Avery County Community Health Assessment

2021

TOE RIVER HEALTH DISTRICT

Avery · Mitchell · Yancey County Health Departments

Collaboration

This document was developed by Toe River Health District in partnership with community leaders, public health agencies, businesses, the medical community, school systems, and local faith-based organizations and churches 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:

Name	Agency	Role/ Contribution	Duration of Participation	Agency Website
Jessica Farley	Toe River Health District	Leader	Yearly	www.toeriverhealth.org
Deb Gragg	Avery County Health District	Participant	Yearly	www.toeriverhealth.org
Tiffany Moon	Western Youth Network	Participant	Yearly	https://www.westernyouthnetwork.org
Madison Zaidel	Appalachian Regional Healthcare System	Participant	Yearly	https://apprhs.org
Randy Fehdrau	Positive Parenting	Participant	Yearly	https://apprhs.org
Pam Snyder	Headstart	Participant	Yearly	n/a
Alice Salthouse	High Country Community Health Center	Participant	Yearly	https://www.highcountrycommunityhealth.com

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Community Results Statement

Our mission is to partner with local agencies to not only identify health needs of our community, but to also explore and develop possible solutions to address health concerns in order to work toward improving health for all residents.

Leadership for the Community Health Assessment Process

The Community Health Assessment team is comprised of many participants representing area agencies in Avery County, North Carolina. The purpose of this Community Health Assessment is to learn about the health status and quality of life concerns of Avery County residents, collaborate with citizens by soliciting input from the community, and to provide an overview of resources that exist for handling those concerns. This document is the result of collaboration between Toe River Health District, WNC Healthy Impact, and the Healthy Carolinians of Avery County Partnership.

Partnerships

A health department-led comprehensive Community Health Assessment (CHA) provides community insight into the health status of the county. Using surveys, focus groups, interviews, community members, local government and business leaders, and health professionals came together to identify and prioritize health issues. Participating in the assessment process puts the county in a position to take the next steps in developing policy, environment, and system changes that support their concerns. Currently in Avery County there is a coalition to bring together all the organizations and individuals that are committed to improving health in the county. This group consists of motivated individuals who are advocates on behalf of a broad range of community members and can represent appropriately the concerns of various populations within the county. The limited resources available in the county demonstrates a need for a coalition who will take responsibility and provide leadership for promoting and supporting policy, systems and environmental change that support healthy eating, and increase physical activity and prevent tobacco use throughout the county to combat most chronic disease conditions.

Membership of Healthy Carolinians of Avery County Partnership

Name	Agency & Address	Phone	Email
Jessica Farley, Health Promotion Supervisor	Avery County Health Dept. 545 Schultz Circle P.O. Box 345 Newland, NC 28657	828-733-6031	Jessica.farley@ toeriverhealth.org
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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 stakeholders working together to improve health and healthcare in western North Carolina. Learn more at www.WNCHN.org.

Theoretical Framework/Model

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

Collaborative Process Summary

Avery County's collaborative process is supported on a regional level by WNC Healthy Impact (WNCHI). Locally, our process is a community-wide and multi-faceted approach to completing the community health assessment and giving this information to the community.

The collaborative process includes input from the community as an important element of the community health assessment process. Our county included community input and engagement: (1) Through partnerships on conducting the health assessment process; (2) Through primary data collection efforts; (3) In the identification and prioritization of health issues. Community engagement is an ongoing focus for our CHA Leadership Team as we move forward to the

collaborative action planning phase of the community health improvement process. Partners and stakeholders with current efforts or interest related to priority health issues will continue to be engaged. We also plan to work together with our partners to help assure programs and strategies in our community are developed and implemented with community members and partners.

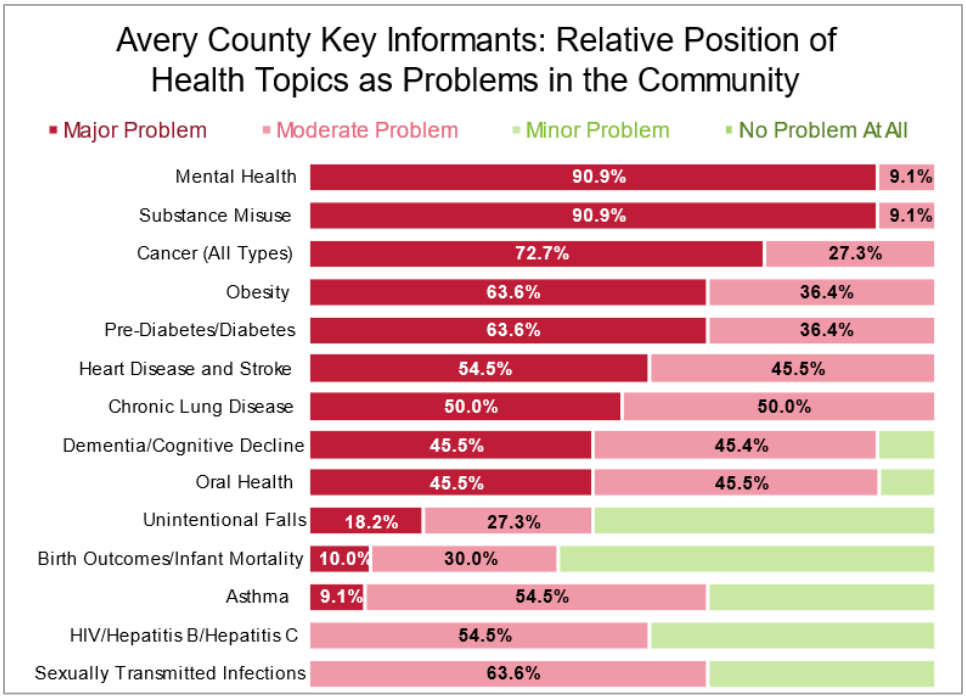
Phase 1 of the collaborative process began in January 2021 with the collection of community health data. For more details on this process see Chapter 1 – Community Health Assessment Process.

Key Findings

A community wide 75-questionnaire was conducted in the spring and summer of 2021 to give residents an opportunity to express concerns and opinions about the quality of life in Avery County. This included questions about the quality of life, economy, education, health, housing, physical activity, social issues, transportation, and COVID. Surveys were conducted by telephone by a trained interviewer and efforts were made to reach a representative sample of the population. Self-administered surveys were also available online. A total of 225 Avery County surveys were analyzed: 200 via telephone interview and 25 via the publicly available weblink.

Some of the major findings that the Healthy Carolinians of Avery County discussed in the prioritization process included the large proportion of respondents whose life has been negatively influenced by substance abuse. Approximately 27% of respondents were classified as excessive drinkers and 12% reported using opioids in the past year, with or without a prescription. Twenty percent of respondents reported more than seven days of poor mental health in the past month and almost 20% did not get needed mental health care or counseling in the past year. Sixty-five percent of Avery County respondents had calculated BMIs in the overweight or obese range and less than a quarter of respondents got the recommended amount of physical and strengthening activity in an average week. Twenty percent of respondents reported current smoking, 12% used smokeless tobacco and 7% used vape products.

In additional to secondary data and survey collection, eleven (11) community stakeholders participated in an online key informant survey. Individuals were asked to consider specific health issues, provide comments about social determinants of health, and evaluate the strengths and opportunities of the Avery County community. The graphic below displays a summary of their ranking of health topics in the community.



During monthly meetings, standards for the Community Health Assessment Process and Accreditation were discussed and reviewed for publication in the 2021 Community Health Assessment. Each member reviewed and approved of the Community Health Assessment Survey and Community Resource Directory included in the assessment. After the analysis was completed, qualitative and quantitative data findings were presented to the CHA team. The team reviewed the data and developed the top ten major health issues based upon statistical data and community survey results. Based on findings from the community survey combined with secondary health data, in November 2021, Healthy Carolinians of Avery County members identified chief health concerns for the county.

1. Substance Abuse
2. Obesity Issues
3. Mental Health
4. Childhood Trauma
5. Food Insecurity
6. Poverty Issues
7. Housing Expenses
8. Language Barriers
9. Stigma
10. Effects of COVID-19

Health Priorities

In November 2021, Healthy Carolinians of Avery County along with the CHA Team members participated in a prioritization activity to determine the three leading health concerns to be

addressed during this cycle. The worksheet asked that each of the ten concerns be ranked, to find the top three concerns for future action. The results from the prioritization process were reviewed and discussed at the meeting. Results of these worksheets were calculated to come up with the top three priorities, which are as follows:

1. **Mental Health**
2. **Substance Abuse**
3. **Food and Nutrition**

Next Steps

The 2021 CHA will be disseminated in a variety of ways. To begin, the document will be made available online at http://www.toeriverhealth.org. Hard copies will also be available at the Health Department, local library, and printed upon request. The CHA Facilitator will present the CHA data during a Board of Health Meeting, Healthy Carolinians of Avery County steering committee meeting, Avery County Health Department staff meeting, and upon request.

Further steps will be taken including the development of a community health improvement plan based on the findings from the CHA. The CHA Facilitator will convene community members and partners interested in moving forward on the selected health priorities. Action teams will emerge from the selected health priorities and the teams will begin brainstorming evidence-based strategies. While much work has already been done to improve the health of our community's residents, more work is left to do to ensure that Avery County is the healthiest place to live, learn, work, and play.

Collaborative action planning with hospitals and other community partners will result in the creation of a community-wide plan that outlines what will be aligned, supported and/or implemented to address the priority health issues identified through this assessment process. A key step in action plans will be to determine what is currently going on regarding the top health concerns, and what we would like to see going on regarding these health concerns.

The health partnership will create subcommittees for each health concern and these committees will work on creating collaborative action planning and implementation efforts. Upcoming meetings will be scheduled, and partners will be notified. We will conduct a root cause analyzes and identify possible evidence-based strategies to tackle the health concerns during the action planning process.

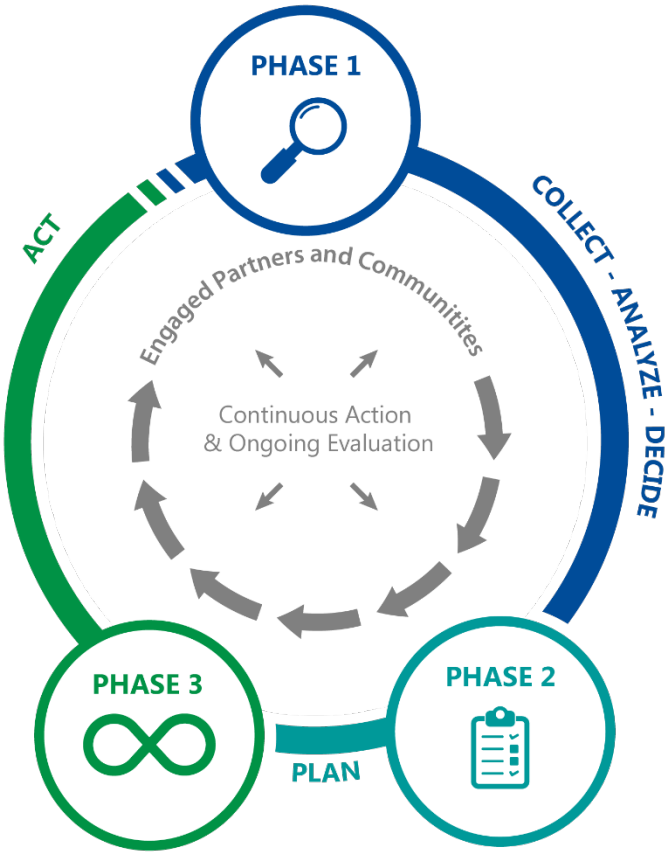
While much work has already been done to improve the health of our community's residents, more work is left to do to ensure that Avery County is the healthiest place to live, learn, work, and play.

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 CHA results in a public report which describes the health indicators, status of the community, recent changes, and necessary changes to reach a community's desired health-related results.

Phases of the Community Health Improvement Process:



Definition of Community

Community is defined as "county" for the purposes of the North Carolina Community Health Assessment Process. Avery County is included in Charles A. Cannon Jr. Memorial Hospital's community for the purposes of community health improvement, and as such they were key partners in this local level assessment.

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 regional core set of data, which includes 18-counties in the western portion of North Carolina (Avery, Buncombe, Burke, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Rutherford, Polk, Swain, Transylvania, and Yancey. The 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 the CHA 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 eighteen county WNC region as "peer"
- WNC Healthy Impact Community Health Survey (cell phone, landline and internet-based survey) of a random sample of adults in the county
- Online key informant survey

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

Health Resources Inventory

An inventory of available resources of our community was also conducted through reviewing a subset of existing resources currently listed in the 2-1-1 database for our county as well as working with partners to fill in additional information. Where gaps were identified, we partnered with 2-1-1 to fill in or update this information when applicable. See **Chapter 6** 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 through:

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

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

ensure that programs and strategies in our community are developed and implemented with community members and partners.

At-Risk & Vulnerable Populations

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

The at-risk and vulnerable populations of focus for our process and product include:

- Youth in the community
- Poverty stricken community members and their families
- Elderly in the community
- Minority groups in the community
- Physically/Mentally handicapped in the community

If any relevant at-risk groups are not included in our process or product, it is only because they have not been brought to our attention up to this point. Toe River Health District wishes to help every vulnerable population in the communities we serve. We look to the area frequently to assure that we are reaching every disadvantaged group that exists in our community. Toe River Health District also realizes that reaching everyone in the community is a hard task, but we are always willing to reach more individuals that need help once we learn that they are in our county.

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.

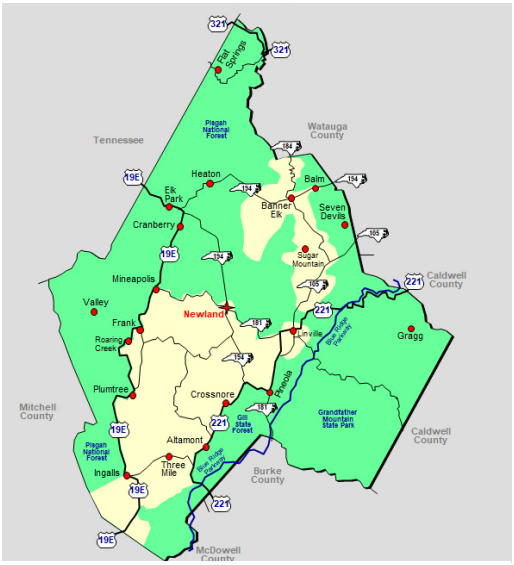
The **underserved** are community members who do not access health care either because there is a lack of services or providers available or because of limitations of income, literacy, or understanding on how to access services. Those **at-risk** are community members of a group who are likely to, or have the potential to, get a specified health condition. Examples of at-risk populations in Avery County include residents who are low income, minorities, who are un- or under-insured, who smoke, who abuse substances, are obese/overweight, who are sedentary, do not eat the recommended servings of fruits and vegetables, etc. The **vulnerable** are community members that may be more susceptible than the general population to risk factors that lead to poor health outcomes. Examples of vulnerable populations in Avery County include residents living below poverty level, residents using WIC/FNS services, older adults, etc.

Chapter 2 – Avery County

Location, Geography, and History of Avery County

Avery County is located in the High County region of Western North Carolina, bordered by Tennessee and Mitchell, McDowell, Burke, Caldwell, and Watauga Counties. It's population of 17,806 is spread out across a land area of 247 square miles.

Approximately half of Avery County lies within the Pisgah National Forest and the county's mountainous terrain is a primary feature of the significant local tourism industry. Grandfather Mountain and Linville Caverns draw thousands of visitors a year, while Beech Mountain and Sugar Mountain are popular with skiers. Grandfather Mountain is the highest peak in the Blue Ridge Mountains at 5,964 feet. The Linn Cove Viaduct, a lengthy curved bridge near Grandfather Mountain, is marvel of engineering and a common sight in photos of the NC mountains. Popular annual attractions include the Grandfather Mountain Highland Games & Gathering of Scottish Clans, Banner Elk Art Festival, and the Beech Mountain Storytelling and Crafts Festival.



Source: www.carolana.com

Banner Elk is home to Lees-McRae College, a small private college established in 1900. Crossnore, Elk Park, and Linville are other notable communities in Avery County. The county seat of Newland lies at an elevation of 3,589 feet, making it the highest county seat in the eastern United States.

While tourism is an important local industry, Avery County also produces lumber, tobacco, potatoes, beef cattle, and Fraser fir Christmas trees. Mining in the county produces kaolin, mica, iron and feldspar (NCPedia, 2021).

Avery County was the 100th county in the state to be created, in 1911, and is named after Colonel Waightstill Avery, an officer in the Revolutionary War and the first Attorney General of North Carolina. Before German, Scotch-Irish, and British settlers moved to the area, the territory that became Avery County was home to the Cherokee Indians. Newland was named after William Calhoun Newland, Lieutenant Governor of NC at the time of the county's formation. (NC History Project, 2021).

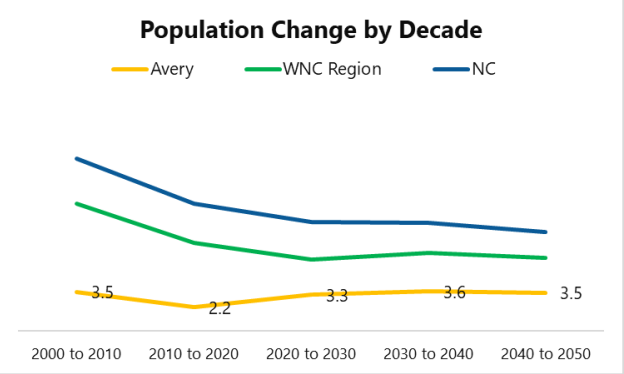
Population

The 2020 Decennial Census counted 17,806 residents of Avery County, higher than the 2019 American Community Survey (ACS) population estimate of 17,506. Unlike most locations across the WNC Region, Avery County is home to a higher proportion of males than females.

