Mitchell County Community Health Assessment

2013

2013 MITCHELL COUNTY COMMUNITY HEALTH ASSESSMENT

ACKNOWLEDGEMENTS

This document was developed by Mitchell County, in partnership with the Blue Ridge Regional Hospital and Toe River Health District, as part of a local community health assessment process. We would like to thank several agencies and individuals for their contributions and support in conducting this health assessment:

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Our community health assessment process and products were also supported by technical assistance, financial support, and collaboration as part of WNC Healthy Impact, a partnership between hospitals and health departments in western North Carolina to improve community health. www.WNCHealthyImpact.com

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EXECUTIVE SUMMARY

Overview of CHA Purpose and Process

WHAT IS A COMMUNITY HEALTH ASSESSMENT (CHA)?

A Community Health Assessment (CHA) is a process by which community members gain an understanding of the health concerns, and healthcare systems of the community by identifying, collecting, analyzing, and disseminating information on community assets, strengths, resources, and needs. A Community Health Assessment usually is concluded in a report or a presentation that includes information about the health of the community as it is today and about the community's capacity to improve the lives of residents. A Community Health Assessment can provide the basis for discussion and action.

WHY SHOULD YOUR COMMUNITY CONDUCT A COMMUNITY HEALTH ASSESSMENT?

The ultimate purpose for the CHA is for improving and promoting the health of community members and creates an environment for change. The role of the community assessment is to identify factors that affect the health population and determine the availability of resources within the community to adequately address these factors.

WHO SHOULD BE INVOLVED? WHO IS RESPONSIBLE FOR COMPLETING THE CHA?

Most communities include people from the local Healthy Carolinians partnerships, public health department, local healthcare providers, people from hospitals and clinics, businesses and civic leaders, educators, social service workers, elected officials, and concerned community members. Every citizen is a potential partner!

Through representation of and collaborative efforts from community leaders, public health agencies, businesses, hospitals, private practitioners, and academic centers (to name a few), the community can begin to answer key questions such as:

(a) "What are the strengths in our community?"
(b) "What health concerns do community members have?"
(c) "What resources are available and what do we need in the community to address these concerns?"

In this community-based assessment, the community members will take the lead role in forming partnerships, gathering health-related data, determining priority health issues, identifying resources, and planning community health programs. This assessment process starts with the people who live in the community and gives the community primary responsibility for determining the focus of assessment activities at every level, including

- Collection and interpretation of data
- Evaluation of health resources
- Identification of health problems
- Development of strategies for addressing these problems

This way, community assessment is done by the community rather than on the community. The Community Health Assessment is required of all local health departments in the state of North

Carolina through the Division of Public Health every four years, as well as for all non-profit hospital systems every three years.

HOW CAN A COMMUNITY HEALTH ASSESSMENT IMPROVE THE COMMUNITY'S HEALTH?

Communities often have to make critical decisions without adequate information. Examples include where to locate new health clinics, how to attract suitable new industry, or how to position the community for future growth. CHA's help concerned citizens answer questions like:

(a) What is important to the community?
(b) How do people like living in the community?
(c) What would citizens like to see changed?
(d) How have they been successful at meeting challenges in the past?
(e) Who are important contributors in efforts to improve the community's health?
(f) What do they see as the greatest obstacles to good health?

These are some examples of questions to ponder as you consider conducting the Community Health Assessment,

HOW CAN YOUR COMMUNITY USE THE COMMUNITY HEALTH ASSESSMENT?

Once your CHA has been completed, there are many things your team and your community can do with the information. The value of an assessment is in its' use. The CHA is just the beginning of the actions to improve the health of the community. The following are some suggested ways to put your CHA to use:

- You can share a greater knowledge and understanding of the community as it is today.
- You can publish and make available the results of the assessment to the community.
- You can provide facts upon which to base programmatic or organizational decisions.
- You can plan effective, collaborative interventions to promote better health.
- You can seek funding, providing invaluable statistics when applying for grants.
- You can advocate policy change with legislators, county government, and others.
- You can provide a baseline by which to monitor changes.
- You can develop resources and market the community.
- You can inform citizens and empower them to act.
- You can build partnerships/coalitions.
- You can identify emerging issues.

List of Health Priorities

Over the past four years, Mitchell County has primarily focused on: Substance Abuse, Unemployment/Underemployment, and Mental Health Issues and Lack of Services. These priorities were selected by the 2009 Community Health Assessment Team.

During the 2013 Community Health Assessment, the top three health concerns that we will be focusing on for the next three years for Mitchell County are:

1. Healthy Living Behaviors and Lifestyles
2. Substance Abuse Prevention and Increasing Availability/Access to Mental Health Services
3. Access and Assistance for Low-Income Households (Lack Everyday Needs)

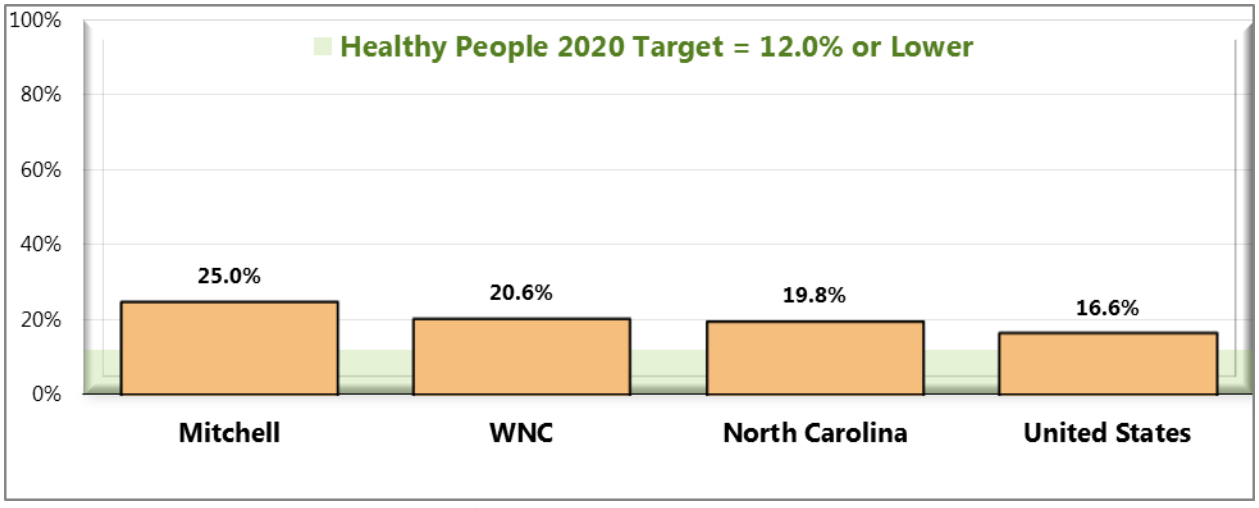
The CHA Team decided if these were important enough to be brought up by citizens of Mitchell County and discussed among community members, these would be the priorities we would address. Like in the 2009 Community Health Assessment, poverty continues to play a major role in these areas.

General Review of Data and Trends

The following key data and trends helped support the determination of each of the three health priorities. This is only a snapshot of each area, more detail can be found in the full report.

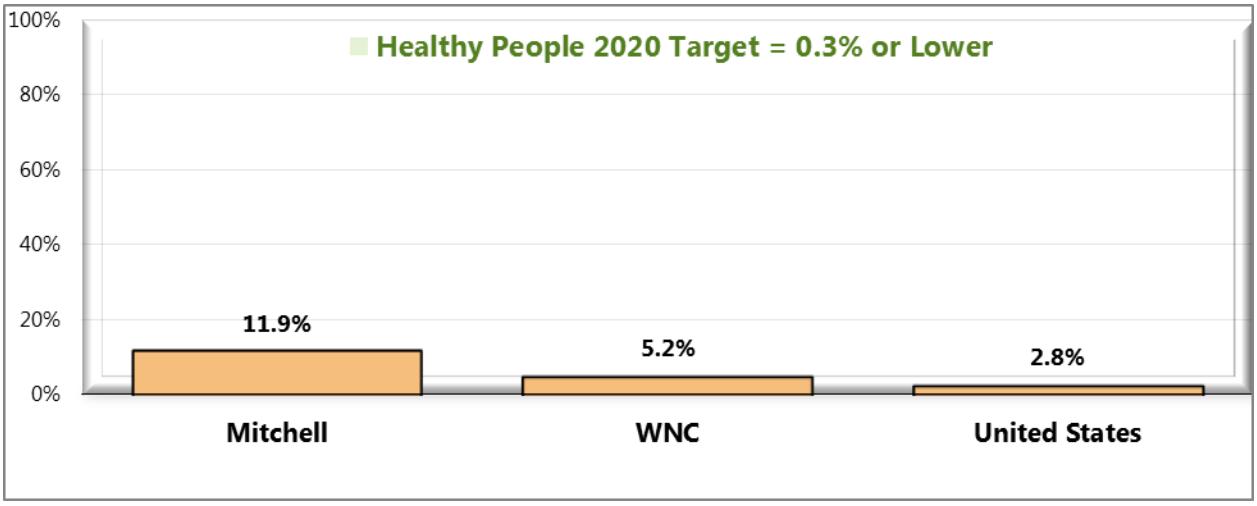
1. **Healthy Living Behaviors and Lifestyles**
   Mitchell County residents would like to see more opportunities to engage in Healthy Living Behaviors and Lifestyles in order to obtain optimal health; primarily focusing on physical spaces (such as parks) to participate in physical activity. Some opportunities residents have mentioned are: creation of a fitness center, youth programs that are free and accessible, community gym, comprehensive transportation plan completed for Mitchell County including sidewalks and bike lanes, etc. Here are some statistics that could potentially be improved with more access to physical activity opportunities in the county.

Current Smokers (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc.

Currently Use Smokeless Tobacco Products (WNC Healthy Impact Survey)

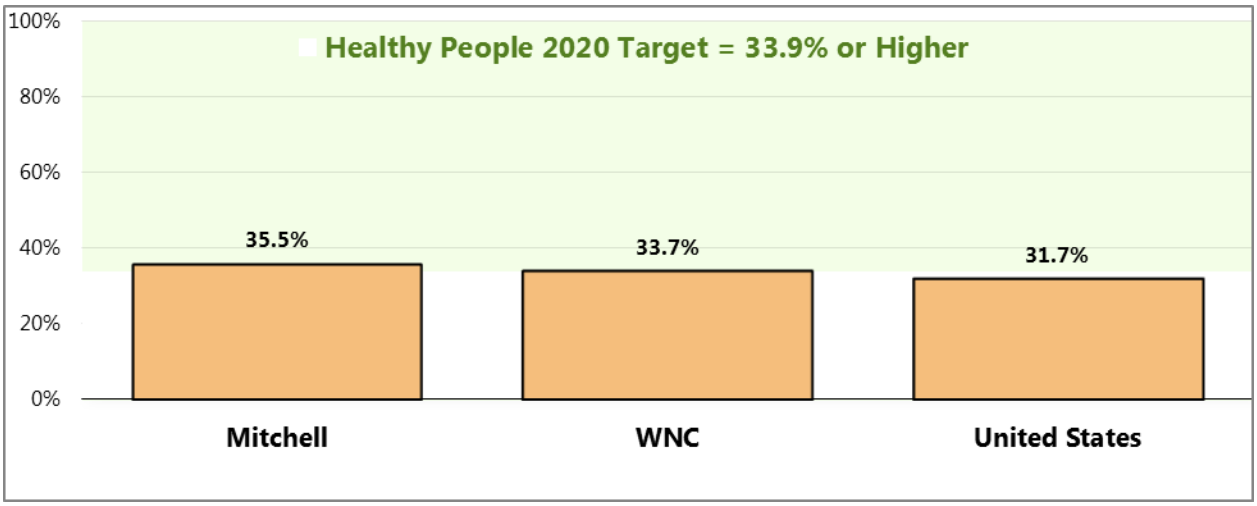


Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc.

Currently, Mitchell County has a higher rate (double) of total smokers compared to the region and nation rates.

Healthy Weight (WNC Healthy Impact Survey)

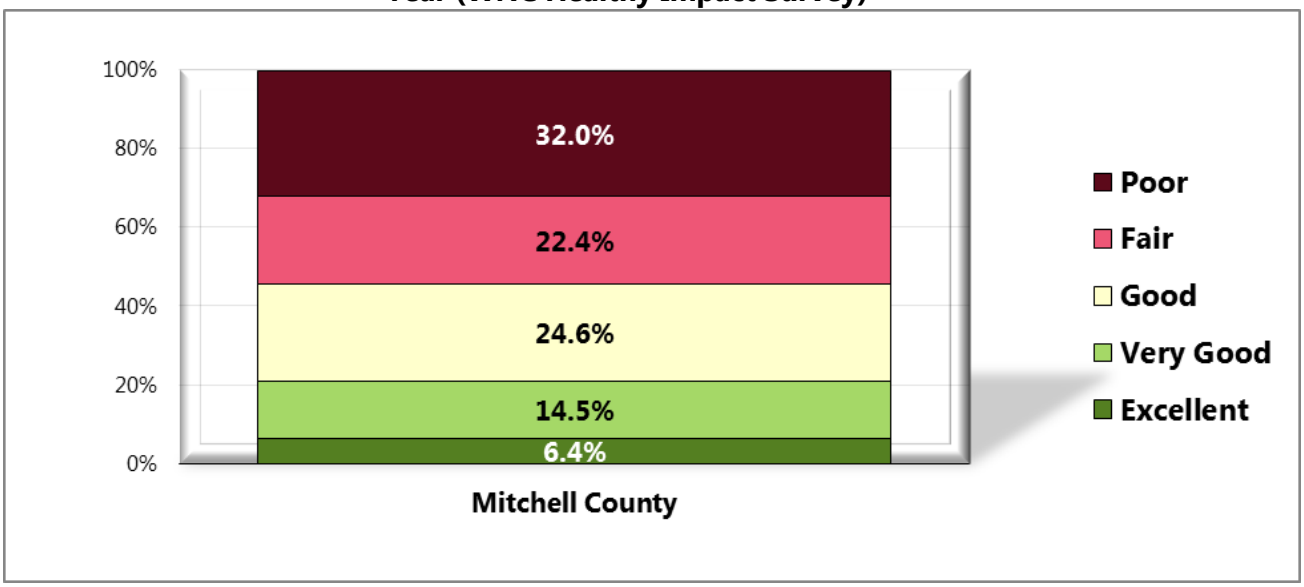
(Percent of Adults With a Body Mass Index Between 18.5 and 24.9)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 85]

Even with minimal physical activity opportunities within the county, residents tend to be at a slightly healthier weight than those in Western North Carolina and United States, concerns still rise to the top of the list about people becoming healthier in Mitchell County.

Evaluation of the Recreational Options Available to Community Residents throughout the Year (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc.

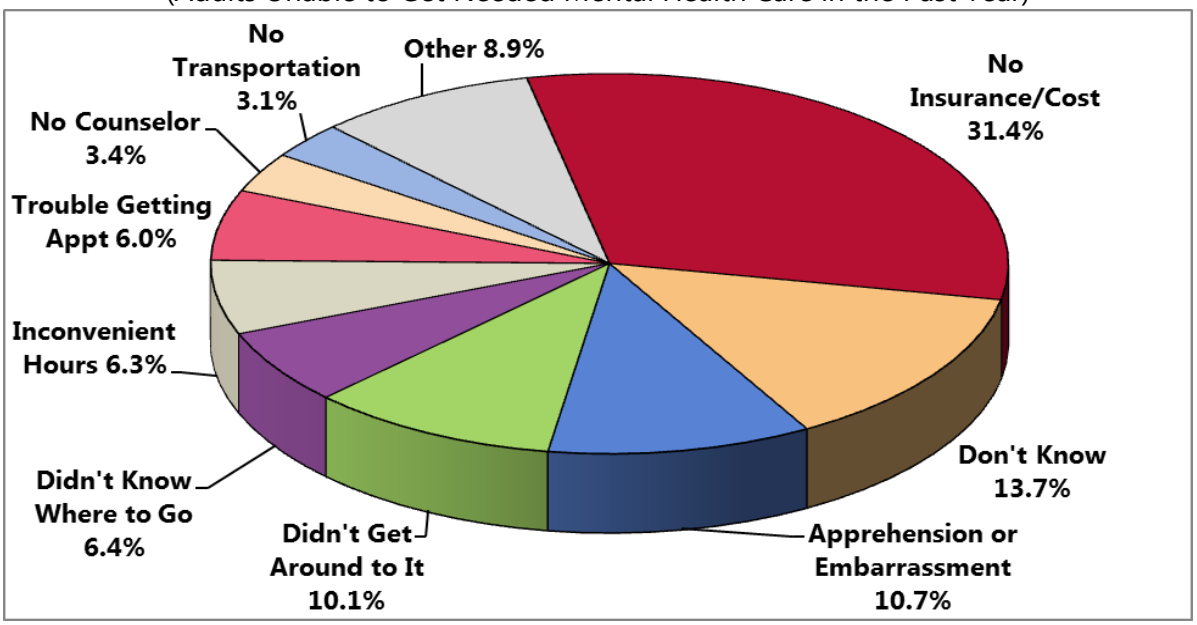
Over half of the people surveyed in Mitchell County thought that recreational options available in the county were fair to poor. This is a rational assumption with no public fitness center or community gym available in the county.

2. **Substance Abuse Prevention and Increasing Availability/Access to Mental Health Services**

   Many residents stated they would like to see services and treatment centers available in the county. Integrated Mental Health Care into Primary Care appointments/visits would also help capture the target audience in one-stop-shop approach. Education and Outreach efforts will be forthcoming to generate awareness of availability of services and reduce the stigma of accessing services.

Primary Reason for Inability to Access Mental Health Services (WNC Healthy Impact Survey)

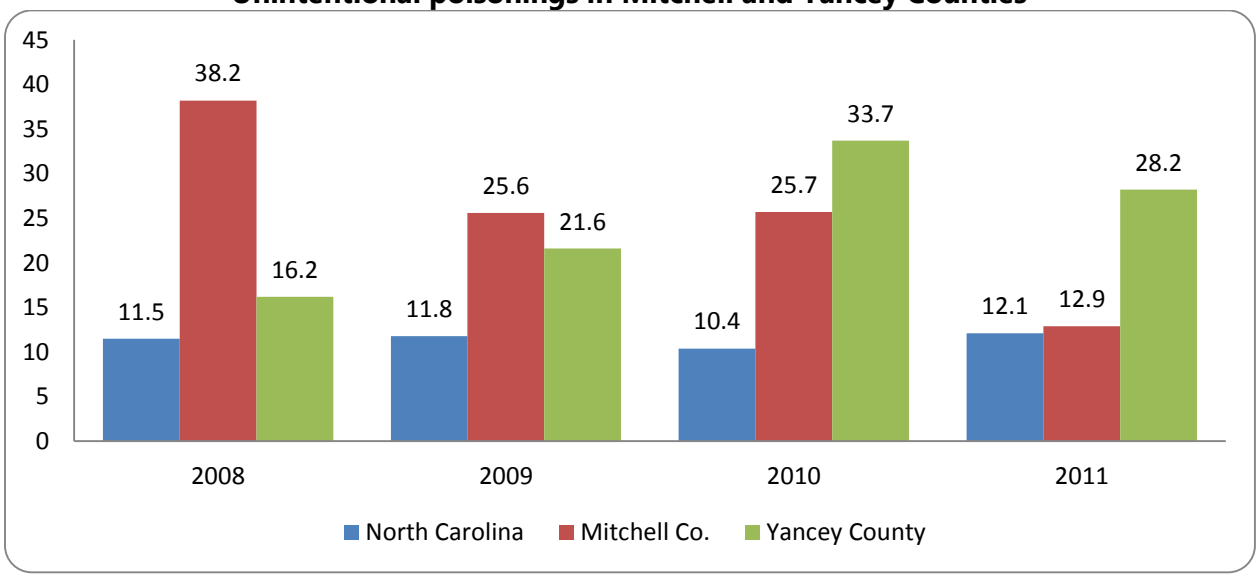
(Adults Unable to Get Needed Mental Health Care in the Past Year)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc.

Most people surveyed did not access Mental Healthcare services because of lack of insurance and cost. Some was embarrassed and apprehensive about seeking services and to others, it simply was not a priority and didn't know why they did not access services. The integrated healthcare approach would help people get what they need without having to prioritize their needs.

Unintentional poisonings in Mitchell and Yancey Counties



Source: NC State Center for Health Statistics, based on unintentional and undetermined intent poisonings on death certificates and bridged population estimates. These rates are statistically unstable and trends should be interpreted with caution. http://projectlazarus.posterous.com Mortality rates per 100,000 populations for unintentional poisonings*: 2008 through 2011

Based on this data, Mitchell and Yancey Counties rates have room for improvement compared to the North Carolina rate for unintentional and undetermined intent poisonings.

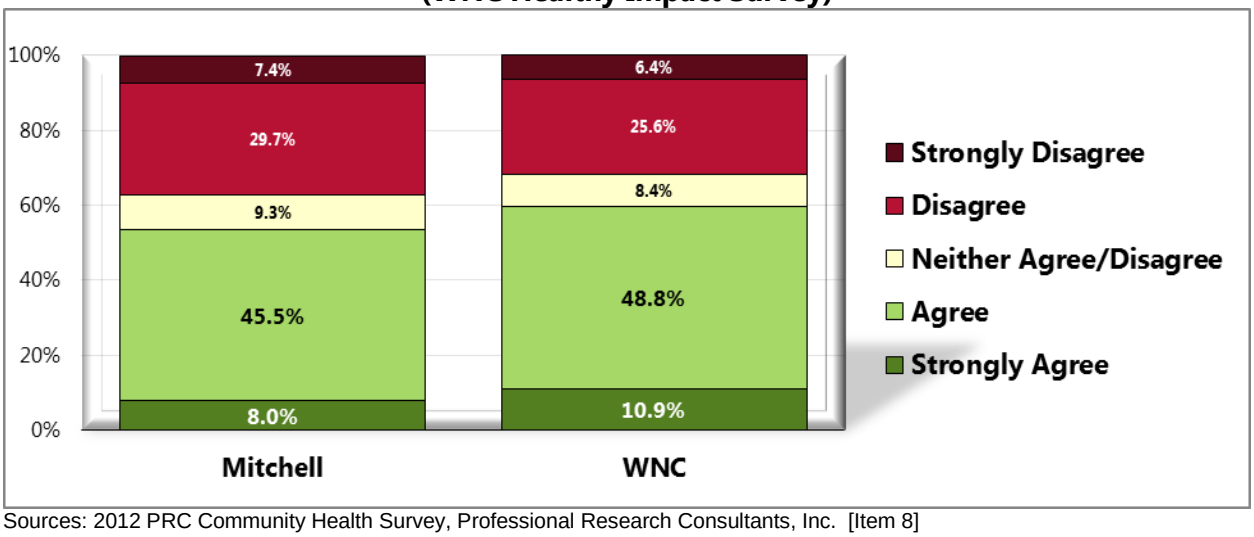
Arrest data from the Mitchell County Clerk of the Court shows in 2010 there were 708 charges with 449 defendants brought to court and in 2011 there were 713 charges with 481 defendants. Of the drug related charges, over 50% were related to controlled substances.

In January 2013, a Substance Abuse Community Survey was conducted and when asked where people in Mitchell and Yancey counties can obtain prescription drugs if they don't have a doctor's prescription responded: get from a friend for free-72% (134 of 186); get from some else for free-46.2% (86 of 186); get from their home-58% (108 of 186); get from a relative's home-77.4% (144 of 186)

3. Access and Assistance for Low-Income Households (Lack Everyday Needs)

Several residents are concerned for themselves and/or others struggling through everyday life and meeting daily necessities. Mitchell County is motivated to help their own. A Federally Qualified Healthcare Clinic is opening in Bakersville and Spruce Pine that offers healthcare on a sliding fee scale for the underinsured and uninsured. Toe River Project Access also works with local doctors to donate a certain number of hours toward those in need of healthcare, MY Meds helps with the cost of medicines, and food panties are county-wide throughout churches, local businesses, and schools. Outreach and educational campaigns will be needed to inform the community about what programs and services are currently available, such as using social media and writing grants and fundraising for media campaigns, seek funding to help support and sustain food pantries, create food assistance programs for families/students during summertime, and create more community gardens in all areas of the county.

"There is plenty of help for people during times of need in my county."
(WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 8]

Most survey participates feel Mitchell County is resourceful when the time of need arises, offering plenty of help to our people during hardships.

Population in Poverty, All Ages
5-Year Estimates (2005-2009 and 2006-2010

Geography	2005-2009				2006-2010			
	Population Estimate	# Below Poverty Level	% Below Poverty Level	# Below 200% Federal Poverty Level	Population Estimate	# Below Poverty Level	% Below Poverty Level	# Below 200% Federal Poverty Level
Mitchell County	15,546	2,562	16.5	6,620	15,477	2,599	16.8	6,762
Regional Total	697,685	103,966	14.9	255,556	726,827	113,990	15.7	271,215
State Total	8,768,580	1,320,816	15.1	3,066,957	9,013,443	1,399,945	15.5	3,208,471

Poverty is clearly the greatest disparity to health in Mitchell County. The poverty rate for all ages was higher than the comparable rates regional and statewide. Also, 20.3% of those surveyed in Mitchell County report lack of health insurance. In Mitchell County the number and percent of Medicaid-eligible persons increased every year since 2005, and the percent of Medicaid-eligible Mitchell County residents was higher than the comparable figures for WNC and NC for each year shown.

Contributing to poverty is the cost of housing and annual wage amounts. In Mitchell County, WNC, and NC, a higher proportion of renters than mortgage holders spend 30% of more of household income on housing costs.

Poverty contributes to access to quality health care. 10.8% of persons surveyed in Mitchell County said they were unable to get needed medical care at some point in the past year, compared to a similar rate for WNC. The main reason being cost/no insurance (74.7%).

Next Steps

The 2013 Mitchell County Community Health Assessment will be shared with the Toe River Health District Board of Health and Mitchell County Board of Commissioners. The Mitchell Community Health Partnership and Blue Ridge Regional Hospital will be instrumental in reviewing the report and assisting with development of action plans to address the identified health priorities over the next three years

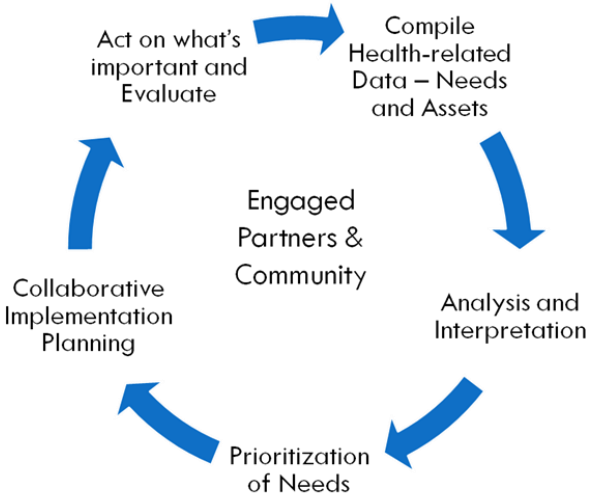
Mitchell County will move forward with information in this Community Health Assessment to form collaborative partnerships and action plans; as well as determine how we can most effectively impact health in western North Carolina.

