VIDANT ROANOKE CHOWAN HOSPITAL'S 2016 COMMUNITY HEALTH NEEDS ASSESSMENT

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Introduction

Local public health agencies in North Carolina (NC) are required to conduct a Comprehensive Community Health Assessment (CHA) at least once every four years. The CHA is required of public health departments in the consolidated agreement between the NC Division of Public Health (NC DPH) and the local public health agency. Furthermore, a CHA is required for local public health department accreditation through the NC Local Health Department Accreditation Board (G.S. § 130A-34.1). As part of the US Affordable Care Act of 2011, non-profit hospitals are also now required to conduct a community health (needs) assessment at least every three years. Recognizing that duplicate assessment efforts are a poor use of community resources, LHDs and non-profit hospitals across the state are developing models for collaboratively conducting the community health assessment process. This document is the culmination of such a partnership between the Hertford County Public Health Authority (HCPHA), the Vidant Roanoke Chowan Hospital (VROA) and the Vidant Health system.

The community health assessment, which is both a process and a document, investigates and describes the current health status of the community, what has changed since the last assessment, and what still needs to change to improve the health of the community. The *process* involves the collection and analysis of a large range of data, including demographic, socioeconomic and health statistics, environmental data, and professional and public opinion. The *document* is a summary of all the available evidence and serves as a resource until the next assessment. The completed CHA serves as the basis for prioritizing the community's health needs, and culminates in planning to meet those needs.

The Vidant Health system contracted with Sheila S. Pfaender, Public Health Consultant, to assist in conducting the 2016 Community Health Needs Assessments for Vidant Health's primary service counties, including Hertford County. The assessment process incorporated the guidance provided by the *Community Assessment Guidebook: North Carolina Community Health Assessment Process*, published by the NC Office of Healthy Carolinians/Health Education and the NC State Center for Health Statistics (December 2011). The assessment also adheres to the 2012 standards for community assessment stipulated by the NC Local Health Department Accreditation (NCLHDA) Program and The Internal Revenue Service (IRS) 2014 final ruling implementing requirements for tax-exempt hospitals under Section 501(r) of the Affordable Care Act (ACA).

The CHA coordinators from the HCHD, VROA and Vidant Health worked with the consultant to develop a multi-phase plan for conducting the assessment. The phases included: (1) a research phase to identify, collect and review demographic, socioeconomic, health and environmental data; (2) a community input phase to receive input from community members utilizing a survey and small group discussions; (3) data synthesis and analysis phase; (3) a period of data reporting and discussion among community partners; and (4) a prioritization and decision-making phase. Upon completion of this work the CHA partners and the community will have the tools they need to develop plans and activities that will improve the health and well-being of the people living in Hertford County.

Assessment Methodology

In order to learn about the specific factors affecting the health and quality of life for Hertford County residents, the consultant accessed numerous readily available secondary data sources, representing data from the local, state and national level. All data sources are listed in Appendix A of this report. The author has made every effort to obtain the most current data available at the time the report was prepared.

It is instructive in any community health assessment to relate local county level data to similar data in other jurisdictions. In this assessment, Hertford County data is compared to "like" data describing the state of NC as a whole, as well as to data from ten counties that comprise the Vidant Health primary service area, referred to as the "Region." Where Hertford County data is compared to this "Region," the Regional data includes the compilation of data from Beaufort, Bertie, Chowan, Dare, Duplin, Edgecombe, Greene, Hertford, Hyde and Pitt Counties. In other cases Hertford County data is compared to US-level data, or to Healthy People 2020 goals or other standardized measures. Where appropriate, trend data has been used to show changes in indicators over time, at least since the previous assessment three years ago, but as far back as comparable data is available. A summary of the secondary data and hospital utilization data indicators is included in Appendix B of this report.

In addition to the secondary data collection, HCPHA, VROA, and Vidant Health also reached out to Hertford County residents to gain a better understanding of their health status including health issues/diagnoses, preventative health activities, identified health needs, and barriers to health within the county. Feedback was obtained through a survey process, as well as small group discussions.

The survey questions were adapted from the survey questionnaire provided by the *Community Assessment Guidebook: North Carolina Community Health Assessment Process*, published by the NC Office of Healthy Carolinians/Health Education and the NC State Center for Health Statistics (December 2011). Surveys were provided in English and Spanish and distributed to residents using an online survey option and a paper survey option. The survey process was conducted over a 4 week period with 294 individuals participating in the survey process. The survey questions are included in Appendix C of this report.

In addition to the survey process, 5 small group discussions were held in various locations within Hertford County. Participants responded to 7 open-ended questions and shared their feedback. The small group open-ended discussion questions are also included in Appendix C of this report.

Chapter One: Demographic Data

General Population Characteristics

The following general population characteristics of Hertford County and its comparator counties were based on 2014 US Census data population estimates presented in Table 1.

- The County has almost equal proportions of females and males.
- The median age of the County population is 3.3 years older than NC average and approximately the same as the Region.
- Approximately 20% of the County is under the age of 18, which is a lower proportion compared to NC and the Region.
- 17.5% of the County population is over the age of 65, a higher proportion compared to the Region and NC.

County	Total Population (2014 Estimate)						Under 18 Years		# 18-64 Years	% 18-64 Years	65 Years and Older	
	# Total	# Males	% Males	# Females	% Females	Median Age*	# Under 18 Years	% Under 18 Years			# Total	% Total
Hertford	24,308	12,004	49.4	12,304	50.6	41.5	4,824	19.8	15,236	62.7	4,248	17.5
Regional Total	458,613	221,596	48.3	237,017	51.7	41.7	100,240	21.9	287,278	n/a	71,095.0	15.5
State Total	9,943,964	4,844,593	50.8	5,099,371	53.5	38.2	2,287,549	23.0	6,193,053	62.3	1,463,362	14.7
State Average	99,440	48,446	n/a	50,994	n/a	n/a	22,875	23.0	61,931	n/a	14,634	n/a

Table 1. General Demographic Characteristics (2010 US Census data and 2014 Population estimates)
Note: Percentages by gender are calculated. *Metric for Regional Total Median Age calculated as the arithmetic mean of county values
Source: US Census Bureau, American Fact Finder, 2010 Census, Summary File DP-1, 2010 Demographic Profile Data, Profile of General Population and Housing Characteristics: 2010; 2014 Population Estimates: April 1, 2010 to July 1, 2014 (PEPAGESEX), http://factfinder2.census.gov.

Minority Populations

Hertford County has a significantly larger proportion of African American residents, compared to the Region and NC as a whole. The County has a lower proportion of most other races or ethnicities, notably Hispanics.

- Whites composed 36.3% of the total population; the regional comparable figure was 60.9% and the statewide figure was 71.5%.
- Blacks/African Americans composed 59.8% of the total population; the regional comparable figure was 35.4% and the statewide figure was 22.1%.
- American Indians and Alaskan Natives composed 01.7% of the total population; the regional comparable figure was 0.8% and the statewide figure was 1.6%.
- Asians, Native Hawaiians and Other Pacific Islanders composed 0.8% of the total population; the regional comparable figure was 1.3% and the statewide figure was 2.8%.
- Hispanics/Latinos of any race composed 3.8% of the total population; the regional comparable figure was 8% and the statewide figure was 9%.

Population Growth

Hertford County's population growth is expected to shrink even as the State and Region grow at a slowing rate. Between 2000 and 2030, the county population is expected to increase by only 3.4% overall, while the Region increases by 20% and NC grows by 44% (Table 2).

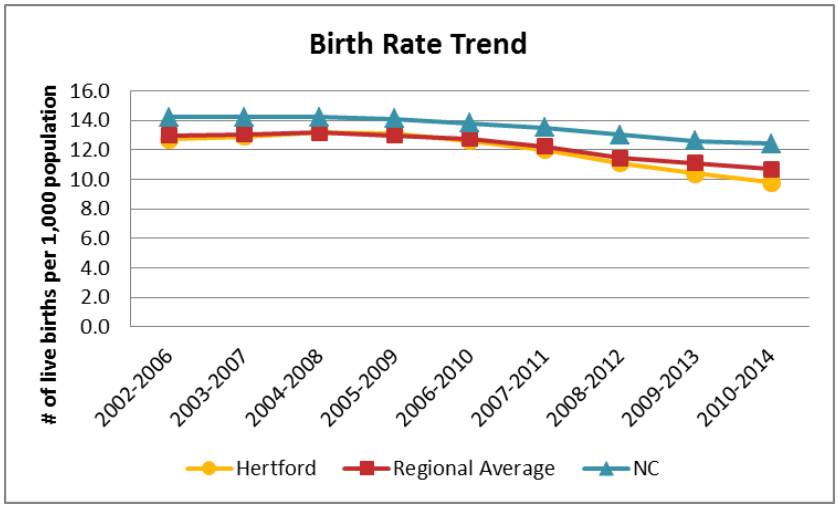
- In 2000, a third (33.3%) of the Hertford County population lived in an urban area. By 2010, that proportion had declined to 31.4% of the population.
- Statewide, North Carolina is more urban than rural and is becoming even more so. In 2010, 66% of residents lived in urban areas and 34% lived in rural areas.

Decade	Hertford County	Regional Average	State of NC
2000-2010	8.4	14.6	**15.6**
2010-2020	-2.2	2.8	**10.9**
2020-2030	-3.2	1.8	**9.8**

Table 2. Population Growth in Overall Population, by Decade, 2000 through 2030 Note: percentage change is calculated. Source: Profile of General Demographic Characteristics: 2000 (DP-1), SF1.and Profile of General Population and Housing Characteristics: 2010 (DP-1). U.S. Census Bureau, American FactFinder: http://factfinder2.census.gov; Age, Race, and Sex Projections, Age Groups – Total, July 1, 2020 County Total Age Groups – Standard last updated October 7, 2015. North Carolina Office of State Budget and Management County/State Population Projections: https://www.osbm.nc.gov/demog/countytotals_standardagegroups

Birth Rate

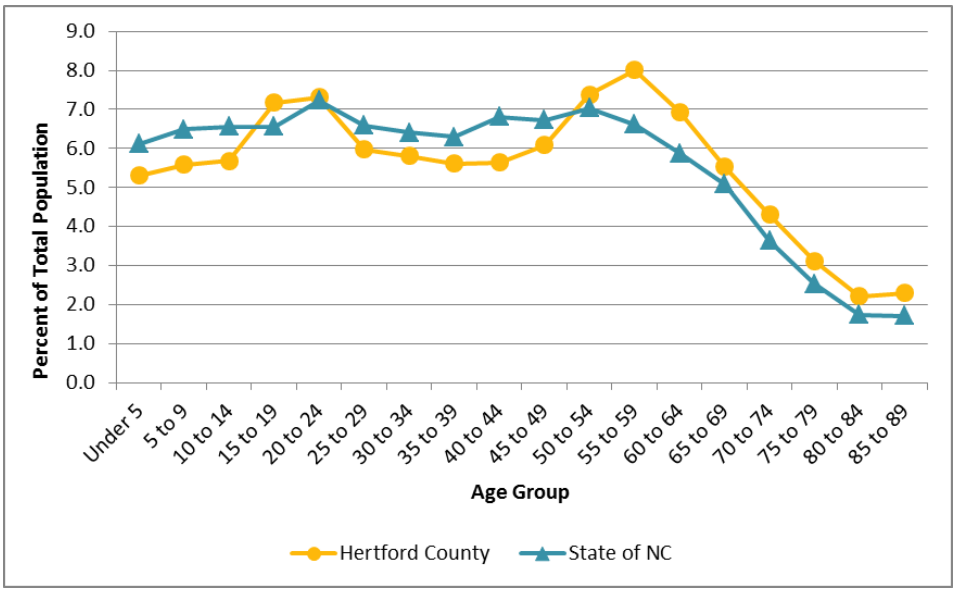
The Hertford County birth rate demonstrated an overall decline over the period presented below, with a similar trend seen in the Region and the state. Between 2007-2011 and 2010-2014, birth rates have decreased overall among most racial groups compared. A similar trend is seen across the Region and the state. The highest birth rate occurred among the Hispanic population; it has not demonstrated the decrease seen among other groups.



Graph 1. Birth Rate Trend, Live Births per 1,000 Total Population (Nine 5-Year Aggregates, 2002-2006 through 2010-2014) Source: NC State Center for Health Statistics, Health Data, County Level Data, County Health Databooks 2008, 2009, 2010, 2011, 2012, 2013; 2014; http://www.schs.state.nc.us/schs/data/databook/.

Age

According to 2014 estimates, compared to NC as a whole Hertford County has higher proportions of young people aged 15 to 24 and those over the age of 50.



Graph 2. Population Distribution by Age and Gender, Number and Percent (US Census July 1, 2014 Estimates)
Source: US Census Bureau, American FactFinder, 2010 Census, 2010 Demographic Profile Data, Summary File DP-1, Profile of General Population and Housing Characteristics: 2010; http://factfinder2.census.gov.

Elderly Population

The population segment age 65 and older often requires more and different health and social services than the rest of the population, and understanding how that population will change in coming years will be an important consideration in planning to meet future health and human service needs.

The following information regarding the elderly population in Hertford County was extracted from the 2000 and 2010 US Census figures and current projections for the years 2020 and 2030 from the NC Office of State Budget and Management.

- The proportion of every major age group in Hertford County age 65 and older is projected to increase between 2010 and 2030.
- Though all segments of the elderly population will grow, the segment expected to grow by the largest percentage in the 20 years between 2010 and 2030 is the group aged 85 and older, which is predicted to grow by 78% over that period, from 1.8 to 3.2% of the total county population.
- The segment of the population expected to grow by the second largest percentage between 2010 and 2030 is the group aged 75-84, which is predicted to grow by 60% over that period, from 5.5% to 8.8% of the total county population. In third position is the segment aged 65-74, which is predicted to grow by approximately 45%, from 8.5% to 12.3% of the total county population.

