2018

Macon County Community Health Assessment

Macon County Public Health

ANGEL Medical Center

HIGHLANDS-CASHIERS Hospital

MACON COUNTY
COMMUNITY HEALTH ASSESSMENT

ACKNOWLEDGEMENTS

This document was developed by Macon County Public Health in partnership with Angel Medical Center and Highlands-Cashiers Hospital 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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Erin Braasch	WNC Health Network	Facilitator	Winter 2018	https://www.wnchn.org/wnc-healthy-impact/
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Rick Vangilder	Angel Medical Center	Data Review/ Prioritization	Winter 2018	https://missionhealth.org/member-hospitals/angel/
Jim Villiard	Macon County Public Health	Prioritization	Winter 2018	http://www.maconnc.org/health-department.html
Savannah Yummit	Kid's Place	Prioritization	Winter 2018	

3

TABLE OF CONTENTS

MACON COUNTY 2018 COMMUNITY HEALTH ASSESSMENT EXECUTIVE SUMMARY

Community Results Statement

Macon County's health matters.

Leadership and Partnership for the Community Health Assessment Process

During the 2018 year, Macon County Public Health, MountainWise of Macon County, Angel Medical Center, and Highlands-Cashiers Hospital have facilitated the development of this comprehensive Community Health Assessment by engaging multiple organizations and community members; by outlining the need for certain decisions and interventions; and by creating a positive environment for discussion and change.

Regional/Contracted Services

Our county received support from **WNC Healthy Impact**, a partnership and coordinated process between hospitals, public health agencies, and key regional partners in Western North Carolina working towards a vision of improved community health. We work together locally and regionally to assess health needs, develop collaborative plans, take action, and evaluate progress and impact. This innovative regional effort is coordinated and supported by **WNC Health Network**. WNC Health Network is the alliance of hospitals working together to improve health and healthcare in Western North Carolina. Learn more at www.WNCHN.org.

Theoretical Framework/Model

WNC Health Network provides local hospitals and public health agencies with tools and support to collect, visualize, and respond to complex community health data through Results-Based Accountability™ (RBA). RBA is a disciplined, common-sense approach to thinking and acting with a focus on how people, agencies, and communities are better off for our efforts.

Through WNC Healthy Impact, all hospitals and their public health partners can access tailored Results-Based Accountability training and coaching; scorecard licenses and development (including the electronic Hospital Implementation Strategy); and scorecard training and technical assistance.

Collaborative Process Summary

Macon County's collaborative process is supported by WNC Healthy Impact, which works at the regional level.

Phase 1 of the collaborative process began in January 2018 with the collection of community health data. For more details on this process see Chapter 1 – Community Health Assessment Process.

Locally, our process included reflecting on morbidity and mortality data in our community, social-economic factors that influence health, community input, and public health trends. Morbidity and mortality data show the occurrence of disease and death in Macon County while social- economic factors help explain the context of people's lives that defines their health. These factors include income, education, physical environment, social supports, genetics, and the availability of services; this is where one can start to see connections or gaps in information. Community input and public health trends are valuable in telling the story about why health issues are important and what actions are, or could be, taken to make a positive change.

Angel Medical Center, Highlands-Cashiers Hospital, and Macon County Public Health narrowed down data from hundreds of data points. Morbidity and mortality data in our community was reviewed and assessed based on the size and severity of the problem (using a tool from WNC Healthy Impact). To be considered as a top indicator, the size of the problem must affect at least 1 % of the population or the severity of the problem had to rank as "serious." The top ten morbidity and mortality measures were identified based on these scores.

 "Stand out" data, or risk factor data, was also considered while looking at what affects the health and well-being of Macon County. Stand out data includes modifiable and non-modifiable risk factors, in other words, what we have control over and what we don't have control over. The amount of physical activity an individual gets is an example of modifiable risk factors while the percent of the population over the age 65 is a non-modifiable risk factor.

Morbidity and mortality scores and stand out data from Angel Medical Center, Highlands-Cashier Hospital, and Macon County Public Health were aggregated to create an indicator list for priority selection. Complementary indicators were condensed or grouped- such as overweight and obesity- which produced a top seven indicator list.

A Priority Selection meeting was held to determine the health issues for the Community Health Assessment. Community members were presented the top seven indicator list with review points and data summaries for each issue. Participants held self-guided and open discussions about each issue; they were also prompted with questions such as "what stood out?" and "what is particularly concerning?" After discussion, participants were asked to individually prioritize the issues presented based on relevancy, impact, and feasibility, and to identify their top three health issues. This led to the priority selection that took place in the form of dot voting; participants placed dot stickers beside their top three health issues. The dots collectively identified the top three health issues for the Community Health Assessment.

Priorities were presented to the Board of Health for them to approve and make suggestions.

Key Findings

Macon County has much to offer and is rich in natural beauty, outdoor living, tradition, and people. Natural amenities in Macon County include waterfalls, trails, and the Nantahala National Forest. Other recreational facilities are the Little Tennessee River Greenway and ball parks which many residents and visitors take advantage of. There are many other features in Macon County which celebrates the county's tradition, culture, and people from the County Fair, Pickin' on the Square, Gem Shows, and other seasonal festivities.

Macon County also has an endless list of supportive services in place that the community can benefit from including the health department, hospitals, department of social services, the recreation center, emergency services, community care clinics, and support groups like REACH and Full Circle Recovery Center. Those that work, volunteer, and coordinate these efforts are dedicated to serving the people of Macon County. Though these services are available there is confusion regarding how to access them. Access to care has been mentioned throughout survey collection and in priority selection conversation.

It is important for people in Macon County to know the impact health issues have on our community. Number data and story data are equally important in explaining this. Number data is scientific and draws a general conclusion about a series of information. While story data expresses experiences, feelings, and what is most important to the community. Considering both number and story data creates powerful measures towards improved community conditions and health. When presenting priority issues, we captured what the numbers say, what the community said, what else we know about the issue, and what is happening around the issue.

Residents of Macon County show extraordinary investment in their community through care and support of the people that they live with. This can be seen and felt in every day interactions, but also through the amount of time and efforts community members dedicate to making Macon County the best place to be. This was no different at the Priority Selection meeting where community members heavily debated what health issues was most important to address in this community health assessment. Specifically, there was lengthy discussion about Mental Health and its link to substance use. Community members agreed that mental illness and substance use often go hand in hand, which gave them reason to consider combining the issues into a singular priority. However, after continued deliberation, the community decided to keep mental illness and substance use as separate issues in order to best address substance use.

Ultimately, the community must choose priorities that they deem reachable. Therefore, they must ask, "does our community have the capacity and resources to make progress with this health condition or disease?" The answer to this question helped community members select the priorities.

Health Priorities

Macon County has been working collaboratively to collect data, listen to community perspectives, and to evaluate ongoing programs and available resources. These priorities are intended to create dialog and action focused activities that would leave to positive change

among community members and agencies. Macon County's top health priorities (listed in no particular order) are:

Health Priority 1- Substance Use
Health Priority 2- Overweight and Obesity
Health Priority 3- Domestic Violence and Sexual Assault
Health Priority 4- Mental Health

Next Steps

- Results of the 2018 Community Health Assessment will be widely disseminated throughout Macon County. Plans include the public library, newspaper, media press releases, web postings, and presentations to hospital, health, Board of Health and other boards/committees. We anticipate these results will be used for strategic planning purposes for our local hospitals, health department, as well as other health and human service agencies in the county.
- Collaborative work will take place with teams and/or community members to better understand the story and root causes behind your priority issues; engage with existing and new partners.
- Identify what works to do better on these issues, including evidence-based strategies (e.g. literature review), what is working in other communities, and what people most affected by the issues think would work to do better on the priorities.
- Select priority strategies and create performance measure to help you know how people are better-off because of the strategies.
- Task forces will play an integral role in choosing and designing interventions and priority strategies. They will continue to identify resources, policies, environmental initiatives and programs already focused on the identified priorities. Task forces will also recruit volunteers, publicizing and conducting activities, evaluating activities and informing the community about the results.
- A Community Health Improvement Plan (CHIP) on an electronic Scorecard will be available for anyone to access to monitor progress. Available here: http://maconnc.org/healthy-carolinians.html.
- A State of the County Health (SOTCH) report will be available for anyone to access and monitor progress. Available here: http://maconnc.org/healthy-carolinians.html.
- A Macon County Provider contact list can be found here: http://www.maconnc.org/health-resources.html.
- For access to the full data set, please contact Lyndsey Henderson at Macon County Public Health.

CHAPTER 1 – COMMUNITY HEALTH ASSESSMENT PROCESS

Purpose

Community health assessment (CHA) is an important part of improving and promoting the health of county residents. A community health assessment (CHA) – which is a process that results in a public report – 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.

What are the key phases of the Community Health Improvement Process?

In the **first phase** of the cycle, process leaders for the CHA collect and analyze community data – deciding what data they need and making sense of it. They then decide what is most important to act on by clarifying the desired conditions of wellbeing for their population and by then determining local health priorities.

The **second phase** of the cycle is community health strategic planning. In this phase, process leaders work with partners to understand the root causes of the identified health priorities, both what's helping and what's hurting the issues. Together, they make a plan about what works to do better, form workgroups around each strategic area, clarify customers, and determine how they will know people are better-off because of their efforts.

In the **third phase** of the cycle, process leaders for the CHA take action and evaluate health improvement efforts. They do this by planning how to achieve customer results and putting the plan into action. Workgroups continue to meet and monitor customer results and make changes to the plan as needed. This phase is vital to helping work groups understand the contribution their efforts are making toward their desired community results.

Definition of Community

Community is defined as "county" for the purposes of the North Carolina Community Health Assessment Process.   Macon County is included in Angel Medical Center and Highlands-

10

Cashiers Hospital community for the purposes of community health improvement, and as such they were key partner in this local level assessment.

WNC Healthy Impact

WNC Healthy Impact is a partnership and coordinated process between hospitals, public health agencies, and key regional partners in Western North Carolina working towards a vision of improved community health. We work together locally and regionally to assess health needs, develop collaborative plans, take action, and evaluate progress and impact.

This regional initiative is designed to support and enhance local efforts by:
- Standardizing and conducting data collection,
- Creating communication and report templates and tools,
- Encouraging collaboration,
- Providing training and technical assistance,
- Addressing regional priorities, and
- Sharing evidence-based and promising practices.

This innovative regional effort is supported by financial and in-kind contributions from hospitals, public health agencies, and partners, and is coordinated by **WNC Health Network**. WNC Health Network, Inc. is an alliance of hospitals working together, and with partners, to improve health and healthcare. Learn more at www.WNCHN.org.

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, we share a general overview of health and influencing factors, then focus more on priority health issues identified through a 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 publicly available secondary data metrics with our county compared to the sixteen county WNC region
- Set of maps accessed from Community Commons and NC Center for Health Statistics
- WNC Healthy Impact Community Health Survey (cell phone, landline and internet-based survey) of a random sample of adults in the county
- Online key informant survey

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

Health Resources Inventory

We conducted an inventory of available resources of our community by reviewing a subset of existing resources currently listed in the 2-1-1 database for our county as well as working with partners to include 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 a critical element of the community health assessment process. Our county included community input and engagement in several ways:

- Partnership on conducting the health assessment process
- Through primary data collection efforts (survey, key informant interviews, listening sessions, etc.)
- By reviewing and making sense of the data to better understand the story behind the numbers
- 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 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 ensure that programs and strategies in our community are developed and implemented with community members and partners.

Underserved, At-Risk& Vulnerable Populations

Throughout our community health assessment process, 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. For the purposes of the overall community health assessment, we aimed to understand differences in health outcomes, correlated variables, and access, particularly among medically underserved, low-income, and/or minority populations, and others experiencing health disparities.

The underserved, at-risk and vulnerable populations of focus for our process and product include:
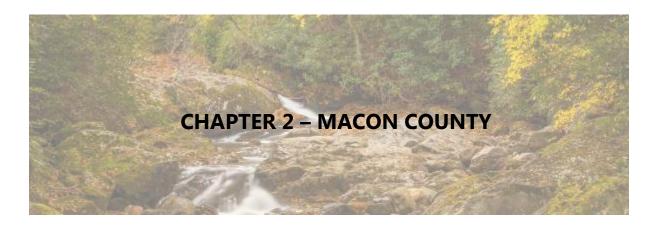
- Under- and uninsured
- Women who smoke while pregnant
- Those without transportation
- Women with gestational diabetes
- Spanish speaking persons with (pre) diabetes
- Drug users
- Homeless
- Men who have sex with men
- Aging population
- Domestic violence and sexual assault victims
- Those with limited access to grocery stores and recreation facilities
- People who are overweight or obese- any age group
- Tobacco users
- Those with mental health issues
- Grandparents raising grandchildren
- Retirees who move to Macon County without a support system

Though there are not universally accepted definitions of the three groups, here are some basic definitions from the Health Department Accreditation Self-Assessment Instrument (in some cases definitions have been slightly altered to better represent our region):

Underserved populations relate to those who do not access health care either because there is a lack of services or providers available or because of limitations such as income, literacy/language barriers or understanding on how to access services, cultural competency of clinicians, trust, transportation, etc.

