Graham County 2015 Community Health Assessment

12/30/2015

GRAHAM COUNTY COMMUNITY HEALTH ASSESSMENT

ACKNOWLEDGEMENTS

This document was developed by Graham County Department of Public Health, in partnership with Murphy Medical Center as part of a local community health (needs) assessment process. We would like to thank and acknowledge several agencies and individuals for their contributions and support in conducting this health assessment:

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Deena Collins	Murphy Medical Center	Local hospital representative
Rick Davis	GREAT	CHA team
Mandi Carringer	Mountain Wise	Community Survey
Professional Research Consultants, Inc.	Professional Research Consultants, Inc.	Key Informant Survey

Our community health (needs) assessment process and product were also supported by technical assistance, financial support, and collaboration as part of WNC Healthy Impact, a partnership between hospitals, health departments, and their partners in western North Carolina to improve community health.

TABLE OF CONTENTS

GRAHAM COUNTY 2015 CHA EXECUTIVE SUMMARY

Purpose and Process

The Community Health Assessment (CHA), which refers to both to a process and a document, investigates and describes the current health status of the community, recent changes, what needs to change to improve health, and resources available. The process involves the collection and analysis of a large range of data, including demographic, socioeconomic and health statistics, environmental data, personal self-reports, and public opinion. The document is a summary of all the available evidence and serves as a resource until the next assessment. This provides a basis for prioritizing the community's needs, and for planning to meet those needs.

WNC Healthy Impact is a partnership between hospitals and health departments in western North Carolina to improve community health. These partners are collaborating to conduct community health assessments across western North Carolina. The partners collected secondary (existing) data for this report. For the data collection phase of our regional efforts, a survey vendor (PRC – Professional Research Consultants, Inc.) was hired to administer a region-wide phone survey. Additional data was also collected by Mountain Wise via a survey of residents.

Data Summary

Community

Graham County is located in the Great Smoky Mountains of western North Carolina, bordering Tennessee. Its mountain scenery has a natural beauty that attracts many tourist each year. With elevations of the county ranging from 1,177 to 5,560 feet, the topography and slopes can change rapidly in a short distance. Though beautiful, the rugged mountains and limited privately-owned land restrict the opportunity for residential building and developmental business growth. Sixty-three percent of the land in the county is nontaxable, presenting a small tax base and revenue source for county government operations.

According to the 2010 US Census, the population of the County is 8,861. As with region-wide and statewide populations, there is a slightly higher proportion of females than males (50.7% vs. 49.3). Graham County is less diverse than either WNC or NC as a whole, except for a sizeable population of Native Americans (6.4%). In Graham County the population is 90.3% white/Caucasian and 9.7% non-white. Statewide, the comparable figures are 68.5% white and 31.5% non-white. Graham County's median age is 44.3. In the 2010 census 5.7 % of the population was under 5, 18.2% was aged 5 - 19, 56.4% was 20-64, and 19.7% was over 65. Graham County is a Tier 1, economically distressed, county. For 2008-2012, 17.3% of the population was living below poverty level. For the same time period, 21.15% were below the

200% Federal poverty level, as compared to 17.5% in the state. Graham County is a mixture of traditional mountain culture and Native American culture. The county is home to a portion of the Cherokee Indian Reservation, with Native Americans accounting for 6.4% of the total county population. Although Graham is economically distressed, the residents come together in annual events to raise support for Breast Cancer, Cystic Fibrosis, and the Special Olympics. Other important events include the annual Homecoming events and the Fourth of July celebrations.

Health Outcomes

The data revealed trends among county residents, such as a prevalence of diagnosed diabetes and obesity among adults in Graham County, a mortality rate for heart disease that exceeds the state rate, an increase in substantiated cases of child abuse, the lowest ratio for every category of health professional listed, and a high number of uninsured adults. According to County Health Rankings, 2014, Graham was ranked 63rd overall among the 100 North Carolina counties.

Since the 2012 CHA, the county has been working on several priorities. Some of the work includes:

- continuation of the Hilltop Free Clinic for uninsured
- establishing open access with a full time provider at the health department
- training 3 Health Department employees as Life style coaches for a diabetes prevention program recognized by the CDC
- constructing an outdoor classroom at the high school
- continuation of the farmers market
- improving existing walking/bike trails.

Our challenges, in part, are to lower the rates of type II diabetes , heart disease, obesity, tobacco use, and those living in poverty; and to prepare to service an older population.

Populations at risk

The Native American population is an at risk group, although minority population percentages for Graham County are too small to present reliable data, other data sources have proven that diabetes rates are much higher among the Native American population.
The elderly population also faces challenges due to a lack of medical providers in the county. The projected growth over the next two decades of the population over the age of 65 will give us a significantly large population of senior citizens. By 2030 projections estimate there will be more than 2,500 persons age 65+ in Graham County. Other at risk populations are the low-income population, those with lower education attainment and the disabled.

Health Priorities

A meeting was held to help determine the health priorities. Members of the GREAT (Graham Revitalization Economic Action Team) Health and Social Committee were asked to attend. Key data and trends were identified to help determine the health priorities. Attendees were asked to consider the number of people affected, the degree to which the issue leads to death, the effectiveness and the feasibility of intervention, and the importance of the problem to the community. They were asked to voice their opinions through the use of the multi-voting technique as outlined by NACCHO. The data concerning the top priorities is as follows.

Prevalence of diagnosed diabetes among adults in Graham County is slightly higher than the region. Although not significantly higher, it is still a major concern due to its many complications and the fact that it is largely preventable.

The percentages of overweight and obese adults is higher than the region percentages.

The percentage of overweight children is significantly higher. In 2011 ages 2-4 years old, 22.8% were overweight, significantly higher than the state at 16.1%. For ages 5-11 years, 21.6% were overweight as compared the state rate of 17.1%. For ages 12-18 years, the overweight rate was 19.5% for the county, 18.1% for the state.

Graham County mortality rate for heart disease exceeds the state rate by 17%.

Health Priority 1 Access to Care

Health Priority 2 Reduce the incidence of chronic disease (Diabetes, Heart Disease, COPD)

Health Priority 3 Increase Physical Activity and Good Nutrition

Next Steps

The CHA will be disseminated in at least the following ways:

- Dissemination to the public – Graham County Department of Public Health website, GREAT annual meeting, Graham County Library, the *Graham Star* newspaper
- Dissemination to stakeholders – presentations to Graham County Board of Health, Graham County Board of Commissioners, GREAT annual meeting

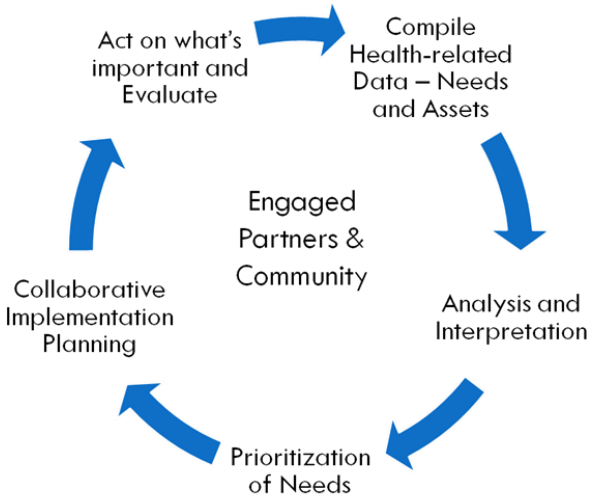
Collaborative implementation planning with hospitals and other community partners will take place in the spring of 2016. The CHA team will host a meeting with partners to develop strategies to improve three of the priority areas. The Graham County Department of Public Health and the community will use this information to continue to work to improve and promote the health of Graham County. The Community Health Assessment will be used as the foundation for concerned citizens and community leaders to strengthen the capacity for moving forward to change both individual and community health outcomes.

CHAPTER 1 – COMMUNITY HEALTH ASSESSMENT PROCESS

Purpose

Community health assessment (CHA) is an important part of improving and promoting the health of county residents. **Community-health assessment is a key step in the ongoing community health improvement process**.

A community health assessment (CHA), which is both a process and a product, investigates and describes the current health indicators and status of the community, what has changed, and what still needs to change to reach a community's desired health-related results.



Definition of Community

Community is defined as "county" for the purposes of the North Carolina Community Health Assessment Process. Graham County is included in Murphy Medical's community for the purposes of community health improvement, and as such they were a key partner in this local level assessment.

WNC Healthy Impact

WNC Healthy Impact is a partnership between hospitals and health departments in western North Carolina to improve community health. As part of a larger, and continuous, community health improvement process, these partners are collaborating to conduct community health (needs) assessments across western North Carolina www.WNCHealthyImpact.com. Our county and partner hospitals are involved in this regional/local vision and collaboration. Participating counties include: Buncombe, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania and Yancey.

Data Collection

The set of data reviewed for our community health assessment process is comprehensive, though not all of it is presented in this document. Within this community health assessment product we share a general overview of health and influencing factors then focus more on priority health issues identified through this collaborative process. Our assessment also

highlights some of our community strengths and resources available to help address our most pressing issues.

Core Dataset Collection

The data reviewed as part of our community's health assessment came from the WNC Healthy Impact regional core set of data and additional local data compiled and reviewed by our local CHA team. WNC Healthy Impact's core regional dataset includes secondary (existing) and primary (newly collected) data compiled to reflect a comprehensive look at health. The following data set elements and collection are supported by WNC Healthy Impact data consulting team, a survey vendor, and partner data needs and input:

- A comprehensive set of publically available secondary data metrics with our county compared to the sixteen county WNC region as "peer"
- Set of maps accessed from Community Commons and NC Center for Health Statistics
- Telephone survey of a random sample of adults in the county
- Email key-informant survey

See Appendix A for details on the regional data collection methodology.

Additional Community-Level Data

Additional local data was collected through a survey conducted by Mandi Carringer of Mountain Wise.

Health Resources Inventory

An inventory of available resources of our community was conducted through reviewing a subset of existing resources currently listed in the 2-1-1 database for our county as well as working with partners to fill in additional information. Where gaps were identified, we partnered with 2-1-1 to fill in or update this information when applicable. See Chapter 7 for more details related to this process.

Community Input & Engagement

Including input from the community is an important element of the community health assessment process. Our county included community input and engagement in a number a ways:

- Partnership on conducting the health assessment process
- Through primary data collection efforts (survey and key informant interviews)
- In the identification and prioritization of health issues

In addition, community engagement is an ongoing focus for our community and partners as we move forward to the collaborative action planning phase of the community health improvement process. Partners and stakeholders with current efforts or interest related to priority health issues will continue to be engaged. We also plan to work together with our partners to help assure programs and strategies in our community are developed and implemented with community members and partners.

At-Risk & Vulnerable Populations

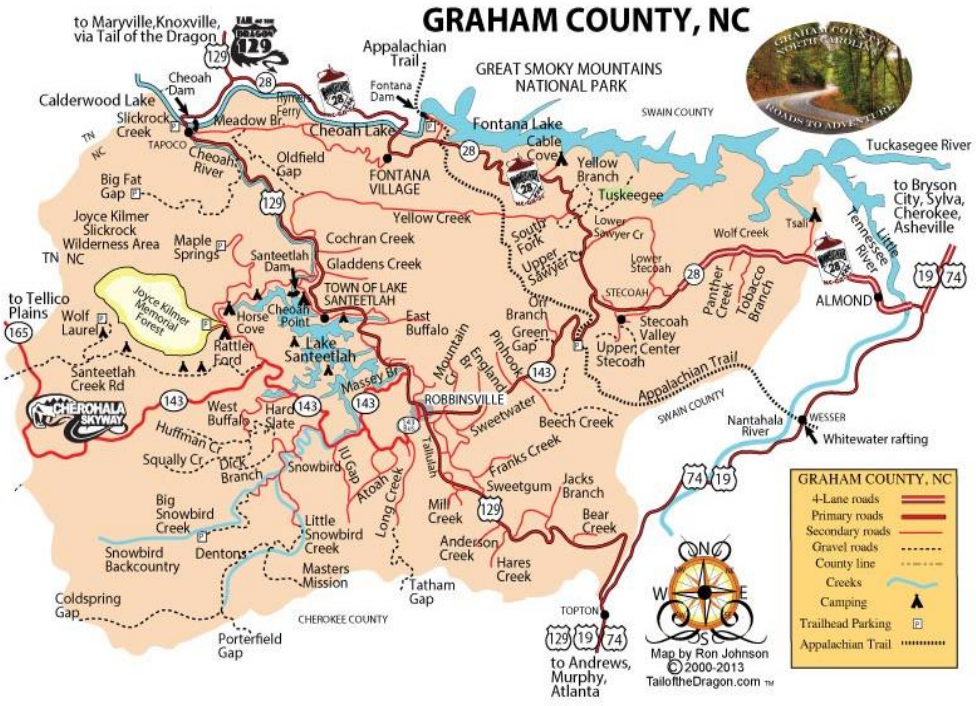
Throughout our community health assessment process and product, our team was focused on understanding general health status and related factors for the entire population of our county as well as the groups particularly at risk for health disparities or adverse health outcomes. In particular, for the purposes of the overall community health assessment, we aimed to understand variability in health outcomes and access of medically underserved, low-income, minority, and others experiencing health disparities.

- Age 65 or older
- Native Americans
- Those living below poverty level
- Disabled
- Those with lower education

CHAPTER 2 – GRAHAM COUNTY

Location and Geography

Graham County is known for its tranquility, isolation and rugged mountain lands. It offers the beauty and comfort that draw tourist and new residents to this rural area. Many tourist flock to the mountains for the thrill of driving on the curvy roads, in particular, one section of Highway 28 known as the Dragon. We also have many who come to hike our portion of the Appalachian Trail or visit Joyce Kilmer Forest.



The county is in the far western part of North Carolina, bordering Tennessee, and is surrounded by mountains with the Unicoi Mountains to the West; the Snowbird Mountains to the South; and the North and East crossed by the Cheoah Range and the Yellow Creek Mountains. The Cheoah River flows into the Little Tennessee River in the western section of the county.

The County has a total of 186,965 acres of land. The United States Forest Service owns 111,618; Tennessee Valley Authority owns 3,522; Eastern Band of The Cherokee Indians owns 2,249; Brookfield Smoky Mountain Hydropower, LLC owns 5,995; and Private landholders own 63,581.

History

Graham County was formed from the eastern part of Cherokee County in 1872 to make enforcement of the law and access to the courts more uniform and accessible for the families who settled in the mountains of WNC. It was named for William A. Graham, a senator who helped with the passage of the act to form the county.

Early history finds only three white families living in Graham County - the Crisps, the Hydes, and the Rowans. Long before European settlers, the area that would become Graham County was home to a large group of Cherokee Indians. Part of the original Trail of Tears still exists in Graham County on a six-mile section of road called Tatham Gap, which connects Graham and Cherokee counties. Graham County's most famous Native American, Chief Junaluska, saved the life of President (then General) Andrew Jackson at Horseshoe Bend. He was awarded 337 acres of land, made a citizen of North Carolina, and given $100 in recognition of his bravery.

Population

According to data from the 2010 US Census, the total population of Graham County is 8,861. In Graham County, as region-wide and statewide, there is a slightly higher proportion of females than males (50.7% vs. 49.3%).

The age 65 and older segment of the population represents a significantly larger proportion of the overall population in Graham County (19.7%) than in the state as a whole (12.9%). In terms of future health resource planning, it will be important to understand how this segment of the population, a group that utilizes health care services at a higher rate than other age groups, is going to change in the coming years. The chart below presents the projected growth trend for the age 65 and older population, further stratified into smaller age groups, for the decades of 2020 and 2030. This data illustrates how the population age 65 and older in the county is going to increase over the coming two decades.

Trend: Growth in Elderly (Age 65 and Older) Population, by Decade, as Number and Percent of Total Population (2020 through 2030)

County	2020 (Projected)								2030 (Projected)							
	Total Projected Population	% Population Age 65-85+	# Age 65-74	% Age 65-74	# Age 75-84	% Age 75-84	# Age 85+	% Age 85+	Total Projected Population	% Population Age 65-85+	# Age 65-74	% Age 65-74	# Age 75-84	% Age 75-84	# Age 85+	% Age 85+
Graham	9,382	23.9	1,232	13.1	743	7.9	268	2.9	10,032	25.0	1,233	12.3	922	9.2	354	3.5
WNC (Regional) Total	810,829	23.8	107,022	13.2	62,400	7.7	23,698	2.9	860,238	26.2	111,136	12.9	82,794	9.6	31,815	3.7
State Total	10,558,749	16.8	1,056,131	10.0	528,492	5.0	190,093	1.8	11,558,205	19.9	1,252,828	10.8	788,911	6.8	263,219	2.3
Source	3	5	3	5	3	5	3	5	4	5	4	5	4	5	4	5

3 - *Age, Race, and Sex Projections, Age Groups - Total, July 1, 2020 County Total Age Groups - Standard* last updated October 10, 2014. North Carolina Office of State Budget and Management County/State Population Projections: http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/county_projections.shtm

4 - *Age, Race, and Sex Projections, Age Groups - Total, July 1, 2030 County Total Age Groups - Standard* last updated October 10, 2014. North Carolina Office of State Budget and Management County/State Population Projections: http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/county_projections.shtm

5 - Percentages calculated using age group population as numerator and total population as denominator

Chapter 3 – A Healthy Graham County

Elements of a Healthy Community

When key informants were asked to describe what elements they felt contributed to a healthy community in our county, they reported:

- Outdoor Activities
- Access to Health Care
- Affordable Health Care
- Clean Water
- Community Members Live Proactive, Healthy Lifestyles
- Diet/Nutrition
- Good Education
- Healthy Economy
- Healthy Lifestyle Education
- Low Rate of Substance Abuse
- Low Rate of Tobacco Use
- Quality Health Care
- Services for Senior Citizens
- Structure for Promotion of Pedestrian, Bicycle Access
- Walkability

Of residents surveyed,

64.44% strongly agreed

and 17.78% agreed

that **all** public places should be

smoke free. (total of 82.22%)

During our collaborative action planning efforts and next steps, we will further explore these concepts and the results our community has in mind.

Community Assets

We also asked key informants to share some of the assets or "gems" they thought were important in our community. They shared the following information and ideas:

- The Natural Resources
- Great People
- The Natural Environment
- Outdoor Recreation, Scenic Beauty
- Family Feel

Graham County's location gives it a natural beauty that attracts many tourist each year. There are several hiking trails, and kayaking and leaf looking are popular activities. Its curvy mountain roads also attract sports car enthusiast clubs and motorcyclists.

