the prereform and postreform periods as raw data (MA Inpatient Discharge Data for 2004–2009),<sup>25</sup> we included MA-residing patients aged 40 or older (those with significant risk for the procedures examined) undergoing a major therapeutic surgical procedure [using Agency for Healthcare Research & Quality Procedure Classes system; Clinical Classifications Software (CCS)], as illustrated by Figure 1.<sup>26</sup> These procedures’ International Classification of Diseases-Ninth Edition-Clinical Modification diagnosis codes were classified into the 231-category Agency for Healthcare Research & Quality CCS.<sup>27</sup> To minimize chance misclassification we only included procedures with aggregate volume of  $\geq 500$ . We excluded obstetrical procedures as their usage has been universally covered in MA.

On the basis of the “source of admission” field, we defined HRR procedures as those with an outpatient physician referral rate  $\geq 70\%$ , reasoning that this threshold would represent a large majority of procedures. We excluded some nonspecific HRR procedures—for instance, “Other operations of the ovary”—that captured a broad range of procedures. To minimize chance fluctuations in procedure use, we grouped the HRR CCS procedures into International Classification of Diseases-Ninth Edition-Clinical Modification procedure categories<sup>27</sup> and excluded those with  $\leq 200$  surgeries for each area income or race/ethnicity cohort.

Information on patient race/ethnicity was part of the discharge data submitted by each hospital; as such identification is likely based on multiple sources including, patient self-report and administrative records. We found longitudinal consistency in the reporting patterns over years, not only for the main racial/ethnic groups (whites, blacks, and Hispanics), but also for proportion with missing race/ethnicity; the proportion of all discharges in a year with race/ethnicity missing or “other”

(ie, not white, black, or Hispanic) ranged between a low of 5.32% (2004) to 6.06% (2006) of the study period years (2004–2006, 2008–2009).

## Analytic Data Structure

To estimate prereform and postreform procedure use we produced 2 analytic datasets, 1 for performing comparisons by race and ethnicity and another for comparisons by area income. The first dataset was obtained by stratifying the state population into cohorts stratified by race/ethnicity, age, sex, county, and time period (ie, prereform/postreform). We stratified patients by the 3 largest race/ethnic cohorts: Hispanics, non-Hispanic whites, and non-Hispanic blacks (See Appendix, Supplemental Digital Content, <http://links.lww.com/MLR/A311>). Categorizing patient age (in years) into 10 five-year age groups aged 40–84 years (eg, 40–44 y), we excluded the 65–69-year age group; as the postreform study period lasts 21 months, inclusion of both 60–64- and 65–69-year age cohorts may overestimate reform effect on procedure use if those initially aged 63 or 64 then age into the 65–69-year age group and became eligible for Medicare before the end of the 21st month. Excluding this age group also eliminates the sharp increases in procedure use previously noted for new Medicare age-65 enrollees.<sup>28,29</sup> To adjust for geographic heterogeneity across MA in factors determining procedure use, we stratified the state into 11 county-based areas, as this is the finest substate level for which annual census population counts are available.<sup>30</sup> This allowed us to perform a finer grained analysis than that at the larger state level. With each county stratified into 54 cohorts (based on sex, 9 age groups and 3 racial/ethnic groups), there was a total of 594 observations each for the prereform and postreform periods (N=1188).

For the second analytic dataset, we followed a similar process but replaced race/ethnicity strata by area income strata. In the absence of individual income, we followed previous work and used the median income (2000 census) for each patient’s residence zip code to stratify all patients into 3 area income groups: lowest quartile (ie, all residents of zip codes in the poorest quartile, henceforth referred to as “low area income” population), second lowest quartile (medium area income), and top 2 quartiles combined (high area income).<sup>22,31–33</sup> As the number of area income cohorts (N=3) is the same as that number of race/ethnicity cohorts, the second analytic dataset has the same number of observational units (N=1188).

## Procedure Rates

Our primary outcome measure was a procedure rate for each cohort of interest, derived from the ratio of (1) the number of HRR procedures for each cohort in the inpatient discharge data; and (2) the census population of this cohort, and then multiplying this ratio by 10,000 so as to obtain the procedure rate per 10,000 census population.

