VIDANT BERTIE HOSPITAL'S 2016 COMMUNITY HEALTH NEEDS ASSESSMENT

Acknowledgements

This report is the culmination of significant work led by Vidant Bertie Hospital and Albemarle Regional Health Services, in conjunction with key stakeholders from the community:

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TABLE OF CONTENTS

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 Albemarle Regional Health Services (ARHS), Vidant Bertie Hospital (VBER) 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 Bertie 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).

Vidant Health worked in conjunction with ARHS and 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 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 Bertie County.

Assessment Methodology

In order to learn about the specific factors affecting the health and quality of life for Bertie 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, Bertie 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 Bertie 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, Bertie 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, ARHS, Vidant Bertie Hospital, and Vidant Health also reached out to Bertie 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 small group discussions.

Ten small group discussion sessions were held in various locations within Bertie County. Participants responded to 10 open-ended questions and shared their feedback. The small group open-ended discussion questions are included in Appendix C of this report.

Chapter One: Demographic Data

General Population Characteristics

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

- Bertie County has approximately equal proportions of males and females.
- The median age of the Bertie County population is 6.5 years older than NC average and 3.0 years older than the Region.
- Approximately 19% of the county is under the age of 18, which is lower than NC and the Region.
- Nearly 20% of the county population is over the age of 65, a higher proportion than either the state or the Region.

County	2014 Population Estimates											
	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
Bertie	20,106	10,076	50.1	10,030	49.9	44.7	3,771	18.8	12,354	61.4	3,981	19.8
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

Bertie County has a higher proportion of Black/African American residents compared to the Region and the state. Further examination reveals that Blacks/African Americans compose the largest proportion of the Bertie County population. Other minority groups comprise smaller proportions of the population compared to other jurisdictions. It is also important to note the county has a much lower proportion of Hispanic residents compared to the State and the Region.

- Whites composed 36.2% of the total population; the regional comparable figure was 60.9% and the statewide figure was 71.5%.
- Blacks/African Americans composed 61.4% of the total population; the regional comparable figure was 35.4% and the statewide figure was 22.1%.
- American Indians and Alaskan Natives composed 0.5% 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 0.7% of the total population; the regional comparable figure was 1.3% and the statewide figure was 2.8%.
- Hispanics/Latinos of any race composed 1.7% of the total population; the regional comparable figure was 8% and the statewide figure was 9%.

Population Growth

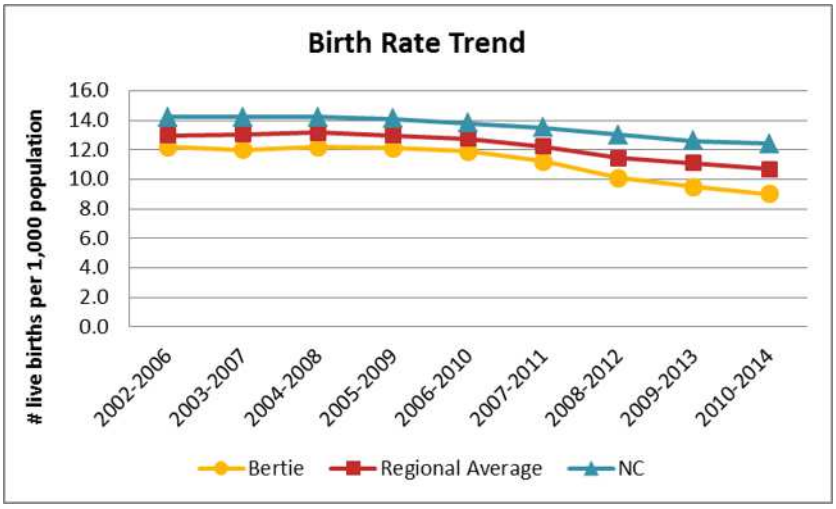
Bertie County's population is predicted to **shrink** over the coming decades, by several thousand people. Between 2000 and 2030, the county population is expected to *decrease* by 16.8% overall, while the Region increases by 20% and NC grows by 44% (Table 2).

Decade	Bertie County	Regional Average	State of NC
2000-2010	7.1	14.6	15.6
2010-2020	-10.5	2.8	10.9
2020-2030	-13.7	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

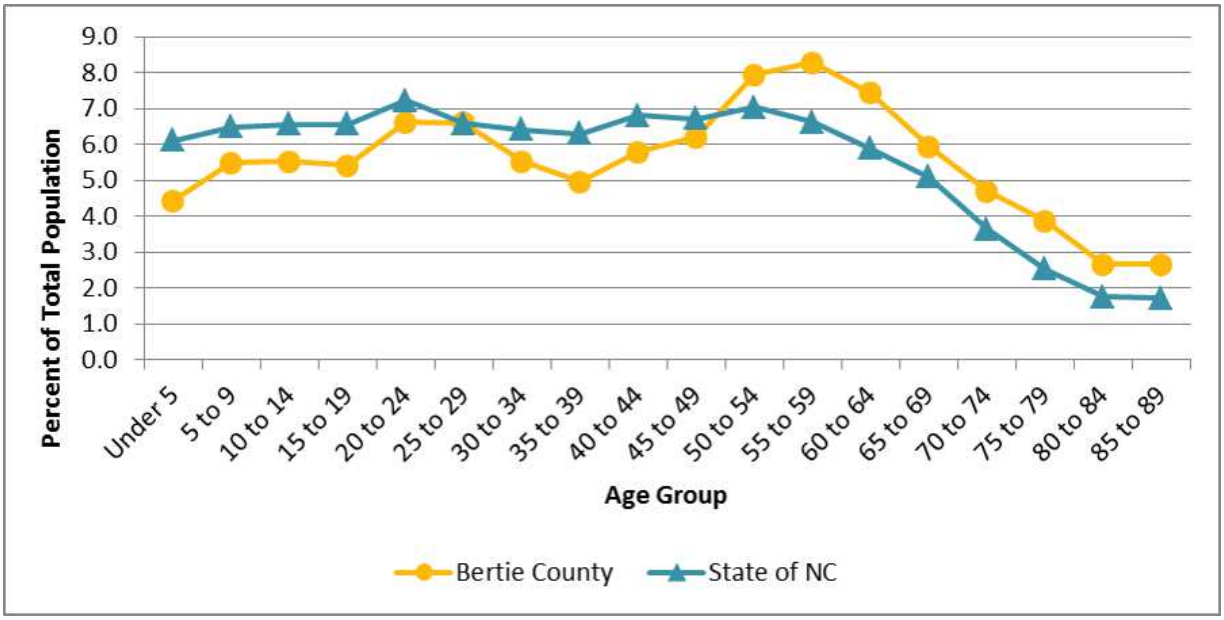
Overall population growth is a function both of increase (via immigration and birth) and decrease (via emigration and death). Graph 1 illustrates that the birth rate is declining in Bertie County, the region, and the state. A closer examination by racial group reflects that birth rates in Bertie County have decreased overall among White and African American residents while it has risen among Hispanics. The highest birth rate among Hispanics in Bertie County (14.9) occurred in 2009-2013.



