Dare County Department of Public Health and
The Outer Banks Hospital

2013 Dare County Community Health Needs Assessment

Secondary Data Report

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INTRODUCTION

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

In communities where there is an active Healthy Carolinians coalition, the CHA partnership also usually includes that entity. Healthy Carolinians is "a network of public-private partnerships across North Carolina that shares the common goal of helping all North Carolinians to be healthy." The members of local coalitions are representatives of the agencies and organizations that serve the health and human service needs of the local population, as well as representatives from businesses, communities of faith, schools and civic groups. In Dare County, the local Healthy Carolinians coalition is Healthy Carolinians of the Outer Banks (HCOB).

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 DCDPH and OBH contracted with Sheila S. Pfaender, Public Health Consultant, to assist in conducting the 2013 Community Health Needs Assessment for Dare County, following 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.

The CHA coordinators from the DCDPH and OBH worked with the consultant to develop a multi-phase plan for conducting the assessment. The phases included: (1) a research phase to identify, collect and review demographic, socioeconomic, health and environmental data; (2) a data synthesis and analysis phase; (3) a period of data reporting and discussion among the project partners; (4) a community input phase to elicit opinion and ideas regarding the assessment outcomes among community stakeholders; and (5) 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 Dare County. The consultant provided direct technical assistance for phases 1, 2, and 3, and consulted on phases 4 and 5.

ASSESSMENT METHODOLOGY

In order to learn about the specific factors affecting the health and quality of life of Dare County residents, the consultant tapped numerous readily available secondary data sources. For data on Dare County demographic, economic and social characteristics sources included: the US Census Bureau; Log Into North Carolina (LINC); NC Office of State Budget and Management; NC Department of Commerce; Employment Security Commission of NC; NC Division of Aging and Adult Services; NC Child Advocacy Institute; NC Department of Public Instruction; NC Department of Justice; NC Department of Juvenile Justice and Delinquency Prevention; NC Department of Administration; NC Division of Medical Assistance; NC Division of Child Development; NC State Board of Elections; NC Division of Health Services Regulation; the Cecil B. Sheps Center for Health Services Research; and the Annie E. Casey Foundation *Kids Count Data Center*. Local sources for socioeconomic data included: the Dare County Department of Social Services; the Outer Banks Chamber of Commerce; Dare County Schools; and other Dare County agencies and organizations. The author has made every effort to obtain the most current data available at the time the report was prepared.

The primary source of health data for this report was the NC State Center for Health Statistics, including its County Health Data Books, Behavioral Risk Factor Surveillance System, Vital Statistics, and Cancer Registry. Other health data sources included: US Centers for Disease Control and Prevention; NC DPH Epidemiology Section; NC Division of Mental Health, Developmental Disabilities and Substance Abuse Services; National Center for Health Statistics; Healthy People 2020; NC DPH Nutrition Services Branch; UNC Highway Safety Research Center; NC Department of Transportation; and the NC DPH Oral Health Section. Through the current CHA partnership with OBH, the consultant accessed de-identified hospital utilization data (e.g., emergency department visits, in-patient hospitalizations, and surgeries) that contributed greatly to the understanding of health issues in Dare County. Other important local health data sources included DCDPH, the Community Care Clinic of Dare, and Dare County Emergency Medical Services.

Because in any community health assessment it is instructive to relate local data to similar data in other jurisdictions, Dare County data is compared to like data describing the state of NC as a whole, as well as to data from two adjacent counties that are in the OBH Secondary Service Area: Currituck County and Hyde County. In some cases Dare 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 sometimes further back than that.

Environmental data were gathered from sources including: US Environmental Protection Agency; NC Department of Environment and Natural Resources Divisions of Air Quality, Waste Management, and Environmental Health; and NC State Laboratory of Public Health.

It should be noted that the same consultant assisted with the comprehensive Community Health Assessment and Environmental Assessment for Dare County in 2010. That report included similar secondary data, but also extensive primary data from a community survey and stakeholder interviews, as well as an entire volume of environmental data. In some respects this 2013 CHA is an update to the 2010 effort, with special emphasis on the inclusion of 2010 (or more recent) US Census data, which was not available at the time of the 2010 report.

CHAPTER ONE: DEMOGRAPHIC DATA

POPULATION CHARACTERISTICS

General Population Characteristics

The following general population characteristics of Dare County and its comparator counties were based on 2010 US Census data presented in Table 1.

- As of the 2010 US Census, the population of Dare County was 33,920.
- The population of Dare County was evenly divided between males and females, which is the typical pattern. The gender balance in Hyde County was quite different, with males outnumbering females by roughly 25%.
- The overall median age in Dare County was 43.6, approximately 2.3 years older than the median age in either Currituck or Hyde County, and over six years older than the median age for NC as a whole.

Table 1. General Demographic Characteristics (2010 US Census)

Location	Total Population	Number Males	% Population Male	Median Age Males	Number Females	% Population Female	Median Age Females	Overall Median Age
Dare County	33,920	16,956	50.0	42.3	16,964	50.0	44.9	43.6
Currituck County	23,547	11,669	49.6	41.0	11,878	50.4	41.6	41.3
Hyde County	5,810	3,226	55.5	38.6	2,584	44.5	45.9	41.2
State of NC	9,535,483	4,645,492	48.7	36.0	4,889,991	51.3	38.7	37.4

Note: percentages by gender are calculated.
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; http://factfinder2.census.gov.

Population by Township

Dare County is divided into six townships: Atlantic Township (including the towns of Kill Devil Hills, Kitty Hawk, and Southern Shores); Croatan Township; East Lake Township; Hatteras Township; Kinakeet Township; and Nags Head Township (including the towns of Manteo and Nags Head and the Wanchese CDP [Census-designated place]). The following population information was derived from 2010 US Census data presented in Table 2.

- Atlantic Township was the largest township by population in Dare County, accounting for almost 53% of the county's population.
- Nags Head Township was the second-largest township in Dare County, with 31% of the county's population.
- East Lake Township was the smallest township in Dare County, and was home to only 0.5% of the overall county population.
- East Lake Township was the youngest township in the county in terms of median age: 39.8 years (an increase of 4.9 years since the 2000 US Census).
- Kinnakeet Township was the oldest township in the county, with a median age of 47.6 years (an increase of 3.5 years since the 2000 US Census).

Table 2. Population by Township (2010 US Census)

Township	No. of Persons	% of County Population	Median Age
Atlantic Township	17,809	52.5	43.5
Croatan Township	1,085	3.2	42.8
East Lake Township	161	0.5	39.8
Hatteras Township	2,921	8.6	44.0
Kinnakeet Township	1,401	4.1	47.6
Nags Head Township	10,543	31.1	43.1
Dare County Total	**33,920**	**100.0**	**43.6**

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; http://factfinder2.census.gov.

Population Growth

In the 2010 Dare County CHA, projected population growth figures pointed to decadal population increases in the 15% range. After completion of the 2010 US Census, however, it became clear that these growth projections were overestimates. As a result, the 2020 and 2030 population projections for the county have been adjusted *downward*, to *negative* growth in the range of 3.8% population *loss* in the 2010-2020 and 2020-2030 decades (Table 2).

Table 3. Decadal Population Growth (1980-2030)

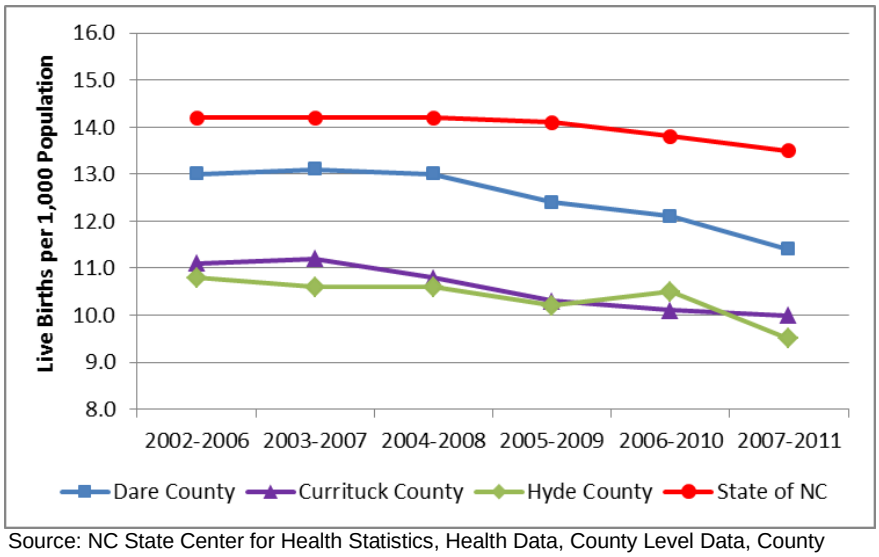
Location	Number of Persons and Percent Change										
	1980	1990	% Change 1980-1990	2000	% Change 1990-2000	2010	% Change 2000-2010	2020 (Projection)	% Change 2010-2020	2030 (Projection)	% Change 2020-2030
Dare County	13,377	22,746	70.0	29,967	31.7	33,920	13.2	32,621	-3.8	31,352	-3.9
Currituck County	11,089	13,736	23.9	18,190	32.4	23,547	29.5	23,989	1.9	24,416	1.8
Hyde County	5,873	5,411	-7.9	5,826	7.7	5,810	-0.3	5,609	-3.5	5,403	-3.7
State of NC	5,880,095	6,632,448	12.8	8,046,485	21.3	9,535,483	18.5	10,966,956	15.0	12,465,481	13.7

Note: percentage change is calculated.
Source: Log Into North Carolina (LINC) Database, Topic Group Population and Housing, Total Population, Population (Data Item 5001); http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

Birth Rate

Overall population growth is a function both of increase (via immigration and birth) and decrease (via emigration and death). Figure 1 illustrates that the birth rate is declining in NC and all three counties in the comparison, but at the fastest rate (steepest slope) in Dare County, where the birth rate decreased from 13.1 live births per 1,000 population in the 2003-2007 aggregate period to 11.4 live births per 1,000 population in the 2007-2011 aggregate period, a decrease of 13%.

Figure 1. Birth Rate Trend, Live Births per 1,000 Total Population (Five-Year Aggregates, 2002-2006 through 2007-2011)



Source: NC State Center for Health Statistics, Health Data, County Level Data, County Health Databooks 2008, 2009, 2010, 2011, 2012, 2013; http://www.schs.state.nc.us/schs/data/databook/.

Population Density

The Dare County population is growing in density, but it, as is the case with its comparator counties, remains far less densely populated than the average NC county. In 2010, Dare County was estimated to be only about 52% as densely populated as the state as a whole. For 2030+, Dare County still is predicted to be only about 67% as densely populated as the state as a whole (Table 4).

Table 4. Decadal Population Density (1980-2030)

Location	Persons per Square Mile					
	1980	1990	2000	2010 (Estimate)	2020 (Projection)	2030 (Projection)
Dare County	34.23	59.60	78.12	100.26	121.11	140.37
Currituck County	43.39	52.49	69.51	101.39	128.23	154.26
Hyde County	9.41	8.83	9.51	9.07	9.02	8.82
State of NC	120.4	136.1	165.2	191.9	219.9	248.2

Source: Log Into North Carolina (LINC) Database, Topic Group Population and Housing, Total Population, Population Density (Data Item 5004); http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

Race and Ethnicity

The population of Dare County is not as racially or ethnically diverse as NC as a whole (or as its comparator counties). For example, according to data in Table 5, the non-white population in Dare County is only about one-fifth to one-fourth as large as the non-white population in Hyde County and in NC, respectively. In Dare County as of the 2010 US Census:

- Whites composed 92.3% of the total population; statewide the comparable figure was 68.5%.
- Blacks/African Americans composed 2.5% of the total population; statewide the comparable figure was 21.5%.
- American Indians and Alaskan Natives composed 0.4% of the total population; statewide the comparable figure was 1.3%.
- Asians, Native Hawaiians and Other Pacific Islanders composed 0.7% of the total population; statewide the comparable figure was 2.3%.
- Hispanics/Latinos of any race composed 6.5% of the total population; statewide the comparable figure was 8.4%.

Table 5. Population Distribution by Race/Ethnicity (2010 US Census)

Location	Total	Number and Percent													
		White		Black or African-American		American Indian and Alaskan Native		Asian, Native Hawaiian and Other Pacific Islander		Some Other Race		Two or More Races		Hispanic or Latino of Any Race	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Dare County	33,920	31,313	92.3	834	2.5	125	0.4	225	0.7	810	2.4	613	1.8	2,210	6.5
Currituck County	23,547	21,268	90.3	1,361	5.8	107	0.5	159	0.7	223	0.9	429	1.8	704	3.0
Hyde County	5,810	3,719	64.0	1,836	31.6	28	0.5	17	0.3	142	2.4	69	1.2	411	7.1
State of NC	9,535,483	6,528,950	68.5	2,048,628	21.5	122,110	1.3	215,566	2.3	414,030	4.3	206,199	2.2	800,120	8.4

Note: percentages are calculated.
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; http://factfinder2.census.gov.

Race and Ethnicity by Township

The following information about racial and ethnic population diversity at the township level in Dare County was derived from 2010 US Census data presented in Table 6.

- All townships in Dare County were predominately white
- Nags Head Township was the township with by far the largest number of Black/African Americans, 661; this figure represented 1.9% of the total county population.
- Atlantic Township was the township with the largest number of Hispanics/Latinos, 957; this figure represented 2.8% of the total county population. Nags Head Township was the township with the second highest number of Hispanics/Latinos, 817; this figure represented 2.4% of the total county population.

Table 6. Population by Race/Ethnicity, by Township (2010 US Census)

Township	Persons Self-Identifying as of One Race											Two or More Races		Hispanic or Latino (of any race)	
	Total Population	White		Black or African American		American Indian and Alaska Native		Asian, Native Hawaiian or Other Pacific Islander		Some Other Race					
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No	%
Atlantic Township	17,809	16,725	49.3	151	0.4	59	0.2	183	0.5	399	1.2	292	0.9	957	2.8
Croatan Township	1,085	989	2.9	6	0.0	7	0.0	4	0.0	58	0.2	21	0.1	102	0.3
East Lake Township	161	136	0.4	1	0.0	0	0.0	0	0.0	23	0.1	1	0.0	24	0.1
Hatteras Township	2,921	2,822	8.3	9	0.0	4	0.0	1	0.0	51	0.2	34	0.1	235	0.7
Kinnakeet Township	1,401	1,361	4.0	6	0.0	3	0.0	5	0.0	10	0.0	16	0.0	75	0.2
Nags Head Township	10,543	9,280	27.4	661	1.9	52	0.2	32	0.1	269	0.8	249	0.7	817	2.4
Dare County Total	**33,920**	**31,313**	**92.3**	**834**	**2.5**	**125**	**0.4**	**225**	**0.7**	**810**	**2.4**	**613**	**1.8**	**2,210**	**6.5**

Note: percentages are calculated from population figures. Percentage figures describe a racial or ethnic group as a proportion of the overall county population.
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; http://factfinder2.census.gov.

Age

The following information about the age (and gender) distribution of the Dare County population was derived from 2010 US Census data presented in Table 7. Generally, these data demonstrate that Dare County had a population distribution skewed older than the distribution for the state as a whole.

- In terms of both numbers (2,973) and percent (8.8%), the largest segment of the population in Dare County was the age group 50-54. This differed slightly from NC as a whole, where the segment composing the largest number and percent (7.3%) of the state's population was the next younger age group, 45-49.
- Persons 65 years of age or older composed 15.3% of the population in Dare County, but 12.8% of the population of NC.
- Persons 19 years of age and younger composed 21.8% of the population in Dare County, but 26.8% of the population of NC.
- In both Dare County and NC, in the age groups 45-49 and older the percent of the population composed of females exceeded or equaled the percent of the population composed of males.

Table 7. Population Distribution by Age and Gender, Number and Percent (2010 US Census)

Age Group	Dare County						North Carolina					
	No. in Population			% of Total Population			No. in Population			% of Total Population		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
All ages	33,920	16,956	16,964	100.0	50.0	50.0	9,535,483	4,645,492	4,889,991	100.0	48.7	51.3
Under 5	1,839	902	937	5.4	2.7	2.8	632,040	322,871	309,169	6.6	3.4	3.2
5 to 9	1,897	952	945	5.6	2.8	2.8	635,945	324,900	311,045	6.7	3.4	3.3
10 to 14	1,861	975	886	5.5	2.9	2.6	631,104	322,795	308,309	6.6	3.4	3.2
15 to 19	1,784	960	824	5.3	2.8	2.4	659,591	338,271	321,320	6.9	3.5	3.4
20 to 24	1,607	883	724	4.7	2.6	2.1	661,573	336,648	324,925	6.9	3.5	3.4
25 to 29	2,035	1,029	1,006	6.0	3.0	3.0	627,036	311,499	315,537	6.6	3.3	3.3
30 to 34	2,043	1,064	979	6.0	3.1	2.9	619,557	304,807	314,750	6.5	3.2	3.3
35 to 39	2,151	1,125	1,026	6.3	3.3	3.0	659,843	324,681	335,162	6.9	3.4	3.5
40 to 44	2,394	1,218	1,176	7.1	3.6	3.5	667,308	329,652	337,656	7.0	3.5	3.5
45 to 49	2,823	1,369	1,454	8.3	4.0	4.3	698,753	341,432	357,321	7.3	3.6	3.7
50 to 54	2,973	1,428	1,545	8.8	4.2	4.6	669,893	323,702	346,191	7.0	3.4	3.6
55 to 59	2,824	1,360	1,464	8.3	4.0	4.3	600,722	285,244	315,478	6.3	3.0	3.3
60 to 64	2,522	1,238	1,284	7.4	3.6	3.8	538,039	255,034	283,005	5.6	2.7	3.0
65 to 69	1,832	885	947	5.4	2.6	2.8	403,024	188,125	214,899	4.2	2.0	2.3
70 to 74	1,339	668	671	3.9	2.0	2.0	294,543	133,021	161,522	3.1	1.4	1.7
75 to 79	934	463	471	2.8	1.4	1.4	223,655	94,981	128,674	2.3	1.0	1.3
80 to 84	630	261	369	1.9	0.8	1.1	165,396	63,573	101,823	1.7	0.7	1.1
85 and older	432	176	256	1.3	0.5	0.8	147,461	44,256	103,205	1.5	0.5	1.1

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.

Figures 2, 3 and 4 compare the age distribution of the NC population to the age distribution of the populations in Dare County, Currituck County, and Hyde County, respectively. In Dare County and Hyde County in particular, there was a smaller proportion of young persons and a larger proportion of older persons than demonstrated in the state age distribution profile. Currituck County, however, had an age distribution profile more similar to that for NC at the younger and older ends of the age spectrum, but highly divergent in the 20-34 and 40-54 age groups.

Figure 2. Population Distribution by Age, Dare County and NC (2010)

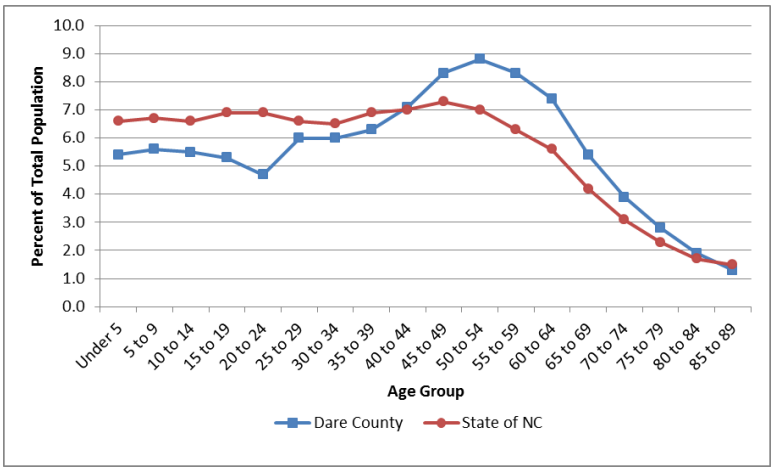


Figure 3. Population Distribution by Age, Currituck County and NC (2010)

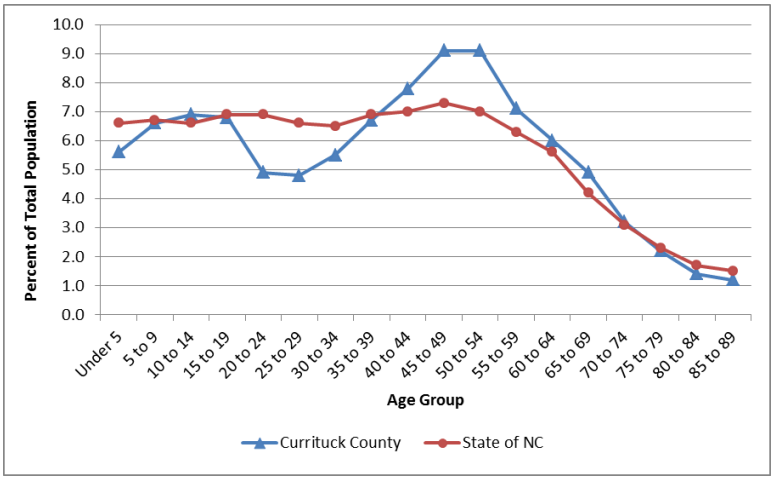
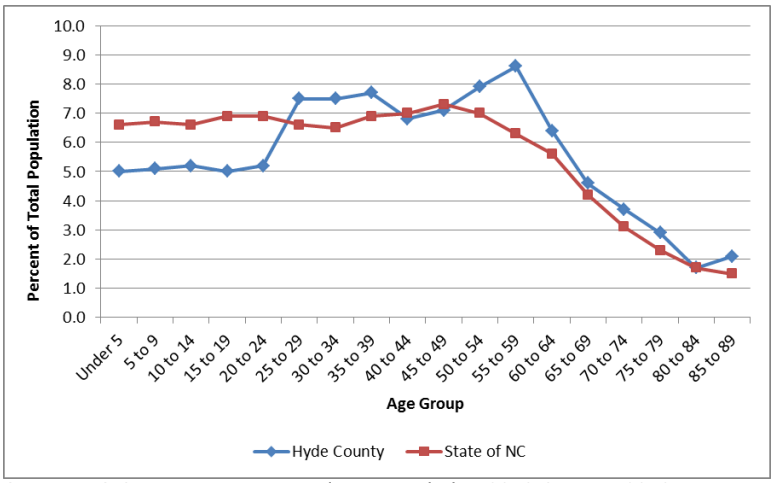


Figure 4. Population Distribution by Age, Hyde County and NC (2010)



Source: US Census Bureau, American FactFinder, 2010 Census, 2010 Demographic Profile Data, Summary File DP-1, Profile of General Population and Housing Characteristics: 2010 (Geographies as noted); http://factfinder2.census.gov.

Age by Township

The discussion below is based on the 2010 US Census data presented in Table 8.

- East Lake Township was the township with the highest proportion of persons under the age of 18 (22.4%), ages 18-24 (11.2%), and ages 25-34 (12.4%).
- Atlantic Township was the township with the highest proportion of persons ages 35-44 (13.9%).
- East Lake Township was the township with the highest proportion of persons ages 45-54 (18.0%).
- Kinakeet Township was the township with the highest proportion of persons ages 55-64 (17.4%) and ages 65 and older (19.9%).

Table 8. Population by Age, by Township (2010 US Census)

Township	Percent of Total Population						
	<18	18-24 Years	25-34 Years	35-44 Years	45-54 Years	55-64 Years	65 Years and Over
Atlantic Township	19.9	6.4	11.9	13.9	17.6	15.5	14.9
Croatan Township	21.2	8.1	11.2	12.4	16.7	14.3	16.0
East Lake Township	22.4	11.2	12.4	11.2	18.0	9.9	14.9
Hatteras Township	19.4	7.8	12.2	12.1	17.4	16.4	14.7
Kinnakeet Township	15.1	5.4	12.3	12.9	17.1	17.4	19.9
Nags Head Township	20.9	6.2	12.2	13.2	16.1	16.1	15.3
Dare County Total	20.0	6.5	12.0	13.4	17.1	15.8	15.2

Source: US Census Bureau, American FactFinder, 2010 Census, 2010 Census Summary File 1 (SF-1), Table QT-P1, Age Groups and Sex (geographies as listed); http://factfinder2.census.gov.

Elderly Population

Because the proportion of the Dare 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 Dare County was extracted from multi-part Table 9 (following page), which was based on 2000 and 2010 US Census figures and current projections for the years 2020 and 2030 from the NC Office of State Budget and Management.

- The proportion of every age group in Dare County age 65 and older will increase through the year 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 154% over that period, from 1.3% to 3.3% 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 107% over that period, from 4.6% to 9.5% of the total county population. In third position is the

segment aged 65-74, which is predicted to grow by approximately 50%, from 9.3% to 13.9% of the total county population.

Table 9. Growth Trend for the Elderly (Age 65 and Older) Population, by Decade (2010 through 2030)

Location	2000 Census								
	Total Population (2000)	# Population Age 65 and Older	% Population Age 65 and Older	# Age 65-74	% Age 65-74	# Age 75-84	% Age 75-84	# Age 85+	% Age 85+
Dare County	29,967	4,124	13.8	2,603	8.7	1,217	4.1	304	1.0
Currituck County	18,190	2,186	12.0	1,310	7.2	674	3.7	202	1.1
Hyde County	5,826	953	16.4	494	8.5	305	5.2	154	2.6
State of NC	8,049,313	969,048	12.0	533,777	6.6	329,810	4.1	105,461	1.3
Source	1	1	1	1	5	1	5	1	5

Location	2010 Census								
	Total Population (2010)	# Population Age 65 and Older	% Population Age 65 and Older	# Age 65-74	% Age 65-74	# Age 75-84	% Age 75-84	# Age 85+	% Age 85+
Dare County	33,920	5,167	15.2	3,171	9.3	1,564	4.6	432	1.3
Currituck County	23,547	3,041	12.9	1,899	8.1	854	3.6	288	1.2
Hyde County	5,810	875	15.1	484	8.3	271	4.7	120	2.1
State of NC	9,535,483	1,234,079	12.9	697,567	7.3	389,051	4.1	147,461	1.5
Source	2	2	2	2	5	2	5	2	5

Location	2020 (Projected)								
	Total Projected Population	# Population Age 65 and Older	% Population Age 65 and Older	# Age 65-74	% Age 65-74	# Age 75-84	% Age 75-84	# Age 85+	% Age 85+
Dare County	37,120	8,355	22.5	5,078	13.7	2,429	6.5	848	2.3
Currituck County	27,490	4,791	17.4	2,974	10.8	1,405	5.1	412	1.5
Hyde County	5,906	1,279	21.7	782	13.2	353	6.0	144	2.4
State of NC	10,614,862	1,763,950	16.6	1,051,688	9.9	519,963	4.9	192,299	1.8
Source	3	3	5	3	5	3	5	3	5

Location	2030 (Projected)								
	Total Projected Population	# Population Age 65 and Older	% Population Age 65 and Older	# Age 65-74	% Age 65-74	# Age 75-84	% Age 75-84	# Age 85+	% Age 85+
Dare County	40,228	10,767	26.8	5,606	13.9	3,816	9.5	1,345	3.3
Currituck County	31,324	7,047	22.5	4,216	13.5	2,157	6.9	674	2.2
Hyde County	5,994	1,495	24.9	742	12.4	571	9.5	182	3.0
State of NC	11,629,556	2,262,855	19.5	1,241,404	10.7	765,598	6.6	255,853	2.2
Source	4	4	5	4	5	4	5	4	5

1 - US Census Bureau, American FactFinder. *Profile of General Demographic Characteristics: 2000 (DP-1), SF1;* http://factfinder2.census.gov.
2 - US Census Bureau, American FactFinder. *Profile of General Population and Housing Characteristics: 2010 (DP-1);* http://factfinder2.census.gov.
3 - NC Office of State Budget and Management, County/State Population Projections. *Age, Race, and Sex Projections, Age Groups - Total, July 1, 2020 County Total Age Groups - Standard;* http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/county_projections.shtm.
4 - NC Office of State Budget and Management, County/State Population Projections. *Age, Race, and Sex Projections, Age Groups - Total, July 1, 2030 County Total Age Groups - Standard;* http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/county_projections.shtm.
5 – Percentages are calculated using age group population as numerator and total population as denominator.

Demographic Characteristics of the Elderly Population

Table 10 summarizes a variety of data describing the educational and financial status of the elderly population. Regarding the populations aged 65 or older in the four jurisdictions presented for comparison in Table 10, the elderly population in Dare County had:

- the lowest proportion with less than a high school diploma or GED (11.4%);
- the highest proportion with a graduate or professional degree (12.8%);
- the highest median income ($45,414); and
- the highest average monthly social security benefit ($1,179).

In addition, Dare County had the second highest proportion of persons age 65 or older in the labor force (15.4%) and the second highest proportion of elderly homeowners (88.7%).

Table 10. Demographic Characteristics of the Population Age 65+

Location	% Persons Age 65+ with < HS Diploma or GED (2006-2010)	% Persons Age 65+ with Graduate or Professional Degree (2006-2010)	% Homeowners Age 65+ (2010)	% Persons Age 65+ in Labor Force (2006-2010)	Median Household Income for Persons Age 65+ (2006-2010)	Average Monthly Social Security Benefit for Persons Age 65+ (2010)
Dare County	11.4	12.8	88.7	15.4	$45,414	$1,179
Currituck County	27.2	5.8	90.0	15.4	$34,741	$1,107
Hyde County	47.3	0.0	85.8	17.5	$28,720	$915
State of NC	28.4	7.5	79.9	14.9	$31,025	$1,151

Source: NC DHHS Division of Aging and Senior Services, County Profiles; http://www.dhhs.state.nc.us/aging/cprofile/cprofile.htm.

Non-English Speaking 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 2010 five-year US Census Bureau estimates summarized in Table 11:

- There were 2,141 foreign-born residents residing in Dare County in 2010. Using a base 2010 population figure of 33,920, foreign-born residents made up 6.3% of the total county population at that time.
- Since 1980, the largest influx of the foreign-born population in Dare County—878 persons—arrived between 2000 and 2010, an increase of 69.5% over that 10-year span. That rate of county increase was approximately the same as the comparable figure for NC as a whole, 67.4%.
- Between 2000 and 2010 the foreign-born population in Currituck County grew by only 42.3%, but the foreign-born population in Hyde County grew by 257%. (Note that immigration of foreign-born persons to Hyde County has been a fairly recent phenomenon, which was not the case in either Dare or Currituck counties.)

Table 11. Growth of the Foreign-Born Population (Before 1980 through 2010)

Location	Number of Persons Arriving				% Increase 2000-2010
	Before 1980	1980-1989	1990-1999	After 2000	
Dare County	529	234	500	878	69.5
Currituck County	378	174	134	290	42.3
Hyde County	0	37	42	203	257.0
State of NC	116,761	104,544	240,941	311,461	67.4

Source: US Census Bureau, American Fact Finder, 2010 ACS 5-Year Estimates, Table B05005: Year of Entry by Citizenship Status in the United States. http://factfinder2.census.gov.

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.*

The following information about linguistically isolated households is derived from the 2005-2009 five-year US Census Bureau estimates presented in Table 12.

- Of the 15,683 Dare County households included in the statistic, an estimated 1,091 (7.0%) spoke a language other than English. Of these, an estimated 238 (21.8%) were linguistically isolated. Both percentages represent an increase from the 2000 Census, when the proportion of the Dare County population speaking a language other than English was 6.0% and the proportion of the county population in linguistic isolation was 11.7% (1).
- Of the three counties under comparison, the highest proportion of non-English speaking households was in Dare County (7.0% for Dare vs. 6.8% for Currituck County and 5.9% for Hyde County). Dare County also had the highest proportion of linguistic isolation within those non-English speaking households (21.8% in Dare vs. 9.2% in Currituck County and 6.6% in Hyde County).
- The largest number of linguistically isolated households in Dare County in both 2000 and 2009 occurred within the Spanish-speaking population.

Table 12. Household Language by Linguistic Isolation (Five-Year Estimate, 2005-2009)

Location	Total Households	Number of Households								
		English-Speaking	Spanish-Speaking		Speaking Other Indo-European Languages		Speaking Asian or Pacific Island Languages		Speaking Other Languages	
			Isolated	Not isolated	Isolated	Not isolated	Isolated	Not isolated	Isolated	Not isolated
Dare County	15,683	14,592	238	377	0	369	0	60	0	47
Currituck County	9,303	8,675	58	277	0	250	0	43	0	0
Hyde County	1,806	1,700	7	99	0	0	0	0	0	0
State of NC	3,541,807	3,194,328	71,843	137,729	7,637	67,897	10,388	35,597	2,466	13,922

Source: US Census Bureau, American Fact Finder, Table B16002: Household Language by Linguistic Isolation, 2009 American Community Survey 5-Year Estimates. http://factfinder.census.gov.

Age Distribution of the Latino Population

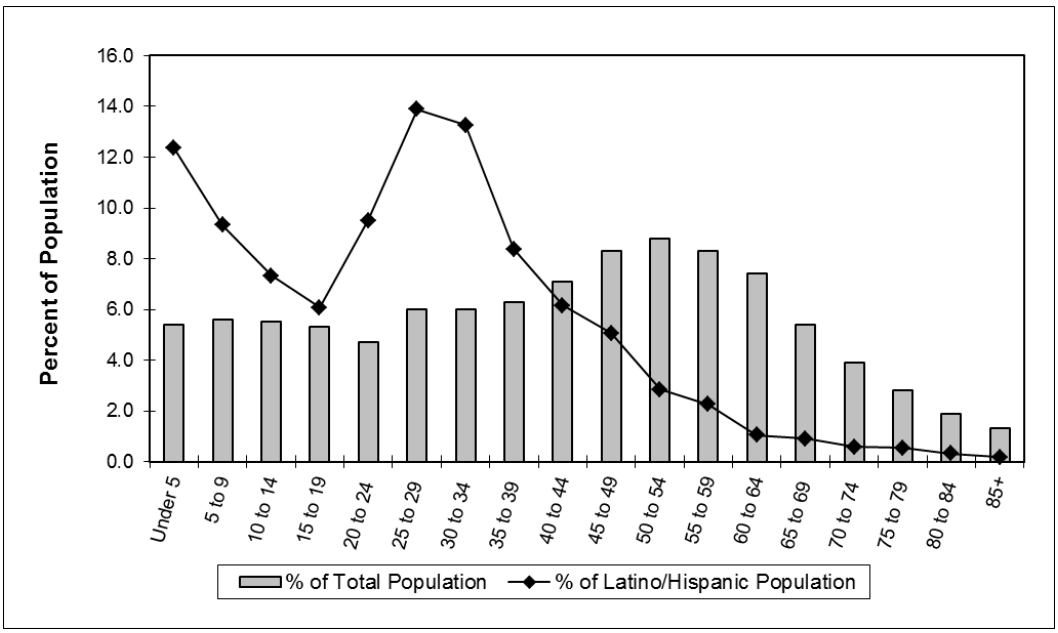
Since the Hispanic/Latino population is the principal linguistically-isolated group in Dare County, further knowledge of the characteristics of this group is helpful in anticipating service needs.

In Dare County, as in other counties in NC, a major impetus for immigration—at least until the economic downturn that began in 2008—was the prospect of employment opportunities. One would expect then that the age groups predominant in this population would be those in their "prime" for work, especially the physical labor-type jobs in construction, agricultural, and fishing industries available to them in the coastal region of the state. The spouses of these workers would be in the midst of their childbearing years, so it might also be expected that this population would have children.

Figure 5 is a graphic depiction of the 2010 US Census population profile by age group of the total Dare County population compared to the same profile for the Hispanic/Latino population.

- In Dare County all age groups under the age of 40 were present in higher proportions in the Hispanic/Latino population than in the overall county population. There were lower proportions for Hispanics/Latinos than for the general population in all the other age groups.
- The highest proportions of the Hispanic/Latino population in Dare County occurred in the Under 5 and the 25-29 and 30-34 age groups. In the overall county population, the highest proportions were in age groups covering the span from 40 to 64.

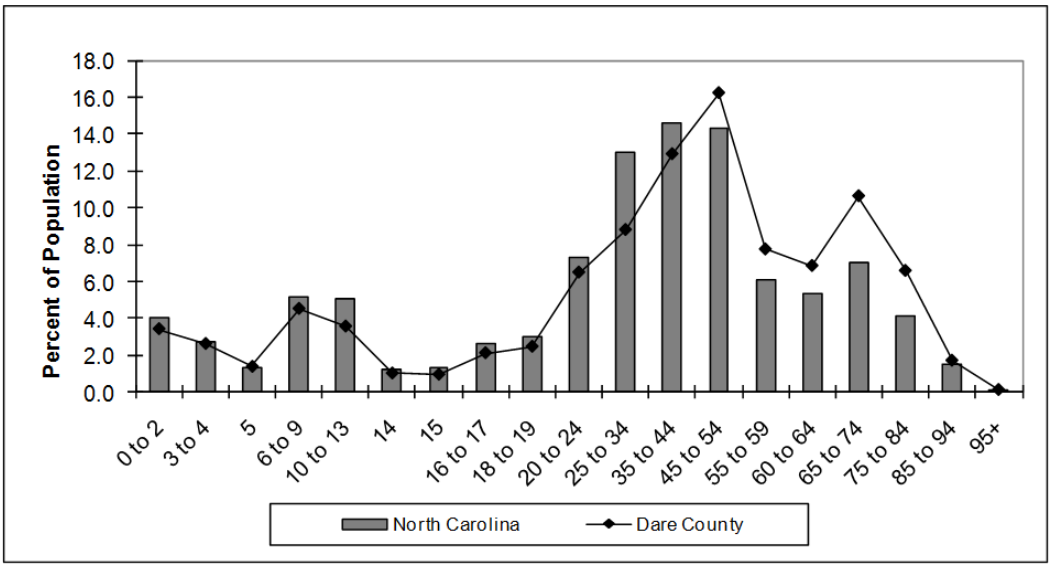
Figure 5. Age Distribution of Overall and Latino Populations in Dare County (2010)



Note: percentages are calculated from Census figures.
Source (Overall Population): US Census Bureau, American Fact Finder, 2010 Census, Summary File DP-1, 2010 Demographic Profile Data, Profile of General Population and Housing Characteristics: 2010; http://factfinder2.census.gov.
Source (Latino Population): US Census Bureau, American Fact Finder, 2010 Census, Summary File 1 (SF-1), PCT12H, Sex by Age (Hispanic or Latino) (geographies as noted); http://factfinder2.census.gov.

Below is a similar graph based on the 2000 US Census. A comparison of the two graphs illustrate that the proportion of the Hispanic/Latino population in the 40-49 age range was much lower in 2010 than in 2000. According to anecdotal evidence, there was less work available during the post-2008 recession, especially in the construction industry, and many Hispanic laborers actually left the area to find work elsewhere. This may account for the inter-Census drop in that age group, since it would be expected to have included many laborers.

Figure 6. Age Distribution of Overall and Latino Populations in Dare County (2000)



Source: 2010 Dare County Community Health Assessment, Volume One

Special Populations

Military Veterans

A population group that sometimes needs special health services is military veterans. Table 13 summarizes information about that population for the aggregate period 2006-2010.

Dare County did not have the largest population of military veterans among the jurisdictions under comparison. Veterans composed 13.5% of Dare County's overall adult civilian population in the period cited, higher than the comparable figures for Hyde County (11.0%), NC (10.8%) and the US (9.9%), but lower than the comparable figure for Currituck County (16.9%).

Although it was not home to the largest contingent, Dare County apparently was home to the oldest veteran population among the comparators: 46.0% of the veterans in Dare County were age 65 or older, compared to 28.3% in Currituck County and 35.1% in Hyde County. Nationally, 40.0% of the veteran population was age 65 or older; in NC the comparable figure was 35.7%.

Table 13. Veteran Status of Population
(Five-Year Estimate, 2006-2010)

Location	Civilian Population 18 years and over					% Veterans by Age				
	Total	# Non-Veterans	% Non-Veterans	# Veterans	% Veterans	18 to 34 years	35 to 54 years	55 to 64 years	65 to 74 years	75 years and over
Dare County	26,704	23,094	86.5	3,610	13.5	6.5	19.2	28.4	25.5	20.5
Currituck County	17,366	14,423	83.1	2,943	16.9	9.9	33.7	28.2	17.4	10.9
Hyde County	4,600	4,094	89.0	506	11.0	14.0	33.4	17.4	21.3	13.8
State of NC	6,947,547	6,200,495	89.2	747,052	10.8	8.7	30.0	25.7	17.9	17.8
National Total	228,808,831	206,156,335	90.1	22,652,496	9.9	7.8	26.3	25.4	19.0	21.4

Source: US Census Bureau, American Fact Finder. Veteran Status, 2010 American Community Survey 5-Year Estimate. Table S2101: Veteran Status; http://factfinder2.census.gov.

Special Needs Registry

In order to assist residents with special needs in the event of an emergency, county Emergency Management Officials develop a special needs registry to help emergency workers know about residents that may have difficulties managing for themselves during a disaster such as a hurricane, flood, winter storm, power outage, disease outbreak or other catastrophic event. Persons volunteer to be included on the registry and have the choice to accept or decline assistance when it is offered.

In Dare County, the list is called the *Special Medical Needs Registry*, and it is a joint project of the Dare County Department of Social Services (DCDSS), the Dare County Department of Public Health (DCDPH) and Dare County Emergency Management. This registry allows social services staff to contact residents with an identified special medical need prior to, during, and/or after an emergency to facilitate assistance as necessary. The list is maintained by DCDSS (2). Below is a summary of the needs of persons who volunteered for inclusion on the current list.

Table 14. Dare County Special Needs Registry List
(June, 2012)

Category	Number	Category	Number	Category	Number
Zip Code		***Needs Classification***		***Needs Classification (continued)***	
27915	6	Respirator	4	Parkinson's disease	1
27920	5	Walker/cane	30	Limited IQ	1
27936	5	Severe arthritis	21	Catheter	3
27948	16	Heart condition	7	Back issues	1
27949	9	Blind or speech impaired	22	Heart attack/stroke	31
27953	4	Special diet	22	IV medications	2
27954	48	Special condition	15	COPD	2
27959	3	Bedridden	4	Nebulizer	2
27968	2	Oxygen	19	Multiple sclerosis	1
27972	2	Wheelchair	21	Dialysis	2
27981	8	Help to eat	7	Seizures	4
Total		Help to toilet	8	Paralysis	1
Age		Mental illness	13	Contagious disease	3
0-18	0	Need electricity	6	High blood pressure	1
19-64	32	Diabetic	4	Hemophilia	1
65+	76	Alzheimer's disease/dementia	10	On Coumadin	1

Note: data is updated annually, in June. Specific locations (addresses) of those in need are not known to first responders until the information is invoked in an actual emergency.
Source: Melanie Corprew, Adult Services Supervisor, Dare County Department of Social Services. Personal communication to Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health, December 31, 2012.

CIVIC ENGAGEMENT

Electoral Process

One measure of a population's engagement in community affairs is its participation in the electoral process. Tables 15 and 16 summarize current voter registration and historical voter turnout data. It should be noted that turnout in any particular election is at least partially determined by the voters' interest and investment in the particular issues on the ballot at that time.

Registered Voters

- The proportion of the voting age population registered to vote in Dare County in 2012 was 88.6%, higher than the comparable percentages for either Currituck or Hyde counties (82.5% and 78.3%, respectively), but lower than the state percentage of 90.1%.
- Only 2% of registered voters in Dare County were Black/African American. This is the lowest percentage for this racial group among the jurisdictions being compared.

Table 15. Registered Voters, by Race/Ethnicity, Number and Percent (As of 12/29/12)

Location	Estimated Voting Age Population (2012)	Number and Percent of Voting Age Population Registered to Vote[1]											
		Total		White		Black		American Indian		Hispanic		Other	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Dare County	32,120	28,459	88.6	27,060	95.1	578	2.0	45	0.2	165	0.6	776	2.7
Currituck County	21,600	17,822	82.5	16,233	91.1	1,006	5.6	54	0.3	115	0.6	529	3.0
Hyde County	4,658	3,645	78.3	2,635	72.3	935	25.7	4	0.1	13	0.4	71	1.9
State of NC	7,351,323	6,624,136	90.1	4,698,878	70.9	1,489,770	22.5	53,833	0.8	114,149	1.7	381,654	5.8
Source:	a	b	c	b	c	b	c	b	c	b	c	b	c

[1] The total number of registered voters reported by the NC State Board of Elections is based on the sum of registrations by party affiliation, and does not necessarily equal the sum of registrations by race. Therefore, the sum of the percentages does not equal 100%.

a - Log Into North Carolina (LINC) Database, Topic Group Government, Voters and Elections, Voting Age Population (Data Item 1714), 2012; http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

b - NC State Board of Elections, Voter Registration, Voter Statistics, Voter Registration Statistics, By County; http://www.app.sboe.state.nc.us/webapps/voter_stats/.

c - Percentages are calculated

Voter Turnout

Note that voter turnout tends to be higher in elections that include a presidential race.

Table 16. Voter Turnout in General Elections (2004-2012)

Location	% Registered Voters that Voted				
	2004	2006	2008	2010	2012
Dare County	68.00	41.00	68.14	45.43	64.30
Currituck County	54.00	45.00	67.63	47.85	64.05
Hyde County	65.00	53.00	67.55	47.21	65.43
State of NC	64.00	37.00	69.93	43.75	68.42

Source: NC State Board of Elections, Elections Central, Elections Results Data (years as noted), General Elections; http://www.sboe.state.nc.us/content.aspx?id=69.

RELIGIOUS LIFE

The fabric of a community is often maintained and repaired through its citizens' participation in organized religion. Increasingly, health and human service providers have come to realize that the faith community can be an important partner in assuring the health and well-being of at least its members if not larger segments of the population.

Table 17 lists the religious bodies in Dare County. These data, gathered in January 2013, show that there is a broad range of options for exploring faith and religion within the county.

Table 17. Religious Bodies in Dare County (January, 2013)

Religious Bodies	Tradition	Family	Number of Congregations	Number of Adherents
Anglican Church in North America	Evangelical Protestant	Episcopalianism/Anglicanism	1	n/a
Assemblies of God	Evangelical Protestant	Pentecostal	8	1,096
Baha'i	Other	Other Groups	0	5
Calvary Chapel Fellowship Churches	Evangelical Protestant	Pentecostal	1	n/a
Catholic Church	Catholic	Catholicism	3	1,747
Christian Church (Disciples of Christ)	Mainline Protestant	Baptist	1	0
Christian Churches and Churches of Christ	Evangelical Protestant	Baptist	2	136
Church of Christ, Scientist	Other	Christian Science	1	n/a
Church of God (Cleveland, Tennessee)	Evangelical Protestant	Pentecostal	1	26
Church of God of Prophecy	Evangelical Protestant	Pentecostal	2	47
Church of Jesus Christ of Latter-day Saints, The	Other	Latter-day Saints	1	390
Congregational Holiness Church	Evangelical Protestant	Pentecostal	1	8
Episcopal Church	Mainline Protestant	Episcopalianism/Anglicanism	2	786
Evangelical Lutheran Church in America	Mainline Protestant	Lutheran	1	0
International Pentecostal Church of Christ	Evangelical Protestant	Pentecostal	2	76
International Pentecostal Holiness Church	Evangelical Protestant	Pentecostal	1	40
Jehovah's Witness	Other	Adventist	1	n/a
Lutheran Church - Missouri Synod	Evangelical Protestant	Lutheran	1	195
Non-denominational	Evangelical Protestant	n/a	7	1,200
Presbyterian Church (U.S.A.)	Mainline Protestant	Presbyterian - Reformed	2	337
Southern Baptist Convention	Evangelical Protestant	Baptist	8	1,199
Unitarian Universalist Association of Congregations	Other	Liberal	1	57
United Methodist Church, The	Mainline Protestant	Methodist/Pietist	15	5,287
TOTAL			63	12,632

Source: Association of Religious Data Archives (ARDA), US Congregational Membership: Reports, County Membership Report, Browse Reports, Counties; http://www.thearda.com/rcms2010/.

COMMUNITY SERVICES AND ORGANIZATIONS

Law Enforcement

Dare County is made up of six municipalities: Duck, Kill Devil Hills, Kitty Hawk, Manteo, Nags Head and Southern Shores. Each municipality has its own Police Department. The unincorporated areas of the county are enforced by the Dare County Sheriff's Office.

Fire and Rescue Departments

The mission of the Dare County Fire Marshal is to safeguard life and property from the hazards of fire, explosion and hazardous substances. The Dare County Fire Marshal coordinates firefighting and fire prevention services in the unincorporated areas of Dare County and serves as liaison between the Fire Districts and the Dare County Board of Commissioners (3).

Fire protection throughout the 860 square miles of Dare County is provided by over 350 volunteer and career firefighters in 15 individual fire districts, each of which is responsible for its own fire protection (3). Dare County fire districts are listed in Table 18.

Table 18. Fire Districts and Municipalities in Dare County (February, 2013)

Location	Fire Department	Station	Status
District			
Avon	Avon Volunteer Fire Department	46	Volunteer
Buxton	Buxton Volunteer Fire Department	44	Volunteer
Colington	Colington Volunteer Fire Department	15	Volunteer
Duck	Duck Volunteer Fire Department	11	Combination
Frisco	Frisco Volunteer Fire Department	42	Volunteer
Hatteras Village	Hatteras Volunteer Fire Department	40	Volunteer
Kill Devil Hills	Kill Devil Hills Fire Department	14	Combination
Kitty Hawk	Kitty Hawk Fire Department	13	Combination
Manns Harbor	Manns Harbor Volunteer Fire Department	18	Volunteer
Nags Head	Nags Head Fire Rescue	16, 20, 21	Combination
Roanoke Island	Roanoke Island Volunteer Fire Department	17	Volunteer
Rodanthe	Chicamacomico Banks Volunteer Fire Department	50	Volunteer
Salvo	Salvo Volunteer Fire Department	48	Volunteer
Southern Shores	Southern Shores Volunteer Fire Department	12	Combination
Stumpy Point	Stumpy Point Volunteer Fire Department	19	Volunteer
Area			
Hatteras Island	Hatteras Island Rescue Squad	35	Volunteer
Source	1	1	2

1 - Dare County Government website; Departments and Services, Emergency Management, Fire Marshal, County Fire Districts and Municipalities; http://www.darenc.com/emgymgmt/firedist.asp.
2 - Dare County Association of Fire Officers, Department Profiles; http://www.angelfire.com/nc2/darefire/preview.html.

In addition to the above fire and rescue departments that fall under the jurisdiction of the Dare County Fire Marshal, there are two additional service providers that offer fire protection services in the county (4):

- Dare County Regional Airport, Station 22, which provides fire protection to the airport, including aircraft. This unit also conducts water rescue in the sound and assists other agencies when requested.
- North Carolina Forest Service, Dare County Unit, which provides wild land fire protection and management to the entire county.

Other Community Services and Organizations

It is a nearly impossible task to create a print catalogue or listing of community resources that is current beyond its print date. Therefore, this CHA document provides instead *links* to on-line or telephone resources that provide information on community organizations and services available to Dare County residents. These particular community resource directories and guides have been included because they are sponsored and/or maintained by entities likely to remain in existence, and because they cover a wide range of community resources.

[Note that Health and Health Care Resources, while included in some of the directories and guides cited below, are discussed in detail in a separate section of this CHA.]

Dare County Community Resource Directories and Guides

2-1-1 System (United Way of North Carolina)

Phone referral system and on-line searchable database running as a pilot program through December, 2013.
Currently catalogs annotated listings for over 100 local agencies.
Portal - http://www.unitedwaync.org/nc-2-1-1. (Or dial 2-1-1 within Dare County)

Outer Banks Community Directory (Outer Banks Chamber of Commerce)

Alphabetical, categorical listing of community organizations and resources.
Currently includes annotated listings for over 100 local organizations.
Portal - http://www.obxchamber.com/daredirectory.cfm.

Outer Banks Business Directory (Outer Banks Chamber of Commerce)

List of Outer Banks businesses, searchable by keyword or over 130 business categories.
Portal – http://www.outerbankschamber.com (in the “Our Chamber” section).

Directory of Services (Dare County Government)

Alphabetical list of live links to categories of services provided by the county.
Portal: http://www.darenc.com/depts/servAD.asp.

Dare County Family Resource Guide (Children and Youth Partnership)

Searchable on-line directory of programs and services for children birth to age 21.
Currently catalogs annotated listings for 175 local agencies.
Portal - http://www.darekids.org/guide.php.

CHAPTER TWO: SOCIOECONOMIC DATA

ECONOMIC CLIMATE

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. In 2011, 2012 and 2013, Dare County and Currituck Counties were assigned Tier 2 designations, and Hyde County was assigned a Tier 1 Designation (5).

County Revenue Indicators

The local Chamber of Commerce tracks certain revenue indicators (e.g., building permits, sales, and receipts) in order to assess changes in the economic well-being of the community. Table 19 presents an annual summary of several of these indicators for 2006-2012. The beginning of *and* partial recovery from the current economic downturn are clearly evident from these data.

- The number and value of building permits and land transfer collections both declined from 2007 through 2009 and began to increase again in 2010. (Note that the 2012 data for the number and value of building permits is incomplete). These three parameters are indicators of economic development through investment in buildings and lands, and their recovery is a sign of confidence in the county's economic infrastructure.
- Gross collections on retail sales declined in 2007 and 2008, and rebounded in 2009 and 2010 before falling again in 2011. This parameter is a reflection of consumer confidence and buying patterns, and when it fluctuates it usually indicates some financial uncertainty among the buying public, including seasonal vacationers. (Note that 2012 gross collections on retail sales do not include the winter holiday buying season.)
- The last two categories of revenue indicators, occupancy receipts and food and beverage receipts, reflect spending by local residents but also spending by vacationers. Note that these two revenue streams did *not* decline as dramatically as the others over the period cited. Food and beverage receipts dipped only in 2008 and 2009, and occupancy receipts increased every year except 2009, perhaps reflecting spending by vacationers who opted for local, "stay-cations" in lieu of more expensive distant travel.

Table 19. Dare County Revenue Indicators (2006-2012)

Revenue Indicator	Calendar Year						
	2006	2007	2008	2009	2010	2011	2012
Number of Building Permits	3,090	2,993	2,953	2,900	3,272	3,532	3,297[1]
Value of Building Permits	$254,278,317	$247,017,181	$141,482,617	$85,023,027	$87,477,124	$108,782,433	$118,028,775[1]
Land transfer Collections	$7,882,945	$6,637,595	$4,754,358	$3,961,956	$4,571,787	$4,302,720	$5,032,666
Gross Collections on Retail Sales	$53,524,319	$51,373,088	$50,958,225	$53,010,527	$61,421,710	$57,929,201	$51,374,819[2]
Occupancy Receipts	$310,145,298	$339,973,731	$349,894,493	$343,650,773	$356,845,997	$370,289,918	$382,124,874[1]
Food and Beverage Receipts	$180,647,134	$189,131,837	$185,121,476	$184,931,353	$187,781,957	$190,867,107	$201,630,583[1]

[1] Figure represents total for January through November, 2012.
[2] Figure represents total for January through October, 2012.
Source: Outer Banks Chamber of Commerce; http:www.outerbankschamber.com/economy-home/economic-reports-for-the-outer-banks/.

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.

Table 20 summarizes recent (August 2012) income data for Dare County, Currituck County, Hyde County and the state of NC. Among these jurisdictions:

- Per capita personal income was highest in Dare County, where it was over $2,800 higher than the state average.
- Median household income was highest in Dare County, where it was more than $5,600 higher than the state average.
- Median family income was highest in Currituck County, where it was almost $13,300 higher than the state average. Median family in Dare County was almost $12,900 higher than the state average.
- Hyde County had the lowest income figures in every category, and its measures were consistently and significantly below the comparable state averages.

Table 20. Income Measures
(August, 2012)

Location	Per Capita Personal Income	Per Capita Income Difference from State	2011 Est Median Household Income	Median Household Income Difference from State	2010 Est Median Family Income	Median Family Income Difference from State
Dare County	$26,788	$2,833	$49,524	$5,608	$65,778	$12,858
Currituck County	$21,219	-$2,736	$42,960	-$956	$66,213	$13,293
Hyde County	$17,928	-$6,027	$31,517	-$12,399	$44,406	-$8,514
State of NC	$23,955	n/a	$43,916 [1]	n/a	$52,920 [1]	n/a

[1] US Census Bureau, American Fact Finder, 2010 ACS 5-Year Estimate. http://factfinder2.census.gov.
Source (except as noted): NC Department of Commerce, AccessNC, Community Demographics, County Report, County Profile, http://accessnc.commerce.state.nc.us/EDIS/page1.html.

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

Table 21 details the various categories of industry by sector in Dare County and its three jurisdictional comparators for 2011, showing the number employed in each sector, the percentage of all employment that that number represents, and the average annual wage for people employed in each sector.

- The industry in Dare County that employed the largest percentage of the workforce (24.09%; up from 23.14% in 2009) was Accommodation & Food Services. This was also the sector among those listed with the lowest average annual wage per employee ($18,079, up from $17,449 in 2009).
- Retail Trade accounted for the second largest percentage of the Dare County workforce, at 18.12%, followed by Real Estate & Rental & Leasing, at 11.94%. No other sector accounted for even 10% of the total workforce in Dare County, clearly illustrating the county's economic roots in—and dependence upon—the travel and tourism industry.
- In Currituck County, the sector employing the largest percentage of the workforce (17.55%) also was Accommodation & Food Service; in Hyde County the sector employing the largest percentage of the workforce (25.75%) was Public Administration.
- Statewide, the sector employing the largest percentage of the workforce was Health Care & Social Assistance (14.45%), followed by Retail Trade (11.66%) and Manufacturing (11.33%).

Table 21. Insured Employment and Wages by Sector
(Annual Summary, 2011)

Sector	Dare County			Currituck County			Hyde County			North Carolina		
	Avg. No. Employed	% Total Employment in Sector[1]	Average Annual Wage per Employee[1]	Avg. No. Employed	% Total Employment in Sector	Average Annual Wage per Employee	Avg. No. Employed	% Total Employment in Sector	Average Annual Wage per Employee	Avg. No. Employed	% Total Employment in Sector	Average Annual Wage per Employee
Agriculture, Forestry, Fishing & Hunting	*	n/a	*	42	1.42	$28,566	290	14.99	$27,011	29,340	0.74	$28,752
Mining	*	n/a	*	*	n/a	*	n/a	n/a	n/a	3,378	0.08	$45,828
Utilities	81	0.45	$77,637	*	n/a	*	17	0.88	$52,709	13,917	0.35	$76,552
Construction	866	4.81	$35,864	304	10.26	$32,516	100	5.17	$31,790	194,022	4.53	$41,316
Manufacturing	356	1.98	$37,573	49	1.65	$31,235	98	5.07	$21,156	448,566	11.33	$52,613
Wholesale Trade	265	1.47	$39,505	104	3.51	$35,177	106	5.48	$25,484	167,533	4.38	$61,194
Retail Trade	3,263	18.12	$23,468	125	4.22	$23,239	178	9.20	$18,098	441,664	11.66	$24,650
Transportation & Warehousing	188	1.04	$36,488	*	n/a	*	35	1.81	$29,932	125,395	3.27	$43,400
Information	184	1.02	$37,650	*	n/a	*	12	0.62	$6,628	72,495	1.82	$63,833
Finance & Insurance	417	2.32	$48,238	242	8.17	$52,001	20	1.03	$28,333	149,135	3.88	$75,088
Real Estate & Rental & Leasing	2,149	11.94	$25,633	442	14.92	$27,032	*	n/a	*	49,753	1.23	$38,476
Professional, Scientific & Technical Services	440	2.44	$43,365	88	2.97	$53,529	9	0.47	$35,762	180,237	4.96	$66,951
Management of Companies & Enterprises	*	n/a	*	*	n/a	*	*	n/a	*	73,019	2.01	$88,763
Administrative & Waste Services	735	4.08	$22,684	375	12.66	$22,975	*	n/a	*	212,177	6.53	$30,258
Educational Services	950	5.28	$37,721	*	n/a	*	190	9.82	$34,990	382,110	9.58	$39,787
Health Care & Social Assistance	938	5.21	$41,730	272	9.18	$28,262	72	3.72	$20,410	552,337	14.45	$42,811
Arts, Entertainment & Recreation	506	2.81	$27,042	192	6.48	$20,796	11	0.57	$30,997	68,749	1.58	$28,474
Accommodation & Food Services	4,338	24.09	$18,079	520	17.55	$16,292	281	14.53	$18,835	346,059	8.95	$14,877
Other Services	549	3.05	$21,891	208	7.02	$23,296	17	0.88	$23,607	241,703	2.49	$43,641
Public Administration	1,779	9.88	$41,419	*	n/a	*	498	25.75	$34,446	94,676	6.18	$28,182
Unclassified	*	n/a	*	*	n/a	*	n/a	n/a	n/a	9,010	n/a	n/a
TOTAL ALL SECTORS	18,004	100.00	$36,235	2,963	100.00	$30,378	1,934	100.00		3,855,275	100.00	$46,772

[1] Percent Total Employment in Sector values were calculated by dividing the Avg. Number of Employed within a sector by the total employees in All Sectors.

* Disclosure suppressed

Source: NC Employment Security Commission, Labor Market Information, Industry Information. Employment and Wages Data by Industry, 2011, Annual Summary. By State or by County; http://eslmi23.esc.state.nc.us/ew/EWYear.asp?Report=1. (Search tool inputs: Ownership type = aggregate of all types; Industry NAICS level = Sector (2 digit); both Employment and Wages.)

Largest Employers

Table 22 lists the largest 25 employers in Dare County as of the end of the 3rd Quarter, 2011.

- None of the employers listed employed as many as 1,000 people.
- The largest employer was Dare County Schools, followed by Dare County Government.

Table 22. Largest 25 Employers in Dare County (Third Quarter, 2011)

Rank	Employer	Industry	No. Employed
1	Dare County Schools	Education & Health Services	500-999
2	County of Dare	Public Administration	500-999
3	NC Department of Transportation	Public Administration	250-499
4	Carolina Designs Realty, Inc.	Financial Activities	250-499
5	Village Realty & Management Service	Financial Activities	250-499
6	East Carolina Health, Inc.	Education & Health Services	250-499
7	Food Lion, LLC	Trade, Transportation & Utilities	250-499
8	Sun Realty Nags Head, Inc.	Financial Activities	100-249
9	Sanderling Resort & Spa	Leisure & Hospitality	100-249
10	Southern Shores Realty Services, Inc.	Financial Activities	100-249
11	Tandem Inc., DBA McDonalds	Leisure & Hospitality	100-249
12	Wal-Mart Associates, Inc.	Trade, Transportation & Utilities	100-249
13	Coastal Staffing	Professional & Business Services	100-249
14	Spam Resorts, Inc.	Financial Activities	100-249
15	National Park Service	Leisure & Hospitality	100-249
16	Town of Kill Devil Hills	Public Administration	100-249
17	Harris Teeter, Inc.	Trade, Transportation & Utilities	100-249
18	State of NC Department of Environment and Natural Resources	Public Administration	100-249
19	Town of Nags Head	Public Administration	100-249
20	Home Depot USA, Inc.	Trade, Transportation & Utilities	100-249
21	Express Cleaning Service, Inc.	Professional & Business Services	100-249
22	Midgett Brothers, Inc.	Financial Activities	100-249
23	YMCA of South Hampton Roads	Other Services	100-249
24	Seaside Vacations, Inc.	Financial Activities	50-99
25	Spencer Yachts, Inc.	Manufacturing	50-99

Source: NC Department of Commerce, Economic Intelligence Development System (EDIS), Business Data, Top Employers, by County; http://accessnc.commerce.state.nc.us/EDIS/business.html.

Travel for Employment

Data gathered by the US Census Bureau on how many resident workers travel outside the county for employment can help demonstrate whether or not a county provides adequate employment opportunities for its own citizens. The economic impact of out-of-state employment is that those workers may pay taxes and spend part of their income out of state. Table 23 summarizes 2007-2011 estimated travel for employment data for Dare County and its comparator jurisdictions.

- A large majority—89%—of Dare County resident workers were employed within the county.
- Of the 2,009 Dare County resident workers who left the county for work, 749 worked out-of-state and 1,260 worked elsewhere in NC.
- In Currituck County, only 35% of resident workers worked in-county; of the 7,300 who worked elsewhere, more than half (4,683) worked out-of-state.

- In Hyde County, approximately 83% of resident workers worked in-county; less than 1% worked out-of-state.
- Statewide, roughly 72% of resident workers worked in their county of residence; 25% worked in another county, and less than 3% worked out-of-state.

Table 23. Place of Work for Resident Workers Age 18 and Older (Five-Year Estimate, 2007-2011)

Location	Number and Percent of Residents										
	Total # Workers Over 16	# Working in NC	% Working in NC	# Working in County	% Working in County	# Working out of County	% Working out of County	# Working out of State	% Working out of State	Total # Leaving County for Work	Total % Leaving County for Work
Dare County	17,949	17,200	95.8	15,970	89.0	1,260	7.0	749	4.2	2,009	11.2
Currituck County	11,266	6,583	58.4	3,966	35.2	2,617	23.2	4,683	41.6	7,300	64.8
Hyde County	2,052	2,044	99.6	1,698	82.7	346	16.9	8	0.4	354	17.3
State of NC	4,221,511	4,115,156	97.5	3,035,545	71.9	1,065,215	25.2	105,186	2.5	1170401	27.7

Note: percentages are calculated and may include some rounding error.
Source: US Census Bureau, American Fact Finder, 2011 ACS 5-Year Estimate, Table B08007: Sex of Workers by Place of Work, State and County Level; http://factfinder.census.gov.

Modes of Transportation to Work

Besides serving as an indicator of environmentalism, the mode of transportation workers use to get to their places of employment can also point to the relative convenience of local workplaces and the extent of the local public transportation system. Table 24 compares data on modes of transportation to work from the 2000 US Census and a 2011 Census Bureau estimate.

- Very few Dare County workers used public transportation to get to work, and the number decreased between 2000 and 2007-2011. Use of public transportation for getting to work was not especially common in any of the jurisdictions being compared.
- The number of Dare County workers who carpooled decreased between 2000 and 2007-2011. Carpooling also decreased in Currituck County and statewide over the same period, but increased significantly in Hyde County.
- The number of workers who walked to work changed little in any of the four jurisdictions.
- The number of Dare County workers who worked at home more than doubled between 2000 and 2007-2011. Increases in working-at-home also occurred in the other three jurisdictions over the same period.

Table 24. Modes of Transportation to Work (2000 and 2007-2011 Five -Year Estimate)

Location	Number of Persons									
	Drove Alone		Carpooled		Used Public Transportation		Walked		Worked at Home	
	2000	2007-2011	2000	2007-2011	2000	2007-2011	2000	2007-2011	2000	2007-2011
Dare County	11,849	13,727	2,184	1,841	23	4	344	360	728	1,613
Currituck County	6,861	6,406	1,325	1,171	38	37	43	41	191	423
Hyde County	1,607	1,119	307	595	18	17	92	93	70	107
State of NC	3,046,666	3,405,376	538,264	462,747	34,803	44,920	74,147	76,424	102,951	177,145
Source:	a	b	a	b	a	b	a	b	a	b

a - US Census Bureau, American Fact Finder, 2000 US Census Data Sets, Summary File 3, Detailed Tables, Means of Transportation to Work for Workers 16 Years and Over; http://factfinder.census.gov.
b - US Census Bureau, American Fact Finder, 2011 American Community Survey 5-Year Estimates, Data Profiles, County, North Carolina (Counties as listed); http://factfinder.census.gov.

Public Transportation in Dare County

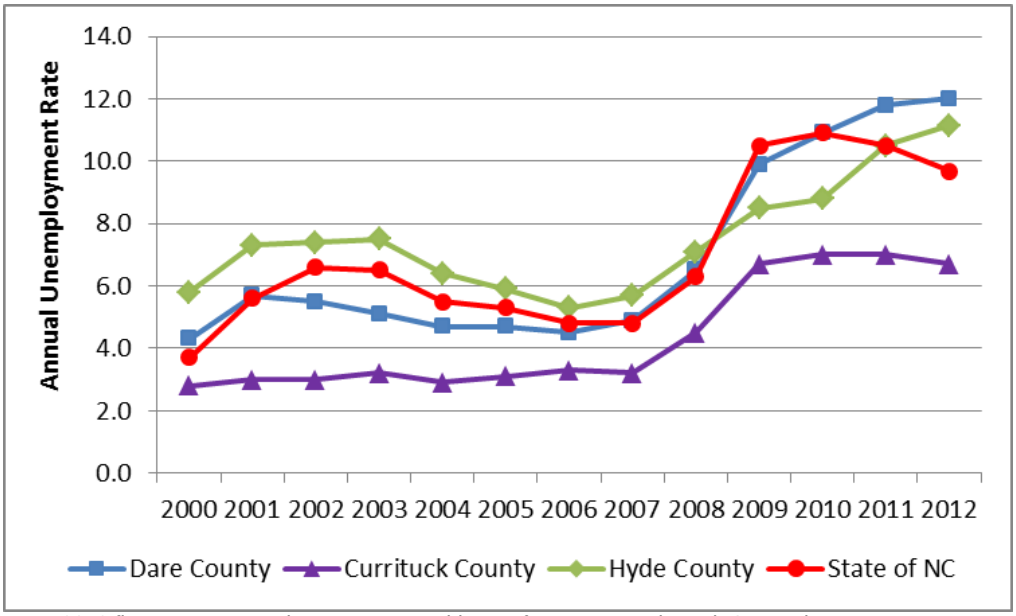
The only public transportation in Dare County is the Dare County Transportation System, (DCTS), which operates with the support of grants from the NC Department of Transportation's Public Transportation Division and funds from Dare County. The system operates via subscription and "demand/response", and is intended primarily to help patrons attend medical appointments within Dare County and to a short list of other destinations within NC (Elizabeth City, Greenville, Durham, and Chapel Hill) and VA (Chesapeake, Norfolk, Virginia Beach, and Hampton). The system provides door-to-door service with two-day's prior notice. Riders are picked up according to pre-arrangement and must call the van when ready for a return trip. In-county service operates Monday through Friday; out-of-county transportation for medical appointments is provided on Tuesdays and Thursdays only, except for trips to Greenville, which can be scheduled only on 2nd and 4th Wednesdays. Service is not provided on weekends or holidays (6).

Unemployment

Figure 7 plots the unemployment rate in Dare County and its jurisdictional comparators.

- Beginning with 2008 data, the unemployment rate began to rise sharply in all four jurisdictions. Unemployment increased in Dare County and Hyde County through the most recent rate (2012), but began to decline in Currituck County and NC as a whole in 2010.
- In 2012 the unemployment rate was highest in Dare County and lowest in Currituck County.

Figure 7. Annual Unemployment Rate (2000-2012)



Note: 2012 figures represent the average monthly rate from January through September.
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.

Seasonal Employment

Due largely to its economic base in the tourism industry, employment data in Dare County displays a strong seasonal component. Figures 8 and 9 plot the monthly number of persons in the total labor force and the number employed in Dare County and NC for 2011.

- Figure 8 clearly depicts the typical summer "surge" of employment in Dare County. Note that the "gap" between the "labor force" and "employed" lines—a representation of unemployment—grew smaller in the summer; indicating there was less unemployment in the summer than other times of the year. For example, the 2011 unemployment rate in Dare County ranged from a high of 19.1 in January to a low of 7.5 in August.
- Figure 8 shows a more moderate summer surge of employment in NC as a whole. The relatively steady width of the gap between labor force and employed indicates relatively steady unemployment. In NC in 2011 the unemployment rate ranged from a high of 11.1 in January to a low of 10.1 in November.

Figure 8. Seasonal Employment, Dare County (2011)

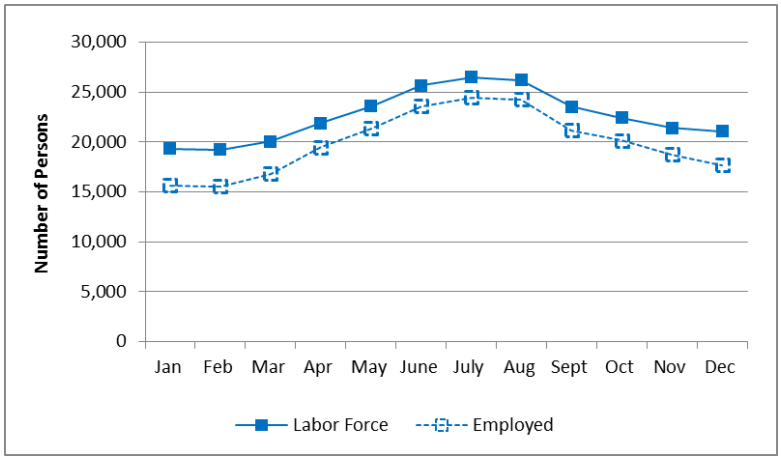
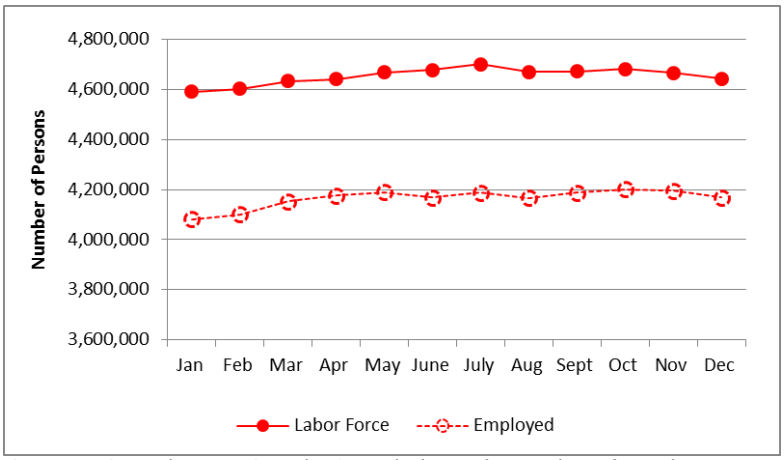


Figure 9. Seasonal Employment, North Carolina (2011)



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.

Business Closings and Layoffs

The NC Employment Security Commission monitors business closings and layoffs across the state, by county. The data collection system is partially anecdotal and therefore imprecise, since it relies on data submitted to the commission and on monitored newspaper reports. Sometimes the data notes a layoff or closing, but not re-hirings or re-openings. Table 25 lists the business closings and layoffs catalogued for Dare County for the period from 2008 to 2012.

- According to these data, from 2008 through 2012 there were five announced business closings in Dare County, involving at least 63 workers. In addition, there was one announced layoff, involving three persons, during the same period.
- The most common reason for a business closure was bankruptcy, which was the reported cause of three of the five closings.

Table 25. Business Closings and Layoffs in Dare County (2008-2012)

Effective Date	Company	City	Product	No. Affected	Reason	Closing/ Layoff
2012	Hostess Brands, Inc	Manteo	Commercial bakery	3	Bankruptcy	C
	Nags Head Bowling Center	Nags Head	Bowling alley	n/a	Loan denied	C
2011	Principle Long-Term Care	Nags Head	Rehabilitation center	63	Not stated	C
	Pledger Palace Child Development	Kitty Hawk	Child day care	n/a	Bankruptcy	C
2010	Town of Southern Shores	Southern Shores	Town government	3	Cost cuts	L
	Madey	Kitty Hawk	Not stated	n/a	Bankruptcy	C
2009	None listed					
2008	None listed					

Source: NC Employment Security Commission, Labor Market Information Division, Demand Driven Data Delivery System, Announced Business Closings and Permanent Layoffs; http://esesc23.esc.state.nc.us/d4/AnnounceSelection.aspx.

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.

Table 26 shows the annual poverty rate for the period from 1970-2000 and the estimated poverty rate for two five year periods: 2006-2010 and 2007-2011. The data in this table describe an overall rate, representing the entire population in each geographic entity. As subsequent data will show, poverty may have strong racial and age components that are not discernible in these numbers.

- In Dare and Hyde Counties and the state of NC, the poverty rate fell each decade from 1970 through 2000. In Currituck County, the poverty rate fell from one period to the next across the span of years shown in the table.
- In Dare and Hyde Counties and the state of NC the poverty rate rose between the 2000 counts and the 2006-2010 estimates, and rose again in the 2007-2011 estimates. In Dare County the percent of persons living below the poverty level increased by 39% between 2000 and 2007-2011. The comparable increase was 63% in Hyde County and 31% in NC.

- Note that the poverty rates in Dare and Hyde Counties and the state of NC continued to rise despite improvements in the national economy that began in 2010.

Table 26. Annual Poverty Rate
(1970-2000; 2006-2010 and 2007-2011 Five-Year Estimates)

Location	Percent of All People in Poverty					
	1970	1980	1990	2000	2006-2010	2007-2011
Dare County	16.4	11.3	8.3	8.0	10.5	11.1
Currituck County	23.3	18.3	10.1	10.7	8.5	7.8
Hyde County	42.2	28.3	24.0	15.4	20.4	25.1
State of NC	20.3	14.8	13.0	12.3	15.5	16.1
Source:	a	a	a	a	b	c

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

Table 27 presents poverty data stratified by broad racial group (white/black). It is clear from these data that Blacks have much higher poverty rates than whites.

- Across all time periods and in all jurisdictions cited in the table, the poverty rate among blacks was two to six times the poverty rate among whites.

Table 27. Persons in Poverty by Race
(2000; 2006-2010 and 2007-2011 Five-Year Estimates)

Location	2000				2006-2010				2007-2011			
	Total No. in Poverty	Total % in Poverty	% White in Poverty	% Black in Poverty	Total No. in Poverty	Total % in Poverty	% White in Poverty	% Black in Poverty	Total No. in Poverty	Total % in Poverty	% White in Poverty	% Black in Poverty
Dare County	2,381	8.0	7.3	18.5	3,494	10.5	9.2	46.9	3,724	11.1	9.9	39.2
Currituck County	1,922	10.7	9.2	23.6	1,964	8.5	7.9	11.8	1,811	7.8	7.4	17.1
Hyde County	795	15.4	11.9	24.3	871	20.4	12.3	47.8	1,224	25.1	10.5	63.3
State of NC	958,667	12.3	8.5	22.9	1,399,945	15.5	11.2	25.6	1,473,556	16.1	11.8	26.1
	a	a	a	a	b	b	b	b	c	c	c	c

a - Log Into North Carolina (LINC) Database, Topic Group Employment and Income (Data Items 6094, 6096, 6098); http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show.
b - US Census Bureau, American Fact Finder, American Community Survey, 2010 American Community Survey 5-Year Estimates, Data Profiles, County, North Carolina (Counties as listed); http://factfinder2.census.gov.
c - US Census Bureau, American Fact Finder, American Community Survey, 2011 American Community Survey 5-Year Estimates, Data Profiles, County, North Carolina (Counties as listed); http://factfinder2.census.gov.

Table 28 presents poverty data stratified by age group. From these data it is apparent that children suffer disproportionately from poverty.

- In all four jurisdictions in every time period cited in the table, the poverty rate for children under the age of 18 exceeded the overall poverty rate by from 1% to 65%, with the greatest average variance—46%—occurring in Dare County. The remaining average variances were 22% in Currituck County, 11% in Hyde County, and 35% in NC.

- The poverty rate for children under the age of 6 (2000) or 5 (2006-2010 and 2007-2011) varied even more significantly from the overall rate. In all four jurisdictions in every time period, the poverty rate for children under the age of 5/6 exceeded the overall poverty rate by from 26% to 144%, with the greatest average variance—85%—again occurring in Dare County. The remaining average variances were 62% in Currituck County, 54% in Hyde County, and 35 in NC.

Table 28. Persons in Poverty by Age
(2000; 2006-2010 and 2007-11 Five-Year Estimates)

Location	2000				2006-2010				2007-2011			
	Total % in Poverty	% Children Under 6 in Poverty	% Children Under 18 in Poverty	% Adults 65 or Older in Poverty	Total % in Poverty	% Related Children Under 5 in Poverty	% Related Children Under 18 in Poverty	% Adults 65 or Older in Poverty	Total % in Poverty	% Related Children Under 5 in Poverty	% Related Children Under 18 in Poverty	% Adults 65 or Older in Poverty
Dare County	8.0	12.8	10.0	5.3	10.5	18.3	15.6	6.9	11.1	27.1	18.3	6.3
Currituck County	10.7	17.7	16.1	8.9	8.5	15.9	9.9	7.3	7.8	10.4	7.9	4.6
Hyde County	15.4	19.4	19.5	23.0	20.4	32.6	21.3	29.8	25.1	44.2	25.6	26.4
State of NC	12.3	17.8	15.7	13.2	15.5	25.5	21.3	10.7	16.1	26.4	22.3	10.3
Source:	a	a	a	a	b	b	b	b	c	c	c	c

a - Log Into North Carolina (LINC) Database, Topic Group Employment and Income (Data Items 6094, 6100, 6102, 6104); http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show.
b - US Census Bureau, American Fact Finder, American Community Survey, 2010 American Community Survey 5-Year Estimates, Data Profiles, County, North Carolina (Counties as listed); http://factfinder2.census.gov.
c - US Census Bureau, American Fact Finder, American Community Survey, 2011 American Community Survey 5-Year Estimates, Data Profiles, County, North Carolina (Counties as listed); http://factfinder2.census.gov.