At-risk populations are the members of a particular group who are likely to, or have the potential to, get a specified health condition. This could be from engaging in behavior (such as pregnant women who smoke) that could cause a specified health condition, having an indicator or precursor (high blood pressure) that could lead to a specified health condition or having a high ACE score (traumatic experiences), which is correlated with increased risk of specified health conditions.

A vulnerable population is one that may be more susceptible than the general population to risk factors that lead to poor health outcomes. Vulnerable populations, a type of at-risk population, can be classified by such factors as race/ethnicity, socio-economic status, cultural factors and age groups.

CHAPTER 2 – MACON COUNTY

Location, Geography, and History of Macon County

Macon County is a diverse mixture of mountain living, small city hustle, rural landscapes and high-tech potential. The 2016 US Census estimates the county has roughly 34, 000 residents residing across 519 square miles, most of them mountainous and sparsely inhabited. Macon County is the home of the Nantahala River. The Nantahala is one of the most popular whitewater rafting destinations in the nation. Highlands is the county's second largest community. At 4,118 feet above sea level, Highlands is known for its ability to attract tourists and vacation/secondary home owners. Highlands is home to a small, yet modern, hospital and medical/dental staff.

Macon County was formed in 1828 from the western part of Haywood County. It was named for Nathaniel Macon, who represented North Carolina in the United States House of Representatives from 1791 to 1915. In 1839 the western part of Macon County became Cherokee County. In 1851 parts of Macon County and Haywood County were combined to form Jackson County. The Macon County seat is Franklin, with a population of around 4,000. Franklin is also the location of Macon County Public health, Angel Medical Center and most of the county's physicians, dentists and other professionals. Franklin is home to most of Macon County's industry and non-service employment. In the past Macon County boasted prominent manufacturing, but in recent years most of those have closed and/or relocated out of state. A software development business, small manufacturing and a floor finishing business provide most of the county's employment opportunities.

Population

General Population Characteristics: According to data from the 2016 Census, the total population of Macon County is 33, 991. The proportions of females to males similarly reflects

region-wide and state percentages- with females consisting of 51.7% of the population compared to males at 48.3%. The median age of Macon County is 49 years old which is slightly higher than region-wide and state averages.

General Population Characteristics, Sex and Age 2016 US Census								
County	Total Population (2016)	% Male	% Female	Median Age	% Under 5 Years Old	% 5-19 Years Old	% 20- 64 Years Old	% 65 Years and Older
Macon	33, 991	48.3	51.7	49.0	5.1	15.4	52.8	26.7
WNC (Regional Total)	775, 745	48.5	51.5	45.9	4.9	16.8	57.0	21.3
State Total	9, 535, 483	48.6	51.4	38.3	6.1	19.7	59.6	14.7

Minority Populations: Macon County has significantly lower proportions of all minority racial groups.

General Population Characteristics, Race/Ethnicity 2016 US Census									
County	Total Population (2016)	White	Black or African American	American Indian, Alaskan Native	Asian	Native Hawaiian, Other Pacific Islander	Some Other Race	Two or More Races	Hispanic or Latino (of any race)
		%	%	%	%	%	%	%	%
Macon	33, 991	92.6	1.2	0.5	0.7	0	3.8	1.3	6.6
WNC (Regional Total)	775, 745	89.9	4.4	1.4	0.8	0.1	1.5	1.8	5.8
State Total	9, 535, 483	69.2	21.5	1.2	2.6	0.1	3.0	2.4	8.9

Population Change: The percent population change from 2010 to 2016 is 0.2%. Growth in the overall population is expected to be 10.1% from 2020- 2030 and 43.5% by 2037. In 2010, 23.9% of the population was 65 and older. Growth in the elderly population is projected to increase in 2020 to 29.1% to 29.7% in 2037; Macon County projections are higher than region and state averages. Youth population change, people under 18, is anticipated to remain steady. In 2010, 19.2% of the population was under the age of 18. Youth trends are predicted to remain relatively steady at 18.5% of the population in 2020 and 19.4% of the population in the year 2037.

Family Composition: In Macon County, there are 15, 215 households; 9, 693 are family households while 5, 522 are nonfamily households. 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. 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.

Composition of Families with Children, 2012- 2016 2016 US Census								
			Family Composition					
County	# Total Households	# Total Family 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. #	%
Macon	15, 215	9, 693	1, 917	13	181	1.2	850	5.6
WNC Total	319, 737	203, 956	45, 676	14.3	6, 064	1.9	17, 081	5.3
State Total	3, 815, 395	2, 515, 338	706, 208	18.5	85, 557	2.2	512, 019	13.4

Composition of Families with Children, 2012- 2016 2016 US Census						
			Nonfamily Composition			
	# Total Households	# Total Nonfamily Households	Householder Living Alone		65 Years and Over	
			Est. #	%	Est. #	%
County						
Macon	15, 215	5, 522	4, 680	30.8	2, 466	16.2
WNC Total	319, 737	115, 781	97, 358	30.4	43, 223	13.5
State Total	3, 815, 395	1, 300, 054	1, 076, 918	28.2	391, 506	10.3

Voting Trend: In 2017 there were 25, 385 total registered voters in Macon County. White registered voters make up most of the total registered voters at 96%. Other registered voters have the second highest percent of the total registered voters with 3.3%. Hispanic registered voters make up 1% of the total registered voters which is equal to the regional arithmetic mean. Black registered voters make up 0.7% of the total registered voters; Macon County's registered black voter averages are significantly lower than the region and state totals.

Homelessness: The total number of homeless people in Macon County has increased from 46 in 2016 to 70 in 2017. Homeless families with children have experienced the most change, nearly doubling since 2016, while the total homeless adult population has decreased. In 2017 the

chronically homeless and veterans were accounted for while in 2016 this information was unavailable. There were 17 people identified as chronically homeless and 3 homeless veterans.

CHAPTER 3 – A HEALTHY MACON COUNTY

Elements of a Healthy Community

In the online survey, key informants were asked to list characteristics of a healthy community. They were also asked to select the health issues or behaviors that they feel are the most critical to address collaboratively in their own community over the next three years or more. Follow-up questions asked them to describe which contributors to progress and impediments of progress exist for these issues, as well as the likelihood that collaborative effort could make a positive change for these issues.

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

- **Access to Care and Services:** Access to care and services is a broad area of concern in Macon County. To quote one respondent on the issue of access to care and services, there are an "inadequate number of health care professionals in the primary care and specialty care areas, especially for the low-income members of the community." Other items of concern are healthy food, low- cost fitness opportunities, transportation, primary care, and mental health treatment and facilities.
- **Nutrition and Physical Activity:** Nutrition and physical activity was a consistent theme throughout the survey and priority selection process. Some variables that seem to

influence nutrition and physical activity are personal/individual choices, costs of healthy eating and physical activity, and educational opportunities. While one respondent perceives that "people [are] not willing to change their lifestyle," another respondent identifies that "as our understanding of healthier eating options has increased so has the national collective understanding of preventative measures." In a different opinion there is a "need for education about healthy living lifestyle[s]."

- **Substance Use:** In regard to substance use, one respondent quoted "recent data (that) shows a high rate of opiate dependency and adverse side-effects helps to bring this issue to a more prominent position in the public discussion of the problem." Substance use is a health issue felt locally, state and nationwide. Substance use is often associated with prescription or illegal drugs; it is important to note that substance use also includes the use of alcohol and tobacco products.

- **Community Collaboration and Coordination of Existing Resources:** "A lot of people in our community are willing to work toward a solution. Community leaders want to see change." There are multiple efforts and services throughout Macon County, which community members recognize. Respondents observe "Full Circle Recovery Center has brought lots of resources to our community to address substance use" while the "Community mental health taskforce, Macon County Leadership Forum on opioid use, and recent very successful community forum on mental health and substance use - Mainly focused on policy level change at the state level...no real boots on the ground beyond the already overtasked providers."

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

CHAPTER 4 – SOCIAL & ECONOMIC FACTORS
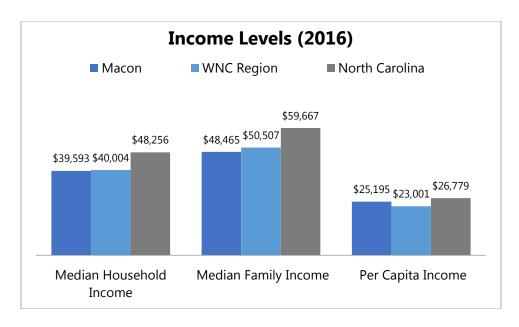
As described by Healthy People 2020, economic stability, education, health and healthcare, neighborhood and built environment, and social community and context are five important domains of social determinants of health. These factors are strongly correlated with individual health. People with higher incomes, more years of education, and a healthy and safe environment to live in have better health outcomes and generally have longer life expectancies. Although these factors affect health independently, they also have interactive effects on each other and thus on health. For example, people in poverty are more likely to engage in risky health behaviors, and they are also less likely to have affordable housing. In turn, families with difficulties in paying rent and utilities are more likely to report barriers to accessing health care, higher use of the emergency department, and more hospitalizations.
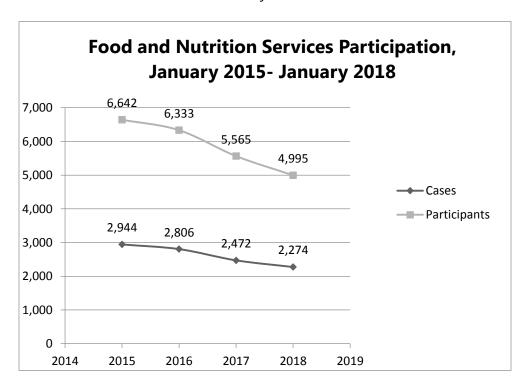
Income & Poverty

"Income provides economic resources that shape choices about housing, education, child care, food, medical care, and more. Wealth, the accumulation of savings and assets, helps cushion and protect us in times of economic distress. As income and wealth increase or decrease, so does health" (County Health Rankings, 2018).

Income: From 2012- 2016 the median household income in Macon County was $39, 593 compared to the state median household which is $48, 256; this is a $8, 663 difference. The median family income was $48, 465 compared to the state which was $59, 667; this is an $11, 202 difference. The number of households with food stamps and SNAP benefits was 2, 224.

Income Levels (2016)

■ Macon ■ WNC Region ■ North Carolina

Median Household Income: $39,593, $40,004, $48,256
Median Family Income: $48,465, $50,507, $59,667
Per Capita Income: $25,195, $23,001, $26,779

Food and Nutrition Services Participation: In Macon County, food and nutrition services participation has steadily decreased since January 2015. In January 2015 there were 2, 944 cases with 6, 642 participants and in January 2018 there were 2,274 cases with 4, 995 participants. Caucasians and individuals under 18 are the major consumers of food and nutrition services.

Food and Nutrition Services Participation, January 2015- January 2018

Participants: 6,642 (2015), 6,333 (2016), 5,565 (2017), 4,995 (2018)
Cases: 2,944 (2015), 2,806 (2016), 2,472 (2017), 2,274 (2018)

◆ Cases
■ Participants

Free and Reduced-Price School Meals: For the school year 2016- 2017, the final average membership of free and reduced- price school meals was 4, 303. There were 447 reduced applications and 2, 375 free applications. There are insignificant differences between Macon County and regional averages.

Employment

"Employment provides income and, often, benefits that can support healthy lifestyle choices. Unemployment and under employment limit these choices, and negatively affect both quality of life and health overall. The economic condition of a community and an individual's level of educational attainment both play important roles in shaping employment opportunities" (County Health Rankings, 2018).
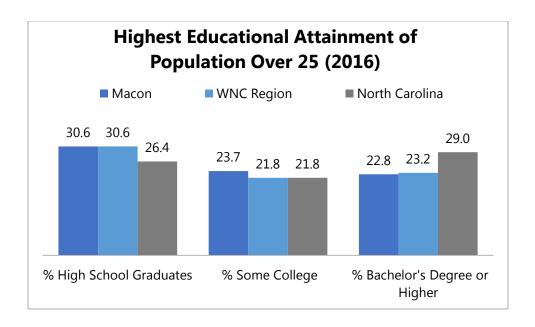
As of 2017 the three employment sectors in Macon County with the largest proportions of workers were Retail Trade, Accommodations and Food Services, and Health Care and Social Assistance. Macon County's Retail Trade provided 20.21% to the workforce; an average weekly income of $509.52. Accommodations and Food Services provided 16.11% to the workforce; an average weekly income of $414.86. Health Care and Social Assistance provided 14.07% to the workforce with an average weekly income of $663.13. Note the gap in average weekly wages between Health Care and Social Assistance and Retail Trade and Accommodations and Food Services. Persons in Retail Trade and Accommodations and Food Services tend to lack employment benefits such as health insurance and retirement programs; many in these sectors also work part time and sometimes at multiple jobs.