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

The following information about the age (and gender) distribution of the Bertie County population was derived from the US Census Bureau 2014 Population Estimates. According to 2014 estimates, compared to NC as a whole Bertie County has lower proportions of people under the age of 50 and higher proportions of people 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

Because the proportion of the Bertie County population age 65 and older is larger than the proportion of that age group statewide, it merits closer examination. 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 Bertie 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 population in every major age group age 65 and older in Bertie County is projected to increase between 2000 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 72% over that period, from 1.8% to 3.1% 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 55% over that period, from 5.5% to 8.5% of the total county population. In third position is the segment aged 65-74, which is predicted to grow by approximately 41%, from 8.7% to 12.3% of the total county population.

Children and Families

According to the U.S. Census Bureau figures for 2010-2014, there were 7,662 households in Bertie 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 Bertie County, 21% of the households were family households with children under 18 years of age. Fifty-five 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. Thirty-three percent were headed by a female householder (no husband present) compared to 34% in the region and 25% in the state. Twelve 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 52% of the estimated 632 grandparents in Bertie 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. It is interesting to note that Bertie County's percentage of grandparents living with and financially responsible for their minor grandchildren is the same as the region (52%) but remains higher than 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 Bertie County has a lower population of military veterans among the regional comparisons. Veterans composed approximately 6% of Bertie County's overall adult civilian population in the period cited, which was less than the regional percentage of 11.2% and the state at 9.6%.

Further examination of the county's veteran population shows that even though the veteran population is lower in Bertie County, 44% of veterans in the county are over the age of 65. It is also important to note that Bertie County has a higher proportion of veterans in the 18 to 34 and the75 years and older age groups than any other jurisdiction presented

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 2014 Estimates, 267 individuals living in Bertie County were born outside the US. Approximately 46% entered the US between 2000 and 2009, while 12% entered before 1990.

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 170 households (2.2% of all households in Bertie County) that speak a language other than English, the most common language is Spanish (69%). Among the Spanish-speaking households, 9% would be considered "limited English speaking". One hundred percent of the small population speaking Asian/Pacific Island languages is linguistically isolated (16 individuals) in Bertie County.

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. Bertie 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 Bertie County, the 2014 per capital personal income was $16,557 which was $9,051 below the state average. This figure has decreased overall since 2010. The 2014 Median household income was $29,388 which is below the state average by $17,305. This figure has changed little since 2010. The 2014 Median family income was $38,566 which is $18,762 below the NC average. The Median Family income has decreased slightly overall since 2010.

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.

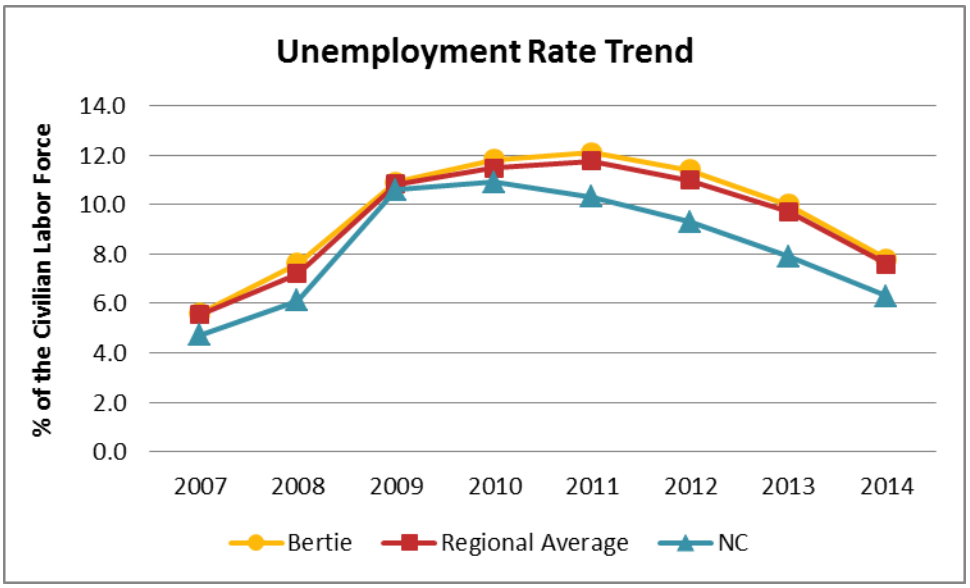
Employment by Sector

An examination of the various sectors of employment in Bertie 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 Bertie County that employed the largest percentage of the workforce (23.2%) was Healthcare and Social Assistance. This sector earned an average of $467 per week.
- Public Administration accounted for the second largest percentage of the Bertie County workforce, at 20.4%, followed by Educational Services, at 13.9%.
- 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 659 individuals were unemployed in Bertie County, calculating to an unemployment rate of 7.8. While an average unemployment rate was not available for 2015, the monthly average rate was highest in June, July and August and was lower in December 2015 (7.1) compared to the Region (7.3) and higher than 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 poverty rate is the percent of the population (both individuals and families) whose money income (which includes job earnings, unemployment compensation, social security income, public assistance, pension/retirement, royalties, child support, etc.) is below a federally established threshold; this is the "100%-level" figure.

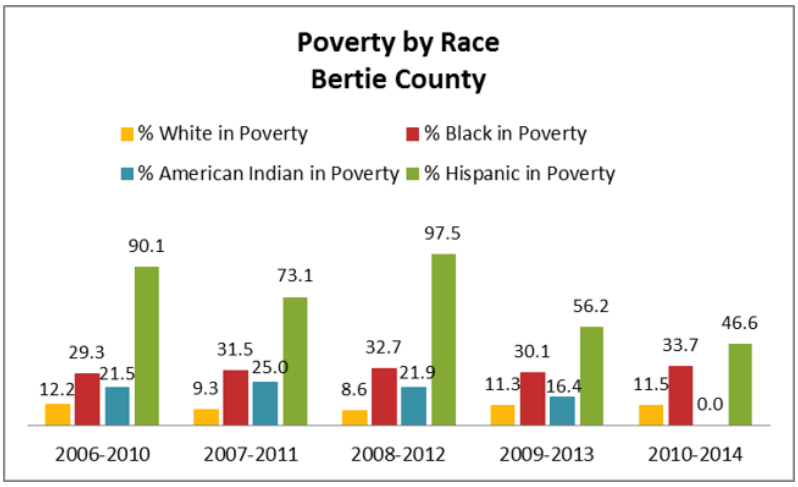
The overall poverty rate (describing the percentage of the total population below the Federally-defined 100% poverty level) in Bertie County was higher than the comparable state rate throughout the period cited. In 2014, an estimated 4,697 individuals, or approximately one-quarter of the population, were living below the poverty level in Bertie County. For 2010-2014 the poverty rate among children in Bertie County under age 18 (46%) was higher than the overall rate and higher than both the state (25%) and the Region (36%). This pattern of disparity is typical in NC.

	2006-2010	2007-2011	2008-2012	2009-2013	2010-2014
Bertie	23.3	23.6	24.3	23.4	25.5
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)
US Census Bureau, American Fact Finder, American Community Survey, 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 Bertie County exceeded the comparable poverty rates for other groups for most of the period cited. In Bertie County and statewide, the highest poverty rate over most of the period cited occurred among Hispanics, followed by blacks.