Dissemination of the Mitchell County CHA will include making all reports publicly available on local agency websites, in local libraries, and throughout local media outlets/publications.

CHAPTER 1 - INTRODUCTION

Purpose of Community Health Assessment (CHA)

Community health assessment (CHA) is the foundation for improving and promoting the health of county residents. **Community-health assessment is a key step in the continuous community health improvement process**. The role of CHA is to identify factors that affect the health of a population and determine the availability of resources within the county to adequately address these factors.



A community health assessment (CHA), which refers both to a process and a document, investigates and describes the current health status of the community, what has changed since a recent past assessment, and what still needs to change to improve the health of the community. The *process* involves the collection and analysis of a large range of secondary data, including demographic, socioeconomic and health statistics, environmental data, as well as primary data such as personal self-reports and public opinion collected by survey, listening sessions, or other methods. The *document* is a summary of all the available evidence and serves as a resource until the next assessment. Together they provide a basis for prioritizing the community's health needs, and for planning to meet those needs.

Because it is good evidence-based public health practice, local health departments (LHDs) across North Carolina (NC) are required to conduct a comprehensive community health assessment at least every four years. It is required of public health departments in the consolidated agreement between the NC Division of Public Health and local public health departments. Furthermore, it is required for local public health department accreditation through the NC Local Health Department Accreditation Board (G.S. § 130A-34.1). As part of the Affordable Care Act, non-profit hospitals are also now required to conduct a community health (needs) assessment at least every three years.

The local health department usually conducts the CHA as part (and usually the leader) of a team composed of representatives from a broad range of health and human service and other organizations within the community. Community partners and residents are part this process as well.

Definition of Community

Community is defined as "county" for the purposes of the North Carolina Community Health Assessment Process. In western North Carolina, hospitals define their community as one or more counties for this process. Mitchell County is included in Blue Ridge Regional Hospital's community for the purposes of community health improvement and investment, and as such Blue Ridge Regional Hospital was a key partner in this local level assessment process.

WNC Healthy Impact

WNC Healthy Impact is a partnership between hospitals and health departments in North Carolina to improve community health. As part of a larger, and continuous, community health improvement process, these partners are collaborating to conduct community health (needs) assessments across western North Carolina. See www.WNCHealthyImpact.com for more details about the purpose and participants of this region-wide effort.

The regional work of WNC Healthy Impact is supported by a steering committee, workgroups, local agency representatives, and a public health/data consulting team. In addition, for this data collection phase of our regional efforts, a survey vendor (PRC – Professional Research Consultants, Inc.) was hired to administer a region-wide telephone survey. Various partners, coalitions, and community members are also engaged at the local level. The template for this CHA report, a core set of secondary and survey (primary) data, and analysis support, were made available through this collaborative regional effort.

Data Collection Process

Core Dataset Collection

As part of WNC Healthy Impact, a regional data workgroup of public health and hospital representatives and regional partners, with support from the consulting team, made recommendations to the steering committee on the data approach and content used to help inform regional data collection. The core regional dataset was informed by stakeholder data needs, guidelines, and requirements. From data collected as part of this core dataset, the consulting team compiled secondary (existing) data and new survey findings for each county in the 16-county region. This assessment includes data integrated from the secondary data efforts as well as the community health survey for our county. See Appendix A for details on the data collection methodology.

Criteria for selecting "highlights"

The body of assessment data supporting this document is wide-ranging and complex. In order to develop a summary of major findings, the consultant team applied three key criteria to nominate data for inclusion in this report. The data described in this report was selected because:

- County statistics deviate in significant ways from WNC regional data or NC statistics;
- County trend data show significant change—positive or negative—over time; or

- County data demonstrate noteworthy age, gender, or racial disparities.

Supplementary to this report is the *WNC Healthy Impact Secondary Data Workbook* (*Data Workbook*) that contains complete county-level data as well as the state and regional averages and totals described here. Data contained in the *Data Workbook* is thoroughly referenced as to source. Readers should consult the *Data Workbook* to review all of the secondary data comprising the regional summaries.

Unless specifically noted otherwise, all tables, graphs and figures presented in this report were derived directly from spreadsheets in the *Data Workbook* or survey data reported by the survey vendor (PRC).

Definitions & Data Interpretation Guidance

Reports of this type customarily employ a range of technical terms, some of which may be unfamiliar to many readers. This report defines technical terms within the section where each term is first encountered.

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. See Appendix A for additional details and definitions.

Community Engagement

In the random-sample survey that was administered in our county as part of this community health assessment, 200 community members completed a questionnaire regarding their health status, health behaviors, interactions with clinical care services, support for certain health-related policies, and factors that impact their quality of life. In addition, in our county, community members and partners acted as the CHA Team and were involved in local data interpretation and priority setting.

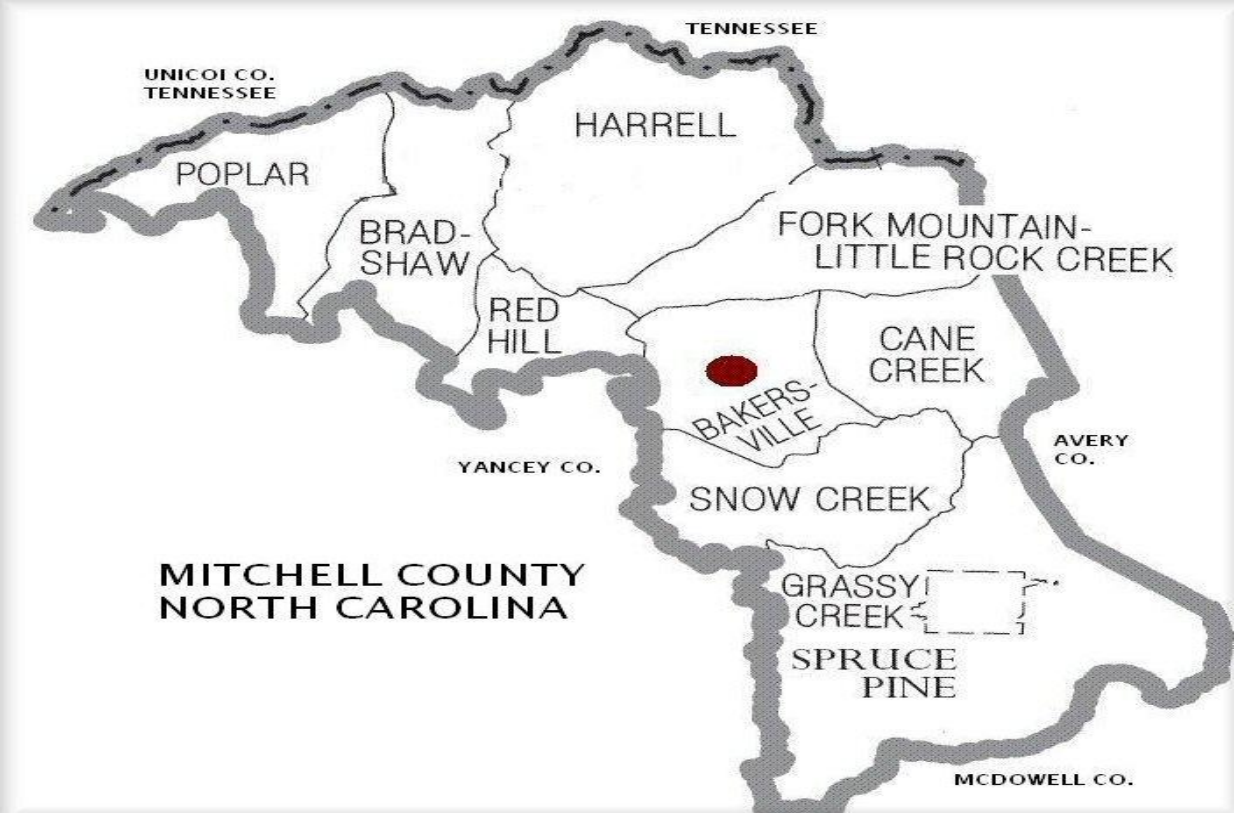
Priority Setting

Details on our county's priority setting process and outcomes are included in Chapter 9 of this document.

CHAPTER 2 – DEMOGRAPHIC AND SOCIOECONOMIC PARAMETERS

Location and Geography

Mitchell County is located in Western North Carolina, approximately 50 miles northeast of Asheville, North Carolina and 25 miles southeast of Johnson City, Tennessee. It is located in the Blue Ridge Mountains. The County's total land is 220 miles. Bakersville is the county seat, with a population of approximately 400. The county's largest town, Spruce Pine, is located in the southern part of the county and has a population of approximately 2,000. The county's average year-round temperature is 52 degrees and it receives an average of 46.7 inches of rain annually. Elevation ranges from 1,700 to 6,313 feet above sea level with an average elevation of 3,000 feet. The mountain climate is particularly appropriate for any number of outdoor activities such as whitewater rafting, hiking, backpacking, camping, fishing, horseback riding, and canoeing, kayaking, mountain biking, and picnicking.



The county is home to the "Mineral City of the World", Spruce Pine and Roan Mountain which includes the world's largest natural rhododendron garden, and the longest stretch of grassy bald in the Appalachian range. Throughout the year such festivals as North Carolina Mineral and Gem Festival and North Carolina Rhododendron Festival bring many people to the area. As of 2010, the population was 15,579. Mitchell County was one of the three dry counties in North Carolina, along with Graham and Yancey, but in March, 2009, after much controversy, the Town of Spruce Pine approved beer, wine, and ABC store sales.

Bakersville: The first settler on the site of what is now Bakersville was David Baker, who acquired a state's grant for 100 acres of land in 1797. David Baker entertained many travelers in the early 1800's, including the noted French botanist, Francois Andre Michaux. Michaux visited Baker's farm on his return from an expedition into Tennessee, Kentucky and Illinois. The movement for the establishment of a new mountain county in 1861 originated in Bakersville, as did the movement to establish the town as the county seat. In 1868 Bakersville was made the seat of government for Mitchell County. Important from the early 1800's through the civil war as a trading center and village, Bakersville became the center of politics in Mitchell County and remains so to this day. Today, Bakersville's quaint downtown is home to galleries and working artists' studios. Each September the town hosts the Bakersville Creek Walk Arts Festival along the banks of meandering Cane Creek, which runs through the center of town. The North Carolina Rhododendron Festival takes place each June and draws visitors from all over the country to witness the spectacular beauty of the world's largest naturally growing rhododendron gardens atop nearby Roan Mountain.

Spruce Pine: Spruce Pine, the largest town in Mitchell County, was founded in 1907 when the Clinchfield Railroad made its way alongside the North Toe River from Erwin, Tennessee. The town was originally centered around a tavern operated by Isaac English, located on an old roadway that ran down to Marion, NC. The town takes its name from a large Carolina hemlock tree that stood near the tavern. The Old English Inn still stands at its original location near the center of town. The railroad, combined with a rapidly expanding mining industry made Spruce Pine the largest town in the Toe River Valley, as it became the hub of commerce and culture for the area. Spruce Pine was the home of The Feldspar Company and Spruce Pine Mica, and other major mining interests had operations in and around the town.

Tourism has become a major economic force in the region, and the town's proximity to the Blue Ridge Parkway, combined with its location near the edge of the Blue Ridge Escarpment has helped make Spruce Pine a travel destination for many. One of Spruce Pine's most famous natives is children's author Gloria Houston, who was born and raised nearby in the Green Valley community northeast of town. In 2002, Houston gave the town of Spruce Pine the rights to brand the town as the "Home of the Perfect Christmas Tree," taken from her best-selling book "The Year of the Perfect Christmas Tree".

Little Switzerland: Scenic Little Switzerland, just off the Blue Ridge Parkway at milepost 331, takes its name from early summer residents of the area who thought the scenery resembled that of the Jura Mountains of Switzerland.

History

Mitchell County was formed in 1861 from parts of Burke County, Caldwell County, McDowell County, Watauga County and Yancey County. It was named in honor of Elisha Mitchell, professor of mathematics, chemistry, geology and mineralogy at the University of North Carolina from 1818 until his death in 1857. Dr. Mitchell was the first scientist to argue that a nearby peak in the Black Mountains was the highest point east of the Mississippi River. He measured the mountain's height and climbed and explored it. In 1857 he fell to his death on a waterfall on the side of the mountain. The mountain was subsequently named Mount Mitchell in his honor.

The creation of Mitchell County was brought about by the question of secession during the build up to the Civil War. The Northern half of the region strongly supported the Union and wanted to part company with the Southern half, which favored secession. The opportunity that enabled this split came about when Jacob W. Bowman, a rising young politician from what is now Bakersville, was elected to represent Yancey County in the N.C. legislature. Eager to serve his constituents living north of Toe River, young Bowman was instrumental in the passage of an act that created the new county.

The county took a direct hit from "The Storm of the Century", also known as the "'93 Superstorm", or "The (Great) Blizzard of 1993". This storm event was similar in nature to a hurricane. The storm occurred between March 12–13, 1993, on the East Coast of North America. Parts of Cuba, Gulf Coast States, Eastern United States and Eastern Canada were greatly impacted.

The county suffered a tragic event on the evening of Friday, May 3, 2002 when a fire broke out at the Mitchell County jail in Bakersville, North Carolina. As a result of the fire 8 men lost their lives.

Population

Understanding the growth patterns and age, gender and racial/ethnic distribution of the population in Mitchell County will be keys in planning the allocation of health care resources for the county in both the near and long term.

Current Population (Stratified by Gender, Age, and Race/Ethnicity)

According to data from the 2010 US Census, the total population of Mitchell County is 15,579. In Mitchell County, as region-wide and statewide, there is a higher proportion of females than males (51.2% vs. 48.8%).

Table 1. Overall Population and Distribution, by Gender (2010)

Geography	Total Population (2010)	# Males	% Males	# Females	% Females
Mitchell County	15,579	7,979	48.8	7,600	51.2
Regional Total	759,727	368,826	48.5	390,901	51.5
State Total	9,535,483	4,645,492	48.7	4,889,991	51.3

In Mitchell County 20.9% of the population is in the 65-and-older age group, compared to 19.0% region-wide and 12.9% statewide (Table 2). The median age in Mitchell County is 45.7, while the regional mean median age is 44.7 years and the state median age is 37.4 years.

Table 2. Median Age and Population Distribution, by Age Group (2010)

Geography	Median Age	# Under 5 Years Old	% Under 5 Years Old	# 5-19 Years Old	% 5-19 Years Old	# 20 - 64 Years Old	% 20 - 64 Years Old	# 65 Years and Older	% 65 Years and Older
Mitchell County	45.7	769	4.9	2,574	16.5	8,976	57.6	3,260	20.9
Regional Total	44.7	40,927	5.4	132,291	17.4	441,901	58.2	144,608	19.0
State Total	37.4	632,040	6.6	1,926,640	20.2	5,742,724	60.2	1,234,079	12.9

In terms of racial and ethnic diversity, Mitchell County is less diverse than either WNC or NC as a whole. In Mitchell County the population is 95.3% white/Caucasian and 4.7% non-white. Region-wide, the population is 89.3% white/Caucasian and 11.7% non-white. Statewide, the comparable figures are 68.5% white and 31.5% non-white (Table 3). The proportion of the population that self-identifies as Hispanic or Latino of any race is 4.1% in Mitchell County, 5.4% region-wide, and 8.4% statewide (Table 3).

The racial and ethnic diversity within the 16 counties that compose the region is quite varied, and readers should consult the *Data Workbook* to understand those differences.

Table 3. Population Distribution, by Racial/Ethnic Groups, as Percent of Overall Population (2010)

Geography	White	Black or African American	American Indian, Alaskan Native	Asian	Native Hawaiian, Other Pacific Islander	Some Other Race	Two or More Races	Hispanic or Latino (of any race)
Mitchell County	95.3	0.4	0.4	0.3	0.0	2.5	1.1	4.1
Regional Total	89.3	4.2	1.5	0.7	0.1	2.5	1.8	5.4
State Total	68.5	21.5	1.3	2.2	0.1	4.3	2.2	8.4

Population Growth Trend

Between the 2000 and 2010 US Censuses the population of Mitchell Count *decreased* by 0.7% while the population of WNC grew by 13.0% (Table 4). The rate of population loss in the county is projected to actually accelerate over the next 10 years; losses are projected to continue in the decade following that. Mitchell is the only county among the 16 in WNC with a negative overall 30-year growth rate. Double-digit (or near double-digit) positive population growth figures are projected for WNC and for NC as a whole over the same period.

Table 4. Decadal Population Growth Rate (2000 to 2030)

Geography	% Total Population Growth			
	2000 to 2010	2010 to 2020	2020 to 2030	2000 to 2030
Mitchell County	-0.7	-1.3	-0.4	-2.3
Regional Total	13.0	11.6	9.6	38.2
State Total	15.6	11.3	9.6	44.5

The growth rate of a population is a function of emigration and death rates on the negative side, and immigration and birth rates on the positive side. As illustrated by the data in Table 5, the birth rate in Mitchell County, lower than the comparable mean WNC and NC rates, remained roughly static at around 10.2 births per 1,000 persons over the five aggregate periods between 2002-2006 and 2006-2010. Region-wide the birth rate was stable at around 10.8 for several years before falling recently to 10.5. Statewide, the birth rate, stable for several years around 14.2, fell recently to 13.8.

Table 5. Birth Rate, Five 5-Year Aggregate Period (2002-2006 through 2006-2010)

Geography	2002-2006	2003-2007	2004-2008	2005-2009	2006-2010
Mitchell County	10.2	10.1	10.3	10.2	10.1
Regional Arithmetic Mean	10.8	10.8	10.8	10.7	10.5
State Total	14.2	14.2	14.2	14.1	13.8

Older Adult Population Growth Trend

As noted previously, the age 65-and-older segment of the population represents a larger proportion of the overall population in Mitchell County and WNC than in the state as a whole. In terms of future health resource planning, it will be important to understand how this segment of the population, a group that utilizes health care services at a higher rate than other age groups, is going to change in the coming years. Table 6 presents the decadal growth trend for the age 65-and-older population, further stratified into smaller age groups, for the decades from 2010 through 2030. These data illustrate how the population age 65-and-older in the county is going to increase over the coming two decades. Calculated from the figures in Table 6, the percent increase anticipated for each age group in Mitchell County between 2010 and 2030 is 8.5% for the 65-74 age group, 35.8% for the 75-84 age group, and 50.0% for the 85+ age group. In WNC as a whole, the 65-74 age group is projected to grow by 24.0%, the 75-84 age group by 52.5%, and the 85+ age group by 40.0% over the same period of time.

Table 6. Population Age 65 and Older (2010 through 2030)

Geography	2010 Census Data				2020 (Projected)				2030 (Projected)			
	Total % Age 65 and Older	*% Age 65-74**	*% Age 75-84*	*% Age 85+*	% Age 65 and Older	% Age 65-74	% Age 75-84	% Age 85+	% Age 65 and Older	% Age 65-74	% Age 75-84	% Age 85+ *
Mitchell County	20.9	11.8	6.7	2.4	24.3	13.1	8.3	3.0	25.6	12.8	9.1	3.6
Regional Total	19.0	10.4	6.1	2.5	23.5	13.2	7.4	2.9	25.7	12.9	9.3	3.5
State Total	12.9	7.3	4.1	1.5	16.6	9.9	4.9	1.8	19.3	10.6	6.5	2.2

Composition of Families with Children

Data in Table 7 illustrates that the percentage of households with children headed by a married couple is lower in Mitchell County than in WNC (16.1% vs. 17.2%) and in NC (16.1% vs. 20.1%).

Table 7. Composition of Family Households, 5-Year Estimate (2006-2010)

Geography	Family Composition						
	# 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. #	%
Mitchell County	6,812	1,100	16.1	47	0.7	307	4.5
Regional Total	318,280	54,822	17.2	5,322	1.7	17,134	5.4
State Total	3,626,179	729,708	20.1	78,051	2.2	282,131	7.8

* A household includes all the people who occupy a housing unit. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated people who share living arrangements.
** A family consists of a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption. All people in a household who are related to the householder are regarded as members of his or her family. A family household may contain people not related to the householder, but those people are not included as part of the householder's family in tabulations.
*** Family composition percentages are based on total number of households. Numerator is number of family households (headed by male, female or married couple) with children under 18 years; denominator is total number of households.

In Mitchell County, 100% of grandparents living with their minor grandchildren also are the party responsible for their grandchildren's care. In WNC as in NC as a whole, the comparable figure is about 51% (Table 8).

Table 8. Grandparents Responsible for Grandchildren, 5-Year Estimate (2006-2010)

Geography	Family Composition		
	# Grandparents Living with Own Grandchildren (<18 Years)*	Grandparent Responsible for Grandchildren (under 18 years)	
		Est. #	%
Mitchell County	261	261	100.0
Regional Total	13,470	6,971	51.8
State Total	187,626	95,027	50.6

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

Military Veteran Population

Military veterans compose a higher proportion of the total civilian population in WNC than in either NC or the US as a whole. Calculating from figures in Table 9, veterans make up 8.3% of the civilian population in Mitchell County, compared to 12.4% in the WNC region, 10.8% statewide, and 9.9% nationally. In Mitchell County, approximately 50% of the veteran population is 65 years of age or older; the comparable proportions are 49% for the WNC mean, 36% for NC statewide, and 40% nationwide.

Table 9. Population of Military Veterans, 5-Year Estimate (2006-2010)

Geography	Civilian Population 18 years and over			% Veterans by Age				
	Total	Veterans	Nonveterans	18 to 34 years	35 to 54 years	55 to 64 years	65 to 74 years	75 years and over
Mitchell County	12,675	1,058	11,617	1.8	19.0	29.1	26.5	23.6
Regional Total	593,603	73,783	519,820	n/a	n/a	n/a	n/a	n/a
Regional Arithmetic Mean	n/a	n/a	n/a	3.6	19.3	28.1	24.1	24.9
State Total	6,947,547	747,052	6,200,495	8.7	30.0	25.7	17.9	17.8
National Total	228,808,831	22,652,496	206,156,335	7.8	26.3	25.4	19.0	21.4

Education

It is helpful to understand the level of education of the general population, and with what frequency current students stay in school and eventually graduate.

Educational Attainment

Table 10 provides data on the proportion of the population age 25 and older with one of three levels of educational attainment: high school or equivalent, some college, and a bachelor's degree or higher. In these terms, in 2006-2010, Mitchell County had a 16% higher proportion than WNC as a whole of residents age 25 or older possessing a high school diploma or its equivalent (37.4% vs. 32.2%), and a 33% higher proportion than NC as a whole (28.2%). The overall proportion of the Mitchell County population with some college (16.4%) was lower than the comparable percentages for either WNC (20.5%) or NC (20.9%). At the bachelor's and greater level the proportional attainment in the county (14.4%) was 29% lower than the comparable mean regional figure (20.2%) and 45% lower than statewide figure (26.1%).

Table 10. Educational Attainment of Population Age 25 and Older, Two 5-Year Estimates (2005-2009 and 2006-2010)

Geography	2005-2009				2006-2010			
	Total Population Age 25 Years and Older	% High School Graduation Rate (Includes equivalency)	% Some College	% Bachelor's Degree or Higher	Total Population Age 25 Years and Older	% High School Graduation Rate (Includes equivalency)	% Some College	% Bachelor's Degree or Higher
Mitchell County	11,326	37.0	15.6	14.6	11,528	37.4	16.4	14.4
Regional Total	511,076	n/a	n/a	n/a	532,838	n/a	n/a	n/a
Regional Arithmetic Mean	31,942	32.2	19.6	19.9	33,302	32.2	20.5	20.2
State Total	5,940,248	28.6	20.4	25.8	6,121,611	28.2	20.9	26.1

Drop-Out Rate Trend

For school years 2006-2007, 2007-2008 and 2010-2011, the high school drop-out rate for Mitchell County public schools was higher than the comparable mean rate for the 17 school districts in WNC (one per county plus Asheville City Schools) as well as the rate for all NC public schools (Table 11). The drop-out rate decreased in all three jurisdictions between SY2007-2008 and SY2010-2011.

Table 11. High School Drop-Out Numbers and Rates (SY2006-2007 through SY2010-2011)

Geography	SY2006-2007		SY2007-2008		SY2008-2009		SY2009-2010		SY2010-2011	
	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate
Mitchell County	43	5.93	51	7.08	30	4.31	25	3.64	26	3.83
Regional Total	1,756	n/a	1,651	n/a	1,385	n/a	1,129	n/a	1,019	n/a
Regional Arithmetic Mean	n/a	5.66	n/a	5.58	n/a	4.51	n/a	3.61	n/a	3.36
State Total	23,550	5.27	22,434	4.97	19,184	4.27	16,804	3.75	15,342	3.43

Current High School Graduation Rate

The four-year cohort graduation rates for subpopulations of 9th graders entering high school in SY2007-2008 and graduating in SY2010-2011 are presented in Table 12. In Mitchell County the graduation rates for all subpopulations except females exceeded the mean graduation rate for the 17 school districts in WNC, as well as the comparable rates for NC as a whole. The graduation rate for the population of economically disadvantaged students in Mitchell County was 3.9 percentage points lower than the county's overall graduation rate. At the region- and state-level the graduation rate for economically disadvantaged students was approximately 6.7 percentage points lower than the comparable overall graduation rates.

Table 12. 4-Year Cohort High School Graduation Rate
SY2007-2008 Entering 9th Graders Graduating in SY2010-2011 or Earlier

Geography	Total Number of Students	% Students Graduating				
		All Students	Males	Females	Economically Disadvantaged	Limited English Proficiency
Mitchell County	160	80.0	82.6	76.5	76.1	n/a
Regional Total	7,545	78.8	75.2	82.5	72.0	57.2
State Total	110,377	77.9	73.8	82.2	71.2	48.1

Income

There are several income measures that can be used to compare the economic well-being of communities, among them median household income, and median family income.

Median Household and Family Income

As calculated from the most recent estimate (2006-2010), the median *household* income in Mitchell County was $32,743, compared to a mean WNC median household income of $37,815, a difference of $5,072 *less* in Mitchell County. The median household income in Mitchell County was lower than the comparable state average for both the periods cited in Table 13 ($11,951 lower in 2005-2009 and $12,827 lower in 2006-2010); the gap expanded by $876 from 2005-2009 to 2006-2010.

As calculated from the most recent estimate (2006-2010), the median *family* income in Mitchell County was $41,727, compared to a mean WNC median family income of $47,608, a difference of $5,881 *less* in Mitchell County. The median family income in Mitchell County in 2005-2009 was $12,983 *less* than the comparable state average, and in 2006-2010 the gap widened $1,443, to $14,426 less in Mitchell County.