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.

Tables 29 and 30 show the percent of students *enrolled* to receive free or reduced-price lunch. The source for the data in Table 29 is the national Annie E. Casey Foundation *Kids Count Data Center*; the source for the data in Table 30 (specific to Dare County only) is Dare County Schools. To help readers grasp the numbers behind the percentages, Table 31, based on data from the NC Department of Public Instruction, shows the number of students who *received* either free or reduced-price school lunch in several recent school years (SYs).

- The percentage of students in Dare County enrolled for free or reduced-price school lunch has increased every school year presented in Table 29. In SY2010-11, 41.1% of students were enrolled in the program; this figure was 96% higher than the SY2003-04 figure of 21.0%.
- Free and reduced-price school lunch enrollment in the other jurisdictions was more variable. For example, the figure in Currituck County fluctuated both downward and

upward over the period cited, but in SY2010-11 was only 7% higher than it had been in SY2003-04.

Table 29. Percent of Students Enrolled for Free or Reduced-Price School Lunch (SY2003-04 through SY2010-11)

Location	Percent Students Enrolled for Free or Reduced-Price Lunch							
	SY2003-04	SY2004-05	SY2005-06	SY2006-07	SY2007-08	SY2008-09	SY2009-10	SY2010-11
Dare County	21.0	21.6	22.5	23.7	26.0	33.2	39.2	41.1
Currituck County	32.8	24.4	23.6	24.5	27.0	33.1	35.8	35.1
Hyde County	80.0	63.4	64.6	64.4	66.6	61.9	67.7	64.9
State of NC	48.2	47.7	48.4	48.5	48.4	49.9	53.7	53.9

Source: Annie E. Casey Foundation, Kids Count Data Center, Data by State, North Carolina, Profiles (state and counties as noted), Other Education, Percent of Students Enrolled in Free and Reduced Lunch; http://datacenter.kidscount.org/data/bystate/StateLanding.aspx?state=NC.

- A comparison of Tables 29 and 30 illustrates some slight differences in figures from the respective sources. It should be noted from the more recent data in Table 30 that the percent of students enrolled in the free and reduced-price lunch program in Dare County schools reached an eight-year high of 47.57% in SY2011-12 before falling to 40.47% in the current school year.

Table 30. Percent of Dare County Students Enrolled for Free or Reduced-price Lunch (SY2004-05 through SY2012-13)

Location	Percent Students Enrolled for Free or Reduced-Price Lunch								
	SY2004-05	SY2005-06	SY2006-07	SY2007-08	SY2008-09	SY2009-10	SY2010-11	SY2011-12	SY2012-13
Dare County	22.49	22.39	23.94	26.48	33.40	39.51	41.33	47.57	40.47

Source: Nancy Griffin, Director of Secondary Instruction, Dare County Schools. Personal communication to Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health, November 30, 2012.

From the *counts* of students receiving free or reduced-price lunch presented in Table 31 it is perhaps more clear how the population using that benefit has grown over time.

- In Dare County the number of students receiving free or reduced-price lunch doubled between SY2006-07 and SY2011-12.
- In Currituck County the comparable figure increased 44% between SY2006-07 and SY2011-12, and in NC the increase over the same period was 18%.
- In Hyde County the number of students receiving free or reduced-price lunch in SY2011-12 was actually 5% *lower* than the comparable number in SY2006-07.

Table 31. Number of Students Receiving Free or Reduced-price School Lunch (SY2006-07 through SY2011-12)

Location	No. Students Receiving Free or Reduced-Price Lunch					
	SY2006-07	SY2007-08	SY2008-09	SY2009-10	SY2010-11	SY2011-12
Dare County	1,149	1,236	1,584	1,869	1,983	2,285
Currituck County	992	1,085	1,310	1,394	1,354	1,430
Hyde County	411	421	432	388	373	391
State of NC	671,831	679,877	703,887	752,708	759,361	793,893

Source: NC Department of Instruction, Data & Statistics, Other Education Data: Select Financial Data, Free and Reduced Meals Application Data (by school year). http://www.ncpublicschools.org/fbs/resources/data/.

County Economic Service Utilization

The Dare County Department of Social Services (DCDSS) manages a number of programs that provide assistance to low-income people.

The *Food and Nutrition Services* program (formerly known as Food Stamps) helps eligible households buy the food they need for a nutritionally adequate diet. Benefits may be used to purchase most foods at participating stores; they may not be used to purchase tobacco, pet food, paper products, soap products, or alcoholic beverages (7).

WorkFirst is NC's Temporary Assistance for Needy Families (TANF) program, through which parents can get short-term training and other services, including cash supports, to help them become employed and self-sufficient. Most families have two years to move off WorkFirst Family Assistance (8).

Special Assistance provides a subsidy for clients in Adult Care Homes or, under a special provision, for a limited number of those who can stay home rather than enter care (9).

Table 32 presents data on the economic services provided by DCDSS from 2003-04 through 2011-12.

- The DCDSS data demonstrate clearly that demand for many of the agency's economic services increased since the onset of the national recession in 2008, in some cases dramatically. For example, the average monthly number of applications for nutrition and food services increased by nearly a factor of three (from 590 to 1,745) between 2007-08 and 2011-12, and the value of benefits issued increased by almost a factor of four.
- Work First Family Assistance is a very small program in Dare County. On average, per month during FY2011-12, 38 families received benefits and 28 of these were "child-only" families not subject to work requirements.
- The total monthly number of households receiving a Special Assistance Adult Care Subsidy and monthly program expenditures both grew by one-third between FY2007-08 and 2011-12.

Table 32. Economic Services Provided by Dare County Department of Social Services (2003-04 through 2011-12)

Service/Activity	Monthly Average								
	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Food and Nutrition Services (formerly Food Stamps)									
Applications	154	71	81	91	94	143	137	162	161
Total Households	403	375	453	616	590	839	1,110	1,553	1,745
Total Individuals	887	741	907	1,250	1,275	1,751	2,510	3,240	3,614
Monthly Issuance	$79,711	$62,299	$77,820	$116,731	$120,956	$198,221	$325,149	$362,246	$457,199
WorkFirst Family Assistance									
Applications	17	16	15	17	15	18	17	15	14
Total Households	48	46	45	55	44	47	49	39	38
Total Employment Cases	84	80	82	99	78	87	86	71	63
Child Only Cases	30	33	32	35	26	32	35	30	28
Monthly Issuance	$9,142	$9,371	$9,448	$11,580	$9,836	$10,517	$10,371	$8,443	$7,123
Special Assistance (Adult Care Subsidy)									
Applications	2	2	2	3	3	3	2	4	4
Total Households	40	43	49	64	60	65	68	74	82
SSI Households/Individuals	23	25	25	31	28	32	36	35	41
Monthly Expenditures	$18,744	$19,786	$23,590	$30,006	$26,885	$29,377	$29,740	$31,409	$35,427

Source: Dare County Department of Social Services Statistical Reports, FY2011, FY2012. Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health. Personal communication to Sheila Pfaender, Public Health Consultant, November 15, 2012.

HOUSING

Table 33 presents US Census Bureau data on housing by type in the four jurisdictions being compared.

- There was a high proportion (>50%) of vacant housing units in Dare County in both time periods cited, reflective of housing geared to seasonal residents or tourists.
- Of the occupied housing units in Dare County, 70-75% were owner occupied and 25-30% were renter occupied. Both Currituck County and Hyde County had higher proportions of owner occupied units.
- Dare County had the lowest proportion of housing units that were classified as mobile homes.
- In 2000 the median monthly mortgage cost was highest in Currituck County; in 2006-2010 the highest median monthly mortgage cost was in Dare County. The lowest mortgage costs in both periods were in Hyde County.
- Median monthly mortgage cost in Dare County increased by 65% between 2000 and 2006-2010.
- In both periods cited, the highest median gross monthly cost for rent was in Dare County.
- Median gross monthly rent cost in Dare County increased by 58%.

Table 33. Housing by Type
(2000 and 2006-2010 Five-Year Estimate)

Location	2000												
	Total Housing Units	Vacant Housing Units		Occupied Housing Units		Owner Occupied Units		Median Monthly Cost, Owner with Mortgage	Renter Occupied Units		Median Gross Monthly Rent	Mobile Home Units	
	No.	No.	%	No.	%	No.	%	$	No.	%	$	No.	%
Dare County	26,671	13,981	52.4	12,690	47.6	9,460	74.5	$1,012	3,230	25.5	$638	2,164	8.1
Currituck County	10,687	3,785	35.4	6,902	64.6	5,630	81.6	$1,028	1,272	18.4	$590	2,230	20.9
Hyde County	3,302	1,117	33.8	2,185	66.2	1,713	78.4	$689	472	21.6	$383	774	23.4
State of NC	3,523,944	391,931	11.1	3,132,013	88.9	2,172,355	69.4	$985	959,658	30.6	$548	577,323	16.4
Source:	a	a	a	a	a	a	a	b	a	a	c	d	d

Location	2006-2010 Estimate												
	Total Housing Units	Vacant Housing Units		Occupied Housing Units		Owner Occupied Units		Median Monthly Housing Cost, Homes With Mortgage	Renter Occupied Units		Median Gross Monthly Rent	Mobile Home Units	
	No.	No.	%	No.	%	No.	%	$	No.	%	$	No.	%
Dare County	33,492	19,157	57.2	14,335	42.8	10,118	70.6	$1,668	4,217	29.4	$1,010	1,968	6.0
Currituck County	14,453	5,573	38.6	8,880	61.4	7,163	80.7	$1,564	1,717	19.3	$789	n/a	n/a
Hyde County	3,347	1,228	36.7	2,119	63.3	1,557	73.5	$975	562	26.5	$602	608	18.9
State of NC	4,327,528	582,373	13.5	3,745,155	86.5	2,497,900	66.7	$1,244	1,247,255	33.3	$718	605,418	14.3
Source:	e	e	e	e	e	e	e	f	e	e	f	f	f

a - US Census Bureau, American FactFinder, 2000 US Census, Summary File 1 (SF-1), 2000 Demographic Profile Data, DP-1, Profile of General Population and Housing Characteristics: 2000 (geographies as listed); http://factfinder2.census.gov.
b - US Census Bureau, American FactFinder, 2000 US Census, Summary File 3 (SF-3), 100-Percent Data, Table H091, Median Selected Monthly Owner Costs (Dollars) for Specified Owner-Occupied Housing Units by Mortgage Status (geographies as listed); http://www.factfinder2.census/gov.
c - Log Into North Carolina, LINC Services; State and Counties: North Carolina and selected counties; Topic Group: Population and Housing; Housing Characteristics (Data Field V6115), 2000; http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show
d - US Census Bureau, American FactFinder, 2000 US Census, Summary File 3 (SF-3), Table QTH4, Physical Housing Characteristics - All Housing Units: 2000 (geographies as listed); http://www.factfinder2.census/gov.
e - US Census Bureau, American FactFinder, 2010 US Census, Summary File 1 (SF-1), 2010 Demographic Profile Data, DP-1, Profile of General Population and Housing Characteristics: 2010 (geographies as listed); http://factfinder2.census.gov.
f - US Census Bureau, American Fact Finder, 2010 ACS 5-Year Estimates, Table DP04: Selected Housing Characteristics (geographies as listed). http://factfinder2.census.gov.

Table 34 presents data on housing costs as a percent of household income.

- Whether referencing renter occupied units or mortgaged units, the percentage of housing units spending more than 30% of household income on housing was consistently highest in Dare County.
- The percentage of renter occupied units in Dare County spending more than 30% of household income on housing decreased 1.6% between 2005-2009 and 2006-2010, while the percent of mortgaged housing units costing more than 30% of household income increased by 3.5%.

Table 34. Estimated Housing Cost as Percent of Household Income (2005-09 and 2006-2010 Five-Year Estimates)

Location	Renter Occupied Units						Mortgaged Housing Units					
	2005-2009			2006-2010			2005-2009			2006-2010		
	Total Units	Units Spending >30% Household Income on Housing		Total Units	Units Spending >30% Household Income on Housing		Total Units	Units Spending >30% Household Income on Housing		Total Units	Units Spending >30% Household Income on Housing	
		#	%		#	%		#	%		#	%
Dare County	4,537	2,305	50.8	4,433	2,216	50.0	7,871	3,990	50.7	8,077	4,237	52.5
Currituck County	1,687	779	46.2	1,667	773	46.4	5,594	2,600	46.5	5,592	2,665	47.7
Hyde County	377	110	29.2	334	148	44.3	789	335	42.5	816	342	41.9
State of NC	1,131,480	486,934	43.0	1,157,690	513,340	44.3	1,634,410	513,340	31.4	1,688,790	535,120	31.7
Source	1	1	3	2	2	3	1	1	3	2	2	3

1 - US Census Bureau, American FactFinder. 2009 ACS 5-Year Estimates. Table DP04: Selected Housing Characteristics (geographies as listed). http://factfinder2.census.gov.
2 - US Census Bureau, American FactFinder. 2010 ACS 5-Year Estimates. Table DP04: Selected Housing Characteristics (geographies as listed). http://factfinder2.census.gov.
3 – Percentages are calculated.

Affordable Housing

An inescapable observation from Table 33 (cited previously) is the high cost of housing in Dare County.

- In Dare County, the median monthly cost of a mortgage in 2006-2010 was $1,668, a figure 34% higher than the median mortgage cost statewide.
- Renters in Dare County faced a similarly high cost: in 2006-2010 the median monthly rent in the county was $1,010, a figure 41% higher than the median rent in NC as a whole.

According to information from the NC Rural Economic Development Center based on 2006-2010 US Census data estimates, 44% of housing in Dare County was classified as "unaffordable", compared to 40% in Currituck County, 34% in Hyde County, and 32% statewide (10). This data is at least partially reflective of the population living in households that pay more than 30% of the household income for housing costs.

The US Department of Housing and Urban Development (HUD) maintains a system for tracking "affordable" housing for its low-income clients, to whom it provides housing subsidies. HUD services are delivered through Public and Indian Housing Authority (PHA) offices throughout NC.

There is no PHA office located in Dare County to assist residents in accessing HUD services. The nearest offices are in Elizabeth City (Pasquotank County), Edenton (Chowan County),

Hertford (Perquimans County), Plymouth (Washington County), Ahoskie (Hertford County), Williamston (Martin County) and Washington (Beaufort County) (11). At the time this report was developed, there were *no* single-family HUD-subsidized homes available in Dare County (12) and only one affordable apartment (in Manteo, in an ARC facility for developmentally disabled persons) (13).

The US Department of Agriculture (USDA) catalogues information about rental properties available in rural areas. The agency's Multi-Family Housing (MFH) Rental website provides an online guide to Government assisted rental projects. At the time this report was developed, the MFH website listed one qualifying rental property in Dare County: Harbourtowne Apartments in Manteo (14).

Homelessness

Dare County's first homeless shelter initiative, Room in the Inn, opened in Kill Devil Hills in January 2009. This church-based, all-volunteer program was designed to provide temporary food and shelter for homeless people at area churches, primarily during the winter months (15). Host churches provide dinner, overnight accommodations, breakfast, and a bag lunch. Volunteer hosts stay overnight with the guests. The program utilizes a formal intake process off-site from the host church to screen participants; the screening includes a breathalyzer test. The intake worker drives the client to the hosting church and stays for an hour to assure all is well and answer question; the intake worker returns the following morning to return guests to the intake site. Table 35 summarizes Room in the Inn guest figures for the past five seasons. According to the correspondent, guest demographics from 2009 to date have been as follows:

- Racial dispersion: 6 African-Americans (3 men, 1 woman, 2 girls) and 2 Hispanics (both men); the remainder of the guests were white.
- Age range: 18-70 years (most in the 30-40 range).

Table 35. Room in the Inn Guest Census (2009-2012)

Period of Operation	No. of Guests	
	Males	Females
2009 (January-March)	14	3
2010 (January-April)	20	1
2010-2011 (November-April)	35	6
2011-2012 (November-April)	38	7
2012-2013 (November-April)	6	2

Gail Leonard, representative of Room at the Inn. Personal communication to Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health, November 20, 2012

It should be noted that accurate data on the size and nature of the homeless population is elusive at best, especially in a community like Dare County where it is possible to shelter out-of-doors for much of the year. It is likely that Room in the Inn hosted only a fraction of the total homeless population, especially during recent challenging economic times.

HOUSEHOLDS

Table 36 describes the number of persons living in households in the four comparator jurisdictions.

- The average number of persons per household in Dare County—2.36—was lower than the state average, lower than the figure for Currituck, and about the same as the figure for Hyde County.
- The percent of one-person households in Dare County—25.4%—was lower than the comparable figure in Hyde County and the state as a whole, but higher than the figure for Currituck County.
- The percent of one-person households where the resident is age 65 or older in Dare County—34.8%—was slightly higher than the comparable state average, but lower than the figure for Currituck County and much lower than the figure for Hyde County.

Table 36. Household Characteristics (2010 US Census)

Location	Total No. Households[1]	Average Persons per Household	No. One-person Households	% Households One-person	No. One-person Age ≥65 Households	% One-person Households ≥Age 65
Dare County	14,335	2.36	3,643	25.4	1,266	34.8
Currituck County	8,880	2.64	1,748	19.7	660	37.8
Hyde County	2,119	2.35	622	29.4	294	47.3
State of NC	3,745,155	2.48	1,011,348	27.0	341,864	33.8

1 - A household includes all the persons who occupy a housing unit. A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from the outside of the building or through a common hall. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated persons who share living arrangements. (People not living in households are classified as living in group quarters.

Source: US Census Bureau, American FactFinder, 2010 Census, 2010 Demographic Profile Data, Summary File DP-1, Profile of General Population and Housing Characteristics (geographies as noted); http://factfinder2.census.gov.

Single-Parent Families

Data in Table 37 describe some characteristics of single-parent families. In order to interpret the table please note the following definitions provided by the data source:

Family: A family consists of two or more persons, including the householder, who are related by birth, marriage, or adoption, and who live together as one household; all such persons are considered as members of one family. (Persons not in families and not inmates of institutions are classified as unrelated individuals.)

Families with Own Children: Families with their own children under age 18. An "own child" is a never-married child under 18 years who is a son, daughter, stepchild, or adopted child of the householder.

Female Householder Families with Children: Families with a female householder, with no husband present, and with their own children under 18.

Male Householder Families with Children: Families with a male householder, no wife present, and with their own children under 18.

Children Living with Both Parents: Children under 18 who live with both parents; own children of householders living in households that are classified as married-couple family households.

Children Not Living With Both Parents: Children under 18 who do not live with both parents. Includes children under 18 living: in a family with a male householder and no wife present, in a family with a female householder and no husband present, with other relatives, with nonrelatives, in group quarters, or, in some cases, living as householders themselves or as a spouse of a householder.

- In Dare County the percent of children under the age of 18 *not* living with both parents increased by 21% (from 29.7% to 35.9%) between 2000 and 2010. Statewide the increase was 14% (from 35.5% to 40.4%).
- In Dare County the percent of *female* family householders with children under the age of 18 increased 1% (from 18.2% to 18.4%) between 2000 and 2010. Over the same period, the percent of *male* family householders with children under the age of 18 increased 6% (from 7.8% to 8.3%). Statewide between 2000 and 2010 there was a decrease of 4% in the percent of female family householders with children (from 22.8% to 22.0%), and a 5% increase in the percent of male family householders with children (from 6.1% to 6.4%).

Table 37. Single-Parent Families
(2000 and 2010)

Location	2000										
	Total Families	Total Families with Own Children	Female Family Householders with Children <18		Male Family Householders with Children <18		Total Children <18	Children <18 Living with Both Parents		Children <18 Not Living with Both Parents	
	Number	Number	Number	%	Number	%	Number	Number	%	Number	%
Dare County	8,451	3,467	630	18.2	269	7.8	6,411	4,507	70.3	1,904	29.7
Currituck County	5,203	2,316	367	15.8	172	7.4	4,607	3,171	68.8	1,436	31.2
Hyde County	1,434	577	121	21.0	33	5.7	1,186	758	63.9	428	36.1
State of NC	2,158,869	995,648	227,351	22.8	60,791	6.1	1,964,047	1,266,526	64.5	697,521	35.5
Source:	a	a	a	b	a	b	b	a	b	a	b

Location	2010										
	Total Families	Total Families with Own Children	Female Family Householders with Children <18		Male Family Householders with Children <18		Total Children <18	Children <18 Living with Both Parents		Children <18 Not Living with Both Parents	
	Number	Number	Number	%	Number	%	Number	Number	%	Number	%
Dare County	9,397	4,183	771	18.4	346	8.3	6,792	4,351	64.1	2,441	35.9
Currituck County	6,630	3,140	490	15.6	233	7.4	5,591	3,720	66.5	1,871	33.5
Hyde County	1,345	635	130	20.5	37	5.8	1,076	601	55.9	475	44.1
State of NC	2,499,174	1,331,533	292,504	22.0	85,199	6.4	2,281,635	1,359,045	59.6	922,590	40.4
Source:	a	a	a	b	a	b	b	a	b	a	b

a - Log Into North Carolina (LINC) Database, Topic Group Population and Housing (Data Items 6044, 6046, 6048, 6049, 6050, 6051), 2000 and 2010; http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.
b - Figures are calculated

Grandparents Responsible for Minor Children

Table 38 presents data on grandparents with responsibility for minor children. Data on grandparents as primary caregivers were derived from US Census Bureau American Community Survey questions. Data were collected on whether a grandchild lives with a grandparent in the household, whether the grandparent has responsibility for the basic needs of the grandchild, and the duration of that responsibility. Responsibility of basic needs determines if the grandparent is financially responsible for food, shelter, clothing, day care, etc., for any or all grandchildren living in the household. Percent is derived with the number of grandparents responsible for grandchildren (under 18 years) as the numerator and number of grandparents living with own grandchildren (under 18 years) as the denominator.

- In Dare County for the period cited, an estimated 59.3% of grandparents living with their minor grandchildren were also responsible for their care.
- The estimated percentage of grandparents living with and responsible for their minor grandchildren was higher in each of the comparator counties than the comparable percentage statewide (50.6%)

Table 38. Grandparents with Responsibility for Minor Children (Five-Year Estimate, 2006-2010)

Location	# Grandparents Living with Own Grandchildren (<18 Years)	Grandparent Responsible for Grandchildren (under 18 years)*	
		Est. #	%
Dare County	459	272	59.3
Currituck County	471	284	60.3
Hyde County	93	60	64.5
State of NC	187,626	95,027	50.6

Source: US Census Bureau, American FactFinder, 2006-2010 American Community Survey 5-Year Estimates. Selected Social Characteristics in the United States (DP02); http://factfinder2.census.gov.

CHILD CARE

Child Care Facilities

The NC Division of Child Development is the state agency charged with overseeing the child care industry in the state, including the regulation of child day care programs. The Division licenses child care facilities that keep more than two unrelated children for more than four hours a day. In NC, regulated child day care facilities are divided into two categories—Child Care Centers and Family Child Care Homes—with the categories delineated on the basis of enrollment. A *child care center* is a larger program providing care for three or more children, but not in a residential setting. The number of children in care is based upon the size of individual classrooms and having sufficient staff, equipment and materials. A *family child care home* is a smaller program offered in the provider's residence where three to five preschool children are in care. A family child care home may also provide care for three school-age children (16).

In 1999, the NC Division of Child Development began issuing "star rated" licenses to all eligible Child Care Centers and Family Child Care Homes. NC's Star Rated License System gave from one to five stars to child care programs based on how well they were doing in providing quality child care. A rating of one star meant that a child care program met the state's minimum licensing standards for child care. Programs that chose to voluntarily meet higher standards could apply for a two to five star license. (Note: Religious-sponsored child care programs could opt to continue to operate with a notice of compliance and not receive a star rating.)

Three areas of child care provider performance were assessed in the star system: program standards, staff education, and compliance history. Each area had a range of one through five points. The star rating was based on the total points earned for all three areas.

Then, in 2005, the way facilities were evaluated was changed in order to give parents better information about a program's quality. The new rules made a 75% "compliance history" a minimum standard for any licensed facility. Because it is now a minimum requirement, all programs earn their star rating based only on the two components that give parents the best indication of quality: staff education and program standards. In addition, programs having a two component license can earn a "quality point" for enhanced standards in staff education and program standards.

- Of the 18 licensed child care centers in Dare County at the time of the report, five (28%) were five-star facilities and 5 (28%) were four-star facilities.
- Of the 19 licensed family child care homes in Dare County, one (5%) was a five-star facility and seven (37%) were four-star facilities.

Table 39. NC-Licensed Child Care Facilities in Dare County (November, 2012)

Type of Facility	Number
Child Care Centers (18)	
Five-star	5
Four-star	5
Three-star	2
Two-star	0
One-star	0
GS 110-106 (Church-affiliated)	1
Temporary	5
Family Child Care Homes (19)	
Five-star	1
Four-star	7
Three-star	5
Two-star	4
One-star	2

Source: NC Department of Health and Human Services, Division of Child Development, Child Care Facility Search Site; http://ncchildcaresearch.dhhs.state.nc.us/search.asp

Table 40 presents total enrollment summaries for child care facilities.

Table 40. Children Enrolled in NC-Regulated Child Care (2008-2011)

Location	No. Children (0-5) Enrolled in Child Care Centers				No. Children (0-12) Enrolled in Family Care Homes			
	2008	2009	2010	2011	2008	2009	2010	2011
Dare County	464	383	390	412	137	115	113	113
Currituck County	309	310	273	332	58	47	45	39
Hyde County	62	77	91	120	1	3	3	4
State of NC	172,717	168,953	169,852	194,632	15,354	14,936	14,384	13,321

Source: Annie E. Casey Foundation, Kids Count Data Center, Community Level Data, North Carolina Indicators; http://datacenter.kidscount.org/data/bystate/StateLanding.aspx?state=NC.

The WorkFirst Employment Program discussed previously includes child care subsidies for families that qualify. Table 41 presents the number of children in each jurisdiction that received WorkFirst Working Connections Child Care Subsidies.

- The number of children in Dare County that received a WorkFirst child care subsidy remained relatively stable over the period cited compared to the other jurisdictions where the numbers of subsidized children fell significantly over the period cited.

Table 41. Number of Children Receiving WorkFirst Child Care Subsidy (2005-2010)

Location	Number of Children Receiving WorkFirst Child Care Subsidy					
	2005	2006	2007	2008	2009	2010
Dare County	72	73	68	78	74	78
Currituck County (2)	70	60	51	52	44	35
Hyde County	55	38	43	37	28	25
State of NC	53,872	46,616	41,075	43,124	42,944	39,341

Note: the number of children is based on the number of children under 18 receiving Work First benefits for the month of December for a particular year.
Source: Annie E. Casey Foundation, Kids Count Data Center, Community Level Data, North Carolina Indicators;
http://datacenter.kidscount.org/data/bystate/chooseindicator.aspx?state=NC.

Table 42 presents data from the Dare County Department of Social Services summarizing average monthly participation in several categories of child care-related services. A major observation that stands out amid this data is the large and growing number of people on the waiting list for day care services.

Table 42. Dare County Department of Social Services Day Care Services Utilization (FY2003-04 through FY2011-12)

Service/Activity	Average Monthly Number of Participants								
	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Day Care									
Children Served - Non-FSA	267	261	293	361	341	310	311	305	314
Smart Start Day Care	23	27	34	50	30	23	23	20	22
WorkFirst Family Assistance Day Care	11	12	6	6	7	11	15	21	21
Developmental Needs Day Care	4	7	13	12	11	7	6	8	13
Waiting List	140	94	17	2	48	79	167	227	342

Source: Dare County Department of Social Services Statistical Reports, FY2011, FY2012. Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health. Personal communication to Sheila Pfaender, Public Health Consultant, November 15, 2012.

EDUCATION

Higher Education

There are no four-year colleges in Dare County. There are two universities in NC within a significant commuting distance of Dare County and the rest of the Outer Banks: Elizabeth City State University in Elizabeth City (Pasquotank County) and East Carolina University in Greenville (Pitt County). In addition, there are several colleges and universities in the Norfolk/Hampton Roads area of VA. There is, however, a branch of a regional community college with a physical presence in Dare County.

The College of The Albemarle (COA) is a community college that serves the Outer Banks with locations throughout northeastern NC including a campus in Manteo, one in Elizabeth City, and a third in Edenton. A comprehensive community college, COA offers two-year degrees in college transfer and career programs, basic skills programs, continuing education classes for personal enrichment as well as credit, customized business and industry training, and cultural enrichment opportunities including an annual summer program called College for Kids. The COA is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award associate degrees.

College of The Albemarle's Dare County Campus opened in 1984. COA offered classes in Dare County since the 1960's in various borrowed facilities, but population growth and student demand justified the opening of a full-time facility. A student may receive an Associate Degree entirely at the Dare Campus.

The Dare County COA program is located at two sites. COA's main Dare County Campus, the Russell Twilford Campus, is located in Manteo. It features the Diane Baum St. Clair Technology Education Center, a high-tech facility that houses computer labs, classroom and office space, and a 62-seat Information Highway Room. A second building at the Manteo location houses the campus library, student lounge, science labs, multimedia classrooms and administrative offices. The second COA site in Dare County, called the Roanoke Island Campus, houses administrative offices for Corporate and Continuing Education as well as the Small Business Center, an electronics lab, a computer lab, Certified Nursing Assistant lab, and multimedia classrooms. Adjacent buildings house the Basic Skills/GED program and a Professional Arts Building containing specialized labs for; ceramics, jewelry making, HVAC, Electrical, Welding, and Construction as well as general purpose classrooms and computer labs (17).

Primary and Secondary Education

Schools and Enrollment

Tables 43 through 52 focus on data pertaining to primary and secondary (mostly public) schools in Dare County (as well as its comparator counties and the state of NC where appropriate).

- There are 11 public schools in the Dare County school district: 7 elementary schools, 2 high schools, 1 combined school, and 1 alternative school. There also are two private schools in the county (Table 43).

Table 43. Number of Schools
(SY2011-12)

Location	Public					Private			
	Elementary (PK-8)	Middle (4-8)	Secondary (9-12)	Combined	Other	K-12	K-9/8	9-12	Other
Dare County Schools	5	2	2	1	1 Alternative School (7-12)	1	0	0	1
Currituck County Schools	6	2	2	0		0	0	0	1
Hyde County Schools	1	1	1	2		0	0	0	0
Source:	a	a	a	a	a	b	b	b	b

a - NC Department of Public Instruction, NC School Report Cards, Search by School District.
http://www.ncreportcards.org/src/main.jsp?pList=1&pYear=2011-2012.
b - Private School Review, North Carolina Private Schools, Search by Zip Code;
http://www.privateschoolreview.com/find_schools.php.

- First Flight High School in Kill Devil Hills was the largest school in the district, with a SY2011-12 enrollment of 773. Manteo Elementary School was the second largest school in the district, with a SY2011-12 enrollment of 680. (Table 44).

Table 44. Dare County Schools
(November, 2012)

School	Location	School Type/Calendar	Grade Range	Enrollment SY2011-12
Cape Hatteras Elementary	Buxton	Regular School, Traditional Calender	PK-5	268
Cape Hatteras Secondary	Buxton	Regular School, Traditional Calender	6-12	295
Dare County Alternative	Manteo	Alternative Education, Traditional Calender	7-12	32
First Flight Elementary	Kill Devil Hills	Regular School, Traditional Calender	PK-5	352
First Flight High School	Kill Devil Hills	Regular School, Traditional Calender	9-12	773
First Flight Middle	Kill Devil Hills	Regular School, Traditional Calender	6-8	638
Kitty Hawk Elementary	Kitty Hawk	Regular School, Traditional Calender	K-5	442
Manteo Elementary	Manteo	Regular School, Traditional Calender	PK-5	680
Manteo High	Manteo	Regular School, Traditional Calender	9-12	447
Manteo Middle	Manteo	Regular School, Traditional Calender	6-8	357
Nags Head Elementary	Nags Head	Regular School, Traditional Calender	PK-5	545

Source: NC Department of Public Instruction, Data and Statistics, Education Data, NC School Report Cards, School Year 2009-10;
http://www.ncschoolreportcards.org/src.

- K-12 public school enrollment in Dare County declined every year between SY2005-06 and SY2009-10 before rebounding to an eight-year high in SY2011-12; a similar pattern occurred in Currituck County, although there the most recent enrollment figure was not the highest in the period cited (Table 45).
- School enrollment figures statewide did not display a clear pattern during the period cited (Table 45).

Table 45. K-12 Public School Enrollment
(SY2004-05 through SY2011-12)

Location	Number of Students							
	SY2004-05	SY2005-06	SY2006-07	SY2007-08	SY2008-09	SY2009-10	SY2010-11	SY2011-12
Dare County Schools	5,078	5,145	5,059	4,954	4,945	4,930	4,989	5,188
Currituck County Schools	4,100	4,269	4,254	4,207	4,169	4,096	4,067	4,167
Hyde County Schools	680	667	679	656	641	604	585	610
State of NC	1,395,810	1,428,912	1,452,420	1,458,156	1,456,558	1,446,650	1,450,435	n/a
	a	a	a	a	a	a	a	b

Note: this data excludes charter school enrollment.
a - NC Department of Public Instruction, Data and Statistics, Education Data: NC Statistical Profile. NC Statistical Profile Online: Local Education Agencies Information, Pupil Accounting. http://apps.schools.nc.gov/pls/apex/f?p=1:1:497147721913602.
b - NC Department of Public Instruction, Data and Statistics, Education Data: Attendance and Membership Data. Principals Monthly Report. Month 1 for each school year, then look for the appropriate LEA by number.
http://www.ncpublicschools.org/fbs/accounting/data/.

Educational Attainment

Table 46 presents data on several measures of educational attainment.

- As of a 2006-2010 US Census Bureau estimate, Dare County had higher percentages of both high school graduates and residents with a bachelor's degree or higher than Currituck County, Hyde County, or NC as a whole. The percentage of high school graduates in Dare County (91.8%) was 9.8% higher than in NC overall (83.6%). The percentage of the population with a bachelor's degree or higher in Dare County (32.1%) was 22.9% greater than in NC overall (26.1%).
- According to SY2011-12 End of Grade (EOG) Test results, higher percentages of third graders in Dare County public schools demonstrated grade-appropriate proficiency in both reading and math than students in Hyde County or statewide. (Currituck County had the highest percentages of proficient third graders in both reading and math.) A higher percentage of eighth graders in Dare County public schools performed at or above grade level in reading than students in the other three jurisdictions. Dare County eighth graders also surpassed students statewide in the EOG math test, but comparable performances among eighth graders in both Currituck and Hyde counties were somewhat better.
- In SY2011-12 the average total SAT score for students in the Dare County schools (1011) was above the average total SAT score for students in the other jurisdictions. Of significance may be the fact that a significantly higher proportion of Dare County students (87%) participate in the SAT exam than in Currituck County (69%), Hyde County (52%), or the state as a whole (68%).

Table 46. Educational Attainment

Location	% Population High School Graduate or Higher	% Population Bachelor's Degree or Higher	% 3rd Graders At or Above Grade Level, ABCs EOG Reading Test	% 3rd Graders At or Above Grade Level, ABCs EOG Math Test	% 8th Graders At or Above Grade Level, ABCs EOG Reading Test	% 8th Graders At or Above Grade Level, ABCs EOG Math Test	SAT Participation Rate	Average Total SAT Scores
	2006-2010	2006-2010	SY2011-12	SY2011-12	SY2011-12	SY2011-12	SY2011-12	SY2011-12
Dare County	91.8	32.1	74.9	86.4	87.1	93.2	87%	1011
Currituck County	84.7	17.2	76.5	90.7	82.7	>95	69%	990
Hyde County	76.7	11.7	72.5	70.0	77.8	>95	52%	953
State of NC	83.6	26.1	68.8	82.8	71.1	85.2	68%	997
Source:	a	a	b	b	b	b	b	b

a - US Census Bureau, American Fact Finder, American Community Survey, 2006-2010 American Community Survey (ACS) 5-Year Estimates, Data Profiles, Detailed Tables, Selected Social Characteristics, Educational Attainment, by State or County; http://factfinder.census.gov.
b - NC Department of Public Instruction, Data and Statistics, Education Data, NC School Report Cards. District Profile. http://www.ncreportcards.org/src/.

Educational Expenditures

Table 47 presents data on local, state and federal expenditures on education in the four jurisdictions being compared.

- In the 2011-12 school year the total per pupil expenditure (the sum of Federal, state and local investments) in Dare County ($10,935) was 29% higher than the comparable figure for Currituck County ($8,509), and 30% higher than the average for the state as a whole ($8,417). Total expenditures in Hyde County ($18,344) were the highest, more than twice the total per pupil expenditures in either Currituck County or the state of NC.
- In all jurisdictions, the state contributed the highest proportion to the total per-pupil expenditure: 51% in Dare County, 63% in Currituck County, 73% in Hyde County, and an average of 64% statewide. The federal contribution was the smallest proportion of the total in all four jurisdictions.

Table 47. Educational Expenditures (SY2011-12)

Location	Per Pupil Expenditure			
	Local	State	Federal	Total
Dare County	$4,621	$5,603	$711	$10,935
Currituck County	$2,353	$5,331	$825	$8,509
Hyde County	$2,963	$13,470	$1,911	$18,344
State of NC	$1,904	$5,355	$1,158	$8,417

Source: NC Department of Public Instruction, Data and Statistics, Education Data, NC School Report Cards. District Profile. http://www.ncreportcards.org/src/.

High School Drop-Out Rate

Table 48 presents data on the high school (grades 9-12) drop-out rate. According to the NC Department of Public Instruction, a "drop-out" is any student who leaves school for any reason before graduation or completion of a program of studies without transferring to another elementary or secondary school. For reporting purposes, a drop-out is a student who was

enrolled at some time during the previous school year, but who was not enrolled (and who does not meet reporting exclusions) on day 20 of the current school year. The data below is specific to high school students.

- The high school drop-out rate in Dare County fluctuated over the period cited in the table, but was near or below 2.00 for every school year between SY2006-07 and SY2010-11. The most current drop-out rate, 2.66, was the highest in six years.
- Throughout most of the period cited the drop-out rate in Dare County was the lowest among the four jurisdictions.

Table 48. High School Drop-Out Rate
(SY2004-05 through SY2011-12)

Location	Drop-Out Rate							
	SY2004-05	SY2005-06	SY2006-07	SY2007-08	SY2008-09	SY2009-10	SY2010-11	SY2011-12
Dare County Schools	2.81	3.28	2.07	1.68	2.03	1.96	1.77	2.66
Currituck County Schools	5.84	4.71	4.04	4.79	4.19	3.16	3.73	n/a
Hyde County Schools	0.50	3.16	5.19	3.69	2.97	6.95	1.76	n/a
State of NC	4.74	5.04	5.27	4.97	4.27	3.75	3.43	n/a
Source:	a	a	a	a	a	a	a	b

a - NC Department of Public Instruction, Research and Evaluation, Dropout Data and Collection Process, Annual Dropout Reports; http://www.ncpublicschools.org/research/dropout/reports/.
b - Nancy Griffin, Director of Secondary Instruction, Dare County Schools. Personal communication to Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health, November 26, 2012.

Graduation Rate

The four-year cohort graduation rates for subpopulations of 9th graders entering high school in SY2008-09 and graduating in SY2011-12 are presented for all four jurisdictions in Table 49. The overall graduation rate (88.9%), the female graduation rate (91.7%), and the graduation rate among economically disadvantaged students (80.3%) all were highest in Dare County Schools. The graduation rate among males was highest in Currituck County Schools (88.8%) and next highest in Dare County Schools (86.3%).

Table 49. Four Year Cohort Graduation Rate
(9th Graders Entering SY2008-09 and Graduating SY2011-12 or Earlier)

School System	All Students			Male			Female			Economically Disadvantaged		
	Total Students	# Students Graduating	% Students Graduating	Total Students	# Students Graduating	% Students Graduating	Total Students	# Students Graduating	% Students Graduating	Total Students	# Students Graduating	% Students Graduating
Dare County Schools	351	312	88.9	182	157	86.3	169	155	91.7	122	98	80.3
Currituck County Schools	207	181	87.4	116	106	88.8	91	78	85.7	59	46	78.0
Hyde County Schools	16	9	56.2	7	2	28.6	9	7	77.8	6	2	33.3
State of NC	110,886	89,187	80.4	56,675	43,348	76.5	54,211	45,839	84.6	48,553	36,268	74.7

Note: subgroup information is based on data collected when a student is last seen in the cohort
Source: Public Schools of North Carolina, Cohort Graduation Rate. 4-Year Cohort Graduation Rate Report, 2008-09 Entering 9th Graders Graduating in 2011-12 or Earlier. http://www.ncpublicschools.org/accountability/reporting/cohortgradrate.

School Crime and Violence

Along with test scores and dropout rates, schools now also track and report acts of crime and violence that occur on school property.

The NC State Board of Education has defined 17 criminal acts that are to be monitored and reported, ten of which are considered dangerous and violent:

- Homicide
- Assault resulting in serious bodily injury
- Assault involving the use of a weapon
- Rape
- Sexual offense
- Sexual assault
- Kidnapping
- Robbery with a dangerous weapon
- Robbery without a dangerous weapon
- Taking indecent liberties with a minor

The other seven criminal acts are:

- Assault on school personnel
- Bomb threat
- Burning of a school building
- Possession of alcoholic beverage
- Possession of controlled substance in violation of law
- Possession of a firearm or powerful explosive
- Possession of a weapon

Table 50 summarizes crime and violence catalogued by the NC Department of Public Instruction for schools in Dare County, Currituck County, Hyde County, and in the state overall.

- The number and rate of acts of school crime and violence in Dare County Schools and the other two county school systems fluctuated dramatically over the period cited. Only the statewide average showed any stability, likely due to the large size of the sample. The state rate increased in the two most recent school years cited.

Table 50. School Crime and Violence Trend (SY2004-05 through SY2010-11)

Location	SY2004-05		SY2005-06		SY2006-07		SY2007-08		SY2008-09		SY2009-10		SY2010-11	
	No. Acts[1]	Rate[2]	No. Acts	Rate	No. Acts	Rate	No. Acts	Rate	No. Acts	Rate	No. Acts	Rate	No. Acts	Rate
Dare County Schools	59	12.3	29	6.0	25	5.2	21	4.4	43	9.0	28	5.9	40	8.3
Currituck County Schools	10	2.6	25	6.3	22	5.4	32	8.0	59	14.9	31	8.0	39	10.1
Hyde County Schools	6	9.4	2	3.2	5	7.8	1	1.6	3	4.8	2	3.5	6	10.4
State of NC	10,107	7.5	10,959	7.9	11,013	7.8	11,276	7.9	11,116	7.6	11,608	8.0	11,657	8.0
Source	a	a	a	a	a	a	b	b	b	b	b	b	b	b

[1] For list of reportable acts see accompanying text
[2] Rate is number of acts per 1,000 students
a - NC Department of Public Instruction, Research and Evaluation, Discipline Data, Annual Reports, Annual Reports of School Crime and Violence (years as noted); http://www.ncpublicschools.org/research/discipline/reports/#consolidated.
b - NC Department of Public Instruction, Research and Evaluation, Discipline Data, Consolidated Data Reports. Crime & Violence Table C-5. http://www.ncpublicschools.org/research/discipline/reports/#consolidated.

Table 51 displays detail on the acts of crime and violence committed in Dare County Schools in SY2010-11 and SY2011-12.

- According to this data, the most common offense by far in Dare County Schools was possession of a controlled substance, accounting for 27 reportable acts in SY2010-11 and 13 reportable acts in SY2011-12.
- The second most common offense was possession of a weapon, accounting for 8 reportable acts in SY2010-11 and 6 in SY2011-12.

Table 51. School Crime and Violence in Dare County Schools, by Type of Offense (SY2010-11 and SY2011-12)

Type of Offense	No. Reportable Acts	
	SY2010-11	SY2011-12
Assault resulting in serious personal injury	0	0
Assault involving use of a weapon	0	0
Assault on school personnel	1	1
Bomb threat	2	2
Burning a school building	0	0
Homicide	0	0
Kidnapping	0	0
Possession of alcohol	2	4
Possession of firearm	0	0
Possession of controlled substance	27	13
Possession of weapon	8	6
Rape	0	0
Robbery with dangerous weapon	0	0
Sexual assault	0	0
Sexual offense	0	0
Indecent liberties with a minor	0	0
TOTAL	40	26

Source: Nancy Griffin, Director of Secondary Education, Dare County Schools. Personal Communication to Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health, November 26, 2012.

Table 52 presents data summarizing disciplinary activity in the public schools in Dare County, Currituck County, Hyde County, and NC as a whole. Since the data represent counts of activity of school systems of different sizes, direct comparisons are problematic.

- In Dare County Schools the most common disciplinary activity was the short-term suspension. The school system employed a long-term suspension only once during the period cited, and did not apply any expulsions.
- In Currituck County Schools, a system with approximately 1,000 fewer students than Dare County, there were more short-term suspensions than in Dare County in all periods for which there are common measures, and more long-term suspensions as well.

Table 52. School Disciplinary Activity
(SY2008-09 through SY2011-12)

School System	SY2008-09			SY2009-10			SY2010-11			SY2011-12		
	No. Short-Term Suspensions	No. Long-Term Suspensions	No. Expulsions	No. Short-Term Suspensions	No. Long-Term Suspensions	No. Expulsions	No. Short-Term Suspensions	No. Long-Term Suspensions	No. Expulsions	No. Short-Term Suspensions	No. Long-Term Suspensions	No. Expulsions
Dare County Schools	283	1	0	329	0	0	361	0	0	346	0	0
Currituck County Schools	585	17	0	571	0	0	595	3	0	n/a	n/a	n/a
Hyde County Schools	100	0	0	113	0	0	36	0	0	n/a	n/a	n/a
State of NC	293,453	3,592	116	277,206	3,368	88	262,858	2,586	59	n/a	n/a	n/a
Source:	a	a	a	a	a	a	a	a	a	b	b	b

[1] A short-term suspension is up to 10 days.

[2] A long term suspension is 11 or more days.

a - NC Department of Public Instruction, Research and Evaluation, Discipline Data, Consolidated Data Reports (years as noted); http://www.ncpublicschools.org/research/discipline/reports/#consolidated.

b - Nancy Griffin, Director Secondary Education, Dare County Schools. Personal communication to Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health, November 26, 2012

CRIME AND SAFETY

Crime Rates

All crime statistics reported below were obtained from the NC Department of Justice, State Bureau of Investigation unless otherwise noted.

Index crime is composed of *violent crime* and *property crime*. Violent crime includes murder, forcible rape, robbery, and aggravated assault; property crime includes burglary, larceny, arson, and motor vehicle theft.

Table 53 presents the rates for index crime, violent crime, and property crime for the period from 2007 through 2011 for Dare County, Currituck County and the state of NC. (Comparable data for Hyde County was missing at the source.)

- The overall index crime rate in Dare County fluctuated between 2007 and 2011 but was higher than the index crime rate for either Currituck County or the state as a whole in every year cited except 2007. For the period 2008 through 2011 the index crime rate in Dare County was two or more times higher than the rate in Currituck County.
- The largest component of Dare County index crime was property crime, rates for which also were consistently higher than comparable rates in either Currituck County or NC.
- Throughout the period cited the violent crime rate in Dare County was higher than the comparable rate in Currituck County and lower than the violent crime rate for the state.

Table 53. Crime Rates, Crimes per 100,000 Population (2007-2011)

Location	Crimes per 100,000 Population														
	2007			2008			2009			2010			2011		
	Index Crime	Violent Crime	Property Crime	Index Crime	Violent Crime	Property Crime	Index Crime	Violent Crime	Property Crime	Index Crime	Violent Crime	Property Crime	Index Crime	Violent Crime	Property Crime
Dare County	4,686.5	233.6	4,452.9	6,191.6	335.6	5,856.1	6,561.6	318.1	6,243.6	5,923.4	320.2	5,603.3	6,778.6	324.6	6,454.0
Currituck County	2,453.4	187.1	2,266.3	2,351.4	185.4	2,165.9	2,894.0	201.9	2,692.1	2,876.3	201.6	2,674.8	3,404.2	225.0	3,179.3
Hyde County	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
State of NC	4,658.9	480.2	4,178.7	4,554.6	474.2	4,080.4	4,178.4	417.2	3,761.2	3,955.7	374.4	3,581.4	3,919.8	354.6	3,565.2

* - Indicates incomplete or missing data.
Source: NC Department of Justice, State Bureau of Investigation, Crime, View Crime Statistics, Crime Statistics (by Year); http://ncdoj.gov/Crime/View-Crime-Statistics.aspx.

Table 54 presents detail on index crime committed in Dare County from 2007-2011. Note the following definitions:

Robbery: larceny by the threat of violence;
Aggravated assault: a physical attack on another person which results in serious bodily harm and/or is made with a deadly or dangerous weapon such as a gun, knife, sword, ax or blunt instrument;
Burglary: unlawful breaking and entering into the premises of another with the intent to commit a felony;
Larceny: the theft of property without use of force; and
Motor vehicle theft: the theft or attempted theft of a motor vehicle

- The predominant violent crime reported in every year cited was aggravated assault.
- The predominant property crime reported in every year cited was larceny.

Table 54. Types of Crimes Reported in Dare County (2007-2011)

Type of Crime	Number of Crimes				
	2007	2008	2009	2010	2011
Violent Crime					
Murder	1	0	0	2	1
Rape	9	11	7	18	14
Robbery	8	9	10	8	13
Aggravated Assault	65	95	91	82	82
Property Crime					
Burglary	415	590	683	732	785
Larceny	1,084	1,335	1,407	1,152	1,378
Motor VehicleTheft	46	80	38	41	24
Total Index Crimes	1,628	2,120	2,236	2,035	2,297

Source: NC State Bureau of Investigation, Crime in North Carolina, North Carolina Crime Statistics, Crime Statistics in Detailed Reports (By Year), 2011 Annual Reports, County Offenses Ten Year Trend, http://crimereporting.ncdoj.gov/ ,

Other Criminal Activities

- As of January 2, 2013 there were 41 registered sex offenders in Dare County, compared to 34 in Currituck County and nine in Hyde County (Table 55).
- According to the NC Governor's Crime Commission, in 2012 there was one gang in Dare County, and none in either Currituck County or Hyde County. The same year, the Crime Commission sited a total of 963 gangs statewide (Table 55)
- According to the NC State Bureau of Investigation, there was only one methamphetamine drug lab bust in Dare County during the period from 2005 through 2011. In the same period there were no meth lab busts in Currituck County and two in Hyde County. Over the same period, 1,664 meth lab busts were recorded statewide (Table 55).

Table 55. Other Criminal Activity

Location	No. Registered Sex Offenders (1/2/13)	No. Gangs	No. Methamphetamine Lab Busts						
		2012	2005	2006	2007	2008	2009	2010	2011
Dare County	41	1	0	0	0	0	0	1	0
Currituck County	34	0	0	0	0	0	0	0	0
Hyde County	9	0	0	2	0	0	0	0	0
State of NC	14,028	963	328	197	157	197	206	235	344
Source:	a	b	c	c	c	c	c	c	c

a - NC Department of Justice, Sex Offender Statistics, Offender Statistics; http://sexoffender.ncdoj.gov/stats.aspx.
b - NC Department of Crime Control and Public Safety, Governor's Crime Commission, Publications. Gangs in North Carolina: An Analysis of GangNET Data, March 2012, Table 4. Gang Numbers and Node by County; http://www.ncgccd.org/pdfs/pubs/gang%20crime/2012GangReport.pdf.
c - NC Department of Justice, State Bureau of Investigation, Crime, Enforce Drug Laws, Meth Focus, Meth Lab Busts; http://www.ncdoj.gov/getdoc/b1f6f30e-df89-4679-9889-53a3f185c849/Meth-Lab-Busts.aspx.

Juvenile Crime

The following definitions will be useful in understanding the subsequent data and discussion.

Complaint: 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.
Undisciplined: Describes a juvenile between the ages of six and 16, who is unlawfully absent from school, or regularly disobedient and beyond disciplinary control of parent/guardian, or is regularly found where it is unlawful for juveniles to be, or has run away from home for more than 24 hours. It also includes 16-17 year olds who have done any of the above except being absent from school.
Delinquent: Describes a juvenile between the ages of six and not yet 16 who commits an offense that would be a crime under state or local law if committed by an adult.
Diversion: If a complaint is not approved, it may be diverted to a community resource or placed on a diversion contract or plan that lays out stipulations for the juvenile (like community service) to keep the juvenile out of court.
Non-divertible: Non-divertible offenses include offenses like: murder, rape, sexual offense, arson, first degree burglary, crime against nature, willful infliction of serious bodily harm, assault with deadly weapon, etc.
Transfer to Superior Court: A juvenile who is 13, 14 or 15 who is alleged to have committed a felony may be transferred to Superior Court and tried and sentenced as an adult. If a juvenile is over 13 and charged with first degree murder, the judge must transfer the case to Superior Court if probable cause is found.
Rate: The number per 1,000 persons that are aged 6 to 17 in the county.

Table 56 presents a summary of juvenile justice complaints and outcomes for 2010 and 2011.

- The number of complaints for undisciplined youth in Dare County decreased 63% between 2010 and 2011, from 40 to 15; the rate of undisciplined youth decreased 65%, from 9.64 to 3.36.
- The number of complaints of delinquent youth in Dare County increased 43% between 2010 and 2011, from 130 to 186; the rate of delinquent youth increased 29%, from 38.71 to 50.12.
- The rate of complaints for undisciplined and delinquent youth in Dare County exceeded the comparable rates for Currituck County and NC as a whole in both 2010 and 2011. While rates were highest in Hyde County, those rates were based on very small numbers of complaints and likely were unstable.
- Despite the high rates of complaints against youth in Dare County, few were sent to secure detention, and none were sent to youth development centers or transferred to Superior Court.

Table 56. Juvenile Justice Complaints and Outcomes (2010 and 2011)

Location	Complaints								Outcomes					
	No. Undisciplined		No. Delinquent		Rate Undisciplined (Complaints per 1,000 Ages 6 to 17)		Rate Delinquent (Complaints per 1,000 Age 6 to 15)		No. Sent to Secure Detention		No. Sent to Youth Development Center		No. Transferred to Superior Court	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Dare County	40	15	130	186	9.64	3.36	38.71	50.12	7	8	0	0	0	0
Currituck County	6	11	133	106	1.68	2.84	45.97	33.57	12	9	0	0	0	0
Hyde County	3	5	2	0	4.48	7.23	3.77	0	1	1	0	0	0	0
State of NC	4,285	3,603	33,299	33,556	2.94	2.34	27.55	26.08	4,297	3,558	357	307	30	28

Source: NC Department of Juvenile Justice and Delinquency Prevention, Statistics and Legislative Reports, County Databooks (Search by Year); http://www.ncdjjdp.org/statistics/databook.html.

Juvenile Crime Risk

Table 57 (following page) displays local assessment outcome data for juvenile crime offenders in Dare and Hyde Counties for FY2011-12. Following is a summary of the assessment results for the youth assessed in Dare County:

- Only 6.7% were assessed as “high risk”; 18.7% were assessed as “medium risk”.
- The vast majority—97.3%—were 12 or older at their first complaint.
- Approximately one-third (37.3%) had been referred to court previously.
- Substance abuse was implicated in 45.3%; 16.0% of assessment subjects were deemed in need of substance abuse treatment.
- Parental supervision was deemed to be some sort of problem in 16.0% of the offenders.
- The vast majority—96.8%—were deemed to be functioning academically at grade level.
- Only 17.0% presented “serious problems” at school; another 27.7% presented “moderate problems”.
- Domestic “discord” or “violence” in the home setting was noted for 29.7% of offenders.
- Parental skills were deemed “inadequate” in 2.1% and “marginal” in 40.4% of cases.
- A history of family criminality was noted in 25.5% of cases.
- Family substance abuse was noted in 24.5% of cases.

Table 57. Juvenile Crime Risk Assessment Outcomes (FY2011-12)

Location	No. Youths Assessed	Percentage																		
		Overall Risk			Age at First Complaint		Referrals to Court				Peer Group Associations				Substance Abuse			Parental Supervision		
		Low	Medium	High	≥12	<12	Current Only	1 Prior	2 Prior	4+ Prior	Good Peer Group	Rejected by Peers	Negative Peers	Gang Association	None Known	Some Abuse	Need Treatment	Willing/ Able	Willing/ Unable	Unwilling/ Unable
Dare County	75	74.7	18.7	6.7	97.3	2.7	62.7	20.0	17.3	0.0	54.7	34.7	10.7	0.0	54.7	29.3	16.0	84.0	13.3	2.7
Hyde County	1	0.0	100.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0
State of NC		69.4	23.0	7.6	85.7	14.3	62.5	18.1	12.2	7.2	39.4	39.1	16.2	5.3	71.8	15.7	12.5	79.6	19.0	1.4

Location	No. Youths Assessed	Percentage																		
		Overall Needs			Academic Function		School Behavior				Domestic Discord			Parenting Skills			Family Criminality		Family Sub. Abuse	
		Low	Medium	High	At Grade Level	Below Grade Level	No Problems	Minor Problems	Moderate Problems	Serioius Problems	Supportive Home	Domestic Discord	Domestic Violence	Adequate	Marginal	Inadequate	No Family History	Has Family History	Has Family Court/Gang	No Known Use	Family Uses Drugs/Alc
Dare County	94	66.0	29.8	4.3	96.8	3.2	47.9	7.4	27.7	17.0	70.2	22.3	7.4	57.4	40.4	2.1	74.5	19.1	6.4	75.5	24.5
Hyde County	1	0.0	100.0	0.0	100.0	0.0	0.0	50.0	50.0	0.0	50.0	50.0	0.0	0.0	100.0	0.0	0.0	50.0	50.0	50.0	50.0
State of NC		64.7	31.0	4.2	90.6	9.4	23.4	12.4	23.8	40.4	76.5	18.1	5.4	45.0	51.2	3.8	63.5	28.8	7.7	89.9	10.1

Source: Data from the Dare County Juvenile Crime Prevention Commission. Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health. Personal communication to Sheila Pfaender, Public Health Consultant, November 16, 2012

Sexual Assault

Table 58 summarizes data from the Domestic Violence Commission of the NC Council for Women on the number of individuals who filed complaints of sexual assault in Dare County, Currituck County, Hyde County and the state of NC from FY2004-05 through FY2010-11.

- Since the figures are counts and not rates, they are difficult to compare from one jurisdiction to another.
- The annual number of complaints varies without a clear pattern in all four jurisdictions over the period covered but appeared to have increased dramatically—by 88%—in Dare County between FY2009-10 and FY2010-11.
- Statewide, there was a 58% increase in the number of complaints between FY2008-09 and FY2010-11, and a smaller increase between FY2010-11 and FY2011-12.

Table 58. Sexual Assault Complaint Trend (FY2004-05 through FY2010-11)

Location	No. of Individuals Filing Complaints ("Clients")						
	FY2004-05	FY2005-06	FY2006-07	FY2007-08	FY2008-09	FY2009-2010	FY2010-2011
Dare County	37	33	49	47	42	69	130
Currituck County	n/a	n/a	n/a	n/a	n/a	129	79
Hyde County	1	4	3	2	*	7	6
State of NC	8,564	8,721	7,444	6,527	8,494	13,392	13,881

* Program submitted partial data.
Source: NC Department of Administration, Council for Women, Domestic Violence Commission, Statistics, County Statistics (years as noted); http://www.doa.state.nc.us/cfw/stats.htm.

Information on sexual assault received directly from the Dare County Sheriff's Office (DCSO) differs somewhat from the state data presented in Table 58. The DCSO tabulates sexual assault (and domestic violence) complaints on the basis of "calls out", defined as an officer responding to a call from a home, the hospital emergency department, or some other location of a victim of sexual assault or domestic violence. Some of the variance between the state and local data may be due to the reporting period (fiscal year for the state, calendar year for the DCSO) and because there may be some duplication of clients in the local figures.

According to the local source, officer responses to sexual assaults in progress totaled 53 in 2010, 57 in 2011, and 45 in 2012 (18).

Table 59 presents details on the types of sexual assaults reported in FY2010-11.

- The largest proportion of sexual assault complaints in Dare County (56.9%) was for date rape. The second largest proportion (30.0%) was for complaints by adult survivors of child sexual assault.
- In Currituck County, the largest proportion of sexual assault complaints (74.7%) was by adult survivors of child sexual assault. The second largest proportion (8.9%) was for adult rape.
- In Hyde County, the largest proportion of sexual assault complaints (66.7%) was for date rape. Note however that the number of sexual assaults in Hyde County was very small and the resulting percentages likely were unstable.

- Statewide the largest proportion of sexual assault complaints (23.7%) involved adult rape; the second largest proportion (22.2%) involved child sexual offense.

Table 59. Types of Sexual Assaults (FY2010-11)

Location	Total Assault Clients	Type of Assault													
		Adult Rape		Date Rape		Adult Survivor of Child Sexual Assault		Marital Rape		Child Sexual Offense		Incest		Other	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Dare County	130	13	10.0	74	56.9	39	30.0	0	0.0	0	0.0	3	2.3	1	0.8
Currituck County	79	7	8.9	5	6.3	59	74.7	6	7.6	1	1.3	0	0.0	1	1.3
Hyde County	6	0	0.0	1	16.7	4	66.7	0	0.0	1	16.7	0	0.0	0	0.0
State of NC	13,881	3,289	23.7	1,328	9.6	2,393	17.2	1,162	8.4	3,086	22.2	1,216	8.8	1,407	10.1

Source: NC Department of Administration, Council for Women, Domestic Violence Commission, Statistics, 2010-2011 County Statistics; http://www.doa.state.nc.us/cfw/stats.htm.

Table 60 details the types of offenders involved in sexual assaults in FY2010-11.

- In Dare County the most common offender in sexual assault complaints was an acquaintance (66.9%), followed by a relative (25.4%).
- In Currituck County the most common offender was a relative (72.2%), followed by an acquaintance (24.1%).
- In Hyde County, the most common offender was a relative (66.7%) although due to the small number of assaults this figure likely was unstable.
- Statewide the most common offender was a relative (36.6%), followed closely by an acquaintance (33.1%).

Table 60. Types of Offenders in Sexual Assaults (FY2010-11)

Location	Total Offenders	Type of Offender									
		Relative		Acquaintance		Boy/Girl Friend		Stranger		Unknown	
		No.	%	No.	%	No.	%	No.	%	No.	%
Dare County	130	33	25.4	87	66.9	7	5.4	3	2.3	0	0.0
Currituck County	79	57	72.2	19	24.1	3	3.8	0	0.0	0	0.0
Hyde County	6	4	66.7	1	16.7	1	16.7	0	0.0	0	0.0
State of NC	13,603	4,978	36.6	4,505	33.1	1,635	12.0	928	6.8	1,557	11.4

Source: NC Department of Administration, Council for Women, Domestic Violence Commission, Statistics, 2010-2011 County Statistics; http://www.doa.state.nc.us/cfw/stats.htm.

Domestic Violence

Table 61 summarizes data from the Domestic Violence Commission of the NC Council for Women on the number of individuals who filed complaints of domestic violence in Dare County, Currituck County, Hyde County and the state of NC from FY2004-05 through FY2010-11.

- Since the figures are counts and not rates, they are difficult to compare from one jurisdiction to another.
- The annual number of complaints varies without a clear pattern in all three jurisdictions over the period covered but appeared to have increased dramatically—by 85%—in Dare County between FY2009-10 and FY2010-11.

- Statewide, there was a 24% increase in the number of complaints between FY2007-08 and FY2008-09, and a larger increase (28%) between FY2008-09 and FY2009-10.

Table 61. Domestic Violence Complaint Trend (FY2004-05 through FY2010-11)

Location	No. of Individuals Filing Complaints ("Clients")						
	FY2004-05	FY2005-06	FY2006-07	FY2007-08	FY2008-09	FY2009-10	FY2010-11
Dare County	223	178	276	360	292	309	571
Currituck County	282	182	177	154	146	272	261
Hyde County	36	41	40	17	*	80	123
State of NC	50,726	48,173	47,305	41,787	51,873	66,320	61,283

* Program submitted partial data.
Source: NC Department of Administration, Council for Women, Domestic Violence Commission, Statistics, County Statistics (years as noted); http://www.doa.state.nc.us/cfw/stats.htm.

As was the case with sexual assault, the DCSO provided supplementary data on domestic violence that differs somewhat from the state data presented in Table 61. The reasons noted previously for variance between the DCSO data and the state data (i.e., different time periods and possibly duplicated clients) still apply.

According to the local source, officer responses to sexual assaults in progress totaled 691 in 2010, 655 in 2011, and 668 in 2012 (19).

Table 62 provides details on the services received by domestic violence complainants in FY2010-11.

- The 571 complaints of domestic violence in Dare County were addressed by a total of 2,801 services.
- The largest numbers of services received by domestic violence complainants in Dare County were for information and referral (712) followed by advocacy (571) and court services (379).
- The largest numbers of services received by domestic violence complainants in Currituck County were for advocacy (1,088), information (701) and counseling (648), in that order. Fewer complainants in Currituck County received the services of the courts than in Dare County.
- The largest numbers of services received by complainants in Hyde County were for information, advocacy and referral (received by all 123 clients) followed by transport (39) and court services (27).
- The local domestic violence shelter in Dare County was full on 66 days; the shelter in Currituck County was full on 114 days, and the shelter in Hyde County was never full.

Table 62. Services Received by Domestic Violence Complainants (FY2010-11)

Location	Total Domestic Violence Clients	Services Received									Days Local Shelter was Full
		Total	Information	Advocacy	Referral	Transport	Counseling	Hospital	Court	Other	
Dare County	571	2,801	712	571	712	105	253	8	379	61	66
Currituck County	261	3,131	701	1,088	445	80	648	0	169	0	114
Hyde County	123	444	123	123	123	39	8	1	27	0	0
State of NC	61,283	476,979	107,679	105,203	69,533	27,933	68,981	1,232	48,995	47,423	7,999

Source: NC Department of Administration, Council for Women, Domestic Violence Commission, Statistics, 2010-11 County Statistics; http://www.doa.state.nc.us/cfw/stats.htm.

Outer Banks Crisis Hotline

The Outer Banks Crisis Hotline (OBX Crisis Hotline) is the local Dare County agency that receives and triages requests for services from domestic violence victims. The agency provides domestic violence/sexual abuse crisis intervention, advocacy, shelter, support services and prevention activities. Table 63 presents data on the clients the agency served in recent years.

- The majority of the OBX Crisis Hotline clients were white, but significant numbers were Hispanic.
- The majority of clients were female, but the number of male clients has been growing.
- Most of the agency's clients were between the ages of 26 and 40; the second largest number of clients was age 41-60.

Table 63. Outer Banks Crisis Hotline Service Activity Summary

Service/Activity	FY2009-10 (Jan-Jun)	FY2010-11 (Jan-Jun)	FY2011-12 (Jul-Jun)	FY 2012-13 (Jul-Dec)
Calls received	268	411	589	322
Total number (unduplicated) individuals served in person	191	309	471	290
Race of individuals served				
White	132	203	310	188
Black	22	52	60	39
Hispanic	37	54	100	61
Asian	0	0	1	2
Sex of individuals served				
Female	188	303	461	276
Male	3	6	10	14
Age of individuals served				
0-12	0	0	0	0
13-17	0	0	1	0
18-25	22	28	44	41
26-40	120	207	246	164
41-60	48	71	165	84
61+	1	3	6	1
Unknown	0	0	9	0
Shelter services				
Number of children under 18	24	38	57	42
Number of adults 18-59	26	39	62	41
Number of adults 60+	1	0	1	1
Shelter status				
Number of referrals elsewhere due to lack of space	0	0	0	0
Number of days shelter was full	0	0	0	0
Volunteer hours worked in agency (all purposes)	5,957	4,669	18,905	9,891

Source: Lynn Bryant, Outer Banks Hotline, Inc. Personal communication to Anna Shafer, Public Health Education Specialist, Dare County Department of Public Health, January 17, 2013.

The OBX Crisis Hotline agency also operates the Dare County domestic violence shelter. Following is a description of shelter services (20).

The local shelter has an ideal capacity of 15. It is equipped with single beds, permanent cribs and portable cribs, and is handicapped accessible. While it is the agency's goal to keep families together in the same room, that is not always possible. When the shelter reaches capacity, clients can be housed in motels, although that option is seldom used.

Lodging at the shelter is temporary and residents typically stay only until they resolve their situations or move on to friends or family; in some cases, they may return to their homes with protection orders (the residence being secured for them by court order). The agency would like to impose a 21-30 day maximum stay, but in many cases has had to extend that period due to the victim's lack of employment, lack of affordable housing, custody issues, or need for substance abuse treatment or other specialized services.

The shelter houses residents all year, with a greater influx in the winter when there is less work available and more pressure on families and couples living on the edge. In summer months the agency often houses tourists in crisis; their stays tend to be very short-term.

Over the years the agency has begun to experience fewer shelter clients but longer stays. The agency attributes longer stays to economic factors and the smaller number of clients to the zero tolerance for drug use in the secure shelter facility and the agency's reputation for involving child protective services as required when children have witnessed domestic violence. The shelter cannot house male children 16 and over but assists in making other arrangements. The agency offers only motel lodging for male clients, but allows them to use shelter facilities (e.g., laundry and food) during the day, especially if they have children.

In FY2010 the facility sheltered a total of 120 clients; in the first six months of FY2013 it had sheltered a total of 84 clients.

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. Table 64 presents child protective services data from the state's Child Welfare website for the period from FY2004-05 through FY2011-12.

- The total number of findings of child abuse, neglect or dependency in Dare County fluctuated annually without a clear pattern. For the period cited, the highest number of findings was 316 in FY2009-10, and the lowest was 174 in 2005-06. The average number of reports of child abuse, neglect or dependency per year throughout the period cited was 234.
- The total number of substantiated findings of abuse and neglect, abuse only, and neglect only covered annually by those reports ranged from a low of 24 in FY2011-12 to a high of 90 in FY2004-05, and averaged 58 per year.

Table 64. Reports of Child Abuse and Neglect, Dare County (FY2004-05 through FY2011-12)

Category	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-2011	2011-2012
Total No. of Findings of Abuse, Neglect, Dependency	182	174	231	267	211	316	230	261
No. Substantiated[1] Findings of Abuse and Neglect	2	7	3	2	0	1	1	2
No. Substantiated Findings of Abuse	2	1	2	2	1	0	0	0
No. Substantiated Findings of Neglect	86	58	62	71	40	56	46	22
Total substantiated findings	90	66	67	75	41	57	47	24
Services Recommended	0	4	4	11	8	16	5	12
No. Unsubstantiated Findings	92	88	43	50	31	64	20	27
Services Not Recommended	0	11	60	67	60	53	46	63

[1] A "substantiated" report of child abuse, neglect or exploitation indicates that the investigation supports a conclusion that the subject child(ren) was/were abused, neglected, or exploited.
Source: Child Welfare, Reports of Abuse and Neglect section, Reports of Abuse and Neglect Type of Finding/Decision (Not Exclusive) (Longitudinal Data); http://sasweb.unc.edu/cgi-bin/broker?_service=default&_program=cwweb.tbReport.sas&county=Alamance&label=County&format=html&entry=10&type=CHILD&fn=FRST&vtype=xfind.

Table 65 presents demographic detail from the same source as above on the cases described for FY2011-12.

- A large majority (80% to 100%) of all findings applied to white, non-Hispanic children.
- For the year cited, both of the abuse and neglect cases involved females; one victim was very young (age 0-5) and the other was a teenager (age 13-17).
- The majority of neglect-only cases (68%) involved males, 32% involved girls.
- The largest proportion of findings applied to the youngest age group, 0-5.

Table 65. Demographic Detail of Child Abuse Cases, Dare County (FY2011-12)

Category of Finding	Number of Children											
	Total	White	African-American	Other Races	Hispanic	Non-Hispanic	Male	Female	Ages 0-5	Ages 6-12	Ages 13-17	Missing Age
Abuse and Neglect	2	2	0	0	0	2	0	2	1	0	1	0
Neglect	22	18	3	1	2	20	15	7	10	7	5	0
Services Needed	35	30	2	3	0	35	18	17	24	9	2	0
Services Provided, No Longer Needed	100	88	1	11	14	86	49	51	57	27	15	1
Services Recommended	12	11	0	1	1	11	3	9	8	2	2	0
Unsubstantiated	27	22	4	1	4	23	10	17	16	5	6	0
Services Not Recommended	63	61	0	2	9	54	35	28	28	20	15	0

Source: Child Welfare, Reports of Abuse and Neglect section, Table of Summary Data: Type of Finding by Category (Longitudinal). http://sasweb.unc.edu/cgi-bin/broker?_service=default&_program=cwweb.icans.sas&county=North%20Carolina&label=&entry=10.

Table 66 presents child abuse data provided by DCDSS. These data differ somewhat in scope from the data above; for example, the local data catalogues only "*serious* neglect", not "neglect". The local data also tracks foster care and adoptions, which the state data, as presented, does not.

- According to the local data source, the number of Dare County children involved in findings of abuse and neglect decreased significantly, from a high of 42 in FY2003-04 to a current low of 11 in FY2011-12.
- From the local data it appeared that findings of abuse fell dramatically, from 23 in FY2003-04 to 11 in FY2011-12. In the meantime, findings of serious neglect appeared to increase, although not as dramatically. It should be noted that over such a long period of time the state of practice in this field—along with case definitions—have evolved, likely accounting for some of the shifts in numbers.
- The number of children involved in assessments increased from 22 in FY2008-09 to 37 in FY2011-12.
- The total number of children in agency custody decreased from 67 in FY2003-04 to 32 in FY2009-10, but increased recently, to 53 in FY2011-12.
- Among the children in DSS custody, the largest proportions (ranging from 28% to 51% annually) were in family placement.
- Over the past nine fiscal years, the number of licensed foster homes available to house DCDSS custody cases has averaged 13. Currently there are 19 licensed foster homes.
- The DCDSS finalized from one to two adoptions among its custody clients annually over the entire period cited.

Table 66. Dare County Department of Social Services Child Protective Services Activity Summary (FY2003-04 through FY2011-12)

Service/Activity	Annual Monthly Average								
	FY2003-04	FY2004-05	FY2005-06	FY2006-07	FY2007-08	FY2008-09	FY2009-10	FY2010-11	FY2011-12
Findings									
Number of children	42	37	32	18	22	16	18	13	11
Abuse	23	20	17	9	1	0	0	0	1
Serious neglect	0	1	1	0	8	7	8	6	4
Abuse and neglect	2	2	2	3	0	0	0	0	1
Assessments									
Number of assessments	n/a	n/a	n/a	n/a	13	13	17	17	19
Number of children	n/a	n/a	n/a	n/a	26	22	29	33	37
Foster Care									
Total children in custody	67	67	59	54	50	44	32	37	53
In-county foster homes	17	13	11	6	8	9	7	12	14
Out-of-county foster homes	5	6	6	5	3	2	2	3	5
Therapeutic placement	5	5	6	7	5	2	3	4	5
Wright Place placement	8	4	3	2	2	2	2	2	4
Family placement	31	34	23	22	23	20	13	11	15
Adoptive placement	3	4	6	9	4	6	3	4	6
Court approved	n/a	n/a	4	1	2	1	0	2	3
CARS agreement (18-21)	n/a	n/a	0	2	2	1	0	2	0
Licensed foster homes	14	11	14	18	15	14	19	17	19
Adoptions									
Adoptions finalized	1	1	2	2	1	1	1	1	1
Adoptive studies completed	1	1	0	3	2	3	3	1	0
Post-adoptive services	1	1	1	1	3	3	3	2	0
Adoption assistance	46	46	62	88	88	81	92	95	91

Source: Dare County Department of Social Services Statistical Reports, FY2011, FY2012. Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health. Personal communication to Sheila Pfaender, Public Health Consultant, November 15, 2012

Adult Maltreatment

Adults who are elderly, frail, or mentally challenged are also subject to abuse, neglect and exploitation. The DCDSS Adult Protective Services unit screens, investigates and evaluates reports of what may broadly be referred to as adult maltreatment. Table 67 presents adult protective services data from the DCDSS, by quarter, for CY2012.

- For the year cited, DCDSS received a total of 111 reports of adult maltreatment. Of these, 26 did not meet criteria of law, but 85 were screened in and evaluated.
- The most common allegations of maltreatment were self-neglect (52), caretaker neglect (27) and financial exploitation (24). There were eight cases involving multiple allegations.
- For the year, 31 evaluated cases were confirmed as mistreatment, and 30 were not confirmed; an additional 23 cases were still being evaluated at the time this report was being written.
- In 61 of the cases evaluated, the victim was in poor physical health, 46 cases displayed dementia, a mental illness, or mental retardation. Substance abuse was implicated in 14 cases, and 26 cases presented with multiple disabilities.
- Geographically, most of the cases (49) came from the beaches north of Oregon Inlet, or Roanoke Island (33).

Table 67. Dare County Department of Social Services Adult Protective Services Activity Report (2012)

Activity	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Total
No. total reports	25	23	30	33	111
Screened in and evaluated	21	15	21	28	85
Reports not meeting criteria of law	4	8	9	5	26
Types of Allegations					
Self-neglect	14	13	12	13	52
Caretaker neglect	7	6	5	9	27
Caretaker abuse	1	1	1	0	3
Psychological abuse	0	0	0	1	1
Financial exploitation	5	3	6	10	24
Exploitation of the person	0	0	0	0	0
Multiple allegations	2	3	2	1	8
Report Confirmation					
No. Confirmed mistreatment	6	8	12	5	31
% Confirmed mistreatment	46%	67%	75%	25%	53%
No. not confirmed	7	4	4	15	30
% not confirmed	54%	33%	25%	75%	47%
Still in evaluation	8	3	5	7	23
Types of Disability					
Poor physical health	14	13	13	21	61
Dementia	8	7	4	4	23
Mental illness	5	5	5	5	20
Mental retardation	1	0	0	2	3
Substance abuse	2	4	3	5	14
Multiple disabilities	7	8	4	7	26
Location of Adults Reported					
Roanoke Island	9	7	9	8	33
Hatteras Island	1	7	0	4	12
Mainland	2	0	1	0	3
Beaches north of Oregon Inlet	13	7	11	18	49
Homeless	0	2	0	1	3
Other county	0	0	0	2	2
Other state	0	0	0	0	0

Source: Melanie Corprew, Dare County Department of Social Services. Personal communication to Gail E. Sonnesso, Gentle Expert Memorycare Adult Day Services, January 18, 2013

Sometimes a victim of adult maltreatment cannot continue living on his or her own and requires placement in an adult care home or nursing home, and DCDSS assists in that placement. Other cases require an official guardianship arrangement. Table 68 presents DCDSS data on guardianships and placements for FY2003-04 through FY2011-12.

- The number of guardianships increased from an annual monthly average of six in the period from FY2003-04 through FY2005-06 to an annual monthly average of 15 in the period from FY2006-07 through FY2011-12.
- DCDSS placed an annual monthly average of one or fewer adults in adult care homes every year cited until FY2011-12 when the average increased to four. DCDSS also placed an annual monthly average of one adult in a nursing home every year cited until FY2011-12 when the average increased to two.

Table 68. Dare County Department of Social Services Adult Protective Services Placements and Guardianships (FY2003-04 through FY2011-12)

Service/Activity	Monthly Average								
	FY2003-04	FY2004-05	FY2005-06	FY2006-07	FY2007-08	FY2008-09	FY2009-10	FY2010-11	FY2011-12
Guardianship Services									
Petitions filed	n/a	n/a	n/a	n/a	n/a	1	1	1	0
Total guardianships	5	6	7	11	13	15	16	17	16
Total payees (adult children)	22	14	18	24	30	37	44	39	36
Adult Placements									
Adult care home	0	0	1	1	1	1	0	1	4
Nursing home placements	1	1	1	1	1	1	1	1	2

Source: Dare County Department of Social Services Statistical Reports, FY2011, FY2012. Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health. Personal communication to Sheila Pfaender, Public Health Consultant, November 15, 2012

CHAPTER THREE: HEALTH RESOURCES

Access to and utilization of healthcare is affected by a range of variables including the availability of medical insurance coverage, availability of medical professionals, transportation, cultural expectations and other factors.

MEDICAL INSURANCE

Medically Indigent Population

In most communities, citizens' utilization of health care services is related to their ability to pay for those services, either directly or through private or government health insurance plans/programs. People without these supports are called “medically indigent”, and theirs is often the segment of the population least likely to seek and/or to be able to access necessary health care.

Table 69 presents data on the proportion of the population (by age group) without health insurance of any kind. The health insurance system in the US is built largely upon employer-based insurance coverage, so an increase in the number of unemployed people usually leads to an increase in the number of uninsured.