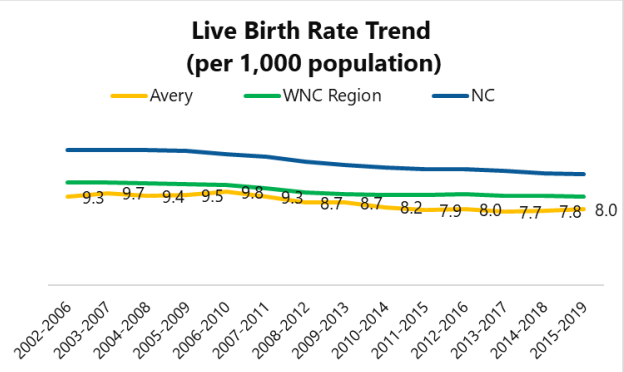
Population Distribution (2019)	Total Population	% Male	% Female	Median Age
Avery County	17,506	54.9	45.1	45.2
WNC Region	900,182	48.7	51.3	46.5
North Carolina	10,264,876	48.7	51.3	38.7

Population Change

According to estimates from the NC Office of State Budget and Management, Avery County is projected to see a much lower rate of population growth compared to the WNC Region or NC between 2020 and 2050. While the population is expected to grow at a slow rate in the coming decades, by 2050 the county population could approach 20,123.



The birth rate in Avery County has not changed significantly in many years and has decreased overall since 2007-2011. Between 2015 and 2019, an average of 140 people were born each year in the county. Geographic mobility data indicates that 11% of the population moved to Avery County from another county, state, or country in 2019, which is higher compared to other counties in the Toe River Health District as well as the WNC Region (6.5%) (NC SCHS, Vital Statistics, 2021).

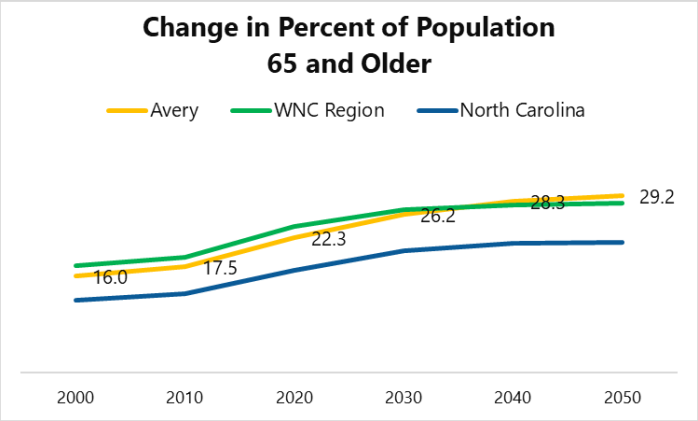


Age

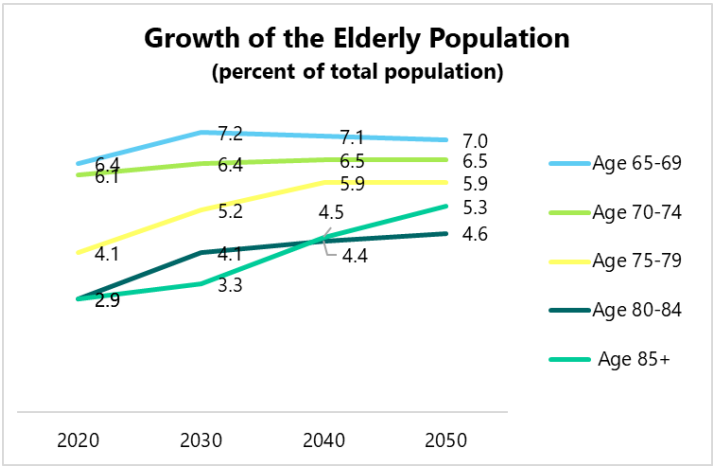
The median age of Avery County's residents was 45.2 in 2019, 6.5 years older than the NC median age of 38.7 and 1.5 years younger than the WNC Region as a whole (46.5). Compared to NC, Avery County is home to a larger proportion of seniors: 22% of the county was age 65 or older in 2019. There are several hundred more elderly women than elderly men in Avery County (Census Bureau, ACS, 2021).

Age Distribution (2019)	Age Under 5	Age 5-19	Age 20-64	Age 65 & older
Avery County	3.4%	14.3%	60.6%	21.7%
WNC Region	4.7%	16.4%	56.4%	22.4%
North Carolina	5.9%	19.3%	59.0%	15.9%

Much like the projections for NC and the WNC Region as a whole, the proportion of the population over the age of 65 in Avery County is projected to increase between 2020 and 2050, from around 22% to more than 29%, or from an estimated 4,058 individuals to a projected 5,877 in 2050.



Seniors will remain a critical component the Avery County population, with the proportion of adults in most age groups presented in the table below projected to increase through at least 2050. Note that the oldest group, those aged 85 and older, is expected to nearly double by 2050 (from 535 to 1,063) (NC OSBM, County Projections, 2021). The oldest adults can face unique challenges such as increased risk of falls, different patterns of heath care utilization, more demanding and complicated long-term care needs, as well as transportation and mobility issues.



Racial and Ethnic Diversity

Compared to the WNC region and to North Carolina, Avery County is less racially diverse. As of 2019 ACS estimates, 92% of the county population was white and 8% was non-white. Across the WNC Region, 90% of the population was white and 10% was non-white; nearly 69% of NC was white and 31% was non-white in 2019. Approximately 5% of the Avery County population identifies as ethnically Hispanic or Latino, a lower proportion compared to the WNC Regional and NC averages for 2019 (Census Bureau, ACS, 2021).

Population Distribution by Race/Ethnicity (2019)	White	Black or African American	American Indian or Alaskan Native	Asian	Native Hawaiian, Other Pacific Islander	Some Other Race	Two or More Races	Hispanic or Latino (of any race)
Avery County	92.0%	4.0%	1.3%	0.4%	0.0%	1.3%	1.0%	5.1%
WNC Region	89.5%	4.5%	1.4%	1.2%	0.1%	1.6%	1.9%	6.1%
NC	68.7%	21.4%	1.2%	2.9%	0.1%	3.1%	2.7%	9.4%

Other Populations of Note

Almost 6% of Avery County households, around 370, spoke a language other than English in 2019. Spanish was the most common language spoken and 18% of the non-English speakers in Avery County would be considered linguistically isolated (Census Bureau, ACS, 2021).

Avery County was home to 851 veterans in 2019; 97% of them were male and 65% were over the age of 65 (Census Bureau, ACS, 2021).

According to the 2019 ACS, an estimated 20% of the Avery County population was living with a disability, higher than the WNC Region (18%) or North Carolina (13%). Ambulatory difficulties were most common (11% of the population) followed by independent living difficulties (8.5%). Approximately 8% of the county population had a hearing difficulty and 7% had a cognitive difficulty; 4% had a vision difficulty and 4% had a self-care difficulty (Census Bureau, ACS, 2021).

COVID-19 Pandemic

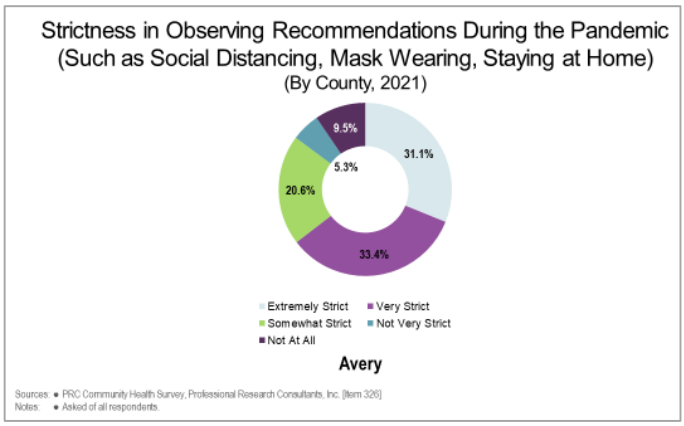
Physical or social distancing is one of the best tools we have to avoid exposure to this virus and slow its spread. However, having to physically distance from someone you love—friends, family, coworkers, or a worship community—can be hard. During the pandemic, community members in Avery County struggled with adapting to new social routines, from choosing to skip in person gatherings, to consistently wearing masks in public. The need to socially distance limits what activities people can engage in or how they otherwise use their free time, which often leads to a negatively framed focus on being stuck at home or being unable to travel.

The physical and mental health of the community has degraded as the pandemic has dragged on, with many mourning the loss of loved ones to COVID-19 and dealing with their own struggles with the virus. The impact of missing family and friends and worrying about losing

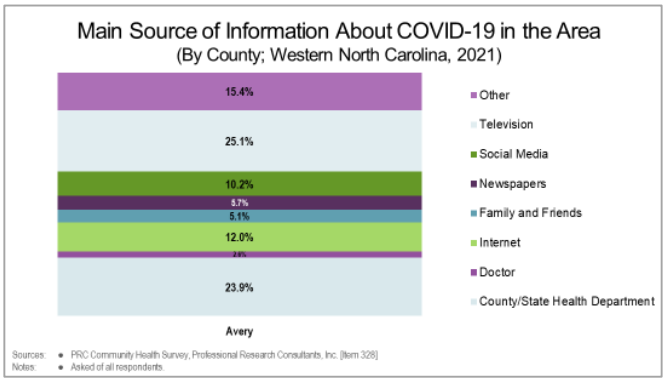
touch with people they used to see in person should not be overlooked. Economic difficulties resulting from the pandemic ranged from lost jobs and reduced hours, to being more stressed at work or frustrated about working from home. Frustration resulting from rising prices, failing businesses, or cost-of-living increases, continues to be a challenge in Avery County.

While some Avery County residents have expressed annoyance over mask-wearing requirements that they viewed as infringing on their personal freedom, others were dismayed that their fellow Americans refused to respect their safety by wearing a facemask in public places. Political culture and society in general have seemingly degraded over the course of the pandemic. Some people feel frustration with the government's lackluster response to the spread of the disease, while others were baffled over financially ruinous lockdowns in response to what they view as an overhyped danger.

The 2021 Community Health Survey included two questions added by the Toe River Health District, pertaining to COVID. Among Avery County respondents, 64.5% reported being extremely or very strict about following social distancing, mask wearing, and stay-at-home orders during the pandemic. Nearly 15% were not at all or not very strict about observing mitigation strategies and 21% were somewhat strict.



Avery County survey respondents looked to television sources (25%) and the state and county health department (24%) for information about COVID-19 in the local area. Approximately 22% of respondents used social media or the internet as their main source of information about COVID. Less than 3% of respondents relied on doctors as the main source of COVID-19 information (WNC Health Network, 2021).



Participants in the Key Informant Interviews were asked *"Thinking over the past 12 months, what have you experienced in your community that has helped you feel inspired, confident, or hopeful related to the health and wellbeing of people in your community?"*
Avery County stakeholders responded with praise for the professionals, paid and volunteer, who worked so hard to provide testing, immunizations, and care.

"I have seen our community come together and, to a degree, come out of their silos to address the effects of the pandemic." – Public Health Representative (Avery County Key Informant Interview)

"Toe River Health Department and the Avery County Schools have really stepped up to keep our county as safe as possible. In addition, other agencies have networked effectively to provide food, shelter, and utilities for folks in need. Feeding Avery Families is and has been amazing in providing food services for families, so has the school-based food service program." – Social Services Provider (Avery County Key Informant Interview)

"Avery County government was very supportive of our work with COVID and they passed ordinances requiring masks which was very helpful. They really went above and beyond." – Public Health Representative (Avery County Key Informant Interview)

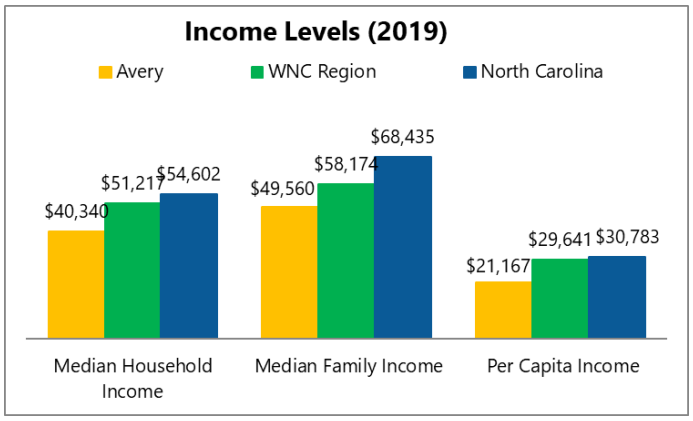
Chapter 3 – Social & Economic Factors

As described by Healthy People 2030, economic stability, education access and quality, healthcare access and quality, neighborhood and built environment, and social community and context are five important domains of social determinants of health. Social determinants of health (SDOH) are the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks. (Office of Disease Prevention and Health Promotion, 2020)

Income & Poverty

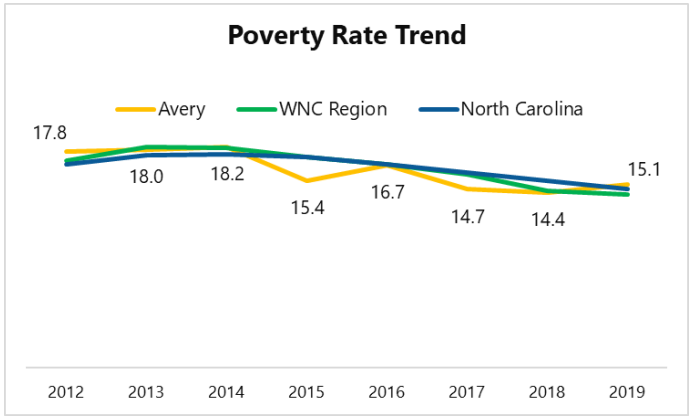
"Income provides economic resources that shape choices about housing, education, child care, food, medical care, and more. Wealth, the accumulation of savings and assets, helps cushion and protect us in times of economic distress. As income and wealth increase or decrease, so does health" (County Health Rankings, 2021).

Between 2016 and 2019, the median household income in Avery County rose from $35,891 to $40,340. However, the median household income among residents of Avery County remains more than $14,000 lower compared to NC in 2019.



The median family income also rose between 2016 and 2019, from $46,516 to $49,560, though the Avery County median remains nearly $19,000 lower compared the median family income in NC.

Per capita income in Avery County fell from $21,548 in 2016 to $21,167 in 2019 and remains lower compared to both NC and the WNC Region (Census Bureau, ACS, 2021).

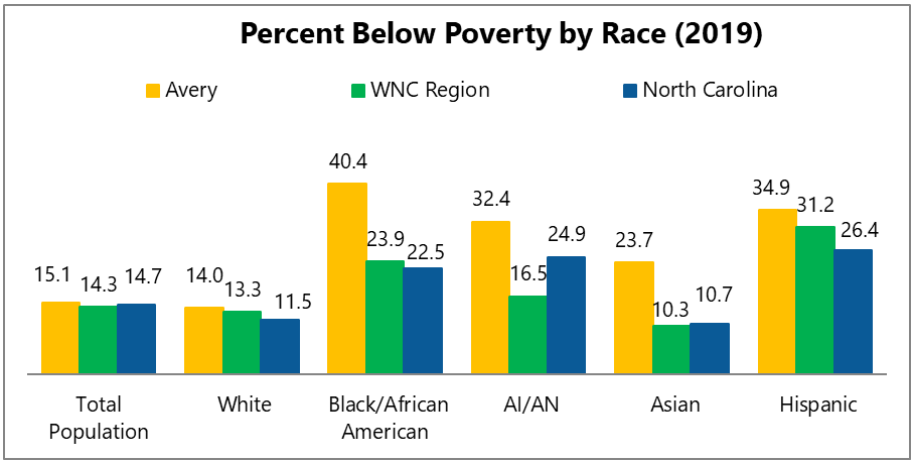


The poverty rate in Avery County in 2019 was 15.1 (representing more than 2,100 individuals), higher compared to the WNC Region (14.3) and NC (14.7).

Across the state and WNC Region children, particularly those under the age of 5, are more likely to live in poverty. In Avery County, 19% of children under 18 live below the federal poverty line,

compared to 22% in the region and 21% in NC. Among children under 5, 11% were living in poverty in Avery County, compared to 24.6% in WNC and 23.8% in NC in 2019.

While the poverty rates among non-white residents are based on small numbers, it's important to note BIPOC individuals in Avery County are more likely than white individuals to live below the poverty line. In 2019, approximately 40% of Black/African American residents and 35% of Hispanic residents of Avery County lived in poverty (Census Bureau, ACS, 2021).



As of January 2021, 981 Avery County households comprised of 1,884 individuals (approximately 11% of the county population) were receiving Food and Nutrition Services (FNS) benefits, an increase from 802 households and 1,500 individuals in January of 2020. Children under the age of 18 comprised 31% of the Avery County individuals receiving FNS in January 2021 (UNC-CH, Management Assistance, 2021).

School children who are determined to be "needy" (often referred to by school systems as Economically Disadvantaged) qualify to receive free- and reduced-cost school meals. In Avery County, 55% of students in SY18-19 and SY19-20 were determined to be needy, similar to the WNC Region (55%) and lower than NC (58%) (NC Department of Public Instruction, Child Nutrition Division, 2021).