## Analysis

We estimated prereform and postreform procedure rates for all HRR procedures combined and for each individual procedure category, for subpopulations by area income or race/ethnicity; we adjusted for compositional

**TABLE 1. High Referral Rate Procedures: Volumes and Referral Rate**

Procedure Category	# Procedures in Study Period	Average Referral Rate (%)	# Individual Procedures in Category	Individual Procedures (% Share of Category Volume)
Musculoskeletal	80,688	95	4	Knee arthroplasty (40%), spinal fusion (31%), hip replacement (22%), and partial excision bone (7%)
Urinary/genital	51,088	95	6	Hysterectomy (32%), oophorectomy (32%), repair of cystocele and rectocele (12%), transurethral resection of prostate (12%), genitourinary incontinence procedures (8%), and nephrectomy (2%)
Nervous	29,372	88	1	Laminectomy (100%)
Cardiovascular	20,914	80	4	Heart valve procedures (34%), endarterectomy (32%), peripheral vascular bypass (19%), and aortic resection (15%)
Digestive	19,845	73	2	Colorectal resection (98%) and gastrectomy (2%)
All procedures	201,907	90	17	

Procedures are categorized by ICD-9-CM procedure chapters. No eye, ear, and nose/throat procedures met the high referral rate criteria. Urinary, male genital, and female genital system procedures have been combined into 1 category.

Study period comprises prereform and postreform periods (10/1/2004–5/30/2006 and 1/1/2008–9/30/2009, respectively).

# procedures indicates the state-wide volume performed during hospitalization stays in the prereform and postreform periods.

Average referral rate indicates the % of hospitalizations (during which procedure was performed) based on outpatient referral.

differences in sex and age by direct standardization.<sup>34</sup> These adjusted rates were estimated separately for nonelderly and elderly cohorts. We first measured overall change (%) in procedure use—the percentage change between prereform and postreform procedure rates. To estimate net change (%) associated with health reform, we adjusted for secular changes using the elderly as the comparison cohort (“difference-in-difference” estimation).<sup>35,36</sup> We used a count regression (Poisson) model with procedure count as the outcome measure and census population count as the population at risk. We specified a county-level fixed effects regression structure (with clustering-adjusted SEs) to capture nesting of cohorts within county.<sup>35,37</sup> Regression covariates included indicators of age, sex, race/ethnicity or area income, time period (pre-reform/postreform), and interaction between the elderly/non-elderly indicator and time period (to estimate the net change). Statistical significance was assessed at the level of  $P < 0.05$ . All estimation was performed using Stata Version 11.1.<sup>37</sup> We performed several sensitivity analyses to assess the robustness of findings to (a) inclusion of 65–69 age group; (b) alternative count regression (ie, negative binomial) specification; and (c) state-level aggregated unit of analysis (ie, without county-level stratification). To address potential bias from regression to the mean or differential changes in the characteristics of the study over time, we also estimated an alternative model on the basis of segmented time-series specification of postreform effects that allowed for level and trend effects. This study was approved by the Boston University Medical Campus Institutional Review Board.

Note that the comparison groups were based on age, not whether the patient held Medicare coverage, so dual eligibles were included with their respective age groups. Our estimates are based on change in procedure rate (say, among nonelderly or elderly patients) between the prereform and postreform period. It may well be that the subgroup of, say, elderly with dual eligibility may have different procedure rates than their counterparts without dual eligibility; however, to the extent that prevalence of dual eligibility remained similar in the prereform and postreform periods, it does not impact the net estimates that we have estimated.

## RESULTS

We identified 17 HRR procedures, in 5 clinical categories, with an aggregate volume of 201,907 surgeries during the prereform and postreform periods (Table 1). The overall referral rate for all procedures was 90%.

Table 2 summarizes the number of people undergoing HRR procedures, the number of people in the population at risk, and each group’s sociodemographic composition pre-reform and postreform. Whereas the nonelderly accounted for 60% of prereform surgeries, their share increased to 64% in the postreform period; however, the nonelderly share of the population at risk remained at 78%. The share of blacks and Hispanics increased both among procedure recipients (6.4%–8.2%) and the population at risk (9.0%–9.8%); share by area income cohorts did not change.

### Procedure Rates and Overall Postreform Change by Area Income

Prereform use of HRR procedures was similar among nonelderly area income subgroups (Table 3). After reform, overall increases in procedure rates were higher for low area income (8%,  $P = 0.04$ ) and medium area income (10%,  $P < 0.001$ ) cohorts compared with that for their high area income counterparts (4%). Adjusting for secular changes, the impact of health reform for the nonelderly income cohorts (or the net change in procedure rate) was: 13% (low area income, 95% confidence intervals (CI)=[9%, 17%]), 15% (medium area income, 95% CI=[6%, 24%]), and 2% (high area income, 95% CI=[-3%, 8%]).