Macon County's unemployment rate (2017) is 4.7%. This is comparable to the state's unadjusted total at 5.1& and the national unadjusted total at 4.9%. There are 15, 280 people in the labor force of which 14, 460 are employed and 821 are unemployed.
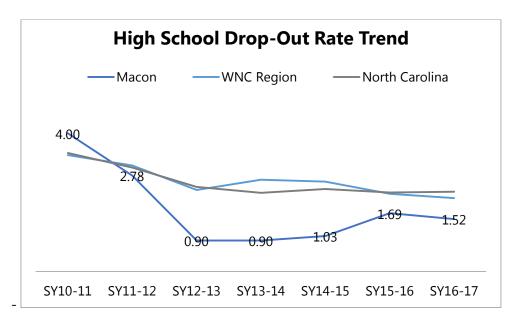
Education

"Better educated individuals live longer, healthier lives than those with less education, and their children are more likely to thrive. This is true even when factors like income are taken into account" (County Health Rankings, 2018).

The total population aged 25 years and older is 25, 339. Based on this, Macon County has a 30.6% high school graduation rate; this is equal to the region's average and slightly higher than the state's average at 26.4%. The percent of the population with some college is 23.7% while those with a bachelor's degree or higher is 22.8%.

Highest Educational Attainment of Population Over 25 (2016)

■ Macon ■ WNC Region ■ North Carolina

	% High School Graduates	% Some College	% Bachelor's Degree or Higher
Macon	30.6	23.7	22.8
WNC Region	30.6	21.8	23.2
North Carolina	26.4	21.8	29.0

As of the final month of the 2016- 2017 school year, there were 4, 539 total students enrolled in the Macon County school district. The high school dropout rate for the same school year is 1.52 which equals 21 students. Macon County's high school dropout rate is below the region and state averages. For 2016- 2017 there were 163 short term suspensions for all grades and 1 long term suspension.

High School Drop-Out Rate Trend

Macon —— WNC Region —— North Carolina

	SY10-11	SY11-12	SY12-13	SY13-14	SY14-15	SY15-16	SY16-17
Macon	4.00	2.78	0.90	0.90	1.03	1.69	1.52

Community Safety

"Injuries through accidents or violence are the third leading cause of death in the United States, and the leading cause for those between the ages of 1 and 44. Accidents and violence affect health and quality of life in the short and long-term, for those both directly and indirectly affected, and living in unsafe neighborhoods can impact health in a multitude of ways" (County Health Rankings, 2018).

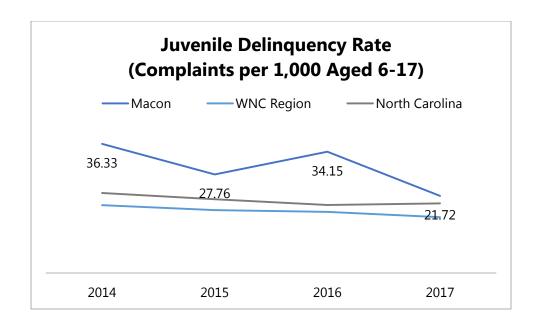**Crime:** Index crime includes the total number of violent crime (murder, rape, robbery, and aggravated assault) and property crime (burglary, larceny, and motor vehicle theft). Violent crime includes the offenses of murder, rape, robbery, and aggravated assault. Property crime includes the offenses of burglary, larceny, and motor vehicle theft. The index crime and property crime in Macon County was relatively comparable to regional and state totals while property crime rate in Macon County was significantly lower compared to regional and state averages.

Crime Rate Trends 2016 NC SBI Crime Reporting			
County	**Index Crime Rate**	**Violent Crime Rate**	**Property Crime Rate**
Macon	2, 478.8	86.3	2, 392.5
WNC (Regional Total)	2, 318.1	182.2	2, 135.9
State Total	3, 154.5	374.9	2, 779.7

Sexual Assault and Domestic Violence: In the FY 2016- 2017, 114 clients were identified as victims of sexual assault. The single most frequently reported specific type of sexual assault during the period was "other" while child sexual offenses came in second. Region and statewide the most frequently reported type of sexual assault was rape. In Macon County the most common type of offender was unknown. The number of calls in Macon County dealing with domestic violence decreased from 1, 196 calls in FY 2015- 2016 to 542 calls in FY 2016- 2017; however, the number of clients who were victims of domestic violence increased from 389 in FY 2015- 2016 to 542 in FY 2016- 2017.
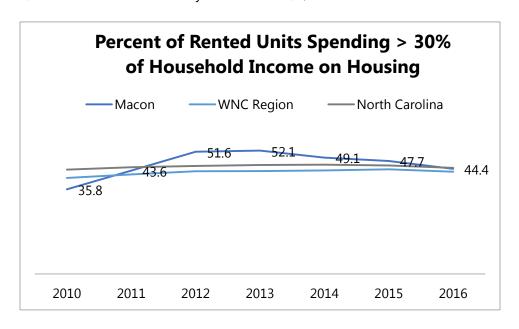
Juvenile Justice: Macon County has significantly higher rates of juvenile delinquency compared to the region and state. The chart shows a pattern of spikes and declines in juvenile delinquency in Macon County. There was a decrease in complaints from 2016 to 2017 with 154 total complaints in 2016 to 97 total complaints in 2017. There were 18 undisciplined complaints and 79 delinquent complaints. Undisciplined complaints are offenses that would not be crimes if committed by adults and delinquent complaints which are any juvenile between 6 and not yet 16 who commits an offense that would be a crime under state or local law if committed by an adult. Outcomes include 1 person placed in a detention center and 29 who served in a community program.

**Juvenile Delinquency Rate
(Complaints per 1,000 Aged 6-17)**

Macon   WNC Region   North Carolina

36.33

34.15

27.76

21.72

2014   2015   2016   2017
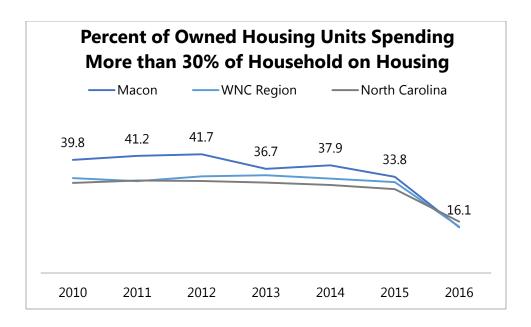
Housing

"The housing options and transit systems that shape our communities' built environments affect where we live and how we get from place to place. The choices we make about housing and transportation, and the opportunities underlying these choices, also affect our health" (County Health Rankings, 2018).

There are 15, 215 total occupied housing units in Macon County from 2012- 2016. There were 4, 070 total rented units and 11,145 owned units. Of total renters 44.4 % spent greater than 30 % of their household income on housing while 16.1% of owned units spent greater than 30 % of their household income on housing in Macon County. The median gross rent for the same time period was $714 while median monthly owner costs $1, 037.

**Percent of Rented Units Spending > 30%
of Household Income on Housing**

Macon   WNC Region   North Carolina

51.6   52.1

43.6   49.1   47.7

35.8   44.4

2010   2011   2012   2013   2014   2015   2016

Percent of Owned Housing Units Spending More than 30% of Household on Housing

— Macon — WNC Region — North Carolina

39.8   41.2   41.7   36.7   37.9   33.8   16.1

2010   2011   2012   2013   2014   2015   2016

Housing adequacy examines suitable living environments. Macon County data shows that 18.1% of owned or rented units are mobile homes or other types of housing, 13.3% was built in 1959 or earlier, and that 5.7% of houses are with no vehicle available.

County or Township	Total Occupied Housing Units	% Mobile Homes or other type of housing	% Built in 1959 or earlier	% without complete plumbing facilities	% without complete kitchen facilities	% with no vehicle available	% with no telephone service	% heating house with fuel oil, kerosene, coal, coke, or other fuels	% with no heating fuel
Housing Adequacy (of Occupied Housing Units both owned and rented), 2012- 2016									
Macon	15,215	18.1	13.3	0.0	0.5	5.7	3.3	16.6	0.7
Burningtown	287	21.6	29.6	0.0	0.0	3.1	0.0	27.2	0.0
Cartoogechaye	1,036	12.8	6.6	0.0	1.4	0.9	0.0	14.4	0.0
Cowee	942	30.8	10.6	0.8	0.8	3.9	5.3	9.9	0.0
Ellijay	1,305	20.0	17.6	1.0	0.7	8.3	7.0	18.3	2.1
Flats	198	24.7	6.1	0.0	0.0	0.0	0.0	69.7	0.0
Franklin	6,291	17.0	14.8	0.0	0.0	6.6	2.9	12.5	0.9
Highlands	1,628	4.0	15.1	0.0	1.7	4.4	0.0	19.0	0.2
Millshoal	1,179	20.0	11.7	0.0	0.0	10.0	7.0	18.8	0.0
Nantahala	355	25.4	21.4	0.0	0.0	0.0	0.0	34.1	0.0
Smithbridge	1,803	26.7	7.2	0.0	0.8	5.1	5.5	17.9	0.8
Sugarfork	191	5.2	6.3	5.2	0.0	0.0	0.0	33.5	0.0

Family & Social Support

"People with greater social support, less isolation, and greater interpersonal trust live longer and healthier lives than those who are socially isolated. Neighborhoods richer in social capital provide residents with greater access to support and resources than those with less social capital" (County Health Rankings, 2018).

In 2018, 69.6% of adults reported that they always or usually get social and or emotional support; this has decreased since 2015 at 83.2% (*WNC Health Network, 2018)*.

CHAPTER 5 – HEALTH DATA FINDINGS SUMMARY

Mortality

The ranking is based on death rate and not the number of deaths. This is because number of deaths only represents the total number of deaths during a stated time frame. The number cannot be age-adjusted, and therefore cannot be used for comparison or ranking. In Macon County, the top three leading causes of death are: cancer, diseases of the heart, and chronic lower respiratory disease.

| Leading Causes of Death, Rate Per 100,000 2012- 2016					
Rank	Cause of Death	Macon		State	
		# Deaths	Death Rate	# Deaths	Death Rate
1	Cancer	491	159.9	95, 163	166.5
2	Diseases of Heart	485	159.3	89, 393	161.3
3	Chronic Lower Respiratory Diseases	163	50.3	25, 385	45.6
4	All Other Unintentional Injuries	91	39.7	16, 453	31.9
5	Cerebrovascular Disease	104	34.5	23, 514	43.1
6	Alzheimer's disease	93	28.6	16, 917	31.9
7	Unintentional Motor Vehicle Injuries	44	23.2	7, 125	14.1
8	Diabetes Mellitus	69	23.1	13, 042	23.0
9	Suicide	43	22.2	6, 679	12.9
10	Pneumonia and Influenza	44	15.5	9, 707	17.8
11	Chronic Liver Disease and Cirrhosis	35	14.8	5, 930	10.3
12	Nephritis, Nephrotic Syndrome, and Nephrosis	41	13.1	9, 046	16.4
13	Septicemia	17	5.4	7, 266	13.1
15	Homicide	6	3.9	3, 002	6.2
14	Acquired Immune Deficiency Syndrome	5	3.2	1, 183	2.2
All Causes (some not listed)		2,225	768.5	429, 955	781.8
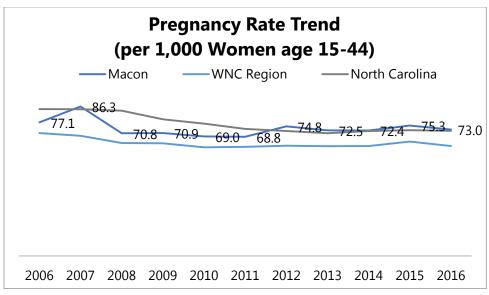
Life expectancy: For persons born in 2014- 2016, the overall life expectancy is 77.8. This is comparable to the regional mean and state total. Stable, racially and ethnically stratified mortality rates for Macon County are not available.

Life Expectancy at Birth Single, Three Year Aggregate 2014- 2016					
County	**Overall**	**Sex**		**Race**	
		Male	**Female**	**White**	**African-American**
Macon	77.8	74.6	81.1	77.7	N/A
WNC	77.7	75.1	80.4	78.0	76.2
State Total	77.4	74.8	79.9	78.3	74.9

Health Status & Behaviors

Overall Health Status: According to *America's Health Ranking* (2016), North Carolina had an overall national rank of 32 out of 50 where one (1) is the "best". *County Health Rankings* indicates that Macon County has an overall health outcomes rank of 40 among the 100 North Carolina counties. Macon County is ranked 67th in length of life and 23rd in quality of life. Health factor rankings out of 100 is 11th for health behaviors, 71st for clinical care, 53rd for social and economic factors, 93rd in physical environment, and 39th for overall health factors.

