

# Jackson County 2018 Community Health Assessment

December 31, 2018



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**ACKNOWLEDGEMENTS**

This document was developed by the Jackson County Department of Public Health, in partnership with Harris Regional Hospital, the Healthy Carolinians of Jackson County Partnership, and other key community partners as part of a local community health 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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Our community health assessment process and products were supported collaboratively by **WNC Healthy Impact**, a partnership between hospitals and health departments to improve community health in western North Carolina. This innovative regional effort is coordinated, housed and financially supported by **WNC Health Network**, the alliance of western NC hospitals working together to improve health and healthcare.

Learn more at [www.WNCHN.org](http://www.WNCHN.org).

WNC **HEALTHY** IMPACT



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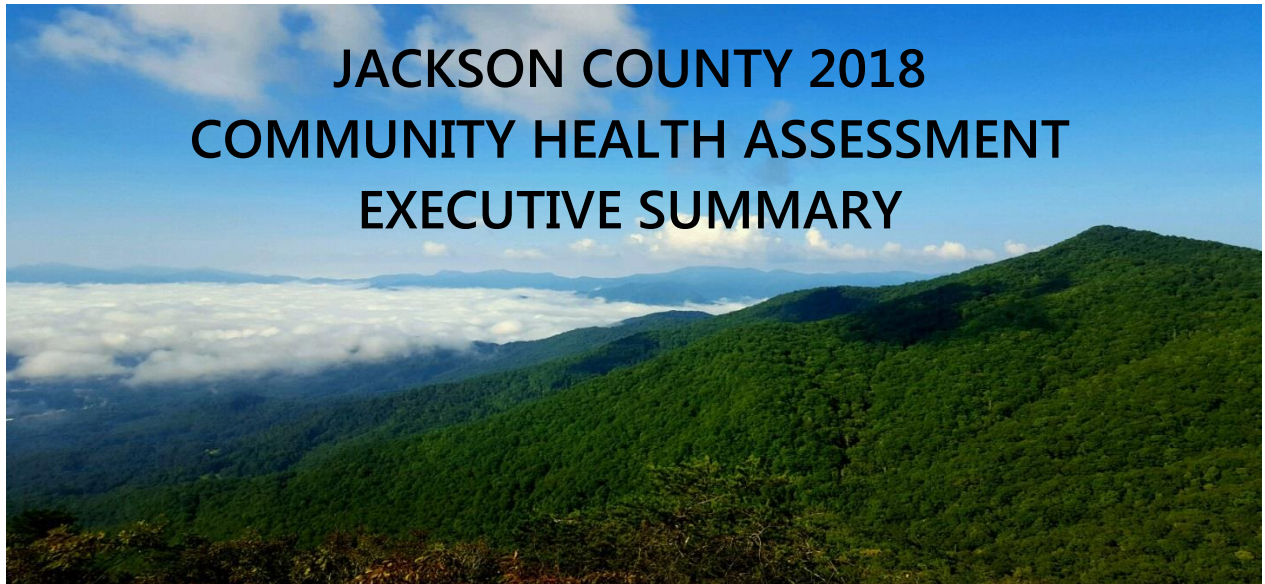
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# JACKSON COUNTY 2018 COMMUNITY HEALTH ASSESSMENT EXECUTIVE SUMMARY



## Community Results Statement

*Quality Health and Services for Every Jackson County Resident*

## Community Health Assessment Process

### Leadership & Partnerships

In Jackson County, leadership for the Community Health Assessment (CHA) process can be described as traditional, with the Jackson County Department of Public Health (JCDPH) as the responsible party. JCDPH collaborated closely with Harris Regional Hospital's Community Health Coordinator and Community Health Needs Assessment (CHNA) Facilitator Chelsea Burrell. The following assisted with the CHA process:



Name	Agency	Duration	Role/ Contribution
Alicia Parham	Jackson County Department of Public Health	2018	CHA Work Team
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Shelley Carraway	Jackson County Department of Public Health	2018	CHA Steering Committee
Trevor Gates	Community Member	2018	CHA Work Team

**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](http://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**

Jackson County's collaborative process is supported by WNC Healthy Impact, which works at the regional level. Locally, our process is supported by the CHA Work Team, the Healthy Carolinians Steering Committee, and the local hospital CHNA Facilitator. 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.

### **Key Findings**

Primary data collected revealed that in Jackson County, less than 10% of residents consume five or more servings of fruits or vegetables daily and less than a quarter of the population are meeting the physical activity recommendations of 150 active minutes per week. Furthermore, 77% of residents are overweight or obese, a number higher than the Western North Carolina, State, and US averages. Regarding substance abuse, the data set showed almost half of the population (47%) admitted their lives have been negatively affected by substance abuse, whether it was their own or someone else's. Currently, 22.3% of Jackson County residents are current smokers, and 10% are using vaping products, such as electronic cigarettes. Both numbers are significantly higher than the Western North Carolina and State averages (WNCHN – WNC Healthy Impact Community Health Survey, 2018).

Secondary data reported Jackson County's adult and childhood (age 2-18 years) obesity rates are higher than the Western North Carolina averages (Obesity in Children Ages 2 to 18 by County, 2017). Additionally, 11% of pregnant women have gestational diabetes, while 30% are obese with a BMI greater than 30 (Birth Indicator Tables by State and County, 2018). In relation to food insecurity, Jackson County's poverty rates continue to be higher than the Western North Carolina region and North Carolina in all categories – the total population, children under 18, and children under 5 (QuickFacts, 2019). Jackson County's percent of alcohol-related crashes remains high and is tied with Transylvania County at 5.8% for having the highest percentage of all 16 Western North Carolina counties (North Carolina Alcohol Facts, 2017). These and additional findings stood out to participants assisting with prioritization, and ultimately lead to the choosing of the current health priorities.

### **Health Priorities**

Through the Community Health Assessment process, the two priority areas chosen were Obesity/Physical Activity/Nutrition (with a special focus on food insecurity) and Substance Abuse Prevention.

### **Next Steps**

In early 2019, the CHA Work Team will work towards better understanding the story and root causes behind our priority issues, as well as engage with existing and new partners to help improve these issues. The CHA Work Team and Healthy Carolinians Steering Committee will



help identify evidence-based strategies and develop a Community Health Improvement Plan (CHIP). Action Teams will also be identified as a means to support improvement efforts.

# 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. Jackson County is included in Harris Regional Hospital’s and Highlands-Cashiers Hospital’s community for the purposes of community health improvement. Harris Regional Hospital was a key partner in this local level assessment.

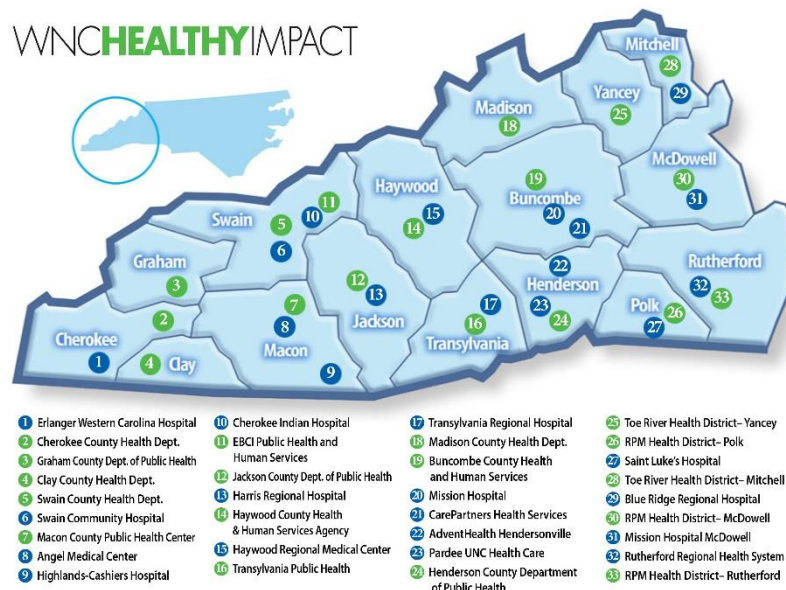
## WNC Healthy Impact

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](http://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.

### **Additional Community-Level Data**

In March 2018, the Jackson County Department of Public Health partnered with the School Health Advisory Council and Jackson County Public Schools to survey 6-12 grade students on current substance use and perceived substance use of their peers. This data was reviewed as part of the community health assessment and played a part in the community choosing Substance Abuse Prevention as a priority.

### **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 a number of ways:

- Recruitment of community members for the CHA Work Team
- Partnership on conducting the health assessment process with the CHA Work Team and Healthy Carolinians Steering Committee
- Through primary data collection efforts (surveys and key informant interviews)
- By reviewing and making sense of the data to better understand what the numbers mean
- In the identification and prioritization of health through a community meeting



*Priority voting – Photo courtesy of Janelle Messer*

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. We will continue to engage partners and stakeholders with current efforts or interest related to priority health issues. 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.

## At-Risk & Vulnerable Populations

Throughout our community health assessment process, our team 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 and access, particularly among medically underserved, low-income, and/or minority populations, and others experiencing health disparities.

To assist in data analysis, reporting, prioritization and health improvement planning, we came up with the following definitions and examples for underserved, at-risk, and vulnerable populations:

The **underserved** are community members 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. Jackson County has high Health Professional Shortage Area (HPSA) scores (Mental Health: 15, Primary Care: 18, and Dental Health: 20) proving that *all* Jackson County residents are underserved (HPSA Find 2019). More specific examples of underserved populations in Jackson County include the un- or under-insured, residents living below the poverty level and residents with limited educational attainment.

**At-risk populations** are the members of a particular group who are likely to, or have the potential to, get a specified health condition. Examples of at-risk populations in Jackson County include residents who are low income, minorities, who are un- or under-insured, who smoke, who abuse substances, who are obese or overweight, who are sedentary, do not eat the recommended amount of fruits and vegetables, etc.

**A vulnerable population** is one that may be more susceptible than the general population to risk factors that lead to poor health outcomes. Examples of vulnerable community members in Jackson County include those who are living below the poverty level, using WIC/FNS services, older adults, etc.

## CHAPTER 2 – JACKSON COUNTY



Jackson County, North Carolina

Photo courtesy of  
<https://www.ncpedia.org/geography/jackson>

### Location & Geography

Located in Southern Appalachia, Jackson County is a rural Tier 2 county in the mountains of Western North Carolina (WNC). Surrounded by the Blue Ridge Parkway and Great Smoky Mountains National Park, Jackson County consists of 494 square miles of mountains, rolling hills, and fertile valleys. Known for its varying geography, elevation ranges in the county from 2,000 to 6,000 feet above sea level. The county also boasts a vast amount of U.S. National Forest Land, notably the Nantahala National Forest (Geography, 2018). The pleasant climate and scenic beauty attracts both tourists and retirees to the area.

Jackson County is home to four main towns. The county seat, Sylva, is located in the northern portion of the county along with Dillsboro and Webster. The one-stoplight town of Cashiers serves the southern end of the county and sits at an elevation of 3,484 feet (Home, 2019). There are additional residential areas such as Cullowhee, Forest Hills, Tuckasegee, Whittier, and the Qualla Boundary, a tribal reservation for the Eastern Band of Cherokee Indians. Notable geographic features of Jackson County include Richland Balsam, which is the Blue Ridge Parkway and county's tallest mountain peak at 6,410 feet, and Panthertown Valley, which has been described as the "Yosemite of the East." In addition, the Tuckasegee River flows 40 miles through the county and is a haven for trout fishing enthusiasts (Geography, 2018).

Interestingly, Jackson County is centrally located to three out-of-state metropolitan areas. It is 140 miles from Atlanta, Georgia; 111 miles from Knoxville, Tennessee; and 195 miles from Columbia, South Carolina. The North Carolina state capitol of Raleigh is 292 miles from Jackson County, deepening the feeling of isolation from state lawmakers and inaccessibility to resources. It is common to hear residents say that the rest of North Carolina believes the state ends in Asheville, meaning the western part of the state is forgotten about.

### History

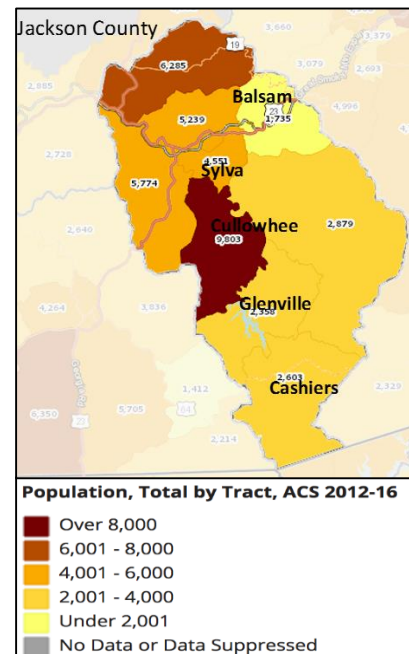
Named for President Andrew Jackson, Jackson County was founded in 1851 from parts of Haywood and Macon Counties (Martin, 2019). Jackson County is shaped by the unique identities of its several towns and residential areas, each having its own rich history. Webster, created in the mid-1800s, was the original county seat and was incorporated in 1859. During the construction of the Western North Carolina Railroad (now the Great Smoky Mountain Railroad), Webster's residents expected the railroad to run through their town's center. However, the railroad was built through the town of Sylva instead. Cullowhee is an unincorporated township comprised mostly of Western Carolina University and the surrounding businesses/residences designed to serve faculty and students. Dillsboro is a small village of shops and crafters, and was also a center of railway activity during the 1880s when the Western NC railroad was built. The current Great Smoky Mountain Railroad attracts a significant amount of visitors to the Dillsboro area. The county seat, Sylva, is the retail and professional center of

Jackson County. Named for William D. Sylva, the town’s development rose with the construction of the Western NC Railroad. The railroad’s route through Sylva made it a prime location for the county’s seat but the issue of relocation resulted in years of bitter dispute between representatives of Sylva and Webster. The state legislature settled the dispute, giving Sylva permission to construct a courthouse and to pay the moving costs to relocate (Martin, 2019). That courthouse is now home to the Jackson County Public Library and is touted as the most photographed courthouse in the state.

