

2018 WILKES COUNTY COMMUNITY HEALTH NEEDS ASSESSMENT

Wilkes County Health Department,
Wake Forest Baptist Health Wilkes
Medical Center, and The Health
Foundation, Inc.

*Secondary
Data,
Community
Health
Survey and
Stakeholder
Survey
Report*

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INTRODUCTION

Local public health agencies in North Carolina (NC) are required to conduct a comprehensive Community Health Assessment (CHA) once every three or four years. The CHA is required of public health departments in the consolidated agreement between the NC Division of Public Health (NCDPH) 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, not-for-profit hospitals are also now required to conduct a Community Health Needs Assessment (CHNA) once every three years. Recognizing that duplicate assessment efforts are a poor use of community resources, local health departments (LHDs) and not-for-profit hospitals across the state are developing models for collaboratively conducting the community health assessment process.

In Wilkes County, the CHA/CHNA process included the only hospital in the county: Wake Forest Baptist Health Wilkes Medical Center. In counties that have a community health coalition, the CHA/CHNA partnership also usually includes that entity, which in Wilkes County is The Health Foundation. The members of the Wilkes County CHA/CHNA “team” included 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. The Wilkes County Health Department provided staff to coordinate the project. The partners in Wilkes County agreed to call the dual-purpose 2018 project by one name, the 2018 Wilkes County Community Health Needs Assessment (CHNA).

The CHNA 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, hospital 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 CHNA serves as the basis for prioritizing the community’s health needs, and culminates in planning to meet those needs.

The partners contracted with Sheila S. Pfaender, Public Health Consultant, and her team to assist in conducting the 2018 CHNA for Wilkes County, following the guidance provided by the *Community Assessment Guidebook: North Carolina Community Health Assessment Process*, published by the NC Department of Public Health (June 2014 revision and subsequent updates). The assessment also adheres to the current standards for community assessment stipulated by the NC Local Health Department Accreditation (NCLHDA) Program. An additional goal for this project was to meet the US Affordable Care Act/Internal Revenue Service Form 990 Schedule H requirements for not-for-profit hospitals in conducting a Community Health Needs Assessment (CHNA) as cited in the December, 2014 Final Rule.

The CHNA Coordinator from the Wilkes County Health Department worked with the consultant to develop a multi-phase plan for conducting the assessment. The phases included: (1) a secondary data research phase to identify, collect and analyze secondary demographic, socioeconomic, health and environmental data; (2) a primary data research phase to collect and analyze data collected via an on-line community survey; (3) a data synthesis and analysis phase; (4) a period of data reporting and discussion among the project partners and the public, including issues prioritization exercises; and (5) a decision-making phase among partners.

Upon completion of this work the assessment partners and the community have the tools they need to develop plans and activities that will improve the health and well-being of the people living in Wilkes County.

ASSESSMENT METHODOLOGY

In order to learn about the specific factors affecting the health and quality of life of Wilkes County residents, the consultant tapped numerous readily available secondary data sources. For data on Wilkes County demographic, economic and social characteristics sources included but were not limited to: 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 Department of Public Instruction; NC Department of Justice; 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. Local sources for sociodemographic data included the Wilkes County Department of Social Services. 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 and Vital Statistics and Cancer Registry units. Other health data sources included: US Centers for Disease Control and Prevention; NCDPH Epidemiology Section; NC Division of Mental Health, Developmental Disabilities and Substance Abuse Services; National Center for Health Statistics; Healthy North Carolina 2020; Injury and Violence Prevention Branch; NC Department of Transportation; and the NCDPH Oral Health Section, among other *public domain* sources. Other important *local* health data sources included the Wilkes County Health Department, and Wilkes Medical Center (for sharing hospital data).

Environmental data were gathered from public domain sources including: US Environmental Protection Agency, NC Department of Environmental Quality Divisions of Air Quality and Waste Management, and the Section of Environmental Health in NCDPH.

Primary data gathering was also an important part of this assessment (including a community survey and issues prioritization exercises); methodologies for the primary data collection activities are discussed in separate sections of this report.

Because in any community health assessment it is instructive to relate local data to similar data in other jurisdictions, Wilkes County data is compared to like data describing the state of NC as a whole, as well as data from Surry County, NC, a state-approved “peer” county. In some cases Wilkes County data is compared to US-level data, to Healthy People/Healthy North Carolina 2020 goals or to other standardized measures. Where appropriate, trend data has been used to show changes in indicators over time, at least since the most recent previous assessment three years ago, but sometimes further back than that.

This report represents a topical synthesis of all the secondary data researched in connection with the 2018 Wilkes County CHNA project. It is intended to serve as the master secondary data resource for guiding community deliberations about the most important health issues in Wilkes County and how to solve them.

It should be noted at the onset that the consultant thoroughly cites and personally vouches for all data sources in the public domain. Local data cites the name of the provider of the information, and readers should judge for themselves the authority of those sources. Finally, as is typical in all time-limited activities such as community health assessment, all data were mined at a point in time in the recent past, and may not represent present conditions. Numbers, entity names, program titles, etc. that appear in the data may no longer be current.

This comprehensive report is available on-line in PDF format on the Wilkes County Health Department's website at www.wilkeshealth.com.

CHAPTER ONE: DEMOGRAPHIC DATA

POPULATION CHARACTERISTICS

General Population Characteristics

The following general population characteristics of Wilkes County, its peer county and the state of NC were based on US Census data estimates via the American Community Survey (ACS).

- The population of Wilkes County was 68,888.
- The population of Wilkes County had a slightly higher percentage of females than males.
- The median age in Wilkes County was 44.1, 5.8 years older than the NC median age.

**Table 1. General Demographic Characteristics
(2016 ACS Estimates)**

Location	2016 ACS Estimates							
	Total Population	Number Males	% Population Male	Median Age Males	Number Females	% Population Female	Median Age Females	Overall Median Age
Wilkes County	68,888	33,902	49.2	43.1	34,986	50.8	45.3	44.1
Surry County	72,767	35,422	48.7	41.2	37,345	51.3	44.5	43.0
State of NC	9,940,828	4,834,592	48.6	36.8	5,106,236	51.4	39.7	38.3
	a	a	a	b	a	a	b	b

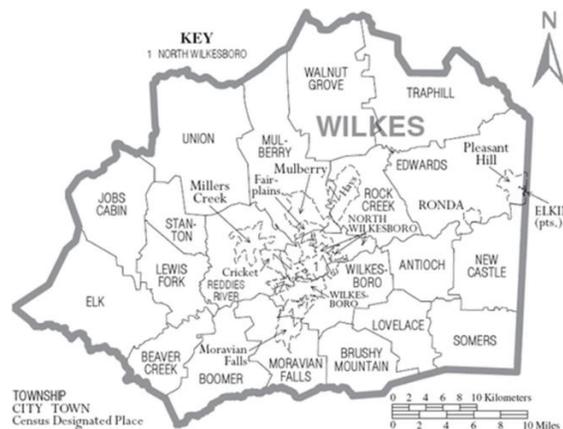
a - Table DP05: ACS Demographic and Housing Estimates, 2016 American Community Survey. US Census Bureau, American Fact Finder, <http://factfinder2.census.gov>.

b - Table S0101: Age and Sex. 2016 American Community Survey. US Census Bureau, American Fact Finder, <http://factfinder2.census.gov>.

Population by Township

As noted in the following figure and table, Wilkes County is divided into 21 townships among which Reddies River and Wilkesboro townships had the largest populations and Job’s Cabin Township had the smallest. Union Township had the “oldest” median age (56.0 years), and Job’s Cabin Township the “youngest” (34.2 years).

Figure 1. Map of Wilkes County



**Table 2. Population by Township, Wilkes County
(2012-2016 ACS Five-Year Estimates)**

Township	No. of Persons	% of County Population	Median Age
Antioch township	1,072	1.6	47.3
Beaver Creek township	359	0.5	47.5
Boomer township	2,139	3.1	44.4
Brushy Mountain township	798	1.2	40.3
Edwards township	7,368	10.7	45.5
Elk township	1,171	1.7	46.8
Jobs Cabin township	486	0.7	34.2
Lewis Fork township	1,193	1.7	55.9
Lovlace township	471	0.7	51.2
Moravian Falls township	3,288	4.8	50.6
Mulberry township	6,822	9.9	39.7
New Castle township	2,244	3.3	34.9
North Wilkesboro township	7,190	10.4	41.8
Reddies River township	11,075	16.1	42.6
Rock Creek township	5,578	8.1	43.2
Somers township	1,015	1.5	49.8
Stanton township	677	1.0	55.5
Traphill township	2,940	4.3	47.5
Union township	785	1.1	56.0
Walnut Grove township	1,675	2.4	46.0
Wilkesboro township	10,542	15.3	43.5
Wilkes County Total	68,888	100.0	44.1

Source: Table DP05: ACS Demographic and Housing Estimates, 2016 American Community Survey. US Census Bureau, American Fact Finder, <http://factfinder2.census.gov>.

Population Growth

The next table illustrates that the rate of population growth in Wilkes County population has been slowing since 2000, and this pattern is projected to continue through at least 2030. The Wilkes County rate of growth was smaller than the rate for the state as a whole in every period covered by the table below.

**Table 3. Decadal Population Growth
(1980-2030 Estimates and Projections)**

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
Wilkes County	58,657	59,393	1.3	65,636	10.5	69,340	5.6	71,574	3.2	75,042	4.8
Surry County	59,449	61,704	3.8	71,209	15.4	73,673	3.5	72,845	-1.1	72,842	0.0
State of NC	5,880,095	6,632,448	12.8	8,046,485	21.3	9,535,483	18.5	10,619,432	11.4	11,759,744	10.7

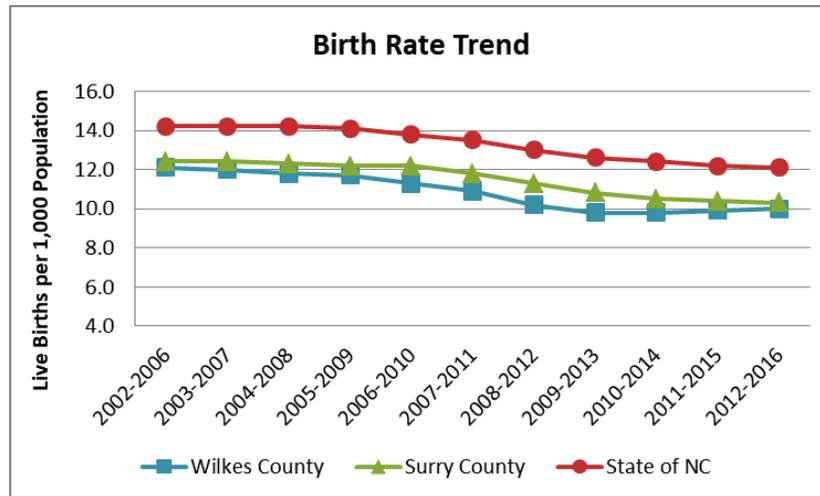
Note: percentage change is calculated.

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

Birth Rate

Overall population growth is a function both of increase (via in-migration and birth) and decrease (via out-migration and death). The following figure illustrates that the birth rate has declined since the early 2000s in Wilkes County, Surry County and the state as a whole. In recent years, Wilkes County has seen a small increase in the birth rate, though it remains lower than the comparable state rate.

Figure 2. Birth Rate Trend, Live Births per 1,000 Total Population (Five-Year Aggregates, 2002-2006 through 2012-2016)



Source: NC State Center for Health Statistics, Health Data, County Level Data, County Health Databooks [years as noted]; <https://schs.dph.ncdhhs.gov/data/databook/>

Population Density

As seen in the table below, population density in Wilkes County has increased every decade since 1980, a trend projected to continue in the next two decades. However, the population density in Wilkes County was lower than the population density statewide in every period presented.

Table 4. Decadal Population Density (1980-2037 Estimates and Projections)

Location	Persons per Square Mile						
	1980	1990	2000	2010 (Estimate)	2020 (Projection)	2030 (Projection)	2037 (Projection)
Wilkes County	77.98	78.44	86.68	90.63	94.91	99.51	102.73
Surry County	110.23	115.00	132.74	142.59	135.74	135.73	135.74
State of NC	120.4	136.1	165.2	191.9	218.12	241.54	257.84

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

Race and Ethnicity

The population of Wilkes County is less diverse than the population of NC as a whole. In Wilkes County as of 2016 US Census Bureau estimates:

- Whites composed 91.2% of the total population; statewide the comparable figure was 69.2%.
- Blacks/African Americans composed 4.3% of the total population; statewide the comparable figure was 21.5%.
- American Indians and Alaskan Natives composed 0.2% of the total population; statewide the comparable figure was 1.2%.
- Asians, Native Hawaiians and Other Pacific Islanders composed 0.6% of the total population; statewide the comparable figure was 2.7%.
- Hispanics/Latinos of any race composed 5.9% of the total population; statewide the comparable figure was 8.9%.

**Table 5. Population Distribution by Race/Ethnicity
(2016 ACS Estimates)**

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.	%
Wilkes County	68,888	62,792	91.2	2,945	4.3	133	0.2	383	0.6	1,613	2.3	1,022	1.5	4,071	5.9
Surry County	72,767	66,972	92.0	2,689	3.7	276	0.4	483	0.7	1,189	1.6	1,158	1.6	7,222	9.9
State of NC	9,940,828	6,882,915	69.2	2,137,131	21.5	117,479	1.2	261,138	2.7	298,795	3.0	243,370	2.4	884,763	8.9

Source: Table DP05: ACS Demographic and Housing Estimates, 2016 American Community Survey. US Census Bureau, American Fact Finder, <http://factfinder2.census.gov>.

Race and Ethnicity by Township

When the Wilkes County population is examined at the township level in 2016 (and as presented in the table below):

- Wilkesboro Township is home to the highest proportion of African Americans (12.0% of the population of the township) followed by North Wilkesboro Township (11.1%).
- Moravian Falls Township is home to the highest proportion of American Indians/Alaskan Natives (1.6% of the population of the township).
- Antioch Township is home to the highest proportion of Asian, Native Hawaiian or Other Pacific Islanders (20.5% of the township's population).
- North Wilkesboro Township is home to the highest proportion of Hispanics (13.0% of the township's population), followed by Wilkesboro Township (11.5%).

**Table 6. Population by Race/Ethnicity, Wilkes County by Township
(2016 ACS Estimates)**

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.	%	
Antioch township	1,072	817	76.2	35	3.3	0	0.0	220	20.5	0	0.0	0	0.0	43	4.0	
Beaver Creek township	359	301	83.8	9	2.5	0	0.0	0	0.0	10	2.8	39	10.9	15	4.2	
Boomer township	2,139	1,963	91.8	107	5.0	0	0.0	8	0.4	21	1.0	40	1.9	61	2.9	
Brushy Mountain township	798	798	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	
Edwards township	7,368	7,030	95.4	229	3.1	2	0.0	0	0.0	45	0.6	62	0.8	359	4.9	
Elk township	1,171	1,171	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	
Jobs Cabin township	486	486	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	
Lewis Fork township	1,193	1,193	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	18	1.5	
Lovelace township	471	471	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	
Moravian Falls township	3,288	2,980	90.6	176	5.4	52	1.6	0	0.0	8	0.2	72	2.2	307	9.3	
Mulberry township	6,822	6,724	98.6	0	0.0	2	0.0	0	0.0	73	1.1	23	0.3	106	1.6	
New Castle township	2,244	2,048	91.3	168	7.5	0	0.0	0	0.0	0	0.0	28	1.2	19	0.8	
North Wilkesboro township	7,190	5,664	78.8	801	11.1	0	0.0	58	0.8	617	8.6	50	0.7	934	13.0	
Reddies River township	11,075	10,212	92.2	20	0.2	59	0.5	37	0.4	524	4.7	223	2.0	828	7.5	
Rock Creek township	5,578	5,461	97.9	78	1.4	0	0.0	0	0.0	0	0.0	39	0.7	17	0.3	
Somers township	1,015	1,015	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	
Stanton township	677	677	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	
Traphill township	2,940	2,751	93.6	61	2.1	0	0.0	0	0.0	128	4.4	114	3.9	57	1.9	
Union township	785	772	98.3	0	0.0	0	0.0	0	0.0	13	1.7	0	0.0	13	1.7	
Walnut Grove township	1,675	1,663	99.3	0	0.0	12	0.7	0	0.0	0	0.0	0	0.0	84	5.0	
Wilkesboro township	10,542	8,595	81.5	1,261	12.0	6	0.1	60	0.6	302	2.9	318	3.0	1,210	11.5	
Wilkes County Total	68,888	62,792	91.2	2,945	4.3	133	0.2	383	0.6	1,613	2.3	1,022	1.5	4,071	5.9	

Source: Table DP05: ACS Demographic and Housing Estimates, 2016 American Community Survey. US Census Bureau, American Fact Finder, <http://factfinder2.census.gov>.

Age

Regarding the age (and gender) distribution of the Wilkes County population according to 2016 ACS estimates shown in the following table:

- In terms of both numbers (5,463) and percent (7.9%), the largest segment of the population in Wilkes County was the group aged 55-59.
- Persons 65 years of age or older composed 19.8% of the population in Wilkes County, and 14.7% of the population of NC; persons 19 years of age and younger composed 23.3% of the population in Wilkes County, and 25.8% of the population of NC.

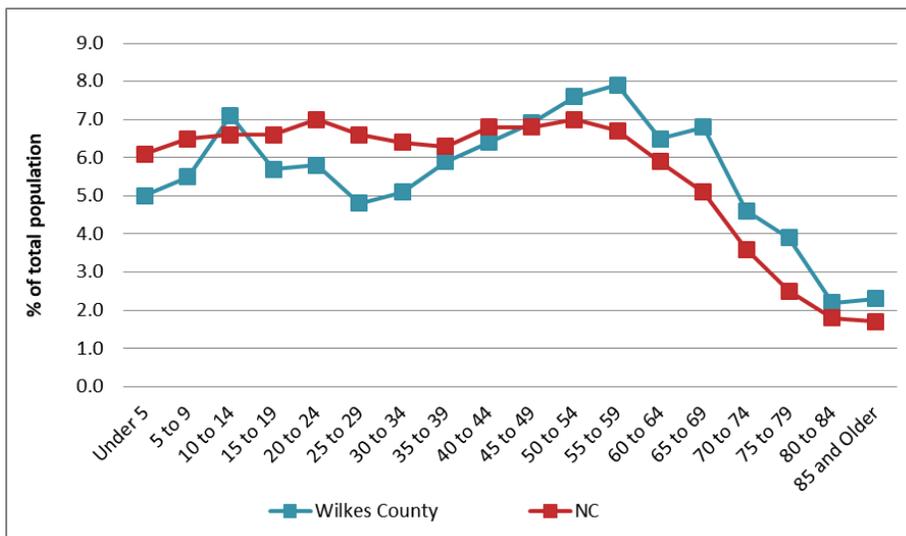
Table 7. Population Distribution by Age and Gender, Number and Percent (2016 ACS Estimates)

Age Group	Wilkes 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	68,888	33,902	34,986	100.0	49.2	50.8	9,940,828	4,834,592	5,106,236	100.0	48.6	51.4
Under 5	3,416	1,700	1,716	5.0	5.0	4.9	605,960	308,419	297,541	6.1	6.4	5.8
5 to 9	3,790	1,827	1,963	5.5	5.4	5.6	644,338	327,504	316,834	6.5	6.8	6.2
10 to 14	4,857	2,558	2,299	7.1	7.5	6.6	651,637	334,349	317,288	6.6	6.9	6.2
15 to 19	3,959	2,063	1,896	5.7	6.1	5.4	658,761	335,985	322,776	6.6	6.9	6.3
20 to 24	3,989	2,054	1,935	5.8	6.1	5.5	695,460	357,209	338,251	7.0	7.4	6.6
25 to 29	3,303	1,624	1,679	4.8	4.8	4.8	654,782	323,879	330,903	6.6	6.7	6.5
30 to 34	3,480	1,726	1,754	5.1	5.1	5.0	639,604	313,902	325,702	6.4	6.5	6.4
35 to 39	4,064	2,160	1,904	5.9	6.4	5.4	629,372	308,695	320,677	6.3	6.4	6.3
40 to 44	4,406	2,203	2,203	6.4	6.5	6.3	678,386	331,349	347,037	6.8	6.9	6.8
45 to 49	4,763	2,427	2,336	6.9	7.2	6.7	679,360	332,474	346,886	6.8	6.9	6.8
50 to 54	5,251	2,576	2,675	7.6	7.6	7.6	694,539	336,936	357,603	7.0	7.0	7.0
55 to 59	5,463	2,743	2,720	7.9	8.1	7.8	661,578	315,303	346,275	6.7	6.5	6.8
60 to 64	4,475	2,159	2,316	6.5	6.4	6.6	587,721	275,657	312,064	5.9	5.7	6.1
65 to 69	4,658	2,275	2,383	6.8	6.7	6.8	507,599	237,951	269,648	5.1	4.9	5.3
70 to 74	3,172	1,489	1,683	4.6	4.4	4.8	356,619	161,973	194,646	3.6	3.4	3.8
75 to 79	2,721	1,177	1,544	3.9	3.5	4.4	252,615	108,736	143,879	2.5	2.2	2.8
80 to 84	1,514	620	894	2.2	1.8	2.6	178,355	71,641	106,714	1.8	1.5	2.1
85 and older	1,607	521	1,086	2.3	1.5	3.0	164,142	52,630	111,512	1.7	1.1	2.2

Source: Table B01001: Sex by Age (for numbers) and Table S0101: Age and Sex (for percentages). 2016 ACS 5-year estimates. U.S. Census Bureau, American FactFinder website: <http://factfinder2.census.gov>.

The next figure compares the age distribution of the NC population to the age distribution of the population in Wilkes County according to 2016 ACS estimates. Wilkes County is home to a smaller proportion of persons in most age groups under the age of 45-49 and a larger proportion of persons over the age of 49 than demonstrated in the state age distribution profile.

Figure 3. Population Distribution by Age, Wilkes County and NC (2016 ACS Estimates)



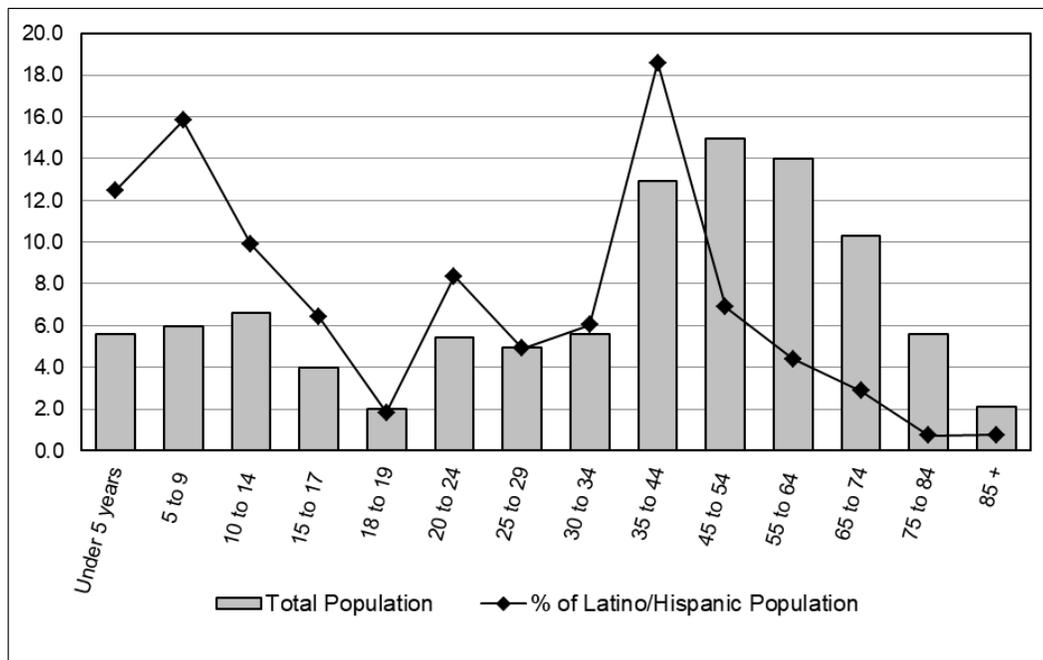
Source: Table S0101: Age and Sex. 2016 ACS 5-year estimates. U.S. Census Bureau, American FactFinder website: <http://factfinder2.census.gov>.

Age Distribution of the Latino Population

The following figure is a graphic depiction of the population profiles, by age group, of the total Wilkes County population and the Hispanic/Latino population in the county.

- The age distribution of the Hispanic/Latino population looks quite different than the age distribution of the overall population.
- In Wilkes County many of the age groups under the age of 45 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 groups over age 45.
- The highest proportions of the Hispanic/Latino population in Wilkes County occurred in the 5-9 and 35-44 age groups.

Figure 4. Age Distribution of Overall and Latino Populations in Wilkes County (2016 ACS Estimates)



Sources - US Census Bureau, American Fact Finder, 2016 ACS 5-Year Estimates, Table B01001: Sex by Age, and Sex by Age (Hispanic or Latino); <http://factfinder2.census.gov/>.

Age by Township

According to 2016 ACS data presented in the table below:

- Job's Cabin Township had the highest proportion of persons under the age of 18 (32.1% of the township's population), followed by Brushy Mountain Township (31.9%).
- Lewis Fork Township had the highest proportion of persons ages 65 and older (35.6% of the total population of the township), followed by Union Township (29.3%)

**Table 8. Population by Age, by Township, Wilkes County
(2016 ACS Estimates)**

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
Antioch township	12.6	16.6	8.5	9.8	12.8	18.7	21.0
Beaver Creek township	29.2	3.6	5.3	9.5	22.0	9.5	20.9
Boomer township	22.9	5.1	10.4	13.4	21.5	10.7	15.9
Brushy Mountain township	31.9	3.8	10.1	14.2	3.6	14.0	22.6
Edwards township	20.0	7.7	10.3	10.9	19.0	9.7	22.5
Elk township	14.1	15.2	7.6	8.1	25.9	14.4	14.5
Jobs Cabin township	32.1	6.2	14.7	17.7	3.5	12.5	13.4
Lewis Fork township	12.0	4.4	5.6	9.1	18.4	14.9	35.6
Lovelace township	7.4	15.7	6.6	9.6	21.5	16.8	22.5
Moravian Falls township	19.1	3.9	11.5	8.6	15.9	18.4	22.5
Mulberry township	23.1	8.5	9.6	15.5	13.1	14.1	16.0
New Castle township	21.9	14.8	13.5	9.8	15.6	8.9	15.4
North Wilkesboro township	21.6	10.0	9.0	13.6	14.0	13.0	18.9
Reddies River township	23.7	6.7	10.4	13.0	12.2	15.9	18.1
Rock Creek township	19.7	9.8	10.1	13.1	10.3	19.3	17.6
Somers township	23.8	2.9	7.8	7.0	19.0	18.6	20.9
Stanton township	21.6	0.0	3.2	13.3	8.6	34.6	18.8
Traphill township	20.6	6.0	6.6	11.9	21.0	11.6	22.3
Union township	16.4	7.6	7.3	6.7	10.4	22.2	29.3
Walnut Grove township	21.7	5.9	10.9	11.0	11.9	18.4	20.3
Wilkesboro township	21.6	6.3	10.5	12.7	13.5	13.0	22.2
Wilkes County Total	21.4	7.7	9.9	12.3	14.5	14.4	19.8

Source: Table S0101: Age and Sex, 2016 American Community Survey. US Census Bureau, American Fact Finder, <http://factfinder2.census.gov>.

Elderly Population

Because the proportion of the Wilkes 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 the county's future health and human service needs. The following information regarding the elderly population was extracted from the following table, which contains 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 the population in Wilkes County age 65 and older is projected to increase by 52% between 2010 and 2030, when the number of persons in the county age 65 and older is expected to reach 19,392.
- Though all segments of the elderly population will grow, the segment expected to grow by the largest proportion between 2010 and 2030 is the age group 75-84, which is predicted to grow by 73% over that period, from 5.2% to 9.0% of the county population.
- The proportion of the segment age 65-74 will grow by 40% over the same period, and the proportion of the segment age 85 and older will grow by 60%.

Table 9. Growth Trend for the Elderly (Age 65 and Older) Population, by Decade (2000 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+
Wilkes County	65,632	9,246	14.1	5,157	7.9	3,080	4.7	1,009	1.5
Surry County	71,219	10,973	15.4	5,773	8.1	3,874	5.4	1,326	1.9
State of NC	8,049,313	969,048	12.0	533,777	6.6	329,810	4.1	105,461	1.3
Source	a	a	d	a	d	a	d	a	d
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+
Wilkes County	69,340	11,778	17.0	6,820	9.8	3,602	5.2	1,356	2.0
Surry County	73,673	12,250	16.6	6,750	9.2	3,931	5.3	1,569	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	b	b	d	b	d	b	d	b	d
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+
Wilkes County	71,574	15,779	22.0	8,974	12.5	5,072	7.1	1,733	2.4
Surry County	72,845	14,717	20.2	8,385	11.5	4,683	6.4	1,649	2.3
State of NC	10,619,432	1,789,725	16.9	1,063,143	10.0	533,546	5.0	193,036	1.8
Source	c	d	d	c	d	c	d	c	d
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+
Wilkes County	75,042	19,392	25.8	10,259	13.7	6,749	9.0	2,384	3.2
Surry County	72,842	16,822	23.1	8,893	12.2	5,913	8.1	2,016	2.8
State of NC	11,759,744	2,355,463	20.0	1,272,905	10.8	807,850	6.9	274,708	2.3
Source	c	d	d	c	d	c	d	d	d

a - US Census Bureau, American FactFinder. Profile of General Demographic Characteristics: 2000 (DP-1), SF1; <http://factfinder2.census.gov>.

b - US Census Bureau, American FactFinder. Profile of General Population and Housing Characteristics: 2010 (DP-1); <http://factfinder2.census.gov>.

c - NC Office of State Budget and Management, County/State Population Projections. Sex and Single Years of Age (2000-2037). http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/county_projections.shtm.

d - Percentages were calculated using age group population as numerator and total population as denominator.

Population Speaking Limited English

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.

Linguistic Isolation

“Linguistic isolation”, or household with a limited ability to speak English, can be a barrier preventing foreign-born residents from accessing needed services. The US Census Bureau tracks limited English speaking 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.

According to data from the 2016 ACS shown in the following table:

- Of the 27,583 Wilkes County households included in the statistic, an estimated 1,349 (4.9%) spoke a language other than English. An estimated 407 of these households were linguistically isolated; in 94% of these cases the isolated residents were Spanish-speaking.

Table 10. Household Language by Ability to Speak English (2012-2016 ACS Five-Year Estimates)

2016 ACS Estimate													
County	Non-English Speaking	Spanish			Other Indo-European languages			Asian and Pacific Island languages			Other languages		
		Total	Limited English Speaking	Not Limited English Speaking	Total	Limited English Speaking	Not Limited English Speaking	Total	Limited English Speaking	Not Limited English Speaking	Total	Limited English Speaking	Not Limited English Speaking
Wilkes County	1,349	1,049	383	666	115	0	115	124	0	124	61	24	37
Surry County	2,256	1,909	598	1,311	218	16	202	93	27	66	36	0	36
State Total	412,603	250,178	71,684	178,494	82,310	8,447	73,863	60,128	13,418	46,710	19,987	2,788	17,199

Source: Household Language by Household Limited English Speaking Status (Table C16002), 2016 ACS 5-Year Estimates. U.S. Census Bureau, American FactFinder website: <http://factfinder2.census.gov>

Special Populations

Military Veterans

A population group that sometimes needs special health services is military veterans. The next table summarizes estimates regarding that population for the aggregate period 2012-2016.

- Veterans composed 8.7% of Wilkes County’s overall adult civilian population in the period cited, similar to NC (9.0%) but higher than national (8.0%) averages.
- A larger proportion of the veterans in Wilkes County were age 65 and older (57%) than in NC as a whole (44%) or nationally (48%).

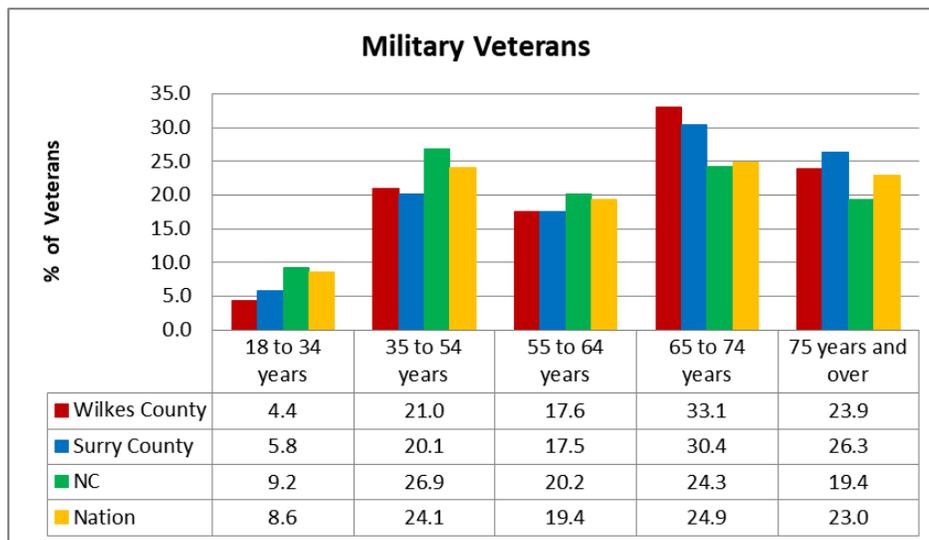
- The Veterans Administration Medical Center nearest to Wilkes County is the W.G. (Bill) Hefner VA Medical Center in Salisbury, NC. Others are located in Asheville, Durham, and Fayetteville, NC.
- VA Outpatient Clinics are located in Hickory, Fayetteville, Raleigh and Greenville, NC; Community-Based Outpatient Clinics serving veterans are located in Kernersville, Charlotte, Durham, Elizabeth City, Franklin, Goldsboro, Hamlet, Jacksonville, Morehead City, Pembroke, Raleigh, Rutherfordton, Sanford, Supply, and Wilmington, NC. Vet Centers are located in Greensboro, Charlotte, Fayetteville, Greenville, and Jacksonville, Raleigh, and Spindale, NC (1).

**Table 11. Veteran Status of Population
(2012-2016 ACS Five-Year Estimates)**

Location	Civilian Population 18 years and over				
	Total	# Non-Veterans	% Non-Veterans	# Veterans	% Veterans
Wilkes County	54,123	49,399	91.3	4,724	8.7
Surry County	56,609	52,067	92.0	4,542	8.0
State of NC	7,570,164	6,886,943	91.0	683,221	9.0
National Total	243,935,157	224,399,816	82.0	19,535,341	8.0

Source: US Census Bureau, American Fact Finder, American Community Survey, 2016 ACS 5-Year Estimate, Table S2101: Veteran Status; <http://factfinder2.census.gov>.

**Figure 5. Age Distribution of Military Veterans
(2012-2016 ACS Five-Year Estimates)**



Source: US Census Bureau, American Fact Finder, American Community Survey, 2016 ACS 5-Year Estimate, Table S2101: Veteran Status; <http://factfinder2.census.gov>.

Blind/Visually Impaired Population

The table below presents the number of blind and visually-impaired persons in the three jurisdictions being compared.

Table 12. Blind/Visually Impaired Populations

Location	Number Blind/Visually Impaired (2017)
Wilkes County	247
Surry County	193
State of NC	22,610

Source: Log into North Carolina (LINC) Database, Topic Group Vital Statistics and Health (Data Item 520);
http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show.

Special Needs Registry

In order to assist residents with special needs in the event of an emergency, county Emergency Management Officials and their community partners 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.

Currently, Wilkes County Emergency Management maintains the Special Needs Registry and the multi-page registration form is posted at their website (2). As of August 2018, there were no entries in the Special Needs Registry in Wilkes County (3).

CIVIC ENGAGEMENT

Electoral Process

One measure of a population's engagement in community affairs is its participation in the electoral process. The table below summarizes current voter registration figures.

Registered Voters

- The proportion of the overall voting age population registered to vote in Wilkes County in December 2017 was 75.7%, lower than the state percentage of 85.9% and the Surry County percentage of 78.4%.

Table 13. Registered Voters, by Race/Ethnicity, Number and Percent (As of December 30, 2017)

Location	Estimated Voting Age Population 2017	Number and Percent of Voting Age Population Registered to Vote ¹											
		Total		White		Black		American Indian		Hispanic		Other	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Wilkes County	56,155	42,534	75.7	39,678	70.7	1,713	3.1	42	0.1	624	1.1	1,101	2.0
Surry County	57,581	45,164	78.4	41,081	71.3	1,763	3.1	64	0.1	1,044	1.8	2,256	3.9
State of NC	7,959,289	6,838,698	85.9	4,735,732	59.5	1,511,599	19.0	56,060	0.7	176,127	2.2	535,307	6.7

Source:

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), 2017 ; http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show.

b - NC State Board of Elections, Voter Registration, Voter Statistics, Voter Registration Statistics, <https://vt.ncsbe.gov/RegStat/c>

c - Percentages are calculated

Voter Turnout

The next table shows voter turnout figures for the 2004, 2008, 2012, and 2016 General Elections.

- Higher or similar proportions of Wilkes County voters turned out to vote in Wilkes County compared to the average statewide.

Table 14. Voter Turnout in General Elections

Location	% Registered Voters that Voted			
	2004	2008	2012	2016
Wilkes County	67.78	71.91	68.96	72.37
Surry County	30.63	66.10	66.28	69.74
State of NC	63.42	71.90	68.17	68.27

Source : Log Into North Carolina (LINC) Database, Topic Group Government, Voters and Elections, Percent of Registered Voters Voting in General Election (Data Item 1717), Years as noted.

http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show

COMMUNITY SERVICES AND ORGANIZATIONS

Law Enforcement

Wilkes County Sheriff's Office

The Wilkes County Sheriff's Office is headquartered in Wilkesboro. The Sheriff's Office is responsible for ensuring all residents' and visitors' safety in a county that covers 758 square Units within the department include:

- Jail
- Civil
- Criminal Investigation
- Communications
- Criminal Response Group (CRG)
- Field Operations
- School Resource Officers
- 911 Addressing (4).

Police Departments in Wilkes County

Each of the two largest municipalities in Wilkes County, Wilkesboro and North Wilkesboro, maintain their own police departments.

Wilkesboro Police Department

The Wilkesboro Police Department consists of 22 full-time officers, 3 reserve officers and 2 administrative assistants. There are 2 Divisions within the department, the Patrol Division and the Support Services Division:

- **Patrol Division.** The Patrol Division has 5 patrol teams to provide continuous, around-the-clock police service. In 2018 the division answered over 11,299 calls for service and made 346 arrests. This division includes a Crash Reconstruction Team that is specially trained for in-depth investigation of the most serious traffic crashes. As the local coordinator for the NC Governor's Highway Safety Program, all patrol officers receive high levels of training in patrol functions. The department has a Bicycle Patrol officer for areas such as Main Street, the Greenway, and the town's parks so that people in these general public locations are better served. In the summer of 2016, the department welcomed a K-9 Officer.
- **Support Division.** The Support Services Division is responsible for investigating reported general crimes and controlled substance violations. Other functions include evidence control, equipment management, our Crime Stoppers role, and crime prevention programs. The Special Response Team (S.R.T.) is trained in various high-risk operations and they provide 24/7/365 abilities to respond to disasters or situations when extra manpower is needed quickly (5).

North Wilkesboro Police Department

The primary functions of the North Wilkesboro Police Department are the preservation of the public peace and order, the prevention and detection of crime, the apprehension of offenders, and the protection of life and property. The North Wilkesboro Police Department strives to be a

community-oriented police department. Currently the department is broken down into different divisions, with each one specializing in certain areas as well as working closely with other divisions.

- **Criminal Investigations Division (CID)** - The Criminal Investigation Division is made up of 5 Investigators who are on call 24 hours a day. CID is responsible for the follow up investigation of all reported crimes. These investigations consist of locating and interviewing victims and witnesses; locating, identifying, and preserving physical evidence; recovering stolen property; locating, interviewing, and arresting criminal suspects; and presenting criminal cases to the District Attorney's office for prosecution. The Department's Crime Prevention Unit is also housed within the Criminal Investigations Division. The Narcotics Investigator also serves as the ABC Enforcement Officer for the department.
- **Narcotics Division** – The narcotics unit is responsible for all illegal drug violations that occur inside North Wilkesboro. The narcotics unit is assisted by the Criminal Investigations Division in establishing cases against drug offenders along with setting up controlled buys of illegal drugs and charging the persons involved. The Narcotics Investigator reports to the Commander of CID.
- **Patrol Division** – The Patrol Division is made up of all uniformed officers. The Patrol Division is broken down into 4 squads. Each of the squads is supervised separately by a Sergeant who is assigned to work road duty as well as supervision. The Auxiliary Unit for the department is also under the Patrol Division. The Patrol Division is made up of 18 full time officers and 4 part time officers (6).

Fire Departments

Fire protection in Wilkes County is provided by the municipal and volunteer fire departments listed alphabetically by town in the following table.

**Table 15. Fire Departments Serving Wilkes County
(April 2018)**

Department Name	Location
Sta 21 - North Wilkesboro - 709 9th St	North Wilkesboro
Sta 22 - Wilkesboro - 400 S Cherry St	Wilkesboro
Sta 23 - Wilkes-Iredell - 11715 Statesville Rd	North Wilkesboro
Sta 24 - Millers Creek - Sta 1 - 5200 Boone Trail	Millers Creek
Sta 24 - Millers Creek - Sta 2 - 700 Big Ivy Rd	Purlear
Sta 25 - Cricket - 1399 Boone Rd	Boone Trail
Sta 26 - Mulberry-Fairplains - 2055 Sparta Rd	North Wilkesboro
Sta 27 - Broadway - 1690 Statesville Rd	Wilkesboro
Sta 28 - Moravian Falls - 258 East Brocktown Rd	Moravian Falls
Sta 29 - Roaring River - Sta 1 - 214 ABTCO Rd	Roaring River
Sta 29 - Roaring River - Sta 2 - 5225 Speedway Rd	Roaring River
Sta 31 - Mountain View - Sta 1 - 5416 Mountain View Rd	Hays
Sta 41 - Mountain View - Sta 2 - 3945 Dehart Church Rd	Hays
Sta 32 - Ronda - Sta 1 - 12164 Elkin Hwy	Ronda
Sta 32 - Ronda - Sta 2 - 3463 Clingman Rd	Ronda
Sta 33 - Pleasant Hill - 1069 Austin-Traphill Rd	Pleasant Hill
Sta 34 - Austin - 7170 Austin-Traphill Rd	Austin
Sta 35 - Traphill - Sta 1 - 8899 Traphill Rd	Traphill
Sta 35 - Traphill - Sta 2 - 668 Moxley Rd	Hays
Sta 36 - McGrady - 11461 Sparta Rd	McGrady
Sta 37 - Ferguson - Sta 1 - 12660 W NC Hwy 268	Ferguson
Sta 37 - Ferguson - Sta 2 - 7262 Elk Creek Darby Rd	Ferguson
Sta 38 - Goshen - 5450 W NC 268	Wilkesboro
Sta 39 - Boomer - 5990 S NC Hwy 18	Boomer
Sta 41 - Champion - Sta 1 - 491 Champion-Mt Pleasant Rd	Ferguson
Sta 41 - Champion - Sta 2 - 3044 Mt Zion Rd	Ferguson
Sta 41 - Champion - Sta 3 - 137 Shiffords Branch Rd	Purlear
Sta 42 - Shepherds Crossroads - 6188 White Plains Rd	Roaring River
Sta 43 - Knotville - 2864 Elkin Hwy	North Wilkesboro
Sta 44 - Brushy Mountain - 7990 Brushy Mountain Rd	Moravian Falls
Sta 45 - Little Brushy Mountain - 2772 Mt Sinai Rd	Wilkesboro
Sta 46 - Wilbar - 10035 N NC Hwy 16	Millers Creek
Sta 89 - Wilkes Rescue Squad - 822 Boston Avenue	North Wilkesboro

Source: NC Fire Station Lists by County; http://www.carolinasfirepage.com/members/nc_ctys.html

Community Resources

Many government agencies and community organizations maintain on-line resource directories to help the citizens of Wilkes County locate the organizations and services they need. Among them are:

Wilkes County Health Department Community Resource Guide

The Wilkes County Health Department maintains an on-line, 28-page guide to community resources arranged by category of service. The guide provides a brief description of each service as well as addresses, phone numbers and hours of operation (if applicable). The guide can be accessed at:

<https://wilkescounty.net/DocumentCenter/View/246/Community-Resources-Guide-PDF?bidId=>

2-1-1 of Wilkes County

With the help of the United Way, many communities in NC, including Wilkes County, help maintain a local “2-1-1” phone information system to help citizens locate health and human services and resources as varied as employment assistance, food pantries, or homeless shelters. A call to NC 2-1-1 is free, confidential, available all day, every day, and in any language.

In addition, there is an on-line gateway to NC 2-1-1 that provides links to a listing of county resources via the following URL: <https://www.nc211.org/find-help>

SAFE, Inc. Wilkes County, NC – Resources and Links

SAFE offers survivors of domestic and sexual violence options for safety, empowerment, healing and hope. It maintains a web listing of resources of interest to its clients and others. The resource list can be located via the following URL: <http://www.safewilkes.org/resources-links>

Wilkes Faith Help – Local Medical Resources

FaithHealth mobilizes the caring strengths of congregations to improve health and bring hope to those who are ill. Part of FaithHealthNC, a statewide movement bringing together individuals, congregations, community partners and health care providers to improve health, the local office maintains a webpage with links for local medical resources such as clinics, counseling, dental care, insurance, prescriptions, respite care, urgent care and “find a doc.” It can be located at: <http://wilkesfaithhealth.weebly.com/local-medical-resources.html>.

United Way of Wilkes County

The United Way maintains a brief alphabetized list of links to partner agencies, most of which provide advocacy or direct assistance to the public. The list is accessed via:

<http://uwwilkes.org/partner-agencies/>

Wilkes Community Partnership for Children

The Partnership, through its Smart Start initiative, maintains a webpage with links not to organizational resources but to *information* resources on topics pertaining to early childhood

and child development. The list can be accessed at: <https://www.wilkeschildren.org/childhood-resources-> .

CHAPTER TWO: SOCIOECONOMIC DATA

ECONOMIC CLIMATE

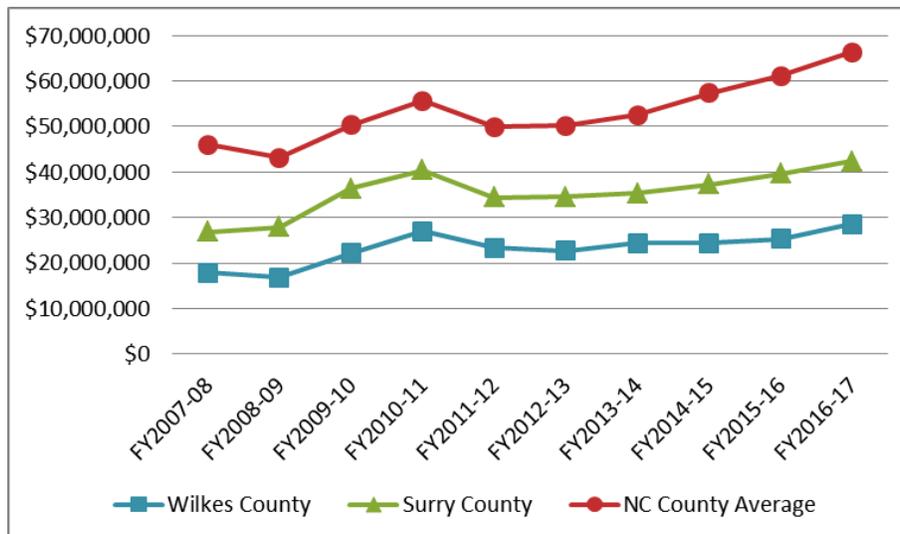
Tier Designation

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 that encourage economic activity and business investment in less prosperous areas of NC. In 2019 Wilkes County was assigned the Tier 2 designation; its peer Surry County was assigned the Tier 1 designation (7).

County Revenue Indicators

For the decade covering FY2007-2008 through FY2016-2017, gross collections of state sales and use taxes in Wilkes County were only about 43% of the average for all NC counties, as shown in the table below. These taxes provide some of the money available to the county to fund public services; change in these collections point to changes in overall economic activity and fiscal confidence in a county.

Figure 6. NC State Sales and Use Tax Gross Collections (FY2007-2008 through FY2016-2017)



Source: NC Department of Revenue, Tax Publications and Reports, State Sales and Use Tax Reports by Fiscal Year, by County Summary; <https://www.ncdor.gov/reports-and-statistics/state-sales-and-use-tax-reports-fiscal-year>

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.

The next table summarizes 2016 income data for Wilkes County and its comparators. Among these jurisdictions:

- Per capita personal income in Wilkes County was \$6,634 *lower* than the comparable state average.
- Median household income in Wilkes County was \$13,410 *lower* than the comparable state average.
- Median family income in Wilkes County was \$13,207 *lower* than the comparable state average.

**Table 16. Income Measures
(2012-2016 ACS Five-Year Estimates)**

Location	Median Household Income	Difference from the state	Median Family Income	Difference from the state	Per Capita Income	Difference from the state	Mean Retirement Income	Difference from the state
Wilkes County	\$34,846	-\$13,410	\$46,460	-\$13,207	\$20,145	-\$6,634	\$19,456	-\$2,919
Surry County	\$37,345	-\$10,911	\$48,039	-\$11,628	\$21,411	-\$5,368	\$19,367	-\$3,008
State of NC	\$48,256	n/a	\$59,667	n/a	\$26,779	n/a	\$22,375	n/a

Source: Table DP03: Selected Economic Characteristics, 2016 American Community Survey 5-Year Estimate. U.S. Census Bureau American FactFinder website: <http://factfinder2.census.gov>

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

The table below details categories of industry by sector in Wilkes County and its comparators for 2016 showing the number employed in each sector, the percentage of all employment that that number represents, and the average weekly wage for people employed in each sector.

- The industry in Wilkes County that employed the largest percentage of the workforce (20.45%) was Manufacturing, with an average weekly wage of \$702. In 2014, it accounted for 23.09% of the workforce with an average weekly wage of \$673.
- The Retail Trade sector accounted for the second largest percentage of the Wilkes County workforce, at 12.98% (average weekly wage of \$479), followed closely by Health Care and Social Assistance at 11.72% (average weekly wage of \$665).
- Statewide, the sector employing the largest percentage of the workforce was Health Care & Social Assistance (14.1%), followed by Retail Trade (11.8%) and Manufacturing (10.9%).
- The average weekly wage for all sectors in Wilkes County was \$677, \$357 less than the average weekly wage for all sectors in NC as a whole (\$1,034). The disparity between Wilkes County and the state has widened since 2014 when the average weekly wage in Wilkes County was \$288 less than the NC average across all sectors.

**Table 17. Employment and Wages by Sector
(Annual Summary, 2016)**

Sector	Wilkes County			Surry County			North Carolina		
	Avg. No. Employed	% Total Employment in Sector	Average Weekly Wage per Employee	Avg. No. Employed	% Total Employment in Sector	Average Weekly Wage per Employee	Avg. No. Employed	% Total Employment in Sector	Average Weekly Wage per Employee
Agriculture, Forestry, Fishing & Hunting	180	0.83	\$491	175	0.62	\$1,651	28,447	0.7	\$655
Mining	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Utilities	n/a	n/a	n/a	n/a	n/a	n/a	15,230	0.4	\$1,718
Construction	640	2.94	\$708	2,792	9.83	\$925	200,482	4.7	\$962
Manufacturing	4,453	20.45	\$702	3,894	13.71	\$666	464,525	10.9	\$1,089
Wholesale Trade	772	3.55	\$978	736	2.59	\$836	182,811	4.3	\$1,328
Retail Trade	2,825	12.98	\$479	4,352	15.32	\$468	501,944	11.8	\$524
Transportation & Warehousing	464	2.13	\$819	1,200	4.23	\$766	142,776	3.4	\$910
Information	222	1.02	\$875	246	0.87	\$701	79,995	1.9	\$1,494
Finance & Insurance	319	1.47	\$1,030	598	2.11	\$934	163,851	3.8	\$1,731
Real Estate & Rental & Leasing	226	1.04	\$745	195	0.69	\$583	56,941	1.3	\$906
Professional, Scientific & Technical Services	537	2.47	\$928	602	2.12	\$1,114	232,297	5.5	\$1,484
Management of Companies & Enterprises	2,082	9.56	\$959	424	1.49	\$1,265	83,824	2.0	\$1,993
Administrative & Waste Services	552	2.54	\$517	1,806	6.36	\$419	295,184	6.9	\$663
Educational Services	2,116	9.72	\$650	2,270	7.99	\$658	373,364	8.8	\$831
Health Care & Social Assistance	2,551	11.72	\$665	3,918	13.80	\$722	602,329	14.1	\$924
Arts, Entertainment & Recreation	188	0.86	\$200	175	0.62	\$304	73,222	1.7	\$588
Accommodation & Food Services	1,947	8.94	\$272	2,802	9.87	\$262	412,099	9.7	\$320
Other Services	414	1.90	\$448	787	2.77	\$559	108,171	2.5	\$630
Public Administration	1,283	5.89	\$715	1,427	5.02	\$646	241,875	5.7	\$905
TOTAL ALL SECTORS	21,771	100.00	\$677	28,399	100.00	\$793	4,259,367	100.0	\$1,034

Source - Quarterly Census Employment and Wages (QCEW), 2016. NC Employment Security Commission, Labor & Economic Analysis Division (LEAD), 4D: <https://accessnc.opendatasoft.com/pages/home>. 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.

Largest Employers

The following table lists the 25 largest employers in Wilkes County as of the end of the 3rd Quarter, 2017.

- Three of the employers listed—Tyson Farms, Inc., Lowe’s Companies, Inc., and the Wilkes County Board of Education—employed more than 1,000 people.
- Three employers listed employed between 500 and 999 people; the others in the list each employed fewer than 500 people.

**Table 18. 25 Largest Employers in Wilkes County
(Third Quarter, 2017)**

Rank	Employer	Industry	No. Employed
1	Tyson Farms Inc	Manufacturing	1000+
2	Lowe's Companies Inc	Professional & Business Services	1000+
3	Wilkes County Board of Education	Education & Health Services	1000+
4	Wilkes Regional Medical Center	Education & Health Services	500-999
5	Lowe's Home Centers Inc	Trade, Transportation & Utilities	500-999
6	Wilkes County	Public Administration	500-999
7	Wilkes Community College	Education & Health Services	250-499
8	Louisiana-Pacific Corporation	Manufacturing	250-499
9	Wal-Mart Associates Inc	Trade, Transportation & Utilities	250-499
10	Tyson Poultry Inc	Manufacturing	250-499
11	Congruity HR	Professional & Business Services	250-499
12	QSI	Professional & Business Services	100-249
13	East Coast Millwork Dist Inc	Trade, Transportation & Utilities	100-249
14	NC Department of Transportation	Public Administration	100-249
15	Callaghan and Callaghan Inc	Professional & Business Services	100-249
16	Food Lion	Trade, Transportation & Utilities	100-249
17	Principle Long Term Care Inc	Education & Health Services	100-249
18	Samaritans Purse Inc	Education & Health Services	100-249
19	Gardner Glass Products Inc	Manufacturing	100-249
20	Wilkes Senior Village	Education & Health Services	100-249
21	The Interflex Group	Manufacturing	100-249
22	Worldwide Protective Products LLC	Manufacturing	100-249
23	Plycem Usa Inc	Manufacturing	100-249
24	McDonald's	Leisure & Hospitality	100-249
25	Town of Wilkesboro	Public Administration	100-249

Source: NC Department of Commerce, Access NC data portal. Business: Top 25 Employers. Sort by County;
<https://accessnc.opendatasoft.com/pages/home/>

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.

- According to the estimate for 2012-2016 shown in the table below, 75.4% of Wilkes County resident workers were employed within the county.

**Table 19. Place of Work for Resident Workers Age 16 and Older
(2012-2016 ACS Five-Year Estimates)**

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
Wilkes County	27,311	27,095	99.2	20,590	75.4	6,505	23.8	216	0.8	6,721	24.6
Surry County	29,195	28,329	97.0	20,555	70.4	7,774	26.6	866	3.0	8,640	29.6
State of NC	4,448,095	4,334,037	97.4	3,182,485	71.5	1,151,552	25.9	114,058	2.6	1,265,610	28.5

Note: percentages are calculated and may include some rounding error.

Source: Table B08007: Sex of Workers by Place of Work, State and County Level. 2016 ACS 5-year estimate. US Census Bureau, American Fact Finder. <http://factfinder.census.gov>

Modes of Transportation to Work

Besides serving as an indicator of environmental concern, 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. The next table compares data on modes of transportation to work from the 2000 US Census and the ACS estimate for 2012-2016.

In Wilkes County:

- Very few workers used public transportation to get to work in 2000, but the number for 2012-2016 was higher.
- The number of workers who carpoled decreased 34% between 2000 and 2012-2016.
- The number of workers who walked to work, while relatively small, decreased 15% over the period cited.
- The number of workers who worked at home decreased 20% over the same period.

**Table 20. Modes of Transportation to Work
(2000 Count and 2012-2016 ACS Five -Year Estimate)**

Location	Number of Persons											
	Drove Alone		Carpooled		Used Public Transportation		Walked		Taxicab, motorcycle, bicycle or other means		Worked at Home	
	2000	2012-2016	2000	2012-2016	2000	2012-2016	2000	2012-2016	2000	2012-2016	2000	2012-2016
Wilkes County	24,740	22,946	5,088	3,367	15	40	289	245	147	104	762	609
Surry County	26,234	25,126	5,511	2,668	19	173	465	173	407	246	822	809
State of NC	3,046,666	3,609,146	538,264	436,604	34,803	48,349	74,147	80,835	35,942	58,229	102,951	214,932

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://factfinder2.census.gov>.

b - US Census Bureau, American Fact Finder, 2016 American Community Survey 5-Year Estimates, Table B08006: Sex of Workers by Means of Transportation to Work. County, North Carolina (Counties as listed); <http://factfinder.census.gov>.

Public Transportation in Wilkes County

Wilkes Transportation Authority (WTA) is the public transportation entity in Wilkes County and is authorized to operate within the state of North Carolina under guidance from the Department of Transportation. WTA is a non-profit organization dedicated to providing safe, reliable, and efficient transportation options to the general public and is not affiliated with any other government body or agency

WTA provides multiple transportation options for residents of Wilkes County, specializing in offering transportation alternatives to those with limited options in rural communities. WTA can provide trips to anywhere in the state of North Carolina.

All WTA drivers are certified in first aid and defensive driving, are trained to current driving standards, and are randomly drug tested. All WTA vehicles are regularly maintained, and are handicap-accessible to Americans with Disabilities Act standards. For safety and efficiency, all vehicles have two-way radios. Most vehicles are equipped to board upright wheelchairs.

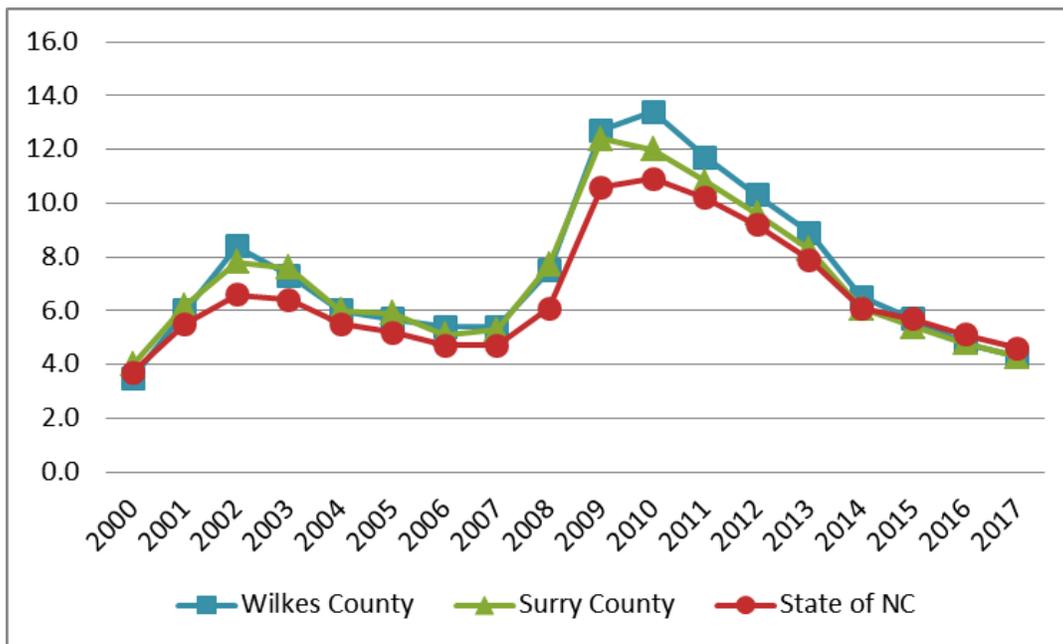
WTA offers both **on demand** and **set-schedule express shuttle** services. On-demand services are provided when the user calls in advance to schedule service. On-demand travel must be completed during the same business day. On-demand WTA services observe regular service hours (6:30 AM to 6:30 PM Monday through Friday), extended service hours (before 6:00 AM and after 6:00 PM weekdays, and weekend service), holiday services (on nationally recognized holidays) and rural general public service inside Wilkes County (8).