### Procedure Rates and Overall Postreform Change by Race/Ethnicity

Prereform use of all HRR procedures was significantly lower among nonelderly Hispanics (118 procedures per 10,000 population;  $P < 0.001$ ) and blacks (149;  $P = 0.05$ ) compared with whites (157). After reform, overall change in procedure rates among the nonelderly was greater among Hispanics (23%,  $P < 0.001$ ) and blacks (21%,  $P < 0.001$ ) compared with that among whites (7%). Adjusting for secular trends, the net change in procedure rate was 22% (95%

**TABLE 2.** Counts of High Referral Rate Procedures and Population at Risk, by Sociodemographics

Characteristics	Total # Procedures (Prereform and Postreform Periods)	Distribution of Procedures		# Population at Risk, Person-Years (Prereform and Postreform Periods)	Distribution of Population at Risk	
		Prereform (%)	Postreform (%)		Prereform (%)	Postreform (%)
All (age 40+ y)	201,907	100	100	10,072,992	100	100
Women	123,560	60	62	5,387,207	54	53
Men	78,347	40	38	4,685,785	46	47
Age (y)						
40–64	124,966	60	64	7,845,648	78	78
70 or older	76,941	40	36	2,227,344	22	22
Area income, zip code median						
Low	43,880	22	22	2,282,028	23	23
Medium	50,454	25	25	2,494,057	25	25
High	107,229	53	53	5,296,841	53	53
Race/ethnicity						
Hispanics	6688	2.8	3.8	484,209	4.5	5.1
Blacks	8115	3.6	4.4	460,728	4.5	4.7
Others	6324	3.4	2.8	419,872	3.9	4.4
Whites	180,780	90.1	89.0	8,708,183	87.1	85.8

Study period comprises prereform and postreform periods (10/1/2004–6/30/2006 and 1/1/2008–9/30/2009, respectively).  
 Total # procedures indicates the number of high referral rate procedures performed during hospitalizations in the prereform and postreform periods.  
 Population at risk indicates the aggregate census population (person-years) during the prereform and postreform periods.  
 Area income cohorts are defined as: low=lowest quartile zip codes, medium=second quartile, and high=top 2 quartile.

CI=[5%, 38%]) for Hispanics, 5% for blacks (95% CI=[-20%, 30%]), and 7% for whites (95% CI=[5%, 10%]).

**Postreform Change by Procedure Categories**

Table 4 presents analogous findings for each procedure category by area income and race/ethnicity. There is considerable variation in overall and net changes across categories, with some indicating secular decrease in procedure rates, but statistical precision of estimates is also reduced because of relatively smaller volumes within individual procedure categories. For musculoskeletal and urinary/genital procedures, both low and medium area income cohorts experienced significant increase in overall postreform procedure rates. Although not statistically significant, we found that compared with the high area income group, the estimated net increase (%) was larger or net decrease smaller for all 5 procedure categories among the lowest area income cohort and for 4 procedure categories among the medium area income cohort. Comparisons by race/ethnicity indicate that compared with whites, the estimated net change (%) was greater for 3 of the procedure types (musculoskeletal, urinary/genital, and nervous) among Hispanics, but only for digestive procedures among blacks—and statistically significant only for nervous system procedures among Hispanics.

Sensitivity analyses indicate that all main findings reported are robust to (a) inclusion of those aged 65–69; (b) alternative count regression specification to permit overdispersion; and (c) aggregation of procedure counts to state instead of county level (See Appendix, Supplemental Digital Content, <http://links.lww.com/MLR/A311>). Segmented time-series Poisson model indicated similar patterns in postreform

change, with no significant transition period effects for any of the cohorts (See Appendix, Supplemental Digital Content, <http://links.lww.com/MLR/A311>).

**DISCUSSION**

We compared prereform and postreform utilization of major therapeutic inpatient surgical procedures predominantly scheduled by outpatient referrals among nonelderly MA adults, and found greater overall increases for lower area income cohorts compared with the highest area income cohort, and for Hispanics compared with whites. Before reform, both blacks and Hispanics had lower rates of these procedures compared with whites. We estimated the net change in procedure use associated with health reform among the nonelderly accounting for secular trends, finding significant increases for lower area income groups and Hispanics and whites but not among blacks or the highest area income group. As 90% of all surgeries came from outpatient physician referral, these findings suggest a meaningful improvement in access to outpatient care for the surgeries studied, especially those living in lower income areas, Hispanics, and whites.