- During the period cited in Table 69, the percent of the Dare County population overall (age 0-64) without health insurance was highest in 2008-09, at 20.8%, but improved to 15.7% in 2010-11.
- In all jurisdictions the younger age group (0-18) had a lower percent without health insurance than the older age group (19-64).
- The highest percent of uninsured in the younger age group was noted at the state level. The lowest percent of uninsured in this age group was in Dare County in 2006-07 and in Currituck County in 2008-09 and 2010-11.
- In each period cited, the highest percent of uninsured in the older age group was noted in Hyde County

Table 69. Percent of Population without Health Insurance, by Age Group (2006-07, 2008-09, and 2010-11)

Location	2006-2007			2008-2009			2010-2011		
	0-18	19-64	0-64	0-18	19-64	0-64	0-18	19-64	0-64
Dare County	9.5	22.6	18.8	9.7	24.6	20.8	7.8	18.2	15.7
Currituck County	10.5	23.2	19.4	9.2	24.5	20.2	7.0	19.8	16.2
Hyde County	10.8	31.4	25.8	11.0	31.6	26.8	8.5	24.6	20.9
State of NC	11.3	19.5	19.5	11.5	23.2	19.7	9.4 [1]	23.0 [1]	18.9 [1]

Source: North Carolina Institute of Medicine, NC Health Data, Uninsured Snapshots, Characteristics of Uninsured North Carolinians; http://www.nciom.org/nc-health-data/uninsured-snapshots/.
[1] Source: North Carolina Institute of Medicine, NC Health Data, Uninsured Snapshots, Characteristics of Uninsured North Carolinians 2020-2011, http://www.nciom.org/nc-health-data/uninsured-snapshots/.

North Carolina Health Choice

In 1997, the Federal government created the *State Children's Health Insurance Program* (SCHI)—later known more simply as the *Children's Health Insurance Program* (CHIP)—that provides matching funds to states for health insurance for families with children. The program covers uninsured children in low-income families who earn too much to qualify for Medicaid (21).

States are given flexibility in designing their CHIP eligibility requirements and policies within broad Federal guidelines. The NC CHIP program is called NC Health Choice for Children (NCHC). This plan, which took effect in October 1998, includes the same benefits as the State Health Plan, plus vision, hearing and dental benefits (following the same guidelines as Medicaid). Children enrolled in NCHC are eligible for benefits including sick visits, check-ups, hospital care, counseling, prescriptions, dental care, eye exams and glasses, hearing exams, hearing aids, and more (22). In NC, the maximum income limit for participation in the NCHC program is 200% of the Federal Poverty Guideline.

Table 70 presents enrollment figures for NCHC for FY2008-2010. It should be noted that enrollment is directly related to the funding available, which may change at either the Federal or state level.

- In Dare County and NC as a whole the number of children eligible increased every year during the period shown.
- In Dare County the percent of eligible children actually enrolled increased dramatically over the period cited, from 39.7% in FY2008 to 76.8% in FY2010. Statewide, the percent of eligible children enrolled in the program increased from 66.4% in FY2008 to 85.7% in FY2010.

Table 70. NC Health Choice Enrollment (FY2008 through FY2010)

Location	FY2008			FY2009			FY2010		
	# Children Eligible	# Eligibles Enrolled	% Eligibles Enrolled	# Children Eligible	# Eligibles Enrolled	% Eligibles Enrolled	# Children Eligible	# Eligibles Enrolled	% Eligibles Enrolled
Dare County	461	183	39.7	523	296	56.6	577	443	76.8
Currituck County	245	144	58.8	270	167	61.9	258	153	59.3
Hyde County	104	22	21.2	113	91	80.5	106	75	70.8
State of NC	131,446	87,234	66.4	140,141	103,624	73.9	143,022	122,536	85.7

Source: NC Division of Medical Assistance, Statistics and Reports, Medicaid Data, County-Specific Snapshots for NC Medicaid Services, 2006-2010; http://www.ncdhhs.gov/dma/countyreports/index.htm.

Medicaid

Medicaid is a health insurance program for low-income individuals and families who cannot afford health care costs. It serves low-income parents, children, seniors, and people with disabilities. Both coverage and eligibility requirements are different for people with different kinds of needs. Chief among these requirements is low income, which depending on service can range from 51% to 200% of the Federal Poverty Guideline.

Table 71 summarizes data on Medicaid eligibility and expenditures for the period from FY2007 through FY2010.

- The number and percent of residents eligible for Medicaid in Dare County increased from one year to the next throughout the period cited.
- The expenditure/cost per adult enrollee in Dare County rose from FY2007 to FY2008 and decreased thereafter.
- Hyde County had the highest proportion of Medicaid-eligible residents throughout the period cited, averaging almost 21%. The average statewide was approximately 16%.

Table 71. Medicaid Eligibility and Expenditures (FY2007 through FY2010)

Location	FY2007			FY2008			FY2009			FY2010		
	No. Eligible	% Eligible	Expenditure per Eligible	No. Eligible	% Eligible	Average Cost per Adult Enrollee	No. Eligible	% Eligible	Average Cost per Adult Enrollee	No. Eligible	% Eligible	Average Cost per Adult Enrollee
Dare County	2,768	8.0	$7,635	3,018	9.0	$8,042	3,403	10.0	$7,284	3,668	11.0	$6,609
Currituck County	2,170	9.0	$6,380	2,274	10.0	$6,130	2,534	11.0	$6,317	2,683	11.0	$5,863
Hyde County	1,164	21.0	$6,027	1,163	21.0	$6,093	1,168	21.0	$6,356	1,142	20.0	$5,737
State of NC	1,330,486	15.0	$7,254	1,397,732	15.0	$7,244	1,500,204	16.0	$7,389	1,577,121	17.0	$7,256

Source: NC Division of Medical Assistance, Statistics and Reports, Medicaid Data, County-Specific Snapshots for NC Medicaid Services, 2006-2010 (geographies as noted); http://www.ncdhhs.gov/dma/countyreports/index.htm.

The county department of social services is responsible for facilitating its clients' access to the range of Medicaid services for which they may qualify. Table 72 presents data about Medicaid services facilitated by DCDSS for the period from FY2003-04 through 2011-12.

- While applications for family Medicaid have been higher post-recession (2008) than before, they do not appear to have increased dramatically.
- The numbers of individuals and households receiving family Medicaid have increased significantly since 2008, as have the numbers of individuals and households participating in NC Health Choice and the number of individuals receiving Medicaid for the disabled.

Table 72. Dare County Department of Social Services Medicaid Services Activity Summary (FY2003-04 through FY2011-12)

Service/Activity	Monthly Average								
	FY2003-04	FY2004-05	FY2005-06	FY2006-07	FY2007-08	FY2008-09	FY2009-10	FY2010-11	FY2011-12
Family Medicaid									
Applications	167	188	200	232	192	211	203	229	212
Total Households	1,078	1,105	1,289	1,797	1,515	1,665	1,865	1,930	2,051
Total Individuals	1,549	1,499	1,683	2,288	1,953	2,176	2,462	2,584	2,771
NC Health Choice									
Total Households	307	340	300	298	284	308	352	388	409
Total Individuals	467	511	452	450	414	453	514	574	609
Medicaid for Aging Adults									
Applications	8	7	9	8	10	9	10	10	14
Total In-Home	174	161	170	151	169	178	183	179	177
Total in Adult Care	42	39	38	48	45	48	48	50	50
Long-Term Care Individuals	88	92	87	95	83	84	84	77	72
Medicaid for the Disabled									
Applications	22	24	21	27	28	32	39	41	38
Total Non-SSI Households/Individuals	170	164	199	197	161	204	210	222	229
SSI Households/Individuals	184	196	188	225	204	211	212	231	240

Source: Dare County Department of Social Services Statistical Reports, FY2011, FY2012. Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health. Personal communication to Sheila Pfaender, Public Health Consultant, November 15, 2012.

Health Check Early Periodic Screening, Diagnosis and Treatment

Federal law requires that Medicaid-eligible children under the age of 21 receive any medically necessary health care service covered by the federal Medicaid law, even if the service is not normally included in the NC State Medicaid Plan. This requirement is called Early Periodic Screening, Diagnosis and Treatment (EPSDT). In NC, Health Check EPSDT covers complete medical and dental check-ups, provides vision and hearing screenings, and referrals for treatment (23).

Table 73 presents a four-year summary of the participation of eligible children in the NC Health Check program.

- The number of Dare County children eligible for NC Health Check EPSDT services increased from one fiscal year to the next over the entire period cited. However, the Dare County participation ratio fell as the number eligible rose.
- The Health Check participation ratio in Dare County was below the comparable state ratio during the first two fiscal years displayed, but exceeded the state ratio in the last two fiscal years. In fact, during FY2009-10 and FY2010-10 the Health Check participation ratio for Dare County was the highest among the four jurisdictions being compared.

Table 73. Participation in Health Check (EPSDT)
(FY2007-08 through FY2010-11)

Location	FY2007-08			FY2008-09			FY2009-10			FY2010-11		
	No. Eligible	No. Eligibles Due Initial or Periodic Service	Participation Ratio	No. Eligible	No. Eligibles Due Initial or Periodic Service	Participation Ratio	No. Eligible	No. Eligibles Due Initial or Periodic Service	Participation Ratio	No. Eligible	No. Eligibles Due Initial or Periodic Service	Participation Ratio
Dare County	2,442	1,526	75.2	2,683	1,605	72.6	2,815	2,350	59.0	3,015	2,400	59.6
Currituck County	1,749	939	71.6	1,923	1,011	74.3	2,009	1,660	49.4	2,041	1,628	46.3
Hyde County	674	372	75.5	645	349	78.2	641	553	50.5	621	541	48.2
State of NC	n/a	563,421	77.3	n/a	594,043	80.0	1,185,510	963,619	53.8	1,146,716	961,381	54.7

Note: the participation ratio is calculated by dividing the number of eligibles receiving at least one initial screening service by the number of eligibles who should receive at least 1 initial or period screenings (not shown in the table).
Source: NC Division of Medical Assistance, Statistics and Reports, Health Check Participation Data; http://www.ncdhhs.gov/dma/healthcheck/participationdata.htm.

Medicaid Managed Care: Community Care of North Carolina/Carolina ACCESS

The goal of Medicaid managed care is to create community health networks to achieve long-term quality, cost, access, and utilization objectives. NC's approach to Medicaid managed care is to create medical homes for eligible Medicaid recipients by enrolling them into Community Care of North Carolina/Carolina ACCESS (CCNC/CA). Today CCNC/CA combines Carolina ACCCESS and ACCESS II/III, which are primary care case management health plans (24).

Carolina ACCESS

Carolina ACCESS, implemented in 1991, is NC's Primary Care Case Management (PCCM) Program for Medicaid recipients. It serves as the foundation managed care program for Medicaid recipients and brings a system of coordinated care to the Medicaid program by linking each eligible recipient with a primary care provider (PCP) who has agreed to provide or authorize healthcare services for each enrollee. Primary care providers bill fee-for-service and are reimbursed based on the Medicaid fee schedule; they also receive a small monetary incentive per member per month for coordinating the care of program participants enrolled with their practice. By improving access to primary care and encouraging a stable doctor-patient

relationship, the program helps to promote continuity of care, while reducing inappropriate health service utilization and controlling costs. The program expanded statewide in 1998. Carolina ACCESS created the infrastructure for ACCESS II/III, an enhanced community-based primary care case management health plan (24).

Carolina ACCESS II/III

ACCESS II and III are enhanced primary care programs initiated in 1998 to work with local providers and networks to manage the Medicaid population with processes that impact both the quality and cost of healthcare. ACCESS II/III includes local networks comprised of community providers such as primary care practices, hospitals, health departments, departments of social services, and others who have agreed to work together in a public/private partnership to operate as a Carolina ACCESS PCP and provide the care management systems and supports that are needed to manage enrollee care. In addition to a primary care provider, ACCESS II and III enrollees have care managers who assist in developing, implementing, and evaluating enhanced managed care strategies for them. Because health care is planned and provided on the community level, larger community health issues can be addressed. Providers in ACCESS II and III receive a small monetary incentive per member per month; the PCPs are paid a small per member per month care management fee. A majority of Medicaid recipients enrolled in managed care are linked with a CCNC network. There are fourteen networks operating statewide; Dare County is a member of the Community Care Plan of Eastern Carolina, which also includes 26 other counties in the eastern part of the state (24).

Table 74 summarizes CCNC/CA enrollment data for the period from 2007-2010.

- The percent of Medicaid eligible persons in Dare County enrolled in CCNC/CA decreased in 2010, to 58% from a three-year average of 64%; this decrease occurred as the number of county residents enrolled in Medicaid increased steadily over the period cited.
- Statewide, the percent of the Medicaid eligible population enrolled in CCNC/CA averaged approximately 65% over the four-year period cited.

Table 74. Community Care of NC/Carolina ACCESS Enrollment (2007-2010)

Location	2007		2008		2009		2010	
	No. Enrolled in Medicaid	% Medicaid Eligibles Enrolled	No. Enrolled in Medicaid	% Medicaid Eligibles Enrolled	No. Enrolled in Medicaid	% Medicaid Eligibles Enrolled	No. Enrolled in Medicaid	% Medicaid Eligibles Enrolled
Dare County	2,768	64	3,018	63	3,403	64	3,668	58
Currituck County	2,170	59	2,274	59	2,534	61	2,683	49
Hyde County	1,164	42	1,163	38	1,168	57	1,142	53
State of NC	1,330,485	62	1,397,732	64	1,500,204	67	1,577,121	66

Source: NC Division of Medical Assistance, Statistics and Reports, Medicaid Data, County-Specific Snapshots for NC Medicaid Services, 2006-2010 (geographies as noted); http://www.ncdhhs.gov/dma/countyreports/index.htm.

Medicare

Medicare is the US government's health insurance program for senior citizens (people 65 years of age or older), certain younger people with specific disabilities, and people with end-stage renal disease. Medicare is an entitlement program and is not based on financial need. Medicare benefits are available to all Americans or their spouses who have paid Social Security taxes through their working years.

Some persons who receive Medicare also qualify for Medicaid; these persons are referred to as "dually enrolled", and tend to be elderly and poor. Table 75 summarizes dual Medicare/Medicaid enrollment data for the period from 2007-2010.

- Dare County had the lowest percentage of dual Medicare/Medicaid enrollees in each year cited.

Table 75. Medicare/Medicaid Dual Enrollment (2007-2010)

Location	Percent of Eligibles Dually Enrolled			
	2007	2008	2009	2010
Dare County	11.8	12.6	12.0	11.4
Currituck County	14.9	14.2	12.7	12.3
Hyde County	28.4	26.7	26.0	26.3
State of NC	16.7	16.1	15.0	14.5

Source: NC Division of Medical Assistance, Statistics and Reports, Medicaid Data, County Specific Snapshots for NC Medicaid Services; http://www.ncdhhs.gov/dma/countyreports/index.htm.

HEALTH CARE PROVIDERS

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. Table 76 presents those data (which for simplicity's sake will be referred to simply as the "ratio") for Dare County, Currituck County, Hyde County, 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 2009-2011.

- The health professional ratios in Dare County for MDs and RNs were lower than US or NC ratios for each year cited.
- The Dare County ratio for primary care MDs exceeded or equaled the comparable US ratio in every year cited, and exceeded the NC ratio in 2011.
- The Dare County ratio for dentists and pharmacists exceeded the comparable US and NC ratios in every year cited.
- The Currituck County and Hyde County ratios for every category of provider were much lower than the comparable NC or US ratios in every year cited.

Table 76. Active Health Professionals per 10,000 Population (2009-2011)

Location	2009					2010					2011				
	MDs	Primary Care MDs	DDSs	RNs	Pharms	MDs	Primary Care MDs	DDSs	RNs	Pharms	MDs	Primary Care MDs	DDS	RNs	Pharms
Dare County	15.8	8.5	6.1	66.3	10.3	15.9	8.3	6.2	62.0	9.7	16.1	8.8	5.9	66.1	10.8
Currituck County	3.4	2.1	2.1	22.6	1.6	3.8	2.1	1.7	21.7	1.7	3.8	1.7	2.1	22.0	1.3
Hyde County	0.0	0.0	0.0	48.3	0.0	1.7	1.7	0.0	46.5	0.0	1.7	1.7	0.0	48.2	0.0
State of NC	21.2	9.2	4.4	96.9	9.3	21.7	9.4	4.4	97.3	9.2	22.1	7.8	4.4	98.6	9.5
United States	23.4 [2]	8.5 [2]	5.3 [3]	92.5 [3]	8.7 [3]	22.7 [2]	8.2 [2]	5.7 [3]	92.0 [3]	8.3 [3]	22.7 [2]	8.2 [2]	5.7 [3]	92.0 [3]	8.3 [3]

Abbreviations used: MDs (Physicians), RNs (Registered Nurses), DDSs (Dentists), Pharms (Pharmacists)
[1] Primary Care Physicians are those who report their primary specialty as family practice, general practice, internal medicine, pediatrics, or obstetrics/gynecology
[2] US ratio from US Census Bureau estimates. Comparison data is for date two years previous.
[3] US ratio from Bureau of Labor Statistics. Comparison data matches.
Source for NC Data: Cecil G. Sheps Center for Health Services Research, North Carolina Health Professions Data System, North Carolina Health Professions Data Books, Table 14 (2008, 2009, 2010, 2011); http://www.shepscenter.unc.edu/hp/publications.htm.

Although the health professional ratio for dentists in Dare County appears to be higher than state or national ratios, accessing dental care may still be a problem for Medicaid enrollees. Tables 77 and 78 list dental practices that accept Medicaid and/or NC Health Choice clients.

Table 77. Dentists in Dare County Accepting Medicaid/Health Choice Clients (As of August 15, 2012)

Practice Name/Provider Name	Location	Medicaid/ Health Choice	Currently Accepting New Medicaid Clients	Currently Accepting New Health Choice Clients
Francis Ausband at William M. Downing DDS PA	Nags Head	Medicaid	No	n/a
Scott Bobrow	Southern Shores	Medicaid	No	n/a
Ken Budde at Budde and Bueker DDS	Kill Devil Hills	Medicaid	No	n/a
William Downing at William M Downing DDS PA	Nags Head	Medicaid	No	n/a
Markus Heyder at Atlantic Dentistry	Kitty Hawk	Medicaid/HC	Yes	No
Patrick H Morgan Jr.	Coinjock	Medicaid/HC	Yes	No
Mead Slagle	Frisco	HC	Yes	No
Samuel Smith	Kill Devil Hills	HC	Yes	No
Stephanie Sweeney at Atlantic Dentistry	Kitty Hawk	Medicaid/HC	Yes	No
James Woodson	Nags Head	HC	Yes	No
Michael Zaritsky (Oral Surgeon) at Dr. Francis A Bald & Assoc.	Nags Head	Medicaid	No	n/a
Dare County Health Department	Manteo	HC	n/a	Yes

Source: NC Division of Medical Assistance, Medicaid, Find a Doctor, NC Medicaid and NC Health Choice Dental Provider Lists; http://www.ncdhhs.gov/dma/dental/dentalprov.htm.

Table 78. Dentists Outside Dare County Accepting Medicaid/Health Choice Clients (As of August 15, 2012)

Practice Name/Provider Name	Location	Clients Accepted	Insurance Accepted
Smile Starters - Medicaid Dental Center	Raleigh, NC	Children ages 1-20	Medicaid
Dr. Bullock and Dr. Sundin	Virginia Beach, VA	Chldren ages up to 13	Medicaid
Dr. Burton	Greenville, NC	Children and adults	Medicaid
Dr. Regis Dandar	Elizabeth City, NC	Children ages 3 and up; adults	Medicaid
James Bernstein Dental Center	Greenville, NC	Children ages 5 and up; adults	Medicaid; sliding fee
Dr. Cliff Jones, III	Elizabeth City, NC	Children ages 3 and up; adults	Medicaid
Dr. J. Martin	Portsmouth, VA	Children ages 1-18	Medicaid
Martin-Tyrrell-Washington District Dental Unit	Plymouth, NC	Children ages 1-20	Medicaid
Dr. Albert Solomon	Chesapeake, VA	Children ages 3 and up; adults	Medicaid
Dr. Marvin Kaplin Orthodontics	Chesapeake, VA	Children ages 8-17	Medicaid

Source: Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health. Personal communication to Sheila Pfaender, Public Health Consultant, December 18, 2012.

Table 79 lists the number of active health professionals in Dare County, Currituck County, and Hyde County, by specialty, for 2011:

- There were no general practitioners or psychological assistants in Dare County.
- The specialties with fewer than five practitioners in Dare County included: internal medicine (2), certified nurse midwifery (1), occupational therapy assistant (2), optometry (4), podiatry (2), and psychology (1).
- In Currituck County there was no representation in the specialties of: general practice, obstetrics/gynecology, pediatrics, certified nurse midwifery, occupational therapy assistant, optometry, podiatry, psychology, and respiratory therapy. The only other specialties with five or more practitioners in Currituck County were dentistry (5), registered nursing (52), and licensed practical nursing (38).
- There were very few medical professionals of any category in Hyde County. The largest representation was among registered nurses (28), licensed practical nurses (9), and nurse practitioners (4).

Table 79. Number of Active Health Professionals, by Specialty (2011)

Category of Professional	Number of Professionals [1]		
	Dare	Currituck	Hyde
Physicians			
Primary Care Physicians	30	4	1
Family Practice	16	3	1
General Practice	0	0	0
Internal Medicine	2	1	0
Obstetrics/Gynecology	7	0	0
Pediatrics	5	0	0
Other Specialities	25	5	0
Dentists and Dental Hygienists			
Dentists	20	5	0
Dental Hygienists	19	2	0
Nurses			
Registered Nurses	226	52	28
Nurse Practitioners	13	1	4
Certified Nurse Midwives	1	0	1
Licensed Practical Nurses	35	38	9
Other Health Professionals			
Chiropractors	10	2	0
Occupational Therapists	5	2	0
Occupational Therapy Assistants	2	0	1
Optometrists	4	0	0
Pharmacists	37	3	0
Physical Therapists	17	4	2
Physical Therapy Assistants	5	3	1
Physician Assistants	14	2	0
Podiatrists	2	0	0
Practicing Psychologists	1	0	0
Psychological Assistants	0	1	0
Respiratory Therapists	7	0	0

[1] Numbers reported include those active within the profession and those newly licensed in 2009 with unknown activity status; inactives are excluded.
Source: Cecil G. Sheps Center for Health Services Research, North Carolina Health Professions Data System. Publications. 2011 North Carolina Health Professions Databook; http://www.shepscenter.unc.edu/hp/publications/2011_HPDS_DataBook.pdf.

Hospitals

Table 80, which lists the number of general hospital beds in the four jurisdictions being included in this report, reflects the fact that there is only one hospital in Dare County: The Outer Banks Hospital.

Table 80. Number of General Hospital Beds[1]
(2004-2010)

Location	2004	2005	2006	2007	2008	2009	2010
Dare County	19	19	19	19	21	21	21
Currituck County	0	0	0	0	0	0	0
Hyde County	0	0	0	0	0	0	0
State of NC	20,590	20,338	20,329	20,322	20,443	20,647	20,699

[1] Defined as "general acute care beds" in hospitals; that is, beds which are designated for short-stay use. Excluded are beds in service for dedicated clinical research, substance abuse, psychiatry, rehabilitation, hospice, and long-term care. Also excluded are beds in all federal hospitals and state hospitals.
Source: Log Into North Carolina (LINC) Database, Topic Group Vital Statistics and Health (Data Item 524); http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

The Outer Banks Hospital

The Outer Banks Hospital (OBH), which is located in Nags Head, NC, opened in 2002. It is a full-service critical access hospital offering a wide range of inpatient and outpatient services, and is fully accredited by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). OBH is a partnership between Vidant Health and Chesapeake Regional Medical Center.

The hospital has 21 private rooms, each furnished with built-in couches for family members and visitors. Two of the hospital's beds are designed as labor/delivery/recovery/postpartum rooms, and one is a Level 1 nursery bed. More than 400 babies are born at OBH every year.

The Emergency Department employs physicians who are board certified in emergency medicine, and trauma-trained RNs who are supported by unit secretaries and nursing assistants. A Minor Care section helps accommodate the increased volume of patients seen during the tourist season. Dare County Emergency Medical Services provides medical air transports out of the community utilizing the helipad adjacent to the hospital Emergency Department.

The hospital has two operating rooms used for general surgery and a third designated for Cesarean sections.

OBH has a comprehensive, film-less diagnostic imaging department that offers X-rays, digital mammograms, 64-slice CT, fixed MRI, nuclear medicine, ultrasound, and PET/CT scan services. It also operates a CAP-accredited laboratory (25).

OBH, as a full partner in the development of this CHA, has 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. The data on which these summaries were developed is presented in Appendices A.1.1-4.

OBH Emergency Department Admission Demographics

Note that all OBH data referenced in this report includes only those patients whose residence at the time of admission was Dare County, Currituck County, Hatteras Island, or Ocracoke. It does ***not*** *include patients who were visitors to the county.*

Residence (Table 81)

- Beach residents accounted for approximately half of the emergency department (ED) visits every year cited.
- Currituck County residents accounted for approximately 13% and Hatteras Island residents accounted for an average of 7% of ED visits.
- Mainland residents accounted for about 30% of ED visits.
- Ocracoke residents accounted for less than 1% of ED visits.
- The proportions of ED visits by location were very stable over the period cited.

Table 81. Percent of OBH Emergency Department Visits by Patient Residence (FY2010-FY2012)

Location	Percent of ED Visits		
	2010	2011	2012
Beaches	48.7	48.6	48.9
Currituck County	13.5	13.9	13.7
Hatteras Island	7.2	7.3	7.8
Mainland	29.9	29.7	29.0
Ocracoke	0.8	0.5	0.6

Source: Appendix A.1.1.

Age (Table 82)

- Adult (age 18-64) patients accounted for nearly 64% of all ED visits. This figure is very close to the proportion of persons in this age group in the overall Dare County population, 64.8% (from Table 8, cited previously).
- Pediatric (age 0-17) patients accounted for nearly 18% of all ED visits. This figure is slightly lower than the proportion of persons in this age group in the overall Dare County population, 20.0% (Table 8).
- Senior (age 65+) patients accounted for almost 19% of all ED visits. This figure is higher than the proportion of persons in this age group in the overall Dare County population, 15.2% (Table 8).
- The proportions of ED visits by age were very stable over the period cited.

Table 82. Percent of OBH Emergency Department Visits by Patient Age (FY2020-FY2012)

Location	Percent of ED Visits		
	2010	2011	2012
Adult	63.9	63.7	63.5
Pediatric	17.9	17.5	17.9
Senior	18.2	18.8	18.5

Source: Appendix A.1.2.
Adult = age 18-64; Pediatric = age 0-17; Senior = age 65 and older

Race (Table 83)

- White persons accounted for the vast majority—an average of approximately 87%—of ED visits. This figure is slightly lower than the proportion of white persons in the Dare County population, 92.3% (see Table 5, cited previously).
- Black/African American persons accounted for approximately 6% of ED visits. This figure is almost 2½ the proportion of black persons in the Dare County population, 2.5% (Table 5).
- Hispanic/Latino persons accounted for slightly over 5% of ED visits. This figure is slightly lower than the proportion of Hispanic/Latino persons in the Dare County population, 6.5% (Table 5). It should be noted that by hospital protocol "Hispanic" is a race, not an ethnicity. That is, "Hispanic" is an exclusive category, not combined with race; i.e., the hospital does not delineate "black and Hispanic", or "white and Hispanic", as does the US Census Bureau.
- The proportions of ED visits by race were very stable over the period cited.

Table 83. Percent of OBH Emergency Department Visits by Patient Race (FY2010-FY2012)

Location	Percent of ED Visits		
	2010	2011	2012
Asian	0.3	0.4	0.2
Black	6.1	6.4	6.4
Hispanic	5.5	5.0	5.0
Indian (Native or Alaskan)	0.3	0.2	0.2
Other	1.3	1.4	1.2
Unknown	>0.1	>0.1	>0.1
White	86.4	86.6	86.8

Source: Appendix a.1.3.

Payer (Table 84)

- Persons paying for their own care ("self-pay") in the ED accounted for the largest proportion of payers, a three-year average of a little more than 25%.
- Medicaid, Medicare, and Manage Care paid for almost equal proportions of ED visits over the period cites, approximately 23% each.
- The proportions of ED visits by payer were very stable over the period cited.

Table 84. Percent of OBH Emergency Department Visits by Payer Group (FY2010-FT2012)

Location	Percent of ED Visits		
	2010	2011	2012
Agencies	0.6	0.5	0.5
CHAMPUS	2.2	2.0	1.8
Commercial/Managed Care	26.4	25.1	23.1
Medicaid	22.4	22.1	24.6
Medicare	22.1	23.6	22.9
Self-pay	24.8	25.3	25.6
Workman's Compensation	1.5	1.4	1.6

Source: Appendix A.1.4.

Other hospital utilization data for inpatient hospitalizations and surgical procedures is presented in Appendices A.2 and A.3, respectively. Diagnosis-related hospital data is cited in the Health Statistics section of this report as appropriate.

Other Hospitals

Table 85 lists nine NC hospitals in counties within commuting distance of Dare County. Of these, only Vidant Medical Center in Greenville offers a Trauma Center (rated for Level I care).

Table 85. NC Hospitals Convenient to Dare County (February, 2013)

County/Facility Name	Location	No. Beds	Operating Rooms
Beaufort County			
Vidant Beaufort Hospital	Washington	General - 120 Psychiatric - 22	7
Vidant Pungo Hospital	Belhaven	General - 39 Nursing Home - 10	2
Bertie County			
Vidant Bertie Hospital	Windsor	General - 6	2
Chowan County			
Vidant Chowan Hospital	Edenton	General - 49 Nursing Home - 40	4
Hertford County			
Vidant Roanoke-Chowan Hospital	Ahoskie	General - 86 Psychiatric - 28	7
Martin County			
Martin General Hospital	Williamston	General - 49	3
Pasquotank County			
Albemarle Hospital	Elizabeth City	General - 182	13
Pitt County			
Vidant Medical Center	Greenville	General - 748 Rehabilitation - 75 Psychiatric - 52	35
Washington County			
Washington County Hospital	Plymouth	General - 49	2

Source: NC Department of Health and Human Services, Division of Health Service Regulation. Hospitals Licensed by the State of North Carolina; http://www.ncdhhs.gov/dhsr/reports.htm .

Residents of Dare County also may seek medical services in southeastern VA, primarily in the area referred to as the *Tidewater Region*. Table 86 lists hospitals in the cities in this region.

Table 86. Hospitals in Southeastern Virginia (February, 2013)

Hospital	Location
Chesapeake General Hospital	Chesapeake
Hampton VA Medical Center	Hampton
Riverside Behavioral Health Center	Hampton
Sentara Careplex Hospital	Hampton
Mary Immaculate Hospital	Newport News
Riverside Memorial Medical Center	Newport News
Riverside Rehabilitation Institute	Newport News
Children's Hospital of the Kings Daughters	Norfolk
DePaul Medical Center	Norfolk
Lake Taylor Hospital	Norfolk
Sentara Heart Hospital	Norfolk
Sentara Leigh Hospital	Norfolk
Sentara Norfolk General Hospital	Norfolk
Tidewater Psychiatric Institute	Norfolk
Maryview Medical Center	Portsmouth
Naval Medical Center	Portsmouth
Sentara Obici Hospital	Suffolk
Sentara Bayside Hospital	Virginia Beach
Sentara Princess Anne Hospital	Virginia Beach
Sentara Virginia Beach General Hospital	Virginia Beach
Virginia Beach Psychiatric Center	Virginia Beach

Source: The Agape Center, Virginia Hospitals; http://www.theagapecenter.com/Hospitals/Virginia.htm.

Dare County Emergency Medical Services

Emergency medical services (EMS) in Dare County are provided at the Advanced Life Support (ALS) level of care. All personnel hold credentials issued by the State of NC, which require a high level of continuing education and on-going training. Paramedics also maintain certifications in Advanced Cardiac Life Support (ACLS), Pediatric Advanced Life Support (PALS), and Pre-Hospital Trauma Life Support (PHTLS).

Dare County EMS transports critical care patients from The Outer Banks Hospital to other medical facilities throughout the region; it also operates Dare MedFlight, an aeromedical service providing rapid transport for critically injured and ill patients.

Dare County EMS operates a system of eight stations that extend throughout the county, in Kill Devil Hills, Manteo, Frisco, Southern Shores, Nags Head, Rodanthe, Dare County Airport (Manteo), and Manns Harbor. Dialing 911 activates EMS throughout all of Dare County (26).

Table 83 lists a summary of the Dare County EMS calls for the last six months of 2010 and all of 2011 and 2012.

The ten definable conditions (i.e., those not labeled “other” or “no complaint or injury noted”) requiring the largest percentage of total EMS responses over the entire 30 months covered in the table were, in descending order:

- Traumatic injury (19.3%)
- Chest pain/discomfort (7.0%)
- Abdominal pain/problems (6.8%)
- Respiratory distress (6.7%)

- Generalized weakness (5.7%)
- Pain (non-traumatic) (3.8%)
- Altered level of consciousness (3.4%)
- Syncope/fainting (3.1%)
- Cardiac rhythm disturbance (2.6%)
- Stroke/CVA (1.7%)

High proportions of EMS responses actually involve conditions with non-specific labels:

- Other (9.2%)
- No complaints or injury noted (8.8%)

Table 87. Dare County EMS Calls Summary (2010 [part], 2011, 2012)

Clinical Impression	Primary Count				Condition Total as % of Grand Total Calls
	2010 [1] (June-Dec)	2011 (Jan-Dec)	2012 (Jan-Dec)	Condition Total	
Abdominal Pain/Problems	275	408	448	1,131	6.8
Airway Obstruction	9	15	9	33	0.2
Allergic Reaction	38	62	68	168	1.0
Altered Level of Consciousness	140	228	203	571	3.4
Asthma	3	21	22	46	0.3
Behavioral/Psychiatric Disorder	73	138	141	352	2.1
Bowel Obstruction	4	16	9	29	0.2
Cardiac Arrest	21	63	67	151	0.9
Cardiac Rhythm Disturbance	94	158	188	440	2.6
Chest Pain (Non-Cardiac)	n/a	38	72	110	0.7
Chest Pain/Discomfort	273	439	445	1,157	7.0
Congestive Heart Failure	9	50	43	102	0.6
Dehydration	10	68	91	169	1.0
Diabetic Hyperglycemia	7	31	28	66	0.4
Diabetic Symptoms	65	83	88	236	1.4
Electrocution	n/a	3	1	4	0.0
Emphysema/COPD	n/a	13	25	38	0.2
Epistaxis	6	13	20	39	0.2
Fever/Infection	n/a	60	160	220	1.3
Gastrointestinal Bleed	13	85	64	162	1.0
Generalized Weakness	241	374	335	950	5.7
Headache	11	69	91	171	1.0
Hemorrhage	57	61	77	195	1.2
Hypertension	24	33	48	105	0.6
Hyperthermia	27	27	13	67	0.4
Hypothermia	0	9	5	14	0.1
Hypovolemia/Shock	17	13	11	41	0.2
Inhalation Injury (Toxic Gas)	n/a	4	1	5	0.0
MI - Other	n/a	16	10	26	0.2
MI - STEMI	n/a	8	8	16	0.1
No Complaints or Injury/Illness Noted	327	560	575	1,462	8.8
Obvious Death	16	40	43	99	0.6
Other	297	586	641	1,524	9.2
Pain (Non-Traumatic)	152	245	230	627	3.8
Poisoning/Drug Ingestion	23	53	49	125	0.8
Pregnancy/Obstetrical Delivery	21	34	35	90	0.5
Renal Failure	25	37	38	100	0.6
Respiratory Arrest	3	10	15	28	0.2
Respiratory Distress	293	414	414	1,121	6.7
Resuscitation Withheld/Compelling Reason	n/a	n/a	3	3	0.0
Seizure	61	139	113	313	1.9
Sexual Assault/Rape	2	1	2	5	0.0
Smoke Inhalation	3	2	n/a	5	0.0
Stings/Venomous Bites	17	18	14	49	0.3
Stroke/CVA	71	94	117	282	1.7
Substance/Drug Abuse	9	47	53	109	0.7
Suspected TIA	n/a	13	18	31	0.2
Syncope/Fainting	108	188	219	515	3.1
Traumatic Circulatory Arrest	2	3	3	8	0.0
Traumatic Injury	718	1,278	1,210	3,206	19.3
Undefined Musculoskeletal Pain	n/a	30	61	91	0.5
Vaginal Hemorrhage	4	5	4	13	0.1
TOTAL CALLS	3,569	6,403	6,648	n/a	n/a
GRAND TOTAL CALLs	**n/a**	**n/a**	**n/a**	**16,620**	100.0

[1] - Covers only six months

Source: Virginia Midgett, Senior Administration Support Specialist, HIPAA Privacy Officer, Dare County Emergency Medical Services. Personal communication to Anna Schafer, Public Health Education Specialist, Dare County Department of Public Health, February 4, 2013.

Dare County Department of Public Health

The mission of the Dare County Department of Public Health (DCDPH) is to serve to assure healthy people and healthy communities. The agency is working towards their vision of establishing Dare County as the healthiest county in North Carolina through trusted innovative leadership and community collaboration. The DCDPH operates agency facilities in Manteo, Frisco, and Kill Devil Hills. The agency's primary areas of service are described below, as summarized from the Dare County Department of Public Health Year End Report for FY2012 (27).

Community and Clinical Services Division

This division provides surveillance, prevention and education, and assures community and clinical services that assist in reducing health risks to county residents and visitors. The division's work focuses on clinical services, school health programs, public health emergency preparedness, and communicable disease control and surveillance services.

Community and Clinical Services Section

- **Adult Health** – provides screening and preventive services including physicals, immunizations, (limited) laboratory testing, and education on minimizing health risks.
- **Primary Care Management (PCM)** – provides nursing assessments and care management to Medicaid recipients with chronic or sustained illnesses.
- **Child Health** – provides preventive health services (e.g., well child health screenings and immunizations) and physical and developmental assessments to identify and minimize potential health risks for infants and children.
- **Community Alternative Program for Children (CAP-C)** – a care management program that provides direct services, connections to resources, and interdisciplinary care coordination so families can care for medically complex infants and children at home.
- **Community Care for Children (CC4C)** – a Medicaid program responsive to the needs of families with children up to age five at risk for medical or developmental delays or disabilities.
- **Health Check Coordination (HCC)** – a Medicaid program that helps families access health insurance coverage, periodic well child checkups, specialized medical services, dental care, age-appropriate immunizations, and transportation for their eligible children through age 19.
- **Baby LINKS** – provides skilled nursing assessments for postpartum mothers and newborns, provides new parents with parenting education, and links new mothers to indicated support services.
- **Family Planning** – provides both information and options so clients can exercise personal choice in determining the number and spacing of their children and improve health practices that will reduce long-term health risks.
- **Maternal Health** – provides early and consistent access to prenatal and postpartum care to uninsured and underinsured pregnant women.
- **Obstetrical Care Case Management (OBCM)** – a Medicaid program focused providing access to health care, and social service and community support systems to high-risk pregnant women and their families.
- **Breast and Cervical Cancer Control Services** – provides free or low-cost breast and cervical screening and follow-up services to uninsured and underinsured women.

- **Women, Infants and Children (WIC)** – a food supplement (food and infant formula) and nutrition education program for pregnant and post-partum women, infants, and children under age 5; also provides breastfeeding education and support and loans breast pumps.
- **Breast Feeding Peer Counseling** – provides education and support to pregnant and breastfeeding women in the WIC program.
- **Immunization Services** – offers immunizations for vaccine-preventable diseases and provides education to raise awareness of the importance of immunizations.
- **Diabetes Education and Management Program** – an American Diabetes Association-recognized program that offers individual and group education to people with diabetes.
- **Medical Nutrition Therapy (MNT)** – provides nutrition assessment, counseling, and education to improve individual and community health.
- **Telemedicine** - he DCDPH is working in partnership with the Engelhard Rural Health Clinic to identify opportunities to better support the health and health outcomes for the community through the use of Telehealth technology. One of the opportunities being explored is the expansion of current services/support to home health, hospice and substance abuse/mental health clients on Hatteras Island (particularly since access via customary transportation is often interrupted due to weather and/or road conditions). Another opportunity being explored is the availability of palliative care consults for primary care physicians in our community to enhance the quality of symptom management for patients at the end of life.

Numerical data on DCDPH Community and Clinical Services Division outcomes and services (e.g., number of patients, number of visits, number of tests, number of services, etc.) are presented in Appendix B.1. Below are presented summary data on the demographic composition of DCDPH clients by program area. The raw data on which these summaries are based appear in Appendices B.2.1, B.2.2, and B.2.3.

<u>Program Utilization by Age</u>, FY2011-2012 (Appendix B.2.1)

- **Adult Health** – The largest proportion of the 1,510 patients in this program (24.8%) was in the 55-64 age group. The next highest proportions were in the 45-54 age group (21.5%) and the 35-44 age group (18.8%).
- **Child Health** – The vast majority of the 286 patients in this program (87.0%) were under the age of five, and within that proportion 41% were infants under the age of one, and 52% were one year old.
- **Dental Health** – Because the *Miles of Smiles* mobile dental program is focused on serving children, almost 97% of the 711 dental health clients were under the age of 18.
- **Family Planning** – The largest proportion of the 1,146 clients in this program (44.7%) was in the 25-34 age group. The next highest proportions were in the 18-24 age group (28.9%) and the 35-44 age group (15.6%).
- **Immunization** – The largest proportion of the 2,520 clients of the immunization program (18.1%) was in the 55-64 age group. The next highest proportions were in the 45-54 age group (16.4%), the 65+ age group (14.4%), and the 7-17 age group (14.2%).
- **Maternal Health** – The largest proportion of the 442 clients in this program (62.4%) was in the 25-34 age group. The next highest proportions were in the 18-24 age group (21.9%) and 35-44 age group (12.9%).
- **Sexually Transmitted Disease** – The largest proportion of the 509 patients in this program (42.4%) was in the 25-34 age group. The next highest proportions were in the 18-24 age group (31.4%) and the 35-44 age group (13.9%).

- **Tuberculosis** – The largest proportion of the 452 clients in this program (23.2%) were in the 18-24 age group. The next highest proportions were in the 25-34 age group (20.4%) and the 35-44 age group (16.8%).

Program Utilization by Race, FY2010-2011 and FY2011-2012 (Appendix B.2.2)

- The vast majority of DCDPH clients in all program areas in both fiscal years were white, with proportions ranging from a low of 77.0% (Dental Health program clients in FY2010-11) to a high of 96.5% (Immunization program clients in FY2011-12).
- Among black clients of DCDPH, the highest proportions participated in the Dental Health Program; 12.9% of program participants in FY2010-11 and 11.3% in FY2011-12 were black. The lowest participation among blacks is in the Immunization program, where only 3.0% of patients in both FY2010-11 and FY2011-12 were black.
- The DCDPH does not indicate "Hispanic/Latino" as a racial or ethnic category in its patient records at the present time.

Program Utilization by Payer, FY2010-2011 and FY2011-2012 (Appendix B.2.3)

- The primary payer for client services varied by program area.
- **Adult Health** – The most common payer in this program in both FY2011 (80.8%) and FY2012 (80.6%) was the patient (i.e., self-pay, or "patient pay only"). The next most common payer was commercial insurance (9.4% in both fiscal years).
- **Child Health** – The most frequent payer in this program area was Medicaid (only), the payer of record for 85.3% of clients in FY2011 and 90.1% of clients in FY2012. The second most common payer was "patient pay only", cited for 13.0% of patients in FY2011 and 7.6% of patients in FY2012.
- **Dental Health** – The most frequent payer in this program area in both FY2011 (55.5%) and FY2012 (54.2%) was Medicaid. The second most frequent payer in FY2011 was patient self-pay (19.3%); the second most frequent payer in FY2012 was commercial insurance only (17.8%).
- **Family Planning** – The most frequent payer in this program area in both FY2011 (78.4%) and FY2012 (79.6%) was patient pay only. The second most frequent payer in both FY2011 (10.4%) and FY2012 (9.8%) was Medicaid.
- **Immunization** – The most frequent payer in this program area in both FY2011 (46.3%) and FY2012 (52.5%) was commercial insurance only. The second most common payer in both FY2011 (24.9%) and FY2012 (28.9%) was patient pay only.
- **Maternal Health** – The most frequent payer in this program area in both FY2011 (44.0%) and FY2012 (43.0%) was Medicaid only. The second most frequent payer in both FY2011 (30.9%) and FY2012 (33.4%) was patient pay only.
- **Sexually Transmitted Disease** – The most common payer in this program area in both FY2011 (83.8%) and FY2012 (84.3%) was patient pay only. The second most common payer in both FY2011 (8.6%) and FY2012 (9.6%) was Medicaid only.
- **Tuberculosis** – The most frequent payer in this program area in both FY2011 (80.0%) and FY2012 (84.5%) was patient pay only. The second most frequent payer in both FY2011 (9.5%) and FY2012 (8.0%) was commercial insurance only.

School Health Section

The agency's school health section provides school health services to children through Public Health Nurses stationed in each school. The public health nurses implement eight components of a coordinated school health program: (1) school health services; (2) health education; (3)

healthy school environment; (4) physical education program; (5) counseling, psychological and social services; (6) school nutrition; (7) health promotion for school faculty and staff; and (8) family and community involvement. In addition to coordinating these eight components, the School Health Section also coordinates the *Miles of Smiles* mobile dental clinic. School health will be covered in greater detail later in this CHA report.

Communicable Disease Control and Surveillance Services Section

This section provides surveillance and tracking of all reportable diseases and emerging health threats. It conducts disease outbreak investigations and implements appropriate control measures, including information dissemination, in response. Agency communicable disease data are presented later in the Health Statistics chapter of this CHA report.

Dare Home Health and Dare Hospice Division

This Division offers a wide variety of health and supportive services in the home to patients ranging in age from newborn infants to elderly persons.

Home Health

Home health services are made available to homebound patients requiring periodic and intermittent skilled services while under the care of a physician. Services include: wound care treatment and education; home infusion therapy for antibiotics or other medications; assistance with disease management and education; and rehabilitative services such as physical, occupational, or speech therapy. Table 88 presents a demographic description of Dare Home Health clients.

- The largest proportions of Dare Home Health clients were female, white, age 75 or older, and resided on the beaches.

Table 88. Demographics of Dare Home Health Clients (FY2010-11 and FY2011-12)

Demographic	FY2011	FY2012
Total patients served	405	413
Total patient visits	4,714	4,142
Patient Gender		
% males	40	41
% females	60	59
Patient Race		
% Caucasian	94	95
% African American	3	3
% Hispanic	1	1
% Other	2	1
Patient Age		
% <8	2	2
% 8-44	6	6
% 45-64	28	27
% 65-74	24	24
% 75+	40	42
Patient Location		
% Manteo	34	36
% Beaches	47	48
% Hatteras	19	16
% Currituck	0	<1

Source: Dare County Department of Public Health Year End Report, 2012.

Table 89 presents annual summary data for home health services by discipline.

- The number of total patients served rose overall from 304 to 413 (36%) between FY2007-08 and FY2011-12. The number of total visits fell overall from 4,758 to 4,142 (12.9%) over the same period.
- The largest proportion of visits involved nursing services, ranging annually from 46.3% to 53.0% of all visits. The second highest proportion of visits involved physical therapy services, ranging annually from 26.7% to 35.3% of all visits.

Table 89. Dare Home Health Annual Service Summary (FY2006-07 through FY2011-12)

Parameter	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012
Total Patients Served	n/a	304	392	381	405	413
Number of Visits by Discipline						
Nursing	2,200	2,359	2,544	2,549	2,353	2,187
Physical therapy	1,293	1,277	1,467	1,509	1,665	1,433
Occupational therapy	153	109	166	122	130	101
Speech therapy	39	52	57	117	21	11
Dietician	42	0	0	0	0	0
Medical social worker	47	30	26	10	11	7
Home health aide	887	924	1,232	855	534	403
TOTAL	4,643	4,758	5,492	5,162	4,714	4,142

Source: Dare County Department of Public Health Year End Report, 2012.

(It should be noted that other providers in Dare County also offer home health services. They are listed in the "Other Licensed Health Resources and Facilities" section of this report.)

Hospice

Hospice services are made available to terminally ill patients with a prognosis of six months or less under the care of a physician. Services include: management of pain, nausea and other unpleasant symptoms; assistance with personal care such as hygiene and housekeeping; coordinating necessary supplies and equipment; and helping patients make final arrangements.

Respite care, through which volunteers provide psychosocial support, is available to give full-time family caregivers a brief break from the demands of their care-giving.

(It should be noted that other providers in Dare County also offer hospice services. They are listed in the "Other Licensed Health Resources and Facilities" section of this report.)

Table 90 presents a demographic description of Dare Hospice clients.

- The largest proportion of Dare Hospice clients were female (55% on average for the period cited).
- The vast majority on hospice clients (97%) were white.
- The highest proportion of hospice patients (67% on average) was age 75 or older.
- An average of approximately 60% of hospice patients resided on the beaches.
- The average length of hospice stay over the period cited was 18.86 days.

Table 90. Demographics of Dare Hospice Clients (FY2010-11 and FY2011-12)

Demographic	FY2011	FY2012
Total patients served (unduplicated)	88	97
Total days of care	3,066	4,937
Average length of stay	17.32	20.40
Patient Gender		
% males	48	42
% females	52	58
Patient Race		
% Caucasian	97	97
% African American	2	1
% American Indian	1	1
% Hispanic	0	0
% Other	0	1
Patient Age		
% 8-44	0	2
% 45-64	17	12
% 65-74	18	17
% 75+	65	69
Patient Location		
% Manteo	24	26
% Beaches	61	59
% Hatteras	15	13
% Currituck	0	2

Source: Dare County Department of Public Health Year End Report, 2012.

Project Health Access

Project Health Access of the Outer Banks was launched in 2012 with support from the Office of Rural Health and Kate B. Reynolds Charitable Trust. By sharing resources and networking with community physicians, hospitals, health departments. and community and rural health centers, access to healthcare for the uninsured or low-income adults residing in Dare County is supported for success. Project Health Access is being developed in collaboration with local healthcare partners and community service organizations throughout Dare County to ensure that uninsured individuals have access to healthcare, and that healthcare services may be received in a timely and consistent manner. Project Health Access assists in linking those who qualify with primary medical homes and medical specialty care/services, as well as appropriate community resources. In addition to utilizing existing safety net care providers, area healthcare providers and medical specialty care providers agree to donate care to a number of eligible patients per year. Enrollees receive primary and/or specialty care from a participating provider, with care coordination by a registered nurse. Support is based upon income and identified medical needs.

Environmental Health Services Division

The primary purpose of this division is to protect the health of the citizens of Dare County by assuring safe food handling, proper on-site sewage treatment and disposal, and proper sanitation. While the purpose of each program within the division is described below, utilization and outcome data for the division is presented in the Environmental Data chapter of this report.

Food and Lodging Program

The purpose of this program is to assure proper sanitation in food and lodging establishments through the enforcement of state and local government regulations. The program administers eighteen NC-regulated programs: restaurants, food stands, push carts, school lunchrooms, limited food stands, lodging, summer camps, bed and breakfast homes, bed and breakfast inns, meat markets, nursing homes, child day care, school buildings, local confinements, elderly nutrition sites, residential facilities, swimming pools, and tattoo parlors. On a local level, the department also regulates seafood markets and free-standing food establishments.

On-Site Water Protection Program

This program protects the public from illness associated with unsafe ground water. The program is responsible for activities associated with subsurface sewage collection, treatment, and disposal, and for activities associated with private drinking water wells.

Recreational Water Quality Program

This program works closely with the NC Recreational Water Quality Program to protect public health by monitoring and performing bacterial testing of recreational waters. Coastal waters are monitored by the state and the US Environmental Protection Agency (EPA). Public notices are issued when bacteriological standards for safe bodily contact (established by the EPA) are exceeded. The division alerts the Recreational Water Quality Contact Group of each advisory prior to its posting.

Health Education and Outreach Services Division

This division provides public awareness campaigns, education on preventive behaviors to promote healthy lifestyles, and ensures that DCDPH staff is properly trained to enhance agency services. Some of the division's work is agency-focused (e.g., staff education, and resource development), or of a public relations outreach/marketing nature (e.g., public awareness, media coordination and public health advocacy committee), but other programs focus on service outreach. Programs in the last category are highlighted below.

Health Promotion

The health promotion program focuses on advocating for policies that address the prerequisites of health, including income, housing, food security, employment, and working conditions. Its work is funded through a combination of state and local funding.

Peer Power Program

Peer Power is a high school class provided in all Dare County high schools through a partnership of the DCDPH and the Dare County Board of Education. The program educates students about healthy behaviors including nutrition, physical activity, and the harmful effects of tobacco use, with the aim of helping participants develop life-long commitment to healthy behaviors. In a key element of the program, the high school students in the program serve as peer educators, teaching their peers the information they have learned.

Recently, a graduate student in the Department of Public Health at the Brody School of Medicine at East Carolina University undertook an Intermediary Outcome Evaluation of Dare County's Peer Power Program. According to the evaluation findings, students exposed to the Peer Power Program are exhibiting healthier lifestyle choices than students who never received the intervention. Of particular importance, according to the evaluation author, participating students are significantly more likely to exercise frequently, eat more fruits and vegetables, and abstain from using tobacco products. Peer Power students also were found to be complying with national health standards at a higher rate than non-Peer Power students (28).

Teen Tobacco Use Prevention and Cessation Initiative

Tobacco Reality Unfiltered (TRU) is a program designed to prevent tobacco use initiation, eliminate exposure to second-hand smoke, promote tobacco cessation, and reduce health disparities attributable to tobacco use.

Healthy Carolinians of the Outer Banks

DCDPH facilitates Healthy Carolinians of the Outer Banks (HCOB), a partnership working locally to mobilize people and resources to address community health challenges. HCOB benefits from representation and input from over 20 local organizations and agencies. Accomplishments of HCOB are detailed in a subsequent chapter of this CHA report.

Public Health Emergency Preparedness Section

The public health emergency preparedness section assures that the DCDPH is prepared to rapidly respond to and meet community health needs following any type of disaster, including intentional or unintentional disasters such as pandemics, terrorism, and weather-related disasters such as hurricanes. One of the section's major tasks during any emergency is to quickly share information on the health status of the community with a range of partners.

Substance Abuse Services

This division offers a full-service prevention, intervention, and treatment program for substance abuse. DCDPH substance abuse services utilization data are presented later in the Health Statistics chapter of this CHA report.

Substance Abuse Treatment

In January 2012, Dare County contracted with East Carolina Behavioral Health to serve as the agent for providing substance abuse services to Dare County residents. The healthcare provider remains PORT Human Services. Program services offered include individual treatment, group treatment, and counseling sessions as well as a new, intensive outpatient program.

School-Based Prevention

The division provides school-based educational programs for substance abuse prevention in partnership with Dare County Schools. Current evidence-based prevention programs offered school system-wide include: *Positive Action,* for elementary (grade 3-5) students; *Project Alert*, for middle school (grade 6-8) students; and *Project TND (Toward No Drugs)*, for 9th graders.

Community-Based Prevention

The division provides the community *Project Exposed*, a substance abuse prevention program which offers a look into the teenage drug culture and presents parents with information needed to combat illicit drug use. The division also provides substance abuse education to youth camps, daycares, civic organizations, and other community groups.

Provider-Based Intervention

The division's *Screening, Brief Intervention and Referral to Treatment (SBIRT)* program trains providers in use of substance abuse screening tools and methods for referring patients to treatment resources. The goal of the program is to facilitate early intervention for substance abuse treatment.

Community Care Clinic of Dare

The Community Care Clinic of Dare provides basic healthcare, medication assistance, and wellness education for financially challenged, uninsured persons living or working in Dare County. The clinic was founded in 2005 by a partnership of the Albemarle Hospital Foundation, the DCDPH, and OBH. Currently, the clinic operates at sites in Nags Head and Frisco.

The Community Care Clinic of Dare will provide: basic (non-emergency) medical care, specialty care referrals (when possible), prescription drug access (excluding pain medication) through voucher and Prescription Assistance Programs, health education, and interagency referrals.

The Community Care Clinic of Dare in *not* able to provide: emergency or urgent care services, access to narcotics or other controlled medications (including those for pain management), mental health care, or obstetrical and gynecological (OB-GYN) care.

To be eligible to receive services from the Community Care Clinic of Dare, the patient must: be at least 18 years old, live or work in Dare County, have no health insurance, Medicare, or Medicaid (or have non-comprehensive health insurance), have less than $3,000 on hand or in a

bank, *and* have household income less than certain prescribed limits based on the number of persons in the household.

Table 91 presents a summary of CCCD utilization data for 2011.

- CCCD patients were predominately female, white, and between the ages of 18 and 65. Most lived either in the beach communities or Roanoke Island/Mainland.
- The most common health problem presented by CCCD patients was hypertension.

Table 91. Community Care Clinic of Dare Utilization Data (2011)

Parameter	Number of Patients
Total	642
Gender	
Male	249
Female	393
Age	
<18	0
18-65	637
>65	5
Race/Ethnicity	
Hispanic or Latino (all races)	91
White (not Hispanic or Latino)	515
Asian/Pacific Islander	6
Black/African American	27
Native American/Alaskan Native	0
Unknown	3
Geoographic Distribution	
Hatteras Island	95
Roanoke Island/Dare County Mainland	202
Beach	328
Currituck County	15
Other	2
Most Common Health Problem	
Diabetes	128
Hypertension	232
COPD	64

Source: Rick Gray, Executive Director, Community Care Clinic of Dare. Personal communication to Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health, November 26, 2012.

School Health

As noted previously, Dare County is fortunate to have a school nurse in each of its public schools. The DCDPH employs all school health nursing staff. The current ratio of school nurses to students in Dare County schools is 1:500; the ratio for the state is 1:1,185. The recommended ratio is 1:750 (29).

The public is sometimes surprised by the wide variety of services provided by school nurses. Student's needs range from first aid for cuts, acute illness nursing and hygiene counseling to chronic disease management, grief counseling and suicide prevention. Table 92 presents a summary of the services provided by nurses in Dare County schools for SY2009-10 through SY2011-12.

Table 92. Dare County School Nurse Activity Summary (SY2009-10 through SY2011-12)

Nature of Activity	No. Services Provided/ Clients Served		
	SY2009-10	SY2010-11	SY2011-12
Screening			
Vision	2,058	2,127	1,992
Dental	207	87	197
Immunization Audit	2,920	1,898	1,586
Pediculosis	405	369	221
Counseling - Individual Session			
ADD/ADHD	n/a	n/a	234
Depression/Psychological Problem/Suicide Ideation	971	1,043	257
Pregnancy	125	49	143
Tobacco Use	50	19	n/a
Substance Abuse	61	70	n/a
Substance abuse, including tobacco use and R_x abuse	n/a	n/a	104
Hygiene/Puberty	1,402	1,118	416
Child Abuse/Neglect	7	12	10
Grief/Loss	38	43	n/a
Bullying/Violence	174	129	146
Mental health illness otherwise not noted	n/a	n/a	706
Chronic Illness - Individual Interventions			
Asthma	476	544	459
Peak Flow	42	14	n/a
Nebulizer	16	6	n/a
Diabetes	625	523	368
Blood Sugar	330	209	n/a
Severe allergies	n/a	n/a	20
Seizure disorder	n/a	n/a	53
Sickle cell	n/a	n/a	0
Chronic Illness otherwise not noted	857	528	202
Services - Individual Interventions			
First Aid			
Illness/injury at home	6,210	6,718	4,927
Major injury	86	88	82
Major illness	27	32	22
Minor injury at school	4,012	4,595	4,549
Minor illness at school	18,460	13,428	13,145
Communicable Disease	1	0	0
Individual Education Plan (IEP)	83	37	50

a - Annual School Health Report 2009-2010; personal communication from Laura Willingham, Health Education Specialist, Dare County Department of Public Health transmitted via email to Sheila Pfaender.
b - Annual School Health Report, 2010-11 and 2011-12; personal communication from Anna Snyder, Public Health Education Specialist, Dare County Department of Public Health transmitted via email to Sheila Pfaender, Public Health Consultant, January 25, 2013.

In an important front-line offense against seasonal influenza, school nurses in Dare County administered 1,199 doses of Flu Mist nasal influenza vaccine to students in SY2011-12. School nurses also collaborated with school officials to implement the Gfeller-Waller Concussion Act, and to assist in identifying and caring for student athletes post-concussion (27).

Long-Term Care Facilities

The NC Division of Aging and Adult Services is the state agency responsible for planning, monitoring and regulating services, benefits and protections to support older adults, persons with disabilities, and their families. Among the facilities under the agency's regulatory jurisdiction are nursing homes, family care home, and adult care homes. Each category of long-term care is discussed subsequently, but Table 93 summarizes the limited number of facilities in each category in Dare County. Note that at the date of this report there were no family care homes in Dare County.

Table 93. NC-Licensed Long-Term Care Facilities in Dare County (November, 2012)

Facility Type/Name	Location	# Beds SFN (ACH)[1]
Nursing Homes/Homes for the Aged		
Colony Ridge Nursing and Rehabilitation Center	Nags Head	126 (18)
Adult Care Homes/Homes for the Aged		
Spring Arbor of the Outer Banks	Kill Devil Hills	120

[1] - SNF (ACH) = Maximum number of nursing or adult care home beds for which the facility is licensed.
Source: NC Department of Health and Human Servics, Division of Health Services Regulation (DHSR), Licensed Facilities, Adult Care Homes, Family Care Homes, Nursing Facilities (by County); http://www.ncdhhs.gov/dhsr/reports.htm.

Nursing Homes

Nursing homes are facilities that provide nursing or convalescent care for three or more persons unrelated to the licensee. A nursing home provides long term care of chronic conditions or short term convalescent or rehabilitative care of remedial ailments, for which medical and nursing care are indicated. All nursing homes must be licensed in accordance with state law by the NC Division of Health Service Regulation Licensure Section (30).

Table 94 presents the number of nursing facility beds in the four jurisdictions being compared. Note that the county figures have not changed in seven years.

Table 94. Number of Nursing Facility Beds (2005-2011)

Location	2005	2006	2007	2008	2009	2010	2011
Dare County	126	126	126	126	126	126	126
Currituck County	100	100	100	100	100	100	100
Hyde County	80	80	80	80	80	80	80
State of NC	43,987	44,248	44,210	44,234	44,315	45,143	45,382

Note: this count includes beds licensed as nursing facility beds, meaning those offering a level of care less than that offered in an acute care hospital, but providing licensed nursing coverage 24 hours a day, seven days a week.
Source: Log Into North Carolina (LINC) Database, Topic Group Vital Statistics and Health (Data Item 513); http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

At the time this report was prepared, there was only one state-licensed nursing home in Dare County: Colony Ridge Nursing and Rehabilitation Center in Nags Head.

Adult Care Homes

Adult care homes are residences for aged and disabled adults who may require 24-hour supervision and assistance with personal care needs. People in adult care homes typically need a place to live, some help with personal care (such as dressing, grooming and keeping up with medications), and some limited supervision. Medical care may be provided on occasion but is not routinely needed. Medication may be given by designated, trained staff. These homes vary in size from *family care homes* of two to six residents to *adult care homes* of more than 100 residents. These homes were previously called "domiciliary homes," or "rest homes." The smaller homes, with two to six residents, are still referred to as family care homes. In addition, there are Group Homes for Developmentally Disabled Adults, which are licensed to house two to nine developmentally disabled adult residents (31).

Adult care homes are different from nursing homes in the level of care and qualifications of staff. They are licensed by the state Division of Health Service Regulation (Group Care Section) under State regulations and are monitored by Adult Home Specialists within county departments of social services. Facilities that violate licensure rules can be subject to sanctions, including fines (31).

At the time this report was prepared, there was only one state-licensed adult care home in Dare County: Spring Arbor of the Outer Banks. This facility had a total of 120 beds.

Alternatives to Institutional Care

An alternative to institutional care preferred by many disabled and senior citizens is to remain at home and use community in-home health and/or home aide services. As noted previously, Dare Home Health and Dare Hospice is a licensed home health services provider but there are other licensed providers in the county; Table 95 below lists the others. Note that there may be additional providers that refer to themselves as “home health service (or care) providers”; the table below lists only those licensed by the state.

Table 95. Other NC-Licensed Hospice and Home Care Service Providers in Dare County (As of November, 2012)

Type and Name of Facility	Location
Licensed Hospice Facilities	
Continuum Home Care and Hospice of Dare County	Nags Head
Licensed Home Care Only Facilities	
Coastal Rehabilitation, Inc.	Kitty Hawk
Cintinuum Home Care of the Outer Banks	Nags Head
Dare County Department of Social Services	Nags Head
Visiting Angels	Southern Shores

Source - NC Department of Health and Human Services, Division of Health Services Regulation (DHSR), Licensed Facilities, Hospitals (by County); http://www.ncdhhs.gov/dhsr/reports.htm.

As noted in the table above, DCDSS provides in-home aide services for their clients. Aide services typically include help with bathing, dressing, walking, meal preparation, essential errands, housekeeping and home management. Table 96 presents in-home aide service utilization data for the period from 2004-2011.

- There was a net increase in the annual number of clients who received DCDSS in-home aide services between 2004 and 2009, followed by a subsequent two-year decrease. The annual average number of clients over the period cited was 151.
- For the period cited the number of hours of in-home aide services provided by DCDSS peaked in 2006 (34,665) and has declined since.

Table 96. In-Home Aide Services Provided by Dare County Department of Social Services (2004-2011)

Activity	2004	2005	2006	2007	2008	2009	2010	2011
No. of Clients Served	147	153	144	153	156	162	152	143
No. Hours of Service Provided	31,004	31,365	34,665	31,515	30,195	31,001	28,971	23,918

Source: Dare County Department of Social Services, State of the Department Annual Reports, 2005, 2006, 2007, 2008, 2009, 2010, 2011 and 2012.

Adult Day Care/Adult Day Health Centers

Adult day care provides an organized program of services during the day in a community group setting for the purpose of supporting the personal independence of older adults and promoting their social, physical and emotional well-being. Also included in the service, when supported by funding from the Division of Aging and Adult Services (NCDAAS), are no-cost medical examinations required for admission to the program. Nutritional meals and snacks, as appropriate, are also expected. Providers of adult day care must meet State Standards for Certification, which are administrative rules set by the state Social Services Commission. These standards are enforced by the office of the Adult Day Care Consultant within the NCDAAS. Routine monitoring of compliance is performed by Adult Day Care Coordinators located at county departments of social services. Costs to consumers vary, and there is limited funding for adult day care from state and federal sources (32).

Adult day health services are similar programs to adult day care programs that they provide an organized program of services during the day in a community group setting to support the personal independence of older adults and promote their social, physical, and emotional well-being. In addition, providers of adult day health services, as the name implies, offer health care services to meet the needs of individual participants. Programs must also offer referral to and assistance in using other community resources, and transportation to and from the program may be provided or arranged when needed and not otherwise available. Also included in the service, when supported by funding from the NCDAAS, are medical examinations required for individual participants for admission to day health care services and thereafter when not otherwise available without cost. Food and services to provide a nutritional meal and snacks as appropriate are expected as well (33).

The NCDAAS did not list any state-funded adult day care/adult day health centers for Dare County at the time this report was developed. However, there are at least two local service providers that focus on populations with special needs and their caregivers.

The **GEM Center**, located in Kill Devil Hills, is a community-based nonprofit organization that provides a positive and supportive environment for adults with memory loss, physical and mental disabilities and those in need of socialization (34).

Monarch Beach Club, located in Manteo, provides services to individuals with intellectual and developmental disabilities (35).

Mental Health Services and Facilities

The unit of NC government responsible for overseeing mental health services is the Division of Mental Health, Developmental Disabilities and Substance Abuse Services (DMH/DD/SAS). In NC, the mental health system is built on a system of Local Management Entities (LMEs). LMEs are agencies of local government—area authorities or county programs—that are responsible for managing, coordinating, facilitating and monitoring the provision of mental health, developmental disabilities and substance abuse services in the catchment area served. LME responsibilities include offering consumers 24/7/365 access to services, developing and overseeing providers, and handling consumer complaints and grievances (36).

At the time this report was prepared, the LME for Dare County was East Carolina Behavioral Health (ECBH). ECBH serves a total of 19 counties in eastern NC, facilitating mental health services for both children and adults. Services offered include: diagnostic assessment, outpatient therapy, multi-systemic therapy, psychosocial rehabilitation, developmental therapy, intensive in-home services, medication management, substance abuse residential care, day treatment, community respite, group living, supportive living, supportive employment, substance abuse treatment (outpatient and residential), day activity and vocational program for the developmentally disabled, personal assistance, and targeted case management.

Table 97 (on the following page) lists ECBH network providers serving Dare County residents.

It should be noted, however, that the list of ECBH providers is a master list of those offering services throughout the LME's 19-county service area; at the present time very few network providers and services are physically located in Dare County itself. A network gap analysis commissioned by ECBH and released in March, 2010 identified many services that would need to improve dramatically in order to meet the needs at that time. For example, the gap analysis revealed that disabled populations were "dramatically underserved", substance abuse services were "almost non-existent", and that people living in the area had "no expectations" for local services (37). Gap analysis findings specific to Dare County included the following:

- Lack of substance abuse services
- Lack of short- and long-term inpatient treatment beds
- Lack of psychiatrists
- Lack of crisis care
- Lack of collaboration among mental health care providers

Table 97. East Carolina Behavioral Health Network Providers Serving Dare County (As of September, 2012)

Provider	Location (Nearest, if Several)	Service	Age Group
A Plus Results Independent Living, Inc.	Plymouth	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Act Medical Group, PA	Numerous	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Albemarle Hospital	Elizabeth City	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Albemarle Psychological Innovations	Elizabeth City	Mental Health	Child/Adult
Anointed Mental Health, LLC	Greenville	Mental Health, Substance Abuse	Child/Adult
ARC of NC	Elizabeth City, Ahoskie	Developmental Disability, Mental Health	Child/Adult
Axford, Mary Claire, LCSW	Nags Head	Mental Health	Child/Adult
Benjamin House Community Services	Elizabeth City	Developmental Disability, Substance Abuse	Child/Adult
Bowens, William C., MD	Elizabeth City	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Buscemi, Cary S. / Sea Oats Counseling	Nags Head	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Career Fulfillment Services, PLLC	Greenville	Mental Health	Child/Adult
Carolinaeast Medical Center	New Bern	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Catholic Charities of the Diocese of Raleigh, Inc.	Hertford	Mental Health	Child/Adult
Chasteen, Athena, LCSW	Elizabeth City	Mental Health, Substance Abuse	Adult
Children and Family Counseling Services	Nags Head	Mental Health	Child/Adult
Crisp, Bryan, MA, LMFT, BCBA	Greenville	Developmental Disability, Mental Health	Child/Adult
Dickinson, Patricia S., PhD	Havelock	Developmental Disability, Mental Health	Child/Adult
Dixon Social Interactive Services, Inc.	Washington	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Dream Provider Care Services, Inc.	Plymouth, Edenton, Columbia	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Eastern Psychiatric & Behavioral Specialists, PLLC	Greenville	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
ECU Physicians Pediatrics	Greenville	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
ECU Physcians Psychiatry Outpatient Center	Greenville	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Evans Health Psychological Services	Ahoskie	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Hoffmier, Elizabeth G., LCSW	Nags Head	Mental Health	Child/Adult
Hunsberger, Hilary K., LCSW	Elizabeth City	Mental Health	Child/Adult
Integrated Family Services	Elizabeth City, Ahoskie	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Jaworski, Jeffrey A., LPC, LCAS	Nags Head	Mental Health, Substance Abuse	Child/Adult
Johnston, Edward Angus, MS, CRC, LCAS, LPC	Greenville	Mental Health, Substance Abuse	Child/Adult
Johnston, Grace G., MSW, LCSW, LCAS	Greenville	Mental Health, Substance Abuse	Child/Adult
Kenyear, Stephanye A., RN, NP, PLLC	Greenville	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Life, Inc.	Goldsboro	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Making the Difference Services, LLC	Greenville	Developmental Disability, Mental Health	Child/Adult
Martin General Hospital	Williamston	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Medical Park Psychiatric Associates	Greenville	Mental Health	Adult
Minor-Schork, Debra, RN, LLC	Edenton	Mental Health	Adult
Monarch	Manteo	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
New Bern Professional Health Services, PC	New Bern	Developmental Disability, Mental Health	Child/Adult
New Hope Counseling Services, PA	Washington	Mental Health	Child/Adult
OneCare Behavioral Health System	Elizabeth City	Mental Health, Substance Abuse	Child/Adult
Pathways Counseling Center	Elizabeth City	Mental Health, Substance Abuse	Child/Adult
Peele Counseling, PLLC	Nags Head	Mental Health, Substance Abuse	Child/Adult
PORT Human Services	Nags Head	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Precision Health Care Services, Inc.	Greenville	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Pride in North Carolina	Elizabeth City	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Recovery Innovations - Wellness City	Greenville	Mental Health, Substance Abuse	Adult
Rescare Inc., CNC/Access, Inc	Nags Head	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Roberts, Christopher James, LCSW, LCAS	Manteo	Mental Health, Substance Abuse	Child/Adult
Roberts, Kelly, LCSW	Manteo	Mental Health, Substance Abuse	Child/Adult
Rosenke, Dorothy, PsyD	Elizabeth City	Developmental Disability, Mental Health	Child/Adult
Sandalwood Counseling	Nags Head	Mental Health	Child/Adult
Scott, Jean D., CCSW, LCSW, RN	Elizabeth City	Mental Health	Adult
The Outer Banks Hospital	Nags Head	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Thomas, Elizabeth M., LPC	Elizabeth City	Mental Health	Child/Adult
Vidant Adult Behavioral Health Center	Ahoskie	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Vidant Bertie Hospital	Windsor	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Vidant Chowan Hospital	Edenton	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Vidant Medical Group, UHS Physicians, LLC	Greenville	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Vidant Medical Center	Greenville	Developmental Disability, Mental Health, Substance Abuse	Child/Adult

Source: East Carolina Behavioral Health Provider Network Directory, September 2012

There is a very short list of NC-licensed mental health facilities physically located in Dare County, as shown in Table 98. These facilities provide day activities, substance abuse treatment, or supervised living.

Table 98. NC-Licensed Mental Health Facilities (G.S. 122C) (November, 2012)

Operator/Name of Facility	Location	Category
Monarch		
Beach Club of Dare	Manteo	Day Activity
PORT Human Services		
PORT Human Services-New Horizons	Nags Head	Substance Abuse Intensive Outpatient Program
Life, Inc.		
Roanoke Trail Facility	Manteo	Supervised Living DD Adult

Source - NC Department of Health and Human Services, Division of Health Services Regulation (DHSR), Licensed Facilities, Mental Health Facilities (G.S. 122C) (by County); http://www.ncdhhs.gov/dhsr/reports.htm

Table 99 presents a five-year trend of LME utilization data for Dare County.

- Total LME admissions jumped by 94% between SFY2011 and SFY2012.
- The largest proportion of LME admissions in Dare County each SFY was in the mental health category, ranging from 58% to 72% of total admissions.
- The substance abuse category accounted for the second largest proportion of admissions, ranging from 26% to 42% of total admissions.

Table 99. Dare County LME Admissions, by Admissions Category (SFY2008 – SFY2012)

Admission Category	Number of LME Admissions				
	SFY2008	SFY2009	SFY2010	SFY2011	SFY2012
Mental Health	355	315	332	315	549
Developmental Disability	5	1	11	9	27
Substance Abuse	161	229	145	115	274
Total	521	545	488	439	850

Source: Trends in LME Admissions and Persons Served, by County, 5-Year Study. NC Department of Health and Human Services, Division of Mental Health, Developmental Disabilities and Substance Abuse Services, Consumer Data Warehouse (CDW) Reports website; http://www.ncdhhs.gov/mhddsas/providers/CDW/reports.htm.

Additional data regarding specific mental health admissions and diagnoses appears in a Mental Health Section of the Health Statistics Chapter of this CHA report.

Other Healthcare Resources

Other NC Licensed Healthcare Facilities

- As of November 2012 there was one NC-licensed ambulatory surgical facility in Dare County, the RMS Surgery Center in Kitty Hawk (Table 100).
- There were no NC-licensed cardiac rehabilitation facilities or nursing pools in Dare County as of November 2012 (Table 100).

Table 100. Other NC-Licensed Healthcare Facilities in Dare County (As of November, 2012)

Type and Name of Facility	Location
Licensed Ambulatory Surgical Facilities	
RMS Surgery Center	Kitty Hawk
Licensed Cardiac Rehabilitation Facilities	
None	
Licensed Nursing Pools	
None	

Source - NC Department of Health and Human Services, Division of Health Services Regulation (DHSR), Licensed Facilities, Hospitals (by County); http://www.ncdhhs.gov/dhsr/reports.htm.

Dialysis Centers

As of November 2012 there was one dialysis center in Dare County, Dare County Dialysis, located in Manteo. This for-profit facility, operated by the corporate entity Fresenius Medical Care (FMC) had nine hemodialysis stations and was Medicare-certified (38).

Urgent Care Centers

The ***Outer Banks Hospital Urgent Care Center***, located in Southern Shores, provides walk-in medical care for illnesses and conditions from sprains and cuts to fish hooks and sore throats. It offers on-site x-ray and laboratory facilities, and can perform minor surgical procedures (39).

Outer Banks Urgent Care and Family Practice, located in Nags Head, is open seven days a week. Walk-in patients are seen for urgent and emergency care; the staff also offers regular family medical care by appointment. Its staff includes Spanish-speaking providers (40).

Beach Medical Care, Ltd. is an urgent care/family practice clinic located in Kitty Hawk, NC. It treats pediatric to geriatric patients, and walk in patients are accepted. It is open seven days a week, and accepts major insurances. Affiliated with Albemarle Health and Regional Medical Center in Kitty Hawk (41).

Regional Medical Center

Regional Medical Center, located in Kitty Hawk, is affiliated with Albemarle Health. Services include:

Specialty Physician Offices – Staffed by board certified physicians in a variety of specialty areas ranging from cardiology and neurology to pulmonology and urology,

Diagnostic Imaging – Includes x-ray and magnetic resonance imaging (MRI) as well as digital mammography; bone densitometry; radiographic and digital spot fluoroscopy; abdominal, pelvic, thyroid, breast, and vascular ultrasound; and intravenous pyelogram (IVP).

Outpatient Surgery – Offers a full range of outpatient surgical procedures, including small incision surgery.

Urgent Care and Family Medicine – Provided by Beach Medical Care, Ltd. (see above) (42).

Other Dare County Medical Centers and Group Practices

Table 101 presents a limited list of other medical centers and group practices in Dare County.

Table 101. Other Medical Centers and Group Practices in Dare County (As of February, 2013)

Practice/Practitioner	Location	Services
HealthEast Family Care	Avon	Primary care for children and adults
Hatteras Island Family Medicine	Frisco	Primary care for children and adults
HealthEast Family Care	Hatteras	Primary care for children and adults
Medical House Calls	Kill Devil Hills	Traveling clinic for children and adults in their homes
Beach Medical Care, Ltd.	Kitty Hawk	Urgent care and family practice for children and adults
Regional Medical Center	Kitty Hawk	Urgent and non-urgent care, diagnostics, laboratory, cardiac rehabilitation, physical therapy and outpatient surgery.
Dare Medical Associates, PA	Manteo	Family medicine, occupational medicine and acute care
Island Medical Center	Manteo	Family medical care; x-ray services available
HealthEast Family Care	Nags Head	Primary care for children and adults
Outer Banks Family Medicine	Nags Head	Primary care for children and adults
Care-a-Van Family Practice and House Calls	Southern Shores	Comprehensive family healthcare with housecalls available
Chesapeake Health Medical Office	Nags Head	Primary care

Source: Outer Banks Services, Outer Banks Hospitals and Medical Facilities. Outer Beaches Realty website; www.outerbeaches.com/OuterBanks/Services/HospitalsMedicalFacilities.

Recreational Facilities

Physical activity can support individual and community health and wellbeing. Dare County offers many opportunities for outdoor physical recreation associated with its temperate climate and its proximity to the ocean: swimming, boating, fishing and hunting, hiking and cycling, to name a few. Those who prefer organized team and/or indoor activities are also well-served by the many recreational facilities, both public and private, located throughout the county. Table 102 lists many of the public parks and recreational centers in the county; Table 103 lists some of the private gyms and sports clubs.