Unemployment

The next figure plots the unemployment rate in Wilkes County and its comparators.

- Beginning in 2008, the unemployment rate rose significantly in all three jurisdictions. Unemployment in Wilkes County and NC as a whole began to decline after 2010, a year after the decline began in Surry County. The declines continue at the present time.
- In 2017, the annual unemployment rate for Wilkes County (4.3%) was slightly lower than the state rate of 4.6% (9).

Figure 7. Annual Unemployment Rate (2000-2017)



Note: The unemployment rate is calculated by dividing the number of unemployed by the civilian labor force. The civilian labor force is the total employed plus the unemployed.

Source: Labor Force/Local Area Unemployment Statistics (LAUS). NC Employment Security Commission, Labor & Economic Analysis Division (LEAD), 4D: <https://accessnc.opendatasoft.com/pages/home/>

Poverty

The poverty rate is the percent of the population (both individuals and families) whose money income (which includes job earnings, unemployment compensation, social security income, public assistance, pension/retirement, royalties, child support, etc.) is below a federally established threshold; this is the “100%-level” figure.

The following table shows the decadal poverty rate for the period from 1970 through 2000 and the estimated poverty rate for six five-year periods: 2007-2011 through 2012-2016. 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 Wilkes County, most of the poverty rates after 2000 were higher than the rates for 2000 or earlier.
- Wilkes County poverty rates in the most recent aggregate periods were higher compared to both NC and Surry County.
- After increasing steadily between 2007-2011 and 2010-2014, the poverty rate in Wilkes County has since declined slightly in the last two aggregate periods.

**Table 21. Annual Poverty Rate
(1970-2000; 2006-2010 through 2012-2016 ACS Five-Year Estimates)**

Location	Percent of All People in Poverty									
	1970	1980	1990	2000	2007-2011	2008-2012	2009-2013	2010-2014	2011-2015	2012-2016
Wilkes County	22.2	13.8	13.3	11.9	21.7	22.4	22.7	24.3	23.3	21.1
Surry County	17.8	13.7	11.4	12.4	18.0	18.3	19.9	19.8	19.7	17.9
State of NC	20.3	14.8	13.0	12.3	16.1	16.8	17.5	17.6	17.4	16.8
Source:	a	a	a	a	b	b	b	b	b	b

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.

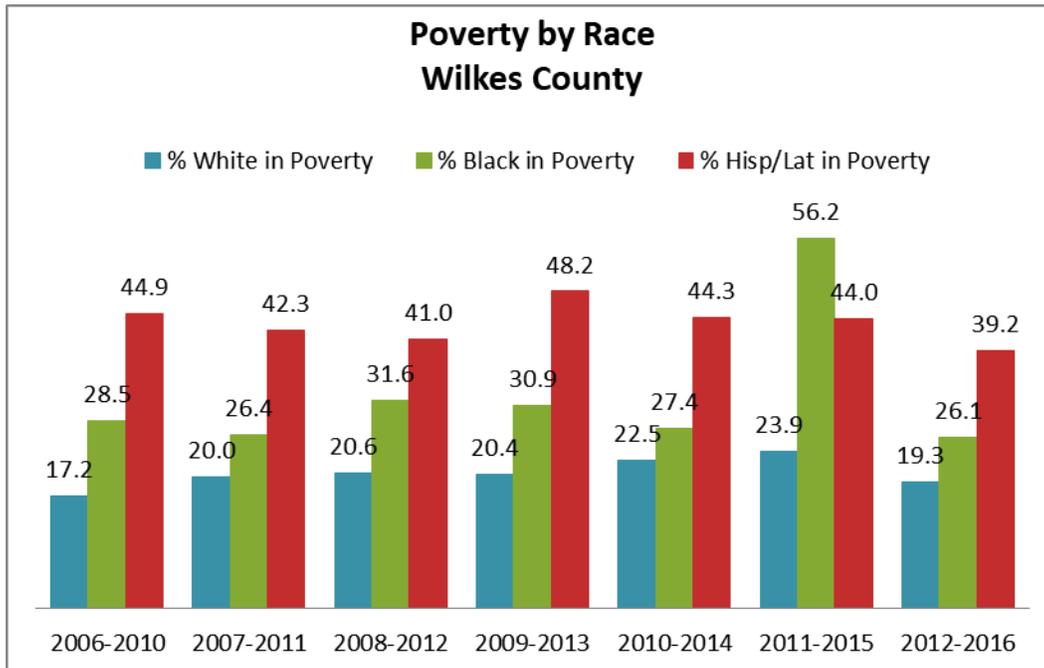
b - Table DP03: Selected Economic Characteristics. American Community Survey [years as noted]. US Census Bureau, American Fact Finder. <http://factfinder2.census.gov>

Poverty by Race

The next table presents 100%-level poverty data stratified by broad racial group (white/black/Hispanic) for the five-year aggregates from 2006-2010 through 2012-2016.

- Across all time periods and in all jurisdictions cited, the poverty rate among blacks was higher than the poverty rate among whites.
- In Wilkes County over the six periods shown the poverty rate for blacks averaged 46% higher than the rate for whites.
- The poverty rate among Hispanics in Wilkes was consistently higher than the comparable rate for whites *and* for blacks. Over the six periods shown the poverty rate for Hispanics averaged 113% higher the poverty rate for whites.

**Figure 8. Persons in Poverty, Percent by Race, Wilkes County
(2006-2010 through 2012-2016 ACS Five-Year Estimates)**



Source: Table S1701: Poverty Status in the Past 12 Months. American Community Survey 5-Year Estimates [years as noted]. US Census Bureau, American Fact Finder. <http://factfinder2.census.gov>.

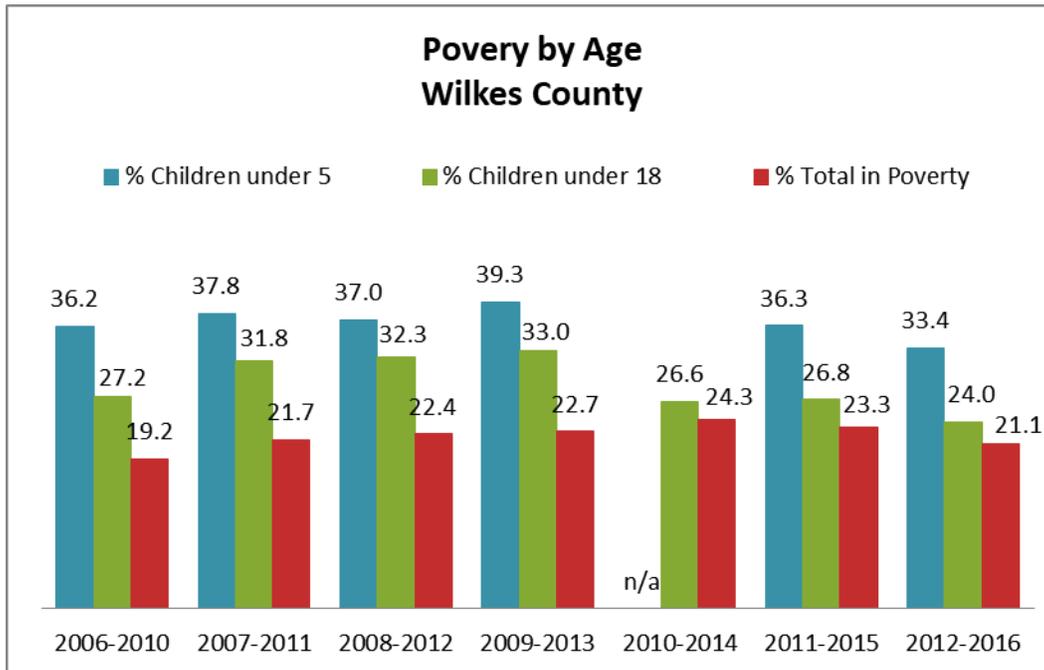
Poverty by Age

The following table presents poverty data stratified by age group. Note that the youngest age category is defined somewhat differently in the first table, so the summary data below focuses only on the data from the six aggregate periods. From these data it is apparent that children suffer disproportionately from poverty.

- In all jurisdictions in every aggregate time period cited in the table, the poverty rate for children under the age of 18 exceeded the overall poverty rate. For the six aggregate periods cited the average poverty rate for youth under age 18 in Wilkes County was 31% higher than the overall poverty rate.
- The poverty rate for children under the age of 5 varied even more significantly from the overall rate. For the six aggregate periods cited the average poverty rate for children under age 5 in Wilkes County was 69% higher than the overall poverty rate.

There are many reasons that children suffer disproportionately from poverty. Demographic characteristics such as higher fertility rates among poor families and the higher prevalence of single parent families among the poor are at least partly responsible for higher poverty rates for children than for adults.

Figure 9. Persons in Poverty, Percent by Age Group, Wilkes County (2006-2010 through 2012-2016 ACS Five-Year Estimates)



Source: Table S1701: Poverty Status in the Past 12 Months. American Community Survey 5-Year Estimates [years as noted]. US Census Bureau, American Fact Finder. <http://factfinder2.census.gov>.

Children Receiving Free or Reduced-price School Lunch

Other data corroborate the impression that children bear a disproportionate burden of poverty. One measure of poverty among children, presented in the table below, is the percent of school-age children in a school system who are eligible to receive free or reduced-price school lunch (that is, are determined to be “needy”).

Students must 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.

Table 22. Percent of Students Eligible for Free or Reduced-Price School Lunch (“Needy”) (SY2006-07 through SY2016-17)

Location	% of Students Determined to be “Needy”										
	SY2006-07	SY2007-08	SY2008-09	SY2009-10	SY2010-11	SY2011-12	SY2012-13	SY2013-14	SY2014-15	SY2015-16	SY2016-17
Wilkes County	56.61	56.92	58.93	62.26	63.37	65.93	67.12	68.03	49.45	50.53	78.73
Surry County	53.65	56.19	57.58	61.12	58.77	65.47	66.29	64.64	64.75	64.91	65.14
State of NC	48.46	48.39	49.85	53.68	53.86	55.94	56.14	57.56	52.83	52.48	59.82

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 Wilkes County Department of Social Services (WCDSS) manages numerous programs that provide economic 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. Benefits are issued via Electronic Benefits Transfer (EBT) cards (10).

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 (11).

Low Income Energy Assistance Program (LIEAP) is a Federally-funded program that provides for a one-time vendor payment to help eligible households pay their heating bills. Households including a person aged 60 or older or an individual receiving disability benefits and services through the NC Division of Aging and Adult Services are eligible to sign up for assistance from December 1-31; all other households may apply from January 1-March 31 or until funds are exhausted (12).

The table below presents data on the economic services provided by WCDSS in fiscal years 2014-15, 2015-16 and 2016-17.

- The number of households receiving assistance from FNS appeared to decrease from year to year over the period cited.
- The average monthly number of recipients receiving WorkFirst Family Assistance stayed relatively steady over the three years presented. The number of WorkFirst Employment Services participants declined overall.
- The number of applications taken and approved for the Low-Income Energy Assistance Program decreased annually throughout the period cited.

**Table 23. Economic Services Provided by Wilkes County DSS
(FY2014-15 through FY2016-17)**

Service/Program and (Metric)	2014-15	2015-16	2016-17
Family Support Services			
<i>Child Support Enforcement</i> (Children for whom paternity was established)	212	122	1,697
(Absent parents located)	562	509	605
<i>Food and Nutrition Services</i> (Households receiving assistance per month)	7,000	6,819	6,014
<i>Low-Income Energy Assistance (LIEP)</i> (Households approved)	1,694	1,363	1,279
<i>Crisis Intervention Program (CIP)</i> (Applications approved)	726	1,086	901
<i>Work First Family Assistance (WFFA)</i> (Average monthly cases)	233	237	229
<i>Work First Employment Program</i> (Persons assessed)	184	115	125
(Persons participating in GED, ABE, post-secondary education, vocational training, job search)	122	136	153
(Participants obtaining employment)	45	54	53
(Families moved off public assistance and into jobs)	18	27	29

Source: Wilkes County Department of Social Services Annual Reports, FY2014-15, FY2015-16, and FY2016-17. Personal communication from Rachel Willard, Health Educator, Wilkes County Health Department to Sheila S. Pfaender, Public Health Consultant, August 14, 2018.

The following two tables present demographic data on FNS and WorkFirst recipients in Wilkes County in the 2018 calendar year.

**Table 24. Demographics of Food and Nutrition Services Recipients
January 2018**

County	January 2018								
	Households	Individuals	Caucasian	African American	Other Races	Hispanic	Individuals 65 and Older	Individuals Under 18	Children aged 5 to 17
Wilkes County	6,136	14,070	12,346	939	785	1,459	1,317	5,335	3,733
Surry County	6,165	14,177	12,777	1,071	329	2,467	1,496	5,458	3,949
State Total	702,445	1,620,475	801,542	705,845	113,088	213,982	119,239	694,660	489,550

Source: Table of Summary Data: Race and Age Breakdown. Food and Nutrition Services: Point in Time Data. UNC-CH Jordan Institute for Families Management Assistance for Child Welfare, Work First and Food & Nutrition Services in North Carolina website: <http://ssw.unc.edu/ma/>.

**Table 25. Demographics of WorkFirst Services Recipients
January 2018**

County	January 2018								
	Cases	Individuals	Child Only	Children Ages 0-5	Children Ages 6-10	Children Aged 11-15	Children 16+	Adults	Median Benefit
Wilkes County	188	359	136	90	99	90	22	58	\$236
Surry County	115	196	108	56	62	56	14	6	\$181
State Total	13,855	24,453	11,170	6,821	6,779	6,038	1,863	2,913	\$181

Source: Table of Summary Data: General and Age Composition Over Time. All Work First Cases. UNC-CH Jordan Institute for Families Management Assistance for Child Welfare, Work First and Food & Nutrition Services in North Carolina website: <http://ssw.unc.edu/ma/>.

HOUSING

The following table presents ACS data on housing by type in the jurisdictions being compared. This data covers the aggregate period 2012-2016.

- There was a higher estimated proportion of vacant housing units in Wilkes County (16.5%) than in NC (14.3%).
- Among the estimated total occupied housing units in Wilkes County, approximately 75% were owner-occupied and 25% were renter-occupied.
- In Wilkes County 27% of all housing units were classified as mobile homes, double the NC average of 13%.

**Table 26. Housing by Type
(2012-2016 ACS Five-Year Estimate)**

Location	2012-2016											
	Total Housing Units		Vacant Housing Units		Occupied Housing Units		Owner Occupied Units		Renter Occupied Units		Mobile Home Units	
	No.	No.	%	No.	%	No.	%	No.	%	No.	%	
Wilkes County	33,046	5,463	16.5	27,583	83.5	20,625	74.8	6,958	25.2	8,953	27.1	
Surry County	33,625	4,788	14.2	28,837	85.8	20,861	72.3	7,976	27.7	8,094	24.1	
State of NC	4,453,767	638,375	14.3	3,815,392	85.7	2,471,723	64.8	1,343,669	35.2	590,302	13.3	

Source - US Census Bureau, American Fact Finder, American Community Survey, 2010 and 2016 ACS 5-Year Estimates, Table DP04: Selected Housing Characteristics. <http://factfinder2.census.gov>.

The following table presents ACS-estimated housing costs for mortgaged and rented housing in two five-year aggregate periods: 2008-2012 and 2012-2016.

- In the periods cited the average estimated median monthly gross rent in Wilkes County was \$577, \$210 lower than the state average of \$787. Over the same period the average estimated monthly mortgage cost in Wilkes County was \$1,010, \$255 lower than the state average of \$1,265.
- Despite the lower than average housing costs, significant proportions of the Wilkes County population are spending more than 30% of their monthly come on housing. The average percentage of renter occupied units in Wilkes County spending more than 30% of household income on housing in the periods cited was 52%, slightly higher than the state average of 50%. Over the same period the average percentage of mortgaged housing units in Wilkes County spending more than 30% of household income on housing was 34%, 13% *higher* than the state average of 30%.

**Table 27. Estimated Housing Cost as Percent of Household Income
(2008-2012 and 2012-2016 ACS Five-Year Estimates)**

Location	Renter Occupied Units							
	2008-2012			2012-2016				
	Total Units ¹	Units Spending >30% Household Income on Housing		Median Gross Monthly Rent	Total Units	Units Spending >30% Household Income on Housing		Median Gross Monthly Rent
		#	%			#	%	
Wilkes County	6,012	3,146	52.4	\$562	5,693	2,820	50.7	\$593
Surry County	6,750	3,285	48.7	\$549	6,758	2,913	46.2	\$617
State of NC	1,095,577	554,428	50.6	\$759	1,248,071	602,043	49.4	\$816

Location	Mortgaged Housing Units							
	2008-2012			2012-2016				
	Total Units ¹	Units Spending >30% Household Income on Housing		Median Monthly Mortgage Cost	Total Units	Units Spending >30% Household Income on Housing		Median Monthly Mortgage Cost
		#	%			#	%	
Wilkes County	10,095	3,886	38.5	\$1,030	10,222	3,035	30.0	\$990
Surry County	11,691	3,393	29.0	\$1,054	11,258	3,131	28.1	\$1,019
State of NC	1,658,483	539,993	32.6	\$1,287	1,599,623	447,141	28.1	\$1,243

¹ - The total units is the number of occupied units paying rent or mortgage for which the percentage of household income being spent on housing costs can be computed. It does not equal the total number of occupied housing units. Source: US Census Bureau, American FactFinder. [Years as noted] ACS 5-Year Estimates. Table DP04: Selected Housing Characteristics (geographies as listed). <http://factfinder2.census.gov>.

Affordable Housing

Housing is considered “affordable” when it comprises no more than 30% of household income. A household paying 30% or more of household income on housing is considered “cost-burdened” by housing. According to 2017 information from the NC Housing Coalition, 26% of Wilkes County households (7,238) were “cost-burdened”. This figure included 50% of renters (2,820 households) and 21% of homeowners (4,418) households. In 2017 25% of households in Surry County were considered cost-burdened as regards housing (13).

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. At the time this report was developed, there were no single-family HUD-subsidized homes available in Wilkes County (14). There were 6 affordable apartments listed for the county, all of them in North Wilkesboro: three ARC facilities for developmentally disabled persons, and three private apartment facilities for the elderly (15).

Homelessness

According to data from the NC Housing Coalition, there is at the present time one emergency homeless shelter serving Wilkes County, Hospitality House; but it is physically located in Boone (Watauga County) (16). According to another source, the Homeless Shelter Directory, the

designated homeless shelter for Wilkes County is Catherine H. Barber Memorial Shelter, Inc., in North Wilkesboro a 501c-3 organization that provides temporary overnight shelter to anyone who is homeless. The clients get a safe place to rest, bathing facilities, washing facilities, and food is also available. A limit of 14 days is imposed to ensure that clients are seeking permanent shelter (17).

The NC Coalition to End Homelessness assists local jurisdictions in conducting an annual “point-in-time” survey of homeless persons every autumn. No PiT homeless data was submitted from Wilkes County in 2014 through 2017 (18).

HOUSEHOLDS

The following table describes households in the three comparator jurisdictions.

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.

- The average number of persons per household in Wilkes County—2.46—was slightly lower than the state average of 2.54.
- The percent of one-person households in Wilkes County—28.9%—was similar to the comparable figure for the state as a whole (28.2%).
- The percent of one-person households where the resident is age 65 or older in Wilkes County—13.8%—was 34% higher than the comparable state average of 10.3%.

**Table 28. Household Characteristics
(2012-2016 ACS Five-Year Estimates)**

Location	Total No. Households	Average Persons per Household	% Householders Living Alone	% Households Living Alone ≥Age 65
Wilkes County	27,583	2.46	28.9	13.8
Surry County	28,837	2.49	28.2	13.5
State of NC	3,815,392	2.54	28.2	10.3

Source: US Census Bureau, American Fact Finder, American Community Survey, 2016 ACS 5-Year Estimates, Table S1101: Households and Families. <http://factfinder2.census.gov>.

Single-Parent Families

Data in the following table 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.

- In the time period noted, there were 6,810 households in Wilkes County with minor children.
- Of the households with minor children, 71% (4,865) were married couple family households. The comparable figure for NC was 66%.
- Of the households with minor children, 20% (1,341) were female householder family households. The comparable figure for NC was 26%.
- Of the households with minor children, 9% (604) were male householder family households. The comparable figure for NC was 8%.

**Table 29. Single-Parent Families
(2012-2016 ACS Five-Year Estimates)**

Location	Total Households	Married Couple Family Households			Male Householder (no wife present) Family Households			Female Householder (no husband present) Family Households		
		Total Households	with own children <18		Total Households	with own children < 18		Total Households	with own children <18	
		Number	Number	Percent	Number	Number	Percent	Number	Number	Percent
Wilkes County	27,583	14,635	4,865	33.2	1,384	604	43.6	2,651	1,341	50.6
Surry County	28,837	15,437	5,189	33.6	1,335	509	38.1	3,007	1,506	50.1
State of NC	2,815,392	1,833,772	706,208	38.5	169,547	85,557	50.5	512,019	284,537	55.6

Source: US Census Bureau, American Fact Finder, 2016 ACS. Table S1101: Households and Families (geographies as noted). <http://factfinder2.census.gov>. Percentages calculated.

Grandparents Responsible for Minor Children

The following table presents data on grandparents with responsibility for minor children. Responsibility for basic needs is determined by whether the grandparent is financially responsible for food, shelter, clothing, day care, etc., for any or all grandchildren living in the household.

- In the period cited, an estimated 63% of grandparents living with their minor grandchildren were also responsible for their care.
- Among grandparents responsible for their own grandchildren, the vast majority are white, 38% have a disability, and 46% live below the poverty level.

**Table 30. Grandparents with Responsibility for Minor Children
(2012-2016 ACS Five-Year Estimates)**

Location	# Grandparents Living with Own Grandchildren (<18 Years)	Grandparent Responsible for Grandchildren (under 18 years)						
		#	%	White	Black/ or African-American	Hispanic/ Latino	With any Disability	Below the Poverty Level
Wilkes County	1,553	978	63.0	96.4	1.6	6.2	38.3	46.3
Surry County	1,383	718	51.9	93.2	4.9	0.0	36.5	19.9
State of NC	210,039	96,671	46.0	58.0	34.4	6.2	28.2	23.9

Source: US Census Bureau, American FactFinder, 2016 American Community Survey 5-Year Estimates. Table 1002: Grandparents. <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 enough 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 (19).

The way child care facilities were evaluated was changed in 2005 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 a "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. As reported in the following table:

- Of the 32 licensed child care centers in Wilkes County at the time of this report, 18 (56%) were five-star facilities and five (16%) were four-star facilities.
- Of the 11 licensed family child care homes in Wilkes County at the time of this report, none was a five-star facility and two (18%) were four-star facilities.

**Table 31. NC-Licensed Child Care Facilities in Wilkes County
(May, 2018)**

Type of Facility	Number
Child Care Centers (32)	
Five-star	18
Four-star	5
Three-star	6
Two-star	0
One-star	0
GS 110-106 (Church-affiliated)	3
Temporary	0
Family Child Care Homes (11)	
Five-star	0
Four-star	2
Three-star	4
Two-star	4
One-star	1

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

EDUCATION

Higher Education

There is one college-level educational institution in Wilkes County: Wilkes Community College.

Wilkes Community College (WCC). Wilkes Community College, a member of the North Carolina Community College system, is a public, two-year, open-door institution serving the people of Wilkes, Ashe and Alleghany counties and beyond. In addition to its main campus in Wilkesboro, WCC operates satellite campuses in Jefferson (Ashe County) and Sparta (Alleghany County). WCC's mission is to provide:

- Quality education and workforce development, including basic-skills, occupational, technical and pre-baccalaureate programs;
- Economic development services to business and industry, both public and private;
- Community development through a variety of services, cultural activities and recreational opportunities.

WCC is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate degrees, diplomas, and certificates. The WCC Medical Assisting Program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon recommendation of the Medical Assisting Education Review Board (MAERB).

WCC has six primary academic divisions: Arts and Sciences, Business and Public Service Technologies, Applied Career Technologies, Health Sciences, College and Career Readiness, and Workforce Development and Community Education. The college offers the following:

- Associate in Arts degrees leading to transfer to senior institutions
- Associate in Applied Science degrees, Diplomas, and Certificates leading to employment
- Non-credit (Continuing Education) programs leading to employment (20).

Primary and Secondary Education

Schools and Enrollment

The next several tables focus on data pertaining *mostly* to the primary and secondary *public* schools in the Wilkes County Local Educational Authority (LEA): Wilkes County Schools. As of 2018, there were 13 elementary schools, 4 middle schools and 5 high schools in Wilkes County.

There is one public charter school in Wilkes County, serving students in kindergarten through eighth grade (21). In addition, there are three private schools in Wilkes County, all of them religiously affiliated (22).

**Table 32. Public Schools in Wilkes County
(SY2017-18)**

School	Location	School Type/Calendar	Grade Range
Boomer-Ferguson Elementary	Boomer	Regular School, Traditional Calendar	PK-5
CB Eller Elementary	Elkin	Regular School, Traditional Calendar	PK-5
CC Wright Elementary	North Wilkesboro	Regular School, Traditional Calendar	PK-5
Central Wilkes Middle	Moravian Falls	Regular School, Traditional Calendar	6-8
East Wilkes High	Ronda	Regular School, Traditional Calendar	9-12
East Wilkes Middle	Ronda	Regular School, Traditional Calendar	6-8
Millers Creek Elementary	Millers Creek	Regular School, Traditional Calendar	PK-5
Moravian Falls Elementary	Moravian Falls	Regular School, Traditional Calendar	PK-5
Mount Pleasant Elementary	Ferguson	Regular School, Traditional Calendar	PK-5
Mountain View Elementary	Hays	Regular School, Traditional Calendar	PK-5
Mulberry Elementary	North Wilkesboro	Regular School, Traditional Calendar	PK-5
North Wilkes High	Hays	Regular School, Traditional Calendar	9-12
North Wilkes Middle	North Wilkesboro	Regular School, Traditional Calendar	6-8
North Wilkesboro Elementary	North Wilkesboro	Regular School, Traditional Calendar	PK-5
Roaring River Elementary	Roaring River	Regular School, Traditional Calendar	PK-5
Ronda-Clingman Elementary	Ronda	Regular School, Traditional Calendar	PK-5
Traphill Elementary	Traphill	Regular School, Traditional Calendar	PK-5
West Wilkes High	Millers Creek	Regular School, Traditional Calendar	9-12
West Wilkes Middle	Wilkesboro	Regular School, Traditional Calendar	6-8
Wilkes Central High	Wilkesboro	Regular School, Traditional Calendar	9-12
Wilkes Early College High	Wilkesboro	Regular School, Traditional Calendar	9-13
Wilkesboro Elementary	Wilkesboro	Regular School, Traditional Calendar	PK-5
Bridges Academy	State Road	Charter School, Traditional Calendar	K-8

Source: NC Department of Public Instruction, NC School Report Cards, Search by School District.
<https://ncreportcards.ondemand.sas.com/src>

The table below summarizes data on the three private schools in Wilkes County

**Table 33. Private Schools in Wilkes County
(2017)**

School	Location	School Type/Calendar
Gordon Baptist Christian School	North Wilkesboro	Religious Day School (14 students)
Harvest Time Christian Academy	Wilkesboro	Religious Day School (55 students)
Millers Creek Christian School	Millers Creek	Religious Day School (147 students)

Source: NC Division of Non-Public Education, Private Schools, North Carolina Directory of Non-Public Schools November 2017.
<https://ncadmin.nc.gov/citizens/private-school/nc-directory-private-schools>.

Non-charter public school enrollment figures in Wilkes County decreased annually in most years from SY2006-07 through SY2016-17, as seen in the table below.

**Table 34. K-12 Public School Enrollment
(SY2010-11 through SY2016-17)**

Location	Number of Students						
	SY2010-11	SY2011-12	SY2012-13	SY2013-14	SY2014-15	SY2015-16	SY2016-17
Wilkes County Schools	10,124	10,103	10,013	10,161	10,110	9,858	9,752
Surry County Schools	8,705	8,602	8,527	8,607	8,522	8,418	8,235
State of NC	1,450,435	1,458,572	1,467,297	1,493,980	1,498,654	1,493,809	1,486,448

Source: NC Department of Public Instruction, Data and Statistics, Education Data: NC Statistical Profile. NC Statistical Profile Online: Local Education Agencies Information, Pupil Accounting, Table A1 by LEA: <http://apps.schools.nc.gov/ords/f?p=145:1>

Educational Attainment

The following table presents data on several measures of educational attainment.

Among residents age 25 or older, in 2016, compared to the NC average, Wilkes County had:

- A 69% higher percentage with less than a 9th grade education;
- A 25% higher percentage with a *terminal* high school (or equivalency) diploma; and
- A 52% lower percentage with bachelor's degree or higher.

**Table 35. Educational Attainment
(2012-2016 ACS Five-Year Estimates)**

County	Percent of the population 25 years and older									
	Total Population Age 25 Years and Older	Less than 9th Grade	9th to 12th grade, no diploma	High school graduate (includes equivalency)	Some college, no degree	Associates Degree	Bachelor's Degree	Graduate or Professional Degree	% HS Graduate or Higher	% Bachelor's Degree or Higher
Wilkes County	48,877	8.8	14.4	32.9	20.6	9.6	9.7	4.0	76.9	13.8
Surry County	50,839	9.3	13.1	30.8	20.3	11.2	10	5.3	77.6	15.3
North Carolina	6,684,672	5.2	8.5	26.4	21.8	9.1	18.8	10.2	86.3	29.0

Source: US Census Bureau, American Fact Finder, American Community Survey, 2016 American Community Survey (ACS) 5-Year Estimates, Table S1501: Educational Attainment; <http://factfinder.census.gov>

Educational Proficiency

The table below presents data on the end-of-grade (EOG) proficiency results in reading and math for 3rd and 8th graders and for certain demographic groups in non-charter Wilkes County Schools.

- In SY2016-2017, compared to the NC average, Wilkes County students demonstrated lower proficiency on 3rd grade reading and 8th grade math EOGs, slightly lower proficiency on 8th grade reading EOGs, and higher proficiency on 3rd grade math EOGs.
- When stratified by race, black and Hispanic students in Wilkes County demonstrated higher proficiency on all EOG tests compared to NC, while lower proportions of white students demonstrated grade level proficiency.

- In SY2016-17 Wilkes County Public Schools students scored slightly higher than the state average on the SAT standardized test (1,083 vs. 1,074, respectively), although the participation rate in Wilkes County (20%) was half the statewide average (23).

**Table 36. Educational Proficiency
(SY2016-17)**

Location	Percent Students Who are "Grade Level Proficient" on End of Grade Tests							
	% 3rd Graders: Reading	% 3rd Graders: Math	% 8th Graders: Reading	% 8th Graders: Math	% of All Students: All Tests	% of All Black Students: All Tests	% of All Hispanic Students: All Tests	% of All White Students: All Tests
Wilkes County Schools	53.9	67.4	53.4	44.1	60.7	47.9	51.1	63.7
Surry County Schools	64.8	38.9	56.9	53.6	67.3	44.8	60.2	70.8
State of NC	57.8	63.6	53.7	45.8	58.8	40.2	48.1	71.1

Source: NC Department of Public Instruction, Data and Statistics, Education Data, NC School Report Cards. Analytic site for deep data. District Performance. <http://www.ncpublicschools.org/src/>

Educational Expenditures

The next table presents data on local, state and federal expenditures on education.

- In SY2016-17 the total per-pupil expenditure (the sum of Federal, state and local investments) in public schools in Wilkes County was \$168 lower than the state average.
- In all jurisdictions, the state contributed the highest proportion to the total per-pupil expenditure. The federal contribution was the smallest proportion of the total in all jurisdictions.

**Table 37. Educational Expenditures
(SY2016-17)**

Location	Average Per Pupil Expenditure			
	Local	State	Federal	Total
Wilkes County Schools	\$1,536	\$6,224	\$1,221	\$8,981
Surry County Schools	\$1,544	\$1,421	\$1,152	\$4,117
State of NC	\$2,232	\$5,944	\$973	\$9,149

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

High School Drop-Out Rate

The table below 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 in regular (non-charter) public schools.

- The high school drop-out rate Wilkes County declined steadily between SY2010-11 and SY2013-14 but has since increased and in SY2016-17 was higher compared to Surry County and the NC average.

**Table 38. High School Drop-Out Rate
(SY2010-11 through SY2016-17)**

Location	Drop-Out Rate						
	SY2010-11	SY2011-12	SY2012-13	SY2013-14	SY2014-15	SY2015-16	SY2016-17
Wilkes County Schools	2.62	2.46	2.22	1.71	2.68	2.50	2.59
Surry County Schools	4.72	3.48	2.75	2.03	2.03	2.05	2.16
State of NC	3.43	3.01	2.45	2.28	2.39	2.29	2.31

Source: NC Department of Public Instruction, Research and Evaluation, Annual Reports [years as noted], Annual Dropout Reports: Dropout Table D-4. <http://www.ncpublicschools.org/research/dropout/reports/>

Graduation Rate

The four-year cohort graduation rates for subpopulations of 9th graders entering public high school in SY2013-14 and graduating in SY2016-17 or earlier are presented for all comparator jurisdictions in the following table.

- The four-year cohort graduation rates in Wilkes County were higher than comparable state rates for all groups.

**Table 39. Four Year Cohort Graduation Rate
(9th Graders Entering SY2013-14 and Graduating SY2016-17 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
Wilkes County Schools	737	655	88.9	367	321	87.5	370	334	90.3	221	187	84.6
Surry County Schools	659	597	90.6	334	291	87.1	325	306	94.2	298	261	87.6
State of NC	115,730	110,164	86.5	58,885	49,167	83.5	56,844	50,997	89.7	46,465	38,029	81.8

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, 2013-14 Entering 9th Graders Graduating in 2016-17 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

The following table summarizes crime and violence catalogued by the NC Department of Public Instruction for SY2010-11 through SY2016-17.

- The number and rate of acts of school crime and violence in Wilkes County Schools fluctuated without pattern over the period cited. Only the statewide average showed any stability, likely due to the large size of the sample.
- The Wilkes County Schools school violence rates were significantly higher than compared to NC and Surry County in the most recent two school years presented.

**Table 40. School Crime and Violence Trend, All Grades¹
(SY2010-11 through SY2016-17)**

Location	SY2010-11		SY2011-12		SY2012-13		SY2013-14		SY2014-15		SY2015-16		SY2016-17	
	No. Acts	Rate	No. Acts	Rate	No. Acts	Rate	No. Acts	Rate	No. Acts	Rate	No. Acts	Rate	No. Acts	Rate
Wilkes County Schools	44	4.46	75	7.64	79	8.09	35	3.56	55	5.63	79	8.26	86	9.12
Surry County Schools	70	8.29	82	9.86	93	11.28	39	4.71	58	7.06	55	6.78	31	3.90
State of NC	11,657	7.95	11,161	7.63	10,630	7.20	10,132	6.79	10,347	6.89	10,020	6.62	9,834	6.48

¹ Rate is number of acts per 1,000 students

Source: NC Department of Public Instruction, Research and Evaluation, Discipline Data, Consolidated Data Reports, Crime & Violence Table C5: Total Number of Acts for Each LEA or Charter School (years as noted).

<http://www.ncpublicschools.org/research/discipline/reports/#consolidated>

The next table displays detail on the acts of crime and violence committed in Wilkes County Schools in SY2015-16 and SY2016-17.

- The most common offense overall in Wilkes County Schools was possession of a controlled substance; the second most common offense overall was possession of a weapon.
- Assaults on school personnel increased between SY2015-16 and SY2016-17 while possession of alcohol decreased.

Table 41. School Crime and Violence in Wilkes County Schools, by Type of Offense (SY2015-16 and SY2016-17)

Type of Offense	No. Reportable Acts	
	SY2015-16	SY2016-17
Assault resulting in serious personal injury	0	1
Assault involving use of a weapon	0	0
Assault on school personnel	8	12
Bomb threat	0	0
Burning a school building	0	0
Homicide	0	0
Kidnapping	0	0
Possession of alcohol	17	11
Possession of controlled substance	39	43
Possession of a firearm	2	1
Possession of weapon	13	18
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	79	86

Source: NC Department of Public Instruction, Research and Evaluation, Discipline Data, Annual Report of School Crime and Violence (years as noted); <http://www.ncpublicschools.org/research/discipline/reports/#consolidated>

The following table presents data summarizing disciplinary activity in the public school systems of the comparator jurisdictions for the period SY2013-14 through SY2016-17. Since the data represent *counts* of activity of school systems of different sizes, direct comparisons are problematic.

- The most common disciplinary activity in Wilkes County Schools was the short-term suspension. Expulsions were rare in all jurisdictions.

Table 42. School Disciplinary Activity (SY2013-14 through SY2016-17)

School System	SY2013-14			SY2014-15			SY2015-16			SY2016-17		
	Short-Term Suspensions	Long-Term Suspensions	Expulsions									
Wilkes County Schools	504	1	0	603	9	0	564	5	0	627	3	1
Surry County Schools	448	6	0	624	5	0	518	7	0	530	2	0
State of NC	198,254	1,088	37	208,650	1,085	42	216,895	1,036	27	208,539	695	18

A short-term suspension is up to 10 days. A long term suspension is 11 or more days.

NC Department of Public Instruction, Research and Evaluation, Discipline Data, Consolidated Data Reports (years as noted). Suspension Table S-2. State figures in full Consolidated Report.

<http://www.ncpublicschools.org/research/discipline/reports/#consolidated>

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.

The table below presents the rates for index crime, violent crime, and property crime for the period from 2012 through 2016 for Wilkes County and its comparators.

- The overall index crime rate in Wilkes County decreased steadily between 2012 and 2016 and was lower than both Surry County and NC average over the entire period cited.
- The violent crime rate in Wilkes County, lower compared to NC over the entire period, increased in 2016 after a period of consistent decline.
- The largest component of Wilkes County index crime was property crime, rates for which also were consistently lower than the comparable rates for the state as a whole.

Table 43. Crime Rates, Crimes per 100,000 Population (2012-2016)

Location	Index Crimes per 100,000 population					Violent Crimes per 100,000 population					Property Crimes per 100,000 population				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Wilkes County	3,118.9	2,733.5	2,445.7	2,002.8	1,861.1	231.6	212.8	200.9	181.9	208.4	2,887.3	2,520.7	2,244.8	1,820.9	1,652.7
Surry County	3,377.9	3,241.1	3,297.2	2,893.9	3,001.0	289.2	216.7	174.3	194.8	167.9	3,088.7	3,024.4	3,122.9	2,699.0	2,833.1
State of NC	3,770.6	3,506.2	3,285.5	3,174.3	3,154.5	358.9	339.5	332.9	356.2	374.9	3,411.7	3,166.6	2,952.7	2,818.2	2,779.7

Source: Crime Trends - Offenses and Rates per 100,000: County Rates, Ten Year Trend. 2016 Annual Summary. North Carolina Department of Justice, State Bureau of Investigation website: <http://crimereporting.ncsbi.gov/>

The table below presents detail on index crime committed in Wilkes County from 2012-2016. 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 44. Types of Crimes Reported in Wilkes County (2012-2016)

Type of Crime	Number of Crimes				
	2012	2013	2014	2015	2016
Violent Crime	161	148	120	127	145
<i>Murder</i>	2	6	3	4	3
<i>Rape</i>	7	4	4	10	9
<i>Robbery</i>	22	22	10	10	16
<i>Aggravated Assault</i>	130	116	103	103	117
Property Crime	2,007	1,753	1,564	1,271	1,150
<i>Burglary</i>	620	571	499	365	339
<i>Larceny</i>	1,320	1,115	1,003	852	762
<i>Motor Vehicle Theft</i>	67	67	62	54	49
Total Index Crimes	2,168	1,901	1,704	1,398	1,295

Source: NC State Bureau of Investigation, Crime in North Carolina, North Carolina Crime Statistics, Crime Statistics in Detailed Reports (By Year), 2013 Annual Reports, County Offenses Ten Year Trend, <http://crimereporting.ncdoj.gov/>.

Other Criminal Activities

The following table summarizes miscellaneous (non-index crime) criminal activities of the recent past.

- As of May 2, 2018 there were 163 registered sex offenders in Wilkes County.
- According to the NC State Bureau of Investigation, there were 146 methamphetamine drug lab busts in Wilkes County during the period from 2005 through 2017; data is missing at the source for 2014-2016. Three labs were reportedly busted in 2017.
- According to a report from the NC State Highway Patrol GangNET program, Wilkes County is identified as an "At Risk" county regarding gang activity, meaning there are no identified gangs but the county is adjacent to counties with identified gangs, on an interstate corridor, or have a significant metropolitan population (24)

Table 45. Other Criminal Activity

Location	No. Registered Sex Offenders (5/2/2018)	No. Methamphetamine Lab Busts									
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Wilkes County	163	1	2	7	19	59	50	n/a	n/a	n/a	3
Surry County	110	0	2	2	4	16	11	n/a	n/a	n/a	2
State of NC	15,502	197	206	235	344	460	561	557	467	376	232

Source: NC Department of Justice, Sex Offender Statistics, Offender Statistics; <http://sexoffender.ncsbi.gov/stats.aspx> . Note that the total does not include those who are incarcerated or listed as out of state.

Source: NC Department of Justice, State Bureau of Investigation, Divisions, Field Operations, Clandestine Labs, 2017 Map of Clandestine Lab Responses. <http://www.ncsbi.gov/Divisions/Field-Operations/Clandestine-Labs/Meth-Lab-Busts>

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.

Youth Development Center: Youth Development Centers are secure custody facilities with a therapeutic program focus; the minimum commitment is 6 months.

Rate: The number per 1,000 persons that are aged 6 to 17 in the county.

The next two tables present a summary of juvenile justice *complaints* for the period 2013 through 2017.

- The number of complaints for *undisciplined* youth in Wilkes County averaged 36 annually in the five-year period cited; the rate averaged 3.43 annually over that same period.
- The number of complaints of *delinquent* youth in Wilkes County averaged 203 annually over the period cited; the rate averaged 23.6 annually over that period.

Table 46. Juvenile Justice Complaints: Undisciplined Youth (2013 through 2017)

Location	Complaints									
	No. Undisciplined					Rate Undisciplined (Complaints per 1,000 Ages 6 to 17)				
	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
Wilkes County	38	25	38	42	36	3.58	2.37	3.62	4.04	3.51
Surry County	27	33	29	27	20	2.31	2.89	2.52	2.42	1.81
State of NC	2,738	2,277	2,332	2,339	2,428	1.66	1.47	1.49	1.48	1.53

Source: NC Department of Public Safety. Juvenile Justice. County Databooks (Years as noted); <https://www.ncdps.gov/Juvenile-Justice/Community-Programs/Juvenile-Crime-Prevention-Councils/JCPC-Planning-Process/County-Databooks>.

Table 47. Juvenile Justice Complaints: Delinquent Youth (2013 through 2017)

Location	Complaints									
	No. Delinquent					Rate Delinquent (Complaints per 1,000 Age 6 to 15)				
	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
Wilkes County	197	148	232	179	259	22.5	17.0	26.60	20.91	30.94
Surry County	187	237	199	212	237	19.4	25.3	21.17	20.28	26.38
State of NC	29,353	29,288	27,210	25,183	25,737	22.9	22.5	20.78	19.16	19.58

Source: NC Department of Public Safety. Juvenile Justice. County Databooks (Years as noted); <https://www.ncdps.gov/Juvenile-Justice/Community-Programs/Juvenile-Crime-Prevention-Councils/JCPC-Planning-Process/County-Databooks>.

- Over the five years cited, a total of 99 Wilkes County youth were sent to secure detention, none were sent to youth development centers, and none were transferred to Superior Court.

Table 48. Juvenile Justice Outcomes (2013 through 2017)

Location	Outcomes														
	No. Juveniles Detained					No. Sent to Youth Development Center					No. Transferred to Superior Court				
	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
Wilkes County	9	23	18	27	22	0	0	0	0	0	0	0	0	0	0
Surry County	10	6	13	11	8	3	0	1	0	0	0	0	0	0	0
State of NC	2,352	2,244	2,162	1,915	1,805	219	202	217	178	187	28	14	19	17	16

Source: NC Department of Public Safety. Juvenile Justice. County Databooks (Years as noted); <https://www.ncdps.gov/Juvenile-Justice/Community-Programs/Juvenile-Crime-Prevention-Councils/JCPC-Planning-Process/County-Databooks>.

Sexual Assault and Domestic Violence

SAFE, Inc. Wilkes County

SAFE (Sheltered Aid to Families in Emergency) Inc., Wilkes County is a non-profit agency, founded in 1981, that serves women, men, teens and children whose lives have been affected by domestic and sexual violence. Services include:

- Emergency Shelter.** The SAFE shelter is open 24 hours a day, seven days a week to provide immediate, safe housing to women and children who have left home due to domestic violence. (Men are sheltered in a separate location.) There is no charge to stay in the shelter for those who qualify.
- Help Line.** SAFE's help line, (336) 838-SAFE (7233) is available 24 hours a day to provide support services to victims and survivors of sexual assault and family violence.
- Advocacy.** SAFE's trained advocates provide support to victims, including: assistance in seeking protective orders, support during court hearings, and referral to community resources. SAFE advocates do not give legal advice; they provide support and help victims understand their options.
- Counseling and Support.** SAFE offers two support groups for survivors a *domestic violence support group* and a *sexual assault support group*. Members of the public are

welcome to participate in the support groups. SAFE also offers individual counseling for adult and child survivors of domestic or sexual violence. Therapy is provided by licensed professional counselors.

- **Child Advocacy Center.** SAFE operates SAFE Spot, the Child Advocacy Center of Wilkes County. SAFE Spot provides comprehensive, community-based services to children and families affected by sexual abuse or severe physical abuse. The center is currently providing forensic interviews, victim advocacy and case coordination services. Trauma focused mental health care and child medical evaluations are provided by center partners.
- **Community Education.** SAFE provides informative presentations to church groups, middle and high school classes, college classes and community groups. Topics include: *SAFE Dates* (relationship training for teens), Introduction to SAFE and Its Services, Elder Abuse, *Stand Up: Bystander Involvement Training*, *Behind Closed Doors: Domestic Violence 101*, and Preventing Child Sexual Abuse: Best Practices for Youth Serving Organizations. SAFE can also provide free educational materials to churches, schools or workplaces.
- **Sexual Assault Services.** SAFE's sexual assault program serves victims of sexual assault through hospital response, crisis call response, advocacy, counseling and psychoeducation. All services are free and confidential. Wilkes Medical Center has sexual assault nurse examiners to provide specialized care to victims of sexual assault (25).

The table below 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 the period from FY2010-11 through FY2015-16 (reporting methodology changed in FY2016-17, so FY2016-2017 and subsequent data should not be compared to data from previous years). The data is reported to the Council for Women by SAFE Inc. in Wilkes County. Note that since the figures are counts and not rates, they are difficult to compare from one jurisdiction to another.

- Sexual assault complaints in Wilkes County fluctuated without pattern and peaked at 58 in FY2012-13; the annual average was 36 clients.

**Table 49. Sexual Assault Complaint Trend
(FY2010-11 through FY2015-16)**

Location	No. of Individuals Filing Complaints ("Clients")					
	FY2010-11	FY2011-12	FY2012-13	FY2013-14	FY2014-15	FY2015-16
Wilkes County	45	29	58	39	14	30
Surry County	n/a	n/a	11	9	18	10
State of NC	13,881	13,214	12,971	13,736	13,655	10,981

NC Department of Administration, Council for Women, Domestic Violence Commission, Statistics, County Statistics (years as noted); <https://ncadmin.nc.gov/about-doa/divisions/council-for-women/women-statistics>

The next table presents details on the types of sexual assaults reported in FY2016-17.

- The largest proportions of sexual assault complaints in Wilkes County were for adult rape (56%) and adult survivor of child sexual assault (22%).
- Statewide the largest proportion of sexual assault complaints involved adult rape (30%); the second largest proportion involved child sexual offense (26%).

Table 50. Types of Sexual Assaults (FY2016-17)

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.	%
Wilkes County	18	10	55.6	0	0.0	4	22.2	2	11.1	0	0.0	0	0.0	2	11.1
Surry County	32	6	18.8	9	28.1	1	3.1	4	12.5	5	15.6	1	3.1	6	18.8
State of NC	9,453	2,820	29.8	449	4.7	1,279	13.5	548	5.8	2,428	25.7	346	3.7	1,583	16.7

Source: NC Department of Administration, Council for Women, Domestic Violence Commission, Statistics, 2016-2017 County Statistics. <https://ncadmin.nc.gov/about-doa/divisions/council-for-women/women-statistics>

The following table details the types of offenders involved in sexual assault complaints in comparator jurisdictions in FY2016-17.

- In Wilkes County the most common offender in sexual assault complaints was a relative (44%) followed by an acquaintance (22%).
- Statewide the most common offender was a relative (32%), followed by an acquaintance (27%).

Table 51. Types of Offenders in Sexual Assaults (FY2016-17)

Location	Total Offenders	Type of Offender									
		Relative		Acquaintance		Boy/Girl Friend		Stranger		Unknown	
		No.	%	No.	%	No.	%	No.	%	No.	%
Wilkes County	18	8	44.4	4	22.2	3	16.7	0	0.0	3	16.7
Surry County	32	9	28.1	12	37.5	10	31.3	1	3.1	0	0.0
State of NC	9,352	2,954	31.6	2,542	27.2	1,437	15.4	561	6.0	1,858	19.9

Source: NC Department of Administration, Council for Women, Domestic Violence Commission, Statistics, 2016-2017 County Statistics. <https://ncadmin.nc.gov/about-doa/divisions/council-for-women/women-statistics>

The table below summarizes data on the number of individuals who filed complaints of domestic violence from FY2010-11 through FY2015-16. Note that the figures are counts and not rates, thus they are difficult to compare from one jurisdiction to another.

- The annual number of complaints varies without a clear pattern over the period covered and averaged 677 annually, with the number peaking in FY 2012-13 at 869.

Table 52. Domestic Violence Complaint Trend (FY2010-11 through FY2015-16)

Location	No. of Individuals Filing Complaints ("Clients")					
	FY2010-11	FY2011-12	FY2012-13	FY2013-14	FY2014-15	FY2015-16
Wilkes County	637	580	869	712	816	446
Surry County	454	57	681	482	519	897
State of NC	61,283	51,563	57,345	55,274	56,664	48,601

NC Department of Administration, Council for Women, Domestic Violence Commission, Statistics, County Statistics (years as noted); <https://ncadmin.nc.gov/about-doa/divisions/council-for-women/women-statistics>

The next table provides details on the services received by domestic violence complainants in FY2016-17.

- The most common service provided to domestic violence complainants in Wilkes County in the period cited was advocacy.
- The local domestic violence shelter serving Wilkes County was full on 69 days.

Table 53. Services Received by Domestic Violence Complainants (FY2016-17)

Location	Total Domestic Violence Clients	Services Received									Days Local Shelter was Full
		Total	Information	Advocacy	Referral	Transport	Counseling	Hospital	Court	Other	
Wilkes County	225	3,565	667	1,451	836	243	137	13	169	49	69
Surry County	1,095	20,570	11,434	2,782	4,756	14	443	3	1,097	41	0
State of NC	51,074	507,204	162,152	100,434	80,126	29,588	53,447	1,023	51,587	28,847	8,025

Source: NC Department of Administration, Council for Women, Domestic Violence Commission, Statistics, 2016-2017 County Statistics. <https://ncadmin.nc.gov/about-doa/divisions/council-for-women/women-statistics>

The table below presents data on the number of domestic violence-related homicides in Wilkes County from 2008-2016. (State and local law enforcement agencies are required by General Statute to report specific information on domestic violence related homicides.)

- There was a total of ten domestic violence-related homicides in Wilkes County over the period cited.

Table 54. Domestic Violence-Related Homicides (2008-2016)

Location	Number of Domestic Violence Related Homicides								
	2008	2009	2010	2011	2012	2013	2014	2015	2016
Wilkes County	2	0	1	0	0	4	1	2	0
Surry County	2	1	1	0	2	0	1	0	0
State of NC	137	99	107	107	106	108	111	91	110

Source: 2016 Domestic Violence Homicide Report, Domestic Violence Reports, SBI Statistics. NC State Bureau of Investigation website: <http://www.ncsbi.gov/Services/SBI-Statistics/Domestic-Violence-Report>

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. The following table presents data for Wilkes County from the state's Child Welfare website for the period FY2010-11 through FY2016-17.

- 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.
- The total number of findings of child abuse, neglect or dependency in Wilkes County, with the exception of FY2013-14, remained relatively steady before rising in 2013-14. The average annual number of findings per year throughout the 10-year period cited was 40. The most frequent finding was for neglect.

Table 55. Reports of Child Abuse and Neglect, Wilkes County (FY2010-11 through FY2016-17)

Category	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Total No. of Findings of Abuse, Neglect, Dependency	38	33	35	63	40	34	35
No. Substantiated Findings of Abuse and Neglect	6	2	6	16	13	5	2
No. Substantiated Findings of Abuse	0	0	2	2	1	0	3
No. Substantiated Findings of Neglect	29	24	26	37	23	25	30
No. Substantiated Findings of Dependency	3	7	1	8	3	4	0
Services Needed	38	54	64	38	41	39	64
Services Recommended	10	50	53	42	39	27	21
No. Unsubstantiated Findings	129	77	57	99	156	144	81
Services Not Recommended	181	249	210	227	211	194	215

Source: Child Welfare, Reports of Abuse and Neglect section, Reports of Abuse and Neglect Type of Finding/Decision (Not Exclusive) (Longitudinal Data); <http://ssw.unc.edu/ma/>

The next table presents demographic detail from the same source as above on the 35 complaints of child maltreatment tracked in FY2016-17.

- The majority of the substantiated findings of abuse, neglect, or abuse and neglect involved white children (83%).
- For the year cited, 19 (54%) of the substantiated findings involved males.
- The largest proportion of victims (69%) were under the age of six.

Table 56. Demographic Detail of Child Maltreatment Cases, Wilkes County (FY2016-17)

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
Abuse and Neglect	2	2	0	0	0	2	1	1	0	2	0
Abuse	3	3	0	0	0	3	1	2	2	0	1
Neglect	30	24	1	5	2	28	17	13	22	8	0
Dependency	0	0	0	0	0	0	0	0	0	0	0
Services Needed	64	56	2	6	6	58	30	34	46	16	1
Services Provided, No Longer Needed	21	12	9	0	0	21	16	5	8	8	4
Services Recommended	83	73	6	4	5	78	38	45	43	29	11
Unsubstantiated	81	69	9	3	14	67	36	45	29	27	24
Services Not Recommended	215	175	22	16	17	196	108	105	123	63	26

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.

The Wilkes County Department of Social Services publishes data on all its Children’s Services in annual reports for FY2014-15 through FY2016-17. These data are presented in the following table, highlights of which are cited below.

- The number of children placed for adoption decreased slightly over the period cited.
- The number of licensed foster homes in the county increased annually over the period.
- The number of children served monthly, in either licensed or unlicensed placements, increased.
- The number of child abuse or neglect investigations increased in every year shown.

Table 57. Children’s Services Activity Summary, Wilkes County DSS (FY2014-15 through FY2016-17)

Service/Program and (Metric)	2014-15	2015-16	2016-17
Children’s Services			
<i>Adoption Services</i> (Adoptions completed)	27	23	22
<i>Child Care</i> (Average number of children served monthly)	441	398	379
<i>Foster Home Licensure</i> (New foster homes licensed)	2	6	9
<i>Foster Care</i> (Children served monthly in licensed placements)	124	135	147
(Children served monthly in unlicensed placements)	52	47	67
(Children returned home)	25	29	17
<i>LINKS</i> (Youth served and trained)	76	139	182
<i>Protective Services</i> (Neglect/abuse investigations/assessments)	789	850	904
(Families provided Case Planning/Case Management services)	145	123	123
(Children involved in Case Planning/Case Management)	256	247	222

Source: Wilkes County Department of Social Services Annual Reports, FY2014-15, FY2015-16, and FY2016-17. Personal communication from Rachel Willard, Health Educator, Wilkes County Health Department to Sheila S. Pfaender, Public Health Consultant, August 14, 2018.

Adult Maltreatment

Adults who are elderly, frail, or mentally challenged are also subject to abuse, neglect and exploitation. County DSS Adult Protective Services units screen, investigate and evaluate reports of what may broadly be referred to as adult maltreatment. The table below presents Wilkes County Department of Social Services Adult Protective Services data for the period FY2014-15 through FY2016-17.

- The number of reports of adult maltreatment received averaged 251 annually.
- The number of legal guardianships established did not change significantly over the period cited, averaging 37 each year.

Table 58. Adult Protective Services Provided by Wilkes County DSS (FY2014-15 through FY2016-17)

Service/Program and (Metric)	2014-15	2015-16	2016-17
Adult Services			
<i>Guardianship and Payee</i> (Individuals receiving guardianship)	39	35	37
(Receiving protective payee services)	6	6	6
<i>Individual/Family Adjustment Services</i> (On-going cases)	15	15	19
(Clients served)	183	201	165
<i>Protective Services/Crisis Intervention</i> (Total abuse/neglect/exploitation complaints received)	245	288	221
(Referrals made to other agencies)	293	310	177
(Well-being checks)	94	96	54

Source: Wilkes County Department of Social Services Annual Reports, FY2014-15, FY2015-16, and FY2016-17. Personal communication from Rachel Willard, Health Educator, Wilkes County Health Department to Sheila S. Pfaender, Public Health Consultant, August 14, 2018.

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.

The table below 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, the percent of the Wilkes County population overall (age 0-64) without health insurance was highest in 2013 (20.5%). The most recent (2016) percent uninsured for this age group was 14.9%. It is unclear whether the decrease in the percent uninsured might have been influenced by the implementation of the US Affordable Care Act.
- In all jurisdictions the younger age group (0-18) had a significantly lower percent without health insurance than the older age group (18-64). Over the course of the period cited, the percent uninsured among youth was approximately one-third the percent among the older age group. Some of this difference is likely due to the existence of NC Health Choice (see below).

Table 59. Percent of Population without Health Insurance, by Age Group (2013-2016)

Location	2013			2014			2015			2016		
	<19	18-64	<65	<19	18-64	<65	<19	18-64	<65	<19	18-64	<65
Wilkes County	7.4	25.3	20.5	5.8	22.5	18.1	5.6	19.6	15.9	4.9	18.5	14.9
Surry County	7.5	25.1	20.2	7.2	22.9	18.6	6.1	19.6	15.9	5.1	18.7	15.0
State of NC	6.9	22.5	18.1	5.5	18.9	15.2	4.6	16.2	13.0	4.7	15.1	12.2

Source: *Small Area Health Insurance Estimates*, (years as noted). U.S. Census Bureau, Small Area Health Insurance Estimate (SAHIE) Interactive Data Tool. Geographies and age groups as noted. <https://www.census.gov/data-tools/demo/sahie/sahie.html>.

As will be reported on fully in a later chapter in this report, the 2018 Wilkes County Community Health Survey asked participants what type of health insurance they have. Among the 484 participants who answered the question, 11% percent of respondents (n=53) reported not having health insurance. Approximately half of the respondents (51%) had insurance through

Blue Cross Blue Shield; 15% were on Medicare and 12% had coverage through United Health Care. Participants were also asked whether or not any in a list of problems prevented them from accessing necessary health care or social services in the past 12 months. Among the 462 respondents who answered the question, 82 (18%) reported that lack of health insurance was the primary barrier to accessing care or services. Note that the 2018 survey sample skewed female, educated, and middle-aged.

