Swain County Health Department Community Health Assessment 2015

Acknowledgements

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

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

WNCHEALTHYIMPACT

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Swain County 2015 CHA Executive Summary

Purpose and Process

During the 2015 Community Health Assessment (CHA), the Swain County Health Department (SCHD) partnered with WNC Healthy Impact to complete the process. WNC Healthy Impact is a partnership between 16 counties of hospitals and health departments in Western North Carolina (WNC), working towards a vision of improved community health. This partnership consisted of working together locally and regionally on a community health improvement process to assess the health needs, develop collaborative plans, take coordinated action, and evaluate progress and impact.

Throughout 2015, a variety of data collection took place for the CHA. SCHD, in partnership with WNC Healthy Impact, collected both primary and secondary data to not only determine the health status of Swain County but also see how its status relates to that of the region. In working with WNC Healthy Impact, SCHD collected data through a Core Survey of 200 residents, 50 Swain County Key Informant surveys and interviews. Further, secondary data from the NC State Center for Health Statistics, US Census Bureau, CDC's Behavioral Risk Factor Surveillance System and more was collected to supplement the primary data, filling in any data gaps. Data collected was analyzed and prioritized with the input of the community via a prioritization process based on the *Rating/Ranking Key Health Issues* (Health Resources in Action) and the *Hanlon Method for Prioritizing Health Problems* (NACCHO). Three health priorities were selected for the community to focus efforts on, aiming to make a collective impact over the next three years.

Many key partners participated in this process. Partners included, WNC Healthy Impact, SCHD CHA team, Swain County Economic Development, Swain County Schools, Swain Community Hospital, Smoky Mountain Urgent Care, Mountain Projects Inc., Smoky Mountain Times and Swain Medical Center. All entities and organizations provided great insight into this process, offering opinions on the health status of this community. It is through their partnership and collaboration that we were able to make this a product about the community, by the community, and for the community.

Data Summary

Community

Swain County is one of the westernmost counties in North Carolina, containing a large portion of the Great Smoky Mountains National Park (GSMNP) and half of the Qualla Boundary of the Eastern Band of Cherokee Indians (EBCI). The rugged mountainous terrain has elevations ranging from 1600 to 6643 feet. There are four significant rivers (Tuckasegee, Little Tennessee, Oconaluftee, and Nantahala) and numerous creeks slicing through the land. Swain County is 540 square miles, with 83% of that land under federal or local ownership and out of the tax base: 217,451 acres (65%) is GSMNP, 22,296 acres (6.5%) US Forest Service, 29,477.46 acres (8.5%) Qualla Boundary managed by the EBCI,

7337 acres (2%) Fontana Reservoir managed by TVA and 3800 acres (1%) local tax-exempt property.

As of 2014, the total Swain county population was 14,274, which has grown 2.1% since 2010. The population growth rate is much lower than the state average rate of 4.3%. Swain County median household income was $34,632 and NC's was $46,693 in 2010-2014. Persons in poverty for Swain County was 19.3%; whereas NC was 17.2%. Swain County median house value was $123,100 and NC's was $153,600 in 2010-2014 (U.S. Census Bureau, 2016).

Swain County is a Tier one, 100% rural county. In the years of 2009 – 2013, Swain County Poverty rate was 27.2 %, which was higher than WNC and NC. The estimated poverty rate among children under age 18 ranged from between 30% to 48% which was higher than the overall rate throughout this period (U.S. Census Bureau).

In 2014, the majority of residents were Caucasian (65.7%) with minorities represented as follows: Black (1.3%), Hispanic (4.7%) and Native American (27.9%). Swain County's estimated projected growth of the elderly (65+) by 2030 will be more than 3,500 persons.

Swain's beautiful mountainous terrain is an asset bringing many tourists. This asset does lead to service job creation; but, these jobs are at a low wage and usually without health insurance. The same beautiful mountains create terrain that is a deterrent to industry locating in the area.

People in Swain County have generally had a strong connection to the land, with many who farm, garden (which means raising vegetables, not flowers), hunt and fish. The rugged mountains have isolated this community, but have also preserved many old customs, language, and handicrafts. There is a strong sense of heritage, pride, self-sufficiency and independence. Much of the culture has been passed down through the years from grandparents to sons and daughters and so on. Food still has a colloquial twist of bacon fat seasoning. The culture prides their ability to take care of family. Hunting and fishing is still a way of feeding the family. Children usually learn to hunt at an early age carrying on the tradition that our area natural resources nurture.

In summary, Swain County is a small rural county where the people believe it is a good, safe place to raise your children and grow old. The communities are church centered, where families are found to worship together and live in close proximity to one another. Pride is in inherent in the people of Swain County. Most of the recreation in the county is based upon sports. You can find a large percentage of the county at the home football games on Friday nights and in the spring at local baseball games.

Health Outcomes

In 2012, the CHA process identified tobacco use and obesity (physical activity & nutrition) as health priorities. The community devoted effort towards these priority areas. We identified progress in some areas and others where progress is still developing. The

leading mortality rates remained the same for the 2015 CHA. The leading causes of death in Swain County were related to diseases of the heart, cancer, and chronic respiratory disease (2009-2013 NC State Center for Health Statistics). According to these data, people in Swain County have higher mortality than the population statewide for all eight of the leading causes of death for which there are stable rates. Male rates compare poorly to female mortality rates. The male mortality rate is 2.1 times higher than female rates in diseases of the heart. Male cancer rates are 1.96% higher than females. As its variance from the state rate demonstrates, mortality attributable to diabetes is a very significant health problem in Swain County.

Our CHA team observed there was a rise in diabetes in 2014, with 111 new cases as reported by the CDC. The highest diabetes death rates were reported in Swain County at 45.5 deaths per 100. Should it continue, it is a forewarning of eventual increased mortality, especially since the diabetes mortality rate in the county increased over 8% since 2012. Swain County Health Department and partners implemented a Diabetes Education Recognition program in 2013. Currently, the education program focus is Diabetes Prevention.

The percentage of women who smoked during pregnancy in NC and the WNC region did not improve significantly between 2008 and 2013. The occurrence of pregnant women in Swain County who smoked actually increased after 2009. Among comparators, in every year cited except 2009 Swain County had the highest percentage of pregnant women who smoked.

As a result of unintentional poisoning our community noticed an increase in deaths. During the period 2009-2013, 22 Swain County residents died, resulting in a corresponding age-adjusted mortality rate of 31.6 deaths per 100,000 population, the highest rate between NC, Swain, WNC-regional, and non-WNC which were the comparators for unintentional poisonings. Of the 22 unintentional poisoning deaths in the county in that period, 17 (77%) were due to medication or drug overdoses, with a corresponding mortality rate of 24.4, the highest rate among the comparators. The Coalition for a Safe and Drug Free Swain County has implemented campaigns for proper storage and disposal of medications, dispersal of medication lock boxes and supported promotional activities related to substance abuse (NC SCHS, 2016).

Swain County adults considered “obese” on the basis of height and weight (BMI > 30) was 31.6% in the period from 2005 - 2011. Over the same period the WNC average prevalence was 27.1%. The prevalence of adult obesity has been increasing in WNC until recently. The prevalence in Swain County appears to be stabilizing (NC SCHS, 2016).

The Western counties had the opportunity to reach a large portion of our community through the 2014 Department of Defense Medical Mission (Appalachian Care), serving more than 8,000 individuals over two weeks. Swain County and Cherokee County were host counties. This opportunity brought the community together to increase access to services including; medical, vision, dentistry, behavioral health and veterinary services.

Not only were services received by the community, both Medicaid and non-Medicaid referrals were made and diabetes risks were identified.

Challenges continue in reaching populations using tobacco. School grounds are tobacco free, but individuals are still seen smoking at athletic events. Rates for smoking during pregnancy are high, despite the education they receive of the detriments to health for them and their unborn child.

Populations at Risk

Population groups with an increased likelihood of a disease or other health issues, as identified in this CHA document, as at-risk population in Swain County are broad categories that may or may not be at-risk at any identified time. Population at risk are identified as residents living at poverty level, the under-insured and non-insured, residents with low educational attainment, residents without transportation, and residents with limited communication. SCHD wants to focus our effort on those who are most vulnerable, undeserved and face disparities to ensure health equity among our residents.

Health Priorities

Swain County Health Department CHA facilitator and nursing director analyzed the secondary and primary data from WNC Healthy Impact and on-line surveys. Highlights of the data were presented to CHA work group and prioritized into 10 top areas using above described techniques. From there, data was presented to all CHA groups and community members at a CHA prioritization luncheon, selecting 10 top priorities and through facilitation the groups narrowed to the top 5 issues. The process went back to the CHA facilitator, health educator, and nursing supervisor and the 3 priority areas below were identified and recommended by the CHA team.

- Heart Disease, Stroke and Diabetes Prevention
  - Focus on (nutrition – obesity – physical activity)
- Reduce Substance Abuse in our community
  - Linking to: (mental health - infectious disease - STD's)
- Promote a healthy environment
  - Focus on (Tobacco cessation in pregnant moms and youth)

Next Steps

The 2015 CHA will be disseminated in a variety of ways. To begin with, the document will be made available online at http://www.swaincountync.gov/health-home.html. Hard copies will also be available at the Health Department, local library, and printed upon request. Reports of the CHA data will be presented to the community in the local newspaper. The CHA Facilitator will present the CHA data during a Board of Commissioners meeting, Swain Community Hospital meeting, and upon request.

Next steps will include the development of a community health improvement plan based on the findings of the CHA. The CHA facilitator will assemble a meeting of the CHA committee and action teams to develop objectives and strategies to move forward on the

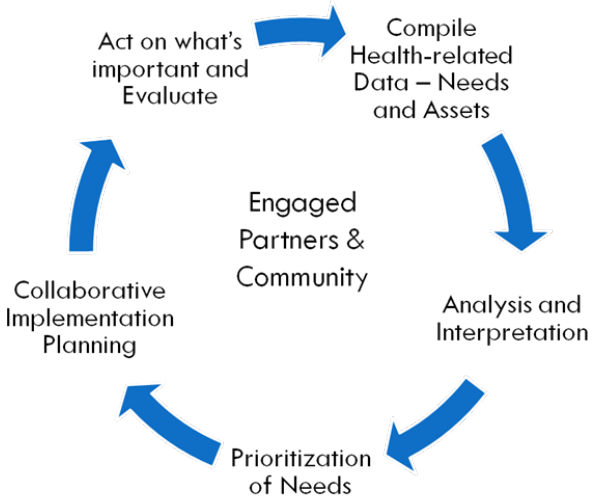
identified three priority health issues. The teams will develop plans using evidence based strategies. Swain has made progress through the years on health issues through environmental and policy changes and education.

Chapter 1 –Community Health Assessment Process

Purpose

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

The CHA is both a process and a product, investigating and describing the current health indicators and status of the community, what has changed, and what still needs to change to reach a community's desired health-related results.



Definition of Community

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

WNC Healthy Impact

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

Data Collection

The set of data reviewed for our community health assessment process is comprehensive, though not all of it is presented in this document. Within this community health assessment document we share a general overview of health and influencing factors then focus more on priority health issues identified through this collaborative process. Our assessment also highlights some of our community strengths and resources available to help address our most pressing issues.

Core Dataset Collection

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

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

See Appendix A for details on the regional data collection methodology

Health Resources Inventory

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

Community Input & Engagement

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

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

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

At-Risk & Vulnerable Populations

Throughout our CHA process and product, our team was focused on understanding general health status and related factors for the entire population of our county as well as the groups particularly at risk for health disparities or adverse health outcomes. In particular,

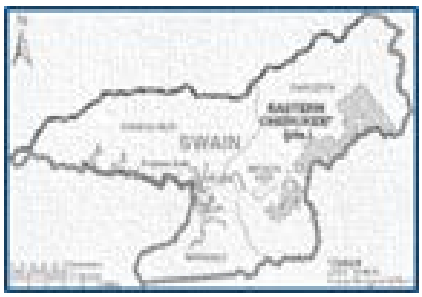
for the purposes of the overall CHA, we aimed to understand variability in health outcomes and access of medically underserved, low-income, minority, and others experiencing health disparities.

To assist in data analysis, reporting, prioritization and heath improvement planning, the following definitions and examples for at-risk and vulnerable populations.

- Young children
- Residents living in poverty
- Elderly
- Uninsured adults

Chapter 2 – Swain County

Location and Geography



Swain County is one of the westernmost counties in North Carolina, containing the Great Smoky Mountains National Park (GSMNP) and US Forest Service property which is 75% of Swain County's land mass. Also, half of the Qualla Boundary of the Eastern Band of Cherokee Indians (EBCI), Cherokee is located in Swain County.

The county seat is Bryson City. Swain County is home of the Nantahala River. The Nantahala River is one of the most popular whitewater rafting rivers in the nation. In 2013, the World Freestyle Kayaking Championship took place on the Nantahala River. Adjacent counties are as follows: Sevier County, Tennessee to the north; Haywood County to the east; Jackson County to the southeast; Macon County to the south; Graham County to the southwest; and Blount County, Tennessee to the northwest. Unincorporated communities include, Alarka, Deep Creek, Deals Gap, Ela, Whittier, Hewitt, Lauada, and Ravensford. National protected areas that partly lie in Swain County are the Blue Ridge Parkway, the Great Smoky Mountains Nation Park, Nantahala National Forest, and EBCI. Swain County residents can travel to 4 other state capitals quicker than they can drive to Raleigh, the state capitol.

History

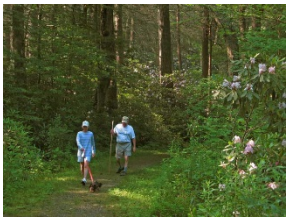
The area that is now Swain County was home to the Cherokee Indians for many centuries before being settled by Europeans of mostly Scotch, Scotch-Irish, or English ancestry. In 1838, the infamous "Trail of Tears" moved most of the Cherokee to Oklahoma, with tragic results. About 1000 Cherokee stayed in the mountains, and became part of the group that is now recognized as the Eastern Band of Cherokee Indians.

Swain County was established in 1871 from portions of Jackson and Macon Counties. The land on which Bryson City is located was originally part of the Big Bear Reserve, deeded by Congress in 1819 to the Cherokee Chief Yonah. Passing through various hands, it became "Charleston" at the founding of the county, and renamed "Bryson City" in 1889.

The Town of Bryson City was established as the county seat and was named in honor of Captain Thaddeus Dillard Bryson.

Tourism has been a significant driving force in Swain County even before it's foundation as a county. William Bartram traveled through the area in the 1770s, drawn to explore the natural beauty and spectacular mountains. In the beginning of the 20th century, Horace Kephart, a renowned author and naturalist, lived and worked in Swain County for almost 25 years, exploring and writing about the wilderness. He worked hard to promote the formation of the GSMNP. The Fryemont Inn, built in 1923, was, for a time, the outstanding hotel west of Asheville. Other unique inns followed, including the Hemlock Inn and Nantahala Village, responding to the tourist demand.

In the early 1970's, a whitewater rafting industry grew up around the Nantahala River; over 600 people are seasonally employed on the river each year. Dubbed the "Outdoor Capital of the World," Swain County also has mountain biking and an excursion train.

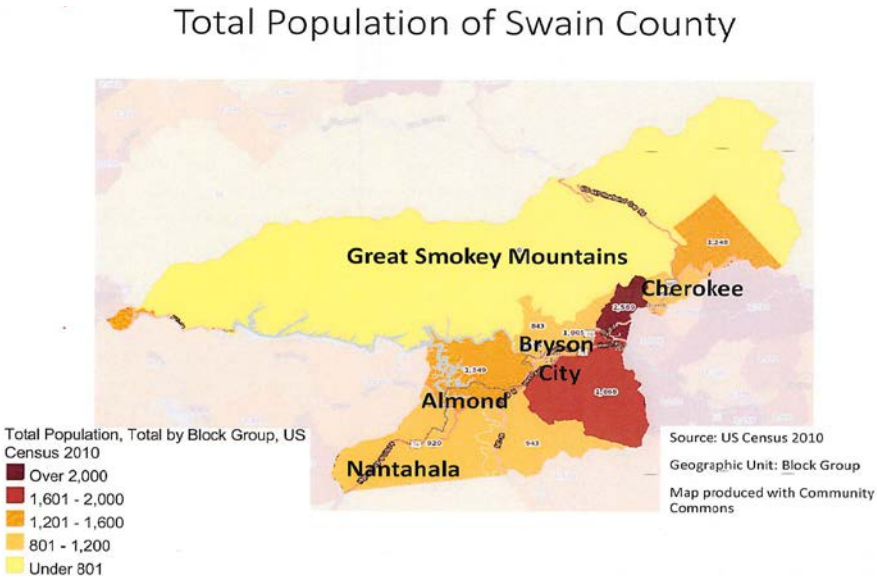


The Blue Ridge Parkway provides ample opportunities for locals and tourists to hike, horseback ride, camp and fish.

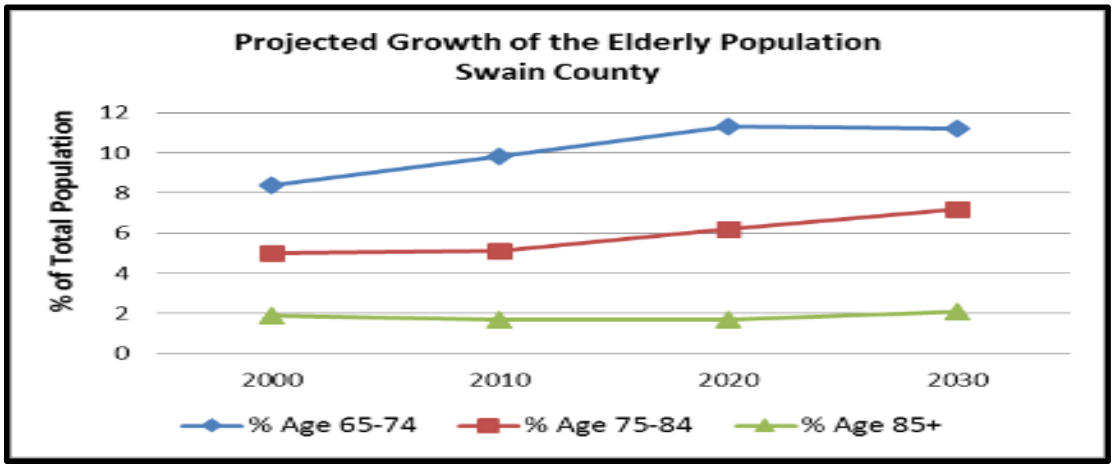
The Smoky Mountain Railroad, located in downtown Bryson City, brings thousands of tourists to the area. In the summer time Bryson City streets come alive with tourists visiting the town while in route to ride the train. At Christmas time it is common to see families in their pajamas; of course, they are going to ride the Polar Express. During the months of January the streets are empty again, until the train powers up again.

Population

In 2014, 14,274 was the population in Swain County, an increase of 293 from 2010 or 2.1%. The modest rate of growth in Swain County in the period 2000-2010 is expected to increase significantly over the following two decades, to a rate highest among NC and WNC. The majority of residents are Caucasian (65%) with minorities represented as follows: Black (1.3%), Hispanic (4.7%), and Native American (27.9%) (US Census Bureau, 2016).



Understanding the growth patterns, age, gender and racial/ethnic distribution of the population in Swain County, will be key in planning the allocation of health care resources for the county in both the near and long term. Individual's ages 75-84 years are projected to increase by 524 from 2010 to 20130. By 2030, projections estimate that there will be more than 3,200 persons age 65+ in Swain County (US Census Bureau). For planners this leads to the question - will there be adequate health and human service resources, respite homes and adult daycare nursing facilities to serve the projected increase in the senior population.



U.S. Census Bureau, 2016

Chapter 3 – A Healthy Swain County

Elements of a Healthy Community

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

- Access to quality preventive healthcare
- Health Education for all demographic
- Diet and Nutrition affording healthy foods

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

The Swain County Coalition for a Safe and Drug Free Swain County addresses issues in the community and schools around substance abuse. This will be one of the action teams and the other will be the Obesity, Diabetes, Heart Disease prevention team. These teams will be community based action groups of volunteers and agency groups working to improve the health of residents of Swain County through data exploration and strategic planning.

These action teams and the CHA work group will develop the Community Action Plan. These action teams are designed around selected health priorities and delegated with developing strategies to address each health priority.

Community Assets

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

- The strong sense of community in Swain County people
- The natural beauty of the land and water
- Great tourism destination
- Having the national park in our community
- Mountain community offering the ability to "know your neighbor"
- Access to Western Carolina University and Southwest Community College

Swain County prides itself on the mentality of neighbor helping neighbor.

Chapter 4 – Social and Economic Factors

Income

Several income measures that can be used to compare the economic well-being of communities, are median household income and median family income. Income has a direct impact on the health of all members of a household. Low income has a direct correlation to decreased health status. In the years of 2009 – 2013 Swain County's Poverty rate was 27.2 %, higher than WNC and NC. In the chart below Swain County's poverty rate displays a significant increase from 2006-2013.