The appreciation of culture and traditions and blending of Appalachian Mountain culture and the Native American Cherokee culture is also an asset to the community.

Another valuable asset to the county is the GREAT team. It is a partnership of citizens that works to address many of the challenges faced by Graham County. GREAT (**G**raham **R**evitalization **E**conomic **A**ction **T**eam) has an active membership of over 100 people serving on its Board of Directors and seven committees. In addition to local citizen participation, there are representatives from a variety of county, regional and state groups actively involved with the organization. They have been successful at getting many grants for the county and many projects completed that lead to a healthier community. One of their projects has been the walking trail at Stecoah Valley Center, as seen below.

CHAPTER 4 – SOCIAL & ECONOMIC FACTORS

Income

Income can come from jobs, investments, government assistance programs, or retirement plans. Income not only allows families and individuals to purchase health insurance and medical care, but also provides options for healthy lifestyle choices. Poor families and individuals are most likely to live in unsafe homes and neighborhoods, often with limited access to healthy foods and employment options (County Health Rankings , 2015). Those with fewer resources also find it more difficult to bear the expenses of traveling out of county to seek medical attention, especially at times when gas prices are high. As the chart below shows, Graham County falls significantly lower than the region and even lower still than the state incomes.

Income Measures, Median Household Income and Median Family Income(5-Year Est., 2006-10 through 2009-13)

County	2006-2010				2007-2011				2008-2012				2009-2013			
	Household and Family Income				Household and Family Income				Household and Family Income				Household and Family Income			
	Median Household Income (dollars)*	Median Household Income Diff from State	Median Family Income (dollars)**	Median Family Income Diff from State (dollars)	Median Household Income (dollars)*	Median Household Income Diff from State	Median Family Income (dollars)**	Median Family Income Diff from State (dollars)	Median Household Income (dollars)*	Median Household Income Diff from State	Median Family Income (dollars)**	Median Family Income Diff from State (dollars)	Median Household Income (dollars)*	Median Household Income Diff from State	Median Family Income (dollars)**	Median Family Income Diff from State (dollars)
Graham	28,447	-17,123	34,831	-21,322	32,255	-14,036	38,722	-18,449	32,137	-14,313	40,143	-17,003	33,903	-12,431	39,580	-17,348
WNC (Regional) Arithmetic Mean	37,815	-7,756	47,608	-8,545	39,201	-7,090	48,991	-8,181	39,118	-7,332	48,686	-8,460	38,887	-7,447	48,551	-8,377
State Total	45,570	n/a	56,153	n/a	46,291	n/a	57,171	n/a	46,450	n/a	57,146	n/a	46,334	n/a	56,928	n/a
Source	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2

Note: Households include all the people who occupy a housing unit. The occupants may be a single family, one person living alone, or two or more families living together, or any other group of related or unrelated people who share living arrangements. Note: Family Households consist of a householder and one or more other people living in the same household who are related to the Householder by birth, marriage, or adoption. All people in a household who are related to the householder are regarded as members of his or her family. A family household may contain people not related to the householder, but those people are not included as part of the householder's family in tabulations.
1 - *Selected Economic Characteristics, 2006-2010 [and other years as noted] American Community Survey 5-Year Estimates (DP03).* U.S. Census Bureau American FactFinder: http://factfinder2.census.gov
2 - Calculated

Employment

Employment provides not only income, but often, benefits that can support healthy lifestyle choices. Unemployment limits these choices, and negatively affects both quality of life and health overall (County Health Rankings , 2015). As shown below, the unemployment rate for

Graham County in January and February of 2015 is nearly three times that of the state and double that of the region.

Unemployment Rate Trend (Single Years, 2007 through 2013 [Unadjusted] and 2014 to date

County	Civilian Labor Force Estimate - Calculated Annual Average, 2014 (Unadjusted)			Unemployment Rate, % (Annual Average, Unadjusted)								% Unemployed (2015 Monthly Average,	
	Labor Force	# Employed	# Unemployed	2007	2008	2009	2010	2011	2012	2013	2014	January	February
Graham	3,669	3,241	429	7.2	10.9	16.8	16.1	16.6	16.8	14.8	11.7	14.5	14.2
WNC (Regional) Total	360,445	340,497	19,949	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
WNC (Regional) Arithmetic Mean	22,528	21,281	1,247	5.0	6.9	11.4	11.7	11.2	10.6	9.3	6.5	7.0	6.8
State Total (unadjusted)	4,656,194	4,370,379	285,815	4.8	6.3	10.4	10.8	10.2	9.5	8.4	6.1	5.9	5.7
State Total (seasonally adjusted)	4,630,201	4,349,017	281,184	4.8	6.3	10.4	10.8	10.3	9.5	8.6	6.1	5.3	5.3
National Total (unadjusted)	155,921,833	146,305,333	9,616,417	4.6	5.8	9.3	9.6	8.9	8.1	7.4	6.2	6.1	5.8
National Total (seasonally adjusted)	155,899,000	146,302,833	9,596,333	4.6	5.8	9.3	9.6	8.9	8.1	7.4	6.2	5.7	5.5
Source	1	1	1	2	2	2	2	2	2	2	2	2	2

1 - Calculated Annual Average using *Local Area Unemployment Statistics (LAUS) - Labor Force, Employed and Unemployed, 2014.* North Carolina Department of Commerce, Labor and Economic Analysis Division (LEAD), D4 - Demand Driven Data Delivery System: http://esesc23.esc.state.nc.us/d4/

Education

Higher education attainment is linked to higher incomes, better employment options, and increased social supports that, together, support opportunities for healthier choices (County Health Rankings , 2015). In total percentage of all students, Graham County is slightly behind the graduation rate for the state for the graduating class of 2014. Interestingly, the percentage of males graduating on schedule is slightly above the state rate while the percentage for females is significantly lower.

4-Year Cohort High School Graduation Rate, SY2010-2011 Entering 9th Graders Graduating in SY2013-2014 or Earlier

County	All Students			Male			Female			Economically Disadvantaged			Limited English Proficiency		
	Total Students	# Students Graduating	% Students Graduating	Total Students	# Students Graduating	% Students Graduating	Total Students	# Students Graduating	% Students Graduating	Total Students	# Students Graduating	% Students Graduating	Total Students	# Students Graduating	% Students Graduating
Graham	87	71	81.6	43	36	83.7	44	35	79.5	51	40	78.4	n/a	n/a	n/a
WNC (Regional) Total	7,268	6,114	84.1	3,747	3,057	81.6	3,521	3,057	86.8	3,291	2,599	79.0	78	42	53.8
State Total	109,714	92,035	83.9	55,846	44,840	80.3	53,868	47,195	87.6	47,828	37,311	78.0	2,603	1,345	51.7
Source	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Note: subgroup information is based on data collected when a student is last seen in the cohort" n/a" indicates that the student population in the subgroup is too small to report the value. The percentage is not shown if it is greater than 95 percent or less than 5 percent. Subgroups with no data are not shown in the table above.
1 - *4-Year Cohort Graduation Rate Report, 2010-11 Entering 9th Graders Graduating in 2013-14 or Earlier - LEA Results*. Public Schools of North Carolina, Cohort Graduation Rates: http://www.ncpublicschools.org/accountability/reporting/cohortgradrate

Community Safety

Community safety reflects not only violent acts in neighborhoods and homes, but also injuries caused unintentionally through accidents. Detailed crime information for Graham County from the preferred source is limited, due to there is not enough local data to graph, and is not presented in this report. (Refer to the *Data Workbook* for a review of the few data points that are available.) There was no data on homicides, violent crime, or property crime. However, there was data in some areas. For 2013-2014 there were 21 sexual assaults reported. The chart below shows the number of calls for domestic violence has decreased. However, the cases of substantiated child abuse have increased significantly, from 5 in 2006 to 39 in 2010. The percentage of unintentional injury mortality

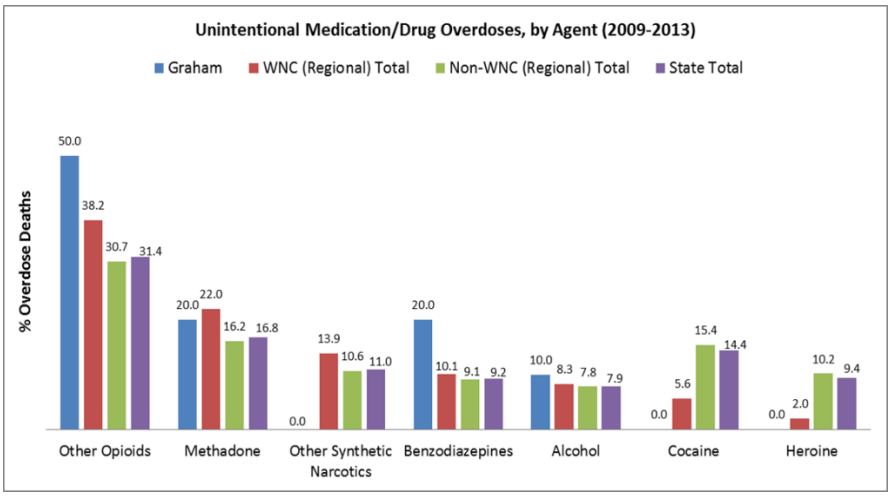
in Graham County for 2005-09 is 36.8 where as for the state it is 28.6% (County Health Rankings , 2015).

Domestic Violence Trends (2007-2008 through 2013-2014)

County	FY2011-2012					FY2012-2013					FY2013-2014				
	County Pop Estimate 2011	# Calls	# Clients	#Total Services Provided	# Days shelter was full	County Pop Estimate 2012	# Calls	# Clients	#Total Services Provided	# Days shelter was full	County Pop Estimate 2013	# Calls	# Clients	#Total Services Provided	# Days shelter was full
Graham	8,942	6	44	1,314	0	8,798	288	125	6,970	16	8,854	58	50	2,293	0
WNC (Regional) Total	770,362	15,591	8,225	85,388	751	770,397	21,385	8,730	101,490	646	776,064	17,060	7,866	90,355	1,586
State Total	9,669,244	84,075	51,563	394,083	6,196	9,767,229	114,034	57,345	444,425	7,597	9,811,942	116,052	55,274	465,463	8,086
Source	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

1 - 2013-2014 County Statistics - Domestic Violence. North Carolina Department of Administration, Council for Women: http://www.councilforwomen.nc.gov/stats.aspx

In the period 2009-2013, 13 Graham County residents died as a result of unintentional poisoning, with a corresponding age-adjusted mortality rate of 30.2 deaths per 100,000 population, twice the WNC average and 2.7 times the NC average.
Of the 13 unintentional poisoning deaths in the county in that period, 11 (85%) were due to medication or drug overdoses, with a corresponding mortality rate of 25.5, almost twice the WNC average and 2.5 times the NC average.



Medication and Drug Poisoning. Prepared April 19, 2015, by the Injury Epidemiology and Surveillance Unit, Injury and Violence Prevention Branch, Chronic Diseaese and Injury Section, N.C. Division of Public Health .

Housing

Housing is also a substantial expense, reflecting the largest single monthly expenditure for many individuals and families. Quality housing is not affordable for everyone, and those with lower incomes are most likely to live in unhealthy, overcrowded, or unsafe housing conditions. Graham County follows the regional and state data very closely as far as percentage of units spending >30% in income on housing. That figure has been consistently between 30 and 33.3% from 2006 to 2013. (County Health Rankings , 2015)

Family & Social Support

Social support stems from relationships with family members, friends, colleagues, and acquaintances. People with greater social support, less isolation, and greater interpersonal trust live longer and healthier lives than those who are socially isolated (County Health Rankings , 2015).

Online key informants were asked to indicate whether they believe physical environment and social determinants of health are each a "major contributor," "moderate contributor," "minor contributor," or "not a contributor at all" to health problems in Graham County.

As the chart below shows, the greatest share of key informants characterized Physical Environment as a "moderate contributor" to local health issues.

Nearly three-fourths of key informants characterized Social Determinants of Health as a "major contributor" to health issues to local health issues.

Evaluation of Contributors to Health Issues				
Health Issue	**Major Contributor**	**Moderate Contributor**	**Minor Contributor**	**Not a Contributor At All**
Physical Environment	0.0%	71.4%	14.3%	14.3%
Social Determinants of Health	71.4%	28.6%	0.0%	0.0%

Those who rated social determinates as a "major contributor" feel that the following contribute most to health problems in Graham County:

- Alcohol/Drug Abuse
- Economy
- Education
- Lack of Motivation to Change
- Lack of Resources to Facilitate Prolonged Change
- Lack of Two-Parent Household
- Learned Behaviors
- Poverty

Key informants noted a lack of two-parent households, as shown below only 19.1% of households with children are headed by a married couple, which is right in-line with the state's

rate. Graham County does have a higher percentage of children being raised by grandparents, 57.9% as compared to the state's 48.6%.

General Demographic Characteristics: Composition of Families with Children (5-Year Estimate, 2009-2013)

County	# Grandparents Living with Own Grandchildren (<18 Years)	Grandparent Responsible for Grandchildren (under 18 years)*		# Total Households	Family Household Headed by Married Couple (with children under 18 years)		Family Household Headed by Male (with children under 18 years)		Family Household Headed by Female (with children under 18 years)	
		Est. #	%		Est. #	%**	Est. #	%**	Est. #	%**
Graham	171	99	57.9	3,462	660	19.1	37	1.1	159	4.6
WNC (Regional) Total	15,007	8,142	54.3	316,799	49,395	15.6	6,133	1.9	17,711	5.6
State Total	206,632	100,422	48.6	3,715,565	706,106	19.0	84,199	2.3	293,665	7.9
Source	1	1	1	1	1	1	1	1	1	1

Note - Households include all the people who occupy a housing unit…The occupants may be a single family, one person living alone, or two or more families living together, or any other group of related or unrelated people who share living arrangements

Note - Family Households consist of a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption. All people in a household who are related to the householder are regarded as members of his or her family. A family household may contain people not related to the householder, but those people are not included as part of the householder's family in tabulations.

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

** - Family composition percents are based on total number of households. Numerator is number of family households (headed by male, female or married couple) with children under 18 years. Denominator is total number of households.

1 - *Selected Social Characteristics in the United States, 2009-2013 American Community Survey 5-Year Estimates (DP02).* U.S. Census Bureau American FactFinder: http://factfinder2.census.gov

CHAPTER 5 – HEALTH DATA FINDINGS SUMMARY

Mortality

The following table lists the 15 leading causes of death in the county. The first five causes are unchanged since the 2012 CHA. The leading cause of death in Graham County is Heart Disease, followed by cancer.
Alzheimer's disease has jumped from number 14 in 2012, to number 6 and Chronic Liver Disease has gone down from 8 to 12 since the 2012 CHA. Suicide has gone up from 12 to spot 9 since the last CHA.

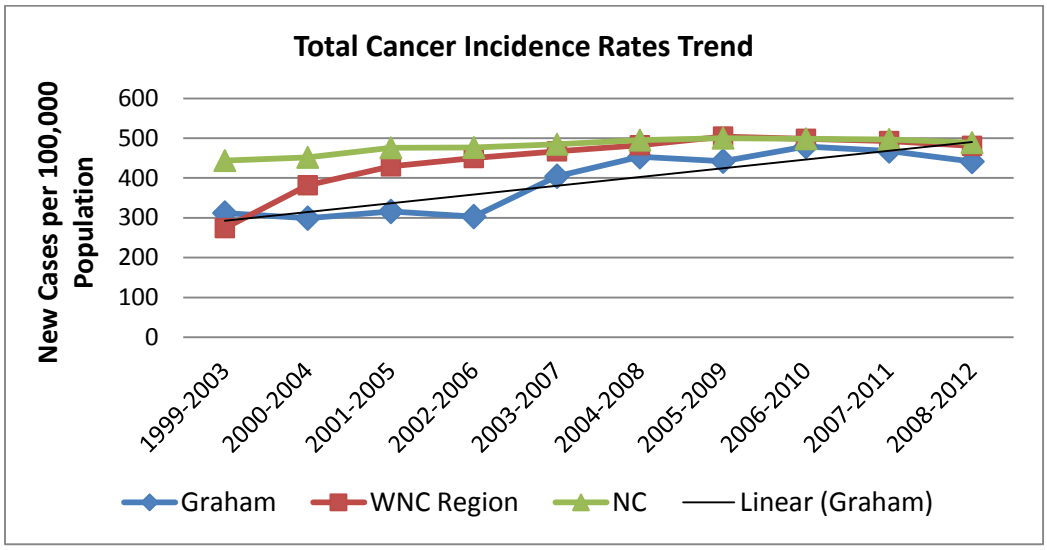
Leading Causes of Death, Age-Adjusted Death Rates per 100,000 Population (5-Year Aggregate, 2009-2013)

Rank	Cause of Death	Graham	
		# Deaths	Death Rate
1	Diseases of Heart	130	199.6
2	Cancer	100	157.8
3	All Other Unintentional Injuries	31	69.8
4	Chronic Lower Respiratory Diseases	40	61.4
5	Cerebrovascular Disease	24	35.7
6	Alzheimer's disease	15	**23.3**
7	Diabetes Mellitus	13	**20.5**
8	Pneumonia and Influenza	13	**19.7**
9	Suicide	9	**18.2**
10	Nephritis, Nephrotic Syndrome, and Nephrosis	10	**15.3**
11	Unintentional Motor Vehicle Injuries	5	**13.3**
12	Chronic Liver Disease and Cirrhosis	6	**10.7**
13	Septicemia	6	**9.1**
14	Homicide	3	**7.5**
15	Acquired Immune Deficiency Syndrome	0	**0.0**
All Causes (some not listed)		512	844.2

Source: Center For Disease Control and Prevention BRFSS

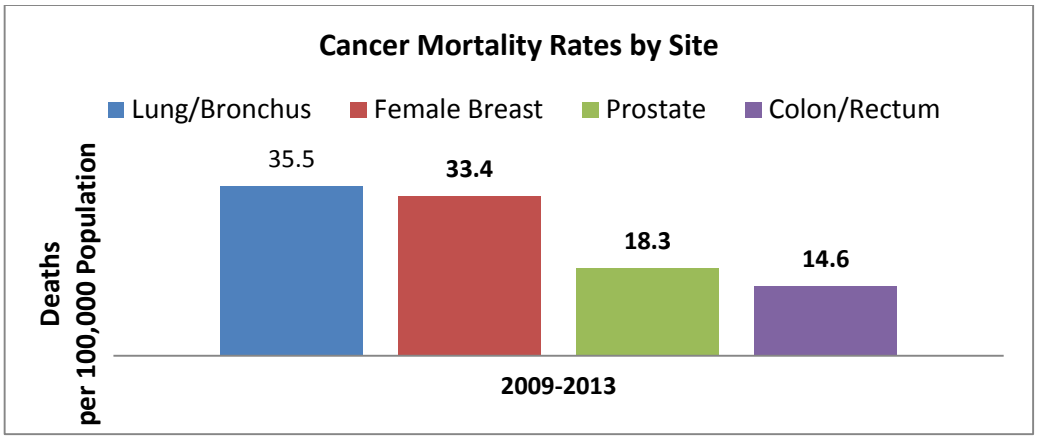
Heart disease is the number one cause of death in the county and has a higher occurrence in the county than in the state. The mortality rates for Graham County show a gender disparity in the two leading causes of death. The rate of death from heart disease for males is 57% higher than for females. Also, the rate of death from all cancers is 63% higher for males than for females. This is not unique to Graham County, disproportionate mortality among men is a long-standing and wide-spread problem that remains unsolved. It may indicate that males are not seeking preventative medical care as much as females, or that males participate in higher risk lifestyles (smoking, drinking, poor diet, etc.) more than women do, and there may be other factors at play as well (CDC, 2015).