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 (26).

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); the CHIP acronym is used in reporting from NC Division of Medical Assistance. 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). In NC, the maximum income limit for participation in the NCHC program is 211% of the Federal Poverty Guideline (27). 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 (28).

The following table presents CHIP enrollment figures as of January in 2015-2018 and annual unduplicated counts for 2015-2017.

- In Wilkes County the number of unduplicated children enrolled in CHIP rose slightly each year; the number of unduplicated children enrolled in the Medicaid expansion MCHIP program decreased slightly each year.

Table 60. NC Health Choice Enrollment, Wilkes County (2015-2018)

Wilkes County	MCHIP	CHIP	CHIP Extended Coverage
January, 2018	1,064	817	
January, 2017	1,070	843	
January, 2016	1,101	828	
January, 2015	1,142	774	2
Annual Unduplicated 2017	1,175	1,030	
Annual Unduplicated 2016	1,263	1,005	10
Annual Unduplicated 2015	1,283	927	23

Source: [Years as noted] Enrollment Counts by County and Budget Groups. NC Division of Medical Assistance, Reports, Enrollment Reports. State Fiscal Year Medicaid/Health Choice State and County Reports.

<https://dma.ncdhhs.gov/documents/reports/enrollment-reports/medicaid-and-health-choice-enrollment-reports>

Medicaid

Authorized by Title XIX of the Social Security Act, Medicaid was signed into law in 1965 alongside Medicare. All states, the District of Columbia, and the US territories have Medicaid programs designed to provide health coverage for low-income people: parents, children, seniors, and people with disabilities. Both coverage and eligibility requirements are different for people with different kinds of needs. Medicaid is one of the largest payers for health care in the United States. Although the Federal government establishes certain parameters for all states to follow (i.e., Medicaid recipients must be US citizens or legal permanent residents) each state administers their Medicaid program differently, resulting in variations in Medicaid coverage across the country (29).

As with CHIP, in NC county departments of social services caseworkers help clients determine their eligibility for Medicaid.

The following table summarizes data on the number of persons eligible for some of the largest Medicaid programs in Wilkes County for the period from FY2015 through FY2017.

- The total number of Wilkes County residents eligible for Medicaid increased between FY2015 and FY2016 and decreased slightly in FY2017.
- The program areas with the largest number of eligibles were TANF (Temporary Assistance for Needy Families; formerly AFDC [Aid to Families with Dependent Children]) followed by the Infants and Children program.

Table 61. Number of Medicaid Eligibles by Program Area, Wilkes County (Annual Unduplicated Counts, 2015-2017)

Wilkes County	Aged	Blind	Disabled	TANF (AFDC) Under 21	TANF (AFDC) 21 and over	Other Child	Pregnant Women	Family Planning	Infants and Children	MQBQ	MQBB	MQBE	County Total
Annual Unduplicated 2017	1,441	16	2,880	4,119	1,944	246	284	428	3,264	141	613	331	16,975
Annual Unduplicated 2016	1,491	17	2,826	3,814	1,991	230	329	262	3,642	154	651	340	17,102
Annual Unduplicated 2015	1,443	21	2,774	2,876	1,928	267	353	129	4,465	126	654	327	16,745

Source: [Years as noted] Enrollment Counts by County and Budget Groups. NC Division of Medical Assistance, Reports, Enrollment Reports. State Fiscal Year Medicaid/Health Choice State and County Reports.

<https://dma.ncdhhs.gov/documents/reports/enrollment-reports/medicaid-and-health-choice-enrollment-reports>.

The next table presents summary data on the Medicaid-eligibles and program payments for which the county is responsible for its computable share. This data covers Wilkes County, Surry County, and the state of NC. Some of the figures in the table are population-dependent (e.g., expenditure per eligible), and are not directly comparable from one jurisdiction to another.

- The number of Medicaid eligibles in Wilkes County varies slightly each year through FY2017 and averaged 16,951 over the five periods presented.
- The total county cost for Medicaid in Wilkes County was higher in more recent fiscal years and averaged \$100,386,939 over the five year period. The average expenditure per eligible is also higher in more recent years.
- The percent of the county population eligible for Medicaid was approximately 24% in each year presented.

**Table 62. Annual Summary of Medicaid Eligibles and Expenses
(SFY2013-SFY2017)**

SFY2013	2012 Est. Population	Number of Medicaid Eligibles	Total Expenditures	Expenditure per Eligible	Per Capita Expenditure	Ranking	Eligibles per 1,000 Population	% of Medicaid Eligibles based on 2012 Population
Wilkes	69,625	17,338	\$ 98,073,825	\$ 5,657	\$ 1,409	33	249	24.90%
Surry	73,754	19,456	\$ 98,548,922	\$ 5,065	\$ 1,336	43	264	26.38%
STATE TOTAL	9,765,229	2,140,459	\$ 10,644,195,024	\$ 4,973	\$ 1,090	n/a	219	21.92%
SFY2014	2013 Est. Population	Number of Medicaid Eligibles	Total Expenditures	Expenditure per Eligible	Per Capita Expenditure	Ranking	Eligibles per 1,000 Population	% of Medicaid Eligibles based on 2013 Population
Wilkes	69,754	16,597	\$ 93,945,539	\$ 5,660	\$ 1,347	28	238	23.79%
Surry	73,344	18,726	\$ 96,146,911	\$ 5,134	\$ 1,311	35	255	25.53%
STATE TOTAL	9,861,952	2,094,318	\$ 10,077,624,394	\$ 4,812	\$ 1,022	n/a	212	21.24%
SFY2015	2014 Est. Population	Number of Medicaid Eligibles	Total Expenditures	Expenditure per Eligible	Per Capita Expenditure	Ranking	Eligibles per 1,000 Population	% of Medicaid Eligibles based on 2014 Population
Wilkes	69,890	16,745	\$ 102,860,995	\$ 6,143	\$ 1,472	23	240	23.96%
Surry	73,840	19,080	\$ 103,939,944	\$ 5,448	\$ 1,408	33	258	25.84%
STATE TOTAL	9,953,687	2,189,881	\$ 10,991,204,281	\$ 5,019	\$ 1,104	n/a	220	22.00%
SFY2016	2015 Est. Population	Number of Medicaid Eligibles	Total Expenditures	Expenditure per Eligible	Per Capita Expenditure	Ranking	Eligibles per 1,000 Population	% of Medicaid Eligibles based on 2015 Population
Wilkes	69,663	17,102	\$ 103,832,412	\$ 6,071	\$ 1,490	24	245	24.5%
Surry	73,195	19,022	\$ 102,303,569	\$ 5,378	\$ 1,398	33	260	26.0%
STATE TOTAL	10,056,683	2,265,650	\$ 10,962,551,108	n/a	n/a	n/a	n/a	n/a
SFY2017	2016 Est. Population	Number of Medicaid Eligibles	Total Expenditures	Expenditure per Eligible	Per Capita Expenditure	Ranking	Eligibles per 1,000 Population	% of Medicaid Eligibles based on 2016 Population
Wilkes	69,663	16,975	\$ 103,221,924	\$ 6,081	\$ 1,482	25	244	24.4%
Surry	73,195	19,255	\$ 101,687,124	\$ 5,281	\$ 1,389	36	263	26.3%
State Total	10,158,475	2,332,206	\$ 11,142,210,996	n/a	n/a	n/a	n/a	n/a

Source: [Years as noted] SFY Medicaid Annual Report Tables. Table 7: Eligibles and Program Payments. NC Division of Medical Assistance. Reports: Annual Reports and Tables. <https://dma.ncdhhs.gov/reports/annual-reports-and-tables>.

The following table summarizes data on the “rendering (attending) providers” in Wilkes County who received Medicaid payments in FY2015 through FY2017.

Table 63. Rendering Providers Who Received Medicaid Payments, Wilkes County (FY2015 through FY2017)

Provider Classification	Provider Specialization	2017			2016			2015		
		Provider Count	Visits/Days	Procedures/Scripts	Provider Count	Visits/Days	Procedures/Scripts	Provider Count	Visits/Days	Procedures/Scripts
Agencies										
	Case Management	2	10,941	10,946	3	20,207	20,438	3	10,510	10,622
	Community/Behavioral Health	1	693	693	1	347	347	1	267	267
	Home Health	2	3,519	4,223	2	4,134	4,801	2	5,386	6,036
	Hospice Care, Community Based	1	2,509	2,509	1	2,000	2,000	1	207	207
	In Home Supportive Care	5	27,646	27,838	5	35,096	35,269	6	34,165	34,319
	Local Education Agency (LEA)	1	5,507	5,681	1	4,902	5,043	1	4,560	4,658
Allopathic & Osteopathic Physicians										
	Allergy & Immunology	2			5	1,350	1,717	6	2,172	2,674
	Anesthesiology	5	1,443	1,608	5	1,523	1,673	6	1,568	1,719
	Emergency Medicine	28	9,045	11,456	23	8,794	11,034	18	9,047	11,075
	Family Medicine	28	10,432	16,679	26	12,585	18,550	19	12,904	19,239
	General Practice	1	16	31	3	3	3	2	24	42
	Internal Medicine	61	7,318	9,753	52	10,035	16,110	34	11,923	19,734
	Internal Medicine Cardiovascular Disease	3	1,278	1,625	3	1,109	1,328	3	1,535	1,950
	Internal Medicine Gastroenterology	2	576	672	3	574	670	2	710	784
	Internal Medicine Geriatric Medicine	2	54	54	1	32	32			
	Internal Medicine Hematology							1		
	Internal Medicine Hematology & Oncology	3			2	243	682	4	352	996
	Internal Medicine Medical Oncology	1	396	1,419	1	257	793	2	43	98
	Internal Medicine Nephrology	2	19	20				2	31	31
	Internal Medicine Sleep Medicine	1	494	635	1	955	1,498	1	1,043	1,742
	Obstetrics & Gynecology	6	5,242	7,969	6	6,226	8,180	5	7,108	9,467
	Obstetrics & Gynecology Gynecologic Oncology	4	11	45	2	22	41	4	17	29
	Ophthalmology	1	473	616	1	473	618	1	552	731
	Orthopaedic Surgery	3	798	1,327	3	1,690	3,179	3	2,221	4,170
	Otolaryngology	2	1,382	1,812	2	857	1,378	1	918	1,477
	Pathology Anatomic/Clinical Pathology	1						1	65	173
	Pediatrics	7	21,656	46,808	8	21,375	44,633	8	21,891	46,390
	Psychiatry & Neurology Neurology	1	253	298	1	283	328	1	352	415
	Psychiatry & Neurology Psychiatry							2		
	Radiology Diagnostic Radiology	3	8,656	11,324	3	9,100	12,094	3	10,290	13,788
	Surgery	7	1,070	1,496	7	2,808	4,612	6	3,384	5,070
Ambulatory Health Care Facilities										
	Urology	2	499	826	2	624	1,076	2	781	1,223
Behavioral Health & Social Service Providers										
	Clinic/Center End-Stage Renal Disease Treatment	1	3,235	4,857	1	3,278	5,125	1	3,280	6,733
	Counselor Mental Health	1			3	17	17	3		
	Counselor Professional	3	133	134	5	66	77	5	66	74
	Psychologist	1	12	12	1			2		
	Social Worker Clinical	1			2			3	16	16
Chiropractic Providers										
	Chiropractor	1	805	827	1	1,137	1,212	1	1,191	1,272
Dental Providers										
	Dentist Dental Public Health							1	782	2,535
	Dentist General Practice	16	17,443	59,998	14	16,897	59,754	14	18,628	66,086
	Dentist Orthodontics/Dentofacial Orthopedics	2	3,038	3,597	2	3,135	3,619	2	3,167	3,739
	Dentist Pediatric Dentistry	3	582	2,211	3	1,380	6,054	4	1,824	7,374
	Dentist Prosthodontics	1	573	1,784	1	646	2,004	1	18	45
Eye and Vision Services Providers										
	Optometrist	8	6,329	6,744	7	5,884	6,638	7	4,873	5,960
Group										
	Multi-Specialty	3	3,520	4,090	2	2,558	3,163	2	2,731	3,353
	Single Specialty	3	757	1,423	3	976	1,477	3	720	1,112
Hospitals										
	General Acute Care Hospital	1	21,486	97,336	1	22,213	104,307	1	22,654	107,713
Laboratories										
	Clinical Medical Laboratory	2	250	846	2	2,106	33,854	2	487	3,565
Nursing & Custodial Care Facilities										
	Custodial Care Facility Adult Care Home	6	22,690	22,804	6	28,185	28,431	6	35,156	35,161
	Skilled Nursing Facility	4	11,297	36,764	4	9,427	34,677	4	8,093	31,973
Physician Assistants & Advanced Practice Nursing										
	Nurse Anesthetist, Certified Registered	10	1,266	1,267	10	1,160	1,160	7	1,036	1,036
	Nurse Practitioner	14	3,779	6,228	10	3,338	5,035	10	1,523	2,524
	Nurse Practitioner Acute Care	1								
	Nurse Practitioner Family	17	7,192	12,121	10	2,826	3,692	8	414	753
	Nurse Practitioner Gerontology	1	162	296	1	15	25	1	155	279
	Nurse Practitioner Primary Care	1	169	192						
	Nurse Practitioner Psych/Mental Health	1			1	71	71			
	Nurse Practitioner Pediatrics							1	46	79
	Physician Assistant	21	6,424	9,602	16	2,497	4,274	11	1,829	3,044
Podiatric Medicine & Surgery Service Providers										
	Podiatrist Foot & Ankle Surgery	1		11						
	Podiatrist Foot Surgery	1								
	Podiatrist Primary Podiatric Medicine	2	298	428	1	217	324	1	271	452
Respiratory, Developmental, Rehabilitative & Restorative										
	Occupational Therapist	1			1	25	25	1	757	760
	Physical Therapist	1	73	73				1	67	67
Speech, Language and Hearing Service Providers										
	Audiologist	1		13						
	Speech-Language Pathologist	2	697	697	2	594	594	2	537	537
Suppliers										
	Durable Medical Equipment & Medical Supplies	7	548	616	4	59	103	4	73	104
	Durable Medical Equipment & Medical Supplies Customized Equipment	5	2,038	3,175	6	1,780	2,605	6	1,696	2,457
	Durable Medical Equipment & Medical Supplies Dialysis Equip & Supplies							1		
	Durable Medical Equipment & Medical Supplies Oxygen Equip & Supplies	2	7,414	11,601	2	8,301	12,392	3	8,144	12,469
	Durable Medical Equipment & Medical Supplies Parenteral & Enteral Nutrition	3	33	37	3	198	253	3	355	546
	Home Delivered Meals				1	378	386			
	Pharmacy Community/Retail Pharmacy	5	57	120						
Transportation Services										
	Ambulance Land Transport	1	1,939	3,197	1	2,345	4,143	1	2,399	4,354

Source: Provider Report, DHHS/DMA Dashboard: Payments to Providers. <https://dma.ncdhhs.gov/reports/dashboards>.

Medicaid Services Provided by Wilkes County Department of Social Services

The table below presents data on Medicaid services provided by the WCDSS in FY2011-12 and FY2014-15 through 2016-2017.

- Annual figures for the number of monthly recipients for Adult Medicaid increased each year while the number of households served with Family and Children Medicaid varied each year and averaged nearly 7,500 each year.
- The number of Medicaid recipients in nursing homes doubled between FY2014-15 and FY2015-16 and increased again in FY2016-17.
- The number of individuals receiving Special Assistance subsidies for nursing home care decreased over the period cited.
- Medicaid transportation figures increased over the period cited.

**Table 64. Medicaid Services Provided by Wilkes County DSS
(FY2014-15 through FY2016-16)**

Service/Program and (Metric)	2014-15	2015-16	2016-17
Adult Services			
<i>Aid to the Blind</i> (Clients served)	183	201	165
Children's Services			
<i>Medicaid Transportation</i> (Clients served)	1,040	1,262	1,363
<i>Perinatal Services</i> (Women served)	257	325	336
Family Support Services			
<i>Adult Medicaid</i> (Individuals assisted monthly)	5,281	5,843	6,595
(Individuals in nursing homes)	385	701	815
<i>Care Connection Pharmacy</i> (Individuals receiving pharmacy cards)	238	300	283
<i>Special Assistance</i> (Aged/disabled persons monthly receiving nursing home subsidies)	260	217	159
<i>Family and Children Medicaid</i> (Households served)	7,558	7,329	7,459
<i>North Carolina Health Choice (NCHC)</i> (Households receiving NCHC)	347	425	494

Source: Wilkes County Department of Social Services Annual Reports, FY2014-15, FY2015-16, and FY2016-17. Personal communication from Rachel Willard, Health Educator, Wilkes County Health Department to Sheila S. Pfaender, Public Health Consultant, August 14, 2018.

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. Medicare data is not summarized here but is referred to or presented topically in other parts of this report.

HEALTH CARE PROVIDERS

Practitioners

One way to compare the supply of health professionals among jurisdictions is to calculate and compare the ratio of the number of health care providers to the number of persons in the populations of those jurisdictions. In NC, there is data on the ratio of active health professionals per 10,000 population calculated at the county level. The following table presents those data (which for simplicity's sake will be referred to simply as the "ratio") for Wilkes County, Surry County and the state of NC over the ten-year period from 2008 through 2017. Noteworthy in this presentation of data is the column designating the percentage of practitioners in each category who are over the age of 65.

- The health professional ratios in Wilkes County for registered nurses, dentists, physicians and pharmacists were lower than the comparable state ratios in each year cited.
- The ratios of dentists in Wilkes County were much lower than the state ratio every year cited. Since 2015, 20% or more of dentists in Wilkes County were over the age of 65; in 2017, 35% of dentists in Surry County were over the age of 65. Over the period cited, the proportion of dentists statewide over the age of 65 ranged from approximately 10% to a maximum of 15%.
- In every year over the period cited the ratios of physicians in Wilkes County were approximately half the state ratio. Surry County physician ratios were higher than Wilkes County but lower than NC. Furthermore, in Wilkes County more than 20% of physicians were over the age of 65.
- Lower proportions of nurses and pharmacists in Wilkes County were over the age of 65, compared to dentists and physicians.

Table 65. Active Health Professionals per 10,000 Population (2008-2017)

Wilkes County	Registered Nurses			Dentists			Physicians			Pharmacists		
	#	Ratio per 10,000	%over age 65	#	Ratio per 10,000	%over age 65	#	Ratio per 10,000	%over age 65	#	Ratio per 10,000	%over age 65
2008	446	66.26	3.6%	18	2.67	11.1%	75	11.14	9.3%	35	5.20	8.6%
2009	449	66.49	3.8%	18	2.67	11.1%	82	12.14	19.5%	36	5.33	8.3%
2010	450	64.82	4.0%	19	2.74	10.5%	82	11.81	14.6%	39	5.62	7.7%
2011	453	65.09	4.2%	19	2.73	15.8%	78	11.21	15.4%	37	5.32	2.7%
2012	439	62.93	5.2%	18	2.58	11.1%	83	11.90	16.9%	40	5.73	7.5%
2013	430	61.65	5.6%	18	2.58	16.7%	72	10.32	20.8%	38	5.45	7.9%
2014	458	65.54	5.2%	17	2.43	17.7%	75	10.73	21.3%	41	5.87	9.8%
2015	464	66.29	3.7%	15	2.14	20.0%	75	10.71	21.3%	38	5.43	7.9%
2016	472	67.32	3.2%	13	1.85	23.1%	70	9.98	22.9%	33	4.71	6.1%
2017	455	64.51	2.9%	14	1.98	21.4%	72	10.21	20.8%	n/a	n/a	n/a

Source: Cecil B Sheps Center for Health Services Research. NC Health Professionals Data System. Choose a Profession, then Download Data. <https://nhealthworkforce.sirs.unc.edu/>.

Surry County	Registered Nurses			Dentists			Physicians			Pharmacists		
	#	Ratio per 10,000	% over age 65	#	Ratio per 10,000	% over age 65	#	Ratio per 10,000	% over age 65	#	Ratio per 10,000	% over age 65
2008	623	84.89	2.9%	24	3.27	8.3%	112	15.26	1.8%	61	8.31	9.8%
2009	639	86.48	2.4%	24	3.25	8.3%	122	16.51	1.6%	61	8.26	9.8%
2010	633	85.78	2.5%	27	3.66	11.1%	133	18.02	2.3%	63	8.54	7.9%
2011	646	87.80	2.6%	23	3.13	17.4%	135	18.35	6.7%	62	8.43	8.1%
2012	648	87.90	3.2%	24	3.26	16.7%	129	17.50	10.9%	63	8.55	9.5%
2013	661	90.12	4.1%	27	3.68	18.5%	113	15.41	8.0%	63	8.59	7.9%
2014	662	89.66	4.1%	27	3.66	22.2%	118	15.98	6.8%	62	8.40	11.3%
2015	650	88.04	4.3%	27	3.66	25.9%	119	16.12	9.2%	70	9.48	8.6%
2016	660	89.39	4.6%	23	3.12	21.7%	121	16.39	14.1%	70	9.48	11.4%
2017	670	91.98	5.1%	26	3.57	34.6%	126	17.30	16.7%	n/a	n/a	n/a

North Carolina	Registered Nurses			Dentists			Physicians			Pharmacists		
	#	Ratio per 10,000	% over age 65	#	Ratio per 10,000	% over age 65	#	Ratio per 10,000	% over age 65	#	Ratio per 10,000	% over age 65
2008	87,743	95.09	3.4%	4,053	4.39	9.5%	19,542	21.18	7.8%	8,578	9.30	7.4%
2009	90,930	96.91	3.6%	4,162	4.44	10.3%	19,894	21.20	8.0%	8,694	9.27	7.5%
2010	93,133	97.29	3.7%	4,251	4.44	10.9%	20,752	21.68	8.4%	8,755	9.15	6.8%
2011	95,335	98.60	3.9%	4,273	4.42	10.5%	21,340	22.07	9.3%	9,195	9.51	5.7%
2012	97,222	99.56	4.2%	4,465	4.57	13.4%	21,788	22.31	10.1%	9,822	10.06	6.4%
2013	99,611	101.01	4.6%	4,561	4.62	14.1%	22,414	22.73	9.9%	10,026	10.17	6.3%
2014	99,734	100.20	4.6%	4,681	4.70	14.5%	23,063	23.17	10.3%	10,546	10.60	6.5%
2015	100,134	99.59	4.5%	4,857	4.83	15.0%	23,324	23.20	10.6%	11,192	11.13	6.5%
2016	101,570	99.99	4.9%	4,960	4.88	14.9%	23,869	23.50	11.0%	11,620	11.44	6.9%
2017	103,425	100.68	5.3%	5,112	4.98	15.2%	24,432	23.78	11.5%	n/a	n/a	n/a

Source: Cecil B Sheps Center for Health Services Research. NC Health Professionals Data System. Choose a Profession, then Download Data. <https://nhealthworkforce.sirs.unc.edu/>.

Hospitals

Wake Forest Baptist Health - Wilkes Medical Center

Wake Forest Baptist Health - Wilkes Medical Center (WFBH-WMC) is operated by the Wake Forest Baptist Health; it is owned by the Town of North Wilkesboro and governed by the Hospital Operating Organization, a team of leaders of the community who volunteer their time. It is fully accredited by the Joint Commission on Accreditation of Healthcare Organizations.

WMC is licensed for 130 beds, including a 10-bed skilled nursing unit (30).

Physician specialties at Wilkes Medical Center include:

Anesthesiology	Cardiology	Medical Imaging
Emergency Medicine	ENT	Family Practice
Gastroenterology	Internal medicine	Nephrology
Neurology	OB/GYN	Ophthalmology
Pathology	Pediatrics	Psychiatry
General surgery	Orthopedic Surgery	Vascular Surgery
Urology		

Utilization of Wilkes Medical Center by Wilkes County Residents

Emergency Department Utilization

People sometimes utilize the emergency department of the local hospital not only for emergency care but for care of convenience or last resort due to lack of a medical home or personal health care provider. It can be instructive to examine the emergency department patient flow over time, especially as the demographics of the patient population reflects (or not) the demographics of the county or other service area.

Wilkes Medical Center made available to the consultant de-identified emergency department and inpatient hospitalization discharge records for the period 2015 through 2017, including basic patient demographic information and diagnosis codes. The diagnosis codes will be used in later sections of this report. In this section the demographic data is summarized to describe who uses the emergency department and inpatient services.

The table below summarizes the demographic characteristics of Wilkes County residents who utilized the *emergency department* over the period cited. The analysis compares gender and age group characteristics of hospital discharges to the same kind of demographic data for the overall Wilkes County population.

- Females: Hospital – 55.7% County – 50.8%
- Males: Hospital – 44.3% County – 49.2%
- Under age 18: Hospital – 18.6% County – 21.4%
- Age 18-64: Hospital – 65.9% County – 58.8%
- Age 65 and older: Hospital – 15.5% County – 19.8%
- Black/African American: Hospital – 8.3% County – 4.3%
- Caucasian/White: Hospital – 86.5% County – 91.2%
- Hispanic: Hospital – 4.8% County – 5.9%

Table 66. WMC Emergency Department Discharges (2015-2017)

Number of ED Discharges by Gender and Age Group						
Year	Females	Males	< 18	18-64	≥ 65	Total No. Discharges
2015	14,963	12,060	5,054	17,861	4,110	27,025
2016	15,644	12,501	5,151	18,694	4,301	28,146
2017 (part)	11,949	9,318	4,021	13,821	3,426	21,268
Total	42,556	33,879	14,226	50,376	11,837	76,439

Number of ED Discharges by Racial Group							
Year	Am. Indian/Alaskan	Asian	Black/African American	Caucasian/White	Hispanic	Unknown	Total No. Discharges
2015	17	79	2,196	23,471	1,256	6	27,025
2016	22	94	2,321	24,325	1,368	15	28,146
2017 (part)	10	54	1,848	18,323	1,023	8	21,268
Total	49	227	6,365	66,119	3,647	29	76,439

Source: Based on proprietary data provided to Sheila S. Pfaender, Public Health Consultant, by WFBH-WMC.

Inpatient Hospitalization Utilization

Regarding inpatient (IP) hospitalization discharges shown in the next table:

- Females: Hospital – 60.9% County – 50.8%
- Males: Hospital – 39.1% County – 49.2%
- Under age 18: Hospital – 10.9% County – 21.4%
- Age 18-64: Hospital – 43.0% County – 58.8%
- Age 65 and older: Hospital – 46.1% County – 19.8%
- Black/African American: Hospital – 5.3% County – 4.3%
- Caucasian/White: Hospital – 89.8% County – 91.2%
- Hispanic: Hospital – 4.3% County – 5.9%

Table 67. WMC Inpatient Hospitalization Discharges (2015-2017)

Number of IP Discharges by Gender and Age Group						
Year	No. by Gender		No. by Age Group			Total No. Annual Discharges
	Females	Males	< 18	18-64	≥ 65	
2015	2,677	1,720	471	1,859	2,067	4,397
2016	2,701	1,689	516	1,951	1,924	4,391
2017 (part)	1,799	1,189	301	1,250	1,437	2,988
Total	7,177	4,598	1,288	5,060	5,428	11,776

Number of IP Discharges by Racial Group						
Year	Am. Indian/ Alaskan	Asian	Black/ African American	Caucasian/ White	Hispanic	Total No. Discharges
2015	1	18	214	3,979	185	4,397
2016	2	24	252	3,910	201	4,391
2017 (part)	1	10	157	2,691	126	2,988
Total	4	52	623	10,580	512	11,776

Source: Based on proprietary data provided to Sheila S. Pfaender, Public Health Consultant, by WFBH-WMC.

Wilkes County Health Department

The Wilkes County Health Department is located in the heart of Downtown Wilkesboro. It has been serving the community for over 50 years, offering services including well/sick visits, health promotion and healthy lifestyle choices, diabetes and nutritional counseling, maternity and postpartum care, and immunizations as well as environmental health services such as well water testing, septic and waste water services, and restaurant inspections.

The Wilkes County Health Department cares for men, women and children by providing comprehensive services focused on wellness, education and prevention. Agency programs include: disease prevention and control, preparedness and response to emergent diseases and

events, environmental health, WIC, and personal health programs, such as prenatal care services, well and sick adult and child healthcare, and adult and child dental services.

Specific services and programs include:

For Children

Well/sick care
Immunizations
Dental Health
Care Coordination

For Pregnant Women

Prenatal Care
Sexual Health
Text4Baby

For Teens

Well/sick care
MESH (school health)
Dental health
Sexual health
Plan First/Birth Control

For Adults

Well/sick care
Immunizations
Dental health
Sexual health
Plan First/birth control
Prenatal Care
Breast and Cervical Cancer Control Program

WCHD also provides Women, Infant and Children (WIC) services, offers diabetes education and medical nutrition therapy, operates a public health dental clinic, monitors communicable diseases, and offers a complete range of environmental health services, including food and lodging inspections and well and septic system permitting and monitoring (31).

Wilkes Public Health Dental Clinic

The Wilkes Public Health Dental Clinic is a 501c3 non-profit corporation located in North Wilkesboro and serving patients aged 1-100. Its mission is to serve the unserved and underserved children and adults of the region with preference given to Wilkes County residents. The practice serves all patients regardless of inability to pay; discounts for essential services are offered based on family size and income. Clinic services include dental exams, cleanings and x-rays; fillings, root canal therapy, extractions, crowns, dentures and partials, bridges; whitening, fluoride treatment, varnishes and sealants; and dental education.

The Wilkes Public Health Mobile Dental Clinic began operation in 2001. For the past 15 years, the Mobile Dental Clinic has treated children in the Wilkes County School System; school children are seen when parents or guardians return a signed, completed consent form for treatment to the school. Currently, the mobile clinic also serves both children and adults around the county by appointment (32).

Federally-Qualified Health Center

The Wilkes Community Health Center, located in Wilkesboro and operated by the Wilkes County Health Department, is a designated FQHC providing comprehensive primary and preventive care services to Wilkes and surrounding county residents of all ages, regardless of their ability to pay. Services and programs include: primary care for adults and children, screenings, gynecological care, pharmaceutical and laboratory services, immunizations, family planning, case management, health education, outreach, mental health and substance abuse services, nutrition, preventive dental, and transportation (33).

The following table presents Wilkes Community Health Center utilization data for 2017, the only year for which data is available given the newness of the facility. This data was accessed through HRSA.

Table 68. Wilkes Community Health Center Utilization Data (2017)

Parameter	2017
Patient Age and Race/Ethnicity	
Total Patients (# of patients)	2,971
Age (% of Total Patients)	
	<18 28.2
	18-64 67.4
	≥ 65 4.4
Minority Patients by Race/Ethnicity (% known)	
	<i>Non-Hispanic White</i> 59.2
	<i>Racial and/or Ethnic Minority</i> 40.9
	<i>Hispanic or Latino (all races)</i> 32.4
	<i>Black/African American</i> 6.4
	<i>Asian</i> 1.2
	<i>Best served in another language</i> 25.9
Patient Characteristics	
Income Status (% of patients with known income)	
	<i>Patients at or below 200% of poverty</i> 56.7
	<i>Patients at or below 100% of poverty</i> 44.0
Insurance Status (% of total patients)	
	<i>Uninsured</i> 44.5
	<i>Children uninsured (age 0-19 years)</i> 23.4
	<i>Medicaid/CHIP</i> 32.3
	<i>Medicare</i> 7.5
	<i>Dual eligibility</i> 4.3
	<i>Other Third Party</i> 15.7
Services (% of services)	
Medical	100.00
Dental	0.00
Mental Health	0.44
Substance Abuse	0.00
Vision	0.00
Clinical Data	
Medical Conditions (% of patients with condition)	
	<i>Hypertension</i> 28.6
	<i>Diabetes</i> 16.5
	<i>Asthma</i> 3.2
Preventive Health Screening and Services (% of patients)	
Cervical cancer screening	32.9
Weight Assessment and Counseling for Nutrition and Physical Activity for Children and Adolescents	61.4
Body Mass Index Screening and Follow Up	25.5
Adults Screened for Tobacco Use and Receiving Cessation Intervention	68.5
Colorectal cancer screening	32.9
Childhood immunization status	27.3
Screening for Clinical Depression and Follow-Up Plan	78.6
Chronic Disease Management	
Use of appropriate medications for asthma	51.6
Coronary artery disease: Lipid Therapy	86.7
Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antithrombotic	33.3
Hypertensive Patients with Blood Pressure < 140/90	67.6
Diabetes: Hemoglobin A1c Poor Control	54.6

Source: US Health Resources and Services Administration, Bureau of Primary Health Care, Health Center Data, Program Grantee Profiles. Wilkes Community Health Center.
<https://bphc.hrsa.gov/uds/datacenter.aspx?q=d&bid=04E01243&state=NC&year=2017#fn19>.

Wilkes County Emergency Medical Services

Established in 1971, Wilkes County Emergency Medical Services (Wilkes EMS) is a county government owned and operated medical service headquartered in North Wilkesboro. Employing 54 full time and 26 part time field paramedics, Wilkes EMS operates from two full-time bases, providing around-the-clock advanced life support care for the citizens of Wilkes County. Wilkes EMS offers Continuing Education for EMS employees and Rescue Squad members to continue their education and help to provide more knowledge in the field for emergency situations.

In 2018, EMS received 12,789 calls, the highest number since at least 2010 (34).

School Health

The local educational authority in Wilkes County, Wilkes County Schools, employs all school health nursing staff. As of March 2019, Wilkes County Schools employed 10 school nurses, all of whom split their time among two—and sometimes three—schools (35). Student's needs for nursing care range from first aid for cuts, acute illness nursing and hygiene counseling to chronic disease management.

The most recent (SY2012-2013) ratio of school nurses to students in Wilkes County schools was 1:1,009; during the same school year the ratio for the state was 1:1,177 (36). The recommended ratio is 1:750. Unfortunately, more recent data is not available at the source.

The Mobile Expanded School Health (MESH) mobile medical unit, staffed by a Family Nurse Practitioner and a Nurse, spend one day a week at each of the five Wilkes County high schools. The unit provides assessment and treatment for minor illness and illnesses, sports physicals, immunizations and laboratory tests, some over-the-counter medications as well as prescriptions. A counselor is available to help with mental health concerns. All services, except for sports physicals, are provided for free; MESH bills Medicaid, Health Choices, and some insurance (37).

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, adult care homes, and family care homes. Each category of long-term care is discussed subsequently, but the following table summarizes numbers of facilities in each category in Wilkes County. There is a total of 668 long-term beds in the county.

**Table 69. NC-Licensed Long-Term Care Facilities in Wilkes County
(May, 2018)**

Facility Type/Name	Location	# Beds SFN (ACH) ¹	NC ACLS Star Rating (of 5)
Nursing Homes/Homes for the Aged			
Avante at Wilkesboro	Wilkesboro	120 (0)	n/a
Westwood Hills Nursing and Rehabilitation Center	Wilkesboro	176 (10)	n/a
Wilkes Senior Village	North Wilkesboro	111 (19)	n/a
Adult Care Homes/Homes for the Aged			
Rose Glen Manor	North Wilkesboro	60	3
The Villages of Wilkes Traditional Living/Noations Inc.	North Wilkesboro	102	4
Wilkes County Adult Care/Raintree Healthcare of Wilkesboro LLC	Wilkesboro	99	0
Family Care Homes			
None			

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 Services, Division of Health Services Regulation (DHSR), Licensed Facilities, Adult Care Homes, Family Care Homes, Nursing Facilities (by County); <https://www2.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 (38).

At the time this report was prepared, there were three state-licensed nursing homes in Wilkes County, offering a total of 407 skilled nursing beds.

Adult Care Homes and Family 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 (39).

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.

Effective in January, 2009 the state of NC implemented a Star Rating system to help consumers seeking a long-term placement for a loved one in an adult care home or family care home. The

North Carolina Star Rated Certificate program for assisted living facilities was established in response to requests of NC citizens for increased availability of public information regarding the care provided in adult care facilities. The rules are based on General Statute 131D-10 and were created by the NC Medical Care Commission with input from residents and families in adult care homes, advocacy groups, providers, and others. The ratings (from a low of one to a high of five) are based on once-a-year inspections that typically last two or three days. Note that the ratings may not reflect changes in the facility's care and services that have occurred since that inspection date (40).

At the time this report was prepared, there were three state-licensed adult care homes in Wilkes County (neither of which was rated "5-star"; one was a "4-star" and the other a "3-star" facility). The Adult Care Homes offer a total of 261 beds.

Alternatives to Institutional Care

Many disabled or senior citizens choose to avoid or defer institutional care and instead to remain at home and use community in-home health and/or home aide services. Among seniors, this alternative is referred to as "aging in place". Seniors who are able-bodied and mobile may opt to live independently where they can access as-needed services that provide house cleaning, meal preparation or occasional assistance with personal care. Those who are less able, whatever their age, might prefer to live at home and utilize regularly more extensive supports offered in the community.

This report cites only those in-home health and/or home aide services available in Wilkes County that are licensed by the state of NC. Note that there may be additional providers in the county that refer to themselves as "home health service (or care) providers" that are *not* licensed by the state and are not named in this report. Note that this section also includes hospice services in Wilkes County.

Home Care, Home Health and Hospice Services

The table below lists the licensed home care, home health, and hospice services in Wilkes County.

Table 70. Licensed Home Care, Home Health and Hospice Services in Wilkes County (May 2018)

Facility Name	Location	Services
Aerocare	North Wilkesboro	Home Care Only, Accredited
Aeroflow Inc.	North Wilkesboro	Home Care Only, Accredited
Continuum Home Care of Wilkesboro	Wilkesboro	Home Care Only
Continuum Home Care and Hospice of Wilkesboro	Wilkesboro	Hospice Facility
Gentiva Health Services	Wilkesboro	Home Care Only, Accredited
Haven Home Care Inc.	North Wilkesboro	Home Care Only
Home Instead Senior Care	North Wilkesboro	Home Care Only
Kindred at Home	Wilkesboro	Home Care Only, Accredited; Home Health Facilities, Accredited
Lincare, Inc.	North Wilkesboro	Home Care Only, Accredited
PruittHealth Hospice - Wilkes	North Wilkesboro	Hospice Facility
Team Nurse - North Wilkesboro	North Wilkesboro	Home Care Only
Wake Forest Baptist Health Care at Home, LLC	Wilkesboro	Home Care Only, Accredited; Home Health Facilities, Accredited
Wake Forest Baptist Health Care at Home, Hospice - Wilkes	Wilkesboro	Hospice Facility
Wilkes Senior Resources	North Wilkesboro	Home Care Only

Source - NC Department of Health and Human Services, Division of Health Services Regulation (DHSR), Licensed Facilities, Home Care Only, Home Care with Hospice, Home Health Only, and Home Health with Hospice Facilities (by County); <https://www2.ncdhhs.gov/dhsr/reports.htm>.

Wilkes County Department of Social Services

The Wilkes County Department of Social Services (WCDSS) assists adults and families with finding appropriate living and healthcare arrangements when care can no longer be maintained at home. Part of this also includes help in returning home or to more independent living arrangements. WCDSS also works with the NC Division of Facility Services to license and monitor the facilities in Wilkes County that serve this population. This includes receiving and evaluating complaints made by or on behalf of residents.

WCDSS also provides limited home management services to disabled and elderly adults, families, and children who are unable to perform these tasks themselves. Social Workers assess and evaluate each adult to develop and implement a service plan to meet their needs. This can include locating and contacting other providers as well as coordinating and monitoring the delivery of services.

The table below summarizes some of WCDSS services to the frail elderly and disabled adults.

Table 71. Adult Services Provided by Wilkes County DSS (FY2014-15 through FY2016-17)

Service/Program and (Metric)	2014-15	2015-16	2016-17
Adult Services			
<i>Adult Home Care Licensure</i> (Licensed homes supervised)	3	4	2
<i>Adult Home Specialist Services</i> (Placement inquiries)	17	16	90
(Complaints investigated)	31	37	6
<i>In-Home Aide Level III Home Management</i> (In-home Aide service cases)	14	15	19
(Clients served by the SA In-home Program)	2	3	4

Source: Personal communication from Rachel M. Willard, Director of Allied Health Services, Wilkes County Health Department, to Sheila S. Pfaender, Public Health Consultant, August 14, 2018.

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 (41).

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.

The Ruby Pardue Blackburn Adult Day Health Care Center provides this service in Wilkes County.

The Ruby Pardue Blackburn Adult Day Health Care Center

Adult Enrichment Services of Wilkes is a non-profit organization doing business as The Ruby Pardue Blackburn Adult Day Care Center. The center was named after the mother and sister of one of our major contributors. The Ruby Pardue Blackburn Adult Day Health Care Center has been caring for families since 2008. The Center is conveniently located in North Wilkesboro, near Wilkes Regional Medical Center in West Park Medical Park in the 1915 building.

The original idea for an adult day care center in the Wilkes County area began as a Task Force in 1998. Adult Enrichment Services of Wilkes along with The Health Foundation, Inc. Board developed this program over a seven year period of study and development following the recommendations and best practices identified by Partners in Caregiving, the NC Adult Day Health Services Association, and by visiting the top ranked facilities in North Carolina.

The Center offers services for participants and families:

Services for Participants

- **Quality Care and Supervision** – 12 hours of care provided by professional staff, trained in CPR and First Aid as well as other population-specific trainings. Program Assistants come from a variety of health care background and have been trained in caring for the elderly and disabled. They are also available to assist participants with activities of daily living; such as, eating, ambulating, toileting, bathing, personal hygiene, and grooming. All assistance is provided in a safe, hygienic manner; with recognition of an individual's dignity and right to privacy; in a manner that encourages the maximum level of independence that our participants are capable of accomplishing.

- **Health Care and Medication Monitoring** – A nurse on staff (the Health Care Coordinator) is available full time to assess and monitor participants throughout the day, and to give participants their medication. The Health Care Coordinator also serves as a family resource to help families identify other health care needs that may be needed for their loved one.
- **Enriching Activities** – Therapeutic activities with focus on social, physical, and cognitive abilities are a core component of the program. The Program Director and other staff work with participants and their families to identify activities based on the interests, needs, and abilities of each participant, emphasizing his/her strengths and abilities rather than impairments.
- **Therapy Services** – From time to time, a participant may be in need of physical, occupational or speech therapy. The center is equipped with a room designated for therapy, and a licensed therapist may be obtained through an order from the participant's physician and by the choice of the participant. Therapists may be arranged through a local agency.
- **Food & Snacks** – Participants enjoy a nutritional breakfast, lunch, and an afternoon snack during their stay at the center. Menus for breakfast, lunch, and snacks are developed and approved by a Registered Dietician. A Registered Dietician is also available for consultation and on-going staff training. The Center complies with the North Carolina Adult Day Care Standard in reference to nutritious meals. Special diets are available, if ordered by the participant's physician.
- **Beauty/Barber Service** – Optional beauty/barber services are available for an additional fee by a licensed beautician.

Services for Families

- **Caregiver Support Group Meeting** – A facilitated meeting conducted at the Center the first and third Monday of every month; free.
- **Respite Care** – Respite care is available free of charge; provided by The RPBADC staff (42).

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 (43).

At the time this report was prepared, the local management entity/managed mental health care organization (LME/MCO) for Wilkes County was Vaya Health, which is headquartered in Asheville, NC and serves a total of 23 counties in western NC. There is a toll-free number (1-800-849-6127) by which the public can find out how to obtain services and support for mental health, developmental disabilities and substance abuse in their community. The number is operational 24 hours a day, 7 days a week (44).

The January 2019 edition of the Vaya Health LME/MCO Provider Directory (a 132 page document, also searchable online) lists 19 contracted providers or agencies with physical addresses in Wilkes County (45).

A list of NC-licensed mental health *facilities* (not providers) *physically located* in Wilkes County is shown in the table below. Most of these facilities provide day activities or supervised living services for the developmentally disabled, but other services include residential treatment, psychosocial rehabilitation, day activity, day treatment, and adult developmental vocational programs.

Table 72. NC-Licensed Mental Health Facilities (G.S. 122C) in Wilkes County (May, 2018)

Name of Facility/Operator	Location	Category
268 Home/RHA Health Services Inc.	North Wilkesboro	Supervised Living DD Adult
AFL-Espensshade/Omni Visions Inc.	Wilkesboro	Supervised Living/Alternative Family Living
Barium Springs Home for Children - Kulynych Cottage	North Wilkesboro	Residential Treatment Level II
Daymark Recovery Services - Wilkes/Daymark Recovery Services Inc.	North Wilkesboro	Psychosocial Rehabilitation, SA Intensive Outpatient Program
Forst Hill AFL	Wilkesboro	Supervised Living/Alternative Family Living
Holly Hills Group Home/Brushy Mountain Group Homes Inc.	North Wilkesboro	Supervised Living DD Adult
LIFESPAN Creative Campus Wilkesboro	North Wilkesboro	Day Activity
Lakewood/RHA North Carolina MR, Inc.	Wilkesboro	Supervised Living DD Adult
Lewis Fork Homes I & II	Ferguson	Supervised Living DD Adult
Mountain Health Solutions - North Wilkesboro/ATS of North Carolina Inc.	North Wilkesboro	Outpatient Methadone, SA Intensive Outpatient Program
Mulberry Group Home/Brushy Mountain Group Homes Inc.	North Wilkesboro	Supervised Living DD Adult
Old 60 Home/RHA Health Services Inc.	Wilkesboro	Supervised Living DD Adult
Sparta Road Home	North Wilkesboro	Supervised Living DD Adult
Swain Street Group Home/Brushy Mountain Group Homes Inc.	North Wilkesboro	Supervised Living DD Adult
Synergy Recovery at the Bundy Center/Synergy Recovery, Inc.	North Wilkesboro	Facility Crisis Services for all Disability Groups, SA Intensive Outpatient Program
VOCA - Apple Valley/VOCA Corporation of America	Wilkesboro	Supervised Living DD Adult
VOCA - Blairfield	Wilkesboro	Supervised Living DD Adult
VOCA - College Street	Wilkesboro	Supervised Living DD Adult
VOCA - Kimsey	Wilkesboro	Supervised Living DD Adult
VOCA - Wellborn Ave	Wilkesboro	Supervised Living DD Adult
West Wilkes Middle Day Treatment	Wilkesboro	Day Treatment
Wilkes ADAP	North Wilkesboro	Adult Developmental Vocational Programs
Wilkes Day Treatment - CC Elementary	North Wilkesboro	Day Treatment
Wilkes Day Treatment - Mulberry Elementary	North Wilkesboro	Day Treatment
Wilkes Day Treatment - North High	Hays	Day Treatment
Wilkes Vocational Services, Inc.	North Wilkesboro	Adult Developmental Vocational Programs

Source - NC Department of Health and Human Services, Division of Health Services Regulation (DHSR), Licensed Facilities, Mental Health Facilities (G.S. 122C) (by County); <https://www2.ncdhhs.gov/dhsr/reports.htm>

(See also the discussion of Mental Health in *Chapter Four: Health Statistics* of this report for a discussion of Mental Health system reform in NC and a review of mental health service utilization by Wilkes County residents.)

Other Healthcare Resources

Other Healthcare Facilities

- As of May 2018, there was no state licensed ambulatory surgical facility, cardiac rehabilitation facility or licensed nursing pool in Wilkes County.
- There was one Medicare-approved dialysis facility in Wilkes County as of May 2018. Note that this facility offers no services after 5:00 PM.

**Table 73. Medicare-Approved Dialysis Facilities in Wilkes County
(As of May 2018)**

Facility	Location	Features
Wilkes Dialysis Center	North Wilkesboro	24 hemodialysis stations; no shifts after 5:00pm

Source: Dialysis Facility Compare, <http://www.Medicare.gov/Dialysis/Include/DataSection/Questions>.

Recreational Facilities

The next table lists some of the public recreational facilities in Wilkes County.

Table 74. Public Recreational Facilities in Wilkes County

Category/Name	Location	Facilities/Programs
Parks and Recreational Facilities		
Cub Creek Park	Wilkesboro	Baseball fields, batting cages, concessions, basketball courts, walking tracks, tennis courts, pickle ball courts, playground, trout waters, birding activities. Community Garden. Picnic shelters, restrooms. Dog park. Rain gardens.
Rolling Pines Disc Golf Course	Wilkesboro	18 hole Frisbee golf course
School Street Park	Wilkesboro	Nature trail, birding trail, picnic tables
Westwood Park	Wilkesboro	Baseball fields, playground, restrooms, concessions, basketball court, picnic shelter
Highland Hills Disc Golf Course	North Wilkesboro	18 hole Frisbee golf course
Smoot Park	North Wilkesboro	Swimming pool
Memorial Park	North Wilkesboro	baseball and softball fields, spring and summer teams, tennis courts, trailhead to Yadkin River Greenway
Woodlawn Park and Community Center	North Wilkesboro	
Highland Park	North Wilkesboro	
Smoot Park and Pool	North Wilkesboro	outdoor basketball course, volleyball, playground, picnic areas, trail head to YRG and municipal pool.
Stone River State Park	Roaring Gap	Over 16 miles of trails on 14,00 acres of land, 20 miles of trout waters for fishing
Main Street Park	North Wilkesboro	
North Wilkesboro Skateboard Park	North Wilkesboro	
Yadkin River Greenway	North Wilkesboro	Preserved natural area, walking/hiking trails, fishing access
W. Kerr Scott Dam and Reservoir	Wilkesboro	Multi-use trails, public swimming, boating, biking, fishing

Sources: <http://www.north-wilkesboro.com/attractions/>
<http://www.north-wilkesboro.com/government/?id=recreation>
<http://www.wilkesboronorthcarolina.com/departments-128/parks-a-recreation/48-parks-rec>

Note: Youth baseball, softball, basketball, volleyball offered. Adult softball and flag football offered. Listed on the Wilkes County Parks and Rec site. <http://wilkescounty.net/parks-recreation/parks-recreation-links/>

CHAPTER FOUR: HEALTH STATISTICS

METHODOLOGY

Routinely collected mortality and morbidity surveillance data and behavior survey data can be used to describe—and compare—the health status of communities. Briefly speaking, mortality refers to death; morbidity refers to illness or disability among the living. These data, some of which are readily available in the public domain, others of which are proprietary (e.g., hospital discharge data) typically use standardized definitions and codes, thus allowing comparisons among county, state and national figures. There is, however, some error associated with each of these data sources. Surveillance systems designed to track morbidity, for communicable diseases and cancer diagnoses for instance, rely on reports submitted by health care facilities across the state and are likely to miss many 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

Mortality

Mortality, or the rate of death, is calculated by dividing the number of deaths due to a specific disease in a defined period of time by the size of the population being measured in the same period. Mortality typically is described as a rate, usually presented as number of deaths per 100,000 residents. Mortality rates are readily available since the underlying (or primary) cause of death is routinely reported on death certificates, the submission of which is usually universal. 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:

$$\text{(number of deaths due to a cause/population)} \times 100,000 = \text{deaths per 100,000 people}$$

Age-adjustment

Many factors can affect the risk of death, including race, gender, occupation, education and income. One of the most significant factors 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 “younger” people, and others have a higher proportion of “older” 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 (NCSCHS). 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 Wilkes 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 size of the population being measured for each of the years in the same period.

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 percentage, or a count, but not a rate. This report contains morbidity statistics from public domain sources, and, because the local hospital in Wilkes County made de-identified hospital discharge data available to the consultant, the non-fatal burden of disease can further be described by hospital utilization figures.

Prevalence

Prevalence, which describes the extent of morbidity, 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. Typically, prevalence data, especially local prevalence data, underestimates the true extent of a disease in the population, since individuals who do not seek medical care or who are diagnosed outside the target jurisdiction may not be 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.

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 denominator is a smaller number, such as 10,000.

Incidence rate is calculated according to the following formula:

$$\text{(number of new cases/population)} \times 100,000 = \text{new cases per 100,000 people}$$

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.

Trends

Data for multiple years is included in this report wherever possible. Since comparing data on a year-by-year basis often can yield very unstable trends due to small numbers 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 in a population sense 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 enough, so the NCSCSHS 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, NCSCSHS has suppressed reporting data (e.g., 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 assure that unstable health data do not become the basis for local decision-making, this author makes every effort to 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. However, in smaller jurisdictions such as Wilkes County it may be necessary to use unstable figures in order to have any data at all to report. Where these exceptions occur, the narrative will highlight the potential instability of the data 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* considers 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 a 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)

Wilkes County residents participate in the state's annual Behavioral Risk Factor Surveillance System (BRFSS) Survey, as part of a several different aggregate groups. It is not possible to isolate survey responses from Wilkes County from the BRFSS results available in the public domain. Since the aggregate regional data covers such a diverse area, the results cannot responsibly be interpolated to describe health in Wilkes 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*.

Hospital Data

The hospital in Wilkes County, Wake Forest Baptist Health Wilkes Medical Center, provided the consultant with de-identified emergency department and inpatient discharge data that described the discharged patients by demographic characteristics (gender, age and racial/ethnic group), named the primary payer of behalf of each patient, and provided the primary diagnosis associated with the patient according to official ICD (International Classification of Disease) or DRG (diagnosis-related group) code for the visit. ICD codes are used world-wide; DRG codes are unique to the US. The hospital data provided was specific to Wilkes County residents, and carried no personal identifiers such as name, address, phone number, or zip code.

Demographic stratification was applied to the data to describe groups that used these hospital services and to determine whether utilization patterns matched the distribution of the stratified groups in the overall Wilkes County population. The diagnosis codes were matched to the comparable diagnosis codes assigned to the fifteen leading causes of death (as well as to selected other diseases and health conditions) and used to help describe the burden of certain health conditions in the community. WFBH-WMC provided data for three fiscal year, however data provided for FY2017 represents 10 of the 12 months (October 2016-July 2017) while FY2015 and FY2016 each includes a full 12 months of data (October –September).

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. Together the metrics for those measures help calculate an overall rank. The table below shows where NC stood in the 2018 overall rankings and in rankings of specific categories relative to the “best” and “worst” states, and those states ranked on either side of NC.

Table 75. Rank of North Carolina in America’s Health Rankings (2018)

Location	National Rank (Out of 50) ¹							
	Overall	Behaviors	Community and Environment	Policy	Clinical Care	All Determinants	All Outcomes	Overall
Utah	1	1	4	23	3	1	8	1
Florida	31 (tied)	33	32	28	34	34	22	31
North Carolina	33	32	45	9	9	27	36	33
Ohio	34	36	27	29	22	33	35	34
Louisiana	50	50	50	38	42	50	43	50

Source: United Health Foundation, 2018. America’s Health Rankings; <https://www.americashealthrankings.org/>

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.

The next two tables present the 2018 county rankings for Wilkes County and its comparator in terms of health outcomes and health factors, and additional detail regarding the indicators that comprised the rankings.

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 outdated. Furthermore, comparing rankings from year to year may not be valid because the parameters used in the ranking algorithms change from time to time.

**Table 76. County Health Rankings
(2018)**

Location	County Rank (Out of 100)							
	Health Outcomes			Health Factors				
	Length of Life	Quality of Life	Overall Outcomes Rank	Health Behaviors	Clinical Care	Social & Economic Factors	Physical Environment	Overall Factors Rank
Wilkes County	86	66	80	52	87	45	50	61
Surry County	59	52	55	43	80	31	86	55

**Table 77. County Health Rankings Details
(2018)**

Outcome or Determinate	Wilkes County	Surry County	NC County Average	Top (90th Percentile) US Performers
Health Outcomes	80	55		
<i>Length of Life</i>	86	59		
Premature death	9,900	8,300	7,300	5,300
<i>Quality of Life</i>	66	52		
Poor or fair health	19%	20%	18%	12%
Poor physical health days	4.1	4.1	3.6	3.0
Poor mental health days	4.4	4.4	3.9	3.1
Low birthweight	9%	8.0%	9.0%	6.0%
Health Factors	61	55		
<i>Health Behaviors</i>	52	43		
Adult smoking	19%	19%	18%	14%
Adult obesity	30%	30%	30%	26%
Food Environment Index	7.5	8.0	6.4	5.6
Physical inactivity	31%	29%	24%	20%
Access to exercise opportunities	74%	49%	76%	91%
Excessive drinking	16	15%	17%	13%
Alcohol-impaired driving deaths	27%	26%	31%	13%
Sexually transmitted infections	286.2	274.1	647.4	145.1
Teen births	44	37	29	15
<i>Clinical Care</i>	87	80		
Uninsured	16%	16%	13%	6%
Primary care physicians	2360:1	1770:1	1420:1	1030:1
Dentists	3120:1	2400:1	1830:1	1280:1
Mental health providers	640:1	950:1	460:1	330:1
Preventable hospital stays	75	69	49	35
Diabetes monitoring	89%	90%	89%	91%
Mammography screening	67%	64%	68%	71%
<i>Social and Economic Factors</i>	45	31		
High school graduation	88%	91%	86%	95%
Some college	52%	52%	66%	72%
Unemployment	4.8%	4.8%	5.1%	3.2%
Children in poverty	25%	25%	22%	12%
Income equality	5.0	4.7	4.8	3.7
Children in single-parent households	29%	28%	36%	20%
Social associations	14.9	14.2	11.5	22.1
Violent crime	217	224	342	62
Injury deaths	103	83	68	55
<i>Physical Environment</i>	50	86		
Air pollution - particulate matter	9.2	9.2	9.1	6.7
Drinking water violations	no	yes	n/a	n/a
Severe housing problems	18%	15%	17%	9%
Driving alone to work	84%	86%	81%	72%
Long commute - driving alone	28%	32%	31%	15%

Source for both tables above: County Health Rankings and Roadmaps, 2018. University of Wisconsin Population Health Institute; <http://www.countyhealthrankings.org/app/north-carolina/2018/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

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

The following table presents total annual pregnancy, fertility and abortion rates for women age 15-44 for the period from 2013-2016, stratified by race/ethnicity.

- The *total pregnancy rate* in Wilkes County was lower than the total pregnancy rate for NC over the entire 2013-2016 period. The total pregnancy rate in Wilkes County increased between 2013 (59.2) and 2016 (65.8). The highest pregnancy rates in Wilkes County occurred among Hispanic women.
- The *total fertility rate* in Wilkes County was lower than the total fertility rate for NC in 2013 and 2014 and higher in 2015 and 2016. The total fertility rate in Wilkes County increased by 9% overall between 2013 and 2016. The highest fertility rates in Wilkes County occurred among Hispanic women.
- The *total abortion rate* in Wilkes County was significantly lower than the total abortion rate for NC in every year cited below. The total abortion rate in Wilkes County increased by 56% overall between 2013 and 2016. The only stable abortion rates in Wilkes County occurred among white non-Hispanic women.

Table 78. Pregnancy, Fertility and Abortion Rates, Ages 15-44 (Single Years, 2013-2016)

Location	Females Ages 15-44											
	2013			2014			2015			2016		
	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate
Wilkes County Total	59.2	56.1	2.7	63.4	60.1	3.2	66.8	63.7	2.7	65.8	61.4	4.2
White, Non-Hispanic	54.3	51.6	2.2	59.6	56.5	3.0	61.6	59.5	n/a	63.6	60.1	3.4
African American, Non-Hispanic	77.1	70.8	n/a	75.2	73.1	n/a	71.3	62.9	n/a	61.3	40.9	n/a
American Indian, Non-Hispanic	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Other, Non-Hispanic	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Hispanic	109.0	101.5	n/a	100.9	96.0	n/a	120.3	110.1	n/a	89.9	84.4	n/a
Surry County Total	60.7	57.4	2.9	64.3	60.0	3.6	65.1	60.5	4.3	64.8	58.8	5.9
White, Non-Hispanic	56.2	53.9	1.9	59.1	55.5	3.0	59.4	55.0	4.1	58.4	53.3	5.0
African American, Non-Hispanic	75.2	59.7	n/a	72.8	55.7	n/a	78.6	65.8	n/a	101.3	94.4	n/a
American Indian, Non-Hispanic	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Other, Non-Hispanic	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Hispanic	84.2	79.0	n/a	97.0	91.9	n/a	94.7	91.6	n/a	92.8	86.0	n/a
State of NC Total	70.8	60.3	10.1	72.1	61.0	10.7	72.6	60.7	11.5	72.2	60.3	11.5
White, Non-Hispanic	61.8	55.4	6.1	63.5	56.5	6.6	63.4	56.3	6.8	63.0	56.1	6.6
African American, Non-Hispanic	79.0	59.7	18.6	79.5	59.4	19.4	81.3	58.7	21.9	76.4	57.4	21.3
American Indian, Non-Hispanic	71.5	62.9	8.2	69.9	61.1	8.5	74.3	63.2	10.4	70.3	60.2	9.7
Other, Non-Hispanic	79.4	69.5	9.5	82.4	72.0	10.1	79.7	68.6	10.9	80.2	69.9	9.9
Hispanic	98.6	87.9	10.3	98.4	87.0	10.9	98.4	87.1	10.7	100.0	87.3	12.2

Note: "n/a" indicates an unstable rate based on a small number (fewer than 10 cases)

Source: NC Center for Health Statistics, County-level Data, Vital Statistics: Reported Pregnancies (single years as noted): <https://schs.dph.ncdhhs.gov/data/vital.cfm>.