Employment

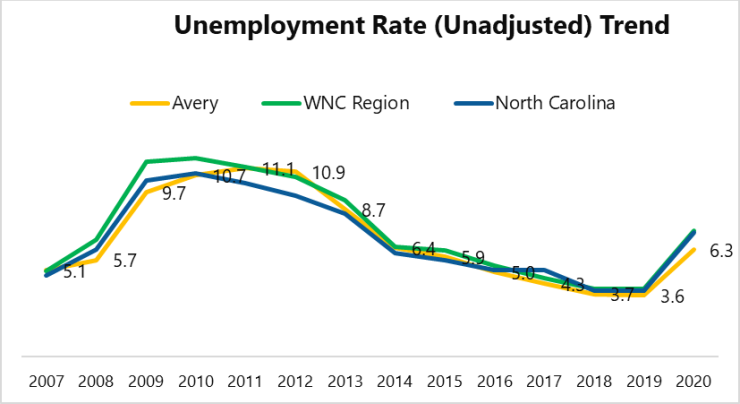
"Employment provides income and, often, benefits that can support healthy lifestyle choices. Unemployment and under employment limit these choices, and negatively affect both quality of life and health overall. The economic condition of a community and an individual's level of educational attainment both play important roles in shaping employment opportunities" (County Health Rankings, 2021).

Public Administration was the largest employment sector in Avery County in 2020, employing 15% of the workforce. The average weekly wage in this sector was $841 in Avery County, higher compared to $795 in the WNC Region and lower compared to $1,041 in North Carolina.

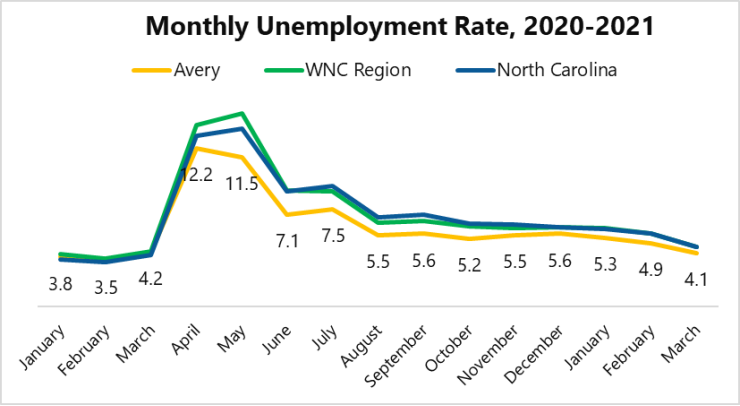
Retail Trade was the second largest employment sector in 2020 (14%) and paid an average weekly wage of $515 in Avery County, lower than the WNC Region ($542) and NC ($621). Retail Trade is typically one of the lowest wage-earning employment sectors, with unpredictable hours and often lacking employment benefits.

Health Care and Social Assistance was the third largest employment sector in Avery County in 2020, employing 13% of the workforce and paying a lower weekly wage ($728) compared to the Region ($809) and NC ($1,069) (NC Department of Commerce, Quarterly Census Employment and Wages, 2021).

The unemployment rate in Avery County follows the same general pattern as the WNC Region and the state of North Carolina, though the Avery County rate was lower the comparators in 2016 through 2020.



The abrupt rise in the unemployment rate in 2020 is due to the COVID pandemic. When monthly unemployment rates from January 2020 through March 2021 are examined, Avery County experienced the same dramatic increase in unemployment rates seen across the state and region in April and May of 2020. While the rates have since fallen, they have not yet decreased to pre-pandemic levels. Avery County continues to demonstrate a lower unemployment rate compared to NC and the WNC Region (NC Department of Commerce, Local Area Unemployment Statistics, 2021).



The 2021 WNC Healthy Impact Community Health Survey asked several questions pertaining to the impact of the COVID-19 pandemic on employment. Around 18% percent of Avery County respondents reported losing a job and another 24.5% reported losing hours or wages but not a job due to the pandemic (WNC Health Network, 2021).

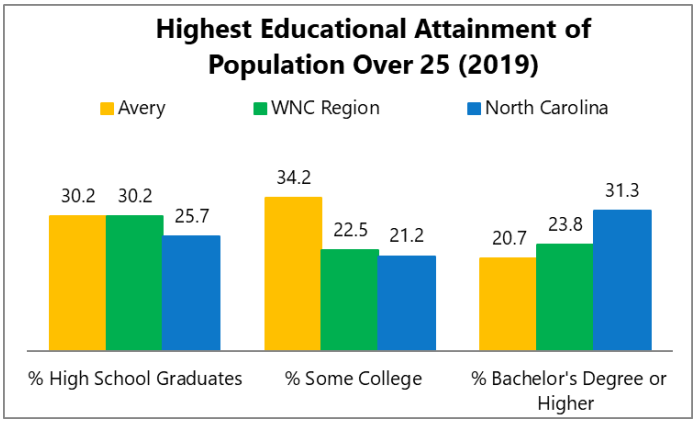
Impact of the COVID Pandemic	Lost a Job	Lost hours or wages
Avery County	18.4%	24.5%
WNC Region	14.2%	25.6%

Education

"Better educated individuals live longer, healthier lives than those with less education, and their children are more likely to thrive. This is true even when factors like income are taken into account" (County Health Rankings, 2021).

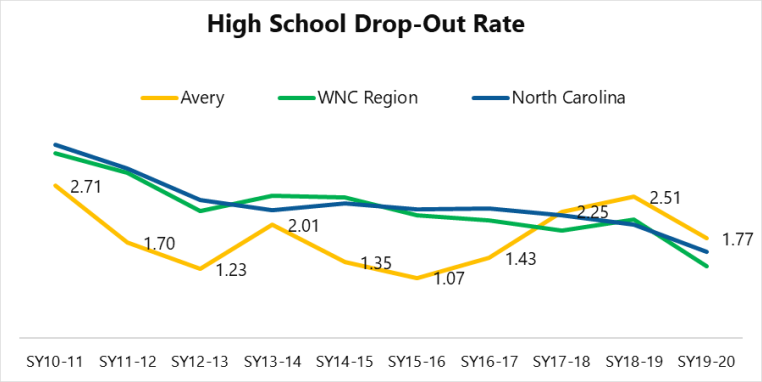
Higher levels of education can lead to a greater sense of control over one's life, which is linked to better health, healthier lifestyles decisions, and fewer chronic conditions. Perhaps the greatest evidence for continuing education is connected to lifespan – on average, college graduates live nine more years than high school dropouts. These benefits of education trickle down to children as well: children whose mothers graduate from college are twice as likely to live past their first birthday, have decreased risk of cognitive development, decreased risk of tobacco and drug use, and lower risk of many chronic conditions (CDC, CDC Community Health Improvement Navigator, 2015).

Approximately 30% of the Avery County residents over the age of 25 attained only a high school education, the same as the WNC Region and higher compared to NC. A higher proportion of Avery County adults had attended some college but not completed a degree program (34%). Nearly 21% of Avery County adults over the age of 25 had received a bachelor's degree or higher, lower to 24% across the WNC Region and 31% statewide (Census Bureau, ACS, 2021).

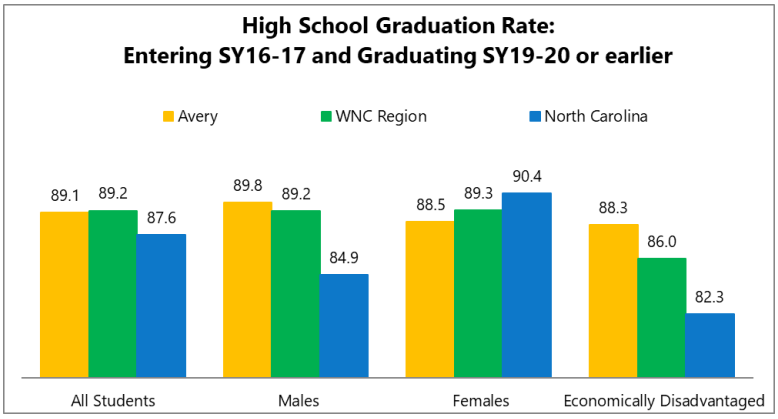


Eleven schools within the Avery County School system served 1,940 students in SY2019-2020: five elementary schools, two middle schools, one high school, and three combined schools (one 6-12 school and two K-12 schools).

Except for the most recent three school years, Avery County high school drop-out rates have been lower compared to WNC and NC over the period shown in the chart below. Note that the 2019-2020 school year was impacted by COVID-related school closures in March 2020 (NC Department of Instruction, Dropout and Discipline Data, 2021).



Compared to the WNC Region, Avery County demonstrated similar graduation rates for all students and males, with 89% of students who entered in SY16-17 graduating within four years. Females were less likely than males to graduate in Avery County and had lower graduation rates compared to WNC and NC. A higher proportion of economically disadvantaged students graduated from Avery County schools compared to the WNC Region and NC (NC Department of Public Instruction, Cohort Graduation Rates, 2021).



Racism and Discrimination

"Racism is an underlying or root cause of health inequities and leads to unfair outcomes between racial and ethnic groups. Different geographic areas and various racial and ethnic groups experience challenges or advantages that lead to stark differences in life expectancy, infant mortality, poverty, and more" (County Health Rankings, 2021).

As discussed in Chapter 1, 8% of the Avery County population was non-white and 5% identified as Hispanic/Latinx in 2019. Among Avery County respondents to the 2021 Community Health Survey, 18.5% disagreed or strongly disagreed that the community was a welcoming place for people of all races and ethnicities, higher compared to the WNC Region (16.7%).

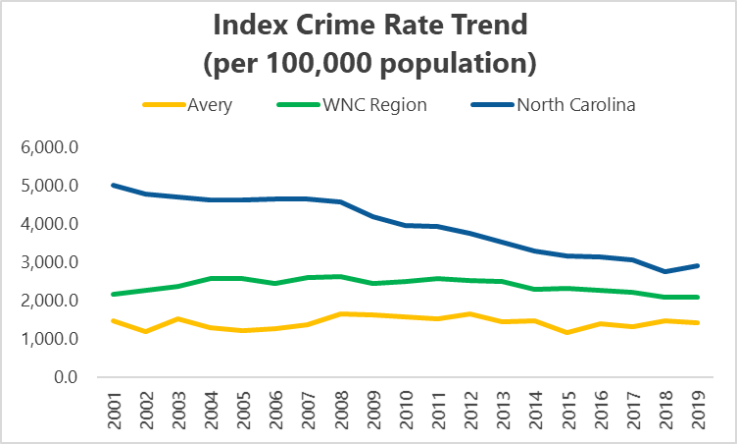
Approximately 8% of Avery County respondents reported being threatened or harassed due to their race often or sometimes (note that 12.4% of the Avery County survey sample identified non-white). When asked if they had been discriminated against due to their race or ethnicity, 5.4% of Avery County respondents had been treated unfairly often or sometimes at school.

More than 35% of Avery County respondents said they were often or sometimes criticized for their accent, higher compared to the WNC Region (WNC Health Network, 2021).

Often or Sometimes Experienced Discrimination Due to Race or Ethnicity	Harassed or threatened	Treated Unfairly at School	Criticized for Accent
Avery County	7.5%	5.4%	35.9%
WNC	9.5%	8.7%	29.5%

Community Safety

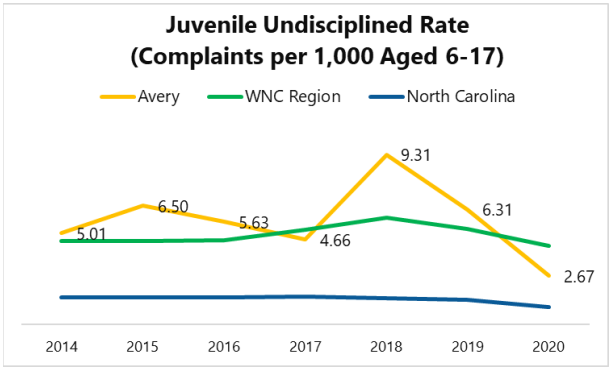
"Injuries through accidents or violence are the third leading cause of death in the United States, and the leading cause for those between the ages of one and 44. Accidents and violence affect health and quality of life in the short and long-term, for those both directly and indirectly affected, and living in unsafe neighborhoods can impact health in a multitude of ways" (County Health Rankings, 2021).

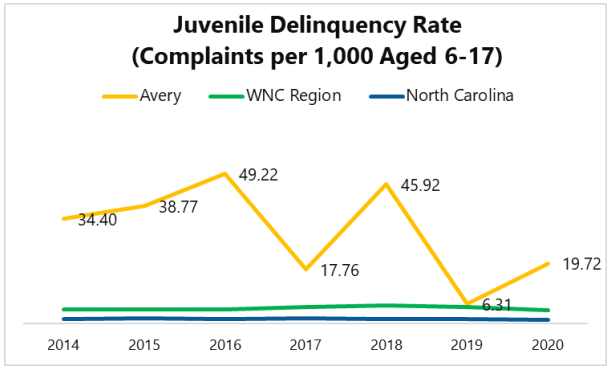


According to the Uniform Crime Reporting system managed by the State Bureau of Investigation, the index crime rates in Avery County were significantly lower compared to the WNC Region and the state since at least 2001. Property and violent crime rates were also lower at the county level compared to the region and NC. In 2017, the most recent year for which county-level statistics are available, there were a total of 235 criminal offenses in Avery County; aggravated assault was the most common violent crime and larceny (theft of property without the use of force) was the most common property crime (NC State Bureau of Investigation, 2021).

Between 2014 and 2020, an average of 65 complaints of juvenile offenses were processed each year by the Juvenile Crime Prevention Council in Avery County. The juvenile undisciplined rate has fallen in Avery County, from a high point of 9.31 in 2018 to 2.67 in 2020, though it was higher compared to the WNC Region and NC over most of the period shown, below. Avery County's juvenile delinquency rate is variable but was higher than NC and the WNC Region since 2014. A juvenile is determined to be undisciplined if they committed offenses that would not be crimes if committed by adults (truancy, running away from home, ungovernable, or is regularly found where it is unlawful for juveniles to be). A juvenile delinquent is any juvenile between 6

and 15 who commits an offense that would be a crime under state or local law if committed by an adult (NC Department of Public Safety, Juvenile Crime Prevention Councils, 2021).





In FY2019-2020, Oasis Inc. of Avery County, the NC Council for Women-funded domestic violence and sexual assault agency, served 13 sexual assault clients (rape was the most common type of assault reported) and 124 domestic violence clients. The shelter operated by this agency was full on 250 days during FY19-20. Between 2010 and 2020, there were three domestic violence-related homicides in Avery County (NC Department of Administration, Council for Women, 2021).

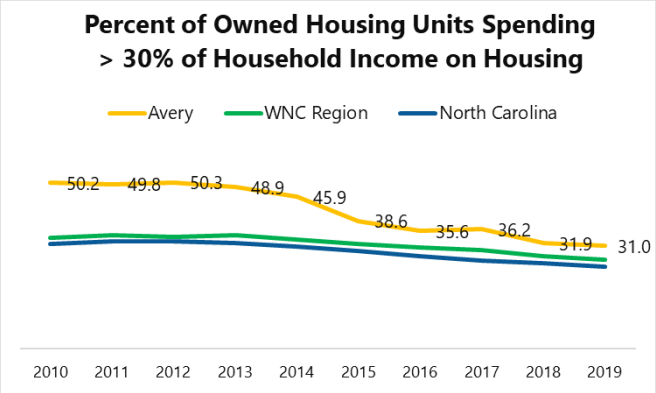
The number of investigated and substantiated reports of child abuse in Avery County varies on a yearly basis with no clear pattern. In FY19-20, 103 children were investigated for reported abuse or neglect and 6 were substantiated (2 cases of abuse and neglect, 1 case of abuse, 3 cases of neglect) and 14 were unsubstantiated. In FY19-20, 24 children entered child welfare custody in Avery County, double the number in FY18-19. Compared to the state of North Carolina, Avery County has placed a higher proportion of children with relatives in recent years. A foster home is the second most common placement in Avery County; it is the most common placement in NC (UNC-CH, Management Assistance, 2021).

Housing and Transportation

"The housing options and transit systems that shape our communities' built environments affect where we live and how we get from place to place. The choices we make about housing and transportation, and the opportunities underlying these choices, also affect our health" (County Health Rankings, 2021).

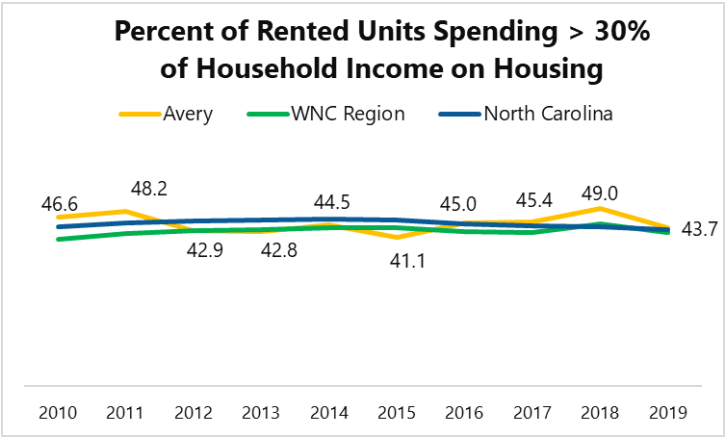
As of 2019, there were 14,225 housing units in Avery County: 46% were occupied and 54% were vacant, higher compared to NC, where 14% of housing units were vacant in 2019. Compared to North Carolina as a whole, Avery County residents are more likely to be homeowners. Three-quarters of occupied Avery County housing units were owner occupied in 2019 and 25% were renter occupied. Statewide, 35% of occupied housing units were renter-occupied (Census Bureau, ACS, 2021).

Housing Affordability



The median monthly costs for Avery County homeowners increased from $914 in 2010 to $1,068 in 2018 and decreased to $983 in 2019. Median monthly costs averaged $1,116 across the WNC Region and $1,314 in NC in 2019. The percentage of homeowners spending more than 30% of their household income on housing costs declined overall from a high point of 50.3% in 2012 to 31.0% in 2019. In 2019, 13% of Avery County homeowners spent more than 50% of their household income on housing costs, higher than WNC (10.5%) and NC (9.8%).