Table 102. Public Recreational Facilities in Dare County

Category/Name	Location	Facilities/Programs
Public Recreational Centers[a]		
Dare County Center	Manteo	Multi-generational facility hosting programs and activities including arts and crafts classes, exercise classes, cooking classes, health and wellness classes and more. Facilities include fitness room, arts and crafts room, library/electronic media room, kitchen and dining room, stage, and classrooms.
Fessenden Center	Buxton	Multi-generational facility hosting programs and activities including athletics, arts, wellness and general leisure programming. Youth programs include classes and lessons as well as team and individual sports, summer camps and special events.
Youth Center at Family Recreation Park	Kill Devil Hills	Facility hosts sports activities for youth and adults, including basketball, volleyball, soccer, Frisbee, tennis, and other organized programs.
Lions Club Center at Westcott Park	Manteo	Facility hosts sports activities for youth, including basketball, soccer, football and swimming lessons (in the summer), and other organized programs.
Dare County Youth Center	Manteo	A gathering place for youth in middle- and high school, featuring gaming systems, pool table, foosball table, computer room, tutoring room, library/reading room, arts and crafts room, and music room.
Dare County Dance Department	Manteo	Headquartered in Manteo, this program offers classes for ages three and up in Manteo, Kill Devil Hills and Buxton. Classes are taught in ballet, tap, jazz, hop-hop, lyrical, modern and pointe.
Public Parks[b]		
Aviation Park	Kill Devil Hills	Fitness trail, roller hockey rink, skate park, children's play area; restrooms.
Hayman Park	Kill Devil Hills	Neighborhood recreation area includes playground and picnic area.
Kitty Hawk Park	Kitty Hawk	Covered picnic shelter, skate park, playground, dog park, half-mile walking trail, restrooms.
Family Recreation Park	Kill Devil Hills	Park features include: multipurpose field, lighted baseball field, lighted softball field, batting cages, lighted tennis courts, outdoor volleyball court, tennis hitting wall, playground with climbing wall, covered picnic pavilion, concession stand, press boxes, and restrooms.
Kill Devil Hills Field	Kill Devil Hills	Lighted softball field, lighted tennis courts, soccer field, playground, restrooms.
Nags Head Soccer Complex	Nags Head	Mid- and large-size soccer/lacrosse fields, covered picnic shelter, concession stand, restrooms.
Fessenden Center Field	Buxton	Lighted multi-use field, soccer goals, concession stand, picnic tables and benches, playground, basketball court, lighted tennis courts, skate park, restrooms.
Burrus Field	Buxton	Lighted youth baseball/softball field, concession stand, portable bleachers, restrooms.
Avon Playground	Avon	Fenced playground with grassy area, play center with slides, tunnels and climbing bars, swing set, picnic pavilion with tables, benches.
Rodanthe Community Center Playground	Rodanthe	Play center with slides, tunnels and climbing bars, merry-go-round, swing set, picnic tables, restrooms in (community center).
Westcott Park	Manteo	Basketball court, lighted tee-ball field, lighted baseball field, lighted softball field, batting cages, playgrounds, concession stand, restrooms.
lege of the Albemarle Roanoke Island Campus	Manteo	Lighted baseball field, batting cage, skate park, outdoor volleyball court, concession stand, restrooms.
Old Swimming Hole	Manteo	Picnic shelter, playground.
Airport Pavilion	Manteo	Picnic shelter, playground.
Manns Harbor Fire Station	Manns Harbor	Playground, outdoor basketball court.
Pointer's Field	Stumpy Point	Baseball/softball field, playground.
Pigum Walker Park	Wanchese	Lighted baseball field, lighted softball field, playground, picnic shelter, tennis courts, concession stand, restrooms.

a - Dare County Government, Park and Recreation, Facilities; http://darenc.com/ParksRec/.
b - Dare County Government, Parks and Recreation, http://www.darenc.com/parksrec/parks.asp.

Table 103. Private Gyms/Sports Clubs/Recreational Facilities in Dare County

Name	Location	Facilities/Programs
Adult Fitness Center, OBX	Southern Shores	Cardio equipment; circuit training
Ashtanga Yoga Center	Nags Head	Yoga lessons
Barrier Island Fitness Center	Kitty Hawk	Weight room; swimming pool; hot tub; steam and sauna rooms
Bushin Kan Karate/Outer Banks Martial Arts	Kitty Hawk	Martial arts classes
Crossfit Outer Banks and OBX Weightlifting	Kill Devil Hills	Weights; cardio equipment; conditioning training programs
Curves	Kill Devil Hills	Weight loss consultant and equipment
Duck Landing Club House	Duck	Amusements and recreation
Island Fitness Club	Buxton	Cardiovascular and weight training equipment
Knuckle Up Fitness	Kitty Hawk	Gym; personal training; boxing; health club; lessons
Nags Head Waterworks	Nags Head	Water sports adventure: parasailing, wave running
Nautics Hall Health and Fitness Center	Manteo	Indoor pool; exercise equipment
Outer Banks Family YMCA	Nags Head	Indoor, outdoor pools; fitness center; classes
Outer Banks Sports Club	Nags Head	Gym; sauna; cardio equipment; classes
Sanderling Resort and Spa	Duck	Fitness center; spa; swimming pool; golf; tennis
Spa Koru	Avon	Spa; salon; fitness center; residential facilities

Sources: Beach Book, the Official Phone Directory of the Outer Banks; CenturyLink Phone Directory, Outer Banks / Albemarle Area

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 Dare 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 Dare 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.)

Behavioral Risk Factor Surveillance System (BRFSS)

Dare County residents participate in the state's annual Behavioral Risk Factor Surveillance System (BRFSS) Survey, as part of an aggregate 41-county sample that encompasses the entire eastern third of NC. It is not possible to isolate survey responses from Dare County BRFSS participants without oversampling the county, which rarely occurs. Since the aggregate regional data covers such a diverse area, the results cannot responsibly be interpolated to describe health in Dare County. As a result, BRFSS data will not be used in this document *except* for local BRFSS data manipulated by the CDC to yield a county-level *estimate*.

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. Table 104 shows where NC stood in the 2011 rankings relative to the "best" and "worst" states, where first ranked is best and 50th ranked is worst.

Table 104. Rank of North Carolina in America's Health Rankings (2011)

Location	National Rank (Out of 50)[1]		
	Overall	Determinants	Outcomes
Vermont	1	1	5
North Carolina	32	31	38
Mississippi	50	50	50

Source: United Health Foundation, 2011. America's Health Rankings; http://www.americashealthrankings.org/mediacenter/mediacenter2.aspx.

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.

Table 105 presents the county rankings for Dare County, Currituck County and Hyde County in terms of health outcomes and health factors; Table 106 presents additional detail.

- Dare County ranks fifth in the state of NC in terms of health outcomes, chiefly due to a very favorable mortality rate, but 14th in terms of health factors, in which category health behaviors and clinical care contribute most to the lower rank.
- Currituck County and Hyde County fare worse than Dare County in almost every category ranked, with the exception of social and economic factors in Currituck County (ranked 6th) and physical environment in Hyde County (ranked 1st).

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.

Table 105. County Health Rankings (2012)

Location	County Rank (Out of 100)[1]							
	Health Outcomes			Health Factors				
	Mortality	Morbidity	Rank	Health Behaviors	Clinical Care	Social & Economic Factors	Physical Environment	Rank
Dare County	3	22	5	27	28	13	4	14
Currituck County	62	43	51	36	62	6	52	17
Hyde County	25	42	31	47	90	42	1	31

Source: County Health Rankings and Roadmaps, 2012. University of Wisconsin Population Health Institute; http://www.countyhealthrankings.org/app/north-carolina/2012/rankings/outcomes/overall.

Table 106. County Health Rankings Details (2012)

Outcome or Determinate	Dare County	Currituck County	Hyde County	NC County Average	National Benchmark[1]
Mortality					
Premature death	5,943	9,117	7,685	7,961	5,466
Morbidity					
Poor or fair health	16%	n/a	n/a	18%	10%
Poor physical health days	3.9	4.1	3.8	3.6	2.6
Poor mental health days	3.9	3.4	3.1	3.4	2.3
Low birthweight	7.5%	8.6%	9.3%	9.1%	6.0%
Health Factors					
Health Behaviors					
Adult smoking	n/a	n/a	n/a	22%	14%
Adult obesity	29%	33%	32%	29%	25%
Physical inactivity	25%	24%	31%	25%	21%
Excessive drinking	n/a	n/a	n/a	13%	8%
Motor vehicle crash death rate	21	25	n/a	19	12
Sexually transmitted infections	214	170	290	445	84
Teen birth rate	36	36	58	50	22
Clinical Care					
Uninsured	19%	18%	25%	18%	11%
Primary Care physicians	1703:1	6040:1	N/A	1135:1	631:1
Preventable hospital stays	51	70	82	64	49
Diabetic screening	86%	86%	92%	87%	89%
Mammography screening	69%	67%	64%	70%	74%
Social and Economic Factors					
High school graduation	91%	80%	83%	78%	N/A
Some college	64%	56%	44%	61%	68%
Unemployment	10.7%	6.8%	8.3%	10.6%	5.4%
Children in poverty	24%	18%	30%	25%	13%
Inadequate social support	n/a	n/a	n/a	21%	14%
Children in single-parent households	34%	23%	41%	34%	20%
Viloent crime rate	291	182	n/a	448	73
Physical Environment					
Air pollution-particulate matter days	0	0	0	1	0
Air pollution-ozone days	0	0	0	6	0
Access to recreational facilities	15	8	19	11	16
Limited access to healthy foods	1%	25%	6%	10%	0%
Fast food restaurants	35%	44%	8%	49%	25%

Source: County Health Rankings and Roadmaps, 2012. University of Wisconsin Population Health Institute; http://www.countyhealthrankings.org/app/north-carolina/2012/rankings/outcomes/overall.

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.

Pregnancy, Fertility and Abortion Rates, Women Age 15-44

Table 107 presents total annual pregnancy, fertility and abortion rates for women age 15-44 for the period from 2007-2011.

- The *total pregnancy rate* in Dare County was higher than the total pregnancy rate for Currituck County and for NC throughout the period cited and higher than the comparable pregnancy rate in Hyde County in every year except 2010. The total pregnancy rate in Dare County decreased by 14% overall between 2007 and 2011.
- The *total fertility rate* in Dare County was higher than the total fertility rate for Currituck County throughout the period cited, higher than the total fertility rate for NC in all years cited except 2007, and higher than the total fertility rate in Hyde County in every year except 2010. The total fertility rate in Dare County decreased by 6% overall between 2007 and 2011.
- The *total abortion rate* in Dare County was above the total abortion rate for Currituck County, Hyde County and NC throughout the period cited. The total abortion rate in Dare County decreased by 36% overall between 2007 and 2011.

Table 107. Total Pregnancy, Fertility and Abortion Rates, Ages 15-44 (Single Years, 2007-2011)

Location	Females Ages 15-44														
	2007			2008			2009			2010			2011		
	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate
Dare County	91.9	67.9	23.6	91.5	72.2	18.4	85.3	67.9	17.2	80.2	65.4	14.8	78.9	63.6	15.1
Currituck County	71.9	57.7	13.9	57.3	45.2	11.7	62.6	49.2	13.4	69.0	56.3	12.7	66.1	53.8	12.3
Hyde County	77.3	67.0	**9.0**	80.5	67.7	12.8	63.0	51.9	**11.1**	84.2	72.4	11.9	72.1	62.5	**9.6**
State of NC	84.7	69.1	15.1	83.9	69.1	14.4	78.9	65.1	13.4	76.4	62.7	13.2	73.3	61.5	11.4

Note: Bold type indicates an unstable rate based on a small number (fewer than 10 cases)
Source: NC Center for Health Statistics, County-level Data, County Health Data Books (2007-2013). Pregnancy and Live Births. Pregnancy, Fertility, & Abortion Rates per 1,000 Population, by Race, by Age; http://www.schs.state.nc.us/SCHS/data/databook/.

Beginning in 2010, NC SCHS began reporting stratified pregnancy, fertility and abortion data in a different manner than previously. Prior to 2010 the data was stratified by “total”, “white” and “minority”. After that date and to the present time, the data was stratified by “total”, “White non-

Hispanic", "African-American non-Hispanic", "Other non-Hispanic", and "Hispanic". Because of this change, stratified data prior to 2010 is not directly comparable to 2010 and 2011 data. Table 108 presents pregnancy, fertility, and abortion rates stratified according to the new model.

- Pregnancy and fertility rates among Dare County Hispanics exceeded those of the other racial and ethnic groups in the county in 2010. The pregnancy rate among Other non-Hispanics and the fertility rate among Hispanics were higher than the comparable rates in the other groups in 2011. It should be noted that some rates for African-American non-Hispanics and Other non-Hispanics in both periods were unstable, as indicated by the bold type.

Table 108. Pregnancy, Fertility and Abortion Rates, Ages 15-44, Stratified by Race/Ethnicity (2010 and 2011)

Location	Females Ages 15-44					
	2010			2011		
	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate
Dare County Total	80.2	65.4	14.8	78.9	63.6	15.1
White, Non-Hispanic	73.2	58.2	15.0	73.2	57.7	15.4
African American, Non-Hispanic	64.7	**41.2**	**23.5**	72.2	67.0	**5.2**
Other, Non-Hispanic	**68.0**	**48.5**	**19.4**	118.8	108.9	**9.9**
Hispanic	151.5	145.6	**5.8**	112.6	110.7	**1.9**
Currituck County Total	69.0	56.3	12.7	66.1	53.8	12.3
White, Non-Hispanic	70.5	57.8	12.7	64.6	52.9	11.8
African American, Non-Hispanic	75.6	50.4	**25.2**	86.6	59.1	**27.6**
Other, Non-Hispanic	**51.3**	**51.3**	**0.0**	**66.7**	**66.7**	**0.0**
Hispanic	**31.3**	**31.3**	**0.0**	68.8	62.5	**6.3**
Hyde County Total	84.2	72.4	11.9	72.1	62.5	**9.6**
White, Non-Hispanic	72.9	65.3	**7.7**	75.6	67.8	**7.8**
African American, Non-Hispanic	96.2	76.9	**19.2**	48.5	**38.8**	**9.7**
Other, Non-Hispanic	**250.0**	**250.0**	**0.0**	**0.0**	**0.0**	**0.0**
Hispanic	109.1	90.9	**18.2**	94.3	**84.9**	**9.4**
State of NC Total	76.4	62.7	13.2	73.3	61.5	11.4
White, Non-Hispanic	65.6	57.1	8.2	63.6	56.4	7.0
African American, Non-Hispanic	86.1	61.0	24.4	81.5	59.7	21.1
Other, Non-Hispanic	84.5	71.3	12.8	80.6	69.4	10.9
Hispanic	114.0	99.0	14.7	106.6	94.0	12.2

Note: Bold type indicates an unstable rate based on a small number (fewer than 10 cases)
Source: NC Center for Health Statistics, County-level Data, County Health Data Books (2007-2013). Pregnancy and Live Births. Pregnancy, Fertility, & Abortion Rates per 1,000 Population, by Race, by Age; http://www.schs.state.nc.us/SCHS/data/databook/.

Pregnancy, Fertility and Abortion Rates, Women Age 15-19

Table 109 presents total annual pregnancy, fertility and abortion rates for women age 15-19 ("teens") for the period from 2007-2011. Note that most rates in Hyde County were unstable.

- Throughout the period cited, the *total pregnancy rate* for Dare County teens was lower than the total pregnancy rate for teens statewide. The Dare County rate also was lower than the comparable rate for Currituck County teens in 2009, 2010, and 2011. (Too many Hyde County rates were unstable to permit proper comparison.) The total pregnancy rate among Dare County teens decreased by 24% overall between 2007 and 2011.

- The *total fertility rate* among Dare County teens was lower than the total fertility rate among teens statewide in all years cited. The total fertility rate among Dare County teens increased by just 2% overall between 2007 and 2011, but actually increased by 23% between 2010 and 2011 after a period of decline.
- The *total abortion rate* among Dare County teens was higher than the abortion rates among teens in the other jurisdictions in every year except 2009. Note that several of the teen abortion rates were unstable. The total abortion rate among Dare County teens decreased by 49% overall between 2007 and 2011.

Table 109. Total Pregnancy, Fertility and Abortion Rates, Ages 15-19 (Single Years, 2007-2011)

Location	Females Ages 15-19														
	2007			2008			2009			2010			2011		
	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate
Dare County	51.1	25.0	26.1	39.0	24.4	14.6	21.0	14.7	**6.3**	40.0	20.6	19.4	38.7	25.4	13.3
Currituck County	49.1	39.3	**9.8**	31.6	21.4	**10.1**	40.7	30.5	**10.2**	50.2	37.0	13.2	64.3	44.6	19.7
Hyde County	69.9	**55.9**	**7.0**	**39.8**	**34.1**	**5.7**	**21.7**	**10.9**	**10.9**	**32.7**	**26.1**	**6.5**	**61.2**	**61.2**	**0.0**
State of NC	63.0	48.4	14.3	58.6	45.7	12.5	56.0	43.4	12.2	49.7	38.3	11.0	43.8	34.8	8.7

Note: Bold type indicates an unstable rate based on a small number (fewer than 10 cases)
Source: NC Center for Health Statistics, County-level Data, County Health Data Books (2007-2013). Pregnancy and Live Births. Pregnancy, Fertility, & Abortion Rates per 1,000 Population, by Race, by Age; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 110 presents racially/ethnically stratified pregnancy, fertility and abortion data for teens.

- Racially stratified rates among minority teens are mostly too unstable for comparison.

Table 110. Pregnancy, Fertility and Abortion Rates, Ages 15-19, Stratified by Race/Ethnicity (2010 and 2011)

Location		Females Ages 15-19					
		2010			2011		
		Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate
Dare County	Total	40.0	20.6	19.4	38.7	25.4	13.3
	White, Non-Hispanic	31.7	15.2	16.5	40.0	26.2	13.8
	African American, Non-Hispanic	**37.0**	**0.0**	**37.0**	**69.0**	**69.0**	**0.0**
	Other, Non-Hispanic	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
	Hispanic	**137.9**	**103.4**	**34.5**	**0.0**	**0.0**	**0.0**
Currituck County	Total	50.2	37.0	13.2	64.3	44.6	19.7
	White, Non-Hispanic	54.1	40.5	**13.5**	65.1	45.4	19.7
	African American, Non-Hispanic	**41.7**	**20.8**	**20.8**	**50.8**	**16.9**	**33.9**
	Other, Non-Hispanic	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
	Hispanic	**0.0**	**0.0**	**0.0**	**96.8**	**96.8**	**0.0**
Hyde County	Total	**32.7**	**26.1**	**6.5**	**61.2**	**61.2**	**0.0**
	White, Non-Hispanic	**11.6**	**11.6**	**0.0**	**88.6**	**88.6**	**0.0**
	African American, Non-Hispanic	**52.6**	**35.1**	**17.5**	**18.5**	**18.5**	**0.0**
	Other, Non-Hispanic	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
	Hispanic	**100.0**	**100.0**	**0.0**	**71.4**	**71.4**	**0.0**
State of NC	Total	49.7	38.3	11.0	43.8	34.8	8.7
	White, Non-Hispanic	34.4	27.2	7.0	30.8	25.2	5.5
	African American, Non-Hispanic	70.2	50.9	18.7	61.6	45.5	15.6
	Other, Non-Hispanic	48.9	38.8	9.5	39.4	32.9	6.4
	Hispanic	82.7	70.6	11.7	71.1	62.7	8.2

Note: Bold type indicates an unstable rate based on a small number (fewer than 10 cases).
Source: NC Center for Health Statistics, County-level Data, County Health Data Books (2007-2013). Pregnancy and Live Births. Pregnancy, Fertility, & Abortion Rates per 1,000 Population, by Race, by Age; http://www.schs.state.nc.us/SCHS/data/databook/.

Pregnancies among Teens (age 15-19) and Adolescents (under age 15)

Figure 111 presents trend data on the number of teen pregnancies in each jurisdiction from 2003-2010.

Table 111. Number of Teen Pregnancies (Ages 15-19)
(Single Years, 2003-2010)

Location	Number of Pregnancies, Ages 15-19							
	2003	2004	2005	2006	2007	2008	2009	2010
Dare County	57	55	64	54	45	40	20	33
Currituck County	37	42	33	40	35	28	32	38
Hyde County	10	9	11	14	10	7	4	5
State of NC	17,390	18,143	18,259	19,192	19,615	19,398	18,142	15,957

Source: NC State Center for Health Statistics, North Carolina Health Data Query System. Pregnancy Data. North Carolina Reported Pregnancy Data. Year: 2003-2011. (Counties and age groups as indicated); http://www.schs.state.nc.us/SCHS/data/preg/preg.cfm.

Figure 112 presents trend data on the number of adolescent pregnancies in each jurisdiction from 2003-2010.

Table 112. Number of Adolescent Pregnancies (Under Age 15)
(Single Years, 2003-2010)

Location	Number of Pregnancies, Age 14 and Younger							
	2003	2004	2005	2006	2007	2008	2009	2010
Dare County	0	3	2	0	0	2	1	1
Currituck County	0	2	2	0	1	1	0	1
Hyde County	0	0	0	0	0	0	0	0
State of NC	443	472	468	405	404	376	324	282

Source: NC State Center for Health Statistics, North Carolina Health Data Query System. Pregnancy Data. North Carolina Reported Pregnancy Data. Year: 2003-2011. (Counties and age groups as indicated); http://www.schs.state.nc.us/SCHS/data/preg/preg.cfm.

Pregnancy Risk Factors

High Parity and Short Interval Births

According to the NC SCHS, a birth is *high parity* if the mother is younger than 18 when she has had one or more births, or aged 18 or 19 and has had two or more births, or is 20-24 and has had four or more births, etc. A *short-interval birth* involves a pregnancy occurring less than six months since the last birth. High-parity and short-interval pregnancies can be a physical strain on the mother and sometimes contribute to complicated pregnancies and/or poor birth outcomes.

Table 113 presents data on high-parity and short interval births for the aggregate period 2007-2011.

- Dare County had the lowest percentage of high-parity births among women under age 30 (9.4%), but the second lowest percentage among women age 30 or older. In both

age groups the percentage of high parity births was lower in Dare County than in the state as a whole.

- The percentage of short-interval births was highest in Hyde County and lowest in Currituck County. The percentage of short-interval births in Dare County (10.5%) was lower than the comparable percentages in Hyde County and NC as a whole.

Table 113. High Parity and Short Interval Births (Single Five-Year Aggregate Period, 2007-2011)

Location	High Parity Births				Short Interval Births	
	Mothers < 30		Mothers ≥ 30			
	No.[1]	%[2]	No.[1]	%[2]	No.[3]	%[4]
Dare County	106	9.4	171	20.7	133	10.5
Currituck County	102	13.0	75	18.3	77	10.4
Hyde County	24	14.5	28	29.5	150	15.4
State of NC	70,404	17.2	47,110	21.2	52,600	12.6
Source:	a	a	a	a	b	b

[1] Number at risk due high parity
[2] Percent of all births with age of mother in category indicated
[3] Number with interval from last delivery to conception of six months or less
[4] Percent of all births excluding 1st pregnancies
a - NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Pregnancy and Births, 2007-2011 Number At Risk NC Live Births due to High Parity by County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.
b - NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Pregnancy and Births, 2007-2011 NC Live Births by County of Residence, Number with Interval from Last Delivery to Conception of Six Months or Less; http://www.schs.state.nc.us/SCHS/data/databook/.

Smoking during Pregnancy

Smoking during pregnancy is an unhealthy behavior that may have negative effects on both the mother and the fetus. Smoking can lead to fetal and newborn death, and contribute to low birth weight and pre-term delivery. In pregnant women, smoking can increase the rate of placental problems, and contribute to premature rupture of membranes and heavy bleeding during delivery (43).

Table 114 presents trend data on smoking during pregnancy for the period from 2005-2011.

- The percent of births to mothers who smoked during pregnancy in Dare County was higher than the comparable percentage statewide in every period except 2011,
- The percentages of mothers who smoked during their pregnancies fell overall in Dare County, Currituck County and NC over the period cited, but rose in Hyde County. The decrease was 35% in Dare County, 53% in Currituck County, and 10% statewide. The increase in Hyde County was 54%, but note that all the percentages for that county were calculated on small numbers of events and likely were unstable.

Table 114. Smoking during Pregnancy Trend
(Single Years, 2005-2011)

Location	Number and Percent of Births to Mothers Who Smoked Prenatally													
	2005		2006		2007		2008		2009		2010		2011	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Dare County	69	15.0	63	13.5	57	14.0	54	12.9	59	15.4	n/a	n/a	36	9.8
Currituck County	47	18.4	37	15.3	40	14.9	36	16.4	28	12.3	n/a	n/a	20	8.6
Hyde County	6	10.0	11	15.1	8	15.4	6	11.3	7	16.7	n/a	n/a	8	15.4
State of NC	14,839	12.1	14,668	11.5	14,426	11.0	13,624	10.4	12,975	10.2	n/a	n/a	13,159	10.9

Source: NC State Center for Health Statistics, Vital Statistics, Volume 1 (2005, 2006, 2007,-2008, 2009, 2010, and 2011): Population, Births, Deaths, Marriages, Divorces, (geography as noted), Mother Smoked; http://www.schs.state.nc.us/schs/data/vitalstats.cfm.

Early Prenatal Care

Good pre-conception health and early prenatal care can help assure women the healthiest pregnancies possible.

Table 115 presents trend data on the percent of all women receiving prenatal care in the first trimester for the four jurisdictions included in this report.

- The percent of pregnant women in Dare County who received early prenatal care exceeded 85% in every year cited except the last. According to the data source cited, the percentage of women utilizing early prenatal care fell dramatically in all four jurisdictions in 2011. These unusual figures may represent a change in statistical methodology, but none was explained at the source; neither was there an explanation for missing data in 2010.

Table 115. Women Receiving Prenatal Care in the First Trimester
(Single Years, 2005-2011)

Location	Number and Percent of Women Receiving Prenatal Care in the First Trimester													
	2005		2006		2007		2008		2009		2010		2011	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Dare County	424	92.2	408	87.2	356	87.7	357	85.2	344	89.8	n/a	n/a	243	66.4
Currituck County	234	91.4	211	87.2	234	87.0	191	86.8	208	91.2	n/a	n/a	72	31.0
Hyde County	49	81.7	65	89.0	43	82.7	46	86.8	33	78.6	n/a	n/a	33	63.5
State of NC	101,716	82.7	104,528	81.9	105,849	80.9	107,183	82.0	105,626	83.3	n/a	n/a	85,706	71.2

Source: NC State Center for Health Statistics, Basic Automated Birth Yearbook (BABY Book), North Carolina Residents (2005, 2006, 2007,-2008, 2009, 2010, and 2011) (geographies as noted): Table 6 (and others): County Resident Births by Month Prenatal Care Began, All Women; http://www.schs.state.nc.us/schs/births/babybook/ .

Pregnancy Outcomes

Low Birth Weight and Very Low Birth Weight

Low birth weight can result in serious health problems in newborns (e.g., respiratory distress, bleeding in the brain, and heart, intestinal and eye problems), and cause lasting disabilities (mental retardation, cerebral palsy, and vision and hearing loss) or even death (44).

Table 116 presents five-year aggregate data on low birth weight births: infants weighing 2,500 grams (5.5 pounds) or less.

- The percentages of total low birth-weight births were similar in Dare and Currituck Counties and varied little over time. However, in every period over the entire span cited in the table, the percent of total low birth-weight births in Dare County was lower than the comparable percentage statewide.
- In all three counties the percentages of low birth weight births among minority groups were based on small numbers of events and thus were unstable. In NC as a whole, where the percentages were based on larger numbers, black non-Hispanic women had the highest percentage of low birth-weight births.

Table 116. Low Birth-Weight Births
(Five Year Aggregate Periods, 2006-2010 and 2007-2011)

Location	Percent of Very Low Birth Weight (≤ 2,500 Gram) Births									
	2006-2010					2007-2011				
	Total	White, Non-Hispanic	Black, Non-Hispanic	Other Non-Hispanic	Hispanic	Total	White, Non-Hispanic	Black, Non-Hispanic	Other Non-Hispanic	Hispanic
Dare County	7.0	7.2	**19.0**	**0.0**	**4.8**	7.0	7.1	**14.8**	**6.9**	**5.2**
Currituck County	7.6	7.3	**14.1**	**10.5**	**2.6**	7.2	6.9	**13.8**	**8.7**	**2.9**
Hyde County	10.0	**8.2**	**12.0**	**0.0**	**14.7**	8.8	**7.0**	**13.6**	**0.0**	**8.6**
State of NC	9.1	7.7	14.4	9.3	6.3	9.1	7.7	14.3	9.4	6.5

Note: Bold type indicates an unstable rate based on a small number (fewer than 20 cases).
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2012, 2013), Pregnancy and Births, Low and Very Low Weight Births; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 117 presents five-year aggregate data on very low birth-weight births: infants weighing 1,500 grams (3.3 pounds) or less.

- The total percentage of very low birth-weight births in Dare County was lower than the comparable state percentage in both periods cited.
- In all three counties the percentages of very low birth-weight births among minority groups were based on small numbers of events and thus were unstable. At the state level, black non-Hispanic women had the highest percentage of low birth-weight births.

Table 117. Very Low Birth-Weight Births
(Five-Year Aggregate Periods, 2006-2010 and 2007-2011)

Location	Percent of Very Low Birth Weight (≤ 1,500 Gram) Births									
	2006-2010					2007-2011				
	Total	White, Non-Hispanic	Black, Non-Hispanic	Other Non-Hispanic	Hispanic	Total	White, Non-Hispanic	Black, Non-Hispanic	Other Non-Hispanic	Hispanic
Dare County	1.3	**1.1**	**10.3**	**0.0**	**1.1**	1.1	**1.0**	**6.6**	**0.0**	**0.9**
Currituck County	2.0	**1.6**	**7.8**	**5.3**	**2.6**	**1.4**	**1.0**	**6.5**	**4.3**	**2.9**
Hyde County	**1.8**	**0.0**	**5.3**	**0.0**	**2.9**	**2.3**	**1.3**	**6.1**	**0.0**	**0.0**
State of NC	1.8	1.3	3.4	1.5	1.2	1.8	1.3	3.3	1.5	1.2

Note: Bold type indicates an unstable rate based on a small number (fewer than 20 cases).
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2012, 2013), Pregnancy and Births, Low and Very Low Weight Births; http://www.schs.state.nc.us/SCHS/data/databook/.

Cesarean Section Delivery

Table 118 presents data on the percent of births delivered by Cesarean section.

- As elsewhere in the US, the percentage of Cesarean section delivery in all four jurisdictions has risen over time. Over the period cited in the table, Cesarean deliveries rose by 17% in Dare County, 16% in Currituck County, 36% in Hyde County, and 13% statewide.

Table 118. Cesarean Section Deliveries
(Five-Year Aggregate Periods, 2001-2005 through 2007-2011)

Location	Percent of Resident Births Delivered by Cesarean Section						
	2001-2005	2002-2006	2003-2007	2004-2008	2005-2009	2006-2010	2007-2011
Dare County	34.6	35.9	36.5	38.0	38.7	39.4	40.6
Currituck County	29.4	30.4	32.0	31.7	33.2	34.4	34.2
Hyde County	29.4	32.1	33.0	35.0	37.5	41.3	40.0
State of NC	27.7	28.7	29.6	30.3	30.9	31.2	31.2

Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Pregnancy and Births, Births Delivered by Caesarian Section; http://www.schs.state.nc.us/SCHS/data/databook/ .

Birth Complications

Data from the Outer Banks Hospital on inpatient hospitalizations speaks to the frequency of problems connected with infants upon birth. Table 119 summarizes some of that data for 2010, 2011 and 2012. The data on which this table is based appears in Appendix A.2.5. The codes used in this table (and others subsequently) refer to *diagnosis related groups* (DRGs), payment categories used to classify patients (especially Medicare patients) for the purpose of reimbursing hospitals with a fixed fee regardless of the actual costs incurred.

- Of 1,025 hospitalizations associated with infant birth DRGs at OBH from 2010 through 2012, 705 (69%) involved “normal” infants. An additional 12 (1%) involved infants that presented with “major” problems, and 308 (30%) involved infants that presented with “significant” problems.

Table 119. Inpatient Hospitalizations of Newborn Infants
(2010-2012)

DRG Code	Diagnosis	Number of Discharges			
		2010	2011	2012	Total
795	Normal newborn	243	215	247	705
793	Full-term neonate with major problems	5	2	5	12
794	Neonate with other significant problems	89	104	115	308

Infant Mortality

Infant mortality is the number of infant (under one year of age) deaths per 1,000 live births.

Table 120 presents infant mortality data for Dare County, Currituck County, Hyde County and the state of NC.

- Due to infant deaths numbering fewer than 20 per aggregate period in the counties, stable total infant mortality rates were not available for comparison. The one stable rate for Dare County (9.6 in 2001-2005) was higher than the comparable state rate (8.5).

Table 120. Total Infant Deaths
(Five-Year Aggregate Periods, 2001-2005 through 2007-2011)

Location		Infant Deaths													
		2001-2005		2002-2006		2003-2007		2004-2008		2005-2009		2006-2010		2007-2011	
		No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Dare County	Total	20	9.6	**14**	**6.4**	**16**	**7.1**	**14**	**6.2**	**12**	**5.6**	**9**	**4.4**	**11**	**5.6**
Currituck County	Total	**8**	**6.8**	**11**	**9.1**	**16**	**12.7**	**17**	**13.6**	**18**	**14.8**	**17**	**14.1**	**15**	**12.6**
Hyde County	Total	**3**	**10.4**	**1**	**3.3**	**1**	**3.4**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**11.5**
State of NC	Total	5,056	8.5	5,084	8.4	5,234	8.4	5,333	8.4	5,289	8.3	5,066	7.9	4,899	7.8

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Mortality, Infant Death Rates per 1,000 Live Births; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 121 demonstrates that when stratified by race/ethnicity, infant mortality rates in the jurisdictions under study all were unstable due to small numbers of infant deaths. State data, however, indicated that the infant mortality rate among African-American non-Hispanics was 2½ times the comparable rate for White non-Hispanics.

Table 121. Infant Deaths, Stratified by Race/Ethnicity
(Five-Year Aggregate Periods, 2006-2010 and 2007-2011)

Location		Infant Deaths			
		2006-2010		2007-2011	
		No.	Rate	No.	Rate
Dare County	Total	**9**	**4.4**	**11**	**5.6**
	White, Non-Hispanic	**4**	**2.5**	**4**	**2.6**
	African American, Non-Hispanic	**1**	**17.2**	**1**	**16.4**
	Other, Non-Hispanic	**2**	**83.3**	**2**	**69**
	Hispanic	**2**	**5.3**	**4**	**11.6**
Currituck County	Total	**17**	**14.1**	**15**	**12.6**
	White, Non-Hispanic	**12**	**11.1**	**11**	**10.3**
	African American, Non-Hispanic	**3**	**46.9**	**3**	**46.2**
	Other, Non-Hispanic	**1**	**52.6**	**0**	**0**
	Hispanic	**1**	**25.6**	**1**	**28.6**
Hyde County	Total	**0**	**0**	**3**	**11.5**
	White, Non-Hispanic	**0**	**0**	**2**	**12.7**
	African American, Non-Hispanic	**0**	**0**	**1**	**15.2**
	Other, Non-Hispanic	**0**	**0**	**0**	**0**
	Hispanic	**0**	**0**	**0**	**0**
State of NC	Total	5,066	7.9	4,899	7.8
	White, Non-Hispanic	2,074	5.9	2,001	5.7
	African American, Non-Hispanic	2,208	14.7	2,129	14.3
	Other, Non-Hispanic	187	6.3	188	6.2
	Hispanic	597	5.8	581	5.8

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Mortality, Infant Death Rates per 1,000 Live Births; http://www.schs.state.nc.us/SCHS/data/databook/.

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.

Table 122 presents gender- and race-stratified life expectancy at birth data for all jurisdictions.

- Overall life expectancy at birth in Dare County increased by two years, from 77.7 to 79.7 (2.6%), between 1990-1992 and 2008-2010.
- In both periods cited average life expectancies at birth for females were higher than life expectancies for males, but the gap narrowed from 4.7 years to 4.3 years because life expectancy increased by 2.5 years for males and only 2.1 years for females.
- In 1990-1992 the life expectancy for whites exceeded the life expectancy for African-Americans by 2.8 years. The NC SCHS suppressed life expectancy rates for African Americans for the 2008-2010 period due to an insufficiently large number in that population.
- Of the jurisdictions being compared, life expectancies at birth were highest in Dare County in all population groups for all periods cited.

Table 122. Life Expectancy at Birth, by Gender and Race (1990-1992 and 2008-2010)

Location	Life Expectancy in Years									
	Person Born in 1990-1992					Person Born in 2008-2010				
	Overall	Male	Female	White	African-American	Overall	Male	Female	White	African-American
Dare County	77.7	75.2	79.9	77.7	74.9	79.7	77.7	82.0	79.9	n/a
Currituck County	73.1	69.9	76.7	74.4	62.9	77.3	74.7	80.0	77.5	73.9
Hyde County	72.2	68.4	76.0	74.2	68.4	77.3	76.5	76.9	78.2	75.7
State of NC	74.9	71.0	78.7	76.4	69.8	77.8	75.1	80.4	78.5	74.8

Source: NC State Center for Health Statistics, County-level Data, Life Expectancy, State and County Estimates, Life Expectancy: North Carolina 1990-1992 and 2008-2010, State and County; http://www.schs.state.nc.us/schs/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 123 compares mortality rates for the 15 leading causes of death in Dare County, Currituck County, Hyde County, NC and the US for the five-year aggregate period 2007-2011 (or as otherwise noted). The causes of death are listed in descending order of rank in Dare County. Note that the NC SCHS suppressed rates for some causes of death in each county (denoted by "N/A") because the number of deaths fell below the Center's threshold of 20 per five-year aggregate period. For that reason, discussion of some county-level differences will be limited.

Differences between Dare County and NC mortality rates are discussed below.

Relative to the state of NC:

- Pneumonia and influenza ranked significantly *higher* among leading causes of death in Dare County (3rd vs. 9th). The mortality rate for pneumonia/influenza in Dare County was 49.0, 2.7 **times** *higher* than the comparable state rate of 17.9. As will be discussed later, mortality due to pneumonia/influenza has been high in Dare County for some time.
- Diabetes mellitus ranked significantly *lower* among leading causes of death in Dare County (13th vs. 7th). The mortality rate for diabetes in Dare County was 10.4, less than half the comparable state rate of 22.0.
- Septicemia ranked *higher* as a cause of death in Dare County (8th vs. 11th), but the mortality rate for septicemia in Dare County was 13.9, only 2% higher than the comparable state rate of 13.6.
- The kidney disease complex (nephritis, nephrotic syndrome and nephrosis) ranked *lower* as a cause of death in Dare County (11th vs. 8th). The mortality rate for kidney disease in Dare County was 12.4, 33% lower than the comparable state rate of 18.6.

While differences in rank for the following causes of death were not as pronounced as those described above, mortality rates in Dare County *exceeded* comparable state rates for:

- Other (non-motor vehicle) unintentional injuries (22% higher),
- Chronic liver disease and cirrhosis (15% higher),
- Suicide (4% higher), and
- Diseases of the heart (2% higher).

Dare County mortality rates were *lower* than comparable NC rates for:

- Cerebrovascular disease (37% lower),
- Alzheimer's disease (32% lower),
- Unintentional motor vehicle injuries (17% lower),
- Total cancer (6% lower), and
- Chronic lower respiratory disease (6% lower).

Table 123. Overall Age-Adjusted Mortality Rates for the 15 Leading Causes of Death, Dare County and Comparators (Single Five-Year Aggregate Period, 2007-2011 or as Noted)[1]

Rank/Cause of Death	Dare County		Currituck County			Hyde County			State of NC			United States (2011)	
	Number	Rate	Number	Rate	Rank	Number	Rate	Rank	Number	Rate	Rank	Rate	Rank
1. Diseases of the Heart	338	182.4	222	195.0	2	69	192.9	2	86,099	179.3	2	173.7	1
2. Cancer	349	168.1	242	199.6	1	79	231.0	1	88,518	179.7	1	168.6	2
Trachea, Bronchus, and Lung	100	46.0	87	71.7	N/A	25	72.4	N/a	27,092	54.5	N/A	45.9	N/A
Breast	25	21.4	12	N/A	N/A	5	N/A	N/A	6,414	23.0	N/A	12.0 [2]	N/A
Colon, Rectum and Anus	34	16.2	21	18.0	N/A	5	N/A	N/A	7,614	15.5	N/A	15.3	N/A
Pancreas	26	13.4	14	N/A	N/A	3	N/A	N/A	5,184	10.5	N/A	10.9	N/A
Prostate	14	N/A	14	N/A	N/A	4	N/A	N/A	4,385	24.3	N/A	8.3 [2]	N/A
3. Pneumonia and Influenza	82	49.0	80	80.9	3	1	N/A	N/A	8,455	17.9	9	15.7	8
4. Chronic Lower Respiratory Disease	81	43.9	71	60.9	4	19	N/A	N/A	22,274	46.6	3	42.7	3
5. All Other Unintentional Injuries	65	35.6	34	29.4	5	13	N/A	N/A	13,781	29.2	5	38.0	5
6. Cerebrovascular Disease	53	29.2	30	26.5	7	30	83.0	3	21,774	46.0	4	37.9	4
7. Alzheimer's Disease	33	19.6	23	24.4	8	10	N/A	N/A	13,347	29.0	6	24.6	6
8. Septicemia	26	13.9	14	N/A	N/A	2	N/A	N/A	6,515	13.6	11	10.5	11
9. Unintentional Motor Vehicle Injuries	22	12.8	32	27.8	6	6	N/A	N/A	7,336	15.5	10	10.9	N/A
10. Suicide	25	12.6	22	17.4	9	2	N/A	N/A	5,751	12.1	12	12.0	10
11. Nephritis, Nephrotic Syndrome, and Nephrosis	21	12.4	15	N/A	N/A	3	N/A	N/A	8,860	18.6	8	13.4	9
12. Chronic Liver Disease and Cirrhosis	25	10.7	17	N/A	N/A	1	N/A	N/A	4,723	9.3	13	9.7	12
13. Diabetes Mellitus	21	10.4	15	N/A	N/A	13	N/A	N/A	10,733	22.0	7	21.5	7
14. Homicide	4	N/A	4	N/A	N/A	0	N/A	N/A	2,949	6.3	14	3.6	N/A
15. Acquired Immune Deficiency Syndrome	4	N/A	2	N/A	N/A	1	N/A	N/A	1,687	3.5	15	2.4	N/A
Total Deaths All Causes (Some causes are not listed above)	1,384	730.9	995	873.2	N/A	309	900.7	N/A	388,092	808.4	N/A	740.6	N/A
Source:	a	a	a	a	b	a	a	a	a	a	b	c	c

[1] Rate = Number of events per 100,000 population, where the Standard = Year 2000 US Population

[2] Denominator is not-sex-specific, but rather is the whole population

a - NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.
b - Calculated
c - National Center for Health Statistics, National Vital Statistics Reports, Volume 61, Number 6 (October 10, 2012), Deaths, Preliminary data for 2011; http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_06.pdf.

Compared to US mortality rates, comparable rates in NC are *higher* for *every* cause of death listed except:

- Other (non-motor vehicle) unintentional injuries, and
- Chronic liver disease and cirrhosis.

Compared to US mortality rates, comparable rates in Dare County are *higher* for the following causes of death:

- Total cancer,
- Other (non-motor vehicle) unintentional injuries,
- Cerebrovascular disease,
- Alzheimer's disease,
- Kidney disease (nephritis, nephrotic syndrome, nephrosis), and
- Diabetes mellitus.

Table 124 compares the 15 leading cause of death mortality rates in Dare County for 2007-2011 with 2004-2008 rates presented in the 2010 Dare County CHA. Rate changes indicated in **red** type and signified by a plus ("+") sign indicate mortality rates that *worsened* between 2004-2008 and 2007-2011. Changes in **green** and signified by a minus ("-") sign improved over the same interval.

- Improved mortality rates were noted for total cancer, pneumonia and influenza, cerebrovascular disease, unintentional motor vehicle injury and diabetes.
- Worse mortality rates were noted for heart disease, chronic lower respiratory disease, Alzheimer's disease, septicemia, kidney diseases, and chronic liver disease and cirrhosis.

Table 124. Comparison of Dare County Mortality Rates for 2007-2011 and 2004-2008

Rank / Cause of Death	Mortality Rate		Percent Rate Change	Rank
	2007-2011	2004-2008		2004-2008
1. Diseases of the Heart	182.4	162.4	**+12.3**	2
2. Cancer	168.1	171.1	**-1.8**	1
3. Pneumonia and Influenza	49.0	49.8	**-1.6**	3
4. Chronic Lower Respiratory Disease	43.9	33.4	**+31.4**	6
5. Unintentional Non-Motor Vehicle Injury	35.6	35.5	**+0.3**	5
6. Cerebrovascular Diseases	29.2	37.1	**-21.3**	4
7. Alzheimer's Disease	19.6	13.7	**+43.1**	8
8. Septicemia	13.9	11.6	**+19.8**	11
9. Unintentional Motor Vehicle Injury	12.8	19.4	**-37.1**	7
10. Suicide	12.6	12.6	**no change**	10
11. Nephritis, Nephrotic Syndrome and Nephrosis	12.4	**10.3**	**+20.4**	12
12. Chronic Liver Disease and Cirrhosis	10.7	**8.5**	**+25.9**	13
13. Diabetes Mellitus	10.4	13.3	**-21.8**	9
14. Homicide	**n/a**	**3.1**	**n/a**	14
15. Acquired Immune Deficiency Syndrome	**n/a**	**1.3**	**n/a**	15
Total Mortality Rate	730.9	699.8	**+4.4**	n/a

Gender Disparities in Leading Causes of Death

In the past, NC CHAs have demonstrated some significant differences in mortality rates between men and women. Table 125 compares gender stratified rates for the 15 leading causes of death in Dare County and its comparator jurisdictions. The usefulness of the table is hampered somewhat by numerous suppressed rates.

In Dare County, mortality *rates for males were higher* than comparable rates for females for:

- Unintentional non-motor vehicle injuries (by 113%),
- Diseases of the heart (by 38%), and
- Total cancer (by 37%).

In Dare County, the overall mortality rate for males (804.4) was 23% higher than the overall mortality rate for females (655.7).

In Dare County, mortality *rates for females were higher* than comparable rates for males for:

- Pneumonia and influenza (by 52%),
- Chronic lower respiratory disease (by 48%), and
- Cerebrovascular disease (by 10%).

In NC as a whole, mortality rates for males were higher than comparable rates for females for every leading cause of death except Alzheimer's disease, and the overall mortality rate for males (969.2) was 42% higher than the overall mortality rate for females (684.0).

Table 125. Sex-Specific Age-Adjusted Death Rates for the 15 Leading Causes of Death (Single Five-Year Aggregate Period, 2007-2011)

Cause of Death	Dare County				Currituck County Rate		Hyde County Rate		State of NC Rate	
	Males		Females							
	Number	Rate	Number	Rate	Males	Females	Males	Females	Males	Females
1. Diseases of the Heart	193	212.5	145	153.7	265.7	141.4	234.9	172.7	229.4	141.6
2. Cancer	196	196.5	153	143.1	223.5	182.5	275.1	224.7	227.4	147.5
3. Pneumonia and Influenza	28	38.0	54	57.8	89.1	75.2	N/A	N/A	20.9	16.1
4. Chronic Lower Respiratory Disease	29	35.0	52	51.7	86.3	41.6	N/A	N/A	54.9	41.7
5. Unintentional Non-Motor Vehicle Injury	43	48.7	22	22.9	N/A	N/A	N/A	N/A	38.8	20.9
6. Cerebrovascular Diseases	23	27.7	30	30.4	N/A	35.5	N/A	N/A	46.8	44.5
7. Alzheimer's Disease	9	N/A	24	26.1	N/A	N/A	N/A	N/A	22.7	32.2
8. Septicemia	10	N/A	16	N/A	N/A	N/A	N/A	N/A	15.0	12.6
9. Unintentional Motor Vehicle Injury	17	N/A	5	N/A	49.4	N/A	N/A	N/A	22.9	8.6
10. Suicide	18	N/A	7	N/A	N/A	N/A	N/A	N/A	19.6	5.3
11. Nephritis, Nephrotic Syndrome and Nephrosis	11	N/A	10	N/A	N/A	N/A	N/A	N/A	22.7	16.0
12. Chronic Liver Disease and Cirrhosis	17	N/A	8	N/A	N/A	N/A	N/A	N/A	13.2	5.9
13. Diabetes Mellitus	13	N/A	8	N/A	N/A	N/A	N/A	N/A	26.0	18.8
14. Homicide	4	N/A	0	N/A	N/A	N/A	N/A	N/A	9.8	2.9
15. Acquired Immune Deficiency Syndrome	4	N/A	0	N/A	N/A	N/A	N/A	N/A	4.8	2.3
Total Deaths All Causes (Some causes are not listed above)	740	804.4	644	655.7	1,039.1	733.7	1,054.9	833.8	969.2	684.0

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source - NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Racial Disparities in Leading Causes of Death

Because of below-threshold numbers of deaths during the period, 2007-2011 age-adjusted mortality rates among Dare County minorities are available only for African Americans and Hispanics, and then only as overall rates. According to data in Table 126, in Dare County the

overall mortality rate for African American non-Hispanics (738.8) was 1% higher than the overall mortality rate for White non-Hispanics (728.4), and the overall mortality rate for Hispanics (398.1) was 45% lower than the overall rate for White non-Hispanics.

Table 126. Race-Specific Age-Adjusted Death Rates for the 15 Leading Causes of Death (Single Five-Year Aggregate Period, 2007-2011)

Cause of Death	Dare County									
	White, non-Hispanic		African-American, non-Hispanic		Other Races, non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1. Diseases of the Heart	322	182.0	11	N/A	0	N/A	5	N/A	338	182.4
2. Cancer	342	171.5	6	N/A	0	N/A	1	N/A	349	168.1
3. Pneumonia and Influenza	80	49.8	2	N/A	0	N/A	0	N/A	82	49.0
4. Chronic Lower Respiratory Disease	80	45.1	1	N/A	0	N/A	0	N/A	81	43.9
5. Unintentional Non-Motor Vehicle Injury	59	34.0	0	N/A	2	N/A	4	N/A	65	35.6
6. Cerebrovascular Diseases	49	28.7	2	N/A	1	N/A	1	N/A	53	29.2
7. Alzheimer's Disease	32	20.0	1	N/A	0	N/A	0	N/A	33	19.6
8. Septicemia	25	13.9	1	N/A	0	N/A	0	N/A	26	13.9
9. Unintentional Motor Vehicle Injuries	18	N/A	0	N/A	0	N/A	4	N/A	22	12.8
10. Suicide	24	12.8	0	N/A	0	N/A	1	N/A	25	12.6
11. Nephritis, Nephrotic Syndrome and Nephrosis	21	12.9	0	N/A	0	N/A	0	N/A	21	12.4
12. Chronic Liver Disease and Cirrhosis	23	10.2	1	N/A	1	N/A	0	N/A	25	10.7
13. Diabetes Mellitus	21	10.8	0	N/A	0	N/A	0	N/A	21	10.4
14. Homicide	3	N/A	0	N/A	0	N/A	1	N/A	4	N/A
15. Acquired Immune Deficiency Syndrome	4	N/A	0	N/A	0	N/A	0	N/A	4	N/A
Total Deaths All Causes (Some causes are not listed above)	1,320	728.4	35	738.8	8	N/A	21	398.1	1384	730.9

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source - NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Age Disparities in Leading Causes of Death

Each age group tends to have its own leading causes of death. Table 127 lists the three leading causes of death by age group for the five-year aggregate period from 2007-2011. (Note that for this purpose it is important to use *non-age adjusted* death rates.)

The leading cause(s) of death in each of the age groups in Dare County were:

- Age Group 00-19: Congenital anomalies (birth defects) *and* Other unintentional (non-motor vehicle) injuries (tie)
- Age Group 20-39: Other unintentional (non-motor vehicle) injuries
- Age Group 40-64: Cancer – all sites
- Age Group 65-84: Cancer – all sites
- Age Group 85+: Diseases of the heart

Noteworthy differences in the age pattern of mortality among the four jurisdictions being compared are as follows:

- Suicide is a more prominent cause of death among the 20-39 age group in Currituck County and NC than in the other jurisdictions.
- Cerebrovascular disease is a prominent cause of death among the 40-64 age group in Hyde County but not in the other jurisdictions.
- Pneumonia/influenza is among the three leading causes of death in the 85+ age group in Dare County and Currituck County but not in the other jurisdictions.

Table 127. Three Leading Causes of Death by Age Group, Number of Deaths and Unadjusted Death Rates (Single Five-Year Aggregate Period, 2007-2011)

Age Group	Rank	Cause of Death			
		Dare County	Currituck County	Hyde County	State of NC
00-19	1	Congenital anomalies (birth defects) Other unintentional injuries	Conditions originating in the perinatal period	Conditions originating in the perinatal period Congenital anomalies	Conditions originating in the perinatal period
	2	Conditions originating in the perinatal period	Congenital anomalies Motor vehicle injuries SIDS	Chronic lower respiratory disease Pneumonitis due to solids & liquids Motor vehicle injuries	Congenital anomalies
	3	Motor vehicle injuries	Other unintentional injuries		Motor vehicle injuries
20-39	1	Other unintentional injuries	Motor vehicle injuries	Motor vehicle injuries	Motor vehicle injuries
	2	Motor vehicle injuries	Suicide	Other unintentional injuries	Other unintentional injuries
	3	Cancer-All sites	Cancer-All Sites Other unintentional injuries	Cancer-All sites	Suicide
40-64	1	Cancer-All sites	Cancer-All sites	Cancer-all sites	Cancer-all sites
	2	Diseases of the heart	Diseases of the heart	Diseases of the heart	Diseases of the heart
	3	Other unintentional injuries	Other unintentional injuries	Cerebrovascular disease	Other unintentional injuries
65-84	1	Cancer-all sites	Cancer-All sites	Cancer-all sites	Cancer-all sites
	2	Diseases of the heart	Diseases of the heart	Diseases of the heart	Diseases of the heart
	3	Chronic lower respiratory disease	Chronic lower respiratory disease	Chronic lower respiratory disease	Chronic lower respiratory disease
85+	1	Diseases of the heart	Diseases of the heart	Diseases of the heart	Diseases of the heart
	2	Cancer-all sites	Pneumonia & Influenza	Cerebrovascular disease	Cancer-all sites
	3	Pneumonia & influenza	Cancer-all sites	Cancer-All sites	Cerebrovascular disease

Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, Death Counts and Crude Death Rates per 100,000 for Leading Causes of Death, by Age Groups, NC, 2007-2011; http://www.schs.state.nc.us/SCHS/data/databook/.

Differences in mortality statistics will be covered as each cause of death is discussed separately below, in the order of highest Dare County rank to lowest, beginning with heart disease. It is important to emphasize once more that because of below-threshold numbers of deaths there will be no stable county rates for some causes of death, especially among racially stratified groups. Some unstable data will be presented in this document, but always accompanied by cautions regarding its use.

Diseases of the Heart

Heart disease is an abnormal organic condition of the heart or of the heart and circulation. Heart disease is the number one killer in the US and a major cause of disability. The most common cause of heart disease, coronary artery disease, is a narrowing or blockage of the coronary arteries, the blood vessels that supply blood to the heart itself. Coronary artery disease is the major reason people have heart attacks, but other kinds of heart problems may originate in the valves in the heart, or the heart may not pump well and cause heart failure (45).

Heart disease was the leading cause of death in Dare County and the second leading cause of death in NC, Currituck County and Hyde County in the 2007-2011 period (Table 123, cited previously); it was the second leading cause of death in Dare County at the time of the 2010 CHA.

Heart Disease Hospitalizations

Table 128 presents hospital discharge rate trend data for several years. According to this data from NC SCHS, heart disease has been cause for a high proportion of illness-related hospitalizations among Dare County residents over time, although at a significantly lower average rate than statewide.

Table 128. Heart Disease Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Dare County	5.0	4.7	5.0	5.0	4.1	4.2	4.3
Currituck County	4.6	4.5	4.6	4.0	3.5	2.4	3.0
Hyde County	16.6	13.8	14.5	9.1	12.6	13.1	11.0
State of NC	13.1	12.7	12.2	11.8	11.4	11.3	10.9

Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

Data from The Outer Banks Hospital (OBH) further demonstrates the significance of heart disease in the Dare County community.

Table 129 presents data on the number of emergency department (ED) admissions for diagnoses associated with ischemic heart disease, by age group, among Dare County residents, in 2010-2012 (Appendix A.1.5). There also were admissions in the pediatric age group, but they are not shown due to low numbers.

- Approximately 2% of all ED admissions (853 of 42,884) over the three-year period cited were associated with diagnoses of ischemic heart disease.
- The majority (65%) of ED admissions associated with ischemic heart disease involved persons age 65 or older (557 of 853 admissions).
- Among seniors the most frequent (47%) ischemic heart disease diagnosis was cardiac dysrhythmia (262 of 557 admissions).
- Over the three-year period cited, 94 patients were admitted to the ED with acute myocardial infarction (heart attack).

Table 129. OBH Emergency Department Admissions: Ischemic Heart Disease (2010-2012)

Diagnosis		Number of ED Admissions									
		2010			2011			2012			Grand Total
ICD-9 Code	Diagnosis Description	Adult	Senior	Total	Adult	Senior	Total	Adult	Senior	Total	
410-414	***Ischemic heart disease***	***83***	***195***	***279***	***106***	***193***	***300***	***105***	***169***	***274***	***853***
410	*Acute myocardial infarction*	9	23	32	9	19	28	13	21	34	94
411	*Other acute and subacute forms of ischemic heart disease*	9	8	17	9	5	14	8	4	12	43
427	*Cardiac dysrhythmia*	47	87	135	59	91	150	61	84	145	430
428	*Heart failure*	6	68	74	18	58	76	9	47	56	206
	Total ED Admissions	**9,059**	**2,577**	**14,174**	**8,844**	**2,607**	**13,876**	**9,427**	**2,745**	**14,834**	**42,884**

Adult = Age 18-64; Senior = Age 65 or older
Source: Appendix A.1.5.

According to OBH data for inpatient hospitalizations, in the period from 2010-2012 there were 128 hospital discharges for stays totaling 285 days for diagnoses associated with diseases and disorders of the circulatory system (which would include heart disease but also other circulatory system problems). (Appendix A.2.5). Note that Dare County residents with heart disease are sometimes hospitalized out of county and even out of state; those cases do *not* appear in this particular OBH summary. According to NC SCHS data, in 2011 there were 147 hospital admissions for heart disease among Dare County residents; this figure includes hospitalizations anywhere in NC (46).

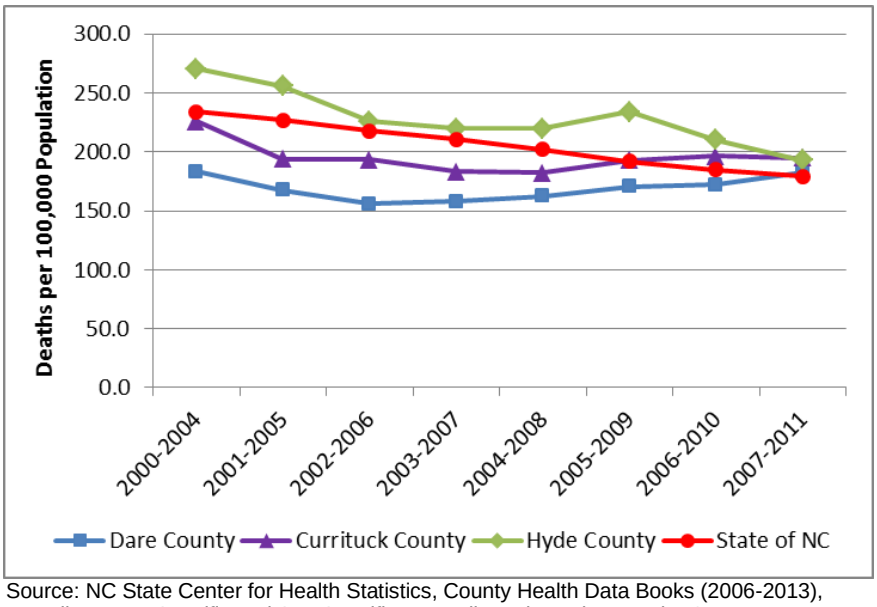
The OBH does *not* conduct major heart procedures such as open heart surgery at its facility in Nags Head.

Heart Disease Mortality Rate Trend

Figure 10 displays heart disease mortality rate trends over time in the four jurisdictions being compared in this CHA.

- Until the last data point, the heart disease mortality rate in Dare County was the lowest among the four jurisdictions throughout the period.
- Heart disease mortality in Dare County rose slightly over the period from 2003-2007 to 2007-2011, but was approximately the same in 2007-2011 as in 2000-2004.
- Of the four jurisdictions included in the comparison, Hyde County experienced the largest decrease—approximately 29% overall—in heart disease mortality rate over the period cited.
- At the state level, the heart disease mortality rate fell steadily over the period cited, to a current low (179.3) among the jurisdictions cited.

Figure 10. Overall Heart Disease Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Heart Disease Mortality

Table 130 presents heart disease mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the heart disease mortality rate was lowest statewide and highest in Hyde County. The mortality rate for that group in Dare County fell between the state and Hyde County rates.
- Note that due to below-threshold numbers of heart disease deaths among minority populations in Dare County and elsewhere, mortality rates were suppressed for those groups.
- There appeared to be a gender difference in heart disease mortality in all jurisdictions; this disparity will be described in greater detail below.

Table 130. Race/Ethnicity-Specific and Sex-Specific Heart Disease Mortality (Single Five-Year Aggregate Period, 2007-2011)

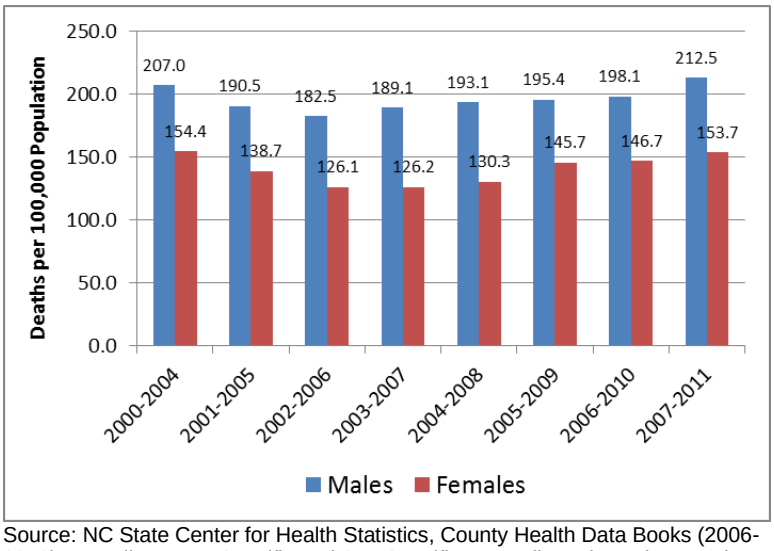
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	322	182.0	11	N/A	0	N/A	5	N/A	193	212.5	145	153.7	338	182.4
Currituck County	200	194.4	22	256.3	0	N/A	0	N/A	133	265.7	89	141.4	222	195.0
Hyde County	48	199.5	21	188.1	0	N/A	0	N/A	32	234.9	37	172.7	69	192.9
State of NC	67,605	176.2	16,965	209.3	1,070	118.6	459	46.1	44,630	229.4	41,469	141.6	86,099	179.3

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 11 depicts gender-stratified heart disease mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- It appears that the gender difference in heart disease mortality noted in Dare County for 2007-2011 is actually longstanding. Noteworthy also is the apparent increase in heart disease mortality among both men and women since the 2002-2006 period

Figure 11. Sex-Specific Heart Disease Mortality Rate Trend, Dare County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 131 presents heart disease mortality rate data stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of heart disease deaths in minority populations the NC SCHS suppressed the related mortality rates. At the state level, however, heart disease mortality rates among African Americans, both male and female, were approximately 20% higher than among their white, non-Hispanic counterparts. Heart disease mortality statewide was lowest among both male and female Hispanics.

Table 131. Race/Ethnicity and Sex-Specific Heart Disease Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	209.1	N/A	N/A	N/A	156.1	N/A	N/A	N/A
Currituck County	257.0	N/A	N/A	N/A	143.5	N/A	N/A	N/A
Hyde County	257.3	N/A	N/A	N/A	190.6	N/A	N/A	N/A
State of NC	226.4	271.6	140.0	54.8	137.5	167.5	100.8	37.4

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Cancer

Cancer is a term for diseases in which abnormal cells divide without control and can invade nearby tissues. Cancer cells also can spread to other parts of the body through the blood and lymph systems. If the disease remains unchecked, it can result in death (47).

Total Cancer

Total cancer (cancers of all types) was the second leading cause of death in Dare County and Currituck County and the leading cause of death in Hyde County and NC in the 2007-2011 period (Table 123, cited previously); it was the leading cause of death in Dare County at the time of the 2010 CHA.

Malignant Neoplasm Hospitalizations

Table 132 presents the hospital discharge rate trend data for malignant neoplasms.

- Throughout the period cited, the malignant neoplasm discharge rate in Dare County was lower than the comparable rates for Hyde County and the state as a whole. Statewide, hospitalizations for this diagnosis decreased over time; there was no clear pattern in Dare County.

Table 132. All Malignant Neoplasms Hospital Discharge Rate Trend (2005-2011)

Classification	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Dare County	2.5	2.1	2.7	2.9	2.8	2.2	2.4
Currituck County	1.3	1.4	1.2	1.9	1.2	1.1	1.1
Hyde County	6.1	2.5	4.8	4.0	3.3	3.3	2.6
State of NC	3.9	3.9	3.9	3.6	3.4	3.3	3.2

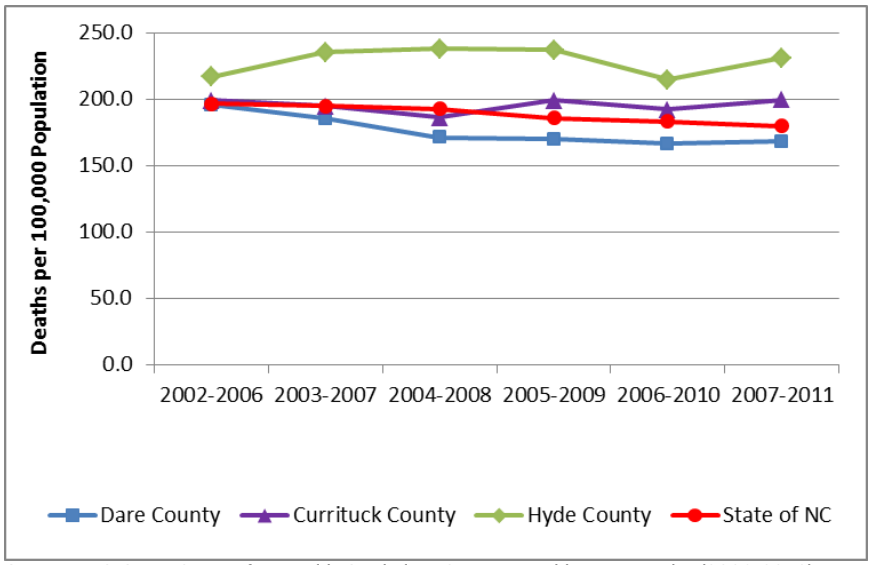
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

Total Cancer Mortality Rate Trend

Figure 12 displays total cancer mortality rate trends over time in the four jurisdictions being compared in this CHA.

- The total cancer mortality rate in Dare County declined steadily between 2000-2004 and 2004-2008 before leveling to a recent rate of approximately 168.
- Once higher than the comparable rates in Currituck County, Hyde County and NC, the total cancer mortality rate in Dare County has been lower than the rates in those jurisdictions since 2003-2007.
- Of the four jurisdictions included in the comparison, Hyde County experienced the largest increase—approximately 14% overall—in the total cancer mortality rate over the period cited.
- At the state level, the total cancer mortality rate fell gradually over the period cited, to a current low (179.7).

Figure 12. Overall Total Cancer Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Total Cancer Mortality

Table 133 presents total cancer mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the total cancer mortality rate was lowest in Dare County and highest in Hyde County.
- Note that due to below-threshold numbers of total cancer deaths among some minority populations in Dare County and elsewhere, mortality rates for those groups were suppressed.
- In the jurisdictions where total cancer mortality rates for African American non-Hispanics were available they exceeded comparable rates for white non-Hispanics. For example, in Hyde County the total cancer mortality rate among African American non-Hispanics was 37% higher than the rate for white non-Hispanics. In Currituck County and NC as a whole the rate difference between those two groups was around 18%.
- There appeared to be a gender difference in total cancer mortality in all jurisdictions; this disparity will be described in greater detail below.

Table 133. Race/Ethnicity-Specific and Sex-Specific Total Cancer Mortality (Single Five-Year Aggregate Period, 2007-2011)

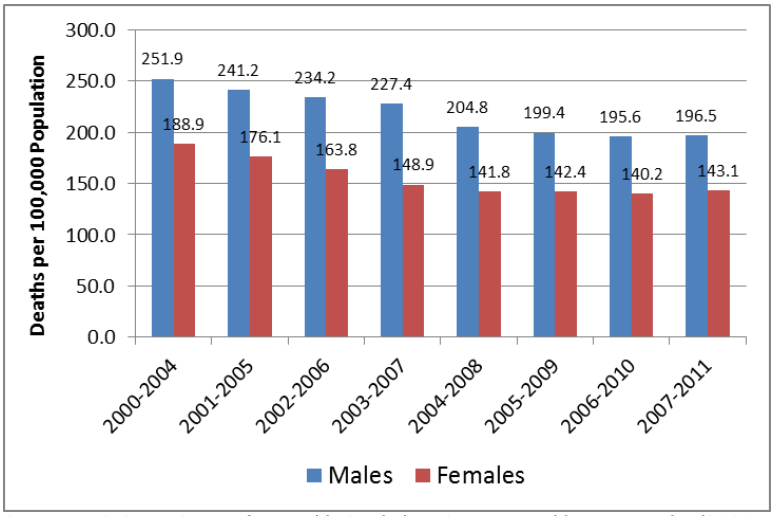
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	342	171.5	6	N/A	0	N/A	1	N/A	196	196.5	153	143.1	349	168.1
Currituck County	216	197.8	24	271.0	1	N/A	1	N/A	121	223.5	121	182.5	242	199.6
Hyde County	52	225.7	27	258.8	0	N/A	0	N/A	39	275.1	40	224.7	79	231.0
State of NC	68,577	176.8	17,982	211.4	1,240	120.7	719	65.1	47,193	147.5	41,325	147.5	88,518	179.7

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 13 depicts gender-stratified total cancer mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- It appears that the gender difference in total cancer mortality noted in Dare County for 2007-2011 is actually longstanding.
- The total cancer mortality rate for both males and females decreased steadily over most of the period cited until leveling off recently.

Figure 13. Sex-Specific Total Cancer Mortality Rate Trend, Dare County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 134 presents total cancer mortality rate data stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of total cancer deaths in some minority populations the NC SCHS suppressed the related mortality rates.
- At the state level, total cancer mortality rates for males of all races/ethnicities exceeded the comparable rates for their female counterparts.

- At the state level, total cancer mortality rates among African American non-Hispanics, both male and female, were higher than comparable rates among their white, non-Hispanic counterparts. Total cancer mortality rates were lowest statewide among both male and female Hispanics.

Table 134. Race/Ethnicity and Sex-Specific Total Cancer Mortality Rate, Dare County (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	198.7	N/A	N/A	N/A	147.5	N/A	N/A	N/A
Currituck County	218.2	N/A	N/A	N/A	182.9	N/A	N/A	N/A
Hyde County	264.1	N/A	N/A	N/A	204.4	N/A	N/A	N/A
State of NC	220.7	293.2	145.7	72.2	146.6	164.0	103.1	59.4

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

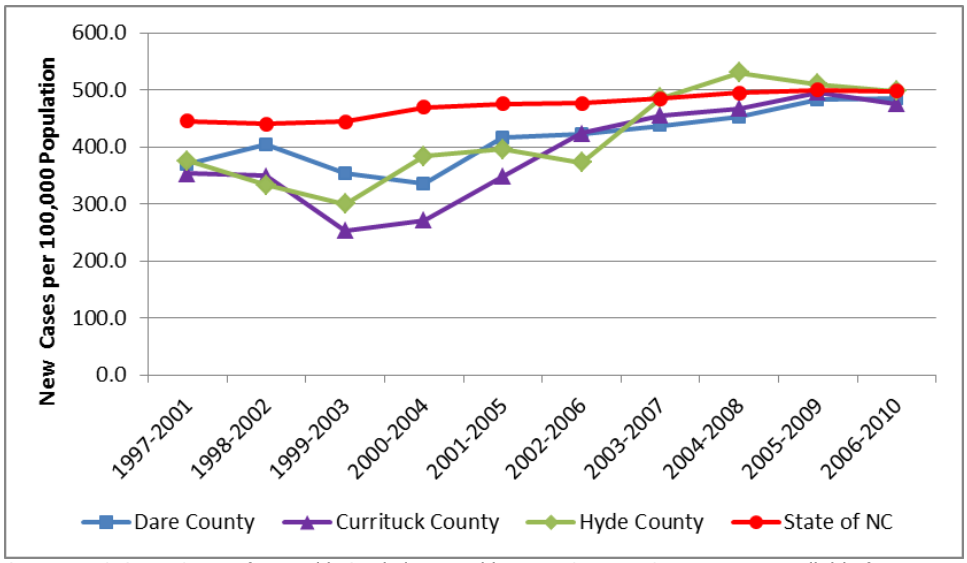
Total Cancer Incidence

Since total cancer is a significant cause of death, it is useful to examine patterns in the development of new cases. The statistic important to understanding the growth of a health problem is *incidence*, the population-based rate at which new cases of a disease occur and are diagnosed (methodology for which was described previously). Cancer incidence rates used in this report were obtained from the NC Cancer Registry, which collects data on newly diagnosed cases from NC clinics and hospitals as well as on NC residents whose cancers were diagnosed at medical facilities in bordering states.

Figure 14 plots the incidence rate trend for total cancer.

- The total cancer incidence rate in Dare County fluctuated over time, but increased 21% in net over the entire period cited, from 401.6 in 1995-1999 to 485.1 in 2006-2010. Between 2000-2004 and 2006-2010, however, the Dare County total cancer incidence rate increased from 334.9 to 485.1, a difference of 45%. Despite this rapid rise, the Dare County rate, once higher than the rates in the other two counties, was lower in the last three aggregate periods than the rates for Currituck and Hyde counties as well as for the state as a whole.
- Total cancer incidence rates for Currituck and Hyde counties both increased in the net between 1995-1999 and 2006-2010, by 30% in Currituck County (from 366.1 to 475.7) and by 36% in Hyde County (from 365.5 to 497.7).
- The total cancer incidence rate for the state of NC increased gradually over the period cited, and was 16% higher in 2006-2010 (498.1) than in 1995-1999 (429.4).

Figure 14. Overall Total Cancer Incidence Rate Trend
(Five-Year Aggregate Periods, 1995-1999 through 2006-2010)



Source: NC State Center for Health Statistics, Health Data, Cancer, Cancer Data Available from SCHS, Annual Reports, NC Cancer Incidence Rates for All Counties by Specified Site (Years as noted); http://www.schs.state.us.nc/SCHS/CCR/reports.html.

To this point the discussions of cancer mortality and incidence have focused on figures for total cancer. In Dare County, as throughout the state of NC, there are four (or five) site-specific cancers that cause most cancer deaths: breast cancer, colon cancer, lung cancer, prostate cancer, and, sometimes, pancreas cancer. It should be noted that males also can have breast cancer, but since the number of cases tends to be small, the mortality rates for breast cancer (and prostate cancer) used here are gender-specific.

Table 135 presents age-adjusted mortality data for the five prominent site-specific cancers for the 2007-2011 period.

- In Dare County, lung cancer was the site-specific cancer with the highest mortality rate, followed by (female) breast cancer, colon cancer, and pancreas cancer. The number of prostate cancer deaths was below threshold so the mortality rate was suppressed.
- In NC as a whole, lung cancer presents the highest mortality rate, followed by prostate cancer, breast cancer, colon cancer, and pancreas cancer.

Table 135. Mortality for Five Major Site-Specific Cancers
(Single Five-Year Aggregate Period, 2007-2011)

Location	Female Breast Cancer		Prostate Cancer		Lung Cancer		Colon Cancer		Pancreas Cancer	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Dare County	25	21.4	14	N/A	100	46.0	34	16.2	26	13.4
Currituck County	12	N/A	14	N/A	87	71.7	21	18.0	14	N/A
Hyde County	5	N/A	4	N/A	25	72.4	5	N/A	3	N/A
State of NC	6,358	22.8	4,385	24.3	27,092	54.5	7,614	15.5	5,184	10.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013). 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates (counties and cancer sites as indicated); http://www.schs.state.nc.us/schs/data/databook/.

Table 136 presents age-adjusted incidence data for four of the five site-specific cancers for the 2006-2010 period. (Note that incidence data for pancreas cancer was not available.)

- In Dare County, breast cancer was the site-specific cancer with the highest incidence rate, followed by prostate cancer, lung cancer, and colon cancer. The same pattern of cancer incidence was noted in Hyde County and in NC as a whole.
- In Currituck County, prostate cancer presented with the highest incidence rate, followed by breast cancer, lung cancer, and colon cancer.

Table 136. Incidence for Four Major Site-Specific Cancers (Single Five-Year Aggregate Period, 2006-2010)

Location	Female Breast Cancer		Prostate Cancer		Lung Cancer		Colon Cancer	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Dare County	219	195.7	147	133.8	150	69.6	91	45.0
Currituck County	96	136.9	105	168.3	100	80.0	49	41.3
Hyde County	28	174.5	18	114.6	35	101.3	21	60.9
State of NC	41,169	155.9	34,733	153.7	36,287	74.8	20,968	43.4

Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013). 2006-2010 NC Cancer Incidence Rates per 100,000 Population Age-Adjusted to the 2000 US Population; http://www.schs.state.nc.us/schs/data/databook/

Multi-year mortality and incidence rate trends for these site-specific cancers will be presented subsequently, as each cancer type is discussed separately. The cancer topics are presented in decreasing order of site-specific cancer mortality rates in Dare County.

Lung Cancer

The category of cancer referred to as lung cancer traditionally *also* includes cancers of the trachea and bronchus.

Lung, Trachea and Bronchus Cancer Hospitalizations

Table137 summarizes hospital discharge rate data for trachea, bronchus and lung neoplasms.

- The hospital discharge rate for lung cancer in Dare County peaked in 2009 and has decreased since.

Table 137. Malignant Trachea, Bronchus, Lung Neoplasms Hospital Discharge Rate Trend (Single Years, 2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Dare County	0.3	0.5	0.4	0.5	0.6	0.5	0.3
Currituck County	0.5	**0.1**	**0.3**	**0.3**	**0.3**	**0.3**	**0.1**
Hyde County	**0.7**	n/a	**0.9**	**0.9**	**0.6**	**0.3**	**0.3**
State of NC	0.6	0.6	0.6	0.5	0.5	0.5	0.4

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

Admissions data for the OBH ED for 2010-2012 included cases related to neoplasms. During that period there were 181 ED visits attributable to patients with neoplasm-related diagnoses, 45 of which (25%) were associated with malignant neoplasms of the trachea, bronchus and lung. This represented the largest group among cancer-related ED visits for the period (Appendix A.1.5).

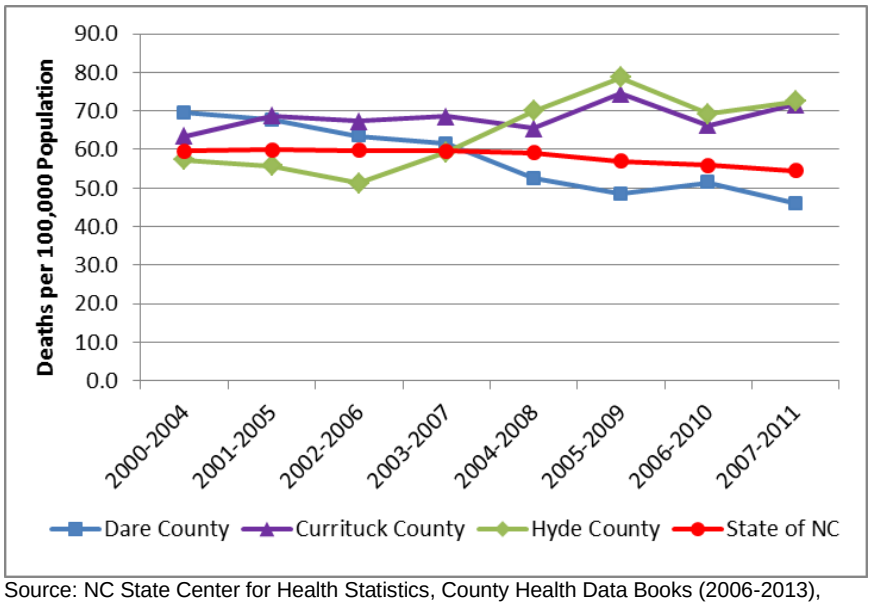
According to data summarized in Appendix A.2.6, neoplasms of the trachea, bronchus and lung were *not* among the top 25 DRG diagnoses resulting in inpatient hospitalizations at OBH in FY2011. According to NC SCHS data on Inpatient Hospital Utilization and Charges by Principal Diagnosis, 11 Dare County residents were hospitalized somewhere in NC for diagnoses of malignant neoplasms of the trachea, bronchus and lung in 2011 (46).

Lung Cancer Mortality Rate Trend

Figure 15 displays lung cancer mortality rate trends over time in the four jurisdictions being compared in this CHA.