Estimated Poverty Rate

County	**Percent Total Population Below 100% Poverty Level**			
	2006-2010	2007-2011	2008-2012	2009-2013
Swain County	**22.4**	**22.5**	**22.5**	**27.2**
WNC Region	15.7	16.1	16.9	18.0
State of NC	15.5	16.1	16.8	17.5

U.S. Census Bureau, 2016

The Swain County median household income was $36,094 in the time period, 2009-2013. Reflecting an increase of $1,023 since 2006-2010. This is $2,793 below WNC average and $10,240 below NC average. Swain County is a Tier one, economically distressed county.

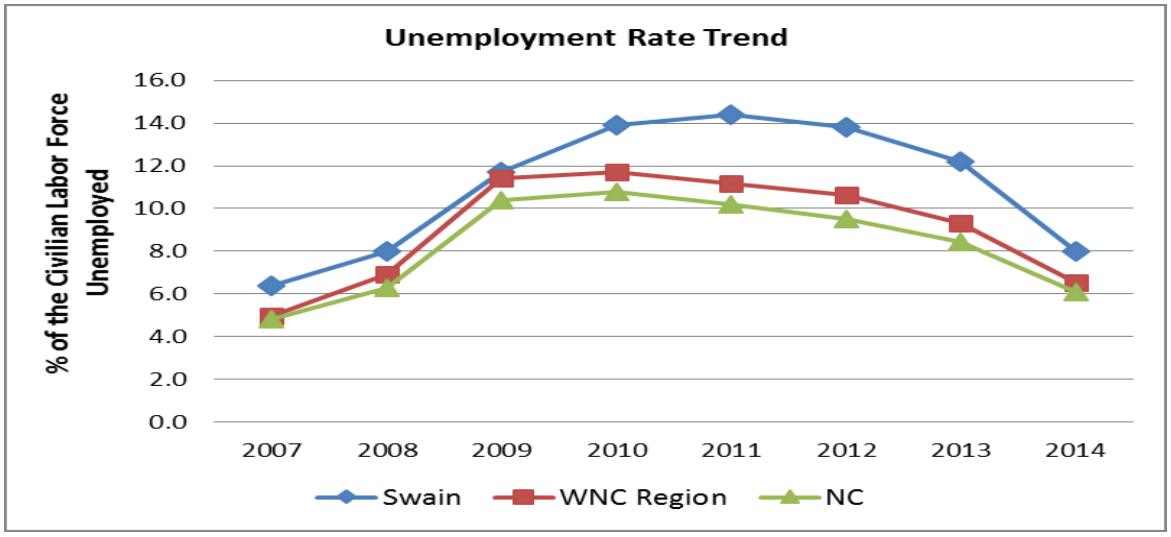
Employment

As of 2013, the three employment sections in Swain County with the largest proportions of works and average weekly wages were:

- Public Administration: 35.98% of workforce ($749)
- Accommodation and Food Servicer:15.42% of workforce ($294)
- Health Care and Social Assistance: 13.82% of workforce ($686)

Employment measures aim to show the percentage of the population that is unemployed and seeking work. Unemployment figures shed light on a community's overall economic situation and provide information about the percentage of the population that may be at risk for various health concerns associated with unemployment (County Health Rankings and Roadmaps).

Throughout the period cited in the graph below (2007 – 2014), the unemployment rate in Swain County was higher than the comparable rates in WNC region and NC.



U.S. Census Bureau, 2016

Education

Compared with WNC region, Swain County has:

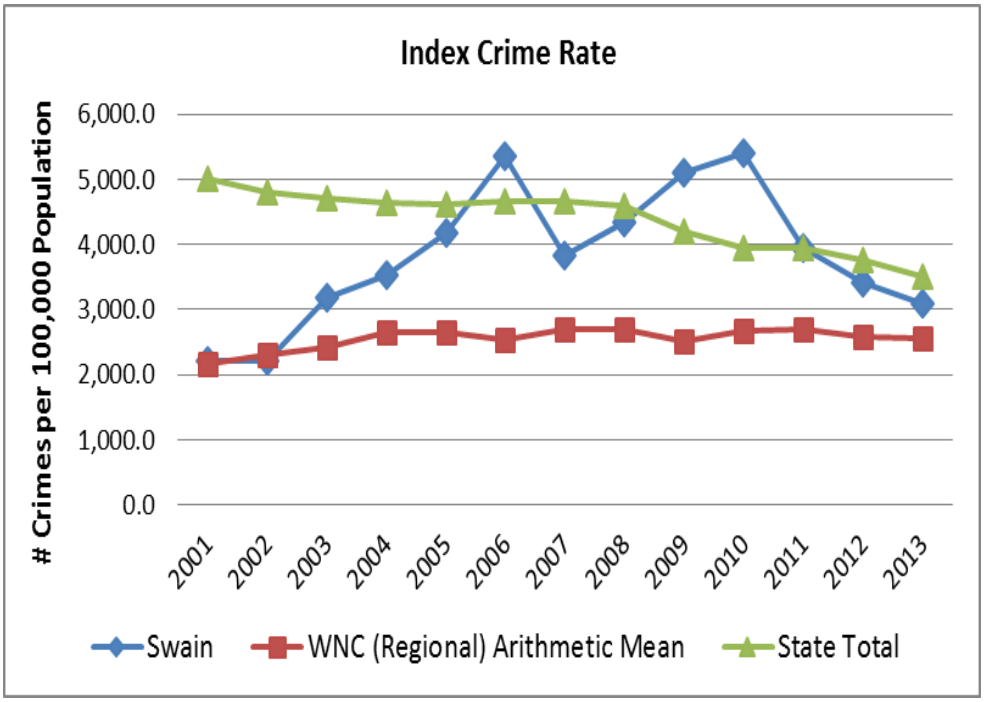
- 0.2% higher percentage of persons in the population over age 25 having only a high school diploma or equivalent (2009-2013 Estimate)
- 23% lower percentage of persons in the population over age 25 having a Bachelor's degree or higher (2009-2013 Estimate)
- 0.1% higher overall HS graduation rate (for 4-year cohort of 9th graders entering school in SY 2010-2011 and graduating in SY2013-2014 or earlier)

People with higher levels of education have longer, healthier lives compared to those who have less education. Since the early 1990's life expectancy has decreased for people without a high school education. People with less education encounter major disadvantages in health such as; shorter lives, overall poor health and high risk factors for negative health outcomes (NC SCHS, 2016).

Community Safety

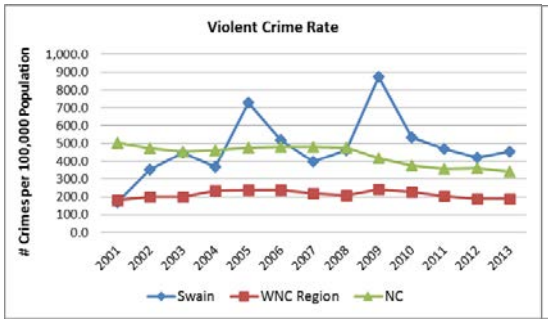
The index crime is the sum of all violent and property crimes. The index crime rate in Swain County was the highest among comparators for several years between 2006 and 2010. The index crime rate in 2013 was lower than the NC rate but higher than the WNC rate. The violent crime rate in Swain County was the highest among comparators in several years between 2006 and 2013. Property crime rates (burglary, larceny, arson and motor vehicle thefts) in 2013 was lower than the NC rate but higher than the WNC rate. In FY 2013-2014, 32 persons in Swain County were identified as victims of sexual assault, 56% of those as child sexual offense, usually by an acquaintance.

Index Crime Rate Trend

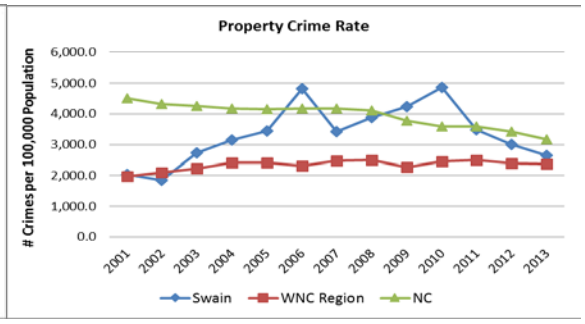


NC Department of Justice, 2013

Violent Crime Rate



Property Crime Rate

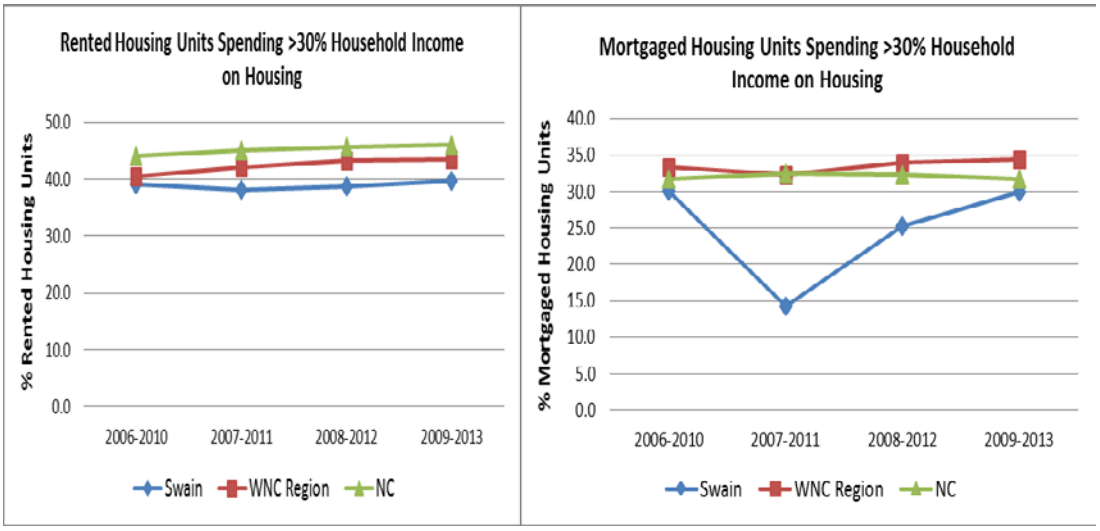


NC Department of Justice, 2002

Housing

Swain County residents spend close to 40% of household income on housing. Even though Swain County's percentages for rented and mortgaged housing is lower than the regional and state levels, the median income for Swain County is much lower in comparison.

Housing Costs



U.S. Census Bureau, 2016

Family & Social Support

In the 5-year period from 2009-2013, an estimated 226 Swain County grandparents living with their minor-aged grandchildren were financially responsible for them. Over the same period there were an estimated 5,368 households in Swain County, 1,490 of them with children under 18 years of age. Among the households with minor age children, 17% were headed by a married couple. An additional 6% were headed by a female single parent, and 1.5% were headed by a male single parent.

Minor-Age Children Living with Grandparents and in Single-Parent Households, 2009-2013

County	# Grandparents Living with Own Grandchildren (<18 Years)	Grandparent Responsible for Grandchildren (under 18 years)*		# Total Households	Family Household Headed by Married Couple (with children under 18 years)		Family Household Headed by Male (with children under 18 years)		Family Household Headed by Female (with children under 18 years)	
		Est. #	%		Est. #	%**	Est. #	%**	Est. #	%**
Swain	325	226	69.5	5,368	889	16.6	77	1.4	298	5.6
WNC (Regional) Total	15,007	8,142	54.3	316,799	49,395	15.6	6,133	1.9	17,711	5.6
State Total	206,632	100,422	48.6	3,715,565	706,106	19.0	84,199	2.3	293,665	7.9

U.S. Census Bureau, 2016

Communities rich in social capital are able to help residents with support with resources. People with relationships including family and friends, colleagues, neighbors, etc. have strong social support which leads to an increase in positive health outcomes. These relationships decrease stress, cardiovascular disease, overeating, obesity and smoking in adults.

Over three fourths of key informants characterized Social Determinants of Health as a "major contributor" to local health issues. Individuals felt access to health care, alcohol

and drug abuse, community mindset and access to affordable healthy foods contribute the most to health problems in Swain County.

Contributors to Health Issues				
Health Issue	Major Contributor	Moderate Contributor	Minor Contributor	Not a Contributor At All
Physical Environment	**17.6%**	**41.2%**	**29.4%**	**11.8%**
Social Determinants of Health	**76.5%**	**23.5%**	**0.0%**	**0.0%**

Professional Research Consultants Inc., 2015

Chapter 5 – Health Data Findings Summary

Mortality

The overall life expectancy for residents in Swain County is 73.1 years. This is both lower than that of WNC (77.7 years) and NC (78.2 years). For individuals born in 2011-2013, life expectancy among comparators is longest among women. Swain County health outcome rankings, ranked Swain County 100 out of 100 for length of life.

Life Expectancy at Birth for Person Born in 2011-2013

County	Overall	Sex		Race	
		Male	Female	White	African-American
Swain	73.1	70.5	75.7	75.1	n/a
WNC (Regional) Arithmetic Mean	77.7	75.3	80.2	77.9	75.2
State Total	78.2	75.7	80.6	78.8	75.9

NC SCHS, 2016

Swain County has a higher mortality than the population statewide for eight of the leading causes of death. The leadings causes of death in Swain County is heart disease followed by cancer and cerebrovascular disease. In all the areas, Swain County prevalence is significantly higher than NC.

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

Age-Adjusted Rates (2009-2013)	Swain No. of Deaths	Swain Mortality Rate	Rate Difference from NC
1. Diseases of the Heart	217	245.0	+44.1%
2. Cancer	196	216.5	+25.0%
3. Cerebrovascular Disease	58	71.6	+63.8%
4. Chronic Lower Respiratory Disease	58	66.1	+43.4%
5. All Other Unintentional Injuries	41	56.4	+92.5%
6. Diabetes Mellitus	45	51.2	2.4X
7. Alzheimer's Disease	30	35.8	+23.9%
8. Pneumonia and Influenza	27	32.3	+80.4%
9. Suicide	15	22.0	+80.3%
10. Unintentional Motor Vehicle Injuries	13	21.5	+56.9%
11. Nephritis, Nephrotic Syndrome, Nephrosis	18	20.8	+18.2%
12. Chronic Liver Disease and Cirrhosis	16	19.3	2X
13. Septicemia	13	14.3	+3.6%
14. Homicide	7	11.1	+91.4%
15. AIDS	0	0.0	n/a

NC State Center for Health Statistics

Health Status and Behaviors

Overall Health Status

In 2014, Swain County ranked 94th in overall health outcomes. In the health factor category, Swain County ranked:

- 94th in health behaviors (Includes adult smoking, adult obesity, physical inactivity, access to exercise opportunities, alcohol-impaired driving deaths, and more)
- 97th in clinical care (Includes uninsured, primary care physicians, dentists, mental health providers, mammography screenings, and more)
- 90th in social and economic factors (Includes high school graduation, unemployment, children in poverty, social associations, violent crime, and more)
- 75th in physical environment (Includes air pollution-particulate matter, drinking water

County Health Rankings

Location	County Rank (Out of 100)[1]						
	Health Outcomes		Health Factors				Overall Rank
	Length of Life	Quality of Life	Health Behaviors	Clinical Care	Social & Economic Factors	Physical Environment	
Swain	100	37	94	97	90	75	94

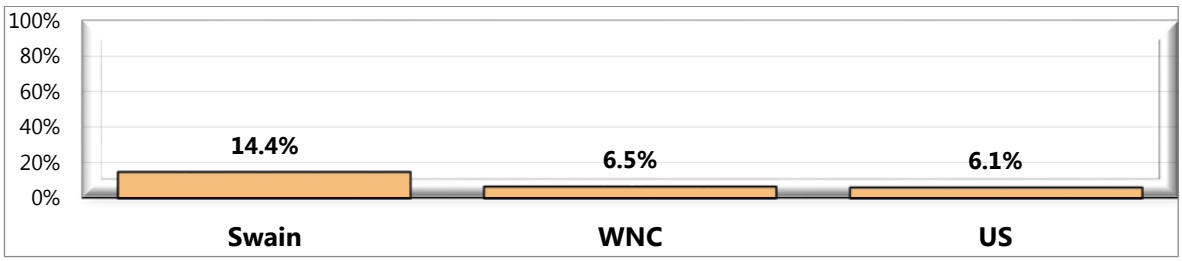
Robert Wood Johnson, 2016

Chronic Disease

Seven out of ten deaths each year are due to chronic disease. Chronic disease accounts for 86% of our nation's health care costs (CDC, Chronic, 2016).

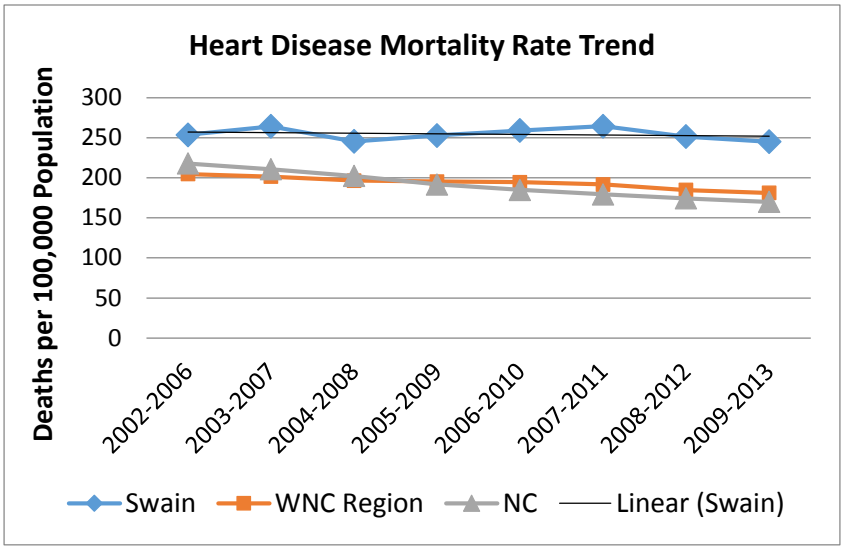
Cardiovascular disease is the leading cause of death in Swain County (217 deaths) as well as the United States. The risk is highest for African-American men and adults living in the southeast (CDC, Heart 2016). Over 14% of Swain County residents reported being diagnosed with heart disease.

Prevalence of Heart Disease 2015



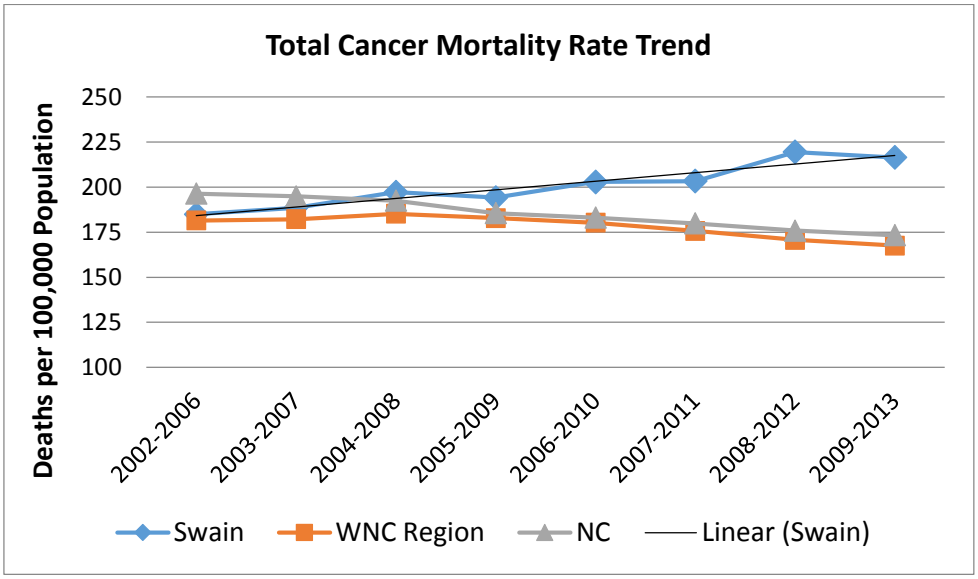
PRC Community Health Surveys, 2015

Heart disease is slightly declining in Swain County but is significantly higher than WNC and NC which are trending down as well.



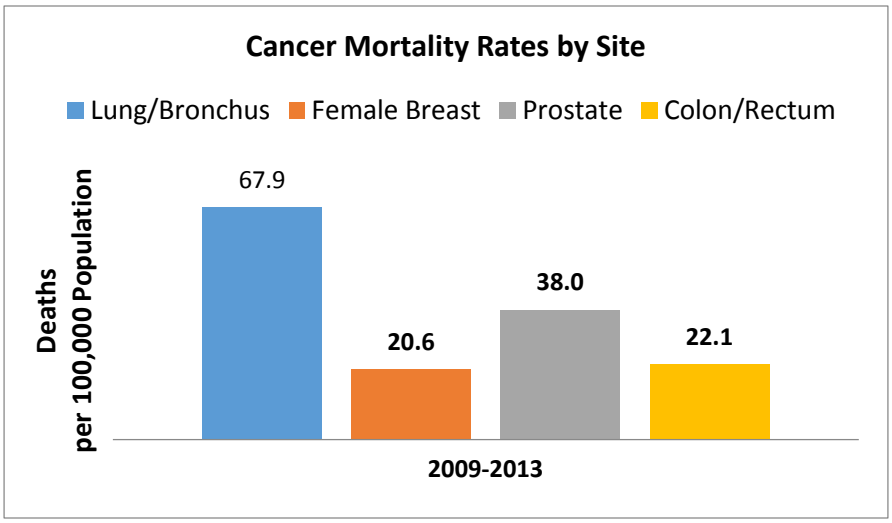
NC SCHS, 2016

Cancer is the second leading cause of death in Swain County (196 deaths) as well as the United States. More than 575,000 people died of cancer in 2011 and more than 1.5 million people were diagnosed with cancer. Swain County's cancer mortality rate is significantly higher than WNC and NC.