Pregnancy and Births or Maternal/Infant Health: In 2016 there were 367 total pregnancies in Macon County. The trend has remained relatively stable since 2013 with a slight increase in 2015. Teen pregnancy rates in Macon County has risen and fallen since 2012; in 2016 there were 25 total pregnancies for women age 15- 19. Among Macon County women age 15- 44 the highest pregnancy rates in the county appear to occur most frequently among Hispanics and then next most frequently among whites. In 2016 the prenatal smoking trend rate was 19.5 which is similar to the WNC arithmetic mean and almost double the state total.

Pregnancy Rate Trend (per 1,000 Women age 15-44)

SOURCE: 2018 WNC Healthy Impact Data Workbook

Secondary and Survey Data- Cancer and Chronic Disease:

Cancer is the number one leading cause of death in Macon County. Total cancer mortality rates have decreased from 166.7 in 2011- 2015 to 159.9 in 2012- 2016; Macon County mirrors regional and state total cancer mortality trends. Males have a higher trend in cancer mortality rates than females. Total cancer mortality rates by race were unavailable for Macon County.
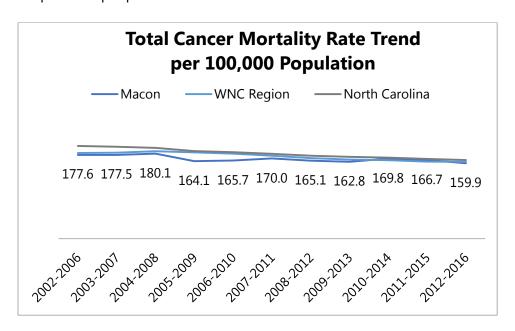
Incidence rate is a measure of the frequency with which a disease occurs in a population over a specified time period. "Incidence rate" or "incidence" is numerically defined as the number of new cases of a disease within a time period, as a proportion of the number of people at risk for the disease.

 The breast cancer (females) mortality trend is 21.8 while the incidence rate for breast cancer (female) is 140.6. Survey data shows that 76.5% of women, aged 50 -74, report having a mammogram in the past two years (2018) compared to 63.6% in 2015. Prostate cancer (males) mortality trend from 2012- 2016 is 21.5; this is an increase from 2011- 2015 with an overall rate of 19.6. The current rate is higher than the regional mean and state total. Prostate cancer incidence trend in Macon County is 86.0 which is lower than the regional mean and state total.

Diseases of the heart are the second leading cause of death in Macon County. Survey data shows that 13.2% of adults reported heart disease which includes heart attack, angina, and coronary disease (2018). The overall heart disease mortality trend in Macon County is 159.3 (2012- 2016); Macon County trends are similar to region and state trends. Risk factors for heart disease include high blood pressure and high cholesterol. Survey data from Macon County reveals that 40.8% of people have been told that they have high blood pressure and that 35.1% of people have high cholesterol (WNC Health Network, 2018).

Chronic lower respiratory disease is the third leading cause of death in Macon County. The lung cancer mortality trend is currently 45.0 (2012- 2016); this is the lowest lung cancer morality trend since 2002- 2006. Lung cancer incidence trends are also decreasing. Survey data shows that 24.6% of people in Macon County identify as a current smoker while 4.9% reports using smokeless tobacco and 8.2% say that they use e-cigarettes. The percent of the population that identifies as having COPD, or lung disease, is 17.4%; this is an increase from 2015 at 13.9% (WNC Health Network, 2018).

Colorectal cancer mortality rate trends have been on the rise since 2008- 2012. Macon County's mortality rate for colorectal cancer from 2012- 2016 is 18.1 which are above region and state trends. The incidence rate trend for colorectal cancer is also higher than region and state trends at 40.7; that equals 109 people.

Total Cancer Mortality Rate Trend per 100,000 Population

Macon — WNC Region — North Carolina

177.6 177.5 180.1 164.1 165.7 170.0 165.1 162.8 169.8 166.7 159.9

2002-2006 2003-2007 2004-2008 2005-2009 2006-2010 2007-2011 2008-2012 2009-2013 2010-2014 2011-2015 2012-2016
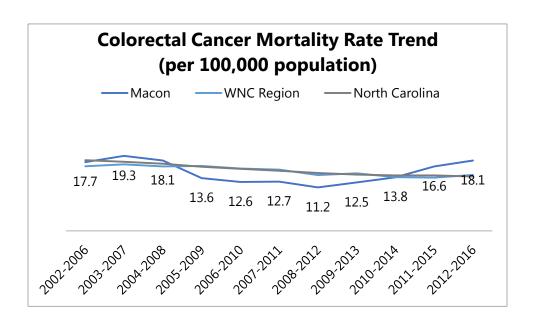
Total Cancer Mortality Trend by Site, Macon County, 2012- 2016
Rate per 100, 000
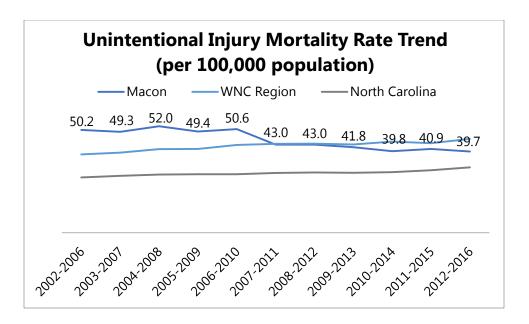
Colon/Rectum		Lung/ Bronchus		Female Breast		Prostate		All Cancers	
Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
47	17.3	144	43.9	34	21.8	31	21.3	491	157.6

Total Cancer Incidence Trend by Site, Macon County, 2012- 2016
Rate per 100,000

Colon/Rectum		Lung/ Bronchus		Female Breast		Prostate		All Cancers	
Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
109	40.7	205	63.3	209	140.6	135	86.0	1, 317	447.3

Colorectal Cancer Mortality Rate Trend
(per 100,000 population)

Macon —— WNC Region —— North Carolina

17.7   19.3   18.1   13.6   12.6   12.7   11.2   12.5   13.8   16.6   18.1

2002-2006, 2003-2007, 2004-2008, 2005-2009, 2006-2010, 2007-2011, 2008-2012, 2009-2013, 2010-2014, 2011-2015, 2012-2016

Injury & Violence: The unintentional injury mortality rate in Macon County has slowly declined since 2007- 2011 with the exception of a slight increase in 2011- 2015. The current (2012- 2016) mortality rate for unintentional injuries in Macon County is 39.7. Unintentional injuries include- but are not limited to- falls, motor vehicle accidents, and poisoning. In 2016 there were 8 fall related deaths in Macon County; 3 deaths were from ages 75 to 84 and 5 deaths were to those 85 years and older. There were 807 reportable crashes and 341 reportable injuries in 2017 for Macon County. The highest cause of crashes and injuries in Macon County was alcohol related followed by motorcycle related. From 2009 to 2013, 21 out of 26 unintentional poisoning deaths were related to overdose.

**Unintentional Injury Mortality Rate Trend
(per 100,000 population)**

— Macon   — WNC Region   — North Carolina

50.2   49.3   52.0   49.4   50.6   43.0   43.0   41.8   39.8   40.9   39.7

2002-2006   2003-2007   2004-2008   2005-2009   2006-2010   2007-2011   2008-2012   2009-2013   2010-2014   2011-2015   2012-2016

Substance Use: Survey data shows that 25.9% of people in Macon County used opiates/ opioids, with or without a prescription, in the past year (WNC Health Network, 2018). There are 99 Medicare Part D prescribers and 65 Medicare Part D Opioid prescribers in Macon County. Medicare Part D is also known as the insurance which covers most outpatient prescription drugs (Medicare Interactive). The most recent information available shows that 1, 907, 000 opioid pills were dispensed in Macon County (YTD total as of 4th Q in 2017). Change in opioid prescribing rate is 0.04 while the change in extended release opioid prescribing rate is -1.08 (2013- 2016). The change in the opioid prescribing rate is significantly different than regional, state, and national averages.

Change in Opioid Prescribing Rates, 2013- 2016		
County	**Change in Opioid Prescribing Rate**	**Change in Extended Release Opioid Prescribing Rate**
Macon	0.04	-1.08
WNC Arithmetic Mean	-0.59	0.01
State Total	-0.39	0.84
National	-0.47	0.80

Mental Health: Mental health and physical health are closely connected. Mental illnesses, such as depression and anxiety, affect people's ability to participate in health-promoting behaviors. In the online key informant survey, mental health was a leading health issue found critical to address. In 2018, 12.3% of people said that they were unable to obtain needed mental health services in the past year; this has increased from 8.4% in 2015. Concerning days of poor mental health, 21.5% said that they experienced more than 7 days of poor mental health in a month (WNC Health Network, 2018). When asked how dissatisfied they were with life 8.9% of respondents said "dissatisfied" or "very dissatisfied." Respondents who said that they

"always" or usually" get needed social and/or emotional support decreased from 83.2% in 2015 to 69.6% in 2018 (WNC Health Network, 2018).

Oral Health: Survey data shows that 65.7% of people, 18 years and older, had a dental visit in the past year (WNC Health Network, 2018). Dentists that billed Medicaid for the fiscal year 2017 were: 1 public health dentist provider, 4 general practice dentist providers, and 1 orthodontics and dentofacial orthopedics.

Clinical Care & Access
Health Professionals: The highest ratio of health professionals in Macon County is registered nurses at 68.3 per 10,000 people and the lowest ratio of health professionals is physician assistants at 3.4.

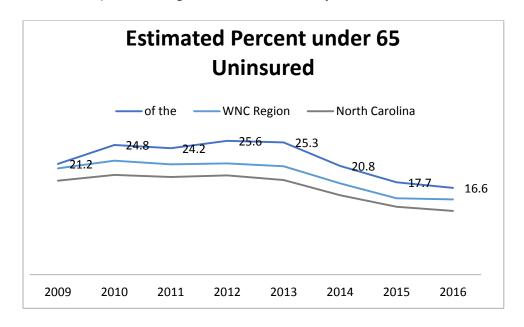| Number of Active Health Professionals per 10,000 Population Ratios, 2017							
County	Physicians	Primary Care Physicians	Dentists	Registered Nurses	Pharmacists	Physicians Assistants	Nurse Practitioners
Macon	21.2	8.8	4.0	68.3	N/A	3.4	4.8
WNC (Regional) Arithmetic Mean	15.5	6.5	3.7	77.5	n/a	4.4	5.7
State Total	23.8	7.0	5.0	100.7	n/a	5.9	6.5

Aging of the Health Workforce: Dentists have the largest percent of health professionals that are over the age of 65 while nurse practitioners have the lowest percent of health professionals that are over the age of 65.

County	Physicians	Dentists	Registered Nurses	Pharmacists	Physicians Assistants	Nurse Practitioners
Macon	33.3%	42.9%	8.3%	N/A	8.3%	5.9%
WNC (Regional) Arithmetic Mean	23.2%	23.2%	8.3%	n/a	10.5%	10.5%
State Total	11.5%	15.2%	5.3%	n/a	4.3%	5.0%

Licensed Facilities: In Macon County there are five licensed adult care facilities which include adult care homes and nursing homes. There are three adult care homes in Macon County-Chestnut Hill of Highlands, Franklin House, and Grandview Manor- and between the three of them there is a maximum capacity of 178 people. The two nursing homes are Eckerd Living in Highlands and Macon Valley Nursing and Rehabilitation Center in Franklin. The nursing homes, combined, have a maximum capacity of 280 people. There are 10 home care, home health, and
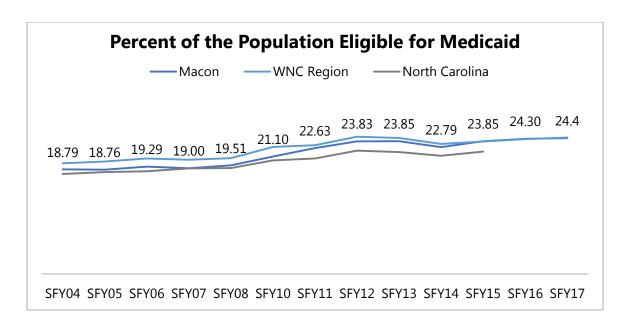
hospice centers in Macon County. Between the nine licensed mental health facilities in Macon County, there is a total capacity of 41 patients.