Our findings of greater net increases in procedure use among lower area income groups and Hispanics are consistent with previous randomized<sup>38,39</sup> and natural experiments of expanded public insurance programs or similar policy changes; however, few prior studies have explicitly examined whether increased insurance coverage reduces income or racial/ethnic disparities in access to or use of care.<sup>36,40</sup> A recent study of Oregon’s lottery-selected expansion of Medicaid to uninsured low-income nonelderly



**TABLE 3. Prereform and Postreform Use of High Referral Rate Procedure by Area Income and Race/Ethnicity Cohorts**

Cohorts	Prereform Procedure Rate		Postreform Procedure Rate		Overall Postreform Change in Procedure Rate (%)	Difference in Change Between Nonwhite/White or Lower Area Income/Highest Income (%)	P (Difference = 0)	Net Change (%): Postreform Change (% in Procedure Rate Among Nonelderly Because of Health Reform)	
	# Procedures/10,000	95% Confidence Interval	# Procedures/10,000	95% Confidence Interval				Net Change (%)	95% Confidence Interval
By area income cohorts									
Nonelderly (age 40–64 y)									
Low	156	[154%, 159%]	169	[167%, 172%]	8	4	0.04	13	[9%, 17%]
Medium	151	[149%, 154%]	166	[164%, 169%]	10	6	<0.001	15	[6%, 24%]
High	154	[153%, 156%]	161	[159%, 162%]	4	Reference		2	[–3%, 8%]
Elderly (age 70 or older)									
Low	302	[295%, 308%]	284	[278%, 291%]	–6	–7	<0.001		
Medium	354	[347%, 361%]	340	[333%, 346%]	–4	–5	0.002		
High	365	[360%, 370%]	369	[365%, 374%]	1	Reference			
By race/ethnicity cohorts									
Nonelderly (age 40–64 y)									
Hispanics	118	[113%, 123%]	146	[141%, 151%]	23	16	<0.001	22	[5%, 38%]
Blacks	149	[143%, 155%]	180	[174%, 186%]	21	14	<0.001	5	[–20%, 30%]
Whites	157	[155%, 158%]	167	[166%, 168%]	7	Reference		7	[5%, 10%]
Elderly (age 70 or older)									
Hispanics	199	[181%, 216%]	202	[186%, 218%]	2	3	0.926		
Blacks	234	[218%, 251%]	268	[251%, 285%]	14	15	0.003		
Whites	355	[352%, 359%]	353	[349%, 356%]	–1	Reference			

Prereform = [October 2004, June 2006] and postreform = [January 2008, September 2009]. Procedure rates, adjusted for sex and age differences, are estimated by direct standardization method. Overall change (%) in procedure rate is the simple % change in the prereform and postreform procedure rates. Difference in overall change by race/ethnicity and area income are obtained by comparing overall change. Net change (%) in procedure rate among nonelderly due to health reform are calculated from a separate (county fixed effects) Poisson regression with a difference-in-difference specification using combined nonelderly and elderly cohort data. Confidence intervals are based on bootstrapped SEs (N = 1000 iterations) to adjust for clustering of observations within county. Area income cohorts are defined as: low = lowest quartile zip codes, medium = second quartile, and high = top 2 quartiles.

adults in 2008 found that hospital admissions increased by 30% in 1 year; this effect is nearly identical to that found in the RAND randomized study in the 1970s.<sup>38,39</sup> More relevant to our study is the finding from Oregon that the increase in inpatient admissions was “disproportionately concentrated” among admissions “that do not originate in the emergency room”; we note that these primarily include admissions based on outpatient physician referral, including those for HRR procedures examined here.<sup>39</sup>

More appropriate for comparison with our study are findings of quasi-experimental expansions of public health insurance.<sup>28,40–42</sup> Studies examining the impact of Medicare enrollment at age 65 have noted increased use of inpatient and outpatient care among the previously uninsured<sup>29</sup> and also the previously insured (because of the relative “generosity” of Medicare).<sup>28,40</sup> One study documented a 10% increase in hospitalizations in the year after Medicare enrollment, with larger increases in use of “elective” procedures such as bypass surgery and joint replacement.<sup>28</sup> This suggests that our finding of increased procedure use may reflect a combination of pent-up unmet need and

need arising from new diagnoses after increased access to outpatient care.