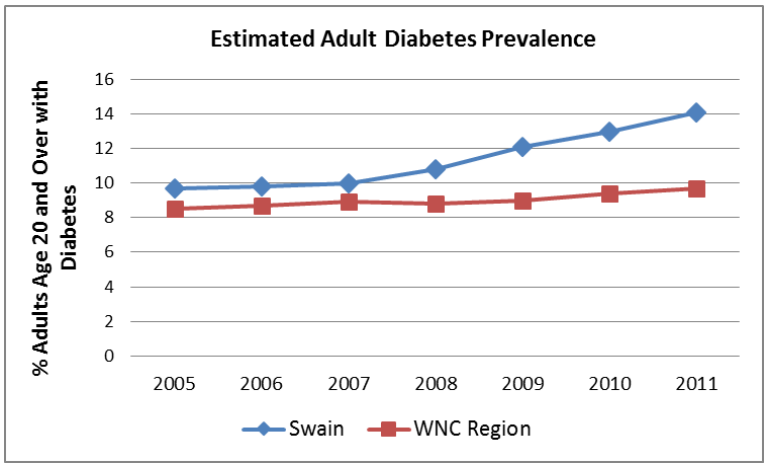
NC SCHS, 2016

Lung cancer was the leading cause of cancer death in Swain County in 2013, nearly doubling the rate of prostate cancer and three times that of female breast cancer and colon/rectum cancer.



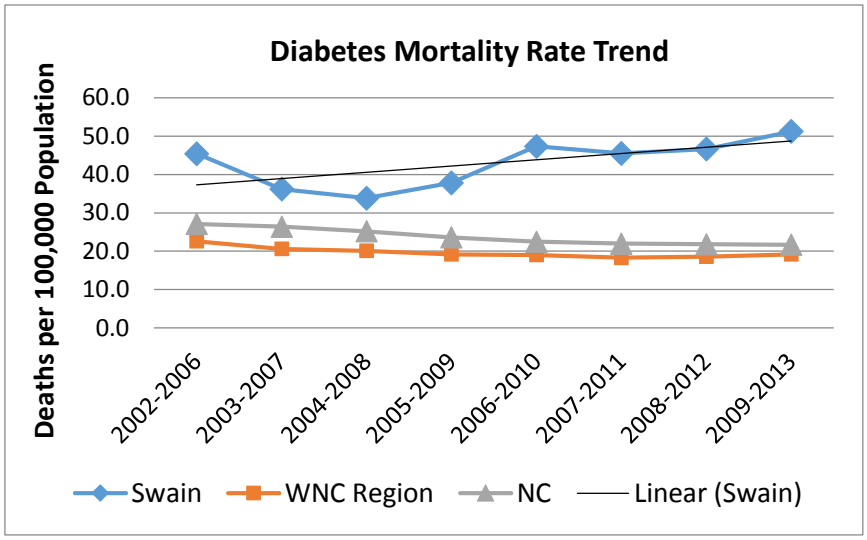
NC SCHS, 2016

Swain County's average of self-reported diabetes in adults was 11.4% in the period 2005-2011. Over the same period, WNC's average was 9.0%. Prevalence of self-reported adult diabetes has been rising recently in both WNC and Swain County, but at a much faster pace in the county. A rising prevalence of diabetes in Swain County, if it continues, could increase mortality rates, especially since the diabetes mortality rate in the county increased over 8% since the 2012 CHA.



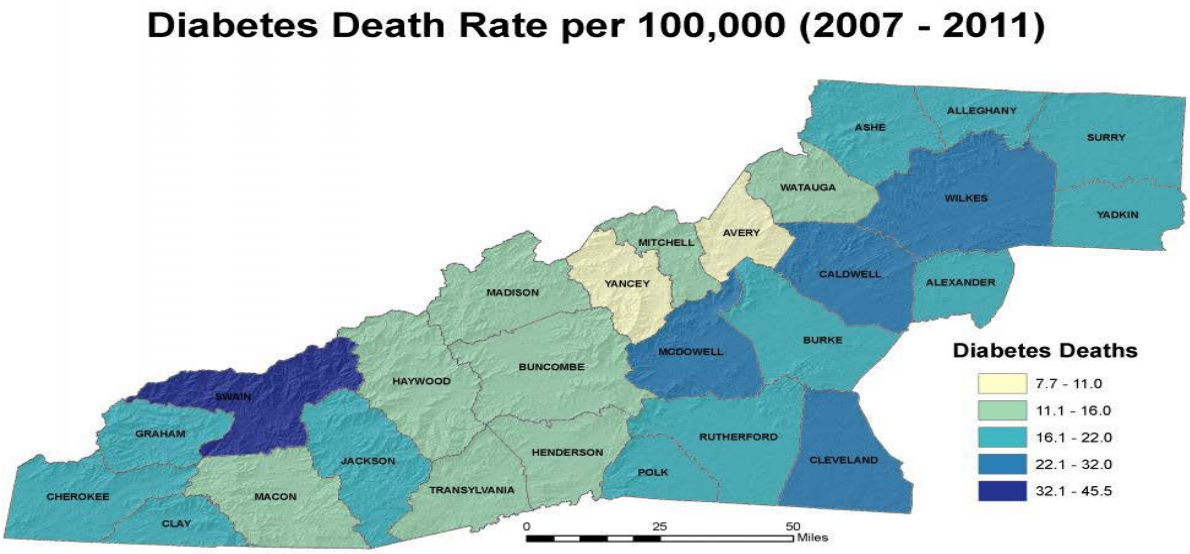
NC SCHS, 2016

Swain County's diabetes rate was lowest from 2004-2008 with 33.8 % compared to 2009-2013 with 51.2% of mortality rates. Both WNC (19.2%) and NC (21.7%) rates are considerably lower in 2009-2013.



NC SCHS, 2016

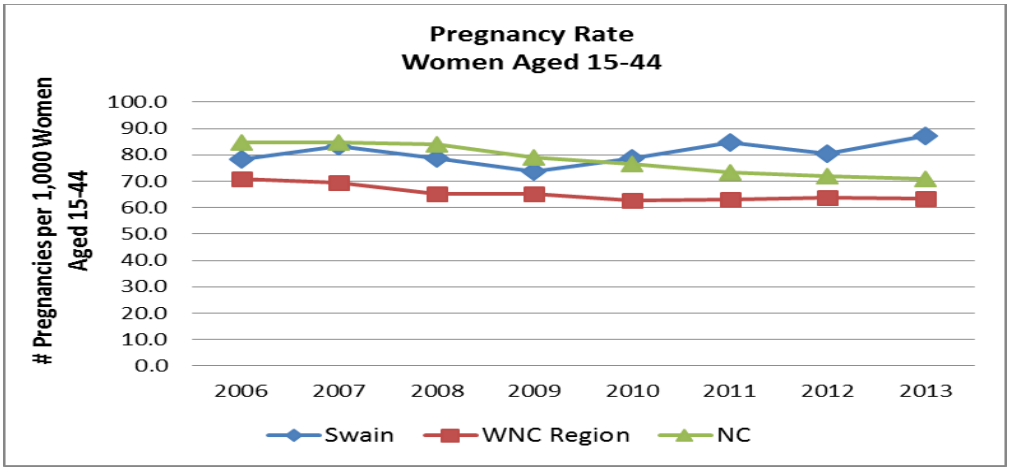
In the Mountain Resources Commission region, the highest diabetes death rates were reported in Swain County, at 45.5 deaths per 100,000 individuals.



Western North Carolina Vitality Index, 2016

Maternal and Infant Health

The total pregnancy rates in WNC and NC have fallen overall since 2007, but appear to have stabilized recently. From 2012-2013, the total pregnancy rate in Swain County constantly rises from 80.4% to 87.1%.

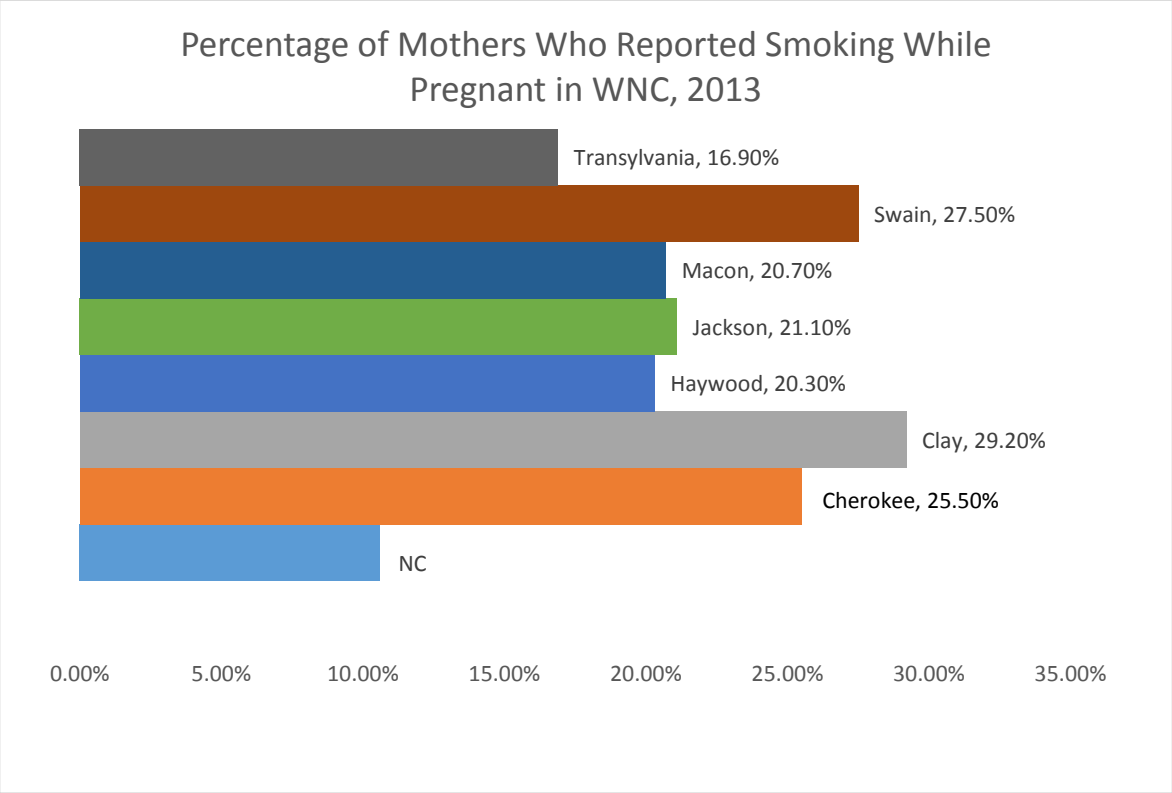


NC SCHS, 2016

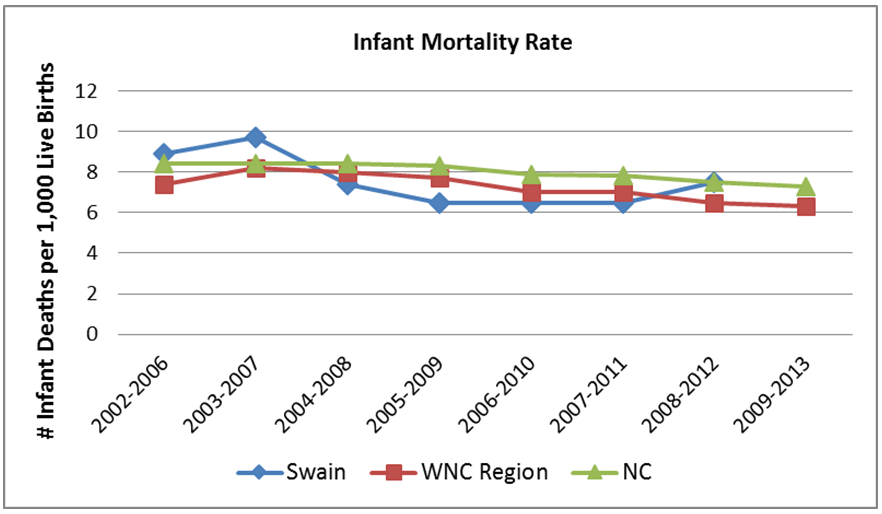
The percentage of women who smoked during pregnancy in NC and the WNC region did not improve significatly between 2008 and 2013. The occurrence of pregnancy women in Swain County who smoked actually decreased from 2008 to 2009 but increased after 2009, decreasing slightly in 2013. Swain County had the highest percentage of pregnant women who smoked in every year except 2009.

County	**Percent of Births to Mothers Who Smoked While Pregnant**					
	2008	**2009**	**2010**	**2011**	**2012**	**2013**
Swain County	30.3	18.6	n/a	26.5	27.8	26.7
WNC Region	20.3	19.1	n/a	20.1	19.2	19.4
State of NC	10.4	11.0	n/a	10.9	10.6	10.3

NC SCHS, 2016



The infant mortality rate in Swain County increased from 2007-2011 to 2008-2012 then decreased slightly in 2009-2013. From 2009-2011 infant mortality rates in Swain County leveled and were even lower than WNC and NC



NC SCHS, 2016

Injury and Violence

In age group 20-39 years, unintentional injuries and motor vehicle injuries were the top 2 leading causes of death in residents of Swain County from 2010-2014.

2010-2014 Ten Leading Causes of Death by County of Residence and Age Group: Ranking, Number of Deaths, and Unadjusted Death Rates per 100,000 Population

Swain County

20-39 YEARS	**0**	**TOTAL DEATHS --- ALL CAUSES**	46	279.6
	1	**Other Unintentional injuries**	11	66.9
	2	**Motor vehicle injuries**	6	36.5
	3	**Suicide**	5	30.4
	4	**Cerebrovascular disease**	4	24.3
	5	**Diabetes mellitus**	3	18.2
		Chronic liver disease & cirrhosis	3	18.2
		Homicide	3	18.2
	8	**Cancer - All Sites**	1	6.1
		Congenital anomalies (birth defects)	1	6.1

NC SCHS, 2016

Mental Health and Substance Abuse

From 2006-2013, a total of 91 Swain County residents were served in NC State Alcohol and Drug Abuse Treatment Centers. In the key informant surveys mental healthcare was rated 66.7% as most difficult to access. Over half of key informants in 2015 characterized mental health as a "major problem" (Professional Research Consultants, INC, 2015). Substance abuse was discussed in the listening sessions, being described as a great concern in Swain County.

	Most Difficult to Access	Second-Most Difficult to Access	Third-Most Difficult to Access	Total Mentions
Mental Health Care	66.7%	50.0%	0.0%	3
Substance Abuse Treatment	33.3%	50.0%	0.0%	2
Specialty Care	0.0%	0.0%	100.0%	2

Professional Research Consultants Inc., 2015

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Access to Health Care Services	16.7%	55.6%	22.2%	5.6%

Professional Research Consultants, Inc.,2015.

Of the 22 unintentional poisoning deaths in the county from 2009-2013, 17 were due to medication or drug overdoses, with a corresponding mortality rate of 24.4.

County	Unintentional Poisoning Deaths for Select Locations and Percent that are Medication/Drug Overdoses (2009-2013)*			Rate of Unintentional Medication/Drug Overdose Deaths (2009-2013)**	
	#	Rate per 100,000 NC Residents	% that are Medication/Drug Overdoses	#	Rate per 100,000 NC Residents
Swain	22	31.6	77.3	17	24.4
WNC (Regional) Total	560	14.8	90.0	506	13.3
Non-WNC (Regional) Total	4,749	10.7	91.0	4320	9.7
State Total	5,309	11.0	90.9	4826	10.0

NC SCHS, 2016

Clinical Care and Access

In 2012 Swain County had the lowest ratio among comparators in all categories of active health professional cited except RNs. The national ratios were highest among comparators for physicians, primary care physicians, and dentists. The state ratios were highest among comparators for registered nurses and physicians.

County	2012				
	Physicians	Primary Care Physicians	Dentists	Registered Nurses	Pharmacists
Swain County	6.21	4.14	3.45	88.31	5.52
WNC (Regional) Arithmetic Mean	14.29	6.84	3.61	76.94	7.97
State Ratio	22.31	7.58	4.51	**99.56**	**10.06**
National Ratio (date)	**23.0** (2011)	**8.1** (2011)	**5.3** (2012)	91.6 (2012)	9.1 (2012)

U.S. Census Bureau, 2016

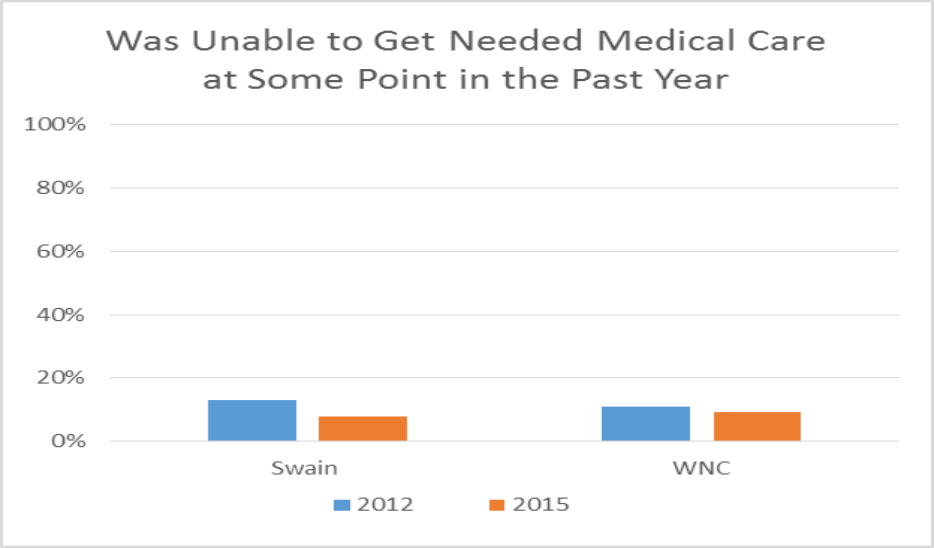
The percent of uninsured adult's ages 18-64 years in Swain County in 2013 was 27.4%. It has decreased from 2012 when it was reported at 29.1%. The percent of uninsured adults ages 18-64 peaked in WNC and NC in 2010. The comparable peak in Swain County occurred in 2012. Among comparators, Swain County had the highest percentage of uninsured adults in every year cited. In all comparator jurisdictions the age group 0-18 has a significantly lower percentage of uninsured than the adult age group, due at least partly to their inclusion in NC Health Choice.

Percent of Population without Health Insurance, by Age Group

County	2009		2010		2011		2012		2013	
	0-18	18-64	0-18	18-64	0-18	18-64	0-18	18-64	0-18	18-64
Swain County	**11.5**	**26.0**	**10.1**	**27.8**	**11.4**	**27.9**	**12.0**	**29.1**	**10.0**	**27.4**
WNC Region	9.9	24.2	9.7	26.0	9.1	25.2	9.3	25.4	8.6	25.0
State of NC	8.7	21.9	8.3	23.5	7.9	23.0	7.9	23.4	6.9	22.5

U.S. Census Bureau, 2016

In 2012, 13% of residents were unable to get needed medical care with WNC averaging 11%. In 2015, the percentages dropped to 7.7% for Swain County and 9% for WNC.



Professional Research Consultants, Inc.,2015.

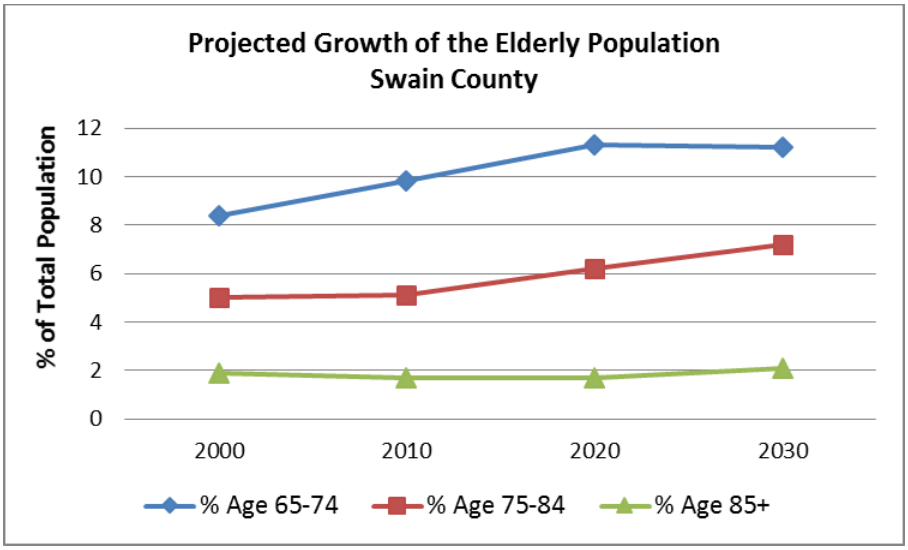
Over half of key informants characterized Access to Health Care Services as a "moderate problem" in Swain County. Only 16.7% rated access to health care as a major problem.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Access to Health Care Services	16.7%	55.6%	22.2%	5.6%

Professional Research Consultants, Inc.,2015.