The median gross rent for rented housing units in Avery County increased from $677 in 2010 to $777 in 2019, higher than the WNC regional average of $721 and lower than the NC average of $907. The percentage of renters spending more than 30% of their income on housing is quite variable in Avery County, though it has increased overall from a low of 41.1% in 2015 to 43.7% in 2019. In 2019, 23.5% of renters in Avery County spent more than half of their household income on rent, higher compared to WNC (18.5% and NC (20.6%) (Census Bureau, ACS, 2021).

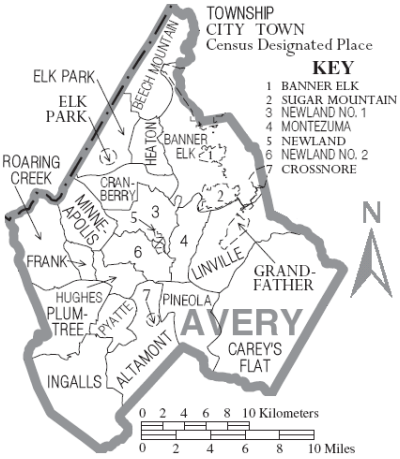


Housing Adequacy

Across Avery County in 2019, 22% percent of the housing units were mobile homes; statewide, mobile homes comprised 13% of housing units. Nineteen percent of Avery County housing was built before 1960 and 40% of units rely on fuel oil, kerosene, coal, coke or other fuels for heating. Approximately 2% of housing units lacked telephone services.

When examining Avery County housing units at the township level:

- Carey's Flat had the highest proportion of mobile homes (54.5%).
- Heaton township had the highest proportion of houses built before 1960 (47.0%).
- The highest proportion of housing units with no vehicle access (13.4%) were in Heaton.
- Carey's Flat had the highest proportion of housing units with no telephone service (54.5%) and housing units using fuel oil, kerosene, coal or other fuels (80.0%).
- Plumtree had the highest proportion of housing units with no heating fuel (4.7%) (Census Bureau, ACS, 2021).



Almost 13% of Avery County respondents to the 2021 Community Health Survey reported a time in the past year when their home was without electricity, heating, or water, higher compared to the 11.5% of the WNC regional respondents reporting the same. More than 28% of respondents always, usually, or sometimes worried about paying their rent or mortgage, higher compared to WNC. Approximately 12% of Avery County respondents had experienced a housing emergency that necessitated living with a friend or relative in the past three years; 3.5% had lived on the street, in their car, or in a temporary shelter at some point in the past three years (WNC Health Network, 2021).

Housing Security	Lacked access to utilities in the past year	Worried about paying rent or mortgage in the past year	Housing emergency in the past 3 years	Lived in temporary shelter in the past 3 years
Avery County	12.7%	28.5%	11.6%	3.5%
WNC	11.5%	25.8%	9.1%	2.1%

Vehicle and Internet Access

According to 2019 estimates, 4.2% of Avery County occupied housing units (rented and owned) did not have access to a vehicle. Rented units are more likely than owned units to lack vehicle access: 7% of rented housing units did not have access to a vehicle compared to 3% of owned units. Senior citizens are more likely than younger age groups to lack vehicle access: 40% of the households with no vehicle access had householders aged 65 and older.

Avery, Mitchell and Yancey County respondents to the Community Health Survey were asked how often they had trouble finding transportation to the places they wanted to go: always, usually, sometimes, seldom, or never. Most Avery County respondents (77.6%) never had difficulty finding transportation; 13.3% seldom found it difficult; 9.2% sometimes, usually, or always found it difficult to find transportation (WNC Health Network, 2021).

Approximately 17% of Avery County households did not have a computer in 2019, which is higher compared to NC (10.9%) and similar to the WNC Region (16.7%). Twenty-eight percent of Avery County households did not have an internet subscription, higher than NC (18.9%) and the WNC Region (26.5%) in 2019. Nine percent of Avery County households relied on a smartphone as their only computing device in 2019; 7% used only their cellular data plan for internet access, lower compared to WNC (10.4%) and NC (9.5%) (Census Bureau, ACS, 2021).

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, 2021).

Among the 6,551 households in Avery County in 2019, 14.8% were householders living alone and 8.4% were householders over the age of 65 who live alone. Approximately 4% of households in the county were comprised of single parents with children under 18.

Almost 200 grandparents in Avery County lived with their own minor grandchildren in 2019. Nearly 50% of those grandparents were responsible for their grandchildren, meaning they are financially responsible for the basic needs of the grandchild, including food, clothing, and day care. No parent of the grandchild was present among 55% of these families. Approximately 31% of the grandparents responsible for grandchildren were still in the labor force, 67% were living below the poverty line, and 65% had a disability of some type (Census Bureau, ACS, 2021).

Nearly 73% of Avery County Community Health Survey respondents in 2021 indicated that they always or usually get the social or emotional support they needed, higher compared to WNC. And 75% of Avery County respondents to the 2021 Community Health Survey indicated that they always or usually have someone to rely on for help or support when needed, similar to 75.9% across the WNC Region.

Chapter 4 – Health Data Findings Summary

Mortality

Life Expectancy

A person born in Avery County in 2017-2019 could be expected to live a longer life than the average resident of NC: 77.5 years. Females tend to live longer than males, with the average male in Avery County living to be 76.5 years old and the average female living to be 78.4. Although there aren't enough minorities in Avery County for life expectancy to be calculated, African Americans typically have shorter life expectancies than white individuals in the WNC Region and in NC (NC SCHS, County Health Databook, 2021).

Life Expectancy if born 2017-2019	Overall	Male	Female	White	African American
Avery County	77.5	76.5	78.4	77.4	n/a
WNC Region	77.3	74.9	79.8	77.7	76.4
North Carolina	76.7	74.0	79.4	77.8	73.8

Leading Causes of Death

Two tables are provided below the following narrative, displaying the mortality rates and the changes that are discussed: Avery County is compared to the WNC Region and NC and rate changes since 2002-2006, the earliest period included in the data set used, and since 2012-2016, the data presented in the 2018 Community Health Assessment are also provided.

1. **Heart disease** was the leading cause of death in Avery County in 2015-2019 and while the mortality rate due to diseases of the heart decreased 24% since 2002-2006, it has increased slightly since 2012-2016. The heart disease mortality rate was 10% higher in Avery County compared to the WNC Region and 16% higher compared to NC in 2015-2019.
2. **Cancer** is the second leading cause of death in Avery County, with a 2015-2019 mortality rate that was 7% lower than both WNC and NC. The cancer mortality rate in Avery County decreased 26% overall since 2002-2006 and increased slightly since 2012-2016. Further discussion of cancer mortality and incidence is included in later sections of this report.
3. **Chronic lower respiratory diseases** (CLRD) are the third leading cause of death in Avery County and the 2015-2019 mortality rate was 31% higher than the WNC Region and 63% higher compared to NC. The CLRD mortality rate in Avery County increased 5% since 2002-2006 and 13% since 2012-2016.
4. **Alzheimer's disease** ranks as the fourth leading cause of death in Avery County in 2015-2019, with the county mortality rate exceeding the WNC Region by 31% and NC by 19%. The Avery County Alzheimer's disease mortality rate rose 47% since 2002-2006 and rose 15% since 2012-2016.

5. **Unintentional injuries** (not motor-vehicle related) were the fifth most common cause of death in Avery County in 2015-2019. The county mortality rate was 13% lower than the WNC region and 11% higher compared to NC. Since 2002-2006, the unintentional injury mortality rose 30% in Avery County; the rate declined 2% since 2012-2016.
6. **Pneumonia and influenza** was the sixth leading cause of death in Avery County, with the 2015-2019 county mortality rate more than double the NC rate and exceeding the comparable WNC rate by 82%. Although the Avery County pneumonia/influenza mortality rate was 11% lower than it was in 2002-2006, the rate increased 27% since 2012-2016.
7. **Cerebrovascular disease (stroke)** is the seventh leading cause of death in Avery County, with a 2015-2019 mortality rate 22% lower compared to WNC and 28% lower compared to NC. Since 2002-2006 the Avery County stroke mortality rate decreased 31% but has increased 16% since 2012-2016.
8. **Unintentional motor vehicle injuries (UMVI)** are the eighth leading cause of death in Avery County; note that the rates cited are based on a small and potentially unstable number of deaths (<20). The 2015-2019 mortality rate was 10% higher compared to WNC and 22% higher compared to NC. The Avery County UMVI mortality rate doubled since 2002-2006 and increased 61% since 2012-2016.
9. **Suicide** was the ninth leading cause of death in Avery County, though the mortality rate is based on a small (<20) number of occurrences. In 2015-2019 the mortality rate in Avery County was 12% lower than the WNC Regional average and 28% higher compared to NC. The suicide mortality rate rose over time: 9% since 2002-2006 and 3% since 2012-2016.
10. **Diabetes** is the 10th leading cause of death in Avery County and the 2015-2019 mortality rate was 25% lower compared to the WNC Region and 31% lower compared to NC. While the Avery County diabetes mortality decreased 9% overall since 2002-2006, it was 36% higher than it was in 2012-2016.
11. **Kidney diseases (Nephritis, Nephrotic Syndrome, and Nephrosis)** are the 11th leading cause of death in Avery County, with a 2015-2019 county mortality rate 5% lower than the WNC Regional average and 14% lower than the NC rate. The Avery County kidney disease mortality rate fell 7% since 2002-2006 and rose 15% since 2012-2016.
12. **Chronic liver disease and cirrhosis** is the 12th leading cause of death in Avery County, although all mortality rates are based on a small number (<20) of deaths. The 2015-2019 liver disease mortality rate was 19% lower compared to the WNC Region and 15% higher compared to NC. The Avery County rate rose over time: 4% overall since 2002-2006 and 72% since 2012-2016.
13. **Septicemia** was the 13th leading cause of death in Avery County in 2015-2019 with all mortality rates based on a low number (<20) of deaths. The county mortality rate was 6% higher compared to WNC and 10% lower than NC. The 2015-2019 Avery County mortality rate was 75% higher than it was in 2002-2006 but 23% lower compared to 2012-2016.
14. **Homicide** deaths are infrequent occurrences in Avery County, with mortality rates based on a less than 5 deaths per 5-year aggregate. Avery County mortality rates are typically lower compared to NC and the WNC Regional average.
15. **AIDS** deaths are also rare in Avery County. Many aggregate periods examined for the purpose of this report reflect 1 or no deaths.

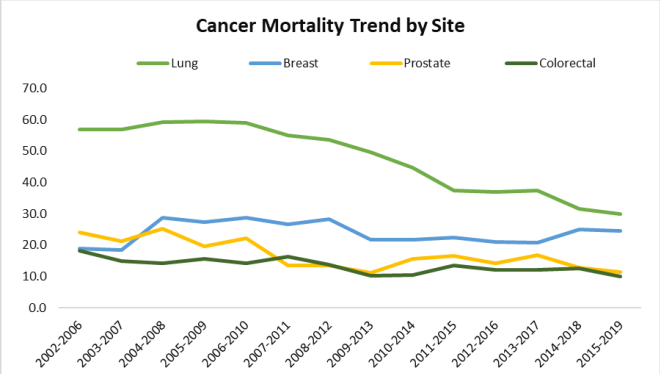
Mortality Rates for Leading Causes of Death	Avery County Rate 2015-2019	WNC Regional Rate 2015-2019	NC Rate 2015-2019	Avery County Rate 2002-2006	Avery County Rate 2012-2016
Diseases of Heart	182.7	165.5	157.3	240.4	169.4
Cancer	146.9	157.6	158.0	198.8	137.4
Chronic Lower Respiratory Diseases	71.9	54.8	44.0	68.6	63.4
Alzheimer's disease	44.0	33.7	36.9	30.0	38.3
All Other Unintentional Injuries	43.6	50.1	39.3	33.6	44.6
Pneumonia and Influenza	33.9	18.6	16.7	38.0	26.7
Cerebrovascular Disease	30.7	39.4	42.7	44.8	26.4
Unintentional Motor Vehicle Injuries	**17.9**	16.3	14.7	**8.8**	**11.1**
Suicide	**17.2**	19.5	13.4	**15.8**	**16.7**
Diabetes Mellitus	16.5	22.0	23.8	18.2	12.1
Kidney Diseases	14.2	14.9	16.5	15.2	12.4
Chronic Liver Disease and Cirrhosis	**12.2**	15.0	10.6	**11.7**	**7.1**
Septicemia	**11.4**	10.8	12.7	**6.5**	**14.8**
Homicide	**1.1**	4.2	6.8	**7.2**	**0.6**
AIDS	**0.0**	0.8	1.8	**0.0**	**0.0**

Rates based on fewer than 20 cases (indicated by N/A) are unstable and have been presented in bold.

Comparison and Change Leading Causes of Death in Avery County	% Difference from WNC Region 2015-2019	% Difference from NC 2015-2019	% Change since 2002-2006	% Change since 2012-2016
Diseases of Heart	+ 10%	+ 16%	- 24%	+ 8%
Cancer	- 7%	- 7%	- 26%	+ 7%
Chronic Lower Respiratory Diseases	+ 31%	+ 63%	+ 5%	+ 13%
Alzheimer's disease	+ 31%	+ 19%	+ 47%	+ 15%
All Other Unintentional Injuries	- 13%	+ 11%	+ 30%	- 2%
Pneumonia and Influenza	+ 82%	+ 103%	- 11%	+ 27%
Cerebrovascular Disease	- 22%	- 28%	- 31%	+ 16%
Unintentional Motor Vehicle Injuries	+ 10%	+ 22%	+ 103%	+ 61%
Suicide	- 12%	+ 28%	+ 9%	+ 3%
Diabetes Mellitus	- 25%	- 31%	- 9%	+ 36%
Kidney Diseases	- 5%	- 14%	- 7%	+ 15%
Chronic Liver Disease and Cirrhosis	- 19%	+ 15%	+ 4%	+ 72%
Septicemia	+ 6%	- 10%	+ 75%	- 23%
Homicide	- 74%	- 84%	- 85%	+ 83%

Cancer Mortality

In 2015-2019 Cancer was the second leading cause of death in Avery County, with a mortality rate of 146.9 that was lower than both the WNC Region and NC.



Lung cancer was the leading cause of cancer-related deaths and in 2015-2019 the Avery County mortality rate (30.0) was 29% lower compared to the WNC Region (42.3) and NC (42.0). Over time, the lung cancer mortality rate has decreased: 47% since 2002-2006 (56.9) and 19% since 2012-2016 (36.9).

Breast cancer was the second leading cause of cancer deaths in Avery County, with a 2015-2019 mortality rate (24.6) 17% higher than the WNC Region (21.0) and 19% higher than NC (20.6). Since 2002-2006 (18.8) the county mortality rate increased 31%; since 2012-2016 (20.9) the mortality rate increased 18%.

Prostate cancer was the third leading cause of cancer-related deaths in Avery County. The 2015-2019 mortality rate (11.3) was 35% lower compared to the WNC Region (17.3) and 42% lower compared to NC (19.5). The county mortality rate has decreased over time: 53% overall since 2002-2006 (24.1) and 21% since 2012-2016 (14.3).

Colorectal cancer was the fourth leading cause of cancer-related deaths for which trend data are available. The Avery County colorectal cancer mortality rate in 2015-2019 (9.9) was 33% lower compared to WNC (14.8) and 26% lower than NC (13.3). Since 2002-2006 (18.2) the mortality rate has declined by 46%; it decreased 18% since 2012-2016 (12.3) (NC SCHS, Central Cancer Registry, 2021).

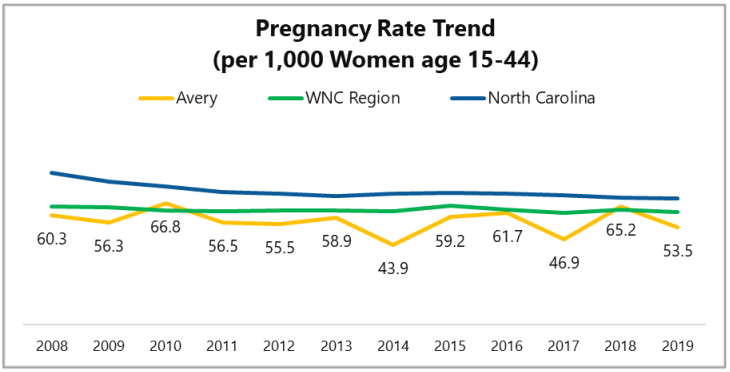
Cancer Mortality in Avery County	Avery County Rate 2015-2019	% Difference from WNC Region 2015-2019	% Difference from NC Rate 2015-2019	% Change since 2002-2006	% Change since 2012-2016
Total Cancer	146.9	- 7%	- 7%	- 26%	+ 7%
Lung Cancer	30.0	- 29%	- 29%	- 47%	- 19%
Breast Cancer	24.6	+ 17%	+ 19%	+ 31%	+ 18%
Prostate Cancer	11.3	- 35%	- 42%	- 53%	- 21%
Colorectal Cancer	9.9	- 33%	- 26%	- 46%	- 18%

Health Status & Behaviors

The Community Health Survey administered across the WNC Region asked respondents to rate their personal health from poor to excellent. In 2021, 19% of Avery County respondents rated their overall health as fair or poor, higher compared to WNC and the US (WNC Health Network, 2021).

Maternal and Infant Health

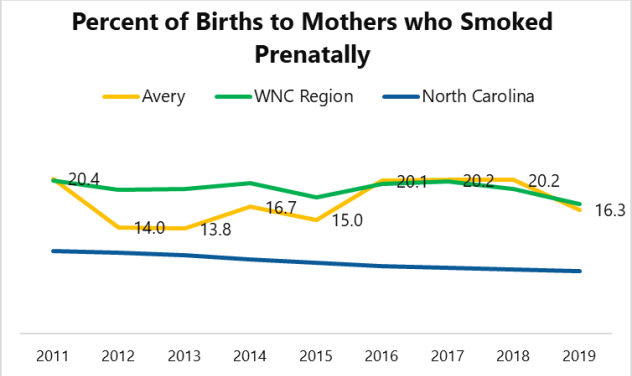
The pregnancy rate among Avery County females of child-bearing age (15-44) fluctuated without a clear pattern between 2008 and 2019 but was lower compared to the state rate over most of the period graphed. There were too few pregnancies among women aged 15-19 (an average of 12 per year between 2013 and 2019) for the NC State Center for Health Statistics to calculate a reliable rate. Most counties across the WNC Region have demonstrated a consistently declining teen pregnancy rate.