- The lung cancer mortality rate in Dare County declined steadily over the period cited, from 69.5 in 2000-2004 to 46.0 in 2007-2011, a total decrease of 34%. In the period from 2004-2008 to 2007-2011 the lung cancer mortality rate in Dare County was the lowest of the four jurisdictions.
- The NC lung cancer mortality rate also decreased over the period, but by only 9%.
- Lung cancer mortality rates in both Currituck and Hyde counties increased over the period, by 13% in Currituck County, and by 26% in Hyde County. Lung cancer mortality rates in Currituck and Hyde counties surpassed comparable rates in Dare County and NC as a whole for the period from 2004-2008 to 2007-2011.

Figure 15. Overall Lung Cancer Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Lung Cancer Mortality

Table 138 presents lung cancer mortality data for the 2007-2011 aggregate period, stratified by race and sex.

- Among white non-Hispanic persons, the lung cancer mortality rate was lowest in Dare County and highest in Currituck County.
- Due to below-threshold numbers of lung cancer deaths among some minority populations in Dare County and elsewhere, mortality rates for those groups were suppressed.
- Statewide, the lung cancer mortality rate for African American non-Hispanics was 3% *lower* than the comparable rate for white non-Hispanics.
- There appeared to be a gender difference in lung cancer mortality in Dare County, Currituck County, and NC as a whole.

Table 138. Race/Ethnicity-Specific and Sex-Specific Lung Cancer Mortality (Single Five-Year Aggregate Period, 2007-2011)

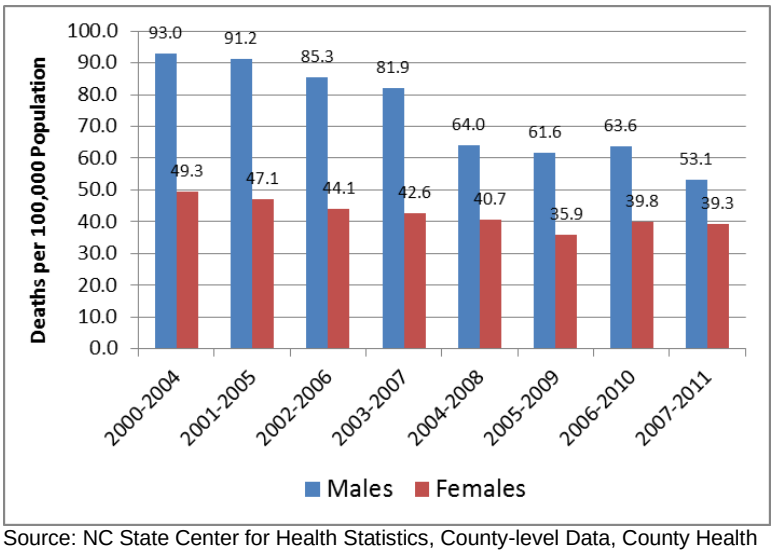
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	99	47.4	1	N/A	0	N/A	0	N/A	58	53.1	42	39.3	100	46.0
Currituck County	81	73.2	6	N/A	0	N/A	0	N/A	50	94.3	37	55.5	87	71.7
Hyde County	17	N/A	8	N/A	0	N/A	0	N/A	14	N/A	11	N/A	25	72.4
State of NC	21,946	55.9	4,667	54.1	369	35.4	110	11.9	15,876	74.4	11,216	40.0	27,092	54.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 16 depicts gender-stratified lung cancer mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- It appears that the gender difference in lung cancer mortality noted in Dare County for 2007-2011 is actually longstanding.
- The lung cancer mortality rate among Dare County males fell significantly over the period cited, from 93.0 in 2000-2004 to 53.1 in 2007-2011, a 43% decrease.
- The lung cancer mortality rate among Dare County females fell 20% over the period cited, from 49.3 to 39.3, but increased again recently.
- In 2000-2004, the lung cancer mortality rate for Dare County males was 89% higher than the comparable rate for Dare County females; by 2007-2011 the difference had shrunk to 35%.

Figure 16. Sex-Specific Lung Cancer Mortality Rate Trend, Dare County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



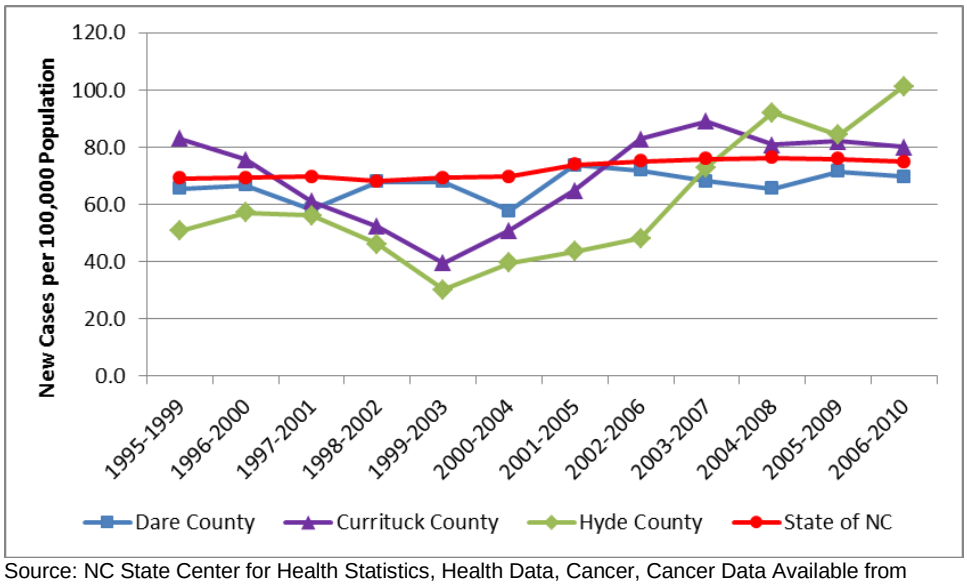
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2006-2013), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Lung Cancer Incidence

Figure 17 plots the incidence rate trend for lung cancer.

- Lung cancer incidence rates increased at least slightly in every jurisdiction except Currituck County, and essentially doubled in Hyde County over the period cited.

Figure 17. Lung Cancer Incidence Rate Trend (Five-Year Aggregate Periods, 1995-1999 through 2006-2010)



Source: NC State Center for Health Statistics, Health Data, Cancer, Cancer Data Available from SCHS, Annual Reports, NC Cancer Incidence Rates for All Counties by Specified Site (Years as noted); http://www.schs.state.us.nc/SCHS/CCR/reports.html.

Sometimes significant increases in incidence are noted after major screening campaigns. It is not known whether or not increased screening activity played a role in the lung cancer incidence "jump" in Hyde County, especially since screenings for breast, prostate and colon cancer are more common than screenings for lung cancer.

Breast Cancer

For purposes of this report, breast cancer pertains exclusively to women, although males can and do contract the disease. There were no cases of breast cancer among males in Dare, Currituck or Hyde County in the 2007-2011 period; there were, however, 56 cases in males statewide.

Breast Cancer Hospitalizations

Table137 summarizes hospital discharge rate data for breast cancer.

- Hospital discharge rates for breast cancer in the three counties shown in the table all were unstable due to small numbers of events.
- Statewide, the discharge rate for female breast cancer was steady at 0.2 until the most recent period, when it fell to 0.1.

Table 139. Malignant Female Breast Neoplasms Hospital Discharge Rate Trend (Single Years, 2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Dare County	**0.2**	**0.2**	**0.0**	**0.1**	**0.2**	**0.1**	**0.1**
Currituck County	**0.0**	**0.0**	**n/a**	**0.1**	**0.1**	**0.1**	**0.0**
Hyde County	**n/a**	**n/a**	**0.2**	**0.2**	**n/a**	**0.2**	**n/a**
State of NC	0.2	0.2	0.2	0.2	0.2	0.2	0.1

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

According to NC SCHS data on Inpatient Hospital Utilization and Charges by Principal Diagnosis, there were three hospitalizations for malignant neoplasms of the female breast among Dare County residents in 2011 (46).

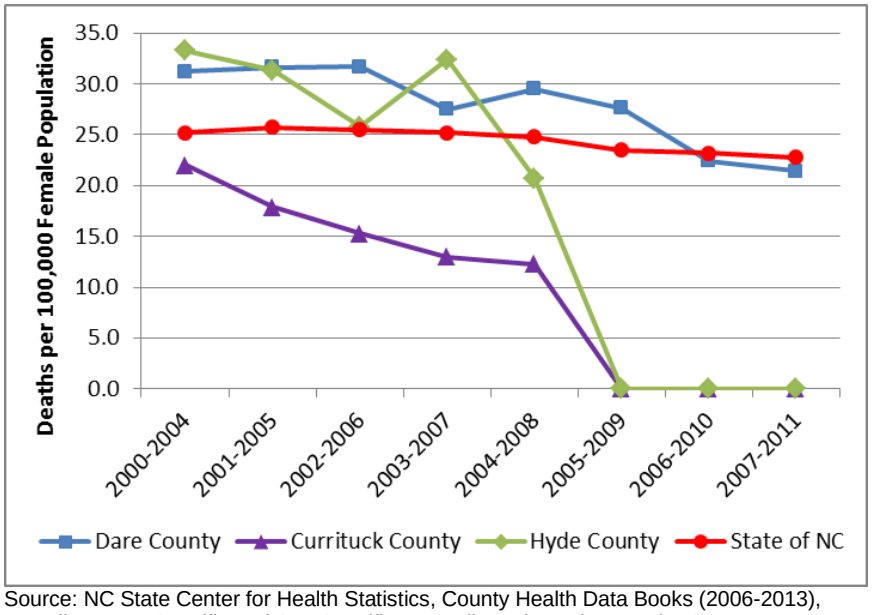
According to OBH data on in- and outpatient surgeries performed from 2010 through 2012, a total of 42 outpatient procedures were performed involving local excision of lesions of the breast (Appendix A.3.5).

Breast Cancer Mortality Rate Trend

Figure 18 displays female breast cancer mortality rate trends over time in the four jurisdictions being compared in this CHA.

- The breast cancer mortality rate in Dare County declined over the period cited, from 31.2 in 2000-2004 to 21.4 in 2007-2011, an overall decrease of 31%. The two most recent breast cancer mortality rate figures for Dare County were lower than the comparable state rates.
- The NC breast cancer mortality rate also declined over the period, but by only 10%.
- Breast cancer mortality rates in Currituck County appeared to decrease between 2000-2004 and 2004-2008; however it should be noted that these rates were based on small numbers of deaths and likely were unstable. The "zero" rates noted in Currituck County in 2005-2009 through 2007-2011 do *not* mean there were no breast cancer deaths, but rather that NC SCHS suppressed the rates due to below-threshold numbers of breast cancer deaths.
- Breast cancer mortality rates in Hyde County appeared to be erratic, likely due to small numbers of deaths. Again the "zero" rates in the last three time periods represent suppressed rates, not mortality rates of zero.

Figure 18. Overall Female Breast Cancer Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Racial Disparities in Breast Cancer Mortality

Table 140 presents breast cancer mortality rate data for the 2007-2011 aggregate period, stratified by race.

- Among white non-Hispanic women, the breast cancer mortality rate was higher in Dare County than in NC as a whole.
- Due to below-threshold numbers of breast cancer deaths among minority women in Dare County and elsewhere, mortality rates for those groups were suppressed.
- Statewide, the breast cancer mortality rate for African American non-Hispanic women was 40% *higher* than the comparable rate for white non-Hispanic women.

- Statewide the breast cancer mortality rates for Other race non-Hispanic women and Hispanic women were 40% and 60% lower, respectively, than the comparable rate for white non-Hispanic women.

Table 140. Race/Ethnicity-Specific Female Breast Cancer Mortality (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Female Population)			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	22.3	N/A	N/A	N/A
Currituck County	N/A	N/A	N/A	N/A
Hyde County	N/A	N/A	N/A	N/A
State of NC	21.5	30.1	11.9	8.5

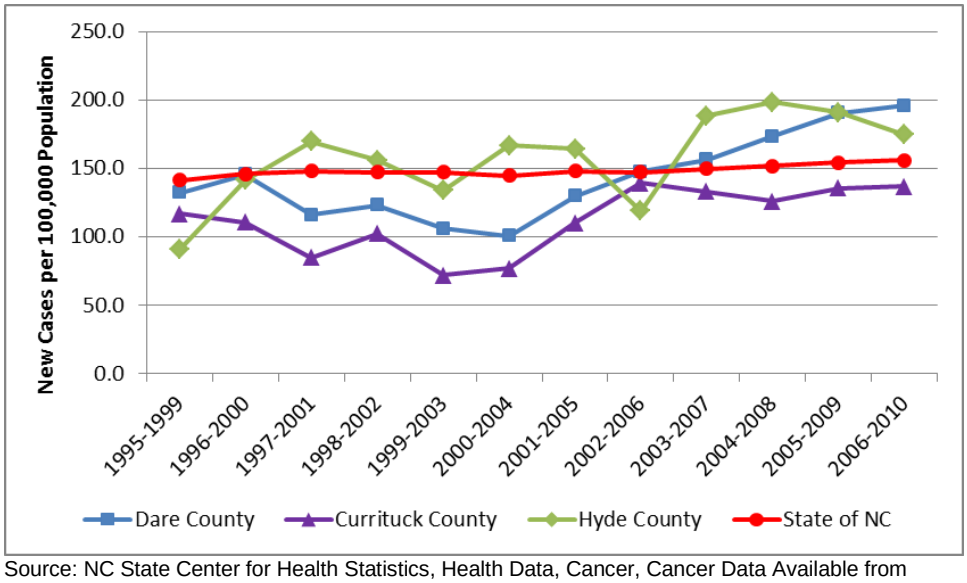
Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Breast Cancer Incidence

Figure 19 plots the incidence rate trend for breast cancer.

- Breast cancer incidence rates increased at least slightly in every jurisdiction over the period cited, In Dare County the overall increase was from 132.5 to 197.5 (48%). Comparable net increases were 17% in Currituck County, 91% in Hyde County, and 10% statewide.

Figure 19. Breast Cancer Incidence Rate Trend (Five-Year Aggregate Periods, 1995-1999 through 2006-2010)



Source: NC State Center for Health Statistics, Health Data, Cancer, Cancer Data Available from SCHS, Annual Reports, NC Cancer Incidence Rates for All Counties by Specified Site (Years as noted); http://www.schs.state.us.nc/SCHS/CCR/reports.html.

It is not known whether or not increased screening activity played a role in any of the increases in breast cancer incidence, although breast cancer screening activities are common.

Colon Cancer

The category of cancer referred to as colon cancer (sometimes referred to as *colorectal cancer*) traditionally *also* includes cancers of the rectum and anus.

Colon Cancer Hospitalizations

Table141 summarizes hospital discharge rate data for malignant neoplasms of the colon, rectum and anus.

- The hospital discharge rate for colon cancer in Dare County peaked in 2008 and has been lower since.

Table 141. Malignant Colon, Rectum and Anus Neoplasms Hospital Discharge Rate Trend (Single Years, 2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Dare County	0.3	**0.2**	0.5	0.6	0.4	0.5	0.4
Currituck County	**0.2**	**0.1**	0.4	**0.4**	**0.1**	**0.0**	**0.2**
Hyde County	**0.5**	**0.7**	**0.7**	**0.5**	**0.6**	**0.9**	**1.0**
State of NC	0.5	0.5	0.5	0.4	0.4	0.4	0.4

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

According to data summarized in Appendix A.2.6, neoplasms of the colon, rectum and anus were *not* among the top 25 DRG diagnoses resulting in inpatient hospitalizations at OBH in FY2011. According to NC SCHS data on Inpatient Hospital Utilization and Charges by Principal Diagnosis, 15 Dare County residents were hospitalized somewhere in NC for diagnoses of malignant neoplasms of the colon, rectum and anus in 2011 (46).

Colon Cancer Mortality Rate Trend

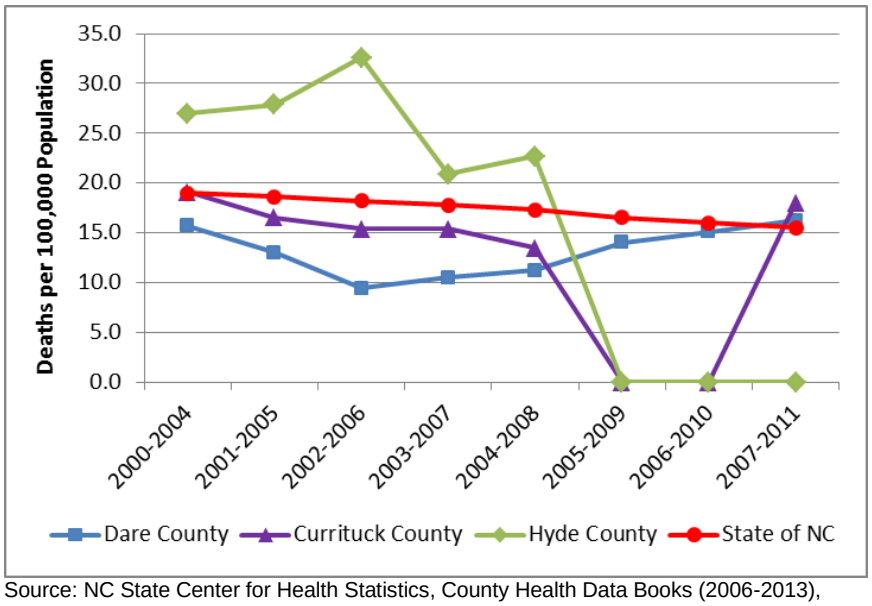
Figure 20 displays colon cancer mortality rate trends over time for the four jurisdictions being compared in this CHA.

- The colon cancer mortality rate in Dare County declined early in the period cited but rose steadily between 2002-2006 and 2007-2011 to a current high of 16.2, 3% higher than the 2000-2004 rate of 15.7, but 72% higher than the 2002-2006 rate of 9.4. In the period from 2000-2004 to 2006-2010 the colon cancer mortality rate in Dare County was the lowest stable rate of the four jurisdictions.
- The NC colon cancer mortality rate declined 18% overall through the period cited.
- Colon cancer mortality rates in Currituck County appeared to decrease between 2000-2004 and 2004-2008; however it should be noted that these rates were based on small numbers of deaths and likely were unstable. The “zero” rates noted in Currituck County

in 2005-2009 and 2006-2010 do *not* mean there were no colon cancer deaths, but rather that NC SCHS suppressed the rates due to below-threshold numbers of colon cancer deaths. The 2007-2011 colon cancer mortality rate in Currituck County, 18.0, was the highest since 2000-2004.

- Colon cancer mortality rates in Hyde County appeared to be erratic, likely due to small numbers of deaths. Again the "zero" rates in the last three time periods represent suppressed rates, not mortality rates of zero.

Figure 20. Overall Colon Cancer Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Colon Cancer Mortality

Table 142 presents colon cancer mortality data for the 2007-2011 aggregate period, stratified by race and sex.

- Due to below-threshold numbers of colon cancer deaths among most racially stratified populations in Dare and the other counties, mortality rates for those groups were suppressed.
- Statewide, the colon cancer mortality rate for African American non-Hispanics was 52% *higher* than the comparable rate for white non-Hispanics, and the rates for Other non-Hispanic and Hispanics were far below the comparable rate for white non-Hispanics.
- Gender-stratified colon cancer mortality rates at the county level were suppressed, but at the state level the colon cancer mortality rate for males (19.0) was 47% higher than the comparable rate for females (12.9).

Table 142. Race/Ethnicity-Specific and Sex-Specific Colon Cancer Mortality (Single Five-Year Aggregate Period, 2007-2011)

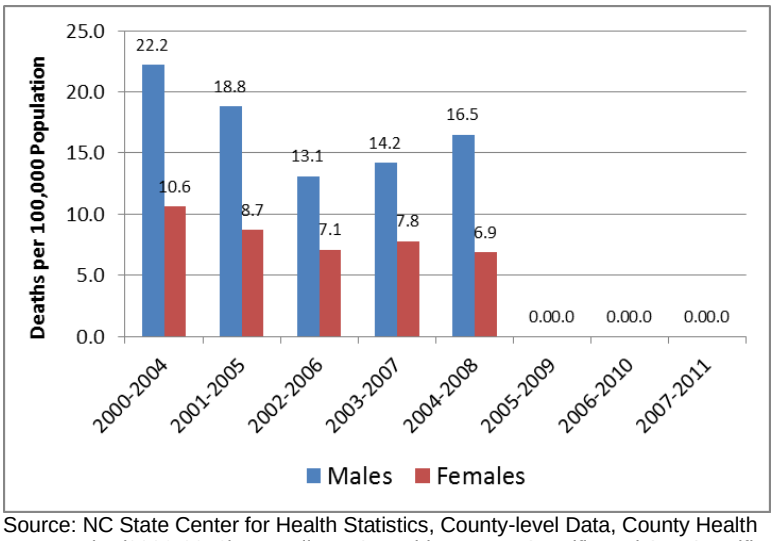
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	32	16.0	2	N/A	0	N/A	0	N/A	19	N/A	15	N/A	34	16.2
Currituck County	19	N/A	2	N/A	0	N/A	0	N/A	8	N/A	13	N/A	21	18.0
Hyde County	4	N/A	1	N/A	0	N/A	0	N/A	2	N/A	3	N/A	5	N/A
State of NC	5,604	14.5	1,851	22.1	96	9.6	63	6.3	3,964	19.0	3,650	12.9	7,614	15.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 21 depicts gender-stratified colon cancer mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- At first glance it appears that the gender difference in colon cancer mortality noted in Dare County for 2007-2011 was actually longstanding. However, since all the gender-stratified colon cancer mortality rates shown were based on small numbers and therefore likely unstable, they should be interpreted with caution. Other rates were suppressed, although they are labeled “0” in the graph.

Figure 21. Sex-Specific Colon Cancer Mortality Rate Trend, Dare County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2006-2013), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Colon Cancer Incidence

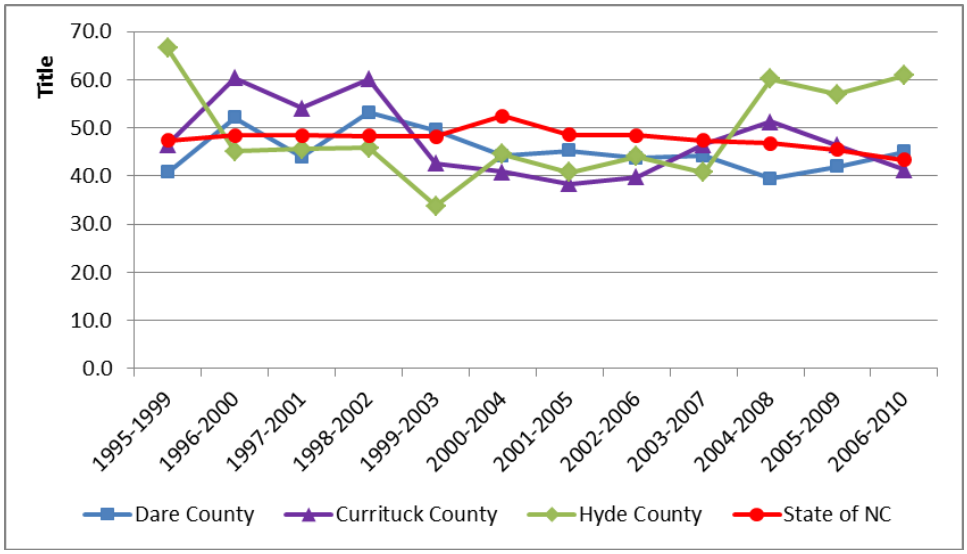
Figure 22 plots the incidence rate trend for colon cancer.

- Colon cancer incidence rates in the three county jurisdictions were erratic over the period cited, perhaps because colon cancer screenings may not typically have the same participation frequency as other kinds of cancer screenings. For example, individuals

tend to participate in colonoscopy at five-year or longer intervals, whereas individuals may participate in mammography every one or two years. In small populations erratic screening behaviors can significantly affect the discovery of new cancer cases.

- At the state level, the colon cancer incidence rate fell from 47.4 in 1995-1999 to 43.4 in 2006-2010, an overall decrease of 8%.

Figure 22. Colon Cancer Incidence Rate Trend
(Five-Year Aggregate Periods, 1995-1999 through 2006-2010)



Source: NC State Center for Health Statistics, Health Data, Cancer, Cancer Data Available from SCHS, Annual Reports, NC Cancer Incidence Rates for All Counties by Specified Site (Years as noted); http://www.schs.state.us.nc/SCHS/CCR/reports.html.

Pancreas Cancer

Pancreas cancer was the site-specific cancer causing the fourth highest cancer mortality rate in Dare County. However, some of the typical data sets referenced in this report do *not* cover this cancer; among them are the Inpatient Hospital Utilization and Charges dataset and the Cancer Incidence dataset. Pancreas cancer mortality data *is* available.

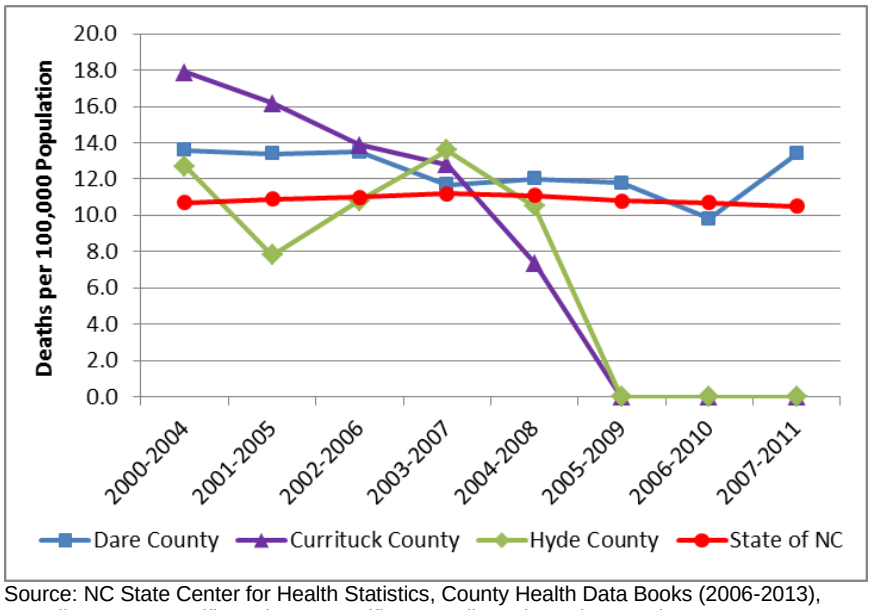
Pancreas Cancer Mortality Rate Trend

Figure 23 displays pancreas cancer mortality rate trends over time in the four jurisdictions being compared in this CHA.

- The pancreas cancer mortality rate in Dare County declined between 2000-2004 and 2006-2010 but spiked upward in 2007-2011 to approximately the same level as in 2000-2004 (13.4).
- The NC pancreas cancer mortality rate changed little throughout the period cited.
- Pancreas cancer mortality rates in Currituck County appeared to decrease dramatically between 2000-2004 and 2004-2008; however it should be noted that the rates in this period were based on small numbers of deaths and likely were unstable. The “zero” rates noted in Currituck County in 2005-2009 through 2007-2011 do *not* mean there were no pancreas cancer deaths, but rather that NC SCHS suppressed the rates due to below-threshold numbers of pancreas cancer deaths.

- Pancreas cancer mortality rates in Hyde County appeared to be erratic, likely due to small numbers of deaths. Again the "zero" rates in the last three time periods represent suppressed rates, not mortality rates of zero.

Figure 23. Overall Pancreas Cancer Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Pancreas Cancer Mortality

Table 143 presents pancreas cancer mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Due to below-threshold numbers of pancreas cancer deaths among most racially stratified populations in Dare and the other counties, mortality rates for those groups were suppressed.
- Statewide, the pancreas cancer mortality rate for African American non-Hispanics was 39% *higher* than the comparable rate for white non-Hispanics, and the rates for Other non-Hispanics and Hispanics were below the comparable rate for white non-Hispanics.
- Gender-stratified pancreas cancer mortality rates at the county level were suppressed, but at the state level the pancreas cancer mortality rate for males (11.8) was 26% higher than the comparable rate for females (9.4).

Table 143. Race/Ethnicity-Specific and Sex-Specific Pancreas Cancer Mortality (Single Five-Year Aggregate Period, 2007-2011)

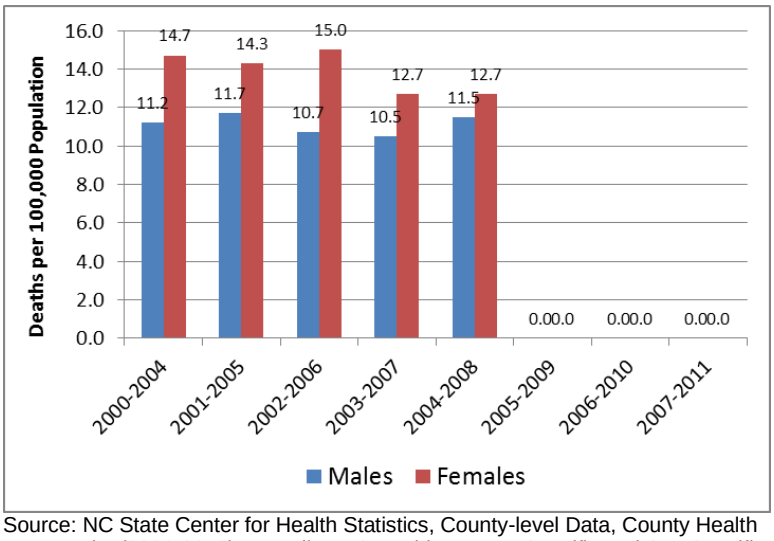
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	25	13.2	0	N/A	0	N/A	1	N/A	14	N/A	12	N/A	26	13.4
Currituck County	9	N/A	5	N/A	0	N/A	0	N/A	7	N/A	7	N/A	14	N/A
Hyde County	2	N/A	1	N/A	0	N/A	0	N/A	2	N/A	1	N/A	3	N/A
State of NC	3,925	10.0	1,152	13.9	66	6.8	41	4.0	2,519	11.8	2,665	9.4	5,184	10.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 24 depicts gender-stratified pancreas cancer mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- At first glance it appears that there was a gender difference in pancreas cancer mortality in Dare County that favored males, with corresponding mortality rates that were higher for females. However, since all the gender-stratified pancreas cancer mortality rates shown were based on small numbers and therefore likely unstable, they should be interpreted with caution. Other rates were suppressed, although they are labeled “0”.

Figure 24. Sex-Specific Pancreas Cancer Mortality Rate Trend, Dare County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2006-2013), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Pancreas Cancer Incidence

Historical pancreas cancer incidence rates are not available from NC SCHS at the present time.

Prostate Cancer

Prostate Cancer Hospitalizations

Table144 summarizes hospital discharge rate data for prostate cancer.

- Most hospital discharge rates for prostate cancer in the three counties shown in the table were unstable due to small numbers of events.
- Statewide, the discharge rate for prostate cancer was mostly steady at 0.3.

Table 144. Malignant Prostate Neoplasms Hospital Discharge Rate Trend (Single Years, 2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Dare County	**0.2**	**0.3**	0.3	**0.2**	0.4	**0.1**	**0.2**
Currituck County	**0.0**	**0.3**	**0.0**	**0.2**	**0.1**	**0.2**	**0.3**
Hyde County	**0.5**	**0.2**	**n/a**	**0.2**	**0.4**	**n/a**	**0.2**
State of NC	0.3	0.3	0.4	0.3	0.3	0.3	0.3

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

According to NC SCHS data on Inpatient Hospital Utilization and Charges by Principal Diagnosis, there were six cases of malignant neoplasms of the prostate involving hospitalizations of Dare County residents somewhere in NC in 2011 (46). According to OBH data (Appendix A.2.5), from 2010 through 2012 there were 14 total discharges involving 29 days of hospitalization at that hospital associated with diseases or disorders of the male reproductive system (but not necessarily cancer).

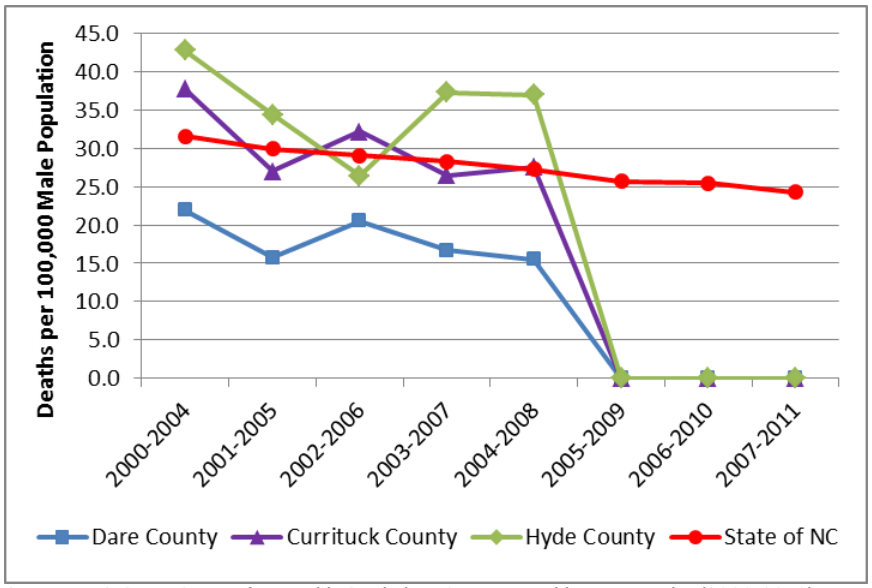
According to OBH data on in- and outpatient surgeries performed from 2010 through 2012, a total of six inpatient and 53 outpatient operations were performed on the male genital organs, although not necessarily involving cancer diagnoses (Appendix A.3.5).

Prostate Cancer Mortality Rate Trend

Figure 25 displays prostate cancer mortality rate trends over time in the four jurisdictions being compared in this CHA.

- The erratic nature of the county-level plots of prostate cancer mortality rates is a reflection of the instability in those rates, due to small numbers of events. Note that all the county rates for the last three time periods were suppressed, and were not equal to “zero”.
- The NC prostate cancer mortality rate decreased by 23% over the period cited, from 31.6 in 2000-2004 to 24.3 in 2007-2011.

Figure 25. Overall Prostate Cancer Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Racial Disparities in Prostate Cancer Mortality

Table 145 presents prostate cancer mortality rate data for the 2007-2011 aggregate period, stratified by race.

- Due to below-threshold numbers of prostate cancer deaths among racially-stratified populations in all three counties, mortality rates for those groups were suppressed.
- Statewide, the prostate cancer mortality rate for African American non-Hispanic males (55.6) was 2.8 *times* the comparable rate for white non-Hispanic males (19.6).
- Statewide the prostate cancer mortality rates for Other race non-Hispanic men and Hispanic men were 12% and 39% lower, respectively, than the comparable rate for white non-Hispanic men.

Table 145. Race/Ethnicity-Specific Prostate Cancer Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Male Population)			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	N/A	N/A	N/A	N/A
Currituck County	N/A	N/A	N/A	N/A
Hyde County	N/A	N/A	N/A	N/A
State of NC	19.6	55.6	17.3	12.0

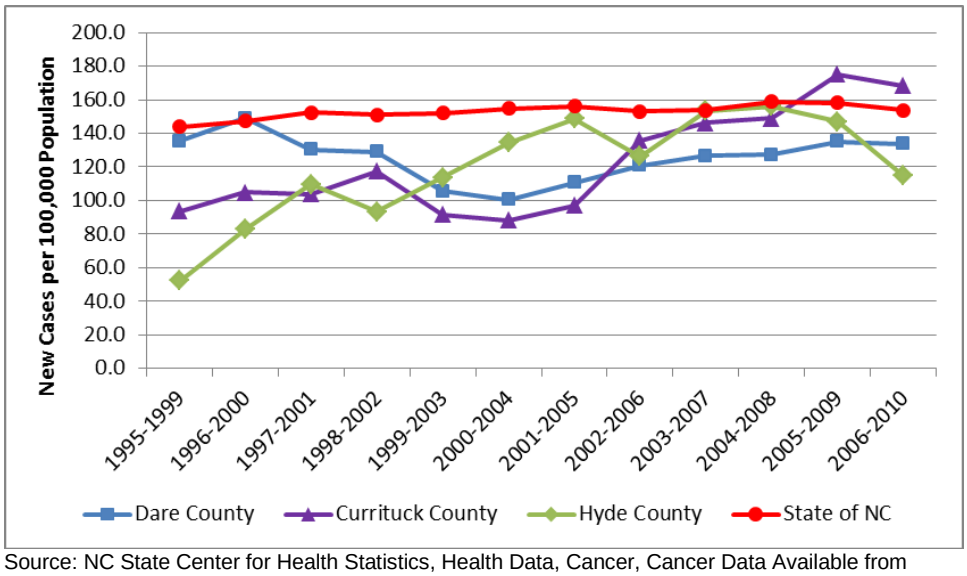
Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Prostate Cancer Incidence

Figure 26 plots the incidence rate trend for prostate cancer.

- The prostate cancer incidence rates in Dare County and NC changed little in the net over the period cited. In Dare County, however, the rate followed the path of a convex curve, and was higher in the first four and last four periods than in the middle four.
- Prostate cancer incidence rate increases in Currituck and Hyde counties were dramatic. The overall increase in prostate cancer incidence was 80% in Currituck County and 120% in Hyde County.

Figure 26. Prostate Cancer Incidence Rate Trend
(Five-Year Aggregate Periods, 1995-1999 through 2006-2010)



Source: NC State Center for Health Statistics, Health Data, Cancer, Cancer Data Available from SCHS, Annual Reports, NC Cancer Incidence Rates for All Counties by Specified Site (Years as noted); http://www.schs.state.us.nc/SCHS/CCR/reports.html.

It is not known whether or not increased screening activity played a role in any of the increases in prostate cancer incidence.

Pneumonia and Influenza

Pneumonia and influenza are diseases of the lungs. Pneumonia is an inflammation of the lungs caused by either bacteria or viruses. Bacterial pneumonia is the most common and serious form of pneumonia and among individuals with suppressed immune systems it may follow influenza or the common cold. Influenza (the "flu") is a contagious infection of the throat, mouth and lungs caused by an airborne virus (48).

Pneumonia/influenza was the third leading cause of death in Dare County and Currituck County, and the ninth leading cause of death in NC, in the 2007-2011 period (Table 123, cited previously); it also was the third leading cause of death in Dare County at the time of the 2010 CHA. Pneumonia/influenza was unranked in Hyde County due to a below-threshold number of deaths.

Pneumonia and Influenza Hospitalizations

Table 146 presents the hospital discharge rate trend data. According to this data from NC SCHS, pneumonia and influenza have caused a significant proportion of illness-related hospitalizations among Dare County residents over time, although at a lower rates than in Hyde County or statewide.

Table 146. Pneumonia and Influenza Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Dare County	2.4	2.2	2.2	2.1	2.4	1.9	1.9
Currituck County	2.7	2.0	1.2	1.4	1.7	1.7	1.3
Hyde County	4.8	6.2	5.9	4.0	6.1	3.3	3.1
State of NC	4.1	3.7	3.4	3.3	3.5	3.1	3.2

Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

Data from the Outer Banks Hospital (OBH) further demonstrates the significance of pneumonia and influenza in the Dare County community. Note that this data is specific to Dare County residents and does not include visitors or tourists.

Table 147 presents data on the number of emergency department (ED) admissions for diagnoses associated with pneumonia and influenza, by age group, in 2010-2012.

- Approximately 2% of all ED admissions (754 of 42,884) over the three-year period cited were associated with diagnoses of pneumonia and influenza in the ICD-9 Code categories shown below. Note there were other codes in the category that are not shown but were in included in the category total.
- The largest proportion (40%) of ED admissions associated with pneumonia and influenza involved adults age 18-64 (300 of 754 admissions); 34% involved seniors age 65 or older (253 admissions), and 26% involved children under the age of 18 (201 admissions).

- In each of the three age groups pneumonia was a more common diagnosis than influenza. Among seniors, pneumonia was by far the more frequent diagnosis, assigned in 95%percent of senior's admissions in the pneumonia/influenza category.

Table 147. OBH Emergency Department Admissions: Pneumonia and Influenza (2010-2012)

Diagnosis		Number of ED Admissions												
		2010				2011				2012				Grand Total
ICD-9 Code	Diagnosis Description	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	
480-488	***Pneumonia and Influenza***	***89***	***114***	***91***	***294***	***64***	***100***	***76***	***240***	***48***	***86***	***86***	***220***	***754***
486	*Pneumonia, organism unspecified*	40	79	89	208	32	70	71	173	41	79	81	201	582
487	*Influenza*	39	26	1	66	19	23	2	44	2	4	2	8	118
Total Emergency Department Admissions		**2,538**	**9,059**	**2,577**	**14,174**	**2,425**	**8,844**	**2,607**	**13,876**	**2,662**	**9,427**	**2,745**	**14,834**	**42,884**

Ped (Pediatric) = Age 017; Adult = Age 18-64; Senior = Age 65 or older
Source: Appendix A.1.5.

According to OBH data for inpatient hospitalizations, in the period from 2010-2012 there were 455 hospital discharges for stays totaling 1,285 days for diagnoses associated with diseases and disorders of the respiratory system (Appendix A.2.5), which would include pneumonia and influenza but also many other diagnoses. Note that Dare County residents with pneumonia and influenza are sometimes hospitalized out of county and even out of state; those cases do *not* appear in this particular OBH summary.

According to data maintained by the NC Hospital Association, simple pneumonia and pleurisy with major or minor complications (DRG Codes 195 and 194) were the 12th and 13th leading DRGs (respectively) accounting for hospitalizations at OBH in FY2011 (Appendix A.2.6).

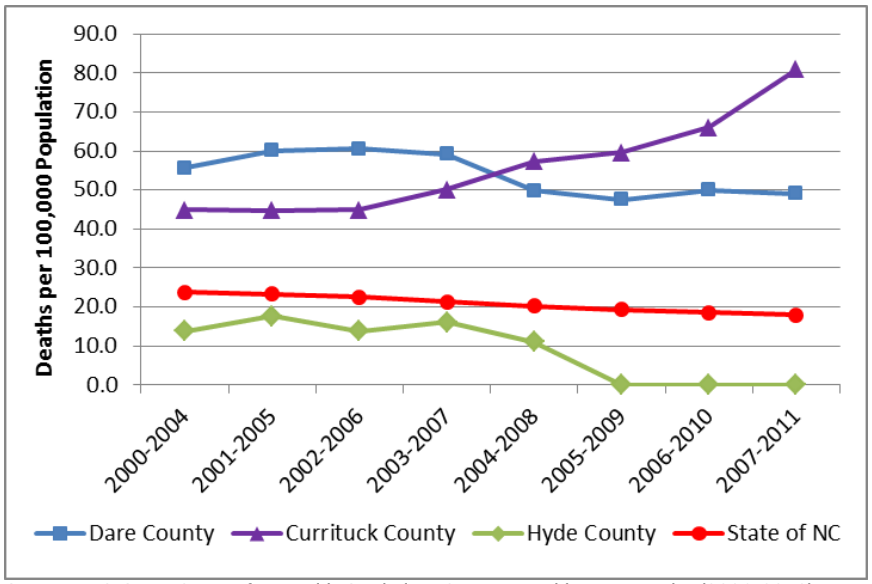
According to NC SCHS, in 2011 there were 131 hospital admissions for pneumonia/influenza among Dare County residents; this figure includes hospitalizations anywhere in NC (46).

Pneumonia and Influenza Mortality Rate Trend

Figure 27 displays the pneumonia/influenza mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The pneumonia/influenza mortality rate in Dare County, although higher than the NC rate throughout the interval cited, was lower in the last four periods than in the first four periods. (Note that the Hyde County rates all were unstable or suppressed.)
- Currituck County experienced a very large increase—approximately 80% overall—in the pneumonia/influenza mortality rate over the period cited.
- At the state level, the pneumonia/influenza mortality rate fell gradually to a current low 17.9.

Figure 27. Overall Pneumonia and Influenza Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Pneumonia and Influenza Mortality

Table 148 presents pneumonia/influenza mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the pneumonia/influenza mortality rate was lowest statewide and highest in Currituck County. The mortality rate for that group in Dare County fell between the state and Hyde County rates.
- Note that due to below-threshold numbers of pneumonia/influenza deaths among minority populations in Dare County and elsewhere, mortality rates were suppressed for those groups.
- There appeared to be a gender differences in pneumonia/influenza mortality in each jurisdiction with non-suppressed rates, but the direction of the difference was not consistent; that is in Dare County the rate for females was higher, but in Currituck County and NC the rate for males was higher.

Table 148. Race/Ethnicity-Specific and Sex-Specific Pneumonia and Influenza Mortality (Single Five-Year Aggregate Period, 2007-2011)

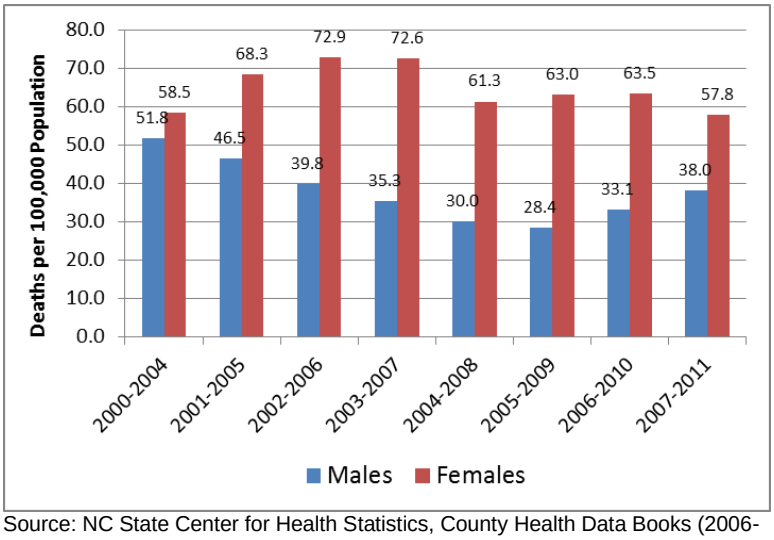
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	80	49.8	2	N/A	0	N/A	0	N/A	28	38.0	54	57.8	82	49.0
Currituck County	68	78.0	12	N/A	0	N/A	0	N/A	35	89.1	45	75.2	80	80.9
Hyde County	1	N/A	0	N/A	0	N/A	0	N/A	0	N/A	1	N/A	1	N/A
State of NC	6,930	18.2	1,377	17.8	83	10.2	65	6.2	3,711	20.9	4,744	16.1	8,455	17.9

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 28 depicts gender-stratified pneumonia/influenza mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- It appears that the gender difference in the pneumonia/influenza mortality rate noted in Dare County for 2007-2011 is actually longstanding. At times over the period cited below, the rate for females was twice the rate for males.
- Noteworthy also is that after several periods of decline, the pneumonia/influenza mortality rate among Dare County men rose in each of the last three periods, even as the rate among women began to stabilize.

Figure 28. Sex-Specific Pneumonia and Influenza Mortality Rate Trend, Dare County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 149 presents pneumonia/influenza mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of pneumonia/influenza deaths in some stratified categories, the NC SCHS suppressed the associated mortality rates.
- At the state level, the pneumonia/influenza mortality rate is highest among African Americans males, followed by white non-Hispanic males and white, non-Hispanic females. Pneumonia/influenza mortality statewide was lowest among male and female Hispanics.

Table 149. Race/Ethnicity and Sex-Specific Pneumonia and Influenza Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	36.7	N/A	N/A	N/A	60.5	N/A	N/A	N/A
Currituck County	73.3	N/A	N/A	N/A	79.2	N/A	N/A	N/A
Hyde County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State of NC	20.9	22.9	10.5	6.2	16.6	15.1	9.9	6.2

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

An important strategy in combatting and controlling pneumonia and influenza is to encourage people to receive an annual influenza immunization. A key player in any such effort is the local health department, which offers immunizations at reasonable and/or state-subsidized cost. According to data provided by the DCDPH, the agency administered flu immunizations as follows (49):

- 2009-2010: 3,386 immunizations (Funding sources: State, 256; Private, 1,330)
- 2010-2011: 2,210 immunizations (Funding sources: State, 471; Private, 1,739)
- 2011-2012: 2,549 immunizations (Funding sources: State, 1,256; Private, 1,293)

In addition, the agency provides school immunization services to Dare County schools. Data for 2012 shows that 1,199 doses of Flu Mist vaccine were administered in schools (27).

Chronic Lower Respiratory Disease (CLRD)

Chronic lower respiratory disease (CLRD) is composed of three major diseases, chronic bronchitis, emphysema, and asthma, all of which are characterized by shortness of breath caused by airway obstruction and sometimes lung tissue destruction. The obstruction is irreversible in chronic bronchitis and emphysema, reversible in asthma. Before 1999, CLRD was called *chronic obstructive pulmonary disease* (COPD). Some in the field still use the designation COPD, but limit it to mean chronic bronchitis and emphysema only. In the US, tobacco use is a key factor in the development and progression of CLRD/COPD, but exposure to air pollutants in the home and workplace, genetic factors, and respiratory infections also play a role (50).

CLRD was the fourth leading cause of death in Dare County and Currituck County, and the third leading cause of death in NC in the 2007-2011 period (Table 123, cited previously); it was the sixth leading cause of death in Dare County at the time of the 2010 CHA. CLRD was unranked in Hyde County due to a below-threshold number of deaths.

CLRD/COPD Hospitalizations

Table 150 presents the hospital discharge rate trend data for COPD (the term still used by some data-compiling organizations). According to this data, COPD caused a significant proportion of illness-related hospitalizations among Dare County residents over time, although for the most part at lower rates than in the other jurisdictions.

Table 150. COPD Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Dare County	3.0	2.9	2.4	2.2	2.2	2.1	1.9
Currituck County	4.3	2.9	3.4	3.1	1.8	2.6	2.8
Hyde County	5.2	4.4	4.2	2.9	2.4	3.3	4.0
State of NC	3.5	3.2	3.1	3.4	3.4	3.2	3.2

Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

Data from The Outer Banks Hospital (OBH) further demonstrates the significance of COPD (the term still used by OBH) in the Dare County community.

Table 151 presents data on the number of emergency department (ED) admissions for diagnoses associated with COPD, by age group, among Dare County residents, in 2010-2012.

- Approximately 2.6% of all ED admissions (1,119 of 42,884) over the three-year period cited were associated with diagnoses of COPD or allied conditions in the ICD-9 Code categories shown below. Note there were other codes in the category that are not shown but were in included in the category total.
- The majority (57%) of ED admissions associated with COPD and allied conditions involved adults age 18-64 (630 of 1,119 admissions); 30% involved seniors age 65 or

older (340 admissions), and 13% involved children under the age of 18 (149 admissions).

- Each age group had its own characteristic pattern of admissions. The most common diagnosis each year in the pediatric age group was *asthma*; in the adult age group it was either asthma or unspecified bronchitis; and in the senior group it was chronic (specified) bronchitis.

Table 151. OBH Emergency Department Admissions: COPD and Allied Conditions (2010-2012)

Diagnosis		Number of ED Admissions												
		2010				2011				2012				Grand Total
ICD-9 Code	Diagnosis Description	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	
490-496	***Chronic Obstructive Pulmonary Disease/Allied Conditions***	***46***	***227***	***134***	***407***	***51***	***170***	***105***	***326***	***52***	***233***	***101***	***386***	***1,119***
490	*Bronchitis, not specified as acute or chronic*	12	80	13	105	4	40	9	53	10	78	21	109	267
491	*Chronic bronchitis*	0	41	88	129	0	53	72	125	0	77	48	125	379
493	*Asthma*	34	91	7	132	47	62	10	119	42	67	10	119	370
496	*Chronic airway obstruction*	0	15	25	40	0	15	13	28	0	11	20	31	99
Total Emergency Department Admissions		**2,538**	**9,059**	**2,577**	**14,174**	**2,425**	**8,844**	**2,607**	**13,876**	**2,662**	**9,427**	**2,745**	**14,834**	**42,884**

Ped (Pediatric) = Age 0-17; Adult = Age 18-64; Senior = Age 65 or older
Source: Appendix A.1.5.

According to OBH data for inpatient hospitalizations, in the period from 2010-2012 there were 455 hospital discharges for stays totaling 1,285 days for diagnoses associated with diseases and disorders of the respiratory system (DRG Codes 163-208, which would include COPD but also many other diagnoses) (Appendix A.2.5). Note that Dare County residents with CLRD/COPD are sometimes hospitalized out of county and even out of state; those cases do *not* appear in this particular OBH summary.

According to data maintained by the NC Hospital Association, COPD without complications or with major or minor complications (DRG Codes 192, 190, and 191) were the 8th, 23th and 24th leading DRGs (respectively) accounting for hospitalizations at OBH in FY2011 (Appendix A.2.6).

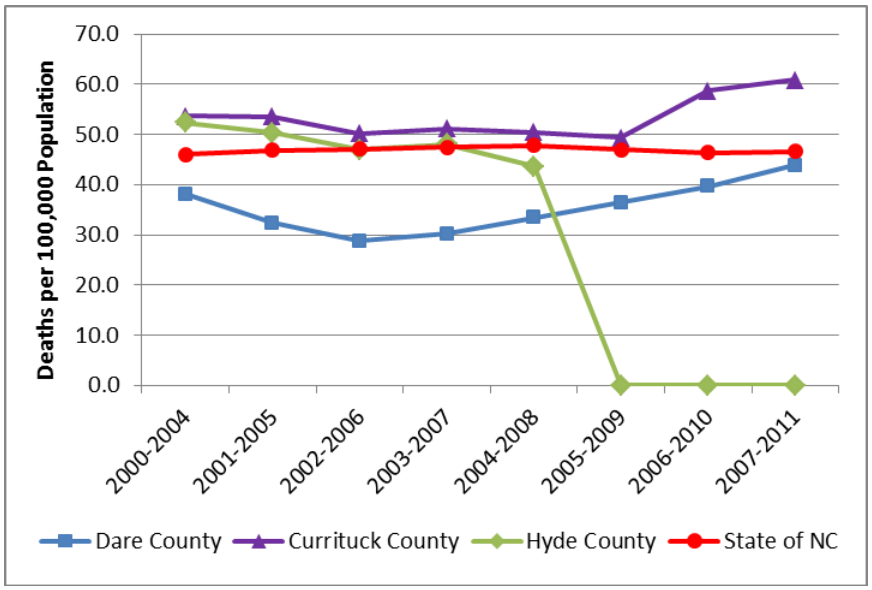
According to NC SCHS, in 2011 there were 65 hospital admissions for COPD among Dare County residents; this figure includes hospitalizations anywhere in NC (46).

CLRD Mortality Rate Trend

Figure 29 displays the CLRD mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The CLRD mortality rate in Dare County, although lower than the comparable rates for Currituck County and NC throughout the interval cited, rose from 28.8 to 43.9 (52%) over the last five periods. (Note that except for the first two, the Hyde County rates all were unstable or suppressed.)
- Currituck County experienced a CLRD mortality rate increase of 21% over the last three periods.
- At the state level, the CLRD mortality rate was essentially unchanged over the period.

Figure 29. Overall CLRD Mortality Rate Trend
(Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in CLRD Mortality

Table 152 presents CLRD mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the CLRD mortality rate was lowest in Dare County and highest in Currituck County.
- Note that due to below-threshold numbers of CLRD disease deaths among minority populations in Dare County and elsewhere, mortality rates were suppressed for those groups.
- There appeared to be a gender differences in CLRD mortality in each jurisdiction with non-suppressed rates, but the direction of the difference was not consistent; that is in Dare County the rate for females was higher, but in Currituck County and NC the rate for males was higher.

Table 152. Race/Ethnicity-Specific and Sex-Specific CLRD Mortality
(Single Five-Year Aggregate Period, 2007-2011)

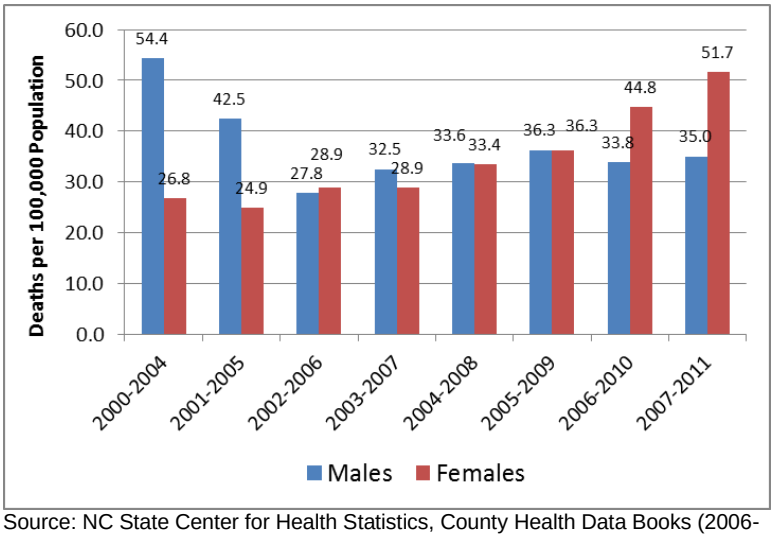
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	80	45.1	1	N/A	0	N/A	0	N/A	29	35.0	52	51.7	81	43.9
Currituck County	67	63.7	2	N/A	2	N/A	0	N/A	46	86.3	25	41.6	71	60.9
Hyde County	16	N/A	3	N/A	0	N/A	0	N/A	10	N/A	9	N/A	19	N/A
State of NC	19,755	51.3	2,287	28.9	176	20.3	56	7.8	10,447	54.9	11,827	41.7	22,274	46.6

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 30 depicts gender-stratified CLRD mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- It appears that the gender difference in the CLRD mortality rate noted in Dare County for 2007-2011 is a relatively new phenomenon. The graph demonstrates that the CLRD mortality rate among males in the county, once much higher than the comparable rate for females decreased significantly in the net. Meanwhile, the CLRD mortality rate among females increased sharply, especially in the last two periods, to the point where it now exceeds the comparable rate for males.

Figure 30. Sex-Specific CLRD Mortality Rate Trend, Dare County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 153 presents CLRD mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of CLRD deaths in some stratified categories, the NC SCHS suppressed the associated mortality rates.
- At the state level, the CLRD mortality rate was highest among white non-Hispanic males, followed by white non-Hispanic females, African American non-Hispanic males, non-Hispanic males of Other races, and African American non-Hispanic females. CLRD mortality rates statewide were lowest among male and female Hispanics.
- CLRD mortality rates were higher for males than for females in every racial group *except* Hispanics, where the rate for females was higher than the comparable rate for males.

Table 153. Race/Ethnicity and Sex-Specific CLRD Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	36.1	N/A	N/A	N/A	53.0	N/A	N/A	N/A
Currituck County	91.3	N/A	N/A	N/A	41.8	N/A	N/A	N/A
Hyde County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State of NC	58.2	43.9	27.2	7.0	47.3	21.1	15.6	8.6

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.

Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

All Other Unintentional Injury

This category includes death without purposeful intent due to poisoning, falls, burns, choking, animal bites, drowning, and occupational or recreational injuries; it expressly excludes unintentional injury due to motor vehicle crashes. (Death due to injury involving motor vehicles is a separate cause of death and will be covered subsequently.)

All other unintentional injury was the fifth leading cause of death in Dare County, Currituck County, and NC in the 2007-2011 period (Table 123, cited previously); it also was the fifth leading cause of death in Dare County at the time of the 2010 CHA. This cause of death was unranked in Hyde County due to a below-threshold number of deaths.

There is limited data specific to poisoning deaths in Dare County. The number of poisoning deaths, regardless of manner, apparently has risen recently in Dare County. The following data on poisoning deaths in Dare County was provided to DCDPH by NC SCHS (51). It should be noted that these data, which originated in the Office of the State Medical Examiner, reflect total occurrences in the county and *not* necessarily resident deaths.

- 2007 – 6 deaths
- 2008 – 4 deaths
- 2009 – 7 deaths
- 2010 – 5 deaths
- 2011 – 13 deaths

All Other Unintentional Injury Hospitalizations

Table 154 presents the hospital discharge rate trend data for a category called *injuries and poisonings,* which also includes injuries resulting from motor vehicle crashes. According to this data, injuries and poisonings caused a significant proportion of hospitalizations among Dare County residents over time, although for the most part at lower rates than in the other jurisdictions.

Table 154. Injuries and Poisonings Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Dare County	4.1	3.9	3.4	3.7	3.3	2.7	3.2
Currituck County	3.0	2.7	2.4	2.3	2.7	2.1	1.9
Hyde County	8.8	6.7	5.5	6.0	6.9	7.1	4.1
State of NC	8.5	8.6	8.6	8.5	8.3	8.2	8.2

Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

Data from The Outer Banks Hospital (OBH) further demonstrates the significance of injury and poisonings in the Dare County community.

Table 155 presents data on the number of emergency department (ED) admissions for diagnoses associated with injury and poisoning, by age group, among Dare County residents, in 2010-2012. It is important to keep in mind that this list includes injuries caused by vehicular means.

- Approximately 22% of all ED admissions (9,278 of 42,884) over the three-year period cited were associated with diagnoses of injury and poisoning in the ICD-9 Code categories shown below. Note there were other codes in the category that are not shown but were in included in the category total.
- The majority (62%) of ED admissions associated with injury and poisoning involved adults age 18-64 (5,764 of 9,278 admissions); 23% involved children under the age of 18 (2,138 admissions) and 15% involved seniors age 65 or older (1,376 admissions).
- The most common diagnosis overall each year in this category was *open wounds*; the second most common diagnosis was *sprains and strains of joints and adjacent muscles,* and the third was *contusion with intact skin surface.*

Table 155. OBH Emergency Department Admissions: Injury and Poisoning (2010-2012)

Diagnosis		Number of ED Admissions												
		2010				2011				2012				Grand Total
ICD-9 Code	Diagnosis Description	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	
800-999	**Injury and Poisoning**	**728**	**1,904**	**451**	**3,083**	**705**	**1,944**	**450**	**3,099**	**705**	**1,916**	**475**	**3,096**	**9,278**
840-848	*Sprains and strains of joints and adjacent muscles*	105	435	43	583	109	482	38	629	100	439	35	574	1,786
850-854	*Intracranial injury without skull fracture (includes concussion)*	23	33	8	64	16	27	11	54	12	29	9	50	168
860-869	*Internal injury of thorax, abdomen and pelvis*	1	8	2	11	2	13	1	16	1	4	5	10	37
870-897	*Open wounds*	161	382	93	636	157	401	81	639	164	401	78	643	1,918
920-924	*Contusion with intact skin surface*	133	264	71	468	104	238	67	409	104	225	90	419	1,296
925-929	*Crushing injury*	1	1	0	2	0	1	0	1	1	3	0	4	7
940-949	*Burns*	9	23	3	35	9	28	2	39	2	37	1	40	114
958-959	*Certain traumatic complications and unspecified injuries*	63	121	24	208	63	95	20	178	80	134	28	242	628
960-979	*Poisoning by drugs, medicinal and biological substances*	11	36	6	53	15	47	5	67	16	40	3	59	179
980-989	*Toxic effects of substances chiefly nonmedicinal as to source*	5	38	9	52	13	36	4	53	2	33	2	37	142
990-995	*Other and unspecified effects of external causes*	15	64	11	90	25	91	13	129	24	91	22	137	356
996-999	*Complications of surgical and medical care, not elsewhere*	2	55	25	82	1	30	34	65	2	44	32	78	225
Total Emergency Department Admissions		**2,538**	**9,059**	**2,577**	**14,174**	**2,425**	**8,844**	**2,607**	**13,876**	**2,662**	**9,427**	**2,745**	**14,834**	**42,884**

Ped (Pediatric) = Age 0-17; Adult = Age 18-64; Senior = Age 65 or older
Source: Appendix A.1.5.

According to OBH data for inpatient hospitalizations, in the period from 2010-2012 there were 13 hospital discharges for stays totaling 23 days for diagnoses associated with injuries, poisonings and toxic effects of drugs (DRG Codes 901-923) (Appendix A.2.5). Note that Dare County residents who suffer accidental injury or poisoning are sometimes hospitalized out of county and even out of state; those cases do *not* appear in this particular OBH summary.

According to data maintained by the NC Hospital Association, no diagnosis associated with a DRG in the injury and poisoning category was among the 25 leading causes for hospitalization at OBH in FY2011 (Appendix A.2.6).

According to NC SCHS, in 2011 there were 111 injury and poisoning hospitalizations among Dare County residents; this figure includes hospitalizations anywhere in NC (46). Note that the state hospitalization data appears to differ significantly from OBH hospitalization data. The OBH data is clearly linked to DRG codes; the coding source for the state data is unclear.

All Other Unintentional Injury Mortality Rate Trend

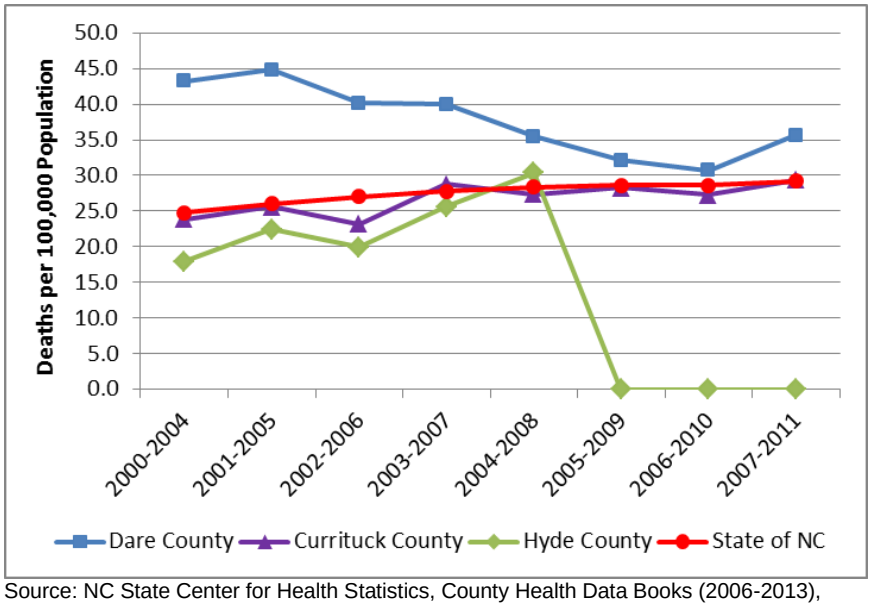
Figure 31 displays the all other unintentional injury mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The all other unintentional injury mortality rate in Dare County, although higher than the comparable rates for Currituck County and NC throughout the interval cited, fell from

43.2 to 35.6 (18%) overall. (Note that all the Hyde County rates were unstable or suppressed.)

- For the most part, all of the other unintentional injury mortality rates in Currituck County were about the same as the comparable rates in NC.
- At the state level, the all other unintentional injury mortality rate rose 18% over the period cited.

Figure 31. Overall All Other Unintentional Injury Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in All Other Unintentional Injury Mortality

Table 156 presents all other unintentional injury mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the other unintentional injury mortality rate was highest in Dare County and lowest in Currituck County.
- Note that due to below-threshold numbers of other unintentional injury deaths among some minority populations, mortality rates were suppressed for those groups.
- There appeared to be a gender differences in other unintentional injury mortality in each jurisdiction with non-suppressed rates, with rates for males higher than rates for females.

Table 156. Race/Ethnicity-Specific and Sex-Specific All Other Unintentional Injury Mortality (Single Five-Year Aggregate Period, 2007-2011)

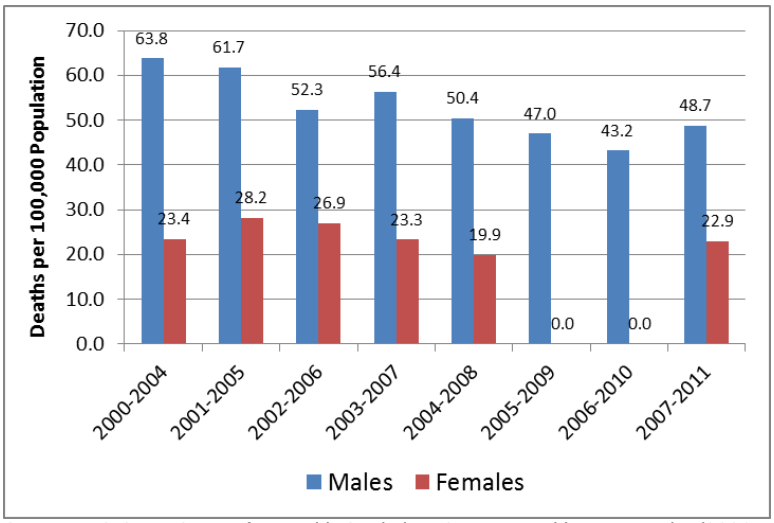
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	59	34.0	0	N/A	2	N/A	4	N/A	43	48.7	22	22.9	65	35.6
Currituck County	33	31.8	0	N/A	0	N/A	1	N/A	17	N/A	17	N/A	34	29.4
Hyde County	9	N/A	4	N/A	0	N/A	0	N/A	10	N/A	3	N/A	13	N/A
State of NC	11,385	33.1	1,854	20.3	246	19.6	296	11.3	8,140	38.8	5,641	20.9	13,781	29.2

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 32 depicts gender-stratified all other unintentional injury mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- It appears that the gender difference in the all other unintentional injury mortality rate noted in Dare County for 2007-2011 actually is longstanding. The all other unintentional injury mortality rate among males in the county was, at times, two or more times the comparable rate for females. Note that many of the rates for females were either unstable or suppressed (as indicated by "0"), due to below-threshold numbers of deaths.

Figure 32. Sex-Specific All Other Unintentional Injury Mortality Rate Trend, Dare County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 157 presents all other unintentional injury mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of all other unintentional injury deaths in some stratified categories, the NC SCHS suppressed the associated mortality rates.
- At the state level, the all other unintentional injury mortality rate in all racial groups was higher among males than females.

- The all other unintentional injury mortality rate was highest among white non-Hispanic males, followed by African American non-Hispanic males, non-Hispanic males of Other races, and white non-Hispanic females. All other unintentional injury mortality rates statewide were lowest among female Hispanics and Other non-Hispanic females.

Table 157. Race/Ethnicity and Sex-Specific All Other Unintentional Injury Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	48.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Currituck County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hyde County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State of NC	43.3	30.1	28.2	15.7	24.1	13.3	13.1	5.9

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Cerebrovascular Disease

Cerebrovascular disease describes the physiological conditions that lead to stroke. Strokes happen when blood flow to the brain stops and brain cells begin to die. There are two types of stroke. Ischemic stroke (the more common type) is caused by a blood clot that blocks or plugs a blood vessel in the brain. The other kind, called hemorrhagic stroke, is caused by a blood vessel that breaks and bleeds into the brain (52).

Cerebrovascular disease was the sixth leading cause of death in Dare County, the seventh in Currituck County, the third in Hyde County, and the fourth leading cause of death in NC in the 2007-2011 aggregate period (Table 123, cited previously). Stroke was the fourth leading cause of death in Dare County at the time of the 2010 CHA.

Cerebrovascular Disease Hospitalizations

Table 158 presents the hospital discharge rate trend data for cerebrovascular disease (CVD). According to this data, CVD caused a significant proportion of illness-related hospitalizations among Dare County residents over time, although for the most part at a lower rate than in Hyde County or NC as a whole.

Table 158. Cerebrovascular Disease Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Dare County	2.0	1.2	1.4	1.1	1.0	1.3	1.1
Currituck County	1.0	1.1	1.4	1.0	1.2	1.1	0.7
Hyde County	6.4	5.1	4.0	4.5	3.2	3.3	5.0
State of NC	3.2	3.1	3.1	3.0	3.1	3.1	3.0

Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

Data from The Outer Banks Hospital (OBH) further demonstrates the significance of CVD among Dare County residents.

Table 159 presents data on the number of emergency department (ED) admissions for diagnoses associated with CVD, by age group, in 2010-2012.

- Approximately 0.6% of all ED admissions (239 of 42,884) over the three-year period cited were associated with diagnoses of CVD in the ICD-9 Code categories shown below. Note there were other codes in the category that are not shown but were in included in the category total.
- The majority (66%) of ED admissions associated with CVD involved seniors age 65 and older (158 of 239 admissions); 33% involved adults age 18-64 (79 admissions), and 1% involved children under the age of 18 (2 admissions).
- While the senior age group presented the highest proportions of diagnoses for both occlusion of cerebral arteries (69%) and transient cerebral ischemia (66%), adults age 18-64 provided the highest proportion (65%) of diagnoses of acute venous embolism and thrombosis of the lower extremity (phlebitis and associated conditions).

Table 159. OBH Emergency Department Admissions: Cerebrovascular Disease (2010-2012)

Diagnosis		Number of ED Admissions												
		2010				2011				2012				Grand Total
ICD-9 Code	Diagnosis Description	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	
430-438	***Cerebrovascular disease***	***1***	***31***	***54***	***86***	***0***	***22***	***56***	***78***	***1***	***26***	***48***	***75***	***239***
434	*Occulsion of cerebral arteries*	0	17	24	41	0	11	34	45	0	9	23	32	118
435	*Transient cerebral ischemia*	0	11	21	32	0	4	15	19	1	11	17	29	80
453.4	*Acute venous embolism and thrombosis of lower extremity*	0	18	11	29	0	14	8	22	0	25	12	37	88
Total Emergency Department Admissions		**2,538**	**9,059**	**2,577**	**14,174**	**2,425**	**8,844**	**2,607**	**13,876**	**2,662**	**9,427**	**2,745**	**14,834**	**42,884**

Ped (Pediatric) = Age 0-17; Adult = Age 18-64; Senior = Age 65 or older
Source: Appendix A.1.5.

According to OBH data for inpatient hospitalizations, in the period from 2010-2012 there were 128 hospital discharges for stays totaling 285 days for diagnoses associated with diseases and disorders of the circulatory system (DRG Codes 216-316, which would include CVD but also other diagnoses) (Appendix A.2.5). Note that Dare County residents with CVD are sometimes hospitalized out of county and even out of state; those cases do *not* appear in this particular OBH summary.

According to data maintained by the NC Hospital Association, intracranial hemorrhage or cerebral infarction without complications (DRG Code 66) was the 21st leading DRG accounting for hospitalizations at OBH in FY2011 (Appendix A.2.6).

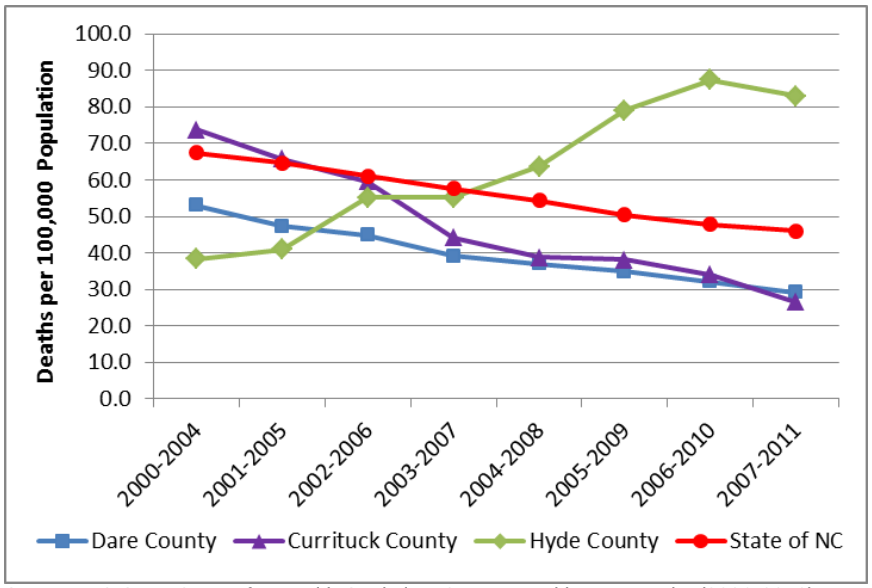
According to NC SCHS, in 2011 there were 37 hospital admissions for CVD among Dare County residents; this figure includes hospitalizations anywhere in NC (46).

Cerebrovascular Disease Mortality Rate Trend

Figure 33 displays the CVD mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The CVD mortality rate in Dare County was lower than the comparable rates for Currituck County and NC throughout most the interval cited, falling overall from 53.1 to 29.2 (45%).
- CVD mortality rates in Currituck County and NC also fell between 2000-2004 and 2007-2011, but the comparable rate in Hyde County increased by 116% over the same period.

Figure 33. Overall Cerebrovascular Disease Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Cerebrovascular Disease Mortality

Table 160 presents CVD mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the CVD mortality rate was highest statewide and lowest in Currituck County. The mortality rate for that group in Dare County fell between the state and Currituck County rates.
- Note that due to below-threshold numbers of CVD disease deaths among minority populations in Dare County and elsewhere, mortality rates were suppressed for those groups.
- There appeared to be inconsistent gender differences in CVD mortality among jurisdiction with non-suppressed rates. In Dare County the CVD mortality rate for males was lower than the comparable rate for females; at the state level, the reverse was true.

Table 160. Race/Ethnicity-Specific and Sex-Specific Cerebrovascular Disease Mortality (Single Five-Year Aggregate Period, 2007-2011)

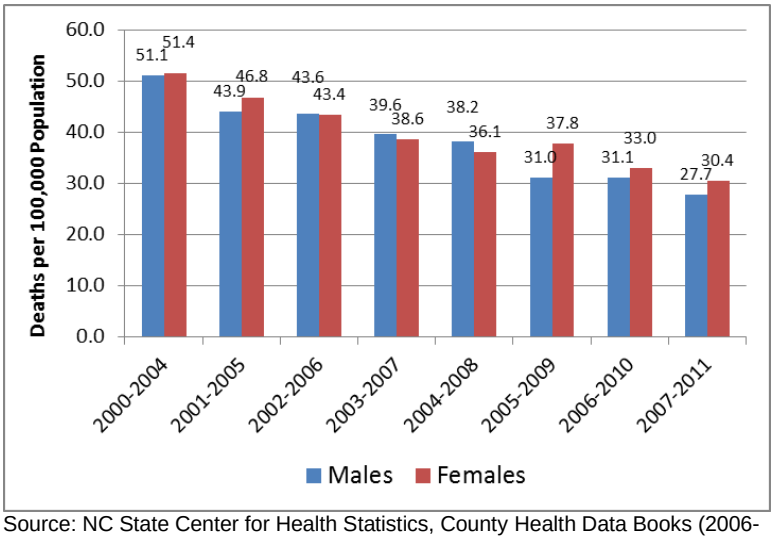
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	49	28.7	2	N/A	1	N/A	1	N/A	23	27.7	30	30.4	53	29.2
Currituck County	25	25.0	5	N/A	0	N/A	0	N/A	8	N/A	22	35.5	30	26.5
Hyde County	14	N/A	15	N/A	1	N/A	0	N/A	14	N/A	16	N/A	30	83.0
State of NC	16,418	43.0	4,933	62.4	280	32.6	143	15.1	8,730	46.8	13,044	44.5	21,774	46.0

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 34 depicts gender-stratified CVD mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- It appears that the gender difference in the CVD mortality rate noted in Dare County for 2007-2011 is a relatively new phenomenon. The graph demonstrates that the CVD mortality rate among Dare County males has been very near to and at times exceeded the CVD mortality rate among Dare County females. In the last three periods, the CVD mortality rate for females was higher than the rate for males. Rates among both males and females in the county decreased over the period cited.

Figure 34. Sex-Specific Cerebrovascular Disease Mortality Rate Trend, Dare County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 161 presents CVD mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of CVD deaths in some stratified categories, the NC SCHS suppressed the associated mortality rates.
- At the state level, the CVD mortality rate was highest among African American non-Hispanic males, followed by African American non-Hispanic females, white non-Hispanic males, and white non-Hispanic females. CVD mortality rates statewide were lowest among male and female Hispanics.
- CVD mortality rates were higher for males than for females in every racial group *except* Hispanics, where the rate for females was higher than the comparable rate for males.

Table 161. Race/Ethnicity and Sex-Specific Cerebrovascular Disease Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	27.9	N/A	N/A	N/A	29.1	N/A	N/A	N/A
Currituck County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hyde County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State of NC	43.3	67.9	37.4	14.0	42.0	57.7	28.5	15.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Alzheimer's Disease

Alzheimer's disease is a progressive neurodegenerative disease affecting mental abilities including memory, cognition and language. Alzheimer's disease is characterized by memory loss and dementia. The risk of developing Alzheimer's disease increases with age (e.g., almost half of those 85 years and older suffer from Alzheimer's disease). Early-onset Alzheimer's has been shown to be genetic in origin, but a relationship between genetics and the late-onset form of the disease has not been demonstrated. No other definitive causes have been identified (53).

Alzheimer's disease was the seventh leading cause of death in Dare County, the eighth in Currituck County, and the sixth leading cause of death in NC in the 2007-2011 aggregate period (Table 123, cited previously). The Alzheimer's disease mortality rate in Hyde County was suppressed due to below-threshold numbers of deaths. Alzheimer's disease was the eighth leading cause of death in Dare County at the time of the 2010 CHA.

Alzheimer's Disease Hospitalizations

At the present time the NC SCHS does not track Alzheimer's disease-related hospitalizations.

According to raw data provided by The Outer Banks Hospital (OBH) on ED admissions, there were nine admissions associated with diagnoses of Alzheimer's disease (ICD-9 Code 331.0) during the period from 2010 through 2012.