Uninsured Population: In Macon County, the estimated percent of people under the age of 65 who are uninsured has been above region and state estimates since 2009; however, Macon County's uninsured population has decreased since 2012. As of 2016, 16.6% of the population in Macon County is uninsured. Survey data shows similar results. When asked about health insurance, 16.9% of respondents, age 18- 64, said that they lacked health insurance.

Estimated Percent under 65 Uninsured

— of the — WNC Region — North Carolina

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         24.8      24.2    25.6    25.3
  21.2                                     20.8
                                                  17.7    16.6
  2009   2010   2011   2012   2013   2014   2015   2016
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Health Care Access: Survey data from 2018 shows that 16.9% of respondents identified that they were unable to get needed medical care in the past year. In comparison, when asked if they had a specific source of ongoing care, 74.7% of respondents answered "yes". This is a slight decrease from 80.4% in 2015. In the past year, 71.3% of respondents said that they have had a routine checkup (WNC Healthy Impact, 2018).

Medicaid: Based on the 2016 population, 24.4% of people in Macon County were Medicaid eligible in SFY 2017. The expenditure per eligible person is estimated at $4, 902. Those eligible for Medicaid has been on a slight increase since 2014. The Aid to Families with Dependent Children (AFDC) has the greatest number of eligible people with 1, 927 people followed by Infants and Children with 1, 748 eligible people. As of December 2017, there are 7, 113 total people eligible for Medicaid in Macon County.

Percent of the Population Eligible for Medicaid

—— Macon   —— WNC Region   —— North Carolina

18.79   18.76   19.29   19.00   19.51   21.10   22.63   23.83   23.85   22.79   23.85   24.30   24.4

SFY04 SFY05 SFY06 SFY07 SFY08 SFY10 SFY11 SFY12 SFY13 SFY14 SFY15 SFY16 SFY17

At Risk Populations

As of 2016, 16.6% of the population in Macon County is uninsured; when asked about health insurance, 16.9% of survey respondents, age 18- 64, said that they lacked health insurance. There has been conversation about primary services and other providers in Macon County with a consensus that there are little providers or sources of care when it comes to mental health and women's care (OBGYN/ labor and delivery). Other considerations that affect those who are under- or uninsured include transportation and income.

Macon County has a transportation system which offers local rides and routes. Out of county transportation is available upon request and additional fees apply. By observation there are little to no bike lanes in Macon County and sidewalks are mainly in town and in declining conditions. Those with limited transportation are considered an at-risk population due to the possibility of pedestrian injury and access to basic needs and work. Lack of transportation has a realm of physical, social, and emotional effects. For example, there were 651 households with no car and low access to a grocery store in 2015. A likely assumption is that these households have poor healthy eating habits and are overweight or obese; access to food means that people will have the opportunity to follow healthy diets.

Food choices and body weight are related to good health status as it reduces the risks for many health conditions including, but not limited to, overweight and obesity, heart disease, high blood pressure, and diabetes. Those who are overweight and/or obese far exceed those with a healthy weight in Macon County. With 68.3% of people in Macon County indicating that they are overweight/obese, these individuals are likely to develop chronic disease risk factors, chronic disease, and other complications.

Substance use affects not only the individual, but families, and the community. Substance use includes prescriptions and over the counter medications as well as other illicit drugs, alcohol and tobacco products. In Macon County, 57.8% of people say that their life has been negatively affected by substance use. Much of the focus around substance use in Macon County has been

directed towards opioid use. However, 41.9% of adults claim to be current drinkers and 24.6% of adults are current smokers. Substance use also has an impact on sub-groups or communities like the homeless, men who have sex with men, and even those in domestic violence cases. Substance use can also have a larger impact on individual and community health status such as hepatitis, HIV, other blood borne illnesses, and lung disease.

The aging population is an at-risk group of people is twofold- aging adults have a higher risk of chronic disease like heart disease, cancer, and diabetes and they fall victim to social barriers like grandparents raising grandchildren and low fixed incomes. As of 2010, 23.9% of the population in Macon County was aged 65 and older. With almost a fourth of the population being 65 years and older, it is not surprising that cancer, diseases of the heart, and chronic lower respiratory diseases are the top three leading causes of death in Macon County. Data shows that 42.2% of grandparents are responsible for their grandchildren, under the age of 18 years old, in Macon County. This takes an interesting turn on care and could be considered as an emerging issue for older adults. A different lens regarding the aging population is the influx of people moving to Macon County. Observation shows that retirees choose to make Macon County their home either seasonally or permanently. Macon County has the second highest number of seasonal residents in the region and 4.8% of people moved from a different state to reside in Macon County. This proposes the question of whether they have a support system in regard to health and access to care, social fulfillment, and care for others.

CHAPTER 6 – PHYSICAL ENVIRONMENT

Air & Water Quality

"Clean air and safe water are prerequisites for health. Poor air or water quality can be particularly detrimental to vulnerable populations such as the very young, the elderly, and those with chronic health conditions. Clean air and water support healthy brain and body function, growth, and development. Air pollutants such as fine particulate matter, ground-level ozone, sulfur oxides, nitrogen oxides, carbon monoxide, and greenhouse gases can harm our health and the environment. Excess nitrogen and phosphorus run-off, medicines, chemicals, lead, and pesticides in water also pose threats to well-being and quality of life" (County Health Rankings, 2018).

Primary Air Pollutants: In 2017, the Air Quality Index shows that Macon County had 335 days with "good" air quality and 12 days with "moderate" air quality. Ozone was present at the level of "pollutant" on all 347 monitored days. Macon County is ranked 66th among the 85 counties reporting TRI releases. Total TRI releases were 6, 167 pounds in 2015. One manufacturing facility in the county was responsible for all of the TRI chemical/ chemical compounds released in Macon County; the TRI chemicals released by Caterpillar Precision Seals were chromium and nickel.

Western North Carolina has the highest levels of radon in the state. The arithmetic mean indoor radon level for the 16 counties of Western North Carolina is 4.1pCi/L. In Macon County, the current average indoor radon level is 2.3 pCi/L. The EPA says that "Smoking, radon, and secondhand smoke are the leading causes of lung cancer." Other air quality data shows that in 2018, 21.2% of survey respondents said that they had second hand smoke exposure at work within the past week.

Community Water Systems: Community water systems in Macon County serve an estimated 21, 056 people, or 61.9% of the county population. The fraction of the Macon County population served by a community water system is 12.5% higher than the average for the Western North Carolina region.

Access to Healthy Food & Places

"Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (Food and Agriculture Organization, 2006). The environments where we live, learn, work, and play affect our access to healthy food and opportunities for physical activity which, along with genetic factors and personal choices, shape our health and our risk of being overweight and obese. As of 2013, 29 million Americans lived in a food desert, without access to affordable, healthy food. Those with lower education levels, already at-risk for poor health outcomes, frequently live in food deserts" (County Health Rankings, 2018).

Famers Markets: According to the US Department of Agriculture (USDA) Food Environment Atlas, there were a total of 52 farmers markets in the 16 Western North Carolina counties in 2016. Two of the 16 farmers markets are located in Macon County. The number of famers markets in Macon County has remained the same since 2009. The ratio for famers markets per 1,000 people is 0.06.

Grocery Stores: As of 2014 there were 152 grocery stores in the 16 Western North Carolina counties. Macon County has seen an increase in grocery stores from 8 in 2009 to 9 in 2014. With this increase, the ratio for grocery stores per 1, 000 people is 0.27. As of 2015 there were 651 households with no car and low access to grocery stores.

Fast Food Restaurants: Fast food restaurants are a prevailing food source in Macon County. The numbers of fast food restaurants have increased from 27 in 2009 to 31 in 2014.The ratio of fast food restaurants per 1,000 people in Macon County is 0.92.

CHAPTER 7- HEALTH RESOURCES

Health Resources

Process

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 Macon County that WNC Healthy Impact provided. Angel Medical Center and Macon County Public Health reviewed the information and reported back any gaps to 2- 1-1. This community tool continues to serve as the updated resource list accessible via phone and web 24/7.

Macon County is a participating member of the NC 2-1-1 system. By dialing 2-1-1 (or 888-892-1162) Macon County residents may be connected to a trained staff person who can link them with community health and human services resources. In addition, local residents may visit www.NC211.org to obtain access to a searchable point-in-time summary list of the resources available in their community. The list for Macon County may be reached directly by searching and clicking the link on www.NC211.org. In addition, a list of the Macon County Referral Resources may be found on the Macon County website at www.maconnc.org.

Findings

The HCA Healthcare transaction has been approved; Angel Medical Center and Highland-Cashiers Hospital, both divisions of Mission Health, will transition. The HCA will construct a new, replacement hospital for Angel Medical Center in Franklin. The replacement hospital will not contain fewer beds or provide fewer services than what is already described in its existing Certificate of Need. Mission Health's Board has generously pledged to give each Legacy Foundation as well as the newly formed Nantahala Health Foundation in Macon County, a distribution of $15 million from the sale proceeds ($5 million upon closing and an additional $5 million upon each of the first and second anniversaries of the closing). These funds are intended to build capacity for future health and well-being improvements and ultimately to dramatically improve the health and well-being of all people and communities of Western North Carolina.

Access to primary care and other health services has been a regular conversation when it comes to resources in Macon County. In addition to NC 2- 1-1, Macon County Public Health, Senior Services, and Angel Medical Center have avenues- online and in- person- to make providers list available to residents. As of 2014, there were 36 primary care physicians in Macon County. This included family practices, internal medicine, obstetrics/ gynecology, pediatrics, and other primary care. However, there has been turnover in physicians which has had a large impact on the community. Low cost health services in Macon County include primary care at Macon County Public Health which can operate on a sliding scale fee and the Community Care Clinic in Franklin and Highlands which provides the medically underserved with health care.

Western North Carolina Aids Project (WNCAP) has expanded services to include Macon County through collaboration with Full Circle Recovery Center. Services include, but are not limited to, substance use counseling, a syringe exchange program, financial assistance for HIV medications, and Hepatitis health services. A Southwestern NC Substance Use Treatment Resource Guide is available as well as an important numbers reference list for harm reduction and other related services.

Resource Gaps

In the summer of 2017, the labor and delivery unit at Angel Medical Center closed. The community's reaction was a mixture of fear and uncertainty especially around travel time and access to care for women and children. One community member said: "*specialized services are often not available locally. And, the local hospital doesn't provide many services for children any more. Losing the labor and delivery department at our hospital was a huge loss.*" Currently, Macon County still does not have a labor and delivery unit.

There is a "growing community awareness of the importance of providing mental health [and substance use services]" said one community member. The missing components of mental health resources and services in Macon County can be strongly felt in the community. This statement also implies a relationship between mental health and substance use which most would support. Mental health also has an impact on physical health. The community understands that funding and policy are major components in addressing mental health. There is strong motivation and community initiative to improve mental health resources and services in Macon County.

CHAPTER 8 – IDENTIFICATION OF HEALTH PRIORITIES

Health Priority Identification

Process

Every three years we pause our work to improve community health so that we may step back and take a fresh look at all of the current data from our county that reflects the health of our community. We then use this information to help us assess how well we're doing, and what actions we need to take moving forward.

Beginning in August 2018 our team spent time understanding the data and uncovering what issues were affecting the most people in our community. We also interviewed community leaders to find out what they're most concerned about. To identify the significant health issues in our community, our key partners (see a full list in the Executive Summary) reviewed data and discussed the facts and circumstances of our community.

We used the following criteria to identify significant health issues:
- Data reflects a concerning trend related to size or severity
- Significant disparities exist
- Issue surfaced as a high community concern
- County data deviates notably from the region, state or benchmark

Once our team made sense of the data, we presented key health issues to a wide range of partners and community members. The participants used the information we presented to score each issue, and then vote for their top areas of concern. Some of the factors they considered were how much the issue impacts our community, how relevant the issue is to multiple health concerns, and how feasible it is for our community to make progress on this issue.

This process, often called health issue prioritization, is an opportunity for various community stakeholders, such as Angel Medical Center, Highlands-Cashiers Hospital, Macon County Public Health, and other community agencies to agree on which health issues and results we can all contribute to, which increases the likelihood that we'll make a difference in the lives of people in our community.

Identified Issues

During the above process, the Data Review Team identified the following health issues or indicators:

- ***Substance Use***: Substance abuse has a major impact on individuals, families, and communities. The effects of substance abuse are cumulative, significantly contributing to costly social, physical, mental, and public health problems.

- ***Overweight/ Obesity***: Weight is determined by individual behavior, policies, and environments that support these behaviors- i.e. schools, worksites, and community.

- ***COPD/ Chronic Lower Respiratory Disease***: The culture of tobacco use, and new tobacco related products, continues to have a negative effect on health.

- ***Cardiovascular Disease***: This is the second leading cause of death in Macon County.

- ***Diabetes***: Diabetes affects 1/3 of the population; most of the focus is around Type 2 Diabetes.