Table 13. Median Household and Median Family Income
5-Year Estimates (2005-2009 and 200-2010)

Geography	2005-2009				2006-2010			
	Median Household Income*		Median Family Income**		Median Household Income		Median Family Income	
	$	$ Difference from State	$	$ Difference from State	$	$ Difference from State	$	$ Difference from State
Mitchell County	33,118	-11,951	42,546	-12,983	32,743	-12,827	41,727	-14,426
Regional Arithmetic Mean	37,107	-7,962	46,578	-8,951	37,815	-7,756	47,608	-8,545
State Total	45,069	n/a	55,529	n/a	45,570	n/a	56,153	n/a

* Median household income is the incomes of all the people 15 years of age or older living in the same household (i.e., occupying the same housing unit) regardless of relationship. For example, two roommates sharing an apartment would be a household, but not a family.
** Median family income is the income of all the people 15 years of age or older living in the same household who are related through either marriage or bloodline. For example, in the case of a married couple who rent out a room in their house to a non-relative, the household would include all three people, but the family would be just the couple.

Population in Poverty

The *poverty rate* is the percent of the population (both individuals and families) whose money income (which includes job earnings, unemployment compensation, social security income, public assistance, pension/retirement, royalties, child support, etc.) is below a federally established threshold. (This is the "100%-level" figure.)

Table 14 shows the estimated annual poverty rate for two five year periods: 2005-2009 and 2006-2010. The table also presents an estimate for the number of persons living below 200% of the Federal poverty rate, since this figure is often used as a threshold for determining eligibility for government services. The data in this table describe an overall rate, representing the entire population in each geographic entity. As subsequent data will show, poverty may have a strong age component that is not detectable in these numbers.

The 100%-level poverty rate in Mitchell County was 16.5% in the 2005-2009 period, but rose to 16.8% in the 2006-2010 period; this change represents an increase of 1.8% in the percent of persons living in poverty. In both periods cited, the poverty rate in Mitchell County was higher than the comparable rates in both WNC and NC. As calculated from figures in Table 14, the 200%-level poverty rate in Mitchell County was 42.6% in the 2005-2009 period and rose to 43.7% in the 2006-2010 period, an increase of 2.6%. In WNC the 200% poverty rate was 36.6% in the 2005-2009 period and rose to 37.3% in the 2006-2010 period, an increase of 1.9%. Statewide, the 100%-level poverty rate rose from 15.1% to 15.5% (an increase of 2.6%) and the 200%-level poverty rate rose from 35.0% to 35.6% (an increase of 1.7%) over the same time frame.

Table 14. Population in Poverty, All Ages
5-Year Estimates (2005-2009 and 2006-2010)

Geography	2005-2009				2006-2010			
	Population Estimate	# Below Poverty Level	% Below Poverty Level	# Below 200% Federal Poverty Level	Population Estimate	# Below Poverty Level	% Below Poverty Level	# Below 200% Federal Poverty Level
Mitchell County	15,546	2,562	16.5	6,620	15,477	2,599	16.8	6,762
Regional Total	697,685	103,966	14.9	255,556	726,827	113,990	15.7	271,215
State Total	8,768,580	1,320,816	15.1	3,066,957	9,013,443	1,399,945	15.5	3,208,471

Table 15 presents similar data focusing this time exclusively on children under the age of 18. From these data it is apparent that children suffer disproportionately from poverty. In Mitchell County the 2005-2009 poverty rate for young persons (21.6%) was 30.9% higher than the overall rate (16.5%), and the 2006-2010 poverty rate for young people (21.0%) was 25.0% higher than the overall rate (16.8%). Childhood poverty increased in both WNC and NC between the 2005-2009 and 2006-2010 periods, rising by 5.2% in WNC and 3.8% statewide. During this same interval, childhood poverty in Mitchell County *decreased* 2.8%, from 21.6% to 21.0%.

Table 15. Population in Poverty, Under Age 18
5-Year Estimates (2005-2009 and 2006-2010)

Geography	2005-2009			2006-2010		
	Population Estimate	# Below Poverty Level	% Below Poverty Level	Population Estimate	# Below Poverty Level	% Below Poverty Level
Mitchell County	3,090	668	21.6	2,850	599	21.0
Regional Total	146,592	31,196	21.3	149,649	33,486	22.4
State Total	2,173,508	452,280	20.8	2,205,704	476,790	21.6

Housing Costs

Because the cost of housing is a major component of the overall cost of living for individuals and families it merits close examination. Table 16 presents housing costs as a percent of total household income, specifically the percent of housing units—both rented and mortgaged—for which the cost exceeds 30% of household income.

In Mitchell County, the percentage of *rental* housing units costing more than 30% of household income was 30.6% in the 2005-2009 period and 25.9% in the 2006-2010 period, a decrease of 15.4%. In WNC, the comparable percentage was 38.9% in the 2005-2009 period and 40.5% in the 2006-2010 period, an increase of 4%. These percentages correspond to state figures of 43.0% and 44.0%, respectively, with a state-level increase of only 2%. The percent of *mortgaged*

housing units in Mitchell County costing more than 30% of household income was 31.1% in 2005-2009 and 36.0% in 2006-2010, an increase of 15.8%. Comparable figures for mortgaged housing units in WNC stood at 33.0% in 2005-2009 and 32.6% in 2006-2010, a decrease of 1%. These percentages compare to state figures of 31.4% and 31.7% in the same periods, and a state-level increase of not quite 1%. From these data it appears that in WNC and NC as a whole a higher proportion of renters than mortgage holders spend 30% or more of household income on housing costs. The reverse is true in Mitchell County.

Table 16. Estimated Housing Units Spending >30% Household Income on Housing 5-Year Estimates (2005-2009 and 2006-2010)

Geography	Renter Occupied Units				Mortgaged Housing Units			
	2005-2009		2006-2010		2005-2009		2006-2010	
	Total Units	% Units Spending >30%	Total Units	% Units Spending >30%	Total Units	% Units Spending >30%	Total Units	% Units Spending >30%
Mitchell County	1,632	30.6	1,706	25.9	2,427	31.1	2,403	36.0
Regional Total	82,441	38.9	86,022	40.5	122,383	33.0	132,668	32.6
State Total	1,131,480	43.0	1,157,690	44.0	1,634,410	31.4	1,688,790	31.7

Note: The percent of renter-occupied units spending greater than 30% of household income on rental housing was derived by dividing the number of renter-occupied units spending >30% on gross rent by the total renter-occupied units. Gross rent is defined as the amount of the contract rent plus the estimated average monthly cost of utilities (electricity, gas, and water and sewer) and fuels (oil, coal, kerosene, wood, etc.) if these are paid for by the renter (or paid for the renter by someone else). Gross rent is intended to eliminate differentials which result from varying practices with respect to the inclusion of utilities and fuels as part of the rental payment.

Employment and Unemployment

The following definitions will be useful in understanding the data in this section.

- *Labor force* – includes all persons over the age of 16 who, during the week, are employed, unemployed or in the armed services.
- *Civilian labor force* – excludes the Armed Forces from the labor force equation.
- *Unemployed* – civilians not currently employed but are available for work and have actively looked for a job within the four weeks prior to the date of analysis; also, laid-off civilians waiting to be called back to their jobs, as well as those who will be starting new jobs in the next 30 days.
- *Unemployment rate* – calculated by dividing the number of unemployed persons by the number of people in the civilian labor force.

Employment

Table 17 summarizes employment by sector. In Mitchell County the five sectors employing the greatest proportions of the workforce are, in descending order: (1) Health Care and Social Assistance (17.01%), (2) Educational Services (15.45%), (3) Retail Trade (12.99%), (4) Public Administration (9.30%), and (5) Mining (7.88%). In WNC, the five leading employment sectors are: (1) Health Care and Social Assistance (18.52%), (2) Retail Trade (13.86%), (3) Accommodation and Food Services (11.43%), (4) Manufacturing (11.28%) and (5) Educational Services (9.19%).

Statewide the comparably ordered list is composed of: (1) Health Care and Social Assistance (14.45%), (2) Retail Trade (11.66%), (3) Manufacturing (11.33%), (4) Educational Services (9.58%) and (5) Accommodation and Food Services (8.95%). The county, WNC and NC lists are quite similar, with variations in WNC stemming from its relative lack of manufacturing jobs and the regionally greater significance of the tourism industry, represented by the Accommodations and Food Service sector. Mitchell County is quite different from the other jurisdictions in the high placement of employment in the Mining sector.

Table 17. Insured Employment by Sector, Annual Summary (2011)

Sector	Mitchell County		WNC	NC
	Avg. No. Employed	% Total Employment in Sector**	% Total Employment in Sector**	% Total Employment in Sector**
Agriculture, Forestry, Fishing & Hunting	*	n/a	0.58	0.74
Mining	394	7.88	0.24	0.08
Utilities	17	0.34	0.36	0.35
Construction	314	6.28	4.75	4.53
Manufacturing	269	5.38	11.28	11.33
Wholesale Trade	80	1.60	2.35	4.38
Retail Trade	649	12.99	13.86	11.66
Transportation & Warehousing	245	4.90	2.53	3.27
Information	9	0.18	1.35	1.82
Finance & Insurance	116	2.32	2.25	3.88
Real Estate & Rental & Leasing	47	0.94	0.93	1.23
Professional, Scientific & Technical Services	62	1.24	3.32	4.96
Management of Companies & Enterprises	37	0.74	0.49	2.01
Administrative & Waste Services	182	3.64	4.90	6.53
Educational Services	772	15.45	9.19	9.58
Health Care & Social Assistance	850	17.01	18.52	14.45
Arts, Entertainment & Recreation	52	1.04	1.73	1.58
Accommodation & Food Services	317	6.34	11.43	8.95
Public Administration	465	9.30	7.18	6.18
Other Services	121	2.42	2.76	2.49
Unclassified	*	n/a	0.00	n/a
TOTAL ALL SECTORS	4,998	100.00	100.00	100.00

Table 18 summarizes the annual average wage paid to employees in the various sectors. Data in Table 18 reveal that overall the annual wage per employee in Mitchell County ($32,828) is $684 higher than the comparable figure for employees region-wide ($32,144) but $13,944 lower than the average annual wage statewide ($46,772).

Table 18. Insured Wages by Sector, Annual Summary (2011)

Sector	Average Annual Wage per Employee		
	Mitchell County	WNC	NC
Agriculture, Forestry, Fishing & Hunting	n/a	$23,145	$28,752
Mining	$61,979	41,662	45,828
Utilities	76,200	72,196	76,552
Construction	25,034	31,190	41,316
Manufacturing	35,092	38,443	52,613
Wholesale Trade	29,809	36,182	61,194
Retail Trade	21,230	22,109	24,650
Transportation & Warehousing	37,995	39,117	43,400
Information	32,988	38,682	63,833
Finance & Insurance	33,481	42,881	75,088
Real Estate & Rental & Leasing	23,545	24,051	38,476
Professional, Scientific & Technical Services	29,293	36,584	66,951
Management of Companies & Enterprises	36,660	43,518	88,763
Administrative & Waste Services	24,106	25,753	30,258
Educational Services	30,448	32,604	39,787
Health Care & Social Assistance	34,543	32,843	42,811
Arts, Entertainment & Recreation	21,994	20,936	28,474
Accommodation & Food Services	10,887	14,424	14,877
Public Administration	28,349	33,818	43,641
Other Services	30,094	24,660	28,182
Unclassified	n/a	12,056	n/a
TOTAL ALL SECTORS	$32,828	$32,144	$46,772

Unemployment

Table 19 summarizes the annual unemployment rate for 2007 through 2011. From these data it appears that the unemployment rate in Mitchell County was higher than comparable figures for both WNC and NC as a whole throughout the period from 2007-2011.

Table 19. Unemployment Rate as Percent of Workforce, (2007 through 2011)

Geography	Annual Average				
	2007	2008	2009	2010	2011
Mitchell County	7.1	8.1	12.6	12.1	11.7
Regional Arithmetic Mean	4.9	6.8	11.8	11.8	11.5
State Total	4.8	6.3	10.5	10.9	10.5

Crime

Detailed crime information for Mitchell County from the preferred source is limited, due to numerous missing data points, and is not presented in this report. (Refer to the *Data Workbook* for a review of the few data points that are available.) Tables 20-22 present annual crime statistics for WNC and the state of NC for the 10 years from 2001 through 2010. Table 20 summarizes the "index crime rate", which is the sum of the violent crime rate (murder, forcible rape, robbery, and aggravated assault) *plus* the property crime rate (burglary, larceny, arson, and motor vehicle theft). Table 21 summarizes violent crime, and Table 22 summarizes property crime.

Data in Table 20 show that the mean index crime rate in WNC was far lower than the comparable state rate for every year during the decade covered in the table. There is not enough information available from the data source to interpret annual variations in these rates.

Table 20. Index Crime Rate (2001-2010)

Geography	Index Crimes per 100,000 Population									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Regional Arithmetic Mean	2,163.4	2,294.3	2,413.8	2,656.0	2,648.1	2,536.4	2,688.3	2,703.4	2,502.2	2,426.4
State Total	5,005.2	4,792.6	4,711.8	4,641.7	4,622.9	4,654.4	4,658.6	4,581.0	4,191.2	3,955.7

Table 21 separates the violent crime rate from the overall index crime rate for the same period cited above. The mean violent crime rate in WNC was significantly lower than the rate for NC as a whole throughout the period cited in the table. According to data from the NC SCHS, there were a total of 148 homicides in the 16 WNC counties during the five-year period from 2006 through 2010, two of them in Mitchell County (*Data Workbook*).

Table 21. Violent Crime Rate (2001-2010)

Geography	Violent Crimes per 100,000 Population									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Regional Arithmetic Mean	181.5	194.4	200.4	198.5	232.9	221.9	274.4	190.7	224.4	258.6
State Total	503.8	475.3	454.7	460.9	478.6	483.5	480.5	477.0	417.1	374.4

Table 22 separates the property crime rate from the overall index crime rate for the same period cited above. Comparing these figures to the index crime rate, it is clear that the majority of all index crime committed is property crime. The mean property crime rate for WNC was significantly lower than the comparable rate for NC as a whole from 2001 to 2010.

Table 22. Property Crime Rate (2001-2010)

Geography	Property Crimes per 100,000 Population									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Regional Arithmetic Mean	1,981.9	2,093.9	2,215.2	2,423.1	2,410.3	2,298.7	2,468.3	2,494.0	2,262.1	2,228.4
State Total	4,501.4	4,317.3	4,257.1	4,180.7	4,144.3	4,170.9	4,178.1	4,103.9	3,774.1	3,581.4

CHAPTER 3 – HEALTH STATUS AND HEALTH OUTCOME PARAMETERS

Health Rankings

America's Health Rankings

Each year for 20 years, America's Health Rankings™, a project of United Health Foundation, has tracked the health of the nation and provided a comprehensive perspective on how the nation—and each state—measures up. America's Health Rankings is the longest running state-by-state analysis of health in the US (United Health Foundation, 2011).

America's Health Rankings are based on several kinds of measures, including *determinates* (socioeconomic and behavioral factors and standards of care that underlay health and well-being) and *outcomes* (measures of morbidity, mortality, and other health conditions). Together, the determinates and outcomes help calculate an overall rank. Table 23 shows where NC stood in the 2011 rankings relative to the "best" and "worst" states (where 1="best"). *When comparing county or regional health data with data for the state as a whole it is necessary to keep in mind that NC ranks 32nd overall, just outside the bottom third of the 50 US states.*

Table 23. State Rank of North Carolina in America's Health Rankings (2011)

Geography	National Rank (Out of 50)		
	Overall	Determinates	Outcomes
Vermont	1	1	5
North Carolina	32	31	38
Mississippi	50	48	50

Source: United Health Foundation, 2011. *America's Health Rankings*. Available at: http://www.americashealthrankings.org/mediacenter/mediacenter2.aspx

County Health Rankings

Building on the work of America's Health Rankings, the Robert Wood Johnson Foundation, collaborating with the University of Wisconsin Population Health Institute, supports a project to develop health rankings for the counties in all 50 states.

Each state's counties are ranked according to health outcomes and the multiple health factors that determine a county's health. Each county receives a summary rank for its health outcomes and health factors, and also for four different specific types of health factors: health behaviors, clinical care, social and economic factors, and the physical environment.

Below is a list of the parameters considered in each of the health outcome and health factor categories:

Health Outcomes – Mortality	**Social and Economic Factors**
Premature death	High school graduation
Morbidity	Some college
Poor or fair health	Unemployment
Poor physical health days	Children in poverty
Poor mental health days	Inadequate social support
Low birth weight	Children in single-parent households
Health Factors	Violent crime rate
Health Behaviors	**Physical Environment**
Adult smoking	Air pollution – particulate matter days
Adult obesity	Air pollution – ozone days
Physical inactivity	Access to recreational facilities
Excessive drinking	Limited access to healthy foods
Motor vehicle death rate	Fast food restaurants
Sexually transmitted infections	
Teen birth rate	
Clinical Care	
Uninsured	
Primary care physicians	
Preventable hospital stays	
Diabetic screening	
Mammography screening	

Table 24 presents the health outcome and health factor rankings for Mitchell County.

Table 24. County Health Rankings via MATCH (2012)

Geography	County Rank (Out of 100)[1]						
	Health Outcomes		Health Factors				Overall Rank
	Mortality	Morbidity	Health Behaviors	Clinical Care	Social & Economic Factors	Physical Environment	
Mitchell County	76	87	25	89	54	22	82

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

Pregnancy and Birth Data

Pregnancy Rate

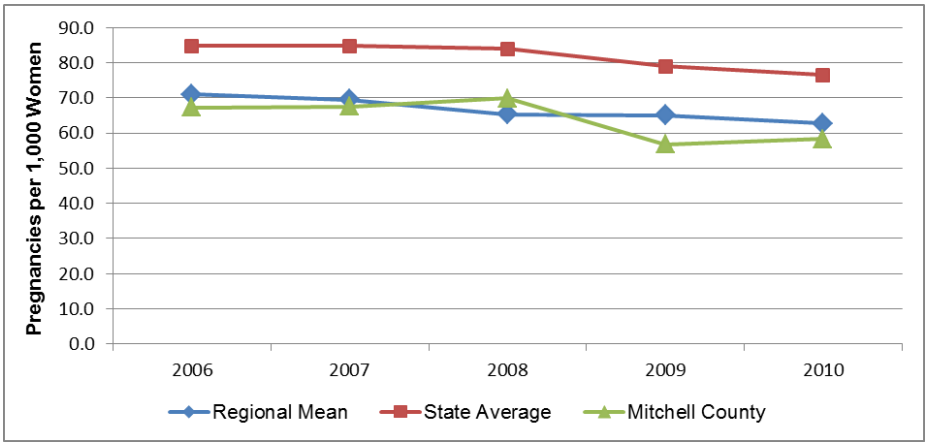
The following definitions and statistical conventions will be helpful in understanding the data on pregnancy:

- Reproductive age = 15-44
- Total pregnancies = live births + induced abortions + fetal death at >20 weeks gestation
- Pregnancy rate = number of pregnancies per 1,000 women of reproductive age
- Fertility rate = number of live births per 1,000 women of reproductive age
- Abortion rate = number of induced abortions per 1,000 women of reproductive age

The NC SCHS stratifies much of the pregnancy-related data it maintains into two age groups: ages 15-44 (all women of reproductive age) and ages 15-19 ("teens"). Figures below present pregnancy rate data for ages 15-44 and 15-19. Note that regional rates are presented as *arithmetic means* (sums of individual county rates divided by the number of county rates). These means are approximations of true regional rates, which NC SCHS does not compute.

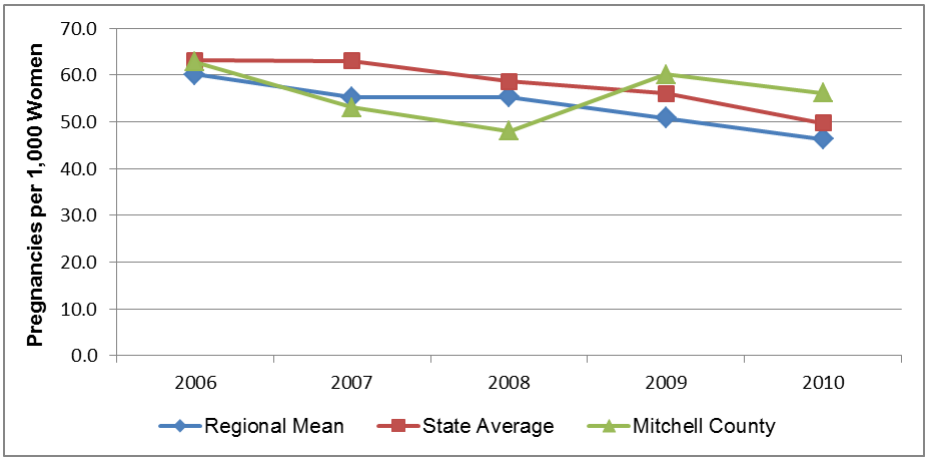
Data in Figure 1 illustrate that the pregnancy rate for women ages 15-44 in Mitchell County was lower than the comparable state rate and approximately the same as the mean WNC rate over the entire period cited. The pregnancy rates in WNC decreased between 2006 and 2010, by 11.6% in WNC, and by 9.9% in NC. The pregnancy rate in Mitchell County was more variable over the same period, but fell overall, from 67.3 in 2006 to 58.3 in 2010, a decrease of 13.4%. The 2010 pregnancy rate was 58.3 in Mitchell County, 62.7 in WNC, and 76.4 in NC.

Figure 1 – Pregnancy Rate Ages 15-44, Pregnancies per 1,000 Women (Single Years, 2006-2010)



Data in Figure 2 illustrate that the pregnancy rate for teens (ages 15-19) in Mitchell County was quite variable, trending both below and above the mean WNC and NC rates over the period cited. Note that the teen pregnancy rate in all three jurisdictions decreased between 2006 and 2010, by 10.5% in Mitchell County, by 22.9% in WNC, and by 21.2% in NC. The 2010 teen pregnancy rate was 56.2 in Mitchell County, 46.3 in WNC, and 49.7 in NC.

Figure 2 – Pregnancy Rate Ages 15-19, Pregnancies per 1,000 Women (Single Years, 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

Pregnancy Risk Factors

Smoking During Pregnancy

Smoking during pregnancy is an unhealthy behavior that may have negative effects on both the mother and the fetus. Smoking can lead to fetal and newborn death, and contribute to low birth weight and pre-term delivery. In pregnant women, smoking can increase the rate of placental problems, and contribute to premature rupture of membranes and heavy bleeding during delivery (March of Dimes, 2010).

Table 25 presents data on the number and percent of births resulting from pregnancies in which the mother smoked during the prenatal period. The percentage frequency of smoking during pregnancy in Mitchell County was significantly higher than the comparable mean percentage for WNC and for the state in *all* of the time periods cited in the table. The WNC mean was significantly higher than (e.g., double) the comparable percentages statewide throughout the period cited. The frequency of smoking during pregnancy in Mitchell County, WNC, and NC all improved over the period cited, by 8.1% in Mitchell County, by 8.0% in WNC, and by 14.7% in NC.

Table 25. Births to Mothers Who Smoked During the Prenatal Period (Five-Year Aggregates, 2001-2005 through 2005-2009)

Geography	2001-2005		2002-2006		2003-2007		2004-2008		2005-2009	
	#	%	#	%	#	%	#	%	#	%
Mitchell County	211	25.9	218	26.8	210	26.1	217	26.3	193	23.8
Regional Total	7,496	22.4	7,442	22.1	7,361	21.7	7,106	21.2	6,919	20.6
State Total	76,712	12.9	74,901	12.4	73,887	11.9	72,513	11.5	70,529	11.0

Late or No Prenatal Care

Good pre-conception health and early prenatal care can help assure women the healthiest pregnancies and best birth outcomes possible. Access to prenatal care is particularly important during the first three months of pregnancy (March of Dimes, 2012).

Table 26 shows data summarizing utilization of prenatal care during the first three months of pregnancy. For the first three aggregate periods shown in the table the percentage of births in Mitchell County that included early prenatal care was lower than the percentage for WNC but higher than the percentage for the state as a whole. During the last two periods shown in the table the percentages for Mitchell County were the highest of the three jurisdictions. Overall, the Mitchell County percentage rose from 87.9% in 2001-2005 to 91.1% in 2005-2009, an increase of 3.6%. The frequency of early prenatal care utilization was higher in WNC than in the state as a whole for every period noted in the figure, but the percentages for both the region and the state decreased over the period cited, by 2.7% in WNC and by 1.7% in NC.

Table 26. Births to Mothers Receiving Prenatal Care During the First Trimester (Five-Year Aggregates, 2001-2005 through 2005-2009)

Geography	2001-2005		2002-2006		2003-2007		2004-2008		2005-2009	
	#	%	#	%	#	%	#	%	#	%
Mitchell County	717	87.9	714	87.7	714	88.7	737	89.3	739	91.1
Regional Total	35,375	89.3	35,799	89.0	36,433	88.9	36,806	88.0	37,049	86.9
State Total	497,895	83.5	503,331	83.0	510,954	82.5	519,098	82.1	524,902	82.1

Birth Outcomes

Low Birth Weight

Low birth weight can result in serious health problems in newborns (e.g., respiratory distress, bleeding in the brain, and heart, intestinal and eye problems), and cause lasting disabilities (mental retardation, cerebral palsy, and vision and hearing loss) or even death (March of Dimes, 2012).

Table 27 summarizes data on the number and percent of low birth weight (≤ 2500 grams or 5.5 pounds) births. (Note that NC SCHS also maintains data on *very* low birth weight [≤1500 grams or 3.3 pounds] births. There are so few very low birth weight births in WNC that county rates are too unstable to calculate a stable regional mean.) In WNC, the mean percentage of low-birth weight births was lower than the comparable percentage for NC as a whole in each of the aggregate periods cited in the table. Further, the percentages were relatively static in both jurisdictions during the entire period.

In Mitchell County over the time span from 2002-2006 through 2006-2010, low birth weight data demonstrated some variability, but the county percentage was higher than comparable WNC mean percentage and lower than the NC percentage in every period cited except 2005-2009; in that cycle the county rate was higher than the rates in the other two jurisdictions. The proportion of low birth weight births in Mitchell County increased 4.7% overall between 2002-2006 and 2006-2010.