The rate of total Cancer incidences for 2008-2012 have been lower than the state, but the mortality rate for men with cancer is higher than the state. In the survey of key informants, cancer was said to be a "Major problem" by 42.9% and a "Moderate problem" by 57.1%. Those that rated it a major problem stated that the travel required to receive treatments is an issue and also cited tobacco use and lack of preventative services in the county as problems. Taken together, cancers of all types compose the second leading cause of death in Graham County.



1999-2003 [and other years as noted] NC Cancer Incidence Rates per 100,000 Population Age-Adjusted to the 2000 US Population. North Carolina State Center for Health Statistics (NC SCHS), 2006-2015 County Health Data Books: http://www.schs.state.nc.us/schs/data/databook

Among cancer deaths, lung cancer was the most prominent. Other prominent cancers are breast cancer, prostate, and colon/rectum cancer.



1999-2003 [and other years as noted] NC Cancer Incidence Rates per 100,000 Population Age-Adjusted to the 2000 US Population. North Carolina State Center for Health Statistics (NC SCHS), 2006-2015 County Health Data Books: http://www.schs.state.nc.us/schs/data/databook

Life expectancy is the average number of additional years that someone at a given age would be expected to live if current mortality conditions remained constant throughout their lifetime. The table below presents a fairly recent summary of life expectancy for Graham County and for WNC and NC as a whole. From this data it appears that females born in Graham County between 2011 and 2013 could expect to live 6.2 years longer than males born at the same time.

Life Expectancy at Birth for Person Born in 2011-2013

	Overall	Sex		Race	
		Male	Female	White	African-American
Graham	75.5	72.6	78.8	75.5	n/a
WNC (Regional) Arithmetic Mean	77.7	75.3	80.2	77.9	75.2
State Total	78.2	75.7	80.6	78.8	75.9
Source	1	1	1	1	1

1 - *2011-2013 State-Level Life Expectancies by Age, Sex, Race and Race by Sex.* Retrieved November 4, 2014, from North Carolina Center for Health Statistics, Life Expectancy - State & County Estimates website: http://www.schs.state.nc.us/data/lifexpectancy/

Health Status & Behaviors

The Robert Wood Johnson Foundation, collaborating with the University of Wisconsin Population Health Institute, supports a project to develop health rankings for the counties in all 50 states.

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 four different specific types of health factors: health behaviors, clinical care, social and economic factors, and the physical environment

The following two tables represent the health outcome and health factor rankings for Graham County from 2012 and 2014.

County Health Rankings via MATCH (2012)

Geography	County Rank (Out of 100)[1]						
	Health Outcomes		Health Factors				Overall Rank
	Mortality	Morbidity	Health Behaviors	Clinical Care	Social & Economic Factors	Physical Environment	
Graham	88	27	33	91	85	80	69

Source: *County Health Rankings and Roadmaps, 2012*. Available at http://www.countyhealthrankings.org/app/north-carolina/2012/rankings/outcomes/overall

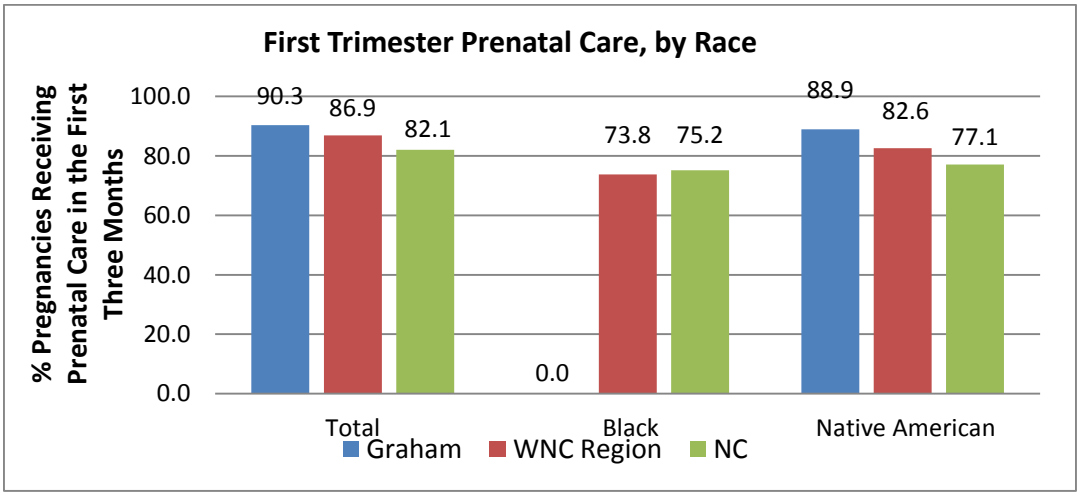
County Health Rankings 2014

Location	County Rank (Out of 100)[1]						
	Health Outcomes		Health Factors				Overall Rank
	Length of Life	Quality of Life	Health Behaviors	Clinical Care	Social & Economic Factors	Physical Environment	
Graham	77	36	25	91	89	93	63

Rankings, 2014. County Health Rankings and Roadmaps: http://www.countyhealthrankings.org/
[1] Rank of 1 equals "best". Source: *County Health Rankings and roadmaps* Available at http://www.countyhealthrankings.org/app/northcarolina/2012/rankings/outcomes/overall

The county's overall ranking has improved slightly, from 69 in 2012 to 63 currently. The rate on physical environment could be expected to go up by the next assessment considering the projects that are underway now.

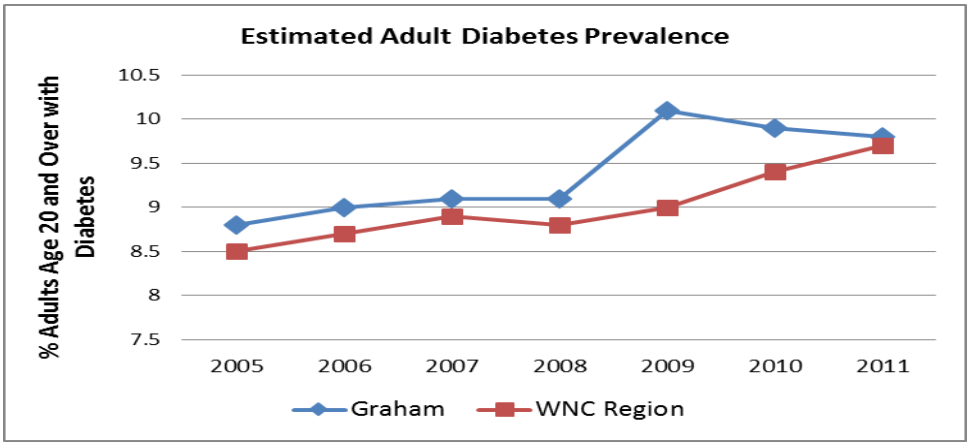
The majority of Key Informants, 71.4%, rated maternal & infant health as a "Moderate problem" stating there was a lack of services in the county. Graham County actually has a slightly higher percentage of women receiving prenatal care in the first trimester than the state percentage, as the chart below shows.



Number and Percent of Women Receiving Prenatal Care in the First Trimester (Total, Black, and Native American), 2005-2009. Retrieved June 13, 2012, from North Carolina State Center for Health Statistics, 2011 County Health Data Book: http://www.schs.state.nc.us/schs/data/databook/

The low birth weight data also show Graham County to be on par with the state levels.

A majority of Key Informants, 85.7%, stated that diabetes is a "Major problem." The number of adults with diabetes increased from 631 in 2008 to 812 in 2011.



County Level Estimates of Diagnosed Diabetes - of Adults in North Carolina, 2005 [and other years as noted]. Centers for Disease Control and Prevention, National Diabetes Surveillance System: http://apps.nccd.cdc.gov/ddtstrs/default.aspx and http://www.cdc.gov/diabetes/atlas/countydata/atlas.html

The majority of Key Informants, 57.1% listed heart disease & stroke as a "Moderate problem." The other 42.9% listed it as a "Major problem" and stated that due to the aging population of the county and the seemingly genetic predisposition to heart disease there are many cases of heart disease and stroke in Graham County. Once again patients must travel a significant distance to specialists.

Graham County did not have enough data to calculate the index crime rate or the homicide rate, violent crimes rate, or property crime rates. There were 21 cases of sexual assault in 2013 and 39 substantiated reports of child abuse in 2010.

Graham County has a high rate of unintentional poisoning deaths and overdose deaths. At 25.5 ,it is more than double the state rate of 10.

Unintentional Poisoning Deaths and Medication/Drug Overdose Deaths (5-Year Aggregate, 2009-2013)

County	Unintentional Poisoning Deaths for Select Locations and Percent that are Medication/Drug Overdoses (2009-2013)*			Rate of Unintentional Medication/Drug Overdose Deaths (2009-2013)**	
	#	Rate per 100,000 NC Residents	% that are med/drug overdoses	#	Rate per 100,000 NC Residents
Graham	13	30.2	84.6	11	25.5
WNC (Regional) Total	560	14.8	90.0	506	13.3
Non-WNC (Regional) Total	4,749	10.7	91.0	4320	9.7
State Total	5,309	11.0	90.9	4826	10.0
Source					

* Codes Used: cdeath1 = X40-X49 ** Codes Used: cdeath1 = X40-X44
1 - *Medication and Drug Poisoning.* Prepared April 19, 2015, by the Injury Epidemiology and Surveillance Unit, Injury and Violence Prevention Branch, Chronic Diseaese and Injury Section, N.C. Division of Public Health

The majority of Key Informants, 57.1%, rated mental health as being a "Major problem" in the county. They stated a lack of understanding in the community and a lack of services available in the county to be barriers. The prevalence of mental health issues was said to be related to drug abuse, isolation, and a lack of "things to do" in the county. Once again to get the proper care patients must travel long distances to specialists or be interviewed over "TV connections" located in Graham County.

In the years 2012, 2013 there were no Graham County residents served by a state psychiatric hospital. There were 453 served in area mental health programs in 2012 and 370 served in 2013. During 2012 there were 15 county residents served in a state alcohol and drug treatment center.

According to the State Library of NC, in 2009, Graham County had 20% of children in kindergarten with untreated tooth decay, as compared to just over 17 % for the state. The majority of Key Informants, 57.1%, rated oral care as a "Moderate problem" and 14.3% rates it as a "Minor problem"

Clinical Care & Access

Graham County residents lag behind the state for number of people who are insured, with the biggest disparity being in the 40 to 64 age group.

County	2013																			
	Under 65 Years					18 to 64 years					40 to 64 years					Under 19 Years				
	Total	Uninsured		Insured		Total	Uninsured		Insured		Total	Uninsured		Insured		Total	Uninsured		Insured	
		#	%	#	%		#	%	#	%		#	%	#	%		#	%	#	%
Graham	6,870	1,514	22.0	5,356	78.0	5,030	1,352	26.9	3,678	73.1	3,026	728	24.1	2,298	75.9	1,945	178	9.1	1,767	90.9
WNC (Regional) Total	598,833	121,250	N/A	477,579	N/A	450,804	110,468	N/A	340,335	N/A	264,939	51,936	N/A	213,002	N/A	155,922	12,054	N/A	143,868	N/A
WNC (Regional) Arithmetic Mean	37,427	7,578	20.8	29,849	79.3	28,175	6,904	25.0	21,271	75.1	16,559	3,246	20.7	13,313	79.3	9,745	753	8.6	8,992	91.4
State Total	8,219,611	1,488,551	18.1	6,731,060	81.9	5,971,217	1,342,556	22.5	4,628,661	77.5	3,239,240	582,314	18.0	2,656,926	82.0	2,361,840	163,880	6.9	2,197,960	93.1
Source	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Community Survey (ACS), demographic population estimates, aggregated federal tax returns, participation in SNAP, County Business Patterns, Medicaid, CHIP and Census 2010 (http://www.census.gov/did/www/sahie/about/index.html)

1 - *Small Area Health Insurance Estimates, 2009 [and other years as noted]* . U.S. Census Bureau, Small Area Health Insurance Estimate (SAHIE) Interactive Data Tool: www.census.gov/did/www/sahie/data/interactive

This table shows that for the time period of 2009-2012, Graham County is far below the state rate for number of physicians, nurses, pharmacists, and dentists.

Number of Active Health Professionals per 10,000 Population Ratios (2009 through 2012)

County	***2012***				
	Physicians	***Primary Care Physicians****	***Dentists***	***Registered Nurses***	***Pharmacists***
Graham	*4.52*	*4.52*	*2.26*	*37.29*	*5.65*
WNC (Regional) Arithmetic Mean	*14.29*	*6.84*	*3.61*	*76.94*	*7.97*
State Total	*22.31*	*7.58*	*4.51*	*99.56*	*10.06*
National Ratio (date)	*23.0 (2011)*	*8.1 (2011)*	*5.3 (2012)*	*91.6 (2012)*	*9.1 (2012)*
*North Carolina Percent (date)****	*21.7 (2011)*	*8.0 (2011)*	*4.5 (2012)*	*99.5 (2012)*	*10.1 (2012)*
Source	*1*	*1*	*1*	*1*	*1*

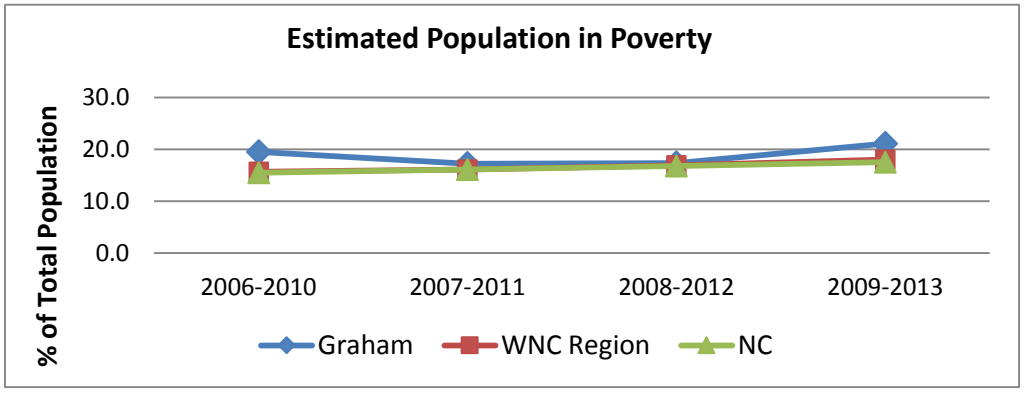
** Primary Care Phys.are those who report their primary specialty as family practice, general practice, internal med., pediatrics, or obstetrics/gynecology*
*** Percents are based on US Census Bureau population estimates, April 1, 2000 to July 1, 2007 (nat'l and N C data). Comparison data is off by two years.*

**** Percents are based on Bureau of Labor Statistics, April 1, 2000 to July 1, 2008 (for both national and North Carolina data). Comparison data matches.*
1 - Table 14 [18 or 15] North Carolina Health Professions, 2009 -2012 Data Books. Cecil G. Sheps Center for Health Services Research, North Carolina Health Professions Data System: http://www.shepscenter.unc.edu/hp/publications.htm

The Key Informant survey revealed that 100% of the replies stated that access to care was either a Major (42.9%) or a moderate (57.1%) problem. No one saw it as a minor problem. The survey characterized urgent care as the most difficult to access, as the chart indicates.

	Most Difficult to Access	Second-Most Difficult to Access	Third-Most Difficult to Access	Total Mentions
Urgent Care	66.7%	50.0%	0.0%	3
Substance Abuse Treatment	0.0%	50.0%	50.0%	2
Primary Care	33.3%	0.0%	0.0%	1
Chronic Disease Care	0.0%	0.0%	50.0%	1

At Risk Populations

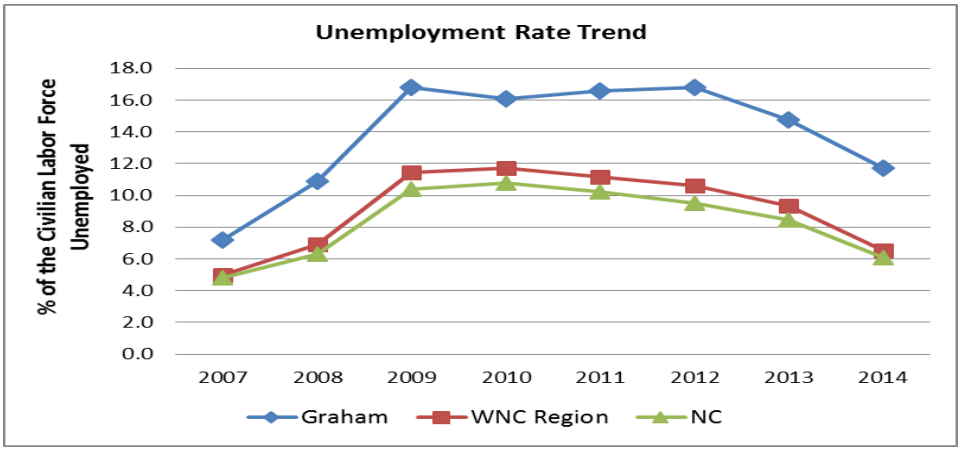


Poverty Status in the Past 12 Months, 2006-2010 [and other years as noted] American Community Survey 5-Year Estimates (S1701).
U.S. Census Bureau American FactFinder: http://factfinder2.census.gov

There are 25.9% of Graham County residents living below poverty level, as of 2013.