Children and Families

According to the U.S. Census Bureau figures for 2010-2014, there were 8,700 households in Hertford County. A household includes all the people who occupy a housing unit, which may be a single family, multiple families, one person living alone, or any other group of unrelated people who share a living space. A family household consists of a householder and one or more people living in the same household who are related by birth, marriage or adoption.

When examining the households in Hertford County, 24% of the households were family households with children under 18 years of age. Fifty percent of the family households with children under 18 years were headed by a married couple as compared to 58% in the region, and 65% within the state. Forty -seven percent were headed by a female householder (no husband present) compared to 34% in the region and 27% in the state. Three percent of these households were headed by a male householder (no wife present) compared to 8% in the region and 8% in the state. The head of household does have implications for the care of children as studies have shown that different genders approach health prevention and maintenance differently.

In addition to this data, a further examination of children and families revealed that 51% of the estimated 578 grandparents in Hertford County are living with their minor grandchildren and also are financially responsible for their care. Grandparents are considered responsible for grandchildren if they are financially responsible for food, shelter, clothing, day care, etc. for any/all grandchildren. This data also has implications for care as the elderly population has its own unique health challenges. Hertford County's percentage of grandparents living with and financially responsible for their minor grandchildren is less than the region (52%) and than greater the state (48%).

Military Veterans

A population group that sometimes needs special health services is military veterans. An analysis of the 2010-2014 population estimates demonstrated that Hertford County did not have the largest population of military veterans among the regional comparisons. Veterans composed 8.4% of Hertford County's overall adult civilian population in the period cited, which is lower as compared to the regional percentage of 11.2% and the state percentage at 9.6%.

Although it was not home to the largest contingent of veterans, Hertford County did have the largest percentage of veterans over the age of 65 among comparator groups: 33.0% of the veterans in Hertford County were age 65 or older, compared to 42% in the region and 41 % of NC.

Foreign-Born Population

The foreign-born population in a community is one that potentially does not speak English, and so is of concern to service providers. In NC, the greatest proportion of the increase in foreign-born persons is represented by immigrants of Hispanic origin; however, statewide there has also been an influx of foreign-born immigrants from Southeast Asia.

According to single five-year US Census Bureau estimates (2010-2014), there were 1,167 foreign-born residents residing in Hertford County in 2014. Approximately 30% entered the

US before 1990 and 27% entered between 1990 and 1999. It is estimated that 26% entered the country between 2000 and 2009.

Linguistic Isolation

"Linguistic isolation", reflected as an inability to communicate because of a lack of language skills, can be a barrier preventing foreign-born residents from accessing needed services. The US Census Bureau tracks linguistically isolated households according to the following definition:

A linguistically isolated household is one in which no member 14 years and over (1) speaks only English, or (2) speaks a non-English language and speaks English "very well". In other words, all members 14 years old and over have at least some difficulty with English.

Among the 338 households (around 4% of all households in Hertford County) that speak a language other than English, the most common language is Spanish (57%).

- Among the Spanish-speaking households, around 10% would be considered "limited English speaking".
- A very few Indo-European and Asian language speaking households are considered linguistically isolated by their limited skills in English.
- Among those households speaking "other languages" 95% (18 of 19) are "limited English speaking".

Chapter Two: Socioeconomic Data

Tier Designation

The NC Department of Commerce annually ranks the state's 100 counties based on economic well-being and assigns a Tier Designation. The 40 most distressed counties are designated as Tier 1, the next 40 as Tier 2, and the 20 least distressed as Tier 3. The Tier system is incorporated into various state programs, including a system of tax credits (Article 3J Tax Credits) that encourage economic activity and business investment in less prosperous areas of NC. Hertford County has been assigned Tier 1 designation.

Income

While revenue indicators give us some idea of economic health from the community economic development standpoint, income measures tell us about the economic well-being of individuals in the community. Among the more useful income measures are personal income, family income, and household income. For comparison purposes, personal income is calculated on a per capita basis; family income and household income are viewed as a median value for a target population. The following are definitions of each of the three income categories:

- *Per capita personal income* is the income earned per person 15 years of age or older in the reference population.
- *Median household income* pertains to the incomes of all the people 15 years of age or older living in the same household (i.e., occupying the same housing unit) regardless of relationship. For example, two roommates sharing an apartment would be a household, but not a family.
- *Median family income* pertains to the income of all the people 15 years of age or older living in the same household who are related either through marriage or bloodline. For example, in the case of a married couple who rent out a room in their house to a non-relative, the household would include all three people, but the family would be just the couple.

In Hertford County, the 2014 Per capital personal income was $17,289 which was $8,319 below the state average. This figure has changed little since 2010. The 2014 Median household income was $32,201 which is also below the state average by $14,492. This figure has also decreased slightly since 2012. The 2014 Median family income was $40,746 which is $16,582 below the NC average. This figure has decreased since 2012.

As large as the difference is between Hertford County incomes and State averages, other counties in the VIDANT region demonstrate even larger deficits: both Hertford and Bertie counties have lower incomes in all three categories.

Employment

The following definitions will be useful in understanding the data in this section.

- *Labor force*: includes all persons over the age of 16 who, during the week, are employed, unemployed or in the armed services.
- *Unemployed*: civilians who are not currently employed but are available for work and have actively looked for a job within the four weeks prior to the date of analysis; also,

laid-off civilians waiting to be called back to their jobs, as well as those who will be starting new jobs in the next 30 days.

- *Unemployment rate*: calculated by dividing the number of unemployed persons by the number of people in the civilian labor force.

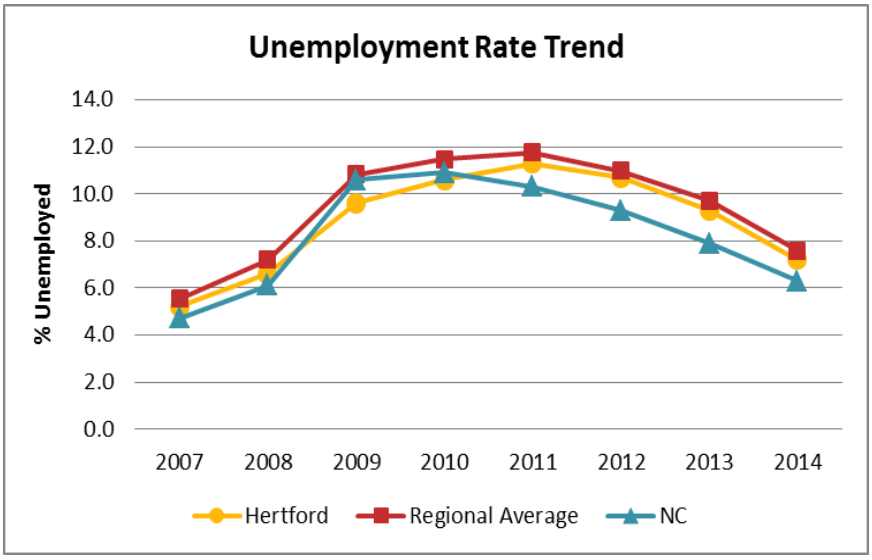
Employment by Sector

An examination of the various sectors of employment in Hertford County and its jurisdictional comparators for 2014 was completed. This analysis examined the number employed in each sector, the percentage of all employment that the number represents, and the average annual wage for people employed in each sector.

- The sector in Hertford County that employed the largest percentage of the workforce (23.2%) was Health Care & Social Assistance. Individuals employed in this sector earned an average of $568 per week.
- Retail Trade accounted for the second largest percentage of the Hertford County workforce, at 12.3%, followed by Educational Services, at 11.6%.
- In the Region, the sector employing the largest percentage of the workforce (16.55%) was Health Care and Social Assistance, followed by Retail Trade (12.73%), Manufacturing (11.95%) and Educational Services (11.77%).
- Statewide, the sector employing the largest percentage of the workforce was Health Care & Social Assistance (14.29%), followed by Retail Trade (11.79%) and Manufacturing (11.06%).

Unemployment

According to 2014 data, a calculated annual average of 676 individuals were unemployed in Hertford County, calculating to an unemployment rate of 7.2. While an average unemployment rate was not available for 2015, the monthly average rate declined each month until May and then climbed over the summer. By December it had declined again to 6.8 compared to the Region (7.3), the State (5.3), and the Nation (4.8).



Graph 3. Annual Unemployment Rate Trend (2007-2014)
Source: NC Employment Security Commission, Labor Market Information, Workforce Information, Employed, Unemployed and Unemployment Rates, Labor Force Statistics, Single Areas for All Years;
http://eslmi03.esc.state.nc.us/ThematicLAUS/clfasp/startCLFSAAY.asp.

Poverty

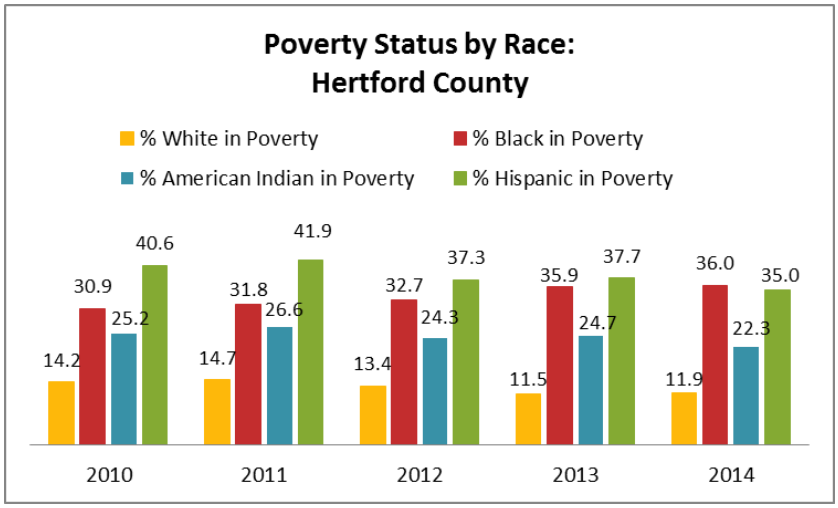
The overall poverty rate (describing the percentage of the total population below the Federally-defined 100% poverty level) in Hertford County was higher than the comparable state and Regional rates throughout the period cited. The poverty rate for children under 18 has increased each period since 2007-2011 and remains higher in Hertford County (42.3% in 2010-2014) compared to NC (25.0%) and the Region (35.7%). In 2014, an estimated 5,689 individuals, or 26% of the population, were living below the poverty level in Hertford County. The poverty rate in Hertford County and in NC increased in every period cited.

	2006-2010	2007-2011	2008-2012	2009-2013	2010-2014
Hertford	**24.1**	**24.7**	**25.0**	**26.0**	**26.3**
Regional Average	20.1	21.5	22.3	23.3	23.0
State of NC	15.5	16.1	16.8	17.5	17.6

Table 3. Poverty Rate Trend (2006-2010 and 2007-2011 Five-Year Estimates)
a - Log Into North Carolina (LINC) Database, Topic Group Employment and Income (Data Item 6094); http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show.
b - US Census Bureau, American Fact Finder, American Community Survey, 2010 American Community Survey 5-Year Estimates, Data Profiles, County, North Carolina (Counties as listed); http://factfinder2.census.gov.
c - US Census Bureau, American Fact Finder, American Community Survey, 2011 American Community Survey 5-Year Estimates, Data Profiles, County, North Carolina (Counties as listed); http://factfinder2.census.gov.

Poverty & Race

The poverty rate among Hispanics in Hertford County exceeded the comparable poverty rates for other groups in all but the most recent period. In NC as a whole, the highest poverty rate over most of the period cited occurred in Hispanics. Black residents also demonstrate high rates of poverty compared to white residents of both Hertford County and NC as a whole.



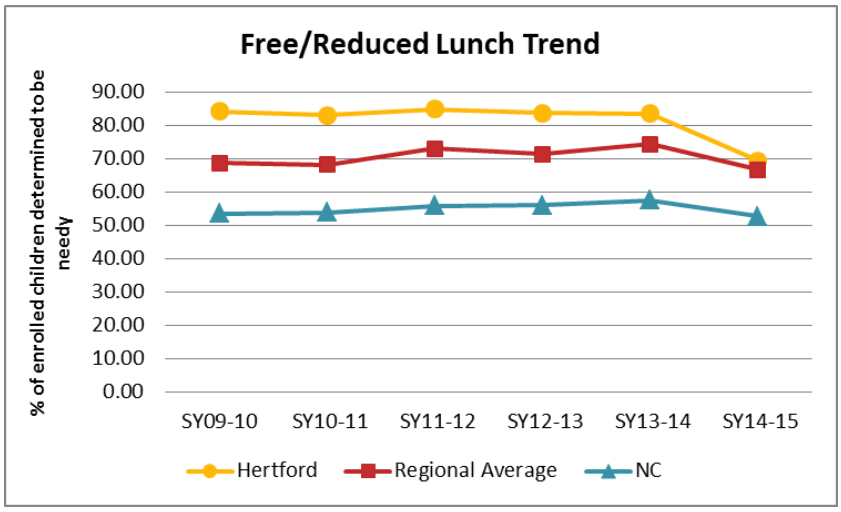
Graph 4. Persons in Poverty by Race (2000; 2006-2010 and 2007-2011 Five-Year Estimates)
Source: US Census Bureau, American Fact Finder, ACS 5-Year Estimates, 2010 through 2014, Table S1701 Poverty Status in the Past 12 Months. http://factfinder.census.gov/

Children Receiving Free or Reduced-price School Lunch

Other data corroborate the impression that children, especially the very young, bear a disproportionate burden of poverty, and that their burden is increasing. One measure of poverty among children is the number and/or percent of school-age children who are eligible for and receive free or reduced-price school lunch.

Students have to be eligible to receive meals; not everyone who is eligible will choose to enroll in the program and receive meals. To be eligible for *free* lunch under the National School Lunch Act students must live in households earning at or below 130 percent of the Federal poverty guidelines. To be eligible for *reduced-price* lunch students must live in households earning at or below 185 percent of the Federal poverty guidelines.

In Hertford County, a higher percentage of students have been identified as "needy", compared to the Region and the State. The recent decrease could be due to policy or procedural changes rather than a change in the number in need.