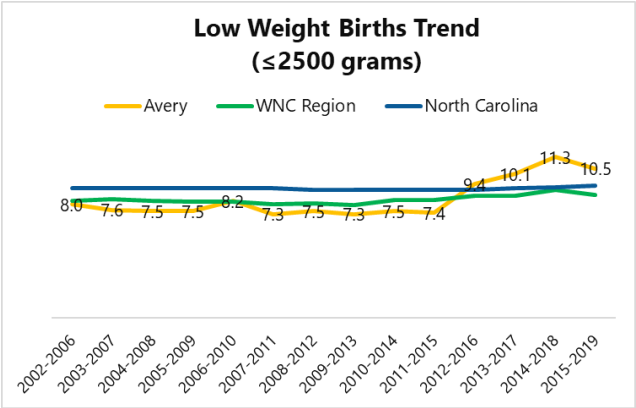
Compared to North Carolina in 2019, Avery County pregnant women were more likely to have gestational diabetes and less likely to have a BMI in the overweight or obese range. Avery County mothers were twice as likely to have smoked during pregnancy compared to the state but also more likely to have received prenatal care starting in the first trimester. And they were more likely to have delivered pre-term (NC SCHS, County Health Databook, 2021).

Among Mothers who gave birth in 2019	With gestational diabetes	Overweight or obese BMI	Smoked during pregnancy	Received prenatal care in first trimester	Delivered preterm (before 37 weeks)
Avery County	6.7%	52.6%	16.3%	83.0%	12.5%
WNC Region	9.5%	54.0%	17.0%	77.1%	11.1%
North Carolina	6.3%	55.2%	8.2%	67.5%	10.4%

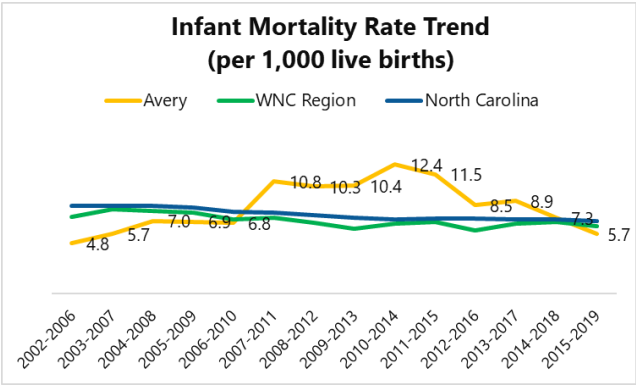
The proportion of women who smoke during pregnancy is an ongoing issue of concern in WNC, where rates have consistently surpassed the comparable state rates. Avery County rates rose between 2012 and 2016 and have been similar to the WNC Region since 2016.



The percentage of births that are low weight (less than 5.5 pounds) has increased recently in Avery County, from 7.4 in 2010-2014 to 11.3 in 2014-2018, higher compared to WNC (8.0%) and the same as NC (9.2%). The percentage of births that are very low weight (less than 3.4 pounds) is based on a small number of occurrences in Avery County but has not changed significantly in a decade and is typically similar to the WNC Region (NC SCHS, County Health Databook, 2021).



Historically there have been too few infant deaths in Avery County (less than 10 per 5-year aggregate period) for stable infant mortality rate to be calculated and so the statistics should be interpreted with caution. But the Avery County infant mortality rate increased from a low of 4.8 in 2002-2006 to a high of 12.4 in 2010-2014 before decreasing to 5.7 in 2015-2019.



Chronic Diseases

In 2021, 8.2% of Avery County Community Health Survey respondents reported being diagnosed with heart disease, higher compared to WNC, NC, and the US. Approximately 38% of respondents had been diagnosed with high blood pressure, similar to the WNC Region and higher compared to NC and the US in 2021. Compared to the region and the nation, a lower proportion of Avery County respondents (21.6%) have been diagnosed with high cholesterol.

In 2021, nearly 12% of Avery County survey respondents reported a diabetes diagnosis, lower compared to WNC and the US and similar to NC. An additional 4.5% had been diagnosed with borderline or pre-diabetes, lower than the US but higher than the Region (WNC Health Network, 2021).

Self-Reported Diagnoses	Heart Disease	High Blood Pressure	High Cholesterol	Diabetes	Pre-Diabetes
Avery County	8.2%	37.9%	21.6%	11.9%	4.5%
WNC	7.3%	37.2%	28.8%	13.7%	4.0%
NC	6.8%	35.1%	n/a	11.8%	n/a
United States	6.1%	36.9%	32.7%	13.8%	9.7%

Respiratory Conditions

Ten percent of Avery County respondents to the 2021 Community Health Survey reported an asthma diagnosis, higher compared to WNC and the US. Approximately 10% of Avery County respondents had been diagnosed with Chronic Obstructive Pulmonary Disease, higher compared to the region, the state and the nation.

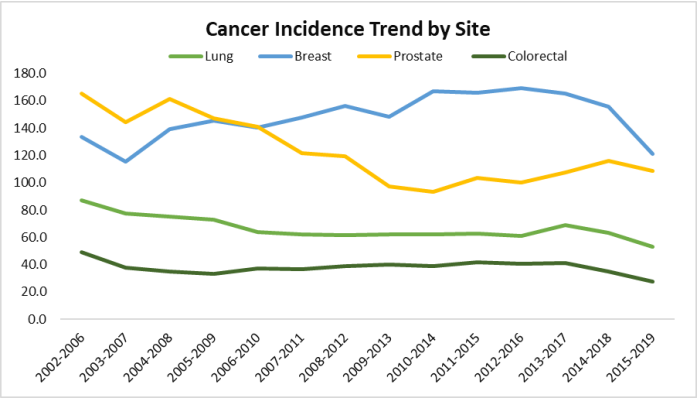
One of the critical risk factors for respiratory conditions like COPD and lung cancer is tobacco use. In 2021, 20% of Avery County survey respondents reported smoking regularly or occasionally, higher compared to WNC, NC and the US. Smokeless tobacco products appear more popular among Avery County survey respondents compared to WNC, NC and the US in 2021, with 12% of respondents using smokeless tobacco. Just over 7% of Avery County respondents reported using vaping products, higher compared to the WNC Region and NC but lower than the US (WNC Health Network, 2021).

Self-Reported Diagnoses and Behavior	Asthma	COPD	Current Smokers	Current Smokeless Tobacco Use	Current Vape Product Use
Avery County	9.9%	10.4%	20.0%	12.1%	7.4%
WNC	9.4%	8.5%	14.9%	4.4%	4.6%
NC	8.3%	7.8%	18.5%	5.1%	4.6%
United States	12.9%	6.4%	17.4%	n/a	8.9%

Cancer Incidence

The total cancer incidence rate in 2015-2019 was lower in Avery County (440.2) compared to WNC (455.9) and NC (469.2). The cancer incidence rate fell 11% from 497.3 in 2002-2006 and decreased 7% from 471.1 in 2012-2016.

The breast cancer incidence rate in Avery County (121.3) was lower compared to the WNC Region (143.7) and NC (163.4) in 2015-2019. The county rate was 9% lower than it was in 2002-2006 (133.2) and fell 28% from a high point in 2012-2016 (169.3).



The 2015-2019 Avery County prostate cancer incidence rate (108.4) was 3% higher compared to WNC (104.8) and 7% lower compared to NC (116.9). While prostate cancer incidence rates have fallen over time in Avery County, decreasing 34% since 2002-2006 (165.1), they increased 8% since 2012-2016 (100.3).

Lung cancer incidence rates have decreased over time in Avery County, falling 39% since 2002-2006 (87.0) and 14% since 2012-2016 (61.2). In 2015-2019 the Avery County lung cancer incidence rate (52.8) was lower compared to WNC (64.2) and NC (62.8).

The colorectal cancer incidence rate in Avery County (27.8) was more than 20% lower compared to both the WNC Region (37.6) and NC (35.2). The colorectal incidence rate declined in the long and short term in Avery County: the 2015-2019 rate was 44% lower than it was in 2002-2006 (49.3) and 32% lower than it was in 2012-2016 (40.6%) (NC SCHS, Central Cancer Registry, 2021).

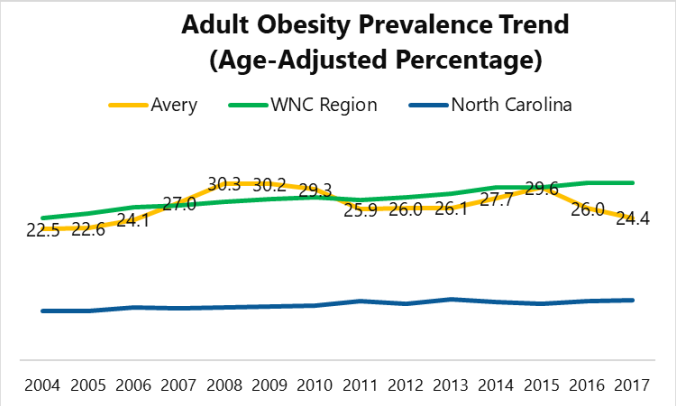
Cancer Incidence in Avery County	Avery County Incidence Rate 2015-2019	% Difference from WNC Region 2015-2019	% Difference from NC Rate 2015-2019	% Change since 2002-2006	% Change since 2012-2016
Total Cancer	440.2	- 3%	- 6%	- 11%	- 7%
Breast Cancer	121.3	- 16%	- 26%	- 9%	- 28%
Prostate Cancer	108.4	+ 3%	- 7%	- 34%	+ 8%
Lung Cancer	52.8	- 18%	- 16%	- 39%	- 14%
Colorectal Cancer	27.8	- 26%	- 21%	- 44%	- 32%

Overweight and Obesity

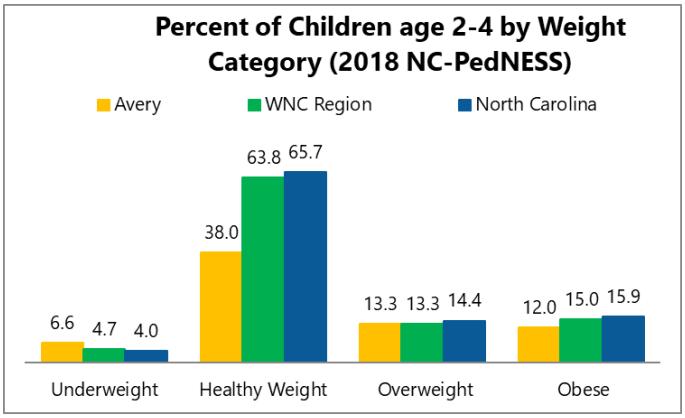
As it is an important risk factor for both diabetes and other chronic health conditions, the Community Health Survey administered in WNC calculated BMIs using the heights and weights reported by respondents. In 2021, 65% of survey respondents in Avery County had a BMI over 25.0 (overweight or obese), lower compared to the WNC Region (68.9%) and NC (69.6%) and higher compared to the US (61.0%).

In 2021, 29% of Avery County survey respondents had BMIs in the obese range, lower compared to the WNC Region (35.6%), NC (34.0%) and the US (31.3%) (WNC Health Network, 2021).

While data from the CDC pertaining to adult obesity is not especially current, it helps to illuminate the historical trend among Avery County residents. The estimated prevalence of obesity among adults (age 20 and older) in Avery County decreased overall from a high of 30.3 in 2008 to 24.4% in 2017. Avery County prevalence rates were lower compared to the WNC Region since 2010. The WNC Region as a whole demonstrates higher and increasing rates of obesity compared to North Carolina, with an average of 10% of the state estimated to be obese over the period presented in the chart below (CDC, National Diabetes Surveillance System, 2021).



While weight-related data pertinent to children is not particularly recent, what is available demonstrates that in 2018, lower percentages of Avery County 2- to 4-year-olds were overweight or obese compared to WNC and NC (Eat Smart Move More, 2021).



Physical Activity

In 2021, 23% of Avery County Community Health Survey respondents met the minimum guideless for physical activity (at least 150 minutes a week of moderate intensity aerobic activity) and muscle-strengthening activity (at least 2 days a week). Compared to WNC (22.6%), NC (21.6%) and the US (21.4%), Avery County respondents were slightly more likely to meet the physical activity recommendations. Twenty percent of Avery County survey respondents in 2021 reported getting no physical activity, lower compared to WNC (22.7%), NC (26.3%), and the US (31.3%) (WNC Health Network, 2021).

Injury

Given the aging nature of the Avery County population, it is important to understand how accidental falls impact the community. In 2015-2019, there were 21 unintentional fall-related deaths among Avery County residents and 90% (n=19) occurred among individuals aged 65 and older. More than half (n=11) of fall-related deaths occurred among those over the age of 84 (NC SCHS, Detailed Mortality Statistics, 2021).

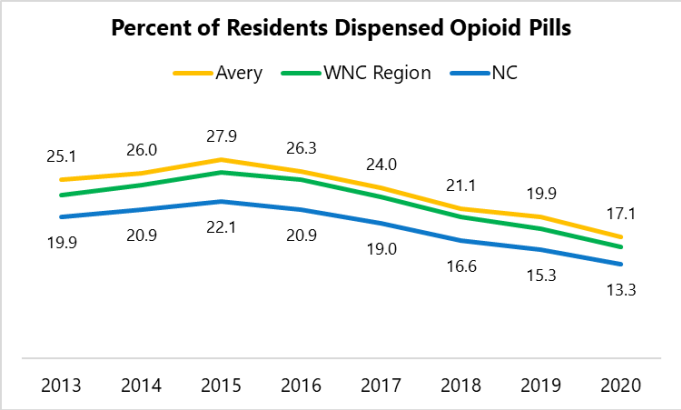
Between 2015 and 2019 there were 1,653 reportable motor vehicle crashes in Avery County and 676 (41%) resulted in injuries. On average, there were 331 accidents and 135 injuries each year between 2015 and 2019. Alcohol was a factor in 4% (n=67) of all motor vehicle crashes in Avery County between 2015 and 2019, with an average of 13 motor vehicle crashes per year and 6 of the resulting injuries per year being alcohol related. In 2020, the number of crashes (271) and injuries (98) were lower than usual, perhaps due to COVID-related lockdowns and quarantines (NC Department of Transportation, County Crash Profiles, 2021).

Substance Use

In 2021, 47.5% of Avery County respondents to the Community Health Survey indicated that their life has been negatively affected by substance abuse, a higher proportion compared to WNC (45.8%) and the US (35.8%). Twelve percent of the county's respondents reported using opiates/opioids, with or without a prescription, in the past year, lower than the region (12.7%) or the US (12.9%) (WNC Health Network, 2021).

Between 2009-2013 and 2015-2019, 108 deaths due to unintentional poisoning, which is where drug overdose deaths are categorized, occurred in Avery County, an average of 15 deaths per 5-year period. Unfortunately, there were too few cases for rates to be published or discussed further. The WNC Region has demonstrated a higher unintentional poisoning mortality rate compared to North Carolina since 2007-2011 (NC SCHS, County Health Databook, 2021).

The NC Opioid and Substance Use Action Plan established a data dashboard in 2017 and while the metrics presented have changed over time, the dashboard remains a unique source of substance use data. The number and percentage of Avery County residents who were dispensed opioid pills has decreased steadily from a high point of 27.9% in 2015, but the Avery County rate exceed the state and regional rates over the entire period shown in the chart.

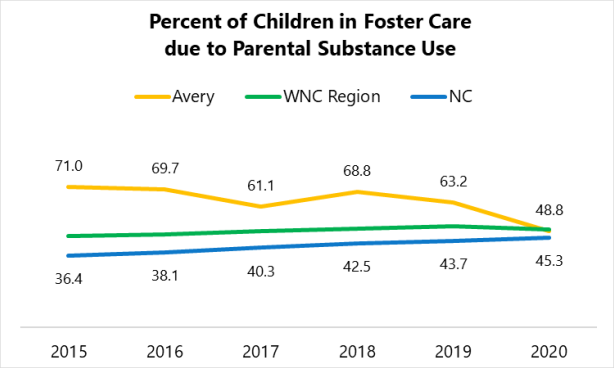


Between 2015 and 2020, the were a total of 49 emergency department visits with an opioid overdose diagnosis among Avery County residents, an average of 8 per year. The exact number is variable on a yearly basis and the calculated rate demonstrates no clear pattern of decline.

Community-administered naloxone reversals were exceedingly rare in Avery County, with a total of 2 being reported between 2013 and 2020. No law enforcement-administered reversals were reported in 2017-2020.

Although the yearly numbers are too variable and small to draw a clear conclusion about Avery County, an increasing percentage of opioid deaths across the state and WNC Region involved illicit opioids such as heroin, fentanyl, and fentanyl-analogues.

Although the proportion of children in foster care due to parental substance use declined overall in Avery County over the period graphed, the county demonstrated a higher rate compared to NC and the WNC Region until 2020. In 2020, 48.8% of the Avery County children in foster care were there because of parental substance use, compared to 49.6% in WNC and 45.3% in NC.



Buprenorphine is the primary medication used in medication-assisted treatment of opioid dependence. In Avery County, the number of buprenorphine prescriptions dispensed has increased steadily each year, from 502 in 2010 to 2,781 in 2020, indicating expanded treatment access. The number of Medicaid beneficiaries and uninsured individuals served by opioid use disorder treatment programs is variable from year to year in Avery County but averaged 85 each year between 2013 and 2020 (NC DHHS, Opioid Action Plan, 2021).