- ***Cancer***: Cancer is the leading cause of death in Macon County; some cancers are preventable by reducing risk factors and having recommended screenings.

- ***Domestic Violence/ Sexual Assault***: Adverse childhood experiences (ACEs) have an impact on future relationships and health.

Priority Health Issue Identification

Process

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

- Criteria 1 – Relevant – How important is this issue? *(Urgency to solve problem; community concern; Focus on equity; Linked to other important issues)*
- Criteria 2 – Impactful – What will we get out of addressing this issue? *(Availability of solutions/proven strategies; Builds on or enhances current work; Significant consequences of not addressing issue now)*
- Criteria 3 – Feasible – Can we adequately address this issue? *(Availability of resources (staff, community partners, time, money, equipment) to address the issue; Political capacity/will; Community/social acceptability; Appropriate socio-culturally; Can identify easy, short-term wins)*

Participants used a modified Hanlon method to rate the priorities using the criteria listed above. Then dot-voting techniques were used to narrow to the top 3 priority health issues.

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

- Substance Use – Substance use was selected as a priority because it has an impact on individuals and the community.
- Overweight and Obesity – Overweight and obesity is a common risk factor for many chronic diseases and is one of the biggest determinants of health status.
- Domestic Violence and Sexual Assault – Domestic violence and sexual assault was a previous priority in the 2015 community health assessment. The community sees the need to continue the positive measures which address this issue.
- Mental Health- Mental health has been a long-addressed issue in Macon County.
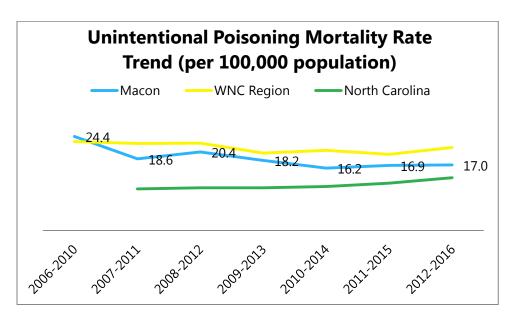
Priority 1: Substance Use

Substance use refers to a set of related conditions associated with the consumption of mind and behavior-altering substances that have negative behavioral and health outcomes. Substance use includes, but is not limited to, alcohol, tobacco, and other drugs. Social attitudes and political and legal responses to the consumption of alcohol and illicit drugs make substance use one of the most complex public health issues. This includes the discussion of is substance use a disease or matter of personal choice.

In 2005, an estimated 22 million Americans struggled with a drug or alcohol problem. Almost 95 percent of people with substance use problems are considered unaware of their problem. Of those who recognize their problem, 273,000 have made an unsuccessful effort to obtain treatment. These estimates highlight the importance of increasing prevention efforts and improving access to treatment for substance abuse and co-occurring disorders (Healthy People 2020, 2019). Substance use has a major impact on individuals, families, and communities. The effects of substance abuse are cumulative, significantly contributing to costly social, physical, mental, and public health problems (DHHS, 2010).

In recent years, substance use has been an issue of high concern in Macon County- with much focus around opioid use. Efforts can be seen across the community from law enforcement to public health to prevention and treatment agencies. It ranked as the top mental health condition, critical to address, from the online key informant survey and was an issue of high concern in the telephone survey.

What Do the Numbers Say?
Health Indicators

- The unintentional poisoning mortality rate can be translated into deaths caused by accidental poisoning. Nearly all poisonings can be attributed to prescription or illegal drugs. The graph above shows data from the NC State Center for Health Statistics which compares the county to regional and state trends. While the trend has decreased over the past 10 years, personal accounts and experiences speak to Macon County's concern regarding substance use.
- As mentioned, substance use has a major impact on individuals, families, and communities. The telephone survey shows that 11.6% of adults **used an illicit drug in the past month** (self or someone they know) while 25.9% **used opiates/opioids in the past year with or without a prescription**.
- The effects of substance use have had a large impact on the community with 57.8 % of adults reporting that their **life has been negatively affected by substance use** while 40.5% of adults **experienced household substance abuse during their childhood**.
- While properly securing and monitoring medications can prevent others from abusing medication, 65.3% of adults in Macon County reported that medicine is **NOT kept in a locked place** so that no one else can access it.
- Other substance use in Macon County includes tobacco use and alcohol consumption. Those who identify as current smokers has increased from 15.9% in 2015 to 24.6% in 2018. In regard to alcohol consumption, 41.9% say that they have at least one drink in the past week while 8.2% of people say that they identify as binge drinkers.

What Did the Community Say?

Themes and quotes that illustrate:
- What's helping?
  - *"A lot of people in our community are willing to work toward a solution. Community leaders want to see change."*
  - *"I think a general understanding of the problem exists by many in the community."*
- What's hurting?
  - *"Funding - Competitive grant funds are not reaching enough rural communities."*
  - *"Adequate and available programs to help. Lack of health care professional working in this area."*

What Else Do We Know?

- Much of community focus is on opioids and overdoses; there are opportunities around tobacco, alcohol, and chronic pain as well as addiction.

What is Already Happening?

- Full Circle Recovery
- Substance Use Task Force
- No Wrong Door Initiative

- Integrated Primary Care at Macon County Public Health
- Rx Prescription Awareness Campaign
- Medication Drop Off locations

What Change Do We Want to See?

- Residents have an increased awareness about signs and symptoms of drug use and overdose and that they properly secure and monitor medications.
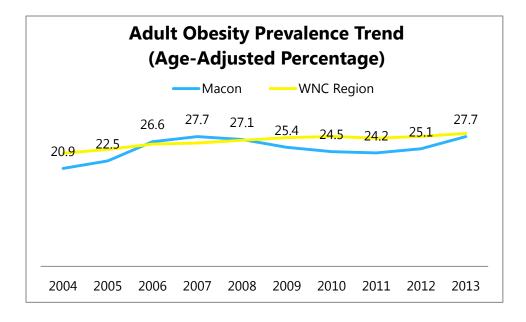- Residents safely dispose of old, expired, or unused medications.

Priority 2: Overweight and Obesity

There are many benefits to having a healthy diet and maintaining a healthy body weight. Good nutrition is important for the growth and development of children; healthy habits follow children into adult hood. A healthy diet, exercise, and body weight reduces risks in adults for overweight and obesity, heart disease, high blood pressure, and diabetes.

The Center for Disease Control and Prevention defines overweight and obesity as weight that is higher than what is considered a healthy weight for a given height; the body mass index, BMI, is used as a screening tool for overweight or obesity. Body mass index is calculated by a weight to height ratio, You can find out your BMI by looking up the BMI Index chart here: https://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmi_tbl.htm. For an individual to be considered overweight or obese, their body mass index is greater than 25 (CDC, retrieved February 27, 2018).

Individual choices, as well as policies, systems, and environment, shapes these behaviors. Therefore, it is important to not only target individuals but the larger community in which they live in when addressing over weight and obesity. Knowledge and attitude are just two pieces of the puzzle when it comes to addressing overweight and obesity. Other things to consider are skills, social supports, and food and exercise access and affordability.

What Do the Numbers Say?
Health Indicators

Adult Obesity Prevalence Trend (Age-Adjusted Percentage)

Macon — WNC Region

WNC Region values: 20.9, 22.5, 26.6, 27.7, 27.1, 25.4, 24.5, 24.2, 25.1, 27.7

Years: 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013

- The adult obesity prevalence trend shows the adult obesity prevalence trend through 2013. Prevalence trends refer to the total number of individuals in a population who have a disease or condition. While the adult obesity prevalence trend information

(above) is outdated, survey data supports the notion that overweight and obesity is an area of high priority.

- Local survey data from 2018 shows that 68.3% of people in Macon County are overweight and obese. Community members say that a better understanding of lifestyle choices and less promotion of "quick fix" programs would help address overweight and obesity.
- Other things to consider when addressing overweight and obesity is the amount of physical activity and food choices which are available to an individual and community. The recommended amount of physical activity for adults is 150 minutes per week. In Macon County, 20.1% of **adults meet physical activity guidelines** (2018).
- In regard to healthy eating, 7.7% of adults **have 5+ servings of the recommended fruits and vegetables** per day (2018). Food insecurity, being without reliable access to enough affordable, nutritious food, is reported to impact 24.4% of people in Macon County while 351 **households have no car and low access to a grocery store**.

What Did the Community Say?

Themes and quotes that illustrate:

- What's helping?
    - *"There has been some work to promote fitness opportunities at no cost in the community."*
    - *"Like heart disease, a more tangible understanding of human physiology and how lifestyle choices (especially those made early in life) and heredity can contribute. As our understanding of healthier eating options has increased so has the national collective understanding of preventative measures."*
    - *"Access to the greenway and other outdoor activities."*
- What's hurting?
    - *"Obesity and lack of physical activity has negatively impacted peoples' physical and emotional health. It impacts persons of all ages and backgrounds. However, for lower income persons there is even more of an impact as that there is often less access to healthy foods and opportunities for fitness activities."*
    - *"Promotion of "quick fix" programs that put emphasis on rapid loss of weight and a focus on overall weight as a number rather than a conscious move towards a more permanent healthy eating and physical activity lifestyle. A more holistic look at body composition and avoidance of disordered eating is needed."*

What Else Do We Know?

- Information on Childhood Obesity is too small to report.
- Health risks include type 2 diabetes, heart disease, and high blood pressure.
- Having a healthy diet includes limiting the intake of saturated and trans fats, cholesterol, added sugars, sodium (salt), and alcohol.

What is Already Happening?

- Diabetes Prevention Program

- Weight Loss Programs at local gyms
- Nutrition Services at Macon County Public Health
- Free Yoga Classes throughout community
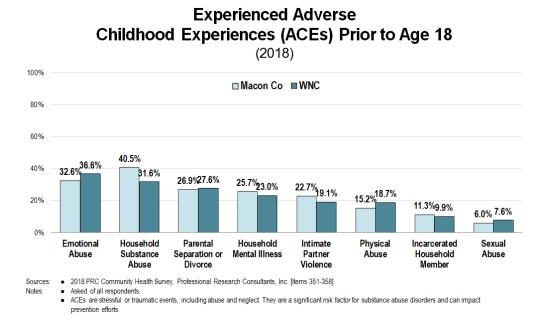
What Change Do We Want to See?
- People in Macon County have a healthy weight and opportunities for healthy food and physical activity.

Priority 3: Domestic Violence and Sexual Assault

Domestic violence, also called intimate partner violence (IPV), domestic abuse, or relationship abuse, is a pattern of behaviors used by one partner to maintain power and control over another partner in an intimate relationship. Domestic violence does not discriminate and affects people of all socioeconomic backgrounds.

Domestic violence includes behaviors that physically harm, arouse fear, prevent a partner from doing what they wish or force them to behave in ways they do not want. It includes the use of physical and sexual violence, threats and intimidation, emotional abuse and economic deprivation. Many of these different forms of domestic violence/abuse can be occurring at any one time within the same intimate relationship.

Domestic violence and sexual assault were discovered to be issues of high concern based on the telephone survey and online key informant survey of community leaders. While domestic violence and sexual assault was a priority in the previous community health assessment cycle, the community sees a need to continue the positive measures which address this issue.

Experienced Adverse Childhood Experiences (ACEs) Prior to Age 18 (2018)

Sources:
- 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 351-358]

Notes:
- Asked of all respondents.
- ACEs are stressful or traumatic events, including abuse and neglect. They are a significant risk factor for substance abuse disorders and can impact prevention efforts.

- Childhood experiences, both positive and negative, have a tremendous impact on future violence victimization and perpetration, and lifelong health and opportunity. As such, early experiences are an important public health issue. Much of the foundational research in this area has been referred to as Adverse Childhood Experiences (ACEs). Adverse childhood experiences (ACEs) are stressful or traumatic events, including abuse and neglect. They are a significant risk factor for substance abuse disorders and can

50

impact prevention efforts.
- According to local ACEs data, 32.6% of adults **experienced emotional abuse** before the age of 18, 22.7% of adults **experienced intimate partner violence** before the age of 18, 15.2% of adults **experienced physical abuse** before the age of 18, and 6.0% of adults **experienced sexual abuse** before the age of 18.
- From 2016 to 2017, there were 144 sexual assault clients and 70 sexual assault related calls. Domestic violence trends show 435 clients, 542 calls, 136, 117 total services were provided, and the shelter was full 57 days.

What Did the Community Say?
Themes and quotes that illustrate:
- What's helping?
  - "Organizations and facilities work together."
  - "MountainWise of Macon County's community mental health and domestic violence taskforces are working on these issues. They're developing community level protocols to better coordinate care for victims…no real boots on the ground beyond the taskforce members and already overtasked providers. "
  - "Great community collaboration."
- What's hurting?
  - Funding."
  - "Lack of cooperation and resources."
  - "Turf issues."
  - "Fear of speaking out."