Graph 5. Percent of Students Enrolled for Free or Reduced-Price School Lunch (SY2009-2010 through SY2014-15)
Source: *Free and Reduced Student Data by Site, Public School Year-to-Date Data 2009-2010 [and other years as noted].* Public Schools of North Carolina, Public Schools of North Carolina, Financial and Business Services: http://www.ncpublicschools.org/fbs/resources/data/

Housing Costs

The estimated median monthly mortgage cost among Hertford County homeowners was $1,016 in 2014. This cost is $256 less than the NC median. The estimated median gross monthly rent among Hertford County renters was $625 in 2014. This cost is $165 less than the NC median.

A closer examination of housing costs as related to percentage of monthly income reflects potential challenges individuals face with regard to balancing cost of housing with other expenditures. The percentage of Hertford County homeowners spending more than 30% of their monthly income on housing has decreased from 42% in 2012 to 38% in 2014 (compared to 31% in NC in 2014). The percentage of renters spending more than 30% of their income on housing has changed very little since 2011: around 47% in the county compared to 46% in NC in 2014.

Homelessness

Every January the NC Coalition to End Homelessness conducts a point-in-time count of homeless individuals. Hertford County did not submit data to the source in 2009 through 2015.

Educational Achievement

According to the US Census Bureau and the NC Public Schools data, a comparison of state and county data reveals that Hertford County has a higher population whose highest attainment was a high school diploma (or equivalent) (31.5% in 2014)) as compared to the Region (31.9%) and the state (26.9%). Hertford County also has a lower population who had a bachelor's degree or higher (14.3% in 2014) as compared to the Region (16.4%) and the state (27.8%).

When comparing Hertford County to the NC average, the 2014-2015 4-year cohort high school graduation rate was higher in Hertford County Schools (86.0%) as compared to the Region (83.5%) and the state (85.6%). High school graduation rates were lowest among male students (81.0%), compared to the Region (79.5%) and the state (82.2%).

Educational System

The number of students enrolled in Hertford County schools has decreased overall, from a high of 3,563 in the 2006-2007 school year to 3,090 in 2014-15. Statewide, the number of enrolled students has increased each year from 2009-2010 to 2014-15. The high school drop- out rate has decreased overall since 2009-10, from 3.29 to 1.11, and it remains lower than in the Region (1.93) and the state (2.28). The high school reportable crime rate is variable in Hertford County. In SY2013-14 the county rate of 9.31 was lower than the Regional average of 11.96 and 65% higher than the state rate (12.37).

Crime and Safety

Two types of crime are generally examined to understand more about a county's crime and safety – violent and property crimes. Violent crimes include offenses of murder, rape, robbery, and aggravated assault. Property crime includes the offenses of burglary, larceny, and motor vehicle theft. For the purposes of this assessment, data was examined by individual type and combined as an "index crime rate."

The "index crime rate" is the rate of the sum of violent crime and property crime. Examining trends over time and comparing those to the state and Region reveals the index crime rate in Hertford County appears variable, though it has declined overall from a high of 5,063.1 in 2004 to 3,300.8 in 2014 (NC 3,287.2; Region 3,021.5).

A closer examination of crimes by type reveals that the majority of crimes committed are property crimes. While property crimes are more common, the Hertford County property crime rate has decreased overall from a high of 4,658.4 in 2004 to 2,978.3 in 2014 (NC 2,954.1; Region 2,705.6).

The violent crime rate in Hertford County fluctuates but has decreased overall, from a high of 494.0 in 2003 to 322.5 in 2014 (NC 333.0; Region 315.8).

Juvenile Crime

In reviewing data from the NC Department of Public Safety with a specific focus on crimes committed by juveniles (ages 6-17), the crimes are reported as "Complaints." The term "Complaint" is defined as a formal allegation that a juvenile committed an offense, which will be reviewed by a counselor who decides whether to approve or not approve the complaint. If approved, it will be heard in juvenile court. Complaints are divided into two categories: "Undisciplined" and "Delinquent."

The term "Undisciplined" refers to disobedience beyond disciplinary control of parent/guardian (e.g., truancy, vagrancy, running away from home for more than 24 hours). Between 2011 and 2014 *few* complaints of undisciplined youth (ages 6-17) in Hertford County were handled: 16 total.

The term "Delinquency" refers to acts committed by youths that would be crimes if committed by an adult. Over the same period the *number* and *rate* of complaints of delinquent youth in the county fluctuated from a low of 24 and 8.37, respectively, in 2011 to a high of 65 and 22.57 in 2013. The "rate" equals the number of events per 1,000 youth in the age group.

During this time period (2011-2014), 18 Hertford County youths were sent to secure detention.

Domestic Violence

The number of domestic violence clients seen by local agencies increased overall in Hertford County, from 67 in 2007-08 to a high of 677 in 2013-14. A total of 399 clients were served in 2014. The number of services provided (advocacy, counseling, legal help, transportation, etc.) is variable. In 2013-14 2,554 services were provided; in 2014-15 that number increased to 8,091. The domestic violence shelter serving Hertford County was full on 0 days in FY2014-2015.

Child Maltreatment

The responsibility for identifying and reporting cases of child abuse, neglect and exploitation falls to the child protective services program within a county's department of social services. Generally speaking, such a unit will have sufficient staff to handle intake of all reports. However, an agency's ability to investigate and monitor reported cases may vary from year to year, depending on the number of properly trained staff available to it; hence, follow-up on reports may vary independently of the number of reports.

Child welfare data from the NC Social Services Data Warehouse at UNC indicates the numbers of children subject to abuse, neglect, or abuse and neglect in Hertford County has decreased over the period shown. Substantiated cases of neglect have notably decreased. A small proportion of reports are eventually substantiated. Neglect tends to be the most common kind of child maltreatment determination.

In Hertford County in 2014-15, there were only two substantiated cases of child maltreatment (1 abuse and 1 dependency). Both were white females; 1 was younger than 5 and the other was in the 6-12 age group.

Chapter Three: Health Resources

Health Insurance

The percent of uninsured in Hertford County increased in all age groups in 2012 but had decreased among all groups by 2013. Compared to the state and the Region, Hertford County tends to demonstrate lower percentages of uninsured residents in all age groups in 2011 and 2013. The age group 0-18 tends to have a lower percentage of uninsured than the 19-64 age group, due partly at least to NC Health Choice.

Medicaid Eligibility

According to data obtained from the NC Division of Medical Assistance, 24.3% of Hertford County residents were eligible for Medicaid in 2013, compared to 16.5% in NC and 19.6% in the Region. The total number of people in Hertford County eligible for Medicaid increased annually in most years from 2009 through 2013. The Medicaid programs with the largest proportion of eligibles were Infants & Children (26%), AFDC (22%) and Disabled (21%) in 2013. In each month of 2013, an average of 768 aged individuals were eligible for both Medicaid and Medicare, lower than the NC County average of 1,195 and a Regional average of 828.

Health Care Practitioners

One way to judge the supply of health professionals in a jurisdiction is to calculate the ratio of the number of health care providers to the number of persons in the population of that jurisdiction. In NC, there is data on the ratio of active health professionals per 10,000 population calculated at the county level. This data was examined for Hertford County, the Region, the state of NC and the US for five key categories of health care professionals: physicians, primary care physicians, registered nurses, dentists and pharmacists. The period covered is through 2012.

- The health professionals ratios in Hertford County were lower than the state for each category except registered nurses.
- The ratios of physicians, primary care physicians, dentists, pharmacists, and nurses were higher than the regional ratios.
- These ratios do not take into consideration medical practitioners in neighboring counties accessible to Hertford County residents.

Although the health professional ratios for each category in Hertford County appear to be higher than the Regional ratios, accessing care may still be a problem. Dental care is especially challenging for Medicaid enrollees as there are limited dental practices which accept Medicaid and/or NC Health Choice clients.

Vidant Roanoke Chowan Hospital

Vidant Roanoke-Chowan Hospital is a 114-bed, not-for-profit hospital located in Ahoskie, NC. This modern facility provides a wide range of health services to about 39,000 residents in the four-county area. As part of Vidant Health, the hospital offers a wide range of services at facilities in Ahoskie and other Hertford County locations.

Hertford County Public Health Authority

Hertford County Public Health Authority provides preventive health services and primary health care for the citizens of the county. Services include: family planning, maternity care, child health, immunizations, and provides treatment and surveillance for communicable disease, sexually transmitted diseases. The Health Department manages the Women Infants and Children's (WIC) nutrition program.

Health Services

Dialysis

There is one dialysis facility with 26 hemodialysis stations in Hertford County, located in Ahoskie. No shifts are offered after 5pm.

Health Facilities

There is no licensed ambulatory surgical center, no cardiac rehabilitation facility, and no licensed nursing pool in the county.

Mental Health Services

There are 6 mental health facilities, all located in Ahoskie, offering a range of services, including several supervised living arrangements, psychosocial rehabilitation, vocational programs, and substance abuse treatment.

Home Health/Hospice

There are 13 facilities which provide home care services, many of them located in Ahoskie. One facility provides home health and home care services. One facility offers hospice services.

School Nurses

The student to school nurse ratio in Hertford County remains below the recommended ratio of 750:1: in SY2012-13 it was 604:1. The state average was 1,177:1 in SY2012-13.

Long-Term Care Facilities

The number of beds in NC-licensed long-term care facilities in Hertford County are:

- Adult Care Homes/Homes for the Aged (3 facilities): 173 beds
- Family Care Homes (13 facilities): 61 beds
- Nursing Homes/Homes for the Aged (1 facility): 151 beds

Most long-term care facilities in the county are located in either Ahoskie or Murfreesboro.

There are a total of 385 beds, or 1 bed for every 11 persons age 65 and older in Hertford County (4,248 persons $\geq$ 65 in 2014). Because of the predicted growth of the elderly population over the next 15-20 years, these services would be expected to grow in demand.

Hospital Utilization – Emergency Department

Vidant Health made available extensive utilization data, some of which will be examined in conjunction with health statistics in a later section of this report. Presented here are demographic summaries of the populations that were admitted to the emergency department

in recent years. This data includes all individuals who received services within the Vidant Health system, who also had a home address located within Hertford County. This data does not include visitors to this area.

Hospital Utilization – Emergency Department - Gender and Age

An examination of Emergency Department utilization by gender demonstrated an increased usage among females, based on the demographics of Hertford County. Females accounted for 57% of all ED discharges over the three-year period cited. Females compose 51% of the total Hertford County population. Males accounted for 43% of all ED discharges over the same period. Males compose 49% of the total Hertford County population.

An analysis of Emergency Department utilization by age reflects that Adult (age 18-64) patients accounted for 60% of all ED visits. This percentage is slightly lower than the proportion of persons in this age group in Hertford County (63%). Minors under the age of 18 ("pediatric" patients) accounted for 20% of all ED discharges over the three-year period cited. This age group composes a total of 20% of the total Hertford County population. Seniors age 65+ accounted for 21% of all ED discharges over the same three-year period, which is higher than the proportion of persons in this age group in Hertford County (18%).

Hospital Utilization – Emergency Department - Racial and Ethnic Profile

An analysis of Emergency Department utilization by race and ethnic profile shows that Blacks/African Americans accounted for 77% of all ED discharges over the three-year period cited. This percentage is much higher than the proportion of Blacks/African Americans within the total Hertford County population (60%). Whites accounted for 21% of all ED discharges over the same period. Whites compose 36% of the total Hertford County population. Hispanics accounted for 1% of all ED discharges over the same period. Hispanics compose 4% of the total Hertford County population. It is important to note that in US Census terms, persons of Hispanic/Latino ethnicity may also be of any race. The hospitals tend to consider Hispanic ethnicity to be a separate racial category.

Hospital Utilization – Emergency Department - Payor Mix

The most common payor groups, in descending order, were:

Medicaid (31.2%)
Medicare (27.9%)
Self-Pay (16.6%)
BCBS Managed Care (11.9%)

Hospital Utilization – Inpatient Admissions

Hospital inpatient admissions were also reviewed for those individuals who experienced an inpatient admission within the Vidant Health system, who also had a home address located within Hertford County.

Hospital Utilization – Inpatient Admissions - Gender and Age

Females accounted for 55% of all inpatient discharges over the three-year period cited. This percentage is higher than the overall population of females in Hertford County (51%). Males accounted for 45% of all inpatient discharges over the same period. Males compose 49% of

the total Hertford County population. One reason for this significant difference may be attributed to age.

Upon closer examination of age as related to inpatient hospitalizations, it is noted that Adult patients (age 18-64 years) accounted for 48% of all inpatient hospitalizations. This rate is significantly less than the proportion of individuals in this age group living in Hertford County (63%). Minors under the age of 18 ("pediatric" patients) accounted for 10% of all inpatient discharges over the three-year period cited. This age group composes a total of 20% of the total Hertford County population.

Interestingly, persons age 65 and older accounted for 42% of all inpatient discharges over the same three-year period. This age group composes a total of 18% of the total Hertford County population, which means that the percentage of inpatient discharges for those people 65+ years old was more than **twice** the percentage that persons aged 65 and older represent in the Hertford County community.

Hospital Utilization – Inpatient Admissions - Racial and Ethnic Profile

Examining the inpatient hospitalization data based on race and ethnicity, Blacks/African Americans accounted for 64% of all inpatient discharges over the three-year period cited. Blacks compose 60% of the total Hertford County population. Whites accounted for 33% of all IP discharges over the same period. Whites compose 36% of the total Hertford County population. Hispanics accounted for 1% of all IP discharges over the same period. Hispanics compose 4% of the total Hertford County population. In US Census terms, persons of Hispanic/Latino ethnicity may also be of any race. The hospitals tend to consider Hispanic ethnicity to be a separate racial category.