## Population

In 2017, 42,973 residents lived in Jackson County, which is a 6.7% increase from 2010. The majority of residents are Caucasian (85.2%) with minorities represented as follows: American Indian/Alaskan Native (8.2%), Hispanic/Latino (5.8%), African American (2.3%), and Asian (1.0%) (QuickFacts, Jackson County, North Carolina, 2018). Jackson County has a significantly larger proportion of American Indians and significantly lower proportion of African Americans and other minority groups than the WNC region and the state of NC. The median age of Jackson County residents is 37.1 years – 8.8 years younger than the WNC regional average and 1.2 years younger than the NC average. Jackson County has the same proportion of younger persons (19.7% ages 5-19 years) and higher proportion of older adults (17.5% ages 65+) when compared to NC. The majority of residents reside in the northern portion of the county, particularly in Cullowhee around Western Carolina University.

The birth rate in Jackson County seems to be falling in recent years (from 11.3 in 2006-2010 to 9.4 in 2012-2016), which is a trend seen in WNC and NC. Jackson County’s birth rate is in line with WNC and lower than NC (Statistics and Reports, Vital Statistics, 2019). In Jackson County, there are 16,048 households. In households where children are 18 years or younger, 2,054 of the households are headed by a married couple, 1,121 are headed by a single female, and 438 are headed by a single male. Additionally, 621 grandparents live with their grandchildren under age 18, and 260 of those grandparents are also financially responsible for their grandchildren (Selected Social Characteristics in the United States (DP02): 2016 ACS 5-Year Estimates, 2018). In relation to children, Jackson County’s high school dropout rate recently declined and is the lowest it has ever been (Educational Attainment: 2012-2016 American Community Survey 5-Year Estimates, 2018).



Source: NC State Center for Health Statistics

Alarmingly, the homeless population increased significantly in many WNC counties in 2017. In Jackson County, there were 38 homeless people in 2017 (an increase from 2 in 2015), which sadly includes 20 homeless children (2017 Point-in-time Count: North Carolina Balance of State - by County, 2018). Currently, finding adequate housing for individuals and families especially

during the harsh winter months has proven difficult. This has quickly become an issue in the county and local leaders and advocates are discussing ideas and solutions.

Homelessness – Year 2017								
Location	Homeless Families with Children			Homeless Adults		Subpopulations		Total Homeless People
	# Children 17 & Under	Total People	Total Households	Total People	Total Households	Chronically Homeless	Veterans	
Jackson County	20	30	5	8	7	0	1	38
<b>WNC Total</b>	155	241	76	333	324	88	15	582

Source: 2017 Point-in-time Count: North Carolina Balance of State – by County, 2018



## CHAPTER 3 – A HEALTHY JACKSON 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 together in their own community over the next three years or more. Follow-up questions asked them to describe what is contributing to and impeding progress 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, they reported:

- Awareness/Education
  - Recreational/Outdoor Activities
  - Healthy Lifestyles
- (WNCHN-Online Key Informant Survey, 2018)

An overarching theme of what is contributing to success in our community is the strong partnerships that have been developed and continue to build. Stakeholders agree that lack of available resources and a lack of understanding how to access what is available are both common problems that need to be addressed. During our collaborative planning efforts and next steps, we will further explore these concepts and the results our community has in mind.



In Jackson County, a community health improvement coalition exists called the Healthy Carolinians of Jackson County Partnership. Founded in the early 1970s, this coalition has grown and developed to become a community-based advocacy group of volunteer agencies and individual community members, working to improve the quality of health for all residents of Jackson County through improved health services, increased efficient utilization of health services, and community empowerment. Furthermore, the Healthy Carolinians of Jackson county works through a Steering Committee and Action Teams to build and promote collaborative partnerships, identify critical needs in the community, guide planning efforts to improve health, support innovative health programs and advocate for health-promoting polices.

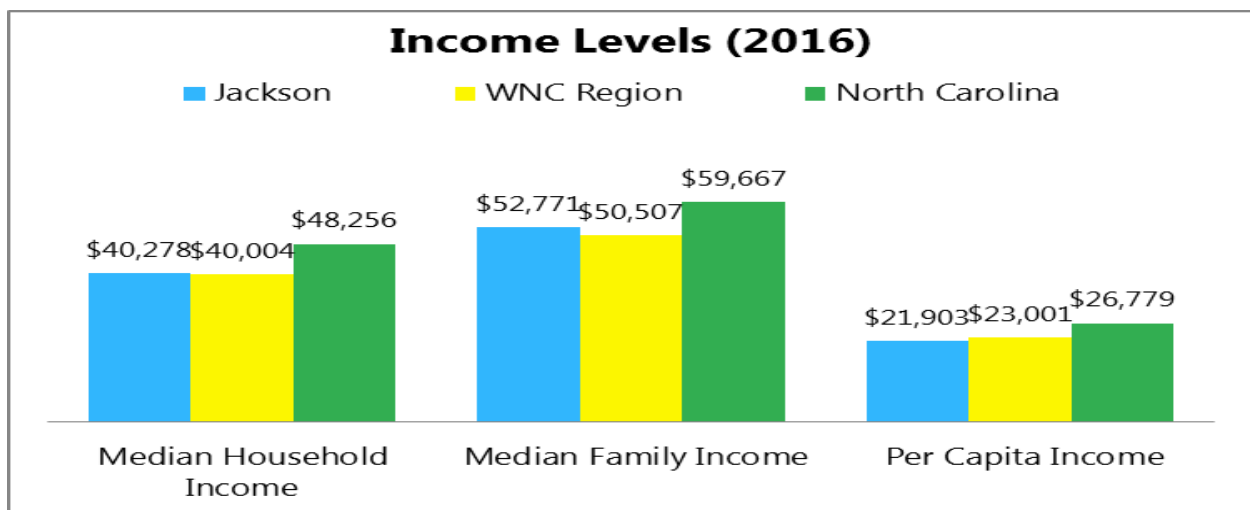
Additionally, Healthy Carolinians of Jackson County plays a large role in the CHA process. Members of the Steering Committee act as the CHA Steering Committee, and advise the process, provide input, and confirm the identified health priorities. Action Teams are formed around selected health priorities and develop strategies to address each priority. See <http://health.jacksonnc.org/healthy-carolinians> for more information on the Partnership, Action Teams, and notable accomplishments.

## 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

As of November 2018, Jackson County moved from a Tier 1 to a Tier 2 designation from the NC Department of Commerce. The Tier 2 designation reflects a change in how the counties are ranked, now based only on average unemployment rate, median household income, percentage growth in population, and adjusted property tax base per capita (County Distress Rankings (Tiers), 2019). Noted in the chart below, for the 2012-2016 time period, Jackson County has a lower median household income, median family income, and per capita income than the state of North Carolina, though median household income and median family income are slightly higher than the WNC region. Each category has increased in Jackson County since the 2011-2015 time period. Jackson County's median household income is \$7,978 lower than North Carolina's median household income (QuickFacts, 2019).



Source: US Census Bureau

Jackson County's poverty rates continue to be higher than the WNC region and NC in all categories – the total population, children under 18, and children under 5. The total population poverty rate trend in Jackson County was at 23.1% in 2016, compared to WNC (16.5%) and NC

(16.8%). In Jackson County, WNC, and NC children suffer disproportionately from poverty. In Jackson County, 33.5% of children under age 18 and 36% of children under the age of 5 are living in poverty. Additionally, the Black/African American and Hispanic populations have significantly higher rates of poverty than other minority and white populations (QuickFacts, 2019).

During the 2016-2017 school year, 62.60% of Jackson County Public School students received free and reduced lunch, which is an increase from the past two school years. The percentage of Jackson County students is higher than North Carolina’s percentage of 59.82%. All five Kindergarten-8<sup>th</sup> grade schools have greater than 50% of students receiving free and reduced lunch. Of those five schools, two of the schools have greater than 80% of their student population receiving free and reduced lunch (Data & Reports, 2019).

Percentage of Students Receiving Free and Reduced Lunch			
	2014-2015	2015-2016	2016-2017
Jackson County	59.85%	56.31%	62.60%
Western Region	58.20%	56.90%	63.30%
North Carolina	52.83%	52.48%	59.82%

Source: Public Schools of North Carolina

## Employment

“Employment provides income and benefits that can support healthy lifestyle choices. Conversely, 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).

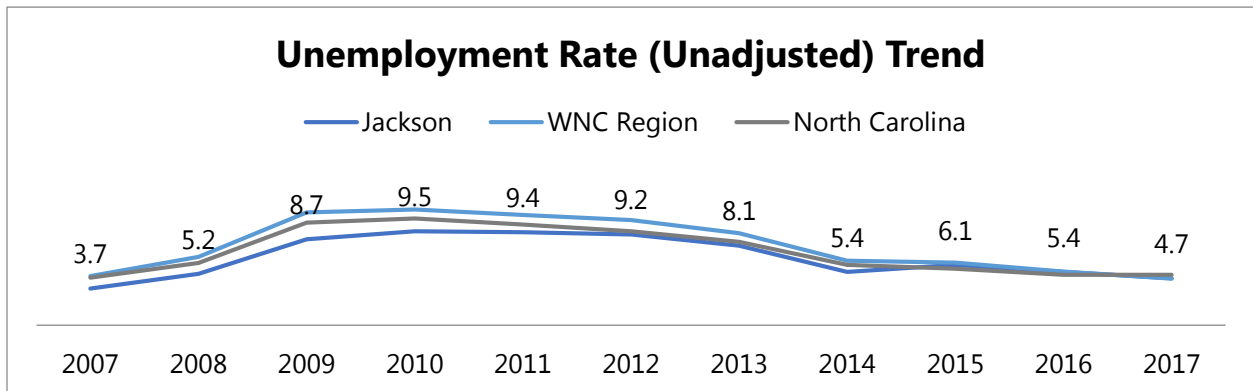
As of 2017, the three employment sectors in Jackson County with the largest proportions of workers (and average weekly wages) were:

- Educational Services: 21.03% of workforce (\$880.09)
- Accommodation and Food Services: 17.97% of workforce (\$328.13)
- Healthcare and Social Assistance: 13.94% of workforce (\$848.25)

Take note of the gap in average weekly wages between the Educational Services sector and the Accommodation and Food section (a difference of \$551.96 per week). Persons working in the Accommodation and Food sector tend to lack employment benefits like health insurance and retirement programs. Additionally, many in this sector work part-time and often at multiple jobs. This is a sector whose relative poverty leaves them vulnerable to emotional stress and poor health outcomes (Industries: Quarterly Employment & Wage (QCEW), 2019).

Throughout the period cited in the graph below (2007-2017), the unemployment rate in Jackson County was lower than comparable rates in the WNC region and the state until 2015. Currently,

Jackson County's rate (4.7) is the same as the WNC region and slightly lower than NC (5.1) (Local Area Unemployment Statistics, 2019).



Source: North Carolina Department of Commerce

It is important to note that a person is defined as unemployed if they:

- Had no employment during the week that includes the 12<sup>th</sup> of the month but were available to work
- Had made specific efforts to find employment during the four weeks prior
- Were waiting to be recalled to a job from which they had been laid off
- Were waiting to report to a new job within 30 days

Persons who have given up on finding employment are not included in this rate.

## Education

Studies show that "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). Jackson County has two opportunities for higher education within its community. Western Carolina University is located in Cullowhee, and Southwestern Community College is located in Sylva. Both colleges work closely with the community and encourage students to volunteer with events and projects.

Compared with the WNC region, Jackson County has:

- 3.8% lower percentage of persons in the population over age 25 having only a high school diploma or equivalent (2012-2016 estimate) (Community Facts, 2019).
- 6.2% higher percentage of persons in the population over age 25 having a Bachelor's degree or higher (Community Facts, 2019).
- A lower overall high school drop-out rate for the 2016-2017 school year. The rate has decreased in Jackson County from 3.25 in the 2014-2015 school year to 1.54 in the 2016-2017 school year (Annual Reports, 2019).



Photo courtesy of Western Carolina University at [www.wcu.edu](http://www.wcu.edu)

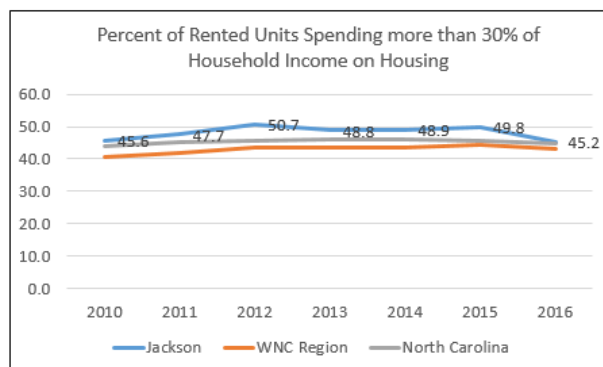
## Community Safety

“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). Community safety means not only violent acts in neighborhoods and homes but also injuries caused unintentionally. Many injuries are preventable – car accidents, poisonings, falls, fires, assaults, rape, robbery, and more. The chronic stress of living in an unsafe neighborhood can lead to accelerated aging, anxiety, depression, higher rates of pre-term births, etc. (CDC, CDC Community Health Navigator, 2019).