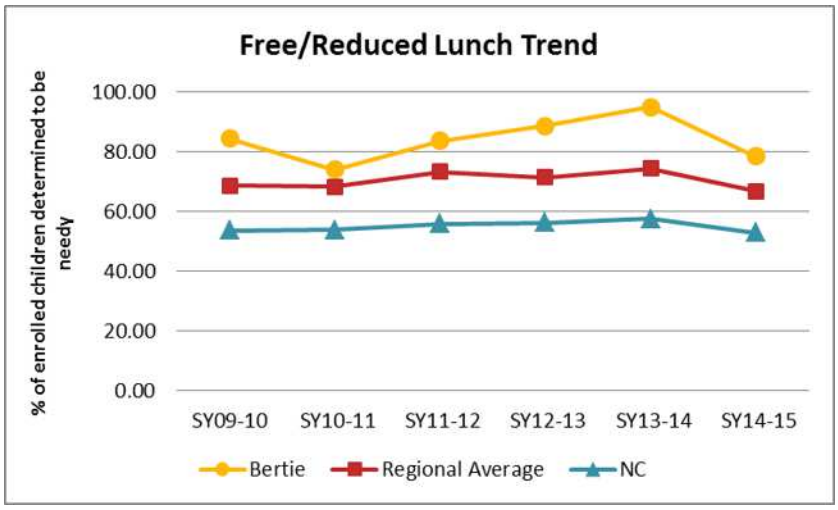


Graph 4. Persons in Poverty by Race (2000; 2006-2010 and 2007-2011 Five-Year Estimates)
Source: US Census Bureau, American Fact Finder, ACS 5-Year Estimates, 2010 through 2014, Table S1701 Poverty Status in the Past 12 Months. http://factfinder.census.gov/

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.

The percentage of students in Bertie County enrolled for free or reduced-price school lunch has increased over time. In Bertie County, a higher percentage of students have been identified as "needy", compared to the State. For the 2014-15 school year, approximately 78% of Bertie County students were identified as needy, compared to 67% in the Region and 53% across the state.



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 Bertie County homeowners, which has increased overall since 2010, was $1,020 in 2014. This cost is $252 lower than the NC median. The estimated median gross monthly rent among Bertie County renters has increased overall since 2010 and was $620 in 2014. This figure is $170 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 Bertie County homeowners spending more than 30% of their monthly income on housing has increased in 2014, after several years of slow decline, to 40% in 2014 (compared to 31% in NC in 2014). Half (50%) of renters spend more than 30% of their income on housing 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. Bertie County was not among the areas participating in the count 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 Bertie County has a higher population who highest attainment was a high school diploma (or equivalent) (37.1% in 2014) as compared to the Region (31.9%) and the state (26.9%). Bertie County also has a lower population who had a bachelor's degree or higher (11.1% in 2014) as compared to the region (16.4%) and the state (25.8%).

When comparing Bertie County to the NC average, the 2014-2015 4-year cohort high school graduation rate was lower in Bertie County Schools (84.6%) as compared to the state (85.6%), but slightly higher than the Region (83.5%). High school graduation rates were lowest among economically disadvantaged students (Bertie 78.8%, Region 78.6%, NC 79.6%).

Educational System
The number of students enrolled in Bertie County schools has decreased each year since 2006-07. In the 2014-15 school year, 2,512 students were enrolled in Bertie County public schools. 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 2009-2010, from 5.59 to 2.99 in 2013-14, though it was higher than the state and the region in the most recent two periods.

The high school reportable crime rate in Bertie County is variable and has increased recently, from 3.73 in 2012-2013 to 11.46 in 2013-2014.

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 Bertie County was lower than the comparable NC average in every year cited. In 2014 the Bertie County crime rate was 2,433.4 crimes committed per 100,000 population, compared to 3,021.5 in the Region and 3,287.2 in NC.

A closer examination of crimes by type reveals that the majority of crimes committed are property crimes. While property crimes are more common, the Bertie County property crime rate seems variable, though it has been consistently lower than the State. The 2014 property

crime rate was 2,298.8 in Bertie County compared to 2,705.6 for the Region and 2,954.1 in NC.

The violent crime rate in Bertie County has demonstrated variability but was lower than the comparable state rate for the entire period shown. In 2014 the Bertie County rate was 134.6 compared to a state rate of 333.0 and a Regional rate of 315.8. It is important to note that these data reflect the time period of 2001 – 2014 and do not capture recent violent crimes which have occurred in the county in 2016.

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, the *number* of individuals who were subjects of complaints of "undisciplined" youth (ages 6-17) was low in Bertie County. A total of 11 children were determined to be undisciplined over the four year period.

Over the same period the number and rate of complaints of "delinquent" youth in the county decreased from a high of 71 and 29.88 in 2012 to a low of 36 and 15.32 in 2013. "Delinquency" refers to acts committed by youths that would be crimes if committed by an adult. Additional information reflects that 15 Bertie County youth were sent to secure detention in 2011; 9 were sent in 2014.

Domestic Violence

Data from the NC Council for Women indicates the number of domestic violence clients seen by local agencies increased overall in Bertie County, from 104 in 2007-08 to 398 in 2014-15. The number of services provided (advocacy, counseling, legal help, transportation, etc.) is variable from year to year; 2,146 services were provided in 2014-15. The domestic violence shelter serving Bertie 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 Bertie County have fluctuated without pattern over the period cited. Neglect-only cases composed the most

common type of child maltreatment in most years; in 2014-15 four of the substantiated cases involved neglect. In Bertie County in 2014-15, 58% of the substantiated cases of abuse, neglect, dependency (n=4) were African American children (as compared to NC 31%). Fifty-eight percent of the victims were female (NC 52%) and 58% were under the age of 5 (NC=53%).

Chapter Three: Health Resources

Health Insurance

The percent of uninsured adults aged 19-64 in Bertie County rose and fell in the periods examined but remained lower than the state and the Region over the past three years. Compared to NC, Bertie County tends to demonstrate lower percentages of uninsured residents in all age groups. 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, 25.2% of Bertie 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 Bertie County eligible for Medicaid changed very little from 2009 through 2013. The Medicaid programs with the largest proportion of eligibles in 2013 were Infants & Children (33%), Disabled (24%) and Medicaid Aid to Families with Dependent Children (AFDC) (19%). In each month of 2013, an average of 731 aged individuals were eligible for both Medicaid and Medicare, lower than the NC County average of 1,195 and the 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 Bertie 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 professional ratios in Bertie County for all categories (physicians, primary care physicians, registered nurses, dentists and pharmacists) were lower than the Region and the state ratios. It is important to note these ratios do not take into consideration medical practitioners in neighboring counties accessible to Bertie County residents.