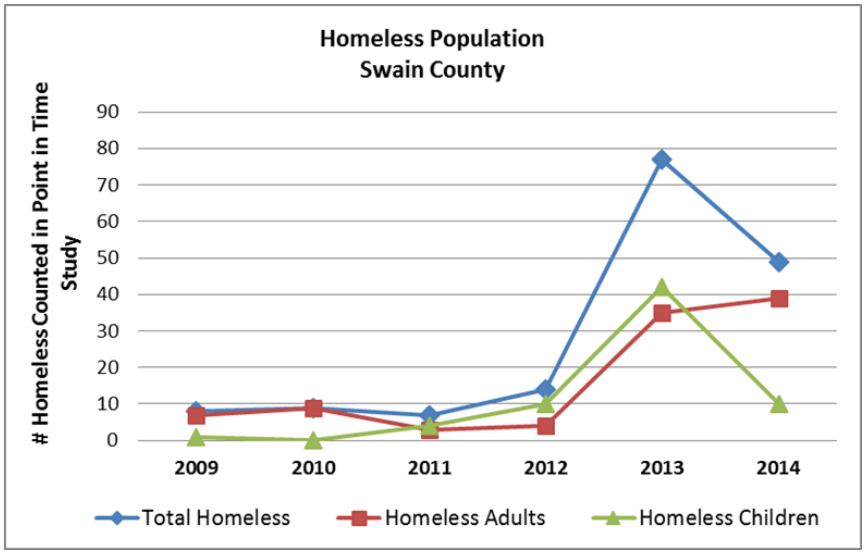
At Risk Populations

The population in each major age group age 65 and older in Swain County will increase between 2010 and 2030. The proportion of the Swain County population age 75-84 is projected to increase by 41% and the population age 85 and older will increase by 24% in the period 2010-2030. By 2030 projections estimate that there will be more than 3,500 persons age 65+ in Swain County.



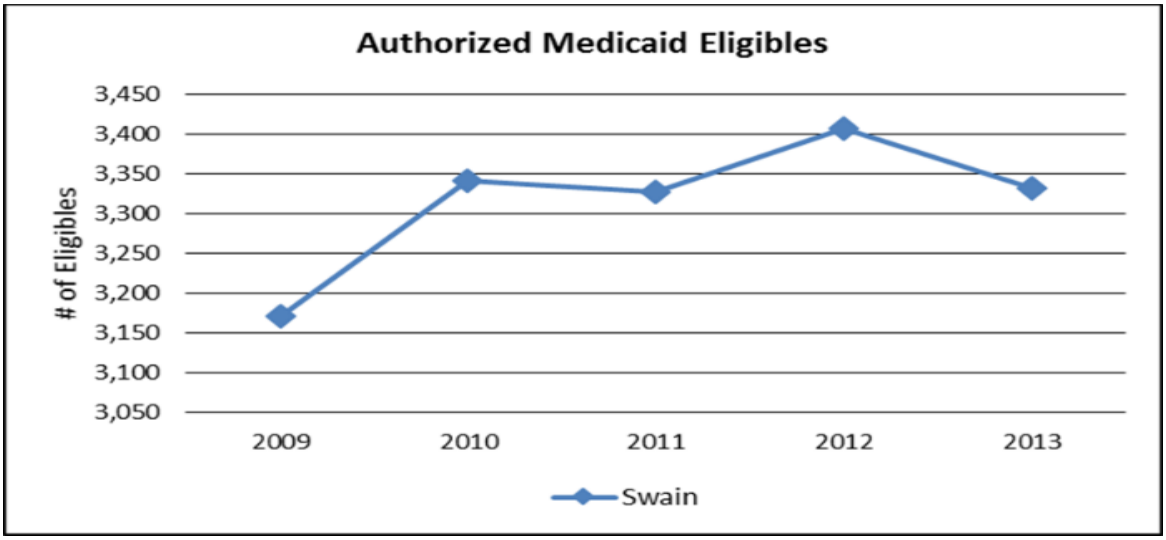
NC SCHS, 2016

In 2013, the total number of homeless persons peaked then decreased in 2014. Over the period cited, 60% of the homeless were adults; 40% were children. From 2010 through 2014, 2% of all homeless adults in Swain County were military veterans.



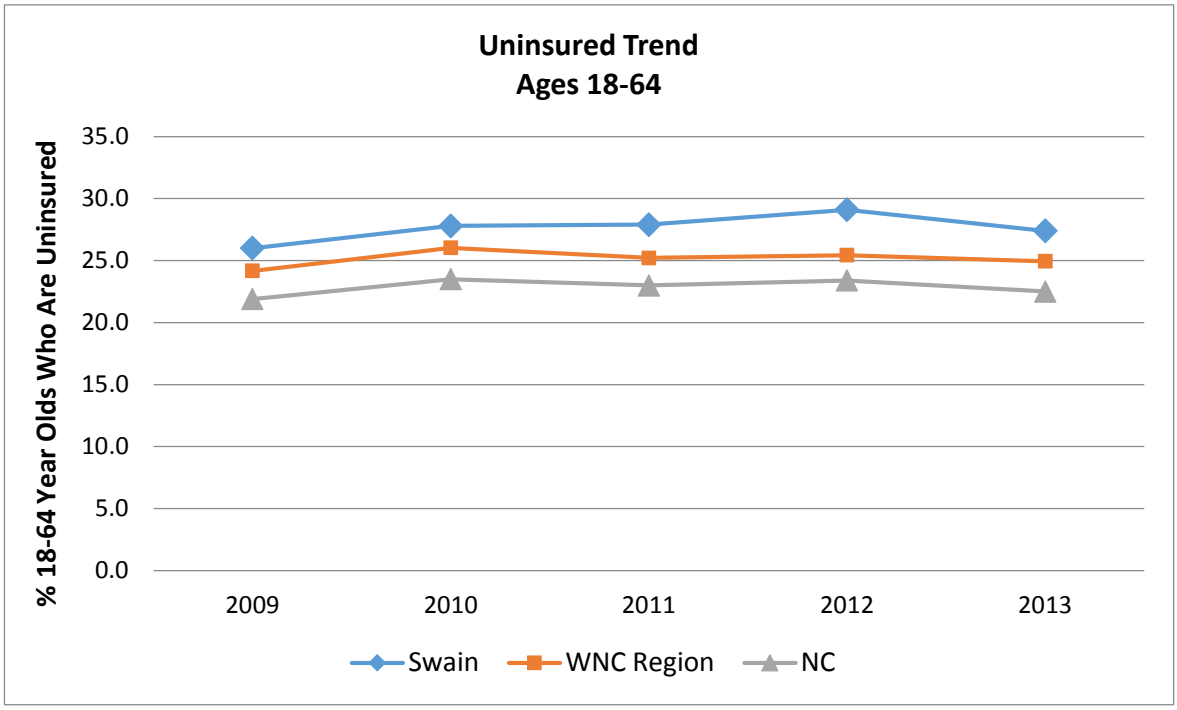
NC SCHS, 2016

North Carolina did not expand Medicaid, leaving many making too much money to qualify for Medicaid under the current guidelines. The total number of people in Swain County eligile for Medicaid fluctuated over the period cited, peaking in 2012 and falling in 2013.



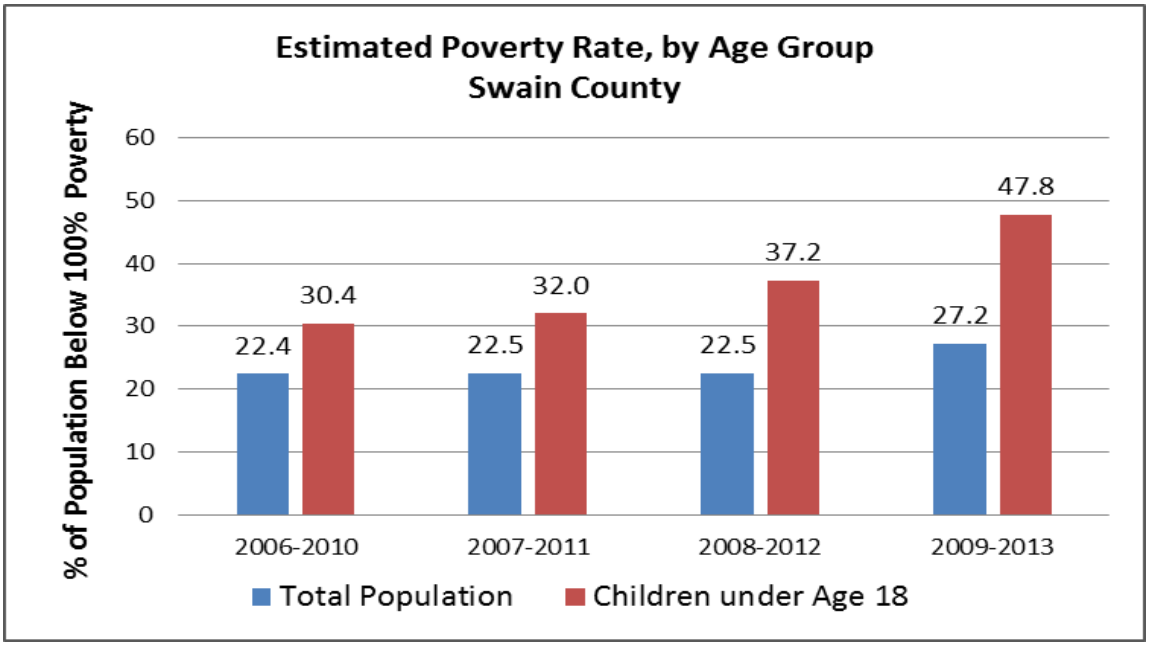
NC Division of Medical Assistance, 2013

As of 2013, the number of uninsured adults in Swain County was on average 20.3% ages 0-65.



NC SCHS, 2016

In Swain County as in much of NC, children suffer significantly and disproportionately from poverty. In Swain County the estimated poverty rate among children under age 18 ranged from between 30% to 48%, increasing each year throughout the periods cited.

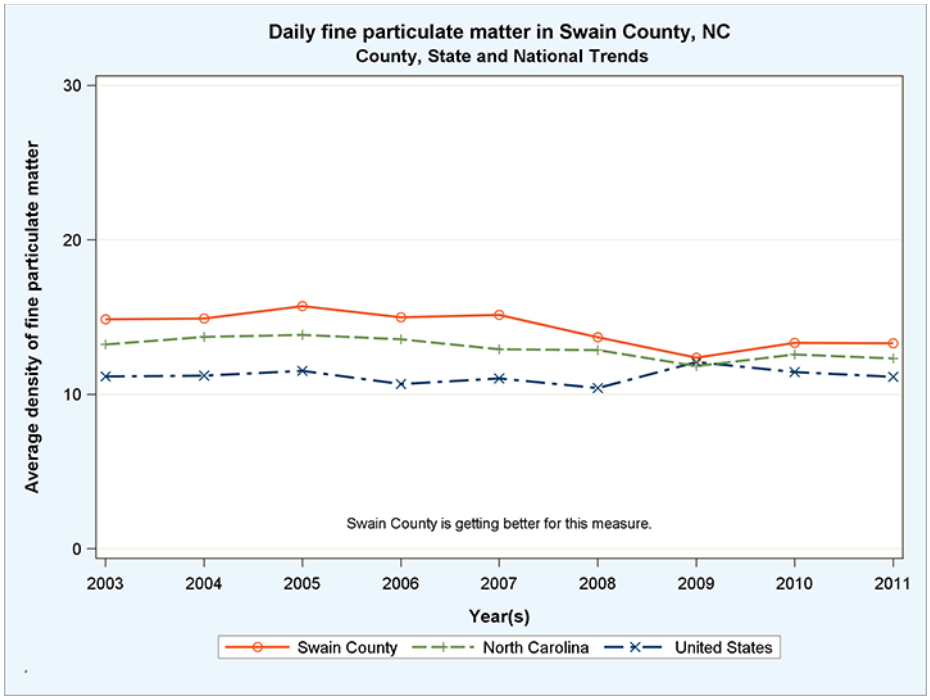


U.S. Census Bureau, 2016

Chapter 6 – Physical Environment

Air Quality

Swain County's Air Quality is higher than North Carolina and the United States overall. Fine particulate matter is 2.5 micrometers in diameter (PM2.5) in size or less. Particles of this size can become lodged in the lungs which is very dangerous. Swain County's average density of fine particulate matter was 13.3 in 2011. NC was at 12.3 and the United States was 12.3. In 2014, Swain County monitored 288 days. During this timeframe, Swain County had 188 days with "good" air quality and 50 days with "moderate" air quality



Radon is a naturally occurring, radioactive gas found in soil and rock. It can enter homes through cracks in the foundation, walls and joints. Ground water can be a major source of radon. Radon is the leading cause of lung cancer in the United States among non-smokers (Radon, 2016).

Western North Carolina has the highest radon levels in the state. In Swain County, the current average indoor radon level is 4.7 pCi/L, 15% higher than the regional mean, and 3.6 times the average national level. Individuals who smoke have a higher risk of lung cancer from radon exposure (Radon, 2016).

Overall, in looking at Swain County's physical environment you can see where radon and second hand smoke is affecting the cancer rate in the county. Swain County Health Department has given out radon testing kits. Along with Mountain Wise, the health department has been collecting data to create change in policy regarding tobacco use.

Students at Swain County signed a proposal for Smoke Free Parks and Recreation in 2013 at the Health Fair held by Swain County Health Department. The proposal was presented to Swain Recreation Park Director and Swain County Manager. The vision of Impact was Healthier Swain County citizens by increasing tobacco free environments and decreasing the use of tobacco through education and policy change. The Swain County Board of Commissioner's is the authority board that can pass any tobacco use ordinance.

Have Breathed Someone Else's Cigarette Smoke at Work in the Past Week

Believe It is Important for Public Walking/Biking Trails are 100% Tobacco Free

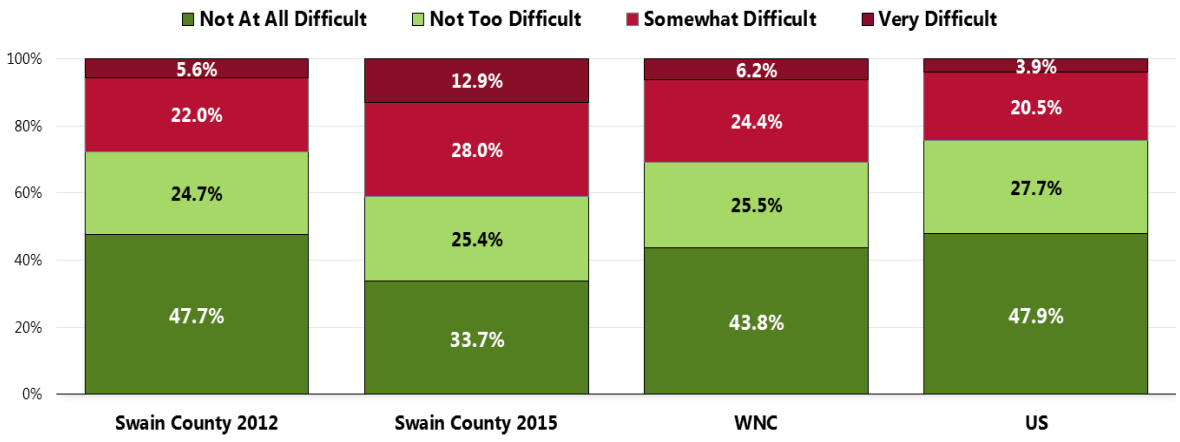
Water Quality

Community water systems in Swain County serve an estimated 5,065 people, or 36% of the 2010 county population. The fraction of the Swain County population served by a community water system is 35% lower than the average for the WNC region and NC as a whole. There are at present 6 national pollutant discharge elimination permits (1 is a small, municipal wastewater treatment facility and 5 are domestic wastewater producers) issued in Swain County that allow municipal, domestic or commercial facilities to discharge products of water/wastewater treatment and manufacturing into waterways.

Access to Healthy Food and Places

In the chart below, in 2015, 33.7% Swain County residents reported it was not difficult at all to access fresh produce. WNC and U.S. are higher, respectively with 43.8% and 47.9%.

Level of Difficulty Accessing Fresh Produce at an Affordable Price
Swain County



Professional Research Consultants, Inc., 2015

Swain County residents have access to healthy foods thru three supermarkets within the county throughout the year. Residents also have access to a farmers market in Bryson City during the summer, various fruit stands and farms within the county.

Swain County has one Recreation Department, one private gym within Bryson City limits, whitewater rafting, multiple walking trails throughout the county and Blue Ridge Parkway and Great Smokies National Park which offer several outdoor opportunities. Residents can access an indoor pool, gym, track and basketball court which is located within EBCI boundary but within Swain County, however this is at the minimum a 30 minute drive.

Chapter 7 – Health Resources

Process

WNC Healthy Impact provided a 2-1-1 dataset for resources in Swain County. The list was reviewed by the accreditation team in 2015. Any outdated information was brought up to date. The areas reviewed were: health resources, supportive services and any gaps in services. The list was compared to information from the Family Resource Center and Department of Social Services. The list was made available to partners and health department visitors. The directory is available in print format when requested.

Findings

Swain County has supportive services in place. The Department on Aging works closely with older adults, identifying their needs; whether it be housing, insurance or medical needs. The senior center offers meals, recreation and some transportation for the elderly. Some of our community support services include; Alcoholics Anonymous, Appalachian Community Services and "Sweet Thoughts" Alzheimer's group. Swain County offers many services such as; health department, recreation department, department of social services, emergency management and more. The health department has a one day adult health clinic that covers family planning services, breast and cervical cancer screenings, sexually transmitted diseases and adult health sick visits.

Resource Gap

A major resource gap for Swain County residents is OB/GYN services and pediatric services. Currently, we do not have either type of office in our county. Smoky Mountain Urgent Care and Swain Medical Center attempt to meet as many of these needs as possible but most individuals must travel at the minimum 30 minutes to receive these specialized services. Since the poverty rate in Swain County is high the expense of traveling forces many to forgo services they truly need to lead a healthy lifestyle.

An enormous need within Swain County is an animal control department and/or ordinance. The issues this gap creates touches many within the County. The problems associated with the lack of animal control creates a hardship for several County departments which respond without training and resources to these issues.

Other gaps include indoor athletic options for seniors, indoor pool, lack of mental health services and limited employment opportunities.

Chapter 8 Identification of Health Priorities

Health Issue Identification

Process

The key partners, Swain County Hospital, Swain County Schools, Smoky Mountain Urgent Care and Swain County Sheriff's Department, studied data results and conversed about the evidences and conditions within Swain County. We used the following criteria to identify significant health issues:

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

Identified Issues

- Chronic Disease Control and Prevention: Heart disease, chronic lung disease and diabetes continue to have mortality rates in Swain County.
- Substance Abuse: This was rated as a major problem by 66.7% of respondent on the key informant survey. Substance abuse has been the source of rising rates of hepatitis in Swain County.
- Diabetes: Over two-thirds of key informants characterized Diabetes as a major problem in Swain County.
- Prevalence of Cancer: Ranks #2 for mortality in Swain County.
- Maternal Health: Risky behavior of pregnant mothers include tobacco use, poor nutrition and high risk sexual activity is great amongst teens leading to high teenage pregnancy rates.

Priority Health Issue Identification

Process

Data collected by PRC was presented to the CHA team for local interpretation. The team chose different data to present to community members. Community members reviewed data from the previously mentioned identified health issues during a community meeting. A summarized list of common themes identified through the key stakeholder interview and listening session process was also made available for those in attendance at the meeting. After a question and answer session on the data provided, community members ranked the identified issues using the criteria (relevancy, impact, and feasibility) explained above and a tool developed by WNC Healthy Impact, adapted from Rating/Ranking Key Health

Issues (Health Resources in Action) and the *Hanlon Method for Prioritizing Health Problems (NACCHO).* Community members then voted on the issues that scored the highest leading to the following identified priorities.

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

Identified Priorities

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

- Chronic Disease (Heart Disease and Diabetes) – This was chosen due to the number of affected individuals in our community. The SCHD has worked and will continue to work on reducing the number of individuals with Type II Diabetes. We will focus on nutrition, obesity and physical activity.
- Reduce Substance Abuse in our community (mental health, infectious disease, sexually transmitted diseases)
- Promote a healthy environment – focus on tobacco cessation in pregnant moms and youth

Priority Issue #1 Chronic Disease

Swain County has high rates of heart disease, diabetes and cancer. Heart Disease can increase your risk for a stroke. Chronic diseases have been a priority in past CHA's and progress has been made but more vigilance is needed, given our top 3 causes of death are chronic disease. Diabetes Self-Management Education and Diabetes Prevention Program have been started at the health department and we hope to see it them continue to grow in our community.