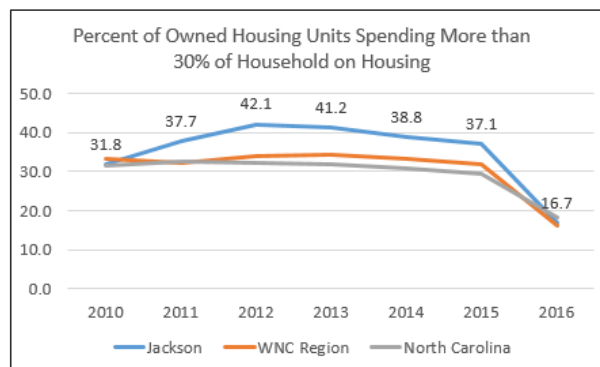
The index crime (the sum of all violent and property crimes), property crime (burglary, arson, and motor vehicle theft), and violent crime (murder, forcible rape, robbery, aggravated assault) rates were higher in Jackson County than in WNC for most years from 2001-2016 (NC Department of Justice, 2018).

## Housing

“The housing options 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). Further, housing is a substantial expense. In fact, a measure of economic burden in a community is the percent of housing units spending more than 30% of household income on housing. In Jackson County, larger proportions of both renters and mortgage holders spend >30% of household income on housing than in the WNC region or NC average (Financial Characteristics, 2019)



Source: US Census Bureau



Source: US Census Bureau

## Family & Social Support

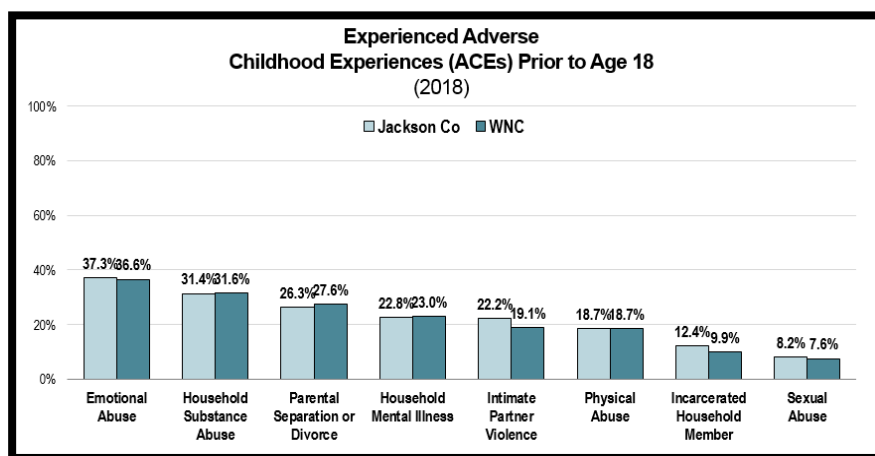
“People with greater social support, less isolation, and greater interpersonal trust live longer and healthier lives than those who are socially isolated. Neighborhoods richer in social capital provide residents with greater access to support and resources than those with less social capital” (County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

One measure of family and social support is the percentage of children in family households, particularly those that live in a household headed by a single parent. Adults and children in single-parent households are at risk for adverse health outcomes such as mental health problems (substance abuse, depression, suicide) and unhealthy behaviors (smoking, excessive alcohol use). In Jackson County, 41% of children live in single parent-households, greater than that of the state of NC (Households & Families: 2010, 2019).

Data from the community-wide telephone survey conducted in Jackson County provides additional insight into the social/emotional support of county residents. When asked about social/emotional support, 74% of residents state they “always” or “usually” get the support they need. Unfortunately, this number has declined since 2015 (80%). A percentage that has increased, 11% of county residents stated they did not get the mental health care or counseling that was needed in the past year. Additionally, 15% stated they are “dissatisfied” or “very dissatisfied” with life, a number that has increased since 2015 (7%) (WNCHN – WNC Healthy Impact Community Health Survey, 2018).

“Adverse childhood experiences (ACEs) are a significant risk factor for substance use disorders and can impact prevention efforts. ACEs are stressful or traumatic events, including abuse and neglect. They may also include household dysfunction such as witnessing domestic violence or growing up with family members who have substance use disorders. ACEs are strongly related to the development and prevalence of a wide range of health problems throughout a person’s lifespan, including those associated with substance misuse” (Adverse Childhood Experiences, 2019). During the 2018 telephone survey in Jackson County, residents were asked a series of questions to determine their ACE score, where having 4 or more is considered high and to significantly increase your risk for poor health outcomes.

In Jackson County, 9.3% of residents have a high ACE score, which is lower than the WNC region (15.9%). Compared to the WNC region, Jackson County residents have higher percentages in the following categories: emotional abuse, intimate partner violence, incarcerated household member, and sexual abuse (WNCHN – WNC Healthy Impact Community Health Survey, 2018).

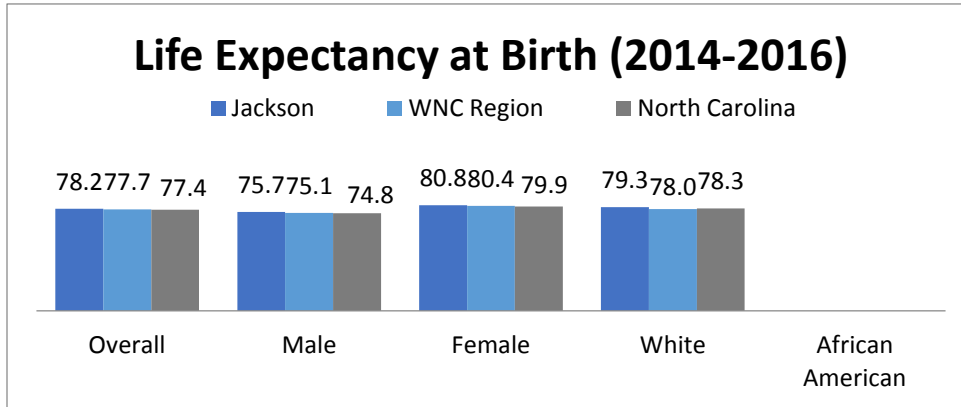


Source: WNCHN – WNC Healthy Impact Community Health Survey

## CHAPTER 5 – HEALTH DATA FINDINGS SUMMARY

### Mortality

In Jackson County, the overall life expectancy for residents is 78.2 years. This is both higher than that of WNC (77.7 years) and NC (77.4 years).



Source: NC State Center for Health Statistics

The leading causes of death in Jackson County mirror those of NC. Total cancer, diseases of the heart, and chronic lower respiratory disease (CLRD) are the top three leading causes of death in our community (2016 North Carolina Vital Statistics, Volume 2: Leading Causes of Death, 2018).

Rank	Cause of Death	Jackson	
		# Deaths	Death Rate
1	Cancer	414	161.0
2	Diseases of Heart	363	151.7
3	Chronic Lower Respiratory Diseases	125	49.7
4	All Other Unintentional Injuries	91	47.0
5	Cerebrovascular Disease	65	28.9
6	Diabetes Mellitus	69	28.2
7	Alzheimer's disease	63	27.8
8	Chronic Liver Disease and Cirrhosis	40	18.1
9	Suicide	39	17.5
10	Nephritis, Nephrotic Syndrome, and Nephrosis	36	16.0
11	Pneumonia and Influenza	34	14.5
12	Unintentional Motor Vehicle Injuries	19	9.4
13	Septicemia	22	8.3
14	Homicide	6	2.9
15	Acquired Immune Deficiency Syndrome	2	0.9
<b>All Causes (some not listed)</b>		1,800	762.0

Source: NC State Center for Health Statistics

According to the above data, people in Jackson County have lower mortality than the population statewide for 10 of the 15 leading causes of death for which county rates are stable. Mortality rates in Jackson County are higher than the comparable state rates for chronic lower respiratory disease, all other unintentional injuries, diabetes mellitus, chronic liver disease and cirrhosis, and suicide (2016 North Carolina Vital Statistics, Volume 2: Leading Causes of Death, 2018).

<b>Jackson County</b>				
<b>Age Group</b>	<b>Rank</b>	<b>Leading Cause of Death</b>	<b># Deaths</b>	<b>Death Rate</b>
<b>00-19</b>	<b>1</b>	Conditions originating in the perinatal period	6	12.4
	<b>2</b>	Motor vehicle injuries	3	6.2
	<b>3</b>	Suicide	2	4.1
		SIDS	2	4.1
<b>20-39</b>	<b>1</b>	Other Unintentional injuries	27	45.2
	<b>2</b>	Suicide	12	20.1
	<b>3</b>	Diseases of the heart	10	16.7
<b>40-64</b>	<b>1</b>	Cancer - All Sites	117	189.5
	<b>2</b>	Diseases of the heart	74	119.9
	<b>3</b>	Other Unintentional Injuries	31	50.2
<b>65-84</b>	<b>1</b>	Cancer - All Sites	250	763.3
	<b>2</b>	Diseases of the heart	180	549.6
	<b>3</b>	Chronic lower respiratory diseases	78	238.2
<b>85+</b>	<b>1</b>	Diseases of the heart	98	2971.5
	<b>2</b>	Cancer - All Sites	46	1394.8
	<b>3</b>	Alzheimer's disease	40	1212.9

Source: NC State Center for Health Statistics

When compared to NC, Jackson County's leading causes of death by age vary for the age groups 00-19 and 20-39. Suicide is higher in Jackson County for both age groups than the rest of NC. For the other age groups, 40-64 years, 65-84 years, and 85+ years, the top 3 leading causes of death are identical in Jackson County and NC (2016 North Carolina Vital Statistics, Volume 2: Leading Causes of Death, 2018).

## **Health Status & Behaviors**

### Overall Health Status

According to America's Health Rankings, the state of NC ranked 33<sup>rd</sup> overall out of 50 United States of America (where #1 is "best"). Within our state, the 2018 County Health Rankings



ranked Jackson County 37<sup>th</sup> overall among 100 NC counties, which is a negative change from 2015, when Jackson County ranked 24<sup>th</sup> (North Carolina, Jackson, 2019).

For health outcomes, the rankings are as follows:

- 35<sup>th</sup> in length of life (includes premature death)
- 47<sup>th</sup> in quality of life (includes poor or fair health, poor physical health days, poor mental health days, low birthweight)

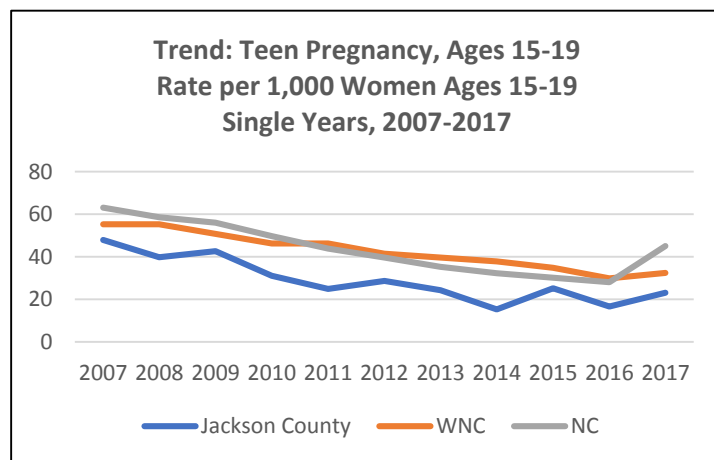
In terms of health factors, Jackson County ranked:

- 38<sup>th</sup> in health behaviors (includes adult smoking, adult obesity, physical inactivity, access to exercise opportunities, excessive drinking, alcohol-impaired driving deaths, sexually transmitted infections and teen births)
- 75<sup>th</sup> in clinical care (includes uninsured, primary care physicians, dentists, mental health providers, preventable hospital stays, and more)
- 53<sup>rd</sup> in social and economic factors (includes education, unemployment, children in poverty and/or single-parent households, violent crimes, injury deaths, and more)
- 12<sup>th</sup> in physical environment (includes air pollution, housing problems, driving alone to work, and a long commute)

Throughout the CHA process, data was collected on self-reported health status. Only 11.7% of residents who were surveyed stated that Jackson County is fair/poor place to live. Additionally, 15.5% of residents stated that they experience “fair” or “poor” overall health. Of those who reported they were limited in activity in some way due to physical, mental, or emotional problems, most listed back/neck problems, arthritis/rheumatism, and “other” as the types of problems that limit activity (WNCHN – WNC Healthy Impact Community Health Survey, 2018).