The Centers for Medicare and Medicaid track the prescribing behavior of physicians participating in the Medicare Part D plan. In 2018, there were 34 Part D prescribers in Avery County and 29 of them prescribed opioids. Those 29 providers, located in Linville, Newland, and Banner Elk, filed 5,893 opioid claims and 732 long-acting opioid claims in 2018. When examined by rate, Avery County demonstrated a higher opioid prescribing rate (6.19) compared to WNC (5.47), NC (5.26), and the US (4.68). The long-acting opioid prescribing rate (12.42) was higher compared to WNC (11.02) and the nation (11.79) and similar to NC (12.60). Since 2013, there were 1.4% fewer opioid claims and 0.81% more long-acting opioid claims filed in Avery County (Centers for Medicare and Medicaid Services, 2021).

While much attention has focused on the opioid crisis in recent years, alcohol continues to be a substance whose misuse impacts our communities. Approximately 49% of Avery County Community Health Survey respondents reporting current consumption of alcohol, similar to the WNC Region, higher than NC and lower than the US. The percentage of respondents engaging in binge drinking was higher in Avery County (24.4%) than any of the three comparators. Binge drinking is defined as men consuming 5+ alcoholic drinks on any one occasion in the past month or women consuming 4+ alcoholic drinks on any one occasion in the past month.

Compared to NC and the WNC Region, a higher proportion of Avery County respondents were classified as excessive drinkers: persons aged 18 years and over who drank more than two drinks per day on average (for men) or more than one drink per day on average (for women) OR who drank 5 or more drinks during a single occasion (for men) or 4 or more drinks during a single occasion (for women) during the past 30 days (WNC Health Network, 2021).

Self-Reported Alcohol Use	Current Drinkers	Binge Drinkers	Excessive Drinkers
Avery County	48.6%	24.4%	26.9%
WNC	50.8%	14.1%	18.4%
NC	47.9%	13.5%	15.4%
US	59.8%	23.6%	27.2%

Epiphany Community Services conducted a youth survey among higher schoolers in Avery County Schools in 2021. The survey asked question about current and previous substance use, student perceptions of the risk of substance use, and their perceptions of peer and parent disapproval. Approximately 16% of high school respondents reported current (in the past 30 days) tobacco or alcohol use; nearly 24% reported currently using e-cigarette or vape products. Thirteen percent of respondents reported current marijuana use and 2% had used prescription medications without a prescription (Avery County Schools, 2021).

Self-Reported Substance Use	% Of High School Students Surveyed
Current tobacco use	16.2%
Current e-cig/vape use	23.7%
Current alcohol use	16.2%
Current Marijuana use	13.0%
Current prescription drug misuse	1.9%

Mental Health

Among 2021 Avery County Community Health Survey respondents, 10.4% reported feeling dissatisfied or very dissatisfied with life, slightly higher compared to WNC. Twenty percent reported more than 7 days of poor mental health in the past month, lower than the Regional average.

Four percent of Avery County respondents in 2021 reported having considered suicide in the past year, a lower percentage compared to WNC (7.2%) (WNC Health Network, 2021).

Self-Reported Mental Health Community Health Survey 2021	Dissatisfied with Life	More than 7 Days of Poor Mental Health	Considered Suicide in the Past Year
Avery County	10.4%	19.9%	4.0%

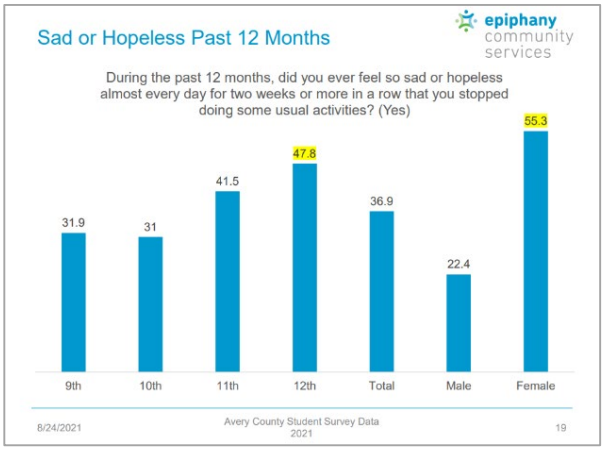
WNC	9.8%	21.8%	7.2%

Between 2015 and 2019 there were 19 deaths due to suicide in Avery County; 15 occurred among individuals between the ages of 35 and 65 (NC SCHS, Detailed Mortality Statistics, 2021).

While 17% of Avery County respondents felt their typical day was extremely or very stressful, a large proportion of them (90%) felt confident in their ability to manage stress. Eighty-six percent agreed or strongly agreed that they were able to stay hopeful in difficult times, similar to WNC (WNC Health Network, 2021).

Self-Reported Stress	Typical Day Extremely Stressful	Confident in Ability to Manage Stress	Able to Stay Hopeful in Difficult Times
Avery County	17.2%	89.8%	85.8%
WNC	14.1%	86.5%	85.0%

Among respondents to the 2021 Avery County Student Survey, 37% or high school students reported feeling so sad or hopeless every day for two weeks that they stopped doing their usual activities; female students were more likely than other groups to report feeling sad or hopeless.



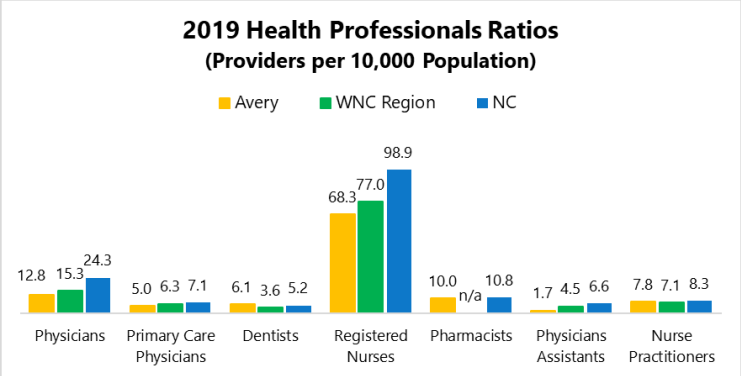
Twelve percent of student respondents reported having considered suicide in the past year and 11% had made a plan about how they would commit suicide. Nearly 4% reported that they had attempted suicide 1 or more times in the past year (Avery County Schools, 2021).

Clinical Care & Access

Healthcare Providers

According to NC Health Workforce data from the Cecil B. Sheps Center for Health Services Research, there were 23 physicians (9 of them primary care physicians), 11 dentists (this dropped to 9 in 2020), 123 registered nurses, 3 physician assistants, 18 pharmacists, and 14 nurse practitioners licensed and active in Avery County in 2019. As of 2019, there were no pediatricians, psychologists, podiatrists, certified nurse midwives, dermatologists, or nephrologists. There were four psychiatrists, one ob-gyn, one cardiologist, one optometrist, and one urologist active in Avery County in 2019.

Compared to the WNC Region, Avery County had lower ratios of physicians, registered nurses and physician assistants. While the ratio of dentists to population was higher than both the state and the region in 2019, that ratio decreased in 2020.



As the healthcare workforce ages and providers approach retirement, office hours often shorten, and providers may be less likely to accept new patients. Rural areas tend to face the challenge of attracting new, younger providers to replace the retiring physicians. In 2019, 39% of Avery County's active physicians, 22% of primary care physicians, and 27% of dentists were over the age of 65 (Sheps Center, NC Health Workforce Data, 2021).

Healthcare Facilities

There is one hospital in Avery County: Charles A. Cannon Jr. Memorial Hospital located in Linville. The hospital had 30 general beds, 10 psych peds and 10 nursing home beds; there are two shared inpatient/ambulatory surgery operating rooms and one endoscopy operating room. There is no additional ambulatory surgical facility in the county and no nursing pool available to provide temporary, supplementary nursing staff.

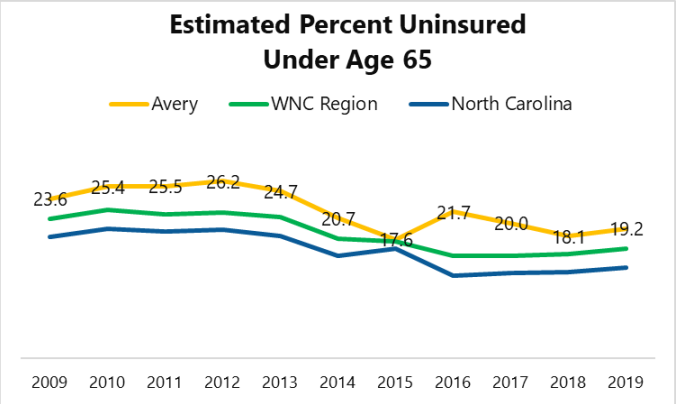
Given the aging nature of Avery County, it will be important to ensure that resources specific to the needs of seniors exist. There are two adult care home located in Newland, with a maximum combined capacity of 100 beds; the one nursing home in Banner Elk has 118 skilled nursing beds and no adult care home beds. There are no family care homes currently operating in Avery County. Three facilities or agencies in Avery County provide home care and home health services and one facility provides hospice services (NC DHHS, Licensed Facilities, 2021).

There is no dialysis facility in Avery County. The closest dialysis facilities are in Spruce Pine (Mitchell County) with 9 hemodialysis stations and no shifts offered after 5pm or in Boone (Watauga County) with 16 hemodialysis stations and no shifts offered after 5pm (Medicare, Dialysis Facility Compare, 2021).

As of December 2021, there were 3 licensed facilities, all located in Newland, providing mental health-related services in Avery County: supervised living for adults with developmental disabilities, vocational programs for adults with developmental disabilities, and an intensive outpatient substance abuse treatment program (NC DHHS, Licensed Facilities, 2021).

Uninsured Population

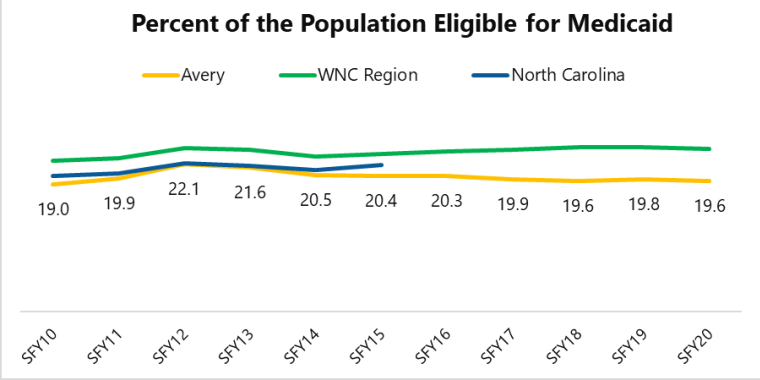
According to 2019 estimates, 19.2% of the Avery County population under the age of 65, or 2,135 people, did not have health insurance. Since 2009 Avery County has demonstrated a higher uninsured rate compared to NC and the WNC Region (Census Bureau, SAHIE, 2021).



Among Avery County minors in 2019, an estimated 8% were uninsured, higher compared to WNC (5.5%) and NC (1.2%); approximately 45% of Avery County children were insured via Medicaid or other public coverage, such as CHIP. An estimated 34% of adults 19-34 did not have health insurance and 21% of adults aged 35-64 were uninsured; both proportions are higher than the region or the state. Among Avery County seniors over the age of 65 in 2019, 28% relied on Medicare alone for insurance and 71% had two or more types of health insurance coverage, higher compared to WNC and NC (Census Bureau, ACS, 2021).

Among Avery County Community Health Survey respondents, 22.5% reported a lack of health insurance coverage, higher compared to the WNC Region (14.9%), NC (19.0%), and the US (8.7%). Eight percent of Avery County respondents reported losing health insurance coverage during the COVID pandemic (WNC Health Network, 2021).

In SFY20, 19.6% of the Avery County population, more than 3,500 individuals, was eligible for Medicaid. Compared to both the WNC and the state, a lower percentage of Avery County residents are eligible for Medicaid and the proportion has not changed much since SFY2016.



As of December 2020, Medicaid Aid to Families with Dependent Children (AFDC) was the largest Medicaid program in Avery County (775 eligibles) followed by Infants and Children (764 eligibles) and Disabled (459 eligibles). A total of 564 children were eligible for MCHIP or CHIP (NC Medicaid Division of Health Benefits, Enrollment Reports, 2021).

Health Care Access

Fourteen percent of Avery County Community Health Survey respondents reporting a time in the past year when they were unable to get needed medical care, higher compared to 10% across the WNC Region. Approximately 27% of Avery County respondents chose to go without needed health care at some point during the COVID pandemic, lower compared to WNC (30%). When asked how likely they were to use telemedicine for future routine healthcare, 38.5% of respondents indicated that they were extremely or very likely to do so, lower compared to WNC (45.9%) (WNC Health Network, 2021).

High Country Community Health is a Federally Qualified Healthcare Center (FQHC), recognized as a Patient Centered Medical Home by HRSA. It is headquartered in Boone, NC but portions of Avery County are included in its service area, and it operates a satellite facility in Newland. FQHCs are important safety net providers in rural areas of the country, as they provide primary care services to underserved communities and populations. These services include mental health and substance use disorder services, primary care and dental services, as well as telehealth visits for both behavioral health and primary care visits.

In 2020, High County Community Health served 10,589 patients, an increase from 9,751 in 2019. In 2020, the clinic served 999 mental health patients, 342 substance use disorder patients, 7,617 medical patients, and 2,204 dental patients. Adults aged 18-24 comprise more than half of their patients (59.5%), with pediatric patients (25.5%) and seniors (15%) accounting for the rest. Approximately 15% of their patients were racial or ethnic minorities: 11% were of Hispanic or Latino ethnicity and 3% were Black/African American. Nearly 9% of their patients were best served in a language other than English. A majority of patients fell below the 200% Federal poverty guideline and 60% fell below the 100% poverty line. Forty-two percent of the patients in 2020 were uninsured, 20% were Medicaid or CHIP patients, and 13% were Medicare patients (HRSA, Program Awardee Data, 2021).

Mental Health Care Access

The number of Avery County residents served by the area mental health program (VAYA) did not change dramatically between FY15-16 and FY19-20, averaging 787 each year. Over that same period, an average of 8 Avery County residents per year were served in NC state psychiatric hospitals (Division of MH/SS/SAS, Annual Reports, 2021).

Approximately 16% of Avery County survey respondents indicated that they were currently taking medication or receiving treatment for their mental health, a lower proportion compared to the WNC Region (24%) and the US (17%). In 2021, 20% of Avery County and 19% of WNC respondents reported a time in the past year when they needed mental health care or counseling but did not get it (WNC Health Network, 2021).

Health Inequities

Among Avery County Community Health Survey respondents, 6% reported often or sometimes being treated unfairly when getting medical care because of their race or ethnicity, higher compared to the WNC Region (4.7%) (WNC Health Network, 2021).

Reliable data illuminating racial disparities is particularly lacking in Avery County, primarily due to the low number of BIPOC residents. The State Center for Health Statistics does not calculate mortality rates when there are fewer than 20 deaths in an aggregate 5-year period, and so racially disaggregated mortality rates simply are not available for the leading causes of death.

Gender disaggregated data **is** available for some of the leading causes of death and it demonstrates that males in Avery County fare worse compared to females. Mortality rates among males are higher for cancer, heart disease, and unintentional injuries (NC SCHS, County Health Databook, 2021).

Mortality Rates by Gender 2015-2019	Avery County Males	Avery County Females	% Difference
Cancer	155.0	137.0	+ 13%
Heart Disease	202.7	162.2	+25%
Chronic Lower Respiratory Diseases	74.4	75.0	- 1%
Unintentional Injuries (non-motor vehicle)	46.3	41.7	+ 11%

Chapter 5 – Physical Environment

"The physical environment is where individuals live, learn, work, and play. People interact with their physical environment through the air they breathe, water they drink, houses they live in, and the transportation they access to travel to work and school. Poor physical environment can affect our ability and that of our families and neighbors to live long and healthy lives." (County Health Rankings, 2021).

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." (County Health Rankings, 2021).

The US Environmental Protection Agency provides Air Quality Index reports from a measuring station in Avery County. In 2019, out of the 366 days with measured air quality, Avery County had 352 good days, 14 moderate days, and no day that was unhealthy for sensitive groups. The most common air pollutant, measurable on 364 days, was ozone (O3). Ozone inhalation can damage the throat and airways and make it more difficult to breathe deeply; it can aggravate existing lung diseases such as asthma, emphysema, and chronic bronchitis. Ground-level ozone is the main ingredient in "smog" and is emitted from industrial facilities, electric utilities, gasoline vapors, and chemical solvents (US EPA, 2021).

The EPA's Toxic Release Inventory tracks more than 650 chemicals that can threaten human health and the physical environment. Facilities that manufacture, process, or use these chemicals in amounts that exceed established levels must report how they release, recycle or manage the materials. Releases can be emissions into air or water, or land disposal (EPA, 2021). Avery County did not have any reportable toxic releases in 2020.

While secondhand smoke exposure has become less prevalent due to the restrictions many communities put in place to discourage smoking, it continues to impact the air quality of homes and workplaces. In 2021, 14% of Avery County Community Health Survey respondents said they had breathed someone else's smoke at work in the past week, higher compared to WNC (9.1%) (WNC Health Network, 2021).

Public water systems provide drinking water to most Americans, and they must abide by established and enforced safety standards. The most common non-public source of water is private wells, the safety of which must be maintained by the homeowner. As of June 2021, approximately 67% of the Avery County population, around 11,800 residents, were served by community water systems. None of the largest community water systems (including Banner Elk, Newland, Crossnore, Linville and Elk Park) had any health-based violations (a contaminant exceeded the safety standard or water was not treated properly) in the past 10 years (EPA, 2021).