Table 27. Low-Weight Births (Five-Year Aggregates, 2002-2006 through 2006-2010)

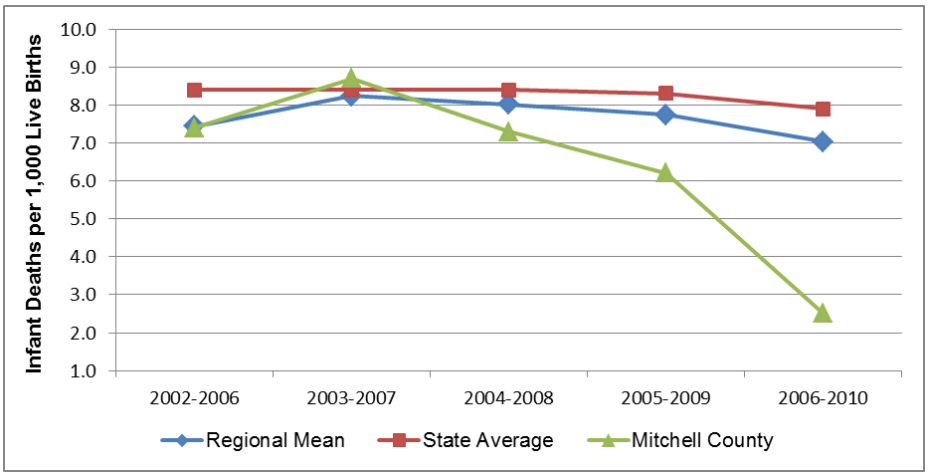
Geography	2002-2006		2003-2007		2004-2008		2005-2009		2006-2010	
	#	%	#	%	#	%	#	%	#	%
Mitchell County	70	8.6	69	8.6	73	8.8	75	9.2	71	9.0
Regional Total	3,447	8.2	3,473	8.4	3,467	8.3	3,434	8.2	3,373	8.2
State Total	54,991	9.1	56,541	9.1	57,823	9.1	58,461	9.1	58,260	9.1

Infant Mortality

Infant mortality is the number of deaths of infants under one year of age per 1,000 live births. Figure 3 presents infant mortality data for WNC and the state. When interpreting this data it is important to remember that the infant mortality rate for NC as a whole is among the highest (i.e., worst) in the US, ranking 46th out of 50 according to the 2011 *America's Health Rankings*, cited previously.

The state's infant mortality rate recently has begun to decrease; after hovering near 8.5 for several years, it was 7.9 in the most recent aggregate period (2006-2010). The mean infant mortality rate for WNC has been lower than the state rate, and appears to be trending in the right direction. The infant mortality rate for Mitchell County plotted in Figure 3 was somewhat variable, but seemed to be decreasing overall. It should be noted that all five of the plotted rates are unstable due to small numbers of infant deaths (n=2-7 per aggregate period).

Figure 3. Infant Mortality Rate, Infant Deaths per 1,000 Live Births (Five-Year Aggregates, 2002-2006 through 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rates.

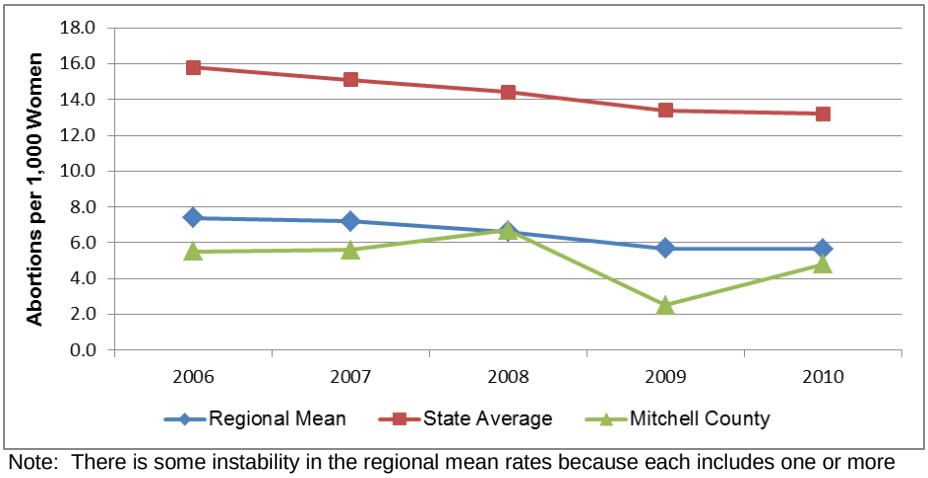
Due to small non-white populations and similarly small numbers of infant deaths among them in both Mitchell County and WNC it is not possible to calculate stable minority infant mortality rates for those jurisdictions. Statewide, the infant mortality rate among non-Hispanic African Americans is *more than twice* the comparable rate among whites (*Data Workbook*).

Abortion

Figures 4 and 5 depict abortion rates for the region and state. Data in Figure 4 show that the mean abortion rate in WNC for women ages 15-44 was less than half the abortion rate for the state as a whole, and that the rate in both jurisdictions fell over the time period cited in the figure, by 24.3% in WNC and by 16.5% in NC. In 2010 the abortion rate was 5.6 in WNC and 13.2 in NC.

The abortion rate in Mitchell County fluctuated somewhat but was lower than both the mean WNC and NC rates throughout the period cited. Fluctuations in the county data plotted in Figure 4 may be due partly to the relatively small numbers of events used in calculating the rates (n=7-19 abortions per year), although each data point except 2009 represents a stable rate as determined by NC SCHS. The abortion rate in Mitchell County fell 12.7% overall between 2007 and 2010. In 2010 the abortion rate was 4.8 in Mitchell County, 5.6 in WNC, and 13.2 in NC.

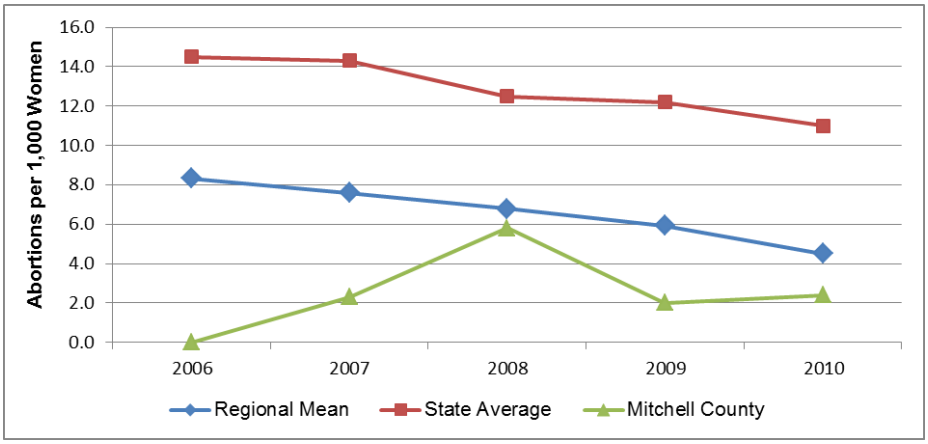
Figure 4. Pregnancies Ending in Abortion, Ages 15-44, per 1,000 Population (Single Years, 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rates.

Data in Figure 5 show that the mean abortion rate in WNC for teens ages 15-19 was slightly more than half the teen abortion rate for the state as a whole for the first three years cited in the figure and less than half the state rate in the most recent two years. The rate in both jurisdictions fell over the time period cited in the figure, by 45.8% in WNC and by 24.1% in NC. The teen abortion rate in Mitchell County fluctuated below the mean WNC rate throughout the period cited. The teen abortion rate in Mitchell County was a true zero in 2006; all other teen abortion rates for Mitchell County were unstable due to small numbers of abortions (n=1-3 per year).

Figure 5. Pregnancies Ending in Abortion, Age 15-19, per 1,000 Population (Single Years, 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

Mortality Data

This section describes mortality for the 15 leading causes of death, as well as mortality due to four major site-specific cancers. The list of topics and the accompanying data is derived from the NC SCHS *County Health Databook*. Unless otherwise noted, the numerical data are age-adjusted and represent overlapping five-year aggregate periods.

Leading Causes of Death

Table 28 compares the mean rank order of the 15 leading causes of death in Mitchell County, WNC and NC for the five-year aggregate period 2006-2010. (The causes of death are listed in descending rank order for WNC.) From this data it appears that chronic lower respiratory disease, pneumonia and influenza, motor vehicle injury and suicide rank higher as causes of death in WNC than in the state as a whole. Conversely, cerebrovascular disease, kidney disease, and septicemia rank lower as causes of death regionally than statewide.

The leading causes of death in Mitchell County are very similar in rank order to the comparable list for WNC. The difference is mostly a matter of rate. For example, the heart disease mortality rate in Mitchell County (238.0) is 22% higher than the mean WNC rate, and the county mortality rate for CLRD (76.4) is 50% higher than the comparable mean WNC rate. Other differences in mortality statistics will be covered as each cause of death is discussed separately below. It should be noted from the onset, however, that for some causes of death (e.g., conditions ranked 8 through 15 below) there may not be stable county mortality rates, due to small numbers of deaths. Some unstable data will be presented in this document, but always accompanied by cautions regarding its use.

Table 28. Rank of Cause-Specific Mortality Rates for the Fifteen Leading Causes of Death (Five-Year Aggregate, 2006-2010)

Leading Cause of Death	Mitchell County		WNC Mean		NC	
	Rank	Rate	Rank	Rate	Rank	Rate
Heart Disease	1	238.0	1	194.4	1	184.9
Total Cancer	2	199.7	2	180.3	2	183.1
Chronic Lower Respiratory Disease	3	76.4	3	51.1	4	46.4
Cerebrovascular Disease	4	56.5	4	44.0	3	47.8
All Other Unintentional Injuries	5	47.8	5	42.9	5	28.6
Alzheimer's Disease	6	43.4	6	30.7	6	28.5
Diabetes Mellitus	8	n/a	7	19.6	7	22.5
Pneumonia and Influenza	7	16.7	8	19.1	9	18.6
Unintentional Motor Vehicle Injuries	9	n/a	9	16.7	10	16.7
Suicide	12	n/a	10	16.7	12	12.1
Nephritis, Nephrotic Syndrome & Nephrosis	10	n/a	11	16.2	8	18.9
Septicemia	11	n/a	12	13.4	11	13.7
Chronic Liver Disease & Cirrhosis	13	n/a	13	13.2	13	9.1
Homicide	14	n/a	14	n/a	14	6.6
Acquired Immune Deficiency Syndrome	15	n/a	15	n/a	15	5.4

It should be noted that the rank order of leading causes of death varies somewhat among the 16 counties in WNC. Further, in 2005-2009 and 2006-2010 the NC SCHS did not release mortality rates for some causes of death in several counties (including Mitchell) because the number of deaths fell below the Center's threshold of 20 per five-year aggregate period. The mean WNC ranking displayed in Table 28 includes only stable rates presented in the *Data Workbook*.

Each age group tends to have its own leading causes of death. Table 29 lists the three leading causes of death by age group for the five-year aggregate period from 2006-2010. (Note that for this purpose it is important to use *non*-age adjusted death rates.) The WNC rankings were developed by a qualitative examination of the individual ranking lists for each of the counties in the region.

In Mitchell County the causes of death in the three older age groups are similar to those noted for WNC. Cancer appears among the three leading causes of death in the 20-39 age group in Mitchell County, but is absent on the WNC and NC lists, and suicide appears as the third leading cause of death in the 00-19 age group in the county while it is not on either the region's or the state's list.

Noteworthy findings among the age-grouped rankings of mortality in WNC compared to NC as a whole include the relatively greater regional prominence of non-motor vehicle injury in the two youngest age groups (00-19 and 20-39) and the third-place ranking of Alzheimer's disease among the leading causes of death in the oldest age group (85+).

Table 29. Leading Causes of Death by Age Group
Unadjusted Death Rates per 100,000 Population
(Five-Year Aggregate, 2006-2010)

Age Group	Rank	Leading Cause of Death		
		Mitchell County	WNC	NC
00-19	**1**	Motor vehicle injuries	Perinatal conditions	Perinatal conditions
		Other unintentional injuries		
	2		Motor vehicle injuries	Congenital abnormalities
	3	*Suicide*	Congenital abnormalities	Motor vehicle injuries
			Other unintentional injuries	
20-39	**1**	Other unintentional injuries	Other unintentional injuries	Motor vehicle injuries
	2	Heart disease	Motor vehicle injuries	Other unintentional injuries
	3	Cancer – all sites	Suicide	Suicide
		Suicide		
40-64	**1**	Heart disease	Cancer – all sites	Cancer – all sites
	2	Cancer – all sites	Heart disease	Heart disease
	3	Other unintentional injuries	Other unintentional injuries	Other unintentional injuries
65-84	**1**	Cancer – all sites	Cancer – all sites	Cancer – all sites
	2	Heart disease	Heart disease	Heart disease
	3	Chronic lower pulmonary disease	Chronic lower respiratory disease	Chronic lower respiratory disease
85+	**1**	Heart disease	Heart disease	Heart disease
	2	Cancer – all sites	Cancer – all sites	Cancer – all sites
	3	Alzheimer's disease	Alzheimer's disease	Cerebrovascular disease

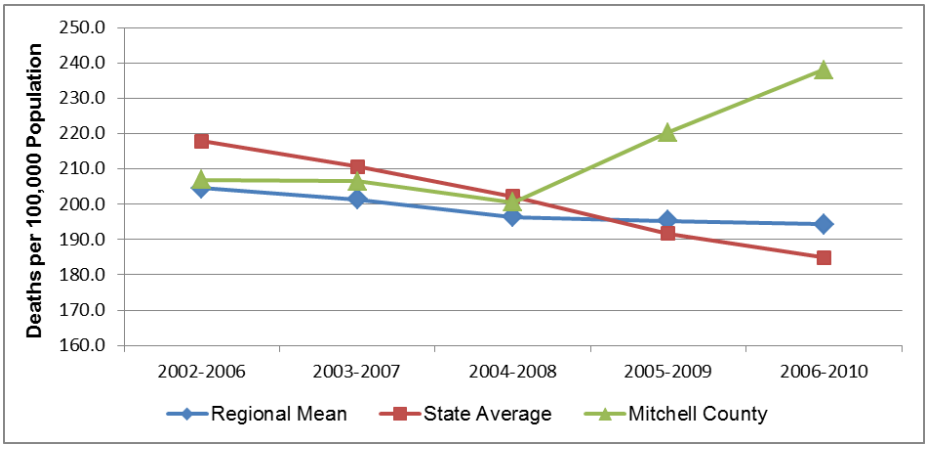
The following section examines in greater detail each of the causes of death listed in Table 28, in the order of highest mean WNC rank to lowest, beginning with heart disease.

Heart Disease Mortality

Heart disease is an abnormal organic condition of the heart or of the heart and circulation. Heart disease is the number one killer in the US. It is also a major cause of disability. The most common cause of heart disease, coronary artery disease, is a narrowing or blockage of the coronary arteries, the blood vessels that supply blood to the heart itself. This is the major reason people have heart attacks. Other kinds of heart problems may happen to the valves in the heart, or the heart may not pump well and cause heart failure (US National Library of Medicine).

Heart disease was the leading cause of death in WNC, NC and Mitchell County in the 2006-2010 aggregate period. Figure 6 presents heart disease mortality trend data. This graph illustrates that the heart disease mortality rate in Mitchell County was between the comparable rates for WNC and NC for the first three aggregate periods after which it jumped dramatically. In the 2004-2008 aggregate period the heart disease mortality rate in the county was 206.9; two years later, in the 2006-2010 aggregate period, the rate was 238.0, an increase 15.0%. On the other hand, heart disease mortality rates decreased in both WNC and NC. In NC, the heart disease mortality rate fell from 217.9 for the 2002-2006 aggregate period to 184.9 for the 2006-2010 aggregate period, a decrease of 15.1%. For the 2002-2006 period the mean WNC heart disease mortality rate was 204.6; by the 2006-2010 period it had fallen to 194.4, a decrease of 4.9%.

Figure 6. Heart Disease Mortality Rate, Deaths per 100,000 Population Five-Year Aggregates (2002-2006 through 2006-2010)



Further subdivision of heart disease mortality data reveals a gender disparity. Figure 7 plots heart disease mortality rates for Mitchell County, stratified by gender. From these data it is clear that Mitchell County males have had a higher heart disease mortality rate than females for the past decade, with the difference as high as 48%. This trend data also shows an apparent 21.6% increase in the heart disease mortality rate among county males (from 239.0 to 290.7) and a corresponding 11.7% increase in the rate among county females (from 176.3 to 197.0) from the beginning of the period cited to the end.

Figure 7. Gender Disparities in Heart Disease Mortality, Mitchell County (Five-Year Aggregates, 2002-2006 through 2006-2010)

Only four of the 16 counties in WNC (Buncombe, Jackson, Rutherford and Swain) had large enough minority populations to yield stable heart disease mortality rates for minority populations, so it is not possible to calculate stable mean region-wide rate for minorities. At the state level, heart disease mortality demonstrates significant racial disparity, with the minority rate higher than the non-minority rate. For example, statewide in 2006-2010 the heart disease mortality rate among non-Hispanic African American males (285.8) was almost 23% higher than the comparable rate among non-Hispanic white males (233.0), and the rate among non-

Hispanic African American females (175.7) was 25% higher than the rate among non-Hispanic white females (140.9). The comparable rates among other non-Hispanics were 148.7 for males and 102.7 for females. Hispanics had the lowest heart disease mortality rates, 55.7 for males and 36.9 for females (*Data Workbook*).

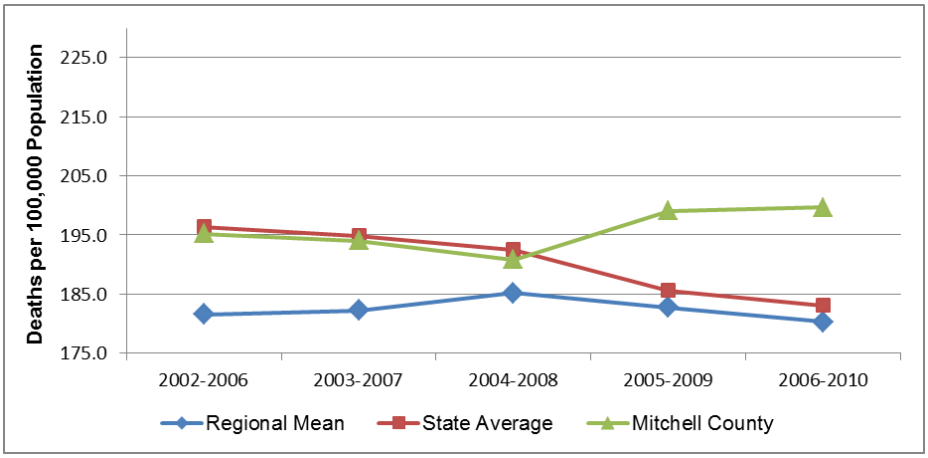
Total Cancer Mortality

Cancer is a term for diseases in which abnormal cells divide without control and can invade nearby tissues. Cancer cells also can spread to other parts of the body through the blood and lymph systems. If the disease remains unchecked, it can result in death (National Cancer Institute).

Taken together, cancers of all types compose the second leading cause of death in WNC, NC and Mitchell County in 2006-2010 (Table 28, cited previously).

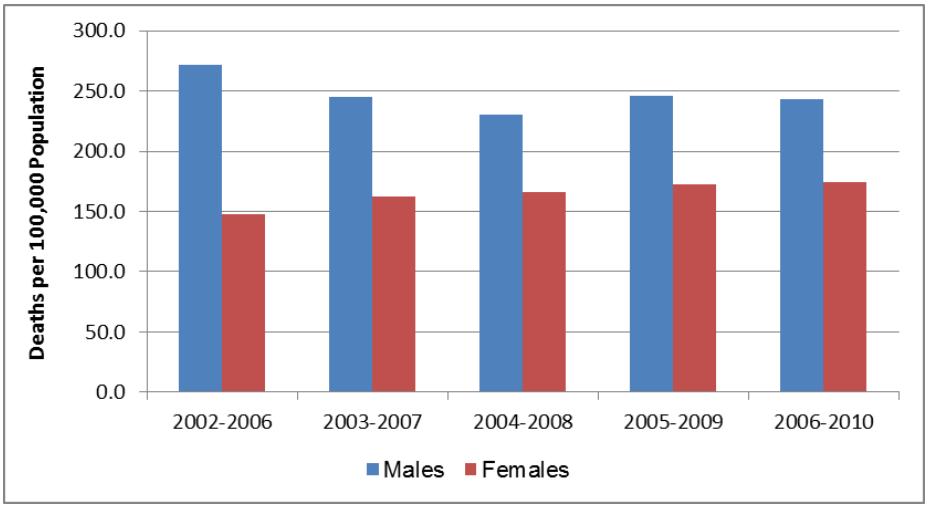
Figure 8 presents mortality trend data for total cancer. The total cancer mortality rate in Mitchell County rose from 195.2 in 2002-2006 to 199.7 in 2006-2010, an increase of 2.4%. The total cancer mortality rate for the state as a whole fell 6.8% (from 196.4 to 183.1) over the period cited, while the comparable rate for the region fell from 181.5 to 180.3. In the last two aggregate periods the total cancer mortality rate in Mitchell County exceeded the rates for the other two jurisdictions.

Figure 8. Total Cancer Mortality Rate, Deaths per 100,000 Population (Five-Year Aggregates, 2002-2006 through 2006-2010)



Like heart disease mortality, total cancer mortality demonstrates a gender disparity. Figure 9 plots mean total cancer mortality rates for Mitchell County, stratified by gender. From these data it is clear that males had a higher total cancer mortality rate than females. Noteworthy, however, is that the total cancer mortality rate among Mitchell County males appears to have fallen, as the comparable rate for females has risen. In the most recent aggregate period (2006-2010) the total cancer mortality rate for Mitchell County males (243.1) was 39% higher than the comparable rate for females (174.7).

Figure 9. Gender Disparities in Total Cancer Mortality, Mitchell County (Five-Year Aggregates, 2002-2006 through 2006-2010)



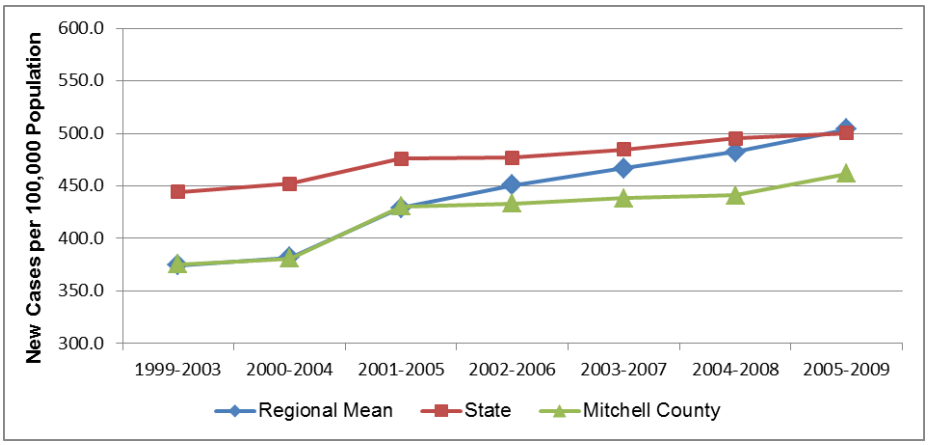
Regionally, only four of the 16 counties in WNC (Buncombe, Jackson, Rutherford and Swain) had large enough minority populations to yield stable total cancer mortality rates, so it is not possible to calculate stable mean region-wide rates for minority populations. At the state level, total cancer mortality demonstrates significant racial disparity, with the minority rates higher than non-minority rates. For example, statewide in 2006-2010 the total cancer mortality rate among non-Hispanic African American males (302.9) was 35% higher than the comparable rate among non-Hispanic white males (224.6), and the rate among non-Hispanic African American females (166.6) was 12% higher than the rate among non-Hispanic white females (149.3). The comparable total cancer mortality rates for other non-Hispanics were 145.7 for males and 103.2 for females. Hispanics had the lowest total cancer mortality rates, 66.0 for males and 61.2 for females (*Data Workbook*).

Since total cancer is a very significant cause of death, it is useful to examine patterns in the development of new cases of cancer in the county. The statistic important to understanding the growth of a health problem is *incidence*. Incidence is the population-based rate at which new cases of a disease occur and are diagnosed. It is calculated by dividing the number of newly diagnosed cases of a disease or condition during a given period by the population size during that period. Typically, the resulting value is multiplied by 100,000 and is expressed as cases per 100,000; sometimes the multiplier is a smaller number, such as 10,000 or 1,000. Cancer incidence rates were obtained from the NC Cancer Registry, which collects data on newly diagnosed cases from NC clinics and hospitals as well as on NC residents whose cancers were diagnosed at medical facilities in bordering states.

Figure 10 graphs the incidence rates for total cancer for seven five-year aggregate periods. From this data it appears that the incidence rate for total cancer increased in Mitchell County, WNC and NC between 1999-2003 and 2005-2009. In Mitchell County, the total cancer incidence rate rose from 375.5 at the beginning of the period cited to 461.6 at the end, an increase of 22.9%.

While both state and mean WNC total cancer incidence rates increased over the period cited in the graph, the slope of increase for WNC is greater than that for the state as a whole. The NC rate rose from 444.0 in 1999-2003 to 500.1 in 2005-2009, a 12.6% increase. The mean total cancer incidence rate in WNC rose from 374.5 in 1999-2003 to 503.8 in 2005-2009, an increase of 34.5%. Further, the regional incidence rate for total cancer, which for years had been below the comparable NC rate, surpassed the state rate for the first time in the 2005-2009 period. The total cancer incidence rate for Mitchell County was below both the mean WNC and NC rates for most of the period cited.

Figure 10. Total Cancer Incidence Rate, New Cases per 100,000 Population (Five-Year Aggregates, 1999-2003 through 2005-2009)



To this point the discussion of cancer mortality and incidence has focused on figures for total cancer. In Mitchell County, as throughout both WNC and the state of NC, there are four site-specific cancers that cause most cancer deaths: breast cancer, colon cancer, lung cancer, and prostate cancer. Table 30 summarizes the age-adjusted mortality rates for the four site-specific cancers for the 2006-2010 aggregate period. In Mitchell County the numbers of deaths attributable to breast cancer and prostate cancer in that period were below the NC SCHS threshold for releasing rates. The stable Mitchell County mortality rate for lung cancer (60.4) and colon cancer (18.4) both were above comparable mean WNC and NC rates. In WNC, lung cancer is the site-specific cancer with the highest mortality, followed by breast cancer, prostate cancer, and colon cancer.

Table 30. Age-Adjusted Mortality Rates for Major Site-Specific Cancers (2006-2010)

Geography	Deaths per 100,000 Population			
	Lung Cancer	Breast Cancer	Prostate Cancer	Colon Cancer
Mitchell County	60.4	n/a	n/a	18.4
Regional Mean	54.7	24.3	22.9	16.6
State	55.9	23.4	25.5	16.0

Multi-year mortality rate trends for these four site-specific cancers will be presented subsequently, as each cancer type is discussed separately.

Table 31 summarizes the age-adjusted incidence rates for these four site-specific cancers for the 2005-2009 aggregate period. From this data it appears that in Mitchell County, prostate cancer was the site-specific cancer with the highest incidence rate, followed by breast cancer, lung cancer, and colon cancer. The Mitchell County incidence rate for colon cancer was higher, and the county incidence rate for breast cancer was lower, than the comparable rates region-wide and statewide. Multi-year incidence rate trends for these four site-specific cancers will be presented subsequently, as each cancer type is discussed separately.