### Maternal & Infant Health

The pregnancy rate in Jackson County for women aged 15-44 years appears to have fallen overall since 2007. Jackson County has experienced a slight decrease (current rate of 48.1 compared to 64.7 in 2007), while WNC (63.5) and NC (72.2) have remained stable since 2011. The teen pregnancy rates have fallen significantly since 2007, when Jackson County's rate was as high as 47.9 per 1,000 women ages 15-19. Though the rates have decreased, they continue to rise and fall rather dramatically each year. As of 2017, the teen pregnancy rate increased again



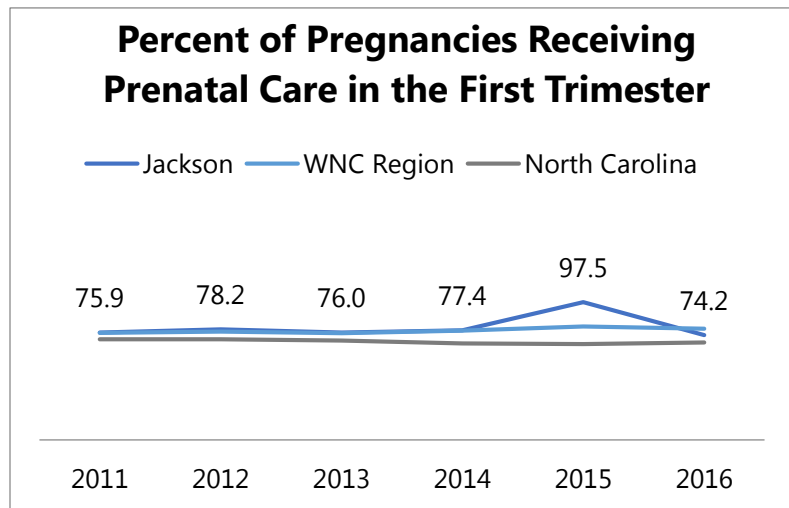
Source: NC State Center for Health Statistics

to 23.1 (2017 Reported Pregnancies, 2019). Among Jackson County women age 15-44 years, the highest pregnancy rates appear to occur among American Indian women with a rate of 91.5.

Further, among teens age 15-19 years in Jackson County, the pregnancy rates per race are unstable due to low numbers, however the numbers of pregnancies per race are as follows: White/Non-Hispanic: 24; American Indian/Non-Hispanic: 14; Hispanic: 7; African-American/Non-Hispanic: 1; Other: 0 (2017 Reported Pregnancies, 2019).

A few pregnancy risk factors are important to note in Jackson County and WNC women. To begin, the WNC region in general has very high percentages of women who smoke during pregnancy. Jackson County is one of the many counties in the region where the percentage of women who smoked during pregnancy exceed 20% (22% in 2017). In the past, the percent of Jackson County women accessing early prenatal care has been especially high (74.2% received prenatal care in the first trimester), so pregnant women should have received messages from maternity care providers about the hazards of smoking while pregnant (2017 North Carolina Vital Statistics 2017). Despite the percentage of women in the county getting early prenatal care being the highest among comparators after 2011 with a major spike in 2015, the percentage of women who smoked while pregnant has actually risen (Birth Indicator Tables by State and County. Trimester Care Began: First, 2018).

The infant mortality rate in Jackson County appears to vary from year to year. The overall infant mortality rates of the county are unstable or suppressed, as are all the racially stratified rates. During the 2012-2016 time period, there were 15 infant deaths in Jackson County, compared to an arithmetic mean of 15 in the WNC region (Infant Death Rates per 1,000 Live Births, 2012-2016, 2018).



Source: NC State Center for Health Statistics

Chronic Disease

Chronic disease is a notable issue in Jackson County, particularly cancer, heart disease, chronic lower respiratory disease, and diabetes.

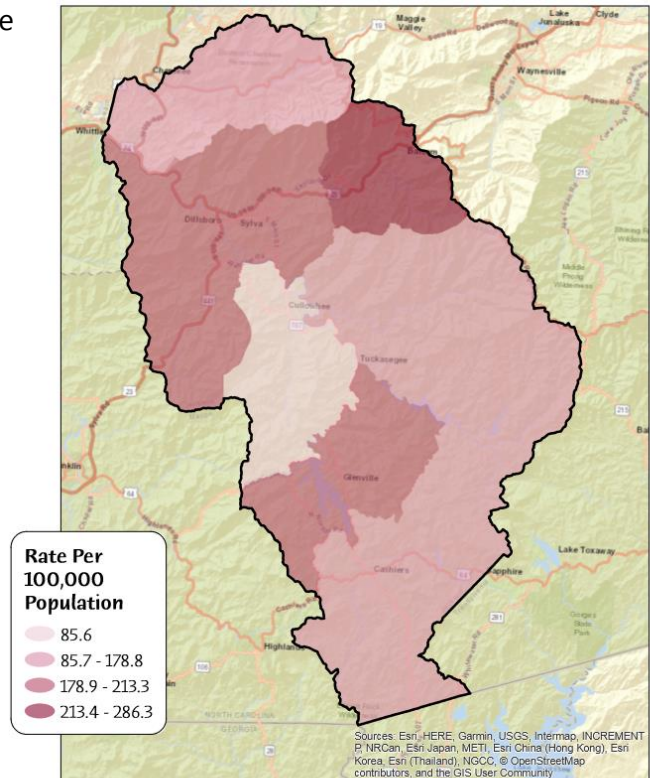
Cancer is the top leading cause of death in Jackson County, with breast, prostate, lung, and colorectal leading in terms of site-specific cancers in this community. Jackson County cancer mortality rates have decreased over time for three of the four site-specific cancers, with colorectal cancer now being the exception. In addition, incidence rates have decreased for all four site-specific cancers during the 2012-2016 time period. Three of these site-specific cancers are subject for periodic community screening efforts. Lung cancer is not usually subject to routine screening and while there are many possible contributors to lung cancer incidences in Jackson County such as smoking, air pollution, and high radon rates, we are unable to establish

a cause/effect relationship with the rates. (2012-2016 Cancer Mortality Rates per 100,000 Population Age-Adjusted to the 2000 US Census, 2018) (Preliminary 2012-2016 NC Cancer Incidence Rates per 100,000 Population Age-Adjusted to the 2000 US Census, 2018).

Cardiovascular disease is the second leading cause of death in Jackson County with over 7% of residents having been diagnosed, to include heart attack, angina, or coronary disease. This prevalence is a little less than that of WNC (8%) (WNCHN – WNC Healthy Impact Community Health Survey, 2018).

According to maps developed by the NC State Center of Health Statistics, heart disease mortality is clustered geographically with the Balsam area having the highest prevalence with a rate of 213.4-286.3, and the Sylva/Dillsboro and Glensville areas experiencing high rates as well, with a rate of 178.9-213.3.

The most recent data for Jackson County from 2013, shows that 10.5% of residents have been diagnosed with diabetes. During the same year, 9.7% of WNC residents report having diabetes. Both jurisdictions have seen an increase in diabetes over time (County-Level Data, Diagnosed Diabetes Prevalence, North Carolina, 2004 through 2013, 2017). In 2018, 9% of Jackson County residents self-reported that they had been diagnosed with borderline or pre-diabetes, a condition that will lead to diabetes if lifestyle changes are not adopted (WNCHN – WNC Healthy Impact Community Health Survey, 2018).



Source: State Center for Health Statistics, June 2018



### Injury & Violence

For Jackson County residents in age groups 00-19, 20-39, and 40-64 years, injuries (whether motor vehicle or unintentional) are a leading cause of death (2016 North Carolina Vital Statistics, Volume 2: Leading Causes of Death, 2018). The main injuries that lead to death or debilitation in our community include falls, unintentional poisonings, and motor vehicle crashes.

Between 2006 and 2017, the number of Jackson County residents served by the Area Mental Health Program increased overall from 1,629 to 2,268. Over the same time period, persons served in NC State Psychiatric Hospitals decreased from 24 to 13, and the persons served in NC State Alcohol and Drug Treatment Centers increased from 17 to 36 (State Data Center, 2018). Additionally, when asked if they got needed social/emotional support, 74.4% of Jackson County

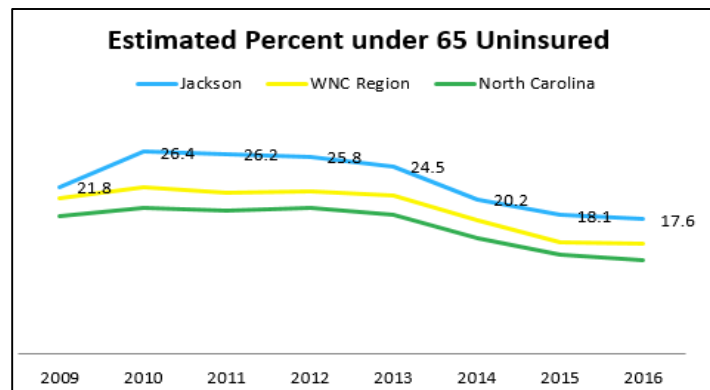
residents indicated that they did, while almost 23% reported having more than 7 poor mental health days in the past month (WNCHN – WNC Healthy Impact Community Health Survey, 2018). The lack of mental health and substance abuse services present an ongoing need in our community. The increase in numbers of those served by Area Mental Health Programming and Alcohol and Drug Treatment Centers shows the importance of additional resources. From the key informant interviews and Healthy Carolinians meetings, the need for additional mental health and substance use resources has been reiterated time and time again. A lack of mental health services in our area is defined as a resource gap below.

### Oral Health

For the first time, Jackson County has a higher rate of individuals 18 and older who have visited a dentist in the last year (73%) than WNC (61.6%). Jackson County's percentage is a significant increase from 2015 (59.6%) (WNCHN – WNC Healthy Impact Community Health Survey, 2018). However, access to affordable oral health continues to be an issue in our county, especially for vulnerable populations. The Health Department's dental clinic closed in 2012 and community partners who were offering the Missions of Mercy free dental clinic annually are no longer available to do so. Both closed their doors due to financial strains. The East Carolina University School of Medicine opened a Community Service Learning Center in Sylva in 2015 and has had success meeting the needs of many patients. At times, there is a long waiting list due to the high demand of appointments, which can leave a gap for our most vulnerable populations. In the past year, professionals have been meeting across WNC to find ways to address the dental health issues for children and the most vulnerable populations.

### Clinical Care & Access

Since 2013, the percent of uninsured Jackson County residents under age 65 has steadily decreased from 24.5% to 17.6% in 2016. However, percentages of uninsured is higher in all age categories (under 65 years, 18 to 64 years, 40 to 64 years, under 19 years) in Jackson County, compared to WNC and NC (Small Area Health Insurance Estimates 2016, 2018). In 2019, Medicaid and NC Health Choice will transition to Medicaid Managed Care. This transformation will shift Medicaid from fee-for-service to a managed care model, where the Department of Health and Human Services "will work with companies – commonly called managed care organizations or prepaid health plans – who will receive a set amount each month to cover health care for each person enrolled in Medicaid" (Medicaid Transformation, 2019). Medicaid transformation will change the healthcare system for millions of North Carolinians.



Source: US Census Bureau

A Health Professional Shortage Area (HPSA) is a geographic area, population group, or health care facility that has been designated by the federal government as having a shortage of health

professionals. There are three existing categories – primary care, dental, and mental health. HPSAs are designated and provided a score (0-26) using several criteria, with 0 being the best and 26 being the worst. Jackson County has high HPSA scores (Mental Health: 15, Primary Care: 18, Dental Health: 20) (HPSA Find, 2019). Each score has gotten higher since the last CHA cycle.

Location	2017					
	Physicians	Primary Care Physicians	Dentists	Registered Nurses	Physicians Assistants	Nurse Practitioners
Jackson	21	7.2	3.5	82.3	3.0	9.5
WNC (Regional Arithmetic Mean)	15.5	6.5	3.7	77.5	4.4	5.7
State Total	23.8	7	5	100	5.9	6.5

Source: North Carolina Health Professions Data System

From the above chart, it is clear Jackson County has a higher ratio of physicians, primary care physicians, registered nurses, and nurse practitioners than the rest of WNC. Jackson County has a smaller ratio of physicians, dentists, registered nurses, and physicians assistants than the state of NC (North Carolina Health Professions Data System, 2018). Despite the differences among comparators, Jackson County still qualifies as a Health Professional Shortage Area and experiences a wide variety of healthcare issues. Residents have difficulty scheduling appointments with providers who are not able to accept new patients and with providers who don't except their insurance, particularly Medicaid. When surveyed, 81.4% of Jackson County residents said they have a specific source of ongoing care, and 8.6% were unable to receive the care they needed in the past year (WNCHN – WNC Healthy Impact Community Health Survey, 2018).

In addition to the shortage of health professionals, Jackson County residents have other barriers to accessing health care such as transportation shortages, financial constraints, lack of childcare, being un- or under-insured, and a lack of knowledge of available resources and how to access those that are available.

### At-Risk Populations

In Jackson County, at-risk populations include, but are not limited to, minorities, uninsured and underinsured, and low-income individuals and families. These populations are likely to have or acquire a health condition. In addition, residents who smoke, abuse substances, are overweight/obese, live a sedentary lifestyle, consume poor nutrition, and/or older adults are also at risk for specified health conditions.

<b>At-Risk Population</b>	<b>Health Condition/Consequence</b>
Minorities (Native Americans)	Diabetes, heart disease, unintentional injuries, substance abuse, cancer, smoking, violence (Health Disparities Among Native Americans/Alaska Natives, 2019)
Uninsured and Underinsured	Less likely to receive care, poor quality of care, uncontrolled health conditions
Low-income	Poor nutrition and access to healthcare
Residents who smoke	Cancer, chronic lower respiratory disease, stroke
Residents who abuse substances	Overdose, death
Residents who are overweight/obese	Diabetes, heart disease hypertension, stroke, cancer
Residents who are sedentary	Obesity, overweight, heart disease, cancer
Residents with poor nutrition	Obesity, overweight
Older adults and seniors	Unintentional falls

## 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). In 2017, the Air Quality Index (AQI) measurement for Jackson County were as follows:

- 206/256 days with good air quality
- 50/256 days with moderate air quality
- Small particulate matter was present at the level of pollutant on 256 of 256 monitored days (Outdoor Air Quality Data, 2019)

Major concerns for human health from exposure to particulate matter are effects on breathing and respiratory systems, damage to lung tissues, and premature death. Small particulate matter in air pollution has the best chance of reaching the lower respiratory tract.