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

The following table presents total annual pregnancy, fertility and abortion rates for girls age 15-19 (“teens”) for the period from 2013-2016, stratified by race/ethnicity. Note that rates based on below-threshold numbers of events were suppressed at the source, as indicated in the table by “n/a”.

- The total teen pregnancy rate in Wilkes County increased by 13% between 2013 and 2016. The county rate exceeded the state rate in every year cited, with an average annual difference of 41%.
- Statewide, the teen pregnancy rate fell by 20% over the period cited.
- Statewide, the teen pregnancy rate was highest among Hispanics in 2013 and 2014, and highest among American Indian non-Hispanics in 2016. Those two groups had the same rate in 2015.
- Statewide, the highest teen abortion rates occurred every year among African American girls.

Table 79. Pregnancy, Fertility and Abortion Rates, Ages 15-19 (Single Years, 2013-2016)

Location	Females Ages 15-19											
	2013			2014			2015			2016		
	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate
Wilkes County Total	38.1	35.6	n/a	48.4	32.5	n/a	46.3	44.3	n/a	42.9	38.3	n/a
White, Non-Hispanic	36.9	35.7	n/a	50.4	28.5	n/a	42.6	42.0	n/a	44.6	40.4	n/a
African American, Non-Hispanic	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
American Indian, Non-Hispanic	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Other, Non-Hispanic	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Hispanic	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Surry County Total	37.7	36.8	n/a	36.4	45.9	n/a	34.9	32.2	n/a	24.6	20.2	n/a
White, Non-Hispanic	36.1	35.5	n/a	31.8	47.4	n/a	31.9	29.6	n/a	24.0	19.5	n/a
African American, Non-Hispanic	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
American Indian, Non-Hispanic	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Other, Non-Hispanic	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Hispanic	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
State of NC Total	35.2	28.4	6.6	32.3	25.9	6.2	30.2	23.5	6.4	28.1	21.8	6.1
White, Non-Hispanic	24.7	20.3	4.2	23.1	19.0	4.0	21.3	17.0	4.2	19.4	15.5	3.8
African American, Non-Hispanic	49.2	37.3	11.5	44.0	33.1	10.5	41.1	29.7	11.0	38.0	27.5	10.1
American Indian, Non-Hispanic	52.6	46.4	6.0	44.9	40.3	n/a	49.1	43.4	5.3	48.8	43.6	5.3
Other, Non-Hispanic	19.9	14.3	5.4	19.0	14.3	4.7	17.5	12.0	5.4	13.8	9.7	4.1
Hispanic	57.9	51.2	6.2	52.8	45.9	6.5	49.1	42.4	6.3	46.9	39.6	7.2

Note: “n/a” indicates an unstable rate based on a small number (fewer than 10 cases)

Source: NC Center for Health Statistics, County-level Data, Vital Statistics: Reported Pregnancies (single years as noted): <https://schs.dph.ncdhs.gov/data/vital.cfm>

Pregnancies among Teens and Adolescents

The tables below present data on the number of teen (ages 15-19) and adolescent (ages 14 and under) pregnancies in each jurisdiction in the period 2013-2016.

Table 80. Number of Teen Pregnancies (Ages 15-19) (Single Years, 2013-2016)

Location	Number of Pregnancies, Ages 15-19			
	2013	2014	2015	2016
Wilkes County	75	96	92	85
Surry County	83	83	79	56
State of NC	11,178	10,328	9,802	9,255

**Table 81. Number of Adolescent Pregnancies (Under Age 15)
(Single Years, 2013-2016)**

Location	Number of Pregnancies, Age 14 and Younger			
	2013	2014	2015	2016
Wilkes County	2	0	0	1
Surry County	0	0	1	1
State of NC	182	169	157	135

Source for both tables above: NC State Center for Health Statistics, North Carolina Health Data Query System. Pregnancy Data: Reported Pregnancy Data. Years as noted. (Counties and age groups as indicated); <https://schs.dph.ncdhhs.gov/interactive/query/preg/preg.cfm>

Pregnancy Risk Factors

High Parity and Short Interval Births

According to the NCSCHS, 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. 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.

The table below presents data on high-parity and short interval births for the period 2012-2016.

- Among its comparators, Wilkes County had the highest percentage of high-parity births among women under age 30 and the highest percentage among women age 30 or older.
- The percentage of short-interval births was highest among the comparators in Wilkes County.

**Table 82. High Parity and Short Interval Births
(Single Five-Year Aggregate Period, 2012-2016)**

Location	High Parity Births				Short Interval Births	
	Mothers < 30		Mothers ≥ 30		No. ³	% ⁴
	No. ¹	% ²	No. ¹	% ²		
Wilkes County	382	15.6	237	24.1	343	14.7
Surry County	336	12.9	253	22.1	303	12.0
State of NC	51,558	14.2	52,363	22.0	48,786	12.2

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 Health Data Book (2018), Pregnancy and Births, Number At Risk NC Live Births due to High Parity by County of Residence; <https://schs.dph.ncdhhs.gov/data/databook/>

b - NC State Center for Health Statistics, County Health Data Book (2018), Pregnancy and Births, NC Live Births by County of Residence, Number with Interval from Last Delivery to Conception of Six Months or Less; <https://schs.dph.ncdhhs.gov/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 (46).

The following table presents data on smoking during pregnancy for the period from 2011 through 2016.

- The percent of births to mothers who smoked during pregnancy in Wilkes County declined 23% from a high of 24.5% in 2012 to a low of 18.8% in 2016.
- Compared to the state, Wilkes County had two or more times the proportion of mothers who smoked during pregnancy over the entire period shown.
- In 2016, the percent of births to mothers who smoked during pregnancy in Wilkes County was 18.9%, 111% *higher* than the comparable rate statewide.

**Table 83. Smoking during Pregnancy Trend
(Single Years, 2011-2016)**

Location	Number and Percent of Births to Mothers Who Smoked Prenatally											
	2011		2012		2013		2014		2015		2016	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Wilkes County	156	23.2	171	24.5	122	18.9	135	19.7	140	19.5	130	18.8
Surry County	182	23.5	164	20.8	155	21.4	162	21.4	190	25.3	128	17.7
State of NC	13,159	10.9	12,727	10.6	12,242	10.3	11,896	9.8	11,297	9.3	10,776	8.9

Source: NC State Center for Health Statistics, County-level Data, County Health Data Book: Birth Indicator Tables by State and County (years as noted). <https://schs.dph.ncdhhs.gov/data/databook/>

Early Prenatal Care

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

The table below presents trend data on the percent of all women receiving prenatal care in the first trimester for the jurisdictions included in this report.

- The percent of pregnant women in Wilkes County who received early prenatal care was higher compared to the state over the entire period shown.

**Table 84. Women Receiving Prenatal Care in the First Trimester
(Single Years, 2011-2016)**

Location	Number and Percent of Women Receiving Prenatal Care in the First Trimester											
	2011		2012		2013		2014		2015		2016	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Wilkes County	527	78.3	565	81.1	497	77.1	494	72.0	544	75.7	508	73.5
Surry County	577	74.6	606	76.8	589	81.5	551	72.7	517	68.9	546	75.5
State of NC	85,706	71.2	85,380	71.3	83,663	70.3	82,474	68.2	81,887	67.8	83,319	69.0

Source: NC State Center for Health Statistics, County-level Data, County Health Data Book: Birth Indicator Tables by State and County (years as noted). <https://schs.dph.ncdhhs.gov/data/databook/>

Other Consequential Characteristics of Pregnancy

Pre-Term Birth

- The highest total frequency of pre-term births among comparators in 2016 occurred in Wilkes County. The second-highest total frequency among these comparators occurred in Surry County.
- In Wilkes County, the highest frequency of pre-term births occurred among Hispanic women, though the rate is based on a small number and should be interpreted with caution.

Table 85. Number and Frequency of Pre-term Births, by Race (2016)

Location	Total Resident Births					Preterm Births (less than 37 weeks gestation)									
	Total	White Non-Hispanic	African American Non-Hispanic	Other Non-Hispanic	Hispanic	Total		White Non-Hispanic		African American Non-Hispanic		Other Non-Hispanic		Hispanic	
						#	%	#	%	#	%	#	%	#	%
Wilkes County	691	587	20	8	76	82	11.9	68	11.6	1	5.0	4	50.0	8	11.8
Surry County	723	537	40	7	139	65	9.0	49	9.1	3	7.5	2	28.6	11	7.9
State Total	6,858	3,372	1,401	536	1,454	6,858	5.7	3,372	5.0	1,401	4.9	536	9.6	1,454	7.9

Mothers with Gestational Diabetes

- Among the three comparators, the highest total frequency of mothers having gestational diabetes in 2016 occurred in Wilkes County.
- In Wilkes County, the highest frequency of mothers having gestational diabetes occurred among Other non-Hispanic women, though the rate is based on a small number and should be interpreted with caution.

Table 86. Number and Frequency of Mothers with Gestational Diabetes, by Race (2016)

Location	Total Resident Births					Mother with Gestational Diabetes									
	Total	White Non-Hispanic	African American Non-Hispanic	Other Non-Hispanic	Hispanic	Total		White Non-Hispanic		African American Non-Hispanic		Other Non-Hispanic		Hispanic	
						#	%	#	%	#	%	#	%	#	%
Wilkes County	691	587	20	8	76	52	7.5	41	7.0	3	15.0	2	25.0	6	7.9
Surry County	723	537	40	7	139	40	5.5	26	4.8	1	2.5	0	0.0	13	9.4
State Total	6,858	3,372	1,401	536	1,454	6,858	5.7	3,372	5.0	1,401	4.9	536	9.6	1,454	7.9

Mothers with "Overweight"

- The highest total frequency of mothers considered "overweight" (i.e., having a BMI of 25.0 to 29.9) in 2016 occurred in Wilkes County.
- In Wilkes County, the highest stable frequency of overweight mothers occurred among Hispanic women.

Table 87. Number and Frequency of Mothers with Overweight, by Race (2016)

Location	Total Resident Births					Mother with "Overweight" BMI (25.0-29.9)									
	Total	White Non-Hispanic	African American Non-Hispanic	Other Non-Hispanic	Hispanic	Total		White Non-Hispanic		African American Non-Hispanic		Other Non-Hispanic		Hispanic	
						#	%	#	%	#	%	#	%	#	%
Wilkes County	691	587	20	8	76	184	26.6	154	26.2	4	20.0	1	23.5	25	32.9
Surry County	723	537	40	7	139	177	24.5	117	21.8	8	20.0	0	0.0	52	37.4
State Total	6,858	3,372	1,401	536	1,454	29,790	24.7	15,605	23.4	7,042	24.8	1,256	22.4	5,519	30.1

Mothers with "Obesity"

- The highest total frequency of mothers considered "obese" (i.e., having a BMI of 30.0 or greater) in 2016 occurred in Surry County. The second-highest total frequency among these comparators occurred in Wilkes County.
- In Wilkes County, the highest *stable* frequency of obese mothers occurred among white non-Hispanic women.

Table 88. Number and Frequency of Mothers with Obesity, by Race (2016)

Location	Total Resident Births					Mother with "Obese" BMI (30.0+)									
	Total	White Non-Hispanic	African American Non-Hispanic	Other Non-Hispanic	Hispanic	Total		White Non-Hispanic		African American Non-Hispanic		Other Non-Hispanic		Hispanic	
						#	%	#	%	#	%	#	%	#	%
Wilkes County	691	587	20	8	76	215	31.1	182	31.0	8	40.0	2	25.0	23	30.3
Surry County	723	537	40	7	139	239	33.1	186	34.6	12	30.0	0	0.0	41	29.5
State Total	6,858	3,372	1,401	536	1,454	32,710	27.1	15,668	23.4	10,984	38.7	564	10.1	4,911	26.8

Source for above four tables: *Birth Indicator Tables by State and County: North Carolina Resident Births for 2016: Risk Factors and Characteristics*. North Carolina State Center for Health Statistics, 2018 County Health Databook website: <https://schs.dph.ncdhhs.gov/data/databook/>.

Note: Rates appearing in **bold** type are based on fewer than 10 events per year. Such rates are unstable and should be interpreted with caution.

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 (47).

The next table presents data on low birth weight births; i.e., infants weighing 2,500 grams (5.5 pounds) or less.

- The total proportion of low birth-weight births in Wilkes County averaged 8.9% throughout the period cited.
- Over the period cited the average proportion of low birth-weight births among black non-Hispanic women in Wilkes County was 18.0%, twice the comparable average proportion of low birth weight births among white non-Hispanic women (8.6%).

**Table 89. Low Birth-Weight Births
(Five Year Aggregate Periods, 2010-2014 through 2012-2016)**

Location	Percent of Low Birth Weight (\leq 2,500 Gram) Births														
	2010-2014					2011-2015					2012-2016				
	Total	White, Non-Hispanic	Black, Non-Hispanic	Other Non-Hispanic	Hispanic	Total	White, Non-Hispanic	Black, Non-Hispanic	Other Non-Hispanic	Hispanic	Total	White, Non-Hispanic	Black, Non-Hispanic	Other Non-Hispanic	Hispanic
Wilkes County	8.6	8.2	19.9	2.5	7.5	8.8	8.3	18.6	2.6	9.3	9.4	9.2	15.6	10.3	8.4
Surry County	7.8	8.1	15.7	10.7	4.8	8.5	8.8	16.3	12.7	5.4	8.4	8.7	15.8	16.3	5.4
State of NC	9.0	7.5	13.8	9.2	6.7	9.0	7.4	13.9	9.2	6.8	9.0	7.5	13.9	9.3	6.9

Note: Bold type indicates an unstable rate based on a small number (fewer than 20 cases).

Source: North Carolina Center for Health Statistics. County Health Databooks (years as noted). Low (<2500 grams) and Very Low (<1500 grams) Weight Births by Race/Ethnicity table (years and locations as noted). <https://schs.dph.ncdhhs.gov/data/databook/>

The following presents data on very low birth-weight births; i.e., infants weighing 1,500 grams (3.3 pounds) or less.

- In both Wilkes and Surry counties the percentages of very low birth-weight births in several stratified groups were based on small numbers of events and thus were unstable. However, the stable rates of very low birth weight births among African American non-Hispanic women in statewide were double the comparable rates among white non-Hispanic women.

**Table 90. Very Low Birth-Weight Births
(Five-Year Aggregate Periods, 2010-2014 through 2012-2016)**

Location	Percent of Very Low Birth Weight (\leq 1,500 Gram) Births														
	2010-2014					2011-2015					2012-2016				
	Total	White, Non-Hispanic	Black, Non-Hispanic	Other Non-Hispanic	Hispanic	Total	White, Non-Hispanic	Black, Non-Hispanic	Other Non-Hispanic	Hispanic	Total	White, Non-Hispanic	Black, Non-Hispanic	Other Non-Hispanic	Hispanic
Wilkes County	1.7	1.6	5.7	0.0	1.2	1.6	1.3	6.2	0.0	1.9	1.7	1.6	4.8	5.1	1.6
Surry County	1.2	1.2	3.7	3.6	0.8	1.5	1.3	3.5	5.5	1.6	1.5	1.4	2.7	8.2	1.4
State of NC	1.7	1.3	3.2	1.4	1.2	1.7	1.3	3.3	1.4	1.3	1.7	1.2	3.2	1.4	1.2

Note: Bold type indicates an unstable rate based on a small number (fewer than 20 cases).

Source: North Carolina Center for Health Statistics. County Health Databooks (years as noted). Low (<2500 grams) and Very Low (<1500 grams) Weight Births by Race/Ethnicity table (years and locations as noted). <https://schs.dph.ncdhhs.gov/data/databook/>

Cesarean Section Delivery

The table below presents data on the percent of births delivered by Cesarean section.

- Over the period cited in the table, Cesarean deliveries averaged 35.5% of all births in Wilkes County and 30.7% statewide.

**Table 91. Cesarean Section Deliveries, Primary and Repeat
(Five-Year Aggregate Periods, 2006-2010 through 2012-2016)**

Location	Percent of Resident Births Delivered by Cesarean Section						
	2006-2010	2007-2011	2008-2012	2009-2013	2010-2014	2011-2015	2012-2016
Wilkes County	35.4	35.3	35.1	36.1	35.3	35.3	36.2
Surry County	27.3	27.7	28.2	28.6	28.9	30.0	30.1
State of NC	31.2	31.2	31.1	30.9	30.5	30.0	29.8

Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (years as noted), Pregnancy and Births, Births Delivered by Caesarian Section (Primary and Repeat); <https://schs.dph.ncdhhs.gov/data/databook/>

Infants Born with Medical Problems

The Diagnosis Related Group (DRG) method of coding diagnoses associated with inpatient hospitalizations offers a series of codes describing newborns and neonates having certain conditions originating in the perinatal period. WMC provided the CHNA Consultant with proprietary hospital data for inpatient hospital discharges coded in this manner. These coded diagnoses are presented in the table below for the period 2015 through 2017.

- WMC saw a smaller number of neonates in 2017 (which represents 10 months instead of 12) compared to previous years, but a higher proportion of them (35%) were treated for “major problems” or “other significant problems” compared to 2015 or 2016 (29%).

**Table 92. Newborns and Neonates with Conditions Originating in the Perinatal Period
Wilkes Medical Center, 2015-2017**

	2015	2016	2017	Total
Total Neonates (DRG 789-795)	403	442	252	1,097
Extreme Immaturity/Respiratory Distress Syndrome (790)	0	0	0	0
Prematurity with Major Problems (791)	2	4	2	8
Prematurity without Major Problems (792)	28	22	18	68
Full-Term Neonate with Major Problems (793)	8	21	12	41
Neonate with Other Significant Problems (794)	79	83	57	219
Normal Newborn (795)	273	298	155	726

Source: Based on proprietary data provided to Sheila S. Pfaender, Public Health Consultant, by Wake Forest Baptist Health Wilkes Medical Center. Note that FY2017 represents partial data (10 months).

Infant Mortality

Infant mortality is the number of infant (under one year of age) deaths per 1,000 live births. The following table presents racially stratified infant mortality data for Wilkes County and its comparators for the aggregate periods 2006-10 through 2012-16.

Note that most racially-stratified infant mortality rates in Wilkes and Surry County were unstable due to below-threshold numbers of infant deaths.

- The Wilkes County infant mortality rose 27% between 2006-2010 and 2012-2016, while the Surry County rate decreased 46% and the state rate declined 9% over the same period.
- In 2012-2016 the Wilkes County infant mortality rate was 25% higher compared to NC.
- Statewide, the infant mortality rate among African-American non-Hispanics was two or more times the comparable rate for white non-Hispanics in every aggregate period cited.
- Statewide, the infant mortality rate among Hispanics was similar to the comparable rate among white non-Hispanics in every period cited.
- It must be noted that the infant mortality rate in NC has been among the 10 worst in the US for at least a decade.

**Table 93. Total Infant Deaths
(Five-Year Aggregate Periods, 2006-2010 through 2012-2016)**

Location	Infant Deaths														
	2006-2010		2007-2011		2008-2012		2009-2013		2010-2014		2011-2015		2012-2016		
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	
Wilkes County	Total	27	7.1	28	7.6	28	7.9	30	8.8	31	9.2	32	9.4	31	9.0
	White, Non-Hispanic	21	6.8	21	7.0	20	6.9	22	7.9	24	8.6	25	8.9	24	8.4
	African American, Non-Hispanic	2	14.4	2	26.7	2	16.0	3	n/a	2	n/a	2	n/a	3	n/a
	Other, Non-Hispanic	1	11.1	0	0.0	0	0.0	0	n/a	0	n/a	0	n/a	0	n/a
	Hispanic	3	6.4	5	11.0	6	13.9	5	n/a	5	n/a	5	n/a	4	n/a
Surry County	Total	46	10.4	48	11.6	38	9.2	28	7.1	24	6.2	24	6.3	21	5.6
	White, Non-Hispanic	1	11.9	42	13.1	35	11.2	25	8.3	21	7.1	19	n/a	16	n/a
	African American, Non-Hispanic	2	12.2	2	12.5	2	13.0	1	n/a	1	n/a	1	n/a	1	n/a
	Other, Non-Hispanic	0	0.0	0	0.0	0	0.0	0	n/a	0	n/a	0	n/a	0	n/a
	Hispanic	5	5.3	4	4.6	1	1.2	2	n/a	2	n/a	4	n/a	4	n/a
State of NC	Total	5,066	7.9	4,899	7.8	4,675	7.5	4,441	7.3	4,295	7.1	4,325	7.2	4,332	7.2
	White, Non-Hispanic	2,074	5.9	2,001	5.7	1,918	5.6	1,850	5.4	1,811	5.4	1,834	5.5	1,800	5.4
	African American, Non-Hispanic	2,208	14.7	2,129	14.3	2,064	14.0	1,967	13.6	1,858	12.9	1,851	12.9	1,864	13.0
	Other, Non-Hispanic	187	6.3	188	6.2	181	5.9	178	5.7	185	5.8	194	5.9	209	6.2
	Hispanic	597	5.8	581	5.8	512	5.3	446	4.8	441	4.9	446	5.0	459	5.1

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 (2007-2011), 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.

The following table presents gender- and race-stratified *life expectancy at birth* data for comparator jurisdictions.

- Overall life expectancy at birth in Wilkes County increased by 0.4 years between 1990-1992 and 2014-2016.
- Life expectancy at birth overall, and for males, whites and African Americans in Wilkes County all increased between 1990-1992 and 2014-2016; over the same period life expectancy for females in Wilkes County *decreased*.
- In Wilkes County in 1990-1992 the life expectancy for females was 8.3 years longer compared to males. By 2014-2016, that difference had declined to 4.9 years, as male life expectancy lengthened and female life expectancy shortened.
- In Wilkes County in 1990-1992 the life expectancy for whites exceeded the life expectancy for African-Americans by 6.4 years. By 2014-2016 the gap had narrowed to 0.9 years.

**Table 94. Life Expectancy at Birth, by Gender and Race
(1990-1992 and 2014-2016)**

Location	Life Expectancy in Years									
	Person Born in 1990-1992					Person Born in 2014-2016				
	Overall	Male	Female	White	African-American	Overall	Male	Female	White	African-American
Wilkes County	75.7	72.5	78.8	76.0	69.6	76.1	73.7	78.6	76.3	75.4
Surry County	76.1	71.9	80.2	76.6	66.8	76.3	73.9	78.7	76.4	74.8
State of NC	74.9	71.0	78.7	76.4	69.8	77.4	74.8	79.9	78.3	74.9

Source: NC State Center for Health Statistics, County-level Data, Life Expectancy, State and County Estimates, Life Expectancy: North Carolina 1990-1992 and 2014-2016, 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 NCSCHS *County Health Data Book*. Unless otherwise noted, the numerical data are age-adjusted and represent five-year aggregate periods.

The following table compares mortality rates for the 15 leading causes of death in Wilkes County, Surry County, NC and the US for the five-year aggregate period 2012-2016 (or as otherwise noted). The causes of death are listed in descending order mortality rate in Wilkes County.

Significant differences between Wilkes County and NC mortality rates are described below. (Other rate differences will be discussed in subsequent sections.)

In 2012-2016:

- The mortality rate for total cancer in Wilkes County (173.5) was 4.2% *higher* than the comparable state rate (166.5). Cancer was the leading cause of death in all three jurisdictions.
 - The mortality rate for lung cancer in Wilkes County (56.3) was 18.5% *higher* than the comparable state rate of 47.5. In Wilkes County, Surry County and NC lung cancer was ranked the same: the leading cause of cancer death by site.
- The mortality rate for heart disease in Wilkes County (166.8) was 3.4% *higher* than the comparable state rate (161.3). Across all three jurisdictions, heart disease was the second leading cause of death.
- Chronic lower respiratory disease ranked *third* as a cause of death in Wilkes County, Surry County and NC; the mortality rate for CLRD in Wilkes County (57.8) was 26.8% higher than the comparable state rate of 45.6.
- Unintentional non-motor vehicle injuries (“all other unintentional injuries”) ranked *higher* as a cause of death in Wilkes County (4th) compared to NC (5th). The mortality rate for unintentional non-motor vehicle injuries in Wilkes County was 50.7, 58.9% *higher* than the comparable state rate (31.9).
- Cerebrovascular disease ranked *fifth* as a cause of death in Wilkes County; it ranked fourth in Surry County and statewide. The mortality rate for cerebrovascular disease in Wilkes County was 35.6, 17.4% lower than the comparable state rate of 43.1.
- Pneumonia/influenza ranked *higher* as a cause of death in Wilkes County (6th vs. 8th) compared to NC and Surry County. The pneumonia/influenza mortality rate in Wilkes County was 33.1, 86.0% *higher* than the comparable state rate of 17.8.
- Alzheimer’s disease ranked *lower* as a cause of death in Wilkes County (7th vs. 5th in NC), and the mortality rate for Alzheimer’s disease in Wilkes County was 31.9, the same as the state.
- Diabetes mellitus ranked as *the eighth* leading cause of death in Wilkes County; it ranked seventh in Surry County and NC. The mortality rate for diabetes in Wilkes County was 24.2, 5.2% *higher* than the comparable state rate of 23.0.
- Unintentional motor vehicle injuries ranked *lower* in Wilkes County (9th) compared to NC (10th), although the mortality rate in Wilkes County was 19.8, 40.4% *higher* than the comparable state rate of 14.1.

- Kidney diseases were the 10th leading cause of death in Wilkes County and ranked 9th in Surry County and NC. The mortality rate in Wilkes County (16.1) was 1.8% *lower* compared to NC (16.4).
- Septicemia ranked eleventh in Wilkes County and NC; the mortality rate in Wilkes County (16.0) was 22.1% *higher* than the comparable state rate (13.1).
- Suicide ranked *higher* in Wilkes County (tied for 11th) compared to NC (12th), and the mortality rate in Wilkes County (16.0) was 24.0% *higher* than the state rate of 12.9.
- Chronic liver disease and cirrhosis was the 13th leading cause of death in Wilkes County, Surry County and NC. The Wilkes County mortality rate (15.5) was 50.5% *higher* than the NC rate (10.3).
- Homicide was the 14th leading cause of death across all three jurisdictions; the Wilkes County mortality rate (5.9) was 4.8% *lower* than the NC rate of 6.2.

**Table 95. Overall Age-Adjusted Mortality Rates for the 15 Leading Causes of Death
Wilkes County and Comparators
(Single Five-Year Aggregate Period, 2012-2016 or as Noted)¹**

Rank/Cause of Death	Wilkes County			Rate Difference from NC	Surry County			Rate Difference from NC	State of NC			Rate Difference from Nation	United States (2016)	
	Number	Rate	Rank		Number	Rate	Rank		Number	Rate	Rank		Rate	Rank
Cancer	872	173.5	1	4.2%	950	181.8	1	9.2%	95,163	166.5	1	6.9%	155.8	2
Trachea, Bronchus, and Lung	289	56.3	<i>a</i>	18.5%	309	57.9	<i>a</i>	21.9%	27,615	47.5	<i>a</i>	23.7%	38.4	<i>a</i>
Prostate	38	19.0	<i>b</i>	-5.5%	41	19.5	<i>c</i>	-3.0%	4,410	20.1	<i>c</i>	4.1%	19.3	<i>b</i>
Colon, Rectum and Anus	83	16.5	<i>c</i>	17.9%	72	14.7	<i>d</i>	5.0%	7,926	14.0	<i>d</i>	0.7%	13.9	<i>c</i>
Breast	43	15.6	<i>d</i>	-25.4%	62	20.5	<i>b</i>	-1.9%	6,563	20.9	<i>b</i>	88.3%	11.1	<i>d</i>
Pancreas	49	9.8	<i>e</i>	-10.9%	54	10.3	<i>e</i>	-6.4%	6,318	11.0	<i>e</i>	-0.9%	11.1	<i>d</i>
Diseases of the Heart	826	166.8	2	3.4%	859	167.1	2	3.6%	89,393	161.3	2	-2.5%	165.5	1
Chronic Lower Respiratory Disease	293	57.8	3	26.8%	315	59.4	3	30.3%	25,385	45.6	3	12.3%	40.6	4
All Other Unintentional Injuries	191	50.7	4	58.9%	139	33.2	5	4.1%	16,453	31.9	5	-32.7%	47.4	3
Cerebrovascular Disease	178	35.6	5	-17.4%	218	41.7	4	-3.2%	23,514	43.1	4	15.5%	37.3	5
Pneumonia and Influenza	158	33.1	6	86.0%	125	24.7	8	38.8%	9,707	17.8	8	31.9%	13.5	8
Alzheimer's Disease	158	31.9	7	0.0%	166	31.3	6	-1.9%	16,917	31.9	5	5.3%	30.3	6
Diabetes Mellitus	120	24.2	8	5.2%	126	25.1	7	9.1%	13,042	23.0	7	9.5%	21.0	7
Unintentional Motor Vehicle Injuries	73	19.8	9	40.4%	71	18.5	11	31.2%	7,125	14.1	10	16.5%	12.1	11
Nephritis, Nephrotic Syndrome, and Nephrosis	81	16.1	10	-1.8%	106	20.7	9	26.2%	9,046	16.4	9	25.2%	13.1	10
Septicemia	78	16.0	11	22.1%	84	16.8	12	28.2%	7,266	13.1	11	22.4%	10.7	12
Suicide	62	16.0	11	24.0%	72	19.2	10	48.8%	6,679	12.9	12	-4.4%	13.5	8
Chronic Liver Disease and Cirrhosis	68	15.5	13	50.5%	68	13.9	13	35.0%	5,930	10.3	13	-3.7%	10.7	12
Homicide	20	5.9	14	-4.8%	13	3.4	14	-45.2%	3,002	6.2	14	0.0%	6.2	14
Acquired Immune Deficiency Syndrome	2	0.7	15	-68.2%	5	1.0	15	-54.5%	1,183	2.2	15	22.2%	1.8	15
Total Deaths All Causes (incl. some not listed above)	4,055	853.3		9.1%	4,663	861.9		10.2%	429,955	781.8		7.3%	728.8	
Source:	<i>a</i>	<i>a</i>	<i>c</i>	<i>c</i>	<i>a</i>	<i>a</i>	<i>c</i>	<i>c</i>	<i>a</i>	<i>a</i>	<i>c</i>	<i>c</i>	<i>d</i>	<i>d</i>

a - NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race-Specific and Sex-Specific Age-Adjusted Death Rates by County;

<https://schs.dph.ncdhhs.gov/data/databook/>.

b (bold/unstable rates) - NC State Center for Health Statistics, Statistics and Reports, Vital Statistics, NC Vital Statistics Volume II, Leading Causes of Death, 2016.

<https://schs.dph.ncdhhs.gov/data/vital.cfm>.

c - Calculated

d - National Center for Health Statistics, National Vital Statistics Reports, Volume 67, No. 5. Deaths: Final Data for 2016. https://www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67_05.pdf.

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

² Denominator is not-sex-specific, but rather whole population.

Changes in Leading Causes of Death since the Last CHA

The next table summarizes changes in the leading causes of death between the last CHA (data for the 2009-2013 aggregate period) and the present CHA (2012-2016 aggregate period). Note that only changes in *stable* rates are being discussed.

- The mortality rate for breast cancer *decreased* the most between CHAs, *decreasing* from 20.7 to 15.6, or by nearly 25%.
- The mortality rate for cerebrovascular disease *decreased* the second-most between CHAs, *decreasing* from 41.7 to 35.6, or approximately 15%.
- The mortality rate due to Alzheimer's disease *increased* the most between CHAs, rising from 22.7 in the earlier period to 31.9 in the more recent period, an increase of almost 41%.
- The mortality due to chronic liver disease and cirrhosis *increased* the second-most between CHAs, rising from 11.5 in 2009-2013 to 15.5 in 2012-2016, an increase of almost 35%.

**Table 96. Changes in Leading Causes of Death, Wilkes County
(Between 2009-2013 and 2012-2016)**

Rank/Cause of Death (in 2012-2016 order)	Mortality Rate		Percent Rate Change
	2009-2013	2012-2016	
Cancer	182.7	173.5	-5.0
Trachea, Bronchus, and Lung	61.0	56.3	-7.7
Prostate	16.9	19.0	12.4
Colon, Rectum and Anus	15.6	16.5	5.8
Breast	20.7	15.6	-24.6
Pancreas	n/a	9.8	n/a
Diseases of the Heart	166.4	166.8	0.2
Chronic Lower Respiratory Disease	53.0	57.8	9.1
All Other Unintentional Injuries	47.0	50.7	7.9
Cerebrovascular Disease	41.7	35.6	-14.6
Pneumonia and Influenza	29.4	33.1	12.6
Alzheimer's Disease	22.7	31.9	40.5
Diabetes Mellitus	24.8	24.2	-2.4
Unintentional Motor Vehicle Injuries	17.7	19.8	11.9
Nephritis, Nephrotic Syndrome, and Nephrosis	16.1	16.1	0.0
Septicemia	13.6	16.0	17.6
Suicide	12.7	16.0	26.0
Chronic Liver Disease and Cirrhosis	11.5	15.5	34.8
Homicide	2.7	5.9	118.5
Acquired Immune Deficiency Syndrome	1.7	0.7	-58.8
Total Deaths All Causes (incl. some not listed above)	879.5	853.3	-3.0

Source: NC State Center for Health Statistics, Statistics and Reports, Vital Statistics, NC Vital Statistics Volume II, Leading Causes of Death, 2012 and 2016. <https://schs.dph.ncdhhs.gov/data/vital.cfm>

Percent Change calculated

Gender Disparities in Leading Causes of Death

In the past, NC CHAs have demonstrated some significant differences in mortality rates between men and women. The following table compares gender-stratified rates for leading causes of death in Wilkes County and its comparator jurisdictions. Note that comparisons are limited by occasional “n/a’s”, representing rates suppressed due to below-threshold numbers of events among stratified groups. The causes of death are listed in order of descending overall Wilkes County mortality rates.

In Wilkes County in 2012-2016, mortality rates for males were higher than comparable rates for females for:

- Kidney diseases (by 92%)
- Diabetes mellitus (by 82%)
- Heart disease (by 81%)
- Chronic liver disease and cirrhosis (by 70%)
- Total cancer (by 55%)
- Other unintentional injuries (by 52%)
- CLRD (by 31%)
- Cerebrovascular disease (by 29%)
- Septicemia (by 16%)
- Pneumonia and influenza (by 9%)

In Wilkes County, the overall mortality rate for males (1005.0) was 39% higher than the overall mortality rate for females (723.0) in 2012-2016.

In Wilkes County, the mortality rate for females was higher than comparable rate for males for:

- Alzheimer’s disease (by 91%)

Table 97. Sex-Specific Age-Adjusted Death Rates for Leading Causes of Death (Single Five-Year Aggregate Period, 2012-2016)

Cause of Death	Wilkes County					Surry County					State of NC Rate		
	Males		Females		Difference between Male and Female rates	Males		Females		Difference between Male and Female rates	Males	Females	Difference between Male and Female rates
	Number	Rate	Number	Rate		Number	Rate	Number	Rate				
Cancer	486	216.5	383	140.1	55%	532	238.4	418	143.1	67%	205.2	138.9	48%
Diseases of the Heart	476	220.9	350	121.8	81%	436	210.4	423	134.8	56%	205.7	127.1	62%
Chronic Lower Respiratory Disease	148	67.5	145	51.6	31%	151	68.9	164	54.1	27%	51.5	41.8	23%
All Other Unintentional Injuries	107	60.6	84	39.8	52%	90	49.1	49	19.2	156%	41.8	23.2	80%
Cerebrovascular Disease	83	40.3	95	31.3	29%	87	41.0	131	40.6	1%	44.0	41.7	6%
Pneumonia and Influenza	69	34.3	89	31.6	9%	63	31.7	62	19.9	59%	20.4	16.0	28%
Alzheimer’s Disease	39	20.3	119	38.9	-48%	39	20.6	127	36.8	-44%	25.0	35.6	-30%
Diabetes Mellitus	71	32.5	49	17.9	82%	67	31.0	59	20.4	52%	27.9	19.1	46%
Unintentional Motor Vehicle Injuries	56	31.6	17	n/a	n/a	51	27.9	20	9.7	188%	20.7	7.9	162%
Nephritis, Nephrotic Syndrome, and Nephrosis	49	22.1	32	11.5	92%	57	27.8	49	15.7	77%	19.8	14.1	40%
Septicemia	36	17.7	42	15.2	16%	37	17.1	47	17.1	0%	14.3	12.3	16%
Suicide	43	22.3	19	n/a	n/a	52	29.0	20	10.7	171%	20.3	6.3	222%
Chronic Liver Disease and Cirrhosis	42	19.4	26	11.4	70%	40	18.0	28	10.0	80%	14.0	6.9	103%
Homicide	15	n/a	5	n/a	n/a	9	n/a	4	n/a	n/a	9.9	2.5	296%
Acquired Immune Deficiency Syndrome	1	n/a	1	n/a	n/a	4	n/a	1	n/a	n/a	3.3	1.2	175%
Total Deaths All Causes (incl. some not listed above)	2,100	1,005.1	1,955	723.0	39%	2,131	1,026.7	2,205	730.8	40%	922.1	668.6	38%

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 (2018), Mortality, 2012-2016 Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhs.gov/data/databook/>

Racial Disparities in Leading Causes of Death

Because of below-threshold numbers of deaths for some causes of death during the 2012-2016, period age-adjusted mortality rates among Wilkes County minorities are available only for African Americans and for only two causes of death, as shown in the table below.

- In Wilkes County in the 2012-2016 period, the total cancer mortality rate was 11% higher among white non-Hispanics (178.0) compared to African American non-Hispanics (160.9).
- The heart disease mortality rate was 51% higher among African American non-Hispanics (249.5) compared to white non-Hispanics (165.3).
- The overall mortality rate for African American non-Hispanics (922.4) was 7% higher than the comparable rate for white non-Hispanics (864.0).

Table 98. Race-Specific Age-Adjusted Death Rates for Leading Causes of Death (Single Five-Year Aggregate Period, 2012-2016)

Cause of Death	Wilkes County											
	White, non-Hispanic		African-American, non-Hispanic		American Indian, non-Hispanic		Other Races, non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Cancer	837	178.0	31	160.9	0	n/a	0	n/a	3	n/a	872	173.5
Diseases of the Heart	771	165.3	48	249.5	1	n/a	0	n/a	5	n/a	826	166.8
Chronic Lower Respiratory Disease	289	60.5	4	n/a	0	n/a	0	n/a	0	n/a	293	57.8
All Other Unintentional Injuries	180	52.9	6	n/a	0	n/a	0	n/a	5	n/a	191	50.7
Cerebrovascular Disease	165	34.7	12	n/a	0	n/a	0	n/a	1	n/a	178	35.6
Pneumonia and Influenza	146	32.6	12	n/a	0	n/a	0	n/a	0	n/a	158	33.4
Alzheimer's Disease	154	32.7	4	n/a	0	n/a	0	n/a	0	n/a	158	31.9
Diabetes Mellitus	106	22.8	13	n/a	1	n/a	0	n/a	0	n/a	120	24.2
Unintentional Motor Vehicle Injuries	69	20.4	1	n/a	0	n/a	0	n/a	3	n/a	73	19.8
Nephritis, Nephrotic Syndrome, and Nephrosis	76	16.2	5	n/a	0	n/a	0	n/a	0	n/a	81	16.1
Septicemia	76	16.8	2	n/a	0	n/a	0	n/a	0	n/a	78	16.0
Suicide	58	16.6	2	n/a	0	n/a	0	n/a	2	n/a	62	16.0
Chronic Liver Disease and Cirrhosis	64	15.6	1	n/a	0	n/a	1	n/a	2	n/a	68	15.5
Homicide	15	n/a	1	n/a	0	n/a	0	n/a	4	n/a	20	5.9
Acquired Immune Deficiency Syndrome	2	n/a	0	n/a	0	n/a	0	n/a	0	n/a	2	0.7
Total Deaths All Causes (incl. some not listed above)	3,838	864.0	178	922.4	3	n/a	4	n/a	32	285.0	4,055	853.3

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. NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhs.gov/data/databook/>

Age Disparities in Leading Causes of Death

Each age group tends to have its own leading causes of death. The following table lists the three leading causes of death by age group for the five-year aggregate period from 2012-2016. (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 Wilkes County were:

- Age Group 00-19: Conditions originating in the perinatal period
- Age Group 20-39: All other unintentional injuries (i.e., 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

**Table 99. Three Leading Causes of Death by Age Group
(Single Five-Year Aggregate Period, 2012-2016)**

Age Group	Rank	Wilkes County	Surry County	State of NC
00-19	1	Conditions originating in the perinatal period	Conditions originating in the perinatal period	Conditions originating in the perinatal period
	2	Congenital abnormalities (birth defects)	Motor vehicle injuries	Congenital anomalies (birth defects)
	3	Motor Vehicle Injuries	Pneumonia & influenza Congenital anomalies (birth defects) Other Unintentional Injuries	Motor vehicle injuries
20-39	1	Other Unintentional Injuries	Other Unintentional Injuries	Other Unintentional injuries
	2	Motor Vehicle Injuries	Motor Vehicle Injuries Suicide	Motor vehicle injuries
	3	Cancer - All Sites Diseases of the heart	Diseases of the heart	Suicide
40-64	1	Cancer - All Sites	Cancer - All Sites	Cancer-All sites
	2	Diseases of the heart	Diseases of the heart	Diseases of the heart
	3	Other Unintentional Injuries	Other Unintentional Injuries	Other Unintentional injuries
65-84	1	Cancer - All Sites	Cancer-All sites	Cancer-All sites
	2	Diseases of the heart	Diseases of the heart	Diseases of the heart
	3	Chronic low er respiratory diseases	Chronic low er respiratory diseases	Chronic Low er Respiratory Diseases
85+	1	Diseases of the heart	Diseases of the heart	Diseases of the heart
	2	Cancer - All sites	Cancer - All sites	Cancer-All sites
	3	Alzheimer's disease	Alzheimer's disease	Alzheimer's disease

Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, Death Counts and Crude Death Rates per 100,000 for Leading Causes of Death, by Age Groups, NC, 2012-2016; <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 to lowest mortality rate in Wilkes County. 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.

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 (48).

Total Cancer

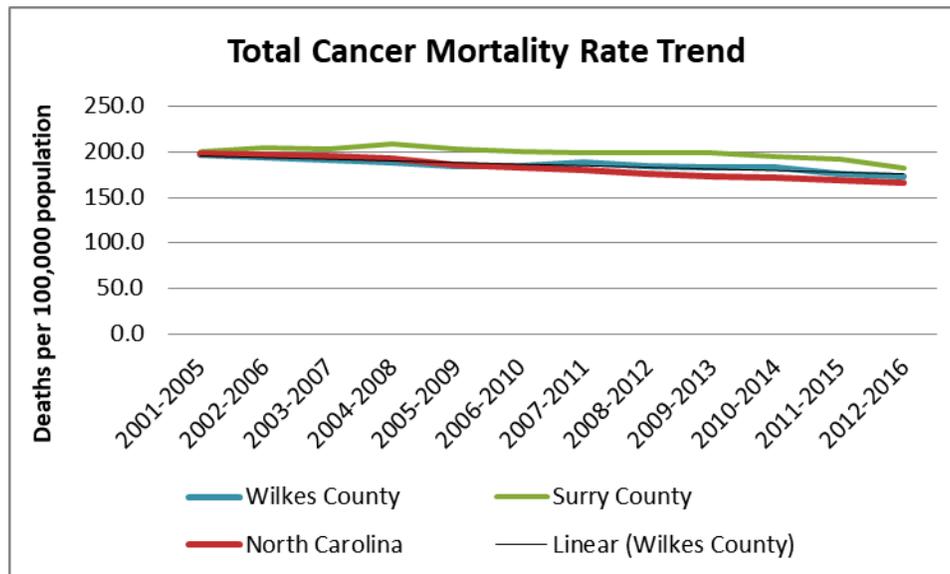
Total cancer (cancers of all types) was the leading cause of death in Wilkes County, Surry County and the state as a whole in the 2012-2016 period (cited previously).

Total Cancer Mortality Rate Trend

The figure below, and the accompanying table, displays total cancer mortality rate trend over time in the jurisdictions being compared in this CHNA.

- The total cancer mortality rate in Wilkes County fluctuated over the period cited but was approximately 12% lower in 2012-2016 (173.5) than in 2001-2005 (196.9).
- The total cancer mortality rate in Wilkes County exceeded the comparable rates for NC in all period after 2005-2009.
- At the state level, the total cancer mortality rate fell gradually over the period cited, from 197.7 to a current low of 173.5.

**Figure 10. Overall Total Cancer Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Racial Disparities in Total Cancer Mortality

The following table presents total cancer mortality data for the aggregate period 2012-2016, stratified by race/ethnicity. Note that due to below-threshold numbers of total cancer deaths among some minority populations at the county level, mortality rates for those groups were suppressed.

- In Wilkes County the total cancer mortality rate among white non-Hispanics exceeded the comparable rate for African American non-Hispanics by 11%.

**Table 100. Total Cancer Mortality, by Race/Ethnicity
(Single Five-Year Aggregate Period, 2012-2016)**

Location	Deaths, Number and Rate (Deaths per 100,000 Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	837	178.0	31	160.9	0	n/a	0	n/a	3	n/a	872	173.5
Surry County	903	184.3	36	195.5	1	n/a	0	n/a	10	n/a	950	181.8
State of NC	72,841	165.0	19,500	190.7	880	158.7	848	104.4	1,094	72.9	95,163	166.5

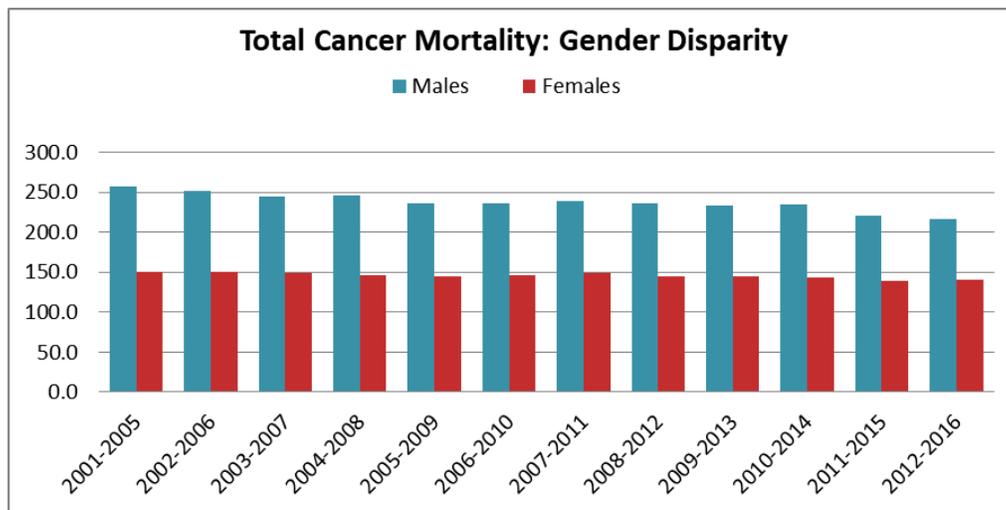
Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Gender Disparities in Total Cancer Mortality

The figure below depicts gender-stratified total cancer mortality rates in Wilkes County for the aggregate periods 2001-2005 through 2012-2016.

- It appears that the gender difference in total cancer mortality noted in Wilkes County for 2012-2016 is actually longstanding.
- The total cancer mortality rates for both males and females in Wilkes County have been decreasing slowly.

**Figure 11. Total Cancer Mortality Rates, by Gender, Wilkes County
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Total Cancer Incidence

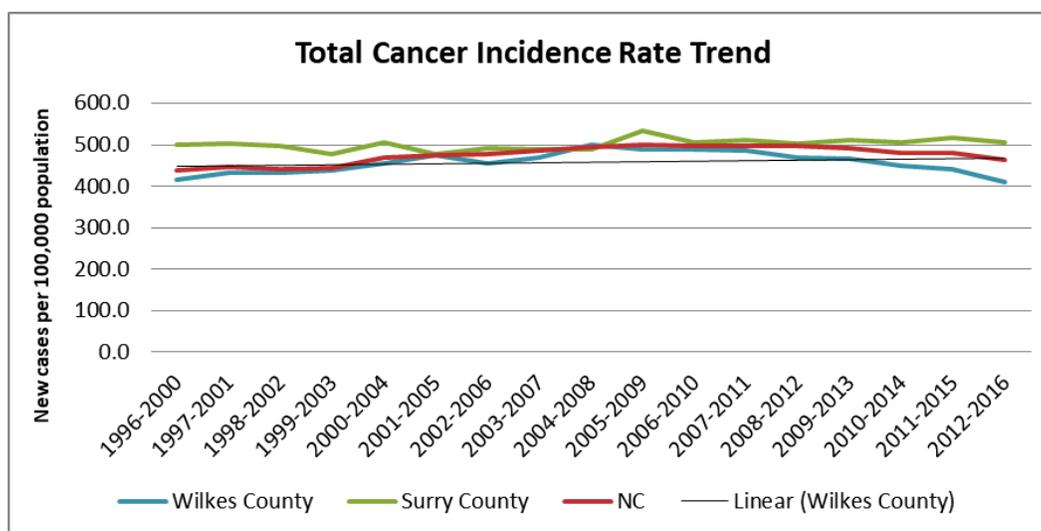
Since total cancer is a significant cause of death, it is useful to examine patterns in the development of new cases. The statistic important to understanding the growth of a health problem is *incidence*, the population-based rate at which new cases of a disease occur and are

diagnosed (methodology for which has been 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.

The following figure plots the incidence rate trend for total cancer for the period 2001-2005 through 2012-2016.

- The total cancer incidence rate in Wilkes County fluctuated over time but decreased by only 3% in net over the entire period cited, from 498.4 in 2001-2005 to 482.8 in 2012-2016.
- The Wilkes County incidence rate for total cancer was the lowest among the comparators in many of the periods shown.

**Figure 12. Overall Total Cancer Incidence Rate Trend
(Five-Year Aggregate Periods, 1996-2000 through 2012-2016)**



Source: NC State Center for Health Statistics, Health Data, Cancer, 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>

Total Cancer Morbidity

Hospital Data

The number of discharges from WMC associated with each leading cause of death is determined based on the primary ICD-9 or ICD-10 code associated with each discharge. For cancer, the associated ICD-9 codes (applicable in 2015) are 140-208; the associated ICD-10 codes (applicable to part of 2015 and all of 2016 and 2017) are C00-C97. Note that these are the same codes associated with causes of mortality cited on death certificates and in NCSCHS mortality rates, so proportions of mortality and morbidity cited in this report for Wilkes County are comparable.

- According to data in the table below, at WMC in the period 2015 through 2017, 36 of 76,439 ED discharges (0.05%) and 104 of 11,776 IP discharges (0.9%) were assigned a primary diagnosis of cancer of some type.

- These would appear to be low proportions of discharges to be associated with the leading cause of death, but it is likely that many Wilkes County patients with cancer utilize specialized physicians and services available at other hospitals in the region having comprehensive cancer centers.

**Table 101. Hospital Discharges Associated with a Diagnosis of Cancer (of any type)
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Diagnosis-Specific	10	10	16	36	39	37	28	104
Total All Discharges	27,025	28,146	21,268	76,439	4,397	4,391	2,988	11,776
Diagnosis as % of Total Discharges	0.03	0.04	0.08	0.05	0.9	0.8	0.9	0.9

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Site-Specific Cancer Mortality and Incidence Rates

To this point the discussions of cancer mortality and incidence have focused on figures for total cancer. In Wilkes 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 used here are specific for *female breast cancer*.

The table below presents age-adjusted *mortality* data for the four prominent site-specific cancers for the 2012-2016 period.

- In Wilkes County, lung cancer was the site-specific cancer with the highest mortality rate. Prostate cancer caused the next highest mortality rate, followed in order by colorectal and breast cancer.
- In NC in the same period, lung cancer presented the highest mortality rate, followed by female breast cancer, prostate cancer, and colon cancer.

**Table 102. Mortality for Five Major Site-Specific Cancers
(Single Five-Year Aggregate Period, 2012-2016)**

Location	Colon Cancer		Lung/Bronchus		Female Breast		Prostate		All Cancers	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Wilkes County	80	16.0	289	56.1	43	15.6	38	19.1	872	173.8
Surry County	72	14.6	309	57.5	62	20.3	41	19.7	950	180.5
State of NC	7,804	13.8	27,600	47.6	6,563	20.8	4,410	20.3	95,163	166.6

Source: NC State Center for Health Statistics, County-level Data, Cancer. Cancer Mortality Rates 1999-2016. All Counties by Specified Site 2012-2016. <https://schs.dph.ncdhhs.gov/schs/CCR/mort1216cnty.pdf>

The next table presents age-adjusted *incidence* data for four of the five site-specific cancers for the 2012-2016 period.

- In Wilkes County, female breast cancer was the site-specific cancer with the highest incidence rate, followed by prostate cancer, lung cancer, and colon cancer.

- In NC, female breast cancer had the highest incidence rate, followed by prostate cancer, lung cancer, and colon cancer.

**Table 103. Incidence for Four Major Site-Specific Cancers
(Single Five-Year Aggregate Period, 2012-2016)**

Location	Colon Cancer		Lung Cancer		Female Breast Cancer		Prostate Cancer		All Cancers	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Wilkes County	175	35.7	378	72.6	271	108.6	223	87.7	2,025	409.9
Surry County	197	40.1	415	78.3	426	155.6	263	103.0	2,549	505.9
State of NC	20,617	36.1	28,865	66.3	48,200	157.5	30,806	109.4	267,539	464.6

Source: NC State Center for Health Statistics, County-level Data, Cancer. Cancer Incidence Rates 2009-2016. All Counties by Specified Site 2012-2016. https://schs.dph.ncdhhs.gov/data/cancer/incidence_rates.htm

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 Wilkes County.

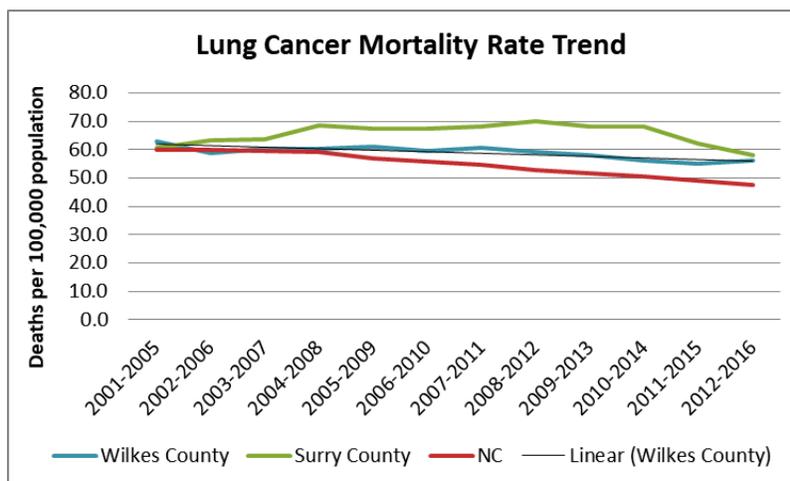
Lung Cancer

The category of cancer referred to as lung cancer traditionally *also* includes cancers of the trachea and bronchus.

Lung Cancer Mortality Rate Trend

- As shown in the figure below, the lung cancer mortality rate in Wilkes County decreased 11% over the period cited, from 63.1 in 2001-2005 to 56.3 in 2012-2016.
- The lung cancer mortality rate in Wilkes County was lower than the Surry County rate over almost all of the aggregate periods presented and has been higher than the comparable state rate since 2003-2007.
- The lung cancer mortality rate statewide decreased steadily over the period shown.

**Figure 13. Lung Cancer Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>.

Racial Disparities in Lung Cancer Mortality

The following table presents lung cancer mortality data for 2012-2016, stratified by race/ethnicity. Due to below-threshold numbers of lung cancer deaths among racially-stratified populations, those mortality rates were suppressed.

- Statewide, the lung cancer mortality rate for African American non-Hispanics was 6% lower than the comparable rate for white non-Hispanics.

Table 104. Lung Cancer Mortality, by Race/Ethnicity (Single Five-Year Aggregate Period, 2012-2016)

Location	Deaths, Number and Rate (Deaths per 100,000 Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	283	58.8	6	n/a	0	n/a	0	n/a	0	n/a	289	56.3
Surry County	297	59.2	10	n/a	1	n/a	0	n/a	1	n/a	309	57.9
State of NC	22,139	49.1	4,838	46.3	289	51.2	181	23.5	168	13.1	28,615	47.5

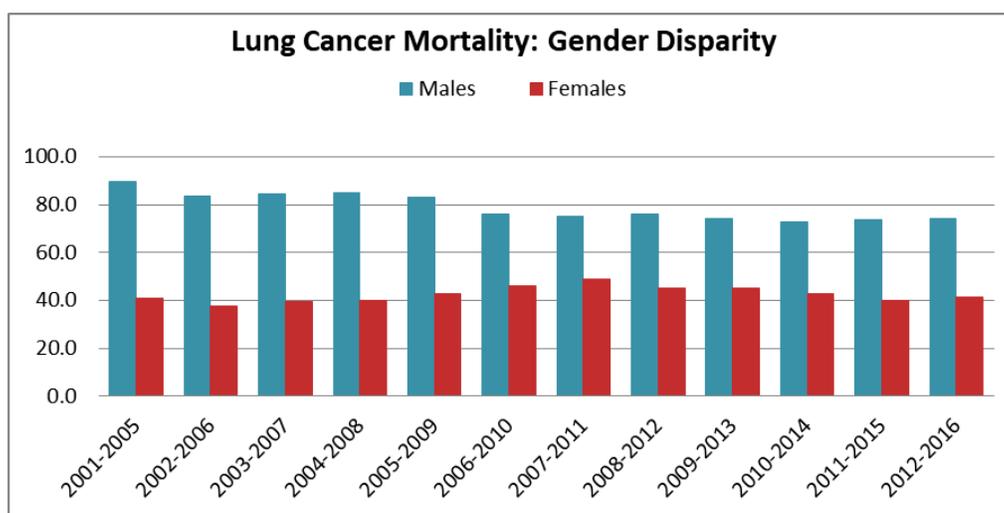
Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases. Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Gender Disparities in Lung Cancer Mortality

The following figure depicts gender-stratified lung cancer mortality rates in Wilkes County for the period 2001-2005 through 2012-2016.

- The lung cancer mortality rate among Wilkes County males was higher than the comparable rate among females over the entire period cited.
- In 2012-2016, the male lung cancer mortality rate (74.5) was 79% higher than the rate among females (41.7).

Figure 14. Lung Cancer Mortality Rates, by Gender, Wilkes County (Five-Year Aggregate Periods, 2001-2005 through 2012-2016)



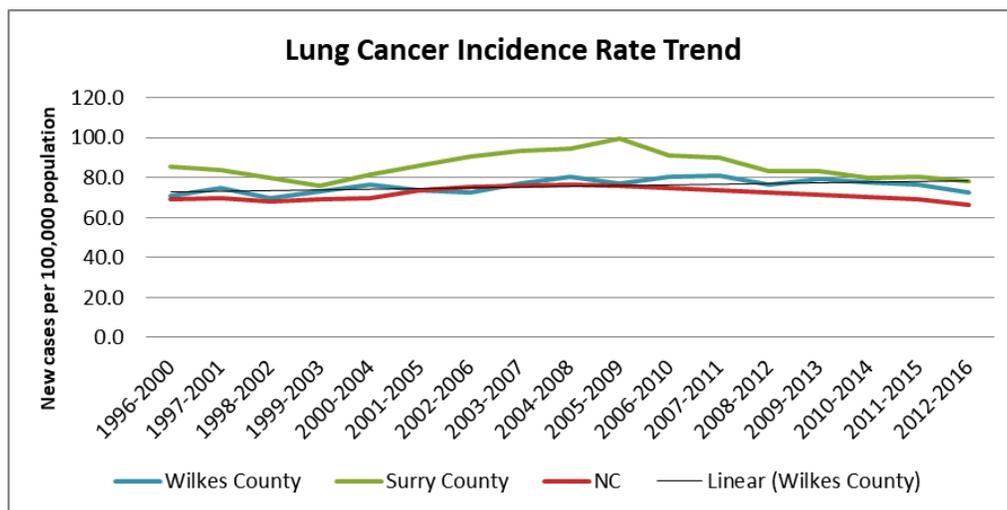
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (years as noted), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Lung Cancer Incidence

The figure below plots the incidence rates for lung cancer for the period 2001-2005 through 2012-2016.