According to OBH data for inpatient hospitalizations, in the period from 2010-2012 there were six hospital discharges for stays totaling 21 days for diagnoses associated mental diseases and disorders (DRG Codes 876-887, which would include Alzheimer's disease but also other diagnoses) (Appendix A.2.5). Note that Dare County residents with Alzheimer's disease might sometimes hospitalized out of county and even out of state; those cases do *not* appear in this particular OBH summary.

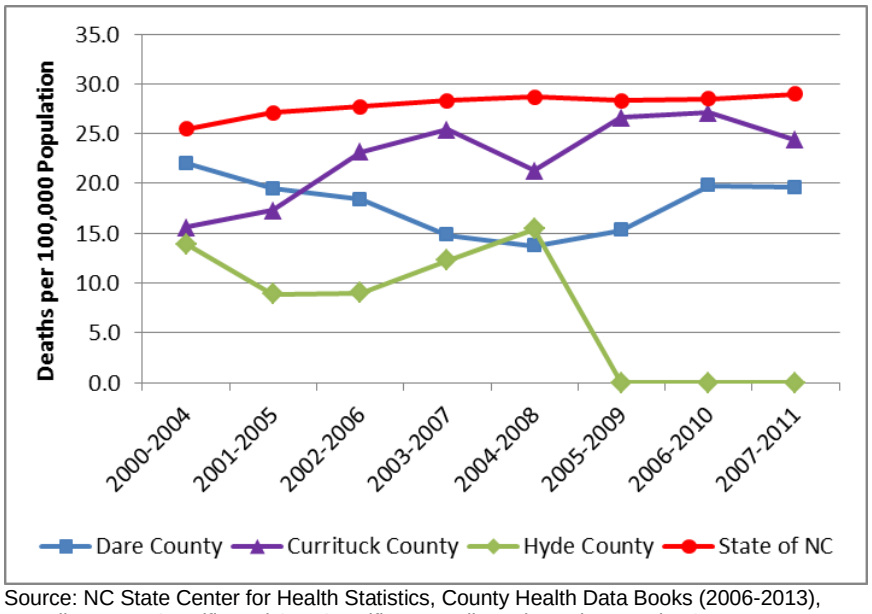
According to data maintained by the NC Hospital Association, Alzheimer's disease was *not* among the 25 leading DRG accounting for hospitalizations at OBH in FY2011 (Appendix A.2.6).

Alzheimer's Disease Mortality Rate Trend

Figure 35 displays the Alzheimer's disease mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The Alzheimer's disease mortality rate in Dare County was lower than the comparable rates for Currituck County and NC throughout most the interval cited. Although the Dare County Alzheimer's disease mortality rate was lower in 2007-2011 (19.6) than in 2000-2004 (22.0), it rose 43% over the last three periods cited.
- The Alzheimer's disease mortality rate in NC rose 14% between 2000-2004 and 2007-2011, and the comparable rate in Currituck County increased by 56% over the same period. All the Alzheimer's disease mortality rates in Hyde County were either unstable or suppressed (as indicated by the "0" rate plotted on the graph).

Figure 35. Overall Alzheimer's Disease Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Alzheimer's Disease Mortality

Table 162 presents Alzheimer's disease mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the Alzheimer's disease mortality rate was highest statewide and lowest in Dare County.
- Note that due to below-threshold numbers of Alzheimer's disease deaths among minority populations in Dare County and elsewhere, mortality rates were suppressed for those groups.
- Statewide there appeared to be a significant gender difference in Alzheimer's disease mortality. There were too many suppressed rates at the county level to make gender comparisons.

Table 162. Race/Ethnicity-Specific and Sex-Specific Alzheimer's Disease Mortality (Single Five-Year Aggregate Period, 2007-2011)

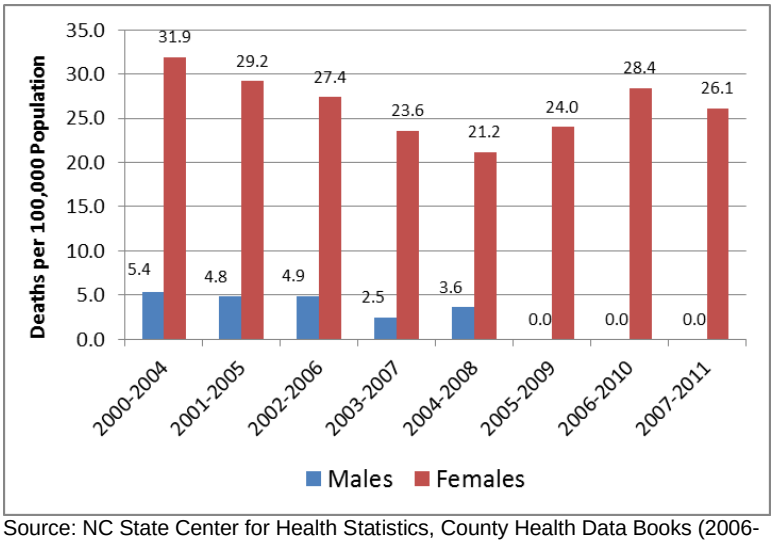
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	32	20.0	1	N/A	0	N/A	0	N/A	9	N/A	24	26.1	33	19.6
Currituck County	22	26.1	1	N/A	0	N/A	0	N/A	5	N/A	18	N/A	23	24.4
Hyde County	6	N/A	4	N/A	0	N/A	0	N/A	4	N/A	6	N/A	10	N/A
State of NC	11,369	29.9	1,789	26.1	136	21.3	53	8.9	3,627	22.7	9,720	32.2	13,347	29.0

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 36 depicts gender-stratified Alzheimer's disease mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- It appears that there was a strong gender difference in Alzheimer's mortality rates in Dare County. The graph demonstrates that the Alzheimer's disease mortality rate among Dare County females was six to nine times the comparable mortality rate among Dare County males. Although all the rates for males were either unstable or suppressed due to below-threshold numbers of events, this disproportional pattern of gender-based Alzheimer's disease mortality is common throughout NC.

Figure 36. Sex-Specific Alzheimer's Disease Mortality Rate Trend, Dare County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 163 presents Alzheimer's disease mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of Alzheimer's disease deaths in some stratified categories, the NC SCHS suppressed the associated mortality rates.
- At the state level, the Alzheimer's disease mortality rate was highest among white non-Hispanic females, followed by African American non-Hispanic females, Other non-Hispanic females, and white non-Hispanic males.
- Statewide, Alzheimer's disease mortality rates were higher for females than for males in every racial group for which there was a complete set of rates.

Table 163. Race/Ethnicity and Sex-Specific Alzheimer's Disease Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	N/A	N/A	N/A	N/A	26.4	N/A	N/A	N/A
Currituck County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hyde County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State of NC	23.4	21.2	15.2	N/A	33.4	28.1	24.9	10.3

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Recently, Gentle Expert Memorycare (GEM) Adult Day Services, Inc., a local Dare County provider of services for Alzheimer's disease patients and their caregivers, undertook a study to identify and describe what potential caregivers in Dare County knew and did not know about Alzheimer's disease. The ultimate goal was to use the assessment results to devise a community-specific Alzheimer's disease "curriculum". The study involved inviting randomly-selected county residents between the ages of 45 and 50 to participate in a mail survey to measure their knowledge about facets of Alzheimer's disease including assessment and diagnosis, caregiving, course of the disease, life impact, risk factors, symptoms, and treatment/management. The survey consisted of a total of 30 true/false statements about the above topics.

According to study results, the mean correct response rate was 22.7 of a possible 30, indicating a significant level of lack of knowledge or perhaps misunderstanding about the nature of Alzheimer's disease. Interestingly, the report authors did not find a significant difference between men and women, age, or whether or not the participant had personal family experience with the disease (54). These results, coupled with a demonstrably aging population, and increasing Alzheimer's disease mortality, may point to a need to educate the population better about this likely growing health problem in its midst.

Septicemia

Septicemia is a rapidly progressing infection resulting from the presence of bacteria in the blood. The disease often arises from other infections throughout the body, such as meningitis, burns, and wound infections. Septicemia can lead to septic shock in which case low blood pressure and low blood flow cause organ failure (55). While septicemia can be community-acquired, some cases are acquired by patients hospitalized initially for other conditions; these are referred to as nosocomial infections. Sepsis is now a preferred term for septicemia, but NC SCHS continues to use the older term.

Septicemia was the eighth leading cause of death in Dare County, and the 11th leading cause of death in NC in the 2007-2011 aggregate period (Table 123, cited previously); it was unranked in Currituck and Hyde Counties due to below threshold numbers of deaths. Septicemia was the 11th leading cause of death in Dare County at the time of the 2010 CHA.

Septicemia Hospitalizations

Table 164 presents the hospital discharge rate trend data for septicemia. According to this data, septicemia caused a significant proportion of illness-related hospitalizations among residents statewide, but was far less prominent in Dare County.

Table 164. Septicemia Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Dare County	0.3	0.4	0.4	0.5	**0.2**	0.3	**0.1**
Currituck County	**0.3**	**0.2**	**0.3**	**0.1**	0.4	0.5	0.4
Hyde County	**1.3**	**0.7**	**0.9**	**1.1**	n/a	**0.9**	2.4
State of NC	1.6	1.8	2.0	2.3	2.5	2.9	3.4

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 165 presents data on the number of emergency department (ED) admissions for diagnoses associated with septicemia, by age group, in 2010-2012.

- Less than 0.1% of all ED admissions (39 of 42,884) over the three-year period cited were associated with diagnoses of septicemia in the ICD-9 Code category shown below.
- The majority (59%) of ED admissions associated with septicemia involved seniors age 65 and older (23 of 39 admissions); 41% involved adults age 18-64 (16 admissions), and 0% involved children under the age of 18.

Table 165. OBH Emergency Department Admissions: Septicemia (2010-2012)

Diagnosis		Number of ED Admissions												
		2010				2011				2012				Grand Total
ICD-9 Code	Diagnosis Description	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	
001-139	**Infectious and Parasitic Diseases**	**106**	**114**	**14**	**234**	**127**	**107**	**29**	**263**	**120**	**135**	**32**	**287**	**784**
038	*Septicemia*	0	1	4	5	0	6	11	17	0	9	8	17	39
Total Emergency Department Admissions		**2,538**	**9,059**	**2,577**	**14,174**	**2,425**	**8,844**	**2,607**	**13,876**	**2,662**	**9,427**	**2,745**	**14,834**	**42,884**

Ped (Pediatric) = Age 0-17; Adult = Age 18-64; Senior = Age 65 or older
Source: Appendix A.1.5.

According to OBH data for inpatient hospitalizations, in the period from 2010-2012 there were 32 hospital discharges for stays totaling 111 days for diagnoses associated infectious or parasitic diseases, systemic or in unspecified sites (DRG Codes 835-872, which would include septicemia but also other diagnoses) (Appendix A.2.5). Note that Dare County residents with septicemia might be hospitalized out of county and even out of state; those cases do *not* appear in this particular OBH summary.

According to data maintained by the NC Hospital Association, septicemia was not among the 25 leading DRGs accounting for hospitalizations at OBH in FY2011 (Appendix A.2.6).

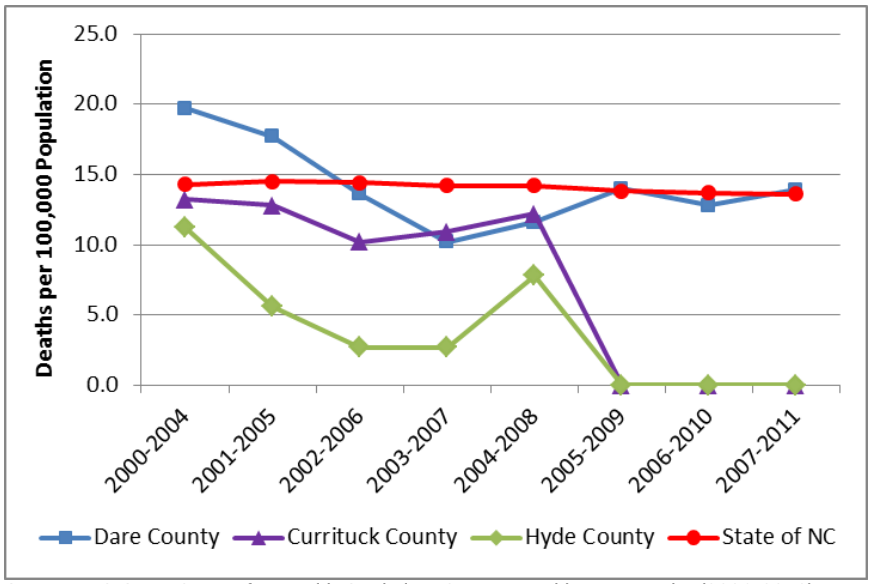
According to NC SCHS, in 2011 there were four hospital admissions for septicemia among Dare County residents; this figure includes hospitalizations anywhere in NC (46).

Septicemia Mortality Rate Trend

Figure 37 displays the septicemia mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The septicemia mortality rate in Dare County was lower than or approximately equal to the comparable rates for NC for all but the first two periods cited, falling overall from 19.7 to 213.9 (29%). Note that all the rates for Currituck and Hyde counties were either unstable or suppressed.
- The septicemia mortality rate for NC as a whole was largely unchanged between 2000-2004 and 2007-2011.

Figure 37. Overall Septicemia Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Septicemia Mortality

Table 166 presents septicemia mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the septicemia mortality rate was higher in Dare County than in NC.
- Note that due to below-threshold numbers of septicemia disease deaths among minority populations in Dare County and elsewhere, mortality rates were suppressed for those groups.
- Statewide, the septicemia mortality rate was higher among males than among females.

Table 166. Race/Ethnicity-Specific and Sex-Specific Septicemia Mortality (Single Five-Year Aggregate Period, 2007-2011)

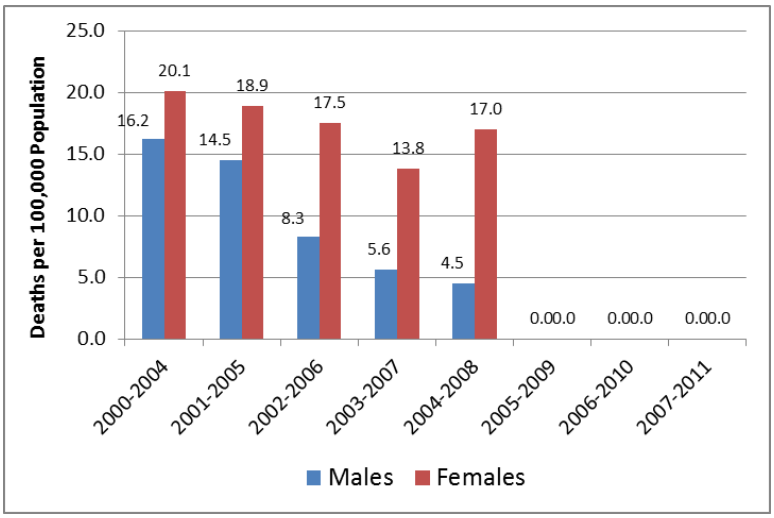
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	25	13.9	1	N/A	0	N/A	0	N/A	10	N/A	16	N/A	26	13.9
Currituck County	13	N/A	1	N/A	0	N/A	0	N/A	4	N/A	10	N/A	14	N/A
Hyde County	0	N/A	2	N/A	0	N/A	0	N/A	1	N/A	1	N/A	2	N/A
State of NC	4,700	12.3	1,662	20.5	82	9.3	71	5.9	2,943	15.0	3,572	12.6	6,515	13.6

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 38 depicts gender-stratified septicemia mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- According to the graph, the septicemia mortality rate among Dare County females appeared to be higher than the comparable rate among Dare County males for all the time periods shown. However, it should be noted that all the gender-stratified septicemia mortality rates in the graph were either unstable or suppressed.

Figure 38. Sex-Specific Septicemia Mortality Rate Trend, Dare County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 167 presents septicemia mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of septicemia deaths in some stratified categories, the NC SCHS suppressed the associated mortality rates, leaving no racially-stratified rates to compare at the county level.
- At the state level, the septicemia mortality rate was highest among African American non-Hispanic males, followed by African American non-Hispanic females, white non-Hispanic males, and white non-Hispanic females. Septicemia mortality rates statewide were lowest among male and female Hispanics.
- Septicemia mortality rates were higher for males than for females in every racial group *except* Hispanics, where the rate for females was higher than the comparable rate for males.

Table 167. Race/Ethnicity and Sex-Specific Septicemia Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Currituck County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hyde County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State of NC	13.5	24.0	10.7	4.9	11.4	18.4	8.2	6.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.

Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Unintentional Motor Vehicle Injury

The NC State Center for Health Statistics distinguishes unintentional motor vehicle injuries from all other injuries when calculating mortality rates and ranking leading causes of death.

Mortality attributable to unintentional motor vehicle injury was the ninth leading cause of death in Dare County, the sixth in Currituck County, and the tenth statewide for the aggregate period 2007-2011 (Table 123, cited previously); it was unranked in Hyde County due to a below threshold number of deaths,

Unintentional Motor Vehicle Injury Hospitalizations

Table 154, cited previously, presented the hospital discharge rate trend data from NC SCHS for a category called *injuries and poisonings,* which included injuries resulting from motor vehicle crashes as well as other unintentional injuries

Also discussed previously was data from The Outer Banks Hospital (OBH) describing data on the number of emergency department (ED) admissions for diagnoses associated with injury and poisoning, by age group, in 2010-2012 (Table 155). It is important to keep in mind that this list included injuries caused by vehicular means.

Regarding Table 155, certain ICD-9 codes within the injury and poisoning category perhaps are more likely than others to pertain to motor vehicle injury, among them intracranial injury (850-854); internal injuries of the thorax, abdomen and pelvis (860-869); crushing injuries (925-929); and certain traumatic complications and unspecified injuries (958-959). Total ED admissions in these four categories (840) accounted for 9% of all injury and poisoning admissions during 2010-2012. The majority (56%) of admissions in these four categories occurred in the adult (age 18-64) age group (469 of 840 admissions).

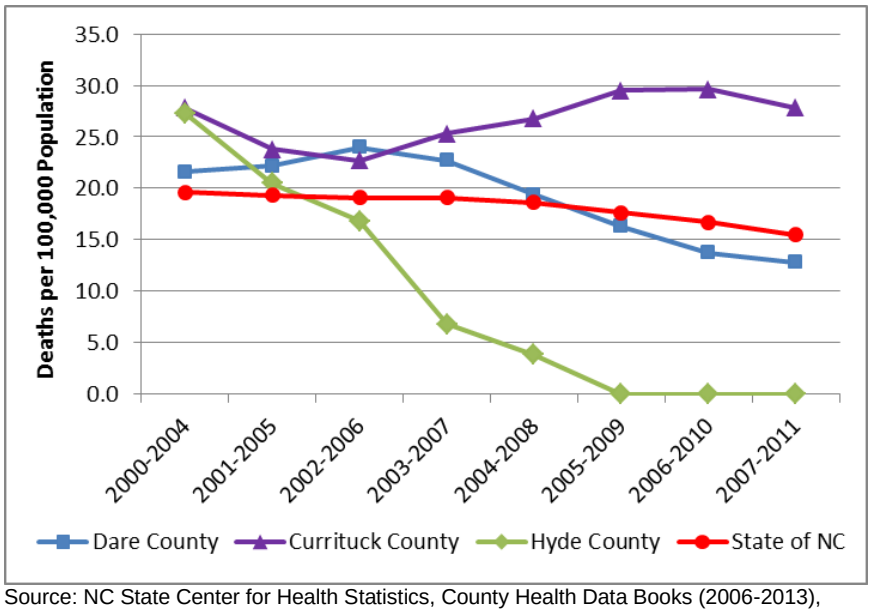
According to OBH data for inpatient hospitalizations, in the period from 2010-2012 there were 13 hospital discharges for stays totaling 23 days for diagnoses associated with injuries, poisonings and toxic effects of drugs (DRG Codes 901-923) (Appendix A.2.5). Note that Dare County residents who suffer accidental injury or poisoning are sometimes hospitalized out of county and even out of state; those cases do *not* appear in this particular OBH summary.

Unintentional Motor Vehicle Injury Mortality Rate Trend

Figure 39 displays the unintentional motor vehicle injury mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The unintentional motor vehicle injury mortality rate in Dare County, once higher than the comparable rate for NC, fell to below the state rate in the last three periods cited. The Dare County rate fell 41% overall from 21.6 in 2000-2004 to 12.8 in 2007-2011. (Note that all the Hyde County rates were unstable or suppressed.)
- The unintentional motor vehicle injury mortality rate in Currituck County, after falling then rising, was the same in 2007-2011 as in 2000-2004: 27.8.
- At the state level, the unintentional motor vehicle injury mortality rate fell 21% over the period cited.

Figure 39. Unintentional Motor Vehicle Injury Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Unintentional Motor Vehicle Injury Mortality

Table 168 presents unintentional motor vehicle injury mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the unintentional motor vehicle injury mortality rate was higher in Currituck County than statewide.
- Note that due to below-threshold numbers of unintentional motor vehicle injury deaths among racially stratified populations in Dare County and elsewhere, mortality rates were suppressed for those groups.
- Statewide, the unintentional motor vehicle injury rate for males was 2.7 *times* the comparable rate for females.

Table 168. Race/Ethnicity-Specific and Sex-Specific Unintentional Motor Vehicle Injury Mortality (Single Five-Year Aggregate Period, 2007-2011)

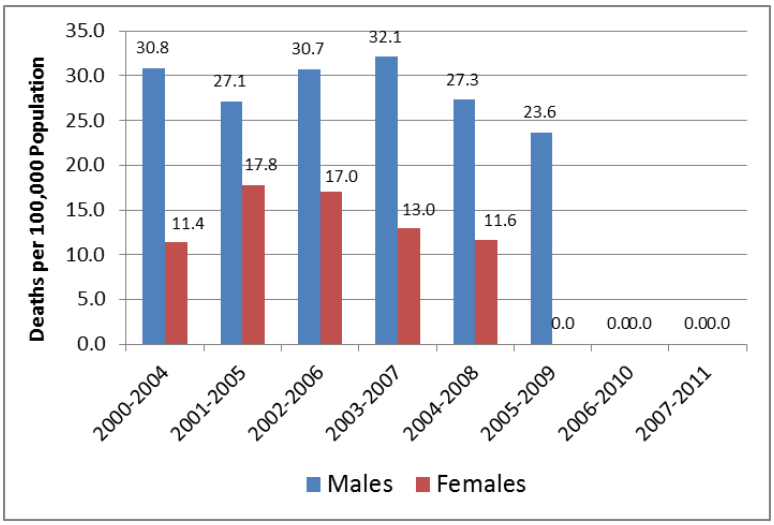
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	18	N/A	0	N/A	0	N/A	4	N/A	17	N/A	5	N/A	22	12.8
Currituck County	28	26.5	2	N/A	0	N/A	2	N/A	27	49.4	5	N/A	32	27.8
Hyde County	4	N/A	2	N/A	0	N/A	0	N/A	3	N/A	3	N/A	6	N/A
State of NC	5,011	15.5	1,547	15.3	236	14.9	542	14.3	5,222	22.9	2,114	8.6	7,336	15.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 40 depicts gender-stratified unintentional motor vehicle injury mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- The unintentional motor vehicle injury mortality rate among males in the county was, on occasion, almost three times the comparable rate for females. Note, however, that all of the rates for females were either unstable or suppressed (as indicated by "0"), due to below-threshold numbers of deaths.

Figure 40. Sex-Specific Unintentional Motor Vehicle Injury Mortality Rate Trend, Dare County
(Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 169 presents unintentional motor vehicle injury mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of unintentional motor vehicle injury deaths in some stratified categories, the NC SCHS suppressed the associated mortality rates.
- At the state level, the unintentional motor vehicle injury mortality rate in all racial groups was higher among males than females.
- Statewide, the unintentional motor vehicle injury mortality rate was highest among African American non-Hispanic males, followed by white non-Hispanic males, non-Hispanic males of Other races, and Hispanic males. All unintentional motor vehicle injury mortality rates statewide were lowest among Hispanic females and African American non-Hispanic females.

Table 169. Race/Ethnicity and Sex-Specific Unintentional Motor Vehicle Injury Mortality Rate
(Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Currituck County	45.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hyde County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State of NC	22.3	24.9	21.9	20.1	9.2	7.3	8.5	6.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Age Disparities in Motor Vehicle Injury Mortality

The unintentional motor vehicle injury mortality rate has a strong age component.

Table 170 presents unintentional motor vehicle injury mortality data, stratified by age group. Note that this data is *not* age-adjusted.

- Statewide, the 20-39 age group has the highest motor vehicle injury mortality rate (21.1), followed by the 40-64 age group (16.0).
- Although the age-stratified mortality rates in all the counties were unstable, they appeared to follow the same pattern as NC as a whole.

Table 170. Motor Vehicle Injury Mortality, Numbers and Rates, by Age
(Five-Year Aggregate Period, 2007-2011)

Location	Number of Deaths and Unadjusted Death Rates per 100,000 Population							
	All Ages		0-19		20-39		40-64	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	47	47.8	**5**	**7.9**	**7**	**18.2**	**8**	**11.7**
Currituck County	32	27.6	**3**	**9.5**	**15**	**55.6**	**11**	**23.7**
Hyde County	**6**	**22**	**1**	**17.7**	**3**	**40.3**	**2**	**20.1**
State of NC	7,336	15.6	1,005	7.9	2,694	21.1	2,474	16.0

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, 2013 County Health Databook, Death Counts and Crude Death Rates per 100,000 Population for Leading Causes of Death, by Age Groups, NC 2007-2011; http://www.schs.state.nc.us/SCHS/data/databook/.

Alcohol-Related Traffic Crashes

Table 171 presents several years of data on the proportion of traffic crashes that were alcohol-related.

- Among the jurisdictions with consistently stable percentages (i.e., excluding Hyde County), in every year except 2007 the highest proportion of alcohol-related crashes occurred in Dare County.
- The percentage of all crashes that were alcohol-related varied from place to place and time period to time period without a clear pattern.

Table 171. Alcohol-Related Traffic Crashes Trend
(Single Years, 2006-2011)

Location	2006			2007			2008			2009			2010			2011		
	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes
Dare County	736	57	7.7	712	47	6.6	671	63	9.4	655	50	7.6	800	58	7.2	681	47	6.9
Currituck County	361	27	7.5	360	32	8.9	337	25	7.4	324	21	6.5	334	23	6.9	339	20	5.9
Hyde County	129	13	10.1	139	10	7.2	116	3	**2.6**	119	11	9.2	103	1	**1.0**	104	5	**4.8**
State of NC	220,307	11,336	5.1	224,307	11,778	5.3	214,358	11,982	5.6	209,695	11,384	5.4	213,573	10,696	5.0	208,509	10,708	5.1
Source	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2

Note: statistical information for North Carolina Alcohol Facts was obtained from the NC Administrative Office of the Courts (AOC) and the NC Division of Motor Vehicles (DMV) for the years 2000 through 2011 (single years).
Note: Percentages appearing in **bold** type are based on fewer than 10 alcohol-related crashes per year. Such figures are likely unstable and should be interpreted with caution.
1 - UNC Chapel Hill, Highway Safety Research Center. North Carolina Alcohol Facts (2006-2011); http://www.hsrc.unc.edu/ncaf/crashes.cfm.
2 - Calculated (% alcohol related crashes is calculated by dividing # alcohol-related crashes by # reportable crashes)

Table 172 presents detail on the outcomes of alcohol-related crashes in 2011.

- In 2011 in Dare County 6.9% of all crashes, 5.5% of all property damage only crashes, 8.5% of non-fatal crashes, and 42.9% of all fatal crashes were alcohol-related. Note however, that the figure for percent of alcohol-related fatal crashes was based on a small number of deaths, and may be unstable.
- Statewide in 2011 5.1% of all crashes, 3.5% of all property damage only crashes, 8.1% of all non-fatal crashes, and 32.6% of fatal crashes were alcohol-related.

Table 172. Outcomes of Alcohol-Related Traffic Crashes (2011)

Location	Total Crashes			Property Damage Only Crashes			Non-Fatal Crashes			Fatal Crashes		
	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes
Dare County	681	47	6.9	451	25	5.5	223	19	8.5	7	3	**42.9**
Currituck County	339	20	5.9	219	9	**4.1**	115	9	**7.8**	5	2	**40.0**
Hyde County	104	5	**4.8**	83	2	**2.4**	19	3	**15.8**	2	0	**0.0**
State of NC	208,509	10,708	5.1	139,404	4,845	3.5	67,983	5,497	8.1	1,122	366	32.6
Source	1	1	2	1	1	2	1	1	2	1	1	2

Note: statistical information for North Carolina Alcohol Facts was obtained from the NC Administrative Office of the Courts (AOC) and the NC Division of Motor Vehicles (DMV) for the years 2000 through 2011 (single years).
Note: Percentages appearing in **bold** type are based on fewer than 10 alcohol-related crashes per year. Such figures are likely unstable and should be interpreted with caution.
1 - UNC Chapel Hill, Highway Safety Research Center. North Carolina Alcohol Facts (2006-2011); http://www.hsrc.unc.edu/ncaf/crashes.cfm.
2 - Calculated (% alcohol related crashes is calculated by dividing # alcohol-related crashes by # reportable crashes)

Pedestrian and Bicycle Crashes

The NC Department of Transportation, Division of Bicycle and Pedestrian Transportation maintains data on the character of crashes involving cars and bicycles and cars and pedestrians. Being able to track this kind of data is important in Dare County, where cyclists and pedestrians are particularly numerous, especially in the summer months.

Tables 173-177 display data on automobile/pedestrian crashes over the period from 1997-2010.

- There were all together 177 automobile/pedestrian crashes during the period.
- The most common location for automobile/pedestrian crashes (90 of 177, or 51%) was non-intersection sites (Table 173).
- When examined in approximately 20-year age increments, the motorists in automobile/pedestrian crashes were most frequently in the 30-49 age group (62 of 177, or 35%), followed by the 50-69 age group (45 of 177, or 25%) (Table 174).
- The most common type of automobile/pedestrian crash involved pedestrians crossing the roadway when the vehicle was not turning (38 of 177, or 21%). The second most common type of crash involved pedestrians darting or dashing out into traffic (30 of 177, or 17%) (Table 175).
- The pedestrian was at fault in 35% (66 of 177) of crashes and the motorist was at fault in 23% (41 of 177) of crashes. However, fault could not be determined or was otherwise unknown in 38% (68 of 177) of crashes (Table 176)
- Many, but not a majority (77 of 177, or 44%) of all automobile/pedestrian crashes occurred in the months of June-August (Table 177).

Table 173. Automobile/Pedestrian Crashes, by Location (1997-2010)

Location	Crash Year														Total
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Intersection	5	4	2	3	3	2	4	4	4	3	1	5	4	1	45
Intersection-Related	0	0	0	0	0	0	0	0	0	2	1	0	2	0	5
Non-Intersection	7	7	5	8	5	9	8	6	7	4	2	5	6	11	90
Non-Roadway	2	2	2	5	2	3	2	2	3	6	3	3	1	1	37
Total	14	13	9	16	10	14	14	12	14	15	7	13	13	13	177

Table 174. Automobile/Pedestrian Crashes, by Age of Motorist (1997-2010)

Driver Age	Crash Year														Total
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
0-19	2	1	0	2	1	1	2	0	1	0	2	0	2	1	15
20-24	3	1	1	1	3	2	2	2	0	1	1	1	1	3	22
25-29	1	0	2	0	0	1	2	0	2	0	0	0	1	1	10
30-39	3	2	2	2	2	3	1	2	2	5	0	3	2	0	29
40-49	1	3	1	3	1	3	3	2	5	3	2	3	0	3	33
50-59	2	0	2	1	2	3	2	4	3	4	0	4	4	3	34
60-69	1	1	0	4	1	1	1	1	1	0	0	0	0	0	11
70+	1	2	0	2	0	0	0	1	0	0	2	1	0	0	9
Unknown	0	3	1	1	0	0	1	0	0	2	0	1	3	2	14
Total	14	13	9	16	10	14	14	12	14	15	7	13	13	13	177

Table 175. Automobile/Pedestrian Crashes, by Type of Crash (1997-2010)

Crash Type	Crash Year														Total
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Backing Vehicle	2	1	0	1	0	0	1	1	2	3	1	1	0	0	13
Crossing Driveway or Alley	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Crossing Roadway - Vehicle Not Turning	4	2	2	4	0	3	1	4	4	2	0	5	5	2	38
Crossing Roadway - Vehicle Turning	1	3	0	0	2	1	1	0	0	0	0	1	0	2	11
Dash / Dart-Out	3	2	3	1	3	2	3	0	3	1	1	3	4	1	30
Multiple Threat / Trapped	0	0	0	0	0	0	2	0	0	2	0	0	0	0	4
Off Roadway	1	1	1	2	2	0	0	0	1	3	2	2	1	0	16
Other / Unknown - Insufficient Details	1	0	0	0	0	0	2	0	0	0	0	0	0	0	3
Pedestrian in Roadway - Circumstances Unknown	1	2	0	0	1	2	0	0	0	1	1	0	1	1	10
Unique Midblock	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Unusual Circumstances	0	1	2	5	0	4	2	3	0	1	1	0	0	1	20
Walking Along Roadway	1	0	1	3	2	2	2	3	4	1	0	1	1	6	27
Working or Playing in Roadway	0	1	0	0	0	0	0	1	0	0	0	0	1	0	3
Total	14	13	9	16	10	14	14	12	14	15	7	13	13	13	177

Table 176. Automobile/Pedestrian Crashes, by Party at Fault (1997-2010)

Fault	Crash Year														Total
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Both at Fault	0	2	1	1	1	0	0	0	0	0	1	0	0	0	6
Fault cannot be determined	1	4	0	0	1	0	0	0	0	0	0	0	0	0	6
Fault not Coded	0	0	0	0	0	0	0	0	0	0	0	13	13	13	39
Motorist at Fault	4	1	3	10	4	1	3	3	4	5	3	0	0	0	41
Pedestrian at Fault	7	6	5	5	4	7	8	6	8	5	1	0	0	0	62
Unknown	2	0	0	0	0	6	3	3	2	5	2	0	0	0	23
Total	14	13	9	16	10	14	14	12	14	15	7	13	13	13	177

Table 177. Automobile/Pedestrian Crashes, by Month (1997-2010)

Month of Crash	Crash Year														Total
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
January	0	0	1	0	0	0	0	1	0	3	0	0	0	0	5
February	1	3	0	2	0	0	1	0	1	1	2	0	1	0	12
March	1	1	0	2	1	1	1	3	1	1	0	1	0	1	14
April	0	0	0	0	1	1	0	1	2	1	1	1	1	1	10
May	2	0	0	2	1	2	1	1	0	1	0	0	2	1	13
June	3	3	2	0	0	0	2	1	2	2	2	1	1	3	22
July	2	4	3	1	2	1	5	1	3	2	0	1	1	1	27
August	3	0	1	3	3	2	2	2	3	3	0	3	3	0	28
September	0	1	0	2	1	1	1	2	2	1	0	1	2	2	16
October	2	0	1	4	1	1	1	0	0	0	0	2	0	2	14
November	0	0	1	0	0	3	0	0	0	0	1	1	1	1	8
December	0	1	0	0	0	2	0	0	0	0	1	2	1	1	8
Total	14	13	9	16	10	14	14	12	14	15	7	13	13	13	177

Source for all tables: NC Department of Transportation, Division of Bicycle and Pedestrian Transportation, Research and Reports, Crash Data Tool, Pedestrian Crash Data; http://www.pedbikeinfo.org/pbcat/_pedquery.cfm.

Tables 178-182 display data on automobile/bicycle crashes in the period from 1997-2010.

- There were all together 193 automobile/bicycle crashes during the period.
- The most common location for automobile/bicycle crashes (106 of 177, or 60%) was non-intersection sites (Table 178).
- When examined in 10-year age increments, the cyclists in automobile/bicycle crashes were most frequently in the 20-29 age group (44 of 193, or 23%), followed by the 11-19 age group (43 of 193, or 22%). (Table 179).
- The most common type of automobile/bicycle crash involved motorists failing to yield to cyclists (61 of 193, or 32%). The second most common type of crash involved cyclists failing to yield (40 of 193, or 21%) (Table 180).
- The motorist was at fault in 28% (55 of 193) of automobile/bicycle crashes and the cyclist was at fault in 25% (48 of 193) of crashes. However, fault could not be determined or was otherwise unknown in 31% (60 of 193) of crashes (Table 181).
- A large majority (67%, or 129 of 193) of all automobile/bicycle crashes occurred in the months of June-August (Table 182).

Table 178. Automobile/Bicycle Crashes, by Location (1997-2010)

Crash Location	Crash Year														Total
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Intersection	3	2	7	4	3	9	8	2	6	3	7	6	6	5	71
Intersection-Related	1	1	1	0	0	0	0	0	0	3	0	0	0	2	8
Non-Intersection	3	9	9	7	9	4	14	5	10	6	11	3	7	9	106
Non-Roadway	0	0	0	0	0	0	1	0	0	1	1	0	1	2	6
Unknown Location	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2
Total	7	12	17	12	12	13	23	7	16	13	19	9	15	18	193

Table 179. Automobile/Bicycle Crashes, by Age of Cyclist (1997-2010)

Bicyclist Age	Crash Year														Total
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Unknown	0	1	2	0	0	0	0	0	0	0	1	0	0	0	4
0-5	0	0	0	0	1	0	0	0	0	0	1	1	0	0	3
6-10	1	3	4	1	1	0	1	1	0	1	0	0	0	6	19
11-15	0	2	4	5	0	2	4	0	0	2	2	3	3	1	28
16-19	0	0	0	1	3	0	3	0	1	1	0	1	1	4	15
20-24	1	0	1	2	2	2	2	4	9	3	6	1	4	2	39
25-29	0	1	0	0	0	0	1	0	0	1	1	0	1	0	5
30-39	3	2	4	2	1	1	3	1	1	0	3	1	2	1	25
40-49	1	1	0	0	3	2	4	1	2	2	3	1	1	2	23
50-59	0	2	2	1	1	2	2	0	2	3	2	1	2	1	21
60-69	0	0	0	0	0	3	2	0	1	0	0	0	0	1	7
70+	1	0	0	0	0	1	1	0	0	0	0	0	1	0	4
Total	7	12	17	12	12	13	23	7	16	13	19	9	15	18	193

Table 180. Automobile/Bicycle Crashes, by Type of Crash (1997-2010)

Crash Type	Crash Year														Total
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Bicyclist Failed to Yield - Midblock	0	3	3	0	1	0	1	1	1	1	1	1	3	2	18
Bicyclist Failed to Yield - Sign-Controlled Intersection	1	0	2	1	0	3	0	0	0	1	0	0	0	2	10
Bicyclist Failed to Yield - Signalized Intersection	0	1	0	0	2	1	1	0	1	1	1	3	0	1	12
Bicyclist Left Turn / Merge	1	1	1	2	1	0	1	2	0	1	0	0	0	3	13
Bicyclist Overtaking Motorist	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Bicyclist Right Turn / Merge	0	1	1	0	0	0	0	0	0	0	0	0	0	1	3
Crossing Paths - Other Circumstances	0	0	1	0	0	0	0	0	2	1	1	0	1	1	7
Head-On	0	0	0	1	1	0	0	0	0	0	0	1	0	0	3
Loss of Control / Turning Error	0	0	0	1	1	0	0	0	0	0	0	0	1	0	3
Motorist Failed to Yield - Midblock	1	1	2	0	3	4	5	0	3	2	5	1	1	2	30
Motorist Failed to Yield - Sign-Controlled Intersection	2	0	3	1	1	5	5	1	3	1	2	1	2	1	28
Motorist Failed to Yield - Signalized Intersection	0	0	0	1	0	0	0	0	1	0	1	0	0	0	3
Motorist Left Turn / Merge	1	2	2	1	0	0	2	1	2	1	3	1	2	0	18
Motorist Overtaking Bicyclist	1	0	1	0	1	0	4	0	2	2	2	0	2	2	17
Motorist Right Turn / Merge	0	0	1	3	0	0	2	2	1	0	1	1	1	1	13
Non-Roadway	0	0	0	0	0	0	1	0	0	1	1	0	1	2	6
Other / Unknown - Insufficient Details	0	1	0	1	0	0	0	0	0	0	0	0	1	0	3
Other / Unusual Circumstances	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Parallel Paths - Other Circumstances	0	1	0	0	1	0	1	0	0	0	1	0	0	0	4
Total	7	12	17	12	12	13	23	7	16	13	19	9	15	18	193

Table 181. Automobile/Bicycle Crashes, by Party at Fault (1997-2010)

Fault	Crash Year														Total
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Bicyclist at Fault	2	7	7	4	5	5	5	3	2	4	4	0	0	0	48
Both at Fault	0	1	3	3	1	6	8	1	5	1	5	0	0	0	34
Fault not Coded	0	0	0	0	0	0	0	0	0	0	0	9	15	18	42
Motorist at Fault	5	3	7	4	6	2	6	3	7	4	4	0	0	0	51
Unknown	0	1	0	1	0	0	4	0	2	4	6	0	0	0	18
Total	7	12	17	12	12	13	23	7	16	13	19	9	15	18	193

Table 182. Automobile/Bicycle Crashes, by Month (1997-2010)

Month	Crash Year														Total
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
February	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2
March	0	0	2	0	1	2	0	1	0	1	1	2	2	0	12
April	0	2	0	0	2	0	1	1	2	1	1	1	0	0	11
May	1	0	0	0	0	1	1	2	0	2	1	1	0	2	11
June	0	0	3	7	0	4	3	0	2	5	4	1	3	6	38
July	2	4	6	2	5	2	4	1	5	0	7	2	5	3	48
August	2	4	4	2	2	3	10	1	5	1	2	2	2	3	43
September	1	0	0	1	0	1	2	0	1	1	0	0	2	2	11
October	1	1	2	0	0	0	1	0	0	1	1	0	0	0	7
November	0	0	0	0	1	0	1	0	0	1	1	0	0	2	6
December	0	0	0	0	1	0	0	0	1	0	1	0	1	0	4
Total	7	12	17	12	12	13	23	7	16	13	19	9	15	18	193

Source for all tables: NC Department of Transportation, Division of Bicycle and Pedestrian Transportation, Research and Reports, Crash Data Tool, Pedestrian Crash Data; http://www.pedbikeinfo.org/pbcat/_pedquery.cfm.

Recognizing that Dare County, especially the major north-south corridor through the two-county Outer Banks region—US Highway 158—has particularly high rates of pedestrian and bicycle crashes, local stakeholders recently approached the NC DOT for help in developing a pedestrian and bicycle safety education and enforcement campaign (56). The proposed campaign, modeled after a similar initiative currently underway in the Triangle Region of NC (Raleigh/Durham/Chapel Hill), would be targeted to local residents, tourists, and foreign workers in Dare County, both as drivers and pedestrians/cyclists.

Suicide

Suicide was the tenth leading cause of death in Dare County, the ninth leading cause of death in Currituck County, and the twelfth leading cause of death in NC in the period 2007-2011. Suicide was unranked as a cause of death in Hyde County due to below-threshold number of deaths (Table 123, cited previously). Suicide also was the tenth leading cause of death in Dare County in the 2004-2008 period covered by the 2010 CHA.

Suicide Hospitalizations

At the present time the NC SCHS does not track hospitalizations related to suicide or attempted suicide.

According to data provided by The Outer Banks Hospital (OBH) on ED admissions, there were 65 admissions specifically associated with suicide ideation (ICD-9 Code V62.84) during the period from 2010 through 2012.

According to OBH data for inpatient hospitalizations, in the period from 2010-2012 there were four hospital discharges for stays totaling eight days for diagnoses associated factors affecting health status/contacts with health services (DRG Codes 939-950, which could include suicide ideation as well as other diagnoses) (Appendix A.2.5). Note that Dare County residents who threaten suicide might sometimes be hospitalized out of county and even out of state; those cases do *not* appear in this particular OBH summary.

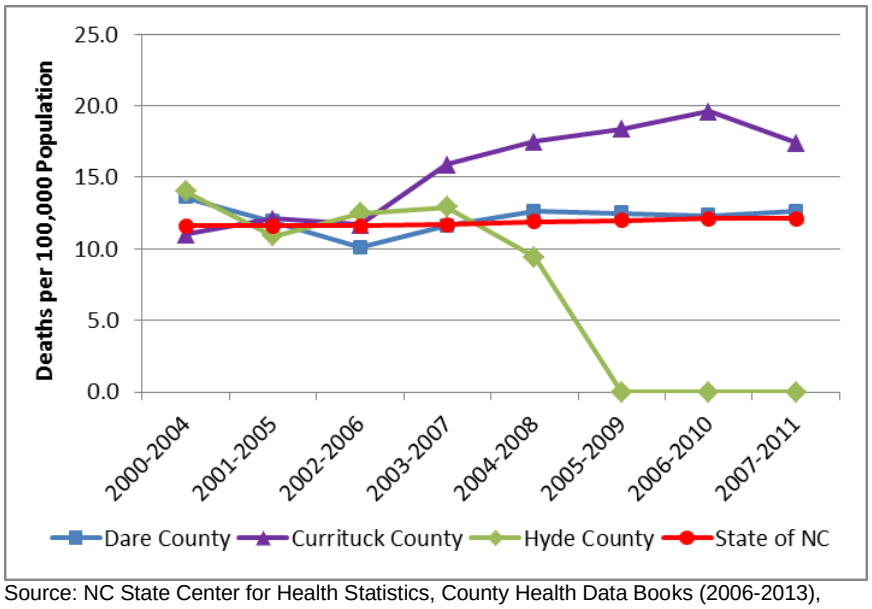
According to data maintained by the NC Hospital Association, suicide ideation was *not* among the 25 leading DRG accounting for hospitalizations at OBH in FY2011 (Appendix A.2.6).

Suicide Mortality Rate Trend

Figure 41 displays the suicide mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The suicide mortality rate in Dare County was near the comparable rate for NC as a whole (approximately 12.0) throughout most the interval cited. Both the NC and Dare County rates changed little over the period cited.
- The suicide mortality rate Currituck County was unstable for the first four periods cited, but for the last four periods was technically “stable” and significantly higher than the comparable rates for Dare County and NC. All the suicide mortality rates in Hyde County were either unstable or suppressed (as indicated by the “0” rate plotted on the graph).

Figure 41. Overall Suicide Mortality Rate Trend
(Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Suicide Mortality

Table 183 presents suicide mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the suicide rate was highest in Currituck County and the lowest in Dare County.
- Note that due to below-threshold numbers of suicide deaths among minority populations in Dare County and elsewhere, mortality rates were suppressed for those groups.
- Statewide there appeared to be a gender-based difference in suicide mortality, with the rate for males over 3½ times the comparable rate for females. There were too many suppressed rates at the county level to make gender comparisons.

Table 183. Race/Ethnicity-Specific and Sex-Specific Suicide Mortality
(Single Five-Year Aggregate Period, 2007-2011)

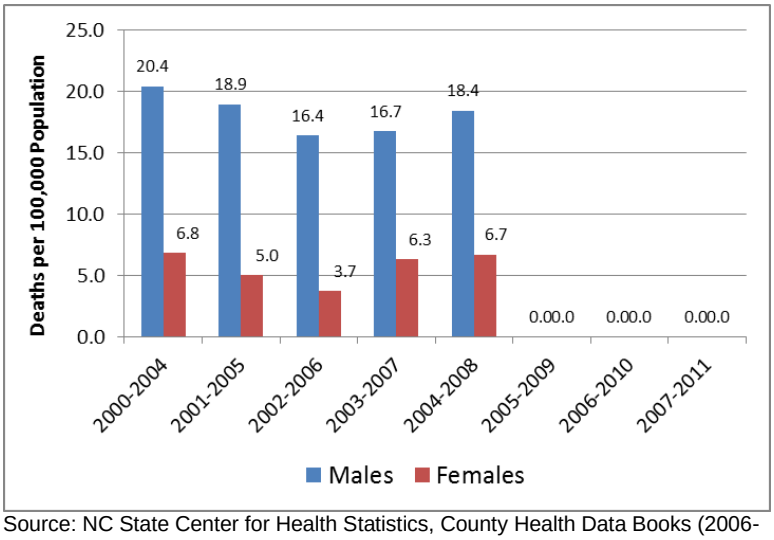
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	24	12.8	0	N/A	0	N/A	1	N/A	18	N/A	7	N/A	25	12.6
Currituck County	21	18.7	0	N/A	0	N/A	1	N/A	19	N/A	3	N/A	22	17.4
Hyde County	2	N/A	0	N/A	0	N/A	0	N/A	2	N/A	0	N/A	2	N/A
State of NC	4,986	15.0	489	4.8	123	7.7	153	4.7	4,446	19.6	1,305	5.3	5,751	12.1

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 42 depicts gender-stratified suicide mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- It appears that there was a strong gender difference in the suicide mortality rate in Dare County. The graph demonstrates that the suicide rate among Dare County males was three to four times the comparable mortality rate among Dare County females. Although all the rates for both sexes were either unstable or suppressed due to below-threshold numbers of events, this disproportionate-pattern of gender-based suicide mortality is common throughout NC.

Figure 42. Sex-Specific Suicide Mortality Rate Trend, Dare County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 184 presents suicide mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of suicide deaths in county-level stratified categories, the NC SCHS suppressed the associated mortality rates.
- At the state level, the suicide mortality rate was highest among white non-Hispanic females, followed by Other race non-Hispanic males, African American non-Hispanic males, and Hispanic males.
- Statewide, suicide mortality rates were higher for males than for females in every racial group.

Table 184. Race/Ethnicity and Sex-Specific Suicide Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Currituck County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hyde County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State of NC	23.9	8.9	11.0	7.0	6.8	1.4	4.7	1.7

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Nephritis, Nephrotic Syndrome, and Nephrosis

Nephritis refers to inflammation of the kidney, which causes impaired kidney function. Nephritis can be due to a variety of causes, including kidney disease, autoimmune disease, and infection. Nephrotic syndrome refers to a group of symptoms that include protein in the urine, low blood protein levels, high cholesterol levels, high triglyceride levels, and swelling. Nephrosis refers to any degenerative disease of the kidney tubules, the tiny canals that make up much of the substance of the kidney. Nephrosis can be caused by kidney disease, or it may be a complication of another disorder, particularly diabetes (57,58).

This composite set of kidney disorders was the eleventh leading cause of death in Dare County and the eighth leading cause of death statewide in 2007-2011; it was unranked in Currituck County and Hyde County due to below-threshold numbers of deaths (Table 123, cited previously). Kidney disease was the twelfth leading cause of death in 2004-2008, the period covered in the 2010 Dare County CHA.

Nephritis, Nephrotic Syndrome and Nephrosis Hospitalizations

Table 185 presents the hospital discharge rate trend data for the composite of kidney disorders. According to this data, kidney disease caused a significant proportion of illness-related hospitalizations among residents statewide, but was far less prominent in Dare County.

Table 185. Nephritis, Nephrosis, Nephrotic Syndrome Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Dare County	1.1	0.5	0.5	0.3	0.4	0.6	0.4
Currituck County	0.6	**0.4**	**0.4**	0.4	0.4	**0.1**	**0.3**
Hyde County	2.0	**0.4**	**0.9**	**0.7**	**0.7**	**1.2**	**0.9**
State of NC	1.2	1.3	1.7	1.6	1.4	1.5	1.8

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 186 presents data on the number of OBH emergency department (ED) admissions for diagnoses associated with genitourinary system complaints, by age group, in 2010-2012.

- Approximately 7% of all ED admissions (2,864 of 42,884) over the three-year period cited were for diagnoses of diseases of, or symptoms associated with, the genitourinary system in the ICD-9 Code categories shown below. According to raw ED admissions data provided by the OBH there were only three ED admissions over the 2010-2012 period in the categories specific for nephritis (ICD-9 580) and nephrosis (ICD-9 581).
- The majority (69%) of ED admissions associated with genitourinary diseases or symptoms involved adults age 18-64 (1,964 of 2,864 admissions); 24% involved seniors age 65 or older (675 admissions), and 7% involved children under the age of 18 (225 admissions).

Table 186. OBH Emergency Department Admissions: Diseases of the Genitourinary System (2010-2012)

Diagnosis		Number of ED Admissions												
		2010				2011				2012				Grand Total
ICD-9 Code	Diagnosis Description	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	
580-629	**Diseases of the Genitourinary System**	**56**	**604**	**175**	**835**	**87**	**607**	**202**	**896**	**57**	**611**	**228**	**896**	**2,627**
584	*Acte kidney failure*	0	6	13	19	0	8	12	20	0	2	6	8	47
590	*Infections of kidney*	1	25	4	30	6	38	8	52	4	44	3	51	133
592	*Calculus of kidney and ureter (kidney stones)*	3	127	22	152	0	132	19	151	1	125	25	151	454
595	*Acute cystitis*	1	32	12	45	27	77	33	137	1	13	0	14	196
599	*Urinary tract infection, site not specified*	39	196	115	350	36	160	103	299	36	207	169	412	1,061
780-799	**Symptoms, Signs and Ill-Defined Conditions**	**484**	**1,766**	**577**	**2,827**	**385**	**1,586**	**590**	**2,561**	**455**	**1,739**	**611**	**2,805**	**8,193**
788	*Symptoms involving urinary system*	10	49	16	75	6	52	28	86	9	41	26	76	237
Total Emergency Department Admissions		**2,538**	**9,059**	**2,577**	**14,174**	**2,425**	**8,844**	**2,607**	**13,876**	**2,662**	**9,427**	**2,745**	**14,834**	**42,884**

Ped (Pediatric) = Age 0-17; Adult = Age 18-64; Senior = Age 65 or older
Source: Appendix A.1.5.

According to OBH data for inpatient hospitalizations, in the period from 2010-2012 there were 217 hospital discharges for stays totaling 573 days for diagnoses associated with diseases or disorders of the kidney or urinary tract (DRG Codes 653-700) (Appendix A.2.5). Note that Dare County residents with kidney disease might be hospitalized out of county and even out of state; those cases do *not* appear in this particular OBH summary.

According to data maintained by the NC Hospital Association, kidney and urinary tract infections without major complications (DRG Code 690), and with major complications (DRG Code 689) were ranked 7th and 22nd, respectively, among the 25 leading DRGs accounting for hospitalizations at OBH in FY2011 (Appendix A.2.6).

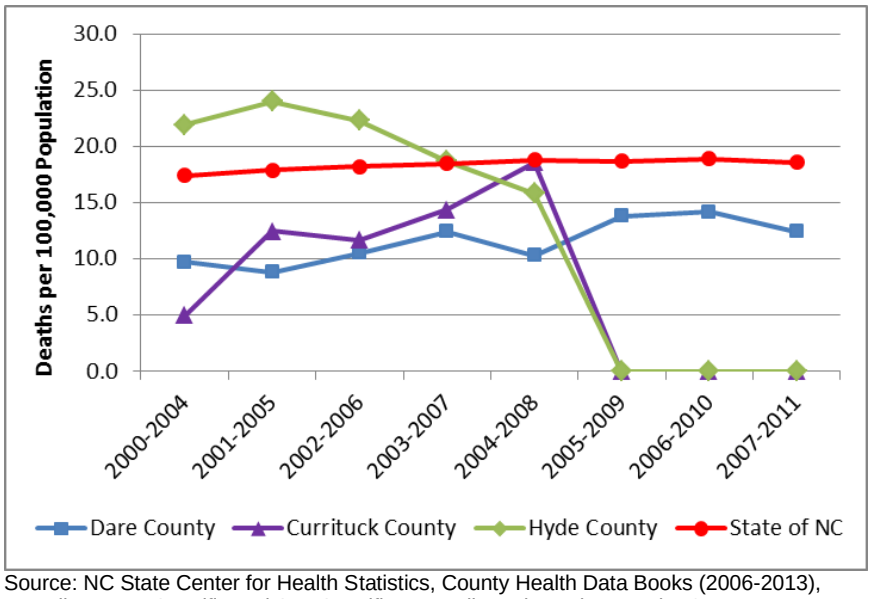
According to NC SCHS, in 2011 there were 15 hospital admissions for nephritis, nephrotic syndrome and nephrosis among Dare County residents; this figure includes hospitalizations anywhere in NC (46).

Nephritis, Nephrotic Syndrome and Nephrosis Mortality Rate Trend

Figure 43 displays the kidney disease mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The nephritis, nephrotic syndrome and nephrosis mortality rate in Dare County was lower than the comparable rate for NC throughout the interval cited, but rose 28% overall, from 9.7 to 12.4. Note, however, that only the last three rates in Dare County were stable, and that all the rates for Currituck and Hyde counties were either unstable or suppressed.
- The kidney disease mortality rate for NC as a whole rose 7% overall between 2000-2004 and 2007-2011.

Figure 43. Overall Nephritis, Nephrotic Syndrome and Nephrosis Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Nephritis, Nephrotic Syndrome and Nephrosis Mortality

Table 187 presents kidney disease mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the kidney disease mortality rate was lower in Dare County than in NC.
- Note that due to below-threshold numbers of kidney disease deaths among minority populations in Dare County and elsewhere, mortality rates were suppressed for those groups.
- Statewide, the kidney disease mortality rate was significantly higher among males than among females.

Table 187. Race/Ethnicity-Specific and Sex-Specific Nephritis, Nephrotic Syndrome and Nephrosis Mortality (Single Five-Year Aggregate Period, 2007-2011)

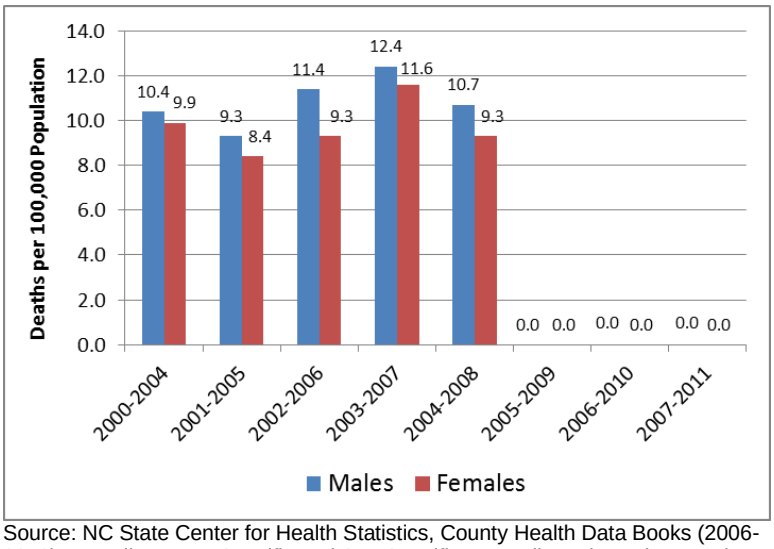
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	21	12.9	0	N/A	0	N/A	0	N/A	11	N/A	10	N/A	21	12.4
Currituck County	13	N/A	2	N/A	0	N/A	0	N/A	11	N/A	4	N/A	15	N/A
Hyde County	3	N/A	0	N/A	0	N/A	0	N/A	2	N/A	1	N/A	3	N/A
State of NC	5,739	15.0	2,921	36.8	143	17.3	57	6.1	4,269	22.7	4,591	16.0	8,860	18.6

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 44 depicts gender-stratified kidney disease mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- According to the graph, the kidney disease mortality rate among Dare County males appeared to be higher than the comparable rate among Dare County females for all the time periods shown. However, it should be noted that all the gender-stratified kidney disease mortality rates in the graph were either unstable or suppressed.

Figure 44. Sex-Specific Nephritis, Nephrotic Syndrome, Nephrosis Mortality Rate Trend, Dare County
(Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 188 presents kidney disease mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of kidney disease deaths, the NC SCHS suppressed the associated mortality rates, leaving no racially-stratified rates to compare at the county level.
- At the state level, the kidney disease mortality rate was highest among African American non-Hispanic males, followed by African American non-Hispanic females, white non-Hispanic males, and Other race non-Hispanic females. Kidney disease mortality rates statewide were lowest among male and female Hispanics.
- Kidney disease mortality rates were higher for males than for females in every racial group *except* Other race non-Hispanics, where the rate for females was higher than the comparable rate for males.

Table 188. Race/Ethnicity and Sex-Specific Nephritis, Nephrotic Syndrome, Nephrosis Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Currituck County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hyde County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State of NC	19.6	41.6	16.7	7.7	12.2	33.7	17.5	4.8

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Chronic Liver Disease and Cirrhosis

Chronic liver disease describes an ongoing disturbance of liver function that causes illness. Liver disease, also referred to as hepatic disease, is a broad term that covers all the potential problems that cause the liver to fail to perform its designated functions. Usually, more than 75% or three quarters of liver tissue needs to be affected before decrease in function occurs. Cirrhosis is a term that describes permanent scarring of the liver. In cirrhosis, the normal liver cells are replaced by scar tissue that cannot perform any liver function (59).

Chronic liver disease and cirrhosis was the twelfth leading cause of death in Dare County and the thirteenth leading cause of death statewide in 2007-2011. It was unranked as a cause of death in Currituck and Hyde counties due to below-threshold numbers of deaths (Table 123, cited previously). Chronic liver disease and cirrhosis was the thirteenth leading cause of death in Dare County in 2004-2008, the period covered in the 2010 CHA.

Chronic Liver Disease and Cirrhosis Hospitalizations

Table 189 presents hospital discharge rate trend data for chronic liver disease and cirrhosis. Note that most of the county-level rates were unstable.

Table 189. Chronic Liver Disease and Cirrhosis Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Dare County	**0.2**	0.3	0.4	**0.2**	**0.1**	**0.1**	**0.2**
Currituck County	**0.2**	**0.1**	**0.2**	**0.2**	**0.1**	**0.0**	**n/a**
Hyde County	**0.5**	**0.2**	**n/a**	**n/a**	**0.2**	**0.2**	**0.2**
State of NC	0.3	0.3	0.3	0.3	0.3	0.2	0.2

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

The ICD-9 Code for chronic liver disease and cirrhosis is 571, and the code for liver abscess and sequelae of chronic liver disease is 572. According to raw data provided by the OBH, there were 60 ED admissions in those two code categories in the period 2010-2012.

According to OBH data for inpatient hospitalizations, in the period from 2010-2012 there were 143 hospital discharges for stays totaling 370 days for diagnoses associated with diseases or disorders of the hepatobiliary system and pancreas (DRG Codes 405-446) (Appendix A.2.5). Note that Dare County residents with liver disease might be hospitalized out of county and even out of state; those cases do *not* appear in this particular OBH summary.

According to data maintained by the NC Hospital Association, liver disease and cirrhosis were not among the 25 leading DRGs accounting for hospitalizations at OBH in FY2011 (Appendix A.2.6).

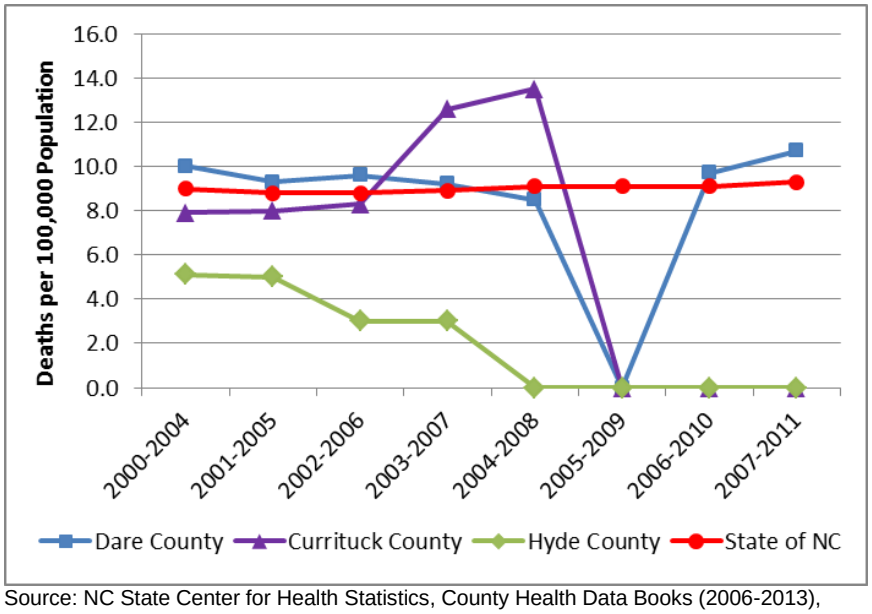
According to NC SCHS, in 2011 there were seven hospitalizations for chronic liver disease and cirrhosis among Dare County residents; this figure includes hospitalizations anywhere in NC (46).

Chronic Liver Disease and Cirrhosis Mortality Rate Trend

Figure 45 displays the chronic liver disease and cirrhosis mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The only the last two chronic liver disease and cirrhosis mortality rates for Dare County and the last three for NC were stable, and all the rates for Currituck and Hyde counties were either unstable or suppressed. Given the large number of unstable or suppressed rates county comparisons are not warranted.
- The chronic liver disease and cirrhosis mortality rate for NC as a whole was essentially unchanged at approximately 9.0 over the period cited.

Figure 45. Overall Chronic Liver Disease and Cirrhosis Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Chronic Liver Disease and Cirrhosis Mortality

Table 190 presents chronic liver disease and cirrhosis mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the chronic liver disease and cirrhosis mortality rate was higher in Dare County than in NC.
- Note that due to below-threshold numbers of chronic liver disease and cirrhosis deaths among minority populations in Dare County and elsewhere, mortality rates were suppressed for those groups.
- Statewide, the chronic liver disease and cirrhosis mortality rate was significantly higher among males than among females.

Table 190. Race/Ethnicity-Specific and Sex-Specific Chronic Liver Disease and Cirrhosis Mortality
(Single Five-Year Aggregate Period, 2007-2011)

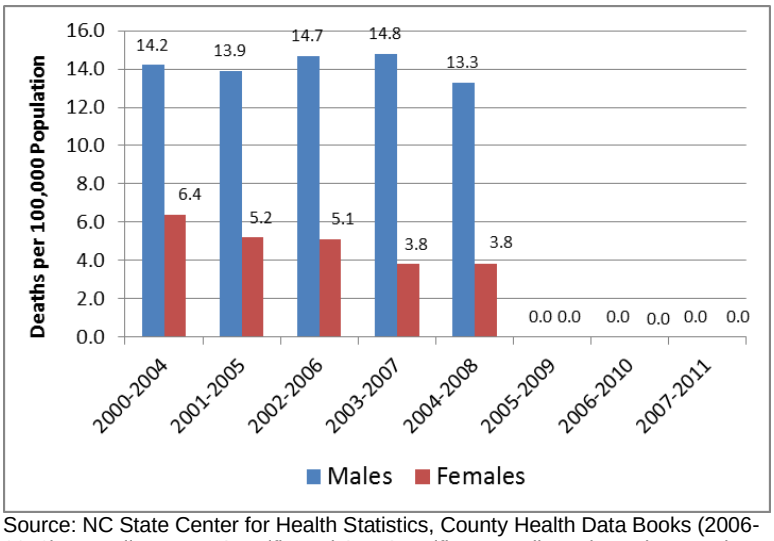
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	23	10.2	1	N/A	1	N/A	0	N/A	17	N/A	8	N/A	25	10.7
Currituck County	16	N/A	1	N/A	0	N/A	0	N/A	14	N/A	3	N/A	17	N/A
Hyde County	1	N/A	0	N/A	0	N/A	0	N/A	1	N/A	0	N/A	1	N/A
State of NC	3,829	9.9	737	7.5	82	6.6	75	5.0	3,122	13.2	1,601	5.9	4,723	9.3

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 46 depicts gender-stratified chronic liver disease and cirrhosis mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- According to the graph, the chronic liver disease and cirrhosis mortality rate among Dare County males appeared to be higher than the comparable rate among Dare County females for all the time periods shown. However, it should be noted that all the gender-stratified mortality rates in the graph were either unstable or suppressed.

Figure 46. Sex-Specific Chronic Liver Disease and Cirrhosis Mortality Rate Trend, Dare County
(Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 191 presents chronic liver disease and cirrhosis mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of chronic liver disease and cirrhosis deaths, the NC SCHS suppressed the associated mortality rates, leaving no racially-stratified rates to compare at the county level.

- At the state level, the chronic liver disease and cirrhosis mortality rate was highest among white non-Hispanic males, followed by African American non-Hispanic males, Other race non-Hispanic males, and Hispanic males.
- Chronic liver disease and cirrhosis mortality rates were higher for males than for females in every racial group.

Table 191. Race/Ethnicity and Sex-Specific Chronic Liver Disease and Cirrhosis Mortality Rate
(Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Currituck County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hyde County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State of NC	14.1	11.0	7.8	6.3	6.2	4.8	5.6	N/A

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Diabetes Mellitus

Diabetes is a disease in which the body's blood glucose levels are too high due to problems with insulin production and/or utilization. Insulin is a hormone that helps glucose get to cells where it is used to produce energy. With Type 1 diabetes, the body does not make insulin. With Type 2 diabetes, the more common type, the body does not make or use insulin well. Without enough insulin, glucose stays in the blood. Over time, having too much glucose in the blood can damage the eyes, kidneys, and nerves. Diabetes can also lead to heart disease, stroke and even the need to remove a limb (60).

Diabetes was the thirteenth leading cause of death in Dare County and the seventh leading cause of death statewide in 2007-2011. It was unranked as a cause of death in Currituck and Hyde counties due to below-threshold numbers of deaths (Table 123, cited previously). Diabetes was the ninth leading cause of death in Dare County in 2004-2008, the period covered in the 2010 CHA.

Diabetes Mellitus Hospitalizations

Table 192 presents hospital discharge rate trend data for diabetes. The rates for Dare County were much lower than the rates for NC as a whole.

Table 192. Diabetes Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Dare County	0.6	0.3	0.3	0.4	0.5	0.8	0.6
Currituck County	**0.4**	0.8	0.5	1.1	0.6	0.7	0.8
Hyde County	**1.4**	2.0	**0.7**	2.2	**1.7**	1.9	2.9
State of NC	1.8	1.8	1.9	1.8	1.8	1.9	2.0

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

In ICD-9 coding, diabetes falls in the category Endocrine and Metabolic Diseases (240-279), with a specific ICD-9 Code of 250 for diabetes mellitus. According to data provided by the OBH, there were 266 ED admissions with the 250 ICD-9 Code in 2010-2012 (Appendix A.1.5).

According to raw data on inpatient hospitalizations provided by the OBH, in the period from 2010-2012 there were 65 hospital discharges for stays totaling 146 days for diagnoses associated with diabetes (DRG Codes 641). Note that Dare County residents with diabetes might be hospitalized out of county and even out of state; those cases do *not* appear in this particular OBH summary.

According to data maintained by the NC Hospital Association, nutritional and miscellaneous disorders without complications, including diabetes (DRG Code 641) ranked 9th among the 25 leading DRGs accounting for hospitalizations at OBH in FY2011 (Appendix A.2.6).

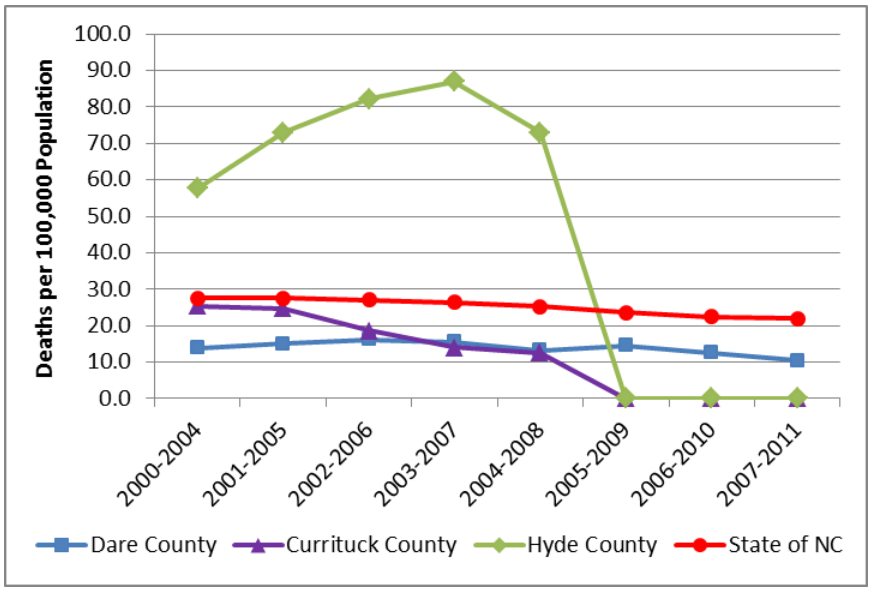
According to NC SCHS, in 2011 there were 21 hospitalizations for diabetes among Dare County residents; this figure includes hospitalizations anywhere in NC (46).

Diabetes Mellitus Mortality Rate Trend

Figure 47 displays the diabetes mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The diabetes mortality rate in Dare County was lower than the NC rate throughout the period cited, and decreased 25% from 13.8 to 10.4 between 2000-2004 and 2007-2011. Note that the last three rates for Currituck and Hyde counties were suppressed.
- The diabetes mortality rate for NC as a whole decreased 20% over the period cited.

Figure 47. Overall Diabetes Mellitus Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Diabetes Mellitus Mortality

Table 193 presents diabetes mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the diabetes mortality rate was lower in Dare County than in NC.
- Note that due to below-threshold numbers of diabetes deaths among minority populations in Dare County and elsewhere, mortality rates were suppressed for those groups.
- Statewide, the diabetes mortality rate was significantly higher among males than among females.

Table 193. Race/Ethnicity-Specific and Sex-Specific Diabetes Mellitus Mortality (Single Five-Year Aggregate Period, 2007-2011)

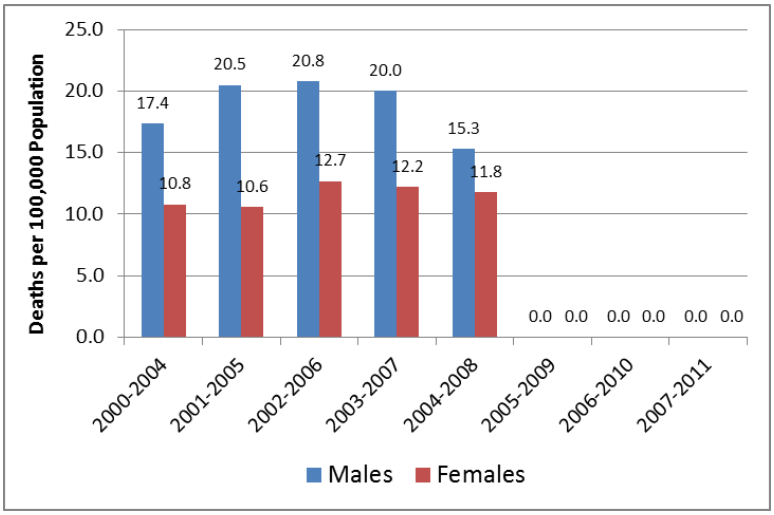
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	21	10.8	0	N/A	0	N/A	0	N/A	13	N/A	8	N/A	21	10.4
Currituck County	12	N/A	3	N/A	0	N/A	0	N/A	10	N/A	5	N/A	15	N/A
Hyde County	6	N/A	7	N/A	0	N/A	0	N/A	4	N/A	9	N/A	13	N/A
State of NC	6,745	17.5	3,681	44.8	217	23.6	90	8.8	5,399	26.0	5,334	18.8	10,733	22.0

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 48 depicts gender-stratified diabetes mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- While it appears that the diabetes mortality rate among Dare County males was consistently higher than the comparable rate among females, it should be noted that all the gender-stratified mortality rates in the graph were either unstable or suppressed.

Figure 48. Sex-Specific Diabetes Mellitus Mortality Rate Trend, Dare County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 194 presents diabetes mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of diabetes deaths, the NC SCHS suppressed the associated mortality rates, leaving no racially-stratified rates to compare at the county level.
- At the state level, the diabetes mortality rate was highest among African American non-Hispanic males, followed by African American non-Hispanic females, Other race non-Hispanic males, and Other race non-Hispanic females.

- Diabetes mortality rates were higher for males than for females in every racial group.

Table 194. Race/Ethnicity and Sex-Specific Diabetes Mellitus Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Currituck County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hyde County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State of NC	21.7	50.9	25.7	11.4	14.2	40.4	22.2	7.0

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Homicide

Homicide was unranked as a leading cause of death in Dare County in the 2007-2011 aggregate period because due to below-threshold numbers of homicide deaths the NC SCHS officially suppressed the associated mortality rate. The same suppression occurred in Currituck and Hyde counties. Statewide, homicide ranked as the 14th leading cause of death in the period cited (Table 123, cited previously).

Homicide Hospitalizations

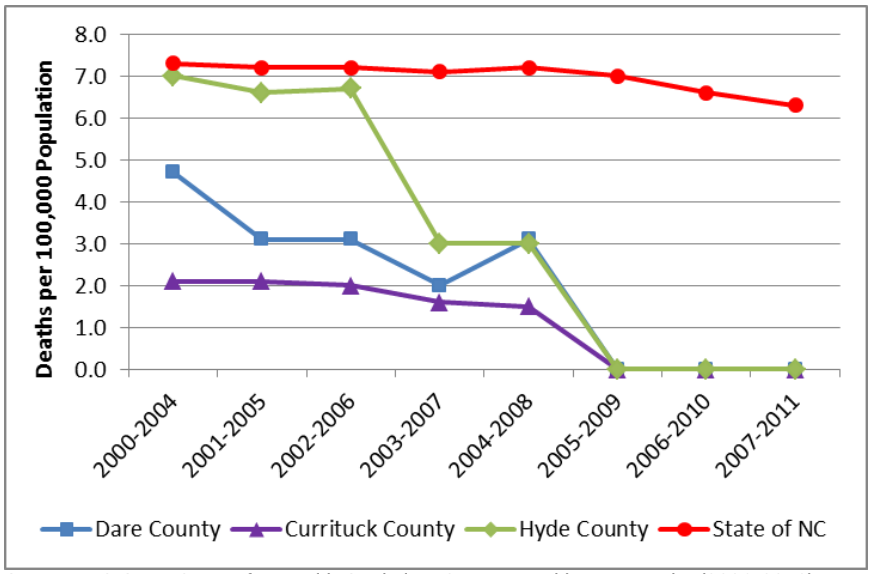
At the present time the NC SCHS does not track hospitalizations related to homicide or attempted homicide, and there is no data among that made available by OBH that specifically relates to homicide.

Homicide Mortality Rate Trend

Figure 49 displays the homicide mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The homicide mortality rates in Dare, Currituck and Hyde counties were below the comparable rate for NC as a whole throughout the interval cited. Note, however, that all the county-level homicide rates were either unstable or suppressed.
- At the state level, the homicide rate decreased 14% over the period cited.

Figure 49. Overall Homicide Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Homicide Mortality

Table 195 presents homicide mortality data for the period 2007-2011, stratified by race and sex.

- Note that due to below-threshold numbers of homicide deaths among racially stratified populations at the county level, all mortality rates were suppressed for those groups.
- Statewide, the homicide rate was highest among African American non-Hispanics, followed by Other race non-Hispanics and Hispanics.
- Statewide, there appeared to be a gender-based difference in homicide mortality, with the rate for males over three times the comparable rate for females.

Table 195. Race/Ethnicity-Specific and Sex-Specific Homicide Mortality (Single Five-Year Aggregate Period, 2007-2011)

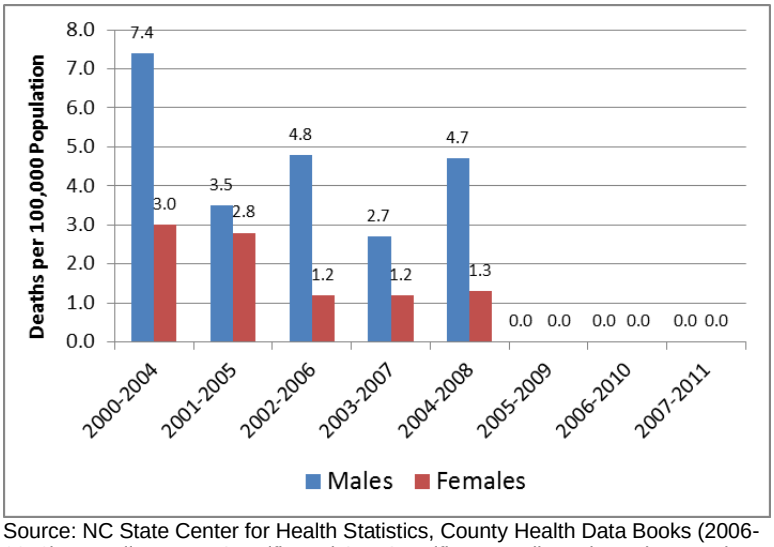
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	3	N/A	0	N/A	0	N/A	1	N/A	4	N/A	0	N/A	4	N/A
Currituck County	4	N/A	0	N/A	0	N/A	0	N/A	1	N/A	3	N/A	4	N/A
Hyde County	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
State of NC	1,064	3.4	1,458	13.8	135	8.0	292	7.3	2,253	9.8	696	2.9	2,949	6.3

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 50 depicts gender-stratified homicide mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- Although all the rates for both sexes were either unstable or suppressed due to below-threshold numbers of events, the disproportional gender-based pattern of homicide mortality depicted in the graph is common throughout NC.