Data Highlights

Coronary artery disease increases your risk for stroke because plaque builds up in the arteries and blocks the flow of oxygen-rich blood to the brain. Other heart conditions, such as heart valve defects, irregular heartbeat (including atrial fibrillation), and enlarged heart chambers, can cause blood clots that may break loose and cause a stroke (CDC, Heart 2016).

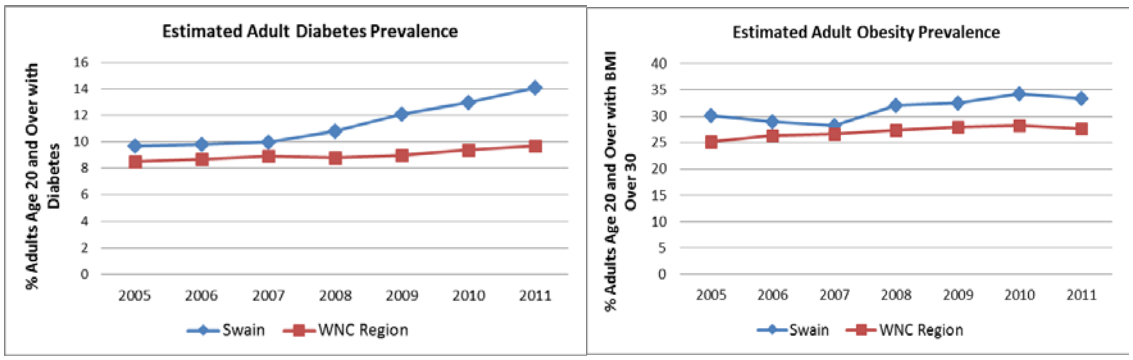
Diabetes also increases the risk for stroke. Diabetes is a chronic, progressive disease impacting and influencing over 347 mill individuals throughout the world. Diabetes is a chronic, progressive disease impacting and influencing over 347 million individuals throughout the world. Your body needs glucose (sugar) for energy. Insulin is a hormone

made in the pancreas that helps move glucose from the food you eat to your body's cells. If you have diabetes, your body doesn't make enough insulin, can't use its own insulin as well as it should, or both (Rise, 2013). These areas have been shown as preventive measures for heart disease, stroke, and diabetes prevention:

- Eating a healthy diet.
- Maintaining a healthy weight.
- Getting enough exercise.
- Not smoking.
- Limiting alcohol use.

Health Indicators

The top 3 leading causes of death in Swain County are chronic diseases; heart disease, cancer and stroke. Diabetes was 6th overall. The prevalence of diabetes in Swain County adults has continued to grow each year since 2005. The high incidence of obesity may relate to the high incidence of diabetes.



CDC, National 2005

Cardiovascular disease is the leading cause of death in Swain County (217 deaths) as well as in the United States. High blood pressure and/or high cholesterol increases your chance of having a heart attack.

Understanding the Issue

A total of 66.7% of individuals thought that diabetes was a major problem in Swain County. Over 40% of Swain County residents reported heart disease and stroke were a major problem in our community. Almost 40% of individuals interviewed though cancer was a major problem in our community.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Diabetes	**66.7%**	**27.8%**	**5.6%**	
Heart Disease & Stroke	41.2%	**52.9%**	**5.9%**	**0.0%**
Cancer	38.9%	**55.6%**	**5.6%**	**0.0%**

Professional Research Consultation Inc., 2015

Populations At-Risk

All Swain County residents can benefit from strategies that focus on physical activity and nutrition. This would improve at-risk populations even more. Food insecurity and obesity often coexist. Both food insecurity and obesity can be consequences of poverty, resulting in the lack of access to enough nutritious food and from the stresses of poverty. (FRAC, 2015) Low income and food insecure residents often deal with a lack of full-service grocery stores, are less likely to have their own vehicle for regular food shopping, have greater availability of fast food restaurants, and cycle between deprivation and over-eating. Further, low income residents often live in neighborhoods with fewer physical activity resources, are less likely to participate in organized sports, and students of lower-income schools spend less time being active during physical education than students of higher-income schools. (FRAC, 2015)

Health Resource available/needed

Resources are needed to combat the early onset, and the severity of heart disease, stroke, and diabetes. While Swain County has a physical environment that is conducive to outdoor activities it lacks in facilities during winter months. Swain County has one Recreation Department, one private gym within Bryson City limits, whitewater rafting, multiple walking trails throughout the county and Blue Ridge Parkway and Great Smokies National Park which offer several outdoor opportunities. Residents can access an indoor pool, gym, track and basketball court which is located within EBCI boundary but within Swain County, however this is at the minimum a 30 minute drive. The health department offers a Lifestyle Change Program, has a certified Nutritionist on staff and offers a 1 day adult health clinic. There is a part-time operated food pantry in Bryson City at the Presbyterian Church. Swain County residents have access to healthy foods thru three supermarkets within the county throughout the year. Residents also have access to a farmers market in Bryson City during the summer, various fruit stands and farms within the county. Further, many health resources are still needed at Swain County Health Department. But due to budget constraints, services are or will be continued to be limited.

Priority #2 Reduce Substance Abuse

The Coalition for a Drug Free Swain County is actively working to gather data and develop a strategic plan for the upcoming year. In the picture the Coalition provided a booth at the annual downtown Chili Cook-Off, giving out information on resources and guides for parents and youth about substance abuse.

The Coalition worked with Project Lazarus, giving out fifty lock boxes. A campaign blitz was held on prescription medications: Take Correctly, Store Securely, Dispose Properly, and Never Share. Poster contests were also held for all 5th grades promotion the effects of substance abuse.

The effect of substance abuse is long reaching. Risky behaviors lead to crime, infectious disease, unwanted teen pregnancy, traffic fatalities, child abuse, injuries, cancer, heart disease, and lost productivity. In the chart, 39% of survey respondents reported their life had been directly negatively affected by substance abuse issues.

Drug use affects every part of society, straining our economy, our health care and criminal justice systems. Prevention is the simplest and most cost effective way to keep America's youth drug-free. Ten percent of 8th graders admit to trying drugs. The United States loses an estimated cost of $6,120 per second in lost productivity, health care costs, etc. due to drug use (Whitehouse, 2016).

Adolescents and impressionable youngsters are most susceptible to the allure of drugs and that is why preventing the first use of illegal drugs, alcohol, and tobacco is essential. Adolescents who do not use illegal drugs, alcohol or tobacco are less likely to develop a chemical dependency. Successful substance-abuse prevention leads to reductions in traffic fatalities, violence, unwanted pregnancy, child abuse, sexually transmitted diseases, HIV/AIDS, injuries, cancer, heart disease, and lost productivity (Preventing 2016).

Data Highlights

Health Indicators

A general characteristic of WNC is high mortality rates due to unintentional poisoning, especially by medication and drug overdose. Swain County is one of the WNC counties with higher than state average poisoning and drug overdose mortality rates. In the period 2009-2013, 22 Swain County residents died as a result of unintentional poisoning. Of the 22 unintentional poisoning deaths in the county in that period, 77.3% or 17 were due to medication or drug overdoses.

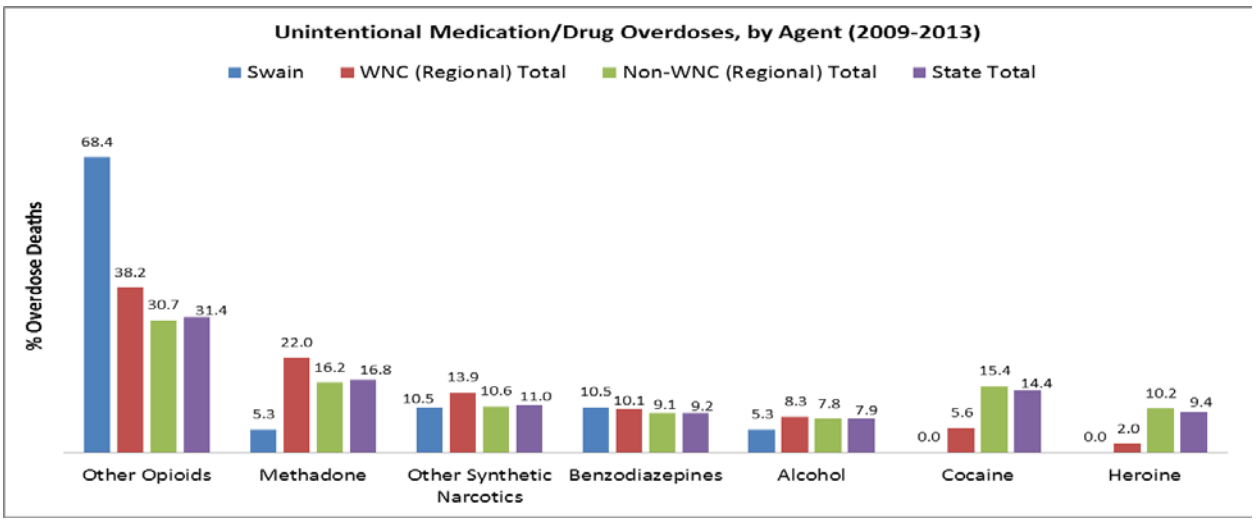
County	Unintentional Poisoning Deaths for Select Locations and Percent that are Medication/Drug Overdoses (2009-2013)*			Rate of Unintentional Medication/Drug Overdose Deaths (2009-2013)**	
	#	Rate per 100,000 NC Residents	% that are Medication/Drug Overdoses	#	Rate per 100,000 NC Residents
Swain	22	31.6	77.3	17	24.4
WNC (Regional) Total	560	14.8	90.0	506	13.3
Non-WNC (Regional) Total	4,749	10.7	91.0	4320	9.7
State Total	5,309	11.0	90.9	4826	10.0

Injury Epidemiology..2015

The following medications/drugs were used in drug overdose deaths in Swain County:

- Methadone
- Cocaine
- Heroine
- Alcohol
- Benzodiazepines
- Other Symthetic Narcotics
- Other Opiods

"Other Opioids" caused the highest proportion of drug overdose deaths (68.4%) in Swain County in the period 2009-2013. Methadone is a synthetic opioid usually associated with treatment for drug abuse. "Other opioids" could include: hydrocodone, oxycodone, morphine, codeine, and related drugs. Benzodiazepines could include anti-anxiety medications, sleeping pills, anti-seizure drugs, muscle relaxers. Other synthetic narcotics could include: bath salts, synthetic marijuana, incense, air fresheners, and things known as "designer drugs".



Injury Epidemiology..2015

Understanding the Issue

While overdose and poisonings are significant in Swain County, other effects due to drug abuse are rising. Swain County had 2 reported Hepatitis B cases in 2014 and 21 reported cases in 2015. There is a strong correlation between the increase in Hepatitis cases and the drug problems plaguing Swain and other communities (Frost, A 2016). Sexually transmitted diseases are also a concern in our community. Over the past few years, chlamydia and gonorrhea have increased.

Swain County Sexually Transmitted Diseases

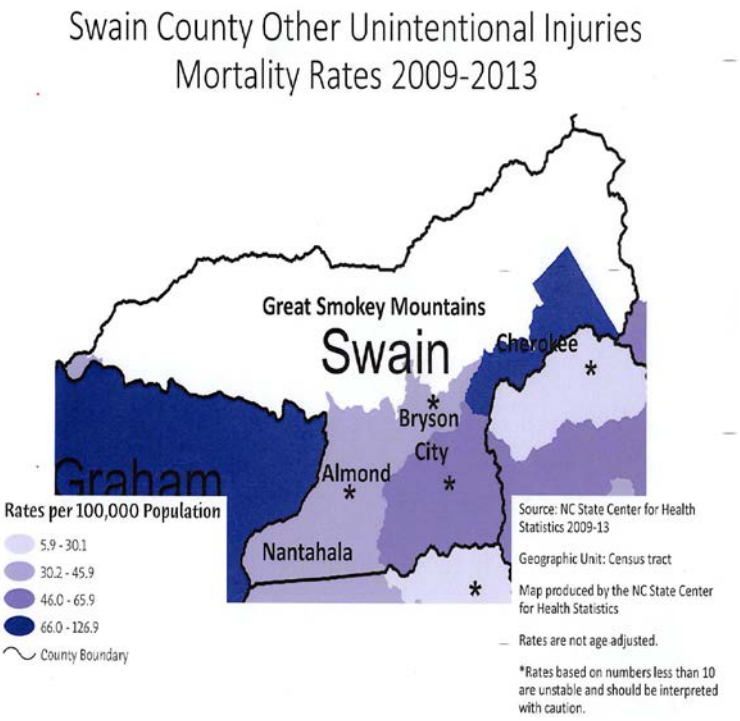
	2001	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Syphillis	0	0	0	0	0	0	0	0	0	0	0
Gonorrhea	11	4	9	6	4	3	5	9	21	3	22
Chlamydia	39	26	29	30	27	34	43	97	75	42	53
HIV/AIDS	0	3	2	1	0	0	0	0	0	0	0

Frost, A. BOC Report 2015

Populations At-Risk

The map below identifies residents on the Qualla Boundary as being an at-risk population for substance abuse.

It is evident Swain County, in line with the rest of the United States, is dealing with a drug overdose and poisoning epidemic. Since 1999, the amount of prescription painkillers prescribed and sold in the US has nearly quadrupled yet there has not been an overall change in the amount of pain that Americans report (CDC, Injury Prevention and Control: Prescription Drug Overdose, 2015). Greater community education, provider education, pain patient support and addiction treatment facilities are needed to address this epidemic.



NC SCHS

However, talking about drugs is still viewed as taboo in this community. Residents don't know who to turn to if their loved ones are battling addiction. Many do not believe their loved ones are at risk or do not understand the risk of overdose. To clarify, 97.5% of Swain County residents said that they had not taken a prescription drug that was not prescribed to them in the past month. Additionally, 97% of residents stated that they had never shared a prescription with someone else. (Professional Research Consultants, Inc., 2015) Finding an effective way to communicate the severity and change the "not in my backyard" mentality of this public health issue to our residents will prove effective at reducing drug/poisoning overdose and death.

Finally, all injury and substance abuse interventions should begin in the early years of life. Intervening early is not only a cost-effective way to address these issues but also works to vastly improve public health in the long run. Programs that prevent drug abuse and other problem behaviors also produce benefits for the community that outweigh monetary costs; for every dollar spent, up to a $10 ROI.

Health Resources available/needed

Some of the resources available in Swain County are: Prescription Take Back events, Swain Sheriff's Department, Permanent Drop Box, Swain Sheriff's Department, Naloxone distribution, Mountain Projects, Sylva, NC (referred to from Swain County), and Coalition for a Safe and Drug Free Swain County. Many resources were mentioned from prioritization events of resources needed, to name a few: Treatment centers, local in-patient treatment centers and substance abuse prevention programs for youth.

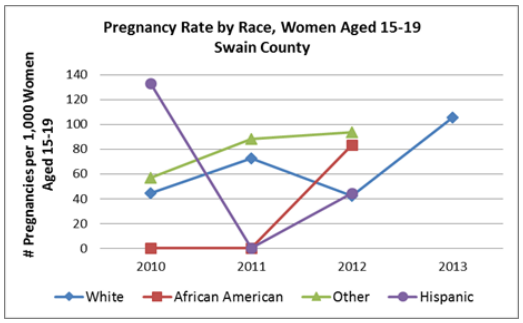
Priority Issue #3 Promote a Healthy Environment

The Swain County CHA team identified an assortment of environmental challenges which caused special consideration to be ranked as a priority health issue. Promoting a healthy environment is comprised of issues such as youth tobacco use, mothers who smoke, tobacco use at the Swain County Parks and Recreation areas as well as school sporting events, teen pregnancy and Hepatitis B cases. As these issues were dissected and discussed at length, the commonality was their link to our environment. A consensus for an environmental scan of the community could be advantageous in discovering what conditions of the environment could be rectified to establish a healthy environment conductive to developing social norms around healthy behaviors. So this assortment of issues has been gathered and grouped under healthy environment to provide an avenue to identify and address many issues as one large approach.

- Radon - high levels reported in Swain County
- Reduction of Teen Pregnancy – advocated free condom dispensers located within the community with accessibility
- Coalition for a Safe and Drug Free County – environmental scan would be effective to determine what locations of the community were impacted by discarded and disposed needs (hot spots for drug use)
- Swain County Schools – tobacco usage (Cigarette butts)

Data Highlights

- Radon - Western North Carolina has the highest radon levels in the state. The arithmetic mean indoor radon level for the 16 counties of the WNC region is 4.1 pCi/L which is 3.2 times the average national indoor radon level. In Swain County, the current average indoor radon level is 4.7 pCi/L, 15% higher than the regional mean, and 3.6 times the average national level
- Teen Pregnancy - Among Swain County women aged 15-44 this new rate was 104.6, and although it is not plotted below, it would have been the highest pregnancy rate among the stratified groups. Among Swain County teens, the pregnancy rate for non-Hispanic American Indians was suppressed, due to a below threshold number of pregnancies **(n=3).**



- Smoking While Pregnant - The percentage of women who smoked during pregnancy within WNC did not improve significantly between 2008 and 2013. The occurrence of pregnant women in Swain County who smoked actually increased after 2009. Among comparators, in every year cited except 2009 Swain County had the highest percentage of pregnant women who smoked.

Understanding the Issue

Humans interact with the environment constantly. These interactions affect quality of life, years of healthy life lived, and health disparities. The World Health Organization (WHO) defines environment, as "all the physical, chemical, and biological factors external to a person, and all the related behaviors" (World Health Organization, 2006).

Environmental health consists of preventing or controlling disease, injury, and disability related to the interactions between people and their environment. Maintaining a healthy environment is central to increasing quality of life and years of healthy life. Globally, nearly 25% of all deaths and the total disease burden can be attributed to environmental factors (World Health Organization, 2006). Environmental factors are diverse and far reaching. They include:

Exposure to hazardous substances in the air, water, soil, and food
Natural and technological disasters
Physical hazards
Nutritional deficiencies
The built environment

Poor environmental quality has its greatest impact on people whose health status is already at risk. Therefore, environmental health must address the societal and environmental factors that increase the likelihood of exposure and disease.

Populations At-Risk

The entire community.

Chapter 9 – Next Steps

Sharing Findings

The final CHA will be shared specifically with the following stakeholders:

- CHA Steering Committee
- CHA Work Team
- Swain County Board of Commissioners
- Swain Community Hospital Board

The Swain County Health Department will make the 2015 CHA available online to the public via the Health Department's website at: http://swaincountync.gov/health. Further, hard copies will be placed at the Mariana Black Public Library and at the SCHD.

Collaborative Action 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 CHA team will meet with community partners and discuss the next steps and develop a community health improvement plan (CHIP).

Works Cited

Centers for Disease Control and Prevention. (10, March 2016). *Chronic Disease Prevention and Health Promotion*. Retrieved from: http://www.cdc.gov/chronicdisease/index.htm

Centers for Disease Control and Prevention. (10, March 2016). *Heart Disease Prevention and Health Promotion*. Retrieved from: http://www.cdc.gov/heartdisease/index.htm

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

FRAC (2015). Why Low Income and Food Insure People are Vulnerable to Obesity. Retrieved from: http://frac.org/initiatives/hunger-and-obesity/whi-are-low-income-and-food-insecure-people-vulnerable-to-obesity/

Frost, Amber (2016). Personal Communication.

Injury Epidemiology and Surveillance Unit, Injury and Violence Prevention Branch, Chronic Disease and Injury Section, N.C. Division of Public Health. (19, April 2015). *Medication and Drug Poisoning*.

NC SCHS. (2016, March 10). *2015 County Health Data Book*. Retrieved from North Carolina State Center for Health Statistics: http://www.schs.state.nc.us/data/databook/

North Carolina Division of Medical Assistance *(2013). Title XIX Authorized Medicaid Eligible*. North Carolina Department of Health and Human Services, Retrieved from: http://www.ncdhhs.gov/dma/elig/index.htm

North Carolina Department of Justice, State Bureau of Investigation (June 2003). *Crime in North Carolina - 2002 [and other years as noted], Annual Summary Report of 2002 Uniform Crime Reporting Data, Table 6.*: http://crimereporting.ncdoj.gov/Reports.aspx

Preventing Drug Abuse (9, March 2016). Office of National Drug Control Policy. Retrieved from: https://www.ncjrs.gov/ondcppubs/publications/policy/99ndcs/iv- b.html

Professional Research Consultants, Inc. (2015). *Community Stakeholder Input: 2015 PRC Online Key Informant Survey-Swain County.* Omaha: Professional Research Consultants, Inc.

Professional Research Consultants, Inc. (2015). *PRC Community Health Needs Assessment: Swain County Community Health Findings.* Omaha: Professional Research Consultants, Inc.