- Lung cancer incidence rates in all three jurisdictions fluctuated from aggregate to aggregate.
- The lung cancer incidence rate in Wilkes County increased overall by less than 3% over the period cited.
- The lung cancer incidence rate in Wilkes County was higher than the comparable state rate in every aggregate period after 2002-2006.

**Figure 15. Lung Cancer Incidence Rate Trend
(Five-Year Aggregate Periods, 1996-2000 through 2012-2016)**



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>

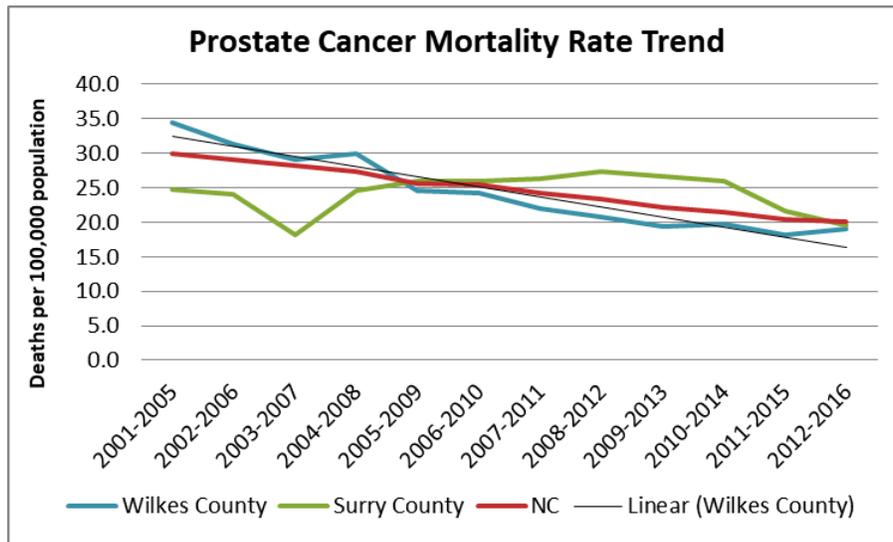
Prostate Cancer

Prostate Cancer Mortality Rate Trend

The next figure plots prostate cancer mortality rates over time.

- The Wilkes County prostate cancer mortality rate decreased overall by 45% over the period cited, a more dramatic decrease than occurred at the state level (where it declined 33%) or in Surry County (with a 21% decrease).
- In 2012-2016 the Wilkes County prostate mortality rate (19.0) was slightly lower than the NC rate of 20.1.

**Figure 16. Prostate Cancer Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhs.gov/data/databook/>

Racial Disparities in Prostate Cancer Mortality

The table below presents prostate cancer mortality data for 2012-2016, stratified by race/ethnicity. Due to below-threshold numbers of prostate cancer deaths among racially-stratified populations in both counties, mortality rates for those groups were suppressed.

- Statewide, the prostate cancer mortality rate for African American non-Hispanics was 2.3 times the comparable rate for white non-Hispanics.

**Table 105. Prostate Cancer Mortality, by Race/Ethnicity
(Single Five-Year Aggregate Period, 2012-2016)**

Location	Deaths, Number and Rate (Deaths per 100,000 Male Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	37	19.6	1	n/a	0	n/a	0	n/a	0	n/a	38	19.0
Surry County	37	18.6	3	n/a	0	n/a	0	n/a	1	n/a	41	19.5
State of NC	3,050	17.2	1,260	39.1	51.0	28.5	15	n/a	34	6.8	4,410	20.1

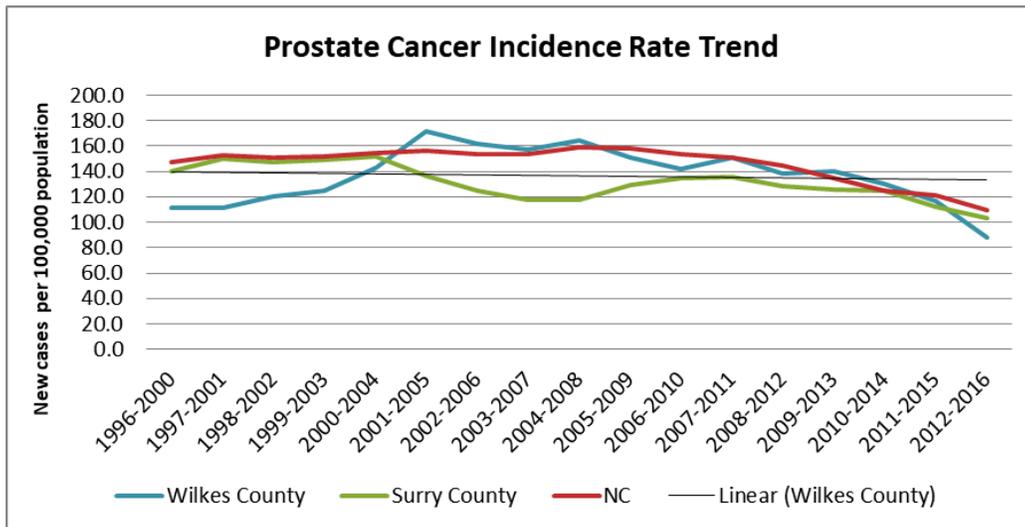
Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhs.gov/data/databook/>

Prostate Cancer Incidence

The following table and its companion figure display the incidence rate trend for prostate cancer.

- The prostate cancer incidence rate in Wilkes County has been similar to the NC rate since 2004-2008, though it has fluctuated over the period shown.
- The prostate cancer incidence rate in Wilkes County decreased overall by 21% over the period cited. Over the same period the comparable rate in NC fell 26%.

**Figure 17. Prostate Cancer Incidence Rate Trend
(Five-Year Aggregate Periods, 1996-2000 through 2012-2016)**



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>.

Colon Cancer

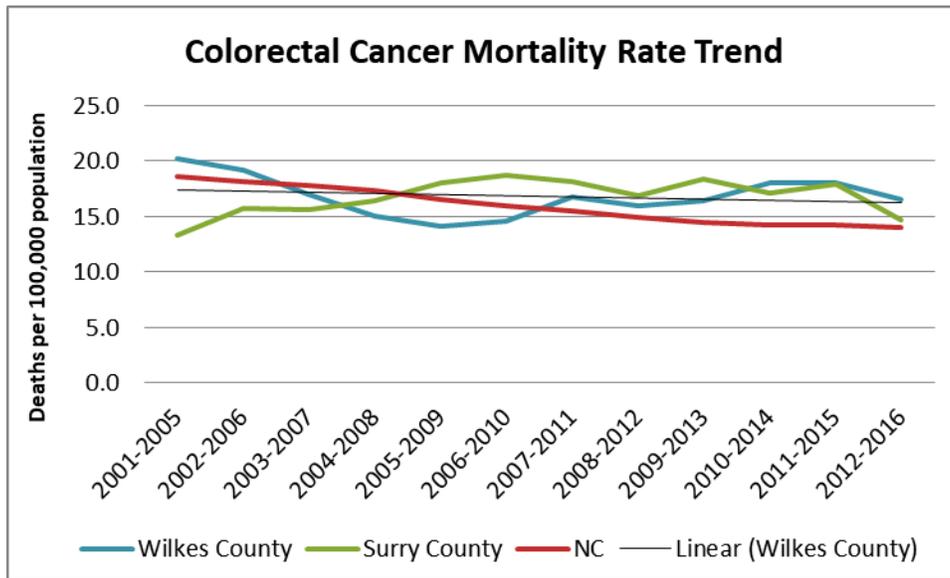
The category of cancer referred to as colon cancer (sometimes referred to as *colorectal cancer*) traditionally *also* includes cancers of the rectum and anus.

Colon Cancer Mortality Rate Trend

The following table and its companion figure display the colon cancer mortality rate trend.

- The colon cancer mortality rate in Wilkes County has been higher than the comparable NC rate since 2007-2011. In 2012-2016 the Wilkes County colorectal cancer mortality rate of 16.5 was 18% higher than the NC rate (14.0).
- The colon cancer mortality rate in Wilkes County decreased overall by 18% over the period cited; the NC rate decreased 25%.

**Figure 18. Colon Cancer Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Racial Disparities in Colon Cancer Mortality

The table below presents colon cancer mortality data for 2012-2016, stratified by race/ethnicity. Due to below-threshold numbers of colon cancer deaths among racially-stratified populations in both counties, mortality rates for those groups were suppressed.

- Statewide, the colon cancer mortality rate for African American non-Hispanics (18.9) was 42% higher than the rate for white non-Hispanics (13.3).

**Table 106. Colon Cancer Mortality, by Race/Ethnicity
(Single Five-Year Aggregate Period, 2012-2016)**

Location	Deaths, Number and Rate (Deaths per 100,000 Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	73	15.9	9	n/a	0	n/a	0	n/a	1	n/a	83	16.5
Surry County	68	14.8	4	n/a	0	n/a	0	n/a	1	n/a	72	14.7
State of NC	5,787	13.3	1,918	18.9	74.0	13.1	67	8.0	80	5.0	7,926	14.0

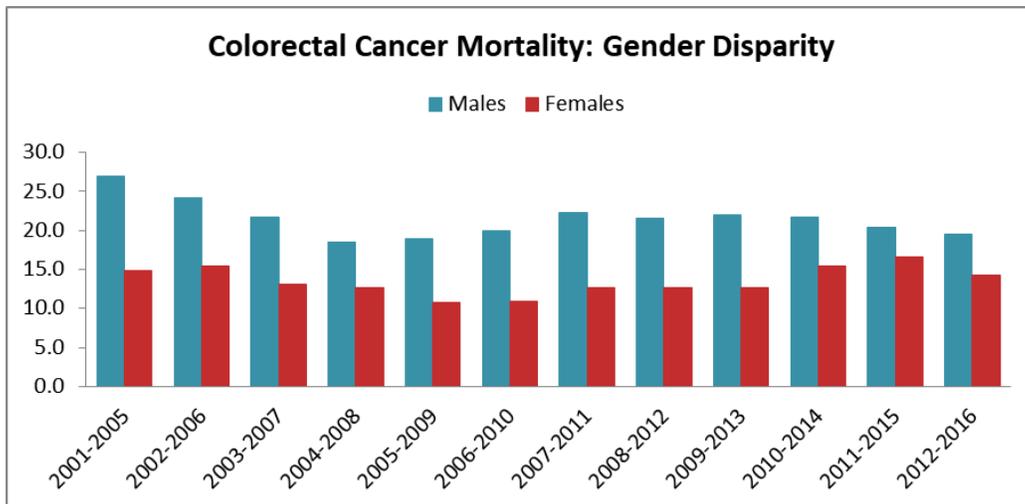
Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases. Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Gender Disparities in Colon Cancer Mortality

The next figure depicts gender-stratified colon cancer mortality rates in Wilkes County for the aggregate periods 2001-2005 through 2012-2016.

- Colon cancer mortality rates for Wilkes County males were higher than the rates for females in every interval.
- In 2012-2016, the male mortality rate due to colorectal cancer (19.5) was 37% higher than the rate among females (14.2).
- It appears that the gender gap in colon cancer mortality rates in Wilkes County may be closing as rates for males decrease and rates for females increase.

**Figure 19. Colon Cancer Mortality Rates, by Gender, Wilkes County
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



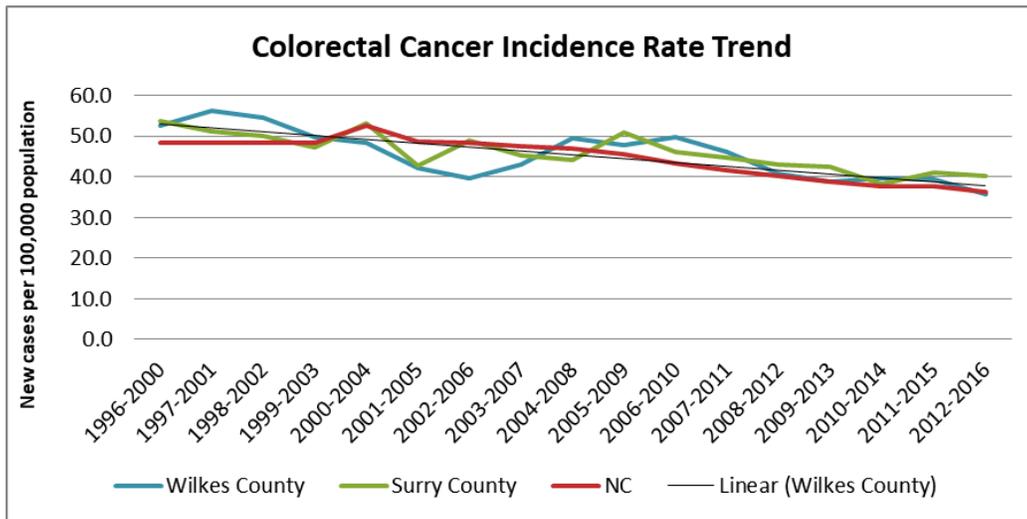
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (years as noted), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Colon Cancer Incidence

The next figure displays incidence rate trend data for colon cancer.

- The colon cancer incidence rate in Wilkes County has varied over the past 17 periods, though it has demonstrated an overall decrease of 32% since 1996-2000.
- Statewide, the colon cancer incidence rate fell overall by 25% over the same period.
- In 2012-2016, the incidence rate was 35.7 in Wilkes County, very similar to the statewide rate of 36.1.

**Figure 20. Colon Cancer Incidence Rate Trend
(Five-Year Aggregate Periods, 1996-2000 through 2012-2016)**



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>

Breast Cancer

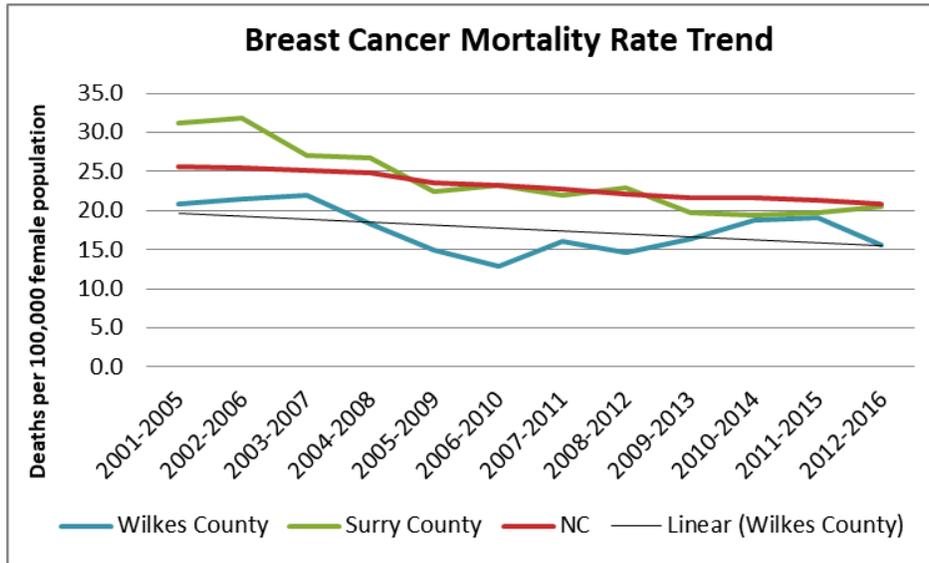
For purposes of this report, breast cancer pertains exclusively to women, although males can and do contract the disease. There were no breast cancer deaths among males in Wilkes County in the 2012-2016 period.

Breast Cancer Mortality Rate Trend

The figure below plots female breast cancer mortality rates over time.

- The breast cancer mortality rates in all three jurisdictions have fallen over the period cited. The breast cancer mortality rate in Wilkes County decreased overall by 25% over the period cited. The NC breast cancer mortality rate decreased overall by 19% over the same period.
- The breast cancer mortality rate in Wilkes County was lower than the comparable rates for the comparators. In 2012-2016, the breast cancer mortality rate was 15.6, 25% lower than the NC rate of 20.9.

**Figure 21. Female Breast Cancer Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Racial Disparities in Breast Cancer Mortality

The following table presents breast cancer mortality data for 2012-2016, stratified by race/ethnicity. Due to below-threshold numbers of breast cancer deaths in both counties, mortality rates for all stratified minority groups were suppressed.

- Statewide, the breast cancer mortality rate for African American non-Hispanic women (28.3) was 46% higher than the comparable rate for white non-Hispanic women (19.4).

**Table 107. Female Breast Cancer Mortality, by Race/Ethnicity
(Single Five-Year Aggregate Period, 2012-2016)**

Location	Deaths, Number and Rate (Deaths per 100,000 Female Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	43	16.6	0	n/a	0	n/a	0	n/a	0	n/a	43	15.6
Surry County	58	20.6	4	n/a	0	n/a	0	n/a	0	n/a	62	20.5
State of NC	4,607	19.4	1,728	28.3	64.0	20.2	70	13.2	94	9.9	6,563	20.9

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 (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>.

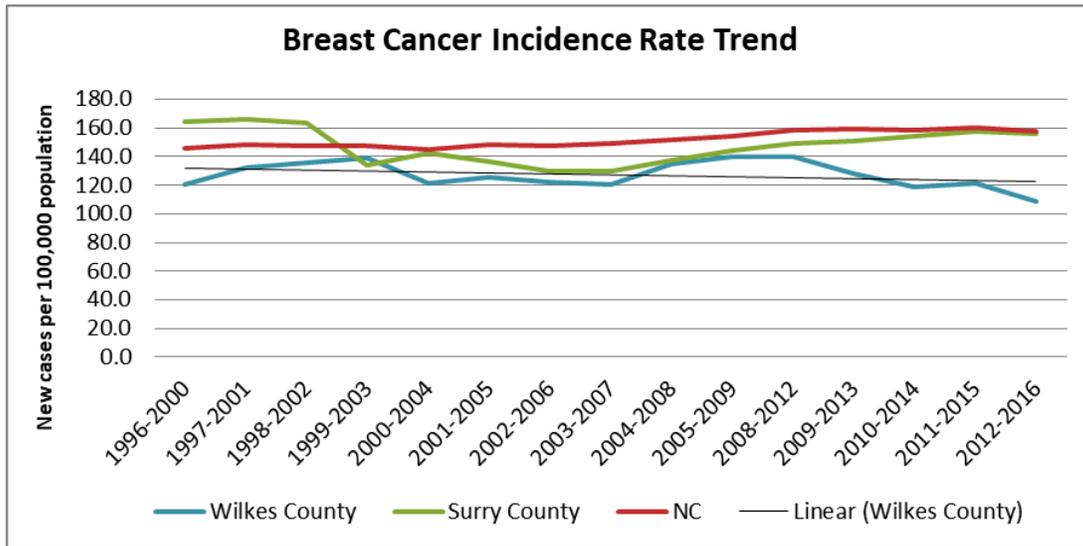
Breast Cancer Incidence

The table below and its companion figure display the incidence rate trend for breast cancer.

- Breast cancer incidence rates are variable in Wilkes County while the state rate has increased steadily since 2000-2004.
- In Wilkes County the breast cancer incidence rate decreased overall by 16% over the period cited.

- In NC the breast cancer incidence rate increased overall by 8% over the period presented.
- It is not known whether or not increased screening activity played a role in the increase in breast cancer incidence, although breast cancer screening activities are common.

**Figure 22. Breast Cancer Incidence Rate Trend
(Five-Year Aggregate Periods, 1996-2000 through 2012-2016)**



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

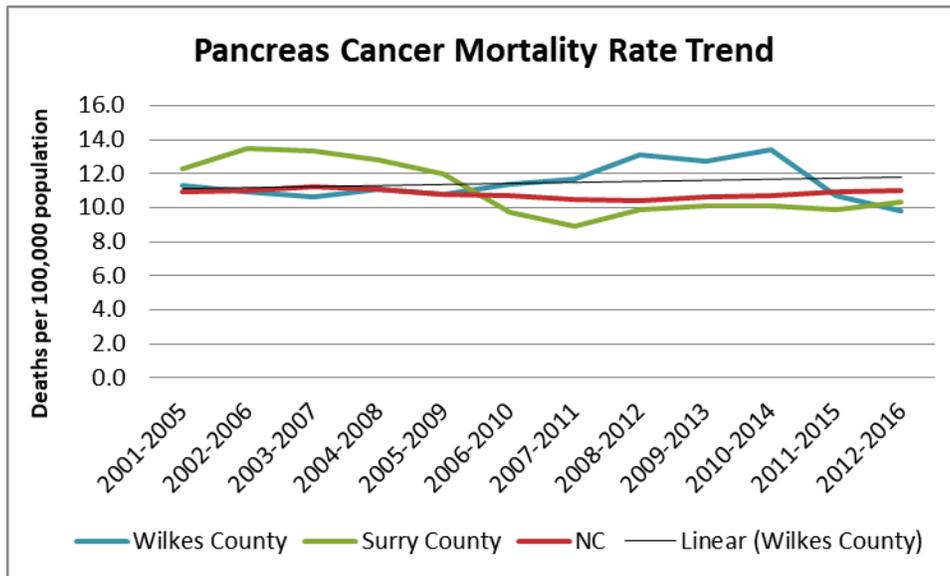
Pancreas cancer is the fifth leading site-specific cause of cancer death in Wilkes County. Due to its relative rarity, the NCSCHS does not publish the same range of data for this cancer as it does for other, more common site specific cancers.

Pancreas Cancer Mortality Rate Trend

The following figure plots the pancreas cancer mortality rate trend.

- Although the trend line for the pancreas cancer mortality rate in Wilkes County shows an increasing slope, the pancreas cancer mortality rate in the county decreased by 13% from the beginning to the end of the period cited. Most of that decrease occurred in the most recent two periods; the regression line is influenced by earlier high rates.
- In 2012-2016, the Wilkes County pancreas cancer mortality rate was 9.8, 11% lower than the state rate (11.0).

**Figure 23. Pancreas Cancer Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Racial Disparities in Pancreas Cancer Mortality

The table below presents pancreas cancer mortality data for 2012-2016, stratified by race/ethnicity. Due to below-threshold numbers of pancreas cancer deaths among stratified populations in both counties, mortality rates for those groups were suppressed.

- Statewide, the pancreas cancer mortality rate for African American non-Hispanics was 34% higher than the rate for white non-Hispanics.

**Table 108. Pancreas Cancer Mortality, by Race/Ethnicity
(Single Five-Year Aggregate Period, 2012-2016)**

Location	Deaths, Number and Rate (Deaths per 100,000 Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	43	9.3	6	n/a	0	n/a	0	n/a	0	n/a	49	9.8
Surry County	50	10.0	3	n/a	0	n/a	0	n/a	1	n/a	54	10.3
State of NC	4,707	10.5	1,422	14.1	63.0	11.9	54	6.8	72	5.4	6,318	11.0

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.

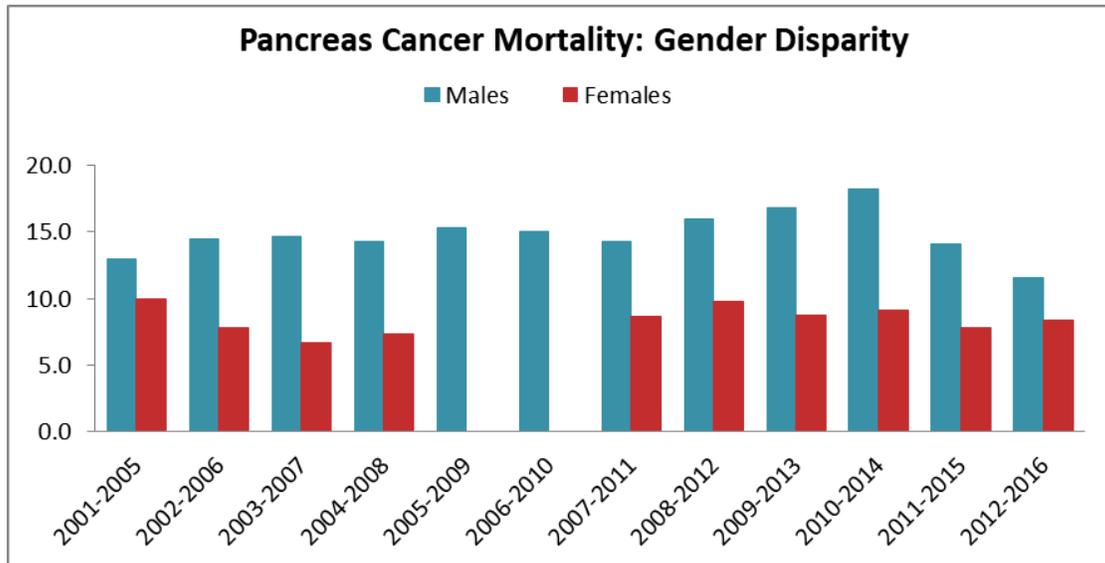
Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Gender Disparities in Pancreas Cancer Mortality

The next figure shows gender-stratified pancreas cancer mortality rates in Wilkes County for 2001-2005 through 2012-2016. Note that female rates were suppressed in two periods and so do not appear in the chart.

- Wilkes County males have higher pancreas cancer mortality rate than females, but it appears that the size of the difference may be shrinking.

Figure 24. Pancreas Cancer Mortality Rates, by Gender, Wilkes County (Five-Year Aggregate Periods, 2001-2005 through 2012-2016)



Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (years as noted), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Pancreas Cancer Incidence

Pancreas cancer incidence rates at the county level are not routinely released by NCSCHS.

Diseases of the Heart

Heart disease describes a range of conditions that affect the heart. Diseases under the heart disease umbrella include blood vessel diseases, such as coronary artery disease; heart rhythm problems (arrhythmias); and congenital heart defects, among others.

The term "heart disease" is often used interchangeably with the term "cardiovascular disease." Cardiovascular disease generally refers to conditions that involve narrowed or blocked blood vessels that can lead to a heart attack, chest pain (angina) or stroke. Other heart conditions, such as those that affect the heart's muscle, valves or rhythm, also are considered forms of heart disease.

Many forms of heart disease can be prevented or treated with healthy lifestyle choices (49).

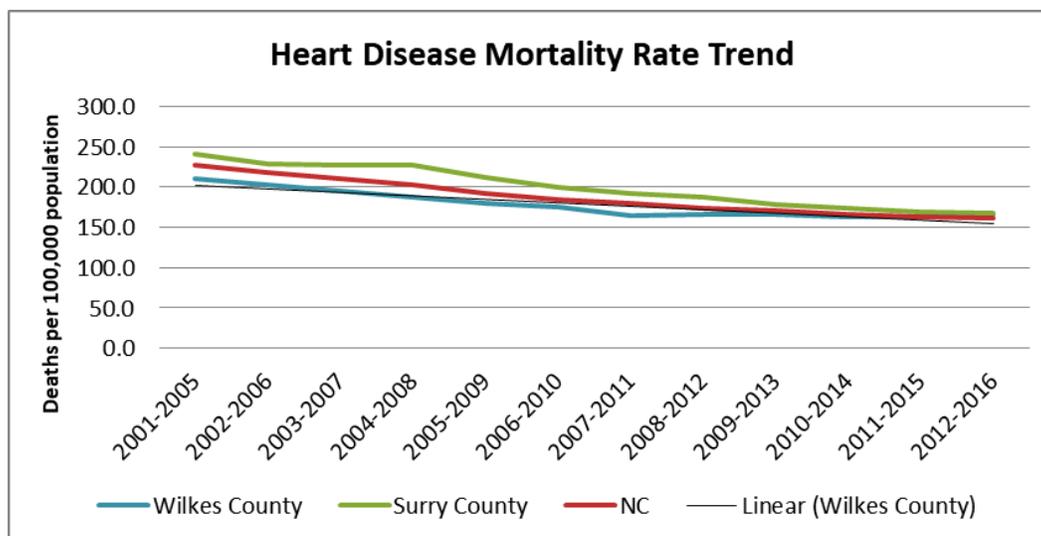
Heart disease was the second leading cause of death in Wilkes County in the 2012-2016 period.

Heart Disease Mortality Rate Trend

The following figure captures heart disease mortality rate trends.

- Heart disease mortality decreased over the time period cited in all three comparator jurisdictions.
- The highest heart disease mortality rate occurred in Surry County in every aggregate period cited.
- In Wilkes County the heart disease mortality rate decreased 21% over the period cited, falling from 210.7 in 2001-2005 to 166.8 in 2012-2016.
- At the state level, the heart disease mortality rate fell 29% over the period cited, decreasing from 226.8 in 2001-2005 to a current low of 161.3 in 2012-2016.

**Figure 25. Heart Disease Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhs.gov/data/databook/>.

Racial Disparities in Heart Disease Mortality

The next table presents heart disease mortality data for the aggregate period 2012-2016, stratified by race/ethnicity. Due to below-threshold numbers of heart disease deaths among some minority populations at the county-level, mortality rates were suppressed for those groups.

- In Wilkes County the heart disease mortality rate among African American non-Hispanics was 51% higher than the comparable rate among white non-Hispanics.

Table 109. Heart Disease Mortality, by Race/Ethnicity (Single Five-Year Aggregate Period, 2012-2016)

Location	Deaths, Number and Rate (Deaths per 100,000 Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	771	165.3	48	249.5	1	n/a	1	n/a	5	n/a	826	166.8
Surry County	820	170.5	29	172.6	1	n/a	1	n/a	8	n/a	859	167.1
State of NC	69,179	159.0	18,081	187.1	904.0	182.0	516	76.0	713	56.6	89,393	161.3

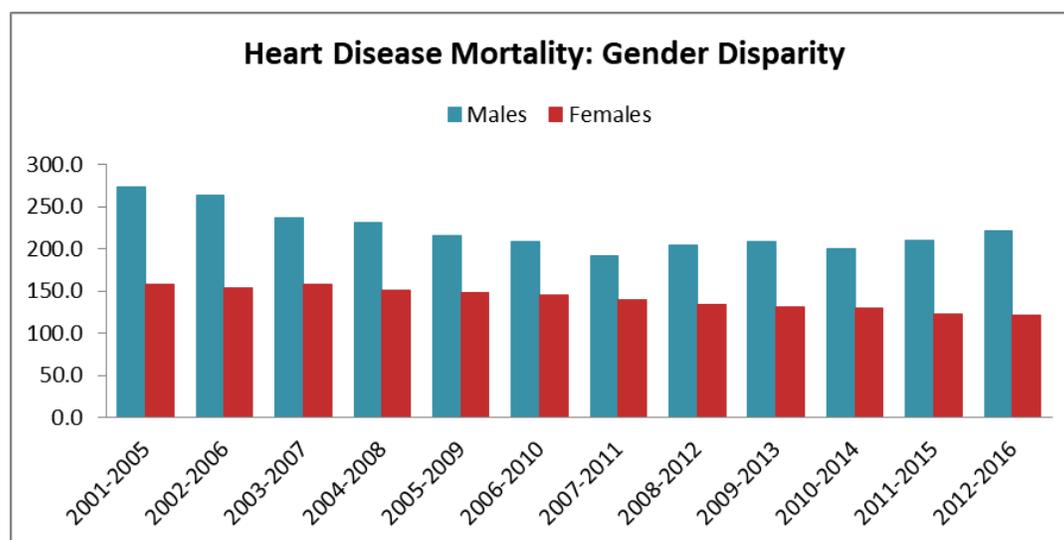
Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases. Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Gender Disparities in Heart Disease Mortality

The figure below presents gender-stratified heart disease mortality rates in Wilkes County for the aggregate periods 2001-2005 through 2012-2016.

- The gender disparity in heart disease mortality in Wilkes County is long-standing. Males have had higher heart disease mortality rates since at least 2001-2005.
- Heart disease mortality rates for both males and females in Wilkes County have decreased since 2001-2005, but the rate for males has increased recently.

Figure 26. Heart Disease Mortality Rates, by Gender, Wilkes County (Five-Year Aggregate Periods, 2001-2005 through 2012-2016)



Source: NC State Center for Health Statistics, County Health Data Books (2007-2015), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <http://www.schs.state.nc.us/SCHS/data/databook/>.

Heart Disease Morbidity

Hospital Data

As noted previously, the number of discharges from WMC associated with each leading cause of death is determined based on the primary ICD-9 or ICD-10 code associated with each discharge. For heart disease, the associated ICD-9 codes (applicable in 2015) are 390-398, 402, 404, 410-429; the associated ICD-10 codes (applicable to part of 2015 and both 2016 and 2017) are I00-I09, I11, I13, I20-I51. Note that these are the same codes associated with causes of mortality cited on death certificates and in NCSCSH mortality rates, so proportions of mortality and morbidity in Wilkes County are comparable.

- ICD codes for heart disease were associated with 1.1% of all ED discharges, and 6.0% of all IP discharges in the period 2015-2017.

**Table 110. Hospital Discharges Associated with a Diagnosis of Heart Disease
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Diagnosis-Specific	308	302	250	860	324	274	112	710
Total All Discharges	27,025	28,146	21,268	76,439	4,397	4,391	2,988	11,776
Diagnosis as % of Total Discharges	1.1	1.1	1.2	1.1	7.4	6.2	3.7	6.0

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Because the heart disease mortality rate gap between males and females in Wilkes County is significant, it may be illustrative to examine hospital discharges stratified by gender. The table below re-examines the data from the table immediately above, this time stratified by sex.

- In 2015-2017 males comprised a higher proportion of ED visits related to heart disease (53.4%) compared to females (46.6%) but a lower proportion of IP discharges (44.9%) compared to females (55.1%).

**Table 111. Hospital Discharges Associated with a Diagnosis of Heart Disease, by Gender
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Total Diagnosis-Specific	308	302	250	860	324	274	112	710
Male	161	165	133	459	145	123	51	319
Male % Diagnosis-Specific	52.3	54.6	53.2	53.4	44.8	44.9	45.5	44.9
Female	147	137	117	401	179	151	61	391
Female % Diagnosis-Specific	47.7	45.4	46.8	46.6	55.2	55.1	54.5	55.1

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Because of the racial disparity in heart disease mortality rates between white non-Hispanics and African American non-Hispanics it may be illustrative to examine hospital discharges stratified by those racial groups.

- White patients comprised approximately 92% of both ED and IP discharges with a heart disease diagnosis in 2015-2017.

**Table 112. Hospital Discharges Associated with a Diagnosis of Heart Disease, by Race
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Total Diagnosis-Specific	308	302	250	860	324	274	112	710
Black	16	12	18	46	19	20	8	47
Black % Diagnosis-Specific	5.2	4.0	7.2	5.3	5.9	7.3	7.1	6.6
White	286	287	221	794	300	253	103	656
White % Diagnosis-Specific	92.9	95.0	88.4	92.3	92.6	92.3	92.0	92.4

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

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).

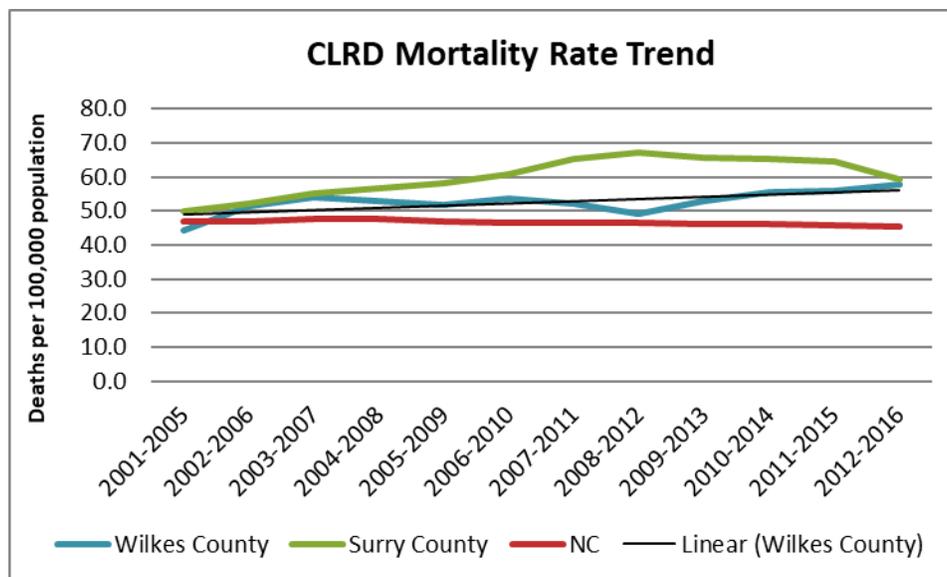
CLRD was the third leading cause of death in Wilkes County, Surry County, and NC in the 2012-2016 period (cited previously).

CLRD Mortality Rate Trend

The next figure displays CLRD mortality rate trends.

- The CLRD mortality rate in Wilkes County was higher than the comparable state rate throughout the period cited beginning in 2002-2006.
- The CLRD mortality rate in Wilkes County increased overall by 30% over the period cited; the state rate decreased 3% over the same period.

**Figure 27. CLRD Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County;
<https://schs.dph.ncdhhs.gov/data/databook/>

Racial Disparities in CLRD Mortality

The following table presents CLRD mortality data for the aggregate period 2012-2016, stratified by race/ethnicity. Note that due to below-threshold numbers of CLRD deaths among minority populations in the counties, mortality rates were suppressed for those groups.

- In NC the CLRD mortality rate was highest among white non-Hispanics, followed by American Indian non-Hispanics, and African American non-Hispanics.

**Table 113. CLRD Mortality, by Race/Ethnicity
(Single Five-Year Aggregate Period, 2012-2016)**

Location	Deaths, Number and Rate (Deaths per 100,000 Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	289	60.5	4	n/a	0	n/a	0	n/a	0	n/a	293	57.8
Surry County	308	61.5	6	n/a	0	n/a	0	n/a	1	n/a	315	59.4
State of NC	22,361	50.7	2,645	27.6	211.0	43.8	81	12.5	87	8.6	25,385	45.6

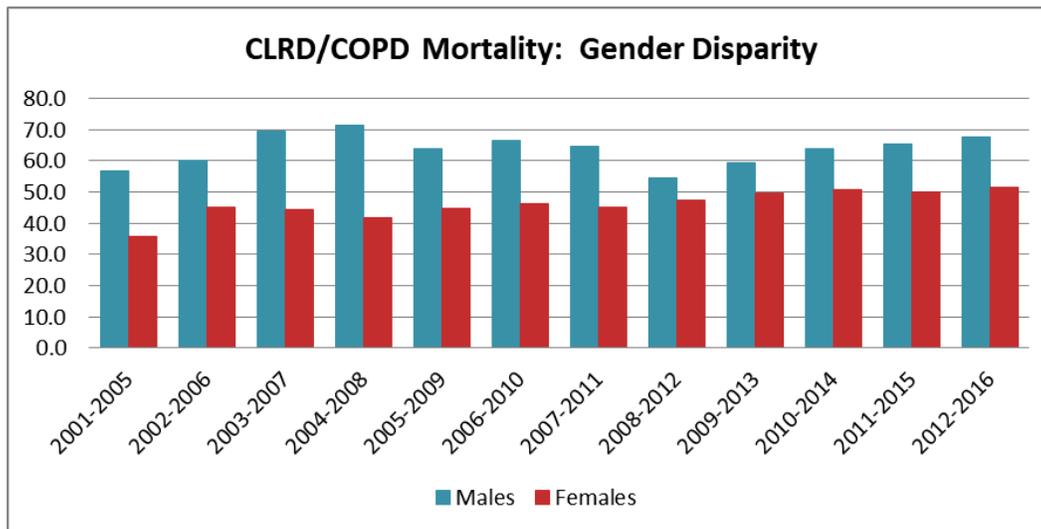
Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Gender Disparities in CLRD Mortality

The figure below presents gender-stratified CLRD mortality rates in Wilkes County for the aggregate periods 2001-2005 through 2012-2016.

- The CLRD mortality rate among Wilkes County males was higher than the comparable rate among females over the entire period cited.
- Although the CLRD mortality rate among Wilkes County males fluctuated over the period cited, the comparable rate for females has risen steadily, closing the once large gender gap.

**Figure 28. CLRD Mortality Rates, by Gender, Wilkes County
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (years as noted), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; <https://schs.dph.ncdhhs.gov/data/databook/>

CLRD Morbidity

Hospital Data

For chronic lower respiratory disease, the associated ICD-9 codes (applicable in 2015) are 490-494, and 496; the associated ICD-10 codes (applicable to part of 2015 and both 2016 and 2017) are J40-J47. Note that these are the same codes associated with causes of mortality cited on death certificates and in NCSCHS mortality rates, so proportions of mortality and morbidity in Wilkes County are comparable.

- Overall, ICD codes for chronic lower respiratory disease were associated with 2.0% of all ED discharges, and 4.2% of all IP discharges in the period 2015-2017.

**Table 114. Hospital Discharges Associated with a Diagnosis of CLRD
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Diagnosis-Specific	576	574	402	1,552	214	162	116	492
Total All Discharges	27,025	28,146	21,268	76,439	4,397	4,391	2,988	11,776
Diagnosis as % of Total Discharges	2.1	2.0	1.9	2.0	4.9	3.7	3.9	4.2

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Because the CLRD mortality rate gap between males and females in Wilkes County remains an issue, it may be illustrative to examine hospital discharges stratified by gender. The table below re-examines the data from the table immediately above, this time stratified by sex.

- The proportion of ED discharges associated with a diagnosis of CLRD was approximately 60% higher among females than among males.
- The proportion of IP discharges associated with a diagnosis of CLRD was 46% higher among females than among males. It is unclear whether these gender differences in hospital utilization reflect a greater presence of CLRD among females or simply greater utilization of hospital services by females.

**Table 115. Hospital Discharges Associated with a Diagnosis of CLRD, by Gender
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Total Diagnosis-Specific	576	574	402	1,552	214	162	116	492
Male	211	236	150	597	86	63	51	200
Male % Diagnosis-Specific	36.6	41.1	37.3	38.5	40.2	38.9	44.0	40.7
Female	365	338	252	955	128	99	65	292
Female % Diagnosis-Specific	63.4	58.9	62.7	61.5	59.8	61.1	56.0	59.3

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

All Other Unintentional Injury

This category includes death without purposeful intent due to poisoning (including accidental drug overdoses), 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.)

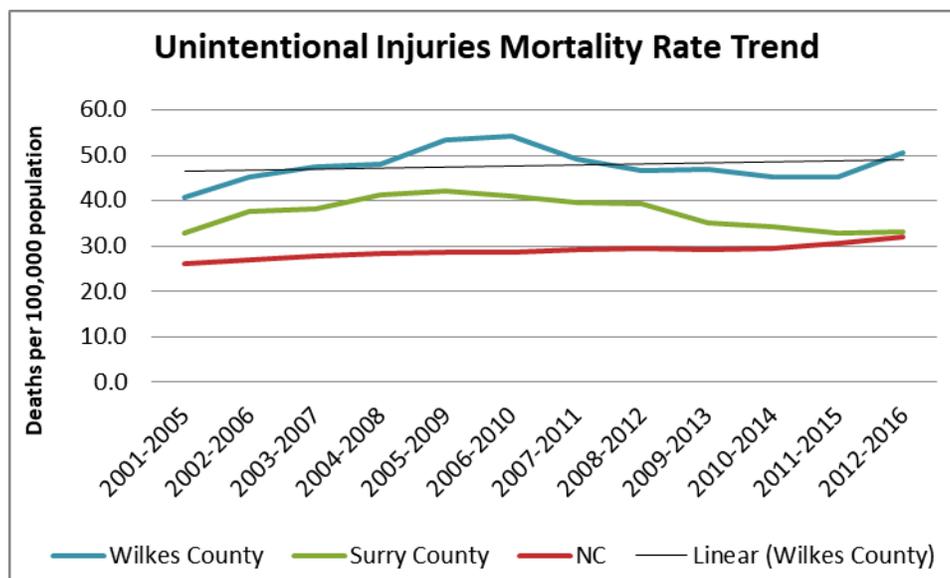
All other unintentional injury was the fourth leading cause of death in Wilkes County and the fifth leading cause of death in Surry County and NC in the 2012-2016 period (cited previously).

All Other Unintentional Injury Mortality Rate Trend

The figure below plots unintentional injury mortality rates over time.

- The all other unintentional injury mortality rate in Wilkes County was higher than the comparable Surry County or NC rates throughout the period cited.
- The mortality rate in Wilkes County increased overall by 25% over the period cited; the NC rate increased 23% over the same period.

Figure 29. All Other Unintentional Injury Mortality Rate Trend (Five-Year Aggregate Periods, 2001-2005 through 2012-2016)



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Racial Disparities in All Other Unintentional Injury Mortality

The table below presents all other unintentional injury mortality rate data for the aggregate period 2012-2016, stratified by race/ethnicity. Note that due to below-threshold numbers of other unintentional injury deaths among all minority populations at the county level, mortality rates were suppressed for those groups.

- At the state level the other unintentional injury mortality rate was highest among American Indian non-Hispanics, followed by white non-Hispanics, then African American non-Hispanics.

Table 116. All Other Unintentional Injury Mortality, by Race/Ethnicity (Single Five-Year Aggregate Period, 2012-2016)

Location	Deaths, Number and Rate (Deaths per 100,000 Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	180	52.9	6	n/a	0	n/a	0	n/a	5	n/a	191	50.7
Surry County	135	36.2	2	n/a	0	n/a	0	n/a	2	n/a	139	33.2
State of NC	13,553	37.3	2,237	21.8	221.0	40.8	120	13.7	322	11.8	16,453	31.9

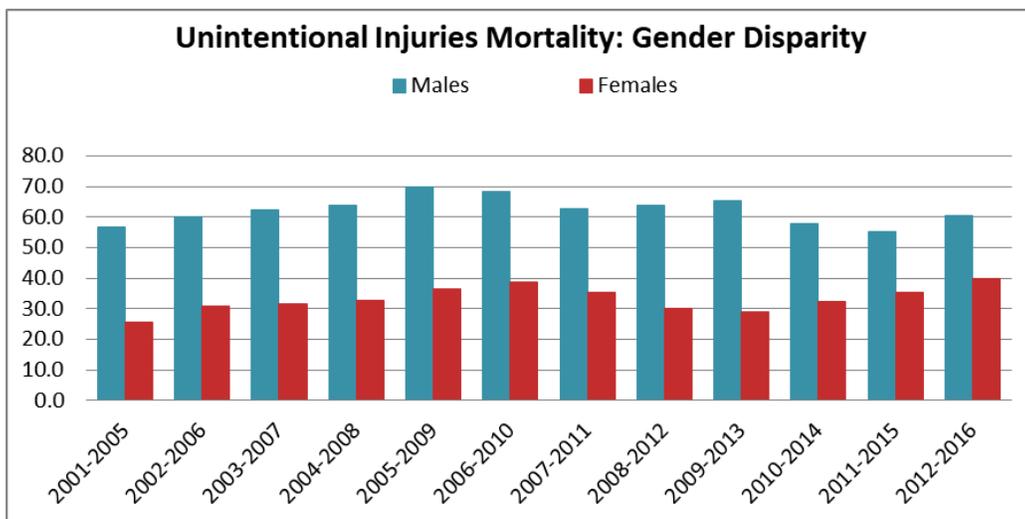
Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases. Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdohhs.gov/data/databook/>

Gender Disparities in All Other Unintentional Injury Mortality

The following figure depicts gender-stratified mortality rates for all other unintentional injuries in Wilkes County for the aggregate period 2001-2005 through 2012-2016.

- Mortality rates for all other unintentional injury for males in Wilkes County historically have been roughly twice the comparable rates for females.
- The rate for females has increased since 2009-2013.

Figure 30. All Other Unintentional Injury Mortality Rates, by Gender, Wilkes County (Five-Year Aggregate Periods, 2001-2005 through 2012-2016)



Source: NC State Center for Health Statistics, County Health Data Books (2007-2018), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <http://www.schs.state.nc.us/SCHS/data/databook/>.

All Other Unintentional Injuries Morbidity

Hospital Data

Parsing information relative to injury, poisoning and violence from ICD-9- or ICD-10-coded hospital data is difficult because injuries, poisoning and violence are coded both for the consequence of the event (e.g., the bodily location of the injury) and its external cause (e.g., automobile collision). Further, certain codes delineate between unintentional (e.g., accidental) and intentional injury (e.g., deliberate self-harm). Analyzing local hospital data for discharges related to the LCD All Other Unintentional Injuries would involve a multi-step process beyond the scope of this CHA project.

Unintentional Poisoning Mortality Rates

The NC State Center for Health Statistics produces aggregate period summaries of deaths due specifically to unintentional poisoning. The table below displays this data for Wilkes County and its comparators for the four aggregate periods 2009-2013 through 2012-2016.

- The mortality rate in Wilkes County attributable to unintentional poisoning (which would include accidental drug overdoses) was the highest among comparators during the period cited and increased in each of the three most recent periods.
- In 2012-2016 the Wilkes County rate (35.1) was 2.6 *times* the state rate.

**Table 117. Unintentional Poisoning Mortality Rate Trend
2009-2013 through 2012-2016**

Location	2009-2013		2010-2014		2011-2015		2012-2016	
	# Deaths	Rate						
Wilkes County	96	29.2	95	28.2	103	30.2	122	35.1
Surry County	66	19.3	67	18.9	62	17.8	61	17.5
State of NC	5,346	11.1	5,531	11.4	6,015	12.3	6,697	13.7

Note: Poisonings include all resident deaths where an unintentional poisoning was coded as the underlying (primary) cause of death. Deaths were coded under the 10th revision of the International Classification of Diseases (ICD). ICD-10: X40-X49.
Source: *Unintentional Poisoning Mortality Rates per 100,000 [years as noted]*. North Carolina State Center for Health Statistics (NCSCHS), County Health Data Book website: <http://www.schs.state.nc.us/data/databook/>.

Cerebrovascular Disease

Cerebrovascular disease describes the physiological conditions that lead to stroke. Strokes happen when blood flow to the brain temporarily or permanently 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 (51).

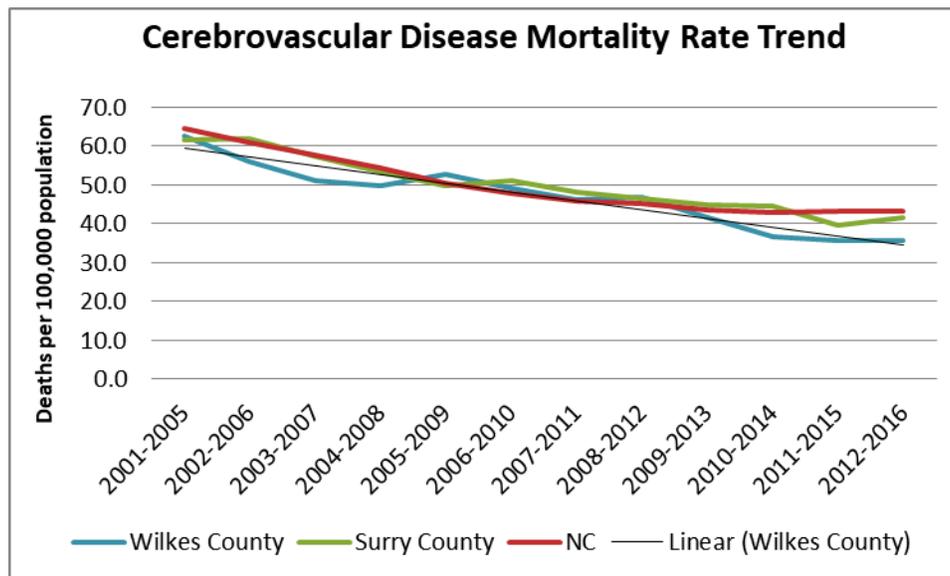
Cerebrovascular disease was the fifth leading cause of death in Wilkes County and the fourth leading cause of death in NC in the 2012-2016 aggregate period (cited previously).

Cerebrovascular Disease Mortality Rate Trend

The figure below plots cerebrovascular disease mortality rates over time.

- The cerebrovascular disease mortality rate in Wilkes County was similar to the state rate over much of the period shown and was 17% lower than the state rate in 2012-2016 (35.6 vs. 43.1).
- The cerebrovascular disease mortality rate in Wilkes County decreased overall by 43% over the period cited; the state rates decreased by 33% over the same period.

**Figure 31. Cerebrovascular Disease Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>.

Racial Disparities in Cerebrovascular Disease Mortality

The table below presents cerebrovascular disease mortality data for the aggregate period 2012-2016, stratified by race/ethnicity. Due to below-threshold numbers of cerebrovascular disease deaths among all minority populations at the county level mortality rates were suppressed for those groups.

- In NC the cerebrovascular disease mortality rate was highest among African American non-Hispanics, followed by white non-Hispanics and American Indian non-Hispanics.

Table 118. Cerebrovascular Disease Mortality, by Race/Ethnicity (Single Five-Year Aggregate Period, 2012-2016)

Location	Deaths, Number and Rate (Deaths per 100,000 Population)															
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	174	40	16	n/a	0	n/a	0	n/a	1	n/a	82	44.7	109	38.2	191	41.7
Surry County	211	45.3	6	n/a	1	n/a	1	n/a	2	n/a	85	45.8	136	42.6	221	45.0
State of NC	16,525	41.3	4,833	57.1	143	36.0	146	29.1	169	17.6	8,829	44.1	12,987	42.5	21,816	43.7

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.

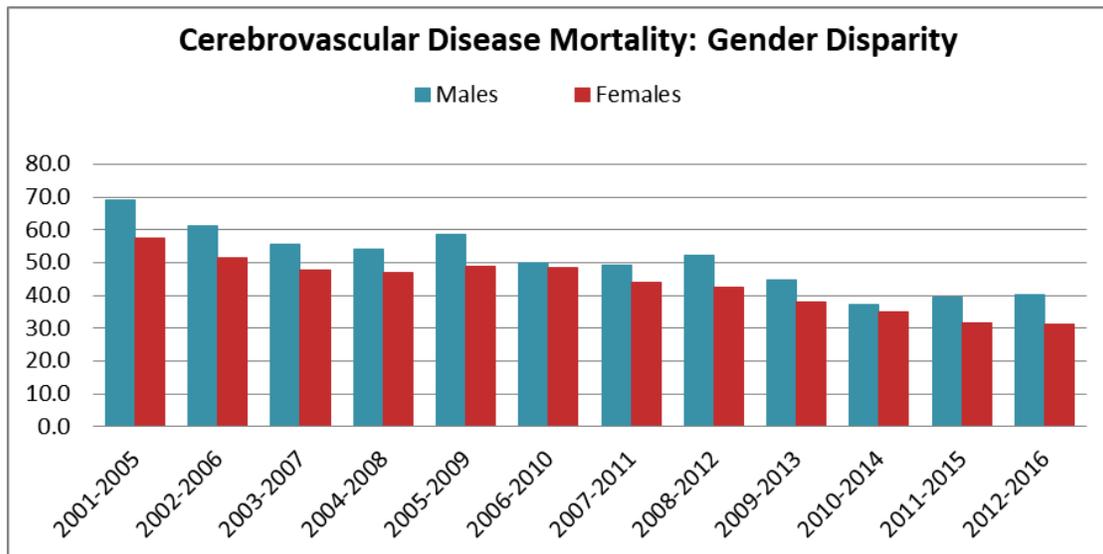
Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>.

Gender Disparities in Cerebrovascular Disease Mortality

The following table depicts gender-stratified cerebrovascular disease mortality rates in Wilkes County for the aggregate periods 2001-2005 through 2012-2016.

- It appears that throughout the period cited the cerebrovascular mortality rate among Wilkes County males was higher than the comparable rate among females.

Figure 32. Cerebrovascular Disease Mortality Rates, by Gender, Wilkes County (Five-Year Aggregate Periods, 2001-2005 through 2012-2016)



Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (years as noted), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; <https://schs.dph.ncdhhs.gov/data/databook/>.

Cerebrovascular Disease Morbidity

Hospital Data

For cerebrovascular disease, the associated ICD-9 codes (applicable in 2015) are 430-434 and 436-438; the associated ICD-10 codes (applicable to part of 2015 and both 2016 and 2017) are I60-I69. Note that these are the same codes associated with causes of mortality cited on death

certificates and in NCSCHS mortality rates, so proportions of mortality and morbidity in Wilkes County are comparable.

- Overall, ICD codes for cerebrovascular disease were associated with 0.2% of all ED discharges, and 1.8% of all IP discharges in the period 2015-2017.

**Table 119. Hospital Discharges Associated with a Diagnosis of Cerebrovascular Disease
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Diagnosis-Specific	42	55	44	141	83	66	58	207
Total All Discharges	27,025	28,146	21,268	76,439	4,397	4,391	2,988	11,776
Diagnosis as % of Total Discharges	0.2	0.2	0.2	0.2	1.9	1.5	1.9	1.8

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Because the CLRD mortality rate gap between males and females in Wilkes County has been consistent, it may be illustrative to examine hospital discharges stratified by gender. The table below re-examines the data from the table immediately above, this time stratified by sex.

- Male patients comprise a higher proportion of ED discharges with a cerebrovascular disease diagnosis compared to females, but a lower proportion of IP discharges.

**Table 120. Hospital Discharges Associated with a Diagnosis of Cerebrovascular Disease,
by Gender
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Total Diagnosis-Specific	42	55	44	141	83	66	58	207
Male	23	31	24	78	37	26	20	83
Male % Diagnosis-Specific	54.8	56.4	54.5	55.3	44.6	39.4	34.5	40.1
Female	19	24	20	63	46	40	38	124
Female % Diagnosis-Specific	45.2	43.6	45.5	44.7	55.4	60.6	65.5	59.9

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Pneumonia and Influenza

Influenza (flu) is a highly contagious viral infection of the throat, mouth and lungs that is one of the most severe illnesses of the winter season. Influenza is spread easily from person to person via the airborne route, usually when an infected person coughs or sneezes. Pneumonia is a serious viral or bacterial infection or inflammation of the lungs. The air sacs fill with pus and other liquid, blocking oxygen from reaching the bloodstream. If there is too little oxygen in the blood, the body's cells cannot work properly, which can lead to death. Influenza is a common cause of pneumonia, especially among younger children, the elderly, pregnant women, or those with certain chronic health conditions or who live in a nursing home. Most cases of flu never lead to pneumonia, but those that do tend to be more severe and deadly. In fact, flu and pneumonia were the eighth leading cause of death in the United States in 2015.

For both influenza and some types of pneumonia there are protective vaccines, although none are 100 percent protective. As flu strains change each year, it is necessary to get a flu vaccination each season to make sure you are protected against the most current strains. Pneumonia vaccinations are usually only necessary once, although a booster vaccination may be recommended for some individuals (52).

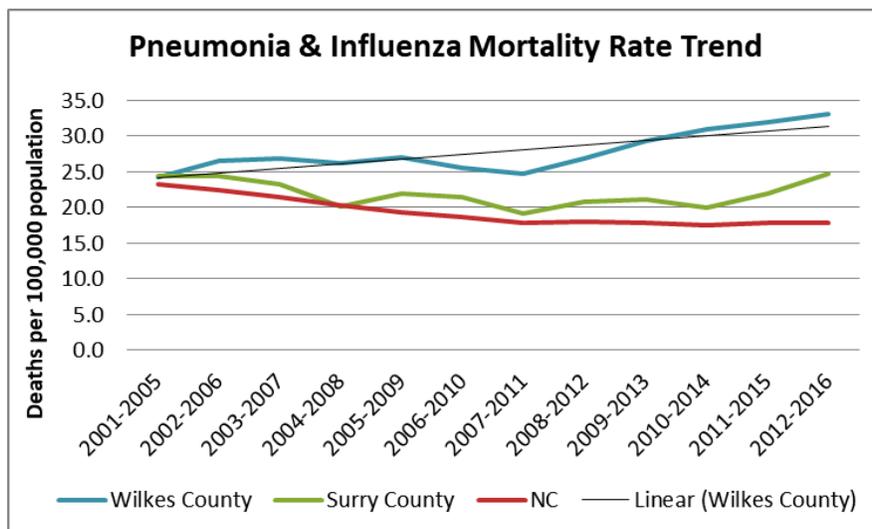
Pneumonia/influenza was the sixth leading cause of death in Wilkes County and the eighth leading cause of death statewide in the 2012-2016 aggregate period (cited previously).