Access to Healthy Food & Places

Food security, as defined by the United Nations' Committee on World Food Security, exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

According to Feeding America, 16% of the Avery County population was food insecure in 2019; 19.5% of children were food insecure. They project that in 2021, 17.1% of the population and 21.2% of children will be food insecure (Feeding America, 2021).

Participants in the 2021 Community Health Surveys were asked if they ran out of food at least once in the past year and if they were worried about funning out of food in the past year. Those who said yes to either question were classified as food insecure. Avery County demonstrated a higher percentage of food insecurity (24%) compared to WNC (19%) and a lower proportion compared to the US (34%) (WNC Health Network, 2021).

While the data available from the US Department of Agriculture's Food Environment Atlas is not particularly recent, it provides standardized information that can be tracked over time. Avery County had 1 farmers market in 2018, the same as in 2013. The number of grocery stores decreased from 5 in 2011 to 4 in 2016: there are three large-chain grocery stores in Avery County (an Ingles in Newland, a Food Lion and a Lowes Foods in Banner Elk). As of 2015, nearly 4.5% of Avery County households had no car and low access (more than 1 mile distant) to a grocery store. In contrast to the grocery stores, fast food restaurants appear more abundant in Avery County: there were 12 fast food establishments in 2011 and in 2016. There were no recreational or fitness facility in Avery County in 2011 and 2016 (USDA, 2021).

"Although there are many jobs, few pay a living wage. At the same time the cost for housing, food, childcare and other necessities have risen. A mother of two making $10 an hour, considered a good wage by many in the county, is living in poverty - as are her children. On top of that, many jobs are seasonal or part-time with no benefits, including health insurance. The rural nature of the county makes accessing healthy foods a barrier. Especially when two of the three grocery stores are within 2 miles of each other. A lack of healthy food knowledge is also an issue." - Public Health Representative (Avery County Key Informant Interview)

"YMCA availability to all. Scholarships for those who can't afford it. Senior programming, free swimming lessons for all K and G3 students. Chronic disease management programming." - Public Health Representative (Avery County Key Informant Interview)

Chapter 6- Health Resources

Health Resources

Process

The subcontractor writing the CHA report collected service request data available from the NC 2-1-1 Counts data portal for 2018, 2019, 2020 and 2021. Local public health and social service agencies, as well as local providers, refer clients to 2-1-1 as a matter of practice. 2-1-1 remains an important resource for several reasons:

- It is an easy to remember, three-digit telephone number that connects people with important community services to meet every day needs and the immediate needs of people in crisis.
- It is free, confidential, and available 24 hours a day.
- It can be accessed through the internet (www.nc211.org) or by calling 2-1-1 from any home, office or cell phone or the toll-free number of 1-888-892-1162.
- 2-1-1 can be updated in real-time, by sending updates to the 2-1-1 coordinator out of Asheville, NC.
- Online/telephone directories such as 2-1-1 have an advantage over printed directories as they are accessible remotely, can be updated easily, and do not require printing costs

The Toe River Health District also compiles a Comprehensive Resource Guide for each of the three counties in their district, which was reviewed as part of the CHA process. Health resources-related comments from the Key Informant Interviews were also reviewed.

Findings

According to comments from the Key Informant Interviews, for a small, rural county, Avery County has a robust and active network of agencies and organizations working to improve the health and wellbeing of the community.

> *"We have a community that is ready to help in any way possible once a need has been identified."– Public Health Representative (Avery County Key Informant Interview)*

> *"The county government is very supportive of healthcare in Avery County. We also work well with the local FQHC and other medical facilities." - Public Health Representative (Avery County Key Informant Interview)*

Stakeholders identified the low number of primary care providers, the continuing high cost of medical care, long wait times at medical clinics, and a lack of specialists in the county as particular challenges to the healthcare system.

Access to primary care is especially necessary in Avery County, where there is a focus on preventive healthcare across the lifespan. The Healthy North Carolina 2030 goal is 1 primary care provider (primary care physicians, nurse practitioners, physician assistants, and certified nurse midwives) per 1,500 people. As of 2019, with 26 primary care providers (9 primary care physicians, 18 nurse practitioners, 3 physician assistants and 0 certified midwives), Avery County had a ratio of 1 provider to 673 people (Sheps Center, NC Health Workforce Data, 2021).

While the 2-1-1 data does not demonstrate a high number of requests from Avery County residents, housing, shelter, and utility related calls tend to be the most common, followed by healthcare. Between 2018 and 2021, rent assistance and information about shelters were the most common housing related requests. Within the Utilities category, assistance with electric utilities was the most common type of request. Within the Healthcare category, the requests were spread across several areas: assistance with prescription medication and referrals to medical, dental and eye care (2-1-1 Counts, 2021).

Top 2-1-1 Request Categories	2018	2019	2020	2021	Total
Housing & Shelter	10	12	18	34	74
Shelters	*1*	*4*	*4*	*3*	*12*
Low-cost housing	*3*	*2*	*0*	*4*	*9*
Home repair/maintenance	*1*	*0*	*4*	*2*	*7*
Rent assistance	*4*	*5*	*9*	*22*	*40*
Mortgage assistance	*1*	*1*	*1*	*1*	*4*
Landlord/tenant issues	*0*	*0*	*0*	*2*	*2*
Utilities	8	4	19	24	55
Electric	*7*	*2*	*16*	*5*	*30*
Gas	*0*	*0*	*0*	*3*	*3*
Water	*0*	*2*	*0*	*2*	*4*
Heating Fuel	*0*	*0*	*1*	*3*	*4*
Phone/Internet	*0*	*0*	*0*	*3*	*3*
Other	*0*	*0*	*2*	*8*	*10*
Healthcare (not including COVID)	14	13	13	14	54
Health insurance	*0*	*4*	*0*	*2*	*6*
Medical expense assistance	*1*	*0*	*0*	*3*	*4*
Medical providers	*3*	*2*	*1*	*2*	*8*
Dental & eye care	*2*	*3*	*0*	*3*	*8*
Prescription medications	*6*	*2*	*1*	*2*	*11*
Nursing home & Adult Care	*1*	*2*	*1*	*0*	*4*
Public Health & Safety	*0*	*0*	*8*	*0*	*8*
Contact information	*1*	*0*	*0*	*2*	*3*
Other	*0*	*0*	*2*	*0*	*2*
Food	2	7	12	2	23

Mental Health & Addictions	0	5	4	2	11
Employment & Income	5	2	10	4	21
Clothing & Household	1	0	1	2	4
Child Care & Parenting	0	0	2	0	2
Government & Legal	2	4	6	7	19
Transportation Assistance	0	3	1	2	6
Education	0	0	0	0	0
Disaster	5	0	8	1	14
Other	4	11	13	6	34
Total for top requests	**51**	**61**	**107**	**98**	**317**

This data does not include the COVID-related request categories that were added to 2-1-1 in 2020.

Resource Gaps

Dentists are a particular need in Avery County; as of 2020, there were 9 active dentists in the county. Aside from one active periodontist, there were no other dental specialists, including pediatric dentistry and oral-maxillofacial surgery, in Avery County in 2020. More than a quarter of the active dentists were over the age of 65, an indicator that unless new dentists are incentivized to work in Avery County, the proportion of dentists will shrink as the providers retire. In SFY2020, 6 public health dentists billed Medicaid for 3,125 procedures; an additional 3 general practice dentists billed Medicaid for 2,595 procedures (NC DHHS, Reports, 2021).

Compared to the WNC Region, Avery County had lower ratios of physicians, registered nurses and physician assistants, meaning fewer providers are available to serve the population or that the providers who are there have to serve a higher number of patients. As of 2019, there were no pediatricians, psychologists, podiatrists, certified nurse midwives, dermatologists, oncologists, endocrinologists, pulmonologists, gastroenterologists, ENT (Otolaryngology), radiologists, nephrologists. There was only one optometrist, one cardiologist, one general surgeon, one ob-gyn, and one urologist (Sheps Center, NC Health Workforce Data, 2021).

"This issue affects every person in Avery County. There aren't many providers in Avery. There is one private medical clinic and they are always full, with long wait times." - Public Health Representative (Avery County Key Informant Interview)

"Lack of specialists in area, residents have to travel for specialized care." - Public Health Representative (Avery County Key Informant Interview)

"Proximity to appropriate and affordable health care, community supports and prevention services, resources." - Public Health Representative (Avery County Key Informant Interview)

"We have a community with great disparity. We have a population with great wealth and many with great need. There are also many good community

leaders who work diligently to close the gap between these two population[s]. ARHS is good community leader in pulling people together. The faith community is also very active in serving those in need. The YMCA is doing a great job to build up the health of the community in a preemptive manner." - Public Health Representative (Avery County Key Informant Interview)

Chapter 7 – Identification of Health Priorities

Priority Health Issue Identification

Process

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

Beginning in January 2021, the Healthy Carolinians of Avery County team spent time understanding the data and uncovering what issues were affecting the most people in our community. We also interviewed community leaders to find out what they are most concerned about. To identify the significant health issues in our community, our key partners (see a full list in the Executive Summary) reviewed data and discussed the facts and circumstances of our community.

We used the following elements to identify significant health issues:

- Data reflects a concerning trend related to size or severity
- Significant disparities exist
- Issue surfaced as a topic of high community concern
- County data deviates notably from the region, state or benchmark

Once our team made sense of the data, we presented key health issues to a wide range of partners and community members. On November 15, 2021, Jessica Farley and Emma Duncan from Toe River Health District facilitated the first of three prioritization meetings, via Zoom. The team shared highlights from the Avery County WNC Healthy Impact presentation, summarizing the community health survey results and key informant interviews, and slides containing statistical data pertaining to substance abuse, mental health, healthy lifestyles and COVID. Participants were prompted to ask questions and comment on what data that stood out to them, then used the JamBoard digital tool to start pulling out the priorities.

At a follow-up meeting on November 22, the team reviewed highlights from the 2018 CHA and compared them to the 2021 results. As a result of that meeting, the Healthy Carolinians of Avery County partnership identified the following 10 health issues:

- **Substance Abuse**. Our community experiences higher opioid dispensing rates as well as excessive alcohol use. The fact that nearly half of survey respondents had experienced the negative impacts of substance use on their lives is an indication of the pervasive effects of drug use.

- **Obesity Issues.** Nearly a quarter of the county population is estimated to be obese, and rates have not improved significantly in many years. Obesity leads to increasing rates of cancer, chronic diseases like diabetes, heart disease and kidney diseases, and can be a complicating factor for many other conditions.

- **Mental Health**. Even without the negative impact of the COVID crisis on our community's mental health, the lack of availability of mental health services and the continued impact of stigma and fear were felt in Avery County, in a rising suicide rate that was also higher compared to NC.

- **Childhood Trauma.** A community health team needs to be able to recognize signs and symptoms in children that might be linked to a traumatic event in their lives. With behavioral health, mental health, substance abuse, and domestic violence being on the rise, it is no surprise that children in these families are suffering too. A critical part of children's recovery is having a supportive caregiving system so that these children can recover from the traumatic events.

- **Food Insecurity**. With an estimated 17% of adults and 21% of children projected to be food insecure in Avery County in 2021, the lack of grocery stores and the continuing poverty rates only make it harder for our community to access fresh, healthy foods.

- **Poverty Issues**. Although Avery County has lower poverty rates compared to NC, 15% of the population and 19% of children under 18 lived below the poverty line. Poverty rates are even higher among the BIPOC population. And while income levels have risen over time, they continue to be thousands of dollars lower than the state average. Health decreases as wealth decreases.

- **Housing Expenses.** Even though the cost of housing is lower in Avery County compared to NC, 31% of homeowners and 44% of renters in Avery County spend more than 30% of their monthly income (which is already lower than NC) on housing. As reflected in 2-1-1 calls, the cost of utilities and heating fuel continue to be an issue in our community.

- **Language Barriers.** Language barriers effect the ability to communicate and if people cannot communicate, this leads to misunderstandings and misinterpretations between people. 18% of the non-English speakers in Avery County are linguistically isolated. The inability to speak to the Hispanic populations in our area prevents individuals from being able to fully express their personality and form bonds with others. The individual may feel isolated from the rest of the population. Language barriers can foment discrimination and separation of groups. It can also, effect their healthcare, mental health, and education.

- **Stigma**. People do not get help if they think someone will find out. People are less likely to be willing to have someone with an addiction problem marry into their family, move next door, spend an evening socializing with them, or work closely with them on a job. In general, higher levels of stigma predict lower willingness to provide support, so this pattern could have very negative downstream consequences for our communities. Stigma around substance use disorder is common and pervasive in our county, which translates into a lack of support for harm reduction and medication assisted treatment programs. Our residents are disproportionately less likely to support having needle exchange programs, safe injection sites and police officers carrying Narcan because people want to believe that we do not have a problem and we live in a perfect place, which is not true.

- **Effects of COVID-19.** When the pandemic first started, reports stated it was only in urban areas but as time went on, it hit the rural areas and we did not have the resources to tackle it. Our small hospitals were full, and our medical system was overwhelmed. People began to panic and stay home, afraid to go out. People found themselves jobless with no income to buy groceries or gas, some found themselves homeless. People suffered from lack of access to care. As time went on, we are seeing more and more people, young and old, with mental health issues, substance abuse issues, and it is affecting their everyday lives.

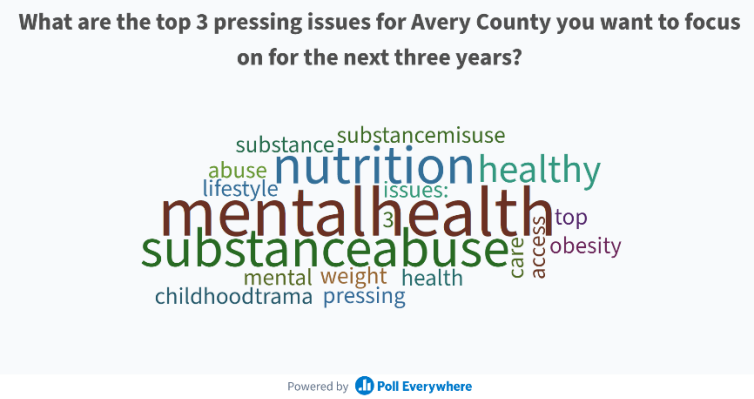
On November 29, 2021, the top ten health issues identified by the Community Health Assessment were presented, with the goal of having top three issues prioritized by the end of the meeting. Before breaking participants into two breakout groups, Jessica Farley reminded the group that the issues should be considered using the following criteria:

- Criteria 1 – Relevant – How important is this issue? *(Size of the problem; Severity of problem; Focus on equity; Urgency to solve problem; Linked to other important issues)*
- Criteria 2 – Impactful – What will we get out of addressing this issue? *(Availability of solutions/proven strategies; Builds on or enhances current work; Significant consequences of not addressing issue now)*

- Criteria 3 – Feasible – Can we adequately address this issue? *(Availability of resources (staff, community partners, time, money, equipment) to address the issue; Political capacity/will; Community/social acceptability; Appropriate socio-culturally; Can identify easy, short-term wins)*

She also encouraged groups to discuss the inclusion or exclusion of "social determinates of health" as a category since social determinates may underpin every other topic. There was agreement that equity (e.g., Spanish translation) and social determinants of health must be lenses that are applied to ALL work undertaken toward community health improvement and should influence everything that we do.

Then a word cloud-voting technique was used to narrow to the top 3 priority health issues.



Identified Priorities

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

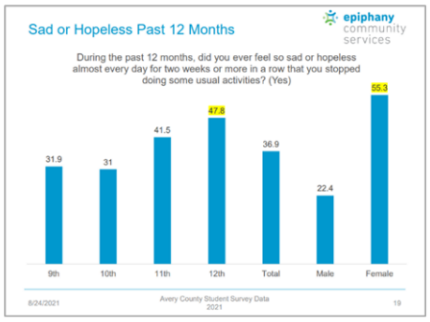
4. **Mental Health**
5. **Substance Abuse**
6. **Food and Nutrition**

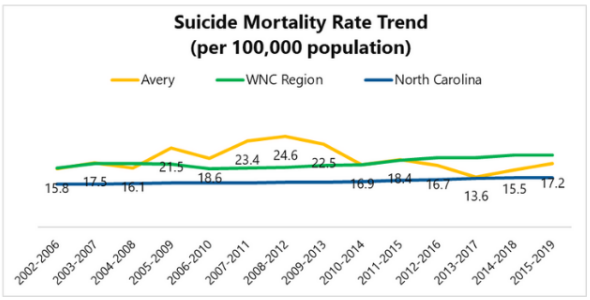
MENTAL HEALTH

Avery County
CHA Priority 1

Poor mental health and the lack of resources to treat it burdens individuals & families. Mental health issues combined with substance abuse can lead to increased intimate partner violence. All of the above accumulate in the lives of our citizens as Adverse Childhood Experiences, which can increase the risk of health issues over a lifetime. Mental illness, domestic violence, and ACEs atrophy a community's ability to respond, withstand, and recover from adversity.

THE NUMBERS





Self-Reported Mental Health Community Health Survey 2021	Dissatisfied with Life	More than 7 Days of Poor Mental Health	Considered Suicide in the Past Year
Avery County	10.4%	19.9%	4.0%
WNC	9.8%	21.8%	7.2%

WHAT DOES THIS MEAN FOR AVERY COUNTY?

- 20% of survey respondents reported 7+ days of poor mental health in the past month.
- The county suicide mortality rate is 28% higher than NC and rose 3% since 2012-2016.
- 16% of survey respondents were currently taking medication or receiving treatment for mental health issues.
- 20% of respondents indicated a time in the pat year when they needed mental health care or counseling but could not get it.
- The DV shelter in Avery County served 124 clients in FY19-20 and the shelter was full on 250 days out of the year.

Revised
Sept. 2021

Tool adapted by WNC Health Network from Buncombe County CHIP data team

MENTAL HEALTH

WHAT'S HELPING?