Table 31. Age-Adjusted Incidence Rates for Major Site-Specific Cancers (2005-2009)

Geography	New Cases per 100,000 Population			
	Breast Cancer	Prostate Cancer	Lung Cancer	Colon Cancer
Mitchell County	107.8	146.0	73.8	46.2
Regional Mean	154.0	139.2	75.4	46.0
State	154.5	158.3	75.9	45.5

Lung Cancer Mortality

Lung cancer was the leading cause of cancer mortality in Mitchell County in the 2006-2010 aggregate period (Table 30, cited above). Figure 11 plots lung cancer mortality rates for several aggregate periods. This data reveals that the lung cancer mortality rate in Mitchell County was between the comparable rates for WNC and NC for part of the period cited in the graph, but the first and last data points plotted for the county were above both the regional and state rates. Overall the lung cancer mortality rate in Mitchell County fell slightly from 62.9 in 2002-2006 to 60.4 in 2006-2010. Statewide the lung cancer mortality rate fell from 59.8 for 2002-2006 to 55.9 for 2006-2010, a 6.5% decrease over the period. The comparable mean WNC rate fluctuated somewhat but was approximately the same at the end of the period (54.7) as at the beginning (54.2).

Figure 11. Lung Cancer Mortality Rate, Deaths per 100,000 Population (Five-Year Aggregates, 2002-2006 through 2006-2010)

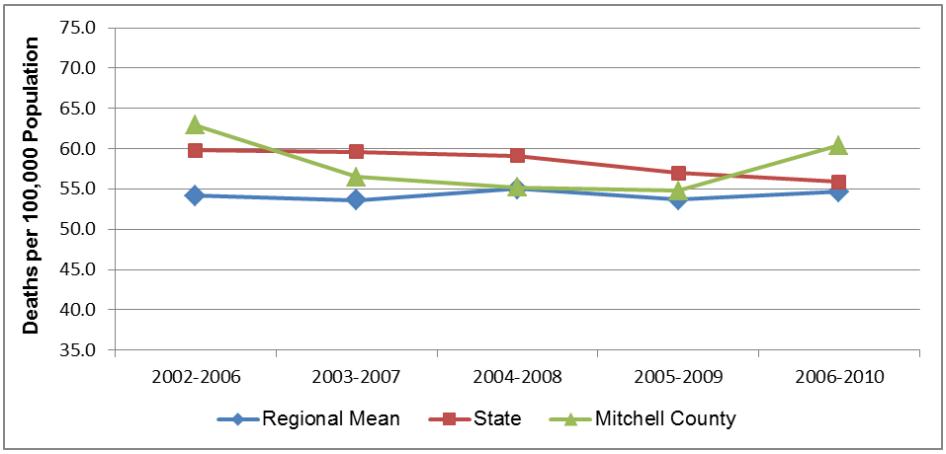


Figure 12 presents gender-stratified Mitchell County lung cancer mortality rates for several aggregate periods. From this data it is clear that males experience disproportionately higher lung cancer mortality than females, with the lung cancer mortality rate among men from 1.6 to 2.4 *times* the rate among women over the period cited. In the 2006-2010 aggregate period the lung cancer mortality rate among Mitchell County males (85.3) was twice the comparable rate among county females (43.6)

Figure 12. Gender Disparities in Lung Cancer Mortality, Mitchell County (Five-Year Aggregates, 2002-2006 through 2006-2010)

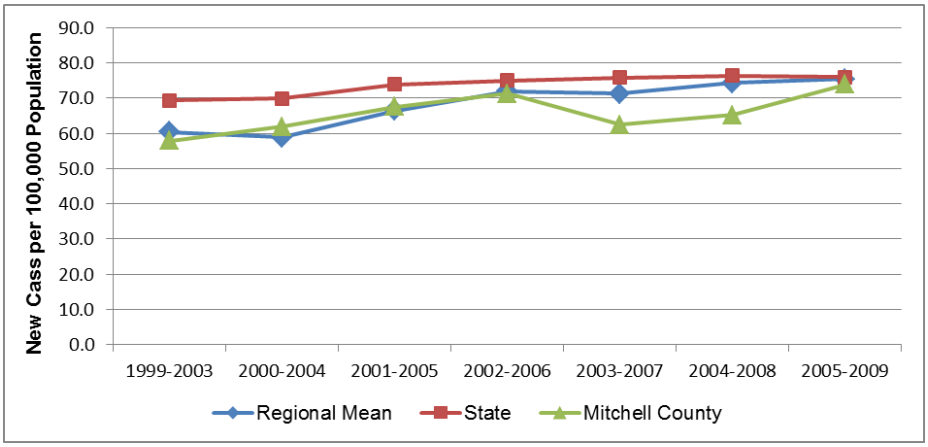
Regionally, only one of the 16 counties in WNC (Buncombe) had large enough minority populations to yield stable minority lung cancer mortality rates, so it is not possible to calculate stable mean region-wide rates for minorities. Statewide, lung cancer mortality rates demonstrate racial disparity. For example, statewide in 2006-2010 the lung cancer mortality rate among non-Hispanic African American males (90.9) was 19% higher than the comparable rate among non-Hispanic white males (76.1); however, the rate among non-Hispanic African

American females (32.7) was 25% *lower* than the rate among non-Hispanic white females (43.7). The comparable rates among "Other" non-Hispanics were 47.2 for males and 24.6 for females. Hispanic males and females had the lowest lung cancer mortality rates, 12.7 and 8.6, respectively (*Data Workbook*).

Since lung cancer is a significant cause of mortality in Mitchell County, it is instructive to examine the trend of development of new lung cancer cases over time. Figure 13 depicts the seven-year trend of lung cancer incidence.

From this data it appears that lung cancer incidence in Mitchell County increased 27.5% (from 57.9 to 73.8) between 1999-2003 and 2005-2009. Region-wide, the mean lung cancer incidence rate has been creeping upward over the past several years, from a point well below the comparable state rate to a point barely below it. The lung cancer incidence rate in WNC increased 25.0% from the 1999-2003 aggregate period (60.3) to the 2005-2009 aggregate period (75.4), while the statewide lung cancer incidence rate increased by 9.5% (from 69.3 to 75.9) over the same time frame. Since lung cancer mortality is already on the rise in the region, the increase in the incidence rate may portend additional lung cancer mortality in the future.

Figure 13. Lung Cancer Incidence, New Cases per 100,000 Population (Five-Year Aggregates, 1999-2003 through 2005-2009)

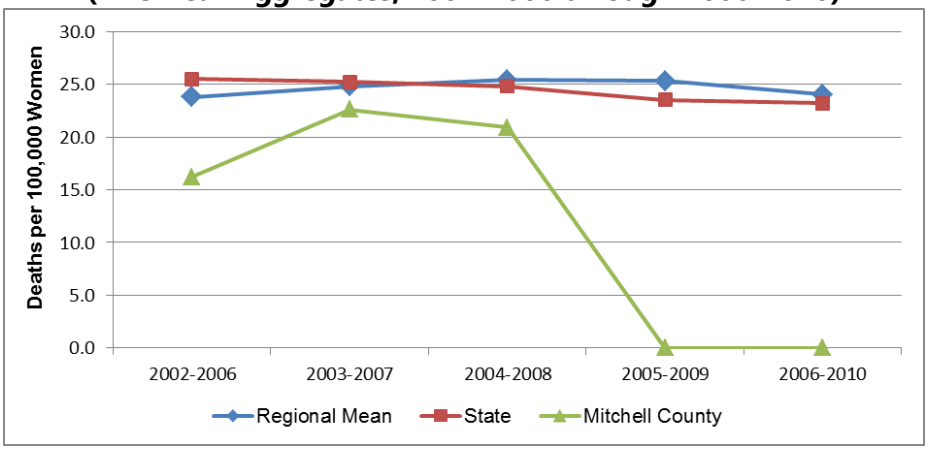


Breast Cancer Mortality

Breast cancer was not ranked as a cause of cancer death in Mitchell County in the 2006-2010 aggregate period due to a small number of deaths (n=18) and unstable rate. However, breast cancer is the second leading cause of cancer death in WNC (Table 30, cited previously). Data in Figure 14 plots breast cancer mortality rates for WNC and NC, as well as three unstable rates for Mitchell County. *Note that a "zero" rate for the county indicates that the NC SCHS did not release a county rate in that period due to a below-threshold number of deaths.* The three Mitchell County breast cancer mortality rates plotted in Figure 14 were below the comparable rates for WNC and NC. At the state level, the breast cancer mortality rate fell throughout the period cited, from a high of 25.5 deaths per 100,000 women in 2002-2006 to a low of 23.2 in 2006-

2010, a decrease of 9.0%. In WNC, the mean breast cancer mortality rate actually increased 6.7% from 23.8 in 2002-2006 to 25.4 in 2004-2008. Since then, the regional rate has reversed to a current breast cancer death rate of 24.0.

Figure 14. Breast Cancer Mortality Rate, Deaths per 100,000 Women (Five-Year Aggregates, 2002-2006 through 2006-2010)

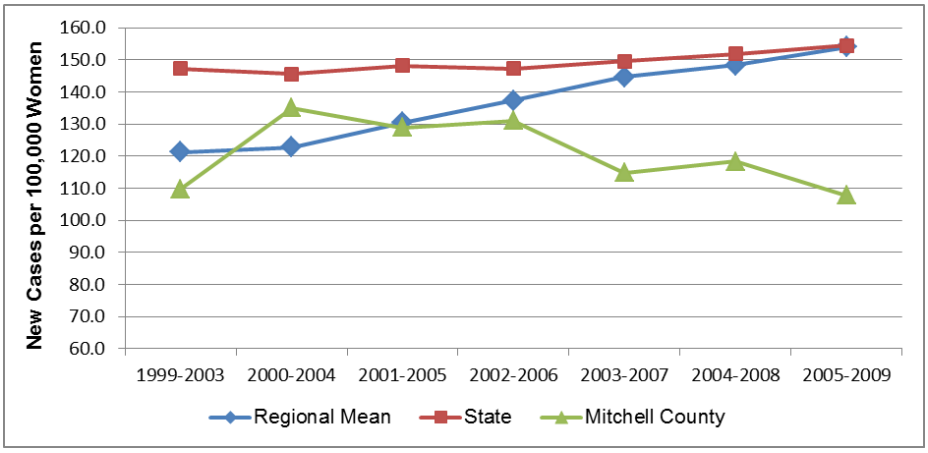


Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

In WNC, none of the 16 counties had large enough minority populations to yield stable breast cancer mortality rates for any minority group. At the state level, minority breast cancer mortality rates are higher than the non-minority rates. For example, statewide in 2006-2010 the breast cancer mortality rate among non-Hispanic African American women (30.7) was 40% higher than the comparable rate among non-Hispanic white women (21.9), and the rate among "Other" non-Hispanic women (11.7) was less than half the rate among non-Hispanic white women. The rate among Hispanic women (6.7) was far lower than the rate in any other population (*Data Workbook*).

Figure 15 demonstrates that the breast cancer incidence rate increased in WNC and NC over the past several years. In Mitchell County, the breast cancer incidence rate varied considerably, but was 1.8% lower in the 2005-2009 aggregate period (107.8) than in the 1999-2003 aggregate period (109.8). In WNC, the mean breast cancer incidence rate rose from 121.3 in the 1999-2003 aggregate period to 154.0 in the 2005-2009 aggregate period, an increase of 27.0%. At the state level, breast cancer incidence rate rose from 147.3 to 154.5 over the same period, an increase of approximately 5%.

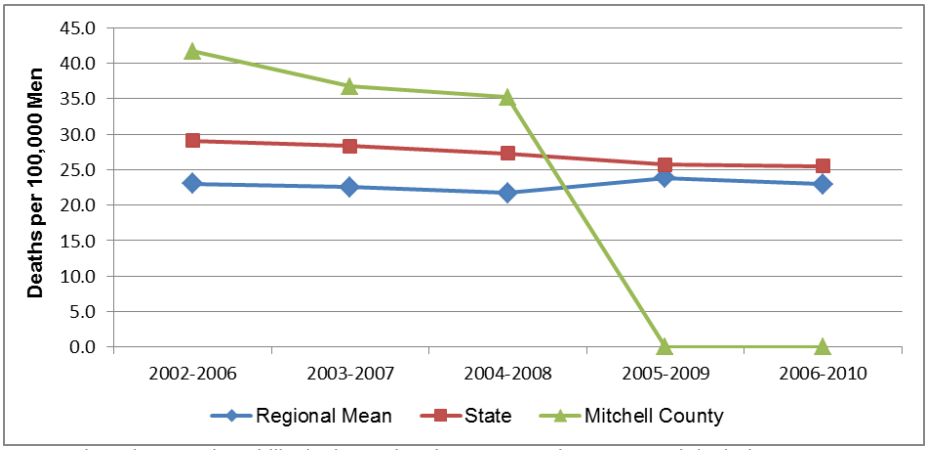
Figure 15. Breast Cancer Incidence, New Cases per 100,000 Women (Five-Year Aggregates, 1999-2003 through 2005-2009)



Prostate Cancer Mortality

Prostate cancer was not ranked as a cause of cancer death in Mitchell County in the 2006-2010 aggregate period due to a small number of deaths (n=16) and unstable rate. Region-wide, prostate cancer was the third largest cause of cancer deaths in that period (Table 30, cited previously). Deaths in Mitchell County attributable to prostate cancer in other periods (n=15-18 per five-year aggregate period) were too few to calculate stable mortality rates, so the county rates plotted in Figure 16 all are unstable (or were not released by NC SCHS, as signified by the "zero" rates). Statewide, prostate cancer mortality demonstrates a slight downward trend, with the 2006-2010 rate (25.5) approximately 12% lower than the comparable rate in 2002-2006 (29.1). In WNC, there was fluctuation but little net decrease in the mean prostate cancer mortality rate over the period cited in the graph (23.0 the first aggregate period; 22.9 the last aggregate period). The three rates plotted for Mitchell County were significantly higher than the comparable mean WNC or NC rates.

Figure 16. Prostate Cancer Mortality Rate, Deaths per 100,000 Men (Five-Year Aggregates, 2002-2006 through 2006-2010)

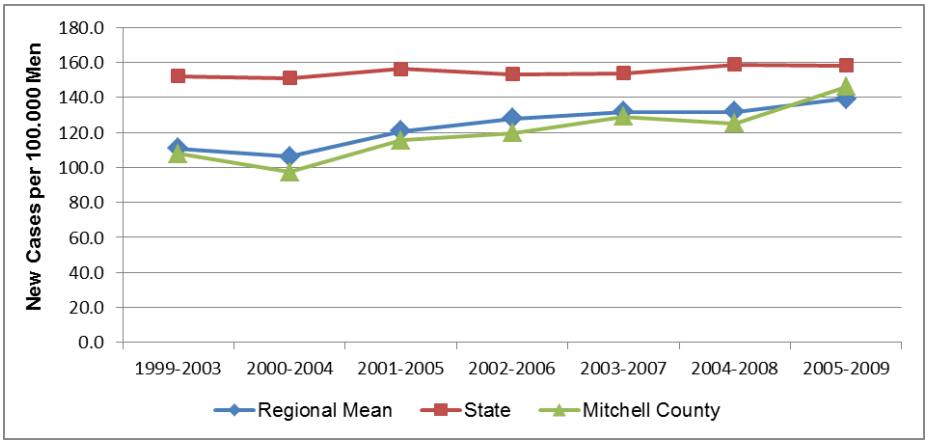


Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

In WNC, none of the 16 counties had large enough minority populations to yield stable prostate cancer mortality rates for any minority group. Statewide, there is a significant racial disparity in prostate cancer mortality. For 2006-2010 in NC as a whole the prostate cancer mortality rate among non-Hispanic African American males (59.4) was *three times* the rate for either non-Hispanic white males (20.4) or "Other" non-Hispanic males (18.2). The prostate cancer mortality rate for Hispanic males (9.5) was the lowest of any minority group in NC (*Data Workbook*).

Prostate cancer incidence statewide has remained relatively stable in recent years, increasing by 4.1%, from 152.0 to 158.3, in the period from 1999-2003 through 2005-2009 (Figure 17). Over the same span of time, the mean prostate cancer incidence rate in WNC rose from 110.7 new cases per 100,000 men in the 1999-2003 period to 139.2 in 2005-2009 period, a total increase of 25.7%, or over six times the percentage increase statewide. In Mitchell County, where the prostate cancer incidence rate was just below the mean WNC rate for most of the period cited, the rate rose from 107.7 to 146.0 over the same period, an overall increase of 35.6% that is almost nine times the percentage increase in NC.

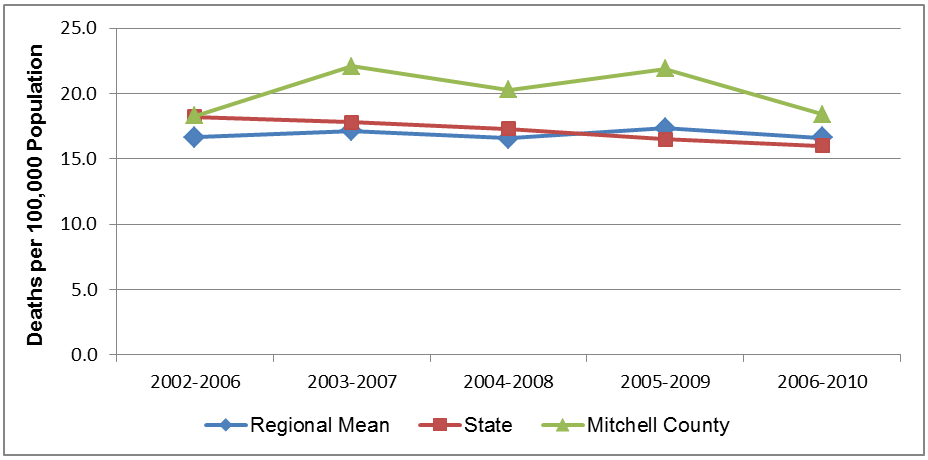
Figure 17. Prostate Cancer Incidence, New Cases per 100,000 Men (Five-Year Aggregates, 1999-2003 through 2005-2009)



Colorectal Cancer Mortality

In the 2006-2010 aggregate period cancer of the colon, rectum and anus (collectively "colorectal" cancer) caused the fourth largest mortality rate among the major site-specific cancers in WNC and NC, but the second largest mortality rate in Mitchell County (Table 30, cited previously). Figure 18 plots the colorectal cancer mortality rate trend for several aggregate periods. The colorectal cancer mortality rate in Mitchell County rose 0.5% overall, from 18.3 in the 2002-2006 aggregate period to 18.4 in the 2006-2010 aggregate period; however rates in the three intervening aggregate periods averaged around 21.4. The state colorectal cancer mortality rate fell steadily in recent years, from a high of 18.2 in the 2002-2006 period to a low of 16.0 in the 2006-2010 period, a rate decrease of 12.1%. In WNC, the mean colorectal cancer mortality rate fluctuated considerably, possibly due to a high proportion of unstable county rates, but was the same at the end of the period cited as at the beginning (16.6).

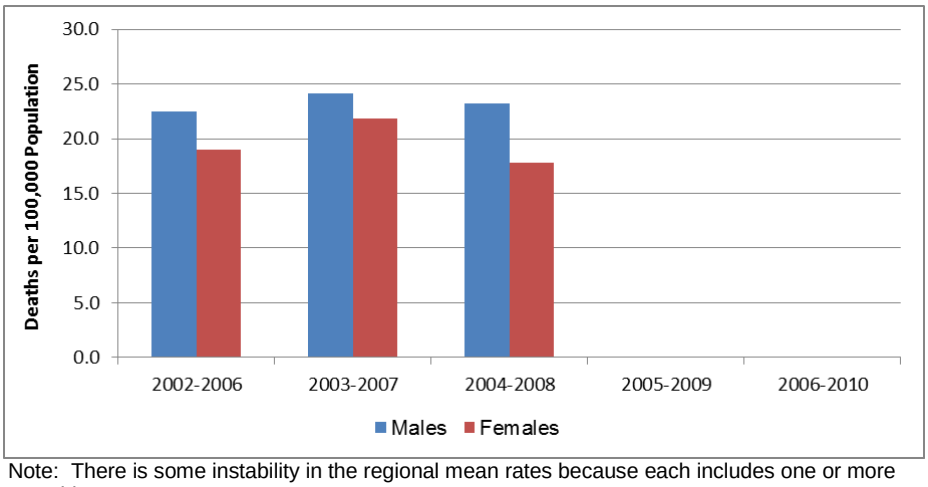
Figure 18. Colorectal Cancer Mortality Rate, Deaths per 100,000 Population (Five-Year Aggregates, 2002-2006 through 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

In Mitchell County there are too few colorectal cancer deaths stratified by gender to yield stable gender-based mortality rates, so all of the county rates shown in Figure 19 are technically unstable. The "missing" data in 2005-2009 and 2006-2010 indicates that NC SCHS did not release rates for those periods due to below-threshold numbers of deaths. From the limited colorectal cancer mortality rate available it appears that the colorectal cancer mortality rate for Mitchell County males was higher than the rate for females for three aggregate periods.

Figure 19. Gender Disparities in Colorectal Cancer Mortality, Mitchell County (Five-Year Aggregates, 2002-2006 through 2006-2010)



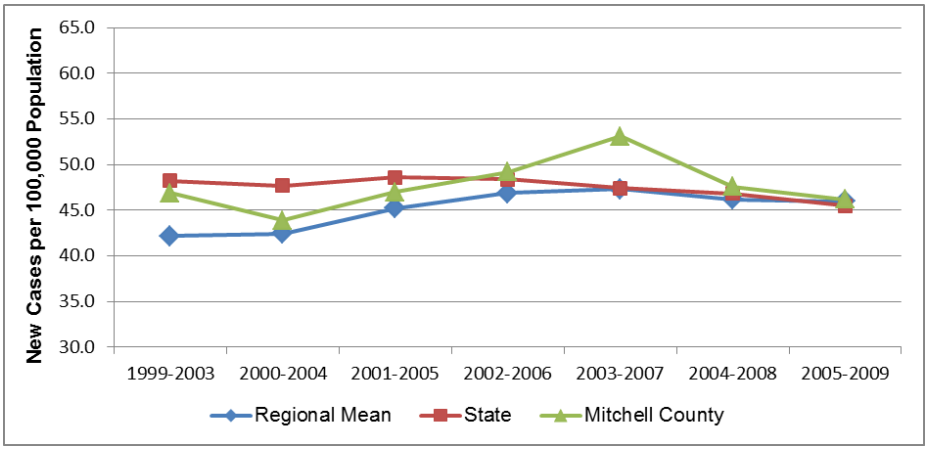
Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

In WNC, only one of the 16 counties (Buncombe) had large enough minority populations to yield stable colorectal cancer mortality rates for any minority group, so it is not possible to calculate stable mean region-wide colorectal cancer mortality rates for minorities. Statewide, colorectal cancer mortality rates demonstrate some racial disparities. In the 2006-2010 aggregate period, the colorectal cancer mortality rate among African American non-Hispanic males (29.0) was 58% higher than the comparable rate among white non-Hispanic males (18.4) and over three times the rate among other non-Hispanic males (9.0). Statewide in the same period the colorectal cancer mortality rate was 18.5 for African American non-Hispanic females, 12.4 for white non-Hispanic females, and 9.9 for other non-Hispanic females. Statewide, the colorectal cancer mortality rates were lowest for Hispanic males (7.4) and Hispanic females (5.4) (*Data Workbook*).

From data in Figure 20 it is apparent that the incidence rate for colorectal cancer in Mitchell County fluctuated over the full period cited, but was essentially the same in 2005-2009 as in 1999-2003 (46.2 vs. 46.9). The county colorectal cancer mortality rate shifted from between both the regional and state rates early in the period cited to above them in the lasts four aggregate periods. The mean WNC colorectal cancer incidence rate has been, until recently, following a different trend than the comparable state rate. In the 1999-2003 aggregate period, the mean colorectal cancer incidence rate in WNC (42.2) was 12% lower than the comparable

state rate (48.2). By the 2005-2009 aggregate period, the state colorectal cancer rate had fallen to 45.5 (a decrease of over 5%), but the mean WNC rate had risen to 46.0 (an increase of 9%).

Figure 20. Colorectal Cancer Incidence, New Cases per 100,000 Population (Five-Year Aggregates, 1999-2003 through 2005-2009)



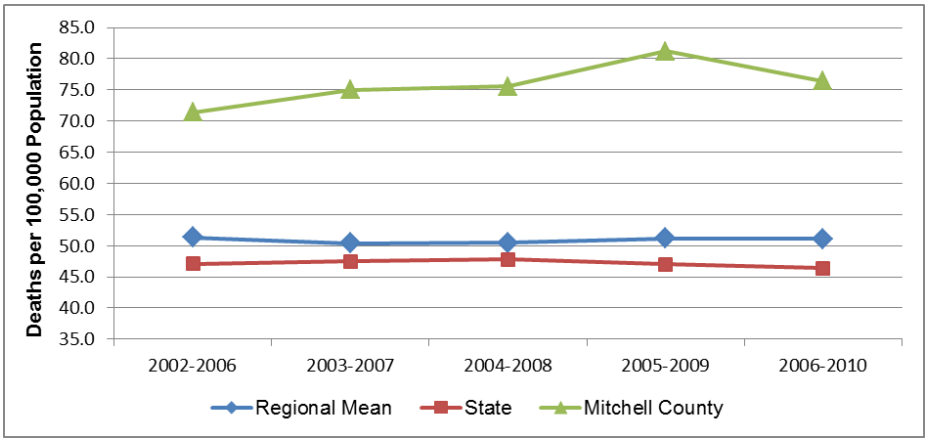
Chronic Lower Respiratory Disease (CLRD) Mortality

Chronic lower respiratory disease (CLRD) is composed of three major diseases, chronic bronchitis, emphysema, and asthma, all of which are characterized by shortness of breath caused by airway obstruction and sometimes lung tissue destruction. The obstruction is irreversible in chronic bronchitis and emphysema, reversible in asthma. Before 1999, CLRD was called chronic obstructive pulmonary disease (COPD). Some in the field still use the designation COPD, but limit it to mean chronic bronchitis and emphysema only. In the United States, tobacco use is a key factor in the development and progression of CLRD/COPD, but exposure to air pollutants in the home and workplace, genetic factors, and respiratory infections also play a role (West Virginia Health Statistics Center, 2006).

CLRD/COPD was the third leading cause of death in WNC and in Mitchell County for the 2006-2010 aggregate period (Table 28, cited previously).

Figure 21 plots CLRD mortality rates for five aggregate periods. The CLRD mortality rate in Mitchell County varied somewhat over the period cited, but was 7.0% higher at the end (76.4) than at the beginning (71.4). The county rate was approximately 50% higher than either the mean WNC rate or the rate statewide throughout the period cited. The mean WNC CLRD mortality rate ranged from 5% to 10% higher than NC rate throughout the period cited in Figure 21. Neither the NC nor the mean WNC CLRD mortality rates improved significantly over the period. In 2006-2010, CLRD mortality rates were 76.4 in Mitchell County, 46.4 in NC, and 51.1 in WNC.

Figure 21. CLRD Mortality Rate, Deaths per 100,000 Population (Five-Year Aggregates, 2002-2006 through 2006-2010)



In WNC, the mean CLRD mortality rate among males exceeded the comparable rate among females by from 33% to 49% over the past decade (*Data Workbook*). Gender-stratified CLRD mortality rates in Mitchell County show a similar pattern (Figure 22). Over the period cited, the CLRD mortality rates for males were 1.7 to 2.2 times the comparable rates for females. The rate for females appeared to increase over the period cites; the rate for males fell in the last aggregate period.