As of January of 2015, unemployment was at 13.5%, as compared to 5.9% for the state. These low income, unemployed families are at risk of not being able to receive medical care, and since

you have to travel out of the county to see any type of specialist, many low income and elderly simply don't go. They often lack a means of transportation or do not have enough money for gas to travel long distances.



LOCAL AREA UNEMPLOYMENT STATISTICS (LAUS) - UNEMPLOYMENT RATE, 2007 [AND OTHER YEARS AS NOTED]. NORTH CAROLINA DEPARTMENT OF COMMERCE, LABOR AND ECONOMIC ANALYSIS DIVISION(LEAD), D4-DEMAND DRIVEN DATA DELIVERY SYSTEM: HTTP://ESESC23.ESC.STATE.NC.US/D4/

CHAPTER 6 – PHYSICAL ENVIRONMENT

Air Quality

Nationally, outdoor air quality monitoring is the responsibility of the Environmental Protection Agency (EPA); most of the following information and data originate with that agency. In NC, the agency responsible for monitoring air quality is the Division of Air Quality (DAQ) in the NC Department of Environment and Natural Resources (NC DENR).

The EPA categorizes outdoor air pollutants as "criteria air pollutants" (CAPs) and "hazardous air pollutants" (HAPs). Criteria air pollutants (CAPS), which are covered in this report, are six chemicals that can injure human health, harm the environment, or cause property damage: carbon monoxide, lead, nitrogen oxides, particulate matter, ozone, and sulfur dioxide. The EPA has established National Ambient Air Quality Standards (NAAQS) that define the maximum legally allowable concentration for each CAP, above which human health may suffer adverse effects (US Environmental Protection Agency, 2012).

The impact of CAPs in the environment is described on the basis of emissions, exposure, and health risks. A useful measure that combines these three parameters is the *Air Quality Index* (AQI).

The AQI is an information tool to advise the public. The AQI describes the general health effects associated with different pollution levels, and public AQI alerts (often heard as part of local weather reports) include precautionary steps that may be necessary for certain segments of the population when air pollution levels rise into the unhealthy range. The AQI measures concentrations of five of the six criteria air pollutants and converts the measures to a number on a scale of 0-500, with 100 representing the NAAQS standard. An AQI level in excess of 100 on a given day means that a pollutant is in the unhealthy range that day; an AQI level at or below 100 means a pollutant is in the "satisfactory" range (AIRNow, 2011). The following table defines the AQI levels.

General Health Effects and Cautionary Statements, Air Quality Index

Index Value	Descriptor	Color Code	Meaning
Up to 50	Good	Green	Air quality is satisfactory, and air pollution poses little or no risk.
51 to 100	Moderate	Yellow	Air quality is acceptable; however, for some pollutants there may be a moderate heath concern for a very small number of people who are unusually sensitive to air pollution.

Index Value	Descriptor	Color Code	Meaning
101 to 150	Unhealthy for sensitive groups	Orange	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
151 to 200	Unhealthy	Red	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
201-300	Very unhealthy	Purple	Health alert: everyone may experience more serious health effects.
301-500	Hazardous	Maroon	Health warnings of emergency conditions. The entire population is more likely to be affected.

Source: AIRNow, Air Quality Index (AQI) – A Guide to Air Quality and Your Health; http://airnow.gov/index.cfm?action=aqibasics.aqi

Data in table below shows that in Graham County there were no days rated "very unhealthy" or "unhealthy", or "unhealthy for sensitive groups" in 2014.

Air Quality Index Summary, Graham County and WNC (2014)

Geography	No. Days with AQI	Number of Days When Air Quality Was:				
		Good	Moderate	Unhealthy for Sensitive Groups	Unhealthy	Very Unhealthy
Graham County	153	137	16	0	0	0

Western NC has the highest radon levels in the state, at 4.1 pCi/L, the region is 3.2 times the average national indoor radon level of 1.3pCi/L. In Graham County the current average indoor radon level is 5.6, 37% higher than the regional mean and 4.3 times the average national level. A screening level over 4 pCi/L is the EPA's recommended action level for radon exposure.

Radon is the number one cause of lung cancer among non-smokers, according to EPA estimates. Overall, radon is the second leading cause of lung cancer. People who smoke have an even higher risk of lung cancer from radon exposure than people who don't smoke.

The Health Department has received 150 Radon Test Kits that will be distributed to the public in January, 2016.

Water

The source from which the public gets its drinking water is a health issue of considerable importance. Water from all municipal and most community water systems is treated to remove harmful microbes and many polluting chemicals, and is generally considered to be "safe" from the standpoint of public health because it is subject to required water quality standards. Municipal drinking water systems are those operated and maintained by local governmental units, usually at the city/town or county level. Community water systems are systems that serve at least 15 service connections used by year-round residents or regularly serves 25 year-round residents. This category includes municipalities, but also subdivisions and mobile home parks.

In Graham County, 4,484 residents, or about 51% of the population, were being served by municipal and community water systems in 2014. This is 7% lower than the region.

Access to Healthy Food & Places

The Health Department sponsors a farmer's market in their parking lot every Saturday from July to October and there is another Tailgate Market in Stecoah every Wednesday from June to mid-September.

Mountain Wise works with Graham County local convenience stores to provide opportunities and access to local fresh fruits and vegetables. When environments encourage and are supportive of healthy choices, it becomes easier to make those choices. The Community Transformation Grant project wants to ensure that everyone has access to fresh fruits and vegetables through farmers markets and corner stores.

Built Environment

Graham County has several projects underway at the present time to improve the outdoor recreation areas and the walkability of the town of Robbinsville. The GREAT coalition has a long-range plan to build and connect greenways/trails throughout the Robbinsville area and plans to create a mountain biking park in Robbinsville. They have already upgraded the walking trails in town and also in Stecoah. They have also built a new playground in Stecoah.

CHAPTER 7- HEALTH RESOURCES

Health Resources

Process

WNC Healthy Impact provided a 2-1-1 dataset for resources in Graham County, it was reviewed for any needed changes and several agencies in the county including the Graham County Department of Public Health, Graham County Cooperative Extension and Graham County Department of Social Services, were called upon to assist with updating the health resource inventory. That community tool (2-1-1) continues to serve as the updated resource list accessible via phone and web 24/7.

See Appendix C for a summary list of the healthcare and health promotion resources and facilities available in Graham County to respond to the health needs of the community. This list is a general summary of resources in the county, not those identified to address specific needs.

Findings

In general, there are basic services available in the county. The Health Department has several programs. Tallulah Clinic and Snowbird Clinic provide primary care, but that is not sufficient for the size of the county.

Resource Gaps

Graham County really needs urgent care services. The county also needs more primary care physicians and access to specialists. A local Dialysis center would be of great help to the residents of Graham County. As mentioned several other places in this document, residents of Graham County must travel out of county, from 45 minutes to two hours to see any type of specialists, whether they need an eye exam or wound care or a urologists or any other specialist. This is often is a hardship on so many of our elderly or poverty level residents, so many people end up cancelling appointments due to the expense of traveling or the problem of trying to find a ride. Many times working adults cannot afford to take a half day off work to seek medical care. There are even times, especially during tourist season, that there is a gap in emergency care due to every ambulance is dispatched because of the high volume of accidents on the curvy roads.

The county has no YMCA or commercial gyms to provide a place to work out. There is no type of entertainment; no theater, skating rinks, miniature golf, or any other place for social gathering and entertainment.

Other gaps include:

- Water aerobics activities for seniors
- Pool for year-round use
- PE equipment suitable for alternate activities at high school
- Organized summer recreation activities for adults and children
- Hiking Club
- Biking Club
- Pediatric and specialty care locally

CHAPTER 8 – IDENTIFICATION OF HEALTH PRIORITIES

Health Issue Identification

Process

To identify the significant health issues in our community, members of GREAT Health and Social committee were asked to attend a meeting. Key data and trends were identified and discussed. Attendees were asked to consider the following factors as criteria to identify significant health issues in our community:

- County data deviates notably from the region, state or benchmark
- The number of people affected
- The degree to which the issue leads to death
- The effectiveness and the feasibility of intervention
- The importance of the issue to the community

There was also a meeting with another of our key partners, Murphy Medical Center, to discuss identifying significant health issues in the county and region.

Identified Issues

The following health issues were surfaced through the above process:

- ***Access to care:*** There are no specialist of any kind, and no after-hours urgent care in the county.
- ***Chronic Diseases***: Diabetes, heart disease, and COPD are at high rates.
- ***Physical Activity and good nutrition:*** Inactivity is much too high a rate, moving more and eating better will also help with the chronic diseases.
- ***Smoking during pregnancy***: Expectant mothers are smoking during their pregnancy.
- ***Radon***: The county has very high rates for radon.
- ***Pneumonia and Influenza***: Mortality rates are too high for these two illnesses.
- ***Suicide rate and accidental overdose:*** Suicide rates and accidental overdoses are rising.
- ***Colorectal cancer:*** The death rate for this cancer is too high.

- ***Graduation rate***: There are a number of students who drop out or don't graduate on time.

- ***Pre-natal care:*** A large number of expectant women do not seek prenatal care.

Priority Health Issue Identification

Process

Data collected by PRC was presented to the CHA team for local interpretation, taking into consideration cultural, environmental, and geographical reasons for the data. The team chose "highlights" of the data to present to community members when disseminating the CHA information. These highlights were chosen based on strong deviations from WNC or NC data, significant changes in the data over time, or when significant disparities were identified.

These highlights were presented to the GREAT Health and Social Committee through a power point presentation. After reviewing the data, the CHA team and the GREAT Health and Social Committee were asked to consider priorities to address in the next 3 years. Participants were to consider the greatest needs of the community, where the biggest impact could realistically be made, and what resources were available in the community to address the needs. They were asked to voice their opinions through the use of the multi-voting dot technique as outlined by NACCHO. Each participant was asked to choose 3 priorities by dot voting for the group to address in the next 3 years. After discussion, a consensus was reached by the group on the priorities to be addressed.

During our group process, the following criteria were used to select priority health issues of focus for our community over the next three years:

- Criteria 1 – the number of people affected
- Criteria 2 – the effectiveness and the feasibility of intervention
- Criteria 3 – and the importance of the problem to the community.
- Criteria 4 – the degree to which the issue leads to death

Identified Priorities

The following priority health issues are the final community-wide priorities for our county that were selected through the process described above:

- Access to Care – Access to care was chosen because it is something that affects everyone in the county and not having access causes a hardship on many people. Access to care was one of the characteristics of a healthy community as listed by the key informant survey. When asked to evaluate health issues, 42.9% surveyed stated access as a major problem and 57.1% stated it was a moderate problem. No one stated it was a minor problem.

- Chronic Disease (Diabetes, Heart Disease, COPD)- This was chosen due to the number of people affected and the effectiveness and feasibility of intervention. The health department has been working on intervention with these issues and

will continue to do so, particularly with the prevention of Type II Diabetes, which is almost completely avoidable with lifestyle changes. The key informant survey revealed 85.7% characterized diabetes as a major problem.

- Physical Activity and Good Nutrition – This was chosen because it affects everyone and it has a high impact on the other priorities chosen. Graham County is seeing an increase with overweight and obese children as well as adults. This trend can potentially lead to people developing Type II diabetes earlier in life than has been seen up to this time.

Each of these health priorities can potentially lead to a shortened lifespan.

PRIORITY ISSUE #1

Access to Care Graham County does not have a pediatrician, gynecologist, optometrist, or any other type of specialist. The closest specialists are anywhere from a 40 minute to a two hour drive away. There is also no urgent care in the county. This has been a priority in previous years as well. The Health Department has provided space and contracts with physicians from other counties to work in Graham County on a limited basis. At one time they had a pediatrician, a gynecologist, a chiropractor and an urgent care on a limited basis, but no permanent solution has been found. The Health Department has recently hired a full time FNP, and has a free clinic one-half day a week for the uninsured. There is still a need for more primary care physicians and specialists. This is important to the community because of the time and expense required to travel out of the county for doctor visits.

Data Highlights

Access to health care was one of the indicators of a healthy community according to the survey of key informants. In fact, 42.9% saw it as a major problem and 57.1% saw it as a moderate problem, meaning 100% of those polled listed access to health care as a problem. (Professional Research Consultants, Communiity Stakeholder Input 2015 PRC Online Key Informant Survey , 2015)

As seen in the chart below, Graham County falls far below the state for the ratio of health professionals.

Number of Active Health Professionals per 10,000 Population Ratios (2011 through 2012)

County	2012				
	Physicians	Primary Care Physicians*	Dentists	Registered Nurses	Pharmacists
Graham	4.52	4.52	2.26	37.29	5.65
WNC (Regional) Arithmetic Mean	14.29	6.84	3.61	76.94	7.97
State Total	22.31	7.58	4.51	99.56	10.06
National Ratio (date)	23.0 (2011)	8.1 (2011)	5.3 (2012)	91.6 (2012)	9.1 (2012)

* Primary Care Physicians are those who report their primary specialty as family practice, general practice, internal medicine, pediatrics, or obstetrics/gynecology
** Percents are based on US Census Bureau population estimates, April 1, 2000 to July 1, 2007 (for both national and North Carolina data). Comparison data is off by two years.
*** Percents are based on Bureau of Labor Statistics, April 1, 2000 to July 1, 2008 (for both national and North Carolina data). Comparison data matches.

http://www.shepscenter.unc.edu/hp/publications.htm

Health Indicators

When compared to the total state numbers, Graham County has about one fourth as many physicians and about half as many other health care professionals per capita, for the time period of 2009-2012; as shown in the previous chart.

Understanding the Issue

As previously mentioned, the lack of health professionals in the county causes a hardship on families when they have to travel to get care. Many elderly residents do not seek care or do not keep appointments because of the travel involved, especially if there is bad weather. People who need to see a specialist and don't can be risking making their chronic condition worse.

Specific Populations At-Risk

This issue affects everyone in the county. Those affected the most would be the elderly and those with chronic disease. The elderly often do not drive and have to depend on someone else and it is difficult to get neighbors, friends, or family to drive to Asheville (two hours each way) for appointments. Although they may have the option of riding transit, many are not able to due to the transit schedule. This issue also affects any working adults who might need to see a specialist, they have to miss at least a half day of work to go to an appointment. Even to see an optometrist is an hour drive. As previously stated, the poverty level is just over 21%, meaning many younger adults often cannot afford the travel expense or do not have a properly working vehicle to travel out of county.

Health Resources available/needed

The Health Department in Graham County works diligently to provide as many services as possible and to encourage new providers to come into the county, even offering space in the health department and use of their office staff and equipment. The Health Department also recently hired a full time Family Nurse Practitioner in order to provide more access to care. However, the Health Department is not capable of filling all of the gaps in care.

PRIORITY ISSUE #2

Chronic Disease Graham County is no exception to the seemingly epidemic levels of Diabetes. The county also has high rates of cancer and heart disease. Chronic Disease has been a priority in the past but still merits more attention.

Data Highlights

The two leading causes of death in Graham County are Heart Disease and Cancer, and Diabetes is in the top ten at number 7 (SCHS, 2013). The prevalence of adult diabetes has actually gone down slightly from 14.9 % in 2012 to 9.7% in 2015, but the incidence of pre-diabetes for the same time period has risen from 10% to 13.3% (Professional Research Consultants, PRC Community Health Surveys, 2015). So, there still must be vigilant efforts to combat this disease. Statistics state that without lifestyle changes pre-diabetics will become diabetic within 5 to 7 years (CDC, 2015).

Health Indicators

If the data presented above is correct regarding the rise in pre-diabetes and slight decline in diabetes, it would seem that efforts at prevention may be working and may be the best use of resources. Given the resources that are now being put into teaching pre-diabetics how to avoid the disease, in three years, the next assessment should begin to show a trend of diabetes rates going down in Graham County.

Understanding the Issue

Diabetes effects every part of the body and it is the cause of many different health complications which have a major impact on quality of life. It is a major health issue and yet is so preventable in most cases. Those who responded to the Key Informant survey related that part of the problem is the lack of exercise facilities and the lack of nutrition education and healthy food choices. They also stated that the disease is largely misunderstood (Professional Research Consultants, PRC Community Health Surveys, 2015). Here is an opportunity where education on a health issue could make a large impact on the community.

Specific Populations At-Risk

The Native American population in the community is greatly affected by this issue. In general in Graham County, there does not seem to be a clear understanding of the seriousness of the disease and the changes in lifestyle that could make it avoidable (Professional Research Consultants, Communiity Stakeholder Input 2015 PRC Online Key Informant Survey , 2015).

Health Resources available/needed

The county now has several different organizations working together to reduce diabetes. The Health Department has three employees that have recently received training in being a lifestyle coach and educating people on how to avoid getting diabetes. The GREAT team is also helping the fight against diabetes by providing training and making improvements to outdoor recreation areas to encourage the population to be more active and reduce obesity, a contributing factor in the cause of diabetes and heart disease. The NC Cooperative extension is also involved by offering classes on preparing healthy meals and living with diabetes. Type II diabetes is almost completely avoidable with lifestyle changes. Hopefully by the next CHA, Graham County's data on diabetes will reflect all of these efforts. Regardless of what efforts are made, there is still a need for medical care to be more convenient. A dialysis center in the county and a local endocrinologist would be a huge advantage to those already living with the disease.

PRIORITY ISSUE #3

Increase Physical Activity and Good Nutrition

Physical activity and good nutrition go hand in hand with good overall health. Inactivity and poor eating habits are major contributors to chronic health problems such as diabetes. Graham County has high rates of overweight/obesity in every age. Graham County has been working at and has long-range plans to improve the opportunities for outdoor recreation. Walking trails have been expanded and paved, hiking trails have been maintained and given new signage, playgrounds have been built, and a new recreation area with mountain biking trails is set to begin work on.