Vidant Bertie Hospital

Vidant Bertie Hospital is a six-bed hospital in Windsor that provides surgical, emergency and diagnostic services, specialty clinics and primary care clinics. The primary care physician practice operates the Vidant Family Medicine - Windsor and there is a telemedicine link with the Brody School of Medicine at East Carolina University. Patient units include medical/surgical and 24-hour emergency care

Albemarle Regional Health Services

ARHS is the district health department serving seven counties in the northeast to include Pasquotank, Perquimans, Bertie, Camden, Chowan, Currituck, and Gates. The department offers traditional Public Health services and environmental health in these counties. In addition, the department also operates programs including the Inter County Public

Transportation Authority (ICPTA), Children's Developmental Service Agency (CDSA), the PCG Landfill and Convenience Sites, and the Albemarle Regional Solid Waste Management Authority (ARSWMA).

Health Services

Dialysis

There is one dialysis facility in Bertie County, located in Windsor, with a total of 20 hemodialysis stations. This facility does not offer shifts after 5pm.

Health Facilities

There are no licensed ambulatory care facilities, no cardiac rehabilitation facility and no licensed nursing pool in the county.

Mental Health Services

There are 10 mental health facilities offering a range of services, including supervised living, psychosocial rehabilitation, day treatment, and respite services.

Home Health/Hospice

In Bertie County, there are 6 facilities providing home care services in the county; 5 are located in Windsor and 1 is in Kelford. Two facilities offer home health care; both are in Windsor. No facility is listed as providing hospice services.

School Nurses

The student to school nurse ratio has decreased in Bertie County from 704:1 in 2009-10 to 655:1 in 2012-13. The recommended ratio is 750:1 and the state average is 1,177:1.

Long-Term Care Facilities

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

- Adult Care Homes/Homes for the Aged (2 facilities): 85 beds
- Family Care Homes (10 facilities): 54 beds
- Nursing Homes/Homes for the Aged (2 facilities): 142 beds
    - One facility also had 20 adult care home beds.
- Most long-term care facilities in the county are located in Windsor or Aulander.

There are a total = 281 beds, or 1 bed for every 14 persons age 65 and older in Bertie County (3,981 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 Bertie County. This data does not include visitors to this area.

Hospital Utilization – Emergency Department - Gender and Age

A review of the Emergency Department utilization by gender demonstrated a higher utilization by females compared to males. Females accounted for 56% of all ED discharges over the three year period reviewed (50% of Bertie County population) and males accounted for 44% all ED discharges over the same period (50% of Bertie 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 figure is consistent with the proportion of persons in this age group in the overall Bertie County population, 61%. Pediatric (age 0-17) patients accounted for 18% of all ED visits. This figure is consistent with the proportion of persons in this age group in the overall Bertie County population, 19%. Senior (age 65+) patients accounted for 22% of all ED visits, which is slightly higher than the proportion of persons in this age group in the overall Bertie County population, 20%.

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 74% of all ED visits. This figure is higher than the proportion of persons in this racial group in the overall Bertie County population (61%). Whites accounted for 25% of all ED discharges, which is lower than the proportion of persons in this racial group in the overall Bertie County population (36%). Hispanics accounted for 0.5% of all ED discharges over the same period, which is less than the overall proportion in Bertie County (2%). It is important to note that in US Census terms, persons of Hispanic/Latino ethnicity may also be of any race. The hospitals do 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:

- Medicare (31.5%)
- Medicaid (28.1%)
- Self-Pay (16.4%)
- BCBS Managed Care (12.5%)

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 Bertie County.

Hospital Utilization – Inpatient Admissions - Gender and Age

Females accounted for 55% of all inpatient hospitalizations which is higher than the proportion of females within the total Bertie County population (50%). Males accounted for 45% of inpatient hospitalizations which is lower than the proportion of males within the total Bertie County population (50%). 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 47% of all inpatient hospitalizations. While this is

the largest percentage group based on age, it is important to note that this percentage is significantly lower than the population of 18-64 year old individuals within the total Bertie County population (61%). Pediatric patients (under the age of 18 years) accounted for 9% of inpatient hospitalizations which is also much lower than the overall population of children under the age of 18 years within Bertie County (19%). The Senior population (age 65+) accounted for 44% of all inpatient hospitalizations over the three year period examined. This is an important finding as this utilization is more than twice the proportion of the total county population represented by this age group (20%).

Hospital Utilization – Inpatient Admissions - Racial and Ethnic Profile

Examining the inpatient hospitalization data based on race and ethnicity, Blacks/African Americans accounted for 61% of all inpatient hospitalizations which is consistent with the proportion of the total county population represented by this racial/ethnic group (61%). Whites accounted for 38% of all inpatient hospitalizations, which is slightly more than the composition within the total county population (36%). Hispanics accounted for 0.3% of all inpatient hospitalizations, which is much lower than their representation within the overall Bertie County population (2%).

Hospital Utilization – Inpatient Admissions - Payor Mix

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

- Medicare (53.3%)
- Medicaid (20.6%)
- BCBS Managed Care (10.3%)
- Self Pay (4.7%)

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 Bertie 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 Bertie 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, Bertie County was ranked:

- 82nd overall out of 100 (where 1 is best) for ***health outcomes***
- 71st in length of life
- 88th for quality of life
- 86th overall out of 100 for ***health factors***
- 75th for health behaviors
- 51st for clinical care
- 91st for social and economic factors
- 15th 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.

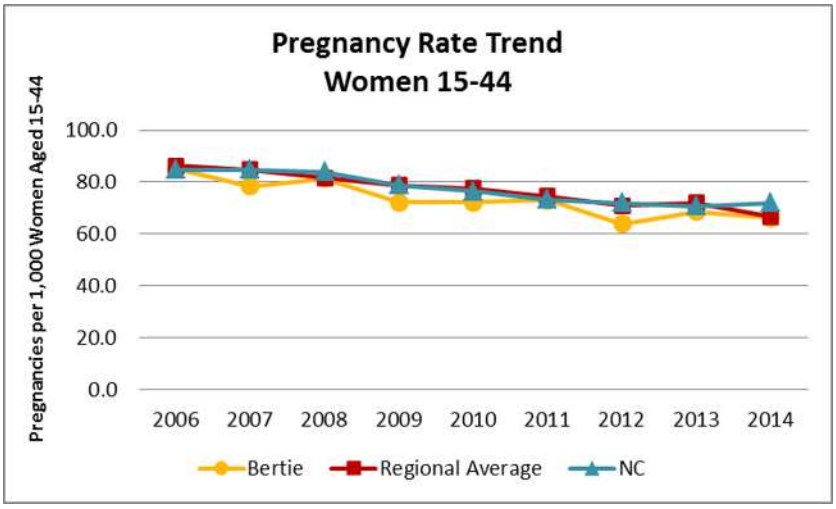
Maternal and Infant Health

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 Bertie County, the Region and the state have decreased overall since 2007. The 2014 pregnancy rate was 66.3 in Bertie 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/

Overall teen pregnancy rates in Bertie County have decreased since 2009, though they remain higher than the state. In 2013 (the last year in which a stable rate is available) the teen pregnancy rate was 59.3 in Bertie County, compared to 44.8 for the Region and 35.2 for the state.