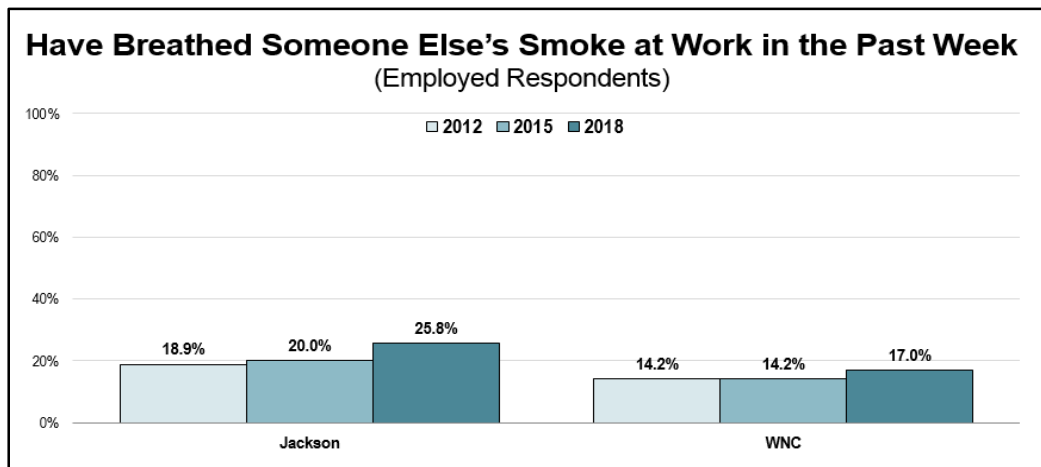
Exposure to radon is perhaps the most significant undervalued health problem in WNC. While the current average indoor radon level in Jackson County is 2.8 pCi/L (2 times the national average). There are counties in WNC with much higher levels (Facts about radon: Radon in Water; Radon and Geology, 2015). For reference, a screening level of 4 pCi/L is the Environmental Protection Agencies recommended action level for radon exposure. Radon is the number one cause of lung cancer. People who smoke have an even higher risk of lung cancer from radon exposure than people who don't smoke (General Radon Information, 2019).

Clean water is also a prerequisite for health. Having access to clean water supports healthy brain and body function, growth, and development. While drinking water safety is improving, many contaminants still pollute our water sources – pharmaceuticals, chemicals, pesticides, and microbiological contaminants. In Jackson County, about 50% of the county's 2018 population was served by community water systems (Safe Drinking Water Search for the State of North Carolina, 2018). The remainder of the population accesses water from wells, directly from a body of surface water, or from bottled water.

Beyond drinking, poor surface water quality can make lakes and streams unsafe for swimming and fish unsafe for consumption. In an area that prides itself on outdoor water sports, water quality is of utmost importance in Jackson County. In 2015, the Jackson County Department of Public Health informed residents of an advisory not to eat some of the fish in Lake Glenville. Based on a finding of high levels of mercury by the NC Department of Environment and Natural Resources (DENR), residents were advised not to eat walleye or largemouth bass fish. In 2016, this same advisory was extended to smallmouth bass. Toxicologists believe aerial deposition to

be the cause for the mercury, which rises into the air from fossil fuels burning and over time settles to the bottom of the waterway where fish feed off algae. No change in the mercury levels is expected, barring human or weather changes.

Additionally, secondhand smoke, or environmental tobacco smoke (ETS), is a known human carcinogen with more than 7,000 chemical compounds, 250 of which are known to be harmful and 69 of which cause cancer (Health Risks of Secondhand Smoke, 2019). Over 25% of residents in Jackson County indicate that they have breathed someone else’s cigarette smoke at work in the past week (WNCHN – WNC Healthy Impact Community Health Survey, 2018).



Source: WNCHN – WNC Healthy Impact Community Health Survey, 2018

## Access to Healthy Food & Places

Access to healthy foods and places for recreation are both indicators of health. Without access and the financial means to purchase healthy foods, residents do not have the environmental supports to live a healthy lifestyle. In Jackson County, six grocery stores and four farmers markets exist to serve over 40,000 residents. Close to 5% of residents live in a food desert, meaning that they live below the poverty level, have no car, and low access to a grocery store (Access and Proximity to Grocery Store, 2015, 2018). Surveyed residents were asked if they have worried in the past year about food running out before having money to buy more, and close to 19% reported that this was often or sometimes true for them.

Additionally, if residents do not have access to a safe place for recreational opportunities, whether that is a park, greenway, walking trail, playground, etc., they are less likely to live an active lifestyle. In Jackson County, there are four public recreation and fitness facilities to serve over 40,000 residents (Health and Physical Activity, 2018). Please see the map below concerning groceries stores accessible to Jackson County residents.



# CHAPTER 7- HEALTH RESOURCES

## Health Resources

### Process

The CHA Facilitator reviewed health resources in the 2-1-1 datasets provided by WNC Healthy Impact. The community tool, 2-1-1, continues to serve as the updated resource list accessible via phone and web 24/7 for Jackson County and Western North Carolina residents. The resources listed with 2-1-1 are updated and are available in place of the CHA Work Team or others compiling a printed directory. The United Way of North Carolina has taken on the task of regularly updating the 2-1-1 resource per county. Local groups also annually review the resources listed and submit updates as needed. These resources available to our residents can be found by visiting [www.nc211.org](http://www.nc211.org) or by simply dialing 2-1-1 or calling 1-888-892-1162.

### Findings

In general, there are strong support services in the community for the aging population, even in the isolated Cashiers community, due to the Cashiers Senior Center. This is important, as Cashiers is known as a summer retreat for retirees. The Department on Aging works to identify needs of the older adult population and ensure they receive the support and guidance to assist them in accessing the resources. The Department on Aging is a crucial resource for the aging population. Additional local government resources available to the county include the Jackson County Department of Public Health, Animal Shelter, Department of Social Services, Emergency Management, Parks and Recreation Department, and more. Our community also provides quality resources for the uninsured and underinsured such as the Mountain Area Pro Bono PT Clinic, Blue Ridge Health FQHC, Nurse Family Partnership, and more.

Access to free, outdoor recreational opportunities was stated multiple times during the key informant interviews as a valuable resource in Jackson County. Even when residents do not have the funds to access a private gym, the Greenway Trail and other free outdoor recreational opportunities provide residents with the setting they need to be active (dependent upon weather).

## Resource Gaps

Based on a review of available resources and input from key stakeholders, resource gaps were identified that need to be filled in Jackson County. Below is a compiled list:

- **Affordable housing:** Few affordable housing options are available. Available housing is often unsafe, inadequate and still too expensive.
- **Communication:** Many agree that communication is key when helping others access resources. There may be resources available but communication between agencies is lacking.
- **Healthy foods:** Healthy food options are lacking in the form of grocery stores, farmers markets, etc. Fast food is readily available and cheap.

- **Homeless shelter:** A long term plan for homeless shelter is a great need as the homeless population has increased significantly.
- **Internet access:** Limited internet access is a major problem for our area and leaves many rural residents out.
- **Mental health services:** Services such as housing and treatment facilities would help those suffering from mental health and substance use issues.
- **Spanish speaking providers:** Many providers use a language line which prohibits a positive medical experience.
- **Access to health care (including subspecialty care):** Residents have difficulty accessing healthcare due to a lack of providers, financial constraints, and more. Many residents travel out of county for subspecialty care such as neurology, endocrinology, urology, etc. Many residents do not have the means to travel and instead must go without getting the care they need.

# CHAPTER 8 – IDENTIFICATION OF HEALTH PRIORITIES

## Health Priority Identification

### Process

Beginning in January 2018, the CHA Facilitator invited community stakeholders and members through emails, word of mouth, and a news release to join the CHA Work Team. Once the CHA Work Team was established, the group met in March 2018 for an overview and background of the Healthy Carolinians of Jackson County, the Community Health Assessment process and product, and how it all ties together. The CHA Work Team reviewed a list of key stakeholders in the community who would be surveyed and also gave valuable input on additional stakeholders who should be included. This was important to provide a well-rounded group of individuals to comment on the health of our community. The CHA Work Team was given a timeline of all CHA activities for the remainder of the year.

In August 2018, the CHA Work Team reconvened to review data that had been gathered throughout the year. The CHA Facilitator presented secondary data through sources such as the NC State Center for Health Statistics, as well as primary data from the WNC Healthy Impact Online Key Informant Interviews and Telephone Surveys. The CHA Work Team spent time understanding the data and uncovering what issues were affecting the most people in our community. 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

The CHA Work Team then voted on identified issues and narrowed them to five to share with the community: obesity/physical activity/nutrition, substance abuse, mental health, housing, and food insecurity.

In October 2018, community members and stakeholders had two opportunities to vote on what they identified as top priorities. During a multi-site flu clinic in Cashiers, attendees were asked to vote on 2 of the 5 identified priorities. On the 25<sup>th</sup> of October, the Healthy Carolinians of Jackson County partnership hosted their annual meeting, which focused on health priority identification. The CHA and CHNA Facilitators partnered together to facilitate the meeting. An overview of the Healthy Carolinians of Jackson County and the CHA were presented, as well as key data for the 5 identified priorities. The CHNA Facilitator lead the participants through a scoring activity where they scored not only the top issues, but also the data they gleaned as most important within each priority itself. 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. At the conclusion of the scoring, participants voted on their top 2 priorities.

This process, often called health issue prioritization, is an opportunity for various local stakeholders, such as public health, social services, higher education, and hospital representatives, community leaders, and more to agree on which health issues and results we can all contribute to. This is important because it increases the likelihood that we'll make a difference in the lives of people in our community.

## **Priority Health Issue Identification**

### **Process**

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

- Criteria 1 – How important or relevant is this issue?
  - Size & severity of the problem
  - Urgency to solve the problem
  - Focus on equity
  - Linked to other important issues
  
- Criteria 2 – What will we get out of addressing this issue or how impactful is it?
  - Availability of solutions/proven strategies
  - Builds on or enhances current work
  - Significant consequences of not addressing issue now
  
- Criteria 3 – 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
  - Ethical
  - Can identify short-term, easy wins

Participants used a modified Hanlon method to rate the priorities using the criteria listed above. Then dot-voting and techniques were used to narrow to the top 2 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:

- Obesity/Physical Activity/Nutrition – Healthy eating and physical activity originally emerged as health priorities during the 2011 Community Health Assessment. While

much community effort has occurred to combat these issues, there is still much to be done. Jackson County still has high numbers of residents who are practicing unhealthy eating habits and live sedentary lifestyles. In addition, overweight/obesity rates are climbing. During the prioritization process, many community members voted for the following identified health issues:

- Obesity
- Physical activity
- Childhood obesity, ages 5-11

Additionally, Food Insecurity received many votes during the process of identifying priorities. The CHA Steering Committee opted to combine this health issue in with obesity/physical activity/nutrition because of the current work with the Jackson County Farmers Market, Cullowhee Community Garden, and other food relief agencies.

- Substance Abuse Prevention – Substance abuse originally emerged as a health priority during the 2011 CHA. Topics identified as particularly concerning during the 2018 CHA process were:
  - Prescription drug misuse
  - Deaths with heroin/fentanyl
  - Youth tobacco use (especially e-cigarettes).

In terms of feasibility, the increase of youth tobacco use with the popularity of e-cigarette products has become a main concern of public school officials and families in Jackson County.

## **PRIORITY ISSUE #1: Obesity/Physical Activity/Nutrition**



*Photo courtesy of Janelle Messer*

Physical Activity and Nutrition has been identified as a priority in Jackson County for many years now, going by a variety of names in the past. Formerly 2 separate action teams, the two merged after the 2015 Community Health Assessment to form one action team working together. Areas of focus for the action team have been increasing the number of adults who participate in 150 minutes or more of physical activity per week, and increasing the number of residents who consume 5 or more servings of fruits/vegetables per day.

According to the latest data, the percentage of Jackson County residents meeting the physical activity recommendations is 21.7%. This question was asked differently in 2018 so we cannot compare it to the previous years to know whether we have improved or not. We do know that there has been a decrease in the percentage of residents consuming the recommended amount of fruits/vegetables, from 9.2% in 2015, to 7.3% in 2018. These numbers prove that though we have been working hard, we need to continue to work on obesity prevention and healthy behaviors in our community. The Health Department, Jackson County Department on Aging, Jackson County Parks and Recreation Department, Jackson County Public Schools, Harris Regional Hospital, Western Carolina University, Jackson County Farmers Market, Great Smokies Health Foundation, and Jackson County Department of Social Services are a few of the agencies who have worked diligently to address these needs within the community.