Hospital Utilization – Inpatient Admissions - Payor Mix

The most common payor groups, in descending order, were:

Medicare (49.4%)
Medicaid (22.3%)
BCBS Managed Care (9.3%)
Self-Pay (4.9%)

Chapter Four: Health Statistics

Methodology

Routinely collected mortality and morbidity surveillance data and behavior survey data can be used to describe the health status of Hertford County residents. These data, which are readily available in the public domain, typically use standardized definitions, thus allowing comparisons among county, state and national figures. There is, however, some error associated with each of these data sources. Surveillance systems for communicable diseases and cancer diagnoses, for instance, rely on reports submitted by health care facilities across the state and are likely to miss a number of cases, and mortality statistics are dependent on the primary cause of death listed on death certificates without consideration of co-occurring conditions.

Understanding Health Statistics

Age-adjustment

Mortality rates, or death rates, are often used as measures of the health status of a community. Many factors can affect the risk of death, including race, gender, occupation, education and income. The most significant factor is age, because the risk of death inevitably increases with age; that is, as a population ages, its collective risk of death increases. Therefore, an older population will automatically have a higher overall death rate just because of its age distribution. At any one time some communities have higher proportions of "young" people, and others have a higher proportion of "old" people. In order to compare mortality data from one community with the same kind of data from another, it is necessary first to control for differences in the age composition of the communities being compared. This is accomplished by *age-adjusting* the data. Age-adjustment is a statistical manipulation usually performed by the professionals responsible for collecting and cataloging health data, such as the staff of the NC State Center for Health Statistics (NC SCHS). It is not necessary to understand the nuances of age-adjustment to use this report. Suffice it to know that age-adjusted data are preferred for comparing health data from one population or community to another and have been used in this report whenever available.

Aggregate Data

Another convention typically used in the presentation of health statistics is *aggregate data,* which combines annual data gathered over a multi-year period, usually three or five years. The practice of presenting data that are aggregated avoids the instability typically associated with using highly variable year-by-year data consisting of relatively few cases or deaths. It is particularly important to aggregate data for smaller jurisdictions like Hertford County. The calculation is performed by dividing the number of cases or deaths due to a particular disease over a period of years by the sum of the population size for each of the years in the same period.

Incidence

Incidence is the population-based rate at which new cases of a disease occur and are diagnosed. It is calculated by dividing the number of newly diagnosed cases of a disease or condition during a given period by the population size during that period. Typically, the

resultant value is multiplied by 100,000 and is expressed as cases per 100,000; sometimes the multiplier is a smaller number, such as 10,000.

Incidence rate is calculated according to the following formula:

(number of new cases/population) x 100,000 = new cases per 100,000 people

The incidence rates for certain diseases, such as cancer, are simple to obtain, since data on newly discovered cases is routinely collected by the NC Central Cancer Registry. However, diagnoses of other conditions, such as diabetes or heart disease, are not normally reported to central data-collecting agencies, so accurate incidence data on these conditions is rare.

Mortality

Mortality is calculated by dividing the number of deaths due to a specific disease in a given period by the population size in the same period. Like incidence, mortality is a rate, usually presented as number of deaths per 100,000 residents. Mortality rates are easier to obtain than incidence rates since the underlying (or primary) cause of death is routinely reported on death certificates. However, some error can be associated with cause-of-death classification, since it is sometimes difficult to choose a single underlying cause of death from potentially many co-occurring conditions.

Mortality rate by cause is calculated according to the following formula:

(number of deaths due to a cause/population) X 100,000 = deaths per 100,000 people

Morbidity

Morbidity as used in this report refers generally to the presence of injury, sickness or disease (and sometimes the symptoms and/or disability resulting from those conditions) in the population. Morbidity data usually is presented as a prevalence percentage, or a count, but not a rate.

Prevalence

Prevalence, which describes the extent of a problem, refers to the number of existing cases of a disease or health condition in a population at a defined point in time or during a period. Prevalence expresses a proportion, not a rate. Prevalence is often estimated by consulting hospital records; for instance, hospital discharge records available from NC SCHS show the number of residents within a county who use hospital in-patient services for given diseases during a specific period. Typically, these data underestimate the true prevalence of the given disease in the population, since individuals who do not seek medical care or who are diagnosed outside of the hospital in-patient setting are not captured by the measure. Note also that decreasing hospital discharge rates do not necessarily indicate decreasing prevalence; rather they may be a result of a lack of access to hospital care.

Trends

Data for multiple years is included in this report wherever possible. Since comparing data on a year-by-year basis can yield very unstable trends due to the often small number of cases, events or deaths per year (see below), the preferred method for reporting incidence and

mortality data is long-term trends using the age-adjusted, multi-year aggregate format. Most trend data used in this report is of that type.

Small Numbers

Year-to-year variance in small numbers of events can make dramatic differences in rates that can be misleading. For instance, an increase from two events one year to four the next could be statistically insignificant but result in a calculated rate increase of 100%. Aggregating annual counts over a five year period before calculating a rate is one method used to ameliorate the effect of small numbers. Sometimes even aggregating data is not sufficient, so the NC State Center for Health Statistics recommends that all rates based on fewer than 20 events—whether covering an aggregate period or not—be considered “unstable”, and interpreted only with caution. In recent years, the NC SCHS has suppressed mortality rates based on fewer than 20 events in a five-year aggregate period. Other state entities that report health statistics may use their own minimum reporting thresholds. To be sure that unstable health data do not become the basis for local decision-making, this report will highlight and discuss primarily rates based on 20 or more events in a five-year aggregate period and on 10 or more events in a single year. Where exceptions occur, the narrative will highlight the potential instability of the rate being discussed.

Describing Difference and Change

In describing differences in data of the same type from two populations or locations, or changes over time in the same kind of data from one population or location—both of which appear frequently in this report—it is useful to apply the concept of percent difference or change. While it is always possible to describe difference or change by the simple subtraction of a smaller number from a larger number, the result often is inadequate for describing and understanding the scope or significance of the difference or change. Converting the amount of difference or change to a *percent* takes into account the relative size of the numbers that are changing in a way that simple subtraction does not, and makes it easier to grasp the meaning of the change.

For example, there may be a rate for a type of event (e.g., death) that is one number one year and another number five years later. Suppose the earlier figure is 12.0 and the latter figure is 18.0. The simple mathematical difference between these rates is 6.0. Suppose also there is another set of rates that are 212.0 in one year and 218.0 five years later. The simple mathematical difference between these rates also is 6.0. Although the same, these simple numerical differences are not of the same significance in both instances. In the first example, converting the 6 point difference to a percent yields a relative change factor of 50%; that is, the smaller number increased by half, a large fraction. In the second example, converting the 6 point difference to a percent yields a relative change factor of 2.8%; that is, the smaller number in the comparison increased by a relatively small fraction. In these examples the application of percent makes it very clear that the difference in the first example is of far greater degree than the difference in the second example. This document uses percentage almost exclusively to describe and highlight degrees of difference and change, both positive (e.g., increase, larger than, etc.) and negative (e.g., decrease, smaller than, etc.)

Final Health Data Caveat

Some data that is used in this report may have inherent limitations, due to sample size, or its age, for example, but is used nevertheless because there is no better alternative. Whenever this kind of data is used, it will be accompanied by a warning about its limitations.

Health Rankings

America's Health Rankings

Each year for more than 20 years, America's Health Rankings™, a project of United Health Foundation, has tracked the health of the nation and provided a comprehensive perspective on how the nation—and each state—measures up. America's Health Rankings is the longest running state-by-state analysis of health in the US.

America's Health Rankings are based on several kinds of measures, including *determinants* (socioeconomic and behavioral factors and standards of care that underlie health and well-being) and *outcomes* (measures of morbidity, mortality, and other health conditions). Together the determinants and outcomes help calculate an overall rank.

According to the 2015 America's Health Rankings, North Carolina ranked 31st overall out of 50 states where 1st is considered best.

County Health Rankings

Building on the work of *America's Health Rankings*, the Robert Wood Johnson Foundation, collaborating with the University of Wisconsin Population Health Institute, undertook a project to develop health rankings for the counties in all 50 states. In this project, each state's counties are ranked according to health outcomes and the multiple health factors that determine a county's health. Each county receives a summary rank for its health outcomes and health factors and also for the four different types of health factors: health behaviors, clinical care, social and economic factors, and the physical environment.

According to the 2015 County Health Rankings for NC, Hertford County was ranked:

- 74th overall out of 100 (where 1 is best) for ***health outcomes***
- 63rd in length of life
- 81st for quality of life
- 80th overall out of 100 for ***health factors***
- 93rd for health behaviors
- 24th for clinical care
- 77th for social and economic factors
- 44th for physical environment

It should be noted that the County Health Rankings serve a limited purpose, since the data on which they are based in some cases is very old and different parameters are measured in different time periods.

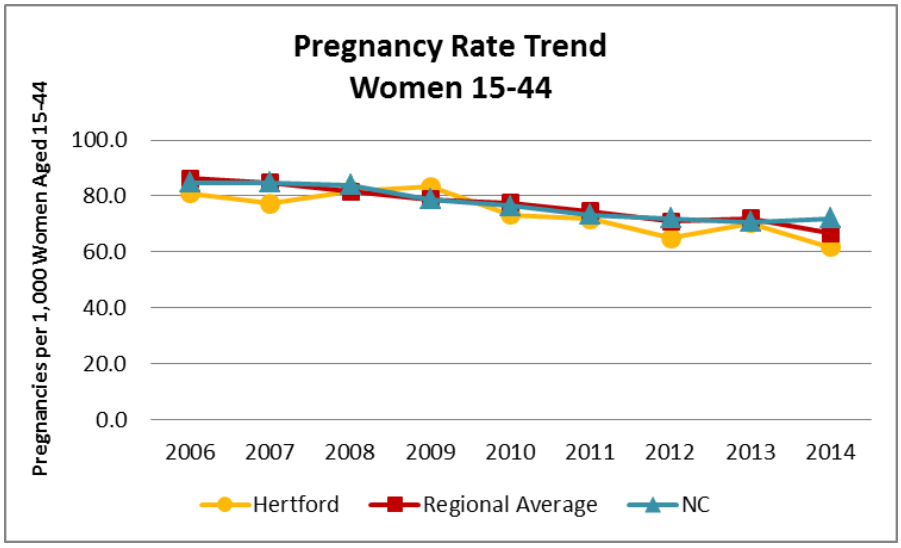
Maternal and Infant Health

Pregnancy

The following definitions and statistical conventions will be helpful in understanding the data on pregnancy:

- Reproductive age = 15-44
- Total pregnancies = live births + induced abortions + fetal death at 20+ weeks gestation
- Pregnancy rate = number of pregnancies per 1,000 women of reproductive age
- Fertility rate = number of live births per 1,000 women of reproductive age
- Abortion rate = number of induced abortions per 1,000 women of reproductive age
- Birth rate = number of live births per 1,000 *population (Note that in the birth rate calculation the denominator includes the entire population, both men and women, not just women of reproductive age.)* Since the birth rate is a measure of population growth, it was presented among the demographic data in Chapter One of this report.

The NC State Center for Health Statistics data indicates the total pregnancy rates for Hertford County, the region and the state have decreased overall since 2007. The 2014 pregnancy rate was 61.8 in Hertford County, compared to 66.8 in the Region and 72.1 in NC.



Graph 6. 2006-2014 Pregnancy Rate Trend for Females 15-44. Source: North Carolina State Center for Health Statistics (NC SCHS), 2008 [and other years as noted] County Health Data Books: http://www.schs.state.nc.us/data/databook/

Teen pregnancy rates in Hertford County have fallen significantly since 2009, though they remain higher than the state. The 2014 teen pregnancy rate was 38.7 in Hertford County, compared to 39.0 for the Region and 32.3 for the state.

Among Hertford County women age 15-44 the highest pregnancy rates appear to occur among Hispanics, though rates were suppressed in recent years. Among Hertford County teens, the rates over time appear quite variable and are unstable for most groups, so have not been presented. The rate is highest among African American teens, whose rates in Hertford County tend to be higher than both the Region and the State.

Pregnancy Risk Factors

Smoking During Pregnancy

The percentage of Hertford County women who smoked during pregnancy increased overall between 2012 and 2014, while comparable percentages for the Region did not change significantly over the same period. Among comparators, the highest percentages of mothers who smoked while pregnant were in Hertford County in 2014.

Inadequate Prenatal Care

The percentage of women receiving early prenatal care increased each year since 2012 in Hertford County. Among racial groups, a higher proportion of white women get prenatal care in the first trimester (80.9%) compared to African American women (78.4%) and 45.5% of Hispanic women in 2014. The percentage of Hispanic women receiving first trimester care has decreased each year since 2012.

Pre-Term, Low Weight and Very Low Weight Births

In Hertford County from 2010-2014, the percentage of Pre-Term Births (babies born at less than 37 weeks) was 17.6%, compared to the Region at 13.4% and the state at 11.8%. Low Weight Births (babies weighing less than or equal to 2500 grams or 5.5 pounds at birth) occurred in 12.5% of live births in Duplin County, compared to the Region (9.9%) and the state (9.0%). The rate of low weight births has changed little overall in Hertford County since 2002-2006. The highest rate of low weight births is among African American mothers (14.8%).

Very Low Weight Births (babies weighing less than or equal to 1500 grams or 3.3 pounds at birth) occurred in 3.2% of live births in Duplin County, compared to the Region (2.3%) and the state (1.7%). The variable rate has increased each period since 2006-2010. The highest rate of very low weight births, though not by much, is among African American mothers (3.9%).

Infant Mortality

The Hertford County infant mortality rate has been consistently higher than the state (7.1 in 2010-2014) and the Regional average (9.8 in 2010-2014). The most recent data from the US Census Bureau reflects Hertford County's infant mortality rate is 31.4. According to the CDC the 2013 infant mortality rate in NC was the 10th highest in the nation.

When infant mortality data was examined by race, none of the stratified rates were stable and therefore, were suppressed after 2008-2012. Although NC SCHS changed the categories used for racial stratifications in 2006-2010, the infant mortality rate among African Americans in the county is traditionally higher compared to the overall rates: 17.5 compared to 14.7 in 2008-2012, the last year in which rates are available. When looking at the number of infant deaths, the majority of all infant deaths in Hertford County occurred among African Americans: 72% (13 of 18) in 2010-2014 compared to 43% in this group statewide.