Radon (8, March 2016). North Carolina Radon Program. Retrieved from: http://www.ncradon.org/About_Radon.html

Rise M., Pellerud A., Rygg L., and Steinsbekk A. (2013). Making and maintaining lifestyle changes after participating in group based type 2 diabetes self-management educations: a qualitative study. Retrieved from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3650057/

Robert Wood Johnson. (2016, March 8). *Swain County Health Rankings*. Retrieved from County Health Rankings and Roadmaps: http://www.countyhealthrankings.org/app/north-carolina/2015/rankings/swain/county/outcomes/overall/snapshot

U.S. Census Bureau. (2016, March 14). State and County Quick Facts: *Swain County, North Carolina.* Retrieved from: http://www.census.gov/quickfacts/table/PST045215/37,37173

Western North Carolina Vitality Index. (8, March 2016). *Deaths from Heart Disease, Stroke, Cancer and Diabetes*. Retrieved from: http://www.wncvitalityindex.org/health/deaths-heart-disease-stroke-cancer-and-diabetes

The White House. (9, March 2016). Office of National Drug Control Policy. Retrieved from: https://www.whitehouse.gov/ondcp

World Health Organization (2006). Preventing disease through healthy environments. Geneva, Switzerland: WHO. Retrieved At https://www.healthypeople.gov/2020/topics-objectives/topic/environmental-health#one

Appendices

Appendix A – Data Collection Methods & Limitations

Appendix B – Secondary Data Profile

Appendix C – County Maps

Appendix D – Survey Findings

- WNC Healthy Impact Survey Instrument
- Community Health Survey Results

Appendix E – Key-Informant Survey Findings

Appendix A – Data Collection Methods and Limitations

Secondary Data from Regional Core

Secondary Data Methodology

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

The principal source of secondary health data for this report was the NC State Center for Health Statistics (NC SCHS), including its County Health Data Books, Behavioral Risk Factor Surveillance System, Vital Statistics unit, and Cancer Registry. Other health data sources included: NC Division of Public Health (DPH) Epidemiology Section; NC Division of Mental Health, Developmental Disabilities and Substance Abuse Services; National Center for Health Statistics; NC DPH Nutrition Services Branch; UNC Highway Safety Research Center; and NC DETECT.

Because in any CHA it is instructive to relate local data to similar data in other jurisdictions, throughout this report representative county data is compared to like data describing the 16-county region and the state of NC as a whole. The WNC regional comparison is used as "peer" for the purposes of this assessment. Where appropriate and available, trend data has been used to show changes in indicators over time.

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

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

Data Definitions

Reports of this type customarily employ a range of technical terms, some of which may be unfamiliar to many readers. Health data, which composes a large proportion of the

information included in this report, employs a series of very specific terms which are important to interpreting the significance of the data. While these technical health data terms are defined in the report at the appropriate time, there are some data caveats that should be applied from the onset.

Error

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

Age-adjusting

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

Rates

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

While rates help make data comparable, it should be noted that small numbers of events tend to yield rates that are highly unstable, since a small change in the raw count may translate to a large change in rate. To overcome rate instability, another convention typically used in the presentation of health statistics is *data aggregation*, which involves combining like data gathered over a multi-year period, usually three or five years. The practice of presenting data that are aggregated avoids the instability typically associated

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

Regional arithmetic mean

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

Describing difference and change

Fifthly, in describing differences in data of the same type from two populations or locations, or changes over time in the same kind of data from one population or location—both of which appear frequently in this report—it is useful to apply the concept of *percent* difference or change. While it is always possible to describe difference or change by the simple subtraction of a smaller number from a larger number, the result often is inadequate for describing and understanding the *scope* or *significance* of the difference or change. Converting the amount of difference or change to a percent takes into account the relative size of the numbers that are changing in a way that simple subtraction does not, and makes it easier to grasp the meaning of the change. For example, there may be a rate of for a type of event (e.g., death) that is one number one year and another number five years later. Suppose the earlier figure is 12.0 and the latter figure is 18.0. The simple mathematical difference between these rates is 6.0. Suppose also there is another set of rates that are 212.0 in one year and 218.0 five years later. The simple mathematical difference between these rates also is 6.0. But are these same simple numerical differences really of the same significance in both instances? In the first example, converting the 6 point difference to a percent yields a relative change factor of 50%; that is, the smaller number increased by half, a large fraction. In the second example, converting the 6 point difference to a percent yields a relative change factor of 2.8%; that is, the smaller number increased by a relatively small fraction. In these examples the application of percent makes it very clear that the

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

Data limitations

Some data that is used in this report may have inherent limitations, due to the sample size, its geographic focus, or its being out-of-date, for example, but it is used nevertheless because there is no better alternative. Whenever this kind of data is used, it will be accompanied by a warning about its limitations.

WNC Healthy Impact Survey (Primary Data)

Survey Methodology & Instrument

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

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

Sample Approach & Design

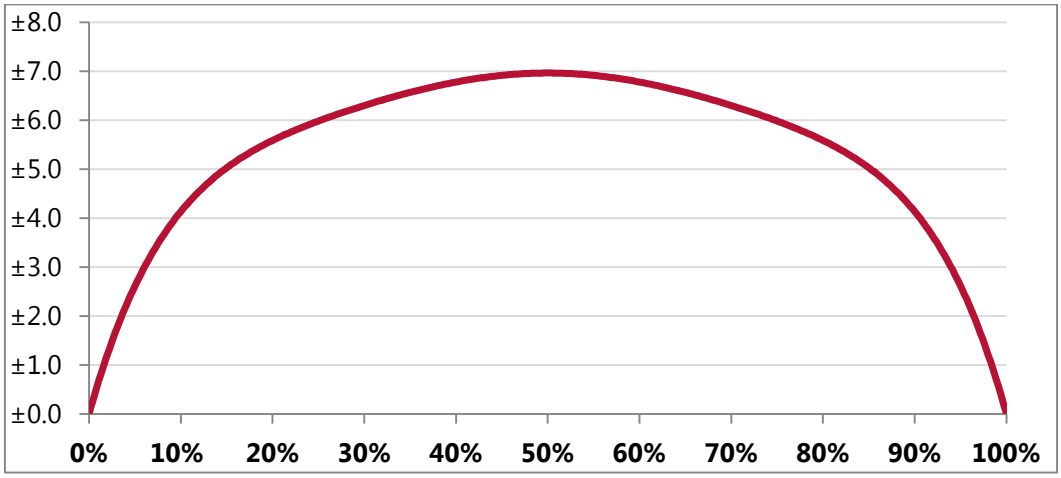
To ensure the best representation of the population surveyed, a telephone interview methodology (one that incorporates both landline and cell phone interviews) was employed. The primary advantages of telephone interviewing are timeliness, efficiency and random-selection capabilities.

The sample design used for this regional effort consisted of a stratified random sample of 3,300 individuals age 18 and older in Western North Carolina, with 200 from our county. All administration of the surveys, data collection and data analysis was conducted by Professional Research Consultants, Inc. (PRC). The interviews were conducted in either English or Spanish, as preferred by respondents.

Sampling Error

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

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



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

Examples: ● If 10% of the sample of 200 respondents answered a certain question with a "yes," it can be asserted that between 5.8% and 14.2% (10% ± 4.2%) of the total population would offer this response. ● If 50% of respondents said "yes," one could be certain with a 95 percent level of confidence that between 43.1% and 56.9% (50% ± 6.9%) of the total population would respond "yes" if asked this question.

Sample Characteristics

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

actual population distribution so as to appropriately represent Western North Carolina as a whole.

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

General Population Characteristics

County	Total Population (2010)	% Males	% Females	Median Age*	% Under 5 Years Old	% 5-19 Years Old	% 20 - 64 Years Old	% 65 Years and Older
Swain	13,981	48.7	51.3	40.8	6.3	19.9	57.2	16.6
WNC (Regional) Total	759,727	48.5	51.5	44.7	n/a	n/a	n/a	n/a
State Total	9,535,483	48.7	51.3	37.4	6.6	20.2	60.2	12.9

Source: US Census Bureau

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

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

Benchmark Data

North Carolina Risk Factor Data

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

Nationwide Risk Factor Data

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

Healthy People 2020

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

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

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

Survey Administration

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

Interviewing Protocols and Quality Assurance

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

Before going into the field in the latter half of February, PRC piloted 30 interviews across the region with the finalized survey instrument. After this phase, PRC corrected any process errors that were found, and discussed with the consulting team any substantive issues that needed to be resolved before full implementation.

PRC employs the latest CATI (computer-aided telephone interviewing) system technology in its interviewing facilities. The CATI system automatically generates the daily sample for data collection, retaining each telephone number until the Rules of Replacement are met. Replacement means that no further attempts are made to connect to a particular number, and that a replacement number is drawn from the sample. To retain the

randomness of the sample, telephone numbers drawn for the sample are not discarded and replaced except under very specific conditions.

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

Cell Phones

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

Minimizing Potential Error

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

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

Sampling Error - Sampling error occurs because estimates are based on only a sample of the population rather than on the entire population. Generating a random sample that is representative and of adequate size can help minimize sampling error. Sampling error, in this instance, is further minimized through the strict application of administration protocols. Post-stratification, as mentioned above, is another means of minimizing sampling error.

Measurement Error - Measurement error occurs when responses to questions are unduly influenced by one or more factors. These may include question wording or order, or the interviewer's tone of voice or objectivity. Using a tested survey instrument minimizes errors associated with the questionnaire. Thorough and specific interviews also reduce

possible errors. The automated CATI system is designed to lessen the risk of human error in the coding and data entry of responses.

Information Gaps

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

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

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

Online Key Informant Survey (Primary Data)

Online Survey Methodology

Purpose and Survey Administration

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

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

Online Survey instrument

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

Participation

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

Local Online Key Informant Survey Participation		
Key Informant Type	Number Invited	Number Participating
Community/Business Leader	34	10
Other Health Provider	2	1
Physician	2	0
Public Health Representative	7	4
Social Service Provider	7	4

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

Online Survey Limitations

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

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

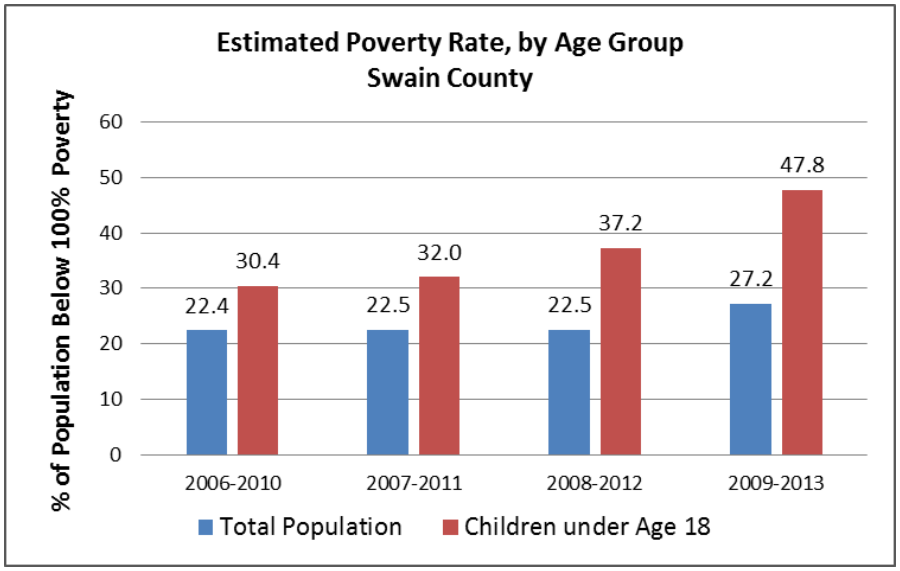
Appendix B – Secondary Data Profile

Swain County has a significant population living below the poverty level. Swain County's was the highest among the comparators in every year cited.

County	Percent Total Population Below 100% Poverty Level			
	2006-2010	2007-2011	2008-2012	2009-2013
Swain County	**22.4**	**22.5**	**22.5**	**27.2**
WNC Region	15.7	16.1	16.9	18.0
State of NC	15.5	16.1	16.8	17.5

NC SCHS, 2016

In Swain County as in much of NC, children suffer significantly and disproportionately from poverty. The estimated poverty rate among children under age 18 ranged from between 36% to 76% higher than the overall rate throughout the period cited.



U.S. Census Bureau, 2015

The percent of uninsured adults age 18-64 peaked in WNC and NC in 2010. The comparable peak in Swain County occurred in 2012. Among comparators Swain County had the highest percentage of uninsured adults in every year cited.

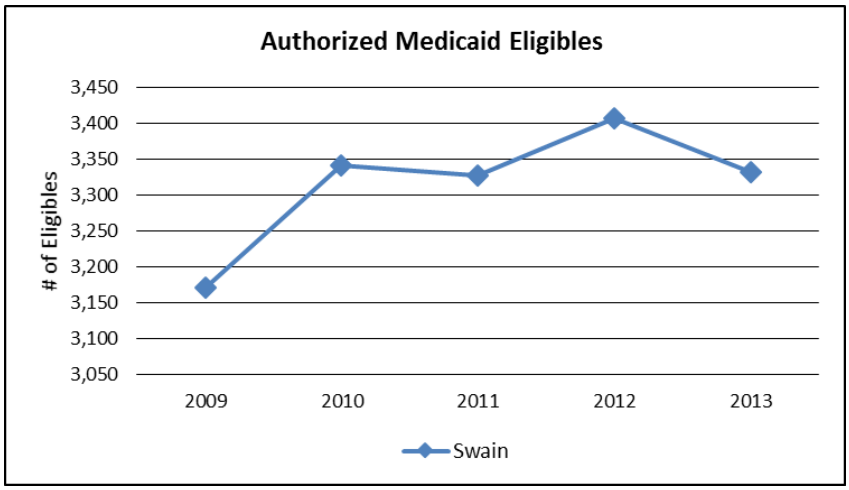
Percent of Population Without Health Insurance, by Age Group

County	2009		2010		2011		2012		2013	
	0-18	18-64	0-18	18-64	0-18	18-64	0-18	18-64	0-18	18-64
Swain County	**11.5**	**26.0**	**10.1**	**27.8**	**11.4**	**27.9**	**12.0**	**29.1**	**10.0**	**27.4**
WNC Region	9.9	24.2	9.7	26.0	9.1	25.2	9.3	25.4	8.6	25.0
State of NC	8.7	21.9	8.3	23.5	7.9	23.0	7.9	23.4	6.9	22.5

U.S. Census Bureau, 2015

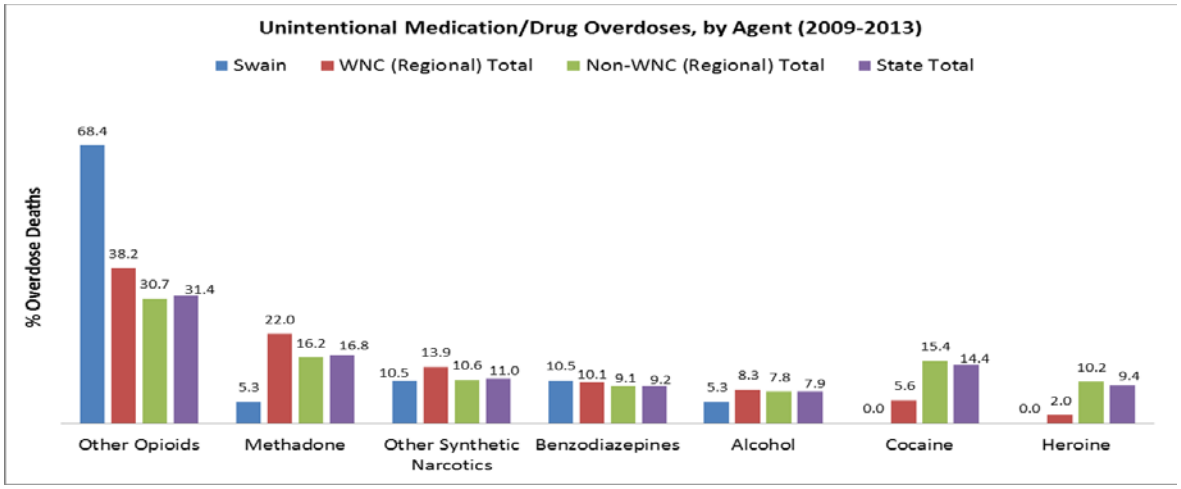
The total number of people in Swain County eligible for Medicaid fluctuated over the period cited, peaking in 2012 and falling in 2013.

Swain County Medicaid-Eligibles, 2009-2013



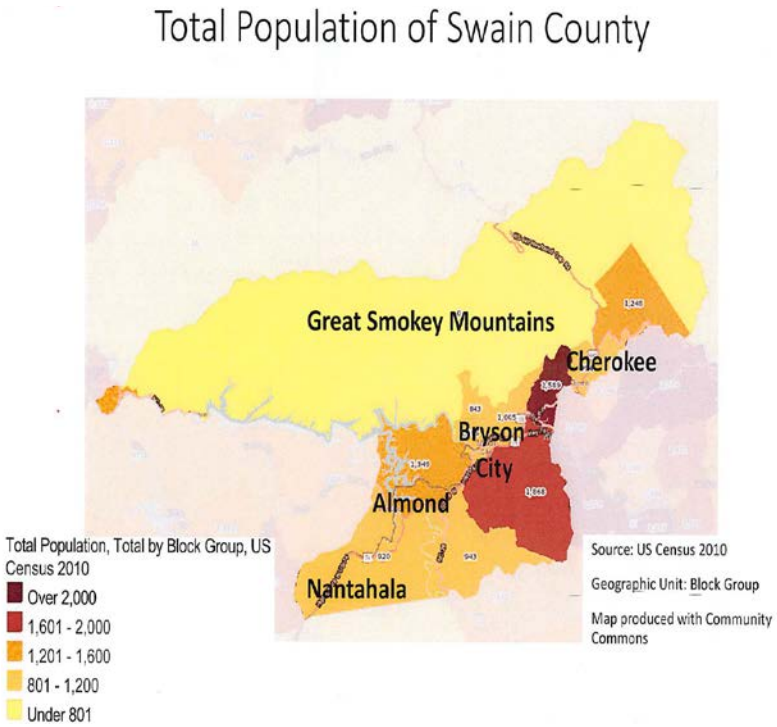
NC Division of Medical Assistance

Other Opioids caused the highest proportion of drug overdose (68.4%) deaths in Swain County in the period 2009-2013. Other opioids could include: hydrocodone, oxycodone, morphine, codeine, and related drugs.