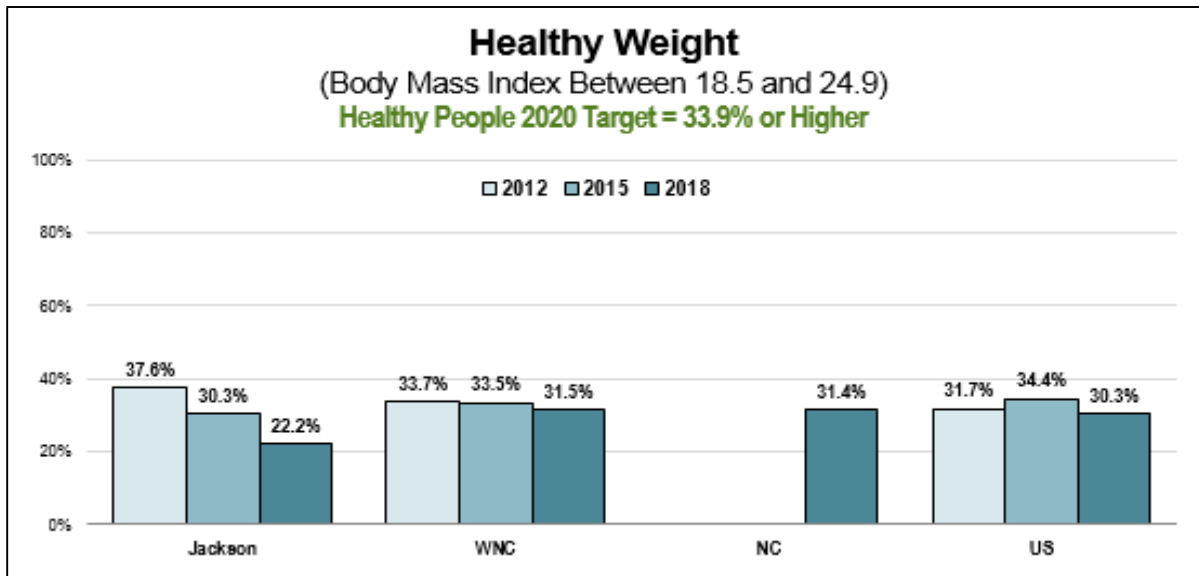
Moving forward, this priority will also include obesity prevention and food insecurity as a subset. Obesity fits in well with fruit/vegetable consumption and physical activity. Food insecurity prevention fits well with the groups identified above. The CHA Work Team and CHA Steering Committee, with input from the community, decided that Obesity/Physical Activity/Nutrition was still a prominent health issue in Jackson County and deserves to be at the forefront of our efforts.

### **What Does the Data Say?**

#### **Health Indicators**

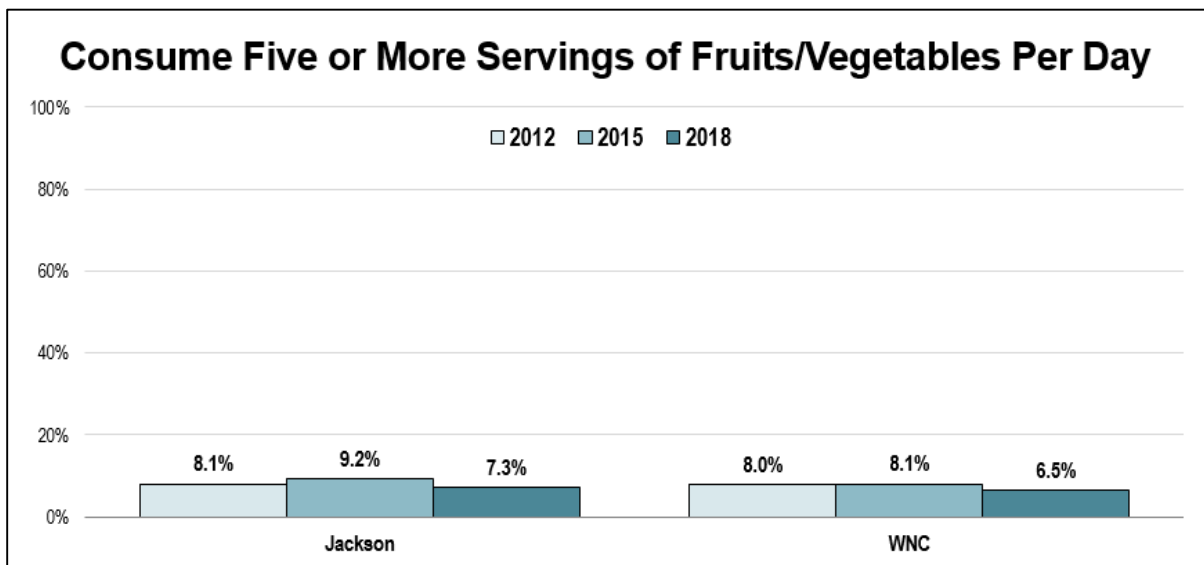
As poor nutrition and physical activity often go hand-in-hand, the outcome of both can be overweight/obesity. The Healthy People 2020 Target for healthy weight (percent of adults with a body mass index between 18.5 and 24.9) is 33.9% or higher. In Jackson County, only 22.2% of residents self-reported a healthy weight. This is a significant decrease from 2012 (37.6%) and 2015 (30.3%). Survey data shows that 77.2% of Jackson County residents are overweight or obese, a number that has increased significantly from 62.5% in 2012 (WNCHN – WNC Healthy Impact Community Health Survey, 2018). Further, 30% of Jackson County children, age 2-18 are

currently overweight or obese, with Jackson County having a higher percentage of obese children compared to WNC and NC (Obesity in Children Ages 2 to 18 by County, 2017).



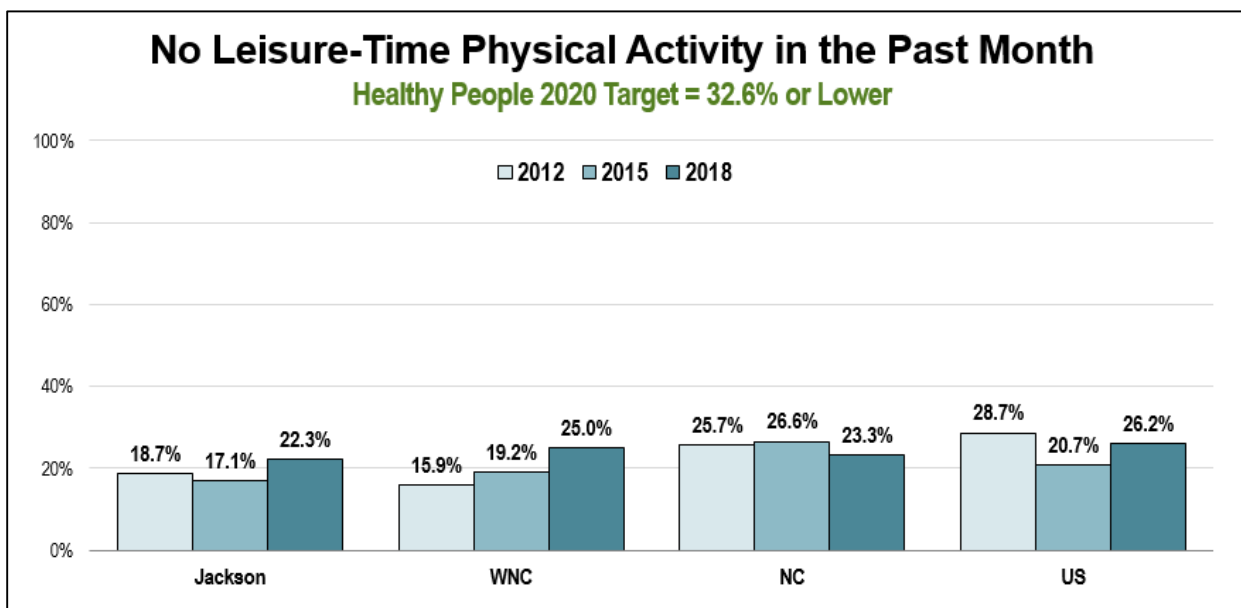
Source: WNCHN – WNC Healthy Impact Community Health Survey

When asked about their fruit and vegetable consumption within the past week, Jackson County residents indicated that they ate significantly less than the recommended 35 servings/week (or 5 servings a day). In fact, only 7.3% of Jackson County residents are meeting the recommended amount of fruit/vegetable consumption. This is a decrease from both 2012 and 2015, despite healthy eating continuing to be priority throughout this time period. The percentage has continued to decline in WNC as well (WNCHN – WNC Healthy Impact Community Health Survey, 2018).



Source: WNCHN – WNC Healthy Impact Community Health Survey

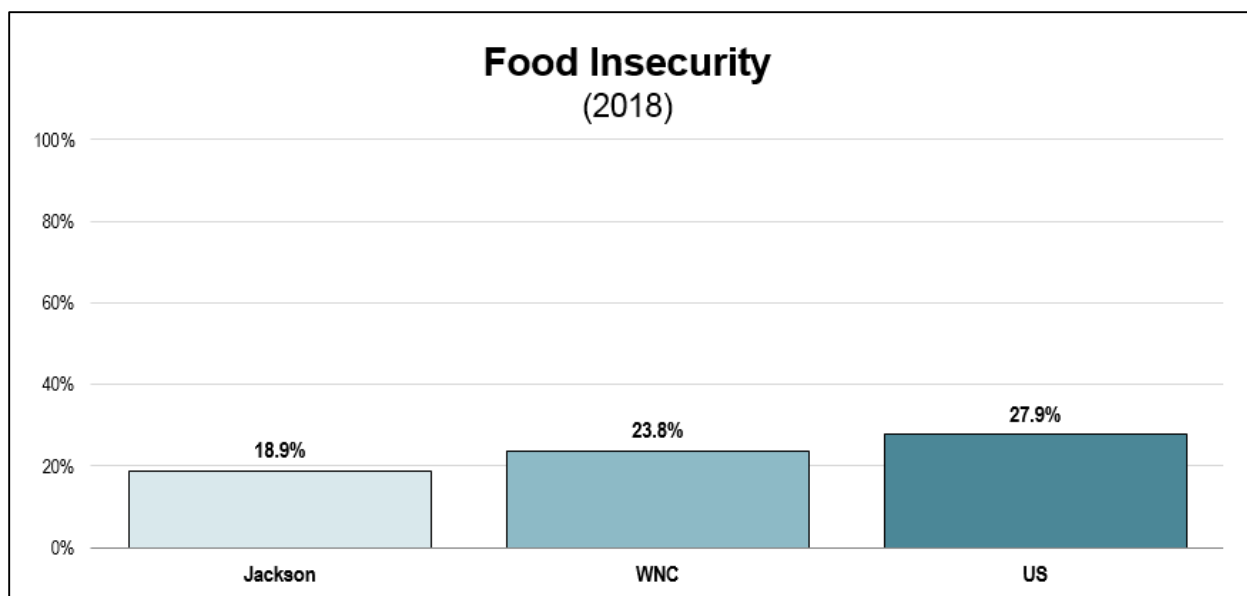
In 2018, survey results showed an increase in the percentage of adults who did not participate in leisure-time physical activity. Less than a quarter of Jackson County residents self-reported that they are meeting the physical activity recommendation of 150 minutes or more of physical activity per week. However, 27.2% are participating in strengthening physical activity. Almost 100% of Jackson County residents felt in 2012 and in 2015 that easier access to activity spaces within the county is important (WNCHN – WNC Healthy Impact Community Health Survey, 2018). This proves that activity spaces are important to residents, and begs the question, if residents had access to more safe places for physical activity, would it change the health of our community? Jackson County does offer its residents safe places to participate in physical activity, but some of the communities are 30 minutes or more away from a park or safe walking space. It is unsafe to walk or recreate on curvy mountain roads with no sidewalks, which presents physical activity challenges for a large portion of our community.



Source: WNCHN – WNC Healthy Impact Community Health Survey

In 2018, almost 19% of Jackson County residents reported that in the past year, they often or sometimes worried about food running out before having money to buy more. This percent of our county is considered to be food insecure. Though Jackson County's percentage is lower than WNC and the US, it still means 1/5 of our community is struggling to provide food for their families.





Source: WNCHN – WNC Healthy Impact Community Health Survey

## What Did the Community Say?

During the key informant surveys, recreational/outdoor activities were ranked #2 in most important characteristics of a healthy community. In addition, “healthy lifestyles” ranked as the #3 most important characteristic. A healthy lifestyle encompasses good nutrition and physical activity. Obesity/physical activity/nutrition was also ranked as the #1 most important health issue to address, as these lifestyle factors strongly contribute to diabetes, heart disease/stroke, and other chronic health issues (WNCHN-Online Key Informant Survey, 2018).

Key informants were very complimentary of the Jackson County Parks and Recreation Department and the low/no cost programs that they offer the community, as well as the walking trails, bike lanes, local parks, nutrition education and walking programs within the public schools, fitness centers, and more. One key informant listed a Healthy Carolinians 9 year initiative as what’s helping our community – the WNC Get Fit Challenge. When asked what is getting in the way of progress on this issue in our community, key informants stated “lack of time for busy families,” and a recurring theme was the fast and cheap access to unhealthy foods and the common belief that healthy foods are more expensive and less accessible. Additionally, the lack of engagement with non-white cultures was also stated and is an area of improvement that should be addressed moving forward (WNCHN-Online Key Informant Survey, 2018).

In relation to food insecurity, Manna Food Bank, The Community Table, and assistance from faith groups were listed as contributing to progress on this issue in our community. A social services provider stated that, “Community gardens, access to SNAP, free/low cost meals at schools, meals available at community food banks and food programs” are making a difference for our residents (WNCHN-Online Key Informant Survey, 2018). Key informants stated that a lack of awareness on the issue and a better distribution system is needed to improve progress. Further, many food insecurity services are stocked with prepackaged, unhealthy foods.

Encouraging donators to provide healthier options could help those accessing the services have more opportunity to partake in better nutrition (WNCHN-Online Key Informant Survey, 2018).

## What is Already Happening?

Many health resources are available in our community, though many more are still needed.