Life Expectancy

Life expectancy is the average number of additional years that someone at a given age would be expected to live if he/she were to experience throughout life the age-specific death rates observed in a specified reference period. Life expectancies in terms of years of life remaining can be calculated for any age. Because life expectancy is an average, however, a particular person may well die many years before or many years after their "expected" survival, due to life experiences, environment, and personal genetic characteristics.

Life expectancy from birth is a frequently utilized and analyzed component of demographic data. It represents the average life span of a newborn and is considered an indicator of the overall health of a population or community.

Life expectancy rose rapidly in the twentieth century due to improvements in public health, nutrition and medicine, and continued progress in these areas can be expected to have further positive impact on life expectancy in the future. Decreases in life expectancy are also possible, influenced mostly by epidemic disease (e.g. plagues of history and AIDS in the modern era), and natural and man-made disasters. One of the most significant influences on life expectancy in populations is infant mortality, since life expectancy at birth is highly sensitive to the rate of death in the first few years of life.

The overall life expectancy in Hertford County is 76.3. When compared to the Regional Mean (77.7) and the state (78.3), Hertford County had the shortest life expectancies in most categories.

County	Overall	Sex		Race	
		Male	Female	White	African-American
Hertford	76.3	73.1	79.3	76.8	75.9
Regional Arithmetic Mean	77.7	75.0	80.3	78.4	76.5
State Total	78.3	75.8	80.7	78.9	75.9

Table 4. 2012-2014 State-Level Life Expectancies by Age, Sex, Race and Race by Sex. Source: North Carolina Center for Health Statistics, Life Expectancy - State & County Estimates: http://www.schs.state.nc.us/data/lifexpectancy/

Mortality

Leading Causes of Death

This section describes mortality for the 15 leading causes of death, as well as mortality due to five major site-specific cancers. The list of topics and the accompanying data was retrieved from the NC SCHS County Health Databook. Unless otherwise noted, the numerical data are age-adjusted and represent five-year aggregate periods.

Table 5 compares the number of deaths and mortality rates for the 15 leading causes of death in Hertford County to the state. The causes of death are listed in descending order of

rank in Hertford County. Differences between Hertford County and NC mortality rates are discussed below.

Age-Adjusted Rates (2010-2014)	Hertford County No. of Deaths	Hertford County Mortality Rate	Hertford Rate Difference from NC
1. Diseases of the Heart	286	177.4	+6.9%
2. Cancer	282	176.9	+3.0%
3. Diabetes Mellitus	86	54.1	+144.8%
4. Cerebrovascular Disease	67	41.7	-3.0%
5. Chronic Lower Respiratory Diseases	52	32.8	-28.7%
6. Alzheimer's Disease	49	30.7	+5.1%
7. All Other Unintentional Injuries	35	25.2	-14.9%
8. Septicemia	26	17.0	+30.8%
9. Nephritis, Nephrotic Syndrome, and Nephrosis	24	15.0	-11.8%
10. Pneumonia and Influenza	22	13.4	-23.9%
11. Unintentional Motor Vehicle Injuries	19	16.8	+24.4$
12. Chronic Liver Disease and Cirrhosis	14	9.3	-4.1%
13. Suicide	14	10.4	-16.1%
14. Homicide	8	7.4	+29.8%
15. Acquired Immune Deficiency Syndrome	6	5.1	+96.2%

Table 5. 2010-2014 Race-Specific and Sex-Specific Age-Adjusted Death Rates by County (CD21B). Source: North Carolina State Center for Health Statistics (NC SCHS), 2016 County Health Data Book website: http://www.schs.state.nc.us/data/databook/

Mortality rates for 8 of the 15 leading causes of death were higher in Hertford County compared to North Carolina rates:

- Diseases of the Heart
- Cancer
- Diabetes Mellitus
- Alzheimer's Disease
- Septicemia
- Unintentional Motor Vehicle Injuries
- Homicide
- Acquired Immune Deficiency Syndrome

An examination of leading causes of death broken down by age group, reveals in NC, the top three leading causes of death for each age group are:

- Age 0-19: Conditions originating in the perinatal period; Congenital anomalies; Motor vehicle injuries
- Age 20-39: Other unintentional injuries; Motor vehicle injuries; Suicide
- Age 40-64: Cancer (all sites); Diseases of the heart; Other unintentional injuries

- Age 65-84: Cancer (all sites); Diseases of the heart; Chronic lower respiratory diseases
- Age 85+: Diseases of the heart; Cancer (all sites); Alzheimer's disease

Further examination of the leading causes of death by age reveal the top 3 causes of death in Hertford County

Age Group	Rank	Cause of Death in Hertford County (2010-2014)
00-19	1 2 3	Conditions originating in the perinatal period Congenital anomalies (birth defects) Homicide Other Unintentional injuries
20-39	1 2 3	Motor vehicle injuries Suicide Homicide
40-64	1 2 3	Cancer - All Sites Diseases of the heart Diabetes mellitus
65-84	1 2 3	Cancer (all sites) Diseases of the heart Diabetes mellitus
85+	1 2 3	Diseases of the heart Cancer - All Sites Alzheimer's disease

Table 6. 2010-2014 Ten Leading Causes of Death by County of Residence and Age Group: Ranking, Number of Deaths, and Unadjusted Death Rates per 100,000 Population. Source: North Carolina Center for Health Statistics (NC SCHS), 2016 County Health Data Book website: http://www.schs.state.nc.us/data/databook/

It is Important to note that that homicide and unintentional injuries are ranked among the leading causes of death in the 0-19 age group. It is also notable that homicide appears as a leading cause of death among the 20-39 age group. Another important note is that diabetes ranks among the three main leading cause of death among the 40-64 and 65-84 age groups.

It is important to note that many of the leading causes of death in Hertford County have decreased over time. A comparison of the mortality rates for leading causes of death from 2002-2006 to 2010-2014 shows the following causes of death remain higher than the state rates for:

- Heart disease
- Total cancer (site-specific cancers will be discussed later)
- Diabetes
- Alzheimer's disease
- Septicemia
- Unintentional Motor Vehicle Injuries
- Homicide
- Acquired Immune Deficiency Syndrome

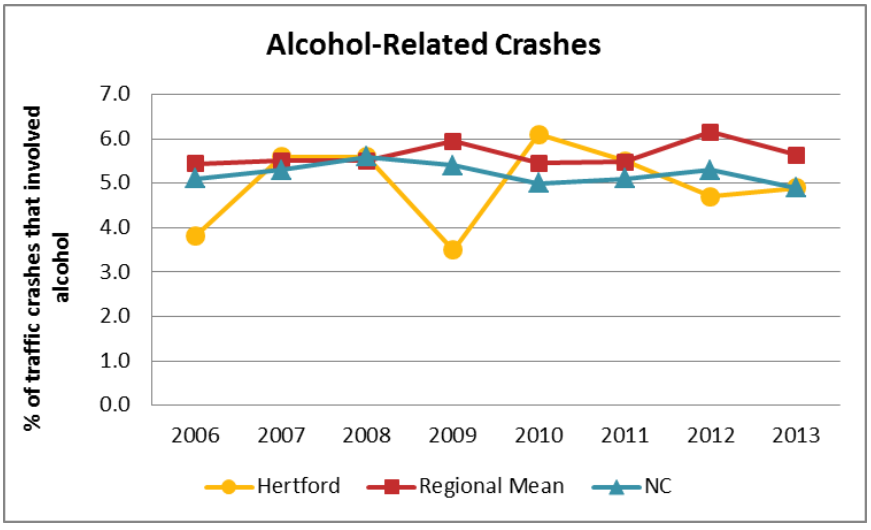
Hertford County Rank by Descending Overall Age-Adjusted Rate (2010-2014)	Rate in 2002-2006	Rate in 2010-2014	% Change 2002-2006 to 2010-2014
1. Diseases of the Heart	230.6	177.4	-23.1%
2. Cancer	220.5	176.9	-19.8%
3. Diabetes Mellitus	48.4	54.1	+11.8%
4. Cerebrovascular Disease	71.1	41.7	-41.4%
5. Chronic Lower Respiratory Diseases	46.1	32.8	-28.9%
6. Alzheimer's Disease	21.6	30.7	+42.1%
7. All Other Unintentional Injuries	23.4	25.2	+7.7%
8. Septicemia	22.9	17.0	-25.8%
9. Nephritis, Nephrotic Syndrome, and Nephrosis	28.2	15.0	-46.8%
10. Pneumonia and Influenza	24.9	13.4	-46.2%
11. Unintentional Motor Vehicle Injuries	30.9	16.8	-45.6%
12. Chronic Liver Disease and Cirrhosis	9.9	9.3	-6.1%
13. Suicide	6.9	10.4	+50.7%
14. Homicide	8.7	7.4	-14.9%
15. Acquired Immune Deficiency Syndrome	8.0	5.1	-36.3%

Table 7. 2010-2014 Race-Specific and Sex-Specific Age-Adjusted Death Rates by County (CD21B). Source: North Carolina State Center for Health Statistics (NC SCHS), 2016 County Health Data Book website: http://www.schs.state.nc.us/data/databook/

Morbidity

Vehicular and Alcohol-Related Motor Vehicle Crashes

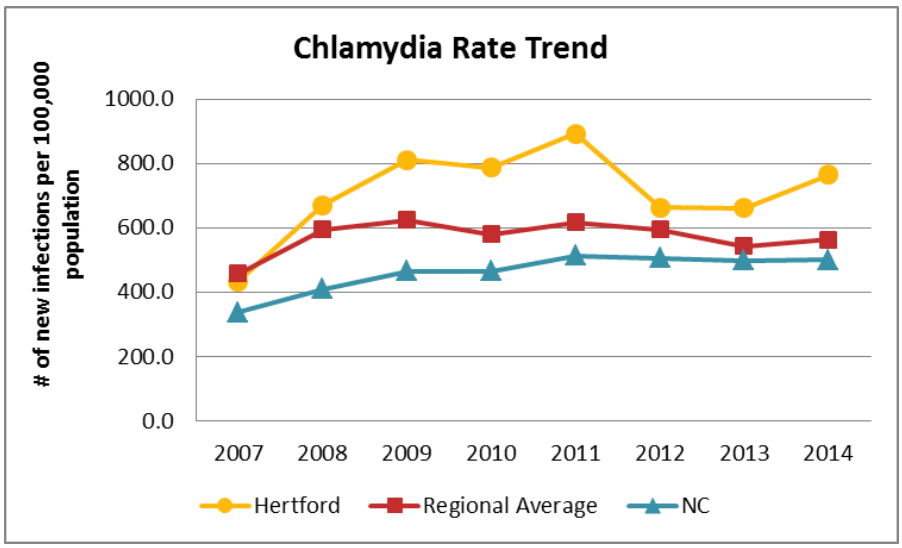
According to the NC Highway Safety Research Center, over the period from 2006 through 2013, an annual average of 5.0% of all traffic crashes in Hertford County were alcohol-related. Statewide, the comparable figure was 5.2% and it was 6% across the Region.



Graph 7. Alcohol Related Traffic Crashes 2006-2013. Source: North Carolina Alcohol Facts. Highway Safety Research Center at the University of North Carolina at Chapel Hill: http://www.hsrc.unc.edu/ncaf/crashes.cfm

Sexually Transmitted Infections – Chlamydia

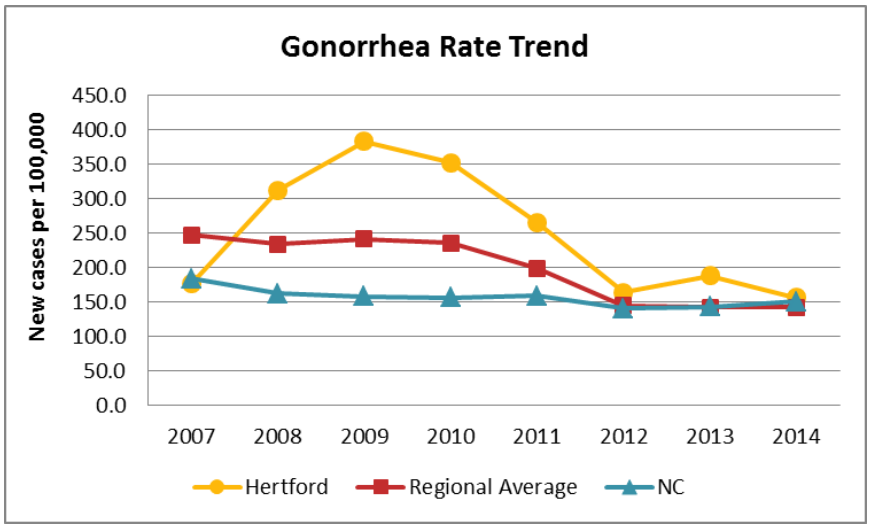
The chlamydia infection rate in Hertford County is variable from year-to- year, but was higher than the state rate for the entire period shown. In 2014, there were 186 new cases of chlamydia in Hertford County, calculating to a rate of 765.2 compared to 501.9 statewide. Of the 15-24 year olds who were tested for chlamydia in 2011, 17.7% tested positive, compared to 10.9% in NC.



Graph 8. North Carolina Newly Diagnosed Chlamydia Rates by County of Diagnosis and Year of Diagnosis, 2010-2014
Source: 2014 North Carolina HIV/STD Surveillance Report.