Figure 50. Sex-Specific Homicide Mortality Rate Trend, Dare County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 196 presents homicide mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of homicide deaths in county-level stratified categories, the NC SCHS suppressed the associated mortality rates.
- At the state level, the homicide mortality rate was highest among African American non-Hispanic males, followed by Other race non-Hispanic males, Hispanic males, and African American non-Hispanic females.
- Statewide, homicide mortality rates were higher for males than for females in every racial group.

Table 196. Race/Ethnicity and Sex-Specific Homicide Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Currituck County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hyde County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State of NC	4.5	23.9	13.0	11.6	2.3	4.7	3.4	2.0

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Acquired Immune Deficiency Syndrome (AIDS)

The human immune deficiency virus (HIV) is the virus that causes AIDS. HIV attacks the immune system by destroying CD4 positive (CD4+) T cells, a type of white blood cell that is vital to fighting off infection. The destruction of these cells leaves people infected with HIV vulnerable to other infections, diseases and other complications. The acquired immune deficiency syndrome (AIDS) is the final stage of HIV infection. A person infected with HIV is diagnosed with AIDS when he or she has one or more opportunistic infections, such as pneumonia or tuberculosis, and has a dangerously low number of CD4+ T cells (less than 200 cells per cubic millimeter of blood) (61).

AIDS was unranked as a leading cause of death in Dare County in the 2007-2011 aggregate period because due to below-threshold numbers of AIDS deaths the NC SCHS officially suppressed the associated mortality rate. The same suppression occurred in Currituck and Hyde counties. Statewide, AIDS ranked as the 15th leading cause of death in the period cited (Table 123, cited previoiusly).

AIDS Hospitalizations

Table 197 presents hospital discharge rate trend data for AIDS. All the rates for Dare County and most of the rates for the other counties were unstable or suppressed. Statewide, the AIDS hospital discharge was 0.2 for many years, but in 2011 decreased to 0.1.

Table 197. AIDS Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Dare County	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**0.1**
Currituck County	**0.1**	**n/a**	**0.0**	**0.0**	**0.2**	**0.0**	**n/a**
Hyde County	**n/a**	**n/a**	**0.2**	**n/a**	**n/a**	**n/a**	**0.3**
State of NC	0.2	0.2	0.2	0.2	0.2	0.2	0.1

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

In the ICD-9 coding scheme, AIDS falls in the category Infectious and Parasitic Diseases (001-139), with two specific codes. According to raw data provided by the OBH, there were six ED admissions with those two codes in the period from 2010 through 2012.

In the DRG coding scheme, HIV and AIDS fall in the category Human Immunodeficiency Virus Infections (969-976). According to raw data on inpatient hospitalizations provided by the OBH, in the period from 2010-2012 there were four hospital discharges for stays totaling 10 days for diagnoses associated with that code category. Note that Dare County residents with HIV/AIDS might be hospitalized out of county and even out of state; those cases do *not* appear in this particular OBH summary.

According to data maintained by the NC Hospital Association, HIV/AIDS was not ranked among the 25 leading DRGs accounting for hospitalizations at OBH in FY2011 (Appendix A.2.6).

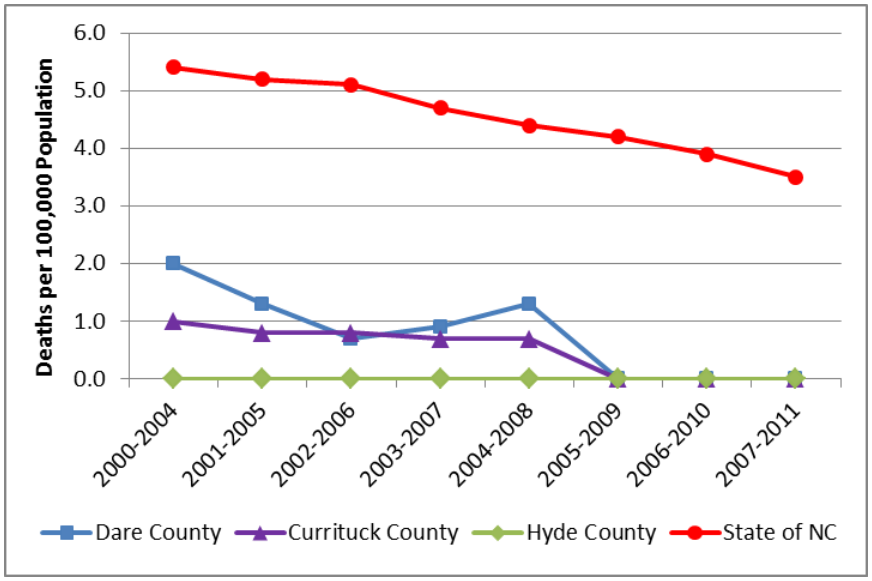
According to NC SCHS, in 2011 there were two hospitalizations for HIV/AIDS among Dare County residents; this figure includes hospitalizations anywhere in NC (46).

AIDS Mortality Rate Trend

Figure 51 displays the AIDS mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- All the county-level AIDS mortality rates for the entire period cited were unstable or suppressed, so comparisons are not possible.
- The AIDS mortality rate for NC as a whole decreased 35% (from 5.4 to 3.5) over the period cited.

Figure 51. Overall AIDS Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in AIDS Mortality

Table 198 presents AIDS mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Note that due to below-threshold numbers of AIDS deaths among all stratified populations at the county level, mortality rates were suppressed for those groups.
- Statewide, the AIDS mortality rate was higher among males than among females, and highest among African American non-Hispanic persons.

Table 198. Race/Ethnicity-Specific and Sex-Specific AIDS Mortality (Single Five-Year Aggregate Period, 2007-2011)

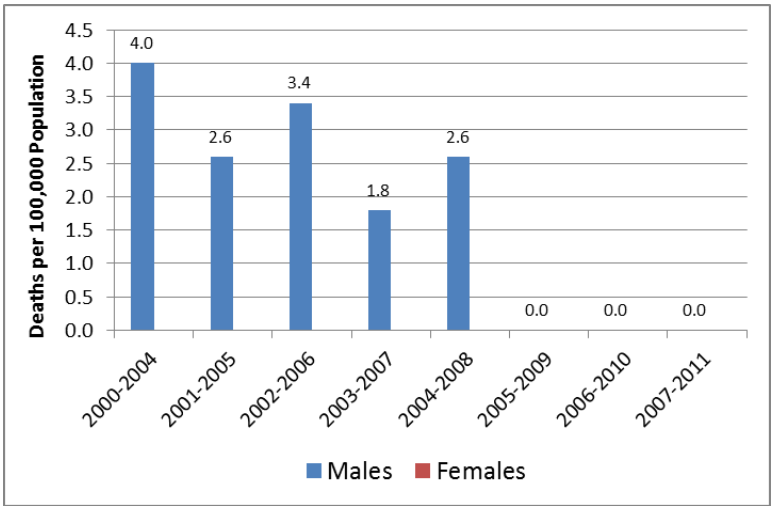
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Dare County	4	N/A	0	N/A	0	N/A	0	N/A	4	N/A	0	N/A	4	N/A
Currituck County	2	N/A	0	N/A	0	N/A	0	N/A	2	N/A	0	N/A	2	N/A
Hyde County	1	N/A	0	N/A	0	N/A	0	N/A	0	N/A	1	N/A	1	N/A
State of NC	333	1.0	1,286	12.9	15	N/A	53	2.2	1,141	4.8	546	2.3	1,687	3.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 52 depicts gender-stratified AIDS mortality rates in Dare County for the aggregate periods 2000-2004 through 2007-2011.

- AIDS mortality rates for females in Dare County were either true zero or suppressed for the entire period shown in the graph. It should be noted that all the AIDS mortality rates plotted for Dare County males were unstable or suppressed.

Figure 52. Sex-Specific AIDS Mortality Rate Trend, Dare County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 199 presents AIDS mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of AIDS deaths, the NC SCHS suppressed the associated mortality rates, leaving no racially-stratified county-level rates to compare.
- At the state level, the AIDS mortality rate was highest among African American non-Hispanic males, followed by African American non-Hispanic females, and Hispanic males.

- AIDS mortality rates were higher for males than for females in every racial group for which there was a complete set of rates.

Table 199. Race/Ethnicity and Sex-Specific AIDS Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Dare County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Currituck County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hyde County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State of NC	1.6	18.2	N/A	3.4	0.4	8.7	N/A	N/A

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

MORBIDITY

Morbidity refers generally to the current presence of injury, sickness or disease (and sometimes the symptoms and/or disability resulting from those conditions) in the living population. This report, communicable diseases (including sexually-transmitted infections), asthma, diabetes, obesity, oral health, and mental health conditions are the topics covered under morbidity. Also included in this section is a general discussion of how residents of Dare County use the services of the Outer Banks Hospital.

The parameter most frequently used to describe the current extent of any condition of morbidity in a population is *prevalence*: 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 usually is expressed as a proportion, not a rate, and often represents an estimate rather than a direct count.

Communicable Disease

A communicable disease is a disease transmitted through direct contact with an infected individual or indirectly through a vector.

Sexually Transmitted Infections

The topic of communicable diseases includes sexually transmitted infections (STIs). The STIs of greatest regional interest are chlamydia and gonorrhea. HIV/AIDS is sometimes grouped with STIs, since sexual contact is one mode of HIV transmission. While AIDS, as the final stage of HIV infection, was discussed previously among the leading causes of death, HIV is discussed here as a communicable disease.

Chlamydia

Chlamydia is the most frequently reported bacterial STI in the US, with an estimated 2.8 million new cases reported in the US each year. Chlamydia cases frequently go undiagnosed and can cause serious problems in men and women, such as penile discharge and infertility respectively, as well as infections in newborn babies of infected mothers (62).

Table 200 presents incidence data (i.e., new cases diagnosed) on chlamydia infections.

- There is considerable variability in the annual incidence rates for chlamydia at the county level, which is not uncommon for an infectious disease (see also disclaimer, below).
- The chlamydia incidence rate in Dare County was well below the comparable NC rate in every year cited.
- The NC Communicable Disease Branch provides the following disclaimer to these chlamydia incidence data:

  Note: chlamydia case reports represent persons who have a laboratory-confirmed Chlamydial infection. It is important to note that Chlamydial infection is often asymptomatic in both males and females and most cases are detected through screening. Changes in the number of reported cases may be due to changes in screening practices. The disease can cause serious complications in females and a number of screening programs are in place to detect infection in young women. There

are no comparable screening programs for young men. For this reason, Chlamydia case reports are always highly biased with respect to gender. The North Carolina STD Surveillance data system has undergone extensive changes since 2008 when North Carolina implemented North Carolina Electronic Disease Surveillance System (NC ESS). During this transition, Chlamydia morbidity counts for some counties may have been affected. Report totals for 2011 should be considered with this in mind. Reports are summarized by the date received in the Communicable Disease Surveillance Unit office rather than by date of diagnosis.

Table 200. Chlamydia Infection Incidence Trend (2007-2011)

Location	Incidence, All Ages, Number and Rate (New cases per 100,000 population)									
	2007		2008		2009		2010		2011	
	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate
Dare County	43	126.4	27	79.3	72	209.9	82	241.7	92	271.2
Currituck County	33	138.3	33	136.6	42	173.4	39	165.6	66	280.3
Hyde County	17	327.3	25	475.3	16	307.0	14	241.0	16	275.4
State of NC	30,612	337.7	37,885	409.7	43,734	466.2	42,167	442.2	53,854	564.8

Source: NC DHHS, Division of Public Health, Epidemiology Section, Communicable Disease Branch. Facts and Figures, Annual Reports. North Carolina 2011 HIV/STD Surveillance Report, Table 7; http://epi.publichealth.nc.gov/cd/stds/figures/std11rpt.pdf.

Gonorrhea

Gonorrhea is the second most commonly reported bacterial STI in the US. The highest rates of gonorrhea have been found in African Americans, people 20 to 24 years of age, and women, respectively. In women, gonorrhea can spread into the uterus and fallopian tubes, resulting in pelvic inflammatory disease (PID). PID affects more than 1 million women in the US every year and can cause tubal pregnancy and infertility in as many as 10 percent of infected women. In addition, some health researchers think gonorrhea adds to the risk of getting HIV infection (63).

Table 201 presents incidence data (i.e., new cases diagnosed) for gonorrhea infections.

- County-level rates were quite variable, due likely to the small and varying numbers of cases each year.
- The Dare County gonorrhea incidence rate was much lower than the comparable NC rate in every year cited.

Table 201. Gonorrhea Infection Incidence Trend (2007-2011)

Location	Incidence, All Ages, Number and Rate (New cases per 100,000 population)									
	2007		2008		2009		2010		2011	
	# Cases	Rate	# Cases	Rate	# Cases	Rate	# Cases	Rate	# Cases	Rate
Dare County	15	44.1	10	29.4	15	43.7	25	73.7	11	32.4
Currituck County	21	88.0	12	49.7	21	86.7	18	76.4	10	42.5
Hyde County	**4**	**77.0**	**4**	**76.0**	**4**	76.8	**6**	**103.3**	**3**	**51.6**
State of NC	16,666	183.9	15,012	162.3	14,811	157.9	14,153	148.4	17,158	179.9

Note: Rates appearing in bold type are based on fewer than 10 cases per year. Such rates are unstable and should be interpreted with caution.
Source: NC DHHS, Division of Public Health, Epidemiology Section, Communicable Disease Branch. Facts and Figures, Annual Reports. North Carolina 2011 HIV/STD Surveillance Report, Table 8; http://epi.publichealth.nc.gov/cd/stds/figures/std11rpt.pdf.

Human Immune Deficiency Virus (HIV)

From the standpoint of traditional incidence rates, the numbers of new HIV cases in small counties like Dare County and its comparators tend to be low and yield extremely variable or suppressible rates. (For example, there was a total of two new HIV cases in Dare County in the three-year period from 2009-2011.) Instead, Table 202 approximates a *prevalence* estimate for each jurisdiction on the basis of how many persons are living with HIV on a particular date.

- As of December 31, 2011 there were 36 persons with HIV/AIDS living in Dare County.

Table 202. HIV Prevalence: HIV and AIDS Cases Living as of December 31, 2011 (By County of Residence)

Location	Number of Living Cases
Dare County	36
Currituck County	14
Hyde County	10
State of NC	26,168

Source: NC DHHS, Division of Public Health, Epidemiology Section, Communicable Disease Branch. Facts and Figures, Annual Reports. North Carolina 2011 HIV/STD Surveillance Report, Table 1; http://epi.publichealth.nc.gov/cd/stds/figures/std11rpt.pdf.

Local STI Data

The Dare County Department of Public Health, Communicable Disease Section is responsible for monitoring and reporting communicable disease throughout the county. Table 203 presents case counts for STIs reported by the DCDPH in 2010, 2011 and 2012.

- Chlamydia was the STI reported most frequently in Dare County in the periods cited.

Table 203. Reported Case Counts of STIs, Dare County Department of Public Health (2010-2012)

Classification	Number of Reports		
	2010	2011	2012
HIV	0	0	0
AIDS	0	0	0
Syphilis (all types)	0	0	0
Chancroid	0	0	0
Chlamydia	82	94	90
Gonorrhea	25	11	3
Non-gonococcal urethritis	17	11	21
Pelvic inflammatory disease	0	0	0
TOTAL	124	116	114

Source: Casey Morris, Preparedness Coordinator, Dare County Department of Public Health. Personal communication to Anna Shafer, Public Health Education Specialist, Dare County Department of Public Health, January 25, 2013.

Other Communicable Diseases

In addition to monitoring and reporting cases of STIs county-wide, the DCDPH Communicable Disease Section also is responsible by law for tracking cases of other communicable diseases. Table 204 presents a summary of the other communicable disease cases identified in Dare County in the period from 2010-2012. (Note: the list below includes only reports that are "probable" or "confirmed".)

- In every year cited, salmonellosis was the most commonly reported communicable disease, and *Campylobacter* infections also were prominent most years. Both these ailments are among the most common diseases caused by bacteria in food or drinking water (64).
- Note that the presence of *Vibrio vulnificus* infection is specific to a coastal environment like much of Dare County. *V. vulnificus* is a bacterium present in warm marine environments, and infections with the organism usually occur after consuming raw or undercooked seafood carrying the organism (especially oysters), or when open wounds contact infected waters. Infections with the organism can lead to cellulitis or septicemia, especially in immune-compromised individuals (65).
- Tick-borne diseases (Ehrlichiosis, Lyme disease, and Rocky Mountain spotted fever) were especially prominent in 2012.
- The *absence* of certain vaccine-preventable communicable diseases (e.g., mumps, measles and whooping cough) from this list is a positive result for the county.

Table 204. Reported Case Counts of Communicable Diseases, Dare County Department of Public Health (2010-2012)

Calendar Year	Total Number of Cases Reported for the Period 2010-2012										
	Campy	Ehrlic	Haem Influ	Hep C (Acute)	Lyme	RMSF	Salmon	Shigell	Vibrio Vulni	Vibrio Other	TOTAL
2010	5	0	1	1	0	0	6	0	2	2	17
2011	2	0	1	1	0	1	10	1	1	0	17
2012	1	1	0	0	4	3	6	1	1	0	17

Abbreviations: Campy = Campylobacter; Ehrlich = Human granulocytic ehrlichiosis (HGE) and human monocytic ehrlichiosis (HME); Haem Influ = Haemophilus influenza; Hep C = Hepatitis C; Lyme = Lyme disease; RMSF = Rocky Mountain spotted fever; Salmon = Salmonellosis; Shigell = Shigellosis; Vibrio Vulni = Vibrio vulnificus.
Source: Casey Morris, Preparedness Coordinator, Dare County Department of Public Health. Personal communication to Anna Shafer, Public Health Education Specialist, Dare County Department of Public Health, January 25, 2013.

Table 205 presents ED admissions from the OBH listing the most common diagnoses of Infectious and Parasitic Diseases (ICD-9 Codes 001-139), by age group, in 2010, 2011 and 2012.

- Admissions for diagnoses of infectious and parasitic diseases accounted for 2% of all ED admissions (784 of 42,884) in the period 2010-2012.
- Among admissions in this category, by far the most common diagnosis was streptococcal sore throat and scarlet fever, which accounted for 330 of 784 admissions (42%). Pediatric cases accounted for 206 of 330 admissions, and adult cases for 124 of 330 admissions. There were no admissions in this category in the senior age group.

Table 205. OBH Emergency Department Admissions: Infectious and Parasitic Diseases (2010-2012)

Diagnosis		Number of ED Admissions												
		2010				2011				2012				Grand Total
ICD-9 Code	Diagnosis Description	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	
001-139	**Infectious and Parasitic Diseases**	**106**	**114**	**14**	**234**	**127**	**107**	**29**	**263**	**120**	**135**	**32**	**287**	**784**
003-009	*Intestinal diseases*	2	8	1	11	2	9	8	19	4	13	10	27	57
034	*Streptococcal sore throat and scarlet fever*	84	46	0	130	69	42	0	111	53	36	0	89	330
038	*Septicemia*	0	1	4	5	0	6	11	17	0	9	8	17	39
052	*Chickenpox*	4	2	0	6	6	1	0	7	6	1	0	7	20
053	*Herpes zoster (shingles)*	0	11	5	16	1	12	4	17	0	16	8	24	57
057	*Viral exanthemata*	4	2	0	6	6	0	0	6	13	0	0	13	25
075	*Infectious mononucleosis*	1	3	0	4	7	1	0	8	4	4	0	8	20
079.6	*Respiratory syncytial virus*	0	0	0	0	2	0	0	2	9	2	0	11	13
079.99	*Unspecified viral infections*	1	3	0	4	3	6	0	9	10	9	0	19	32
112	*Candidiasis (thrush)*	0	10	0	10	6	10	1	17	5	3	6	14	41
133	*Ascariasis (scabies, chiggers)*	2	3	0	5	2	5	0	7	2	5	0	7	19
Total Emergency Department Admissions		**2,538**	**9,059**	**2,577**	**14,174**	**2,425**	**8,844**	**2,607**	**13,876**	**2,662**	**9,427**	**2,745**	**14,834**	**42,884**

Asthma

Asthma, a disease that affects the lungs, is one of the most common long-term diseases of children, but adults also can have asthma. Asthma causes wheezing, breathlessness, chest tightness, and coughing at night, early in the morning, or upon exertion. The symptoms result because the sides of the airways in the lungs swell and the airways shrink. Less air gets in and out of the lungs, and mucous naturally produced by the body further clogs the airways. In most cases, the cause of asthma is unknown (although there likely is a hereditary component), and there is no known cure. Asthma can be hard to diagnose (66).

Table 206 presents hospital discharge data for asthma, stratified by age, for the period 2008-2011. (At the present time this is the best measure of asthma prevalence available from NC SCHS.)

- All the county-level data exhibited considerable variability due to small and varying numbers of asthma cases and resulting unstable rates.
- At the state level, the discharge rate for youth (age 0-14) was from 32% to 54% higher than the discharge rate for all ages.

Table 206. NC Hospital Discharges with a Primary Diagnosis of Asthma, Numbers and Rates per 100,000 (2008-2011)

Location	Discharges, Number and Rate (Discharges per 100,000 Population)															
	2008				2009				2010				2011			
	All Ages		Age 0-14		All Ages		Age 0-14		All Ages		Age 0-14		All Ages		Age 0-14	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Dare County	11	32.4	2	**35.5**	13	37.8	4	**71.0**	6	**17.7**	1	**17.9**	6	**17.5**	1	**17.6**
Currituck County	25	105.2	3	**75.2**	7	**29.4**	0	**0.0**	13	55.2	2	**44.4**	11	45.9	0	**0.0**
Hyde County	6	**108.8**	1	**120.3**	7	**129.8**	1	**123.5**	8	**137.7**	0	**0.0**	9	**154.6**	0	**0.0**
State of NC	10,644	115.4	2,778	151.9	10,986	117.1	3,228	175.0	10,470	109.8	3,152	166.0	9,880	102.3	3,044	157.3

Note: Bold type indicates a likely unstable rate based on a small (fewer than 10) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2010-2013), Morbidity, Asthma Hospital Discharges (Total and Age 10-14) per 100,000 Population (years and counties as noted); http://www.schs.state.nc.us/SCHS/data/databook.

According to data provided by the OBH, in the period 2010-2012 there was a total of 370 ED admissions coded with a diagnosis of asthma (ICD-9 493). Of these 370 admissions, 220 (59%) were among adults age 18-64, 123 (34%) were among children under the age of 18, and 27 (7%) were among seniors age 65 or older (Appendix A.1.5).

Diabetes

Diabetes mellitus, or simply, diabetes, is a group of diseases characterized by high blood glucose levels that result from defects in the body's ability to produce and/or use insulin. Diabetes can cause serious health complications including heart disease, blindness, kidney failure, and lower-extremity amputations. There are three major types of diabetes:

Type 1 diabetes results from the body's failure to produce insulin. This form was previously referred to as "insulin-dependent diabetes mellitus" or "juvenile diabetes". *Type 2 diabetes* results from insulin resistance, a condition in which cells fail to use insulin properly, sometimes combined with an absolute insulin deficiency. This form was previously referred to as “non-insulin-dependent diabetes mellitus” or "adult-onset diabetes". The third main form, *gestational diabetes,* occurs when pregnant women without a previous diagnosis of diabetes develop a high blood glucose level. Gestational diabetes is caused by the hormones of pregnancy or a shortage of insulin. Although this form of diabetes usually goes away after the baby is born, a woman who has had it is more likely to develop Type 2 diabetes later in life.

In recent years, medical professionals have begun to diagnose *prediabetes*, a condition in which blood glucose levels are higher than normal but not high enough for a diagnosis of diabetes. People with prediabetes are at increased risk for developing Type 2 diabetes and for heart disease and stroke (67).

As discussed previously, diabetes was the 13th leading cause of death in Dare County for the 2007-2011 aggregate period, causing 21 deaths (Table 123). However, diabetes is a chronic condition, and, as noted above can have multiple significant health effects on its sufferers long before it might cause death.

Table 207 presents estimates of the prevalence of diagnosed diabetes in adults age 20 and older in Dare, Currituck and Hyde counties. Comparable state-level data was not available.

- Hyde County had the highest prevalence of diagnosed diabetes in adults, with a five-year average of 12.1%. Dare County had the lowest average prevalence, with a five-year average of 8.7%. The five-year average in Currituck County was 8.8%.
- Noteworthy is the steady annual increase in the prevalence of diagnosed diabetes in adults in all three counties. In Dare County the estimated prevalence of diagnosed diabetes in adults increased 24% between 2005 and 2009.

Table 207. Adult Diagnosed Diabetes Prevalence Estimate Trend (Five Single Years, 2005 through 2009)

Location	Estimated Prevalence, Number and Percent (Age-adjusted)									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
Dare County	2,062	7.9	2,163	8.3	2,230	8.6	2,335	9.1	2,606	9.8
Currituck County	1,337	7.8	1,405	7.9	1,547	8.7	1,685	9.3	1,801	10.1
Hyde County	502	11.7	505	11.9	495	12.0	510	12.3	518	12.5
State Total	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Note: The prevalence of diagnosed diabetes and selected risk factors by county was estimated using data from CDC's Behavioral Risk Factor Surveillance System (BRFSS) and data from the U.S. Census Bureau's Population Estimates Program. Three years of data were used to improve the precision of the year-specific county-level estimates of diagnosed diabetes and selected risk factors.
Source: Centers for Disease Control and Prevention, Diabetes Data and Trends, *County Level Estimates of Diagnosed Diabetes - of Adults in North Carolina, 2005-2010;* http://apps.nccd.cdc.gov/ddtstrs/default.aspx.

As noted previously in the discussion of diabetes mortality, there were 266 ED admissions at OBH associated with diabetes diagnoses, and 65 OBH inpatient hospital discharges for stays totaling 146 days for diagnoses associated with diabetes. According to data maintained by the NC Hospital Association, nutritional and miscellaneous disorders without complications, including diabetes (DRG Code 641) ranked 9th among the 25 leading DRGs accounting for hospitalizations at OBH in FY2011.

Obesity

Obesity in Adults

Table 208 presents recent estimates of the prevalence of diagnosed obesity in adults age 20 and older in the three counties being compared in this CHA. Comparable state-level data was not available.

- Hyde County had the highest prevalence of diagnosed obesity in adults, with a five-year average of 31.0%. Dare County had the lowest average prevalence, with a five-year average of 24.9%. The five-year average in Currituck County was 27.4%.
- As with diabetes, it is noteworthy that the prevalence of diagnosed obesity in adults increased in all three counties over the period cited. In Dare County, the estimated prevalence of diagnosed obesity in adults increased 22% between 2005 and 2009.

Table 208. Adult Diagnosed Obesity Prevalence Estimate Trend (Five Single Years, 2005 through 2009)

Location	Estimated Prevalence, Number and Percent (Age-adjusted)									
	2005		2006		2007		2008		2009	
	#	%	#	%	#	%	#	%	#	%
Dare County	6,085	23.4	6,017	23.1	6,289	24.3	6,470	25.1	7,576	28.6
Currituck County	4,079	23.7	4,355	24.5	4,851	27.2	5,270	29.1	5,820	32.6
Hyde County	1,276	29.9	1,305	30.9	1,288	31.2	1,281	30.8	1,330	32.2
State of NC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Note: The prevalence of diagnosed diabetes and selected risk factors by county was estimated using data from CDC's Behavioral Risk Factor Surveillance System (BRFSS) and data from the U.S. Census Bureau's Population Estimates Program. Three years of data were used to improve the precision of the year-specific county-level estimates of diagnosed diabetes and selected risk factors.
Source: Centers for Disease Control and Prevention, Obesity Data and Trends, *County Level Estimates of Diagnosed Obesity - of Adults in North Carolina, 2005-2010;* http://apps.nccd.cdc.gov/ddtstrs/default.aspx.

Obesity in Children and Youth

The NC Healthy Weight Initiative, using the NC Nutrition and Physical Activity Surveillance System (NC NPASS), collects height and weight measurements from children seen in NC DPH-sponsored WIC and Child Health Clinics, as well as some school-based Health Centers (68). (It is important to note that this data is not necessarily representative of the county-wide population of children.) This data is used to calculate Body Mass Indices (BMIs) in order to gain some insight into the prevalence of childhood obesity. BMI is a calculation relating weight to height by the following formula:

BMI = (weight in kilograms) / (height in meters)

For children, a BMI in the 95th percentile or above is considered “obese” (formerly defined as “overweight”), while BMIs that are between the 85th and 94th percentiles are considered “overweight” (formerly defined as “at risk for overweight”).

Table 209 presents NC NPASS data for children ages 2-4 for the period 2007-2011.

- There was no clear pattern of change over time in either weight category in any county.
- At the state-level, there appeared to be a slight increase in the percent of children in the “obese” category, from 15.3% in 2007 to 15.7% in 2011, but the change may not be significant.

Table 209. Prevalence of Obesity and Overweight in Children, Ages 2-4, NC NPASS (2007-2011)

Location	Prevalence of Overweight and Obesity in Children Ages 2-4, by Percent									
	2007		2008		2009		2010		2011	
	Overweight	Obese	Overweight	Obese	Overweight	Obese	Overweight	Obese	Overweight	Obese
Dare County	15.2	17.9	16.0	16.0	13.9	15.4	20.6	15.1	20.1	17.1
Currituck County	13.4	15.9	15.8	18.6	13.3	10.6	14.5	10.8	19.1	14.0
Hyde County	**N/A**	12.0	**N/A**	**N/A**	**N/A**	21.1	15.1	18.6	12.3	17.3
State of NC	15.7	15.3	16.3	15.4	15.8	15.4	16.1	15.6	16.2	15.7

Note: Figures denoted in **bold** type indicate percentages based on fewer than 10 cases.
Note: NC-NPASS data for children ages 2 to 4 are reflective of the population at 185% of the federal poverty level. Approximately 85 to 95% of the children included in the NC-NPASS sample for ages 2 to 4 are WIC participants. Since children are not eligible to participate in WIC once they become 5 years old, the sample size for NC-NPASS data received from the child health clinics was not adequate to calculate county-specific rates for children age 5 and older.
Source: Eat Smart, Move More, Data on Children and Youth in NC, North Carolina Nutrition and Physical Activity Surveillance System (NC-NPASS), NC-NPASS Data (2005-2011), counties and age groups as noted; http://www.eatsmartmovemorenc.com/Data/ChildAndYouthData.html.

Spurred by results of the 2010 Dare County CHA that showed, in an admittedly small sample, higher percentages of overweight and obese children in Dare County than in NC as a whole, the Healthy Weight Task Force of Healthy Carolinians of the Outer Banks (the local Healthy Carolinians affiliate) undertook a project to gather more complete data. In SY2011-2012, school nurses collected BMI data on *all* kindergarten, third-, and sixth-grade students.

Table 210 presents the results of this study, using the BMI percentile differentials described above:

- 32.6% of Dare County kindergarteners were overweight or obese.
- 41.6% of Dare County third-graders were overweight or obese.
- 37.3% of Dare County sixth-graders were overweight or obese.

Table 210. Overweight and Obese Children in Dare County Public Schools (SY2011-2012)

Grade	Percent of Students	
	Overweight	Obese
Kindergarten	14.8	17.8
Third Grade	19.2	22.4
Sixth Grade	24.3	13.0

Source: Melissa Roupe, Vidant Health. Personal communication to Amy Montgomery, Director of Community Outreach, The Outer Banks Hospital, December 11, 2012.

Compared to NC NPASS data, the local study provided a more complete set of data that should be a useful baseline to compare with future studies in the same schools.

Oral Health

Adult Oral Health

Counties are expected to use data from the annual Behavioral Risk Factor Surveillance System (BRFSS) survey to describe dental problems in the community. In NC, the BRFSS survey results are compiled on the county level only for large jurisdictions or metropolitan areas. Dare County responses are combined among those of 40 other counties in an eastern NC region BRFSS data summary. Consequently, it is necessary to look elsewhere to adequately describe the dental needs of adults in Dare County.

The 2010 Dare County CHA process included a community survey that asked questions about respondents' access to dental services. At that time, survey participants ranked dental health 12th among the 24 most significant health problems in the community, and ranked not going to the dentist 9th among the 16 most significant unhealthy behaviors in the community. In the same survey, 16% of respondents reported having had a problem accessing necessary dental care (not routine preventive care) in the past 12 months, and a majority of those (65%) said the primary problem was not being able to afford the cost of dental care (1).

According to data from the OBH, in 2010 through 2012 there were 677 ED admissions under the ICD-9 Codes 520-525, disorders of the teeth and gums. The vast majority of these admissions—92%—were among adults age 18-64. When examined by payer, the largest proportion of admissions—398, or 59%—were "self-pay". This data may indicate that many residents without dental insurance regard the ED as a dental provider of last resort.

Another indicator of lack of access to dental services is local patient response to the NC Missions of Mercy free dental clinic offered annually for the past several years in Dare County. The NC Missions of Mercy (NCMOM) is an outreach program of the NC Dental Society. The purpose of the free program is to directly address the access to care problem facing the state's most underserved. NCMOM is a grassroots effort, dependent on volunteers, with funding from grants and donations.

NCMOM has enough equipment to set up an 80-chair full dental clinic including digital x-ray, sterilization, and all instrumentation and supplies. Clinics are staffed by volunteer dentists, dental hygienists, dental assistants, laboratory technicians, among dental professionals, and scores of other volunteers. Dental students from the UNC School of Dentistry and the ECU School of Dental Medicine participate as volunteer providers during each clinic (69).

NCMOM conducted free dental clinics in Dare County annually from 2009 to 2012. Table 211 summarizes the patients seen and dollar value of services provided in those clinics. Table 212 provides details on the services provided at the 2012 Dare County NCMOM clinic.

- In four years of service, the NCMOM clinics served a total of 2,833 patients, or an average of 708 per year (Table 211)
- In 2012 alone, the NCMOM clinic provided 3,570 services to 647 patients. Services ranged from the routine (e.g., cleanings) to the extreme (e.g., surgical extractions and full dentures) (Table 212).
- The number of extractions alone would tend to indicate that the patients participating in the program perhaps had postponed dental treatment for some time (Table 212).

Table 211. NCMOM Dare County Dental Clinic Outcomes (2009-2012)

Year	No. Patients Seen	Value of Services Provided
2009	902	$401,000
2010	752	$359,000
2011	532	$300,000
2012	647	$404,147

Source: Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health. Personal communication to Sheila Pfaender, Public Health Consultant, November 28, 2012.

Table 212. NCMOM Dare County Dental Clinic Services (November 2-3, 2012)

Procedure	No. Procedures	Value of Service
Prescriptions	314	$6,200
Exams	647	$32,350
Regular cleaning - Adult	160	$11,200
Regular cleaning - Child	2	$98
Gross debridement	36	$4,176
Fluoride varnish	162	$5,670
Panorex X-Ray	600	$54,000
Bite wing X-Ray	2	$60
PA X-Ray	10	$300
Routine extractions	617	$77,165
Surgical extractions	304	$73,032
Composite surfaces	451	$67,650
Amalgam surfaces	215	$24,725
Dentures – Full Upper and Lower	1	$5,128
Dentures - Partial	33	$39,798
Dentures - Adjustment	11	$715
Dentures - Reline	4	$1,800
TOTAL	3,570	$404,147

Source: Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health. Personal communication to Sheila Pfaender, Public Health Consultant, November 28, 2012.

Since cost of dental care can be daunting but is covered for Medicaid-eligible patients, it is interesting to examine the proportion of Medicaid clients who actually receive dental services.

Table 213 presents dental service utilization figures for Medicaid clients for SFY2010.

- From this data it appears that Medicaid-eligible persons under the age of 21 in Dare County receive dental services at a 70% higher proportion than Medicaid-eligible persons age 21 and older. The direction, if not the proportion, of difference is the same in the other three jurisdictions.

Table 213. Dental Service Utilization by Medicaid Recipients, by Age Group (SFY2010)

Location	SFY2010					
	<21 Years Old			21+ Years Old		
	# Eligible for Services	# Receiving Services	% Eligibles Receiving Services	# Eligible for Services	# Receiving Services	% Eligibles Receiving Services
Dare County	2,832	1,234	43.6	1,619	413	25.5
Currituck County	1,968	708	36.0	1,232	292	23.7
Hyde County	626	308	49.2	630	170	27.0
State of NC	1,113,692	541,210	48.6	679,139	214,786	31.6

Source: NC DHHS, NC Division of Medical Assistance, Statistics and Reports, County Specific Snapshots for NC Medicaid Services (2008 and 2011); http://www.ncdhhs.gov/dma/countyreports/index.htm.

Child Oral Health

Each year about 200,000 NC elementary school children participate in dental screenings, also called assessments. Public health dental hygienists screen for tooth decay and other disease conditions in individuals. The hygienists refer children who have dental problems and need dental care to public or private practice dental care professionals (70).

Table 214 presents partial summaries of the screenings conducted in SY2005-2006 through SY2008-2009.

- An average of 93.8% of kindergarteners, and 94.8% of fifth graders in Dare County were screened over the period cited. Statewide, an average of 81.0% of kindergarteners and 76.8% of fifth graders were screened over the same period.
- An average of 19% of kindergarteners and 2% of fifth graders in Dare County had untreated decay over the period cited. Statewide, an average of 19% of kindergarteners and 4% of fifth graders had untreated decay over the same period.

Table 214. Child Dental Screening Summary (SY2005-2006 through SY2008-2009)

Location	School Dental Screening Results															
	SY2005-2006				SY2006-2007				SY2007-2008				SY2008-2009			
	Kindergarten		5th Grade		Kindergarten		5th Grade		Kindergarten		5th Grade		Kindergarten		5th Grade	
	% Screened	% Untreated Decay	% Screened	% Untreated Decay	% Screened	% Untreated Decay	% Screened	% Untreated Decay	% Screened	% Untreated Decay	% Screened	% Untreated Decay	% Screened	% Untreated Decay	% Screened	% Untreated Decay
Dare County	94	18	94	1	94	21	96	3	93	21	95	2	94	16	94	2
Currituck County	99	25	101	6	94	23	95	4	91	19	95	3	96	16	93	1
Hyde County	92	29	84	14	97	24	96	7	98	28	102	2	88	21	88	3
State of NC	82	21	76	5	78	19	81	4	81	18	73	4	83	17	77	4

Source: NC DHHS, Oral Health, References and Statistics, School Oral Health Assessments, NC County Level Oral Health Assessment Data by Year (years and counties as noted); http://www.ncdhhs.gov/dph/oralhealth/stats/MeasuringOralHealth.htm.

Mental Health

With the mental health system in the state—and Dare County—still coping with system reform growing pains, and with substance abuse an ongoing issue of considerable community concern in Dare County, these topics merit a closer look.

As previously noted in the Mental Health Services and Facilities section of this report, the unit of NC government responsible for overseeing mental health services is the Division of Mental Health, Developmental Disabilities and Substance Abuse Services (DMH/DD/SAS).

In 2001, the NC General Assembly passed the Mental Health System Reform Act, which ended the previous system by which quasi-independent local entities such as counties and regional agencies delivered mental health services by directly employing the care providers. The new law essentially privatized mental health services by requiring the governmental local management entities (LMEs) to contract with other public or private providers or provider groups to serve area residents in need of mental health services. The local counties and regions no longer directly controlled the provision of services, but instead were responsible for managing provider contracts (71).

The local management entity serving Dare County (as well as Currituck County and Hyde County) is East Carolina Behavioral Health (ECBH), which is headquartered in Greenville, NC.

Some of the mental health data discussed below originated in the public domain, but other data was provided by ECBH, the OBH, or DCDPH. One goal of mental health reform in NC was to refocus mental health, developmental disabilities and substance abuse care in the community instead of in state mental health facilities. The data below clearly illustrates how utilization of state-level services has diminished.

Mental Health Service Utilization

Table 215 presents an annual summary of the number of persons in each jurisdiction served by LMEs/Area Programs from 2005 through 2010.

- In Dare County the number of persons served by mental health area programs fell every year between 2005 and 2010. It should be noted that ECBH became the LME for Dare County in 2009, and that statistics for that and earlier dates accrue to a different LME.
- There was a 62% drop in number of persons served in Hyde County between 2007 and 2008; since, however, the figure for Hyde County rebounded by 50%. The comparable figures for Currituck County did not vary as widely as those in the other two counties.
- Statewide, there was a decrease in number of persons served between 2007 and 2008, but the state totals have since recovered near to 2005 levels.
- Table 99, cited in a previous chapter, lists totally different (i.e., significantly lower) figures for annual LME *admissions.* The reason for the difference is unclear.

Table 215. Persons Served by Mental Health Area Programs/Local Management Entities (2005-2010)

Dare County	Number of Persons Served					
	2005	2006	2007	2008	2009	2010
Dare County	2,010	2,011	2,012	1,514	1,439	1,406
Currituck County	572	580	607	609	543	554
Hyde County	315	255	277	105	166	157
State of NC	337,676	322,397	315,338	306,907	309,155	332,796

Note: The figures in the table represent all clients of a community-based Area Program for mental health, developmental disabilities, and drug and alcohol abuse active at the beginning of the state fiscal year plus all admissions during the year. Also included are persons served in three regional mental health facilities. Multiple admissions of the same client are counted multiple times. County of residence is reported at the time of admission. State figures include clients reported to reside out-of-state and sometimes contains individuals of Unknown County of residence.
Source: Log Into North Carolina (LINC) Database, Topic Group Vital Statistics and Health (Data Item 519); http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

Since mental health reform in NC, only the most seriously ill mental health patients qualify for treatment at state psychiatric hospitals. The individual must be assessed as meeting the diagnostic criteria for (1) acute schizophrenia and/or other psychotic disorders, (2) acute mood disorders or (3) the combination of both, with or without medical and/or physical complications that are within the parameters of what the state hospital can manage (72).

At the present time, there are three state-operated psychiatric hospitals in NC: Broughton Hospital (Morganton), Central Regional Hospital (Butner), and Cherry Hospital (Goldsboro).

Table 216 presents a summary of the number of persons in each jurisdiction served in NC State Psychiatric Hospitals for the period from 2005 through 2010.

- Except for Hyde County where the numbers are small and unstable, the number of persons served in state psychiatric hospitals decreased in every jurisdiction over the period cited. In Dare County, the net decrease from 2005 to 2010 was 81%; in Currituck County the net decrease was 77%, and statewide it was 61%.

Table 216. Persons Served in NC State Psychiatric Hospitals (2005-2010)

Location	Number of Persons Served					
	2005	2006	2007	2008	2009	2010
Dare County	89	69	66	30	22	17
Currituck County	44	34	24	11	18	10
Hyde County	6	5	9	8	3	4
State of NC	18,435	18,292	18,498	14,643	9,643	7,188

Note: Sometimes referred to as "episodes of care", these counts reflect the total number of persons who were active (or the resident population) at the start of the state fiscal year plus the total of first admissions, readmissions, and transfers-in which occurred during the fiscal year at the three state alcohol and drug treatment centers. Excluded are visiting patients and outpatients. Multiple admissions of the same client are counted multiple times. County of residence is reported at the time of admission. North Carolina data include clients reported to reside out-of-state.
Source: Log Into North Carolina (LINC) Database, Topic Group Vital Statistics and Health (Data Item 519); http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

Table 217 presents OBH ED admissions data relative to ICD-9 Codes 290-319, Mental, Behavioral and Neurodevelopmental Disorders for the period 2010-2012 (Appendix A.1.5). Of specific interest in this case are the numbers of admissions for mental health diagnoses in ICD-9 Code categories 296, 298, 300 and 311 (the categories *not* related to alcohol or drugs).

- In the period cited there were 101 admissions under ICD-9 Code 296, episodic mood disorders (including bipolar disorder); the majority (87 of 101, or 86%) were among adults age 18-64.
- There were 54 admissions under ICD-9 Code 298, other non-organic and unspecified psychoses; the majority (42 of 54, or 78%) was among adults, but an additional 10 admissions were in the pediatric age group (age 0-17).
- There were 394 admissions under ICD-9 Code 300, Anxiety, dissociative and somatoform disorders; the majority (329 of 394, or 84%) was among adults, but an additional 49 admissions (12%) were in the senior age group (age 65 and older).
- There were 169 admissions under ICD-9 Code 311, Depressive disorder, not elsewhere classified; the majority (133 of 169, or 79%) were among adults, but an additional 20 admissions (12%) were in the pediatric age group, and 16 (9%) were in the senior age group.

Table 217. OBH Emergency Department Admissions: Mental, Behavioral and Neurodevelopmental Disorders (2010-2012)

Diagnosis		Number of ED Admissions												
		2010				2011				2012				Grand Total
ICD-9 Code	Diagnosis Description	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	
290-319	**Mental, Behavioral and Neurodevelopmental Disorders**	**30**	**458**	**61**	**549**	**26**	**467**	**40**	**533**	**34**	**530**	**54**	**618**	**1,700**
291	*Alcohol-induced mental disorders*	1	11	1	13	0	8	1	9	0	18	2	20	42
292	*Drug-induced mental disorders*	0	17	1	18	0	19	2	21	0	19	1	20	59
296	*Episodic mood disorders (incl. bipolar disorder)*	2	31	3	36	3	24	1	28	5	32	0	37	101
298	*Other nonorganic and unspecified psychoses*	0	16	5	21	0	8	2	10	0	18	5	23	54
300	*Anxiety, dissociative and somatoform disorders*	3	111	17	131	5	109	14	128	8	109	18	135	394
303	*Alcohol dependence syndrome*	0	78	6	84	0	50	2	52	0	64	1	65	201
304	*Drug dependence*	1	26	0	27	0	31	0	31	0	27	0	27	85
305	*Non-dependent abuse of drugs*	9	91	1	101	2	142	3	147	8	152	9	169	417
311	*Depressive disorder, not elsewhere classified*	6	43	6	55	9	42	4	55	5	48	6	59	169
Total Emergency Department Admissions		**2,538**	**9,059**	**2,577**	**14,174**	**2,425**	**8,844**	**2,607**	**13,876**	**2,662**	**9,427**	**2,745**	**14,834**	**42,884**

According to OBH data on inpatient hospitalizations, in 2010 through 2012 there were six hospitalizations totaling 21 days for the DRG Codes 876-887, Mental Diseases and Disorders. (Appendix A.2.5).

Developmental Disabilities Service Utilization

According to NC MH/DD/SAS, *developmental disability* means a severe, chronic disability of a person which:

a. is attributable to a mental or physical impairment or combination of mental and physical impairments;
b. is manifested before the person attains age 22, unless the disability is caused by a traumatic head injury and is manifested after age 22;
c. is likely to continue indefinitely;

d. results in substantial functional limitations in three or more of the following areas of major life activity: self-care, receptive and expressive language, capacity for independent living, learning, mobility, self-direction and economic self-sufficiency; and
e. reflects the person's need for a combination and sequence of special interdisciplinary, or generic care, treatment, or other services which are of a lifelong or extended duration and are individually planned and coordinated; or
f. when applied to children from birth through four years of age, may be evidenced as a developmental delay (73).

The NC Council on Developmental Disabilities estimated that as of January, 2011 there were over 167,000 persons in NC with a developmental disability (74).

Although community care is preferred where available, the state currently operates three facilities serving the developmentally disabled: Caswell Developmental Center (Kinston), Murdoch Developmental Center (Butner), and J. Iverson Riddle Developmental Center (Morganton).

Table 218 presents a summary of the persons in each jurisdiction served in NC State Developmental Centers for the period from 2005 through 2010.

- The numbers of persons in Dare, Currituck and Hyde counties served in NC State Developmental Centers all were too small to discern any trend.
- At the state level, the number of persons served decreased by 37% between 2005 and 2010.

Table 218. Persons Served in NC State Developmental Centers (2005-2010)

Location	Number of Persons Served					
	2005	2006	2007	2008	2009	2010
Dare County	7	6	1	1	6	5
Currituck County	2	2	0	1	3	3
Hyde County	2	2	0	0	2	2
State of NC	2,172	1,690	1,713	1,409	1,404	1,375

Source: NC Division of Mental Health, Developmental Disabilities and Substance Abuse Services, Statistics and Publications, Reports and Publications, Statistical Reports, Developmental Centers (FY2005-FY2010); http://www.ncdhhs.gov/mhddsas/statspublications/reports/index.htm#statisticalreports.

Substance Abuse Service Utilization

Alcohol and Drugs

There are three state-operated residential alcohol and drug abuse treatment centers (ADATC): the Julian F. Keith ADATC (Black Mountain), the R.J. Blackley ADATC (Butner), and the Walter B. Jones ADATC (Greenville).

Table 219 presents a summary of the persons in each jurisdiction served in NC State ADATC for the period from 2005 through 2010.

- Unlike figures for state psychiatric hospitals, the numbers of persons from Dare County served in NC state ADATCs did not decline dramatically at any point.

Table 219. Persons Served in NC Alcohol and Drug Abuse Treatment Centers (2005-2010)

Location	Number of Persons Served					
	2005	2006	2007	2008	2009	2010
Dare County	61	62	61	78	86	76
Currituck County	13	19	16	33	35	16
Hyde County	2	5	1	9	4	5
State of NC	3,732	4,003	3,733	4,284	4,812	4,483

Sometimes referred to as "episodes of care", these counts reflect the total number of persons who were active (or the resident population) at the start of the state fiscal year plus the total of first admissions, readmissions, and transfers-in which occurred during the fiscal year at the three state alcohol and drug treatment centers. Excluded are visiting patients and outpatients. Multiple admissions of the same client are counted multiple times. County of residence is reported at the time of admission. North Carolina data include clients reported to reside out-of-state.
Source: Log Into North Carolina (LINC) Database, Topic Group Vital Statistics and Health (Data Item 518); http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

Local data for FY2012 on Dare County residents with a principal diagnosis of substance abuse served by a state ADACT are presented in Table 220.

- Most Dare County residents served in a state ADACT were admitted via referral from outpatient or non-state residential facilities, followed closely by those referred from other health care providers. Statewide, the most common referral source by far was other outpatient or residential non-state facility.

Table 220. Dare County Residents with a Substance Abuse Principle Diagnosis Served in State ADATCs (FY2012)

Admission Referral Source	Dare County		State of NC	
	Persons Served	%	Persons Served	%
Other outpatient or residential non-state facility	24	47.1	3,436	80.6
Other health care	21	41.2	488	11.4
Psychiatric service, General Hospital	6	11.8	256	6.0
Self/no referral			50	1.2
State facility			25	0.6
Unknown			5	0.1
Family/friends			5	0.1
TOTAL	51	100.1	4,265	100.0

Note: Persons served includes anyone who has received services in FY2012, i.e. FY2012 admissions plus anyone admitted previously who was still receiving services in FY2012.
Source: Bill Satterfield. Personal communication to Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health, November 14, 2012.

Since General Hospitals sometimes refer patients to ADATCs (and it happened six times to Dare County residents in FY2012), it is interesting to examine OBH ED admissions data relative to substance abuse.

Table 217, cited previously, presented OBH ED admissions data relative to ICD-9 Codes 290-319, Mental, Behavioral and Neurodevelopmental Disorders for the period 2010-2012 (Appendix A.1.5). Of specific interest here are the numbers of admissions for alcohol- and drug-related diagnoses.

- In the period cited, there were 42 total admissions under ICD-9 Code 291, Alcohol-induced mental disorders, and 59 total admissions under ICD-9 Code 292, Drug-induced mental disorders. The majority of these admissions (92 of 101, or 91%) occurred among adults age 18-64.
- There also were 201 total admissions under ICD-9 Code 303, Alcohol dependence syndrome, and 85 total admissions under ICD-9 Code 304, Drug dependence. The majority of these admissions (276 of 286, or 97%) occurred among adults age 18-64.
- There were 417 total admissions under ICD-9 Code 305, Non-dependent use of drugs, predominately (385 of 417, or 92%) among adults age 18-64; however there also were 19 ED admissions in the pediatric (0-17) age group.

According to OBH data on inpatient hospitalizations, in 2010 through 2012 there were eight hospitalizations totaling 15 days for the DRG Codes 895-897, Alcohol/drug use and drug-induced mental disorders (Appendix A.2.5).

Table 221 presents data summarizing the number of arrests in Dare County for offenses relating to drugs and alcohol.

Table 221. Dare County Alcohol and Drug Arrest Data
Alcohol and Other Drugs Office
(2005-2011)

Age Group	Total Number of Arrests						
	2005	2006	2007	2008	2009	2010	2011
Age 16-20	462	628	514	512	456	294	432
Age 21 and older	1,305	1,102	890	1,499	679	655	722
Total	1,767	1,730	1,404	2,011	1,135	949	1,154
Total DUI	742	567	431	656	368	345	364

Source: Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health. Personal communication to Sheila Pfaender, Public Health Consultant, October 30, 2012.

In 1962, the US Supreme Court ruled that addiction is an illness, not a crime, and that states may compel addicts to submit to treatment, and impose criminal sanctions for non-compliance. Within a decade, federal agencies began developing the concept of linking treatment and the judicial process for the specific purpose of interrupting the relationship between addictive behavior and criminal activity. The result was an initiative named *Treatment Alternatives to Street Crime* (TASC). While the acronym has remained the same, the program in NC is now referred to by several titles, including Tre*atment Accountability for Safer Communities*.

The TASC program in NC is unique in that it has unified its network under the central administration of the NC MH/DD/SAS, ensuring that services delivered are of the same type and quality. In NC TASC operates as a component of a community mental health/substance abuse provider that remains in close relationship with the local criminal justice system. Eligible TASC clients are those who demonstrate a need for addiction treatment and/or mental health services and have been charged with or convicted of crimes eligible for intermediate or community

punishments. TASC services are available in every NC county and are organized into four regions that reflect the state's judicial districts and divisions (75). The Dare County TASC program, headquartered at the Coastal Horizons Center, Inc. in Nags Head, is in Region One, which includes a total of 32 counties in the eastern part of the state (76).

Local data for FY2012 on Dare County residents with a principal diagnosis of substance abuse served by the LME/TASC are presented in Table 222.

- Most Dare County residents served in the LME/TASC were admitted via referral from family or friends, followed closely by those referred by the court, corrections or prison. The most common referral source statewide was the court, corrections or prison, followed by self-referral.

Table 222. Dare County Residents with a Substance Abuse Principle Diagnosis Served by LME/TASC (FY2012)

Admission Referral Source	Dare County		State of NC	
	Persons Served	%	Persons Served	%
Court, corrections or prison	124	41.1	26,122	34.0
Self/no referral	1	0.3	17,682	23.0
Family or friends	132	43.7	10,720	14.0
Community agency	13	4.3	8,044	10.5
Psychiatric service, General Hospital	14	4.6	5,227	6.8
Other			4,046	5.3
Other outpatient or non-state residential facility	7	2.3	1,798	2.3
State facility	1	0.3	1,232	1.6
Other health care	7	2.3	902	1.2
Private physician	2	0.7	470	0.6
Non-residential treatment/habilitation program	1	0.3	282	0.4
Schools			205	0.3
Veteran's Administration			15	0.02
Nursing home board and care			8	0.01
Unknown			1	0.00
TOTAL	302	99.9	76,754	100.0

Note: Persons served includes anyone who has received services in FY2012, i.e. FY2012 admissions plus anyone admitted previously who was still receiving services in FY2012.
Source: Bill Satterfield. Personal communication to Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health, November 14, 2012.

New Horizons/PORT

As noted previously in this report, DCDPH offers a full-service prevention, intervention, and treatment program for substance abuse. In January 2012, East Carolina Behavioral Health was contracted as agent for substance abuse services for Dare County residents. The move was made as a result of a reduction in state funding and the need to move to a fee-for-service model for sustainability. Dare County continues to provide gap funding for DCDPH substance abuse services (77).

The direct healthcare provider remains PORT Human Services. Program services offered include individual treatment, group treatment, and counseling sessions as well as a new, intensive outpatient program.

Table 223 presents figures for substance abuse treatment services utilized in FY2009 through FY2012.

- In FY2012 the total number of new clients was the highest during the period cited.
- The largest proportion of clients each year lived in Kill Devil Hills
- The category with the highest proportion of referrals each year was self-referral.
- Most (>60%) program clients had no health insurance.
- The highest average proportion of diagnoses for the period (31%) was in the category of alcohol abuse/dependence.

Table 223. Substance Abuse Treatment Service Figures, Dare County Department of Public Health (FY2009 through FY2012)

Category	FY2009	FY2010	FY2011	FY2012
Clients				
Average open clients per month	52	304	235	250
Total new clients	313	406	374	421
No. adults	*	369	303	354
% adults		91%	81%	85%
No. adolescents (12-17)	5	37	71	61
% adolescents		9%	19%	15%
Client Residence				
Kill Devil Hills	37%	37%	44%	35%
Roanoke Island	31%	16%	15%	21%
South Oregon Inlet	17%	16%	13%	12%
Nags Head	8%	5%	7%	9%
Kitty Hawk/Southern Shores/Duck	7%	15%	14%	19%
Wanchese	*	5%	5%	4%
Homeless	*	3%	2%	0%
Other	*	3%	0%	0%
Referral Source				
Self	45%	29%	37%	20%
TASC	10%	10%	5%	*
Dare County Department of Social Services	20%	14%	13%	12%
School	14%	5%	7%	7%
Medical Provider	4%	9%	8%	9%
Substance Abuse Treatment Center	*	4%	2%	11%
Parent/family member	3%	8%	10%	13%
East Carolina Behavioral Health	*	3%	3%	*
Criminal justice	*	5%	3%	17%
Juvenile justice	*	1%	3%	3%
Other (clergy, private counselor, etc.)	4%	11%	9%	8%
Visits				
Average client visits per month	247	483	305	427
Total client visits per year	2,965	5,804	3,664	4,738
Payer Sources				
Private insurance	34%	12%	16%	22%
Medicaid	1%	2%	5%	16%
Medicare	3%	2%	3%	6%
No insurance	62%	83%	75%	*
Sliding scale	*	*	*	56%
Primary Diagnosis				
Alcohol abuse/dependence	43%	21%	22%	38%
Opioid abuse/dependence	20%	7%	8%	22%
Cannabis abuse/dependence	17%	8%	8%	23%
Cocaine abuse/dependence	*	3%	6%	7%
Not determined yet	*	35%	55%	3%
Other (amphetamine, polysubstance abuse)	20%	14%	2%	7%

* Denotes numbers were not kept for the category that specific year.
Source: Dare County Department of Public Health Year End Report, FY2012.

Substance Use and Abuse among Youth

Drugs

The 2010 Dare County CHA described local Youth Risk Behavior Survey data from 2009, which revealed that alcohol use, cigarette use and marijuana use all began around age 13, and that the prevalence rates of use of those three substances among high school students in Dare County schools were 73%, 44%, and 48%, respectively (1).

As further described in the 2010 Dare County Community Health Assessment (1), Dare County Schools contracts with a vendor to conduct random drug testing among students in grades 7-12 who participate in "privileged activities." Privileged activities are extracurricular activities, interscholastic athletics, and campus parking. Also included are students whose parents "opt in" to the program.

The program has clear consequences for initial and subsequent positive tests. All positive tests result in notification of the student and his/her parent or guardian; school officials are notified only upon the second and third offenses. Other consequences relate to participation in privileged activities and school attendance:

- First Positive Test: Student may continue privileged activity if parent/guardian secures a physician's note; student is subject to mandatory retest.
- Second Positive Test: Student is ineligible to participate in privileged activity for 365 calendar days unless he/she complies with substance abuse assessment/counseling requirement.
- Third Positive Test: Student is ineligible to participate in privileged activity for at least 365 calendar days, but may regain eligibility after 365 days by satisfying substance abuse assessment/counseling plan, mandatory negative drug test, and providing a physician's note.

Table 224 presents outcomes of the random drug testing program from SY2006-07 through SY2011-12.

- The percentage of students in grades 7-12 participating in the program exceeded 82% in each of the three most recent periods cited.
- The percentage of positives and refusals rose every year from SY2006-07 to SY2009-10, and then leveled in SY2010-11 before falling 29% (from 14.5% to 10.3%) between SY2010-11 and SY2011-12.
- The percentages of first, second, and third positives all fell between SY2010-11 and SY2011-12.

Table 224. Dare County Schools Random Drug Testing Program Results (SY2006-2007 through SY2011-2012)

Outcome	SY2006-07	SY2007-08	SY2008-09	SY2009-10	SY2010-11	SY2011-12
Participation Rate, Grades 7-12	78%	86%	82%	83%	88%	83%
Positive/Refusal Rate	7.1%	9.4%	11.6%	14.6%	14.5%	10.3%
First Positive Rate	7.1%	7.0%	4.8%	6.6%	5.1%	4.5%
Second Positive Rate	0.5%	0.8%	1.6%	2.2%	2.9%	1.5%
Third Positive Rate	0.2%	0.4%	1.2%	1.2%	2.1%	1.8%

Source: Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health. Personal communication to Sheila Pfaender, Public Health Consultant, October 30, 2012.

Tobacco

As discussed previously in this report's description of DCDPH programs, the agency is a partner in the Peer Power initiative, a high school class provided in all Dare County high schools that educates students about healthy behaviors including nutrition, physical activity, and the harmful effects of tobacco use. A recent Peer Power evaluation found that students in the program exhibited healthier lifestyles, including abstaining from using tobacco products (28).

While there is no Dare County-specific data on youth tobacco use more recent than the 2009 YRBS, there is regional data through a youth tobacco survey conducted annually through the NC DPH Tobacco Prevention and Control Branch. Dare County is included among the 37 counties in the Branch's Eastern/Coastal Region (Region 1).

Table 225 presents results of the 2011 NC Youth Tobacco Survey conducted among middle school and high school students in Region 1.

- The data reveal that nearly 20% of current sixth-graders reported having ever used tobacco products, and the "ever" use of smoking products rose by grade.
- Current use of any kind of tobacco products was nearly 5% among sixth-graders and rose by grade throughout middle and high school.
- Higher proportions of middle-school students than high school students reported first using cigarettes before age 11, and the younger the middle school student, the higher the proportion.
- An average of nearly 70% of students overall reported media/advertising influence regarding tobacco, but an average of only 41% overall reported exposure to anti-tobacco education in school in the past year.
- An average of 61% of middle school students who were current smokers reported that they wanted to quit smoking cigarettes; among high school students who were current smokers an average of 43% reported they wanted to quit.

Table 225. North Carolina Youth Tobacco Survey Results, Region 1 (2011)

Topic/Behavior	Percent Response, by Grade						
	6	7	8	9	10	11	12
Ever used tobacco products, any kind	19.6	31.5	35.5	47.4	54.9	51.8	65.3
Currently use tobacco products, any kind	4.8	9.6	14.6	16.3	22.6	27.3	35.0
First used cigarettes before age 11	71.0	34.2	27.8	29.1	19.5	10.4	14.7
Report media/advertising influence regarding tobacco	70.1	70.1	72.6	70.7	68.4	73.6	68.5
Report exposure to anti-tobacco education in school in past year	48.1	48.2	44.5	51.3	40.2	26.8	26.4
Current smokers who want to stop smoking cigarettes	83.5	46.7	53.4	29.8	40.8	48.6	52.3

Source: Detailed Summary Tables-Eastern/Coastal Region (Region 1), NC Youth Tobacco Survey, 2011, Middle School and High School Tables. NC Department of Health and Human Services, Surveillance and Evaluation Team, Tobacco Prevention and Control Branch.

Other Reasons for Hospital Utilization

Hospital utilization data for the OBH has been interspersed throughout this report in connection with leading causes of death and major topics of morbidity. But there are significant numbers of hospital visits that do not relate to these major topics. Investigating these other visits gives insight into the broader range of health problems affecting people who live in Dare County.

Note that hospital utilization data is included to illustrate the kinds of health problems that bring Dare County residents to OBH, and is in no way intended as an assessment of hospital policies, procedures, or performance.

Emergency Department Admissions

Appendix A.1.5 presents a three-year summary of emergency department admissions of Dare County residents, by age group, in the highest numbers in each of the core ICD-9 Code categories for 2010, 2011, and 2012. Many of those admissions have already been discussed.

The following are highlights of admissions data on the most prominent diagnoses (i.e., highest numbers of admissions) *not* already discussed. The list, which presents total number of ED admissions for each diagnosis for the period 2010-2012, is organized by core ICD-9 Code category. Within a code category the diagnoses are arranged by highest to lowest number of cases. The detailed data from which this list was derived appears in Appendix A.1.5.

Endocrine and Metabolic Diseases (ICD-9 240-279)

- Dehydration: 183
- Gout: 104

Diseases of the Blood and Blood-Forming Organs (ICD-9 280-289)

- Unspecified anemia: 99

Diseases of the Nervous System and Sense Organs (ICD-9 320-389)

- Supperative and unspecified otitis media (middle ear infection): 529
- Migraine: 358
- Disorders of the external ear (e.g., “swimmer’s ear”): 246
- Disorders of the conjunctiva: 203
- Acute post-operative/chronic pain: 150
- Epilepsy and recurrent seizures: 68

Diseases of the Circulatory System (ICD-9 390-459)

Essential hypertension: 206

Diseases of the Respiratory System (ICD-9 460-519)

- Acute upper respiratory infections, multiple or unspecified sites: 1,094
- Acute pharyngitis: 481
- Acute bronchitis and bronchiolitis: 407
- Chronic sinusitis: 228

- Acute laryngitis and tracheitis: 139
- Acute sinusitis: 128
- Acute tonsillitis: 106

Diseases of the Digestive System (ICD-9 520-579)

- Constipation: 373
- Other and unspecified non-infectious gastroenteritis and colitis: 265
- Cholelithiasis (presence or formation of gallstones): 198
- Gastritis and duodenitis: 181
- Gastrointestinal hemorrhage: 171
- Diverticula of intestine (diverticulitis and diverticulosis): 169
- Diseases of the pancreas: 161
- Acute appendicitis: 128

Diseases of the Skin and Subcutaneous Tissue (ICD-9 680-709)

- Other cellulitis and abscess (excluding toe and finger): 1,054
- Contact dermatitis and other eczema: 186
- Urticaria: 138

Diseases of the Musculoskeletal System and Connective Tissue (ICD-9 710-739)

- Other and unspecified disorders of back: 1,573
- Other and unspecified disorders of joint: 886
- Disorders of muscle, ligament, fascia and other soft tissues: 622
- Other disorders of cervical neck region: 318

Symptoms, Signs and Ill-Defined Conditions (ICD-9 780-799)

- Abdominal pain: 1,408
- Nausea and vomiting: 838
- Headache (*excluding* tension headache and migraine): 701
- Other chest discomfort: 604
- Fever and other disturbances of temperature regulation: 576
- Chest pain, unspecified: 553
- Painful respiration: 511
- Syncope and collapse (fainting): 379
- Dizziness and giddiness: 315
- Symptoms involving urinary system: 237
- Cough: 199
- Other malaise and fatigue: 182
- Diarrhea: 181
- Rash and other non-specific skin eruption: 165
- Epistaxis (nosebleed and nasal hemorrhage): 129

Hospitalizations

Appendix A.2.5 presents a three-year summary of OBH inpatient hospitalizations of Dare County residents by core DRG Diagnosis categories for 2010, 2011, and 2012. Many of those hospitalizations have already been discussed.

Table 226 presents the 15 core DRG Diagnoses with the highest total number of discharges and the highest total number of hospitalization days for the entire period 2010 through 2012.

- Normal newborns accounted for the largest number of discharges, followed by vaginal delivery without complicating diagnoses, and diseases and disorders of the musculoskeletal system and connective tissue.
- Diseases and disorders of the musculoskeletal system and connective system accounted for the largest number of days of hospitalization, followed by diseases and disorders of the respiratory system, and normal newborns.

Table 226. Top 15 Hospitalization DRG Diagnoses, by Discharges and Days, OBH (2010-2012)

Rank	Diagnosis	Total Number of Discharges	Diagnosis	Total Number of Days
1	Normal newborn	705	D/d of musculoskeletal system/connective tissue	1,444
2	Vaginal delivery w/o complicating diagnoses	496	D/d of respiratory system	1,285
3	D/d of musculoskeletal system/connective tissue	459	Normal newborn	1,229
4	D/d of respiratory system	455	D/d of digestive system	1,188
5	Pregnancy, childbirth and the puerperium	435	Pregnancy, childbirth and the puerperium	983
6	D/d of digestive system	374	Vaginal delivery w/o complicating diagnoses	891
7	Neonate with other significant problems	308	Neonate with other significant problems	585
8	D/d of kidney/urinary tract	217	D/d of kidney/urinary tract	573
9	D/d of hepatobiliary system/pancreas	143	D/d of hepatobiliary system/.pancreas	370
10	D/d of circulatory system	128	D/d of circulatory system	285
11	Endocrine, nutritional and metabolic D/d	111	D/d of skin, subcutaneous tissue, breast	247
12	Vaginal delivery with complicating diagnoses	87	Endocrine, nutritional and metabolic D/d	235
13	D/s of nervous system	83	Vaginal delivery with complicating diagnoses	227
14	D/s of skin, subcutaneous tissue, breast	76	D/d of nervous system	221
15	Infections/parasitic D/d, systemic/unspecified	47	Infections/parasitic D/d, systemic/unspecified	111

Note: D/d = Diseases and disorders
Source: Appendix A.2.5

Appendix A.2.6 presents a similar but more detailed list of hospitalizations based on more finely divided DRG codes.

Surgeries

The OBH conducts both inpatient and outpatient surgery, and the following data for the period 2010 through 2012 is separated on that basis.

Appendix A.3.5 lists all OBH surgeries for 2010-2012 according to ICD-9 Procedure Codes. The figures below for leading numbers of surgical procedures were derived from that data.

Inpatient Surgical Procedures

The 10 most common inpatient surgical procedures at OBH for the period 2010-2012 were:

- Total knee replacement: 164
- Total hip replacement: 96
- Reduction of fracture and dislocation: 81
- Laparoscopic appendectomy: 45
- Laparoscopic cholecystectomy (gallbladder surgery): 31
- Esophagogastroduodenoscopy (EGD) with closed biopsy: 23
- Endoscopic ligation/destruction/occlusion of fallopian tubes: 20
- Low cervical caesarian section: 15
- Other endoscopy of small intestine: 14
- Total abdominal hysterectomy: 12

Outpatient Surgical Procedures

The 10 most common outpatient surgical procedures at OBH for the period 2010-2012 were:

- Extracapsular extraction of lens (cataract removal): 540
- Colonoscopy: 478
- Esophagogastroduodenoscopy (EGD) with closed biopsy: 187
- Laparoscopic cholecystectomy (gallbladder surgery): 181
- Dilation of urethra: 174
- Excision of semilunar cartilage of knee: 174
- Repair of hernia: 174
- Endoscopic polypectomy of large intestine: 158
- Diagnostic dilation and curettage of uterus: 133
- Reduction of fracture and dislocation: 116

CHAPTER FIVE: ENVIRONMENTAL DATA

The 2010 Dare County CHA process included the development of a comprehensive environmental assessment, contained in a whole separate volume of the CHA report (78). This section of the 2013 CHA report updates key elements presented in the 2010 document.

AIR QUALITY

Air Quality Index

Nationally, outdoor air quality monitoring is the responsibility of the Environmental Protection Agency (EPA). In NC, the agency responsible for monitoring air quality is the Division of Air Quality (DAQ) in the NC Department of Environment and Natural Resources (NC DENR).

The impact of air pollutants in the environment is described on the basis of emissions, exposure, and health risks. A useful measure that combines these three parameters is the EPA's Air Quality Index (AQI). The EPA monitors and catalogues AQI measurements at the county level, but not in all counties. There is no AQI monitoring station in or near Dare County.

Toxic Releases

Over 4 billion pounds of toxic chemicals are released into the nation's environment each year. The US Toxic Releases Inventory (TRI) program, created in 1986 as part of the Emergency Planning and Community Right to Know Act, is the tool the EPA uses to track these releases. Approximately 20,000 industrial facilities are required to report estimates of their environmental releases and waste generation annually to the TRI program office. These reports do not cover all toxic chemicals, and they omit pollution from motor vehicles and small businesses (79).

According to EPA data, in 2011 there was one TRI-releasing facility in Dare County: the Dare County Bombing Range in Stumpy Point, operated by the US Department of Defense, US Air Force. In 2011 this facility released 4,579 pounds of lead and lead compounds as production-related waste (80). This represented a 31% increase in releases since 2008, when the facility released 3,505 pounds of lead and lead compounds, as reported in the 2010 Dare County CHA (73). The 2010 Dare County CHA also listed a second facility reporting toxic releases in 2008—the US National Park Service at Cape Hatteras National Seashore—which did not report releases in 2011.

For perspective through comparison, neither Currituck County nor Hyde County reported TRI releases in 2011. The NC county with the highest volume of releases in 2011 was New Hanover, which reported over 5.5 *million pounds* of releases (76).

WATER QUALITY

Drinking Water Systems

The EPA is responsible for monitoring the safety of drinking water and water system violations of the federal Safe Drinking Water Act (SDWA). The EPA's Safe Drinking Water Information System (SDWIS) contains information about public water systems and their violations of EPA's drinking water regulations, as reported to EPA by the states. These regulations establish maximum contaminant levels, treatment techniques, and monitoring and reporting requirements to ensure that water systems provide safe water to their customers (81).

As of July 21, 2012, SDWIS listed 24 active water systems in Dare County. Seven were *community water systems* that together served 41,550 people. A community water system is one that serves at least 15 service connections used by year-round residents or regularly serves 25 year-round residents. This category includes municipalities, subdivisions and mobile home parks.

SDWIS also listed four non-transient, non-community water systems in Dare County that served a total of 488 people. These are water systems that serve the same people, but not year-round (e.g. schools that have their own water system).

And finally, SDWIS listed 13 transient, non-community water systems in Dare County that served a total of 2,988 people. This category includes water systems that do not consistently serve the same people (e.g. rest stops, campgrounds, gas stations).

The EPA records in SDWIS violations of drinking water standards reported to it by states. It records violations as either *health-based* (contaminants exceeding safety standards or water not properly treated) or *monitoring- or reporting-based* (system failed to complete all samples or sample in a timely manner, or had another non-health related violation).

Table 227 lists the active water systems in Dare County as of July 12, 2012. The table also includes any *health-based* violations for the period from 2000 through 2011.

- Since there is practically no usable surface water in Dare County, all water systems, whether private or municipal, draw from the same underground sources.
- Most health violations were for exceedances for coliforms or for the presence of trihalomethanes, and most violations occurred well in the past.

Table 227. Active Water Systems in Dare County
(As of July 12, 2012)

Type of System	Total Population Served	Primary Water Source Type	Health Violations 2000-2011
Community Water Systems			
Dare County-Cape Hatteras Water	5,486	Groundwater	MCL average for trihalomethanes (2006); MCL monthly TCR for trihalomethanes (2003)
Dare County-Rodanthe-Waves-Salvo Water System	1,808	Groundwater	None
Dare County-Stumpy Point Water System	269	Groundwater	None
Dare County Water System	22,766	Groundwater	MCL monthly TCR for Coliforms (2003)
Kill Devil Hills, Town of	6,800	Purchased groundwater	None
Manteo, Town of	1,296	Purchased groundwater	MCL monthly TCR for Coliforms (2003)
Nags Head, Town of	3,125	Purchased groundwater	None
Total	**41,550**		
Non-Transient, Non-Community Water Systems			
Assembly of God Church	63	Groundwater	MCL average for trihalomethanes (2009); MCL monthly TCR for Coliforms (2005)
DOT-NC State Shipyard	85	Groundwater	OCCT Study Recommendation for Lead and Copper Rule (2007)
Fort Raleigh-Cape Hatteras National Seashore	40	Groundwater	MCL monthly TCR for Coliforms (2002, 2005)
Wanchese Seafood Industry Park	300	Groundwater	None
Total	**488**		
Transient, Non-Community Water Systems			
Bethany United Methodist Church	140	Groundwater	None
Camp Hatteras	1,064	Groundwater	MCL monthly TCR for Coliforms (2005, 2009)
Dare County Shrine Club	25	Groundwater	None
Elizabethan Gardens	200	Groundwater	None
Elizabethan Inn	40	Groundwater	None
Fisherman's Wharf Restaurant	400	Groundwater	None
Frisco Campground	406	Groundwater	None
Hatchell's	100	Groundwater	None
Roanoke Island Baptist CHurch	30	Groundwater	None
The Refuge on Roanoke Island	163	Groundwater	None
Thickett Lump Marina	150	Groundwater	MCL monthly TCR for Coliforms (2006)
Walker Park	100	Groundwater	MCL monthly TCR for Coliforms (2010)
Whites Mobile Home Park	170	Groundwater	None
Total	**2,988**		

Source: *Safe Drinking Water Search for the State of North Carolina*. Retrieved on November 6, 2012 from US EPA Envirofacts Safe Drinking Water Information System (SDWIS) website: http://www.epa.gov/enviro/facts/sdwis/search.html.

The On-site Water Protection program of the DCDPH Environmental Health Division assures safe ground water to protect the public from illness caused by unsafe water. On the drinking water side, the agency's responsibility covers only private drinking water wells, not community water systems.

Table 228 summarizes DCDPH activities related to wells and well testing for FY2009 through FY2012. According to these data, fewer well permits were issued after FY2010 than before, perhaps as a result of the downturn in construction in the county during the ongoing economic recession. On the other hand, the number of well water samples collected by the agency was higher in the two most recent periods cited than in the first two years cited.

Table 228. Dare County Department of Public Health On-Site Water Protection Activities: Well Water
FY2009 through FY2012

Activity	FY2009	FY2010	FY2011	FY2012
Well Permits (new)	24	15	18	6
Well Permits (replacement)	24	18	16	11
Bacterial Water Samples	104	105	745	189
Other Water Samples	116	66	61	35

Source: Dare County Department of Public Health Year End Report, FY2012

The On-site Water Protection program also is responsible for activities associated with subsurface sewage collection, treatment, and disposal, with a focus on private septic systems, not municipal sewage systems.

Table 229 summarizes DCDPH activities related to septic systems for FY2009 through FY2012. According to these data, fewer applications were received in every subsequent year. New septic permits and installations bottomed in 2010 but have recovered since. Interestingly, in 2010 when new permits and new installations were lowest, repair permits and repair installations were highest.

Table 229. Dare County Department of Public Health On-Site Water Protection Activities: Septic Systems FY2009 through FY2012

Activity	FY2009	FY2010	FY2011	FY2012
Applications Received	1,239	1,144	1,125	1,177
Site Evaluations	3,024	2,794	2,191	2,324
Septic Permits				
New	148	117	135	140
Rewrite	111	70	101	91
Repair	431	464	411	418
System Installations				
New	154	121	132	144
Expansion	74	49	78	56
Repair	384	418	392	391
Type 4,5,6 Inspections	675	541	599	663
Complaint Investigations	57	67	42	35

Source: Dare County Department of Public Health Year End Report, FY2012.

NPDES Permits

Water pollution degrades surface waters making them unsafe for drinking, fishing, swimming, and other activities. As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into US waters. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

Table 230 lists the NPDES-permitted dischargers in Dare County and the destinations and permitted volumes of their discharges. Note that while four of the eleven permitted dischargers are private, commercial enterprises, the remaining seven are town or county government entities. The government entities are either water treatment plants or wastewater treatment plants.

Table 230. National Pollutant Discharge Elimination System (NPDES) Permitted Dischargers (November, 2012)

Facility	Type	Discharge Destination	Permitted Flow (Gal/Day)
Manteo WWTP	Wastewater Treatment Plant, Municipal, Large	Shallowbag Bay	1,000,000
Daniels Seafood / Nags Head	Industrial Process & Commercial	Roanoke Sound	Not limited
Etheridge Seafood Company	Industrial Process & Commercial	Mill Landing Creek (Mill Creek)	Not limited
Wanchese Harbor Project	Industrial Process & Commercial	Mill Landing Creek (Mill Creek)	270,000
Marine Maintenance Facility	Industrial Process & Commercial	Spencer Creek	3,000
Stumpy Point WWTP	Wastewater Treatment Plant, Municipal, <1MGD	Stumpy Point Bay	50,000
Rodanthe/Waves/Salvo Reverse Osmosis WTP	Water Treatment Plant	Blackmar Gut	Not limited
Cape Hatteras Reverse Osmosis WTP	Water Treatment Plant	Pamlico Sound	Not limited
Dare County North Reverse Osmosis WTP	Water Treatment Plant	Atlantic Ocean	1,420,000
Stumpy Point Reverse Osmosis WTP	Water Treatment Plant	Stumpy Point Bay	43,200
Skyco Regional WTP	Water Treatment Plant	Croatan Sound	192,000

SOLID WASTE

Solid Waste Disposal

Table 231 presents figures summarizing tonnage of solid waste disposed in Dare County, Currituck County, Hyde County and NC for the period FY2006-07 through FY2010-11.

- In FY2010-11, Dare County managed 71,630 tons of municipal solid waste (MSW) for a rate of 2.11 tons per capita. This tonnage represented a decrease of 5% from the per capita rate for FY1991-92 (the period customarily used for the base rate).
- During the same 2010-11 period the overall state per capita solid waste management rate was 7% less than the FY1991-92 base per capita rate.
- The per capita rate in Hyde County actually increased 87% between the base year and 2010-11.
- Note that with the exception of Currituck County in 2007-08, the number of MSW tons disposed decreased from year to year in all of the jurisdictions over the period cited *until* 2010-2011.