<b>Available Health Resources</b>	
<b>Resource</b>	<b>Lead Agency</b>
Diabetes Prevention Program	Jackson County Department of Public Health
Tuesdays to Thrive	Harris Regional Hospital, Western Carolina University
Worksite Wellness Programs	Jackson County Government, Jackson County Public Schools, Harris Regional Hospital, MountainWise
Power of Produce	Healthy Carolinians of Jackson County, Jackson County Farmers Market, WCU Dietetic Internship Program, Great Smokies Health Foundation
Annual Healthy Living Festival	Healthy Carolinians of Jackson County
Food relief agencies	The Community Table, United Christian Ministries, MANNA Food Bank
Community gardens	Cullowhee Community Garden, Sylva Community Garden
Healthy Snack Masters Competition	School Health Advisory Council
Community Eligibility Program	Jackson County Public Schools
Summer Feed Program	Jackson County Public Schools
Home Delivered Meals	Jackson County Department on Aging
WNC Get Fit Challenge	Healthy Carolinians of Jackson County
Senior Games	Jackson County Parks and Recreation Department
Arthritis Foundation Exercise Program	Jackson County Department on Aging
Healing Yoga	Jackson County Department on Aging
Tai Chi	Jackson County Department on Aging
At-school walking and biking programs	Active Routes to School, JCDPH
Canning & food safety education	Cooperative Extension

<b>Needed Health Resources</b>	
<b>Resource</b>	<b>Potential Lead Agency(ies)</b>
Additional greenways & sidewalks	Public Works, NC DOT, Planning Commission, Jackson County Parks & Recreation Department

Additional recreation centers	Jackson County Parks & Recreation Department
Indoor county-owned pool	Jackson County Parks & Recreation Department
Healthy food options	Planning Commission, Chamber of Commerce
Cooking classes	JCDPH, Cooperative Extension
Nutritious food donations	Food relief agencies
Additional health education for youth	JCDPH, Harris Regional Hospital, Cooperative Extension
Additional health education for parents	JCDPH, Harris Regional Hospital, Cooperative Extension

**What Change Do We Want to See?**

Moving forward, the Healthy Carolinians of Jackson County will work diligently with community partners to make improvements within our county. We will monitor charts that are placed above – including but not limited to percentage of fruit/vegetable consumption, residents meeting the physical activity recommendations, the percent of overweight/obese adults and children, and the percentage of food insecure residents. Our goal is to move the needle in a positive direction for these areas of concern.

## PRIORITY ISSUE #2 – Substance Abuse Prevention



Substance abuse prevention was first identified as a Jackson County priority during the 2011 Community Health Assessment process. An action team was developed at that time and focused on reducing the percentage of 12-19 year olds who reported use of illicit drugs, alcohol, and tobacco within the past 30 days. The action team also adopted the Project Lazarus model for prescription drug use, working it into their action plan to increase knowledge and

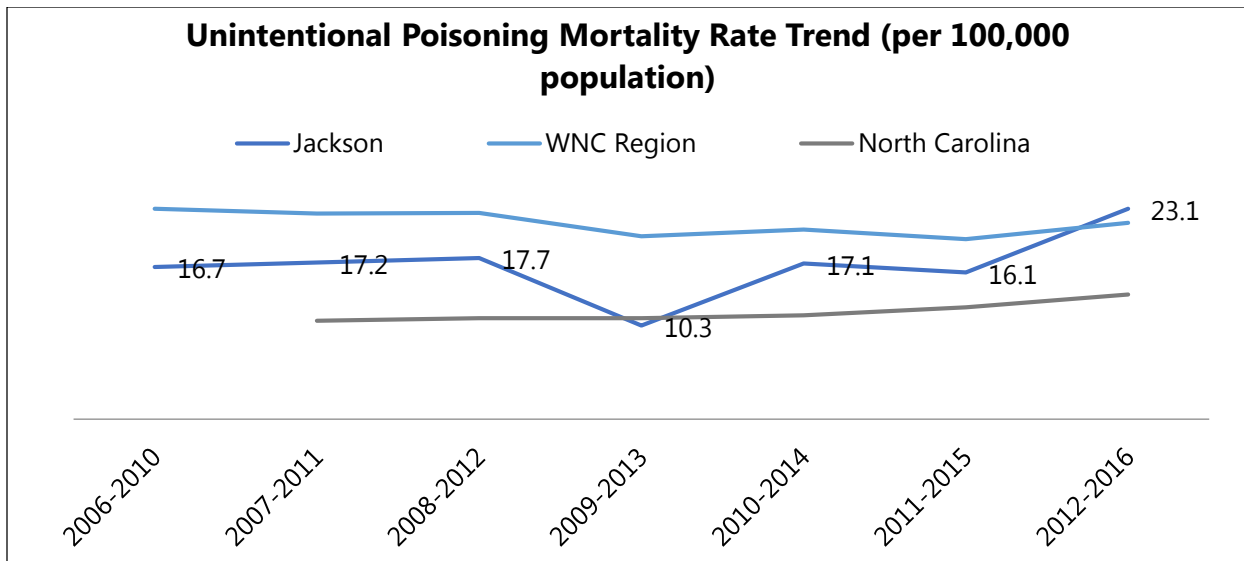
awareness about prescription drug abuse, reduce the presence of unwanted medication in our community, educate the public about naloxone, and reduce prescription drug overdose in Jackson County. The same action team decided to include unintentional injuries (to include overdose, falls, and more) as part of their focus after the 2015 Community Health Assessment data showed unintentional injuries as a leading cause of death in our community. Partnering with the Jackson County Senior Center and Western Carolina University, the action team worked on fall prevention through facilitating the Get Some Balance in Your Life course.

Prescription drug abuse and overdose are large issues to tackle and are problems seen across our region, state, and nation. The action team has worked diligently to combat this issue through messaging campaigns, providing lock boxes to community members, community presentations, medication take back events, obtaining 3 medication drop boxes for the county, and more. We have not reached the desired results for our community in drug prevention or unintentional poisonings, so we will keep working. In 2018, a survey was conducted through the School Health Advisory Council that shed light on youth tobacco and other drug use in Jackson County. From that data and the primary and secondary data gathered during the CHA process, substance abuse prevention is still seen as a top priority. Moving forward, substance abuse prevention will remain at the forefront of our efforts, with a special focus on youth prevention.

### What Do the Numbers Say?

#### **Health Indicators**

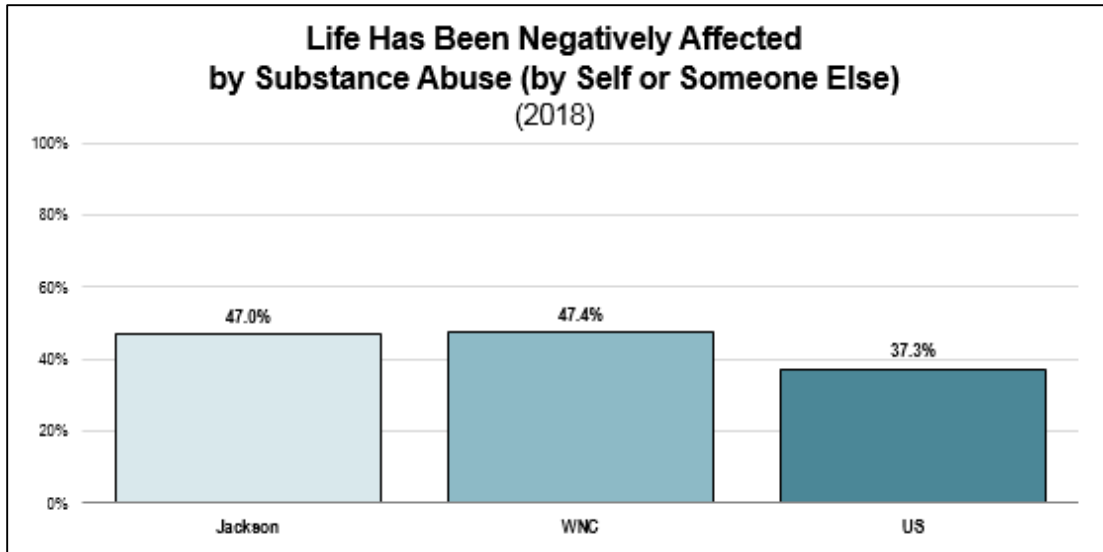
As mentioned above, unintentional poisonings have been a concern in Jackson County. The unintentional poisoning trend in Jackson County has fallen and risen since 2006, while regional and state trends have remained rather stable. For the first time, in the 2012-2016 time period, Jackson County's unintentional poisoning rate rose above the WNC and NC rates (Unintentional Poisoning Mortality Rates per 100,000, 2012-2016, 2018).



Source: NC State Center for Health Statistics

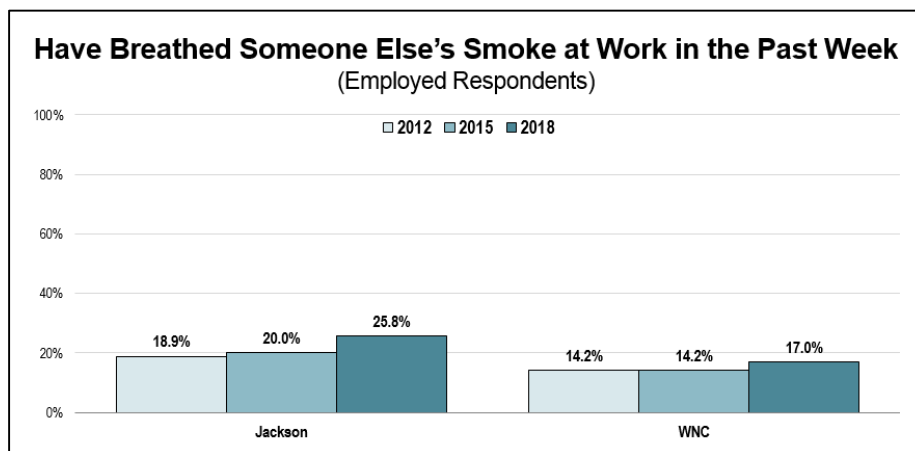
According to the Department of Health and Human Services Opioid Action Plan, there were 8 unintentional opioid related deaths in Jackson County in 2017. This is slightly lower than the WNC average of 10. Additionally, for all opioid deaths, 50% of them included heroin, fentanyl or Fentanyl analogues, which is a powerful synthetic pain reliever “50-100 times more potent than morphine” (Fentanyl, 2019). Fentanyl has become widely known for its danger and has been involved with many overdose deaths in NC and the US. It can also pose a threat to law enforcement and emergency management workers by simply touching or breathing it in. Since the last CHA cycle, Emergency Management Services, Jackson County Sheriff’s Department, Sylva Police Department, and Western Carolina University Police have all been trained to carry and administer the life-saving overdose reversal drug Naloxone. In 2017, EMS administered Naloxone 18 times (Metric Summary Table, 2018). Providing Naloxone overdose reversals has been a controversial topic in our area. Some argue against saving drug users lives, others argue that many of us have been affected by substance use and each person is someone’s child, parent, sibling, aunt, friend, etc. It is important to also remember Naloxone can help save the lives of the elderly or cancer patients who are prescribed high powered pain medication.

In Jackson County, 47% of those surveyed stated that their life had been negatively affected by substance abuse (either their own or someone else’s). This is the same as the WNC region average, but higher than the state (37%). Additionally, 17.5% of Jackson County residents stated that they had used opioids/opiates in the past year with or without a prescription (WNCHN – WNC Healthy Impact Community Health Survey, 2018). This means a fairly substantial portion of our population is using prescription medications. Whether or not they are using them with a doctor’s prescription, this still puts them at risk of misuse or a potential overdose.



Source: WNCHN – WNC Healthy Impact Community Health Survey

Smoking effects every body organ and causes disease and disability. According to the Centers for Disease Control, smoking is the leading cause of preventable death (Fast Facts and Fact Sheets, 2019). Tobacco use is an ongoing problem in Jackson County, and smoking rates continue to be higher than the WNC, NC, and the US averages. In 2018, 22.3% of Jackson County residents reported being a current smoker, a decrease from 26% in 2012. Almost a quarter of our population are current smokers. Also troubling, a quarter of our population stated that they have breathed someone else’s smoke at work in the past week. This number is up from almost 19% in 2012, and the number is higher than WNC (17%) (WNCHN – WNC Healthy Impact Community Health Survey, 2018). Secondhand smoke causes cardiovascular disease and lung cancer in people who have never smoked. Cells become damaged in a way that begins the cancer process even from short bouts of secondhand smoke exposure. “Nonsmokers who are exposed to secondhand smoke at home or at work increase their risk of developing lung cancer by 20-30%” (Health Effects of Secondhand Smoke, 2019).



Source: WNCHN – WNC Healthy Impact Community Health Survey

Youth tobacco use rates had been steadily declining for years. Due to the popularity of electronic cigarettes, youth tobacco use rates have increased in the last few years. There is a common misconception that electronic cigarettes (also known as e-cigarettes or vaping) are a healthier alternative to traditional cigarettes, and that they can even help cigarette smokers quit. Research has shown neither to be true. In fact, most individuals who use electronic cigarette products become “dual users” meaning they also smoke cigarettes or use other tobacco products (Heart Attack Risk Doubles for Daily E-Cigarette Users, 2019).