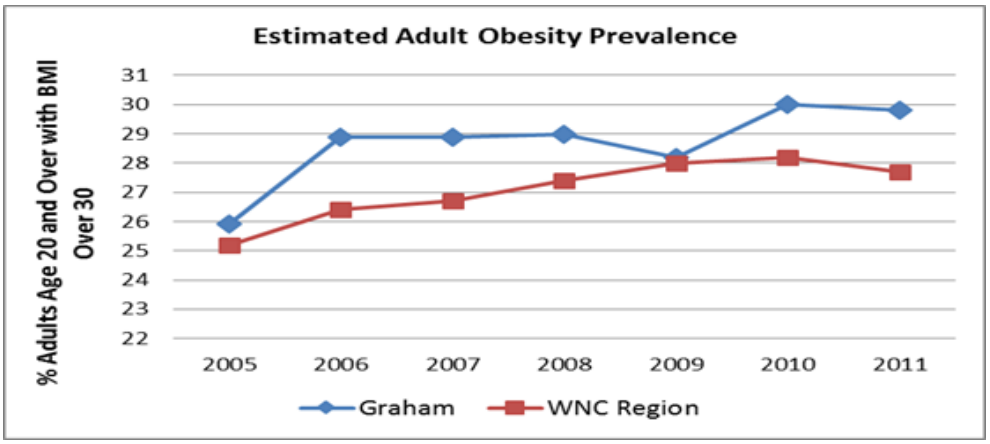
Data Highlights

Age	% Over-weight	% Obese
Graham adults	***No data***	***29.8***
State Adults	*No data*	*27.7*
Graham 2-4	***22.8***	***15.2***
State 2-4	*16.1*	*15.6*
Graham 5-11	***21.6***	***13.7***
State 5-11	*17.1*	*25.8*
Graham 12-18	***19.5***	***29.4***
State 12-18	*18.1*	*28.0*

The chart to the left shows data from 2011. (CDC, 2015) (system, 2011) Graham County exceeds the state rate for percentage of people overweight in every age and in obesity from age 12 to adult. This means that our children are in danger of developing health problems, including Type II Diabetes, at younger ages than we have seen in the past.

Health Indicators

The prevalence of self-reported adult obesity in WNC and Graham County has risen since 2005.



County Level Estimates of Obesity-of Adults in North Carolina, 2005 [and other years as noted]. CDC and Prevention, National Diabetes Surveillance System website: http://apps.nccd.cdc.gov/ddtstrs/default.aspx, http://www.cdc.gov/diabetes/atlas/countydata/County_EXCELstatelistDM.html, http://www.cdc.gov/diabetes/atlas/countydata/atlas.html

Understanding the Issue

In the survey of key informants 85.7% characterized Diabetes as a major problem in the county and related that there are limited facilities for exercise and a lack of nutrition education and healthy food choices. The prevalence of preventable diabetes is one reason this issue should be a priority in the county.

Specific Populations At-Risk

This is again a problem that affects nearly every part of the community, but seems to especially impact our children and young adults. These generations have grown up with indoor, sedentary recreation such as computers and video games; and a world of fast food and junk food. Our elderly also could have better health results if they were more active and had better diets. Many elderly have expressed a desire to have aqua aerobics to help with their arthritis issues or other organized programs for the elderly.

Health Resources available/needed

As already mentioned, Graham County is making improvements to the outdoor opportunities for recreation. There is also an effort to make healthy food choices more easily available through the work that Mountain Wise is doing with the Corner Stores program and the farmers markets that are available in the county now. The Health Department is also providing education with many programs to encourage change in this area, such as Let's Go NC; Faithful Families, Eating Smart and Moving More; Be Active Kids, and monthly Healthy Living classes for the afterschool program.

CHAPTER 9 - NEXT STEPS

Sharing Findings

The CHA will be disseminated in at least the following ways:

- Dissemination to the public – Graham County Department of Public Health website, GREAT annual meeting, Graham County Library
- Dissemination to stakeholders – presentations to Graham County Board of Health, Graham County Board of Commissioners, GREAT annual meeting

Collaborative Action Planning

Collaborative implementation planning with hospitals and other community partners will take place in the spring of 2016. The CHA team will host a meeting with partners to develop strategies to improve the three priority areas.

The collaborative action planning will result in the creation of a community-wide plan that outlines what will be implemented to address the priority health issues identified through this assessment process.

It is understood that community health assessment is an ongoing process. The Graham County Department of Public Health and the community will use this information to continue to work to improve and promote the health of Graham County. The Community Health Assessment will be used as the foundation for concerned citizens and community leaders to strengthen the capacity for moving forward to change both individual and community health outcomes.

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APPENDICES

Appendix A – Data Collection Methods & Limitations

Appendix B – Secondary Data Profile

- 2ndary Data Summary

Appendix C – Graham County 2-1-1–Resources

Appendix D – Community Survey Findings

- WNC Healthy Impact Survey Instrument
- Community Health Survey Results

Appendix E – Key-Informant Survey Findings

Appendix F - County Maps

APPENDIX A - DATA COLLECTION METHODS & LIMITATIONS

Secondary Data from Regional Core

Secondary Data Methodology

In order to learn about the specific factors affecting the health and quality of life of residents of WNC, the WNC Healthy Impact data workgroup and consulting team identified and tapped numerous secondary data sources accessible in the public domain. For data on the demographic, economic and social characteristics of the region sources included: the US Census Bureau; Log Into North Carolina (LINC); NC Office of State Budget and Management; NC Department of Commerce; Employment Security Commission of NC; NC Department of Public Instruction; NC Department of Justice; NC Division of Medical Assistance; and the Cecil B. Sheps Center for Health Services Research. The WNC Healthy Impact consultant team made every effort to obtain the most current data available *at the time the report was prepared*. It was not possible to continually update the data past a certain date; in most cases that end-point was August 2015.

The principal source of secondary health data for this report was the NC State Center for Health Statistics (NC SCHS), including its County Health Data Books, Behavioral Risk Factor Surveillance System, Vital Statistics unit, and Cancer Registry. Other health data sources included: NC Division of Public Health (DPH) Epidemiology Section; NC Division of Mental Health, Developmental Disabilities and Substance Abuse Services; National Center for Health Statistics; NC DPH Nutrition Services Branch; UNC Highway Safety Research Center; and NC DETECT. Because in any CHA it is instructive to relate local data to similar data in other jurisdictions, throughout this report representative county data is compared to like data describing the 16-county region and the state of NC as a whole. The WNC regional comparison is used as "peer" for the purposes of this assessment. Where appropriate and available, trend data has been used to show changes in indicators over time.

Environmental data was gathered from sources including: US Environmental Protection Agency; US Department of Agriculture, and NC Radon Program.

It is important to note that this report contains data retrieved **directly** from sources in the public domain. In some cases the data is very current; in other cases, while it may be the most current available, it may be several years old. Note also that the names of organizations, facilities, geographic places, etc. presented in the tables and graphs in this report are quoted exactly as they appear in the source data. In some cases these names may **not** be those in current or local usage; nevertheless they are used so readers may track a particular piece of information directly back to the source.

Data Definitions

Reports of this type customarily employ a range of technical terms, some of which may be unfamiliar to many readers. Health data, which composes a large proportion of the information included in this report, employs a series of very specific terms which are important to interpreting the significance of the data. While these technical health data terms are defined in the report at the appropriate time, there are some data caveats that should be applied from the onset.

Error

First, readers should note that there is some error associated with every health data source. Surveillance systems for communicable diseases and cancer diagnoses, for instance, rely on reports submitted by health care facilities across the state and are likely to miss a small number of cases, and mortality statistics are dependent on the primary cause of death listed on death certificates without consideration of co-occurring conditions.

Age-adjusting

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

Rates

Thirdly, it is most useful to use *rates* of occurrence to compare data. A rate converts a raw count of events (deaths, births, disease or accident occurrences, etc.) in a target population to a ratio representing the number of same events in a standard population, which removes the variability associated with the size of the sample. Each rate has its own standard denominator that must be specified (e.g., 1,000 women, 100,000 persons, 10,000 people in a particular age group, etc.) for that rate.

While rates help make data comparable, it should be noted that small numbers of events tend to yield rates that are highly unstable, since a small change in the raw count may translate to a large change in rate. To overcome rate instability, another convention typically used in the

presentation of health statistics is *data aggregation*, which involves combining like 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, especially for measures consisting of relatively few cases or events. The calculation is performed by dividing the sum number of cases or deaths in a population due to a particular cause over a period of years by the sum of the population size for each of the years in the same period. Health data for multiple years or multiple aggregate periods is included in this report wherever possible. Sometimes, however, even aggregating data is not sufficient, so the NC SCHS recommends that rates based on fewer than 20 events—whether covering an aggregate period or not—be considered *unstable*. In fact, in some of its data sets the NC SCHS no longer calculates rates based on fewer than 20 events. To be sure that unstable data do not become the basis for local decision-making, this report will highlight and discuss primarily rates based on 20 or more events in a five-year aggregate period, or 10 or more events in a single year. Where exceptions occur, the text will highlight the potential instability of the rate being discussed.

Regional arithmetic mean

Fourthly, sometimes in order to develop a representative regional composite figure from 16 separate county measures the consultants calculated a *regional arithmetic mean* by summing the available individual county measures and dividing by the number of counties providing those measures. It must be noted that when regional arithmetic means are calculated from *rates* the mean is not the same as a true average rate but rather an approximation of it. This is because most rates used in this report are age adjusted, and the regional mean cannot be properly age-adjusted.

Describing difference and change

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

difference in the first example is of far greater degree than the difference in the second example. This document uses percentage almost exclusively to describe and highlight degrees of difference and change, both positive (e.g., increase, larger than, etc.) and negative (e.g., decrease, smaller than, etc.)

Data limitations

Some data that is used in this report may have inherent limitations, due to the sample size, its geographic focus, or its being out-of-date, for example, but it 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.

WNC Healthy Impact Survey (Primary Data)

Survey Methodology

Survey Instrument

To supplement the secondary core dataset, meet additional stakeholder data needs, and hear from community members about their concerns and priorities, a community survey, *2015 WNC Healthy Impact Survey* (a.k.a. 2015 PRC Community Health Survey), was developed and implemented in 16 counties across western North Carolina. The survey instrument was developed by WNC Healthy Impact's data workgroup, consulting team, and local partners, with assistance from Professional Research Consultants, Inc. (PRC). Many of the questions are derived from the Centers for Disease Control and Prevention (CDC) Behavioral Risk Factor Surveillance System (BRFSS), as well as other public health surveys; other questions were developed specifically for WNC Healthy Impact to address particular issues of interest to communities in western North Carolina. Each county was given the opportunity to include three additional questions of particular interest to their county, which were asked of their county's residents.

Professional Research Consultants, Inc.

The geographic area for the regional survey effort included 16 counties: Buncombe, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania and Yancey counties.

Sample Approach & Design

To ensure the best representation of the population surveyed, a telephone interview methodology (one that incorporates both landline and cell phone interviews) was employed. The primary advantages of telephone interviewing are timeliness, efficiency and random-selection capabilities.

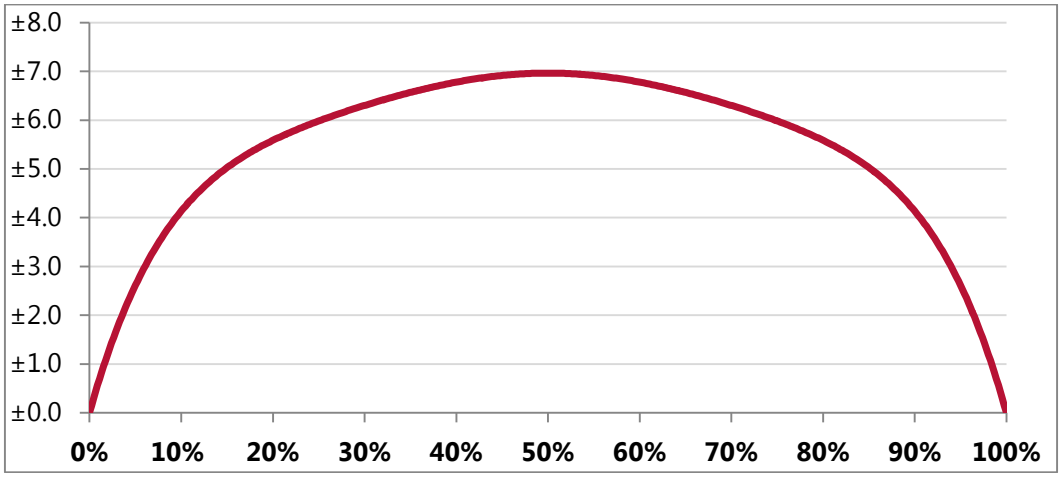
The sample design used for this regional effort consisted of a stratified random sample of 3,300 individuals age 18 and older in Western North Carolina, with 200 from our county. All administration of the surveys, data collection and data analysis was conducted by Professional

Research Consultants, Inc. (PRC). The interviews were conducted in either English or Spanish, as preferred by respondents.

Sampling Error

For our county-level findings, the maximum error rate at the 95% confidence level is ±6.9%).

Expected Error Ranges for a Sample of 200 Respondents at the 95 Percent Level of Confidence



Note: ● The "response rate" (the percentage of a population giving a particular response) determines the error rate associated with that response. A "95 percent level of confidence" indicates that responses would fall within the expected error range on 95 out of 100 trials.

Examples:

● If 10% of the sample of 200 respondents answered a certain question with a "yes," it can be asserted that between 5.8% and 14.2% (10% ± 4.2%) of the total population would offer this response.

● If 50% of respondents said "yes," one could be certain with a 95 percent level of confidence that between 43.1% and 56.9% (50% ± 6.9%) of the total population would respond "yes" if asked this question.

Sample Characteristics

To accurately represent the population studied, PRC worked to minimize bias through application of a proven telephone methodology and random-selection techniques. And, while this random sampling of the population produces a highly representative sample, it is a common and preferred practice to apply post-stratification weights to the raw data to improve this representativeness even further. Specifically, once the raw data are gathered, respondents are examined by key demographic characteristics (namely gender, age, race, ethnicity, and poverty status) and a statistical application package applies weighting variables that produce a sample which more closely matches the population for these characteristics. Thus, while the integrity of each individual's responses is maintained, one respondent's responses may contribute to the whole the same weight as, for example, 1.1 respondents. Another respondent, whose demographic characteristics may have been slightly oversampled, may contribute the same weight as 0.9 respondents. In order to determine WNC regional estimates, county responses were weighted in proportion to the actual population distribution so as to appropriately represent Western North Carolina as a whole.

The following chart outlines the characteristics of the survey sample for our county by key demographic variables, compared to actual population characteristics revealed in census data. Note that the sample consisted solely of area residents age 18 and older.

County	Total Population (2010)	White	Black or African American	American Indian, Alaskan Native	Asian	Native Hawaiian, Other Pacific	Some Other Race	Two or More Races	Hispanic or Latino (of any race)
		%	%	%	%	%	%	%	%
Graham	8,861	90.3	0.2	6.4	0.3	0.0	1.0	1.7	2.2
WNC (Regional) Total	759,727	89.3	4.2	1.5	0.7	0.1	2.5	1.8	5.4
State Total	9,535,483	68.5	21.5	1.3	2.2	0.1	4.3	2.2	8.4

County	Total Population (2010)	% Males	% Females	Median Age*	% Under 5 Years Old	% 5-19 Years Old	% 20 - 64 Years Old	% 65 Years and Older
Graham	8,861	49.3	50.7	44.3	5.7	18.2	56.4	19.7
WNC (Regional) Total	759,727	48.5	51.5	44.7	n/a	n/a	n/a	n/a
State Total	9,535,483	48.7	51.3	37.4	6.6	20.2	60.2	12.9

Poverty descriptions and segmentation used in this report are based on administrative poverty thresholds determined by the US Department of Health & Human Services. These guidelines define poverty status by household income level and number of persons in the household *(e.g., the 2015 guidelines place the poverty threshold for a family of four at $23,050 annual household income or lower)*. In sample segmentation: "very low income" refers to community members living in a household with defined poverty status; "low income" refers to households with incomes just above the poverty level, earning up to twice the poverty threshold; and "mid/high income" refers to those households living on incomes which are twice or more the federal poverty level.

The sample design and the quality control procedures used in the data collection ensure that the sample is representative. Thus, the findings may be generalized to the total population of community members in the defined area with a high degree of confidence.

Benchmark Data

North Carolina Risk Factor Data

Statewide risk factor data are provided where available as an additional benchmark against which to compare local survey findings; these data are reported in the most recent *BRFSS*

(Behavioral Risk Factor Surveillance System) Prevalence and Trend Data published by the Centers for Disease Control and Prevention and the US Department of Health & Human Services.

Nationwide Risk Factor Data

Nationwide risk factor data, which are also provided in comparison charts where available, are taken from the *2013 PRC National Health Survey*; the methodological approach for the national study is identical to that employed in this assessment, and these data may be generalized to the US population with a high degree of confidence.

Healthy People 2020

Healthy People provides science-based, 10-year national objectives for improving the health of all Americans. The Healthy People initiative is grounded in the principle that setting national objectives and monitoring progress can motivate action. For three decades, Healthy People has established benchmarks and monitored progress over time in order to:

- Encourage collaborations across sectors.
- Guide individuals toward making informed health decisions.
- Measure the impact of prevention activities.

Healthy People 2020 is the product of an extensive stakeholder feedback process that is unparalleled in government and health. It integrates input from public health and prevention experts, a wide range of federal, state and local government officials, a consortium of more than 2,000 organizations, and perhaps most importantly, the public. More than 8,000 comments were considered in drafting a comprehensive set of Healthy People 2020 objectives.

Survey Administration

With more than 700 full- and part-time interviewers who work exclusively with healthcare and health assessment projects, PRC uses a state-of-the-art, automated CATI interviewing system that assures consistency in the research process. Furthermore, PRC maintains the resources to conduct all aspects of this project in-house from its headquarters in Omaha, Nebraska, assuring the highest level of quality control.

Interviewing Protocols and Quality Assurance

PRC's methods and survey administration comply with current research methods and industry standards. To maximize the reliability of research results and to minimize bias, PRC follows a number of clearly defined quality control protocols. PRC uses a telephone methodology for its community interviews, in which the respondent completes the questionnaire with a trained interviewer, not through an automated touch-tone process.

Before going into the field in the latter half of February, PRC piloted 30 interviews across the region with the finalized survey instrument. After this phase, PRC corrected any process errors

that were found, and discussed with the consulting team any substantive issues that needed to be resolved before full implementation.

PRC employs the latest CATI (computer-aided telephone interviewing) system technology in its interviewing facilities. The CATI system automatically generates the daily sample for data collection, retaining each telephone number until the Rules of Replacement are met. Replacement means that no further attempts are made to connect to a particular number, and that a replacement number is drawn from the sample. To retain the randomness of the sample, telephone numbers drawn for the sample are not discarded and replaced except under very specific conditions.