Figure 22. Gender Disparities in CLRD Mortality, Mitchell County (Five-Year Aggregates, 2002-2006 through 2006-2010)

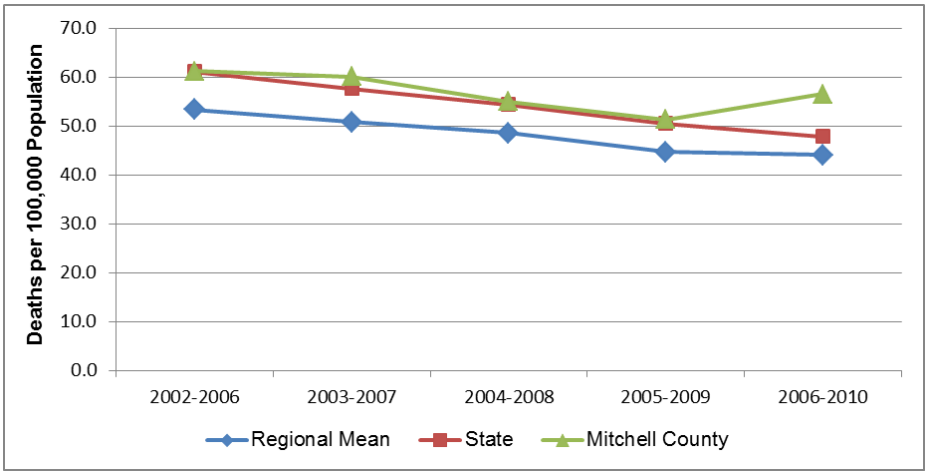
In WNC, only one of the 16 counties (Buncombe) had large enough minority populations to yield stable CLRD mortality rates for any minority group, so it is not possible to calculate a stable mean region-wide CLRD mortality rates for minorities. At the state level for the 2006-2010 aggregate period, the CLRD mortality rate was highest among non-Hispanic white males (58.7), followed by non-Hispanic white females (46.4), non-Hispanic African American males (45.1), Other non-Hispanic males (27.4), non-Hispanic females (21.1), and Other non-Hispanic females (15.6). CLRD mortality rates among Hispanic males and females are much lower (6.8 and 7.5, respectively) (*Data Workbook*).

Cerebrovascular Disease (Stroke) Mortality

Cerebrovascular disease describes the physiological conditions that lead to stroke. Strokes happen when blood flow to the brain stops and brain cells begin to die. There are two types of stroke. Ischemic stroke (the more common type) is caused by a blood clot that blocks or plugs a blood vessel in the brain. The other kind, called hemorrhagic stroke, is caused by a blood vessel that breaks and bleeds into the brain (US National Library of Medicine).

In the 2006-2010 aggregate period, cerebrovascular disease (stroke) was the fourth leading cause of death in WNC and in Mitchell County (Table 28, cited previously). Figure 23 plots stroke mortality rates for several aggregate periods. The stroke mortality rates for WNC and NC decreased over the period cited in the graph. The rate fell 17.4% in WNC (from 53.3 to 44.9) and 21.8% in NC (from 61.1 to 47.8). In Mitchell County the stroke mortality rate fell 16.2%, from 61.2 in 2002-2006 to 51.3 in 2005-2009, but rose in the last aggregate period, to 56.5.

Figure 23. Cerebrovascular Disease Mortality Rate, Deaths per 100,000 Population (Five-Year Aggregates, 2002-2006 through 2006-2010)



Stroke is one cause of death for which there is little gender disparity in the WNC region (*Data Workbook)*. The data in Figure 24 demonstrated a different pattern for gender-stratified stroke mortality rates in Mitchell County. Note, first, that the first three rates plotted for males were unstable; the missing data for 2005-2009 signifies that NC SCHS did not release a rate for males in that period due to a below-threshold number of deaths. Nevertheless, the stroke mortality rates among county females (all of them stable) were consistently higher than the plotted rates for males, including in 2006-2010, when both rates technically qualified as stable.

Figure 24. Gender Disparities in Cerebrovascular Disease Mortality, Mitchell County (Five-Year Aggregates, 2002-2006 through 2006-2010)

No county in WNC has large enough minority populations to yield stable cerebrovascular disease mortality rates for any minority group, so it is not possible to calculate stable mean region-wide cerebrovascular disease mortality rates for minorities. At the state level stroke mortality demonstrates a significant racial disparity. Statewide in the 2006-2010 aggregate period African American non-Hispanic males and females had the highest stroke mortality rates, 71.4 and 60.1, respectively. The comparable rate for non-Hispanic white males was 44.9, and the rate for non-Hispanic white females was 43.6, and the rate for other non-Hispanic males was 39.6 and the rate for other non-Hispanic females was 30.0. The Hispanic population had the lowest stroke mortality rates statewide over the same period, 13.1 among males and 15.2 among females (*Data Workbook*).

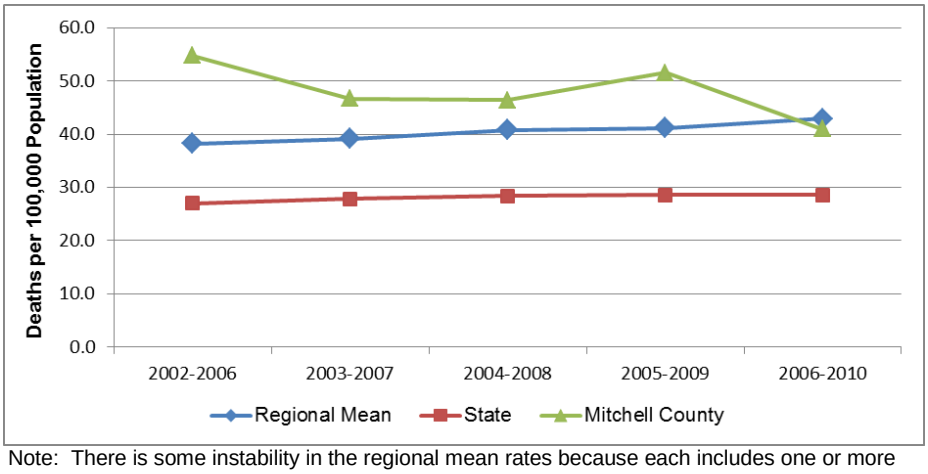
Non-Motor Vehicle Injury Mortality ("All Other Injuries Mortality")

Mortality due to injuries *not* involving motor vehicles was the fifth leading cause of death in WNC, but the fourth leading cause of death in Mitchell County, in the 2006-2010 aggregate period (Table 28, cited previously). This "all other injuries" category includes death without purposeful intent due to poisoning, falls, burns, choking, animal bites, drowning, and occupational or recreational injuries. (Death due to injury involving motor vehicles is a separate cause of death and will be covered subsequently.)

Figure 25 plots the trend in mortality due to all other injuries for five aggregate periods. The non-motor vehicle injury mortality rate in Mitchell County exceeded the comparable mean WNC and NC rates for every aggregate period cited except 2006-2010. The mean rate for WNC exceeded the comparable state rate by from 41% to 50%. While the state rate increased 5.9% (from 27.0 to 28.6) over the entire span cited, the mean WNC rate rose 12.3% from the first period (38.2) to the last (42.9). Over the same span, the comparable rate in Mitchell County

fluctuated, but was lower at the end of the period cited (41.0) than at the beginning (54.7) a decrease of 25.0%.

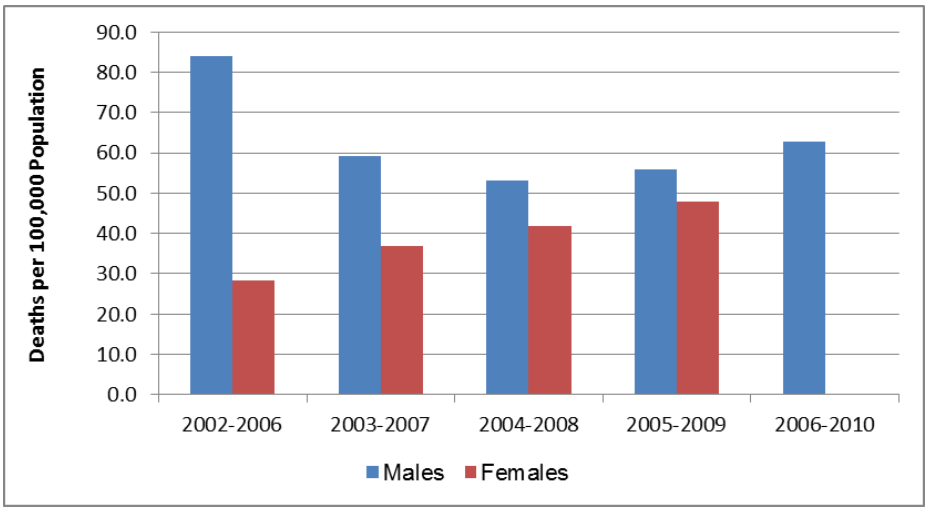
Figure 25. All Other Unintentional Injury Mortality Rate, Deaths per 100,000 Population (Five-Year Aggregates, 2002-2006 through 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

Non-motor vehicle injury mortality in Mitchell County appears to demonstrate a gender disparity (Figure 26). In each of the periods cited, the mortality rate for all other unintentional injuries among males was higher than the comparable rate among females. It must be noted, however, that all of the rates for females during the period cited were unstable or un-released except for the 2005-2009 data point.

Figure 26. Gender Disparities in All Other Unintentional Injury Mortality, Mitchell County (Five-Year Aggregates, 2002-2006 through 2006-2010)



In WNC, none of the 16 counties had large enough minority populations to yield stable all other injury mortality rates for any minority group, so it is not possible to calculate stable mean

region-wide rates for minorities. At the state level for 2006-2010, mortality rates attributable to non-motor vehicle injury are higher among males of each race/ethnicity than females. All other injury mortality rates are highest among non-Hispanic white males (42.2), non-Hispanic African American males (31.7), other non-Hispanic males (25.6) and Hispanic males (15.0). Comparable rates for females are 23.0 for non-Hispanic white females, 13.1 for non-Hispanic African American females, 12.5 for other non-Hispanic females, and 6.2 for Hispanic females (*Data Workbook*).

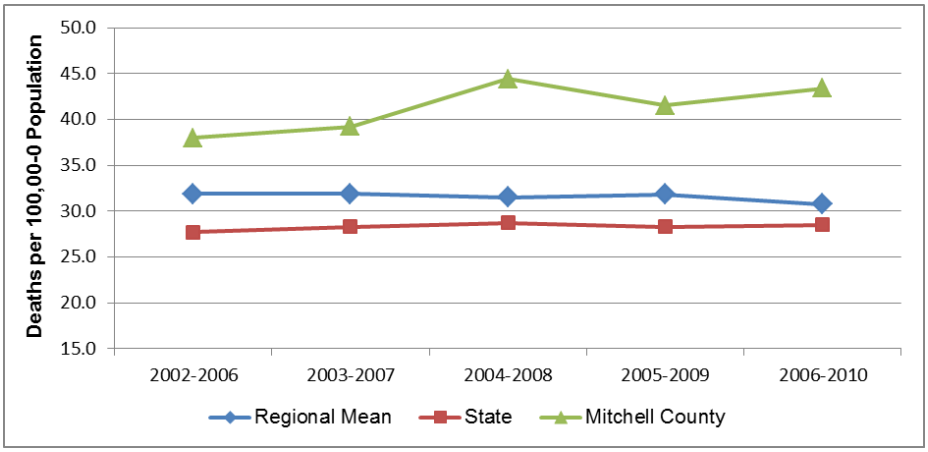
Alzheimer's Disease Mortality

Alzheimer's disease is a progressive neurodegenerative disease affecting mental abilities including memory, cognition and language. Alzheimer's disease is characterized by memory loss and dementia. The risk of developing Alzheimer's disease increases with age (e.g., almost half of those 85 years and older suffer from Alzheimer's disease). Early-onset Alzheimer's has been shown to be genetic in origin, but a relationship between genetics and the late-onset form of the disease has not been demonstrated. No other definitive causes have been identified (National Institute on Aging, 2012).

Alzheimer's disease was the sixth leading cause of death in Mitchell County and WNC for the aggregate period 2006-2010 (Table 28, cited previously).

Figure 27 plots Alzheimer's disease mortality rates over several aggregate periods. The Alzheimer's disease mortality rate in Mitchell County was above both the state and regional mortality rates for the entire period cited in the figure. While the mean WNC and NC Alzheimer's disease mortality rates appeared to remain static, the comparable county rate rose over the period cited, increasing 14.2% from 38.0 to 43.4. The mean Alzheimer's disease mortality rate in WNC was higher than the comparable state rate throughout the span of time cited in Figure 27, despite the fact that the data used were all age-adjusted. Note, however, that NC SCHS made the age-adjustment calculations on the basis of the 2000 US Census, and as we have seen, the "elderly" population in WNC has grown considerably since 2000. It should be noted that the difference between the WNC and NC rates may look different once the 2010 Census becomes the basis of the age adjustment. In the 2006-2010 aggregate period the Alzheimer's disease mortality rate was 43.4 in Mitchell County, 30.7 in WNC, and 28.5 in NC.

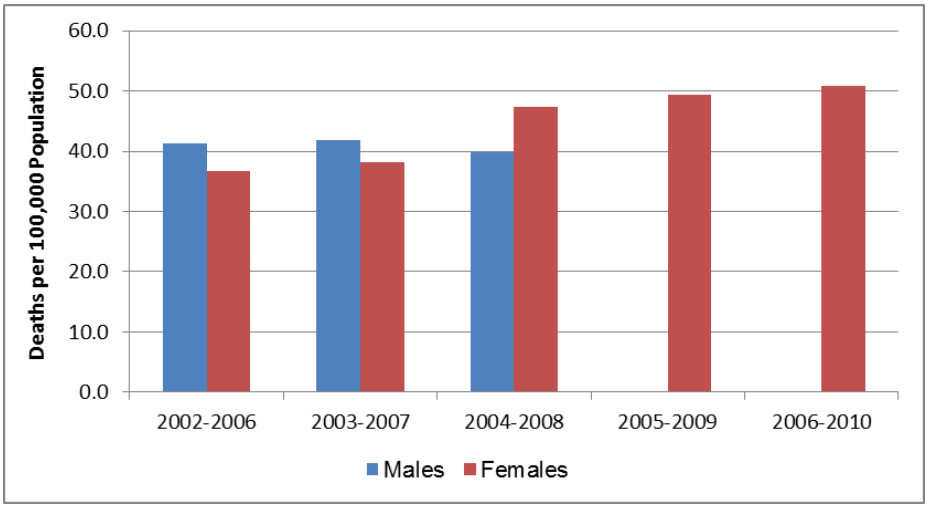
Figure 27. Alzheimer's Disease Mortality Rate, Deaths per 100,000 Population (Five-Year Aggregates, 2002-2006 through 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

Alzheimer's disease mortality has a strong gender component, with mortality rates traditionally much higher among women than among men. In WNC, for example, the mean Alzheimer's disease mortality rate among women was from 51% to 62% higher than the rate among men over the past decade (*Data Workbook*). Figure 28 plots gender-stratified data for Alzheimer's disease in Mitchell County. This data does *not* appear to demonstrate the strong gender difference noted at the regional level. It should be noted, however, that the county data plotted for males all is technically unstable; the "zero" rates for males in 2005-2009 and 2006-2010 signify that the NC SCHS did not release rates for males in those periods due to below-threshold numbers of deaths.

Figure 28. Gender Disparities in Alzheimer's Disease Mortality, Mitchell County (Five-Year Aggregates, 2002-2006 through 2006-2010)



In WNC, none of the 16 counties had large enough minority populations to yield stable Alzheimer's disease mortality rates for any minority group, so it is not possible to calculate

stable mean region-wide rates for minorities. Statewide, the disparity in Alzheimer's disease mortality may be more gender-based than race-based. In NC as a whole in the 2006-2010 aggregate period, the Alzheimer's disease mortality rate for white non-Hispanic females was 32.5, compared to 23.3 for white, non-Hispanic males; the rate for African American non-Hispanic females was 27.6 compared to 20.9 for African American non-Hispanic males; and the rate for Other non-Hispanic females was 21.1 compared to 17.3 for Other non-Hispanic males. The Alzheimer's disease mortality rate for Hispanic females was 9.7; due to a small number of events, the NC SCHS did not release a comparable rate for Hispanic males (*Data Workbook*).

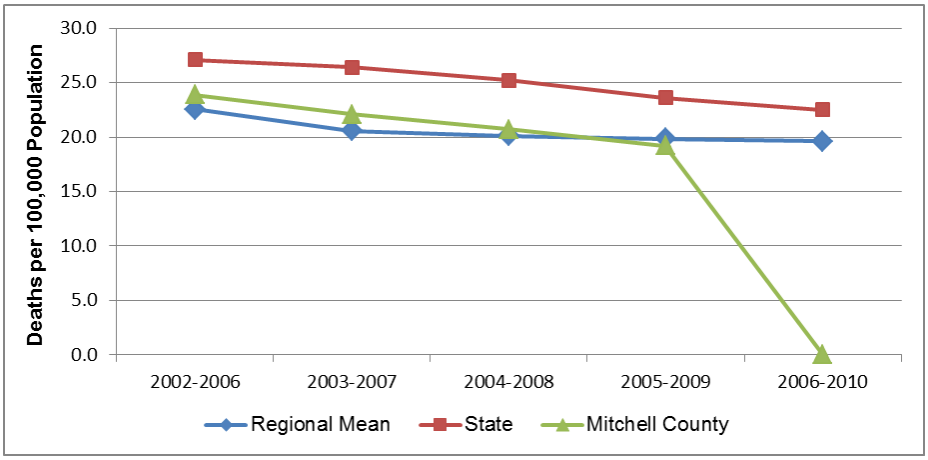
Diabetes Mellitus Mortality

Diabetes is a disease in which the body's blood glucose levels are too high due to problems with insulin production and/or utilization. Insulin is a hormone that helps the glucose get to cells where it is used to produce energy. With type 1 diabetes, the body does not make insulin. With type 2 diabetes, the more common type, the body does not make or use insulin well. Without enough insulin, glucose stays in the blood. Over time, having too much glucose in the blood can damage the eyes, kidneys, and nerves. Diabetes can also lead to heart disease, stroke and even the need to remove a limb (US National Library of Medicine).

Diabetes was the seventh leading cause of death in WNC but the eighth leading cause of death in Mitchell County in the 2006-2010 aggregate period (Table 28, cited previously).

Figure 29 plots trend data for diabetes mortality for several aggregate periods. According to data in Figure 29, the diabetes mortality rate in Mitchell County was below the NC rate and similar to the mean WNC rate for most of the period cited. In the 2006-2010 aggregate period the NC SCHS did not release a diabetes mortality rate for the county due to a below-threshold number of deaths (n=18); the other county rates plotted all were technically stable. Statewide, the diabetes mortality rate fell from 27.1 to 22.5 (17.0%) over the period cited in the figure. Region-wide, the mean diabetes mortality rate fell from 22.6 to 19.6 (13.3%) over the same period. The Mitchell County diabetes mortality rate fell 19.7% from 2002-2006 (23.9) to 2005-2009 (19.2).

Figure 29. Diabetes Mellitus Mortality Rate, Deaths per 100,000 Population (Five-Year Aggregates, 2002-2006 through 2006-2010)

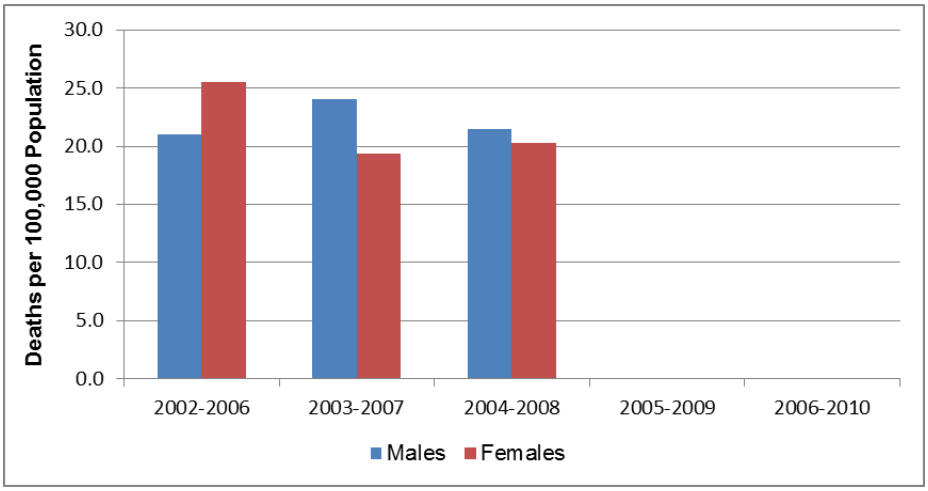


Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

From 2002-2006 through 2006-2010 all diabetes mortality rates stratified by gender in Mitchell County were unstable due to small numbers of events (n=8-16 deaths per aggregate period); the NC SCHS did not release gender-stratified county rates in the last two aggregate periods for the same reason. The limited data plotted in Figure 30 failed to demonstrate a clear gender difference.

It should be noted that in WNC diabetes mortality demonstrates a significant and changing gender disparity. In WNC the difference in diabetes mortality between men and women is widening, as the mean rate for males is increasing and the mean rate for females is decreasing. The diabetes mortality rate among WNC males rose from 23.8 to 29.6, an increase of 24.4% (*Data Workbook*).

Figure 30. Gender Disparities in Mean Diabetes Mellitus Mortality, Mitchell County (Five-Year Aggregates, 2002-2006 through 2004-2008)



In WNC, none of the 16 counties had large enough minority populations to yield stable diabetes mortality rates for any minority group, so it is not possible to calculate stable mean region-wide rates for minorities. Statewide, diabetes mortality demonstrates significant racial disparities. At the state level in the 2006-2010 aggregate period, the highest diabetes mortality rates were observed among African American non-Hispanic males and females, with rates of 51.3 and 42.5, respectively. The next highest rates occurred among other non-Hispanic persons, both male and female, with rates of 25.0 and 25.5, respectively. The diabetes mortality rate during this period for white non-Hispanics was 22.2 for males and 14.4 for females. The lowest diabetes mortality was observed in the Hispanic population, with a rate of 11.2 for men and 7.1 for women (*Data Workbook*).

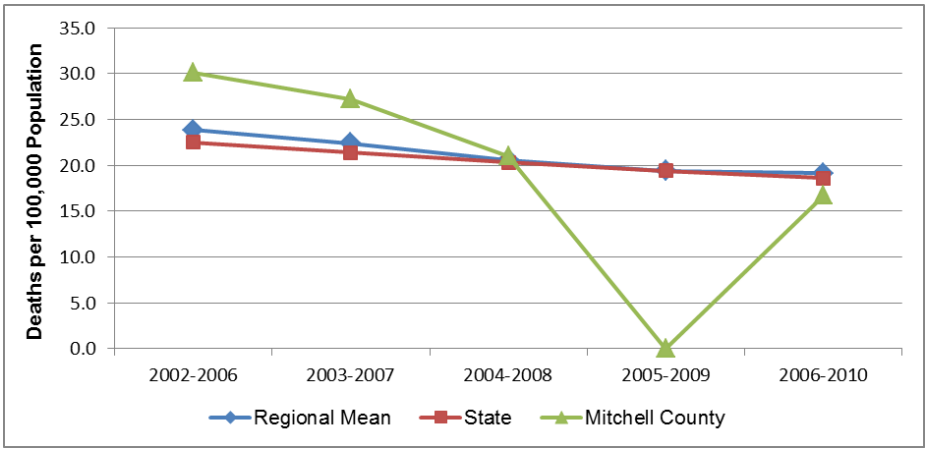
Pneumonia and Influenza Mortality

Pneumonia and influenza are diseases of the lungs. Pneumonia is an inflammation of the lungs caused by either bacteria or viruses. Bacterial pneumonia is the most common and serious form of pneumonia, and among individuals with suppressed immune systems, it may follow influenza or the common cold. Influenza (the "flu") is a contagious infection of the throat, mouth and lungs caused by an airborne virus (US National Library of Medicine).

The joint mortality category pneumonia and influenza was the eighth leading cause of death in WNC but the seventh leading cause of death in Mitchell County for the period 2006-2010 (Table 28, cited previously).

Figure 31 plots the mortality trend for pneumonia and influenza for several aggregate periods. From this data it is apparent that the mean pneumonia/influenza mortality rate in WNC closely paralleled the comparable NC rate throughout the period cited in the figure. Both the regional and state mortality rates for this cause of death decreased in the net over the period. The mean WNC rate decreased from 23.8 to 19.1 (19.7%) and the comparable NC rate decreased from 22.5 to 18.6 (17.3%). In Mitchell County, the pneumonia/influenza mortality rate fell 44.5%, from 30.1 (higher than both the mean WNC and NC rates) in 2002-2006, to 16.7 (lower than both the mean WNC and NC rates) in 2006-2010.

Figure 31. Pneumonia and Influenza Mortality Rate, Deaths per 100,000 Population (Five-Year Aggregates, 2002-2006 through 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

Figure 32 plots gender-stratified pneumonia/influenza mortality rates for Mitchell County. Note that due to small numbers of gender-stratified pneumonia/influenza deaths in the county (n=9-19 per five-year aggregate period) all plotted rates were unstable or were not released by NC SCHS. According to the limited data displayed in the figure, the pneumonia/influenza mortality rate among Mitchell County males was higher than the comparable rate among females in each period for which there was mortality data.

Figure 32. Gender Disparities in Pneumonia/Influenza Mortality, Mitchell County (Five-Year Aggregates, 2002-2006 through 2004-2008)

In WNC, none of the 16 counties had large enough minority populations to yield stable pneumonia/influenza mortality rates for any minority group, so it is not possible to calculate stable mean region-wide rates for minorities. At the state level pneumonia and influenza mortality rates demonstrate moderate racial disparities. Statewide in the 2006-2010 aggregate period the highest pneumonia/influenza mortality rate (24.1) occurred among African American

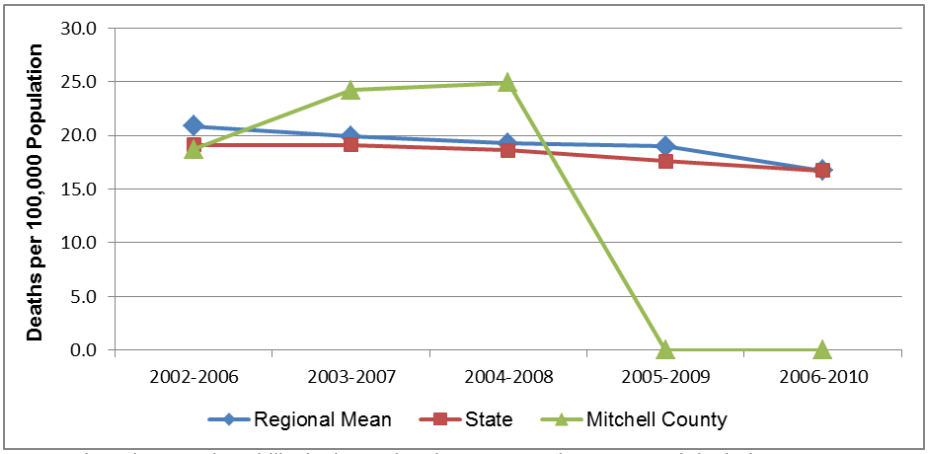
non-Hispanic males, followed in order by white non-Hispanic males (21.5), white non-Hispanic females (17.3), African American non-Hispanic females (15.8), other non-Hispanic males (11.1), and other non-Hispanic females (9.0). The Hispanic population, both male and female, experienced the lowest pneumonia and influenza mortality rates, 5.8 and 7.1, respectively (*Data Workbook*).