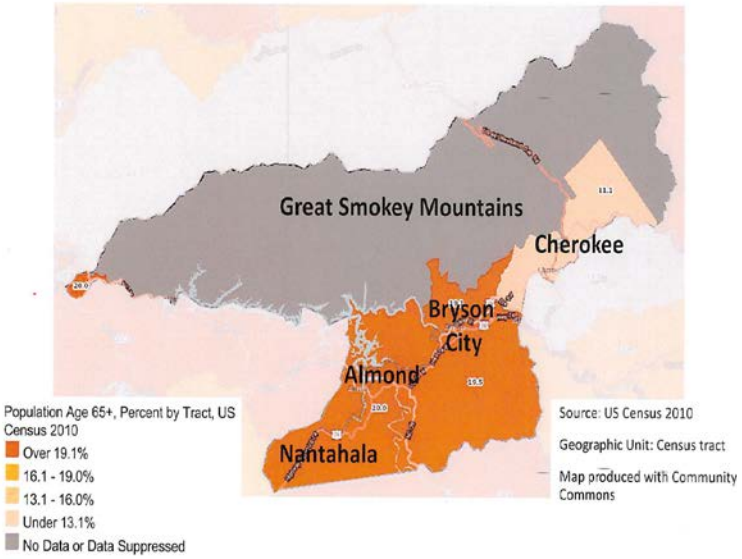
Injury Epidemiology..2015

Appendix C – County Maps



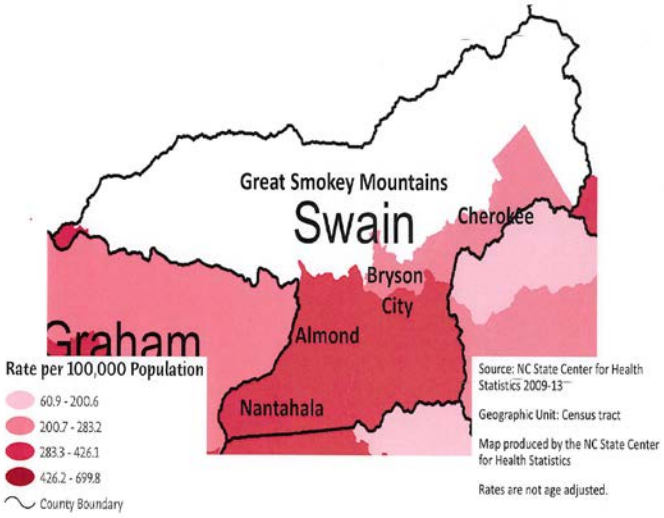
U.S. Census 2010

Percent of the Population of Older Adults (Age 65+) in Swain County



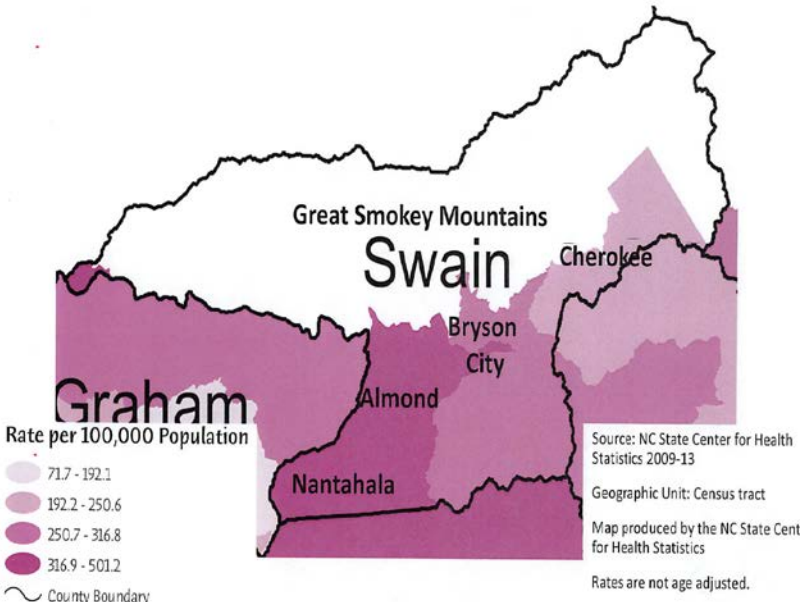
U.S. Census 2010

Swain County Heart Disease Mortality Rates 2009-2013



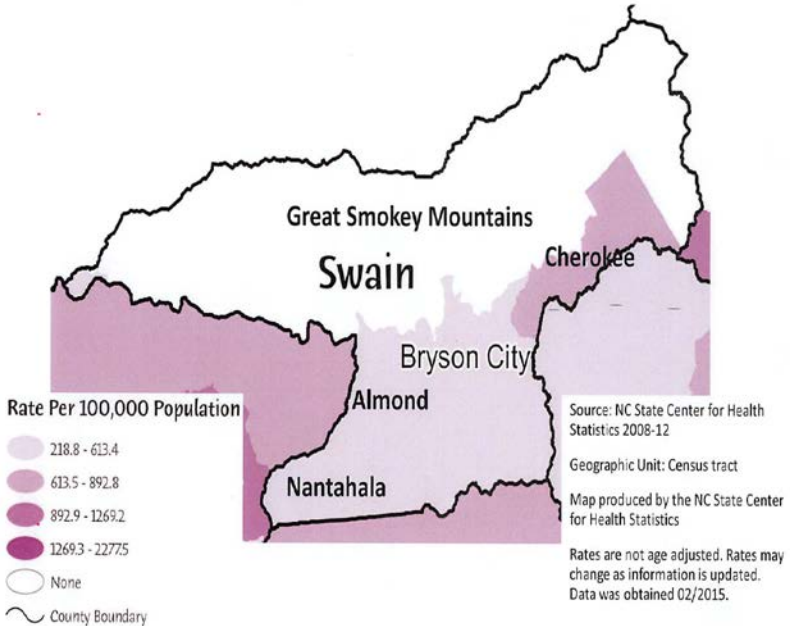
NC SCHS

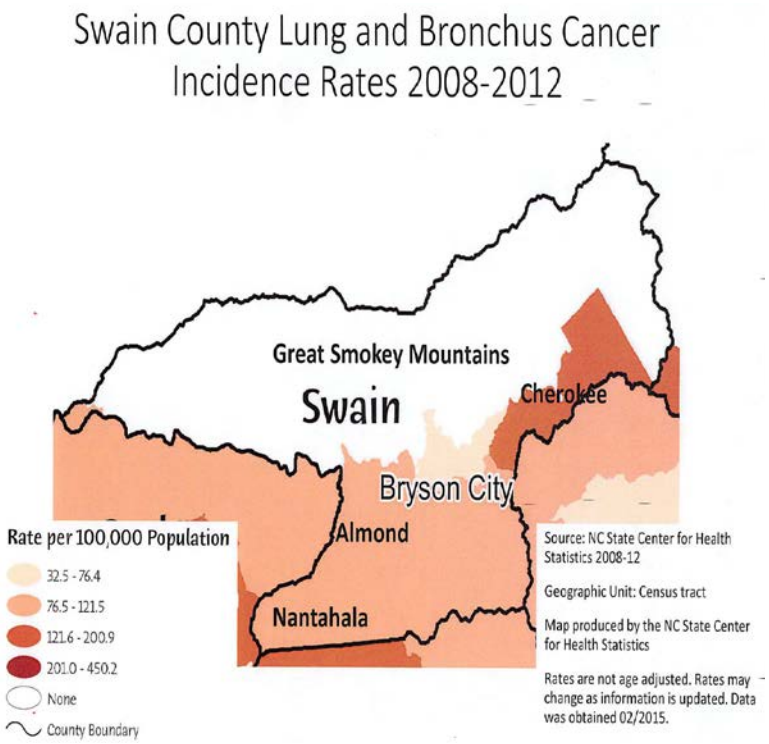
Swain County All Cancers
Mortality Rates 2009-2013



NC SCHS

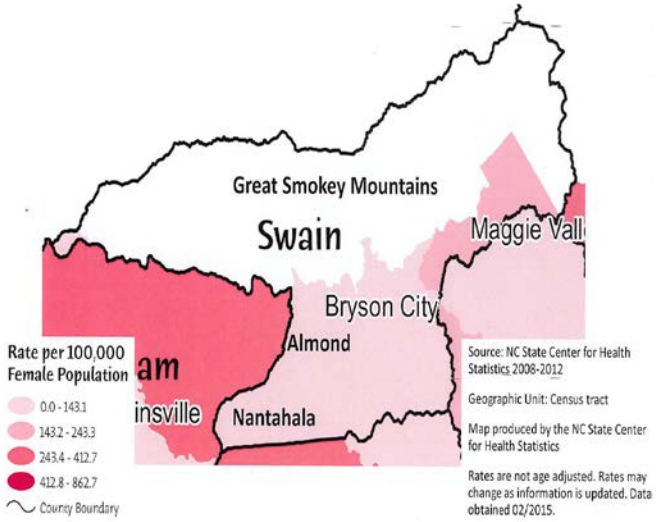
Swain County All Cancer
Incidence Rates 2008-2012




Swain County Lung and Bronchus Cancer
Incidence Rates 2008-2012
Great Smokey Mountains
Swain
Cherokee
Bryson City
Almond
Nantahala
Rate per 100,000 Population
32.5 - 76.4
76.5 - 121.5
121.6 - 200.9
201.0 - 450.2
None
County Boundary
Source: NC State Center for Health Statistics 2008-12
Geographic Unit: Census tract
Map produced by the NC State Center for Health Statistics
Rates are not age adjusted. Rates may change as information is updated. Data was obtained 02/2015.

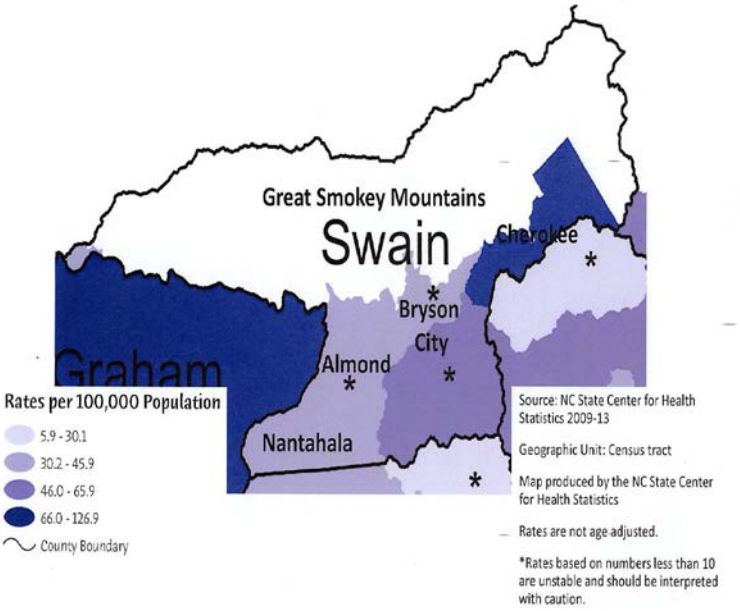
NC SCHS

Swain County Breast Cancer
Incidence Rates 2008-2012

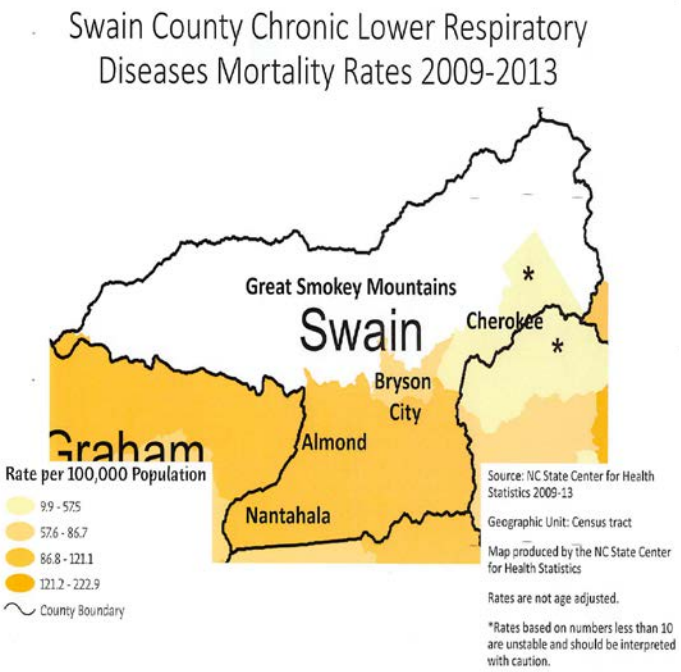


NC SCHS

Swain County Other Unintentional Injuries
Mortality Rates 2009-2013



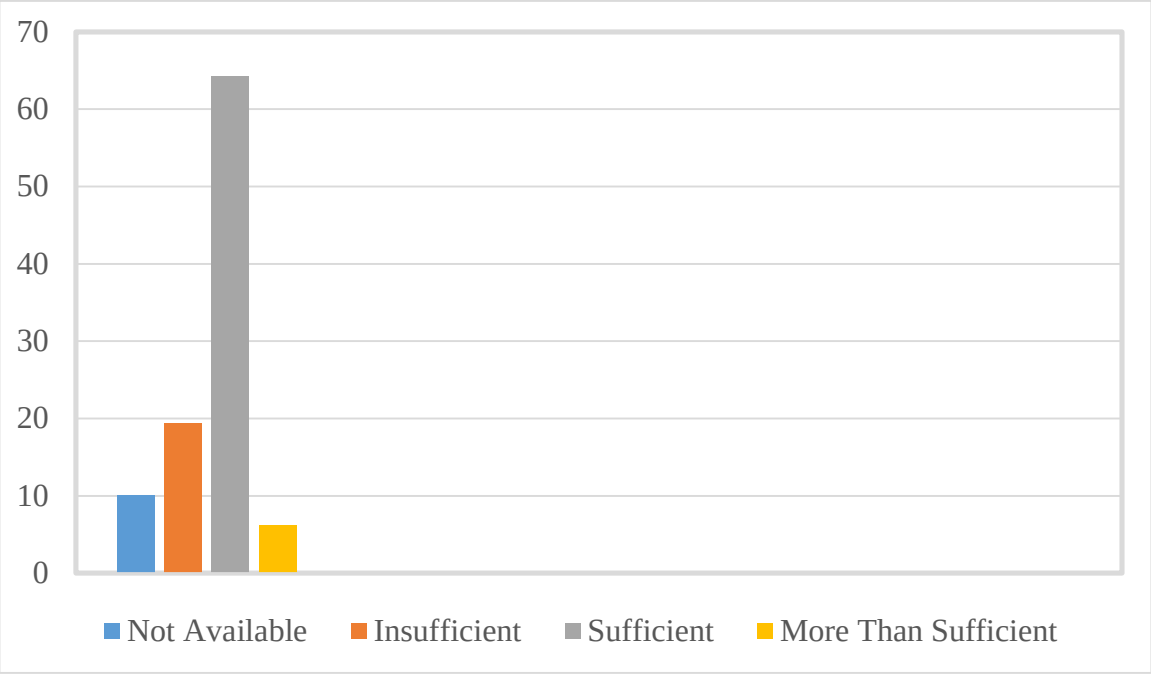
NC SCHS


Swain County Chronic Lower Respiratory Diseases Mortality Rates 2009-2013
Great Smokey Mountains
Swain
Cherokee
Bryson City
Almond
Graham
Nantahala
Rate per 100,000 Population
9.9 - 57.5
57.6 - 86.7
86.8 - 121.1
121.2 - 222.9
County Boundary
Source: NC State Center for Health Statistics 2009-13
Geographic Unit: Census tract
Map produced by the NC State Center for Health Statistics
Rates are not age adjusted.
*Rates based on numbers less than 10 are unstable and should be interpreted with caution.

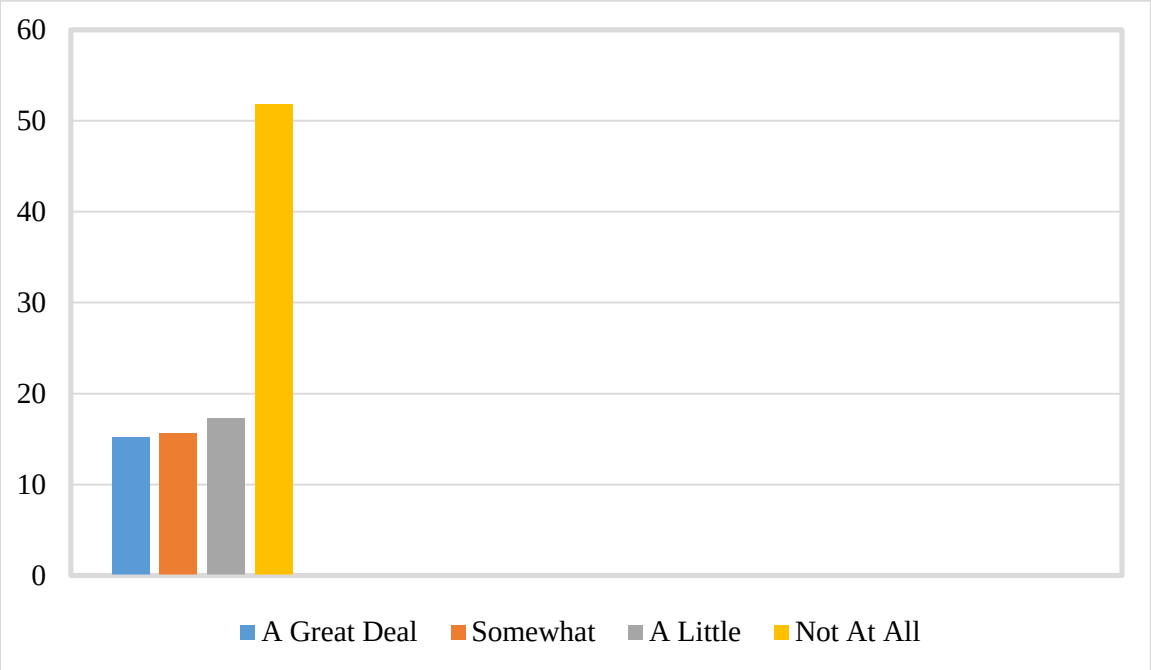
NC SCHS

Appendix D - Survey Findings Swain County 2015

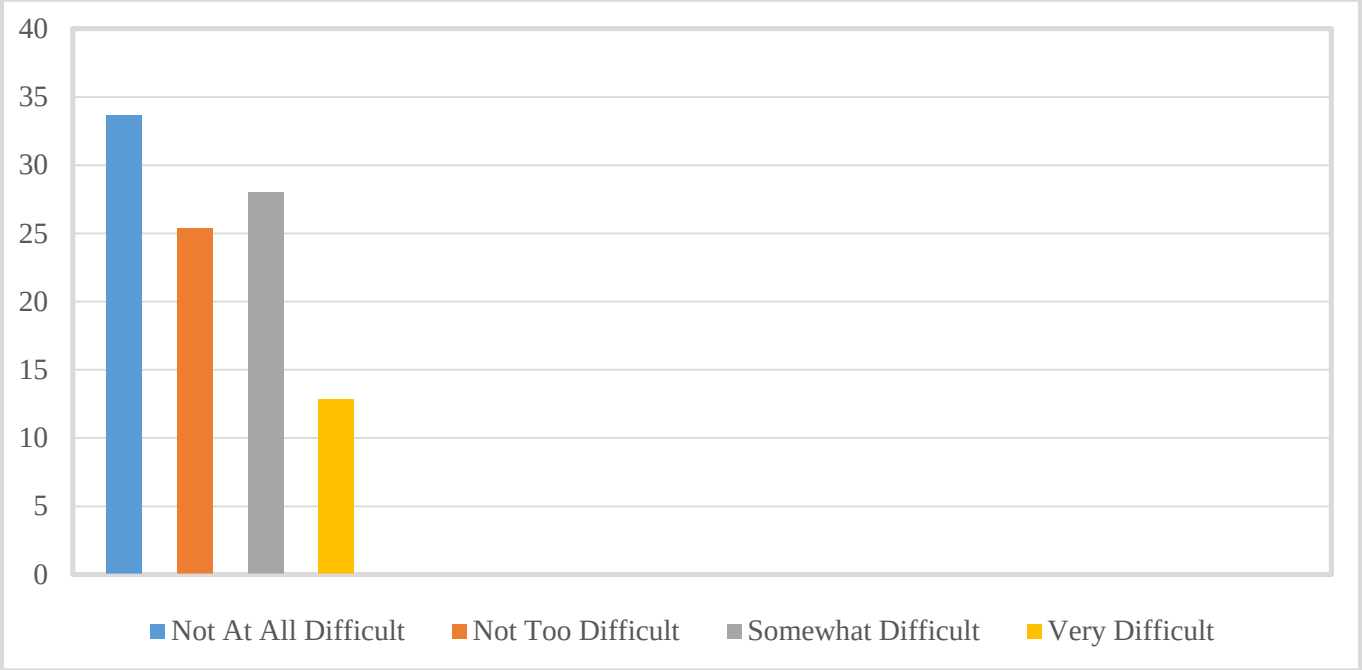
Q1. Do you feel existing community resources or services for chronic diseases such as diabetes, heart disease or COPD are:



Q2. Has your life been negatively affected by substance abuse issues (respondent's or another person)?



Q3. Do you feel it is difficult accessing fresh produce at an affordable price?



Appendix E – Key-Informant Survey Findings

Community Stakeholder Input

2015 PRC Online Key Informant Survey

Swain County, NC

Prepared for:

WNC Healthy Impact

By:

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

2015-0631-02

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Methodology

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

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

Participation

In all, 19 community stakeholders took part in the Online Key Informant Survey, as outlined below:

Swain County Online Key Informant Survey Participation

Key Informant Type	Number Invited	Number Participating
Community/Business Leader	34	10
Other Health Provider	2	1
Physician	2	0
Public Health Representative	7	4
Social Service Provider	7	4

Participating Organization	Populations Served		
	Low-Income Residents	Minority Populations	Medically Underserved
Big Brothers and Big Sisters of Swain	✓	✓	✓
Coalition for a Drug Free Swain County	✓	✓	✓
Health Department	✓	✓	✓
Mountain Projects, Inc.	✓	✓	✓
Smoky Mountain Times Newspaper			✓
Swain Community Hospital, A. Duke LifePoint Hospital	✓	✓	✓

Swain Community Hospital/Harris Regional Hospital	✓	✓	✓
Swain County Health Department	✓	✓	✓
Swain County Schools	✓	✓	✓
Town of Bryson City			
WNC Healthy Impact	✓	✓	✓

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

Minority populations represented:

- African American
- American Indian
- Asian
- Children
- Disabled
- Hispanic/Latino
- Low Income

Medically underserved populations represented:

- Adults
- Children
- Dental Services
- Dental Services for Children
- Elderly
- Hispanic/Latino
- Immigrants
- Low Income
- Mentally Ill
- Substance Abusers
- Unemployed
- Uninsured/Underinsured

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

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

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

Key informants could list up to 3 responses.

Characteristics of a Healthy Community

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

- Access to Health Care (5)
- Health Education (5)
- Diet/Nutrition (3)
- Quality Health Care (3)
- Access to Preventive Health Care (2)
- Affordable Health Care (2)
- Encouraging Physical Activity (2)
- Variety of Opportunities for Physical Activity's (2)
- Access to Healthy Foods (1)
- Access to Medical and Dental Care (1)
- Caring and Supportive Community Providers (1)
- Community Buy In (1)
- Diversity (1)
- Faith (1)
- Good Education (1)
- Guarantee of a Livable Wage (1)
- Health Lifestyles (1)
- Healthy Children (1)
- Healthy Residents (1)
- High Life Expectancy (1)
- Leaders Working Together (1)
- Low Crime Rate (1)
- Low Population of Chronic Disease (1)
- Low Rate of Substance Abuse (1)
- Proper Mental Health Services (1)
- Sense of Belonging to the Community (1)
- Smoke Free Environments (1)
- Strong School System (1)

Community's Greatest Gem/Asset

Key informants characterized their county's greatest "gem" or asset as the following:

Sense of Community

Mountain Community and ability to "know your neighbor". The strong

sense of community in Swain County

People

Swain County has a community 'can-do' spirit that could be leveraged to create a unified focus on how to encourage residents to take advantage of the many opportunities to be outdoors and be healthy. We have great schools and free programs for kids. As a community we can get things done.