Interviewing for this study took place primarily during evening and weekend hours (Eastern Time: Monday-Friday 5pm-9pm; Saturday 10am-4pm; Sunday 2pm-9pm). Some daytime weekday attempts were also made to accommodate those for whom these times might be more convenient. Up to five call attempts were made on different days and at different times to reach telephone numbers for which there is no answer. Systematic, unobtrusive electronic monitoring is conducted regularly by supervisors throughout the data collection phase of the project.

Cell Phones

Cell phone numbers were integrated into the sampling frame developed for the interviewing system for this project. Special protocols were followed if a cell phone number was drawn for the sample to ensure that the respondent lives in the area targeted and that (s)he is in a safe place to talk (e.g., not while driving). Using this dual-mode approach yielded a sample comprised of 6% cell phone numbers and 94% landline numbers. While this proportion is lower than actual cell phone penetration, it is sufficient in supplementing demographic segments that might otherwise be under sampled in a landline-only model, without greatly increasing the cost of administration.

Minimizing Potential Error

In any survey, there exists some degree of potential error. This may be characterized as sampling error (because the survey results are not based on a complete census of all potential respondents within the population) or non-sampling error (e.g., question wording, question sequencing, or through errors in data processing). Throughout the research effort, Professional Research Consultants makes every effort to minimize both sampling and non-sampling errors in order to assure the accuracy and generalizability of the results reported.

Noncoverage Error. One way to minimize any effects of underrepresentation of persons without telephones is through post stratification. In post stratification, the survey findings are weighted to key demographic characteristics, including gender, age, race/ethnicity and income (see above for more detailed description).

Sampling Error. Sampling error occurs because estimates are based on only a sample of the population rather than on the entire population. Generating a random sample that is

representative and of adequate size can help minimize sampling error. Sampling error, in this instance, is further minimized through the strict application of administration protocols. Post stratification, as mentioned above, is another means of minimizing sampling error.

Measurement Error. Measurement error occurs when responses to questions are unduly influenced by one or more factors. These may include question wording or order, or the interviewer's tone of voice or objectivity. Using a tested survey instrument minimizes errors associated with the questionnaire. Thorough and specific interviews also reduce possible errors. The automated CATI system is designed to lessen the risk of human error in the coding and data entry of responses.

Information Gaps

While this assessment is quite comprehensive, it cannot measure all possible aspects of health in the community, nor can it adequately represent all possible populations of interest. It must be recognized that these information gaps might in some ways limit the ability to assess all of the community's health needs.

For example, certain population groups (such as the homeless, institutionalized persons, or those who only speak a language other than English or Spanish) are not represented in the survey data. Other population groups (for example, pregnant women, lesbian/gay/bisexual/transgender residents, undocumented residents, and members of certain racial/ethnic or immigrant groups) might not be identifiable or might not be represented in numbers sufficient for independent analyses.

In terms of content, this assessment was designed to provide a comprehensive and broad picture of the health of the overall community. However, there are certainly a great number of medical conditions that are not specifically addressed.

Online Key Informant Survey (Primary Data)

Online Survey Methodology

Purpose and Survey Administration

To solicit input from key informants (i.e., those individuals who have a broad interest in the health of the community) an Online Key Informant Survey was implemented. A list of recommended participants from our county was provided to PRC by WNC Healthy Impact along with those of other participating counties; this list included names and contact information for physicians, public health representatives, other health professionals, social service providers, and a variety of other community leaders. Potential participants were chosen because of their ability to identify primary concerns of the populations with whom they work, as well as of the community overall.

Key informants were contacted by email, introducing the purpose of the survey and providing a link to take the survey online; reminder emails were sent as needed to increase participation.

Online Survey instrument

In the online survey, respondents had the chance to explain what view as most needed to create a healthy community, and how they feel that environment and social determinants impact health. Key informants were also asked to specifically rate the degree to which various health issues are a problem in our county; follow-up questions asked them to describe why they identify problem areas as such, and how these might be better addressed.

Participation

In all, *7* community stakeholders took part in the Online Key Informant Survey for our county, as outlined below:

Local Online Key Informant Survey Participation		
Key Informant Type	**Number Invited**	**Number Participating**
Community/Business Leader	6	3
Other Health Provider	3	1
Physician	2	2
Public Health Representative	2	1
Social Service Provider	1	0

Through this process, input was gathered from several individuals whose organizations work with low-income, minority populations, or other medically underserved populations.

Online Survey Limitations

The Online Key Informant Survey was designed to gather input from participants regarding their opinions and perceptions of the health of the residents in the area. Thus, these findings are based on perceptions, not facts.

To collect this data, purposive sampling (i.e., a type of non-probability sampling which targets a specific group of people) was used. Unlike the random sampling technique employed in the telephone survey, the purpose is not to make generalizations or statistical inferences from the sample to the entire population, but to gather in-depth insights into health issues from a group of individuals with a specific perspective.

APPENDIX B – SECONDARY DATA PROFILE

As stated in the body of the document, Graham County has 21.1% of its population living below the poverty level. We also have 50.13% who live below the 200% of poverty level, the rate which qualifies for most federal programs.

County	2009-2013						
	Total Population			Children Under 18			# Individuals Below 200% Federal Poverty Level
	Population Estimate	# Population Below Poverty Level	% Population Below Poverty Level	Population Estimate	# Below Poverty Level	% Below Poverty Level	
Graham	8,640	1,821	21.1	1,930	500	25.9	4,326
WNC (Regional) Total	744,726	134,313	18.0	149,873	40,538	27.0	298,131
WNC (Regional) Arithmetic Mean	n/a	n/a	19.5	n/a	n/a	30.2	18,633
State Total	9,396,989	1,643,389	17.5	2,250,686	560,247	24.9	3,605,120
Source	1	1	1	1	1	1	1

Poverty Status in the Past 12 Months, 2006-2010 [and other years as noted] American Community Survey 5-Year Estimates (S1701). U.S. Census Bureau American FactFinder: http://factfinder2.census.gov

From 2008-2013 Graham has averaged about nine percentage places higher than the state for children qualifying for free or reduced lunch.

Free and Reduced Lunch Trend (SY 2008-2009 through SY 2013-2014)

County	SY 2008-2009				SY 2009-2010				SY 2010-2011			
	# Average Daily Membership	# Reduced Applications	# Free Applications	% Needy	# Average Daily Membership	# Reduced Applications	# Free Applications	% Needy	# Average Daily Membership	# Reduced Applications	# Free Applications	% Needy
Graham	1,151	169	514	59.34	1,186	169	514	57.59	1,191	145	615	63.81
WNC (Regional) Total												
Public School District Total	1,411,944	126,882	577,005	49.85	1,402,269	114,932	637,776	53.68	1,409,895	93,239	666,122	53.86
Source	1	1	1	1	1	1	1	1	1	1	1	1

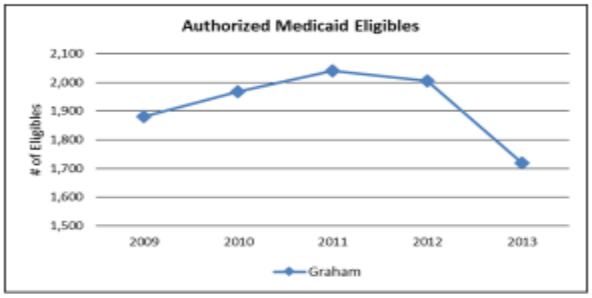
County	SY 2011-2012				SY 2012-2013				SY 2013-2014			
	# Average Daily Membership	# Reduced Applications	# Free Applications	% Needy	# Average Daily Membership	# Reduced Applications	# Free Applications	% Needy	# Average Daily Membership	# Reduced Applications	# Free Applications	% Needy
Graham	1,176	120	628	63.61	1,183	148	646	67.12	1,182	133	686	69.29
WNC (Regional) Total	93,284	7,800		8.36								
State Total	1,417,657	90,563	702,492	55.94	1,430,944	96,270	707,032	56.14	1,424,602	94,412	732,146	58.02
Source	1	1	1	1	1	1	1	1	1	1	1	1

Note: Schools who reported no Free and Reduced counts indicate that meal counts are included in the school within the respective LEA that prepared or served the meal.
Note: Schools with no Adm indicate that ADM was not reported for the school or that the school's ADM is included with another school's ADM for that LEA.

1 - *Free and Reduced Student Data by Site, Public School Year-to-Date Data 2008-2009 [and other years as noted].* Public Schools of North Carolina, Public Schools of North Carolina, Financial and Business Services: http://www.ncpublicschools.org/fbs/resources/data/

The total number of people in Graham County eligible for Medicaid increased between 2009 and 2011 and then fell to a current 5-year low.

Graham County Medicaid-Eligibles, 2009-2013



Source: Centers for Disease Control and Prevention, via BRFSS

18

In County Health Rankings with one being the best and 100 being the worst, Graham County ranked 63 in 2014, which was slightly better than the ranking at the last CHA, which was 69. You can see below that areas we scored the lowest in are clinical care and physical environment.

Location	County Rank (Out of 100)[1]						
	Health Outcomes		Health Factors				Overall Rank
	Length of Life	Quality of Life	Health Behaviors	Clinical Care	Social & Economic Factors	Physical Environment	
Graham	77	36	25	91	89	93	63

2014Rankings, 2014. County Health Rankings and Roadmaps: http://www.countyhealthrankings.org/

Indoor Radon Levels are higher than the state, we will be launching a campaign in January for radon awareness month to give away free test kits.

County	Average Indoor Radon Level (pCi/L)	% Variance from Average National Indoor Radon Level (1.3 pCi/L)	% Variance from Average Regional Indoor Radon Level (4.3 pCi.L)
Graham	5.6	346.2	30.2
WNC (Regional) Total	n/a	n/a	n/a
WNC (Regional) Arithmetic Mean	4.1	215.9	0.0
State Total	n/a	n/a	n/a
Source	1	1,2	2

1 - North Carolina Counties with Detailed Radon Information. North Carolina Radon Information: http://nc-radon.info/NC_counties.html
2 - Calculated from table data
3 - Facts about radon: Radon in Water; Radon and Geology. North Carolina Department of Environment and Natural Resources: http://www.epa.gov/radon/states/northcarolina.html

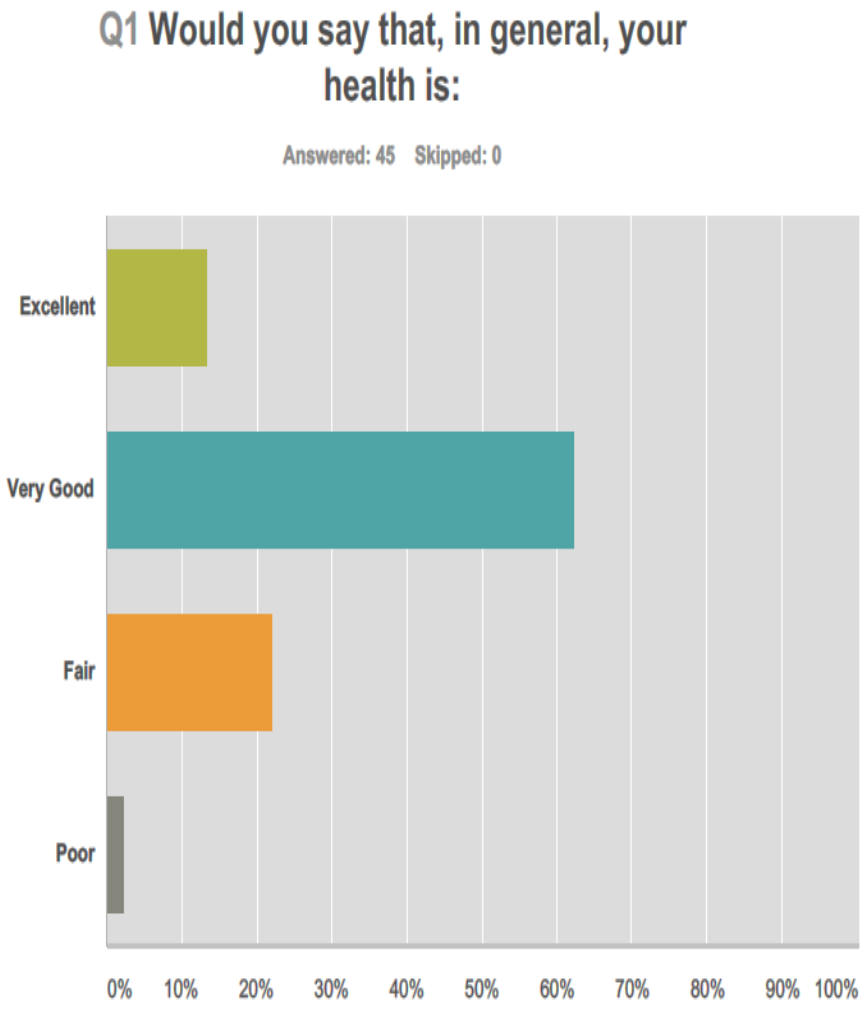
APPENDIX C – GRAHAM COUNTY 2-1-1 RESOURCES

Agency/Provider/Facility	Location/Contact Information	Population Served and Services Provided
Medical Providers		
Graham County Department of Public Health	Alicia Parham, Health Director 21 South Main Street Robbinsville, NC 28771 828-479-7900 www.health.grahamcounty.org	Adults and children served. Wellness exams, sick visits, Kindergarten and sports physicals, immunizations, birth control, free clinic, dental, etc. Monday-Friday, 8am-4:30pm
Hill Top Healthcare Free Clinic	Jill Raymer, Director 21 South Main Street Robbinsville, NC 28771 828-479-7900 x2624 www.health.grahamcounty.org	Uninsured, low-income adults and children served. Immediate care and chronic disease management. Wednesday, 9am-1pm
Snowbird Clinic	Lisa Denzer, FNP 96 Snowbird School Road Robbinsville, NC 28771 828-479-3924	Enrolled members and 1st descendants of Native American tribes. Wellness exams, sick visits, chronic disease management, immunizations. Monday- Friday, hours vary.
Graham Healthcare and Rehabilitation	811 Snowbird Rd, Robbinsville 828-479-8421	Disabled , long term care or short term rehab
Tallulah Health Center	409 Tallulah Road Robbinsville, NC 28771 828-479-6434	Immediate are center, satellite physical therapy center, blood tests, X-rays, EKGs, and allergy treatments.

Exercise/Recreation		
Graham County Cooperative Extension	Randy Collins Amy Holder Pam Adams 21 North Main Street Robbinsville, NC 28771 828-479-7979 randy_collins@ncsu.edu	Diabetes classes every other Monday
Graham County Senior Center	185 West Fort Hill Rd Robbinsville, NC 28771 (828)479-7977 FAX (828)479-7640 Wanda Hill, Director wanda.hill@grahamcounty.org	Senior Citizens Monday through Friday Free Lunch served daily at 11:30, Meals on Wheels for homebound, also many activities
Snowbird Senior Center	Maybelle Welch, Site Supervisor PO Box 612 Robbinsville, NC 28771 Phone (828) 479-9145 Fax (828) 479-7444 maybwelc@nc-cherokee.com	Senior Citizens Monday through Friday Meals served daily, also many activities
Graham County Recreation	Jason Sawyer, Director 12 North Main Street Robbinsville, NC 28771 Phone (828) 479-7681 Cell (828) 735-2704 Fax (828) 479-7988 jason.sawyer@grahamcounty.org	Youth- all ages Seasonal Sports- Football, cheerleading, soccer, baseball, softball, volleyball, basketball
Snowbird Recreation	Janell Rattler 54 Indian School Road Robbinsville, NC28771 Phone 828-479-6178	Youth and Adult Recreational Sports
Graham County Playground	Jason Sawyer, Director 12 North Main Street Robbinsville, NC 28771 Phone (828) 479-7681 Cell (828) 735-2704 Fax (828) 479-7988 jason.sawyer@grahamcounty.org	Youth- all ages Moose Branch Road
Fit Trail	Robbinsville High School 301 Sweetwater Road Robbinsville, NC 28771 Phone (828) 479-3330 Fax (828) 479-9859	All ages Robbinsville High School

Fit Trail and Playground	Stecoah Valley Center 121 School House Rd, Robbinsville, NC 28771 Phone (828) 479-3364	All ages Recreation opportunities
Support Groups		
Teen Support Group	Kim Lovelace 301 Sweetwater Road Robbinsville, NC 28771 Phone (828) 479-3330 Fax (828) 479-9859	Robbinsville High School
Parkinson's Support Group	Jean Sullivan The Gleanings Foundation 167 Lodge Lane Robbinsville, NC 28771 828-479-9773	Everyone welcome. Meets Every 6-8 weeks.

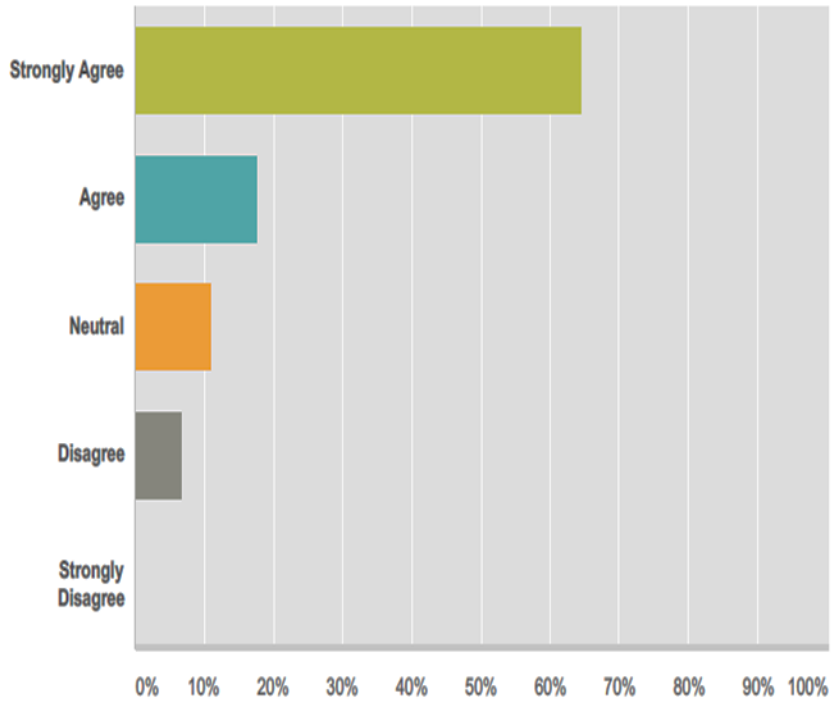
APPENDIX D – COMMUNITY SURVEY FINDINGS



Answer Choices	Responses	
Excellent	13.33%	6
Very Good	62.22%	28
Fair	22.22%	10
Poor	2.22%	1
Total		45

Q2 I believe it is important for ALL PUBLIC PLACES to be 100% tobacco free.