Sexually Transmitted Infections – Gonorrhea

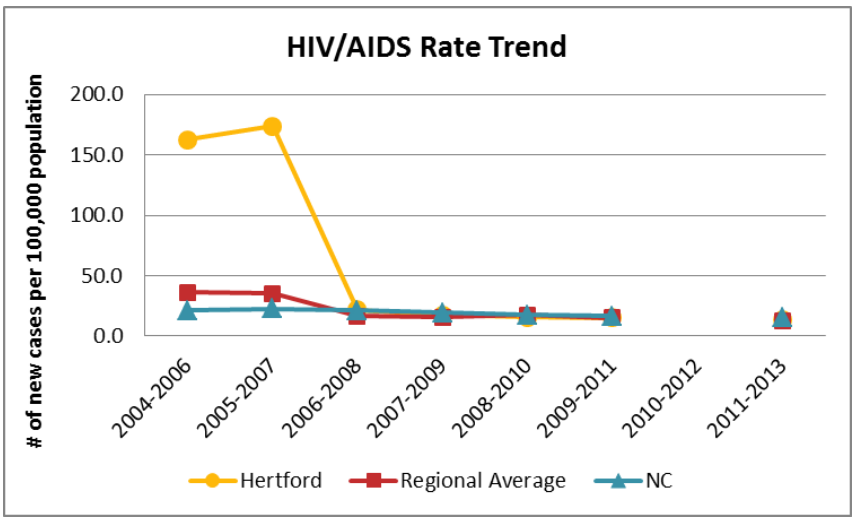
The gonorrhea infection rate in Hertford County, which fell steadily between 2009 and 2012, was nevertheless higher than the state throughout the period cited. In 2014, there were 38 new cases of gonorrhea in Hertford County, calculating to a rate of 156.3, close to the state rate of 150.4. The gonorrhea rate was highest among African Americans in 2006-2010 (the last year for which stratified data is available): 462.6 compared to 318.4 overall.



Graph 9. N.C. Newly Diagnosed Gonorrhea Rates by County of Diagnosis and Year of Diagnosis 2010-2014. Source: 2014 HIV/STD Surveillance Report. Communicable Disease

Sexually Transmitted Infections – HIV/AIDs

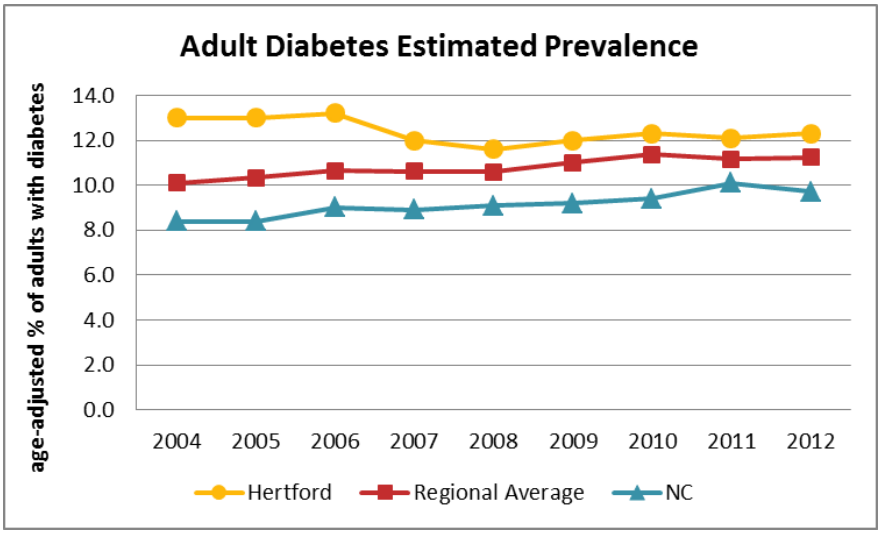
Although the numbers are too low to yield stable rates, the rate of newly diagnosed HIV infections in Hertford County (an average of 12.3 between 2012-2014) was lower than the comparable state rate (13.4). With the exception of the first two periods, the HIV disease rates have been similar to the state and Region rates. Seventy-three people in Hertford County were living with HIV as of the end of 2014.



Graph 10. HIV Disease includes all newly reported HIV infected individuals by the date of first report (HIV or AIDS). Source: North Carolina Epidemiologic Profile for HIV/STD Prevention & Care Planning, Division of Public Health, NC Department of Health & Human Services, Communicable Disease Surveillance Unit, North Carolina Communicable Disease Branch: http://epi.publichealth.nc.gov/cd/stds/epiprofile.html

Adult Diabetes

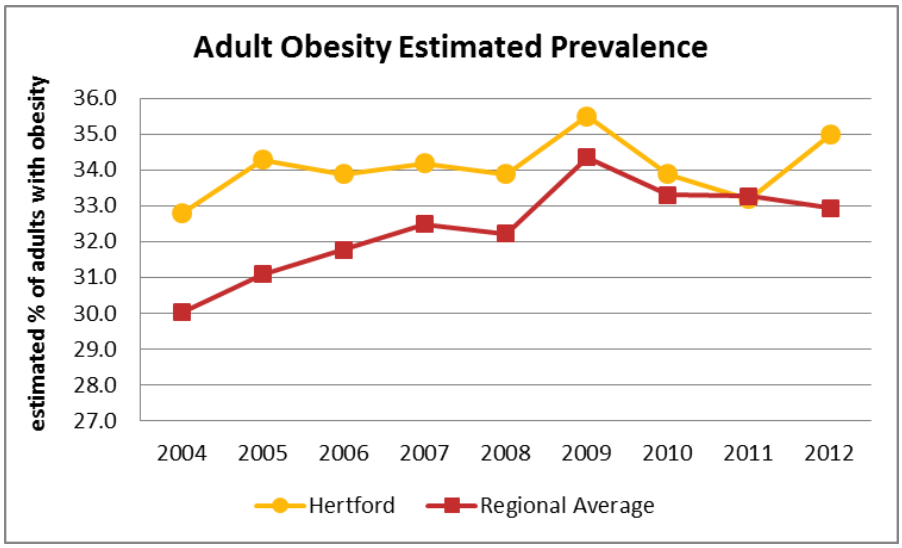
The average prevalence of diabetes among Hertford County adults was higher than the state and the Region for the entire period shown. Over the 9-year period presented, the Hertford County average was 12.4%, compared to 10.8% Region-wide and 9.1% across the state.



Graph 11. County-Level Data, Diagnosed Diabetes Prevalences, North Carolina, 2004 through 2012. Source: Centers for Disease Control and Prevention, National Diabetes Surveillance System: http://www.cdc.gov/diabetes/data/index.html

Obesity in Adults

The average prevalence of obesity in Hertford County was 34.1% in the period from 2004 through 2012, compared to 32.4% in the Region (state data is not available). The Hertford County percentage was higher than the Region for almost the entire period presented and increased overall.



Graph 12. Obesity Prevalence 2004-2012. Source: Centers for Disease Control and Prevention, National Diabetes Surveillance System: http://www.cdc.gov/diabetes/data/index.html

Obesity in Children (Ages 2-4)

There is limited data on the prevalence of childhood obesity in Hertford County. Data is collected for three age groups (2-4, 5-11, 12-18), but the only one yielding stable rates in the county was the 2-4 year old group. The data is also not particularly current. The data available covers only children seen in health department WIC and child health clinics and certain other facilities and programs.

According to this NC-NPASS data, in 2010 an annual average of 17% of the participating children in Hertford County age 2-4 were deemed “overweight”, and an additional 13% were deemed “obese” (total = 30%). Statewide, 16% were overweight and 16% were obese, for a total of 32%. Across the Region, an average of 16% were overweight and another 17% were considered obese, for a total of 33%

Asthma

The Hertford County rate of hospital discharges with a primary diagnosis of asthma was higher than the state rate (98.7 vs. 90.9 in 2014), and has increased over time (from 52.7 in 2010). Among children aged 0-14, the hospital discharge rate has increased overall, from 23.5 in 2010 to 99.3 in 2014. The comparable state rate in 2014 was 144.6

Mental Health

Between 2006 and 2014, the number of Hertford County residents served by the Area Mental Health Program *decreased* overall by 56%. In 2014, 685 Hertford County residents were served. Over the same 9-year period the number of Hertford County

residents served by State Psychiatric Hospitals *decreased* by 93%. In 2014, three Hertford County residents were served. During the same 9-year period, a total of 90 Hertford County residents were served by NC State Alcohol and Drug Abuse Treatment Centers (ADATCs), with the number varying from year to year. In 2014, 9 Hertford County residents were served.

ED discharges related to all Mental, Behavioral and Neurological Disorder diagnoses composed approximately 3% of all ED discharges over the three-year period cited; IP discharges for mental health diagnoses composed approximately 6% of all IP discharges. Note that these diagnoses (ICD-9 290-319xx) include psychotic and non-psychotic disorders, and conditions associated with alcohol and drug abuse

Hertford County Populations At-Risk for Poor Health Outcomes

Primary and Secondary data gathered identifies the following groups as at-risk or populations with health disparities:

- The uninsured and under-insured
- Persons living in poverty
- Minorities
- Males, who generally have poorer health outcomes than females
- Persons with poor access to transportation, because travel may be necessary to reach certain healthcare providers
- The elderly, because healthcare services may not be sufficient to accommodate their needs as their population grows
- Pregnant women and the children they carry, since problematic birth outcomes are more common in the county than statewide

Chapter Five: Community Watch List

After Secondary data was compiled, a watch list of noteworthy Health Problems was developed. The following items were identified as health problems in Hertford County:

- **Birth outcomes** – the infant mortality rate in the county is higher than the NC rate and may be increasing; the county has higher proportions of low-weight and very low-weight births and higher proportions of pre-term births than NC averages; newborns and neonates with problems represent 30% of all births.

- **Diabetes** – ranks 3rd on the list of leading causes of death; the current mortality rate in the county is significantly higher than the NC rate, and it appears to be rising; diabetes is a major health problem among African Americans and males in the county.

- **Mental health problems and suicide** – the suicide mortality rate in the county is increasing; Hertford County patients with mental health diagnoses account for 3% of all ED discharges and 6% of all IP discharges at the local hospital.

- **Septicemia** – county mortality rate currently is significantly higher than NC rate

Chapter Six: Community Feedback

Community Survey Methodology

Hertford County Public Health Authority (HCPHA), Vidant Roanoke Chowan and the Vidant Health system partnered to create a community survey designed to receive feedback from community members regarding health. The survey questions were adapted from the survey questionnaire provided by the *Community Assessment Guidebook: North Carolina Community Health Assessment Process*, published by the NC Office of Healthy Carolinians/Health Education and the NC State Center for Health Statistics (December 2011). The survey was implemented online and in paper copies and in English and Spanish. A total of 294 community members responded to the survey. The survey questions were designed to obtain feedback regarding health issues within the community, as well as to better understanding health behaviors and issues experienced by survey participants and their family members. The survey responses shave been incorporated throughout this document.

Community Small Group Discussions Methodology

In addition to the survey questionnaire, HCPHA partnered with Vidant Roanoke Chowan hospital and the community to assemble and complete Community Small Group Discussions. Community Health Assessment coordinators served as Group Moderators and completed __ small group discussions throughout Hertford County.

Community Feedback Results

Key Feedback Received from all Community Feedback (survey and small group discussions):

- Participants valued a strong sense of community as a valued benefit of living in Edgecombe County.
- The economy and lack of employment were consistently identified as primary concerns among participants.
- Participants identified the need for more community health education related to eating healthy and substance abuse.
- The uninsured, underinsured, and individuals who cannot afford services were consistently identified as groups not receiving necessary healthcare.

Chapter Seven: Issue Prioritization

In June of 2016, members of the Hertford County Health Maintenance Alliance met to discuss the Community Health Needs Assessment. Assessment results were shared and a formal process was utilized to determine Hertford County's community health priorities.

Assessment data (primary and secondary) were shared with key stakeholders. Stakeholders reviewed the information, asked questions, and shared additional data from their respective organizations. Following a comprehensive review of all data provided, each participant was asked to identify key trends for further evaluation. A list was developed which included 14 potential priorities for further discussion and consideration.

The following criteria were used to evaluate the potential health priorities:

1. **The Magnitude of the Problem** – How many persons does the problem affect?

2. **Seriousness of the Consequences** – What degree of disability or premature death occurs because of the problem? What are the potential burdens to the community such as social or economic burdens?

3. **Feasibility of Correcting the Problem** – Is the problem amenable to interventions? Is the problem preventable? Is the community concerned about the problem? Is the intervention feasible scientifically as well as acceptable to the community?

Prioritization Process

Following additional discussion, participants were then guided through a nominal group technique (NGT) where decision-making could be finalized. The nominal group technique was utilized to assure everyone's feedback and opinions were considered (as opposed to traditional voting, where the majority rules). During this process, some priorities were combined as appropriate to finalize the top health priorities for Hertford County. As a result of this process, HCPHA and Vidant Roanoke Chowan Hospital will work to develop action plans addressing the top community health issues.