What Else Do We Know?
- Data does not reflect the magnitude of the problem.

What is Already Happening?
- REACH of Macon County has a strong presence in the community.
- A women's self- defense workshop has been held annually for the last two years.

What Change Do We Want to See?
- People in Macon County are advocates for those who have experienced domestic violence and sexual assault.
- Community agencies work together to address crisis intervention, education, and prevention programs.

Priority 4: Mental Health

Mental health is a state of successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with challenges. Mental health is essential to personal well-being, family and interpersonal relationships, and the ability to contribute to community or society.
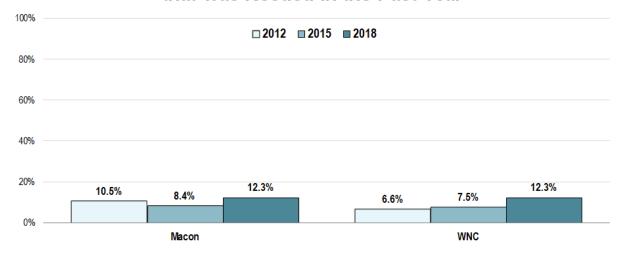
Mental disorders are health conditions that are characterized by alterations in thinking, mood, and/or behavior that are associated with distress and/or impaired functioning. Mental disorders contribute to a host of problems that may include disability, pain, or death.

Mental health is a long-addressed issue in Macon County. Mental health continued to be identified as an issue of high concern and a priority expressed by community leaders at the Priority Selection meeting and by Board of Health members.

What Do the Numbers Say?
Health Indicators

Did Not Get Mental Health Care or Counseling that was Needed in the Past Year

Legend: □ 2012 ■ 2015 ■ 2018

Macon:
- 2012: 10.5%
- 2015: 8.4%
- 2018: 12.3%

WNC:
- 2012: 6.6%
- 2015: 7.5%
- 2018: 12.3%

Macon County			
Total Capacity of 41 across 9 facilities.			
Name of Facility	**Location**	**Capacity (if applicable)**	**Category**
Harrison Avenue Group Home	Franklin	6	Supervised Living DD Adult
Iotla Street Group Home	Franklin	6	Supervised Living DD Adult
Macon Citizens Enterprises (MCE)	Franklin		Adult Developmental Vocational Programs
Macon County Group Home	Franklin	6	Supervised Living DD Adult
Meridian Behavioral Health Services - MVI Day Treatment	Franklin		Day Treatment
Meridian Behavioral Health Services - Iotla Valley Day Treatment	Franklin		Day Treatment
Recovery Options - Macon	Franklin		SA Intensive Outpatient Program
Second Nature Blue Ridge Carolina	Otto	20	Residential Therapeutic (Habilitative) Camps
Yonce House	Franklin	3	Supervised Living DD Adult

- While reasons are inexplicit, 12.3% of people in Macon County **did not get mental health services when needed in the past year** (2018). Financial costs, insurance, availability of health services, and time of care are factors that likely play a part in the limited access to this. Individuals who seek services and/or do not receive treatment or care, or those with limited access to care, have unmet health needs which can intensify over time.
- There is a total capacity of 41 patients across 9 mental health facilities in Macon County. For 2017 the total number of persons served in the area mental health programs is 985.
- According to survey data, 21.5% of respondents in Macon County said that they **experienced more than seven days of poor mental health in a month** (2018). This is has increased from 14.1% in 2015 and is higher than the Western North Carolina average.
- When respondents were asked if they **received needed social or emotional support**, 69.6% said that they **"usually" or "always" do** (2018). The percent of respondents who confirm that they receive social or emotional support decreased since 2015 which means that less people are getting support. Macon County has a lower average than the region.
- When respondents were asked about **satisfaction with life**, 8.9% of respondents said that they were (2018)**."** This response has decreased from 10.6% in 2015.

What Did the Community Say?

Themes and quotes that illustrate:

- What's helping?
  - *"A growing community awareness of the importance of providing mental health and substance use services. Sadly, several community crises have also contributed*

to understanding of the severity of this situation and the need for a full-spectrum of services."
- o *"Community initiative to improve access for patients."*
- What's hurting?
  - o *"Oftentimes is an issue that is greatly impacted at a state level. Lack of local resources to have a major impact on mental health including outreach, access to mental health services, lack of inpatient services, etc."*

What Else Do We Know?
- Mental health difficulties can lead to substance use problems and, conversely, using substances can worsen mental health conditions in some people.
- Mental health and physical health are closely connected.

What is Already Happening?
- Meridian Behavioral Health
- Appalachian Community Services
- Macon County Public Health Integrated Primary Care
- NAMI

What Change Do We Want to See?
- Residents of Macon County have improved mental health due to social, emotional, and professional support.

CHAPTER 9 - NEXT STEPS

Collaborative Planning

Collaborative planning with hospitals and other community partners will result in the creation of a community-wide plan that outlines what will be aligned, supported and/or implemented to address the priority health issues identified through this assessment process.

Where to Access this Report

Results of the 2018 Community Health Assessment will be widely disseminated throughout Macon County. Plans include the public library, newspaper, media press releases, web postings, and presentations to hospital, health, Board of Health and other boards/committees. We anticipate these results will be used for strategic planning purposes for our local hospitals, health department, as well as other health and human service agencies in the county.

- The 2018 Community Health Assessment will be available online for anyone to access and review. Available here: http://maconnc.org/healthy-carolinians.html. The Community Health Assessment will also be available by request at Macon County Public Health.
- A Community Health Improvement Plan (CHIP) on an electronic Scorecard will be available for anyone to access to monitor progress. Available here: http://maconnc.org/healthy-carolinians.html.
- A State of the County Health (SOTCH) report will be available for anyone to access and monitor progress. Available here: http://maconnc.org/healthy-carolinians.html.

For More Information and to Get Involved

Visit Macon County Public Health online or in- person for more information. Contact Lyndsey Henderson at Macon County Public Health (828) 349-2081, if you are interested in volunteering, coordinating, or collaborating with the community health assessment priorities.

WORKS CITED

America's Health Rankings. (2017). 2012-2016 Annual Report: A Call to Action for Individuals and their Communities. [Data tables]. Available from http://www.americashealthrankings.org/.

CDC. (2018). CDC Community Health Improvement Navigator. Retrieved from www.cdc.gov/chinav

Cecil G. Sheps Center for Health Services Research. (2018). North Carolina Health Professions Data System. [Data tables]. Available from http://epi.publichealth.nc.gov/cd/stds/annualrpts.html.

Centers for Disease Control and Prevention (CDC). (2017). National Diabetes Surveillance System: County Level Data, Diagnosed Diabetes Prevalences. [Data tables]. Available from http://www.cdc.gov/diabetes/data/index.html.

Centers for Medicare and Medicaid Services. (2018). Medicare Part D Opioid Prescribing Mapping Tool. [Data tables]. Available from https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Provider-Charge-Data/OpioidMap.html.

County Health Rankings & Roadmaps. (2016). 2016 County Health Rankings. [Data tables]. Available from http://www.countyhealthrankings.org/.

County Health Rankings. (2018). Health Factors. Retrieved from http://www.countyhealthrankings.org/explore-health-rankings/what-and-why-we-rank/health-factors.

Macon County Public Health, 2015. 2015 Community Health Assessment.

NC Department of Health and Human Services. (2018). Annual Report: N.C. Medicaid Eligibility and Program Expenditures for Which the County is Responsible for Its Computable Share. [Data tables]. Available from https://dma.ncdhhs.gov/reports/annual-reports-and-tables.

NC Department of Health and Human Services. (2018). Licensed Facilities, Adult Care Homes, Family Care Homes, Nursing Facilities (by County). [Data tables]. Available from https://www2.ncdhhs.gov/dhsr/reports.htm.

NC Department of Health and Human Services. (2018). Licensed Facilities, Home Care Only, Home Care with Hospice, Home Health Only, and Home Health with Hospice Facilities (by County). [Data tables]. Available from https://www2.ncdhhs.gov/dhsr/reports.htm.

NC Department of Health and Human Services. (2018). Licensed Facilities, Mental Health Facilities (by County). [Data tables]. Available from https://www2.ncdhhs.gov/dhsr/reports.htm.

NC Department of Public Instruction. (2018). Consolidated Data Reports: High School Dropout Counts and Rates. [Data tables]. Available from http://www.ncpublicschools.org/research/dropout/reports/.

NC Department of Public Instruction. (2018). Consolidated Data Reports: Suspension. [Data tables]. Available from http://www.ncpublicschools.org/research/discipline/reports/#consolidated.

NC Department of Public Instruction. (2018). NC School Report Cards: District Profile. [Data tables]. Available from http://www.ncpublicschools.org/src/.

NC Department of Public Instruction. (2018). NC Statistical Profile Online: Final Pupils by Year and Grade. [Data tables]. Available from http://www.ncpublicschools.org/fbs/resources/data/#statistical-profile.

NC Department of Public Safety. (2018). County Databook: Juvenile Justice. [Data tables]. Available from https://www.ncdps.gov/Juvenile-Justice/Community-Programs/Juvenile-Crime-Prevention-Councils/JCPC-Planning-Process/County-Databooks.

NC Division of Public Health, Chronic Disease and Injury Section, Injury and Violence Prevention Branch, Injury Epidemiology and Surveillance Unit. (2015). Medication and Drug Poisoning. [Data tables]. Unpublished Data.

NC Employment Security Commission. (2018). AccessNC: Quarterly Census Employment and Wages. [Data tables]. Available from https://accessnc.opendatasoft.com/pages/home/.

NC Opioid Action Plan Dashboard. (2018). Metric Summary Table. [Data tables]. Available from https://injuryfreenc.shinyapps.io/OpioidActionPlan/.

North Carolina Coalition to End Homelessness. (2018). Point-in-time Count: North Carolina Balance of State by County. [Data tables]. Available from http://www.ncceh.org/pitdata/.

North Carolina Department of Administration. (2018). County Statistics - Sexual Assault: Statewide Statistics by Year. [Data tables]. Available from https://ncadmin.nc.gov/about-doa/divisions/council-for-women.

North Carolina Department of Commerce, Labor, and Economic Analysis Division. (2018). AccessNC: Labor Force (Laus). [Data tables]. Available from https://accessnc.opendatasoft.com/pages/dashboard_laborforce_laus/.

North Carolina Department of Environment and Natural Resources. (2015). Facts about Radon: Radon in Water; Radon and Geology. [Data tables]. Available from http://www.epa.gov/radon/states/northcarolina.html.

North Carolina Department of Health and Human Services. (2018). Reports: Payments to Providers Dashboard. [Data tables]. Available from https://dma.ncdhhs.gov/reports/dashboards.

North Carolina Department of Justice. (2018). State Bureau of Investigation: Crime Trends - Offenses and Rates per 100,000. [Data tables]. Available from http://crimereporting.ncsbi.gov/.

North Carolina Department of Justice. (2018). State Bureau of Investigation: Crime Trends - Offenses and Rates per 100,000. [Data tables]. Available from http://crimereporting.ncsbi.gov/.

North Carolina Office of State Budget and Management. (2018). County/State Population Projections. [Data tables]. Available from https://www.osbm.nc.gov/demog/county-projections.

North Carolina Office of State Budget and Management. (2018). County/State Population Projections: Sex and Single Years of Age (2000-2037). [Data tables]. Available from https://www.osbm.nc.gov/demog/county-projections.

North Carolina Office of State Budget and Management. (2018). County/State Population Projections: Sex and Single Years of Age (2000-2037). [Data tables]. Available from https://www.osbm.nc.gov/demog/county-projections.

North Carolina Office of State Budget and Management. (2018). Persons Served in Area Mental Health Programs. [Data tables]. Available from http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show.

North Carolina Radon Information. (2015). North Carolina Counties with Detailed Radon Information. [Data tables]. Available from http://nc-radon.info/NC_counties.html.

North Carolina State Center for Health Statistics (NC SCHS). (2018). Vital Statistics: Pregnancy, Fertility, and Abortion Rates per 1,000 Population. [Data tables]. Available from https://schs.dph.ncdhhs.gov/data/vital/pregnancies/2016/.

North Carolina State Center for Health Statistics (NC SCHS). (2018). North Carolina Vital Statistics Volume 1: Selected Vital Statistics. [Data tables]. Available from https://schs.dph.ncdhhs.gov/data/vital/pregnancies/2016/.

North Carolina State Center for Health Statistics (NC SCHS). (2018). County Life Expectancy at Birth: County Health Data Book. [Data tables]. Available from https://schs.dph.ncdhhs.gov/data/.

North Carolina State Center for Health Statistics (NC SCHS). (2018). Causes of Death. [Data tables]. Available from https://schs.dph.ncdhhs.gov/data/.