Although the 17 surgical procedures examined represent a broad spectrum of inpatient procedures, our main focus here was on their role as markers of access to care. In combining these procedures for evaluating the differential impact of health reform in access to care across subpopulations, we recognize heterogeneity in the procedures in other respects, including acuity of conditions targeted, impact on quality of life, and value in terms of clinical benefit per dollar. Reflecting this heterogeneity, we found considerable differences in postreform changes in rates, with several categories of procedures experiencing decrease in utilization while some others had sharp increases (≥ 25%). As estimates of net increases by individual procedure categories had wide CIs due largely to small numbers, we cannot rule out potentially large differences among subpopulations. Nevertheless, statistically significant net increases associated with health reform were found for musculoskeletal and urinary/genital procedures among lower area income cohorts and whites, and for urinary/genital procedures among Hispanics.

TABLE 4. Impact of Health Reform on Use of High Referral Rate Procedures by Area Income, Race/Ethnicity & Procedure Category

Procedure Category	HRR Procedure Rates Nonelderly (40-64 y)			HRR Procedure Rates Elderly (70 or Older)			Net change (%): Postreform Change in Procedure Rate Among Nonelderly due to Health Reform			Net Change (%): Postreform Change in Procedure Rate Among Nonelderly due to Health Reform		
	Overall Change in Area Income Cohorts % Change = 0	P	95% Confidence Interval	Overall Change in Area Income Cohorts % Change = 0	P	95% Confidence Interval	Overall Postreform Change in Procedure Rate (%)	P	95% Confidence Interval	Overall Postreform Change in Procedure Rate (%)	P	95% Confidence Interval
Musculoskeletal	Low	<0.001	[3%, 22%]	5	<0.001	[3%, 22%]	31	0.017	[1%, 67%]	19	0.354	[-4%, 31%]
	Medium	0.001	[5%, 19%]	5	0.001	[5%, 19%]	25	0.028	[1%, 24%]	20	0.124	[-12%, 19%]
	High	Reference	[-3%, 6%]	9	Reference	[-3%, 6%]	15	Reference	[2%, 11%]	8	Reference	[2%, 11%]
Urinary/genital	Low	0.595	[10%, 31%]	-11	0.397	[10%, 31%]	30	<0.001	[1%, 67%]	-1	0.846	[1%, 67%]
	Medium	0.031	[21%, 42%]	-15	0.024	[21%, 42%]	40	<0.001	[1%, 24%]	42	<0.001	[-22%, 24%]
	High	Reference	[2%, 28%]	-7	Reference	[2%, 28%]	10	Reference	[11%, 26%]	-10	Reference	[11%, 26%]
Nervous	Low	0.921	[-16%, 9%]	-2	0.034	[-16%, 9%]	8	0.151	[2%, 140%]	-47	<0.001	[2%, 140%]
	Medium	0.32	[-20%, 8%]	3	0.208	[-20%, 8%]	-16	0.122	[-127%, 25%]	43	0.03	[-127%, 25%]
	High	Reference	[-28%, -3%]	10	Reference	[-28%, -3%]	-3	Reference	[-19%, -2%]	7	Reference	[-19%, -2%]
Cardiovascular	Low	0.312	[-19%, -4%]	-10	0.157	[-19%, -4%]	-2	0.265	[-52%, 24%]	15	0.216	[-52%, 24%]
	Medium	0.849	[-6%, 16%]	-13	0.021	[-6%, 16%]	2	0.106	[-65%, 66%]	4	0.5	[-65%, 66%]
	High	Reference	[-21%, 11%]	-4	Reference	[-21%, 11%]	-17	Reference	[-15%, -7%]	-7	Reference	[-15%, -7%]
Digestive	Low	0.989	[9%, 37%]	-24	0.005	[9%, 37%]	8	0.245	[-27%, 48%]	4	0.508	[-27%, 48%]
	Medium	0.865	[-10%, 11%]	-9	0.505	[-10%, 11%]	5	0.375	[5%, 69%]	-30	0.155	[5%, 69%]
	High	Reference	[2%, 19%]	-12	Reference	[2%, 19%]	-4	Reference	[5%, 15%]	-13	Reference	[5%, 15%]

Overall change (%) in procedure rate is the simple % change in the prereform and postreform procedure rates. Difference in overall change by race/ethnicity and area income are obtained by comparing overall change. The figures for the all cohort are identical to those in Table 3.  
 Net change (%) in procedure rate among nonelderly due to health reform are calculated from a separate (county fixed effects) Poisson regression with a difference-in-difference specification using combined nonelderly and elderly cohort data. Confidence intervals are based on bootstrapped SEs (N=1000 iterations) to adjust for clustering of observations within county.  
 Area income cohorts are defined as: low=lowest quartile zip codes, medium=second quartile, and high=top 2 quartiles.  
 HRR indicates high referral rate.