Among Bertie County women age 15-44 the highest pregnancy rates tend to occur among Hispanics and African Americans. Among Bertie County teens, the pregnancy rates over time appear quite variable and have become unstable for most groups. The rate among African American teens appears to be increasing.

Pregnancy Risk Factors

Smoking During Pregnancy

The percentage of Bertie County women who smoked during pregnancy increased from 7.5% in 2013 to 12.8% in 2014, and was higher than the state and the Region. Comparable percentages for the Region did not change significantly over the same period and statewide percentages decreased.

Inadequate Prenatal Care

The percentage of women receiving early prenatal care was higher in Bertie County, compared to the state. The percentage of Bertie County women receiving prenatal care in the first trimester increased from 65.4% in 2012 to 76.2% in 2014. Among racial groups, a higher proportion of white women received prenatal care in the first trimester (85.7%) compared to African American women (73.0%) in 2014. The comparable percentages for other racial groups are unstable.

Pre-Term, Low Weight and Very Low Weight Births

In Bertie County from 2010-2014, the percentage of Pre-Term Births (babies born at less than 37 weeks) was 16.9%, 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 12.4% of live births in Bertie County, compared to the Region (9.9%) and the state (9.0%). The rate of low weight births has declined slightly in Bertie County since 2002-2006 and increased since 2009-2013. The highest rate of low weight births is among African American mothers (14.1%).

Very Low Weight Births (babies weighing less than or equal to 1500 grams or 3.3 pounds at birth) occurred in 2.8% of live births in Bertie County, compared to the Region (2.3%) and the state (1.7%). The variable rate has decreased overall since 2002-2006. The highest rate of very low weight births is among African American mothers (3.4%).

Infant Mortality

The total infant mortality rate in Bertie County has decreased overall from 17.5% in 2005-2009 to 10.8% in 2010-2014. It should be noted that some of Bertie County's rates are technically unstable and should be interpreted cautiously.

The Bertie County infant mortality rate has been higher than both the state and the Region for the entire period examined (2002-2014). 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 tends to be highest among African Americans. Of the 10 infant deaths that occurred in Bertie County in 2010-2014, all of them were among African Americans.

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 Bertie County is 76.6. When compared to the Regional Mean (77.7) and the state (78.3), Bertie County had shorter life expectancies in all categories (Male, Female, White, Black/African American).

County	Overall	Sex		Race	
		Male	Female	White	African-American
Bertie	76.6	75.0	78.1	78.1	75.7
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 Bertie County to the state. The causes of death are listed in descending order of

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

Age-Adjusted Rates (2010-2014)	Bertie County No. of Deaths	Bertie County Mortality Rate	Bertie Rate Difference from NC
1. Diseases of the Heart	270	183.3	+10.5%
2. Cancer	247	168.5	-1.9%
3. Diabetes Mellitus	86	56.6	+156.1%
4. Cerebrovascular Disease	69	46.9	+9.1%
5. Alzheimer's disease	59	37.9	+29.8%
6. Chronic Lower Respiratory Diseases	49	32.3	-29.8%
7. All Other Unintentional Injuries	41	32.4	+9.5%
8. Nephritis, Nephrotic Syndrome, and Nephrosis	33	22.2	+30.6%
9. Unintentional Motor Vehicle Injuries	21	19.9	+47.4%
10. Pneumonia and Influenza	17	12.0	-31.8%
11. Septicemia	13	8.6	-33.8%
12. Chronic Liver Disease and Cirrhosis	11	9.2	-5.2%
13. Suicide	9	6.5	-47.6%
14. Acquired Immune Deficiency Syndrome	6	6.0	+130.8%
15. Homicide	5	4.6	-19.3%

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/

During the time period 2010-2014, Bertie County experienced a higher mortality rate than the state of NC for the following causes of death:

- Diseases of the Heart
- Diabetes Mellitus
- Cerebrovascular Disease
- Alzheimer's Disease
- All Other Unintentional Injuries
- Nephritis, Nephrotic Syndrome, and Nephrosis
- Unintentional Motor Vehicle Injuries
- Acquired Immune Deficiency Syndrome

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 Bertie County

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

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 many of the leading causes of death in Bertie 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 Diseases
- Diabetes
- Cerebrovascular disease
- Alzheimer's disease
- All Other Unintentional Injuries
- Nephritis, Nephrotic Syndrome, and Nephrosis
- Unintentional Motor Vehicle Injuries
- AIDS

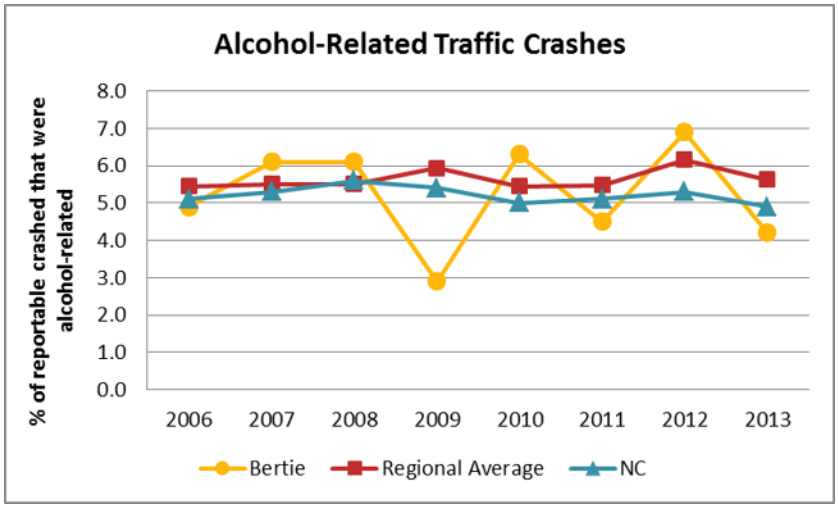
Bertie County Rank by Descending Overall Age-Adjusted Rate (2010-2014)	Rate in 2002-2006	Rate in 2010-2014	% Change 2002-2006 to 2010-2014
1. Diseases of Heart	231.5	183.3	-20.8%
2. Cancer	229.6	168.5	-26.6%
3. Diabetes Mellitus	54.4	56.6	+3.4%
4. Cerebrovascular Disease	64.2	46.9	-27.0%
5. Alzheimer's disease	18.6	37.9	+104%
6. Chronic Lower Respiratory Diseases	36.5	32.3	-11.5%
7. All Other Unintentional Injuries	27.3	32.4	+18.7%
8. Nephritis, Nephrotic Syndrome, and Nephrosis	15.2	22.2	+46.1%
9. Unintentional Motor Vehicle Injuries	49.4	19.9	-60.0%
10. Pneumonia and Influenza	24.2	12.0	-50.4%
11. Septicemia	18.8	8.6	-54.3%
12. Chronic Liver Disease and Cirrhosis	4.7	9.2	+95.7%
13. Suicide	7.8	6.5	-16.7%
14. Acquired Immune Deficiency Syndrome	12.3	6.0	-51.2%
15. Homicide	6.5	4.6	-29.2%