Pneumonia and Influenza Mortality Rate Trend

The next figure plots pneumonia/influenza mortality rates over time.

- The Wilkes County pneumonia/influenza mortality rate was higher than the comparable rates for the other jurisdictions throughout the period cited.
- The pneumonia/influenza mortality rate in Wilkes increased by 37% over the period cited while the comparable mortality rate statewide fell overall by 24% over the same period.

**Figure 33. Pneumonia and Influenza Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Racial Disparities in Pneumonia and Influenza Mortality

The table below presents pneumonia/influenza mortality data for the aggregate period 2012-2016, stratified by race/ethnicity. Note that due to below-threshold numbers of pneumonia/influenza deaths among minority populations at the county level, mortality rates were suppressed for those groups.

- Statewide the pneumonia/influenza mortality rate was highest among white non-Hispanics followed by African American non-Hispanics.

Table 121. Pneumonia and Influenza Mortality, by Race/Ethnicity (Single Five-Year Aggregate Period, 2012-2016)

Location	Deaths, Number and Rate (Deaths per 100,000 Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	146	32.6	12	n/a	0	n/a	0	n/a	0	n/a	158	33.1
Surry County	121	25.8	4	n/a	0	n/a	0	n/a	0	n/a	125	24.7
State of NC	7,888	18.3	1,600	17.1	67.0	13.3	62	10.8	90	7.3	9,707	17.8

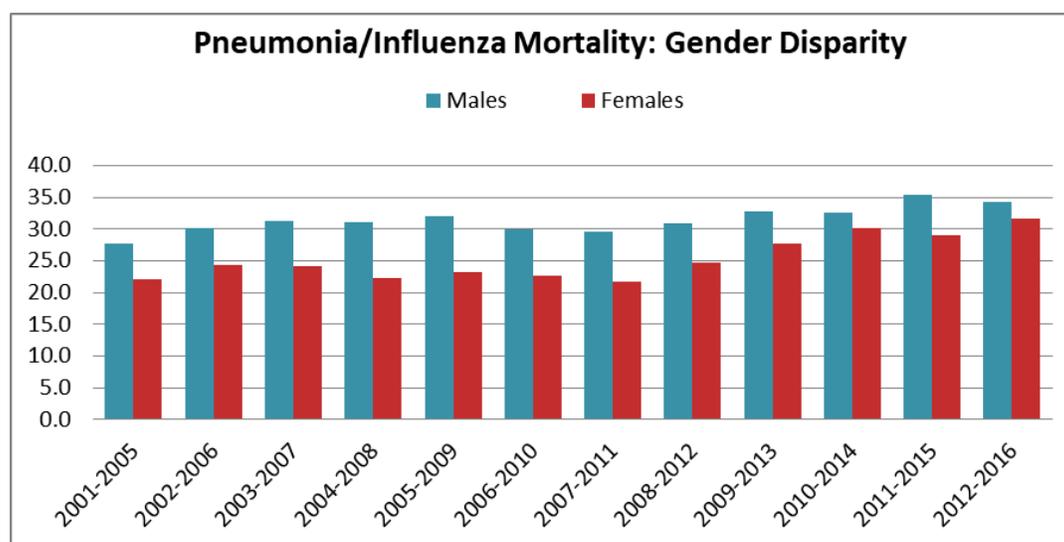
Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases. Source: NC State Center for Health Statistics, County Health Data Book (2015), Mortality, 2009-2013 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; <http://www.schs.state.nc.us/SCHS/data/databook/>.

Gender Disparities in Pneumonia and Influenza Mortality

The following figure depicts gender-stratified pneumonia/influenza mortality rates in Wilkes County for the aggregate periods 2001-2005 through 2012-2016.

- Males in Wilkes County historically have had higher pneumonia/influenza mortality rates than females. The size of the disparity has varied over time, as rates have fluctuated and mortality rates for both males and females have increased since 2007-2011.

Figure 34. Pneumonia and Influenza Mortality Rates, by Gender, Wilkes County (Five-Year Aggregate Periods, 2001-2005 through 2012-2016)



Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (years as noted), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; <http://www.schs.state.nc.us/SCHS/data/databook/>.

Pneumonia and Influenza Morbidity

Hospital Data

For pneumonia and influenza, the associated ICD-9 codes (applicable in 2015) are 480-488; the associated ICD-10 codes (applicable to part of 2015 and all of 2016 and 2017) are J10-J18. Note that these are the same codes associated with causes of mortality cited on death certificates and in NCSCHS mortality rates, so proportions of mortality and morbidity in Wilkes County are comparable.

- Overall, ICD codes for pneumonia and influenza were associated with 1.7% of all ED discharges, and 4.3% of all IP discharges in the period 2015-2017.
- There is considerable yearly variation in hospital discharge patterns associated with influenza and pneumonia, as the relative severity of influenza outbreaks and the effectiveness of the influenza vaccine varies unpredictably from year to year.

**Table 122. Hospital Discharges Associated with a Diagnosis of Pneumonia/Influenza
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Diagnosis-Specific	466	211	603	1,280	260	178	63	501
Total All Discharges	27,025	28,146	21,268	76,439	4,397	4,391	2,988	11,776
Diagnosis as % of Total Discharges	1.7	0.7	2.8	1.7	5.9	4.1	2.1	4.3

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Because there have been historical differences in pneumonia/influenza mortality rates for males and females in Wilkes County, it may be illustrative to examine hospital discharges stratified by gender. The table below re-examines the data from the table immediately above, this time stratified by sex.

- In 2015-2017, females comprised a higher proportion of both ED and IP discharges with a diagnosis of pneumonia or influenza. However, year-to-year gender variation in ED utilization by gender has occurred, as in 2017.

**Table 123. Hospital Discharges Associated with a Diagnosis of Pneumonia/Influenza, by
Gender
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Total Diagnosis-Specific	466	211	603	1,280	260	178	63	501
Male	205	90	307	602	111	79	29	219
Male % Diagnosis-Specific	44.0	42.7	50.9	47.0	42.7	44.4	46.0	43.7
Female	261	121	296	678	149	99	34	282
Female % Diagnosis-Specific	56.0	57.3	49.1	53.0	57.3	55.6	54.0	56.3

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

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.

In 2016, Alzheimer's disease was ranked as the sixth leading cause of death in the United States, but recent estimates indicate that the disorder may rank third, just behind heart disease and cancer, as a cause of death for older people (53).

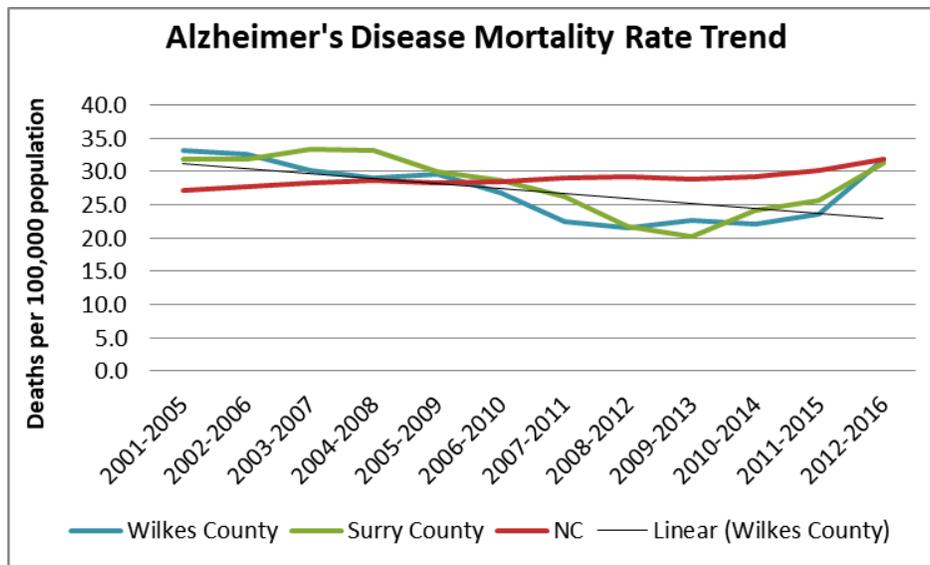
Alzheimer's disease was the seventh leading cause of death in Wilkes County and the fifth leading cause of death in NC in the 2012-2016 aggregate period (cited previously).

Alzheimer's Disease Mortality Rate Trend

The following figure plots Alzheimer's disease mortality rates over time.

- The Alzheimer's disease mortality rate in Wilkes County decreased 35% between 2001-2005 (33.1) and 2008-2012 (21.5) and then increased 48% to 31.9 in 2012-2016.
- The Alzheimer's disease mortality rate in NC rose 18% over the same period.

**Figure 35. Alzheimer's Disease Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Racial Disparities in Alzheimer's Disease Mortality

The following table presents Alzheimer's disease mortality data for the aggregate period 2012-2016, stratified by race/ethnicity. Due to below-threshold numbers of Alzheimer's disease deaths among minority populations at the county level, mortality rates were suppressed for those groups.

- Statewide the Alzheimer's disease mortality rate was highest for American Indian non-Hispanics, non-Hispanic persons, followed by white non-Hispanics, then African American non-Hispanics.

Table 124. Alzheimer's Disease Mortality, by Race/Ethnicity (Single Five-Year Aggregate Period, 2012-2016)

Location	Deaths, Number and Rate (Deaths per 100,000 Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	102	23.6	1	n/a	0	n/a	0	n/a	0	n/a	103	22.7
Surry County	99	20.9	1	n/a	1	n/a	0	n/a	0	n/a	101	20.3
State of NC	11,856	29.8	1,932	26.3	120	38.9	35	9.2	57	9.9	14,000	28.9

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.

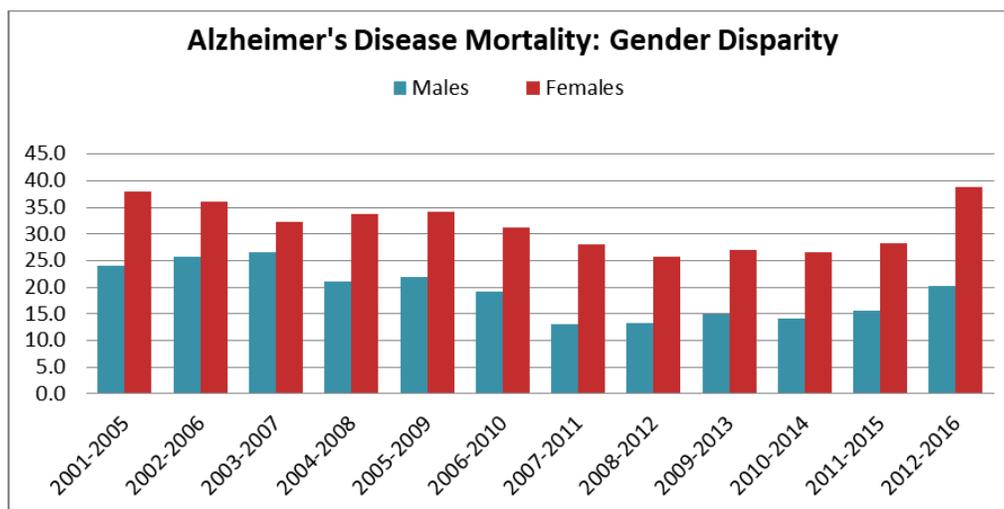
Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>.

Gender Disparities in Alzheimer's Disease Mortality

The figure below displays gender-stratified Alzheimer's disease mortality rates in Wilkes County for the aggregate periods 2001-2005 through 2012-2016.

- The Alzheimer's disease mortality rate among Wilkes County females exceeded the comparable rate among males over the period cited, by an average of 70%.
- The mortality rate for both males and females has increased recently.

Figure 36. Alzheimer's Disease Mortality Rates, by Gender, Wilkes County (Five-Year Aggregate Periods, 2001-2005 through 2012-2016)



Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (years as noted), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; <https://schs.dph.ncdhhs.gov/data/databook/>.

Diabetes Mellitus

Diabetes mellitus is a chronic disease caused by inherited and/or acquired deficiency in production of insulin by the pancreas, or by the ineffectiveness of the insulin produced. Such a deficiency results in increased concentrations of glucose in the blood, which in turn damage many of the body's systems, especially blood vessels and nerves.

There are two principle forms of diabetes:

- Type 1 diabetes (formerly known as insulin-dependent) in which the pancreas fails to produce the insulin which is essential for survival. This form develops most frequently in children and adolescents but is being increasingly noted later in life.
- Type 2 diabetes (formerly named non-insulin-dependent) which results from the body's inability to respond properly to the action of insulin produced by the pancreas. Type 2 diabetes is much more common and accounts for around 90% of all diabetes cases worldwide. It occurs most frequently in adults but is being noted increasingly in adolescents as well (54).

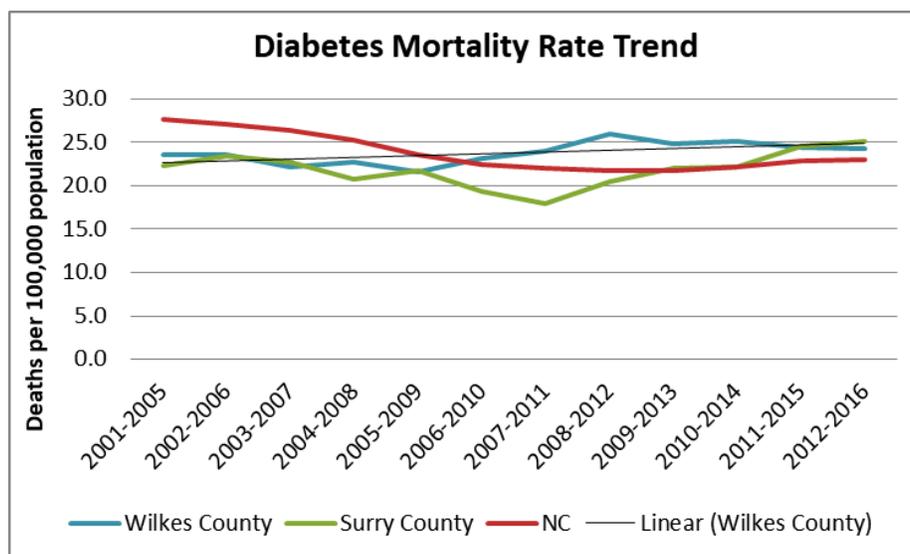
Diabetes was the eighth leading cause of death in Wilkes County and the seventh leading cause of death statewide in 2012-2016 (cited previously).

Diabetes Mellitus Mortality Rate Trend

The following figure plots diabetes mortality rates over time.

- The diabetes mortality rate in Wilkes County was lower than the comparable state rate between 2001-2005 and 2006-2010, after which it was higher than the state rate.
- The diabetes mortality rate in Wilkes County increased overall by 3% over the period cited, while the NC rate decreased 17% over the same period.

**Figure 37. Diabetes Mellitus Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Racial Disparities in Diabetes Mellitus Mortality

The next table presents diabetes mortality data for the aggregate period 2012-2016, stratified by race/ethnicity. Note that due to below-threshold numbers of diabetes deaths among minority populations at the county level mortality rates were suppressed for those groups.

- Statewide, the diabetes mortality rate among American Indian non-Hispanics was 2.4 times the rate among white non-Hispanics, and the rate for African American non-Hispanics was 2.3 times the rate among white non-Hispanic persons.

Table 125. Diabetes Mellitus Mortality, by Race/Ethnicity (Single Five-Year Aggregate Period, 2012-2016)

Location	Deaths, Number and Rate (Deaths per 100,000 Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	106	22.8	13	n/a	1	n/a	0	n/a	0	n/a	120	24.2
Surry County	118	25.4	7	n/a	0	n/a	1	n/a	0	n/a	126	25.1
State of NC	8,212	18.8	4,334	44.0	232.0	45.0	102	14.3	162	11.3	13,042	23.0

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.

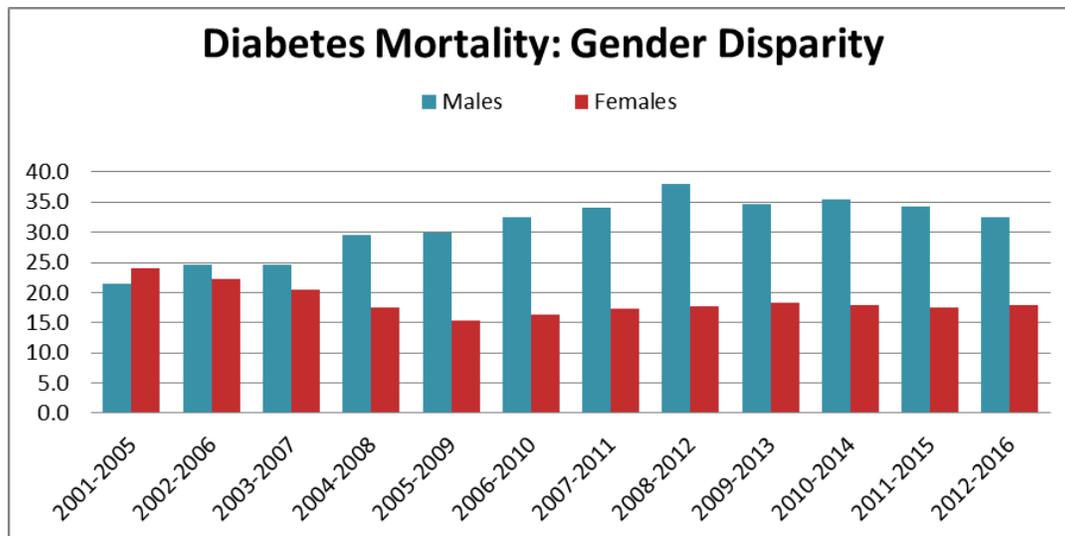
Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Gender Disparities in Diabetes Mellitus Mortality

The following figure depicts gender-stratified diabetes mortality rates in Wilkes County for the aggregate periods 2001-2005 through 2012-2016.

- The diabetes mortality rate among Wilkes County males was higher than the comparable rate among females for 11 of the 12 periods shown.

Figure 38. Diabetes Mellitus Mortality Rates, by Gender, Wilkes County (Five-Year Aggregate Periods, 2001-2005 through 2012-2016)



NC State Center for Health Statistics, County-level Data, County Health Data Books (years as noted), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Diabetes Mellitus Morbidity

Diabetes Prevalence

According to data from the US Centers for Disease Control and Prevention, which catalogs historic prevalence data for diabetes by county, the average prevalence of adult (age 18 or older) diabetes in Wilkes County in the eight-year period 2006 through 2013 was 9.8%, compared to a statewide prevalence of 9.5%.

Table 126. Adult Diagnosed Diabetes Prevalence Estimate Trend (2006 through 2013)

Location	Estimated Prevalence, Number and Percent (Age-adjusted, Age 18 and Older)															
	2006		2007		2008		2009		2010		2011		2012		2013	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Wilkes County	5,580	9.9	5,505	9.7	5,424	9.3	5,935	10.0	6,798	11.0	6,456	10.4	5,836	9.2	5,695	8.7
Surry County	5,377	8.8	5,780	9.4	6,203	9.9	7,030	11.2	6,902	10.8	7,531	11.7	7,193	11.1	7,291	11.1
State Total	599,940	9.0	208,227	8.9	643,131	9.1	674,394	9.2	700,657	9.4	788,226	10.2	778,716	9.7	860,360	10.5

Source: Centers for Disease Control and Prevention, Diabetes Data and Statistics. County Data. Select indicator and year in mapping tool. <https://www.cdc.gov/diabetes/data/county.html>.

Source for state data: Centers for Disease Control and Prevention, Diabetes. Data and Statistics. National and State Data. <https://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html>.

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.

Hospital Data

For diabetes mellitus, the associated ICD-9 code (applicable in 2015) is 250; the associated ICD-10 codes (applicable to part of 2015 and both 2016 and 2017) are E10-E14. Note that these are the same codes associated with causes of mortality cited on death certificates and in NCSCHS mortality rates, so proportions of mortality and morbidity in Wilkes County are comparable.

- Overall, ICD codes for diabetes mellitus were associated with 0.6% of all ED discharges, and 1.9% of all IP discharges in the period 2015-2017.

Table 127. Hospital Discharges Associated with a Diagnosis of Diabetes Mellitus Wilkes Medical Center, 2015-2017

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Diagnosis-Specific	147	163	135	445	81	71	69	221
Total All Discharges	27,025	28,146	21,268	76,439	4,397	4,391	2,988	11,776
Diagnosis as % of Total Discharges	0.5	0.6	0.6	0.6	1.8	1.6	2.3	1.9

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Because the difference in diabetes mellitus mortality rates for males and females in Wilkes County is changing in character, it may be illustrative to examine hospital discharges stratified by gender. The table below re-examines the data from the table immediately above, this time stratified by sex.

- Over the period cited, the proportions of both ED and IP discharges associated with a diagnosis of diabetes were higher among males compared to females.

**Table 128. Hospital Discharges Associated with a Diagnosis of Diabetes Mellitus, by Gender
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Total Diagnosis-Specific	147	163	135	445	81	71	69	221
Male	75	83	72	230	43	42	33	118
Male % Diagnosis-Specific	51.0	50.9	53.3	51.7	53.1	59.2	47.8	53.4
Female	72	80	63	215	38	29	36	103
Female % Diagnosis-Specific	49.0	49.1	46.7	48.3	46.9	40.8	52.2	46.6

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Community Survey Data

The 2018 Wilkes County Community Health Survey queried whether a health professional had respondents with any of a list of health conditions, approximately 19% named diabetes (not during pregnancy) among their diagnoses; 11% of 2015's survey respondents reported a diabetes diagnosis. Approximately 36% of 2018 survey respondents reported an overweight/obesity diagnosis; in 2015 45% of respondents reported receiving such a diagnosis.

Among lifestyle factors contributing to diabetes prevalence and mortality, overweight/obesity, poor eating habits, and a sedentary lifestyle are among the most important. When asked to select from a list the unhealthy behaviors they felt had the greatest impact on the health of the community, 45% of 2018's survey respondents selected "Unhealthy lifestyle (poor eating habits, lack of exercise).

Additionally, the 2018 Wilkes County Community Health Survey asked respondents to self-report their height and weight so that a BMI could be calculated. Using the CDC's standard formula, the average BMI of the 2018 survey respondents was 30.1. Approximately 25% of respondents fell in the normal/healthy weight range (18.5 to 24.9), 32% were categorized as overweight (25.0 to 29.9) and 43% fell into the obese range (30.0 and above).

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.

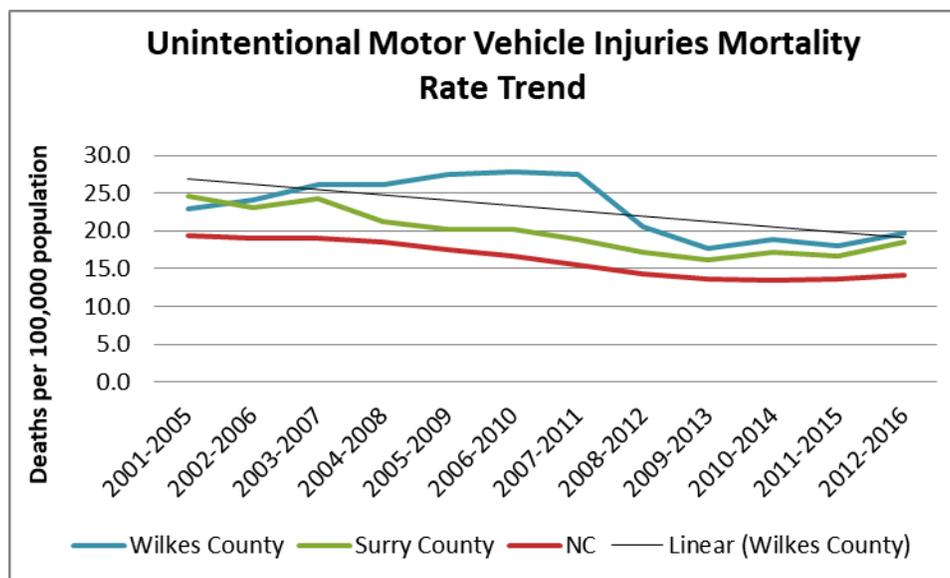
Mortality due to unintentional motor vehicle injury was the ninth leading cause of death in Wilkes County and tenth in NC for 2012-2016 (cited previously).

Unintentional Motor Vehicle Injury Mortality Rate Trend

The following figure plots unintentional motor vehicle injury mortality rates over time.

- The unintentional motor vehicle injury mortality rates in all three jurisdictions decreased over the period cited; due to a recent increase in mortality rate the Wilkes County mortality rate decreased only 14% while the state mortality rate decreased 27%.
- The unintentional motor vehicle injury mortality rate in Wilkes County was higher than the comparable NC rate over the entire period shown. In 2012-2016, the Wilkes County mortality rate (19.8) was 40% higher than the NC rate (14.1).

Figure 39. Unintentional Motor Vehicle Injury Mortality Rate Trend (Five-Year Aggregate Periods, 2001-2005 through 2012-2016)



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Racial Disparities in Unintentional Motor Vehicle Injury Mortality

The next table presents unintentional motor vehicle injury mortality data for the aggregate period 2012-2016, stratified by race/ethnicity. Note that due to below-threshold numbers of unintentional motor vehicle injury deaths among minority populations at the county level, mortality rates were suppressed for those groups.

- Statewide the unintentional motor vehicle injury mortality rate was highest among American Indian non-Hispanics, followed by African-American non-Hispanics and white non-Hispanics.

Table 129. Unintentional Motor Vehicle Injury Mortality, by Race/Ethnicity (Single Five-Year Aggregate Period, 2012-2016)

Location	Deaths, Number and Rate (Deaths per 100,000 Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	69	20.4	1	n/a	0	n/a	0	n/a	3	n/a	73	19.8
Surry County	64	19.6	5	n/a	0	n/a	0	n/a	2	n/a	71	18.5
State of NC	4,736	14.0	1,672	15.3	164.0	27.5	82	6.0	471	10.8	7,125	14.1

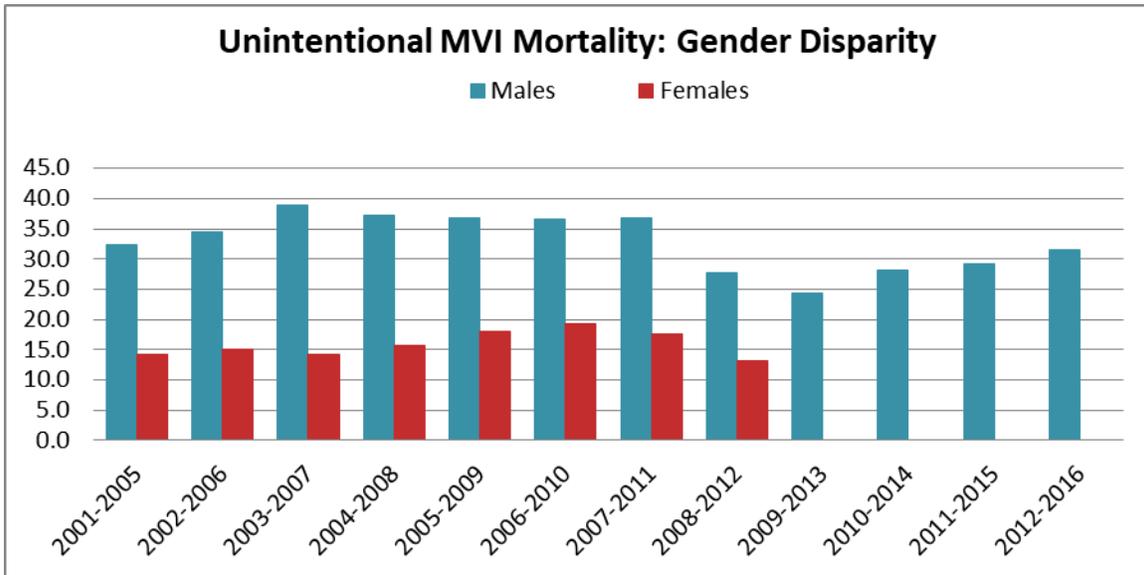
Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases. Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Gender Disparities in Unintentional Motor Vehicle Injury Mortality

The following figure depicts gender-stratified unintentional motor vehicle injury mortality rates in Wilkes County for the aggregate periods 2001-2005 through 2012-2016.

- After a period of decrease, the unintentional motor vehicle injury mortality rate among males in Wilkes County rose in each of the most recent four periods.
- The unintentional motor vehicle injury mortality rate for males in Wilkes County historically has been higher than the comparable rate for females, despite the fact that the number of deaths among females has fallen below the threshold for suppression by the source in the four most recent periods.

Figure 40. Unintentional Motor Vehicle Injury Mortality Rates, by Gender, Wilkes County (Five-Year Aggregate Periods, 2001-2005 through 2012-2016)



Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (years as noted), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Age Disparities in Motor Vehicle Injury Mortality

The table below presents unintentional motor vehicle injury mortality data for the 2012-2016 aggregate period, stratified by age group. Note that this data is *not* age-adjusted. Note further that the “All Ages” category is denoted “n/a” because motor vehicle injury mortality was not listed among the 10 causes of death referenced at the data site for these jurisdictions.

- In Wilkes County the 20-39 age group had the highest motor vehicle injury mortality rate (26.0) followed by the 40-64 age group (20.3).
- Statewide, the 20-39 age group has the highest motor vehicle injury mortality rate (18.8), followed by the 40-64 age group (15.5).

Table 130. Unintentional Motor Vehicle Injury Mortality, Numbers and Rates, by Age (Five-Year Aggregate Period, 2012-2016)

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
Wilkes County	n/a	n/a	5	6.2	19	26.0	25	20.3
Surry County	n/a	n/a	10	11.3	17	21.7	28	21.9
State of NC	n/a	n/a	778	6.1	2,470	18.8	2,551	15.5

Source: NC State Center for Health Statistics, 2018 County Health Databook, Death Counts and Crude Death Rates per 100,000 Population for Leading Causes of Death, by Age Groups, NC 2012-2016; <http://www.schs.state.nc.us/SCHS/data/databook/>.

Unintentional Motor Vehicle Injuries Morbidity

Hospital Data

Parsing information relative to injury, poisoning and violence from ICD-9- or ICD-10-coded hospital data is difficult because injuries, poisoning and violence are coded both for the consequence of the event (e.g., the bodily location of the injury) and its external cause (e.g., automobile collision). Further, certain codes delineate between unintentional (e.g., accidental) and intentional injury (e.g., deliberate self-harm). Analyzing hospital data for discharges related to the LCD Unintentional Motor Vehicle Injuries would involve a multi-step process beyond the scope of this CHNA project.

Alcohol-Related Traffic Crashes

The following table presents several years of data on the proportion of traffic crashes and traffic crash injuries that were alcohol-related.

- The percentage of injuries that occurred during reportable crashes that were alcohol-related increased each year in Wilkes County.
- Over the four-year period cited, an average of 29% of fatal traffic crashes in Wilkes County were alcohol-related. Note, however, the significant variability in the figures for Wilkes County, which increased annually.
- Over the same period, an average of 28.2% of all fatal traffic crashes statewide were alcohol-related.
- In Wilkes County over the period cited an annual average of 5.6% of injuries from non-fatal crashes were alcohol-related; the comparable figure for NC was 6.6%.

**Table 131. Alcohol-Related Traffic Crashes Trend
(Single Years, 2014-2017)**

County	% of Fatal Crashes that were Alcohol Related				% of Injuries from Non-Fatal Injury Crashes that were Alcohol Related				% of Injuries from All Reportable Crashes that were Alcohol Related			
	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017
Wilkes County	18.2	22.2	30.0	45.5	5.1	5.3	5.6	6.4	5.6	5.7	6.0	7.0
Surry County	20.0	29.4	20.0	12.5	10.0	6.8	6.4	6.7	10.3	7.2	6.6	6.8
State Total	29.1	29.2	28.1	26.3	7.1	6.7	6.3	6.2	7.4	6.9	6.5	6.4

Source: Crash Data and Maps: County Crash Profiles. 2017. Connect NCDOT, Resources, Traffic Safety website: <https://connect.ncdot.gov/resources/safety/Pages/Crash-Data.aspx>.

Pedestrian and Bicycle Crashes

The NC Department of Transportation maintains data on the character of crashes involving pedestrians, bicycles, and motorcycles.

The table below displays data on pedestrian, bicycle and motorcycle crashes in Wilkes County and its comparators in 2017. It should be noted that these data refer to *reported* crashes only, and therefore may not include all crashes in a jurisdiction.

- Motorcycle crashes are the most numerous, and the most likely to result in injury.
- In Wilkes County in 2017, there was one fatality from injuries in a pedestrian crash, one fatality from a bicycle crash, and two fatalities from motorcycle crashes.

**Table 132. Number of Pedestrian, Bicycle and Motorcycle Crashes
(2017)**

County	2017									
	Reportable		Alcohol Related		Pedestrian		Bicycle		Motorcycle	
	Crashes	Injuries	Crashes	Injuries	Crashes	Injuries	Crashes	Injuries	Crashes	Injuries
Wilkes County	1,410	672	67	47	7	10	3	3	29	31
Surry County	1,561	901	75	61	13	13	1	2	28	27
State Total	375,067	129,360	11,342	8,290	2,218	2,441	813	815	3,611	3,575

Source: Crash Data and Maps: County Crash Profiles. 2017. Connect NCDOT, Resources, Traffic Safety website: <https://connect.ncdot.gov/resources/safety/Pages/Crash-Data.aspx>

Nephritis, Nephrotic Syndrome, and Nephrosis

Nephritis (also called glomerulonephritis) is a group of diseases that cause inflammation (swelling) of the nephrons in the kidney and reduce the kidney's ability to filter waste from the blood. Most types of nephritis are caused by the body's immune system reacting to an 'insult' of some sort. This might be a medication, poison, infection or a change in the way the immune system behaves (55). 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 (56). 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).

This composite set of kidney disorders was the tenth leading cause of death in Wilkes County and the ninth leading cause of death statewide in 2012-2016 (cited previously).

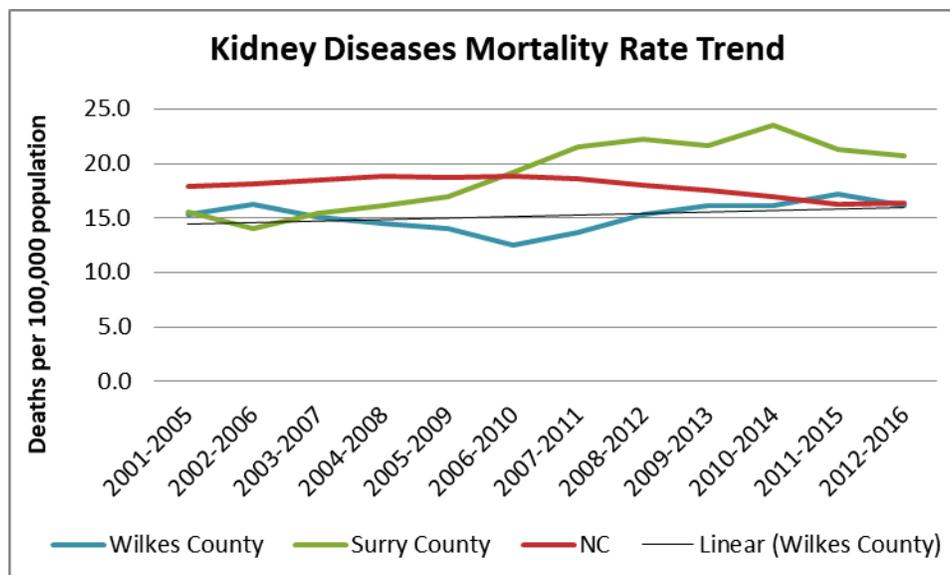
For convenience, this complex of disorders will be referred to subsequently as "kidney disease".

Kidney Disease Mortality Rate Trend

The figure below plots kidney disease mortality rates over time.

- The nephritis, nephrotic syndrome and nephrosis mortality rate in Wilkes County was lower than the comparable state rate throughout most of the period cited. In 2012-2016, the Wilkes County mortality rate was 16.1, similar to the NC rate of 16.4 and lower than the Surry County rate of 20.7.
- While the mortality rate decreased between 2002-2006 and 2006-2010 in Wilkes County, it has since risen and has shown little overall change over the entire period.

**Figure 41. Kidney Disease Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Racial Disparities in Kidney Disease Mortality

The table below presents kidney disease mortality data for the aggregate period 2012-2016, stratified by race/ethnicity. Note that due to below-threshold numbers of kidney disease deaths among minority populations at the county level, mortality rates were suppressed for those groups.

- Statewide, the kidney disease mortality rate was 2.3 times higher among African American non-Hispanics than among white non-Hispanics.

Table 133. Kidney Disease Mortality, by Race/Ethnicity (Single Five-Year Aggregate Period, 2012-2016)

Location	Deaths, Number and Rate (Deaths per 100,000 Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	76	16.2	5	n/a	0	n/a	0	n/a	0	n/a	81	16.1
Surry County	99	20.5	6	n/a	0	n/a	0	n/a	1	n/a	106	20.7
State of NC	5,841	13.4	2,941	31.0	96.0	19.6	66	10.5	102	8.2	9,046	16.4

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.

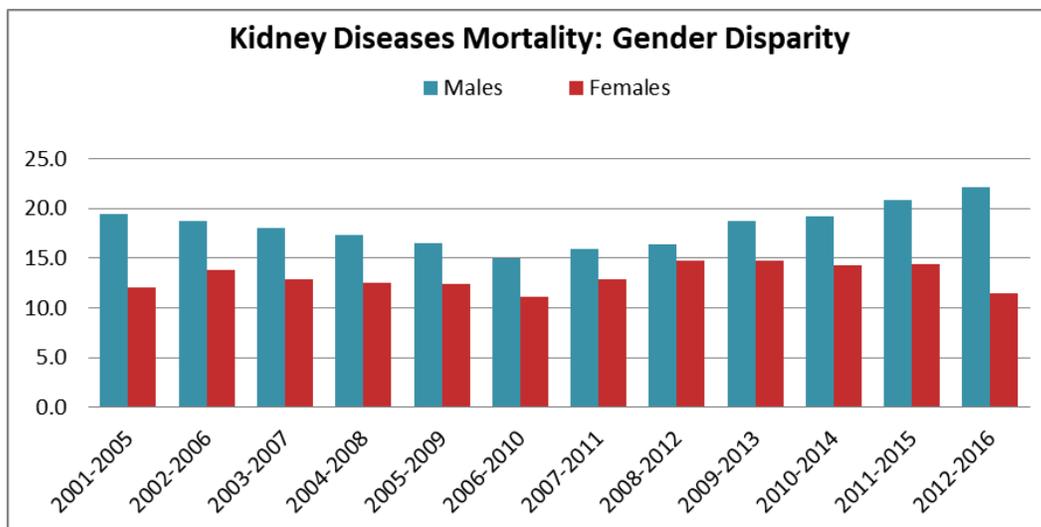
Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhs.gov/data/databook/>

Gender Disparities in Kidney Disease Mortality

The following figure depicts gender-stratified kidney disease mortality rates in Wilkes County for the aggregate periods 2001-2005 through 2012-2016.

- The kidney disease mortality rate for males in Wilkes County exceeded the comparable mortality rate for females in every period cited. Mortality rates for males in Wilkes County have increased over the past four periods, while the female rate has decreased.

Figure 42. Kidney Disease Mortality Rate Trend, by Gender, Wilkes County (Five-Year Aggregate Periods, 2001-2005 through 2012-2016)



Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (years as noted), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; <https://schs.dph.ncdhs.gov/data/databook/>

Kidney Disease Morbidity

Hospital Data

For kidney disease, the associated ICD-9 codes (applicable in 2015) are 580-589; the associated ICD-10 codes (applicable to part of 2015 and all of 2016 and 2017) are N00-N07, N17-N19, N25-N27. Note that these are the same codes associated with causes of mortality cited on death certificates and in NCSCHS mortality rates, so proportions of mortality and morbidity in Wilkes County are comparable.

- Overall, ICD codes for kidney disease were associated with 0.07% of all ED discharges, and 2.8% of all IP discharges in the period 2015-2017.

**Table 134. Hospital Discharges Associated with a Diagnosis of Kidney Disease
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Diagnosis-Specific	19	13	23	55	125	124	75	324
Total All Discharges	27,025	28,146	21,268	76,439	4,397	4,391	2,988	11,776
Diagnosis as % of Total Discharges	0.07	0.05	0.1	0.07	2.8	2.8	2.5	2.8

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Because the difference in kidney disease mortality rates for males and females in Wilkes County appears to be changing in character, it may be illustrative to examine hospital discharges stratified by gender. The table below re-examines the data from the table immediately above, this time stratified by sex.

- Over the period cited, there were too few ED discharges to stratify further.
- In the same period the number and proportion of IP discharges associated with a diagnosis of kidney disease among females were 27% higher than the comparable figures among males.

**Table 135. Hospital Discharges Associated with a Diagnosis of Kidney Disease, by
Gender
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Total Diagnosis-Specific	19	13	23	55	125	124	75	324
Male	n/a	n/a	n/a	n/a	63	54	26	143
Male % Diagnosis-Specific	n/a	n/a	n/a	n/a	50.4	43.5	34.7	44.1
Female	n/a	n/a	n/a	n/a	62	70	49	181
Female % Diagnosis-Specific	n/a	n/a	n/a	n/a	49.6	56.5	65.3	55.9

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Septicemia

Septicemia, or sepsis, is the clinical name for blood poisoning by bacteria. It is the body's most extreme response to an infection. Sepsis that progresses to septic shock has a death rate as high as 50%, depending on the type of organism involved. Sepsis is a medical emergency and needs urgent medical treatment. Without treatment, sepsis can quickly lead to tissue damage, organ failure, and death (58).

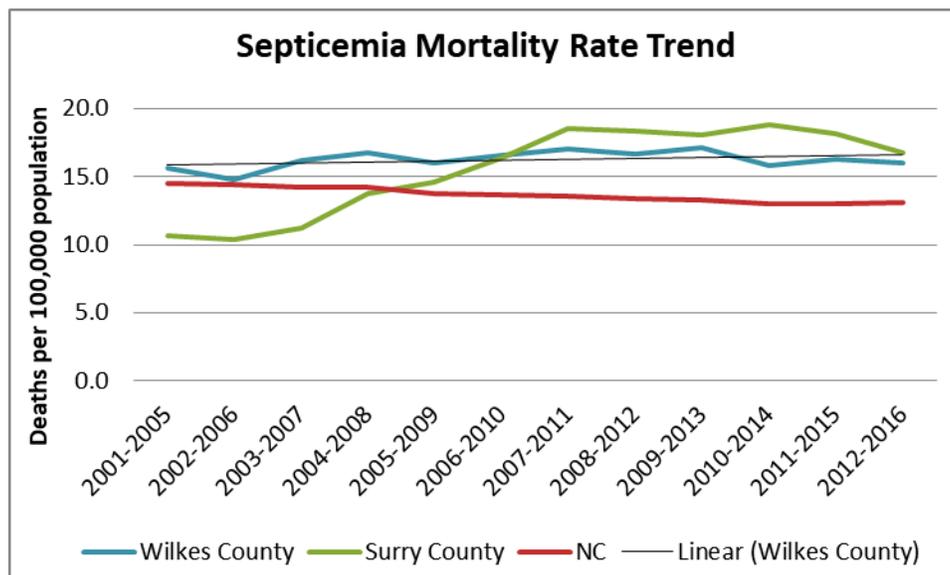
Septicemia was the eleventh leading cause of death in Wilkes County and NC in the 2012-2016 aggregate period (cited previously).

Septicemia Mortality Rate Trend

The following figure plots septicemia mortality rates over time.

- The septicemia mortality rate in Wilkes County exceeded the comparable NC rate throughout the period cited, but the Surry County rate was the highest among the comparators in the six most recent aggregate periods.
- The septicemia mortality rate in Wilkes County changed little over the period shown: the 2001-2005 rate was 15.6 and the 2012-2016 rate was 16.0.

**Figure 43. Septicemia Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>.

Racial Disparities in Septicemia Mortality

The next table presents septicemia mortality data for the aggregate period 2012-2016, stratified by race/ethnicity. Note that due to below-threshold numbers of septicemia deaths among minority populations in the counties, mortality rates were suppressed for those groups.

- Statewide, the septicemia mortality rate was highest among African American non-Hispanic persons, followed by American Indian non-Hispanic persons.

Table 136. Septicemia Mortality, by Race/Ethnicity (Single Five-Year Aggregate Period, 2012-2016)

Location	Deaths, Number and Rate (Deaths per 100,000 Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	76	16.8	2	n/a	0	n/a	0	n/a	0	n/a	78	16.0
Surry County	80	17.3	4	n/a	0	n/a	0	n/a	0	n/a	84	16.8
State of NC	5,295	12.3	1,799	18.6	60.0	12.4	43	6.2	69	5.1	7,266	13.1

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.

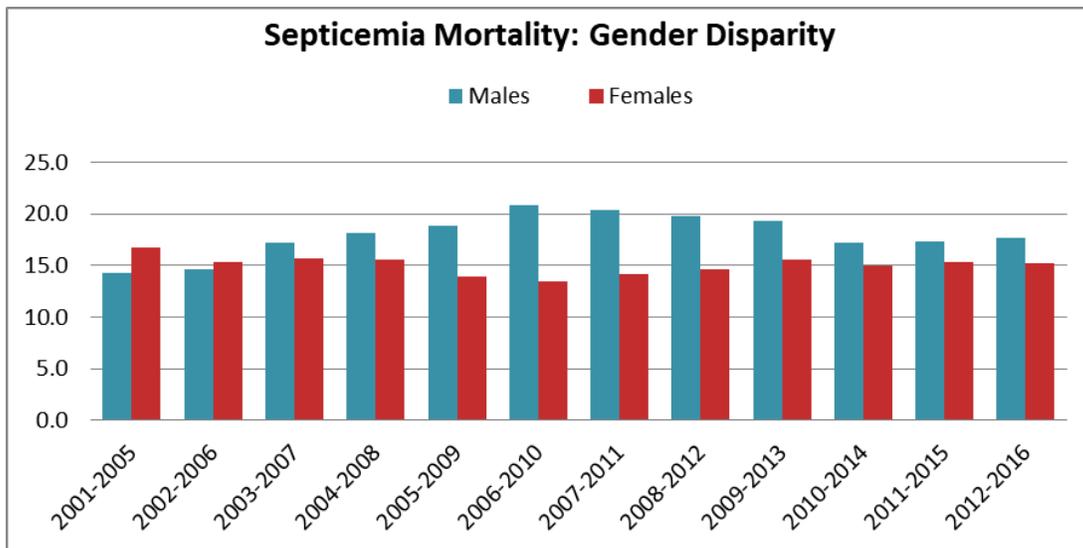
Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Gender Disparities in Septicemia Mortality

The figure below depicts gender-stratified septicemia mortality rates in Wilkes County for the aggregate periods 2001-2005 through 2012-2016.

- The septicemia mortality rate among Wilkes County males has been higher than the comparable rate among county females since 2003-2007.
- The gender disparity for septicemia mortality in Wilkes County appears to be shrinking, as the rate for males decreased and the rate for females increased.

Figure 44. Septicemia Mortality Rates, by Gender, Wilkes County (Five-Year Aggregate Periods, 2001-2005 through 2012-2016)



Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (years as noted), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Septicemia Morbidity

Hospital Data

For septicemia, the associated ICD-9 code (applicable in 2015) is 038; the associated ICD-10 codes (applicable to part of 2015 and both 2016 and 2017) are A40-A41. Note that these are the same codes associated with causes of mortality cited on death certificates and in NCSCHS mortality rates, so proportions of mortality and morbidity in Wilkes County are comparable.

- Overall, ICD codes for septicemia were associated with 0.2% of all ED discharges, and, significantly, 11.0% of all IP discharges in the period 2015-2017, making septicemia an important reason for hospitalization at Wilkes Medical Center.

**Table 137. Hospital Discharges Associated with a Diagnosis of Septicemia
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Diagnosis-Specific	42	51	57	150	365	486	440	1,291
Total All Discharges	27,025	28,146	21,268	76,439	4,397	4,391	2,988	11,776
Diagnosis as % of Total Discharges	0.2	0.2	0.3	0.2	8.3	11.1	14.7	11.0

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Because there is an on-going difference in septicemia mortality rates for males and females in Wilkes County, it may be illustrative to examine hospital discharges stratified by gender. The table below re-examines the data from the table immediately above, this time stratified by sex.

- Over the period cited, the proportion of ED discharges associated with a diagnosis of septicemia were higher among males than among females.
- In the same period the number and proportion of IP discharges associated with a diagnosis of septicemia among females were higher than the comparable figures among males.

**Table 138. Hospital Discharges Associated with a Diagnosis of Septicemia, by Gender
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Total Diagnosis-Specific	42	51	57	150	365	486	440	1,291
Male	21	28	31	80	178	217	189	584
Male % Diagnosis-Specific	50.0	54.9	54.4	53.3	48.8	44.7	43.0	45.2
Female	21	23	26	70	187	269	251	707
Female % Diagnosis-Specific	50.0	45.1	45.6	46.7	51.2	55.3	57.0	54.8

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Suicide

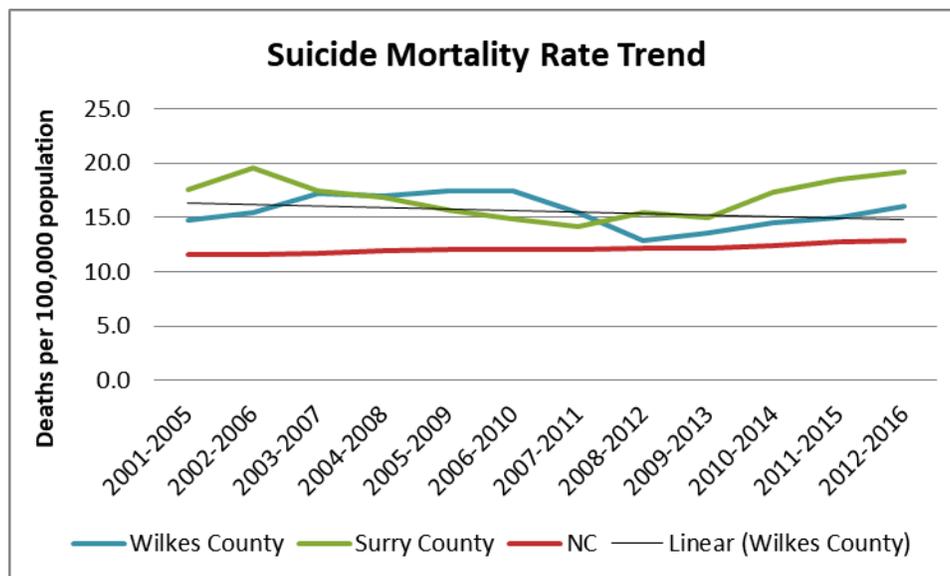
Suicide was the eleventh leading cause of death in Wilkes County (tied with septicemia) and the 12th NC in the period 2012-2016 (cited previously).

Suicide Mortality Rate Trend

The table and its companion figure below display suicide mortality rate trend data.

- The suicide mortality rate in Wilkes County exceeded the comparable NC rate in every period cited.
- The suicide mortality rate in Wilkes County rose overall by 8% over the period cited; the state rate rose 11% over the same period. Note that the regression line for the county displays a negative rate trend, because the primary increase is a recent phenomenon.

**Figure 45. Suicide Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Racial Disparities in Suicide Mortality

The following table presents suicide mortality data for the aggregate period 2009-2013, stratified by race/ethnicity.

- Note that due to below-threshold numbers of suicide deaths among minority populations at the county level, mortality rates were suppressed for those groups.
- Statewide, the suicide mortality rate was highest among white non-Hispanics, followed American Indian non-Hispanics.

**Table 139. Suicide Mortality, by Race/Ethnicity
(Single Five-Year Aggregate Period, 2012-2016)**

Location	Deaths, Number and Rate (Deaths per 100,000 Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	58	16.6	2	n/a	0	n/a	0	n/a	2	n/a	62	16.0
Surry County	71	22.0	0	n/a	0	n/a	1	n/a	0	n/a	72	19.2
State of NC	5,799	16.6	544	5.0	67.0	11.5	111	8.2	158	4.2	6,679	12.9

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.

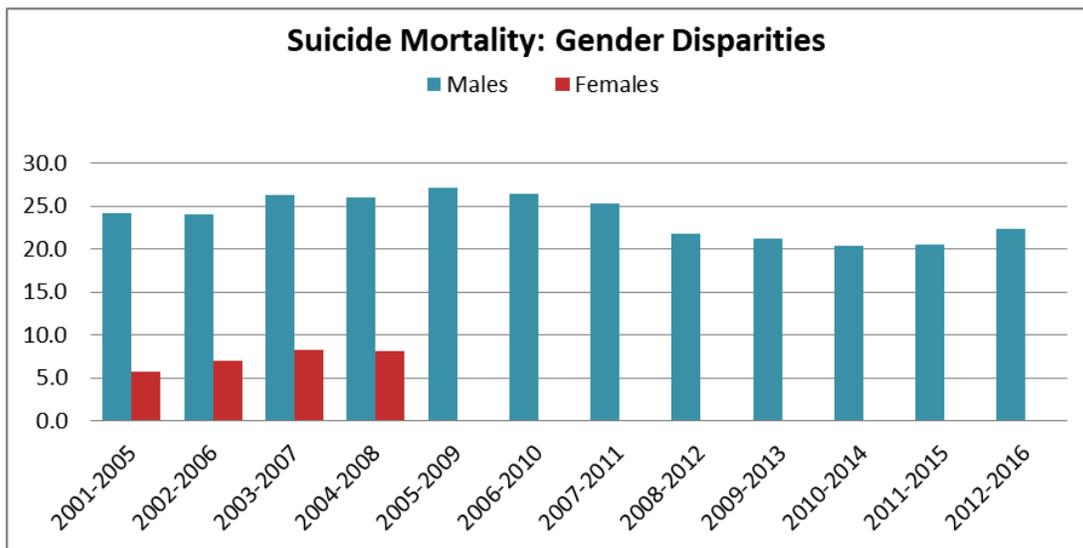
Source: NC State Center for Health Statistics, County Health Data Book (2018), Mortality, 2012-2016 Race/Ethnicity-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Gender Disparities in Suicide Mortality

The next figure depicts gender-stratified suicide mortality rates in Wilkes County for the aggregate periods 2001-2005 through 2012-2016.

- The suicide mortality rate for males in Wilkes County historically has been up to four times the comparable rate for females. Note that rates for females were suppressed in the last eight aggregate periods.

**Figure 46. Suicide Mortality Rates, by Gender, Wilkes County
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (years as noted), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; <https://schs.dph.ncdhhs.gov/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).

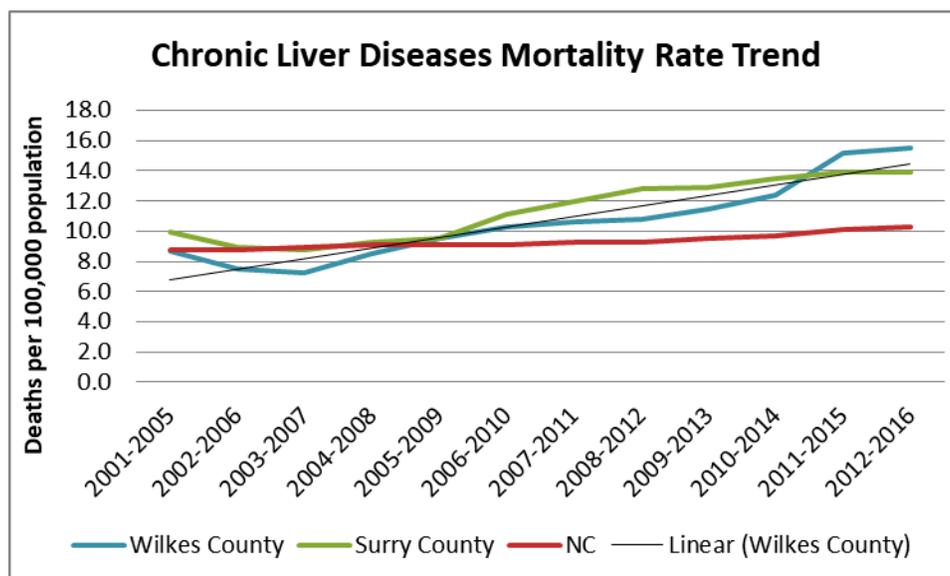
Chronic liver disease and cirrhosis was the thirteenth leading cause of death in Wilkes County, Surry County and NC in 2012-2016 (cited previously).

Chronic Liver Disease and Cirrhosis Mortality Rate Trend

The figure below plots chronic liver disease and cirrhosis mortality rates over time.

- The liver disease mortality rate in Wilkes County was lower than the comparable NC rate from 2001-2005 through 2004-2008 and higher than the state rate thereafter.
- The chronic liver disease and cirrhosis mortality rate in Wilkes County increased overall by 78% over the period cited. The Surry County rate increased 40% and the NC rate increased 17% over the same period.

Figure 47. Chronic Liver Disease and Cirrhosis Mortality Rate Trend (Five-Year Aggregate Periods, 2001-2005 through 2012-2016)



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Racial Disparities in Chronic Liver Disease and Cirrhosis Mortality

The next table presents chronic liver disease and cirrhosis mortality data for the aggregate period 2012-2016, stratified by race/ethnicity. Note that due to below-threshold numbers of chronic liver disease and cirrhosis deaths among minority populations at the county level, mortality rates were suppressed for those groups.

- Statewide the liver disease mortality rate was highest among American Indian non-Hispanics, followed by white non-Hispanics.

Table 140. Chronic Liver Disease and Cirrhosis Mortality, by Race/Ethnicity (Single Five-Year Aggregate Period, 2012-2016)

Location	Deaths, Number and Rate (Deaths per 100,000 Population)											
	White, Non-Hispanic		African American, Non-Hispanic		American Indian, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Wilkes County	64	15.6	1	n/a	0	n/a	1	n/a	2	n/a	68	15.5
Surry County	67	15	0	n/a	0	n/a	0	n/a	1	n/a	68	13.9
State of NC	4,813	11.4	859	7.4	89.0	14.8	38	3.5	131	6.3	5,930	10.3

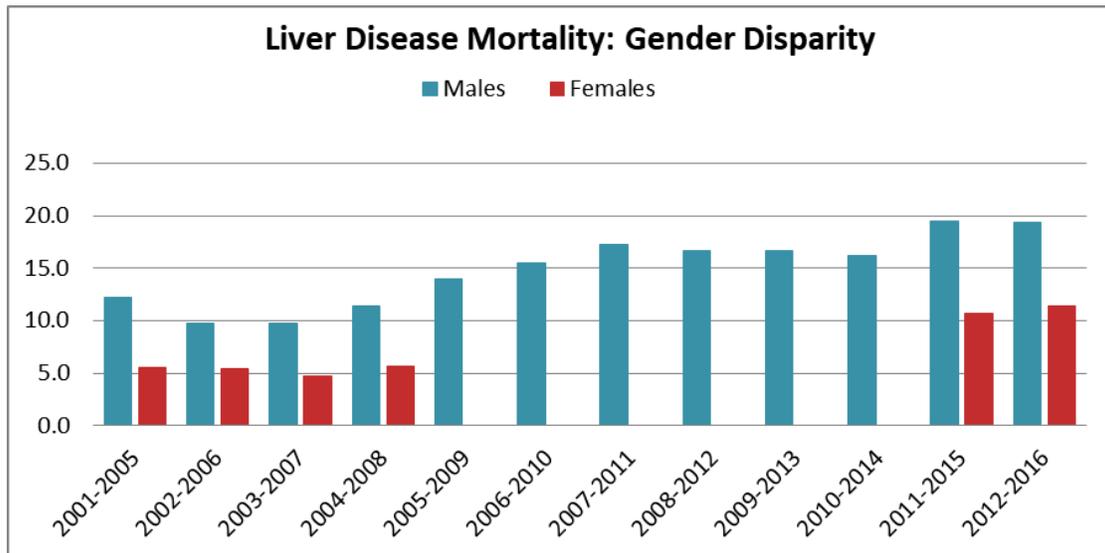
Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases. Source: NC State Center for Health Statistics, County Health Data Book (2015), Mortality, 2009-2013 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; <http://www.schs.state.nc.us/SCHS/data/databook/>.