For Hispanics, the overall postreform increase in procedure use among the nonelderly was considerably higher than that for their elderly counterparts, particularly for musculoskeletal, urinary/genital, and nervous system procedures. For blacks, whereas the changes for both groups were similar for musculoskeletal and urinary/genital procedures, the magnitude of the change is large and comparable with that for the nonelderly Hispanics. Therefore, it is the similar increase in the use of these procedures among the elderly blacks that leads to the results of no significant net change (for nonelderly) attributable to the reform. Reasons for the similar increase among all blacks (elderly and nonelderly) are unclear and merit further examination.

There is considerable debate on whether more medical care leads to better health.<sup>43</sup> However, most studies of natural experimental policy changes have found that expansions of health insurance result in health improvements for individual health measures or subpopulations.<sup>36</sup> Given the natural experimental setting of MA reform, we instead examined disparities in health care utilization and focused on vulnerable subpopulations and selected inpatient procedure categories for which underutilization of care is known to be associated with uninsurance or underinsurance. Research has documented higher rates of clinically unmet need among minorities and lower income patients for many inpatient procedures, including those for cardiac,<sup>44</sup> cancer,<sup>45,46</sup> and musculoskeletal<sup>22</sup> care. Our findings are among the first to show that expanded insurance coverage on a population level is associated with increase in use by such vulnerable populations.

Our study has several important limitations. First, we cannot differentiate overuse of procedures from clinically appropriate use. We suspect that our findings of increased procedure use among minorities do not reflect overuse, as Dartmouth Atlas comparisons of regional differences for Medicare beneficiaries for 12 common inpatient surgeries found MA procedure rates were below average for 6, near average for 5, and above average for only 1 procedure.<sup>47</sup> Second, as our data is observational, the possibility of potential confounding from unobserved factors remains. However, as we adjust for changes among the elderly, our estimates are robust to unobserved factors (including practice pattern changes) that affect all age groups. Also, comparison of nonelderly and elderly rates of use may not be clinically meaningful for some procedures. However, our findings do include same-age group comparisons by race/ethnicity and area income cohorts. Further, we did not include individual-level data on insurance status, because of the inability to infer population rates of insurance status by the subgroups of interest from our data on health care users only. Identification of patient race/ethnicity is not necessarily based on patient self-report and may vary across hospitals; however, as this is likely to affect both nonelderly and elderly patients in each hospital, our methodology of contrasting changes among nonelderly patients with those for elderly patients provides robustness of findings to the potential heterogeneity in race/ethnicity identification. Also, in the absence of data on individual income, we have used zip code-level income as the measure of socioeconomic status; however, this

approach has been used in numerous previous studies.<sup>31–33</sup> Finally, our focus on the use of inpatient procedures may underestimate use of procedures performed in outpatient settings.

Nonetheless our findings have implications for national health reform (Affordable Care Act, 2010) which shares many key elements with MA health reform.<sup>1</sup> Notably, before health reform, MA had lower uninsurance and better safety-net funding compared with other states.<sup>48,49</sup> Depending on the extent to which similar subpopulations gain from insurance expansion from the national reform, the potential for improved access is considerably larger or smaller, as is the potential for higher costs. Our study examined utilization only in the first 2 years after the reform, and therefore may include sharp increases in utilization from nonelderly patients with prior unmet need. Whether these increases will taper-off in the longer run is unknown. Actual changes also depend on other factors, including provider supply and practice patterns, which also vary considerably across states.

In conclusion, our findings of significant postreform expansion in procedure use for Hispanics and lower area income patients are consistent with the relatively larger gains in insurance coverage among these subpopulations. These findings suggest potentially improved access to outpatient care and may reflect demand built up before reform when individuals were uninsured. Whether such improved access—a crucially important first step to improving equity in access and outcomes—translates into improved clinical outcomes at a reasonable cost merits further study.

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