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

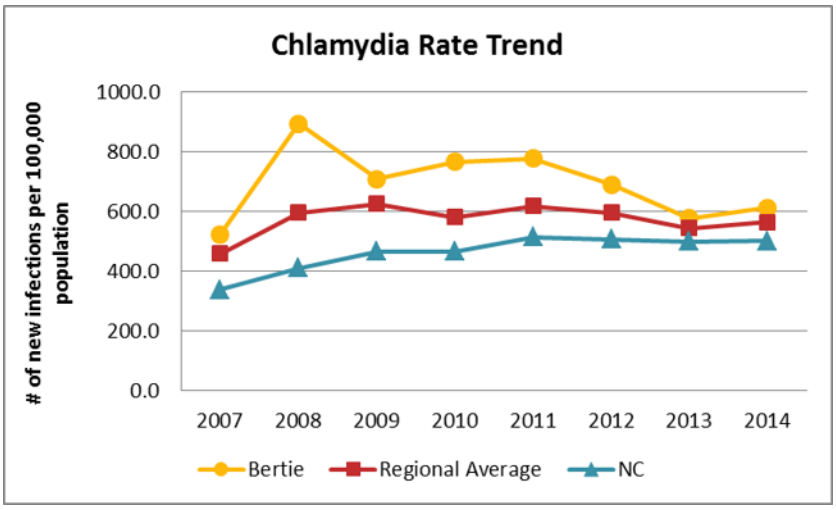
According to the NC Highway Safety Research Center, over the period from 2006 through 2013 an annual average of 5.2% of all traffic crashes in Bertie County were alcohol-related. Statewide the comparable figure was 5.2% and it was 6.0% across the Region.



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

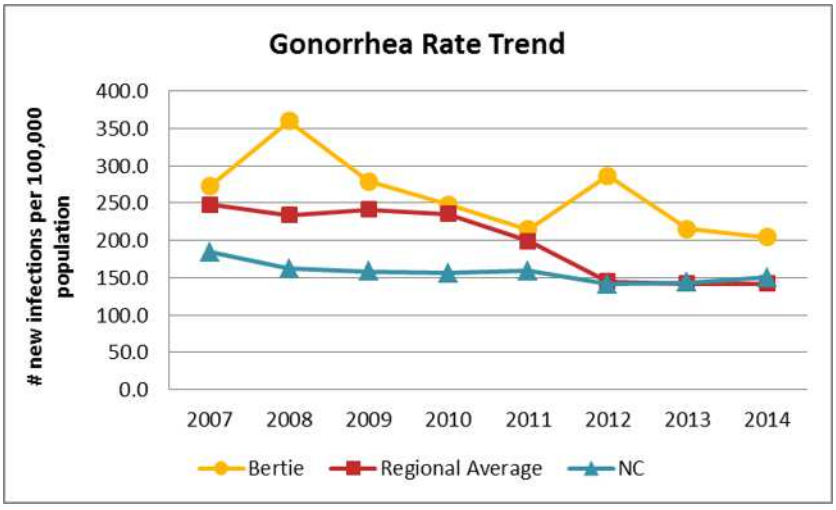
The chlamydia infection rate in Bertie County has increased recently after a period of decrease. In 2014, there were 123 new cases of chlamydia in Bertie County, calculating to a rate of 611.8 compared to 501.9 statewide. Of the 15-24 year olds who were tested for chlamydia in 2011, 17.7% tested positive, 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

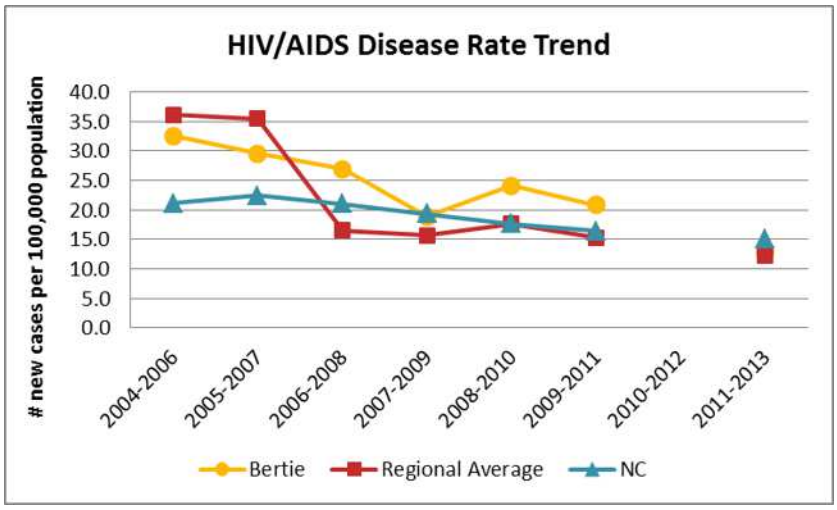
The gonorrhea infection rate in Bertie County had decreased since 2012 but was higher than the state and the Region for the entire period cited. In 2014, there were 41 new cases of gonorrhea in Bertie County, calculating to a rate of 203.9, compared to the state rate of 150.4. The gonorrhea rate was highest among African Americans in 2006-2010 (the last year for which stratified data is available): 460.7 compared to 310.5 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

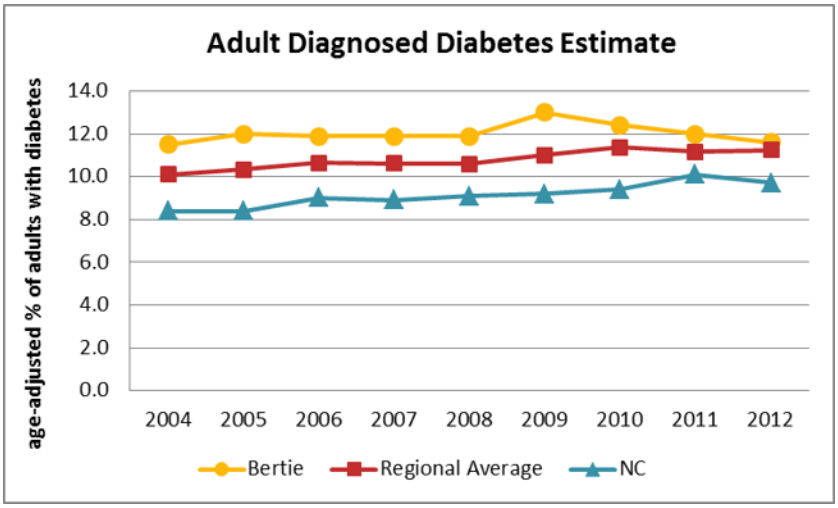
Although the numbers are too low to yield stable rates, the rate of newly diagnosed HIV infections in Bertie County (an average of 18.1 between 2012-2014) was higher than the comparable state rate (13.4). When numbers are aggregated over three-year periods to stabilize them, the Bertie County rates have decreased but remain higher than the comparable state and regional rates, as shown below. Seventy-six people in Bertie 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