Table 231. Solid Waste Disposal FY2006-07 through FY2010-11

Location	MSW Tons Managed 1991-92	MSW Tons Disposed					Base Year Per Capita (1991-92)	Per Capita Rate 2010-11	% Change Base Year to 2010-11
		2006-07	2007-08	2008-09	2009-10	2010-11			
Dare County	51,299.83	110,979.61	93,059.29	70,063.87	67,041.30	71,629.96	2.23	2.11	-5.4
Currituck County	13,792.48	31,288.16	36,495.69	24,769.20	22,564.59	22,944.32	1.00	0.97	-3.0
Hyde County	2,761.59	6,863.76	6,461.19	5,657.61	4,830.84	5,408.64	0.50	0.94	88.0
State of NC	7,257,428.09	11,837,103.91	11,284,712.33	9,910,030.73	9,395,457.19	9,467,044.71	1.07	0.99	7.4

Source: NC Department of Environment and Natural Resources, Division of Waste Management, Solid Waste Program, NC Solid Waste Management Annual Report, Fiscal Years 2008-2009, 2009-2010, 2010-11; http://wastenot.enr.state.nc.us/swhome/AR08_09/AR08_09.pdf.

Table 232 presents the FY2010-11 County Waste Disposal Report for Dare County.

- The majority of Dare County's solid waste is transferred to or transported directly to landfills *outside* the county. The only solid waste landfilled locally is construction and demolition waste.

Table 232. County Waste Disposal Report, Dare County (FY2010-11)

Facility Name	Facility Type	Tons Received	Tons Transferred
Dare County C&D Landfill	Construction & Demolition Landfill	15,793.37	0.00
Soundside Recycling & Materials, Inc.	Materials Recovery TP	3,990.91	3,733.72
East Carolina Regional Landfill	Municipal Solid Waste Landfill	51,841.38	0.00
Currituck Transfer Station	Municipal Solid Waste Transfer Station	832.80	832.80
Dare County Transfer Station	Municipal Solid Waste Transfer Station	49,461.26	49,461.26
Pasquotank County Transfer Station	Municipal Solid Waste Transfer Station	505.08	505.08

Source: NC Department of Environment and Natural Resources, Division of Waste Management, Solid Waste Section. Solid Waste Management Annual Reports, FY2010-2011; County Waste Disposal Report Fiscal Year 2010-2011. http://portal.ncdenr.org/c/document_library/get_file?p_l_id=4649434&folderId=4667253&name=DLFE-38490.pdf.

Table 233 describes the capacity of Dare County's only landfill.

- Based on current fiscal year tons, the estimated remaining "life" capacity of the Dare County Construction and Demolition Landfill is 13.60 years from FY2010-11.

Table 233. Dare County Landfill Capacity (FY2010-11)

Facility Name	Open Date	Volume Overall	Volume Overall Remaining	Volume Overall Remaining in Tons	Volume Overall Remaining in Years (Fiscal Year Tons)
Dare County Construction & Demolition Landfill	11/15/95	1,571,800	634,233	215,129	13.60

Source: NC Department of Environment and Natural Resources, Division of Waste Management, Solid Waste Section. Solid Waste Management Annual Reports, FY2010-2011; Landfill Capacity Report Fiscal Year 2010-2011. http://portal.ncdenr.org/c/document_library/get_file?p_l_id=4649434&folderId=4667253&name=DLFE-41641.pdf.

LEAD

Lead is a highly toxic natural metal found in the environment in soil, dust, air, and water. Historically it was used for many years in common household products such as paint, batteries, makeup, and ceramics, as an additive to gasoline, and as an ingredient in pesticides. Currently, it is used in lead-acid batteries, fishing weights, marine paint, lead shot, bullets, and in the manufacture of some plastics. Recently, the electronics industry is using more lead in magnetic imaging equipment, transistors, night vision equipment, and energy generation (82).

People can get lead in their body if they put their hands or other objects covered with lead dust in their mouths, ingest paint chips, soil, or water that contains lead, or breathe in lead dust, especially during renovations that disturb painted surfaces. Children are at greatest risk.

The Children's Environmental Health Branch of DENR, via its Lead Poisoning Prevention Program, catalogues data on the results of blood lead level monitoring among children. Table 234 presents blood lead monitoring data for 2006-2010.

The data for Ages 1 and 2 are routine screening results; the data for Ages 6 Months to 6 Years represents children who have been tested because a lead poisoning hazard had been identified in their residential housing unit or their child-occupied facility (e.g., daycare facility). All results at the county level likely are unstable due to small numbers of cases.

Table 234. Blood Lead Assessment Results (2006-2010)

Location	Year	Ages 1 and 2					Ages 6 Months to 6 Years		
		Target Population	No. Tested	% Tested	No. ≥ 10µg/dL	% ≥ 10µg/dL	No. Tested	Confirmed 10-19 µg/dL	Confirmed ≥20 µg/dL
Dare County	2006	949	293	30.9	2	**0.7**	363	N/A	N/A
	2007	928	306	33.0	5	**1.6**	390	N/A	N/A
	2008	874	204	23.3	2	**1.0**	274	N/A	N/A
	2009	825	239	29.0	7	**2.9**	285	N/A	N/A
	2010	802	344	42.9	6	**1.7**	403	N/A	N/A
Currituck County	2006	521	214	41.1	2	**0.9**	309	2	N/A
	2007	498	183	36.7	1	**0.5**	257	N/A	N/A
	2008	511	180	35.2	2	**1.1**	254	N/A	N/A
	2009	489	162	33.1	N/A	**0.0**	246	N/A	N/A
	2010	448	188	42.0	1	**0.5**	270	N/A	N/A
Hyde County	2006	116	55	47.4	N/A	N/A	63	N/A	N/A
	2007	133	74	55.6	3	**4.1**	84	1	N/A
	2008	125	78	62.4	1	**1.3**	95	1	N/A
	2009	105	74	70.5	N/A	**0.0**	91	N/A	N/A
	2010	95	56	58.9	1	**1.8**	71	N/A	N/A
State of NC	2006	242,813	103,899	42.8	867	0.8	135,595	255	38
	2007	250,686	112,556	44.9	706	0.6	143,972	232	38
	2008	258,532	121,023	46.8	654	0.5	152,222	181	36
	2009	261,644	129,395	49.5	583	0.5	160,713	143	38
	2010	257,543	132,014	51.3	519	0.4	162,060	146	24

Source: NC DHHS, Division of Public Health, Environmental Health Section, Lead Surveillance Data, 2006-2010, Lead Surveillance Tables; http://deh.enr.state.nc.us/Children_Health/Lead/Surveillance_Data_Tables/surveillance_data_tables.html.

FOOD, LODGING AND INSTITUTIONAL SANITATION

Assuring proper sanitation in food and lodging establishments in Dare County is the responsibility of the Dare County Department of Public Health Environmental Health Services Division's Food and Lodging Program. Health Inspectors visit food and lodging establishments to enforce state and local governmental regulations. The Food and Lodging program administers 18 state-regulated programs including a variety of food and lodging establishments but also summer camps, meat markets, child day care facilities, school buildings, swimming pools and tattoo parlors.

Table 235 presents annual food, lodging and institutional sanitation activity summaries for FY2009 through FY2012.

- There were significant numbers of permits revoked or suspended in each year reported; each revocation or suspension would have been for cause.

Table 235. Dare County Department of Public Health Food, Lodging and Institutional Sanitation Activities Summary (FY2009-FY2012)

Activity	FY2009	FY2010	FY2011	FY2012
Inspections	1,458	1,342	1,667	1,415
Operation Closed Non-Permitted	25	43	24	22
Visit	304	475	386	366
Pre-Opening Construction Visit	137	58	91	71
Permit Issued	304	287	388	304
Permit Revoked	44	52	45	55
Permit Suspended	0	1	41	0
Permit Suspension Lifted	0	0	2	0
Plans Review	121	139	116	55
Foodborne Outbreak Investigation	0	0	1	0
Complaint Investigation	24	29	34	31
Telephone or Office Visit	229	427	476	393
Transitional Permit Issued	0	0	2	3
Transitional Permit Revoked/Suspended	0	0	0	0

Source: Dare County Department of Public Health Year End Report, FY 2012.

BUILT ENVIRONMENT

The term *built environment* refers to the human-made surroundings that provide the setting for human activity, ranging in scale from buildings and parks or green space to neighborhoods and cities. As often used the term also includes supporting infrastructure for those settings, such as the water supply, or the energy grid. In recent years, public health research has expanded the definition of built environment to include healthy food access, community gardens, recreational facilities, and the ease of getting around on foot or on bicycle.

Access to Grocery Stores and Farmers' Markets

Table 236 presents data on the availability of grocery stores.

- The number of grocery stores in Dare County decreased from 18 to 17 between 2007 and 2009.

Table 236. Availability of Grocery Stores (2007 and 2009)

Location	Grocery Stores					
	2007		2009		% Change (2007-2009)	
	#	# per 1,000 Population	#	# per 1,000 Population	#	# per 1,000 Population
Dare County	18	0.53	17	0.50	-5.50	-6.31
Currituck County	9	0.38	9	0.38	0.00	-1.43
Hyde County	3	0.58	1	0.20	-66.66	-66.67
State of NC	n/a	n/a	n/a	n/a	n/a	n/a

Source: *Grocery Stores.* U.S. Department of Agriculture Economic Research Service, Your Food Environment Atlas website: http://ers.usda.gov/FoodAtlas/.

Table 237 presents data on the availability of farmers' markets in 2009 and 2012.

- There were no farmers' markets in any of the three counties in 2009; one opened in Dare County in 2012.

Table 237. Availability of Farmers' Markets (2009 and 2012)

Location	Farmers' Markets					
	2009		2012		% Change (2009-2012)	
	#	# per 1,000 Population	#	# per 1,000 Population	#	# per 1,000 Population
Dare County	0	0.00	1	0.03	n/a	n/a
Currituck County	0	0.00	0	0.00	0.00	0.00
Hyde County	0	0.00	0	0.00	0.00	0.00
State of NC	n/a	n/a	n/a	n/a	n/a	n/a

Source: *Farmers' Markets.* U.S. Department of Agriculture Economic Research Service, Your Food Environment Atlas website: http://ers.usda.gov/FoodAtlas/.

Access to Fast Food Restaurants

Table 238 presents data on the availability of fast food restaurants.

- There were 67 fast food restaurants in Dare County in both 2007 and 2009.

Table 238. Availability of Fast Food Restaurants (2007 and 2009)

Location	Fast Food Restaurants					
	2007		2009		% Change (2007-2009)	
	#	# per 1,000 Population	#	# per 1,000 Population	#	# per 1,000 Population
Dare County	67	1.97	67	1.96	0.00	-0.80
Currituck County	24	1.01	22	0.91	-8.33	-9.64
Hyde County	1	0.20	1	0.20	0.00	-0.32
State of NC	n/a	n/a	n/a	n/a	n/a	n/a

Source: *Fast Food Restaurants.* U.S. Department of Agriculture Economic Research Service, Your Food Environment Atlas website: http://ers.usda.gov/FoodAtlas/.

Access to Recreational Facilities

Table 239 presents data on the availability of recreational and fitness facilities in 2007 and 2009.

- There were six recreation and fitness facilities in Dare County in 2007 and five in 2009.

Table 239. Availability of Fast Food Restaurants (2007 and 2009)

Location	Recreation and Fitness Facilities					
	2007		2009		% Change (2007-2009)	
	#	# per 1,000 Population	#	# per 1,000 Population	#	# per 1,000 Population
Dare County	6	0.18	5	0.15	-16.66	-17.33
Currituck County	3	0.13	2	0.09	-33.33	-34.28
Hyde County	1	0.20	1	0.20	0.00	-0.32
State of NC	n/a	n/a	n/a	n/a	n/a	n/a

Source: *Physical Activity Levels and Outlets.* U.S. Department of Agriculture Economic Research Service, Your Food Environment Atlas website: http://ers.usda.gov/FoodAtlas

CHAPTER SIX: HEALTHY CAROLINIANS OF THE OUTER BANKS

Facilitated by the DCDPH, the Healthy Carolinians of the Outer Banks (HCOB) partnership has input and representation from over twenty local organizations and agencies. The Healthy Carolinians process supports the community in mobilizing people and resources to address community health challenges. Over the past eleven years, HCOB has played a significant role in addressing priority health concerns and bringing many new resources and organizations to fruition within Dare County.

TASK FORCES

The DCDPH, through the HCOB, is committed to aligning with Healthy North Carolina 2020 to establish Dare County as the healthiest county in NC through trusted, innovative leadership and community collaboration. Following the 2010 Community Health Assessment, the Healthy Carolinian Partnership established task forces to address the following health issues that align with the Healthy North Carolina 2020 Objectives:

1. Obesity Prevention
2. Access to Health Care
3. Flu and Pneumonia Prevention
4. Youth Risk Factors

Healthy Weight Task Force

The HCOB Healthy Weight Task Force supports the Healthy NC 2020 objective to increase the percentage of High School Students who are neither overweight nor obese.

Objective	Original Baseline	Current Status
By 2014 reduce the percentage of overweight 2-18 year olds in Dare County from 16.8% to 15% (2008 NC-NPASS).	16.8% of 2-18 year olds in Dare County are overweight	Statistics are improving and as of 2009, 15.7% of 2-18 year olds in Dare County are overweight (2009 NC-NPASS).

Strategies

- The Task Force has completed a thorough analysis of the BMI data collected from all Dare County Schools for Kindergarten, 3rd, and 6th grade. It appears that local prevalence of overweight and obesity among youth is declining. The data has revealed an opportunity to work with a specific target group in our community in order to improve health among that population and have a great impact on our overall childhood obesity rates.
- The Task Force is also working to complete a Best Practice Inventory for Dare County using the May 2012 Institute of Medicine Recommendations "Accelerating Progress in Obesity Prevention". This group is almost finished with the inventory, looking at assets and opportunities.

- Combined, the BMI data and the best practice inventory will help guide the task force into 2013.

2012 Healthy Weight Task Force Accomplishments

- The HCOB Healthy Weight Task Force was recognized for School Banner Campaign at the Dare County Board of Education Meeting on Tuesday, October 9th 2012.

Access to Health Care Task Force

The Access to Health Care Task Force aligns with the Cross-Cutting area of HealthyNC 2020 objectives, which addresses life expectancy, self-reported health, and uninsured individuals. This taskforce continues to work hard to assure health care services to all residents of Dare County.

Objective	Original Baseline	Current Status
Connect an additional 400 residents/year who are un/underinsured to primary care services.	In 2010, the Community Care Clinic of Dare County served 611 unduplicated patients who were uninsured.	Since 2005, the Community Care Clinic of Dare County (CCCD) has served 2,600 clients who were uninsured. CCCD has continued to increase the number of individuals it serves. As of August 2012, the clinic has seen 698 unduplicated patients who were uninsured.

2012 Access to Health Care Task Force Accomplishments

- 2012 NC MOM Dental Clinic – In collaboration with the North Carolina Dental Society, the 2012 NC MOM event was held on November 2nd and 3rd, 2012. The initiative served over 647 patients and provided 3,570 services. In addition to dental services, 350 flu shots were also provided at the event.
- Provided support to Project Health Access, a new DCDPH initiative to improve access to healthcare for uninsured or low income adults residing in Dare County.

Flu and Pneumonia Prevention Task Force

The 2010 Community Health Assessment found a significant number of deaths classified as Pneumonia and/or Influenza-related, with the 2010 mortality rate of 49.8/100,000 being 145% higher than the NC average of 20/100,000. The Flu and Pneumonia Prevention Task Force aligns with the ‘Healthy NC 2020 Focus Area and works to support the Healthy NC 2020 Objective 2: Reduce the pneumonia and influenza mortality rate (per 100,000 population).

Objective	Original Baseline	Current Status
Increase the flu vaccination rate in Dare county by 5% by 2014.	Flu vaccination rate is unknown – to be determined via data collection Pneumonia/Flu mortality rate average between 2004-2008 was 49.8 deaths/100,000 population	There is currently not an umbrella entity that tracks the number of County flu vaccinations. Over the past three years, the DCDPH has seen a decrease in the number of flu vaccination rates provided through its clinics. This is not an indication that flu vaccination rates have decreased. The County now has a cadre of service sites offering the flu vaccine, including pharmacies, private physicians, and hospitals. This increase in availability of the vaccine is a positive reflection of the community wide initiatives. Although there is currently no tracking system established to accurately monitor this indicator, the DCDPH is working to identify ways to create and implement a tracking system.

2012 Flu and Pneumonia Task Force Accomplishments

- For the 2011-2012 fiscal year, DCDPH provided 2,549 flu shots to clients, 50% of which were provided free of charge.

Youth Risk Factors Task Force

The Youth Task Force of HCOB focuses on a multitude of cross-cutting issues that affect youth in our community. The Task Force works closely with local youth-led community groups and local partners to identify and address factors that negatively influence the well-being of youth in Dare County.

Objective	Original Baseline	Current Status
By 2015, reduce the percentage of Dare County High School Students who have seen bullying on campus by 20%.	66% of Dare County students had witnessed bullying on school property (2010 Community Health Assessment).	Updated data for specific indicator is unavailable, but the CDC's 2011 Youth Behavior Surveillance System provides some insight into bullying: • Nationwide, 20.1% of students had been bullied on school property during the 12 months before the survey. • Nationwide, 16.2% of students had been electronically bullied, including being bullied through e-mail, chat rooms, instant messaging, websites, or texting[7].
By 2015, reduce the 5-year rate of acts of school crime and violence from an average of 8.04/1,000 to the state average of 7.74/1,000.	An average of 8.04 acts of school crime and violence per 1,000 students over a 5-year period (2010 Community Health Assessment).	NC State 2010-2011 average is at 7.95 acts per 1,000 students (K-12). NC State 2010-2011 average is at 14.23 acts per 1,000 students (High School only). There were 12.95 acts of school crime and violence per 1,000 students reported in 2009-2010 in Dare County[3].
By 2015, reduce the rate of positive + refusal random drug tests from 14.6% to 10% or less.	14.6% of random drug tests in school were either positive or refused (2010 Community Health Assessment).	10.3% of random drug tests in school were either positive or refused (2011-2012 Dare County School Report Card).

2012 Youth Issues Task Force Accomplishments

Over the past year, there has been a 29% decrease in tests resulting in positives and refusals. Dare County maintains a significantly higher average than National average rate of 2.5%, but the program has seen a decline in first positive results, indicating DCDPH preventive impact on the target population. A decline of second and third positives indicates continuing impact of early interventions, and a 53% reduction in refusals indicates increased acceptance of the program by students and parents. Of important note is the decrease in positive tests results over the program lifespan. This has meant fewer mandatory retests and has saved the Dare County School District $2,660.00.

APPENDICES

Appendix A – The Outer Banks Hospital Utilization Data

Appendix A.1.1: Number of Emergency Department Visits, by Town
Appendix A.1.2: Number of Emergency Department Visits, by Age Group
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Appendix A.2.1: Inpatient Hospitalizations, by Town
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Appendix A.2.5: Inpatient Hospitalizations, by DRG Code
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Appendix A.3.2: Number of Surgeries, by Age Group
Appendix A.3.2: Number of Surgeries, by Race/Ethnicity
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Appendix B – Dare County Department of Public Health Utilization Data

Appendix B.1: Program Outcomes and Services
Appendix B.2.1: Patient Demographics by Program, by Age
Appendix B.2.2: Patient Demographics by Program, by Race
Appendix B.2.3: Patient Demographics by Program, by Payer

APPENDIX A – THE OUTER BANKS HOSPITAL UTILIZATION DATA

Appendix A.1.1. Number of Emergency Department Visits, by Town

Location	2010	2011	2012
Beaches	**6,899**	**6,744**	**7,254**
Kill Devil Hills	4,024	3,959	4,285
Kitty Hawk	1,846	1,800	1,923
Nags Head	1,029	985	1,046
Currituck County	**1,915**	**1,926**	**2,036**
Aydlett	55	62	56
Barco	36	41	27
Coinjock	61	27	30
Corolla	106	110	97
Currituck	12	15	12
Grandy	674	614	610
Harbinger	158	143	151
Jarvisburg	225	239	269
Knotts Island	1	5	3
Maple	4	3	7
Moyock	69	68	79
Point Harbor	120	130	164
Poplar Branch	93	89	98
Powels Point	301	380	433
Hatteras Island	**1,015**	**1,007**	**1,151**
Avon	203	207	242
Buxton	370	372	446
Frisco	147	142	158
Hatteras	87	90	82
Rodanthe	139	134	149
Salvo	44	40	45
Waves	25	22	29
Mainland	**4,233**	**4,124**	**4,308**
Manns Harbor	620	570	626
Manteo	2,694	2,670	2,857
Stumpy Point	85	76	48
Wanchese	834	808	777
Ocracoke	**112**	**75**	**85**
Ocracoke	112	75	85
Grand Total	**14,174**	**13,876**	**14,834**

Source: The Outer Banks Hospital

Appendix A.1.2. Number of Emergency Department Visits, by Age Group

Age Group	2010	2011	2012	Total
Adult	9,059	8,844	9,427	27,330
Pediatric	2,538	2,425	2,662	7,625
Senior	2,577	2,607	2,745	7,929
Grand Total	**14,174**	**13,876**	**14,834**	**42,884**

Adult = Age 18-64
Pediatric = Age 0-17
Senior = Age 65 and older
Source: The Outer Banks Hospital

Appendix A.1.3. Number of Emergency Department Visits, by Race/Ethnicity

Race/Ethnicity	2010	2011	2012	Total
Asian	44	53	37	134
Black	870	885	946	2,701
Hispanic	773	691	739	2,203
Indian (American or Alaskan)	43	33	37	113
Other	191	190	181	562
Unknown	5	5	11	21
White	12,248	12,019	12,883	37,150
Grand Total	**14,174**	**13,876**	**14,834**	**42,884**

Source: The Outer Banks Hospital

Appendix A.1.4. Number of Emergency Department Visits, by Payer

Payer	2010	2011	2012	Total
Agencies	81	65	70	216
CHAMPUS	313	280	267	860
Commercial/Managed Care	3,739	3,479	3,434	10,652
Medicaid	3,176	3,069	3,653	9,898
Medicare	3,130	3,271	3,390	9,791
Self-Pay	3,520	3,513	3,791	10,824
Workman's Compensation	214	199	230	643
Grand Total	**14,174**	**13,876**	**14,834**	**42,884**

Source: The Outer Banks Hospital

Appendix A.1.5: Number of Emergency Department Visits, by ICD-9 Diagnosis Code
(Selected Diagnoses, 2010-2012

ICD-9 Code	Diagnosis Description	2010				2011				2012				Grand Total
		Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	
001-139	**Infectious and Parasitic Diseases**	**106**	**114**	**14**	**234**	**127**	**107**	**29**	**263**	**120**	**135**	**32**	**287**	**784**
003-009	*Intestinal diseases*	2	8	1	11	2	9	8	19	4	13	10	27	57
034	*Streptococcal sore throat and scarlet fever*	84	46	0	130	69	42	0	111	53	36	0	89	330
038	*Septicemia*	0	1	4	5	0	6	11	17	0	9	8	17	39
052	*Chickenpox*	4	2	0	6	6	1	0	7	6	1	0	7	20
053	*Herpes zoster (shingles)*	0	11	5	16	1	12	4	17	0	16	8	24	57
057	*Viral exanthemata*	4	2	0	6	6	0	0	6	13	0	0	13	25
075	*Infectious mononucleosis*	1	3	0	4	7	1	0	8	4	4	0	8	20
079.6	*Respiratory syncytial virus*	0	0	0	0	2	0	0	2	9	2	0	11	13
079.99	*Unspecified viral infections*	1	3	0	4	3	6	0	9	10	9	0	19	32
112	*Candidiasis (thrush)*	0	10	0	10	6	10	1	17	5	3	6	14	41
133	*Ascariasis (scabies, chiggers)*	2	3	0	5	2	5	0	7	2	5	0	7	19
140-239	**Neoplasms**	**0**	**26**	**30**	**56**	**0**	**33**	**48**	**81**	**0**	**22**	**22**	**44**	**181**
162	*Malignant neoplasm of trachea, bronchus and lung*	0	3	9	12	0	8	16	24	0	1	8	9	45
240-279	**Endocrine and Metabolic Diseases**	**6**	**179**	**97**	**282**	**23**	**192**	**115**	**330**	**18**	**172**	**115**	**305**	**917**
250	*Diabetes mellitus*	0	63	25	88	0	61	21	82	0	66	30	96	266
274	*Gout*	0	27	9	36	0	16	14	30	0	29	9	38	104
276.51	*Dehydration*	5		42	47	21		53	74	12		50	62	183
280-289	**Diseases of the Blood and Blood-Forming Organs**	**5**	**18**	**27**	**50**	**8**	**29**	**39**	**76**	**6**	**33**	**35**	**74**	**200**
285	*Other and Unspecified Anemias*	0	10	18	28	0	11	18	29	0	21	21	42	99
290-319	**Mental, Behavioral and Neurodevelopmental Disorders**	**30**	**458**	**61**	**549**	**26**	**467**	**40**	**533**	**34**	**530**	**54**	**618**	**1,700**
291	*Alcohol-induced mental disorders*	1	11	1	13	0	8	1	9	0	18	2	20	42
292	*Drug-induced mental disorders*	0	17	1	18	0	19	2	21	0	19	1	20	59
296	*Episodic mood disorders (incl. bipolar disorder)*	2	31	3	36	3	24	1	28	5	32	0	37	101
298	*Other nonorganic and unspecified psychoses*	0	16	5	21	0	8	2	10	0	18	5	23	54
300	*Anxiety, dissociative and somatoform disorders*	3	111	17	131	5	109	14	128	8	109	18	135	394
303	*Alcohol dependence syndrome*	0	78	6	84	0	50	2	52	0	64	1	65	201
304	*Drug dependence*	1	26	0	27	0	31	0	31	0	27	0	27	85
305	*Non-dependent abuse of drugs*	9	91	1	101	2	142	3	147	8	152	9	169	417
311	*Depressive disorder, not elsewhere classified*	6	43	6	55	9	42	4	55	5	48	6	59	169

Appendix A.1.5. Continued

ICD-9 Code	Diagnosis Description	2010				2011				2012				Grand Total
		Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	
320-389	**Diseases of the Nervous System and Sense Organs**	**216**	**420**	**44**	**680**	**235**	**371**	**64**	**670**	**247**	**362**	**64**	**673**	**2,023**
338.18	*Acute post-operative pain*	2	19	4	25	1	17	4	22	0	22	7	29	76
338.2	*Chronic pain*	0	24	3	27	0	15	3	18	0	27	2	29	74
345	*Epilepsy and recurrent seizures*	3	15	0	18	4	19	3	26	2	17	5	24	68
346	*Migraine*	1	148	5	154	2	95	4	101	1	98	4	103	358
372	*Disorders of the conjunctiva*	29	31	4	64	31	27	2	60	32	38	9	79	203
380	*Disorders of the external ear*	25	47	1	73	31	62	6	99	31	35	8	74	246
382	*Supperative and unspecified otitis media*	139	40	2	181	140	30	0	170	153	24	1	178	529
390-459	**Diseases of the Circulatory System**	**3**	**226**	**309**	**538**	**1**	**223**	**303**	**527**	**2**	**250**	**302**	**554**	**1,619**
401	*Essential hypertension*	1	45	29	75	0	40	20	60	0	40	31	71	206
410-414	***Ischemic heart disease***	***1***	***83***	***195***	***279***	***1***	***106***	***193***	***300***	***0***	***105***	***169***	***274***	***853***
410	*Acute myocardial infarction*	0	9	23	32	0	9	19	28	0	13	21	34	94
411	*Other acute and subacute forms of ischemic heart disease*	0	9	8	17	0	9	5	14	0	8	4	12	43
427	*Cardiac dysrhythmia*	1	47	87	135	0	59	91	150	0	61	84	145	430
428	*Heart failure*	0	6	68	74	0	18	58	76	0	9	47	56	206
430-438	***Cerebrovascular disease***	***1***	***31***	***54***	***86***	***0***	***22***	***56***	***78***	***1***	***26***	***48***	***75***	***239***
434	*Occlusion of cerebral arteries*	0	17	24	41	0	11	34	45	0	9	23	32	118
435	*Transient cerebral ischemia*	0	11	21	32	0	4	15	19	1	11	17	29	80
453.4	*Acute venous embolism and thrombosis of lower extremity*	0	18	11	29	0	14	8	22	0	25	12	37	88
460-519	**Diseases of the respiratory system**	**594**	**824**	**303**	**1,721**	**488**	**769**	**247**	**1,504**	**544**	**771**	**269**	**1,584**	**4,809**
461	*Acute sinusitis*	6	24	2	32	15	71	2	88	1	6	1	8	128
462	*Acute pharyngitis*	65	99	2	166	52	87	5	144	74	92	5	171	481
463	*Acute tonsillitis*	9	19	0	28	15	18	0	33	21	24	0	45	106
464	*Acute laryngitis and tracheitis*	49	2	1	52	38	3	0	41	39	7	0	46	139
465.9	*Acute upper respiratory infections, multiple or unspecified sites*	227	134	12	373	176	132	15	323	241	142	15	398	1,094
466	*Acute bronchitis and bronchiolitis*	55	82	16	153	41	73	14	128	46	68	12	126	407
473	*Chronic sinusitis*	19	69	10	98	4	42	0	46	11	66	7	84	228
480-488	***Pneumonia and Influenza***	***89***	***114***	***91***	***294***	***64***	***100***	***76***	***240***	***48***	***86***	***86***	***220***	***754***
486	*Pneumonia, organism unspecified*	40	79	89	208	32	70	71	173	41	79	81	201	582
487	*Influenza*	39	26	1	66	19	23	2	44	2	4	2	8	118

Appendix A.1.5. Continued

ICD-9 Code	Diagnosis Description	2010				2011				2012				Grand Total
		Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	
490-496	***Chronic Obstructive Pulmonary Disease/Allied Conditions***	***46***	***227***	***134***	***407***	***51***	***170***	***105***	***326***	***52***	***233***	***101***	***386***	***1,119***
490	*Bronchitis, not specified as acute or chronic*	12	80	13	105	4	40	9	53	10	78	21	109	267
491	*Chronic bronchitis*	0	41	88	129	0	53	72	125	0	77	48	125	379
493	*Asthma*	34	91	7	132	47	62	10	119	42	67	10	119	370
496	*Chronic airway obstruction*	0	15	25	40	0	15	13	28	0	11	20	31	99
520-579	**Diseases of the Digestive System**	**77**	**710**	**199**	**986**	**84**	**728**	**206**	**1,018**	**134**	**824**	**222**	**1,180**	**3,184**
520-525	*Disorders of the teeth and gums*	10	230	1	241	11	160	4	175	22	235	4	261	677
535	*Gastritis and duodenitis*	4	41	3	48	3	60	10	73	3	55	2	60	181
540	*Acute appendicitis*	5	38	3	46	6	33	4	43	9	29	1	39	128
558	*Other and unspecified noninfectious gastroenteritis and colitis*	12	53	12	77	13	65	14	92	16	64	16	96	265
562	*Diverticula of intestine (diverticulosis and diverticulitis)*	0	44	23	67	0	35	12	47	0	37	18	55	169
564	*Constipation*	29	43	22	94	35	65	35	135	55	52	37	144	373
574	*Cholelithiasis (presence or formation of gallstones)*	1	43	14	58	0	47	14	61	0	53	26	79	198
577	*Diseases of the pancreas*	0	42	15	57	0	31	11	42	0	52	10	62	161
578	*Gastrointestinal hemorrhage*	1	26	27	54	1	28	30	59	2	24	32	58	171
580-629	**Diseases of the Genitourinary System**	**56**	**604**	**175**	**835**	**87**	**607**	**202**	**896**	**57**	**611**	**228**	**896**	**2,627**
584	*Acute kidney failure*	0	6	13	19	0	8	12	20	0	2	6	8	47
590	*Infections of kidney*	1	25	4	30	6	38	8	52	4	44	3	51	133
592	*Calculus of kidney and ureter (kidney stones)*	3	127	22	152	0	132	19	151	1	125	25	151	454
595	*Acute cystitis*	1	32	12	45	27	77	33	137	1	13	0	14	196
599	*Urinary tract infection, site not specified*	39	196	115	350	36	160	103	299	36	207	169	412	1,061
630-679	**Complications of Pregnancy, Childbirth or the Puerperium**	**3**	**179**	**0**	**182**	**1**	**145**	**0**	**146**	**11**	**241**	**0**	**252**	**580**
634	*Spontaneous abortion*	0	19	0	19	0	29	0	29	0	31	0	31	79
640	*Hemorrhage in early pregnancy*	0	52	0	52	0	47	0	47	1	62	0	63	162
680-709	**Diseases of the Skin and Subcutaneous Tissue**	**106**	**441**	**78**	**625**	**106**	**399**	**63**	**568**	**124**	**438**	**73**	**635**	**1,828**
682	*Other cellulitis and abscess (excluding finger and toe)*	37	278	48	363	44	261	41	346	45	264	36	345	1,054
692	*Contact dermatitis and other eczema*	16	50	2	68	16	33	4	53	21	36	8	65	186
708	*Urticaria*	23	26	4	53	10	26	6	42	15	21	7	43	138

Appendix A.1.5. Continued

ICD-9 Code	Diagnosis Description	2010				2011				2012				Grand Total
		Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	
710-739	**Diseases of the Musculoskeletal System/Connective Tissue**	**59**	**950**	**165**	**1,174**	**73**	**955**	**169**	**1,197**	**117**	**1,049**	**196**	**1,362**	**3,733**
719	*Other and unspecified disorders of joint*	30	202	51	283	30	207	46	283	51	217	52	320	886
723	*Other disorders of cervical (neck) region*	1	95	9	105	2	77	18	97	6	97	13	116	318
724	*Other and unspecified disorders of back*	9	429	59	497	12	453	58	523	11	486	56	553	1,573
728-729	*Disorders of muscle, ligament, fascia and other soft tissues*	17	157	32	206	22	140	21	183	40	148	45	233	622
780-799	**Symptoms, Signs and Ill-Defined Conditions**	**484**	**1,766**	**577**	**2,827**	**385**	**1,586**	**590**	**2,561**	**455**	**1,739**	**611**	**2,805**	**8,193**
780.2	*Syncope and collapse*	9	74	46	129	6	53	50	109	19	66	56	141	379
780.4	*Dizziness and giddiness*	2	49	38	89	3	68	37	108	4	67	47	118	315
780.6	*Fever and other disturbances of temperature regulation*	175	47	16	238	124	39	21	184	105	33	16	154	576
780.79	*Other malaise and fatigue*	0	39	32	71	2	31	29	62	3	30	16	49	182
782.1	*Rash and other non-specific skin eruption*	24	34	0	58	20	29	3	52	25	24	6	55	165
784	*Headache (excluding tension headache and migraine)*	20	209	25	254	13	161	18	192	24	204	27	255	701
784.7	*Epistaxis (nosebleed, nasal hemorrhage)*	9	15	25	49	6	13	17	36	6	16	22	44	129
786.2	*Cough*	40	32	8	80	18	23	9	50	25	22	22	69	199
786.5	*Chest pain, unspecified*	3	41	32	76	3	118	58	179	6	198	94	298	553
786.52	*Painful respiration*	10	126	29	165	11	131	33	175	12	127	32	171	511
786.59	*Other chest discomfort*	0	214	84	298	0	128	47	175	0	96	35	131	604
787.01-787.03	*Nausea and/or vomiting*	78	200	40	318	70	156	24	250	88	151	31	270	838
787.91	*Diarrhea*	18	29	9	56	14	22	24	60	23	30	12	65	181
788	*Symptoms involving urinary system*	10	49	16	75	6	52	28	86	9	41	26	76	237
789	*Abdominal pain*	42	374	55	471	40	334	58	432	56	399	50	505	1,408

Appendix A.1.5. Continued

ICD-9 Code	Diagnosis Description	2010				2011				2012				Grand Total
		Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	Ped	Adult	Senior	Total	
800-999	**Injury and Poisoning**	**728**	**1,904**	**451**	**3,083**	**705**	**1,944**	**450**	**3,099**	**705**	**1,916**	**475**	**3,096**	**9,278**
840-848	*Sprains and strains of joints and adjacent muscles*	105	435	43	583	109	482	38	629	100	439	35	574	1,786
850-854	*Intracranial injury without skull fracture (includes concussion)*	23	33	8	64	16	27	11	54	12	29	9	50	168
860-869	*Internal injury of thorax, abdomen and pelvis*	1	8	2	11	2	13	1	16	1	4	5	10	37
870-897	*Open wounds*	161	382	93	636	157	401	81	639	164	401	78	643	1,918
920-924	*Contusion with intact skin surface*	133	264	71	468	104	238	67	409	104	225	90	419	1,296
925-929	*Crushing injury*	1	1	0	2	0	1	0	1	1	3	0	4	7
940-949	*Burns*	9	23	3	35	9	28	2	39	2	37	1	40	114
958-959	*Certain traumatic complications and unspecified injuries*	63	121	24	208	63	95	20	178	80	134	28	242	628
960-979	*Poisoning by drugs, medicinal and biological substances*	11	36	6	53	15	47	5	67	16	40	3	59	179
980-989	*Toxic effects of substances chiefly nonmedicinal as to source*	5	38	9	52	13	36	4	53	2	33	2	37	142
990-995	*Other and unspecified effects of external causes*	15	64	11	90	25	91	13	129	24	91	22	137	356
996-999	*Complications of surgical and medical care, not elsewhere*	2	55	25	82	1	30	34	65	2	44	32	78	225
V01-V91	**Factors Influencing Health Status/Contact with Health Services**	**57**	**239**	**45**	**341**	**72**	**285**	**42**	**399**	**81**	**328**	**47**	**456**	**1,196**
V58.30-V58.32	*Attention to dressings and sutures*	8	48	9	65	14	59	10	83	27	69	19	115	263
V58.80-V58.89	*Other specified procedures and aftercare*	0	2	1	3	3	25	1	29	7	40	7	54	86
V62.84	*Suicidal ideation*	2	20	0	22	5	23	1	29	4	10	0	14	65
V67.59	*Following other treatment*	10	73	14	97	9	45	8	62	5	15	1	21	180
V68.1	*Encounters for administrative purposes*	0	37	5	42	2	59	1	62	4	141	4	149	253
Total Emergency Department Admissions		**2,538**	**9,059**	**2,577**	**14,174**	**2,425**	**8,844**	**2,607**	**13,876**	**2,662**	**9,427**	**2,745**	**14,834**	**42,884**

Ped (Pediatric) = Age 0-17
Adult = Age 18-64
Senior = Age 65 and older
Source: The Outer Banks Hospital

Appendix A.2.1. Inpatient Hospitalizations, by Town

Location	2010		2011		2012	
	Discharges	Days	Discharges	Days	Discharges	Days
Beaches	**673**	**1,634**	**719**	**1,720**	**751**	**1,843**
Kill Devil Hills	371	872	396	922	390	913
Kitty Hawk	192	472	212	495	255	648
Nags Head	110	290	111	303	106	282
Currituck County	**169**	**356**	**158**	**361**	**154**	**349**
Aydlett	8	20	13	27	6	12
Barco	4	5	3	9	7	17
Coinjock	3	5			1	3
Corolla	21	41	6	18	8	19
Grandy	48	100	37	92	34	81
Harbinger	11	26	18	40	16	34
Jarvisburg	24	49	30	69	14	29
Maple	1	3			2	2
Moyock	2	4	4	7	2	4
Point Harbor	8	15	15	42	13	34
Poplar Branch	12	28	3	5	7	16
Powels Point	27	60	29	52	44	98
Hatteras Island	**169**	**382**	**156**	**352**	**184**	**425**
Avon	39	85	24	56	34	78
Buxton	67	146	65	143	73	164
Frisco	32	79	18	47	34	85
Hatteras	7	15	25	44	15	31
Rodanthe	22	53	16	37	20	51
Salvo			6	18	3	5
Waves	2	4	2	7	5	11
Mainland	**343**	**836**	**374**	**887**	**441**	**1,041**
Manns Harbor	37	80	48	120	68	175
Manteo	230	562	253	592	289	679
Stumpy Point	17	55	16	42	11	28
Wanchese	59	139	57	133	73	159
Ocracoke	**26**	**59**	**15**	**30**	**30**	**60**
Ocracoke	26	59	15	30	30	60
Grand Total	**1,380**	**3,267**	**1,422**	**3,350**	**1,560**	**3,718**

Source: The Outer Banks Hospital

Appendix A.2.2. Inpatient Hospitalizations, by Age Group

Age Group	2010		2011		2012	
	Discharges	Days	Discharges	Days	Discharges	Days
Adult	617	1,398	644	1,459	688	1,574
Pediatric	375	682	344	611	398	733
Senior	388	1,187	434	1,280	474	1,411
Grand Total	**1,380**	**3,267**	**1,422**	**3,350**	**1,560**	**3,718**

Adult = Age 18-64
Pediatric = Age 0-17
Senior = Age 65 and older
Source: The Outer Banks Hospital

Appendix A.2.3. Inpatient Hospitalizations, by Race/Ethnicity

Race/Ethnicity	2010		2011		2012	
	Discharges	Days	Discharges	Days	Discharges	Days
Asian	7	15	10	20	8	14
Black	37	108	48	110	47	112
Hispanic	---	---	---	---	133	241
Indian (American or Alaskan)	2	5	1	1	0	0
Missing	88	160	125	251		
Other	8	14	1,226	2,941	3	6
Unknown	328	783	12	27	2	2
White	910	2,182	---	---	1,367	3,343
Grand Total	**1,380**	**3,267**	**1,422**	**3,350**	**1,560**	**3,718**

Source: The Outer Banks Hospital

Appendix A.2.4. Inpatient Hospitalizations, by Payer

Payer	Discharges	Days	Discharges	Days	Discharges	Days
Commercial/Managed Care	464	1,040	449	964	443	978
Medicaid	399	777	399	820	496	987
Medicare	394	1,195	445	1,291	511	1,507
Missing	---	---	2	4	---	---
Other	33	66	24	51	30	80
Self-Pay	90	189	103	220	76	155
Workman's Compensation	---	---	---	---	4	11
Grand Total	**1,380**	**3,267**	**1,422**	**3,350**	**1,560**	**3,718**

Source: The Outer Banks Hospital

Appendix A.2.5. Inpatient Hospitalizations for Selected Diagnoses, by DRG Code

DRG Code	Diagnosis Description	2010		2011		2012		Total Discharges	Total Days
		Discharges	Days	Discharges	Days	Discharges	Days		
020-103	Diseases/Disorders of the Nervous System	36	83	26	55	38	83	100	221
113-125	Diseases/Disorders of the Eye	0	0	0	0	1	3	1	3
129-159	Diseases/Disorders of the Ear, Nose, Mouth, Throat	2	7	4	10	5	13	11	30
163-208	Diseases/Disorders of the Respiratory System	130	359	167	454	158	472	455	1,285
216-316	Diseases/Disorders of the Circulatory System	30	65	40	96	58	124	128	285
326-395	Diseases/Disorders of the Digestive System	135	414	117	404	122	370	374	1,188
405-446	Diseases/Disorders of the Hepatobiliary System and Pancreas	48	128	46	117	49	125	143	370
453-566	Diseases/Disorders of Musculoskeletal System/Connective Tissue	135	428	171	529	153	487	459	1,444
570-607	Diseases/Disorders of the Skin, Subcutaneous Tissue, Breast	28	96	26	75	28	76	82	247
614-645	Endocrine, Nutritional and Metabolic Diseases/Disorders	20	40	37	84	42	111	99	235
653-700	Diseases/Disorders of the Kidney/Urinary Tract	65	181	77	179	75	213	217	573
707-730	Diseases/Disorders of the Male Reproductive System	2	4	5	10	7	15	14	29
734-761	Diseases/Disorders of the Female Reproductive System	13	32	9	22	10	27	32	81
765-768	Pregnancy, Childbirth and the Puerperium	135	312	136	311	164	360	435	983
774	Vaginal delivery with complicating diagnoses	42	85	30	55	40	87	112	227
775	Vaginal delivery without complicating diagnoses	166	294	161	287	169	310	496	891
791-792	Newborns and Neonates/Conditions Originating in Perinatal Period	8	13	6	11	6	0	20	24
793	Full-term neonate with major problems	5	9	2	3	5	12	12	24
794	Neonate with other significant problems	89	163	104	197	115	225	308	585
795	Normal newborn	243	430	215	367	247	432	705	1,229
799-816	Diseases/Disorders of the Blood, Immunological Disorders	15	39	8	16	17	29	40	84
820-848	Myeloproliferative Diseases/Disorders, Poorly Differentiated Neoplasm	1	4	8	15	3	6	12	25
853-872	Infectious/Parasitic Diseases, Systemic or Unspecified Sites	9	37	10	27	13	47	32	111
876-887	Mental Diseases/Disorders	1	4	1	4	4	13	6	21
895-897	Alcohol/Drug Use/Alcohol/Drug Induced Organic Mental Disorders	3	6	1	1	4	8	8	15
901-923	Injuries, Poisonings and Toxic Effects of Drugs	4	6	3	5	6	12	13	23
928-929	Burns	0	0	0	0	0	0	0	0

Appendix A.2.5. Continued

ICD-9 Code	Diagnosis Description	2010		2011		2012		Total Discharges	Total Days
		Discharges	Days	Discharges	Days	Discharges	Days		
939-950	Factors Affecting Health Status/Contacts with Health Services	1	2	1	3	2	3	4	8
951	Other Factors Influencing Health Status	1	1	0	0	0	0	1	1
957-965	Multiple Significant Trauma	0	0	0	0	1	1	1	1
969-976	Human Immunodeficiency Virus Infections	2	5	2	5	0	0	4	10
981-989	Unrelated Operating Room Procedures	2	7	2	3	1	3	5	13
998-999	Invalid and Ungroupable DRGs	0	0	0	0	0	0	0	0
Missing	No DRG Code	0	0	2	7	1	9	3	16
	Total Inpatient Hospitalizations, All DRG Codes	**1,380**	**3,267**	**1,422**	**3,350**	**1,560**	**3,718**	**4,362**	**10,335**

Source: The Outer Banks Hospital

Appendix A.2.6. Top 25 Inpatient Hospitalizations, by DRG Code (FY2011)

DRG Description (Code)	The Outer Banks Hospital			
	# Cases	# Days	Total Charges	Avg. Charge Per Case
Normal newborn (795)	229	397	$272,240	$1,188
Vaginal delivery w/o complicating diagnoses (775)	169	301	$911,039	$5,390
Major joint replacement or reattachment of lower extremity w/o M (470)	114	379	$4,193,020	$36,780
Neonate w other significant problems (794)	108	204	$157,005	$1,453
Cesarean section w/o CC/MCC (766)	98	218	$810,766	$8,273
Cesarean section w CC/MCC (765)	45	107	$394,402	$8,764
Kidney & urinary tract infections w/o MCC (690)	44	106	$481,515	$10,943
Chronic obstructive pulmonary disease w/o CC/MCC (192)	41	101	$514,675	$12,553
Nutritional & misc metabolic disorders w/o MCC (641)	30	70	$338,184	$11,272
Vaginal delivery w complicating diagnoses (774)	30	55	$187,655	$6,255
Esophagitis, gastroent & misc digest disorders w/o MCC (392)	29	69	$369,862	$12,753
Simple pneumonia & pleurisy w/o CC/MCC (195)	28	72	$350,233	$12,508
Simple pneumonia & pleurisy w CC (194)	24	71	$343,074	$14,294
G.I. obstruction w/o CC/MCC (390)	20	43	$226,351	$11,317
Cellulitis w/o MCC (603)	20	52	$215,911	$10,795
Disorders of pancreas except malignancy w/o CC/MCC (440)	19	46	$253,419	$13,337
Lower extrem & humer proc except hip,foot,femur w/o CC/MCC (494)	19	43	$522,687	$27,509
G.I. hemorrhage w CC (378)	17	39	$225,747	$13,279
Disorders of pancreas except malignancy w CC (439)	17	51	$267,437	$15,731
Hip & femur procedures except major joint w/o CC/MCC (482)	16	55	$479,392	$29,962
Intracranial hemorrhage or cerebral infarction w/o CC/MCC (66)	14	26	$202,736	$14,481
Kidney & urinary tract infections w MCC (689)	14	31	$148,103	$10,578
Chronic obstructive pulmonary disease w MCC (190)	13	44	$230,432	$17,725
Chronic obstructive pulmonary disease w CC (191)	13	43	$198,810	$15,293
Urinary stones w/o esw lithotripsy w/o MCC (25)	13	20	$115,533	$8,887
Top DRGs Totals (includes DRG's not listed here):	*1,274*	*2,851*	*$13,582,224*	*$10,661*
Total for Facility:	*1,635*	*2,849*	*$18,827,594*	*$11,515*

Note: This data provides an overview of hospital cases, stays and charges for the most common inpatient procedures. While the site lists the top 35 DRG inpatient procedures in NC hospitals, this table lists only the top 25 (by number of cases, in decreasing order).

Source: NC Hospital Association. *Hospital Charges by Facility for Top 35 DRG Procedures, FY2011;* https://www.ncha.org/issues/finance/top-35-drgs.

Appendix A.3.1. Number of Surgeries, by Town

Location	2010			2011			2012		
	IN	OUT	Total	IN	OUT	Total	IN	OUT	Total
Beaches	**131**	**568**	**699**	**115**	**668**	**783**	**125**	**826**	**951**
Kill Devil Hills	56	287	343	49	322	371	51	418	469
Kitty Hawk	48	191	239	43	214	257	53	266	319
Nags Head	27	90	117	23	132	155	21	142	163
Currituck County	**34**	**146**	**180**	**34**	**137**	**171**	**22**	**169**	**191**
Aydlett	1	4	5	1	3	4	1	3	4
Barco					1	1		1	1
Coinjock	1	3	4		1	1	1	6	7
Corolla	5	26	31	2	15	17		27	27
Currituck		1	1		1	1		2	2
Grandy	8	38	46	10	32	42	8	39	47
Harbinger	3	15	18	3	13	16		13	13
Jarvisburg	4	10	14	7	16	23	2	18	20
Maple		1	1		1	1		1	1
Moyock		6	6		2	2		4	4
Point Harbor	1	15	16	6	17	23	3	17	20
Poplar Branch	4	2	6		10	10	1	4	5
Powels Point	7	25	32	5	25	30	6	34	40
Hatteras Island	**29**	**194**	**223**	**24**	**195**	**219**	**26**	**214**	**240**
Avon	7	43	50	3	42	45	4	41	45
Buxton	8	78	86	11	66	77	13	79	92
Frisco	6	38	44	4	29	33	5	35	40
Hatteras		17	17	1	32	33		31	31
Rodanthe	7	11	18	2	16	18	4	21	25
Salvo		4	4	1	7	8		3	3
Waves	1	3	4	2	3	5		4	4
Mainland	**62**	**304**	**366**	**72**	**357**	**429**	**57**	**409**	**466**
Manns Harbor	6	33	39	14	32	46	9	51	60
Manteo	41	221	262	48	262	310	38	293	331
Stumpy Point	2	5	7	2	5	7	2	4	6
Wanchese	13	45	58	8	58	66	8	61	69
Ocracoke	**4**	**13**	**17**	**2**	**12**	**14**	**6**	**29**	**35**
Ocracoke	4	13	17	2	12	14	6	29	35
Grand Total	**260**	**1,225**	**1,485**	**247**	**1,369**	**1,616**	**236**	**1,647**	**1,883**

IN = Inpatient surgery
OUT = Outpatient surgery
Source: The Outer Banks Hospital

Appendix A.3.2. Number of Surgeries, by Age Group

Age Group	2010			2011			2012		
	IN	OUT	Total	IN	OUT	Total	IN	OUT	Total
Adult	144	793	937	127	888	1015	124	1091	1215
Pediatric	7	20	27	3	21	24	1	32	33
Senior	109	412	521	117	460	577	111	524	635
Grand Total	**260**	**1,225**	**1,485**	**247**	**1,369**	**1,616**	**236**	**1,647**	**1,883**

Adult = Age 18-64
Pediatric = Age 0-17
Senior = Age 65 and older
IN = Inpatient surgery
OUT = Outpatient surgery
Source: The Outer Banks Hospital

Appendix A.3.3. Number of Surgeries, by Race/Ethnicity

Race/Ethnicity	2010			2011			2012		
	IN	OUT	Total	IN	OUT	Total	IN	OUT	Total
Asian		1	1		3	3		3	3
Black	13	40	53	6	36	42	5	55	60
Hispanic	8	38	46	2	34	36	5	53	58
Indian (American or Alaskan)	1	2	3	1	2	3		3	3
Other	1	7	8		5	5		9	9
Unknown		1	1	1	3	4		3	3
White	237	1,136	1,373	237	1,286	1,523	226	1,521	1,747
Grand Total	**260**	**1,225**	**1,485**	**247**	**1,369**	**1,616**	**236**	**1,647**	**1,883**

IN = Inpatient surgery
OUT = Outpatient surgery
Source: The Outer Banks Hospital

Appendix A.3.4. Number of Surgeries, by Payer

	2010			2011			2012		
Payer	IN	OUT	Total	IN	OUT	Total	IN	OUT	Total
Agencies	3	5	8	6	6	12	4	4	8
CHAMPUS	3	30	33	2	29	31	7	38	45
Commercial/Managed Care	92	556	648	83	678	761	73	768	841
Medicaid	28	115	143	23	107	130	21	156	177
Medicare	112	423	535	116	467	583	118	567	685
Self-Pay	19	80	99	15	61	76	11	96	107
Workman's Compensation	3	16	19	2	21	23	2	18	20
Grand Total	**260**	**1,225**	**1,485**	**247**	**1,369**	**1,616**	**236**	**1,647**	**1,883**

IN = Inpatient surgery
OUT = Outpatient surgery
Source: The Outer Banks Hospital

Appendix A.3.5. Number of Surgeries for Selected Procedures, by ICD-9 Procedure Code

ICD-9 Code	Procedure Description	2010			2011			2012			Total IP Surgeries	Total OP Surgeries	Total Surgeries
		IP	OP	Total	IP	OP	Total	IP	OP	Total			
00.01-00.95	**Procedures/Interventions not Elsewhere**	**0**	**1**	**1**	**0**	**2**	**2**	**0**	**5**	**5**	**0**	**8**	**8**
00.70-00.83	*Revisions of hip and knee replacements*	0	1	1	0	2	2	0	5	5	0	8	8
1.01-05.9	**Operations on the Nervous System**	**0**	**20**	**20**	**0**	**26**	**26**	**1**	**29**	**30**	**1**	**75**	**76**
04.43	*Release of carpal tunnel*	0	14	14	0	24	24	1	22	23	1	60	61
06.01-07.99	**Operations of the Endocrine System**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**
08.01-16.99	**Operations on the Eye**	**0**	**211**	**211**	**0**	**163**	**163**	**0**	**183**	**183**	**0**	**557**	**557**
13.4	*Extracapsular extraction of lens (cataract removal)*	0	202	202	0	161	161	0	177	177	0	540	540
17.11-17.81	**Other Miscellaneous Diagnostic and Therapeutic Procedures**	1	1	2	0	0	0	0	0	0	0	1	1
18.01-20.99	**Operations on the Ear**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**
21.00-29.99	**Operations on the Nose, Mouth and Pharynx**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**1**	**1**	**1**	**2**
30.01-34.99	**Operations on the Respiratory System**	**0**	**0**	**0**	**2**	**1**	**3**	**0**	**1**	**1**	**2**	**2**	**4**
35.00-39.99	**Operations on the Cardiovascular System**	**1**	**3**	**4**	**0**	**1**	**1**	**0**	**1**	**1**	**1**	**5**	**6**
40.0-41.99	**Operations on the Hemic and Lymphatic System**	**1**	**6**	**7**	**1**	**8**	**9**	**0**	**12**	**12**	**2**	**26**	**28**
40.11	*Biopsy of lymphatic structure*	0	4	4	0	4	4	0	6	6	0	14	14
42.01-54.99	**Operations on the Digestive System**	**96**	**456**	**552**	**59**	**507**	**566**	**54**	**608**	**662**	**209**	**1,571**	**1,780**
45.13	*Other endoscopy of small intestine*	7	21	28	3	13	16	4	15	19	14	49	63
45.16	*Esophagogastroduodenoscopy (EGD) with closed biopsy*	8	44	52	6	69	75	9	74	83	23	187	210
45.23	*Colonoscopy*	7	119	126	1	151	152	2	208	210	10	478	488
45.25	*Closed (endoscopic) biopsy of large intestine*	3	20	23	0	25	25	0	21	21	3	66	69
45.42	*Endoscopic polypectomy of large intestine*	2	48	50	1	54	55	1	56	57	4	158	162
47.01	*Laparoscopic appendectomy*	25	24	49	14	21	35	6	39	45	45	84	129
51.23	*Laparoscopic cholecystectomy (gallbladder surgery)*	12	59	71	7	52	59	12	70	82	31	181	212
53.00-53.99	*Repair of hernia*	4	59	63	0	55	55	2	60	62	6	174	180

Appendix A.3.5. Continued

ICD-9 Code	Procedure Description	2010			2011			2012			Total IP Surgeries	Total OP Surgeries	Total Surgeries
		IP	OP	Total	IP	OP	Total	IP	OP	Total			
55.01-59.99	**Operations on the Urinary System**	**2**	**27**	**29**	**11**	**154**	**165**	**7**	**191**	**198**	**20**	**372**	**392**
57.32	*Cytoscopy*	0	6	6	1	44	45	0	29	29	1	79	80
58.6	*Dilation of urethra*	0	16	16	2	70	72	0	88	88	2	174	176
59.8	*Ureteral catheterization*	0	1	1	2	14	16	3	35	38	5	50	55
60.0-64.99	**Operations on the Male Genital Organs**	**1**	**3**	**4**	**2**	**21**	**23**	**3**	**29**	**32**	**6**	**53**	**59**
65.01-71.9	**Operations on the Female Genital Organs**	**17**	**193**	**210**	**12**	**189**	**201**	**19**	**182**	**201**	**48**	**564**	**612**
66.22-66.29	*Endoscopic ligation/destruction/occlusion of fallopian tubes*	6	13	19	4	18	22	10	22	32	20	53	73
68.4	*Total abdominal hysterectomy*	4	9	13	3	29	32	5	28	33	12	66	78
69.09	*Diagnostic dilation and curettage of uterus*	0	40	40	0	49	49	0	44	44	0	133	133
72.0-75.99	**Obstetrical Procedures**	**14**	**0**	**14**	**1**	**0**	**1**	**5**	**0**	**5**	**20**	**0**	**20**
74.1	*Low cervical cesarean section*	11	0	11	1	0	1	3	0	3	15	0	15
76.01-84.99	**Operations on the Musculoskeletal System**	**110**	**191**	**301**	**152**	**220**	**372**	**132**	**276**	**408**	**394**	**687**	**1,081**
79.0-79.9	*Reduction of fracture and dislocation*	28	35	63	31	46	77	22	35	57	81	116	197
80.6	*Excision of semilunar cartilage of knee*	0	40	40	0	54	54	1	80	81	1	174	175
81.51	*Total hip replacement*	22	0	22	29	0	29	45	0	45	96	0	96
81.54	*Total knee replacement*	45	0	45	72	0	72	47	0	47	164	0	164
83.63	*Rotator cuff repair*	2	21	23	1	28	29	0	27	27	3	76	79
85.0-86.99	**Operations of the Integumentary System**	**15**	**96**	**111**	**4**	**49**	**53**	**7**	**57**	**64**	**26**	**202**	**228**
85.21	*Local excision of lesion of breast*	0	27	27	0	5	5	0	10	10	0	42	42
86.3	*Excision/destruction of lesion/tissue of skin/subcutaneous tissue*	0	34	34	0	24	24	1	21	22	1	79	80
87.01-99.99	**Miscellaneous Diagnostic and Therapeutic Procedures**	1	5	6	0	13	13	1	49	50	2	67	69
97.62	*Removal of ureterostomy tube and uretal catheter*	0	1	1	0	9	9	0	27	27	0	37	37
Missing	**No Code**	0	9	9	1	16	17	1	29	30	2	54	56
Total Surgeries, All DRG Procedure Codes											**743**	**4,241**	**4,984**

Source: The Outer Banks Hospital

APPENDIX B – DARE COUNTY DEPARTMENT OF PUBLIC HEALTH UTILIZATION DATA

Appendix B.1: Program Outcomes and Services

Program/Leading Indicator	Annual Total				
	FY2008	FY2009	FY2010	FY2011	FY2012
Adult Health					
Adult Office Visits	226	229	577	248	224
Baby Links					
Postpartum Home Visit	234	238	231	147	224
Newborn Assessment	241	240	188	147	217
BCCCP					
Patients Screened/Mammograms	106/85	175/106	200/109	192/105	155/155
Pap Tests Provided/Abnormal Tests Processed	229	142	1,106/250	1,020/218	848/197
Child Health					
Total Patients	213	184	162	81	41
Total Visits	327	261	261	154	202
CCP					
Unduplicated clients	157	Vacant	51	77	276
Completed contacts	737	0	257	1,384	1,413
Total contacts	985	0	329	1,384	1,414
CAP-C					
Total contact units	40	196	653	1,799	3,148
Number of clients served	1	6	6	7	8
CC4C (*denotes former CSC program)					
Number of client contacts	1,187*	1,240*	724*	1,095*	470
Number of clients served	231*	296*	227*	209*	111
Dental Health					
Number of new patients	0	595	414	336	258
Number of returning patients	0	n/a	344	972	1,115
Total number of visits	0	595	1,371	1,474	1,413
Number of services	0	2,709	4,966	4,430	3,948
Diabetes					
Individual preventive counseling	51	32	40	42	67
Group preventive counseling	5	3	1	9	22
Drug Screening					
Number of visits	309	277	333	303	494
HIV Testing					
Number of tests	877	911	581	891	663
Counseling/Results	165	107	66	83	44
Positive results, Dare County residents	4	1	0	1	0
STD Program					
Number of visits	309	277	333	303	494
TB Testing					
TB control visits (RN-at least 15)	116	97	163	87	61
TB screen # PPD tests placed	485	468	319	388	371
TB follow-up (PPD read)	412	421	314	369	353
Confirmed TB cases	0	0	1	1	0
Family Planning					
Total patients	1,006	1,069	1,177	946	1,012
Total number of visits	2,185	2,112	1,372	1,621	1,720

Appendix B.1. Continued

Program/Leading Indicator	Annual Total				
	FY2008	FY2009	FY2010	FY2011	FY2012
Health Check					
2-year olds in Dare County	323	360	375	387	344
Immunization rate (based on 2-year olds)	79%	84%	89%	95%	95%
Total Medicaid children ages	2,402	2,442	2,683	2,815	3,015
Well child participation rate	69%	73%	72%	79%	79%
Immunizations					
Number of patients received	2,886	2,094	6,304	3,458	3,647
Seasonal influenza vaccine	n/a	1,241	3,383	2,642	3,147
Total number of doses	5,213	3,106	9,097	3,472	3,757
Lab					
Number of tests	13,564	15,902	18,482	18,019	14,332
Number of blood draws	1,117	1,635	1,156	2,002	2,604
Maternal Health					
Number of positive pregnancy tests/patients	376	302	307	287	420
Number of visits/services	1,728	1,501	1,871	1,145	1,482
RH injections	4	n/a	6	3	4
Medical Nutrition					
Medical nutrition total services	38	n/a	n/a	7	29
Home Health/Hospice visits	n/a	n/a	3	5	3
OBCM (*denotes former MCC program)					
Number of tasks	794*	500*	72*	512*	762
Number of unique patients	215*	122*	21*	78*	66
Physicals					
Total number of physicals	831	441	334	489	455
Pregnancy Testing					
Number of tests	642	677	466	680	431
WIC					
WIC certification visits	9,722	10,356	n/a	4,760	6,293
Participation base rate at FY end	820	933	890	892	892

Source: Dare County Department of Public Health Year End Report, FY2012

Appendix B.2.1: Patient Demographics by Program, by Age

Program	Age Group	Total Unduplicated Patients				
		Manteo	Frisco	No Agency Site	Total	Age Group Total as % of *Program Total*
Adult Health	≤ 17	20	1	3	24	1.6
	18-24	96	9	15	120	7.9
	25-34	216	28	30	274	18.1
	35-44	210	28	47	285	18.9
	45-54	241	32	51	324	21.5
	55-64	256	35	83	374	24.8
	65+	86	3	20	109	7.2
Program Total		1,125	136	249	***1,510***	100.0
Child Health	0	100	0	1	101	35.3
	1	128	1	1	130	45.5
	2	3	4	0	7	2.4
	3	0	4	0	4	1.4
	4	6	1	0	7	2.4
	5	10	2	1	13	4.5
	6	5	4	0	9	3.1
	7	1	2	0	3	1.0
	8-17	6	3	1	10	3.5
	18+	2	0	0	2	0.7
Program Total		261	21	4	***286***	100.0
Dental Health	0-17	0	0	689	689	96.9
	18-64	0	0	22	22	3.1
	65+	0	0	0	0	0.0
Program Total		0	0	711	***711***	100.0
Family Planning	≤ 17	37	5	6	48	4.2
	18-24	257	35	39	331	28.9
	25-34	422	42	48	512	44.7
	35-44	141	16	22	179	15.6
	≥ 45	53	9	14	76	6.6
Program Total		910	107	129	***1,146***	100.0
Immunization	≤ 6	130	26	3	159	6.3
	7-17	293	61	4	358	14.2
	18-24	170	14	13	197	7.8
	25-34	230	44	8	282	11.2
	35-44	259	24	8	291	11.5
	45-54	339	65	10	414	16.4
	55-64	381	64	12	457	18.1
	65+	294	55	13	362	14.4
Program Total		2,096	353	71	***2,520***	100.0

Appendix B.2.1. Continued

Program	Age Group	Total Unduplicated Patients				
		Manteo	Frisco	No Agency Site	Total	Age Group Total as % of *Program Total*
Maternal Health	≤ 17	8	0	1	9	2.0
	18-24	83	5	9	97	21.9
	25-34	244	14	18	276	62.4
	35-44	49	3	5	57	12.9
	45+	3	0	0	3	0.7
Program Total		387	22	33	***442***	100.0
Sexually Transmitted Disease	≤ 17	20	1	0	21	4.1
	18-24	153	6	1	160	31.4
	25-34	197	17	2	216	42.4
	35-44	69	2	0	71	13.9
	45-54	28	3	1	32	6.3
	55-64	6	2	0	8	1.6
	65+	1	0	0	1	0.2
Program Total		474	31	4	***509***	100.0
Tuberculosis	≤ 17	15	0	3	18	4.0
	18-24	81	4	20	105	23.2
	25-34	74	3	15	92	20.4
	35-44	61	4	11	76	16.8
	45-54	61	1	10	72	15.9
	55-64	55	1	5	61	13.5
	65+	21	3	4	28	6.2
Program Total		368	16	68	***452***	100.0
Other Services	≤ 17	199	6	8	213	71.7
	18-24	43	2	1	46	15.5
	25-34	16	0	0	16	5.4
	35-44	7	0	1	8	2.7
	45-54	9	0	0	9	3.0
	55-64	5	0	0	5	1.7
	65+	N/A	0	0	0	0.0
Program Total		279	8	10	***297***	100.0

Anna Schafer, Public Health Education Specialist, Dare County Department of Public Health. Personal communication to Sheila Pfaender, Public Health Consultant, January 16, 2013.

Appendix B.2.2: Patient Demographics by Program, by Race

Program / Client Primary Race	Total Unduplicated Patients									
	FY2010-2011					FY2011-2012				
	Manteo	Frisco	No Site	Total	Race Total as % of *Program Total*	Manteo	Frisco	No Site	Total	Race Total as % of *Progran Total*
Adult Health										
American Indian or Alaska Native	1	0	0	1	0.1	0	0	0	0	0.0
Asian	3	1	2	6	0.4	7	1	2	10	0.7
Black or African American	52	0	8	60	3.7	41	1	11	53	3.5
Native Hawaiin/Other Pacific Islander	0	0	0	0	0.0	1	0	0	1	0.1
Unknown	18	0	2	20	1.2	21	0	3	24	1.6
White	1,105	180	239	1,524	94.6	1,055	134	233	1,422	94.2
PROGRAM TOTAL	1,179	181	251	***1,611***	100.0	1,125	136	249	***1,510***	100.0
Child Health										
American Indian or Alaska Native	0	0	0	0	0.0	0	0	0	0	0.0
Asian	4	0	0	4	1.0	0	0	0	0	0.0
Black or African American	15	0	1	16	4.1	16	0	0	16	5.6
Unknown	21	0	2	23	5.8	9	0	0	9	3.1
White	307	23	21	351	89.1	236	21	4	261	91.3
PROGRAM TOTAL	347	23	24	***394***	100.0	261	21	4	***286***	100.0
Dental Health										
American Indian or Alaska Native	0	0	0	0	0.0	0	0	0	0	0.0
Asian	0	0	6	6	0.9	0	0	5	5	0.7
Black or African American	0	0	89	89	12.9	0	0	80	80	11.3
Native Hawaiin/Other Pacific Islander	0	0	0	0	0.0	0	0	1	1	0.1
Unknown	0	0	63	63	9.2	0	0	60	60	8.5
White	0	0	530	530	77.0	0	0	564	564	79.4
PROGRAM TOTAL	0	0	688	***688***	100.0	0	0	710	***710***	100.0
Family Planning										
American Indian or Alaska Native	1	0	0	1	0.1	2	0	0	2	0.2
Asian	9	0	3	12	0.9	3	0	1	4	0.3
Black or African American	40	0	9	49	3.6	41	0	7	48	4.2
Native Hawaiin/Other Pacific Islander	0	0	0	0	0.0	1	0	0	1	0.1
Unknown	18	3	3	24	1.8	21	0	2	23	2.0
White	866	172	246	1,284	93.7	842	107	119	1,068	93.2
PROGRAM TOTAL	934	175	261	***1,370***	100.0	910	107	129	***1,146***	100.0
Immunization										
American Indian or Alaska Native	3	0	0	3	0.1	3	0	0	3	0.1
Asian	11	1	2	14	0.5	10	1	1	12	0.5
Black or African American	86	1	1	88	3.0	74	1	1	76	3.0
Native Hawaiin/Other Pacific Islander	1	0	0	1	0.0	3	0	0	3	0.1
Unknown	53	2	3	58	2.0	20	0	0	20	0.8
White	2,333	310	108	2,751	94.4	1,986	351	69	2,406	95.5
PROGRAM TOTAL	2,487	314	114	***2,915***	100.0	2,096	353	71	***2,520***	100.0
Maternal Health										
American Indian or Alaska Native	0	0	0	0	0.0	0	0	0	0	0.0
Asian	7	0	0	7	1.6	7	0	0	7	1.5
Black or African American	11	0	3	14	3.2	19	1	1	21	4.5
Native Hawaiin/Other Pacific Islander	1	0	0	1	0.2	1	0	0	1	0.2
Unknown	7	1	1	9	2.1	7	2	0	9	1.9
White	334	21	46	401	92.8	375	19	32	426	91.8
PROGRAM TOTAL	360	22	50	***432***	100.0	409	22	33	***464***	100.0
Sexually Transmitted Diseases										
American Indian or Alaska Native	0	0	0	0	0.0	0	0	0	0	0.0
Asian	2	1	0	3	0.5	1	0	0	1	0.2
Black or African American	51	0	0	51	8.9	41	0	3	44	8.6
Native Hawaiin/Other Pacific Islander	1	0	0	1	0.2	0	0	0	0	0.0
Unknown	7	0	0	7	1.2	9	0	0	9	1.8
White	455	40	17	512	89.2	423	31	1	455	89.4
PROGRAM TOTAL	516	41	17	***574***	100.0	474	31	4	***509***	100.0
Tuberculosis										
American Indian or Alaska Native	1	0	1	2	0.4	0	0	0	0	0.0
Asian	1	0	0	1	0.2	4	0	1	5	1.1
Black or African American	29	0	8	37	7.3	25	0	5	30	6.6
Unknown	4	0	0	4	0.8	1	0	0	1	0.2
White	369	27	66	462	91.3	338	16	62	416	92.0
PROGRAM TOTAL	404	27	75	***506***	100.0	368	16	68	***452***	100.0
Other Services										
American Indian or Alaska Native	0	0	0	0	0.0	0	0	0	0	0.0
Asian	1	0	0	1	0.3	1	0	0	1	0.3
Black or African American	30	0	1	31	10.5	17	0	0	17	10.4
Native Hawaiin/Other Pacific Islander	0	0	0	0	0.0	1	0	0	1	0.0
Unknown	7	0	0	7	2.4	6	0	0	6	2.4
White	240	11	5	256	86.8	254	8	10	272	86.2
PROGRAM TOTAL	278	11	6	***295***	100.0	279	8	10	***297***	99.3

Source: Anna Schafer, Public Health Education Specialist, Dare County Department of Public Health. Personal communication to Sheila Pfaender, Public Health Consultant, January 16, 2013.

Appendix B.2.3: Patient Demographics by Program, by Payer

Program/Payer	Total Unduplicated Patients										
	FY2010-2011						FY2011-12				
	Manteo	Frisco	No Entry	No Site	Total	Payer Total as % of *Program Total*	Manteo	Frisco	No Site	Total	Payer Total as % of *Program Total*
Adult Health											
Medicaid and Other	10	0	0	1	11	0.7	11	1	0	12	0.8
Medicaid and Commercial	0	0	0	0	0	0.0	0	0	0	0	0.0
Medicaid Only	64	13	0	4	81	5.2	76	7	1	84	5.9
Patient Pay Only	907	148	0	215	1,270	80.8	821	120	205	1,146	80.6
Tricare	0	0	0	1	1	0.1	0	0	0	0	0.0
Medicare B	50	8	1	2	61	3.9	42	1	3	46	3.2
Commercial Only	131	11	0	5	147	9.4	127	7	0	134	9.4
Program Total	1,162	180	1	228	***1,571***	100.0	1,077	136	209	***1,422***	100.0
Child Health											
Medicaid and Other	2	2	0	0	4	1.4	0	0	0	0	0.0
Medicaid and Commercial	0	0	0	0	0	0.0	0	0	0	0	0.0
Medicaid Only	229	5	0	9	243	85.3	153	0	2	155	90.1
Patient Pay Only	31	5	0	1	37	13.0	2	10	1	13	7.6
Tricare	0	0	0	0	0	0.0	0	0	0	0	0.0
Medicare B	0	0	0	0	0	0.0	0	0	0	0	0.0
Commercial Only	1	0	0	0	1	0.4	2	2	0	4	2.3
Program Total	263	12	0	10	***285***	100.0	157	12	3	***172***	100.0
Dental Health											
Medicaid and Other	0	0	0	42	42	6.4	0	0	40	40	5.7
Medicaid and Commercial	0	0	0	30	30	4.6	0	0	35	35	5.0
Medicaid Only	0	0	0	362	362	55.5	0	0	381	381	54.2
Patient Pay Only	0	0	0	126	126	19.3	0	0	122	122	17.4
Tricare	0	0	0	0	0	0.0	0	0	0	0	0.0
Medicare B	0	0	0	0	0	0.0	0	0	0	0	0.0
Commercial Only	0	0	0	92	92	14.1	0	0	125	125	17.8
Program Total	0	0	0	652	***652***	100.0	0	0	703	***703***	100.0

Appendix B.2.3. Continued

Program/Payer	Total Unduplicated Patients										
	FY2010-2011						FY2011-2012				
	Manteo	Frisco	No Entry	No Site	Total	Payer Total as % of *Program Total*	Manteo	Frisco	No Site	Total	Payer Total as % of Program Total
Family Planning											
Medicaid and Other	36	6	0	6	48	3.6	26	2	0	28	2.5
Medicaid and Commercial	5	0	0	3	8	0.6	2	0	0	2	0.2
Medicaid Only	122	12	3	3	140	10.4	101	4	6	111	9.8
Patient Pay Only	696	128	0	234	1,058	78.4	704	84	114	902	79.6
Tricare	0	0	0	0	0	0.0	0	0	0	0	0.0
Medicare B	4	0	0	0	4	0.3	3	0	1	4	0.4
Commercial Only	62	27	0	3	92	6.8	67	16	3	86	7.6
Program Total	925	173	3	249	***1,350***	100.0	903	106	124	***1,133***	100.0
Health Check											
Medicaid and Other	25	4	0	1	30	38.5	4	4	0	8	22.2
Medicaid and Commercial	0	0	0	0	0	0.0	0	0	0	0	0.0
Medicaid Only	13	11	2	0	26	33.3	17	3	0	20	55.6
Patient Pay Only	13	0	0	9	22	28.2	6	1	1	8	22.2
Tricare	0	0	0	0	0	0.0	0	0	0	0	0.0
Medicare B	0	0	0	0	0	0.0	0	0	0	0	0.0
Commercial Only	0	0	0	0	0	0.0	0	0	0	0	0.0
Program Total	51	15	2	10	***78***	100.0	27	8	1	***36***	100.0
Immunization											
Medicaid and Other	10	0	0	1	11	0.4	4	0	2	6	0.2
Medicaid and Commercial	5	0	0	1	6	0.2	3	0	1	4	0.2
Medicaid Only	322	47	2	6	377	13.4	159	18	0	177	7.3
Patient Pay Only	558	76	1	63	698	24.9	557	118	27	702	28.9
Tricare	0	0	0	0	0	0.0	0	0	0	0	0.0
Medicare B	354	57	0	2	413	14.7	227	33	2	262	10.8
Commercial Only	1,145	129	0	25	1,299	46.3	1,068	179	27	1,274	52.5
Program Total	2,394	309	3	98	***2,804***	100.0	2,018	348	59	***2,425***	100.0

Appendix B.2.3. Continued

Program/Payer	Total Unduplicated Patients										
	FY2010-2011						FY2011-2012				
	Manteo	Frisco	No Entry	No Site	Total	Payer Total as % of *Program Total*	Manteo	Frisco	No Site	Total	Payer Total as % of *Program Total*
Maternal Health											
Medicaid and Other	86	0	0	6	92	24.5	83	1	1	85	22.0
Medicaid and Commercial	2	0	0	0	2	0.5	2	0	0	2	0.5
Medicaid Only	148	9	2	6	165	44.0	152	5	9	166	43.0
Patient Pay Only	74	13	0	29	116	30.9	99	16	14	129	33.4
Tricare	0	0	0	0	0	0.0	0	0	0	0	0.0
Medicare B	0	0	0	0	0	0.0	0	0	0	0	0.0
Commercial Only	0	0	0	0	0	0.0	4	0	0	4	1.0
Program Total	310	22	2	41	***375***	100.0	340	22	24	***386***	100.0
Sexually Transmitted Diseases											
Medicaid and Other	11	0	0	0	11	2.1	3	0	0	3	0.6
Medicaid and Commercial	1	0	0	0	1	0.2	0	0	0	0	0.0
Medicaid Only	43	3	0	0	46	8.6	45	1	1	47	9.6
Patient Pay Only	408	32	0	9	449	83.8	385	27	2	414	84.3
Tricare	0	0	0	0	0	0.0	0	0	0	0	0.0
Medicare B	1	0	0	0	1	0.2	2	0	0	2	0.4
Commercial Only	22	3	0	3	28	5.2	22	3	0	25	5.1
Program Total	486	38	0	12	***536***	100.0	457	31	3	***491***	100.0
Tuberculosis											
Medicaid and Other	1	0	0	1	2	0.5	5	0	0	5	1.2
Medicaid and Commercial	1	0	0	0	1	0.2	0	0	0	0	0.0
Medicaid Only	28	0	0	0	28	6.5	16	0	0	16	3.9
Patient Pay Only	266	20	0	58	344	80.0	270	15	64	349	84.5
Tricare	0	0	0	0	0	0.0	0	0	0	0	0.0
Medicare B	13	1	0	0	14	3.3	9	1	0	10	2.4
Commercial Only	36	4	0	1	41	9.5	33	0	0	33	8.0
Program Total	345	25	0	60	***430***	100.0	333	16	64	***413***	100.0

Appendix B.2.3. Continued

Program/Payer	Total Unduplicated Patients										
	FY2010-2011						FY2011-2012				
	Manteo	Frisco	No Entry	No Site	Total	Payer Total as % of *Program Total*	Manteo	Frisco	No Site	Total	Payer Total as % of *Program Total*
Other Services											
Medicaid and Other	0	0	0	0	0	0.0	0	0	0	0	0.0
Medicaid and Commercial	0	0	0	0	0	0.0	0	0	0	0	0.0
Medicaid Only	0	0	0	0	0	0.0	0	0	0	0	0.0
Patient Pay Only	274	11	0	9	294	99.0	274	8	10	292	100.0
Tricare	0	0	0	0	0	0.0	0	0	0	0	0.0
Medicare B	0	0	0	0	0	0.0	0	0	0	0	0.0
Commercial Only	0	0	0	3	3	1.0	0	0	0	0	0.0
PROGRAM TOTAL	274	11	0	12	***297***	100.0	274	8	10	***292***	100.0

Source: Anna Schafer, Public Health Education Specialist, Dare County Department of Public Health. Personal communication to Sheila Pfaender, Public Health Consultant, January 16, 2013

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