Gender Disparities in Chronic Liver Disease and Cirrhosis Mortality

The figure below depicts gender-stratified chronic liver disease and cirrhosis mortality rates in Wilkes County for the aggregate periods 2001-2005 through 2012-2016.

- The liver disease mortality rate for males in Wilkes County historically has been significantly higher than the rate for females.
- While the number of female deaths attributed to liver disease fell below the suppression threshold for six periods, since 2011-2015 the numbers have risen above the threshold and the rates increased in the most recent two periods.

Figure 48. Chronic Liver Disease and Cirrhosis Mortality Rates, by Gender, Wilkes County (Five-Year Aggregate Periods, 2001-2005 through 2012-2016)



Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (years as noted), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; <https://schs.dph.ncdhs.gov/data/databook/>

Homicide

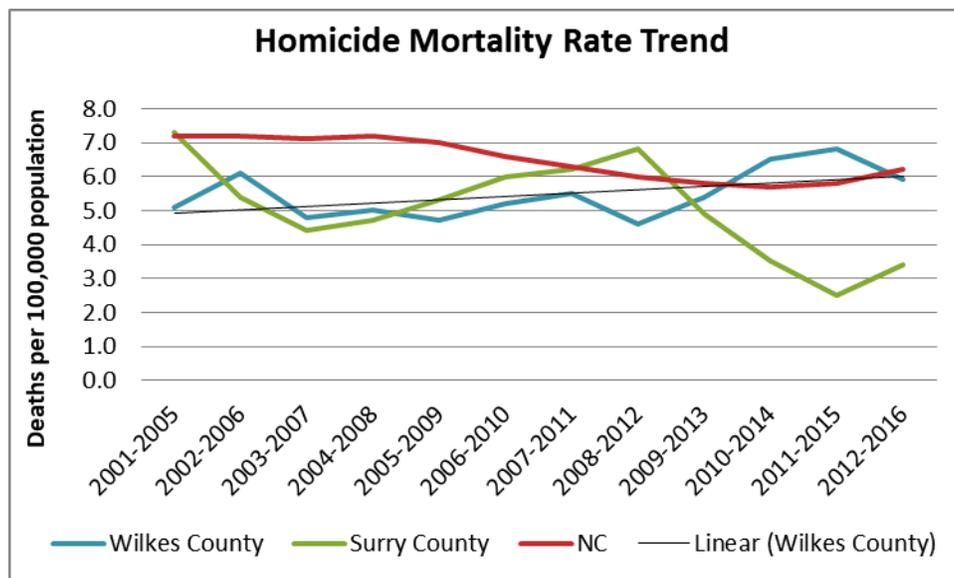
Homicide was the fourteenth leading cause of death in Wilkes County, Surry County and NC in the 2009-2013 aggregate period (cited previously).

Homicide Mortality Rate Trend

The following figure displays homicide mortality rates over time.

- The homicide mortality rate in Wilkes County was lower than the comparable NC rate in all period except 2010-2014 and 2011-2015.
- The homicide mortality rate in Wilkes County was 6% higher in 2012-2016 than in 2001-2005. Note that some Wilkes County rates were unstable.

**Figure 49. Homicide Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, County Health Data Books (years as noted), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; <https://schs.dph.ncdhhs.gov/data/databook/>

Gender and Racial Disparities in Homicide Mortality Rates

All race- and gender-stratified homicide mortality rates in Wilkes and Surry counties in the aggregate period 2012-2016 were unstable and thus suppressed by NCSCHS, so they are not discussed here.

Acquired Immune Deficiency Syndrome (AIDS)

The terms HIV and AIDS can be confusing, because they're related but different. HIV is a virus that harms the immune system by invading and then destroying infection-fighting white blood cells. AIDS is the final stage of an untreated HIV infection. People with AIDS can have a range of symptoms, because their weakened immune systems put them at risk for life-threatening infections and cancers.

The HIV virus passes from one person to another through certain body fluids, such as blood and semen. About 90% of new HIV infections in the U.S. occur during sex. Shared needles and injection drug use is the second most common route of infection. HIV can also spread from an infected mother to her newborn. HIV isn't spread through casual contact, such as shaking hands, hugging, sneezing, sharing utensils, or using bathrooms.

Today, by taking a combination of HIV-fighting medicines (called antiretroviral therapy), fewer Americans with HIV are developing AIDS. And some HIV infections can now be prevented by taking daily medications (called *PrEP*) (60).

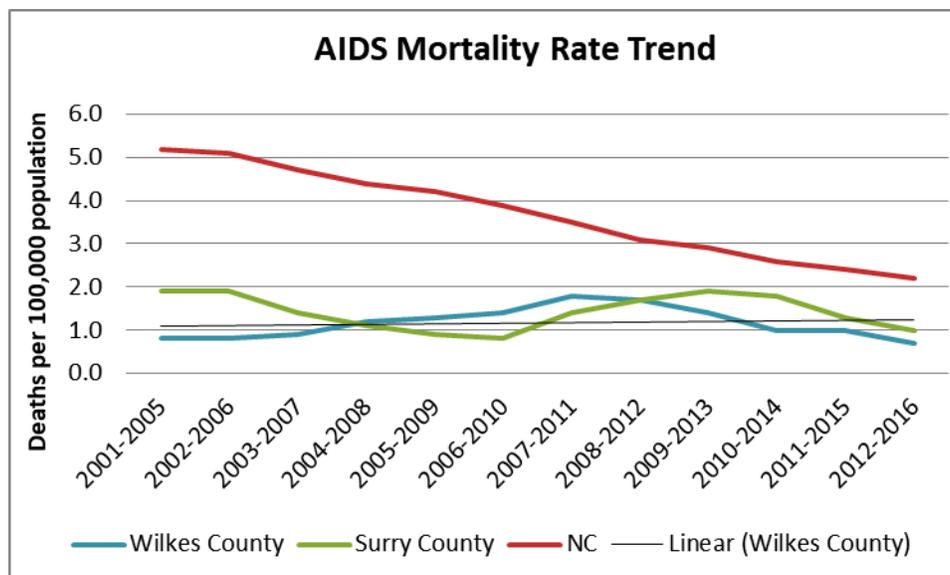
AIDS was the fifteenth leading cause of death in Wilkes County, Surry County, and NC in the 2012-2016 (cited previously).

AIDS Mortality Rate Trend

The figure below plots AIDS mortality rates over time.

- All of the Wilkes County and Surry County AIDS mortality rates for the entire period cited were unstable. All county rates were lower than the comparable state rate.
- The AIDS mortality rate for NC decreased 58% (from 5.2 to 2.2) over the period cited.

**Figure 50. AIDS Mortality Rate Trend
(Five-Year Aggregate Periods, 2001-2005 through 2012-2016)**



Source: NC State Center for Health Statistics, Statistics and Reports, Vital Statistics, NC Vital Statistics Volume II: Leading Causes of Death [years as noted]; <https://schs.dph.ncdhhs.gov/data/vital.cfm>

Gender and Racial Disparities in AIDS Mortality Rates

All race- and gender-stratified homicide mortality rates in Wilkes and Surry counties in the aggregate period 2012-2016 were unstable and thus suppressed by NCSCHS, so they are not discussed here.

Comparison of Deaths and Hospital Discharges for Leading Causes of Death

The table below compares the number of deaths in Wilkes County for the fifteen leading causes of death in the 2012-2016 aggregate period with the number of emergency room (ED) and inpatient (IP) discharges from Wake Forest Baptist Health Wilkes Medical Center in 2015-2017 coded for the same conditions. This data comparison is included to help describe the non-fatal burden of disease in Wilkes County.

- Note that the conditions are listed in rank order by *mortality rate*, not number of deaths.
- While cancer and heart disease were associated with the greatest number of deaths in the county (872 and 826, respectively), CLRD was associated with the largest total number of hospital discharges (2,044), followed by pneumonia/influenza (1,781).
- Although septicemia accounted for 78 deaths, hospital discharges associated with this diagnosis totaled 1,441.

Table 141. Comparison of Number of Deaths and Hospital Discharges for Conditions Coded for Leading Causes of Death

Wilkes County Rank by Descending Overall Age-Adjusted Rate (2012-2016)	Wilkes Co. No. of Deaths 2012-2016	Hospital ED Discharges 2015-2017 (Total=76,469)	Hospital IP Discharges 2015-2017 (Total=11,776)
1. Total Cancer	872	36	104
2. Diseases of the Heart	826	860	710
3. Chronic Lower Respiratory Disease	293	1,552	492
4. All Other Unintentional Injury	191	n/a	n/a
5. Cerebrovascular Disease	178	141	207
6. Pneumonia and Influenza	158	1,280	501
7. Alzheimer's Disease	158	4	12
8. Diabetes Mellitus	120	445	221
9. Unintentional Motor Vehicle Injury	73	n/a	n/a
10. Nephritis, Nephrotic Syndrome and Nephritis	81	55	324
11. Septicemia	78	150	1,291
11. Suicide	62	n/a	n/a
13. Chronic Liver Disease and Cirrhosis	68	26	58
14. Homicide	20	n/a	n/a
15. AIDS	2	0	0

Source: Based on proprietary data provided to Sheila S. Pfaender, Public Health Consultant, by Wake Forest Baptist Health Wilkes Medical Center. Note that FY2017 represents partial data (10 months).

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. In this report, communicable diseases (including sexually-transmitted infections), asthma, obesity, oral health, and mental health conditions are the topics covered under morbidity.

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.

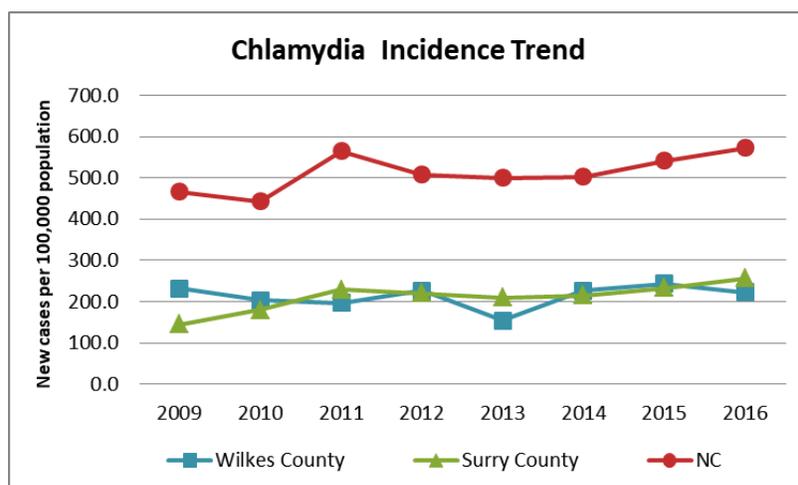
Chlamydia

Chlamydia is the most frequently reported bacterial STI in the US. 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 (61).

The next figure plots incidence rates for chlamydia infections over time.

- There is considerable variability in the annual incidence rates for chlamydia at the county level, which is not uncommon for an infectious disease.
- The chlamydia incidence rate in Wilkes County was below the comparable NC rate in every year cited. Incidence in all three jurisdictions may be increasing.

Figure 51. Chlamydia Infection Incidence Rate Trend (2009-2016)



Source: NC DHHS, Division of Public Health, Epidemiology Section, Communicable Disease Branch. Facts and Figures, Annual Reports. North Carolina 2016 HIV/STD Surveillance Report, Table 12; <https://epi.publichealth.nc.gov/cd/stds/annualrpts.html>.

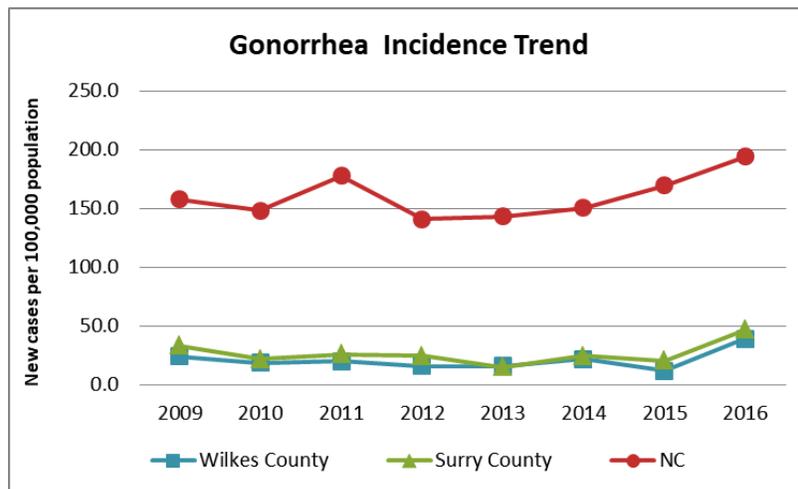
Gonorrhea

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 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 (62).

The figure below plots incidence rates for gonorrhea infections over time.

- County-level rates were quite variable, due likely to the small and varying numbers of cases each year.
- The Wilkes County gonorrhea incidence rate was much lower than the comparable NC rate in every year cited. Gonorrhea incidence may be increasing in all three jurisdictions.

Figure 52. Gonorrhea Infection Incidence Rate Trend (2009-2016)



Source: NC DHHS, Division of Public Health, Epidemiology Section, Communicable Disease Branch. Facts and Figures, Annual Reports. North Carolina 2016 HIV/STD Surveillance Report, Table 11; <https://epi.publichealth.nc.gov/cd/stds/annualrpts.html>.

Human Immune Deficiency Virus (HIV)

From the standpoint of traditional incidence rates, the numbers of new HIV cases in smaller counties like Wilkes tend to be low and yield extremely variable or suppressible rates. (For example, according to the source cited below, there was a total of 15 new HIV cases in Wilkes County in the five-year period from 2012-2016.) Instead of using rates, the following table approximates a *prevalence* estimate for each jurisdiction based on how many persons are living with HIV on a particular date.

- As of December 31, 2016 there were 56 persons living with HIV/AIDS in Wilkes County.

**Table 142. HIV Prevalence: HIV and AIDS Cases Living as of December 31, 2016
(By County of Residence)**

Location	Number of Living Cases
Wilkes County	56
Surry County	89
State of NC	34,187

Source: Source: NC DHHS, Division of Public Health, Epidemiology Section, Communicable Disease Branch. Facts and Figures, Annual Reports. North Carolina 2016 HIV/STD Surveillance Report, Table 1; <https://epi.publichealth.nc.gov/cd/stds/annualrpts.html>

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 (63).

The table below presents hospital discharge data for asthma, stratified by age, for the period of calendar years 2010-2014. (At the present time this is the best measure of asthma prevalence available from NCSCHS.)

Note: A new diagnostic coding system (ICD-10CM) was implemented in October of 2015. The new coding system is not comparable to the ICD-9CM coding criteria used previously. Therefore, reporting of Calendar Year 2015 discharge data will not be available because it crosses over two different diagnostic coding methods. The latest available hospital discharge summary reports for 2014 can be found in the 2015 County Data book. Calendar Year 2016 hospital discharge summary reports will be published as soon as standardized ICD-10CM reporting categories are established.

- Wilkes County asthma discharges among all ages decreased in each year presented below. All youth rates are unstable.
- At the state level, the discharge rate for youth (age 0-14) was from 51% to 63% higher than the discharge rate for all ages.

Table 143. NC Hospital Discharges with a Primary Diagnosis of Asthma (2010-2014)

Location	Discharges, Number and Rate (Discharges per 100,000 Population)																			
	2010				2011				2012				2013				2014			
	All Ages		Age 0-14		All Ages		Age 0-14		All Ages		Age 0-14		All Ages		Age 0-14		All Ages		Age 0-16	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Wilkes County	87	125.5	7	54.6	68	98.6	4	32.1	57	82.2	8	65.0	53	76.8	8	66.1	38	55.2	6	50.6
Surry County	59	80.1	9	63.9	69	93.6	15	107.2	77	104.7	17	123.4	66	90.3	11	82.2	48	65.8	9	68.8
State of NC	10,470	109.8	3,152	166.0	9,880	102.3	3,004	157.3	9,786	100.3	3,128	163.7	9,021	91.6	2,841	148.9	9,035	90.9	2,754	144.6

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 (2010-2014), 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>.

While not as useful as rates--but more current than the data in the table above--are WMC ED and IP discharge counts for 2015-2017 relative to a diagnosis of asthma.

For asthma, the associated ICD-9 code (applicable in 2015) is 493; the associated ICD-10 code (applicable to part of 2015 and all of 2016 and 2017) is J45. There were very few hospitalizations for asthma in the period cited, so those data are not presented here.

The table below presents the numbers of ED discharges from WMH in 2015-2017 that were associated with a primary diagnosis of asthma.

- For the three years cited, 1.0% of all ED discharges and 0.6% of all IP discharges were associated with diagnoses of asthma.

Table 144. Hospital Discharges Associated with a Diagnosis of Asthma Wilkes Medical Center, 2015-2017

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Diagnosis-Specific	354	224	150	728	38	19	11	68
Total All Discharges	27,025	28,146	21,268	76,439	4,397	4,391	2,988	11,776
Diagnosis as % of Total Discharges	1.3	0.8	0.7	1.0	0.9	0.4	0.4	0.6

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

The next table presents asthma-related ED discharges from WMC in 2015-2017 stratified by age group.

- Patients under the age of 15 composed 19% of all ED and IP discharges associated with a primary diagnosis of asthma in the period cited.

**Table 145. Hospital Discharges Associated with a Diagnosis of Asthma, by Age Group
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Total Diagnosis-Specific	354	224	150	728	38	19	11	68
Age 0-14	67	47	26	140	5	4	4	13
Age 0-14 % Diagnosis-Specific	18.9	21.0	17.3	19.2	13.2	21.1	36.4	19.1
Age 15 and Older	287	177	124	588	33	15	7	55
Age 15 and Over % Diagnosis-Specific	81.1	79.0	82.7	80.8	86.8	78.9	63.6	80.9

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Obesity

Obesity in Adults

The following table presents somewhat outdated estimates of the prevalence of diagnosed obesity in adults age 18 and older.

- Among the comparators, Surry County had the highest prevalence of diagnosed obesity in adults from 2009 through 2013. The six-year average prevalence of adult obesity in Wilkes County was 28.5%; the comparable six-year average in Surry County was 30.5%.
- In Wilkes County the estimated prevalence of diagnosed obesity in adults was 8% lower in 2013 (26.5%) than in 2006 (28.7%). Over the same period prevalence in Surry County increased overall by 9%.

**Table 146. Adult Diagnosed Obesity Prevalence Estimate Trend
(Single Years, 2008 through 2013)**

Location	Estimated Prevalence, Number and Percent (Age-adjusted, Age 18 or Older)											
	2008		2009		2010		2011		2012		2013	
	#	%	#	%	#	%	#	%	#	%	#	%
Wilkes County	14,410	28.7	14,970	30.2	15,305	29.5	15,430	29.8	13,820	26.1	14,097	26.5
Surry County	15,250	28.5	16,802	31.9	16,782	31.0	17,202	31.5	15,911	28.9	17,019	31.0
State of NC	n/a	n/a	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 Statistics. County Data. Select indicator and year in mapping tool. <https://www.cdc.gov/diabetes/data/county.html>.

According to results from the 2018 Wilkes County Community Health Survey (described fully subsequently) approximately 36% of 493 respondents reported that they had been diagnosed by a doctor, nurse or other health professional as either overweight or obese; this compares to a response of 45% to a similar question on the 2015 Wilkes County Community Health Survey.

Among lifestyle factors contributing to overweight/obesity prevalence, poor eating habits, and a sedentary lifestyle are among the most important. When asked to select from a list the

unhealthy behaviors they felt had the greatest impact on the health of the community, 45% of 2018’s survey respondents selected “Unhealthy lifestyle” (poor eating habits, lack of exercise).

Additionally, the 2018 Wilkes County Community Health Survey asked respondents to self-report their height and weight so that a BMI could be calculated. Using the standard CDC formula, the average BMI of the 2018 survey respondents was 30.1. Approximately 25% of respondents fell in the normal/healthy weight range (18.5 to 24.9), 32% were categorized as overweight (25.0 to 29.9), and 43% fell into the obese range (30.0 and above).

Obesity in Children and Youth

The Eat Smart Move More Initiative, via the NC Pediatric Nutrition Surveillance System (NCPedNSS), collects height and weight measurements from children seen in NCDPH-sponsored WIC and Child Health Clinics, as well as some school-based Health Centers (64). (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:

$$\text{BMI} = (\text{weight in kilograms}) / (\text{height in meters})$$

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”).

The table below presents NC PedNESS data for children ages 2-4, 5-11, and 2-18 for 2015.

- In Wilkes County, 32.2% of 2-4-year-olds in the program in 2015 were rated overweight or obese; 34.3% of 5-11-year-olds were rated overweight or obese, although the percentage was based on small numbers of program participants. Overall, 33.7% of 2-18-year-olds in the program in 2015 were deemed overweight or obese.

Table 147. Prevalence of Obesity and Overweight in Children, NC-PedNSS (2015)

County	Children Age 2-4										
	Underweight		Healthy Weight		Overweight			Obese			Total
	<5th Percentile		≥5th to <85th Percentile		≥85th to <95th Percentile		Rank Order	≥95th Percentile		Rank Order	
	#	%	#	%	#	%		#	%		#
Wilkes County	49	5.6	583	62.6	164	17.6	92	136	14.6	54	932
Surry County	83	7.3	703	61.8	190	16.7	81	162	14.2	43	1,138
State Total	6,019	4.5	88,058	66.5	19,831	15.0	n/a	18,570	14.0	n/a	132,478

County	Children Age 5-11								
	Underweight		Healthy Weight		Overweight		Obese		Total
	<5th Percentile		≥5th to <85th Percentile		≥85th to <95th Percentile		≥95th Percentile		
	#	%	#	%	#	%	#	%	#
Wilkes County	18	7.0	150	58.6	39	15.2	49	19.1	256
Surry County	61	11.0	369	66.7	72	13.0	51	9.2	553
State Total	1,447	10.9	8,082	60.8	1,769	13.3	1,991	15.0	13,289

County	Children Age 2-18										
	Underweight		Healthy Weight		Overweight			Obese			Total
	<5th Percentile		≥5th to <85th Percentile		≥85th to <95th Percentile		Rank Order	≥95th Percentile		Rank Order	
	#	%	#	%	#	%		#	%		#
Wilkes County	121	6.8	1,054	59.5	287	16.2	84	310	17.5	84	1,772
Surry County	247	11.5	1,349	62.6	301	14.0	30	258	12.0	11	2,155
State Total	8,917	5.7	101,996	65.1	22,884	14.6	n/a	22,953	14.6	n/a	156,750

Source for the three tables above: 2015 NC-PedNESS: Obesity in Children [age groups are noted]. Eat Smart Move More, Data on Children and Youth website: <http://www.eatsmartmovemorenc.com/Data/ChildAndYouthData.html>.

Note: Effective 2014, NC-NPASS (North Carolina Nutrition and Physical Activity Surveillance System) has been renamed to NC-PedNESS to better reflect the contents of the data for children collected from WIC and Child Health Clinics. As in the legacy surveillance system the data still consists of children ages 2 through 4 which are reflective of the population at 185% of the federal poverty level.

The children ages 2 through 4 included in the NC-PedNESS data are from the Special Supplemental Nutrition Program for Women, Infants, and Children – better known as the WIC Program and Child Health Clinics. Children are not eligible to participate in WIC once they become 5 years old. The NC-PedNESS Data also contains data on children 5 years and older from Child Health Clinics and some School based Health Centers whose BMI-Status for Age are also provided in separate tables

Note: Percentages appearing in **bold** type are based on fewer than 10 cases per weight category per year. Such rates are unstable and should be interpreted with caution.

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. Wilkes County responses are combined with those of 18 other counties in a western NC region BRFSS data summary. Consequently, it is necessary to look elsewhere to adequately describe the dental needs of adults in Wilkes County.

According to results of the 2018 Wilkes County Community Health survey, approximately 65% of respondents reported having been to the dentist or dental hygienist in the past year.

Utilization of the Hospital ED for Oral/Dental Problems

Patients often visit hospital emergency departments seeking relief for oral and dental problems if they do not have a regular dentist, cannot get a timely appointment with their own dentist, or cannot afford dental services. Anecdotally, some ED staff report drug-seeking behavior among some ED patients complaining of oral/dental discomfort. What is surprising is how often Wilkes County residents utilize the ED in lieu of a dentist. The following table summarizes discharges

from WMC ED associated with ICD codes for oral and dental problems (ICD-9: 520-529, and ICD-10: K00-K14).

- 2.5% of all ED discharges in 2015-2017 involved a diagnosis related to oral or dental problems.
- Note: There were only 16 IP discharges associated with these diagnoses in the period cited.

Table 148. ED Discharges Associated with Diagnoses of Oral and Dental Problems Wilkes Medical Center, 2015-2017

Number of Discharges	Emergency Department			
	2015	2016	2017	Total
Diagnosis-Specific	755	721	471	1,947
Total All Discharges	27,025	28,146	21,268	76,439
Diagnosis as % of Total Discharges	2.8	2.6	2.2	2.5

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Mental Health

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 (65).

The status quo of the mental health system in NC did not remain static for long, since state government recognized that even with reorganization of the service system the budget for Medicaid-funded mental health services was not adequately managed and was growing at a high rate each year. In 2004 the state Division of Medical Assistance chose to implement the 1915(b)(c) Medicaid Waiver Program as a to control and budget the costs of Medicaid-funded services. This program budgets and manages expenditures based on a capitation formula and other fiscal adjustments that take into account the historical service costs associated with different Medicaid-eligible groups. Starting in 2005 the state established one LME (Piedmont Behavioral Health) as a pilot Medicaid managed care vendor via the waiver program. Expansions of the pilot program were undertaken in 2008 and 2010, and in 2011 NCDHHS was instructed to implement the 1915(b)(c) Waiver Program statewide by July 1, 2013 (66).

The state established a series of minimum requirements for LMEs to participate in the Waiver Program, and if an LME could not meet the minimum standards it was required to merge with another LME. As a result of standards enforcement, the state's original 23 LMEs had shrunk to 10 by December 2013, at which time NCDHHS proposed to consolidate the remaining 10 into

four agencies (67). The LME/MCO serving Wilkes County is Vaya Health LME/MCO, which is headquartered in Asheville, NC.

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 some state-level services has diminished.

Mental Health Service Utilization

The following table presents an annual summary of the number of persons in each comparator jurisdiction served by LMEs/Area Programs from 2008 through 2017.

- While there is variability on a yearly basis, the number of persons in Wilkes County served by the LME increased overall by 37.9% between 2008 and 2017. The LME served an average of 2,608 persons each year.

Table 149. Persons Served by Mental Health Area Programs/Local Management Entities (2008-2017)

Location	Number of Persons Served									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Wilkes County	2,038	3,452	2,831	2,674	2,717	2,176	1,959	2,608	2,810	2,811
Surry County	4,152	3,387	3,604	3,021	2,624	2,443	2,890	3,452	3,845	4,025
State of NC	306,907	309,155	332,796	360,180	315,284	306,080	316,863	337,161	347,060	321,511

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.us/pls/linc/dyn_linc_main.show.

While respondents to the 2018 Wilkes County Community Health Survey seem to have a sense of the nuance among the various mental health-related needs of their community, it is not clear whether they understand how the LME/MCO connects to any of the resources available in the county. Three questions were asked as to where they might refer a friend or family member considering suicide, with a mental health concern, or with a substance abuse problem. Respondents seemed to understand the urgency demanded by suicidal thoughts, with 26% suggesting a crisis hotline and 12% indicating that 911 would be the primary source of help. A minister or religious official was the second most commonly identified source of help for suicide (14%). For mental health counseling, the most common source of help was a private counselor or therapist (25%), followed by Daymark (17%) and a doctor (17%). Daymark (19%) and a doctor (19%) were the most common sources of help for a substance abuse problem, followed by support groups (12%) and a private counselor or therapist (11%). Note that Vaya Health LME/MCO was not a specific choice offered in the survey questions. Approximately 5% of respondents to all three questions said they “did not know” where to refer someone. Accurate knowledge about mental health services should be important to Wilkes County citizens, since 23.5% of respondents to the 2018 Community Health Survey reported they had been diagnosed with depression

Utilization of the Hospital for Mental Health Services

According to a recent (March 20, 2017) article in the Raleigh News and Observer (68), in 2016 hospitals in major metropolitan areas across the state of NC were heavily burdened by mental health cases. In that year, WakeMed hospital in Raleigh had to stop accepting new patients because its 60-bed emergency department was filled with over 100 people with mental illness, UNC Hospital's ED was routinely overwhelmed by those seeking mental health care, and Mission Hospital in Asheville often had a quarter of its ED occupied by people needing psychiatric treatment. It is widely accepted that the emergency department is one of the most costly and ineffective means to serve those with mental health concerns; nevertheless, it may be more accessible for some patients than the system intended to care for them.

There is evidence that some Wilkes County residents who might be best served by accessing the services of the local LME/MCO utilize instead the emergency department of Wilkes Medical Center for their mental health needs.

For mental, behavioral and neurodevelopmental conditions, the associated ICD-9 codes (applicable in 2015) are 290-319; the associated ICD-10 codes (applicable to part of 2015 and all of 2016 and 2017) are F00-F99.

- Over the three-year period cited, 3.0% of all ED discharges and 1.0% of all IP discharges were associated with a diagnosis of a mental, behavioral or neurodevelopmental disorder (this includes substance use-related diagnoses).

**Table 150. Hospital Discharges Associated with a Diagnosis of Mental, Behavioral and Neurodevelopmental Disorders
Wilkes Medical Center, 2015-2017**

Number of Discharges	Emergency Department				Inpatient			
	2015	2016	2017	Total	2015	2016	2017	Total
Diagnosis-Specific	836	809	618	2,263	41	39	32	112
Total All Discharges	27,025	28,146	21,268	76,439	4,397	4,391	2,988	11,776
Diagnosis as % of Total Discharges	3.1	2.9	2.9	3.0	0.9	0.9	1.1	1.0

See text for list of associated ICD codes. Note that FY2017 represents partial data (10 months).

Since mental health reform of the early 2000s, only the most seriously ill mental health patients statewide qualify for treatment at state psychiatric hospitals (69).

At the present time, there are three state-operated psychiatric hospitals in NC: Broughton Hospital (Morganton), Central Regional Hospital (Butner), and Cherry Hospital (Goldsboro).

The following table presents a summary of the number of persons in each comparator jurisdiction served in NC State Psychiatric Hospitals for the period from 2008 through 2017.

- In Wilkes County the numbers of persons served annually in NC State Psychiatric Hospitals decreased by 88% overall over the period cited. Statewide the number of persons served fell every year cited between 2008 and 2016. In 2017 the total number served statewide was 79% lower than in 2008.

**Table 151. Persons Served in NC State Psychiatric Hospitals
(2008-2017)**

Location	Number of Persons Served									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Wilkes County	77	116	60	26	2	1	10	18	19	9
Surry County	105	71	54	22	2	1	14	15	9	11
State of NC	14,643	9,643	7,188	5,754	4,572	3,964	3,529	3,276	3,039	3,083

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 516); http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show

Developmental Disabilities Service Utilization

According to NC MH/DD/SAS (70), developmental disability:

- Is chronic
- Begins at birth or during childhood
- Adversely affects an individual's daily living and functioning

Developmental disabilities can be caused by a mental impairment, a physical impairment or combination of both mental and physical. This can result in limited functions, including:

- Caring for oneself
- Difficulties with communication
- Difficulties with learning
- Difficulties with mobility or moving around
- Difficulties making decisions for oneself
- Difficulties living independently
- Being financially self-sufficient

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).

The table below presents a summary of the persons in each comparator jurisdiction served in NC State Developmental Centers for the period from 2008 through 2016.

- The numbers of persons in Wilkes County served in NC State Developmental Centers were small and remained almost the same over the nine-year period cited.
- At the state level, the number of developmentally disabled persons served in state facilities decreased by 18% overall between 2008 and 2016.

Table 152. Persons Served in NC State Developmental Centers (2008-2016)

Location	Number of Persons Served								
	2008	2009	2010	2011	2012	2013	2014	2015	2016
Wilkes County	13	15	14	14	14	15	14	13	13
Surry County	16	18	17	16	13	14	14	14	13
State of NC	1,409	1,404	1,375	1,355	1,340	1,331	1,282	1,245	1,160

Log Into North Carolina (LINC) Database, Topic Group Vital Statistics and Health (Data Item 517);
http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show

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).

The following table presents a summary of the persons in each comparator jurisdiction served in NC State ADATC for the period from 2008 through 2016.

- The numbers of persons in Wilkes County served in NC State ADATCs fluctuated over the period cited. An average of 35 people were served each year.
- The number of persons statewide served in NC ADATCs has been declining steadily and gradually since about 2011.

Table 153. Persons Served in NC Alcohol and Drug Abuse Treatment Centers (2008-2017)

Location	Number of Persons Served								
	2008	2009	2010	2011	2012	2013	2014	2015	2016
Wilkes County	48	20	29	36	39	40	37	35	31
Surry County	6	14	15	13	3	16	5	15	8
State of NC	4,284	4,812	4,483	4,590	4,265	4,343	4,049	3,698	3,505

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.

Source: Log Into North Carolina (LINC) Database, Topic Group Vital Statistics and Health (Data Item 518);
http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show

Evidence of Opioid Use in Wilkes County

NC Opioid Action Plan Dashboard Metrics (as of 9/12/2018)

The data dashboard developed by the NC Department of Health and Human Services helps track and monitor the 13 data metrics in the NC Opioid Action Plan. The metrics are updated quarterly in the dashboard and the most recent quarter and year-to-date provisional data are displayed in a metric summary table. The dashboard also displays trends over time in graphs of each metric for the state and all 100 counties (71).

The tables below describe NC Opioid Dashboard data for Wilkes County for 2017.

- There were 13 unintentional deaths in Wilkes County in 2017 related to use of opioids.
- In the same year there were 70 ED visits that received a diagnosis as opioid overdose.

Table 154. Number of Opioid Deaths and ED Visits for Opioid Overdose (2017)

Reduce Death/ED Outcomes	Unintentional Opioid Related Deaths					ED visits that received an opioid overdose diagnosis*				
	1st Q 2017	2nd Q 2017	3rd Q 2017	4th Q 2017	YTD total 2017	1st Q 2017	2nd Q 2017	3rd Q 2017	4th Q 2017	YTD total 2017
Wilkes County	6	1	3	3	13	16	15	21	18	70
Surry County	7	0	6	1	14	22	8	22	16	68
North Carolina	452	470	520	442	1,683	1,597	1,924	2,205	1,727	7,453

* The Metric Summary display suppresses ED Dx fewer than 10. While the actual numbers have been provided, caution is urged. This metric tracks the number of opioid overdose visits to Emergency Departments (EDs) in North Carolina. These are visits of all intents: unintentional, intentional, and visits of unknown intent.

The metric "unintentional opioid related deaths" tracks the number of unintentional opioid-related overdose deaths occurring to residents of the named jurisdictions and includes deaths involving all types of opioids: commonly prescribed opioids, heroin, and synthetic narcotics like fentanyl and fentanyl-analogues.

Source: *Metric Summary Table* [by county and state]. NC Opioid Action Plan Dashboard website.

<https://injuryfreenc.shinyapps.io/OpioidActionPlan/>

- In 2017, approximately 21% of opioid deaths in Wilkes County also involved heroin, fentanyl or fentanyl analogues.

Table 155. Conditions Co-occurring with Opioid Death and Misuse (2017)

Reduce Diversion	Percent of Opioid Deaths Involving heroin or fentanyl or Fentanyl analogues					Number of Acute Hepatitis C Cases				
	1st Q 2017	2nd Q 2017	3rd Q 2017	4th Q 2017	YTD total 2017	1st Q 2017	2nd Q 2017	3rd Q 2017	4th Q 2017	YTD total 2017
Wilkes County	n/a	n/a	n/a	21.4	21.4	0	0	0	0	0
Surry County	n/a	n/a	n/a	30.8	30.8	2	1	1	0	4
North Carolina	68.1	75.1	78.7	79.8	75.4	53	48	48	38	187

Opioid-related deaths involving pain medications like oxycodone and hydrocodone have historically been the leading cause of overdose deaths. More recently, illicit substances such as heroin, fentanyl, and fentanyl analogues (drugs that are similar to fentanyl but have been chemically modified in order to bypass current drug laws) are increasingly contributing to overdose deaths, resulting in a growing number of deaths.

Increased rates of new infections of bloodborne illness are another consequence of the opioid epidemic due to the recent shift to illicit substances, causing rates of acute hepatitis C (HCV) to rise in North Carolina. Establishing syringe exchange programs that provide sterile syringes and injection supplies to reduce sharing and reuse is one effective strategy to mitigate the harms associated with injection drug use.

Source: *Metric Summary Table* [by county and state]. NC Opioid Action Plan Dashboard website.

<https://injuryfreenc.shinyapps.io/OpioidActionPlan/>

- The percentage of Wilkes County patients with an opioid prescription receiving more than an average daily dose was higher than in NC as a whole.
- The percentage of Wilkes County patients having an opioid prescription AND at least one benzodiazepine prescription on the same day was higher than the average percentage for the state of NC.

Table 156. Indicators for Potential Opioid Overdose (2017)

Reduce Oversupply	Percent of patients with an opioid Rx receiving more than an average daily dose of 90+ MME of opioid analgesics					Percent of Rx days any patient had at least one opioid AND at least one benzodiazepine Rx on the same day				
	1st Q 2017	2nd Q 2017	3rd Q 2017	4th Q 2017	YTD total 2017	1st Q 2017	2nd Q 2017	3rd Q 2017	4th Q 2017	YTD total 2017
Wilkes County	12.5	12.1	11.5	11.6	11.9	30.6	29.5	27.9	27.1	28.8
Surry County	10.7	10.2	10.5	10.7	10.5	31.3	29.3	27.2	25.6	28.4
North Carolina	6.7	6.5	6.2	6.3	6.4	23.7	22.9	22.0	21.0	22.4

Higher doses of opioids increase the risk for motor vehicle injury, opioid use disorder, and opioid overdose. The CDC Guideline for Prescribing Opioids for Chronic Pain recommends clinicians avoid increasing dosage to ≥90 morphine milligram equivalents (MME) per day.

Concurrent use of central nervous system depressants like opioids, benzodiazepines, and alcohol may put patients at greater risk for an overdose.

Source: *Metric Summary Table* [by county and state]. NC Opioid Action Plan Dashboard website.

<https://injuryfreenc.shinyapps.io/OpioidActionPlan/>

Naloxone is a medication designed to rapidly reverse opioid overdose. It is an opioid antagonist—meaning that it binds to opioid receptors and can reverse and block the effects of other opioids. It can very quickly restore normal respiration to a person whose breathing has slowed or stopped as a result of overdosing with heroin or prescription opioid pain medications. There are three FDA-approved formulations of naloxone: injectable (professional training required), auto-injectable (Ezvio®), and pre-packaged nasal spray (Narcan®) (72).

- In Wilkes County in 2017 there were 129 successful overdose reversals by EMS administration of naloxone; there was one naloxone reversal administered by other community entities in the county that year.

Table 157. Naloxone Access (2017)

Naloxone Access	Number of EMS naloxone administrations					Number of community naloxone reversals**				
	1st Q 2017	2nd Q 2017	3rd Q 2017	4th Q 2017	YTD total 2017	1st Q 2017	2nd Q 2017	3rd Q 2017	4th Q 2017	YTD total 2017
Wilkes County	32	48	28	21	129	0	1	0	0	1
Surry County	31	16	22	12	81	0	0	1	0	1
North Carolina	3,604	4,083	4,327	3,268	15,282	1,065	889	771	1,451	4,176

** Reflects the number of successful overdose reversals using naloxone that were reported to the NC Harm Reduction Coalition.

These are reversals by community lay people and do not include administration by first responders

This metric tracks the number of naloxone administrations provided by Emergency Medical Services (EMS) personnel each quarter. Note that naloxone administration alone does not necessarily equate to an opioid overdose as EMS may administer naloxone when an individual is suffering from a different condition with similar signs and symptoms to an opioid overdose

In August of 2013, the NC Harm Reduction Coalition (NC HRC) launched their Overdose Prevention Project and began distributing naloxone rescue kits across the state. This metric reflects the number of overdose reversals using those naloxone kits reported back to NC HRC. These are reversals reported by community members and do not include administration of naloxone by first responders.

CHAPTER FIVE: ENVIRONMENTAL DATA

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 Environmental Quality (NCDEQ).

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.

- As of the 2017 data release (the most recent available at the time this report was prepared) here was no EPA air quality monitoring station in either Wilkes County or Surry County (73).

Toxic Releases

TRI tracks the management of more than 675 toxic chemicals that may pose a threat to human health and the environment.

Over 4 billion pounds of these toxic chemicals are released into the nation's environment each year, via air, water and land. The US Toxic Releases Inventory (TRI) program, created in 1986 as part of the Emergency Planning and Community Right to Know Act and the Pollution Prevention Act of 1990, is the tool the EPA uses to track these releases. More than 22,000 US facilities in different industry sectors must report annually to the TRI Program Office how much of each chemical is released to the environment and/or managed through recycling, energy recovery and treatment. (A "release" of a chemical means that it is emitted to the air or water or placed in some type of land disposal.) Note that TRI reports do not cover all toxic chemicals, and they omit pollution from motor vehicles and small businesses (74).

According to the table below, in 2017, 406,470 pounds of TRI chemicals were released in Wilkes County, the 26th highest total volume of releases in the state. The NC county with the highest volume of releases in 2017 was Beaufort County, which reported over 5 million pounds of releases (75).

- Manufacturing facilities were responsible for the largest volumes TRI chemicals/chemical compounds released in Wilkes County in 2017.
- The chemicals released in largest quantities in Wilkes County in 2017 were:
 - Methanol
 - Zinc compounds
 - Phenol
 - Styrene
 - Formaldehyde
- The vast majority of the releases were from Louisiana Pacific Corporation's plant in North Wilkesboro, which manufactures reconstituted wood products.

**Table 158. Toxic Release Inventory (TRI) Summary, Wilkes County
(2017)**

Location	Total On- and Off-Site Disposal or Other Releases, In Pounds	County Rank (of 85 reporting) for Total Releases	Compounds Released in Greatest Quantity	Quantity Released, In Pounds	Facilities Releasing Greatest Amount of Compound (Amount, In Pounds)	Primary Nature of Release	Facility Location		
Wilkes County	406,470	26	Methanol	162,266	Louisiana-Pacific Corp. (162,266)	Total On-site Disposal or Other Release	North Wilkesboro		
			Zinc Compounds	69,796	Louisiana-Pacific Corp. (69,796)	Total On-site Disposal or Other Release	North Wilkesboro		
			Phenol	45,900	Louisiana-Pacific Corp. (45,900)	Total On-site Disposal or Other Release	North Wilkesboro		
			Styrene	37,610	JELD-WEN Composites (37,610)	Total On-site and Off-Site Disposal or Other Release	North Wilkesboro		
			Formaldehyde	34,669	Louisiana-Pacific Corp. (34,669)	Total On-site Disposal or Other Release	North Wilkesboro		
			Acetaldehyde	27,802	Louisiana-Pacific Corp. (27,802)	Total On-site Disposal or Other Release	North Wilkesboro		
			Propionaldehyde	26,975	Louisiana-Pacific Corp. (26,975)	Total On-site Disposal or Other Release	North Wilkesboro		
			Ammonia	3,551	Louisiana-Pacific Corp. (2,159)	Total On-site Disposal or Other Release	North Wilkesboro		
							Tyson Farms, Inc (1,392)	Total On-site Disposal or Other Release	Wilkesboro
			Lead Compounds	351	Louisiana-Pacific Corp. (351)	Total On-site Disposal or Other Release	North Wilkesboro		
			Peracetic Acid	250	Tyson Farms, Inc. (250)	Total On-site Disposal or Other Release	Wilkesboro		
			Lead	173	Gardner Glass Products Inc (173)	Total Off-site Disposal or Other Release	North Wilkesboro		
			NC Total	52,282,279					
NC County Average	522,823								

Source: TRI Release Reports: Chemical Reports, 2017. US EPA TRI Explorer, Release Reports, Chemical Reports website: http://iaspub.epa.gov/triexplorer/tri_release.chemical

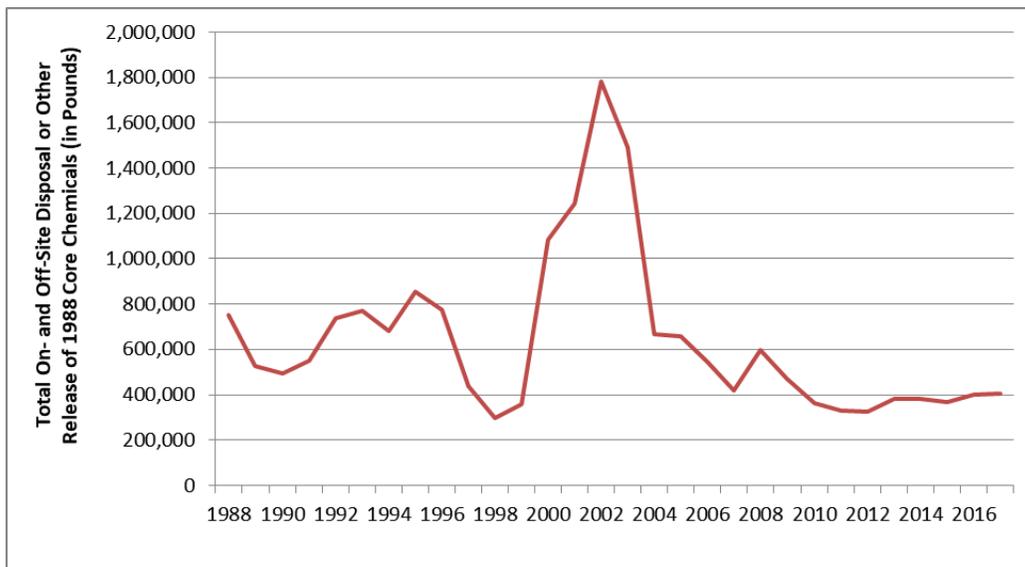
TRI chemical releases in Wilkes County have decreased dramatically since 2002, as shown in the following figure, which plots the weight, in pounds, of total TRI chemicals released annually by all industries in Wilkes County beginning in 1988.

Note that the graph includes only those chemicals defined as “1988 Core Chemicals”. The 1988 Core Chemicals include only chemicals that were reported in all years beginning from 1988. The list includes 296 chemicals. The data does not include, for example, chemicals added since 1988, or chemicals delisted in any year. Because reporting definitions for ammonia, hydrochloric acid, sulfuric acid and vanadium have changed and reporting requirements for previously listed PBTs have changed, these chemicals are also not included in the report (76).

The reduction of TRI releases in the county is not necessarily related to cleaner industrial processes, but rather to the closure of facilities. For example, in one NC county, the TRI chemicals released in highest quantities in the peak emission years (1998 to around 1996) were

primarily volatile solvents associated with the manufacture of wood composites and furniture, chemicals which are no longer released in large quantities because many of the emitting facilities have since closed or reduced operations. In Wilkes County, however, the primary industry (and facility) releasing toxics was the same in 2017 as in 2002, the year of peak releases. This would appear to indicate the facility changed its manufacturing practices or perhaps re-focused toward producing different products.

Figure 53. Total TRI Release Trend, Wilkes County (1988-2017)



Note: The chemicals included in the trend include only 1988 Core Chemicals (see text for explanation).
 Source: US EPA TRI Explorer, Releases: Trends Report, North Carolina, Wilkes County.
http://iaspub.epa.gov/triexplorer/tri_release.trends

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 (77).

In July 2018, SDWIS listed 100 active water systems in Wilkes County. Ten were *community water systems (CWS)* that served 44,076 people, or 64% of the estimated county population in 2016. (Note that the reported populations served by these community water systems overlap with other systems because the CWS serve both businesses and residences.) A community water system is one with 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.

In addition to the 10 community water systems in Wilkes County, there were also 87 *transient, non-community water systems (T/N-C)* serving 3,736 people (5% of the 2016 population). Water systems in the T/N-C category do not consistently serve the same people, and include rest stops, campgrounds and gas stations. Finally, there were three *non-transient, non-community (N-T/N-C) water systems* in Wilkes County, serving 615 people (<1% of the 2016 population). This last group is composed of water systems that regularly supply water to at least 25 of the same people at least six months per year, but not year-round. Some examples are schools, factories, office buildings, and hospitals which have their own water systems. The populations served by these types of water systems are summarized in the table below.

- Because community water systems (i.e., treated water) in Wilkes County reach only approximately 64% of the population, there remains 36% of the population who get their water from private wells or other untreated sources. These are the residents most at-risk for exposure to unknown contaminants in their drinking water.

**Table 159. Population Served by Active Water Systems
(As of July 2018)**

Location	2016 Population Estimate	Number CWSs	Total Population Served by CWSs	% Population Served by CWSs	Number N-T/N-C WSs	Total Population Served by N-T/N-C WSs	% Population Served by N-T/N-C WSs	Number T/N-C WSs	Total Population Served by T/N-C WSs	Total Population Served by Active Water Systems
Wilkes County	68,888	10	44,076	64.0	3	615	0.9	87	3,736	48,427
Source	1	2	2	3	2	2	3	2	2	3

1 - *Profile of General Population and Housing Characteristics: 2010 (DP-1)*. U.S. Census Bureau, American FactFinder website: <http://factfinder2.census.gov>.

2 - *Safe Drinking Water Search for the State of North Carolina*. US EPA Envirofacts Safe Drinking Water Information System (SDWIS) website: <https://www3.epa.gov/enviro/facts/sdwis/search.html>.

3 - Calculated from table data

The EPA also 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). The following table lists the active water systems in Wilkes County as of October 2018. The table also includes any *health-based* violations for the period from 2008 through 2018 (of which there were none).

There are too many (87) T/N-C WSs in Wilkes County to list here individually but interested readers may learn about any of them by checking on the website listed as the table reference.

**Table 160. Active Water Systems in Wilkes County
(As of October 2018)**

Type of System	Total Population Served	Primary Water Source Type	Town(s) Served	Health Violations 2008-2018
Community Water Systems				
Blue Ridge Mountain Club	203	Ground water	Ferguson	None
Blue Ridge Water Association	8,052	Surface water purchased	Hays	None
Broadway Water Association	3,556	Surface water purchased	North Wilkesboro	None
Eckerd of Boomer	33	Ground water	Boomer	None
Moravian Falls Water System	3,226	Surface water purchased	Moravian Falls	None
Mulberry-Fairplains Water Association	8,150	Surface water purchased	North Wilkesboro	None
North Wilkesboro, Town of	4,245	Surface water	North Wilkesboro	None
Ronda, Town of	907	Surface water purchased	Ronda	None
West Wilkes Water Association, Inc.	12,202	Surface water purchased	Miller Creek	None
Wilkesboro, Town of	3,705	Surface water	Wilkesboro	None
Total	44,076			
Non-Transient, Non-Community Water Systems				
Boomer-Ferguson Elementary School	165	Ground water	Boomer	None
Ronda-Clingman Elementary School	321	Ground water	Ronda	None
Traphill Elementary School	129	Ground water	Traphill	None
Total	615			
Transient, Non-Community Water Systems				
87 Different sites	3,736	Ground Water	Various	Check source
Total	3,736			

Source: *Safe Drinking Water Search for the State of North Carolina*. US EPA Envirofacts Safe Drinking Water Information System (SDWIS) website: <http://www.epa.gov/enviro/facts/sdwis/search.html>.

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 (78).

The table below lists the NPDES-permitted dischargers in Wilkes County and the destinations and permitted volumes of their discharges as of July 2016.

- Two of the three largest permitted dischargers are municipalities; the third is a manufacturing facility.
- Of the facilities permitted for minor discharges, most are governmental in nature.

**Table 161. NPDES-Permitted Dischargers, Wilkes County
(As of September 2018)**

Owner	Facility	Type	Discharge Destination	Permitted Flow (Gal/Day)
Major Facilities				
Town of Wilkesboro	Cub Creek Wastewater Treatment Plant	Municipal, Large	Yadkin River	6,600,000
Louisiana Pacific Corporation	Louisiana Pacific Roaring River Wastewater Treatment Plant	Industrial Process & Commercial	Yadkin River	2,000,000
Town of North Wilkesboro	Thurman Street Wastewater Treatment Plant	Municipal, Large	Yadkin River	2,000,000
Minor Facilities				
Wilkes County Schools	Roaring River Elementary School	WWTP, 100% Domestic <1MGD	Yadkin River	4,500
	Mountain View Elementary School	WWTP, 100% Domestic <1MGD	Mulberry Creek	10,000
	Traphill Elementary School	WWTP, 100% Domestic <1MGD	Little Sandy Creek	4,000
	Boomer-Ferguson Elementary School	WWTP, 100% Domestic <1MGD	Warrior Creek	3,000
	North Wilkes High School Wastewater Treatment Plant	WWTP, 100% Domestic <1MGD	Wolf Branch	10,500
Wilkesboro County Adult Care, Inc.	Wilkesboro County Adult Care Wastewater Treatment Plant	WWTP, 100% Domestic <1MGD	Naked Creek	13,000
Wilkes County Airport	Wilkes County Airport	WWTP, 100% Domestic <1MGD	Rock Creek	7,500
Mulberry-Fairplains Water Association	Reddies River Water Treatment Plant	Water Treatment Plant	Reddies River	Not limited
General Permits				
Call Family	Call Family Distillers, LLC	Non-contact Cooling, Boiler Blowdown	Yadkin River	n/a
Tony Jones	Tony Jones Mine	Sand Dredging Operations	Yadkin River	n/a
Carl Rose & Sons	Johnson Sand Pit	Sand Dredging Operations	Yadkin River	n/a
	Prevette Pit	Sand Dredging Operations	Roaring River	n/a
Tarheel Sand and Stone, Inc.	Settles Pit	Sand Dredging Operations	Yadkin River	n/a
NC DENR Division of Parks and Recreation	Stone Mountain State Park	Single Family Domestic Wastewater Discharge	East Prong, Roaring River	n/a
Maple Church	Maple Springs Baptist Church	Single Family Domestic Wastewater Discharge	Little Creek	n/a

Source: List of Active and Expired Individual Permits [BIMS_100316] and List of Active and Expired General Permits [NCG5 Database July 2016]. NPDES Wastewater Permitting Process, North Carolina Division of Water Resources website: <https://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/npdes-wastewater/permitting-process>

SOLID WASTE

Solid Waste Disposal

The next table presents figures summarizing tonnage of solid waste disposed in Wilkes County and comparators for the period FY2012-13 through FY2016-17

- In FY2016-17, Wilkes County managed 54,837 tons of municipal solid waste (MSW) for a rate of 0.78 tons per capita. This tonnage represented a *decrease* of 19% from the per capita rate for FY1991-92 (the period customarily used for the base rate).
- Over the same period the overall state per capita solid waste management rate increased 3% from the FY1991-92 base per capita rate.

**Table 162. Solid Waste Disposal
(FY2012-13 through FY2016-17)**

County	Population	Tons Managed	Municipal Solid Waste and Construction & Demolition Tons Disposed					Based Year Per Capita	Per Capita Rate	% Change from 1991-1992
	July 2016	1991-1992	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	1991-1992	2016-2017	2016-2017
Wilkes County	70,027	58,818	52,801	53,370	54,605	53,332	54,837	0.97	0.78	-19
Surry County	72,843	73,595	53,695	51,926	52,900	59,365	54,677	1.18	0.75	-36
State Total	10,155,942	7,257,428	9,149,130	9,150,471	9,635,874	11,323,734	11,231,358	1.07	1.11	3

Source: FY16-17 County Per Capita Report. North Carolina Department of Environmental Quality, Division of Waste Management, Solid Waste Management Annual Reports website: <https://deq.nc.gov/about/divisions/waste-management/sw/data/annual-reports>

The table below lists the open permitted solid waste facilities physically located in Wilkes County (or near the county and patronized by it) as of September 2018.

- Note that only one of the permitted entities landfills solid waste for a municipality, one is an industrial landfill, and four haul septage.

**Table 163. Open Permitted Solid Waste Facilities, Wilkes County
(As of September 2018)**

Name	Waste	Activity	Location
Louisiana Pacific Corporation	Industrial	Landfill	Wilkesboro
Wilkes County MSWLF	Municipal Solid Waste	Landfill	Roaring River
Myers Septic Tank Service	Septage	Hauler	Wilkesboro
Gilreath Septic & Port-a-John Service	Septage	Hauler	Hays
Grit & Sons	Septage	Hauler	Roaring River
S&J Septic Pumping & Rent-a-Jon	Septage	Hauler	North Wilkesboro

Source: Solid Waste Permitted Facilities. North Carolina Department of Environmental Quality, Division of Waste Management, Solid Waste Management website: <https://deq.nc.gov/about/divisions/waste-management/sw/data/facility-lists>

The table below presents the FY2016-17 County Waste Disposal Report for Wilkes County which lists the tons of solid waste originating in Wilkes County and disposed of in-county and facilities elsewhere.

- At the present time, all of Wilkes County's solid waste (100%) is landfilled within the county, at the Wilkes County Municipal Solid Waste Landfill in Roaring River.

**Table 164. County Waste Disposal Report, Wilkes County
(FY2016-17)**

Facility	Facility Type	County	Tons Received	Tons Transferred
Wilkes County MSWLF	Municipal Solid Waste	Wilkes	54,836.92	0.00

Source: FY16-17 County Waste Disposal Report. North Carolina Department of Environmental Quality, Division of Waste Management, Solid Waste Management Annual Reports website: <https://deq.nc.gov/about/divisions/waste-management/sw/data/annual-reports>

The next table describes the capacity of Wilkes County landfills as of FY2016-17.

- The municipal solid waste landfill in Wilkes County currently has capacity projected to last for approximately another 18 years.

**Table 165. Capacity of Landfills in Wilkes County
(FY2016-17)**

Facility Name	Open Date	Total Permitted Volume	Remaining Permitted Volume	Permitted Volume Overall Remaining in Tons	Approximate Total Permitted Volume Remining in Years
Wilkes County MSW Landfill	1993	4,661,952.00	2,015,482.00	927,109.00	18.00

Source: FY16-17 Landfill Capacity Report. North Carolina Department of Environmental Quality, Division of Waste Management, Solid Waste Management Annual Reports website: <https://deg.nc.gov/about/divisions/waste-management/sw/data/annual-reports>

Wilkes County Solid Waste Management

The Wilkes County Landfill and Solid Waste Division operates a municipal landfill and a recycling program, both dependent on residents' collecting and dropping off their waste (79).

Landfill

The Wilkes County Landfill and Recycling Center is located at 9219 Elkin Highway in Roaring River. Rates are based on the weight or the type of materials to be landfilled; recycling is accepted at no charge. The Landfill is open Monday through Saturday from 7am to 6pm. The landfill collects 60,000 tons of trash annually. All waste is subject to a screening procedure before being accepted. Most landfill charges are determined on a per-ton or per-bag basis; disposal fees for some items are determined on a per-unit basis.

Recycling

The Landfill and Recycling Center in Roaring River also accepts recyclables. Wilkes County also maintains five convenience centers at which residents may drop off recycling, three of which are manned during regular business hours (9:00 AM to 5:00 PM) on Monday, Wednesday, and Friday, and from 8:00 AM to 5:00 PM on Saturday. The two un-manned centers are accessible to the public at all times (80).

Recyclable Materials Accepted at no charge include:

- Aluminum and steel cans
- Used motor oil and filters
- Antifreeze
- Newspaper, magazines and cardboard
- Batteries (Lead Acid Only)
- Glass bottles and jars
- Plastic bottles (rim must be smaller than the bottle and have a screw top opening # 2-7)
- Tires (off-rim)
- White goods (refrigerators, freezers, washers, dryers and hot water heaters)

Town of North Wilkesboro Municipal Solid Waste Management

The Town of North Wilkesboro offers curbside recycling to all of its citizens and also operates a recycling center at Memorial Park. Recyclables accepted include (81):

- Plastic bottles and jugs
- Newspapers and magazines
- Aluminum cans
- Metal food cans
- Glass bottles and jugs
- Cardboard

The town established a mercury recycling program in 2015 for materials such as old thermostats, fluorescent bulbs, and high intensity discharge bulbs. A drop off point should be accessible 24/7 and bi-weekly route collection can be scheduled by phone (82).