North Carolina State Center for Health Statistics (NC SCHS). (2018). Race-Specific and Sex-Specific Age-Adjusted Death Rates by County: County Health Data Book. [Data tables]. Available from https://schs.dph.ncdhhs.gov/data/.

North Carolina State Center for Health Statistics (NC SCHS). (2018). Central Cancer Registry: NC Cancer Incidence Rates per 100,000 Population Age-Adjusted to the 2000 US Census. [Data tables]. Available from http://www.schs.state.nc.us/data/cancer/incidence_rates.htm.

North Carolina State Center for Health Statistics (NC SCHS). (2018). 2012-2016 Cancer Mortality Rates per 100,000 Population Age-Adjusted to the 2000 US Census: Central Cancer Registry. [Data tables]. http://www.schs.state.nc.us/data/cancer/mortality_rates.htm.

North Carolina State Center for Health Statistics (NC SCHS). (2018). Central Cancer Registry: NC Cancer Incidence Rates per 100,000 Population Age-Adjusted to the 2000 US Census. [Data tables]. Available from http://www.schs.state.nc.us/data/cancer/incidence_rates.htm.

North Carolina State Center for Health Statistics (NC SCHS). (2018). Race-Specific and Sex-Specific Age-Adjusted Death Rates by County: County Health Data Book. [Data tables]. Available from https://schs.dph.ncdhhs.gov/data/.

North Carolina State Center for Health Statistics (NC SCHS). (2018). Unintentional Poisoning Mortality Rates per 100,000: County Health Data Book. [Data tables]. Available from https://schs.dph.ncdhhs.gov/data/.

Office of Disease Prevention and Health Promotion. (2018). Healthy People 2020. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/early-childhood-0.

Public Schools of North Carolina. (2018). 4-Year Cohort Graduation Rate Report. [Data tables]. Available from http://www.ncpublicschools.org/accountability/reporting/cohortgradrate.

The National Domestic Violence Hotline. (2018) What Is Domestic Violence. Retrieved from https://www.thehotline.org/is-this-abuse/abuse-defined/.

U.S. Census Bureau. (2017). Gross Rent as a Percentage of Household Income in the Past 12 Months: ACS 5-Year Estimates. [Data tables]. Available from http://factfinder2.census.gov.

U.S. Census Bureau. (2017). Median Gross Rent (Dollars): ACS 5-Year Estimates. [Data tables]. Available from http://factfinder2.census.gov.

U.S. Census Bureau. (2018). ACS Demographic and Housing Estimates: 2016 ACS 5-Year Estimates. [Data tables]. Available from http://factfinder2.census.gov.

U.S. Census Bureau. (2018). ACS Demographic and Housing Estimates: 2016 ACS 5-Year Estimates. [Data tables]. Available from http://factfinder2.census.gov.

U.S. Census Bureau. (2018). ACS Demographic and Housing Estimates: 2016 ACS 5-Year Estimates. [Data tables]. Available from http://factfinder2.census.gov.

U.S. Census Bureau. (2018). ACS Demographic and Housing Estimates: 2016 ACS 5-Year Estimates. [Data tables]. Available from http://factfinder2.census.gov.

U.S. Census Bureau. (2018). Educational Attainment: ACS 5-Year Estimates. [Data tables]. Available from http://factfinder2.census.gov.

U.S. Census Bureau. (2018). Geographic Mobility by Selected Characteristics: 2016 ACS 5-Year Estimates. [Data tables]. Available from http://factfinder2.census.gov.

U.S. Census Bureau. (2018). Grandparents: 2016 ACS 5-Year Estimates. [Data tables]. Available from http://factfinder2.census.gov.

U.S. Census Bureau. (2018). Median Selected Monthly Owner Costs (Dollars) by Mortgage Status: ACS 5-Year Estimates. [Data tables]. Available from http://factfinder2.census.gov.

U.S. Census Bureau. (2018). Mortgage Status by Selected Monthly Owner Costs as a Percentage of Household Income in the Past 12 Months: ACS 5-Year Estimates. [Data tables]. Available from http://factfinder2.census.gov.

U.S. Census Bureau. (2018). Physical Housing Characteristics for Occupied Units: 2012-2016 ACS 5-Year Estimates. [Data tables]. Available from http://factfinder2.census.gov.

U.S. Census Bureau. (2018). Poverty Status in the Past 12 Months: ACS 5-Year Estimates. [Data tables]. Available from http://factfinder2.census.gov.

U.S. Census Bureau. (2018). Selected Economic Characteristics: ACS 5-Year Estimates. [Data tables]. Available from http://factfinder2.census.gov.

U.S. Census Bureau. (2018). Selected Social Characteristics in the United States: 2016 ACS 5-Year Estimates. [Data tables]. Available from http://factfinder2.census.gov.

U.S. Census Bureau. (2018). Small Area Health Insurance Estimates. [Data tables]. Available from https://www.census.gov/data-tools/demo/sahie/#/.

U.S. Department of Agriculture Economic Research Service. (2018). Food Environment Atlas: Local Foods. [Data tables]. Available from http://ers.usda.gov/FoodAtlas/.

U.S. Department of Agriculture Economic Research Service. (2018). Food Environment Atlas: Access and Proximity to Grocery Store. [Data tables]. Available from http://ers.usda.gov/FoodAtlas/.

U.S. Department of Agriculture Economic Research Service. (2018). Food Environment Atlas: Restaurant Availability and Expenditures. [Data tables]. Available from http://ers.usda.gov/FoodAtlas/.

U.S. Department of Agriculture Economic Research Service. (2018). Food Environment Atlas: Health and Physical Activity. [Data tables]. Available from http://ers.usda.gov/FoodAtlas/.

UNC-CH Jordan Institute for Families. (2018). Food and Nutrition Services: Point in Time Data. [Data tables]. Available from http://ssw.unc.edu/ma/.

United States Environmental Protection Agency. (2018). Air Quality Index Reports. [Data tables]. Available from https://www.epa.gov/outdoor-air-quality-data.

United States Environmental Protection Agency. (2018). Safe Drinking Water Search for the State of North Carolina. [Data tables]. Available from https://www.epa.gov/enviro/sdwis-search.

US EPA TRI Explorer. (2017). TRI Release Reports: Chemical Reports. [Data tables]. Available from http://iaspub.epa.gov/triexplorer/tri_release.chemical.

WNC Health Network. (2018). *2018 WNC Healthy Impact Community Health Survey: Data Workbook*. [Data set]. Available from https://www.wnchn.org/partner-resources/.

PHOTOGRAPHY CREDITS

Photos used on the cover and in headers from www.pexels.com; accessed October 2018.

All WNC landscape photos used in the headers courtesy of Patrick Williams, Ecocline Photography.

APPENDICES

Appendix A – Data Collection Methods & Limitations

Appendix B – Data Presentation

Appendix C – 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 data 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 Department of Health and Human Services; NC Office of State Budget and Management; NC Department of Commerce; Employment Security Commission of NC; UNC-CH Jordan Institute for Families; NC Department of Public Instruction; NC Department of Justice; NC Division of Medical Assistance; NC Department of Transportation; and the Cecil B. Sheps Center for Health Services Research. The WNC Healthy Impact data 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 2018.

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; the Centers for Disease Control and Prevention; National Center for Health Statistics; NC DPH Nutrition Services Branch; and NC DETECT.

Environmental data was gathered from sources including: US Environmental Protection Agency; US Department of Agriculture; and NC Department of Environment and Natural Resources.

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.

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.

WNC Healthy Impact Survey (Primary Data)

Survey Methodology
The 2018 WNC Healthy Impact Community Health Survey was conducted from March to June. The purpose of the survey was to collect primary data to supplement the secondary core dataset, allow individual counties in the region to collect data on specific issues of concern, and hear from community members about their concerns and priorities. The survey was conducted throughout the entire WNC Healthy Impact region, which includes the following 16 counties: Buncombe, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania and Yancey.

Professional Research Consultants, Inc. (PRC) designed and implemented the survey methodology, which included a combination of telephone (both landline and cell phone) interviews, as well as an online survey. The survey methodology was designed to achieve a representative sample of the regional population that would allow for stratification by certain demographic characteristics, while also maximizing data collection timeliness and efficiency. Survey sampling and implementation methodology is described in greater detail below.

Survey Instrument
The survey instrument was developed by WNC Healthy Impact's data workgroup, consulting team, and local partners, with assistance from PRC. Many of the questions were derived from the CDC Behavioral Risk Factor Surveillance System (BRFSS) and other validated public health surveys. Other questions were developed specifically by WNC Healthy Impact, with input from regional and local partners, 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 only of their county's residents.

The three additional county questions included in the 2018 survey were:
1) I believe it is important for ALL PUBLIC PLACES to be 100% tobacco free (Strongly Agree/Agree/Neither Agree nor Disagree/Disagree/Strongly Disagree).
2) During the past 30 days, have you or someone you know used an illegal drug or taken a prescription drug that was not prescribed to them? (Yes/No)
3) Do you keep your medicine in a locked place so that no one else can access it? (Yes/No)

Sampling Approach & Design
PRC designed the survey methodology to minimize sample bias and maximize representativeness by using best practice random-selection sampling techniques. They also used specific data analysis techniques, including poststratification, to further decrease sample bias and account for underrepresented groups or nonresponses in the population. Poststratification involves selecting demographic variables of interest within the population (here, gender, age, race, ethnicity, and poverty status) and then applying "weights" to the data to produce a sample which more closely matches the actual regional population for these characteristics. This technique preserves the integrity of each individual's responses while improving overall representativeness. In order to determine WNC regional estimates, county responses were

weighted in proportion to the actual population distribution to appropriately represent Western North Carolina as a whole. Since the sample design and quality control procedures used in the data collection ensure that the sample is representative, the findings may be generalized to the region with a high degree of confidence.

Survey Administration
PRC piloted the survey through 30 interviews across the region and consulted with WNC Health Network staff to resolve substantive issues before full implementation. PRC used trained, live interviewers and an automated computer-aided telephone interviewing system to administer the survey region-wide. Survey interviews were conducted primarily during evening and weekend hours, with some daytime weekday attempts. Interviewers made up to five call attempts per telephone number. Interviews were conducted in either English or Spanish, as preferred by respondents. The final sample included 29 percent cell phone-based survey respondents and 71 percent landline-based survey respondents. Including cell phone numbers in the sampling algorithm allowed better representation of demographic segments that might otherwise be under sampled in a landline-only model.

PRC also worked with a third-party provider to identify and invite potential respondents for an online survey for a small proportion (20%) of the sample population. The online survey was identical to the telephone survey instrument and allowed better sampling of younger and more urban demographic segments.

About the Macon County Sample

Size: The total regional sample size was 3,265 individuals age 18 and older, with 200 surveys from our county. PRC conducted all analysis of the final, raw dataset.

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

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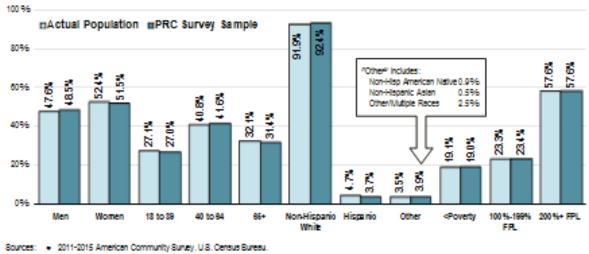
Characteristics: The following chart outlines the characteristics of the survey sample for our county by key demographic variables, compared to actual population characteristics from census data. Note that the sample consists solely of area residents age 18 and older.

Population & Survey Sample Characteristics
(Age 18 and Older, Macon County, 2018)

"Other" Includes:
Non-Hisp American Native 0.9%
Non-Hispanic Asian 0.5%
Other/Multiple Races 2.5%

Sources:
- 2011-2015 American Community Survey. U.S. Census Bureau.
- PRC Community Health Survey, Professional Research Consultants, Inc.

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 2017 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.

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
WNC Healthy Impact, with support from PRC, implemented an Online Key Informant Survey to solicit input from local leaders and stakeholders who have a broad interest in the health of the community. WNC Healthy Impact shared with PRC a list of recommended participants, including those from our county. 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 through an email that introduced the purpose of the survey and provided a link to take the survey online. Reminder emails were sent as needed to increase participation.

Online Survey instrument
The survey provided respondents the opportunity to identify critical health issues in their community, the feasibility of collaborative efforts around health issues, and what is helping/hurting their community's ability to make progress on health issues.

Participation
In all, 14 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 Leader	8	2
Other Health Provider	6	4
Physician	1	1
Public Health Representative	1	1
Social Services Provider	7	6

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 (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.

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 to 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 sixteen 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.

APPENDIX B – DATA PRESENTATION

APPENDIX C- COUNTY MAPS

Macon County Maps
Community Health (Needs) Assessment
2018