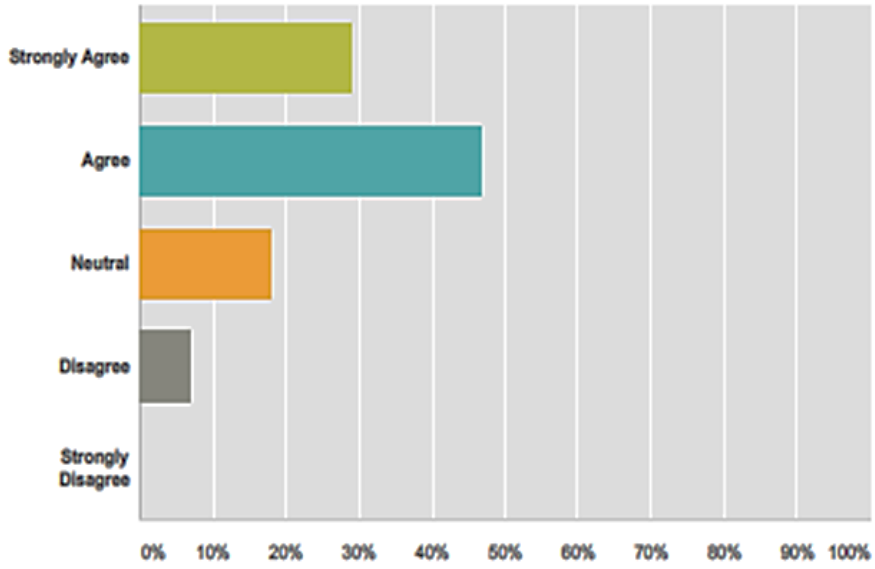
Answered: 45 Skipped: 0



Answer Choices	Responses	
Strongly Agree	64.44%	29
Agree	17.78%	8
Neutral	11.11%	5
Disagree	6.67%	3
Strongly Disagree	0.00%	0
Total		45

Q3 I believe my county provides the factilities and programs needed for ADULTS, CHILDREN, and YOUTH to be physically active throughout the year.

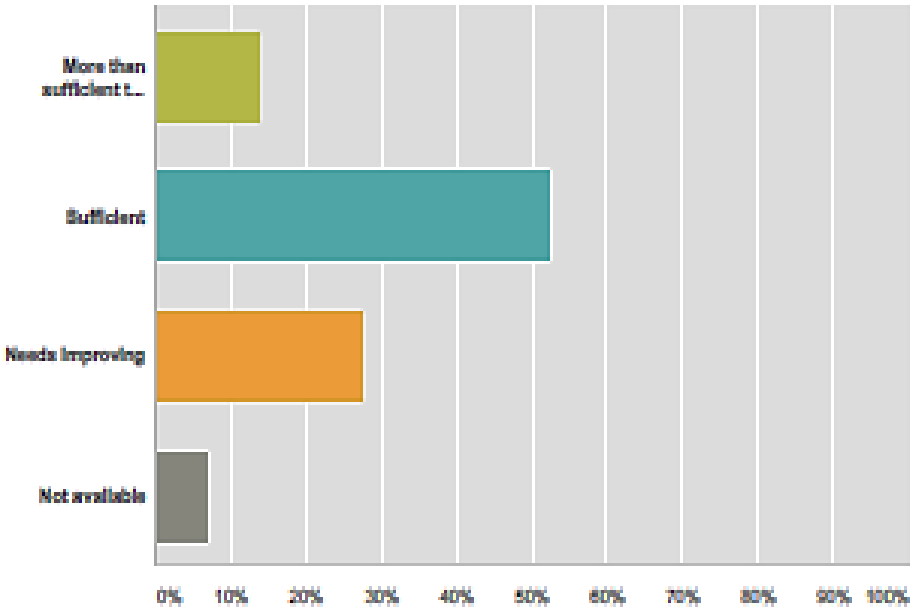
Answered: 45 Skipped: 0



Answer Choices	Responses	
Strongly Agree	28.89%	13
Agree	46.67%	21
Neutral	17.78%	8
Disagree	6.67%	3
Strongly Disagree	0.00%	0
Total		45

Q4 Do you feel existing community resources or services for chronic diseases such as diabetes, heart disease, or COPD are:

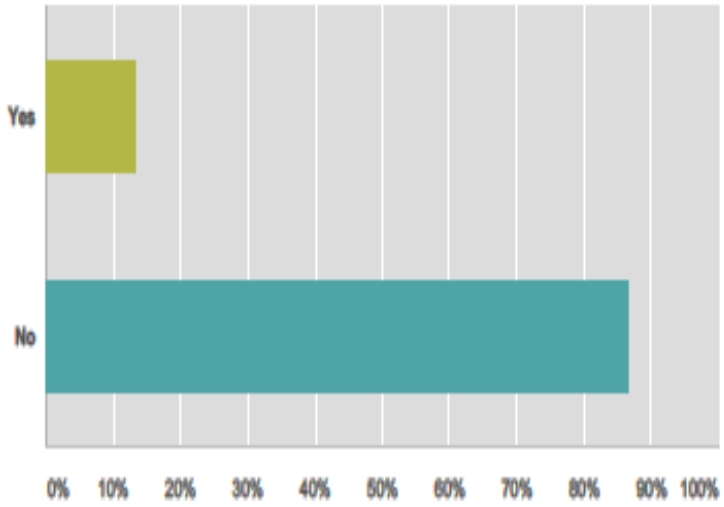
Answered: 44 Skipped: 1



Answer Choices	Responses	
More than sufficient to deal with	13.64%	6
Sufficient	52.27%	23
Needs Improving	27.27%	12
Not available	6.82%	3
Total		44

Q5 In the past 12 months, did you or someone in your household cut the size of your meals or skip meals because there wasn't enough money for food?

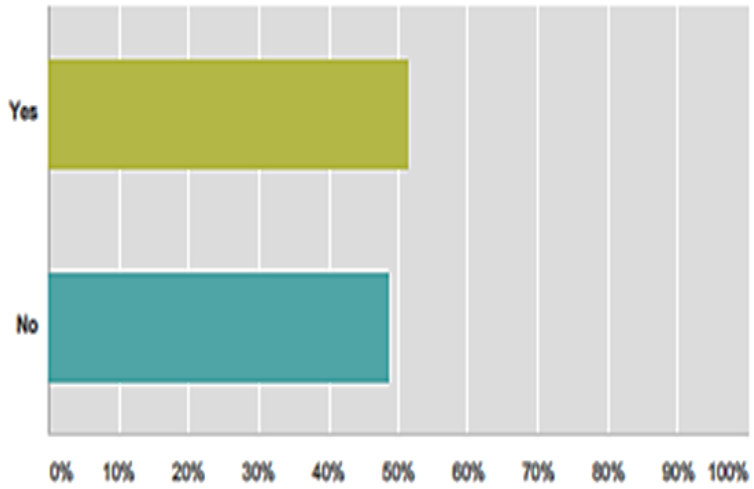
Answered: 45 Skipped: 0



Answer Choices	Responses	
Yes	13.33%	6
No	86.67%	39
Total		45

Q6 If you or someone you knew needed substance abuse counseling, would you know where to refer them?

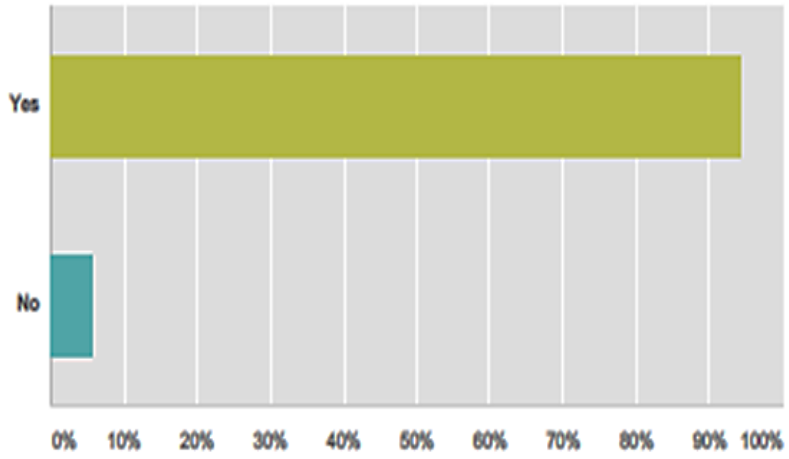
Answered: 37 Skipped: 8



Answer Choices	Responses	
Yes	51.35%	19
No	48.65%	18
Total		37

Q7 Do the services of the Graham County Health Department meet the community's needs?

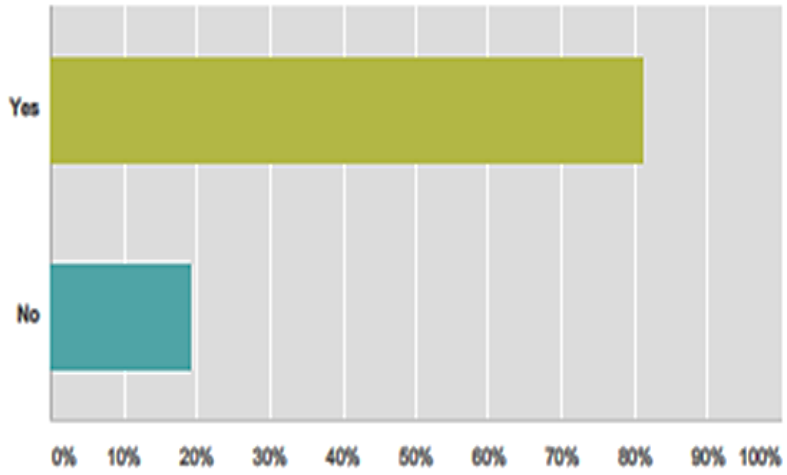
Answered: 36 Skipped: 9



Answer Choices	Responses	
Yes	94.44%	34
No	5.56%	2
Total		36

Q8 Do the Graham County Health Department's hours of service meet the community's needs?

Answered: 37 Skipped: 8



Answer Choices	Responses	
Yes	81.08%	30
No	18.92%	7
Total		37

The majority of those surveyed did not respond to the two write-in questions. Of those who did respond, education was the most commonly cited answer as to what would improve the health of Graham County.

Q9 If you could do one thing to improve the health of Graham County, what would it be?

Responses were:

- Need more doctors, nurses, & youth education
- Education
- Health care classes and information
- More information about the dangers in using drugs
- Close down moonshine stills and not legalize marijuana use and crack down on tobacco use and drugs
- More youth activities
- Urgent care 24 hours
- Public places need to be cleaner and do more things in the schools to talk to the kids about certain stuff
- More activities to improve physical fitness

Q10 Optional Question: Is there anything you would like to recommend to the Graham County Health Department?

Responses were:

- We need a pool that can be used all year. I drive to Cherokee for water aerobics
- Make it easier to find resources for help for a neighbor in need

APPENDIX E – KEY-INFORMANT SURVEY FINDINGS

COMMUNITY STAKEHOLDER INPUT

2015 PRC Online Key Informant Survey

Graham County, NC

Prepared for:
WNC Healthy Impact

By:
Professional Research Consultants, Inc.
11326 P Street Omaha, NE 68136-2316
www.PRCCustomResearch.com

2015-0631-02

Methodology

To solicit input from key informants, those individuals who have a broad interest in the health of the community, an Online Key Informant Survey was implemented. A list of recommended participants was provided to PRC by WNC Healthy Impact who compiled lists submitted by 13 of the 16 WNC counties; this list included names and contact information for physicians, public health representatives, other health professionals, social service providers, and a variety of other community leaders. Potential participants were chosen because of their ability to identify primary concerns of the populations with whom they work, as well as of the community overall.

Key informants were contacted by email, introducing the purpose of the survey and providing a link to take the survey online; reminder emails were sent as needed to increase participation.

Participation

In all, 7 community stakeholders took part in the Online Key Informant Survey, as outlined below:

Graham County Online Key Informant Survey Participation		
Key Informant Type	**Number Invited**	**Number Participating**
Community/Business Leader	6	3
Other Health Provider	3	1
Physician	2	2
Public Health Representative	2	1
Social Service Provider	1	0

	Populations Served		
Participating Organization	**Low-Income Residents**	**Minority Populations**	**Medically Underserved**
Graham County Health Department	✓	✓	✓
Graham Revitalization Economic Action Team			
Snowbird Clinic	✓	✓	✓
Walgreens	✓	✓	✓
WNC Healthy Impact	✓	✓	✓

Through this process, input was gathered from several individuals whose organizations work with low-income, minority populations, or other medically underserved populations.

Minority populations represented:

- American Indian

- Disabled
- Foster Children
- Hispanic/Latino
- Immigrants
- Low Income
- Medicaid

Medically underserved populations represented:

- American Indian
- Disabled
- Elderly
- Hispanic/Latino
- Low Income
- Medicaid
- Retired

In the online survey, respondents had the chance to explain what view was most needed to create a healthy community, and how they feel that the physical environment and social determinants impact health. Key informants were also asked to specifically rate the degree to which various health issues are a problem in their own county; follow-up questions asked them to describe why they identify problem areas as such, and how these might be better addressed. Results of their ratings, as well as their verbatim comments, are included throughout this report as they relate to the various other data presented.

	Populations Served		
Participating Organization	Low-Income Residents	Minority Populations	Medically Underserved
Graham County Health Department	✓	✓	✓
Graham Revitalization Economic Action Team			
Snowbird Clinic	✓	✓	✓
Walgreens	✓	✓	✓
WNC Healthy Impact	✓	✓	✓

Through this process, input was gathered from several individuals whose organizations work with low-income, minority populations, or other medically underserved populations.

Minority populations represented:

- American Indian
- Disabled

- Foster Children
- Hispanic/Latino
- Immigrants
- Low Income
- Medicaid

Medically underserved populations represented:

- American Indian
- Disabled
- Elderly
- Hispanic/Latino
- Low Income
- Medicaid
- Retired

In the online survey, respondents had the chance to explain what view was most needed to create a healthy community, and how they feel that the physical environment and social determinants impact health. Key informants were also asked to specifically rate the degree to which various health issues are a problem in their own county; follow-up questions asked them to describe why they identify problem areas as such, and how these might be better addressed. Results of their ratings, as well as their verbatim comments, are included throughout this report as they relate to the various other data presented.

NOTE: These findings represent qualitative rather than quantitative data. The Online Key Informant Survey was designed to gather input from participants regarding their opinions and perceptions of the health of the residents in the area. Thus, these findings are based on perceptions, not facts.

Characteristics of a Healthy Community

"What are the MOST IMPORTANT characteristics of a healthy community?"

Key informants could list up to 3 responses.

Key informants characterized a healthy community as containing the following *(number in parenthesis identifies number of total mentions):*

- Outdoor Activities (2)
- Access to Health Care (1)
- Affordable Health Care (1)
- Clean Water (1)
- Community Members Live Proactive Healthy Lifestyles (1)
- Diet/Nutrition (1)
- Good Education (1)
- Healthy Economy (1)
- Healthy Lifestyle Education (1)
- Low Rate of Substance Abuse (1)
- Low Rate of Tobacco Use (1)
- Quality Health Care (1)
- Services for Senior Citizens (1)
- Structure for Promotion of Pedestrian, Bicycle Access (1)

Walkability (1) Community's Greatest Gem/Asset

Key informants characterized Graham County's greatest "gem" or asset as the following:

Natural Environment

- *Natural resources and great people*
- *The natural environment of the county*
- *Natural environment*
- *Natural beauty and resources within Graham County.*
- *Outdoor recreation, scenic beauty*

Family Feel

- *Family, natural resources*

Requirements for Quality of Life

"What are the MOST IMPORTANT issues that must be addressed to improve the quality of life?"

Key informants could list up to 3 responses.

Key informants characterized the following as issues that must be addressed in order to improve the quality of life in Graham county. ***(Number in parenthesis identifies number of total mentions.)***

- Employment (3)
- Education About Health and Wellness (2)
- Affordable Housing (1)
- Alcohol/Drug Abuse (1)
- Better Paying Jobs (1)
- Culture (1)
- Economy (1)
- Family Values (1)
- Interest of Elected Officials (1)
- Low Self Esteem (1)
- More/Better Outdoor Recreation Areas (1)
- Obesity (1)
- Poverty (1)
- Promoting Healthy Diet/Nutrition (1)
- Teenage and Young Adult Outlook on Life (1)

Ranking of Health Issues

Online key informants were asked to rate each of the following health issues as a "major problem," "moderate problem," "minor problem," or "no problem at all" in Graham County. The table below illustrates these responses.

Evaluation of Health Issues				
Health Issue	**Major Problem**	**Moderate Problem**	**Minor Problem**	**No Problem At All**
Diabetes	85.7%	14.3%	0.0%	0.0%
Substance Abuse	85.7%	14.3%	0.0%	0.0%
Tobacco Use	85.7%	14.3%	0.0%	0.0%
Nutrition, Physical Activity, & Weight	57.1%	42.9%	0.0%	0.0%
Mental Health	57.1%	28.6%	14.3%	0.0%
Access to Health Care Services	42.9%	57.1%	0.0%	0.0%
Cancer	42.9%	57.1%	0.0%	0.0%
Heart Disease & Stroke	42.9%	57.1%	0.0%	0.0%
Oral Health	28.6%	57.1%	14.3%	0.0%
Sexually Transmitted Disease & Unintended Pregnancy	14.3%	85.7%	0.0%	0.0%
Maternal & Infant Health	14.3%	71.4%	14.3%	0.0%
Respiratory Diseases	0.0%	71.4%	28.6%	0.0%
Injury & Violence	0.0%	28.6%	71.4%	0.0%
Infectious Diseases & Foodborne Illnesses	0.0%	14.3%	71.4%	14.3%

Perceptions of Health Issues

Online Key Informant Survey participants rating any of the aforementioned health issues as "major problems" in Graham County were further asked to give reasons for their perceptions. These are outlined, by health issue, in the following sections.