- "A great school system supports this population. We also have a number of agencies who know about and believe in the ACEs. There have been trainings on ACEs and right before COVID hit, we were planning another conference that would include ACEs." - Public Health Representative (Avery County Key Informant Interview)
- Telehealth options
- Community collaboration

WHAT'S HURTING?

- "Lack of dedicated resources to building community capacity to understand the issues and understand how to take knowledge learned to build resiliency. Reduce and treat trauma and develop policies and practices to intervene." - Public Health Representative (Avery County Key Informant Interview)
- Shame, stigma, resistance, lack of empathy
- Needing Medicaid to acquire services
- Need more certified counselors in schools
- COVID-19 issues

WHO'S MOST IMPACTED?

- People without the means to pay for help (uninsured, underinsured, unemployed, low-income)
- People without internet access
- Children, who lack local target resources
- Teenagers
- Those with Substance Use Disorder

CURRENT ACTION

- Access/public Mental Health facility
- Medication Assisted Treatment program at High Country Community Health
- Community collaboration

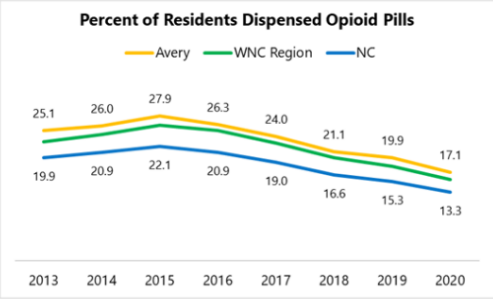
"Local leaders, especially foundation directors and elected officials, looking closely at data to address the underlying root causes of trauma in Avery. To name a few, poverty, housing, transportation, access to healthy food, access to primary care, behavioral health, dental, and substance use disorder treatment. County-wide training around trauma/resiliency-informed science, practices, and policies and the impact on youth and families is crucial...especially with all groups/agencies in the county who serve youth/families...law enforcement, schools, non-profits, health dept, social services, courts, juvenile justice, etc." - Public Health Representative (Avery County Key Informant Interview)

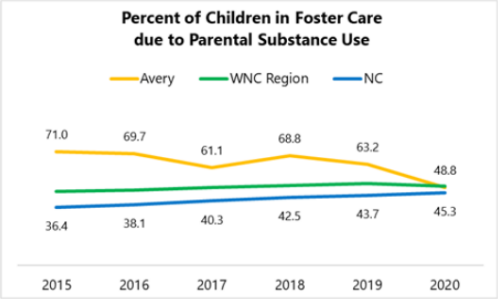
SUBSTANCE ABUSE

Avery County
CHA Priority 2

The expanding social & personal impact of substance use is clearly felt but treatment is often complex; the burden of substance use expands into the entire community. While local collaborations have led to focused efforts to fight substance abuse, stigma, shame and affordability are continual barriers to care. Substance abuse was identified by 91% of Avery County stakeholders in the Key Informant Interview as a "major problem in the community", suggesting that it should continue to be a priority area for Avery County.

THE NUMBERS





Self-Reported Alcohol Use	Current Drinkers	Binge Drinkers	Excessive Drinkers
Avery County	48.6%	24.4%	26.9%
WNC	50.8%	14.1%	18.4%
NC	47.9%	13.5%	15.4%
US	59.8%	23.6%	27.2%

WHAT DOES THIS MEAN FOR AVERY COUNTY?

- Although the rate has decreased over time, a higher percentage of Avery County residents were dispensed opioids compared to NC and WNC.
- 12% of survey respondents reported using opiates/opioids with or without a prescription in the past year.
- Compared to WNC and NC, Avery County tends to have a higher proportion of children in foster care due to parental substance use.
- The number of buprenorphine prescriptions dispensed has increased each year since 2010, indicating increased treatment options and/or increasing need.
- Avery County had higher rates of self-reported binge drinking and excessive drinking among Community Health Survey respondents.
- 47.5% of survey respondents had been negatively affected by substance abuse.

Revised
Sept. 2021

Tool adapted by WNC Health Network from Buncombe County CHIP data team

SUBSTANCE ABUSE

WHAT'S HELPING?

- Medication Assisted Treatment with counseling
- MAT available at High Country Community Health for all regardless of ability to pay
- Community collaboration
- Drug Court

WHAT'S HURTING?

- Shame, stigma, resistance
- Lack of empathy
- Poverty
- Needing Medicaid to acquire services
- COVID-19 issues

WHO'S MOST IMPACTED?

- People aged 15-40
- People without the means to pay for help (uninsured, underinsured, unemployed, low income)
- Children whose parents abuse substances

CURRENT ACTION

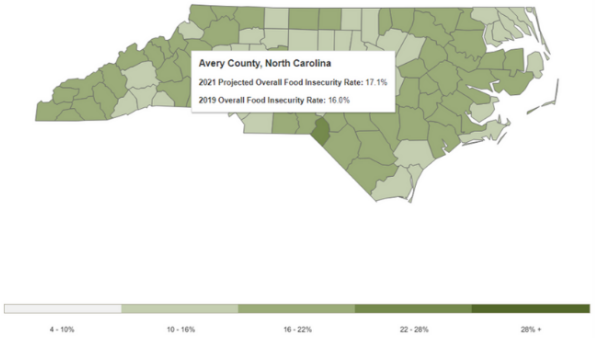
- Freedom Life, drug crisis round table, access to substance abuse public services

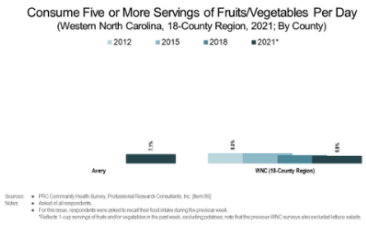
Avery County
CHA Priority 3

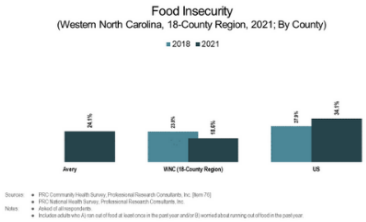
FOOD & NUTRITION

Reliable and sufficient nutrition is necessary order to have a healthy, active life. Many rural communities, including Avery County, were already struggling with low grocery store access and availability and low wages and poverty. The inflating cost of food, supply chain disruptions, and employment impacts resulting from the COVID Pandemic have complicated the food environment in Avery County.

THE NUMBERS







WHAT DOES THIS MEAN FOR AVERY COUNTY?

- Feeding America projects that 17% of adults and 21% of children are food insecure in 2021.
- Only 7% of Avery County survey respondents consume the recommended servings of fruits and vegetables daily.
- 24% of survey respondents reported running out of food at least once in the past year or worried about running out of food in the past year.
- The number of individuals receiving Food and Nutrition Services (food stamps) in Avery County rose from 1,815 in Nov. 2020 to 2,056 in Nov. 2021, indicating an increasing need for food-related assistance.
- There are only four grocery stores in Avery County and all are located in close proximity in the central part of the county; additional grocery shopping options require traveling out of the county. There are convenience stores and small stores that might sell shelf-stable items.

Revised
Sept. 2021

Tool adapted by WNC Health Network from Buncombe County CHIP data team

FOOD & NUTRITION

WHAT'S HELPING?

- "Feeding Avery Families is excellent in providing food to families in need. Also, the Pop-Up Market that is held monthly is good. The schools can provide food for kids who come to school hungry. RAM's Rack is another wonderful resource." - Social Services Provider (Avery County Key Informant Interview)
- "Melissa (at the Extension Office) does a good program teaching how to shop, prepare and cook healthy meals and snacks, we need to promote her." - Social Services Provider (Avery County Key Informant Interview)
- YMCA Afterschool and Summer Camps
- Avery County Schools

WHAT'S HURTING?

- "Food in Avery County is expensive. To get to less expensive quality food, people must leave the county and transportation can be a problem. In addition, healthy food is more expensive than less healthy, more processed food...." - Social Services Provider (Avery County Key Informant Interview)
- People don't know what resources are available

WHO'S MOST IMPACTED?

- Those in the lowest socioeconomic segment
- Adults who are aging in place
- Children
- Low income families

CURRENT ACTION

- Feeding Avery Families

"The rural nature of the county and the high levels of persons living in poverty has created food deserts and/or financial inability to access healthy foods in the county. There are many agencies that are addressing the access by providing food boxes or congregate meals and they do a great and noble drive. To support the health and wellbeing of the community, people need to independently be able to provide for themselves & their families or we are addressing only a symptom." - Public Health Representative (Avery County Key Informant Interview)

Chapter 8 - Next Steps

Collaborative Planning

Collaborative action planning with hospitals and other community partners will result in the creation of a community-wide plan that outlines what will be aligned, supported and/or implemented to address the priority health issues identified through this assessment process. The next steps will be to formulate action plans regarding these three health concerns, starting with answering the questions to eliminate duplication of services and creating work that is not useful:

- What is currently going on regarding these top three health concerns?
- What would you like to see going on regarding the top three health concerns?

The health partnership will create subcommittees for each health concern and these committees will work on creating collaborative action planning and implementation efforts. Upcoming meetings will be scheduled, and partners will be notified. We will conduct a root cause analyzes and identify possible evidence-based strategies to tackle the health concerns during the action planning process.

Further steps will be taken including the development of a community health improvement plan based on the findings from the CHA. The CHA Facilitator will convene community members and partners interested in moving forward on the selected health priorities. Action teams will emerge from the selected health priorities and the teams will begin brainstorming evidence-based strategies.

While much work has already been done to improve the health of our community's residents, more work is left to do to ensure that Avery County is the healthiest place to live, learn, work, and play.

Sharing Findings

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

- Present to the Toe River Health District Board of Health
- Present to the Avery County Board of Commissioners
- Present to the Healthy Carolinians of Avery County
- Distribution to Avery County School Administration
- Distribution to doctors and nurses at Cannon Memorial Hospital
- Distribution to Avery County Senior Center
- Post on local radio station website www.wecr.com
- Conduct a Public Services Announcement with the local radio station

- Publish in the local newspaper website: www.averymountaintimes.com
- Make available on local agency websites and local libraries in Newland and Banner Elk

Where to Access this Report

- WNC Health Network website: https://www.wnchn.org/wnc-healthy-impact/reports/
- Toe River Health District website: www.toeriverhealth.org
- Hard copies will be available at the local library and the health department.

For More Information and to Get Involved

Visit www.toeriverhealth.org or contact Avery County Health Department at (828) 733-6031.

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PHOTOGRAPHY CREDITS

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APPENDICES

Appendix A – Data Collection Methods & Limitations

Appendix B – Survey Findings
WNC Healthy Impact Survey Instrument
Community Health Survey Results

Appendix C – Key-Informant Survey Findings

APPENDIX A - DATA COLLECTION METHODS & LIMITATIONS

Secondary Data Methodology

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; NC Department of Health and Human Services; NC Office of State Budget and Management; NC Department of Commerce; UNC-CH Jordan Institute for Families; NC Department of Public Instruction; NC Department of Justice; NC Division of Health Benefits; 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 WNC Healthy Impact Data Workbook was prepared. It is not possible to continually update the data past a certain date; in most cases that end-point is September 2021. Secondary data is updated every summer in between Community Health Assessment (CHA) years.

The principal source of secondary health data for the WNC Healthy Impact Data Workbook is 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 were 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.

The WNC Healthy Impact data workbook contains only secondary data that are : (1) retrieved directly from sources in the public domain or by special request; and (2) are available for all 16 counties in the WNC Healthy Impact region. All secondary data included in the workbook are the most current available, but in some cases may be several years old. Names of organizations, facilities, and geographic places presented in the tables and graphs 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 Community Health Survey (Primary Data)

Survey Methodology

The 2021 WNC Healthy Impact Community Health Survey was conducted from March to June 2021. The purpose of the survey was to collect primary data to supplement the secondary core dataset and allow individual counties in the region to collect data on specific issues of concern. 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. In 2021, the WNC Health Impact Community Health Survey data collection was expanded to include Avery and Burke County.

Professional Research Consultants, Inc. (PRC) designed and implemented the mixed-mode survey methodology, which included a combination of telephone (both landline and cell phone) interviews, online survey, as well as a community outreach component promoted by WNC Health Network and its local partners through social media posting and other communications. 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 2021 survey were:

1) How often do you have trouble finding transportation to places you would like to go? Would you say: (Always-Never)**.**
2) The following questions are about the coronavirus and COVID-19 pandemic that began in mid-March of 2020. How strict have you been about observing social distancing and stay-at-home recommendations? Would you say: (Extremely Strict-Not at all)

3) What would you say is your main source of information for COVID 19 in your area?

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 56 (56.4) percent cell phone-based survey respondents and 44 (43.6) 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 worked with a third-party provider to identify and invite potential respondents for an online survey for a small proportion (3.5%) 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.

PRC also created a link to an online version of the survey, and WNC Health Network and its local partners promoted this online survey link throughout the various communities in order to drive additional participation and bolster overall samples. This yielded an additional 1,717 surveys, and locally an additional 25.

About the Avery County Sample

Size: The total regional (18-county) sample size was 5,291 individuals aged 18 and older, with 225 from our county. PRC conducted all analysis of the final, raw dataset.

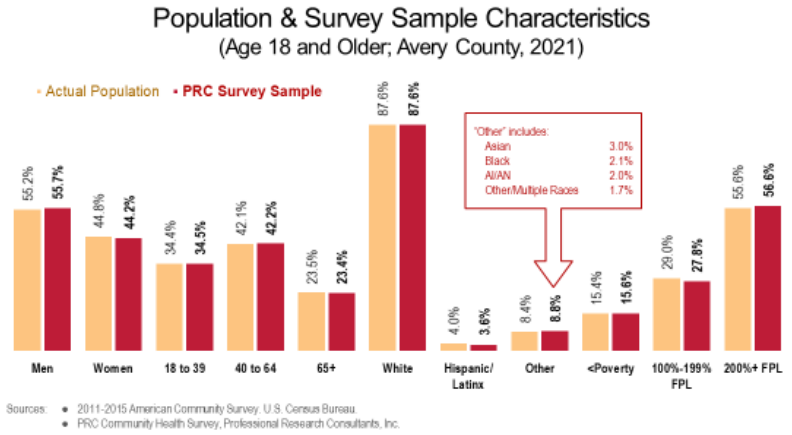
Sampling Error: For county-level findings, the maximum error rate at the 95% confidence level is approximately ±4.0% (Buncombe and Henderson counties), ±4.6% (Polk County), ±5.1% (Jackson and Madison counties), or ±6.9% (all other counties, including Avery).

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

Examples:

- If 10% of a sample of 200 respondents answered a certain question with a "yes," it can be asserted that between 6.0% and 14.0% (10% ± 4.0%) of the total population would offer this response.
- If 50% of respondents said "yes," one could be certain with a 95 percent level of confidence that between 43.1% and 56.9% (50% ± 6.9%) of the total population would respond "yes" if asked this question.

Characteristics: The following chart outlines the characteristics of the survey sample for Avery County by key demographic variables, compared to actual population characteristics from census data. Note that the sample consists solely of area residents aged 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 2020 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 2030

Since 1980, the Healthy People initiative has set goals and measurable objectives to improve health and well-being in the United States. The initiative's fifth edition, Healthy People 2030, builds on knowledge gained over the past 4 decades to address current and emerging public health priorities and challenges.

An interdisciplinary team of subject matter experts developed national health objectives and targets for the next 10 years. These objectives focus on the most high-impact public health issues and reflect an increased focus on the social determinants of health — how the conditions where people live, work, and play affect their health and well-being.

Survey Limitations and Information Gaps

Limitations

The survey methodology included a combination of telephone (both landline and cell phone) interviews, as well as an online survey. Limitations exist for these methods. For example, potential respondents must have access to a landline or a cell phone to respond to the telephone survey. In addition, the telephone survey sample included landlines (versus cell phones), which may further skew responses to individuals or households with landlines.

The PRC online survey component also has inherent limitations in recruitment and administration. Respondents were recruited from a pre-identified panel of potential respondents. The panel may not be representative of the overall population.

Additionally, PRC created an online survey link, which was promoted by WNC Health Network and its local partners through social media posting and other communications. The online survey link respondents might not be representative of the overall population.

A general limitation of using online survey technology is that respondents must interpret survey questions themselves, rather than have them explained by a trained, live interviewer. This may change how they interpret and answer questions.

Lastly, the technique used to apply post stratification weights helps preserve the integrity of each individual's responses while improving overall representativeness. However, this technique can also exaggerate an individual's responses when demographic variables are under-sampled.

Information Gaps

This assessment was designed to provide a comprehensive and broad picture of the health of the community overall. It does not measure all possible aspects of health in the community, nor does it represent all possible populations of interest. For example, due to low population

numbers, members of certain racial/ethnic groups (e.g., Black, AI/AN, Hispanic/ Latinx, etc.) may not be identifiable or represented in numbers sufficient for independent analyses. In these cases, information gaps may limit the ability to assess the full array of the community's health needs.

Online Key Informant Survey (Primary Data)

Online Survey Methodology

Survey Purpose and Administration

The 2021 Online Key Informant Survey was conducted in June and July 2021. 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. In 2021, Avery County was able to align data collection with the WNC Healthy Impact region and leverage the Online Key Informant Survey to include a list of potential key informants. 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.

Survey instrument

The survey provided respondents the opportunity to identify important health issues in their community, what is supporting or getting in the way of health and wellbeing in their community, and who in their community is most impacted by these health issues.

Participation

In all, 11 community stakeholders took part in the Online Key Informant Survey for our county, as outlined below:

Local Online Key Informant Survey Participation		
Key Informant Type	**Number Invited**	**Number Participating**
Community Leader	11	1
Other Health Provider	0	0
Physician	0	0
Public Health Representative	9	9
Social Services Provider	1	1

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

Survey Limitations

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

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

Data Definitions

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

Error

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

Age-adjusting

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