A small community that could be cleaned up health wise with efforts from school system, city and county government...we have beautiful surroundings, but we are very unhealthy inside

Natural Environment

The natural beauty of the land, and water. Beautiful place to

live.

Because of its beauty (absent current mountainside and mountain top development, it is a great tourist destination. But, this limits the county to service jobs which are low wage. This great asset also restricts us.

Natural resources - the outdoors The natural

resources.

National Park

Outdoor Activities

Oddly enough, the greatest asset isn't being utilized by everyone, and that is the ample opportunities for outdoor activities. We also have access to healthy food. The third strength is strong community ties, such as churches and so many people who have family members here that can help promote good activities and life choices.

Outdoor recreation

Employment

We have access to jobs at the casino, CONMET/Shaw, the tourism industry assuming that we can get people to and from work. And, of course, pass drug tests.

Youth

Youth

Requirements for Quality of Life

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

Key informants could list up to 3 responses.

Key informants characterized the following as issues that must be addressed in order to improve the quality of life in Swain County *(number in parenthesis identifies number of total mentions)*:

- Employment (5)
- Affordable Housing (4)
- Education (4)
- Education About Health and Wellness (3)

- Alcohol/Drug Abuse (2)
- Better Paying Jobs (2)
- Comprehensive Sex Education (2)
- Economy (2)
- Access to Healthcare (1)
- Family Values (1)
- More/Better Outdoor Recreation Areas (1)
- Not Accepting Things the way They Have Always Been (1)
- Poverty (1)
- Teen Pregnancy (1)
- Tobacco Use (1)
- Transportation (1)
- Values (1)
- Youth Activities (1)

Ranking of Health Issues

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

Evaluation of Health Issues				
Health Issue	**Major Problem**	**Moderate Problem**	**Minor Problem**	**No Problem At All**
Substance Abuse	66.7%	33.3%	0.0%	0.0%
Diabetes	66.7%	27.8%	5.6%	0.0%
Mental Health	61.1%	38.9%	0.0%	0.0%
Sexually Transmitted Disease & Unintended Pregnancy	50.0%	44.4%	5.6%	0.0%
Nutrition, Physical Activity, & Weight	50.0%	38.9%	11.1%	0.0%
Heart Disease & Stroke	41.2%	52.9%	5.9%	0.0%
Cancer	38.9%	55.6%	5.6%	0.0%
Tobacco Use	27.8%	61.1%	11.1%	0.0%
Oral Health	27.8%	44.4%	27.8%	0.0%
Respiratory Diseases	23.5%	58.8%	17.6%	0.0%
Maternal & Infant Health	22.2%	33.3%	44.4%	0.0%
Access to Health Care Services	16.7%	55.6%	22.2%	5.6%

Injury & Violence	11.1%	33.3%	44.4%	11.1%
Infectious Diseases & Foodborne Illnesses	0.0%	16.7%	66.7%	16.7%

Perceptions of Health Issues

Online Key Informant Survey participants rating any of the aforementioned health issues as "major problems" in their county were further asked to give reasons for their perceptions.

These are outlined, by health issue, in the following sections.

Access to Health Care Services

Over half of key informants characterized *Access to Health Care Services* as a "moderate problem" in Swain County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Access to Health Care Services	**16.7%**	**55.6%**	**22.2%**	**5.6%**

Type of Care Most Difficult to Access

Key informants (who rated this as a "major problem") most often identified mental health care as the most difficult to access in Swain County.

	Most Difficult to Access	Second-Most Difficult to Access	Third-Most Difficult to Access	Total Mentions
Mental Health Care	66.7%	50.0%	0.0%	3
Substance Abuse Treatment	33.3%	50.0%	0.0%	2
Specialty Care	0.0%	0.0%	100.0%	2

Top Concerns

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

Limited Number of Providers

Poverty and lack of affordable healthcare. Many residents will not seek care simply because they know they cannot afford it. Also, Swain County has difficulty retaining physicians which impacts those who seek care for chronic disease because the providers are not vested in the community and do not truly get to know their patients and by default, their conditions.

Swain County needs to provide an optometrist. You have to travel to Jackson County, and it takes a long time to get an appointment.

Cultural Barriers

Low income families, coupled with chronic substance abuse, make healthcare less than a priority.

Lack of Insurance

So many people and their children have no insurance to cover their illnesses and dental care. Children are sent to school sick because of lack of care.

Cancer

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

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Cancer	**38.9%**	**55.6%**	**5.6%**	**0.0%**

Top Concerns

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

Prevalence/Incidence

Cancer is a leading cause of death in our community.

I understand that Swain County has been rated more than once as having the highest rate of cancer in the state. I don't know for certain the source of why that might be. Some of it could be related to people not getting screened early enough but I think it's also tied to environmental factors. High rates of tobacco use, exposure to mercury and other pollutants.

It seems like there are many cancer patients in the area.

Lack of Local Cancer Healthcare Facilities

There are no healthcare centers located in Swain County for patients to go to. It affects every family in Swain County.

Lifestyle Choices

No idea what causes this, but I suspect lifestyle related issues drive most of it.

Diabetes

Over two-thirds of key informants characterized *Diabetes* as a "major problem" in Swain County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Diabetes	**66.7%**	**27.8%**	**5.6%**	

Top Concerns

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

Nutrition, Physical Activity, and Weight

Obesity. Lack of exercise.

What people eat, thus being overweight. I am unsure,

but obesity is rampant here.

Portion of the population genetically predisposed. In other cases, poor diet and lack of exercise are an issue.

Prevalence/Incidence

Due to the high levels of prevalence and incidence in the county. Also the fact that this condition has many other comorbid conditions.

Swain County ranks in the top of NC counties with diabetes. Rates are increasing, which makes diabetes a concern, which needs specific attention with prevention measures put in place.

Native American Population

I don't know for certain that diabetes is high among the general population in Swain County, but I do know that Cherokee people in Swain County have extremely high rates of diabetes. I think a lot of that is genetics, they are more prone to developing the disease, but also lifestyle, particularly the high fat diets people are eating and potentially lack of exercise. It's also possible that increased awareness and prevention at young ages would be beneficial to decreasing these rates.

Lack of Education

Nutritional education is available, but there does not seem to be much community buy in. Also, there appears to be a higher incidence of the disease among Native Americans, and Swain County is home to a large Native population.

Lifestyle Choices

People need to take better care of themselves. The cases of diabetes seem to go up each year. A lot could benefit from making small lifestyle changes to keep them out of the diabetic range. Better eating, exercise and management of their diabetes.

Heart Disease & Stroke

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

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Heart Disease & Stroke	**41.2%**	**52.9%**	**5.9%**	**0.0%**

Top Concerns

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

Lifestyle Choices

Heart disease and stroke are a major problem in every community seeing that they are the leading causes of death all over the USA. I believe that reducing the use of tobacco is a good step to decreasing the rates of heart disease and stroke as would be increasing opportunities for living a healthy, active lifestyle. More companies are offering health insurance and

Lack of Specialized Healthcare Facilities

Again, no health care centers designed specifically for heart disease or stroke.

Leading Cause of Death

They both often lead to death or long term care, which places a large economic burden on the families and caregivers. Unhealthy diets and lifestyles teamed with a higher genetic disposition seem to fuel both these problems.

Prevalence/Incidence

Heart disease and stroke are major debilitation diseases that affect our area. These diseases can be affected by preventive measures.

Tobacco Use

High rate of smoking combined with poor diet and exercise habits.

Infectious Diseases & Foodborne Illnesses

A majority of key informants characterized *Infectious Diseases & Foodborne Illnesses*

as a "minor problem" in Swain County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Infectious Diseases & Foodborne Illnesses	0.0%	16.7%	66.7%	16.7%

Injury & Violence

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

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Injury & Violence	11.1%	33.3%	44.4%	11.1%

Top Concerns

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

Prevalence of Substance Abuse

I think the drug and alcohol influence lead to most issues of injury and violence in Swain County. I think if the drug problem was adequately address, instances of violence would decrease dramatically.

Mental Health and Substance Abuse Issues

Due to mental health and substance use issues, these people exhibit violent behaviors.

Maternal & Infant Health

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

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Maternal & Infant Health	22.2%	33.3%	44.4%	0.0%

Top Concerns

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

Access to Prenatal Care

I understand that our rates for access to prenatal care are lower than many counties in the state. I think a lot of this is an economic issue. I would assume that many people who are not getting maternal and infant care may feel that they cannot afford it or may not know how to access care. It's unfortunately also tied to two other issues: high teen pregnancy rates, I believe; and high rates of drug abuse.

Prevalence of Unintended Pregnancies

There are so many babies born to single women and teenagers. They are not prepared to care for the infants and children. The lack of parenting skills lead to children with learning and behavior problems.

Lack of Resources

There is only one center dedicated to child health, and no OB services in Swain County.

Lack of Education

Education regarding pregnancy and care of children should be part of the curriculum beginning in middle school.

Mental Health

Two-thirds of key informants characterized *Mental Health* as a "major problem" in Swain County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Mental Health	**61.1%**	**38.9%**	**0.0%**	**0.0%**

Top Concerns

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

Lack of Resources

I think mental health is an issue statewide, but Swain County is particularly hard hit because we lack sufficient mental health services.

There are relatively no services available for people. Even if they can get a visit with a mental health provider, there is no follow through. There are no treatment facilities and no funding to help with expenses.

Mental health is an area where there is not available resources to treat. People fall through the cracks.

Lack of mental health resources.

Mental health has been an issue for years. There are no services in the area dedicated to mental health or facilities for individuals to go to.

Prevalence/Incidence

The population as a whole is not aware of its prevalence, don't recognize it unless it is severe and do not know how to access treatment. Sometimes there are not even enough resources available for the patient to receive services. Most government and community agencies also lack enough funding to address it.

It is a problem statewide. Access to services in Swain County and other counties is an issue. People experiencing behavioral health crises often spend hours or days in the local emergency department awaiting a transfer due to the lack of community-based services.

Lack of Diagnosis

It's a major problem because it goes largely unaddressed. Many issues including depression, violence and crime would also be alleviated if people could get help and counseling for their mental health issues.

Lack of Providers

It is not limited to Swain County, but the lack of providers, and the high cost associated with the care seem to be the two most obvious causes. Most insurances do not cover a lot of mental health care.

Nutrition, Physical Activity, & Weight

Half of key informants characterized *Nutrition, Physical Activity & Weight* as a "major problem" in Swain County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Nutrition, Physical Activity & Weight	**50.0%**	**38.9%**	**11.1%**	**0.0%**

Top Concerns

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

Lifestyle Choices

Because these are lifestyle changes, and without community or family buy in it is often left solely on the willpower of individuals.

The most recent County Health Rankings indicate the need for better diet and exercise habits.

Access to Affordable Healthy Foods

It's not just a county issue, but the cost of healthy food/meals versus the cost of the dollar menu fast food items contribute a lot to the nutrition and weight problems. Also lack of education on how to cook healthy. I think the addition of a nice fitness facility would go very far in the improvement of physical activity and weight problems. I think the way the elementary schools are offering free lunches this year is great this year.

Culture

Like heart disease and stroke, this is a national problem. It's cultural. There is less of a focus on promoting healthy lifestyle habits as there should be. Swain County does have positives in this area. A lot of support for sports, a lot of folks who access the great outdoors for recreational activities such as kayaking and mountain biking. I think the community could do more to promote access to the outdoors, particularly for young people and low income families. The other big factor is that so many people sit at a desk all day. That's just not good for your health. Nutrition is another factor that is tied to income. Some folks might not be getting the best nutrition if they can't afford to buy enough food or don't know how to prepare healthy food on a budget. More cooking classes, promoting community or home gardens, these things could be helpful.

Affordable/Safe Opportunities for Physical Activity

The environment in Swain County does not support this.

Lack of Education

Education regarding nutrition, physical activity and diet should be included in curriculum beginning in elementary school.

Lack of Resources

County does not provide enough things for people to be involved in. Look at the Records Department.

Obesity Poverty

Obesity is a large problem of Swain.

Low income. A cultural heritage of comfort food intended for people who worked hard results in obesity when consumers are sedentary.

Oral Health

Key informants most often characterized *Oral Health* as a "moderate problem" in Swain County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Oral Health	**27.8%**	**44.4%**	**27.8%**	**0.0%**

Top Concerns

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

Access and Cost

Local school professionals have shared that free access to dental care for children, especially older kids, is lacking in availability. There was significant demand for dental services for all ages when the Department of Defense conducted its 2014 medical mission event in Swain County. People simply do not have access to free or affordable dental care beyond what is offered in the elementary schools.

Cost, so people don't go.

Culture

More than anything, there seems to be a lack of access to good dental hygiene. There is a plan to increase access to dental care for students and families in the county, which should be supported. I think few people realize that even though dental is often not covered by their health plan that they can buy affordable dental insurance plans on their own.

Medicare/Medicaid

There are no free clinics or Medicaid dentists in the area. There is a huge need for dental care and the providers in the area only accept private pay, at full cost, and private insurance. We need a dental clinic offered through a community agency like others counties have so that people can access it and it is based on income.

Uninsured/Underinsured

Dental services should be available to low income families. Many families cannot afford good dental care.

Respiratory Diseases

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

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Respiratory Diseases	23.5%	58.8%	17.6%	0.0%

Top Concerns

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

No Local Healthcare Facilities

We need specialties in Swain County. Everything goes to Jackson County.

Tobacco Use

Smoking.

Sexually Transmitted Disease & Unintended Pregnancy

Half of key informants characterized *Sexually Transmitted Disease & Unintended Pregnancy* as a "major problem" in Swain County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Sexually Transmitted Disease & Unintended Pregnancy	**50.0%**	**44.4%**	**5.6%**	**0.0%**

Top Concerns

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

Lack of Sex Education in Schools

Schools teach abstinence and they need to teach proper protection to prevent pregnancies. The county does not like to talk or advertise about STDs and we need to.

I'm not certain but I would assume it's directly linked to a lack of good sex education in classrooms. It's also possible that in a community with a strong Christian influence, people are not being taught about protected sex from parents either. I know Swain County has a high teen pregnancy rate. It's also a rural place where young people may not have as many activities to do aside from have sex, drink and do drugs, as cliché as that might sound, I think there is some truth to it.

It seems that safe sex is a touchy subject that no one wants to talk about. Not parents, not community leaders, not school leaders, no one. Just because we don't talk about it doesn't mean the problem isn't there and talking about it isn't going to make it occur more often. More likely, being able to openly discuss the issues would solve a lot of the problems. Also a lot of people who engage in unsafe sex practices have the mentality that nothing bad will happen to me and that is just not the case. STDs and well as unintended pregnancies happen every day to people in our community that we are very familiar with. There needs to be a focus on safe sex education in schools as well as with adults.

Seems like a cultural problem. Education is important beginning in middle school to make students aware of diseases and unwanted pregnancies.

The community seems to think that if you do no talk, educate, or address the fact that our children are sexually active, it will somehow work itself out. The conservative mindset lacks the motivation to be proactive with our children in the realm of sexual education. It is a shame, because we regularly have the highest teen pregnancy rate in the state.

Teen Pregnancy Prevalence

Swain County has a high teen pregnancy.

STD's and unintentional pregnancies are a major problem in Swain County. It is hard to say why, but several people suspect that it is from the lack of entertainment for our youth. I do not agree with this thought and think that it is more of a lack of education from parents to children. It seems that parents do not have the hard conversations with their children and instead would rather be their friend. Lack of parenting skills.

Unintended Pregnancies

Unintended pregnancies, teenage pregnancies are a problem. This stems from parenting, positive activities for teens and access to contraceptives.

Substance Abuse

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

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Substance Abuse	**66.7%**	**33.3%**	**0.0%**	**0.0%**

TOP CONCERNS

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

Nationwide Problem

Again, this is probably statewide but we have fewer resources to help.

Substance abuse is a problem across the nation. We need to address substance abuse, as it parallels with mental health issues many times. It causes the county to lose our productive citizens.

I wish I had the answer. It's a problem in all counties.

Substance abuse has been an issue for a very long time. It affects every community and families throughout Swain County. We need to provide treatment centers and more education at schools and workplace environments on how to get people the help they need.

Lifestyle Choices

My perception is that the community as a whole lacks the resiliency to avoid it. Many youth do not learn and develop necessary life skills and there is a general lack of parenting as well as a lack of parental engagement. A lack of future goals or aspirations combined with a lack of financial independence also contributes to hopelessness for some. Multigenerational substance use creates a family norm that is very difficult to overcome. Basically, many residents are not engaged with enough protective factors in our community. Additionally, many substance abusers are not identified and referred into treatment until they reach a point of major community impact, such as involvement with law enforcement.

Prevalence of Overdose

Drug overdose rates are high for the county and particularly on the reservation. It's tied to a lot of other health issues. It's also tied to lack of economic opportunities and for some, access to funding with little discipline or education on how to manage funds. We also struggle in this region with access to mental health care and substance abuse recovery.

Current Laws

Weak or non-enforcement of drug laws. Repeat offenders are everywhere. There needs to be stiffer penalties for drug users. Those that deal drugs in this county and surrounding counties need to be dealt with. I find it amusing and disturbing that everyone seems to know who is doing it but nothing ever seems to happen to the dealers.

Prevalence/Incidence

Prescription and other drug use is prevalent here with little to no consequences and no treatment. We have very little prevention in the schools for students, staff and parents. We have no prevention and education in the county for the general population.

Lack of Entertainment

Young people could use someplace for them to get together throughout the year. This may help to keep them away from drugs.

Most Problematic Substances

Key informants (who rated this as a "major problem") most often identified alcohol and methamphetamine or other amphetamines as the most problematic substances abused in Swain County.

Alcohol	16.7%	44.4%	22.2%	8
Methamphetamines or Other Amphetamines	41.7%	0.0%	11.1%	6

Opioid Analgesics (e.g. Oxycodone, Hydrocodone, Percocet, Fentanyl, Methadone)	16.7%	11.1%	11.1%	4
Prescription Medications (NOT including Opioid Analgesics)	8.3%	11.1%	22.2%	4
Marijuana	0.0%	33.3%	0.0%	3
Cocaine or Crack	8.3%	0.0%	11.1%	2
Over-The-Counter Medications	8.3%	0.0%	0.0%	1
Club Drugs (e.g. MDMA, GHB, Ecstasy, Molly)	0.0%	0.0%	11.1%	1
Hallucinogens or Dissociative Drugs (e.g. Ketamine, PCP, LSD, DXM)	0.0%	0.0%	11.1%	1

Tobacco Use

Two-thirds of key informants characterized *Tobacco Use* as a "moderate problem" in Swain County.

Health Issue	Major Problem	Moderate Problem	Minor Problem	No Problem At All
Tobacco Use	**27.8%**	**61.1%**	**11.1%**	

Top Concerns

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

Prevalence/Incidence

Education beginning in elementary school regarding tobacco use will help teach children not to smoke like older members in their family.

As a resident of Swain County, it appears there are several people who smoke or use tobacco.

Lack of Resources and Education

Lack of education. I honestly don't know why anyone would smoke and use smokeless tobacco knowing what it does to a person's body.

Contributors to Health Issues

***Physical environment** includes factors such as air and water quality, and pollution and hazards inside homes. It also includes elements of the built environment, such as bike paths and sidewalks.*

***Social determinants of health** are economic and social conditions that influence the health of people and communities. It includes social and economic policies, education, income and poverty, racial discrimination, employment status, and more.*

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

Health Issue	Major Contributor	Moderate Contributor	Minor Contributor	Not a Contributor At All
Physical Environment	17.6%	41.2%	29.4%	11.8%
Social Determinants of Health	76.5%	23.5%	0.0%	0.0%

Physical Environment

The greatest share of key informants characterized Physical Environment as a "moderate contributor" to local health issues.

Those rating this as a "major contributor" identified the following as the greatest contributors to health problems in Swain County:

- Access to Transportation
- Alcohol/Drug Abuse
- Lack of Bike Paths/Sidewalks
- Lack of Economic Opportunities
- Sex Education for Young People

Social Determinants of Health

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

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

- Access to Affordable Healthy Foods
- Access to Health Care
- Alcohol/Drug Abuse
- Community Mindset
- Culture/Tradition
- Dysfunctional Families
- Economy
- Education
- Employment
- Fast Food
- Income/Financial Ability
- Lack of Exercise Facilities
- Need for Youth Center
- Poverty
- Religion
- Social Impact

Additional Local Data & Information

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

- NC Child
- NC Institute of Medicine
- Pride Survey, Swain County Health Department
- www.countyhealthrankings.org

Local Resource Guides & Directories

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

- CDC Resources
- NC - Child
- NC - Detect
- Physician Directory