Hertford County Health Priorities for 2016-2019

- **Healthy Lifestyles**
- **Diabetes**
- **Aging Population**
- **Youth Services**
- **Infant Mortality**

Appendices

Appendix A: Secondary Data Sources

Sheila S. Pfaender, Public Health Consultant, accessed data from the following sources to obtain and analyze secondary data:

- 2014 North Carolina HIV/STD Surveillance Report
- 2015 County Health Rankings & Roadmaps.County Health Rankings and Roadmaps website.
- America's Health Rankings: http://www.americashealthrankings.org/
- Authorized Medicaid and Health Choice Enrollment Reports
- Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System & National Diabetes Surveillance System
- Child Welfare, Reports of Abuse and Neglect section
- Dialysis Facility Compare, http://www.Medicare.gov/Dialysis/Include/DataSection/Questions
- Duncan, D.F., Kum, H.C., Flair, K.A., and Stewart, C.J. (2013). Management Assistance for Child Welfare, Work First, and Food & Nutrition Services in North Carolina. Special data request, March 2011. Also available online through the University of North Carolina at Chapel Hill Jordan Institute for Families website at http://ssw.unc.edu/ma/. Footnotes: Last updated September 2014.
- KIDS COUNT Data Center, a Project of the Annie E. Casey Foundation website: http://datacenter.kidscount.org/
- Highway Safety Research Center at the University of North Carolina at Chapel Hill
- National Center for Health Statistics
- North Carolina Administrative Office of the Courts (AOC)
- North Carolina Coalition to End Homelessness
- North Carolina Department of Administration, Council for Women
- North Carolina Department of Commerce
- North Carolina Department of Health and Human Services
- North Carolina Department of Justice, State Bureau of Investigation
- North Carolina Department of Public Instruction, Data and Statistics
- North Carolina Department of Public Safety, Juvenile Justice
- North Carolina Department of Revenue
- North Carolina Division of Motor Vehicles (DMV)
- North Carolina Electronic Disease Surveillance System (NC EDSS)
- North Carolina Employment Security Commission
- North Carolina Nutrition and Physical Activity Surveillance System (NC-NPASS)
- North Carolina Office of State Budget and Management
- North Carolina State Center for Health Statistics (NC SCHS)
- North Carolina Vital Statistics
- Public Schools of North Carolina
- Sheps Center for Health Services Research, North Carolina Health Professions Data System: http://www.shepscenter.unc.edu/hp/publications.htm
- State Laboratory of Public Health (SLPH). The SLPH provides testing for the Infertility Prevention Project (IPP), which includes testing for chlamydia.
- U.S. Census Bureau, American FactFinder
- Vidant Health Hospital Utilization Data

Appendix B: Secondary Data and Hospital Utilization Data Indicators

2016 CHNA Process Secondary Data Indicators

TOPIC	NOTES
Demographic Data	
Population by Sex, Age	Counts and percentages
Population by Race, Ethnicity	Counts and percentages
Population Growth Trend	Percent growth by decade; projected to 2030
Birth Rate Trend	Birth rate over several years
Population by Age Group	Point-in-time profile of proportion of population by age group
Elderly Population Growth Trend	Population age 65 and older, by 10-year age groups
Family Composition	Grandparents responsible for grandchildren; single-parent families
Military Veterans	By age group
Household Language	Reveals proportion not facile in English
Foreign Born Population	Date of entry of foreign-born population, by decade
Voting Trend	Registered voters and voter turnout per election
Urban and Rural Population	Number and proportion in both groups over time
School Enrollment Trend	Number enrolled plotted over time
Educational Attainment	Proportion HS and College graduates; SAT scores; End of grade test results
Educational Investment	Federal, state and local investment, by school district
High School Drop Out Trend	By school district
High School Graduation Rate	By school district
High School Graduation Rate by Race	Stratification offered where valid
Socioeconomic Data	
Income	Per capita, median family and median household income
Poverty	100% level, overall and stratified by age group (i.e., adult and child) and race
Housing Cost	Median monthly cost for mortgage and for rent, multiple time periods
Housing Cost	Percent spending more than 30% of household income on housing
Homeless Population Trend	Point-in-time counts, by age group and military status
Free and Reduced Lunch Trend	Percent students eligible OR receiving F&R, by several school years
Sector Employment	Point-in-time proportional employment by sector; average weekly wage by sector
Unemployment Rate Trend	Annual unemployment rate, plotted for at least 10 years
County Tier Designation	From NC Department of Commerce

County Revenue Indicators	Receipts, gross and sales tax-related
Crime Trend (Homicide and Index)	Rate, over time for several years
Crime Trend (Violent)	Rate, over time for several years
Crime Trend (Property)	Rate, over time for several years
Juvenile Crime	Rates of undisciplined and delinquent youth
High School Reportable Crimes	Counts and rates
Sexual Assault	Number of complaints; types of perpetrators, by percent
Domestic Violence	Number of complaints
Child Abuse	Number of reports and substantiated cases
Adult Abuse	Number of reports and substantiated cases

Health Data

America's Health Rankings	Ranking of NC among 50 states
County Health Rankings	Ranking of target county among 100 NC counties
Pregnancy Trend (Ages 15-44)	Counts and rates reported over time
Pregnancy Rate by Race (Ages 15-44)	For most recently reported period only
Abortion Trend (Ages 15-44)	Counts and rates reported over time
Pregnancy Trend (Ages 15-19)	Counts and rates reported over time
Pregnancy by Race (Ages 15-19)	For most recently reported period only
Abortion Trend (Ages 15-19)	Counts and rates reported over time
Prenatal Smoking Trend	Proportion of births to mothers who smoked when pregnant; plotted over time
Prenatal Care Trend	Proportion of births to mothers who got prenatal care in first three months of pregnancy; plotted over time
Prenatal Care Trend by Race	Where stratification is valid
Low Birth Weight Trend	Proportion of births at less than 5.5 pounds
Very Low Birth Weight Trend	Proportion of births at less than 3.3 pounds
Infant Mortality Trend	Death rate among infants under the age of one year
Infant Mortality by Race	Where stratification is valid
Life Expectancy	Years of expected life for individual born in a defined period
Cause of Death	Tracks mortality rates for 15 Leading Causes of Death
Death by Age Group	Mortality rate for top three causes of death, by major age groups
Heart Disease Mortality Trend	
Heart Disease Mortality by Race	Where stratification is valid
Total Cancer Mortality Trend	
Total Cancer Mortality by Race	Where stratification is valid
Total Cancer Incidence Trend	New cases per defined time periods
Cancer Mortality by Site	For four major site-specific cancers: lung, breast, prostate and colorectal
Cancer Incidence by Site	New cases per defined time periods for four major site-specific cancers sited above
Lung Cancer Mortality Trend	

Lung Cancer Mortality by Race	Where stratification is valid
Lung Cancer Incidence Trend	New cases per defined time periods
Breast Cancer Mortality Trend	
Breast Cancer Mortality by Race	Where stratification is valid
Breast Cancer Incidence Trend	New cases per defined time periods
Prostate Cancer Mortality Trend	
Prostate Cancer Mortality by Race	Where stratification is valid
Prostate Cancer Incidence Trend	New cases per defined time periods
Colorectal Cancer Mortality Trend	
Colorectal Cancer Mortality by Race	Where stratification is valid
Colorectal Cancer Incidence Trend	New cases per defined time periods
CLRD Mortality Trend	
CLRD Mortality by Race	Where stratification is valid
Stroke Mortality Trend	
Stoke Mortality by Race	Where stratification is valid
Other Injury Mortality Trend	
Other Injury Mortality by Race	Where stratification is valid
Alzheimer's Mortality Trend	
Alzheimer's Mortality by Race	Where stratification is valid
Diabetes Mortality Trend	
Diabetes Mortality by Race	Where stratification is valid
Pneumonia and Influenza Mortality Trend	
Pneumonia and Influenza Mortality by Race	Where stratification is valid
Unintentional Motor Vehicle Injury (UMVI) Mortality Trend	
Unintentional Motor Vehicle Injury (UMVI) Mortality by Race	Where stratification is valid
Suicide Mortality Trend	
Suicide Mortality by Race	Where stratification is valid
Kidney Disease Mortality Trend	
Kidney Disease Mortality by Race	Where stratification is valid
Septicemia Mortality Trend	
Septicemia Mortality by Race	Where stratification is valid
Liver Disease Mortality Trend	
Liver Disease Mortality by Race	Where stratification is valid
Homicide Mortality Trend	
Homicide Mortality by Race	Where stratification is valid
AIDS Mortality Trend	
AIDS Mortality by Race	Where stratification is valid
Adult Diabetes Prevalence Trend	
Child Obesity Prevalence (2-4 years)	
Injury Mortality - Unintentional Falls	Number of unintentional fatal falls, by age group
Motor Vehicle (MV) Crashes, Alcohol, Trend	Number of percent of crashed related to alcohol, plotted over time

Motor Vehicle (MV) Crashes, Alcohol, Detail	Number and percent of crashes by type (e.g., fatal, non-fatal, property only) related to alcohol
Injury Mortality - Poisoning	Number of cases and rates
Chlamydia Infection Rate Trend	
Gonorrhea Infection Rate Trend	
HIV Incidence Trend	New cases identified annually, plotted over time
Communicable Disease	Counts by causative organism or disease; must be obtained from local health department
Inpatient Hospitalization Rate Trend	For state-defined list of health conditions
Dental Service Utilization by Medicaid Recipients	Stratified by age group (i.e., adults and children)
Area Mental Health Program Utilization Trend	Number using the service, plotted over several years
Alcohol and Drug Treatment Center Utilization Trend	Number using the service, plotted over several years
Psychiatric Hospital Utilization Trend	Number using the service, plotted over several years

Health Resource Data

Health Professional Ratios	Number of providers per 100,000 population for MDs, Primary Care MDs, RNs, Dentists, and Pharmacists
Health Professionals by Type	Number of active providers in major categories of health care specialties
Health Insurance Coverage Estimates Trend	Percent uninsured, by age group
Medicaid Eligibles Trend	By Department of Social Services Program Areas
Long-Term Care Facilities	Counts of beds, by type of facility (e.g., nursing homes, homes for the aged, family care homes, etc.)
Home Health Providers	Counts of providers, by category (e.g., home health, hospice, etc.)
School Nurses	Nurse to student ratio
Hospitals	List; counts of beds and loose description (list) of major services
Other Health Care Facilities	Census of dialysis centers, ambulatory surgery centers, urgent care centers, cardiac rehab centers, etc.

Hospital Utilization Data Fields

Hospital Code (to identify specific Vidant Hospital – ie. VMC, VEDG, etc)

Encounter # (to serve as unique identifier)

Admit FY

Discharge FY

LOS

Gender

Race/Ethnic Group

Age

Age Group (Pediatric, Adult, Geriatric)

County

City

Numerical Zip Code

Payor Category

DRG Code / DRG Description

ICD9 Diagnosis Code / ICD9 Diagnosis Description

ICD9 Procedure Code / ICD9 Procedure Description

Appendix C: Primary Data Survey and Small Group Discussion Questions

Primary Data – Small Group Discussion Questions

1. **Introduce yourself and tell us what you think is the best thing about living in this community.**

2. **What do people in this community do to stay healthy?**
   Prompt: What do you do to stay healthy?

3. **In your opinion, what are the serious health-related problems in your community?**

4. **What keeps people in your community from being healthy?**
   Prompt: What challenges do you face that keep you from being healthy?

5. **What could be done to solve these problems?**
   Prompt: What could be done to make your community healthier?

6. **Have you or someone close to you ever experienced any challenges in trying to get healthcare services? If so, what happened?**
   Prompt: Is there any group not receiving enough health care? (If, so why?)

7. **What are the strengths related to health in your community?**
   Prompt: Specific strengths to healthcare?
   Prompt: Specific strengths to a healthy lifestyle?

Appendix D: Evaluation of 2013 Vidant Roanoke Chowan Hospital's Implementation Plan

2013 Implementation Plan Evaluation

Priority: Chronic Disease Prevention and Management

Goal: Early detection, prevention, and improvement of outcomes and quality of life for adults with chronic disease (cancer, heart disease, diabetes, pediatric asthma, or COPD).

Strategies:

Health Screening

- **Provide screening for early detection of cancer, heart disease or diabetes for at least 500 adults at health events in the hospital or community.**
    - **Annual free community health fair open to the public offering cholesterol, blood sugar, blood pressure, diabetes, stroke, height/weight, and body mass index screening for participants.**

Vidant Wellness Center – Ahoskie staff provide health screening at community health events throughout the year. We offer a community health fair each May at the wellness center and invite the public to participate and receive a free health screening for heart disease or diabetes. Counseling is offered to each participant and follow-up provided for those with high risks. Number of community members screened:

FY 2013	692
FY 2014	701
FY 2015/16	754

*Fiscal year is Oct 1 – Sept 30.

- **Implement Breast Cancer Care Project to screen women for breast cancer annually during the month of October at the hospital; provide clinical breast exam and on-site mammography/ultrasound. (Funds available to assist indigent/uninsured women through Cancer Care Funds)**

Since 2013, the hospital has offered a free breast cancer screening at the hospital in outpatient clinical services. 184 free clinical breast exams have been provided at churches and hospital with 27 same-day diagnostic mammograms provided (paid through cancer care fund or individual health insurance). Follow-up is made with each participant who had a positive finding and appropriate referrals were made.

The hospital offers a cancer care fund to assist indigent, uninsured women who are not eligible for NC Breast & Cervical Cancer Prevention Program. This program is offered to area health departments and referrals come to the hospital from health departments. 106 women have received mammograms through this program over the past three years funded by this cancer care fund (referred from health departments as not eligible for BCCPP or other programs).

It is noted that for the past three years, the local Hertford Public Health Authority has received substantial community benefit grants from Vidant Health to supplement the state Breast and Cervical Cancer Prevention Program (BCCPP), lowering the need to refer many women to the hospital to utilize the cancer care funds available.

- **Provide free colonoscopy screening for at least five (5) indigent/uninsured patients referred to Cancer Care Project utilizing Cancer Care Funds (funding raised by Roanoke-Chowan Foundation to assist cancer patients in need).**

Through the Cancer Care Fund, the hospital offers indigent, uninsured patients a baseline colonoscopy based on eligibility and need. Referrals are accepted from Vidant General Surgery – Ahoskie. To date, 2 (two) colonoscopy patients have met eligibility requirements and procedures were provided 'free of charge' to the patient by general surgeon Ed Misse, MD.

In addition to colonoscopy, the hospital offered a community seminar on colorectal cancer that included 'take-home' kits for colorectal cancer screening. 17 kits were returned from the first seminar and the hospital medical laboratory provided results and follow-up to those participants. Last year's Save our Families event offered free at-home kits for colon cancer screening and 12 were returned for testing and follow-up. No positive results were reported from this effort.

- **Provide prostate cancer health education and referral for screening for at least 100 men during the year.**

The hospital provides an annual prostate cancer awareness campaign during the month of September. For the past two years, a Prostate Cancer Awareness Walk has been held on Main Street, Ahoskie in partnership with the 'Friends of Main' business group. 75 men, volunteers, and family members have participated in the walks. Screening education is

provided through media and at the awareness walks. In 2016, the hospital mailed 1900 post cards to at-risk males living in the service area educating them about cancer risks and inviting them to participate in the awareness walk.