Access to Health Care Services

The greatest share of key informants characterized *Access to Health Care Services* as a "moderate problem" in Graham County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Access to Health Care Services	42.9%	57.1%	0.0%	0.0%

Type of Care Most Difficult to Access

Key informants (who rated this as a "major problem") most often characterized urgent care as the most difficult to access in Graham County.

	Most Difficult to Access	Second-Most Difficult to Access	Third-Most Difficult to Access	Total Mentions
Urgent Care	66.7%	50.0%	0.0%	3
Substance Abuse Treatment	0.0%	50.0%	50.0%	2
Primary Care	33.3%	0.0%	0.0%	1
Chronic Disease Care	0.0%	0.0%	50.0%	1

Top Concerns

Among those rating this issue as a "major problem," reasons frequently related to the following:

Limited Services

> *There is only one Medical Practice available in Graham County open Mon-Fri 9-5.*
> *Graham County does not have a hospital, and very limited medical services are available.*

Lack of Mental Health and Substance Abuse Resources

> *The nearest urgent care facility and hospital is 45 plus minutes away. With a greatly dispersed population in rugged*

> *terrain, EMS takes a while to get to people. There are no specialty practices in Graham County. High incidence of uninsured, etc.*

Cancer

Most key informants characterized *Cancer* as a "moderate problem" in Graham County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Cancer	42.9%	57.1%	0.0%	0.0%

Top Concerns

Among those rating this issue as a "major problem," reasons frequently related to the following:

Prevalence/Incidence

> *Many cases of cancer are in Graham County and in order to get the proper treatment patients and their caregivers must travel a significant number to miles to receive treatment.*

Tobacco Use

> *Tobacco use and lack of preventive services.*

Diabetes

The greatest share of key informants characterized *Diabetes* as a "major problem" in Graham County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Diabetes	85.7%	14.3%	0.0%	0.0%

Top Concerns

Among those rating this issue as a "major problem," reasons frequently related to the following:

Native American Population

> *Native American population, limited facilities for exercise, lack of nutrition education.*
>
> *Large Native American population combined with poor nutrition.*

Nutrition, Physical Activity, and Weight

> *Obesity, poor diet and lack of exercise.*
>
> *Lack of physical activities available as well as healthy food choices.*

Prevalence/Incidence

> *Many cases of diabetes are in Graham County along with a significant percentage of the Indian population having diabetes. A lot of misunderstanding of the disease is seen in the population. The closest endocrinologists are still many miles away.*

Heart Disease & Stroke

Most key informants characterized *Heart Disease & Stroke* as a "major" or "moderate problem" in Graham County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Heart Disease & Stroke	42.9%	57.1%	0.0%	0.0%

Top Concerns

Among those rating this issue as a "major problem," reasons frequently related to the following:

Aging Population

> *Due to the aging population of the county and the seemingly genetic predisposition to heart disease there are many cases of heart disease and stroke in Graham County. Once again patients must travel a significant distance to specialists.*

Lack of Education

> *Inadequate preventive care.*

Infectious Diseases & Foodborne Illnesses

A majority of key informants characterized *Infectious Diseases & Foodborne Illnesses* as a "minor problem" in Graham County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Infectious Diseases & Foodborne Illnesses	0.0%	14.3%	71.4%	14.3%

Injury & Violence

The largest share of key informants characterized *Injury & Violence* as a "minor problem" in Graham

County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Injury & Violence	0.0%	28.6%	71.4%	0.0%

Maternal & Infant Health

Key informants generally characterized *Maternal & Infant Health* as a "moderate problem" in Graham County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Maternal & Infant Health	14.3%	71.4%	14.3%	0.0%

Top Concerns

Among those rating this issue as a "major problem," reasons frequently related to the following:

Lack of Resources

> *Lack of services.*

Mental Health

The greatest share of key informants characterized *Mental Health* as a "major problem" in Graham County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Mental Health	57.1%	28.6%	14.3%	0.0%

Top Concerns

Among those rating this issue as a “major problem,” reasons frequently related to the following:

Access Barriers

> *Lack of understanding in community of treatment options and no services available.*
>
> *Remoteness, substance abuse, lack of mental health facilities, education, stigma.*

Prevalence/Incidence

> *Many cases of declining mental health are in Graham County. The drug abuse potential of the county is very high contributing to the problem. Once again to get the proper care patients must travel long distances to specialists or be interviewed over "TV connections" located in Graham County. Isolation of the county and lack of "things to do" contributes to the problem.*

Nutrition, Physical Activity, & Weight

The greatest share of key informants characterized *Nutrition, Physical Activity & Weight* as a “major problem” in Graham County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Nutrition, Physical Activity, & Weight	57.1%	42.9%	0.0%	0.0%

Top Concerns

Among those rating this issue as a “major problem,” reasons frequently related to the following:

Lack of Education

> *History of poor nutrition education, diet, cooking and meal planning. Only one grocery store to choose from in Graham County. No importance placed on physical activity. "Everyone is fat" it is an acceptable norm.*
>
> *Lack of education services provided, lack of facilities for exercise, non-participation of individuals.*
>
> *Poor nutritional education, poverty.*

Oral Health

Key informants most often characterized *Oral Health* as a “moderate problem” in Graham County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All

Oral Health	**28.6%**	**57.1%**	**14.3%**	**0.0%**

Top Concerns

Among those rating this issue as a "major problem," reasons frequently related to the following:

Access and Cost

> *Affordability, substance abuse, education.*

Lack of Education

> *Lack of education and available services.*

Respiratory Diseases

The greatest share of key informants characterized *Respiratory Diseases* as a "moderate problem" in Graham County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Respiratory Diseases	0.0%	**71.4%**	**28.6%**	**0.0%**

Sexually Transmitted Disease & Unintended Pregnancy

Most key informants characterized *Sexually Transmitted Disease & Unintended Pregnancy* as a "moderate problem" in Graham County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Sexually Transmitted Disease & Unintended Pregnancy	**14.3%**	**85.7%**	**0.0%**	**0.0%**

Top Concerns

Among those rating this issue as a "major problem," reasons frequently related to the following:

Teen Pregnancy Prevalence

> *Many cases of teenage pregnancy are in Graham County. Lack of things for teenagers to do in Graham County*

> *contribute to the problem. Along with this comes the problem of sexually transmitted diseases.*

Substance Abuse

The greatest share of key informants characterized *Substance Abuse* as a "major problem" in Graham County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Substance Abuse	85.7%	14.3%	0.0%	0.0%

TOP CONCERNS

Among those rating this issue as a "major problem," the greatest barriers to accessing substance abuse treatment are viewed as:

Over Prescribing of Controlled Substances

> *As a pharmacist practicing in Graham County, I see this problem first hand. Legal prescription drug abuse is very obvious in our county. Just look at the sheriff's report in the Graham Star each week. Prescription forgeries, Sudafed acquisition attempts, pain clinic popularity, doctor shopping, B&E with prescription bottles being stolen, illegal selling on the streets, marijuana and bath salts abuse, attempting to refill prescriptions early, etc., not only account for the problem but contribute to the law problems and financial problems in our county population.*

Lifestyle Choices

> *Broken homes, no solid, consistent family structure for a majority of youth. Cycle of drug abuse creates more of the same.*

Poverty

> *Poverty, low self-esteem and no treatment options.*

Self-Medicating

> *Mental illness, escapism. In some cases unhappy family life, peer pressure, self-medication.*

Most Problematic Substances

Key informants (who rated this as a "major problem") most often identified methamphetamines or other amphetamines and opioid analgesics as the most problematic substances abused in Graham County.

	Most Problematic	Second-Most Problematic	Third-Most Problematic	Total Mentions
Methamphetamines or Other Amphetamines	16.7%	80.0%	0.0%	5
Opioid Analgesics (e.g. Oxycodone, Hydrocodone, Percocet, Fentanyl, Methadone)	33.3%	20.0%	20.0%	4
Alcohol	33.3%	0.0%	20.0%	3
Over-The-Counter Medications	16.7%	0.0%	0.0%	1
Marijuana	0.0%	0.0%	20.0%	1
Prescription Medications (NOT including Opioid Analgesics)	0.0%	0.0%	20.0%	1
Synthetic Drugs (e.g. Bath Salts, K2/Spice)	0.0%	0.0%	20.0%	1

Tobacco Use

The greatest share of key informants characterized *Tobacco Use* as a "major problem" in Graham County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Tobacco Use	85.7%	14.3%	0.0%	0.0%

Top Concerns

Among those rating this issue as a "major problem," reasons frequently related to the following:

Culture

> *Culturally common.*
> *Generational issue.*

Lack of Resources and Education

> *Education and awareness.*

Lifestyle

> *Habits and general acceptance.*

Prevalence/Incidence

> *To me underage smoking is a major problem in Graham County. Combined with the adult population that smokes results in many of our population that smokes resulting in the cancer threat and economic hardship smoking causes on the economic situation of many poor families.*

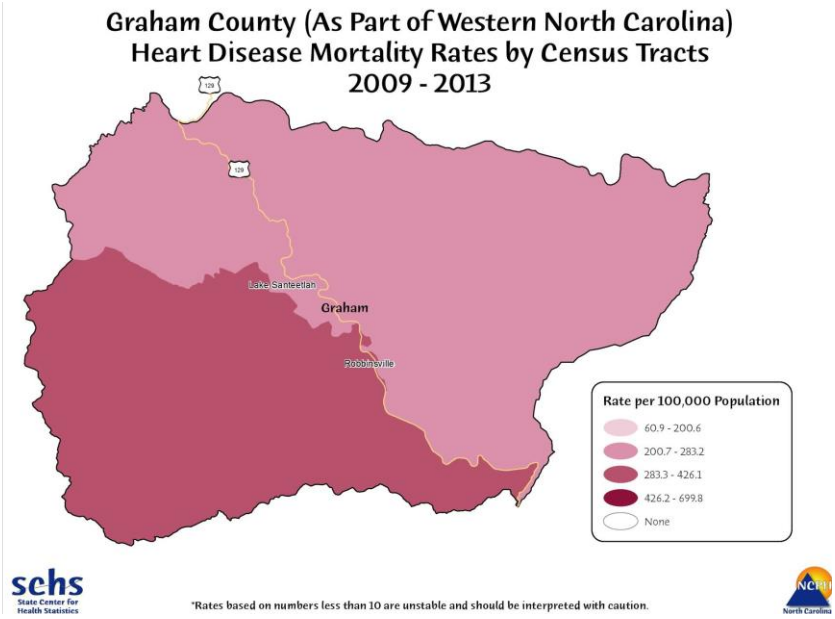
Key informants were aware of the following recent data collection efforts about the health issues, needs, or assets in Graham County:

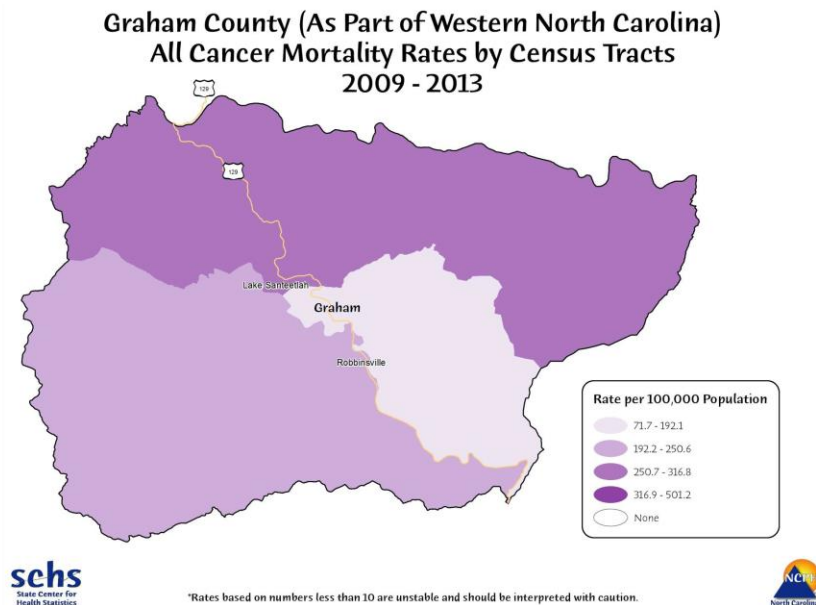
- Graham County Comprehensive Plant
- Pedestrian Connectivity and Health Impact Assessment
- Reimagining Robbinsvi/le

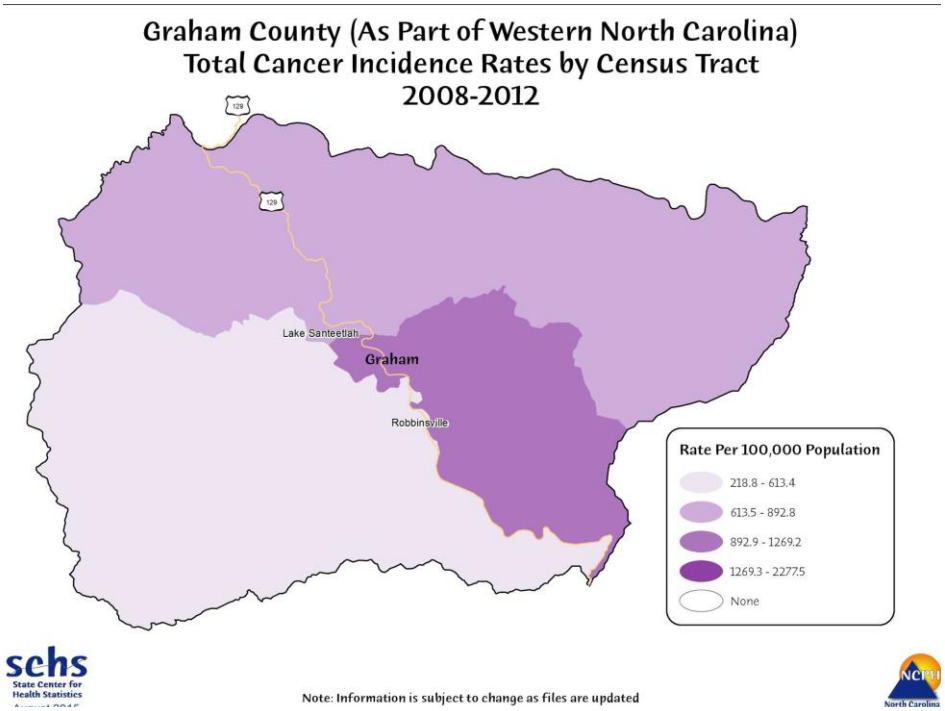
Key informants included the following as examples of health-related resource guides or directories created or used by their agency:

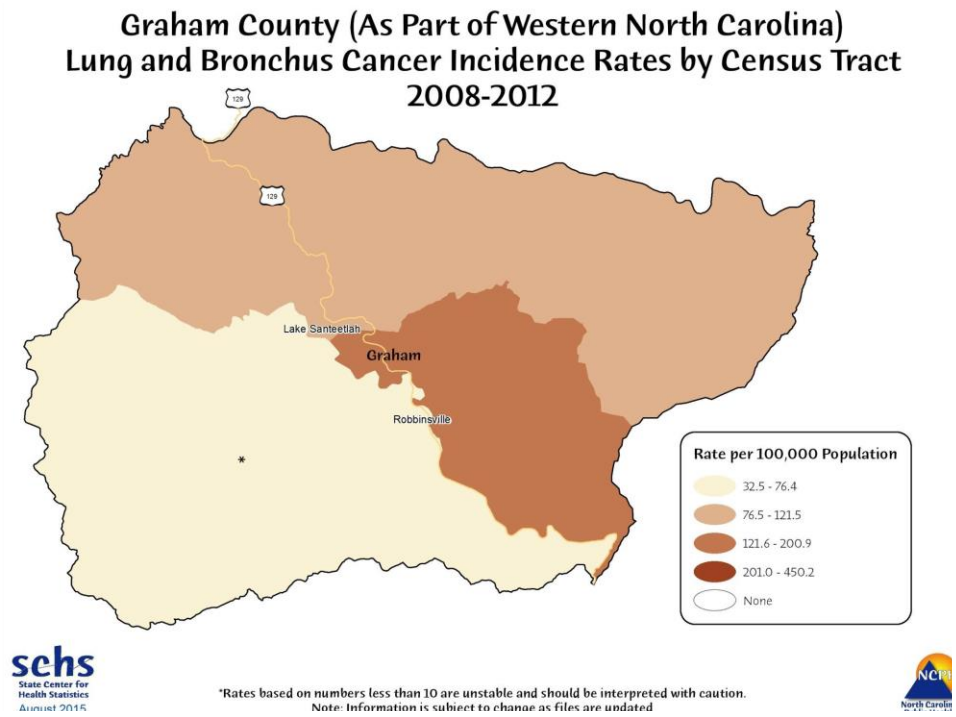
- Pedestrian Connectivity and Health Impact Assessment Plan

APPENDIX F – COUNTY MAPS






Graham County (As Part of Western North Carolina)
Total Cancer Incidence Rates by Census Tract
2008-2012
129
129
Lake Santeetlah
Graham
Robbinsville
Rate Per 100,000 Population
218.8 - 613.4
613.5 - 892.8
892.9 - 1269.2
1269.3 - 2277.5
None
schs
State Center for Health Statistics
Note: Information is subject to change as files are updated
NCIMH
North Carolina


Graham County (As Part of Western North Carolina)
Lung and Bronchus Cancer Incidence Rates by Census Tract
2008-2012
129
129
Lake Santeetlah
Graham
Robbinsville
Rate per 100,000 Population
32.5 - 76.4
76.5 - 121.5
121.6 - 200.9
201.0 - 450.2
None
schs
State Center for Health Statistics
August 2015
*Rates based on numbers less than 10 are unstable and should be interpreted with caution.
Note: Information is subject to change as files are updated

Population of Ethnic and Racial Minorities in Graham County

Population, All Minority, Total by Block Group, US Census 2010
- Over 600
- 301 - 600
- 101 - 300
- Under 101
- No Population or No Data

Source: US Census 2010

Geographic Unit: Block Group

Map produced with Community Commons

Percent of the Population (25+) with a High School Diploma or Higher in Graham County

Population with a High School Diploma or Higher, Percent by Tract, ACS 2009-13
- Over 89.0%
- 82.1 - 89.0%
- 75.1 - 82.0%
- Under 75.1%
- No Data or Data Suppressed

Source: American Community Survey 2009-13

Geographic Unit: Census tract

Map produced with Community Commons