Unintentional Motor Vehicle Injury (UMVI) Mortality

Death due to injuries incurred in unintentional motor vehicle crashes was the ninth leading cause of death in WNC and in Mitchell County in the 2006-2010 aggregate period (Table 28, cited previously).

Figure 33 plots UMVI mortality rates over several aggregate periods. It should be noted that the first rate plotted for Mitchell County was unstable and that county rates were not released by NC SCHS in the last two aggregate periods due to below-threshold numbers of deaths. From the limited data presented it appears that the mortality rate attributable to UMVI in Mitchell County was higher than comparable WNC and NC rates in 2003-2007 and 2004-2008. The mean WNC rate was slightly higher than the comparable state rate for most of the time span cited in the table. In WNC, the UMVI mortality rate fell from 20.9 to 16.7 (20.1%) and in NC the rate fell from 19.1 to 16.7 (12.5%).

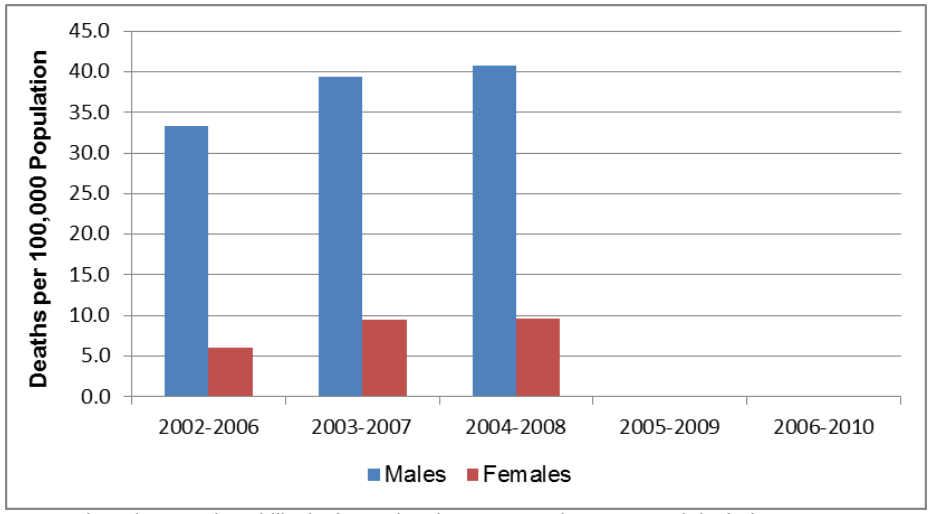
Figure 33. Unintentional Motor Vehicle Injury Mortality Rate
Deaths per 100,000 Population
(Five-Year Aggregates, 2002-2006 through 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

In Mitchell County deaths among males and females attributable to UMVI were too few (n=3-17 per aggregate period) to yield stable gender-stratified mortality rates. The unstable rates plotted in Figure 34 nevertheless did seem to indicate a mortality difference between Mitchell County men and women for three aggregate periods. From this limited data it is appears that UMVI mortality among Mitchell County males was several times greater than the comparable rate among county females.

Figure 34. Gender Disparities in Unintentional Motor Vehicle Injury Mortality
Mitchell County
(Five-Year Aggregates, 2002-2006 through 2004-2008)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

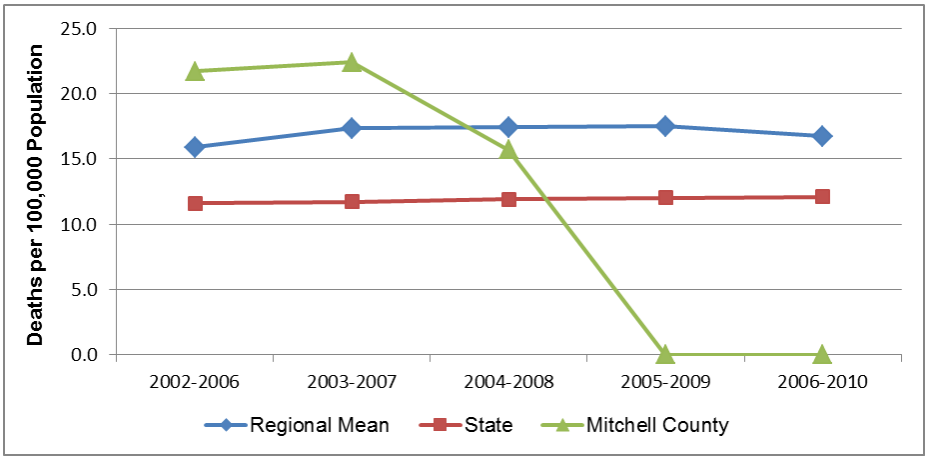
In WNC, none of the 16 counties had large enough minority populations to yield stable UMVI mortality rates for any minority group, so it is not possible to calculate stable mean region-wide rates for minorities. Statewide, disparities in UMVI mortality appear more gender-based than racially-based. At the state level in 2006-2010, the highest UMVI mortality rates all occurred among males with the following rates, in decreasing order: 27.1 for African American non-Hispanic males, 24.2 for non-Hispanic males of other races, and 23.6 for both white non-Hispanic males and Hispanic males. Among women statewide the highest rates were noted among non-Hispanic females of other races (10.4), followed by white non-Hispanic females (9.9), African American non-Hispanic females (7.9) and Hispanic females (7.3) (*Data Workbook*).

Suicide Mortality

Suicide was the tenth leading cause of death in WNC and the twelfth leading cause of death in Mitchell County for the 2006-2010 aggregate period (Table 28, cited previously).

Figure 35 plots suicide mortality rates for several aggregate periods. The mean suicide mortality rate in WNC ranged from 37% to 48% higher than the state rate over the period cited in Figure 35. The suicide mortality rates in WNC and NC changed little over the period cited. The suicide mortality rates plotted for Mitchell County all were unstable (or not released by NC SCHS, as signified by "zero") due to below-threshold numbers of suicide deaths (n=7-18 per five-year aggregate period). Two of the three rates plotted for the county were above both the WNC and NC rates.

Figure 35. Suicide Mortality Rate, Deaths per 100,000 Population (Five-Year Aggregates, 2002-2006 through 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

Suicide mortality in Mitchell County demonstrates a very pronounced gender disparity. From data in Figure 36 it is apparent that the suicide mortality rate for men was several times higher than the rate for women over the span of years cited. Although there is instability in all three data points for both males females (and NC SCHS did not release gender-stratified mortality rates for the remainder of the periods cited in the figure), the gender difference remained very large over time.

Figure 36. Gender Disparities in Suicide Mortality, Mitchell County (Five-Year Aggregates, 2002-2006 through 2004-2008)

In WNC, none of the 16 counties had large enough minority populations to yield stable suicide mortality rates for any minority group, so it is not possible to calculate stable mean region-wide rates for minorities. At the state level, suicide mortality demonstrates a racial disparity as well as a gender disparity. Statewide in the 2006-2010 aggregate period the highest suicide mortality rates occurred among white non-Hispanic males (23.9) followed by other non-Hispanic males

(10.8), African American non-Hispanic males (8.6) and Hispanic males (7.4). Among females, the highest suicide mortality rates occurred among white non-Hispanic females (6.7) followed by other non-Hispanic females (4.7), Hispanic females (1.7) and African American non-Hispanic females (1.5) (*Data Workbook*).

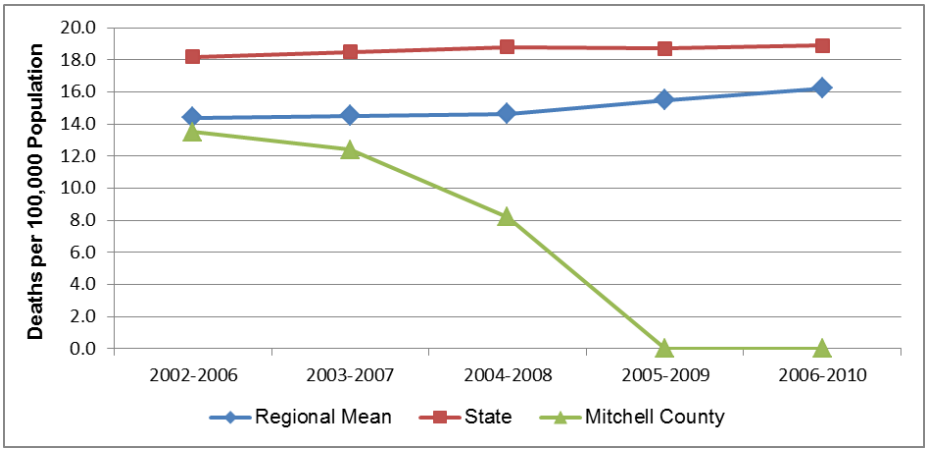
Nephritis, Nephrotic Syndrome and Nephrosis (Kidney Disease) Mortality

Nephritis refers to inflammation of the kidney, which causes impaired kidney function. Nephritis can be due to a variety of causes, including kidney disease, autoimmune disease, and infection. *Nephrotic syndrome* refers to a group of symptoms that include protein in the urine, low blood protein levels, high cholesterol levels, high triglyceride levels, and swelling. *Nephrosis* refers to any degenerative disease of the kidney tubules, the tiny canals that make up much of the substance of the kidney. Nephrosis can be caused by kidney disease, or it may be a complication of another disorder, particularly diabetes (MedineNet.com, March 2012; PubMed Health, 2011).

This set of kidney disorders was the eleventh leading cause of death in WNC but the tenth leading cause of death in Mitchell County for the 2006-2010 aggregate period (Table 28, cited previously).

Figure 37 plots kidney disease mortality over several aggregate periods. This data reveals that the mean kidney disease mortality rate in WNC was below the comparable figure for NC as a whole. Note that the first three county data points were unstable, and the final two data points for the county were plotted as "zero" to signify that the NC SCHS did not release Mitchell County rates for those periods due to small numbers of deaths. Between the 2002-2006 aggregate period and the 2006-2010 aggregate period the mean regional rate climbed from 14.4 to 16.2 (12.5%). Over the same time span the NC rate increased slightly, from 18.2 to 18.9 (3.8%). The three rates plotted for Mitchell County all were below the comparable mean WNC and NC rates.

Figure 37. Kidney Disease Mortality Rate, Deaths per 100,000 Population (Five-Year Aggregates, 2002-2006 through 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

Gender-stratified kidney disease mortality rates for Mitchell County are unstable due to small numbers of events (n=4-9 stratified deaths per five-year aggregate period). According to the limited county data presented in Figure 38, the mean kidney disease mortality rate among men in Mitchell County was higher than the comparable rate among women for the periods cited.

Figure 38. Gender Disparities in Kidney Disease Mortality, Mitchell County (Five-Year Aggregates, 2002-2006 through 2004-2008)

In WNC, none of the 16 counties has large enough minority populations to yield stable kidney disease mortality rates for any minority group, so it is not possible to calculate stable mean region-wide rates for minorities. Statewide for 2006-2010 kidney disease mortality rates demonstrate both racial and gender disparities. Men of all racial groups suffer kidney disease mortality at rates higher than their female counterparts in the same racial group, and non-Hispanic African Americans of either gender have the highest kidney disease mortality rates among their gender group. For instance, kidney disease mortality among non-Hispanic African

American males in this period was 42.4, compared to 19.7 among non-Hispanic white males, 18.0 among other non-Hispanic males, and 7.1 among Hispanic males. Similarly, the kidney disease mortality rate among non-Hispanic African American females was 34.6, followed by 15.3 among other non-Hispanic females, 12.5 among non-Hispanic white females, and 5.4 among Hispanic females (*Data Workbook*).

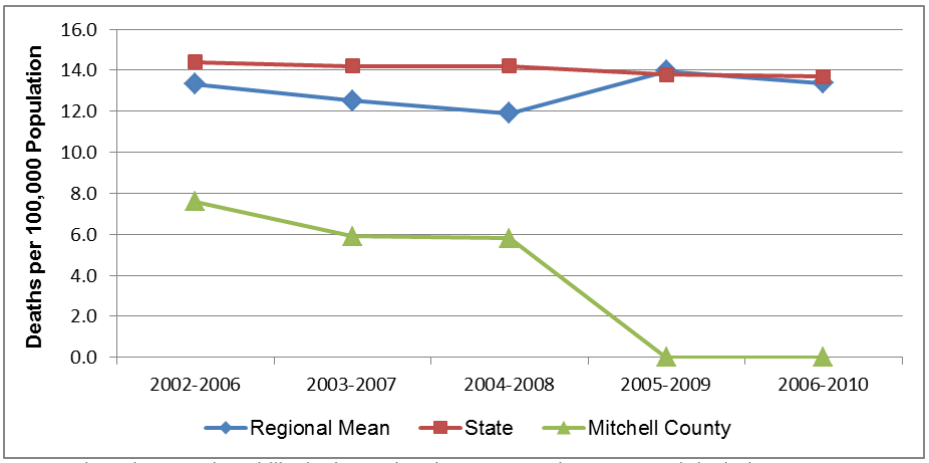
Septicemia Mortality

Septicemia is a rapidly progressing infection resulting from the presence of bacteria in the blood. The disease often arises from other infections throughout the body, such as meningitis, burns, and wound infections. Septicemia can lead to septic shock in which case low blood pressure and low blood flow cause organ failure (US National Library of Medicine). While septicemia can be community-acquired, some cases are acquired by patients hospitalized initially for other conditions; these are referred to as nosocomial infections. Sepsis is now a preferred term for septicemia, but NC SCHS continues to use the older term.

Septicemia was the twelfth leading cause of death in WNC and the eleventh leading cause of death in Mitchell County for the aggregate period 2006-2010 (Table 28, cited previously).

Figure 39 plots septicemia morality data for several aggregate periods. This data shows that the mean WNC septicemia mortality rate fluctuated over the period cited, while the state rate decreased 4.9%, from 14.1 to 13.7. Fluctuation at the WNC-level may be attributed partly to unstable regional mean rates. In Mitchell County, the septicemia mortality rate, which was unstable and based on small numbers of deaths (n=7-9 per aggregate period), was lower than both the comparable mean WNC and NC rates. Note that the NC SCHS did not release county rates for the last two aggregate periods, as signified by "zero" in the graph.

Figure 39. Septicemia Mortality Rate, Deaths per 100,000 Population (Five-Year Aggregates, 2002-2006 through 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

Gender-stratified septicemia mortality rates for Mitchell County during the target period were unstable or not released by NC SCHS due to small numbers of deaths (n=0-7 per gender per five-year aggregate period), but the limited data presented in Figure 40 tend to indicate much higher septicemia mortality among women than men in Mitchell County.

Figure 40. Gender Disparities in Septicemia Mortality, Mitchell County (Five-Year Aggregates, 2002-2006 through 2004-2008)

Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

In WNC, none of the 16 counties has large enough minority populations to yield stable septicemia mortality rates for any minority group, so it is not possible to calculate stable mean region-wide rates for minorities. At the state level, where the calculation of stable septicemia mortality rates is possible, mortality is highest among African American non-Hispanics, both male and female. Statewide the septicemia mortality rate for African American non-Hispanic males in the 2002-2010 aggregate period was 23.7; for females of the same population group the rate was 18.8. For white non-Hispanic males the comparable rate was 13.7; for white non-Hispanic females the rate was 11.5. Among other non-Hispanic males the septicemia mortality rate was 10.6; among other non-Hispanic females the rate was 7.6. The lowest septicemia mortality rates occurred among Hispanics; for males the rate was 5.3, and for females, 4.9 (*Data Workbook*).

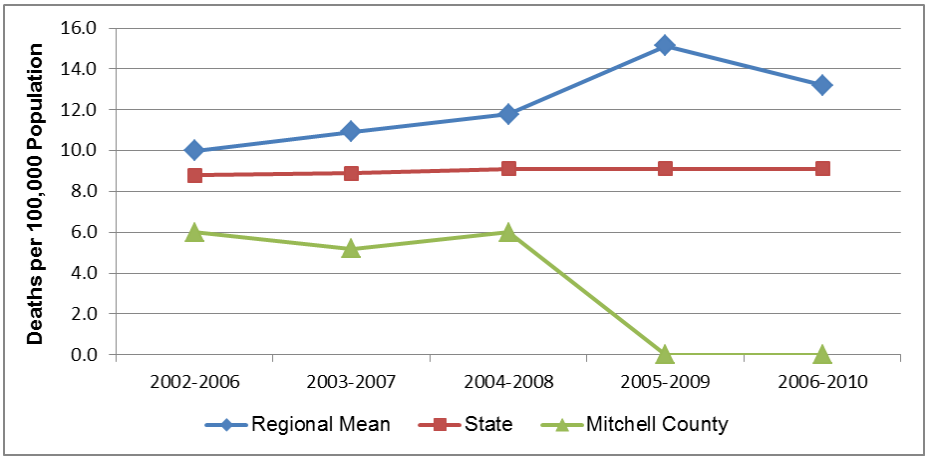
Chronic Liver Disease and Cirrhosis Mortality

Chronic liver disease describes an ongoing disturbance of liver function that causes illness. Liver disease, also referred to as hepatic disease, is a broad term that covers all the potential problems that cause the liver to fail to perform its designated functions. Usually, more than 75% or three quarters of liver tissue needs to be affected before decrease in function occurs. Cirrhosis is a term that describes permanent scarring of the liver. In cirrhosis, the normal liver cells are replaced by scar tissue that cannot perform any liver function (MedicineNet.com, June 2012).

Chronic liver disease and cirrhosis was the thirteenth leading cause of death in WNC and Mitchell County in the 2006-2010 aggregate period (Table 28, cited previously).

Figure 41 plots mortality data for liver disease over several aggregate periods. This data shows that the mean WNC liver disease mortality rate exceeded the state rate throughout the period cited. In WNC, the mean chronic liver disease mortality rate rose from 10.0 for 2002-2006 to 13.2 for 2006-2010, an increase of 32%. Throughout this period the state rate was static at or near 9.1. In Mitchell County, all the rates plotted in the graph are unstable or "zero" because the NC SCHS did not release rates. From this limited data it would appear that the liver disease mortality in the county was below both the comparable mean WNC and NC rates for the period cited in the figure.

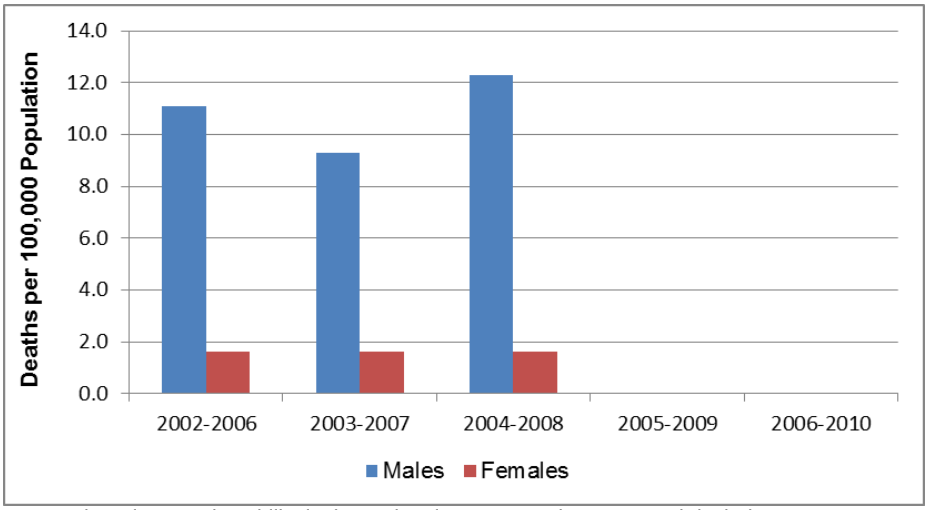
Figure 41. Chronic Liver Disease and Cirrhosis Mortality Rate
Deaths per 100,000 Population
(Five-Year Aggregates, 2002-2006 through 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

Gender-stratified chronic liver disease and cirrhosis mortality rates for Mitchell County in the target period were unstable due to small numbers of stratified deaths (n=1-6 per five-year aggregate period). The limited data presented in Figure 42 would appear to indicate that the liver disease mortality rate among men in the county was significantly higher than comparable rates among women.

Figure 42. Gender Disparities in Chronic Liver Disease and Cirrhosis Mortality
Mitchell County
(Five-Year Aggregates, 2002-2006 through 2004-2008)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

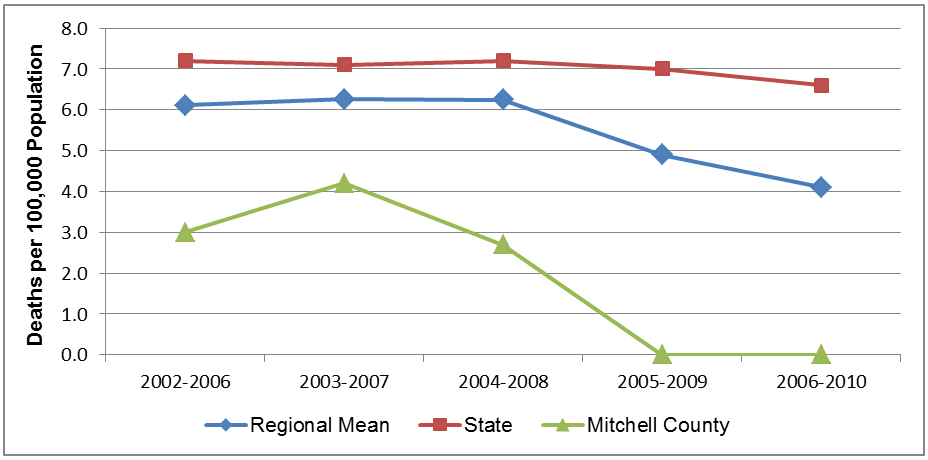
In WNC, none of the 16 counties had large enough minority populations to yield stable chronic liver disease/cirrhosis mortality rates for any minority group, so it is not possible to calculate stable mean region-wide rates for minorities. At the state level, liver disease mortality rates demonstrate some differences among racial groups but a consistent trend of higher mortality rates among men than women. For example, the liver disease mortality rate is highest among white non-Hispanic men (13.8), followed by African American non-Hispanic men (11.2). The liver disease mortality rates among other non-Hispanic men was 7.5, and the rate among Hispanic men was 6.8. Liver disease mortality rates among females were highest for white non-Hispanic women (6.0), followed by other non-Hispanic women (5.2), and African American women non-Hispanic women (5.1). There were too few liver disease deaths among Hispanic women statewide to calculate a stable rate (*Data Workbook*).

Homicide Mortality

Death by homicide was the fourteenth leading cause of death in WNC and Mitchell County for the 2006-2010 aggregate period (Table 28, cited previously).

Figure 43 plots homicide mortality rate trends. In Mitchell County there were too few deaths attributable to homicide (2-3 per five-year aggregate period) to calculate any stable rates, and NC SCHS did not release county mortality rates for homicide in the last two aggregate periods. From this data it is apparent that mean homicide mortality rates in WNC are lower than comparable rates for NC as a whole. This observation would appear to be in concert with earlier data reporting lower rates of violent crime in WNC than in NC. The mean homicide mortality rate in WNC for the 2006-2010 aggregate period was 4.1; the comparable rate for NC was 6.6. The three homicide rates plotted for Mitchell County, although unstable, were well below the comparable rates for WNC or NC.

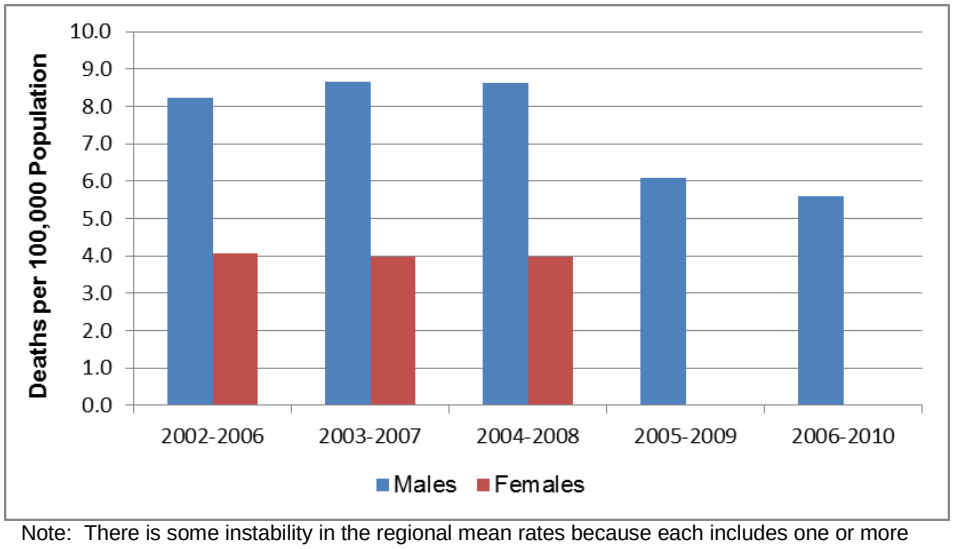
Figure 43. Homicide Mortality Rate, Deaths per 100,000 Population (Five-Year Aggregates, 2002-2006 through 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

There are no stable gender-stratified homicide mortality rates in Mitchell County. According to data presented in Figure 44, the mean homicide mortality rate among WNC males is approximately twice the mean rate among WNC females. In the 2006-2010 aggregate period the mean homicide rate among WNC males was 6.6; it was not possible to calculate a stable meaningful homicide rate for WNC females in that period.

Figure 44. Gender Disparities in Mean Homicide Mortality, WNC (Five-Year Aggregates, 2002-2006 through 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

In WNC, none of the 16 counties has large enough minority populations to yield stable homicide mortality rates for any minority group, so it is not possible to calculate stable mean region-wide rates for minorities. At the state level homicide mortality demonstrates strong racial and gender disparities. In NC for the 2006-2010 aggregate period the highest homicide mortality rates were

among African American non-Hispanic males (25.6), and Hispanic males and other non-Hispanic males (13.0). The next highest homicide mortality rate occurred among African American non-Hispanic females (5.2), followed by white, non-Hispanic males (4.6), other non-Hispanic females (3.4), Hispanic females (2.6), and white non-Hispanic females (2.2) (*Data Workbook*).