Town of Wilkesboro Municipal Solid Waste Management

The sanitation department of the Town of Wilkesboro is a division of Public Works and is responsible for collecting and disposing of garbage, recycling, and many other items. The monthly fee citizens pay on the utility bill covers these items for residential and approved business accounts. Recycling is mandatory for all residential and all commercial accounts. Services include:

- Weekly curbside trash collection
- Bi-weekly curbside recycling
- Curbside bulky item collection (must be scheduled by the resident)
- Curbside yard waste collection
- Seasonal curbside leaf collection
- Electronics recycling (by appointment)

The Town of Wilkesboro also operates three convenience centers within the city limits, located at the Wilkesboro Civic Center, Cub Creek Park, and Woodfield (for Woodfield residents only) (83).

RABIES

Rabies is a vector-borne disease that can be controlled among pets by having dogs and cats properly vaccinated. While pets can be protected that way, there is no practical way to control rabies in the wild, where it is more common. The table below lists the total number of rabies cases detected in Wilkes County and its comparators over the period from 2007-2017.

Major rabies discussion points are these: First of all, rabies is only moderately common in Wilkes County, with 175 cases identified in the seven years from 2007 through 2017, or 4% of the total number of rabies cases statewide over the same period. Second, rabies is more common in animals *other* than cats, dogs or bats. Of the 10 total rabies cases in Wilkes County in 2017, five cases were in skunks and three were in raccoons. Statewide in 2017, 44% of all animal rabies cases were in raccoons.

**Table 166. Animal Rabies Cases
(2007-2017)**

Location	Total Number of Animal Rabies Cases										
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Wilkes County	32	32	18	14	21	18	13	no report	8	9	10
Surry County	18	9	8	14	13	0	8	1	1	no report	2
State of NC	474	452	473	397	429	431	380	352	339	251	254

Source: NC Division of Public Health, Epidemiology. Rabies. Facts and Figures. Rabies by County, Tables by Year.
<http://epi.publichealth.nc.gov/cd/rabies/figures.html#tables>

WILKES COUNTY HEALTH DEPARTMENT ENVIRONMENTAL HEALTH ACTIVITIES

The Environmental Health Division of each local health department in NC is charged with assuring the health of the public through monitoring, permitting and enforcement activities relative to environmental issues that affect the residents of the public. Those activities cover a range of topics from water to food and lodging to animal control.

The On-site Water Protection program of the Wilkes County Health Department’s 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.

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.

Assuring proper sanitation in food and lodging establishments in Wilkes County also is the responsibility of the Wilkes County Health Department Environmental Health Division. 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 (84).

CHAPTER FOUR: COMMUNITY HEALTH SURVEY

METHODOLOGY

The Advisory Team, as well as the steering committee, worked to promote the on-line community health survey from April 2018 through September 2018. The community health survey was conducted primarily via Survey Monkey™ but was supplemented by paper surveys distributed to some population groups that could not easily access the Internet. Paper copies were available in English and Spanish.

SURVEY RESULTS

A total of 548 surveys were collected. Fifteen people started the survey process but were subsequently bumped out of the system by Survey Monkey because they answered that they were not residents of Wilkes County. All questions in those essentially blank surveys were counted by Survey Monkey as “skipped”, so note that the number presented for “unanswered” will include those 15 individuals as well as any other participants to skipped any given question.

Survey responses were analyzed for frequency of response using the built-in capacities of Survey Monkey. It should be noted that not every respondent answered every question. The number and corresponding percentage of individuals who chose each response category are presented in the analysis below. Note: The order of some of the questions in the analysis may differ from their order in the actual survey, having been rearranged for clarity.

For further detail regarding answers that were written-in by respondents, please see the Survey Response Summary Workbook.

SURVEY PARTICIPANTS

Survey participants were asked to provide demographic information about themselves by selecting appropriate responses from lists describing categories of age, gender, race and ethnicity, education level, employment status, household income, and who that income supports. This demographic information was collected in order to assess how well the survey participants represented the general population of Wilkes County. The table below compared the demographic profile of the survey respondents to the general population.

A brief analysis of the information in the demographic comparison reveals that certain population groups were either over-sampled or under-sampled in the 2018 survey.

- Females were significantly over sampled.
- African Americans were slightly over-sampled.
- Persons of Hispanic/Latino ethnicity were adequately sampled.
- The middle-aged segments of the population were over-sampled.
- The less educated segment of the population (those with less than a HS diploma or GED) were significantly under-sampled, and the most educated segment (those with a Bachelor’s degree or higher) were significantly over-sampled.

The survey respondents can be generally characterized as predominately female, ethnically diverse, older, more affluent and more highly educated than the general population. *It will be important to keep this profile in mind when interpreting and applying the results of the survey.*

Demographic Comparison of Survey Respondents with the Overall Wilkes County Population (2016 ACS Estimates)

Demographic Category	2018 Survey Participants		County Population ¹
	#	%	%
Gender (n=486, unanswered = 62)			
Male	94	19.3%	49.4%
Female	390	80.3%	50.6%
Other	2	0.4%	n/a
Race (n=487, unanswered = 61)			
White/Caucasian	416	85.4%	91.2%
African American/Black	47	9.7%	4.3%
Hispanic/Latino	21	4.3%	5.9%
Asian	0	0.0%	0.5%
Pacific Islander	0	0.0	0.1%
Native American	6	1.2%	0.2%
Other	2	0.4%	2.3%
Hispanic/Latino Origin (n=484, unanswered = 64)			
Yes	25	5.2%	5.9%
Age (n=488, unanswered = 60)			
19 or less	6	1.2%	23.3%
20-34	104	21.3%	15.7%
35-54	200	41.0%	26.8%
55-64	84	17.2%	14.4%
65-74	68	13.9%	11.4%
75 or older	26	5.3%	8.4%
Other (calculated)			
Household Income < \$25,000	144	30.6%	27.4%
Household Income > \$50,000	201	42.7%	36.0%
Less than HS Diploma/GED	41	8.5%	23.2%
Bachelor's degree or higher	155	31.8%	13.8%

¹ County data are 2016 ACS estimates from the US Census unless otherwise noted

SURVEY RESULTS

The order of some of the questions in the analysis may differ from their order in the actual survey, because they have been rearranged for clarity, but the survey question number is noted parenthetically. Where possible (when questions and answer choices match adequately) the results of Community Health Survey conducted in 2015 are displayed in the table along with the 2018 results.

Demographic Questions

Survey participants were asked to provide demographic information by selecting appropriate responses from lists of categories of age, gender, race and ethnicity, education level, and household income. This demographic information was collected in order to assess how well the survey participants represented the general population of Wilkes County.

What is the ZIP code of your PRIMARY residence in Wilkes County? (Q 32, n=478; 70 unanswered)

Zip Code	2018		2015	
	#	%	#	%
28659 (North Wilkesboro)	187	39.1%	248	32.1%
28697 (Wilkesboro)	107	22.4%	213	27.6%
28651 (Millers Creek)	41	8.6%	76	9.8%
28635 (Hays)	21	4.4%	52	6.7%
28654 (Moravian Falls)	18	3.8%	25	3.2%
28669 (Roaring River)	18	3.8%	22	2.8%
28665 (Purlear)	14	2.9%	21	2.7%
28670 (Ronda)	13	2.7%	21	2.7%
28624 (Ferguson)	9	1.9%	19	2.5%
28649 (McGrady)	10	2.1%	14	1.8%
28685 (Traphill)	8	1.7%	13	1.7%
28606 (Boomer)	6	1.3%	12	1.6%
28621 (Elkin)	7	1.5%	12	1.6%
28676 (State Road)	2	0.4%	4	0.5%
28683 (Thurmond)	0	0.0%	4	0.5%
27020 (Hamptonville)	8	1.7%	3	0.4%
Other Zip Codes	9	1.9%	12	1.6%
Total	478		773	

- 39% of respondents were from North Wilkesboro.
- 22% of respondents were from Wilkesboro.
- Around 9% were from Millers Creek and an additional 4% were from Hays.
- 25.5% of respondents were from elsewhere in Wilkes County.

How old are you? (Q 25, n=488; 60 unanswered)

Answer Options	2018		2015	
	#	%	#	%
18 – 19	6	1.2%	9	1.1%
20 – 34	104	21.3%	208	24.8%
35 – 54	200	41.0%	384	45.8%
55 – 64	84	17.2%	156	18.6%
65 – 74	68	13.9%	61	7.3%
75 or older	26	5.3%	20	2.4%

- Approximately 23% of the participants were between 18 and 34.
- Around 58% of respondents were between the age of 35 and 64.
- Around 19% of those surveyed were over the age of 65.

How do you describe yourself? (Q 26, n=486; 62 unanswered)

Answer Options	2018		2015	
	#	%	#	%
Female	390	80.3%	670	80.2%
Male	94	19.3%	163	19.5%
Other	2	0.4%	n/a	n/a

- Approximately 19% of the survey participants were male.
- The population of the county is split, roughly, 50/50.

Are you of Hispanic, Latino, or Spanish origin? (Q 27, n=484; 64 unanswered)

Answer Options	2018		2015	
	#	%	#	%
Yes	25	5.2%	34	4.1
No	459	94.8%	492	95.9

- 5.2% of the survey respondents were of Hispanic origin.

What do you consider your race? (Q 28, n=487; 61 unanswered)

Answer Options	2018		2015	
	#	%	#	%
American Indian or Alaska Native	6	1.2%	7	0.8%
Asian	0	0.0%	1	0.1%
Black or African American	47	9.7%	45	5.4%
Hispanic or Latino	21	4.3%	n/a	n/a
Native Hawaiian or other Pacific Islander	0	0.0%	3	0.4%
White or Caucasian	416	85.4%	769	93.0%
Other (please specify)	2	0.4%	n/a	n/a

- The majority of the survey respondents were white.
- Nearly 10% of the respondents were Black or African American, a higher proportion than their distribution in the overall population.

What is the highest level of school, college or training that you have finished? (Q 29, n=487; 61 unanswered)

Answer Options	2018		2015	
	#	%	#	%
Less than 9th grade	13	2.7%	7	0.8%
9th to 12th grade, no diploma	28	5.8%	26	3.2%
High school graduate (or GED / equivalent)	88	18.1%	80	9.7%
Associate's degree or Vocational training	113	23.2%	177	21.5%
Some college (no degree)	89	18.3%	141	17.1%
Bachelor's degree	96	19.7%	199	24.1%
Graduate or professional degree	59	12.1%	191	23.2%
Other (please specify)	1	0.2%	n/a	n/a

- Approximately 32% of the respondents had a Bachelor's degree or higher, compared to the 14% of Wilkes County residents estimated to be so educated.
- 91% of the respondents had at least a high school education.
- 8.5% of the participants less than a high school education.

What type of health insurance do you have? (Q 30, n=484; 64 unanswered)

Answer Options	2018		2015	
	#	%	#	%
Blue Cross / Blue Shield	250	51.7%	497	60.0%
Medicare	71	14.7%	71	8.6%
United Health Care	59	12.2%	38	4.6%
I do not have health insurance.	53	11.0%	62	7.5%
Medicaid	48	9.9%	41	5.0%
Other private insurance company	46	9.5%	169	20.4%
Other (please specify)	18	3.7%	n/a	n/a
Military-related coverage (CHAMPUS, Tricare, etc.)	7	1.5%	16	1.9%

Other write-ins included: Cigna (7), Medcost (4), VA (2)

- 11% of participants do not currently have any kind of health insurance.
- Approximately 15% were on Medicare; 10% were insured through Medicaid.
- 73% have private insurance.

What was your total household income last year, before taxes? A household is all people in a housing unit sharing living arrangements; they may or may not be related. (Q 31, n=470; 78 unanswered)

Answer Options	2018		2015	
	#	%	#	%
Less than \$10,000	55	11.7%	35	4.4%
\$10,000 to \$14,999	40	8.5%	48	6.1%
\$15,000 to \$24,999	49	10.4%	69	8.7%
\$25,000 to \$34,999	62	13.2%	74	9.3%
\$35,000 to \$49,999	63	13.4%	123	15.5%
\$50,000 to \$74,999	80	17.0%	202	25.5%
\$75,000 to \$99,999	63	13.4%		
\$100,000 to \$149,999	40	8.5%	242	30.5%
\$150,000 or more	18	3.8%		

- 20% of respondents have a household income less than \$15,000.
- 44% of participants reported a household income less than \$35,000.
- 26% have a household income of more than \$75,000.

Community Issues

Survey participants were asked to consider a list of 14 issues and select the three they thought most affect quality of life in Wilkes County. They also had the option of “writing-in” an issue. The list of responses below is arranged in descending order of the frequency with which an issue was chosen. (Q 3, n=512, 36 unanswered)

Community Issues	2018	
	#	%
Substance Abuse (drugs and alcohol)	330	64.5%
Economic issues (unemployment, poverty, lack of higher paying jobs)	270	52.7%
Mental Health Concerns (depression, suicide, stress, hopelessness)	158	30.9%
Affordability of health services	149	29.1%
Abuse and neglect	109	21.3%
Lack of/inadequate health insurance	83	16.2%
Transportation options	55	10.7%
Lack of social support (support groups, social activities, loneliness, friendships)	54	10.6%
Educational issues (access to higher education, quality, dropping out of school)	51	10.0%
Hunger	46	9.0%
Homelessness	45	8.8%
Crime (violence, theft, sexual assault)	40	7.8%
Domestic Violence	32	6.3%
Discrimination/Racism	29	5.7%
Other (please specify)	15	2.9%

See the appendix for write-in responses

- This list was reorganized in 2018 and so is not comparable to previous surveys.
- Substance abuse was the most commonly identified issue affecting quality of life in Wilkes County, selected by approximately 65% of respondents.
- “Economic issues” was the next most commonly selected issue, selected by 53% of respondents.
- There was a big gap between the first two items and the issue that ranked third: 31% of respondents selected “mental health concerns” as one of most important issues facing the Wilkes County community.

Health Behaviors

Survey participants were asked to consider an alphabetized list of 13 health behaviors and select the three they thought had the biggest impact on the health of Wilkes County. They also had the option of writing in an answer. The list of responses below is arranged in descending order of the frequency with which a names issue was chosen. (Q 4, n=512, 36 unanswered)

Unhealthy Behaviors	2018	
	#	%
Substance Abuse	372	72.7%
Unhealthy lifestyle (poor eating habits, lack of exercise)	230	44.9%
Anxiety/depression/stress	217	42.4%
Lack of good parenting	196	38.3%
Smoking/tobacco use	116	22.7%
Not getting preventive medical care (vaccines, checkups, screenings)	83	16.2%
Angry, violent behavior	69	13.5%
Unsafe driving (texting while driving, not using child safety seats, not wearing seatbelts)	61	11.9%
Unsafe sexual practices (no pregnancy/STD prevention)	61	11.9%
Suicide	29	5.7%
Poor preparation for an emergency or disaster	17	3.3%
Not getting pre-natal (pregnancy) care	9	1.8%
Other (please specify)	8	1.6%

See the appendix for write-in responses

- This question changed slightly in 2018 and so is not comparable to previous surveys.
- The most commonly identified unhealthy behavior was substance abuse, chosen by approximately 73% of the respondents.
- The next most frequently identified unhealthy behavior respondents was unhealthy lifestyle, identified by 45% of the participants.
- Anxiety/depression/stress was the third most commonly selected unhealthy behavior, chosen by 42% of respondents.

Environmental Health Concerns

Survey participants were asked to consider an alphabetized list of 11 environmental health issues and select the three they thought had the greatest impact on Wilkes County. They also had the chance to write-in an answer. The list of responses below is arranged in descending order of the frequency with which a named behavior was chosen. (Q 5, n=512, 36 unanswered)

Environmental Concerns	2018	
	#	%
Meth labs	324	63.3%
Secondhand smoke	282	55.1%
Household hygiene	232	45.3%
Mold	144	28.1%
Food safety	86	16.8%
Air pollution	83	16.2%
Drinking water	72	14.1%
Septic system failure	35	6.8%
Fluoride-enriched water	32	6.3%
Lead exposure	18	3.5%
Other (please specify)	18	3.5%
Radon	10	2.0%

- This question changed slightly in 2018 and so responses are not comparable to previous surveys.
- “Meth labs” was selected by 63% of respondents as the environmental health concern with the biggest impact on health in Wilkes County.
- Secondhand smoke ranked second, as identified by 55% of respondents.
- The next most commonly identified environmental health concern was household hygiene, which was chosen by 45% of respondents.

Services Needing Improvement

Survey participants were asked to consider an alphabetized list of 12 services and select the three they thought needed the most improvement in their neighborhood or community. They also had the option of writing-in an answer. The list of responses below is arranged in descending order of the frequency with which a named issue was chosen. (Q 6, n=512, 36 unanswered).

Services Needing Improvement	2018		2015	
	#	%	#	%
Substance abuse services	207	40.4%	235	25.1%
Mental Health and Counseling services	170	33.2%	160	24.4%
Services for the elderly	163	31.8%	n/a	n/a
Better/more recreational facilities	151	29.5%	155	16.6%
Services for children (fostering programs, CDSA, child care centers)	133	26.0%	n/a	n/a
Career/job centers	130	25.4%	n/a	n/a
Transportation options	104	20.3%	91	9.7%
Better/healthier food choices	98	19.1%	174	18.6%
Road maintenance and safety	95	18.6%	114	12.2%
Food Banks/Pantries	67	13.1%	109	11.6%
Transitional/halfway housing	51	10.0%	40	4.3%
Animal Control	50	9.8%	47	5.0%
Other (please specify)	19	3.7%	31	3.3%

- “Substance abuse services” was the most commonly chosen area in need of improvement, selected by approximately 40% of respondents.
- Mental health and counseling services ranked second on the list of services needing improvement, as selected by 33% of respondents.
- Services for the elderly ranked third (31% of respondents) and better/more recreational facilities ranked fourth (30%).

Personal Health Questions

In general, would you say that your overall health is... (Q 2, n=507, 41 unanswered)

Overall Health	2018		2015	
	#	%	#	%
Excellent	46	9.1%	127	12.6%
Very Good	177	34.9%	472	46.8%
Good	215	42.4%	327	32.4%
Fair	59	11.6%	69	6.8%
Poor	10	2.0%	13	1.3%

- 44% of respondents in 2018 rated their personal health as excellent or very good, a lower proportion compared to 2015 (59%).
- 14% of respondents rated their health as fair or poor in 2018, a higher proportion than in 2015 (8%).

From what source do you get most of your GENERAL health-related information? (Choose only one.) (Q 7, n=508, 40 unanswered)

	2018		2015	
	#	%	#	%
Doctor/nurse	188	37.0%	422	46.2%
Internet	146	28.7%	262	28.7%
Health department	37	7.3%	19	2.1%
Friends and/or family	31	6.1%	39	4.3%
Television	25	4.9%	33	3.6%
Books/magazines	16	3.2%	n/a	n/a
Local media websites	16	3.2%	n/a	n/a
Newspaper	15	3.0%	n/a	n/a
Pharmacist	12	2.4%	19	2.1%
Other (please specify)	8	1.6%	28	3.1%
Church	7	1.4%	11	1.2%
Hospital	7	1.4%	29	3.2%
Help lines	0	0.0%	2	0.2%

Other write-ins: personal research (2), work in the field (4), school, Care Connection

- 37% of survey respondents in 2018 reported getting their health-related information from a doctor or nurse; it also ranked first among 2015's respondents.
- The internet was the second most popular source of health information (29%).
- The health department was a more frequent source of information in 2018, compared to 2015.

Where do you find out about LOCAL health news or events? (Choose all that apply.) (Q 8, n=506, 42 unanswered)

	2018		2015	
	#	%	#	%
Internet (social media, blogs, Facebook)	270	53.4%	457	49.8%
Friends and/or family	228	45.1%	325	35.4%
Newspapers	173	34.2%	440	48.0%
Television	152	30.0%	192	20.9%
Workplace	138	27.3%	241	26.3%
Email updates	83	16.4%	n/a	n/a
Church	70	13.8%	112	12.2%
Radio	64	12.7%	159	17.3%
Billboards	42	8.3%	110	12.0%
Direct mail	35	6.9%	95	10.4%
Magazines	27	5.3%	38	4.1%
Other (please specify)	20	4.0%	12	1.3%

Other write-ins included: school (4), Foster Grandparent Program (2), don't hear about them (2), library, Free clinic.

- More than half of the respondents (53%) use the internet (including social media, blogs, Facebook) for information about local health news and events. Another 16% get local health news via email.
- Friends and/or family was the second most common source of local health news in 2018, as identified by 45% of respondents.
- Newspapers were less commonly identified as a source of local health news in 2018 (34%), compared to 2015 (48%).

Do you currently use any tobacco products (cigarettes, cigars, cigarillos, dip, chewing tobacco, snuff, e-cigarettes, vaping, bidis, hookah, shisha, or other)? (Q 9, n=506, 42 unanswered)

	2018		2015	
	#	%	#	%
Yes, I use tobacco now	62	12.3%	77	8.4%
Yes, I am trying to quit	24	4.7%	35	3.8%
No, I quit using tobacco	103	20.4%	191	20.9%
No, I've never used tobacco	317	62.7%	610	66.8%

- Approximately 63% of 2018's respondents have never used tobacco.
- 17% currently use some kind of tobacco product, but approximately 5% are trying to quit. In 2015 12% of respondents were current smokers.
- 20% used to smoke but have quit.
- Among females, 10% currently smoke and 5% currently smoke but are trying to quit. 19% used to smoke but have quit.

- Among males, 21% currently smoke and 4.3% currently smoke and are trying to quit. 23% used to smoke but have quit.

If yes, where would you go for help if you wanted to quit? (Choose all that apply.) (Q 10, n=202, 346 unanswered)

	2018		2015	
	#	%	#	%
N/A: I don't want to quit	46	22.8%	23	20.2%
Doctor	67	33.2%	35	30.7%
I don't know	43	21.3%	35	30.7%
Free Quit Line NC	25	12.4%	15	13.2%
Other (please specify)	18	8.9%	9	7.9%
Pharmacy	14	6.9%	1	0.9%
Health Department	12	5.9%	7	6.1%
Private counselor/ therapist	9	4.5%	7	6.1%
Church	8	4.0%	2	1.8%

Other write-ins: on my own (5), n/a or I don't smoke (10), God

- Among those who answered this question in 2018 (it may be assumed they are current smokers, but cannot be assured), around 23% do not wish to quit.
- Approximately 33% would see a doctor for help quitting, and another 21% don't know where they would go for help if they wanted to quit.

In your opinion, what are the three biggest substance abuse problems among ADULTS in this county? (Q 11, n=505, 43 unanswered)

	2018		2015	
	#	%	#	%
Abusing prescription drugs	384	76.0%	689	76.7%
Methamphetamine (Meth)	311	61.6%	522	58.1%
Alcohol abuse	185	36.6%	413	46.0%
Using someone else's prescription drugs	172	34.1%	342	38.1%
Heroin	124	24.6%	60	6.7%
Drinking and driving	97	19.2%	160	17.8%
Cocaine/crack	74	14.7%	81	9.0%
Marijuana	60	11.9%	120	13.4%
I don't know	24	4.8%	17	1.9%
Other (please specify)	7	1.4%	8	0.9%
Huffing (inhaling glue, dust-off, etc)	3	0.6%	3	0.3%

Other write-ins included: treatment by clinics, any drug (3), tobacco (2)

- More than three-quarters of respondents (approximately 76%) in both 2015 and 2018 identified the abuse of prescription drugs as the biggest substance abuse problem among adults in Wilkes County.
- Methamphetamine was the second most commonly identified adult substance abuse issue in both 2015 and 2018.

In your opinion, what are the three biggest substance abuse problems among YOUTH in this county? (Q 12, n=505, 43 unanswered)

	2018		2015	
	#	%	#	%
Alcohol abuse	243	48.1%	476	53.0%
Abusing prescription drugs	232	45.9%	294	32.7%
Marijuana	223	44.2%	400	44.5%
Using someone else's prescription drugs	205	40.6%	385	42.9%
Methamphetamine (Meth)	158	31.3%	231	25.7%
Drinking and driving	141	27.9%	246	27.4%
Heroin	53	10.5%	35	3.9%
Cocaine/crack	51	10.1%	49	5.5%
I don't know	38	7.5%	51	5.7%
Huffing (inhaling glue, dust-off, etc)	34	6.7%	65	7.2%
Other (please specify)	7	1.4%	7	0.8%

Other write-ins: any or all (3), vaping, peer pressure, food, "snorting things, the new advertised codeine drink"

- 48% of respondents in 2018 identified alcohol abuse as the biggest substance abuse issue among youth in Wilkes County.
- Abusing prescription drugs ranked second in 2018 (46%) and marijuana ranked third (44%).

If a friend or family member were thinking about suicide, who is the first person you would tell them to talk to? (Choose only one.) (Q 13, n=501, 47 unanswered)

	2018		2015	
	#	%	#	%
Crisis hotlines	128	25.6%	145	16.3%
Minister/religious official	72	14.4%	191	21.4%
Call 9-1-1	62	12.4%	79	8.9%
Friends and/or family	56	11.2%	126	14.1%
Private counselor/therapist	44	8.8%	85	9.5%
Daymark	41	8.2%	26	2.9%
I don't know	27	5.4%	40	4.5%
Doctor	23	4.6%	94	10.5%
Emergency Department	18	3.6%	34	3.8%
Other (please specify)	14	2.8%	11	1.2%
Care Connection	7	1.4%	6	0.7%
Support group (NA, AA, etc)	4	0.8%	2	0.2%
School counselor	3	0.6%	15	1.7%
Health Department	2	0.4%	3	0.3%

Other write-ins included: depends (5), anyone but Daymark (2), whoever they're comfortable with (3)

- 26% of respondents in 2018 would refer a suicidal friend or family member to a crisis hotline, a higher proportion compared to 2015 (16%)
- The next most common suggestion for help was a minister or religious official (14%).
- 12% would recommend that someone suicidal should call 911.

If a friend or family member needed counseling for a mental health concern or issue, who is the first person you would tell them to talk to? (Choose only one.) (Q 14, n=502, 46 unanswered)

	2018		2015	
	#	%	#	%
Private counselor/therapist	123	24.5%	181	20.3%
Daymark	87	17.3%	78	8.7%
Doctor	87	17.3%	226	25.3%
Minister/religious official	53	10.6%	86	9.6%
Crisis hotlines	46	9.2%	34	3.8%
Friends and/or family	27	5.4%	54	6.0%
I don't know	25	5.0%	39	4.4%
Other (please specify)	13	2.6%	12	1.3%
Health Department	12	2.4%	12	1.3%
Call 9-1-1	9	1.8%	18	2.0%
Care Connection	9	1.8%	8	0.9%
Support group (NA, AA, etc)	8	1.6%	7	0.8%
School counselor	2	0.4%	8	0.9%
Emergency Department	1	0.2%	12	1.3%

Other write-ins: depends, anyone they felt comfortable with, anyone but Daymark (2), Vaya Health, Synergy Recovery, Carenet Solace, ask medical doctor for referral

- Approximately 25% of respondents in 2018 would send a friend or family member in need of help for a mental health issue to a private counselor or therapist.
- Around 17% would refer someone to Daymark or a Doctor.

If a friend or family member wanted help for a substance abuse problem, who is the first person you would tell them to talk to? (Choose only one.) (Q 15, n=505, 43 unanswered)

	2018		2015	
	#	%	#	%
Daymark	97	19.2%	90	10.1%
Doctor	94	18.6%	257	28.7%
Support group (NA, AA, etc)	59	11.7%	133	14.9%
Private counselor/therapist	56	11.1%	85	9.5%
Crisis hotlines	46	9.1%	36	4.0%
Minister/religious official	42	8.3%	59	6.6%
I don't know	34	6.7%	61	6.8%
Friends and/or family	20	4.0%	48	5.4%
Other (please specify)	17	3.4%	13	1.5%
Health Department	16	3.2%	14	1.6%
Call 9-1-1	10	2.0%	14	1.6%
Emergency Department	7	1.4%	23	2.6%
Care Connection	6	1.2%	8	0.9%
School counselor	1	0.2%	4	0.4%

Other write-ins: any (2), depends (2), ARMS (2), Project Lazarus (2), Synergy Recovery, Mountain Health Solutions (2), Methadone clinic in Wilkes, "there's no one to talk to here", ask medical doctor to refer, Life Center in Galax VA.

- 19% of respondents in 2018 said that they would refer someone with a substance abuse problem to Daymark, a higher proportion compared to 2015.
- Approximately 19% would refer someone with a substance abuse issue to a doctor (a lower proportion compared to 2015).
- 12% would recommend a support group to someone wanting help for a substance abuse problem.

During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise? (Q 16, n=499, 49 unanswered)

Answer Options	2018	
	#	%
Yes	360	72.1%
No	139	27.9%

- 72% of survey respondents in 2018 participated in some sort of physical activity outside of their regular job in the past month.

Where do you go for physical activity or exercise? (Choose all that apply.) (Q 17, n=501, 47 unanswered)

Answer Options	2018	
	#	%
Home	248	49.5%
Outdoor recreation and play (parks, public/church/school playgrounds, greenways)	213	42.5%
Community walking trails or groups	160	31.9%
Streets, sidewalks, neighborhood roads	142	28.3%
Indoor recreation centers or facilities	120	24.0%
Bike trails	64	12.8%
Workplace	59	11.8%
I don't get physical activity or exercise	49	9.8%
Other (please specify)	25	5.0%

Other write-ins: YMCA (9), hiking trails/state parks (4), concern about police checkpoints (2), New Life Fitness Center, walking (2), basketball, "anywhere with a/c"

- The most common place for 2018 respondents to exercise was at home (50%).
- Outdoor recreation and play was the next most common place to exercise.
- 32% of respondents reported exercising with community walking trails or groups.

One of the recommendations for healthy eating is to eat at least 5 servings of fruits & vegetables a day. Do you eat this many servings of fruits and vegetables in an average day? (Q 18, n=885, 134 unanswered)

Answer Options	2018	
	#	%
Yes	152	30.5%
No	346	69.5%

- Approximately 31% of respondents reported eating the recommended 5 servings of fruits and vegetables a day.

Where do you get your fruits and vegetables most often? (Choose up to three.) (Q 19, n=499, 49 unanswered)

	2018		2015	
	#	%	#	%
Grocery store	444	89.0%	752	85.0%
Farmer's market/produce stands	186	37.3%	581	65.6%
Grow in my own garden or friend/family member's garden	147	29.5%	298	33.7%
Restaurant or cafeteria	93	18.6%	70	7.9%
Community or convenience store	39	7.8%	46	5.2%
Flea Market/Cattle Sale	33	6.6%	88	9.9%
Food Bank/Pantry	13	2.6%	21	2.4%
I do not buy them	7	1.4%	1	0.1%
Other (please specify)	5	1.0%	26	2.9%

Other write-ins: CSSA (2), any, get from family members, only get them on sale

- 89% of respondents purchase their produce from the grocery store.
- 37% purchase fruits and vegetables from produce stand or farmer's market.
- Approximately 30% get their produce from their own or a friend/family member's garden.

Have you ever been told by a doctor, nurse, or other health professional that you have any of the following health conditions? (Q 20, n=493, 55 unanswered)

	2018		2015	
	#	%	#	%
Angina/Heart disease	23	4.9%	35	4.4%
Asthma	71	15.0%	146	17.8%
Cancer	25	5.3%	42	5.2%
Depression	110	23.5%	205	25.0%
Diabetes/Sugar (not during pregnancy)	89	18.7%	94	11.4%
High Cholesterol	143	29.9%	242	28.8%
Hypertension/high blood pressure	169	34.7%	260	31.0%
Osteoporosis	34	7.2%	42	5.2%
Overweight/Obesity	174	36.4%	375	44.6%

- 5% have been diagnosed with angina or heart disease (similar to 2015).
- 15% of respondents reported an asthma diagnosis (lower than 2015).
- 5% have been diagnosed with cancer (similar to 2015).
- 24% of respondents have been diagnosed with depression (similar to 2015).
- 19% reported a diabetes diagnosis (higher than 2015).
- 30% have been diagnosed with high cholesterol (similar to 2015).
- 35% of respondents have been diagnosed with hypertension or high blood pressure (higher than 2015).
- Approximately 7% have been diagnosed with osteoporosis (higher than 2015).
- Approximately 36% have been diagnosed as overweight or obese (lower than 2015).

- Among female respondents:
 - 38% have been diagnosed with overweight/obesity.
 - 34% have been diagnosed with high blood pressure.
 - Around 31% have been diagnosed with high cholesterol.
 - Approximately 27% have been diagnosed with depression.
 - Approximately 19% have been diagnosed with diabetes (not during pregnancy).
 - 17% have been diagnosed with asthma.

- Among male respondents:
 - Approximately 37% have been diagnosed with high blood pressure.
 - 30% have been diagnosed with overweight/obesity.
 - 26% have been diagnosed with high cholesterol.
 - 18% have been diagnosed with diabetes.
 - 10% have been diagnosed with depression.
 - Approximately 7% have been diagnosed with asthma.

In the past year, have you... (Q 21, n=493, 55 unanswered)

	2018	
	#	%
Had a routine/annual physical or check-up?	414	84.0%
Been to the dentist/dental hygienist?	320	65.4%
Had a cancer screening (mammogram, colonoscopy, prostate exam, Pap smear, etc.) as recommended by a provider?	276	56.6%
Had your blood pressure checked?	445	90.5%
Had your cholesterol checked?	338	69.1%
Had your blood sugar levels checked?	356	72.8%

- 84% of respondents in 2018 reported having had a routine physical or check-up in the past year.
- 65% had been to the dentist or a dental hygienist in the past year.
- 57% reported having a cancer screening as recommended by a provider in the past year.
- Approximately 91% had had their blood pressure checked in the past year.
- 69% reported having their cholesterol check at some point in the past year.
- 73% had their blood sugar levels checked in the past year.

Choose the one place you go most often when you are SICK? (Q 22, n=491; 57 unanswered)

	2018		2015	
	#	%	#	%
Doctor's office	356	72.5%	719	81.8%
Health Department	45	9.2%	25	2.8%
Urgent care center	36	7.3%	55	6.3%
I do not receive care.	18	3.7%	32	3.6%
Emergency Department	13	2.7%	22	2.5%
Hospital	8	1.6%	n/a	n/a
Free clinic	5	1.0%	5	0.6%
Pharmacy	4	0.8%	7	0.8%
Other (please specify)	4	0.8%	8	0.9%
Holistic health clinic (chiropractor, acupuncturist, etc.)	1	0.2%	4	0.5%
MESH Unit	1	0.2%	0	0.0%
Sobador/Curandero	0	0.0%	2	0.2%

Other write-ins: Telemed, any, out of town doctor, VA hospital

- Approximately 73% of respondents go to a doctor's office when they are sick, a lower proportion compared to 2015.
- The second most common was the health department, a higher proportion compared to 2015, likely due to the establishment of the FQHC operated by the Wilkes County Health Department.
- Nearly 4% of respondents in both 2015 and 2018 reported not seeking care anywhere when sick.

Have any of the following problems prevented you or your family member from accessing necessary health care or social services? (Choose all that apply.) (Q 23, n=462; 86 unanswered)

	2018		2015	
	#	%	#	%
I have not had any issues accessing care or services	231	50.0%	492	58.4%
Cost/deductible/co-pay was too high	116	25.1%	164	19.5%
No insurance (health or dental)	82	17.8%	142	16.9%
Insurance didn't cover what was needed	65	14.1%	104	12.4%
Couldn't get an appointment	47	10.2%	58	6.9%
Wait was too long	35	7.6%	65	7.7%
Other (please specify)	23	5.0%	32	3.8%
Treated poorly/disrespectfully	22	4.8%	n/a	n/a
Didn't know where to go	18	3.9%	13	1.5%
Provider/facility would not take my insurance/Medicaid	14	3.0%	10	1.2%
Communication issues	11	2.4%	n/a	n/a
No way to get there	8	1.7%	13	1.5%
Language barrier	2	0.4%	4	0.5%

Other write-ins: none or n/a (7), slow response from DSS (2), doctor not taking new patients (3), had to leave town to access provider (2), other family member does not have health insurance (2), 19 hour wait in ER, physical left area or died (2)

- While 50% of respondents indicated that they did not have any issues accessing care or services, half of 2018's respondents did have access issues.
- Using those who did not say no (n=231) as a denominator (so among those who did have a problem accessing health care or social services:
 - 50% cited "cost/deductible/co-pay was too high" as the primary problem
 - 35% cited lack of health or dental insurance as the main problem
 - 28% cited "insurance didn't cover what was needed" as the primary problem.
 - 20% could not get an appointment; 15% said the wait was too long.

Do you feel that there is a need for additional providers or medical services in Wilkes County? If yes, please specify. (Q 24, n=493; 55 unanswered)

Answer Choices	2018		2015	
	#	%	#	%
Yes	286	58.0%	452	52.8
No	59	12.0%	182	21.3
I do not know	148	30.0%	222	25.9

- More than half of respondents (58%) in 2018 felt a need for additional providers or medical services in Wilkes County.
- 30% of respondents did not know whether more providers were needed.
- 159 people answered the follow up question: If yes, what services? Below is a summary of their responses, capturing the larger categories identified.

- For all write-in responses, see the Survey Response Summary Workbook.

Primary Care/General/Family Practice	63
Obstetrics/Gynecology/Women's Health (including midwifery)	17
Mental health-related (including substance abuse)	27
Holistic or Alternative (integrative medicine, acupuncture, chiropractor)	2
All/general	13
More affordable/Free/Low cost/ for the uninsured (includes dental)	20
Pediatricians and Pediatric Specialists	7
Dental	8
Specialists (unspecified)	8
Eye Doctors (optometrist, ophthalmology)	3
Endocrinology	3
Pulmonology	5
Geriatric	6
Hospice	2
Paramedicine	2
Neurology	3
Oncology	2
Cardiology/cardiac rehab	2
ENT/Allergy	2

About how tall are you without shoes? (Q33, n=477, 71 unanswered)

About how much do you weigh without shoes? (Q34, n=463, 85 unanswered)

Responses were "cleaned" to remove any obvious errors or typos and double check that the height and weight data were from matching respondents. Then the standard formula provided by the CDC was used to calculate a BMI from that data.

Calculated BMI from self-reported height and weight	2018	
	#	%
Underweight (below 18.5)	4	0.9%
Normal or healthy weight (18.5 – 24.9)	113	24.5%
Overweight (25.0 – 29.9)	146	31.7%
Obese (30.0 and above)	198	43.0%
Total	461	

- The average BMI among respondents was 30.1
- The lowest BMI calculated was 16.8.
- The highest BMI calculated was 58.5.

CHAPTER SIX: STAKEHOLDER FORUMS

The Wilkes CHNA Team sent out a survey to 45 community stakeholders, who were given two weeks to complete the survey. The survey asked each stakeholder the same eight questions. In September, the health department analyzed 34 participant surveys. Results of the Stakeholder Surveys are summarized in this report. A full discussion of the Stakeholder Survey is available in the consultant's comprehensive report.

The target participants of the Stakeholder Survey, all of whom represented health and human service agencies and organizations in Wilkes County, were asked the following survey questions:

1. What is your position in your agency?
2. What services does your agency provide for county residents?
3. Describe county residents who are most likely to use your services.
4. In the past 5 years, have there been any changes in the composition of the people who use your services?
5. In the past 5 years, have there been any changes in the needs of the people who use your services?
6. What barriers do residents face in accessing your services?
7. What does your agency do to help overcome those barriers?
8. What services or programs that aren't currently available in the community do you think are needed (whether or not they would be provided by your agency)?

The results of the stakeholder interviews are summarized (briefly) below, according to the "themes" which emerged from discussion of each question or topic. Note that the numbers do not necessarily imply any rank order.

1. Position in agency

- 41% were directors/executives
- 27% were management
- 9% were registered nurses
- 24% were support staff

2. Types of Services

- 35% substance abuse-, addiction- or mental health-related (largest segment)
- Healthcare, dental, safety, prevention, public services and education

3. Population Utilizing Services

- Many offer services to all residents
- 23% serve children/youth
- 32% serve those with mental health or substance abuse issues
- 24% serve low income, Medicaid recipients, the uninsured
- 8% serve businesses or business owners
- 62% said there have been no changes to the composition of people using their services in the last 5 years.
- 38% have seen changes in their client base

4. Changes in Composition of Clients

- 61.8% stated there have not been any changes in the composition of their clients.

5. How Client Needs Have Changed in the last 5 years (65% response rate)

- Need for jobs, transportation, housing
- Healthcare needs
- Food resources

6. Barriers Faced by Clients

- Transportation (identified by 44% of participants)
- Stigma
- Monetary
- Language

7. Overcoming Barriers

- To address **transportation**:
 - provided financial assistance
 - reduced transportation required
 - offered services by phone
 - went out into the community
- Interpreters
- Education
- Better advertising

8. Needed Services

- **Transportation**
 - county-wide bus route
 - expand current route to a regular, more frequent schedule
 - low cost public transportation would increase services utilization
 - Sidewalks
 - Bike shares
 - Taking services out into the community
- **Increase the variety of community programs**

CHAPTER SEVEN: DETERMINING HEALTH PRIORITIES

PRIORITY SELECTION PROCESS

After receiving the secondary data and primary data summaries from the Public Health Consultant, the Advisory Team was involved in a series of meetings to determine the community's health priorities. The importance of broad community involvement was emphasized and encouraged. The Advisory Team decided that the best way to select priorities would be to seek the community's input following a public review of the data. To this effect, the team scheduled a public *Health Summit*, at which participants would be asked to complete an issues prioritization ballot based on the information presented at the Summit. Prior to the Summit, the Public Health Consultant discussed the contents of her presentation with the Advisory Team.

A Prioritization Ballot was created for the Health Summit meeting, with printed instructions indicating that stakeholders should consider the following criteria before selecting their priorities:

1. **Magnitude:** How many persons does the issue/problem affect, either actual or potential?
2. **Seriousness of consequences:** What degree of disability or premature death occurs because of the issue/problem? What are the potential burdens to the community such as economic or social burdens, if the issue/problem is *not* addressed?
3. **Capacity for correcting or preventing:** Is the issue/problem amenable to the intervention? What resources of equipment, expertise, personnel or money are necessary to effect change? Are those necessary resources available in Wilkes County, or can they reasonably be acquired?
4. **Social and/or political will:** Is there likely to be sufficient local community and political support to address the issue or problem? Will the solution to the issue/problem require partnerships? Do these partnerships already exist in Wilkes County, or must they first be developed?

The Advisory Team decided to let Summit participants select up to ten issues or problems that they would like to see addressed over the next three years without requiring that any be ranked. The group felt strongly that there would be enough representation that only a few issues or problems would rise to the top. The team also decided to let the stakeholders have the prioritization ballot at the beginning of the Health Summit meeting. Providing the ballot at the beginning of the meeting would allow stakeholders to list or take notes on issues or problems as the data was being presented.

On October 30, 2018 the Advisory Team hosted the Health Summit, with 92 stakeholders and community member's present. A full list of Summit participants appears appended to this document (Appendix 4). During this meeting, the Public Health Consultant gave a PowerPoint presentation summarizing the secondary and primary data collected as part of the CHNA process. Following the data presentation participants were able to discuss the data with others and consult any of the Advisory Team members, or the Public Health Consultant, for further clarification. Before leaving the meeting, each participant was asked to return their ballot to an Advisory Team member.

PRIORITIES

After tabulating the prioritization ballots from the Health Summit and with further discussion with partners, the health department chose **four** priorities to address. The following were established as Wilkes County's health priorities for the next three years (2019-2021):

- Obesity and Chronic Disease
- Mental Health and Substance Abuse
- Access to Care
- Tobacco and Smoking

NEXT STEPS

In March, following submission of this report, Wilkes County Health Department, Wilkes Medical Center, and the Health Foundation, Inc. will hold several listening sessions or conversation cafes. The "conversation cafes" will serve a dual purpose in which community partners, members, and stakeholders receive information about the CHA, while being engaged to identify strategies and solutions for addressing the four health priorities. At the listening sessions various staff will provide a brief overview of the results, with an emphasis on Chronic Disease and Obesity, Mental Health and Substance Abuse, Tobacco and Smoking, and Access to Care. Following the presentation, participants will be able to suggest enhancement of current programs, new evidenced based strategies, and prospective partnerships.

Suggestions from the meeting will be recorded by a facilitator and note taker for each group, and subsequently consolidated into a set of priority recommendations to help the health department construct their community health improvement plan (CHIP).

In addition to the Community Health Summit results, the health department will utilize Healthy North Carolina 2020 as an additional resource when selecting their evidence-based strategies for each health priority.

The health department will continue to analyze the data and context of each health priority to ensure a proper selection of improvement activities. Once the CHIP has been finalized, it will be distributed to existing coalitions for input and buy-in for each health priority.

Once implementation of the CHIP has begun, the group will continue to monitor and collect health data, and adjust the plan as needed.

APPENDIX

2018 WILKES COUNTY COMMUNITY HEALTH SURVEY INSTRUMENT

2018 Community Health Opinion Survey

WILKES COUNTY

Thank you for taking this short survey. The Wilkes County Health Department, Wake Forest Baptist Health-Wilkes Regional Medical Center, the Health Foundation, and other community agencies use this information to understand community health needs. No answer you provide will be linked back to you in any way. You must be at least age 18 or older to take this survey and live in Wilkes County. If you have already taken the survey on paper or online, please do not take it again.

If you would like to know more about the chance to win a gift card, please continue to the end of the survey where you can find out how to enter the drawing.

Please note, we are asking only Wilkes County residents 18 years or older to complete the survey.

1. Are you a resident of Wilkes County age 18 or over?

Yes No

If no, thank you for your time and interest in our survey.

2. In general, would you say that your overall health is....

Excellent Very Good Good Fair Poor

3. Please choose up to three issues that, in your opinion, most affect the quality of life in Wilkes County.

- | | | |
|---|---|--|
| <input type="checkbox"/> Abuse and Neglect | <input type="checkbox"/> Economic Issues (unemployment, poverty, lack of higher paying jobs) | <input type="checkbox"/> Lack of social support (support groups, social activities, loneliness, friendships) |
| <input type="checkbox"/> Affordability of health services | <input type="checkbox"/> Educational Issues (access to higher education, quality, dropping out of school) | <input type="checkbox"/> Mental Health Concerns (depression, suicide, stress, hopelessness) |
| <input type="checkbox"/> Crime (violent, theft, sexual assault) | <input type="checkbox"/> Homelessness | <input type="checkbox"/> Substance Abuse (drugs and alcohol) |
| <input type="checkbox"/> Discrimination/racism | <input type="checkbox"/> Hunger | <input type="checkbox"/> Transportation options |
| <input type="checkbox"/> Domestic Violence | <input type="checkbox"/> Lack of/inadequate health insurance | |

Other: _____

4. Please choose up to three unhealthy behaviors that, in your opinion, have the biggest impact on the health of Wilkes County.

- | | | | |
|--|---|--|--|
| <input type="checkbox"/> Angry, violent behavior | <input type="checkbox"/> Not getting preventive medical care (vaccines, checkups, screenings) | <input type="checkbox"/> Smoking/tobacco use | <input type="checkbox"/> Unhealthy lifestyle (poor eating habits, lack of exercise) |
| <input type="checkbox"/> Anxiety/Depression/Stress | <input type="checkbox"/> Not getting pre-natal (pregnancy) care | <input type="checkbox"/> Substance abuse | <input type="checkbox"/> Unsafe driving (texting while driving, not using child safety seats, not wearing seatbelts) |
| <input type="checkbox"/> Lack of good parenting | <input type="checkbox"/> Poor preparation for an emergency or disaster | <input type="checkbox"/> Suicide | <input type="checkbox"/> Unsafe sexual practices (no pregnancy/STD prevention) |

Other: _____

5. Please choose up to three environmental health concerns that you believe most affect Wilkes County.

- | | | | |
|--|--|------------------------------------|--|
| <input type="checkbox"/> Air pollution | <input type="checkbox"/> Food safety | <input type="checkbox"/> Meth labs | <input type="checkbox"/> Secondhand Smoke |
| <input type="checkbox"/> Drinking water | <input type="checkbox"/> Household Hygiene | <input type="checkbox"/> Mold | <input type="checkbox"/> Septic system failure |
| <input type="checkbox"/> Fluoride-enriched water | <input type="checkbox"/> Lead exposure | <input type="checkbox"/> Radon | |

Other: _____

6. Please choose up to three services that, in your opinion, need the most improvement in your neighborhood or community.

- | | | | |
|--|--|---|---|
| <input type="checkbox"/> Animal Control | <input type="checkbox"/> Career/job centers | <input type="checkbox"/> Road maintenance and safety | <input type="checkbox"/> Substance abuse services |
| <input type="checkbox"/> Better/healthier food choices | <input type="checkbox"/> Food Banks/Pantries | <input type="checkbox"/> Services for children (fostering programs, CDSA, child care centers) | <input type="checkbox"/> Transitional/halfway housing |
| <input type="checkbox"/> Better/more recreational facilities | <input type="checkbox"/> Mental Health and Counseling Services | <input type="checkbox"/> Services for the elderly | <input type="checkbox"/> Transportation options |

Other: _____

7. Please select the one source that you get most of your general health-related information from.

- | | | |
|--|--|---|
| <input type="checkbox"/> Books/magazines | <input type="checkbox"/> Health department | <input type="checkbox"/> Local media websites |
| <input type="checkbox"/> Church | <input type="checkbox"/> Help lines | <input type="checkbox"/> Newspaper |
| <input type="checkbox"/> Doctor/nurse | <input type="checkbox"/> Hospital | <input type="checkbox"/> Pharmacist |
| <input type="checkbox"/> Friends and/or family | <input type="checkbox"/> Internet | <input type="checkbox"/> Television |
| <input type="checkbox"/> Other: _____ | | |

8. Where do you find out about local health news or events? Check all that apply.

- | | | |
|--|---|---------------------------------------|
| <input type="checkbox"/> Billboards | <input type="checkbox"/> Friends and/or family | <input type="checkbox"/> Television |
| <input type="checkbox"/> Church | <input type="checkbox"/> Internet (social media, Facebook, blogs) | <input type="checkbox"/> Workplace |
| <input type="checkbox"/> Direct mail | <input type="checkbox"/> Magazines | <input type="checkbox"/> Radio |
| <input type="checkbox"/> Email updates | <input type="checkbox"/> Newspapers | <input type="checkbox"/> Other: _____ |

9. Do you currently use any tobacco products (cigarettes, cigars, cigarillos, dip, chewing tobacco, snuff, e-cigarettes, vaping, bidis, hookah, shisha, or other)?

- | | |
|---|--|
| <input type="checkbox"/> Yes, I use tobacco now | <input type="checkbox"/> No, I quit using tobacco |
| <input type="checkbox"/> Yes, I am trying to quit | <input type="checkbox"/> No, I've never used tobacco |

10. If yes, where would you go for help if you wanted to quit?

- | | | | |
|--|--|--|---|
| <input type="checkbox"/> N/A: I don't want to quit | <input type="checkbox"/> Doctor | <input type="checkbox"/> Health Department | <input type="checkbox"/> Private counselor/ therapist |
| <input type="checkbox"/> Church | <input type="checkbox"/> Free Quit Line NC | <input type="checkbox"/> Pharmacy | <input type="checkbox"/> I don't know |
| <input type="checkbox"/> Other: _____ | | | |

11. In your opinion, what are the top three biggest substance abuse problems among ADULTS in this county?

- | | | |
|---|--|--|
| <input type="checkbox"/> Abusing prescription drugs | <input type="checkbox"/> Drinking & driving | <input type="checkbox"/> Marijuana |
| <input type="checkbox"/> Alcohol abuse | <input type="checkbox"/> Heroin | <input type="checkbox"/> Methamphetamine (Meth) |
| <input type="checkbox"/> Cocaine/crack | <input type="checkbox"/> Huffing (inhaling glue, dust-off, etc.) | <input type="checkbox"/> Using someone else's prescription drugs |
| <input type="checkbox"/> I don't know | <input type="checkbox"/> Other: _____ | |

12. In your opinion, what are the top three biggest substance abuse problems among YOUTH in this county?

- | | | |
|---|--|--|
| <input type="checkbox"/> Abusing prescription drugs | <input type="checkbox"/> Drinking & driving | <input type="checkbox"/> Marijuana |
| <input type="checkbox"/> Alcohol abuse | <input type="checkbox"/> Heroin | <input type="checkbox"/> Methamphetamine (Meth) |
| <input type="checkbox"/> Cocaine/crack | <input type="checkbox"/> Huffing (inhaling glue, dust-off, etc.) | <input type="checkbox"/> Using someone else's prescription drugs |
| <input type="checkbox"/> I don't know | <input type="checkbox"/> Other: _____ | |

13. If a friend or family member were thinking about suicide, who is the first person you would tell them to talk to?

- | | | | |
|--|---|---|---|
| <input type="checkbox"/> Call 9-1-1 | <input type="checkbox"/> Daymark | <input type="checkbox"/> Friends and/or family | <input type="checkbox"/> Private counselor/ therapist |
| <input type="checkbox"/> Care Connection | <input type="checkbox"/> Doctor | <input type="checkbox"/> Health Department | <input type="checkbox"/> School counselor |
| <input type="checkbox"/> Crisis hotlines | <input type="checkbox"/> Emergency Department | <input type="checkbox"/> Minister/ religious official | <input type="checkbox"/> Support group (AA, NA, etc.) |
| <input type="checkbox"/> I don't know | <input type="checkbox"/> Other: _____ | | |

14. If a friend or family member needed counseling for a mental health concern or issue, who is the first person you would tell them to talk to?

- | | | | |
|--|---|---|---|
| <input type="checkbox"/> Call 9-1-1 | <input type="checkbox"/> Daymark | <input type="checkbox"/> Friends and/or family | <input type="checkbox"/> Private counselor/ therapist |
| <input type="checkbox"/> Care Connection | <input type="checkbox"/> Doctor | <input type="checkbox"/> Health Department | <input type="checkbox"/> School counselor |
| <input type="checkbox"/> Crisis hotlines | <input type="checkbox"/> Emergency Department | <input type="checkbox"/> Minister/ religious official | <input type="checkbox"/> Support group (AA, NA, etc.) |
| <input type="checkbox"/> I don't know | <input type="checkbox"/> Other: _____ | | |

15. If a friend or family member wanted help for a substance abuse problem, who is the first person you would tell them to talk to?

- | | | | |
|--|---|---|---|
| <input type="checkbox"/> Call 9-1-1 | <input type="checkbox"/> Daymark | <input type="checkbox"/> Friends and/or family | <input type="checkbox"/> Private counselor/ therapist |
| <input type="checkbox"/> Care Connection | <input type="checkbox"/> Doctor | <input type="checkbox"/> Health Department | <input type="checkbox"/> School counselor |
| <input type="checkbox"/> Crisis hotlines | <input type="checkbox"/> Emergency Department | <input type="checkbox"/> Minister/ religious official | <input type="checkbox"/> Support group (AA, NA, etc.) |
| <input type="checkbox"/> I don't know | <input type="checkbox"/> Other: _____ | | |

16. During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?

- Yes No

17. Where do you go for physical activity or exercise? Check all that apply.

- | | |
|--|---|
| <input type="checkbox"/> Bike trails | <input type="checkbox"/> Outdoor recreation & play – parks, public/church/school playgrounds, greenways, etc. |
| <input type="checkbox"/> Community walking trails or groups | <input type="checkbox"/> Streets, sidewalks, neighborhood roads |
| <input type="checkbox"/> Home | <input type="checkbox"/> Workplace |
| <input type="checkbox"/> Indoor recreation centers or facilities | <input type="checkbox"/> I don't exercise or participate in physical activity |
| <input type="checkbox"/> Other: _____ | |

18. One of the recommendations for healthy eating is to eat at least 5 servings of fruits & vegetables a day. Do you eat this many servings of fruits and vegetables in an average day?

- Yes No

19. Where do you get your fruits and vegetables most often? (Choose up to three.)

- | | |
|---|--|
| <input type="checkbox"/> Community or convenience store | <input type="checkbox"/> Grocery store |
| <input type="checkbox"/> Farmer's market/produce stands | <input type="checkbox"/> Grow in my own garden/friend or family members garden |
| <input type="checkbox"/> Food Bank/ Pantry | <input type="checkbox"/> Restaurant or cafeteria |
| <input type="checkbox"/> Flea Market/Cattle Sale | <input type="checkbox"/> I do not buy them. |
| <input type="checkbox"/> Other: _____ | |

20. Have you been told IN THE PAST THREE YEARS by a doctor, nurse, or other health professional that you have any of the following health conditions?

- | | | | |
|--|------------------------------|-----------------------------|-------------------------------------|
| a. Asthma | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't know |
| b. Depression | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't know |
| c. Hypertension/ high blood pressure | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't know |
| d. High cholesterol | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't know |
| e. Diabetes/ Sugar (not during pregnancy) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't know |
| f. Osteoporosis | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't know |
| g. Overweight/ Obesity | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't know |
| h. Angina/ Heart disease | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't know |
| i. Cancer | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't know |

21. In the past year, have you:

- a. Had a routine/annual physical or check-up Yes No Don't know
- b. Been to the dentist/dental hygienist Yes No Don't know
- c. Had a recommended screening (mammogram, colonoscopy, prostate, etc.) Yes No Don't know
- d. Had your blood pressure checked Yes No Don't know
- e. Had your cholesterol checked Yes No Don't know
- f. Had your blood sugar levels checked Yes No Don't know

22. Choose the one place you go most often when you are sick.

- I do not receive care.
- Doctor's office
- Emergency department
- Free clinic
- Health Department
- Holistic health clinic (chiropractor, acupuncturist, etc)
- Hospital
- MESH Unit
- Pharmacy
- Sobador/ Curandero
- Urgent care center
- Other: _____

23. Have any of the following problems prevented you or your family member from getting necessary health or social services? Check all that apply.

- I have not had any issues accessing care or services.
- Communication issues
- Cost/deductible/co-pay was too high
- Couldn't get an appointment
- Didn't know where to go
- Other: _____
- Insurance didn't cover what was needed
- Language Barrier
- No insurance (health or dental)
- No way to get there
- Provider/facility wouldn't take my insurance/Medicaid
- Treated poorly/disrespectfully
- Wait was too long

24. Do you feel that there is a need for additional providers or medical services in Wilkes County?

- Yes
- No
- I do not know

If yes, what providers or services? _____

**** Please complete the questions below for STATISTICAL PURPOSES ONLY. ****

25. How old are you?

- 19 or less
- 20 – 34
- 35 – 54
- 55 – 64
- 65 – 74
- 75 or older

26. How do you describe yourself?

- Female
- Male
- Other

27. Are you of Hispanic, Latino, or Spanish origin?

- Yes
- No

28. What is your race? Please check all that apply.

- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic or Latino
- Native Hawaiian or other Pacific Islander
- White or Caucasian
- Other: _____

29. What is the highest level of school, college, or vocational training that you have finished?

- Less than 9th grade
- 9th to 12th grade, no diploma
- High school graduate (or GED/ equivalent)
- Some college (no degree)
- Associate's degree or Vocational training
- Bachelor's degree
- Graduate or professional degree

30. What type of health insurance do you have? (Choose all that apply)

- I do not have health insurance.
- Blue Cross/ Blue Shield
- United Health Care
- Other private insurance company
- Medicaid
- Medicare
- Military related coverage such as CHAMPUS or Tricare
- Other: _____

31. What was your total household income last year, before taxes?

- Less than \$10,000
- \$10,000 to \$14,999
- \$15,000 to \$24,999
- \$25,000 to \$34,999
- \$35,000 to \$49,999
- \$50,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 to \$149,999
- \$150,000 or more

32. What is your zip code? Write only the first 5 digits.

--	--	--	--	--

33. About how tall are you without shoes? _____ feet _____ inches

34. About much do you weigh without shoes? _____ pounds

THANK YOU FOR YOUR TIME.

IF YOU WOULD LIKE TO BE ENTERED INTO A DRAWING TO WIN A \$100 GIFT CARD OR RECIEVE RESULTS, PLEASE COMPLETE THE NEXT PAGE. THE NEXT PAGE IS NOT REQUIRED.

The results of this survey will be posted online or available electronically on request at www.healthywilkes.org, www.wilkesregional.com, and www.healthfoundationinc.org.

If you are interested in being entered into the drawing for a gift card or receiving the Community Health Needs Assessment results, please provide:

Name: _____

Email or mailing address: _____

Phone number: _____

Check here if you would like information about the results of the Community Health Needs Assessment.

THANK YOU FOR YOUR TIME.

REFERENCES

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