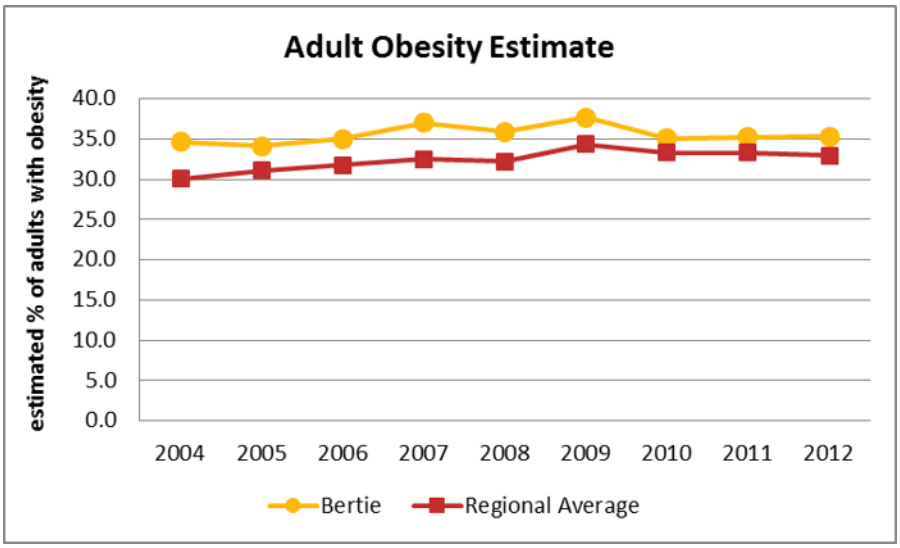
The average prevalence of diabetes among Bertie County adults has changed little over time and was higher than the state for the entire period shown. Over the 9-year period presented, the average prevalence in Bertie County was 12.0%, compared to 10.8% Region-wide and 9.1% across the state.



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 Bertie County was 35.5% in the period from 2004 through 2012, compared to 32.4% in the Region (state data is not available). The Bertie County percentage was higher than the Region for the entire period presented and increased slightly 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 Bertie County. Data is collected for three age groups (2-4, 5-11, 12-18) and covers only children seen in health department WIC and child health clinics and certain other facilities and programs. The most recent data available is for 2010. According to this NC-NPASS data, in 2010 an annual average of 12.7% of the participating children in Bertie County age 2-4 were deemed "overweight", and an additional 14.0% were deemed "obese" (total = 35.7%). Statewide, 16.1% were overweight and 15.6% were obese, for a total of 31.7%. There is no stable data at the source for the other two age groups in Bertie County.

Asthma

The Bertie County rate of hospital discharges with a primary diagnoses of asthma was ***three times*** higher than the state rate (318.3 vs. 90.9 in 2014), and has increased over time (from a low point of 216.1 in 2010). Among children aged 0-14, the hospital discharge rate has decreased from a high of 332.6 in 2012 to 193.3 in 2014, which was higher than the state rate of 144.6.

Because, according to NC SCHS, the hospital discharge rate for asthma in Bertie County has long been higher than the comparable state rate, it may be illustrative to examine hospital discharges for asthma (ICD-9 Code 493xx). These data are from VBER only. The number of ED discharges under this code for blacks was almost ***7 times*** the comparable figures for whites. The number of IP discharges among blacks was lower than the comparable figures among whites in every year cited.

Because, according to NC SCHS, the hospital discharge rate for asthma among children in Bertie County has long been higher than the comparable state rate, it may be illustrative to examine hospital discharges for asthma (ICD-9 Code 493xx) by age. These data are from VBER only. The percentage of ED discharges for children age 14 and younger totaled 29% of all ED discharges under this code; the comparable percentage for *all* remaining age groups was 71%. There were NO IP discharges among children age 14 and younger over the period cited.

Mental Health

Between 2006 and 2014, the number of Bertie County residents served by the Area Mental Health Program decreased overall, from 1,317 in 2009 to 628 in 2014. Over the same 9-year period the number of Bertie County residents served by **State Psychiatric Hospitals** *decreased* by 92%. In 2014, 5 persons were served. During the same 9-year period, a total of **89** Bertie County residents were served by **NC State Alcohol and Drug Abuse Treatment Centers (ADATCs)**, with the number varying from year to year. A high of 15 were served in 2008; 6 were served in 2014.

The LME/MCO serving Bertie County is Trillium Health Resources, located in Greenville (in Pitt County). Trillium also serves the following counties: Brunswick, Carteret, New Hanover, Onslow, Pender, Beaufort, Camden, Chowan, Craven, Currituck, Gates, Hertford, Hyde, Jones, Martin, Northampton, Pamlico, Pasquotank, Perquimans, Pitt, Tyrrell, Washington. Trillium is a consolidation of East Carolina Behavioral Health and CoastalCare.

Trillium partners "with agencies and licensed therapists in our Provider Network to offer services and supports to people in need in or near their own communities. We ensure the delivery of the right services, in the right amount, at the right time. We also work collaboratively with local non-profits, other governmental agencies, medical providers, and hospitals to create a holistic system of total patient care that recognizes all needs of an individual" (http://www.trilliumhealthresources.org/en/About-Us/).

According to data from VIDANT Region hospitals seeing 30 or more Bertie County patients over three years ED discharges related to all Mental, Behavioral and Neurological Disorder diagnoses composed 3.7% of all ED discharges over the three-year period cited; IP discharges for mental health diagnoses composed 7.2% of all IP discharges. These diagnoses (ICD-9 290-319xx) include psychotic and non-psychotic disorders, and conditions associated with alcohol and drug abuse.

Bertie 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 female
- 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 frequency of smoking during pregnancy is significantly higher in county than statewide; high infant mortality; high frequency of pre-term births; high frequency of low birth weight; significant numbers of infants born with “problems”. All this is occurring despite a reasonably high frequency (75%) of early prenatal care.

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 Bertie County:

- **Diabetes** – prevalence in the county is higher than in NC as a whole; the current mortality rate is higher than the NC rate and rising; mortality rate and ED visits for diabetes among African Americans are higher than among whites.
- **Unintentional injuries** – county mortality rate is higher than NC rate and rising
- **Kidney disease** – county mortality rate is higher than NC rate and rising
- **Alzheimer's disease** – county mortality rate is higher than NC rate and rising
- **Chronic Lower Respiratory Disease** – especially among males
- **Asthma** – especially among African Americans and children younger than 15

Chapter Six: Community Feedback

Community Small Group Discussions Methodology

Vidant Bertie Hospital worked in conjunction with Albemarle Regional Health Services and the community to assemble and complete Community Small Group Discussions. Community Health Assessment coordinators served as Group Moderators and completed 10 small group discussions throughout Bertie County.

Community Feedback Results

There were many common, identifiable themes among the Bertie County small-group discussions. When asked to discuss the **best things about living in the county**, participants frequently spoke about the ***quiet environment*** and ***strong sense of community*** in Bertie County. Furthermore, when speaking about the **health-related strengths of the community**, participants again discussed the county's ***environment*** and stated that the space in Bertie County allows community members to engage in a variety of ***outdoor activities***, such as kayaking and walking.