Health Education for Prevention

- **Provide health education to prevent chronic disease at health fairs, educational events such as Dinner with a Doc, community seminars, Speaker's Bureau, or at major health events.**

The following major health events are offered annually:

  - Pink Power Breast Cancer Education Luncheon & speaking tour- October
  - Heart Truth – heart disease prevention luncheon event - February
  - Stroke Education and Screening Event – Spring
  - Save our Sisters Breast Cancer Education – Spring
    (Became Save our Families in 2014 – adding prostate and colorectal cancer awareness to the education)
  - Diabetes Community Education Seminar – 'Living with Diabetes' – November

The hospital also offers annual 'advance care planning' seminars, annual Alzheimer's Disease awareness event, and periodic Dinners with a Doc on topics including sleep disorders, joint replacement, pain management, and colon cancer.

- **Provide Ambassadors for Health (60 trained staff members) to represent hospital at over 25 community health fairs and other events in 4 counties promoting health education, information about risk factors, and resources/services to treat chronic disease.**

Over 80 Ambassadors have represented the hospital at community events since 2013. Numerous hours of staff time, as well as volunteer time, are provided in community outreach services.

Support and Community Resources

- **Provide support groups for patients and families dealing with chronic disease.**

The following groups meet monthly and are sponsored by the hospital:

- Diabetes Support Group – Monthly – Vidant Wellness Center
- Cancer Support Groups – Monthly in Hertford and Gates Counties
- Better Breathers Support Group for COPD – Vidant Wellness Center
- Bariatric support group – Vidant Women's Care – Ahoskie
- Free childbirth preparedness classes offered monthly at the hospital;
- Senior Breakfast Club – health topics presented monthly – Ahoskie United Methodist Church

- **Offer community outreach programs for cancer patients including REACH to Recovery (16 women trained to facilitate) and ROAD to Recovery (volunteers assist with transportation).**

18 women were trained to become REACH to Recovery volunteers for Hertford County. One volunteer offers ROAD to Recovery for the area.

- **Provide patient navigator for cancer patients to include resource/referral, follow-up in home, and networking with other agencies to improve health outcomes.**

A new patient navigator to serve patients with cancer was added to the cancer care team at the hospital in early 2014 through the Hertford Health Access (HHA) grant from The Duke Endowment. HHA connects indigent uninsured patients with resources including health insurance, medication assistance, transportation resources and many other services.

Care Management for Chronic Disease

- **Provide a comprehensive Pediatric Asthma Program for Hertford and Northampton Counties to serve children with asthma; provides case management, referral/resources, and in home family support for at least 80 children per year.**

The Pediatric Asthma Program at the hospital offers in-home and school-based education, counseling and case management for children with asthma. Primary care medical homes are established for each patient served. Since the program began over 500 children and their families have received assistance (consultation or education) through this program and 263 are currently receiving case management services. The number of emergency department visits decreased 23% from 2014 to 2015 for children with asthma served by this program.

- **Provide a comprehensive diabetes education and care management program for patients admitted to the hospital with diabetes. RN care coordinator provides education and in-hospital management; and at-home follow-up and resources including tele-health to monitor patients when they return home.**

Since December of 2008, Vidant Roanoke Chowan Hospital has provided a comprehensive diabetes case/cardiovascular disease management education program**.** Cardiovascular disease patients were added to the program in 2013. The hospital-based program has provided screening and case management for over 4900 patients, providing over 2250 hours of diabetes self-management education since that period. An average of 28 patients are followed through tele-health. Since the program began No patients managed at home through the tele-health program have been re-admitted to the hospital for a diabetes or cardiovascular primary admission reason.

A full-time RN provides this program for the community. Assistance with medications, glucometers, and strips for testing are also provided for free to patients through foundation grant funds.

- **Provide case management for heart failure patients admitted to the hospital or emergency department to offer referrals and resources in community to prevent re-admission to the hospital for heart failure.**

A new chronic heart failure clinic opened at the hospital in 2015. A cardiologist provides this program weekly in outpatient clinical services providing care and case management for between 15 and 22 patients each week. Since opening, the CHF Clinic has enrolled 92 patients who are receiving case management services by the cardiologist. Hospital re-admissions for heart failure have declined at the hospital.

- **Provide emergency department care management plan to connect emergency patients with resources, including primary care, in the community.**

The Community Connections Program began in the hospital emergency department in 2014 to provide a case manager/social worker to connect frequent users of the ED with a primary care medical home and the resources needed to manage chronic disease or other conditions in the community. Assistance is provided for medication and transportation services through this program. High users of the emergency department, including behavioral health patients, are identified by staff and are referred to the case manager. The social worker has assisted

244 patients since the program began with success stories of improved health outcomes due to patients receiving the appropriate primary and specialty care they needed. 156 patients have achieved a primary care medical home as a result of this program.

- **Provide a stroke management program that includes identifying stroke patients admitted to emergency department to include resources, referrals, and monitoring treatment and outcomes.**

The hospital implemented a Telestroke Program in 2015. This program connects emergency physicians with Wake Forest Baptist neurology via "robot" for treatment of stroke patients. Data is collected and is used to track treatment and outcomes. The hospital offer free stroke screening for the community each year and provides speakers in schools and at health fairs on stroke prevention.

Rehabilitation & Exercise Programs

- **Provide cardiopulmonary rehab programs for heart disease patients and "Breathsavers' rehab exercise programs for COPD patients at the Vidant Wellness Center.**

Heart Quest Cardiopulmonary reconditioning program is offered at Vidant Wellness Center – Ahoskie. 150 classes are taught per year with an average of 14 participants in each class.

The Breath Savers class averages 11 participants for each of the 150 classes taught each year.

Members of Heart Quest and Breath Savers had a total of 2659 visits to the center over the past three years.

Better Breathers--a support group for people with chronic lung disease.

- The purpose of the group is to offer patient-centered and community based educational opportunities, and support to persons with chronic lung disease. Specifically COPD, but also asthma, idiopathic pulmonary fibrosis, lung cancer.
- Average 9 participants with the first monthly group being held on October 5, 2013.
- Monthly classes consist of a topic and a speaker who is considered and expert on the topic.

Priority: Access to Care

Goal: To improve access to healthcare especially for indigent/uninsured patient population

Strategies:

- **Serve as the lead organization for Hertford Health Maintenance Alliance (an alliance of community health agencies, schools, social service organizations, and non-profits) to develop a network of specialty care for indigent/uninsured patients.**

Vidant Roanoke-Chowan Hospital served as the lead agency to start Hertford Health Maintenance Alliance and the president remained the chair of the board until 2016 when the health department leader assumed chair. Hospital staff continue to serve on the Alliance and assist with this program weekly.

- **Assist hospital foundation to administer over $100,000 in grant funds to qualifying applicant organizations to improve access to care, and promote health and fitness.**

In 2016, Vidant Roanoke-Chowan achieved the $1 Million milestone of grant funds awarded to community agencies and organizations over the past eight years.

- **Provide financial counselors to assist indigent/uninsured patients and families in need of charitable funds.**

Two member of the patient access team are dedicated to assisting patients in need of charitable funds or who are having payment difficulty. They offer services daily at the hospital; night and weekend patient access staff members are cross-trained to provide referrals and resources. The Vidant Health system also offers counseling and resources for patients in need.

- **Provide a patient transportation fund to assist indigent patients in need of some type of transportation from the hospital upon discharge.**

The hospital has a 'Taxi' fund to provide transit for patients who have no other means of travel home from the hospital. Approximately $4,000 is spent each year on transportation assistance for inpatients and behavioral health patients.

- **Collaborate with Vidant Medical Group to recruit additional specialty physicians to the area to meet patient needs to 'keep care local'.**

New specialties added to the medical staff in recent years include a pulmonologist who assists at the sleep center, an endocrinologist to serve outpatients one day a week; and we opened a new 'immediate care' primary medical office with evening hours.

- **Assist Vidant Medical Group and local primary care practices to achieve patient-centered medical home model of care to provide increased access to primary care services, better quality of care, focus on prevention and management of health issues.**

Vidant Roanoke-Chowan Hospital assisted Vidant Medical Group to open Vidant Immediate Care – Ahoskie that demonstrates medical home principles of providing care for patients discharged from the hospital in order for them to be seen in a timely manner

The hospital offers a team of transitional care nurses at RCH performing the post-discharge calls for high risk patients and providing case management for 30 days, which aligns with medical home principles of resource use and care coordination. These nurses work with the inpatient case managers to identify services needed by the high risk patients currently admitted (based on risk stratification tool that was implemented in Epic in 2014). Patients are evaluated for need of home health, hospice, community care plan, or transitional care/telephonic services and connected with those services.

Also, HealthDirect, the 24 hour nurse triage call center, provides after-hours access to medical advice/triage for patients in our service area (VMG practices and calls coming through ED for a nurse) so this aligns with after-hours access. HealthDirect has been in place for many years.

- **Provide community benefits including cash donations to agencies and organizations that promote access to healthcare in the community.**

The hospital provides approximately $600,000 per year in community benefit of cash donations, staff time serving the community at health fairs and events, and health-related initiatives provided for the community.

- **Collaborate with Roanoke-Chowan Community Health Center's school-based health center at Hertford County Middle School (Bear Care Center) assisting with health education programs and referrals/resources for students.**

Hospital staff serve on school advisory committees and worked with the Bear Care Center staff to begin a new program in Hertford County schools for health improvement. A farm to table program of school gardens and a walking trail connecting the schools in the Ahoskie area are a part of this "Healthy Lifestyles' initiative in the schools.

- **Serve on advisory councils, committees, and boards including the county board of health in the community to promote access to healthcare (hospital leaders to serve as needed).**

Hospital leaders serve on over 15 different councils, committees and boards for health improvement in the county. These include Hertford Health Maintenance Alliance, Smart Start Pre-K Advisory Board, Choanoke Area Development Association board, Hertford Partners for Progress, school health advisory committees, and many others.

Priority: Physical Activity and Nutrition

Goal: To educate adults and children on the benefits of physical activity and nutrition and provide a wellness center with resources to improve general health and fitness.

Vidant Roanoke-Chowan Hospital and Vidant Wellness Center – Ahoskie have accomplished the following strategies:

1. Provided height, weight, and body mass index screening at community health
2. screening events for obesity prevention.
3. Served on advisory councils and partnerships for health in 4 counties to promote wellness, health and fitness – including Gates Partners for Health.
4. Provided a medical model wellness center (that includes health risk assessment) for community (membership required) that offers exercise equipment, weights, and other exercise options with monitoring (FittLinx) to track results; as well as personal trainers, and consultation with exercise specialists to improve outcomes.
5. Offered Vidant Advantage program for low-income community members on a sliding fee schedule or reduced membership rate based on need and health indicators. (236 participants)
6. Opened medical model wellness center to the public free of charge at least at least two times a year for health and wellness promotion events (National Senior Health and Fitness Day, other events)

7. Provided structured exercise classes at the medical model wellness center (aerobics, water aerobics, spinning, Zumba, and other instructor-led training) to help prevent obesity and chronic disease.
8. Offered comprehensive child/adolescent health and fitness programs at the wellness center including:

    - Youth sports conditioning and personal training- promotes active lifestyles including sports, among youth; tailored to age 12 – 15, this program allows children to work with an exercise specialist to learn the risks of unhealthy eating, sedentary lifestyles, and the effects of obesity. Scholarships available for indigent/low income children in need.

    - Summer camps – focus on healthy lifestyle choices and include activities in the pool, aerobics, indoor/outdoor games, arts and crafts, educational speakers, field trips and fun. Scholarships available.

    - Swim lessons – available year round in lap pool

**Youth activities are provided through grant programs for lower income non-members of the community.*

9. Provided free educational classes and seminars on health and fitness and nutrition throughout the year at the wellness center.

10. Implemented physician referral program for primary care providers to refer at-risk patients to the wellness center for specialized health and fitness programs. (***Exercise is Medicine*** Program offered to area physicians with an average of 21 participants referred each year)

- **Serve on regional community transformation team to address healthy eating in Roanoke-Chowan area through food banks and farmer's markets; assist in funding grant programs that educate community about healthy eating.**

Hospital staff serve on the Partnership to Improve Community Health (PICH) initiative funded by the Centers for Disease Control to promote healthy eating through farmers' markets and community education. Staff have attended monthly meetings and assist with this initiative throughout the year for the past four years. Farmers' markets have increased to over 60 in

northeastern North Carolina. Many new farmers' markets have opened with small grants from PICH.

- **Promote healthy eating in the hospital Café through educational displays, and health information about foods served in cafeteria daily.**

Special health promotions are offered in the hospital Café. The hospital has received the Gold Apple award from NC Prevention Partners for access to healthy food, pricing incentives and marketing techniques.

- **Promote health and fitness with quarterly educational articles in local newspapers and magazines; and through public service announcements on the radio.**

Media releases are sent to news and radio with monthly health messages. Special media campaigns provided by the hospital each year include Pink Power/breast cancer, Heart Truth/heart disease, Diabetes, and prostate cancer awareness. The hospital is participating in the national 80% by 2018 campaign for colonoscopy screening.

- **Provide comprehensive employee wellness initiative to improve exercise, fitness, healthy weight, tobacco free, and nutrition among over 600 employees at Vidant Roanoke-Chowan Hospital. Program includes personal counseling, fitness programs, and competitions among employees to track exercise and healthy eating.**

The hospital received the Gold Star award from NC Prevention Partners for being a tobacco-free campus and smoking cessation, as well as a Physical Activity Medal for access to exercise and fitness programs. Vidant Health offers a comprehensive employee wellness program for all employees at Vidant Roanoke-Chowan to include annual screening and counseling for chronic disease. Employees participate in health and wellness programs and are incentivized to participate in these programs. The Vidant Wellness Center – Ahoskie offers numerous programs for hospital employees as well as community members.

- **Support recreation programs at schools and in community through charitable cash donations and through the foundation's community benefit grants program.**

Support through grants and cash donations are provided to schools in Hertford, Gates, Northampton, and Bertie Counties. A total of 11 primary, elementary, middle and high schools receive support from the hospital each year.