Jackson County Public School students in grades 6<sup>th</sup>-12<sup>th</sup> were anonymously surveyed in March 2018 regarding their substance use, particularly alcohol, tobacco, and marijuana. When asked about their cigarette use in the past year, 15% of high school students and 4% of middle school students stated they had smoked all or part of a cigarette (Students, 2018). Additionally, across North Carolina in 2017, 12.1% of students have reported that they currently smoke cigarettes. These numbers may seem relatively low, but the Youth Risk Behavior Survey of North Carolina shows that more teens are getting engaging in tobacco use through electronic cigarettes. In fact, 44% of North Carolina youth in grades 9<sup>th</sup>-12<sup>th</sup> grade reported using electronic cigarettes. This means close to half of North Carolina high school students are trying tobacco in the form of the new electronic cigarettes (North Carolina 2017 Results, 2019). Unfortunately, this number has risen and is expected to keep rising. Electronic cigarettes have been heavily marketed towards youth through the fruity and child-friendly flavorings and the fact that the products can be very discreet. Some of the products resemble a flash drive and are easy to get past even the most diligent parents. In addition, the electronic cigarette products often provide very little smoke or vapor that comes from them, making them easy to use in school or at home without being noticed. As stated above, electronic cigarettes have also been marketed as a safe alternative. Parents and teens are both misled by marketing ploys into believing that electronic cigarettes are not addictive or unsafe. This is simply not true. In addition to the risks of tobacco and nicotine addiction and harmful chemicals, electronic cigarette products have been known to randomly combust causing painful and dangerous burns to the user (Burns resulting from spontaneous combustion of electronic cigarettes: a case series, 2019).

## **What Did the Community Say?**

When asked to rank which mental health conditions were most critical to address in our community, key informants chose substance abuse. When asked to elaborate further, some were in agreement that recognition at the state and federal level that substance abuse is a mental health issue starting to trickle down into the local community (WNCHN – Online Key Informant Survey). There is still a strong stigma attached to substance abuse in our county, where many have a harsh approach towards those who are using and don't think they need or deserve help. On the other end, we are seeing professionals in the community, especially those working with children, taking the substance use issue very seriously. They are seeing the effects of children who grow up in homes with parents misusing substances and the detrimental side effects this epidemic is having on some of our most vulnerable.

When asked to identify what is contributing towards progress on substance abuse prevention, key informants overwhelmingly responded with awareness and education on the issue,

especially community leaders hosting the opioid forum in 2018. Substance abuse, particularly prescription drug abuse, is being talked about at the state and national level which is helping our local community see the severity of the issue. Others stated work groups dedicated to this issue and the services available through Meridian Behavioral Health as what is helping with prevention efforts (WNCHN – Online Key Informant Survey).

Key informants gave insight into what they believe is hindering progress on substance abuse prevention in Jackson County. Many stated that a lack of sustainable funding to combat the issue is a major problem, as well as the lack of resources, planning, and “physical infrastructure that can support long-term recovery” (WNCHN – Online Key Informant Survey). The need for more affordable rehabilitation centers and mental health services to help with every level of addiction are crucial as well, and something our region as a whole is missing. Additionally, once someone has received treatment and is in recovery, they have a hard time finding jobs and housing with a history of substance abuse and/or a criminal record. The stigma of substance abuse is still stacked against them (WNCHN – Online Key Informant Survey).

In relation to tobacco use, key informants shared that tobacco dependency is still a major issue for a large portion of our residents, and that vaping is contributing to the problem. Tobacco use, particularly smoking, is contributing to chronic disease and low quality of life. There are few community resources available other than the Quit Line NC and the Tobacco Treatment Specialist at the Health Department. Anti-smoking campaigns and recognizing the danger of all tobacco products are seen as what will continue to make a difference in Jackson County (WNCHN – Online Key Informant Survey).

## What is Already Happening?

Available Resources	
Resource	Lead Agency
Safe Kids Jackson County	Jackson County Department of Public Health
Medication Take Back Events	Healthy Carolinians of Jackson County
Permanent Drop Box	Jackson County Sheriff’s Office in Sylva & Cashiers, Western Carolina University
Behavioral Health Services	Meridian, Appalachian Community Services
Catch My Breathe Program	Jackson County Public Schools
Tobacco Prevention Efforts	MountainWise
Substance Abuse Prevention Efforts	Mountain Projects
Free Tobacco Cessation	Quit Line NC, Jackson County Department of Public Health
Prevention Awareness and Education	Healthy Carolinians of Jackson County, School Health Advisory Council
Managed Care Organization	Vaya Health
Student Support Specialists	Jackson County Public Schools



<b>Needed Resources</b>	
<b>Resource</b>	<b>Potential Lead Agency(ies)</b>
More local in-patient treatment centers and mental health services	Hospital, Vaya Health
Increase community awareness about available substance abuse/mental health resources	Vaya Health, JCDPH

**What Change Do We Want to See?**

The Healthy Carolinians of Jackson County will continue its work regarding substance abuse prevention in our community. We will focus heavily on prevention in our youth population and work towards lowering the percentages of teens who use tobacco products (including electronic cigarettes). We will continue to provide education and awareness around the substance abuse issue in our county, region, and state through media messaging, news release, and promoting harm reduction. Our goal is see our population move towards recovery, healing, and the percentage of substance use to decline.

## CHAPTER 9 - NEXT STEPS

### Collaborative Planning

Collaborative planning with Harris Regional Hospital, the Healthy Carolinians Steering Committee 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.

### Sharing Findings

The final Community Health Assessment will be shared specifically with the following stakeholders:

- CHA Steering Committee
- CHA Work Team
- Jackson County Governing Board
- Jackson County Board of Commissioners
- Key stakeholders

### Where to Access this Report

The Jackson County Department of Public Health will make the 2018 Community Health Assessment available online to the public via the Health Department's website at:

<http://health.jacksonnc.org/community-health-data> Hard copies will be placed at the following locations throughout the community:

- Jackson County Department of Public Health
- Jackson County Public Library

Additionally, data from the CHA will be shared throughout the community via presentations at the following meetings

- Jackson County Governing Board meeting
- Healthy Carolinians Steering Committee meeting
- Jackson County School Health Advisory Council (SHAC) meeting
- Other meetings as requested

### For More Information and to Get Involved

#### **Please contact:**

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Sylva, NC 28779  
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# **APPENDICES**

## **Appendix A – Data Collection Methods & Limitations**

# 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) Have Taken a Prescription Drug in the Past Month That Was Not Prescribed
- 2) Frequency of Worry or Stress Over Having Enough Money to Pay Rent or Mortgage in the Past Year
- 3) Experienced Ongoing Problems with Water Leaks, Rodents, Insects, Mold, or Other Housing Issues in the Past Year

### ***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 Jackson County Sample**

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

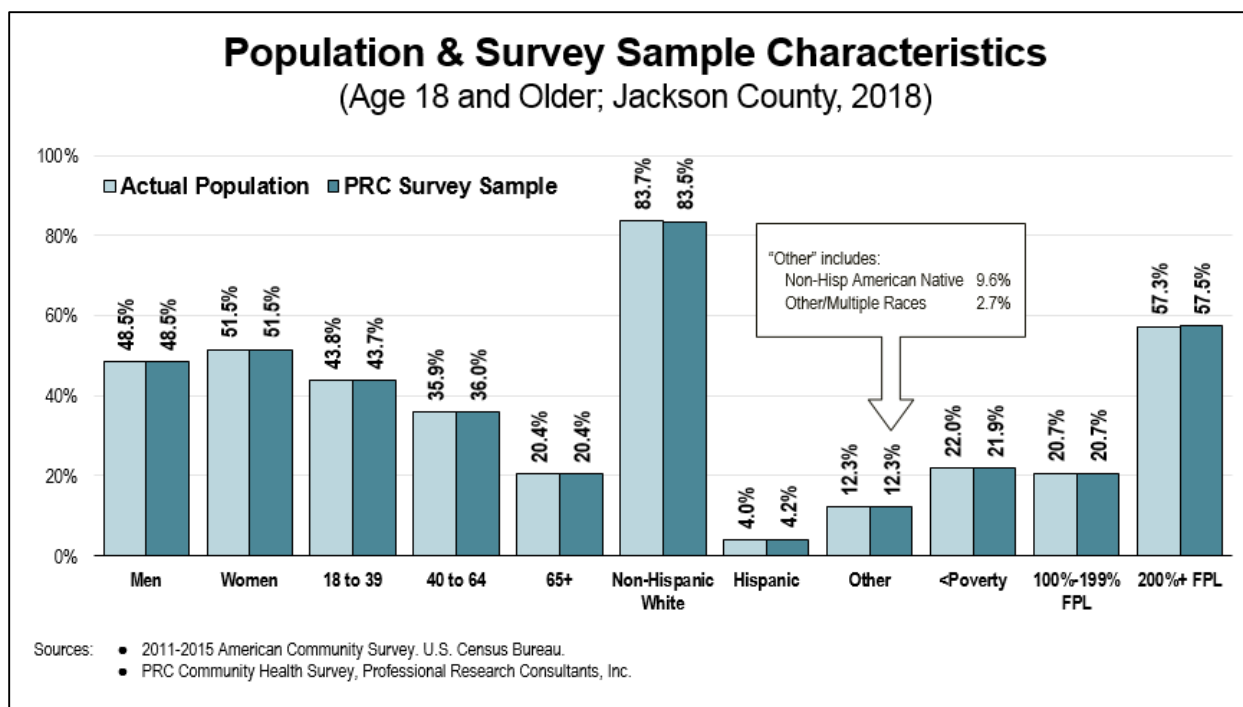
**Sampling Error:** For our county-level findings, the maximum error rate at the 95% confidence level is +6.9%.

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

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% ( $10\% \pm 4.2\%$ ) 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% ( $50\% \pm 6.9\%$ ) 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.



## **Benchmark Data**

### ***North Carolina Risk Factor Data***

Statewide risk factor data are provided where available as an additional benchmark against which to compare local survey findings; these data are reported in the most recent BRFSS (Behavioral Risk Factor Surveillance System) Prevalence and Trend Data published by the Centers for Disease Control and Prevention and the US Department of Health & Human Services.

### ***Nationwide Risk Factor Data***

Nationwide risk factor data, which are also provided in comparison charts where available, are taken from the 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, 17 community stakeholders took part in the Online Key Informant Survey for our county, as outlined below:

<b>Local Online Key Informant Survey Participation</b>		
<b>Key Informant Type</b>	<b>Number Invited</b>	<b>Number Participating</b>
Community Leader	21	7
Other Health Provider	4	3
Physician	5	0
Public Health Representative	5	3
Social Services Provider	6	4

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.

**Local Survey Data or Listening Sessions**

The Jackson County School Health Advisory Council (SHAC) surveyed middle and high school students at Jackson County Public Schools in grades 6<sup>th</sup>-12<sup>th</sup> on substance use – their own and their perception of their peers use. The survey was based off of the Transylvania County CARE Coalition Drug Free Communities grant surveys conducted annually. SHAC presented the surveys to the community in February-March 2018, allowing parents and others to review the surveys and make comments or suggestions. Students completed the surveys electronically mid-March. All surveys were anonymous.

**Data Definitions**

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

**Error**

First, readers should note that there is some error associated with every health data source. Surveillance systems for communicable diseases and cancer diagnoses, for instance, rely on reports submitted by health care facilities across the state and are likely to miss a small number

of cases, and mortality statistics are dependent on the primary cause of death listed on death certificates without consideration of co-occurring conditions.

### ***Age-adjusting***

Secondly, since much of the information included in this report relies on mortality data, it is important to recognize that many factors can affect the risk of death, including race, gender, occupation, education and income. The most significant factor is age, because an individual's risk of death inevitably increases with age. As a population ages, its collective risk of death increases; therefore, an older population will automatically have a higher overall death rate just because of its age distribution. At any one time some communities have higher proportions of "young" people, and other communities have a higher proportion of "old" people. In order to compare mortality data from one community with the same kind of data from another, it is necessary first to control for differences in the age composition of the communities being compared. This is accomplished by age-adjusting the data.

Age-adjustment is a statistical manipulation usually performed by the professionals responsible for collecting and cataloging health data, such as the staff of the NC State Center for Health Statistics (NC SCHS). It is not necessary to understand the nuances of age-adjustment to use this report. Suffice it to know that age-adjusted data are preferred for comparing most health data from one population or community to another and have been used in this report whenever available.

### ***Rates***

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

While rates help make data comparable, it should be noted that small numbers of events tend to yield rates that are highly unstable, since a small change in the raw count may translate to a large change in rate. To overcome rate instability, another convention typically used in the presentation of health statistics is data aggregation, which involves combining like data gathered over a multi-year period, usually three or five years. The practice of presenting data that are aggregated avoids the instability typically associated with using highly variable year-by-year data, especially for measures consisting of relatively few cases or events. The calculation is performed by dividing the sum number of cases or deaths in a population due to a particular cause over a period of years by the sum of the population size for each of the years in the same period.

Health data for multiple years or multiple aggregate periods is included in this report wherever possible. Sometimes, however, even aggregating data is not sufficient, so the NC SCHS recommends that rates based on fewer than 20 events—whether covering an aggregate period



or not—be considered unstable. In fact, in some of its data sets the NC SCHS no longer calculates rates based on fewer than 20 events. To be sure that unstable data do not become the basis for local decision-making, this report will highlight and discuss primarily rates based on 20 or more events in a five-year aggregate period, or 10 or more events in a single year. Where exceptions occur, the text will highlight the potential instability of the rate being discussed.

### ***Regional arithmetic mean***

Fourthly, sometimes in order to develop a representative regional composite figure from 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.