In contrast, when asked to discuss the **health-related weaknesses of the community**, participants stated that the community has a variety of **serious health-related problems**, such as ***heart disease, hypertension, high cholesterol, cancer, and diabetes***. Participants also expressed that ***drug abuse*** was a serious problem in the county. When discussing **barriers to health**, participants stated that many of the aforementioned conditions are the result of ***not being able to afford healthy food***, ***not having adequate insurance***, and ***an overall lack of awareness and health-related knowledge***.

In turn, participants provided a variety of **solutions to the serious health-related problems** in Bertie County. For example, participants stated that ***holistic education systems*** should be used to educate children and adults on health-related topics. Moreover, participants expressed that ***increasing the availability of farmers' markets*** would be an effective way to provide the community with more healthy food options. Finally, participants stated that an ***increase in the availability of healthcare providers and healthcare resources***, such as recreation facilities, is critical in improving the overall health of Bertie County.

Chapter Seven: Issue Prioritization

In June of 2016, key stakeholders in Bertie County were convened. Assessment results were shared and a formal process was utilized to determine Vidant Bertie's county 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 15 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 Bertie County. As a result of this process, Vidant Bertie Hospital will work to develop action plans addressing these top community health issues.

Vidant Bertie's County Health Priorities for 2016-2019

- Access to Care
    - Including a specific focus on Transportation Barriers
- Prevention / Healthy Lifestyles
- Diabetes

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
Small Group Discussion Questions

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?

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

4. What keeps people in your community from being healthy?

5. What could be done to solve these problems?

6. Have you or someone close to you ever experienced any challenges in trying to get healthcare services? If so, what happened?

7. Are there any home remedies you use in place of traditional healthcare and/or medicine?

8. What are the strengths related to health in your community?

9. Cancer and heart disease are the leading causes of death in your county. In your opinion, what makes these the leading causes of death in your county?

10. How does living in a rural area affect health?

Appendix D: Evaluation of 2013 Vidant Bertie Implementation Plan

2013 Implementation Plan Evaluation

Priority health need: Diabetes

Goal: ***To reduce the rate of diabetes in Bertie County and improve quality of life for people living with diabetes.***

Strategies:

- **Continue offering free blood sugar screenings throughout the community.** – Vidant Bertie continues to offer free community health screenings where BMI, Blood pressure, Blood sugar, Cholesterol, and Triglyceride checks are performed. Following the screenings, participants receive health coaching and follow up if their values are abnormal.
- **Continue supporting the diabetes support group and Diabetes Day program.** – The Diabetes Day program no longer continues due to additional services which have been added to provide education and support throughout the year. Albemarle Regional Health Services (ARHS) provides a Diabetes Support group with financial assistance provided by Vidant Bertie Hospital's Community Benefit grants program
- **Continue offering diabetes education at Vidant Family Medicine – Windsor.** – See above – Diabetes Self-Management is taught through the Diabetes Support Group and the Outpatient Diabetes Clinic is offered in Windsor two days each week.
- **Improve medication education for diabetes patients.** – See above – Diabetes Medication Education is provided through Diabetes Support Group and Outpatient Diabetes Clinic.

Priority health need: Cancer

Goal: ***To increase prevention and early detection of cancer (breast, colon, prostate, lung, cervical, skin).***

Strategies:

- **Continue providing early detection services including mammography, FOBT screening and colonoscopies as well as surgical interventions. -** Screenings provided through providers at this time.
- **Continue supporting American Cancer Society through Relay for Life and other partnerships.** – Vidant Bertie continues to support community events to raise awareness about prevention and cancer screenings to promote early detection.
- **Continue supporting local breast and cervical cancer control program through ARHS.** Vidant Bertie continues to various cancer programs offered through ARHS
- **Continue hosting annual breast cancer event.** Vidant Bertie continues to offer the Pink Power breast cancer event every October
- **Offer additional education and screening opportunities for prostate, skin and colon cancer.** – Vidant Bertie plans to implement skin cancer screenings in the community in 2017. Vidant Bertie is also participating in the "80 by 2018" national program to promote colorectal cancer screenings.
- **Support efforts of Community Transformation Grant to promote tobacco-free living to prevent lung cancer.** Vidant Bertie participates with Partners to Improve Community Health (PITCH) program which implements many tobacco-free living initiatives in Bertie County. Vidant Bertie also recently replaced all campus "No Smoking" signs with

"Tobacco Free campus" signs and continues to promote Tobacco Free areas in all of the hospital's service areas.

Priority health need: cardiovascular disease

Goal: ***To reduce the rate of cardiovascular disease in Bertie County and improve quality of life for people living with cardiovascular disease.***

Strategies:

- **Continue providing cardiopulmonary rehabilitation and cardiology specialty clinic and diagnostics.** – Vidant Bertie Hospital provides a cardiologist in the clinic two days each week to see patients.
- **Continue offering free blood pressure and cholesterol screenings throughout the community.** – Community health screenings continue to be provided free of charge to community members throughout the year
- **Continue hosting the annual heart health event for women.** – Vidant Bertie hosts a Heart Health event annually for community members.
- **Optimize the use of health coaching services at Vidant Family Medicine – Windsor.** – Health coaching within Vidant Family Medicine - Windsor continues to serve patients.

Priority health need: lifestyle (smoking, inactivity, nutrition, substance abuse)

Goals: ***To improve the health status of the community by encouraging healthy behaviors and discouraging unhealthy behaviors***

Strategies:

- **Continue offering Healthy Living Support Group to promote healthy behaviors.** - This program has been replaced by other healthy living offerings within the community.
- **Expand congregational health program to include additional churches.** – Vidant Health has worked with faith leaders throughout eastern NC to implement the HealThy Neighbors partnership. This partnership of faith leaders works closely with Vidant Health to provide healthy living education to their members and the surrounding communities. Faith organizations within Bertie County participate in this partnership with 2 Bertie County faith leaders serving on the Advisory Board for the partnership.
- **Continue supporting the Eat Smart, Move More, Weigh Less program**. – The Eat Smart Move More Weigh Less program is offered to the community by the Bertie Cooperative Extension Office in Bertie County. Vidant Bertie contributes monies through their community benefits grants to support this program each year.
- **Continue supporting the Expanded Foods and Nutrition Education Program**. – This program is offered through the Cooperative Extension Office in Bertie County. Vidant Bertie contributes monies through their community benefits grants to support this program each year.
- **Continue providing health fairs**. – Vidant Bertie continues to offer health fairs with their community health screening program.

Priority health need: lack of medical home (lack of knowledge among community and providers regarding available services)

Goals: ***To improve community and provider knowledge of the health and human services and support structures available in Bertie County.***

Strategies:

- **Continue marketing initiatives to promote screenings and immunizations.** – Continues through Vidant Bertie
- **Continue offering transitional care services to connect patients with chronic conditions to community services**. – This continues through Vidant Bertie's inpatient case management program.
- **Continue flu awareness and prevention activities**. – Continues through Vidant Bertie in addition to the annual flu clinic offered to community members.
- **Inform providers and communities about local services through education and awareness activities.** – Continues throughout the year through Vidant Bertie
- **Ensure patients transferred back from other hospitals reconnect with local health providers and resources.** – This continues through Vidant Bertie's inpatient case management program.