Acquired Immune Deficiency Syndrome (AIDS) Mortality

The human immunodeficiency virus (HIV) is the virus that causes AIDS. HIV attacks the immune system by destroying CD4 positive (CD4+) T cells, a type of white blood cell that is vital to fighting off infection. The destruction of these cells leaves people infected with HIV vulnerable to other infections, diseases and other complications. The acquired immunodeficiency syndrome (AIDS) is the final stage of HIV infection. A person infected with HIV is diagnosed with AIDS when he or she has one or more opportunistic infections, such as pneumonia or tuberculosis, and has a dangerously low number of CD4+ T cells (less than 200 cells per cubic millimeter of blood) (National Institutes of Health, 2012).

AIDS was the fifteenth leading cause of death in WNC for the aggregate period 2006-2010 (Table 28, cited previously). In Mitchell County there was only one death attributable to AIDS in the period from 2002-2006 through 2006-2010.

Because of small numbers of AIDS deaths across WNC, AIDS mortality rates are unstable or non-existent in 15 of the 16 counties in the region. A stable rate is available only for Buncombe County; hence it is not possible to plot stable regional AIDS mortality data.

Even at the state level it is not possible to calculate a stable AIDS mortality rate for several minority population groups. Using the stable NC rates available, it is apparent that non-Hispanic African Americans suffered mortality attributable to AIDS at rates much higher than did other groups. For example, in the 2006-2010 aggregate period, the AIDS mortality rate for African American non-Hispanic men (20.2) was almost 12 times the rate among white non-Hispanic men (1.7), and the rate among African American non-Hispanic women (9.8) was almost 25 times the rate among white non-Hispanic women (0.4). The AIDS mortality rate among Hispanic men statewide during this period was 4.1; rates were not released for any other minority group because of below-threshold numbers of AIDS deaths (*Data Workbook*).

Life Expectancy

Life expectancy is the average number of additional years that someone at a given age would be expected to live if current mortality conditions remained constant throughout their lifetime. As the above data has demonstrated, there are many factors, from the prenatal period through the senior years, which can affect life expectancy. Table 32 presents a fairly recent summary of life expectancy for Mitchell County, WNC, and NC as a whole. From this data it appears that females born in Mitchell County in the period cited could expect to live 8.3 years longer than males born at the same time. Similarly, females born in WNC in the period cited in the table

could expect to live 5.5 years longer on average than males born under the same parameters. African Americans born in Mitchell County at the same time could expect to live a 4.3 years shorter lifespan than their white counterparts. African Americans born in WNC at the same time could expect to live a 3.3 years shorter lifespan than their white counterparts. Life expectancy overall in Mitchell County (77.5) is 0.5 years longer than life expectancy in WNC (77.0 years), and 0.2 years longer than life expectancy in the state as a whole (77.3 years).

Table 32. Life Expectancy at Birth (2006-2008)

Geography	Overall	Gender		Race	
		Male	Female	White	African American
Mitchell County	77.5	73.4	81.7	77.9	73.7
Regional Arithmetic Mean	77.0	74.3	79.8	77.3	74.0
State Total	77.3	74.5	80.0	78.1	73.8

Morbidity Data

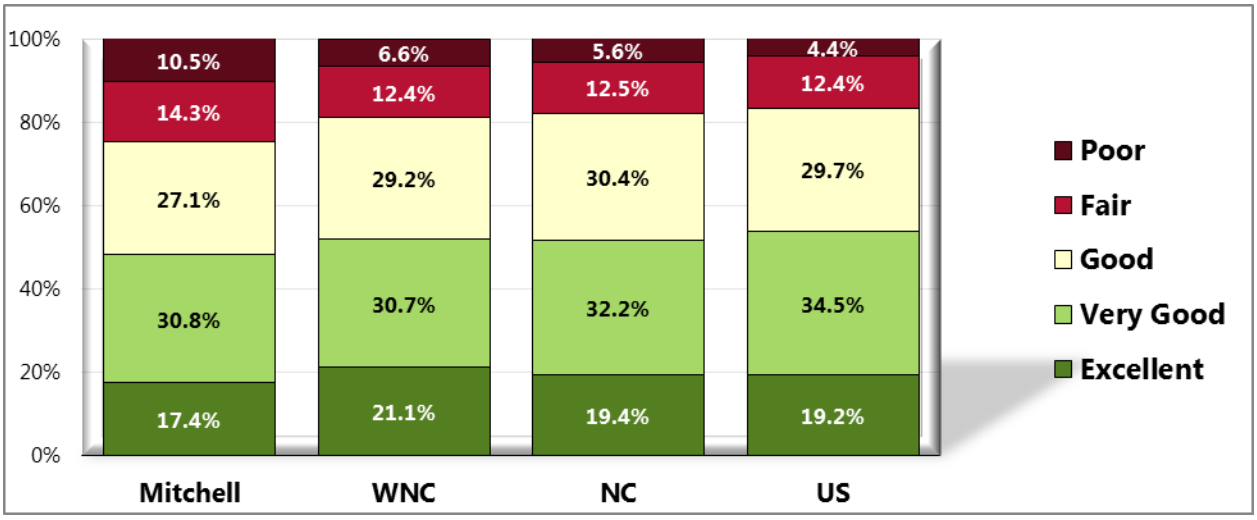
Morbidity as used in this report refers generally to the current presence of injury, sickness or disease (and sometimes the symptoms and/or disability resulting from those conditions) in the living population. In this report disability, diabetes, obesity, injury, communicable disease (including sexually-transmitted infections) and mental health conditions are the topics covered under morbidity.

The parameter most frequently used to describe the current extent of any condition of morbidity in a population is *prevalence*. Prevalence is the number of existing cases of a disease or health condition in a population at a defined point in time or during a period. Prevalence usually is expressed as a proportion, not a rate, and often represents an estimate rather than a direct count.

Self-Reported Health Status

Survey respondents were asked, "Would you say that in general your health is excellent, very good, good, fair, or poor?"

Figure 45. Self-Reported Health Status (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 12]
Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2010 North Carolina data.
2011 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: Asked of all respondents.

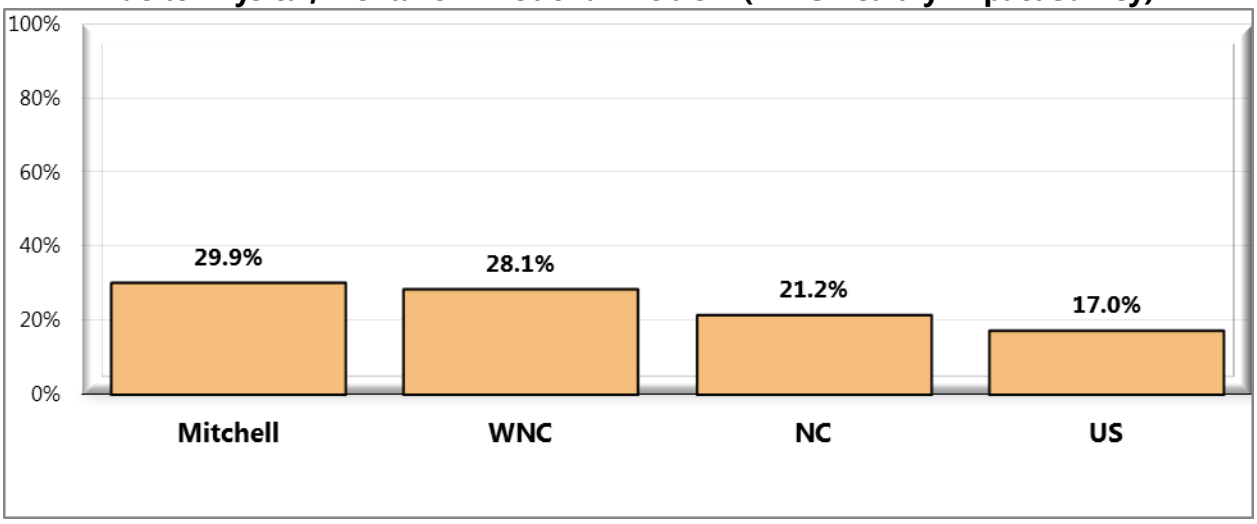
Disability and Limitations in Physical Activity

An individual can get a disabling impairment or chronic condition at any point in life. Compared with people without disabilities, people with disabilities are more likely to (DHHS, 2010):

- Experience difficulties or delays in getting the health care they need.
- Not have had an annual dental visit.
- Not have had a mammogram in past 2 years.
- Not have had a Pap test within the past 3 years.
- Not engage in fitness activities.
- Use tobacco.
- Be overweight or obese.
- Have high blood pressure.
- Experience symptoms of psychological distress.
- Receive less social-emotional support.
- Have lower employment rates.

Survey respondents were asked, "Are you limited in any way in any activities because of physical, mental or emotional problems?" Those who responded, "yes," were then asked to name the major impairment or health problem that limits them. Due to small county-level sample sizes, only regional data is shown for the latter question.

Figure 46. Limited in Activities in Some Way Due to Physical, Mental or Emotional Problem (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 67]
Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2010 North Carolina data.
2011 PRC National Health Survey, Professional Research Consultants, Inc.
Notes: Asked of all respondents

Table 33. Type of Problem That Limits Activities (WNC Healthy Impact Survey)
(Among Those Reporting Activity Limitations)
(Western North Carolina, 2012)

	Arthritis/ Rheumatism	Back/Neck Problem	Difficulty Walking	Fracture/Bone/ Joint Injury	Heart Problem	Lung/Breathing Problem	Mental/ Depression	Other (<3%)
Mitchell	17.6%	23.4%	7.8%	3.6%	0.0%	8.3%	0.0%	39.3%

Diabetes

Table 34 presents trend data from the US Centers for Disease Control and Prevention (CDC) on the estimated prevalence of diagnosed diabetes in Mitchell County and WNC. The prevalence of diagnosed diabetes and selected risk factors by county was estimated using data from CDC's Behavioral Risk Factor Surveillance System (BRFSS) and data from the U.S. Census Bureau's Population Estimates Program. Three years of data were used to improve the precision of the year-specific county-level estimates of diagnosed diabetes and selected risk factors.

From these data it appears that the estimated prevalence of diagnosed diabetes among adults in Mitchell County varied considerably from year to year (which is not unexpected with survey data from a small county) but was the same in 2009 as in 2005, 9.0%. In WNC the estimated mean percent prevalence of diagnosed diabetes among adults rose from 8.5% in 2005 to 9.0% in 2009, an increase of 5.9%.

Table 34. Estimate of Diagnosed Diabetes Among Adults Age 20 and Older (2005-2009)

Geography	2005		2006		2007		2008		2009	
	#	%	#	%	#	%	#	%	#	%
Mitchell County	1,310	9.0	1,407	9.6	1,531	10.3	1,481	9.9	1,349	9.0
Regional Total	49,896	-	52,045	-	55,160	-	55,442	-	58,378	-
Regional Arithmetic Mean	3,119	8.5	3,253	8.7	3,448	8.9	3,465	8.8	3,649	9.0

In 2010, inpatient hospitalizations for diabetes among Mitchell County residents totaled 35 cases, or 1.7% of all inpatient hospitalizations listed for the county (1,593). In the same year, there were 1,240 inpatient hospital cases associated with treatment of diabetes in WNC. This number of cases represented 1.6% of all hospitalizations in the region. Statewide, diabetes hospitalizations composed 1.9% of all hospitalizations in NC (*Data Workbook*).

Obesity

Obesity is a problem throughout the population. However, among adults in the U.S., vast disparities in obesity exist. Within the U.S., the prevalence of obesity is highest for middle-aged people and for non-Hispanic black and Mexican American women. Among children and adolescents, the prevalence of obesity is highest among older and Mexican American children and non-Hispanic black girls. The association of income with obesity varies by age, gender, and race/ethnicity. Social and physical factors affecting diet and physical activity have an impact on weight. (DHHS, 2010).

Body Mass Index (BMI), which describes relative weight for height, is significantly correlated with total body fat content. The BMI should be used to assess overweight and obesity and to monitor changes in body weight. In addition, measurements of body weight alone can be used to determine efficacy of weight loss therapy. BMI is calculated as weight (kg)/height squared (m^2). To estimate BMI using pounds and inches, use: [weight (pounds)/height squared ($inches^2$)] x 703.

In this report, underweight is defined as a BMI of <18.5 kg/m^2, normal is defined as a BMI of 18.5 to 24.9 kg/m^2, overweight is defined as a BMI of 25.0 to 29.9 kg/m^2 and obesity as a BMI ≥30 kg/m^2. The rationale behind these definitions is based on epidemiological data that show increases in mortality with BMIs above 25 kg/m^2. The increase in mortality, however, tends to be modest until a BMI of 30 kg/m^2 is reached. For persons with a BMI ≥30 kg/m^2, mortality rates from all causes, and especially from cardiovascular disease, are generally increased by 50 to 100 percent above that of persons with BMIs in the range of 20 to 25 kg/m^2 (NIH, 1998)

Adult Obesity

Table 35 presents trend data from the CDC on the estimated prevalence of diagnosed adult obesity in Mitchell County and WNC. The prevalence of diagnosed obesity and selected risk factors by county was estimated using data from CDC's Behavioral Risk Factor Surveillance System (BRFSS) and data from the U.S. Census Bureau's Population Estimates Program. Three years of data were used to improve the precision of the year-specific county-level estimates of diagnosed diabetes and selected risk factors.

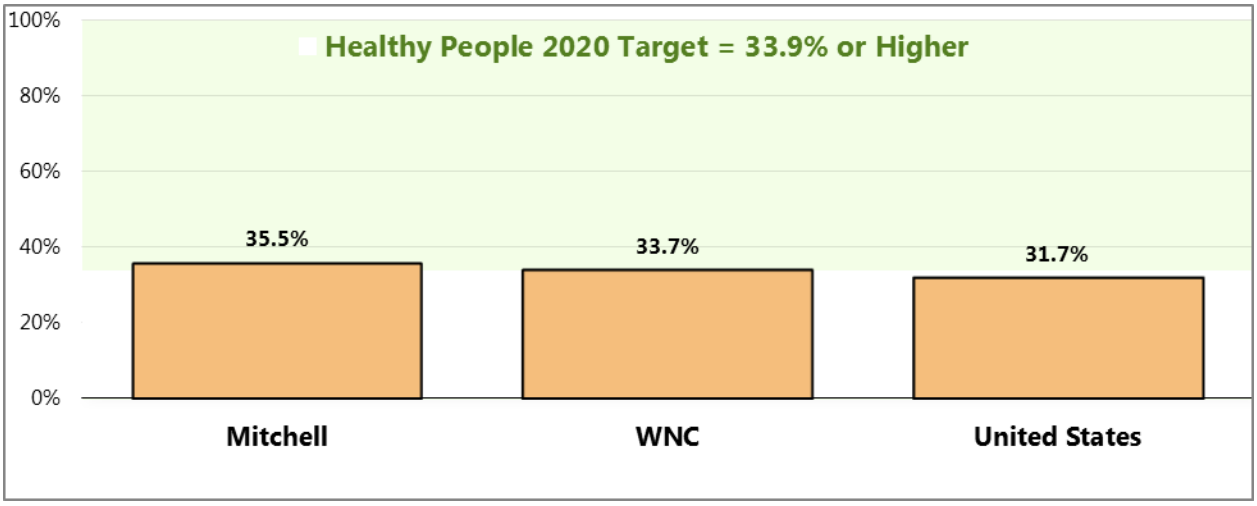
From these data it appears that the estimated prevalence of diagnosed obesity among adults in Mitchell County rose 10.8% between 2005 and 2009. The estimated mean prevalence of adult obesity in WNC increased annually throughout the period cited. Between 2005 and 2009 the estimated mean percent of the WNC population diagnosed as obese rose from 25.2% to 28.0%, a total increase of 11.1%.

Table 35. Estimate of Diagnosed Obesity Among Adults Age 20 and Older (2005-2009)

Geography	2005		2006		2007		2008		2009	
	#	%	#	%	#	%	#	%	#	%
Mitchell County	3,147	25.9	3,253	26.9	3,238	26.6	3,230	26.6	3,399	28.7
Regional Total	128,908	-	136,661	-	139,114	-	143,681	-	148,403	-
Regional Arithmetic Mean	8,057	25.2	8,541	26.4	8,695	26.7	8,980	27.4	9,275	28.0

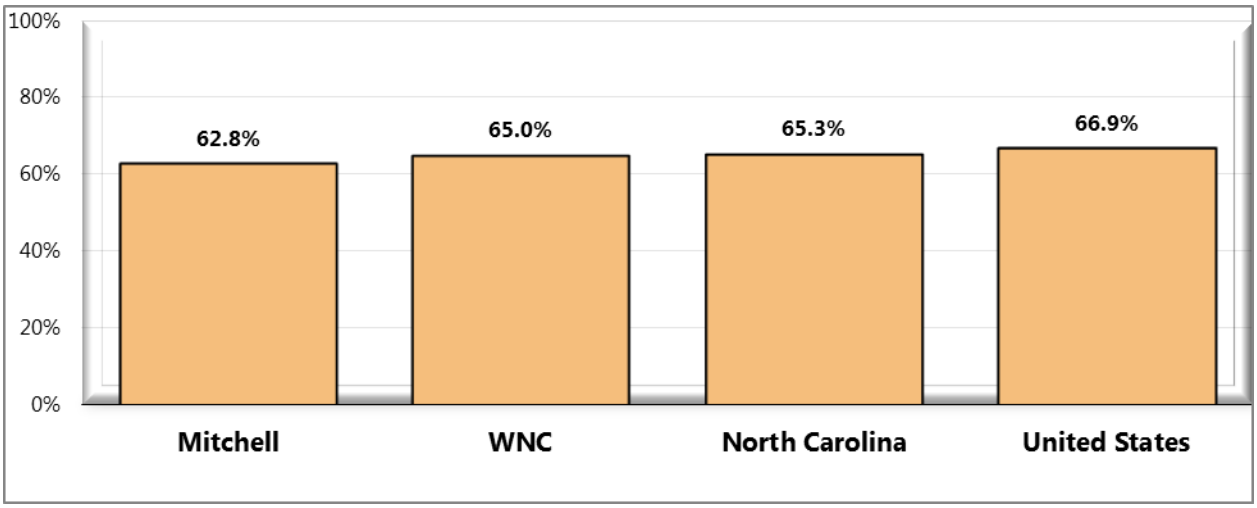
Based on self-reported heights and weights, the survey data below shows 2012 county and regional estimates of the prevalence of healthy weight, overweight, and obesity.

Figure 47. Healthy Weight (WNC Healthy Impact Survey)
(Percent of Adults With a Body Mass Index Between 18.5 and 24.9)



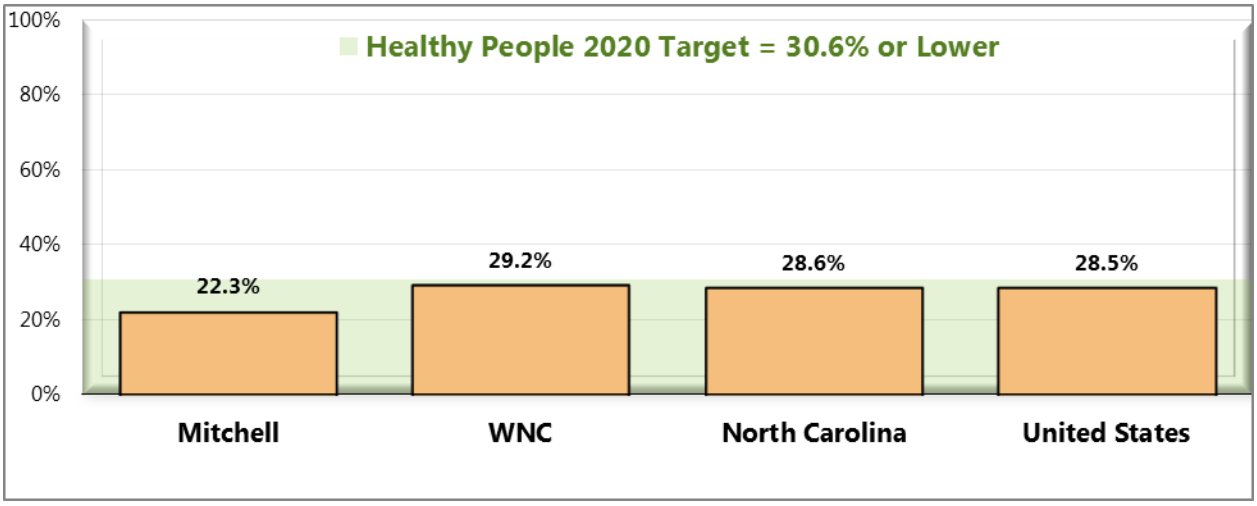
Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 85]
2011 PRC National Health Survey, Professional Research Consultants, Inc.
Notes: Based on reported heights and weights, asked of all respondents.
US Department of Health and Human Services. Healthy People 2020. December 2010.
http://www.healthypeople.gov Objective NWS-8]
The definition of healthy weight is having a body mass index (BMI), a ratio of weight to height (kilograms divided by meters squared), between 18.5 and 24.9.

Figure 48. Prevalence of Total Overweight (WNC Healthy Impact Survey)
(Percent of Overweight or/Obese Adults; Body Mass Index of 25.0 or Higher)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 85]
2011 PRC National Health Survey, Professional Research Consultants, Inc.
Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2010 North Carolina data.
Notes: Based on reported heights and weights, asked of all respondents.
The definition of overweight is having a body mass index (BMI), a ratio of weight to height (kilograms divided by meters squared), greater than or equal to 25.0, regardless of gender. The definition for obesity is a BMI greater than or equal to 30.0.

Figure 49. Prevalence of Obesity (WNC Healthy Impact Survey)
(Percent of Obese Adults; Body Mass Index of 30.0 or Higher)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 85]
2011 PRC National Health Survey, Professional Research Consultants, Inc.
US Department of Health and Human Services. Healthy People 2020. December 2010. http://www.healthypeople.gov [Objective NWS-9]
Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2010 North Carolina data.

Notes: Based on reported heights and weights, asked of all respondents.
The definition of obesity is having a body mass index (BMI), a ratio of weight to height (kilograms divided by meters squared), greater than or equal to 30.0, regardless of gender.

Childhood Obesity

The NC Healthy Weight Initiative, using the NC Nutrition and Physical Activity Surveillance System (NC NPASS), collects height and weight measurements from children seen in NC DPH-sponsored WIC and Child Health Clinics, as well as some school-based Health Centers (NC DHHS – Nutrition Services Branch, 2012). (Note that this data is not necessarily representative of the county-wide or region-wide population of children.) This data is used to calculate Body Mass Indices (BMIs) in order to gain some insight into the prevalence of childhood obesity.

BMI is a calculation relating weight to height by the following formula:

BMI = (weight in kilograms) / (height in meters)

For children, a BMI in the 95th percentile or above is considered "obese" (formerly defined as "overweight"), while BMIs that are between the 85th and 94th percentiles are considered "overweight" (formerly defined as "at risk for overweight").

Tables 36, 37 and 38 present NC NPASS data for 2010 on children in three age groups: ages 2-4, ages 5-11, and ages 12-18.

From data presented in Table 36 it appears that the prevalence of healthy weight among 2-4 year-olds in Mitchell County (65.9%) was higher than the comparable figures for either WNC

(64.5%) or NC (63.5%). The prevalence of *overweight* among children ages 2-4 was lower in Mitchell County (14.6%) than the mean for WNC (17.2%) or the figure for NC as a whole (16.1%). The prevalence of *obesity* in Mitchell County 2-4 year-olds (14.6%) is higher than the mean prevalence in WNC (13.6%) but lower than the prevalence in NC as a whole (15.6%). It must be noted that the regional means denoted in *italics* contain one or more county percentages that are unstable due to small numbers of children participating in the program.

Table 36. Prevalence of Obesity, Overweight, Healthy Weight and Underweight Children 2 through 4 years (2010)

Geography	Total	Underweight		Healthy Weight		Overweight		Obese	
		<5th Percentile		≥5th to <85th Percentile		≥85th to <95th Percentile		≥95th Percentile	
	#	#	%	#	%	#	%	#	%
Mitchell County	226	11	4.9	149	65.9	33	14.6	33	14.6
Regional Total	6,814	316	-	4,410	-	1,139	-	949	-
Regional Arithmetic Mean	426	20	*4.8*	276	64.5	71	*17.2*	59	*13.6*
State Total	105,410	4,935	4.7	66,975	63.5	17,022	16.1	16,478	15.6

From data presented in Table 37 it appears that some of the percentages noted for Mitchell County should be considered unstable, due to very small numbers of children in the 5-11 age group (n=15) participating in the program. In Mitchell County the prevalence of children ages 5-11 with healthy weight (66.7%) was higher than the comparable prevalence for WNC or NC. In WNC, the prevalence of children ages 5-11 with healthy weight (63.4%) was higher than the comparable prevalence for NC (54.3%). The mean prevalence of *overweight* children ages 5-11 in WNC (14.3%) and the prevalence of *obese* children in this age group in WNC (19.4%) were both lower than the comparable prevalence figures for NC (17.1% and 25.8%, respectively). Prevalence figures for these weight groups in the 5-11 age category in Mitchell County were unstable. It must be noted that the regional means denoted in *italics* contain one or more county percentages that are unstable due to small numbers of children participating in the program.

Table 37. Prevalence of Obesity, Overweight, Healthy Weight and Underweight Children 5 through 11 years (2010)

Geography	Total	Underweight		Healthy Weight		Overweight		Obese	
		<5th Percentile		≥5th to <85th Percentile		≥85th to <95th Percentile		≥95th Percentile	
	#	#	%	#	%	#	%	#	%
Mitchell County	15	0	**0.0**	10	66.7	2	***13.3***	3	***20.0***
Regional Total	1,243	26	-	721	-	208	-	288	-
Regional Arithmetic Mean	78	2	*2.9*	45	*63.4*	13	*14.3*	18	*19.4*
State Total	12,633	353	2.8	6,859	54.3	2,157	17.1	3,264	25.8

From data presented in Table 38 it appears that the prevalence of healthy weight among 12-18 year-olds in Mitchell County (48.4%) was lower than the comparable figures for either WNC (56.3%) or NC (51.9%). The prevalence of *overweight* children ages 12-18 was higher in Mitchell County (32.3%) than in WNC (19.0%) or in NC as a whole (18.1%). The prevalence figure for obesity in this age group in Mitchell County was unstable due to the small number of children in that category, but that the prevalence of *obesity* in this age group was smaller in WNC (23.8%) than statewide (28.0%). It must be noted that the regional means denoted in *italics* contain one or more county percentages that are unstable due to small numbers of children participating in the program.

Table 38. Prevalence of Obesity, Overweight, Healthy Weight and Underweight Children 12 through 18 years (2010)

Geography	Total	Underweight		Healthy Weight		Overweight		Obese	
		<5th Percentile		≥5th to <85th Percentile		≥85th to <95th Percentile		≥95th Percentile	
	#	#	%	#	%	#	%	#	%
Mitchell County	31	1	**3.2**	15	48.4	10	32.3	5	**16.1**
Regional Total	1,348	13	-	729	-	245	-	361	-
Regional Arithmetic Mean	84	1	*1.0*	46	*56.3*	15	*19.0*	23	*23.8*
State Total	6,854	133	1.9	3,560	51.9	1,241	18.1	1,920	28.0

For further details regarding this NC NPASS data, consult the *Data Workbook*.

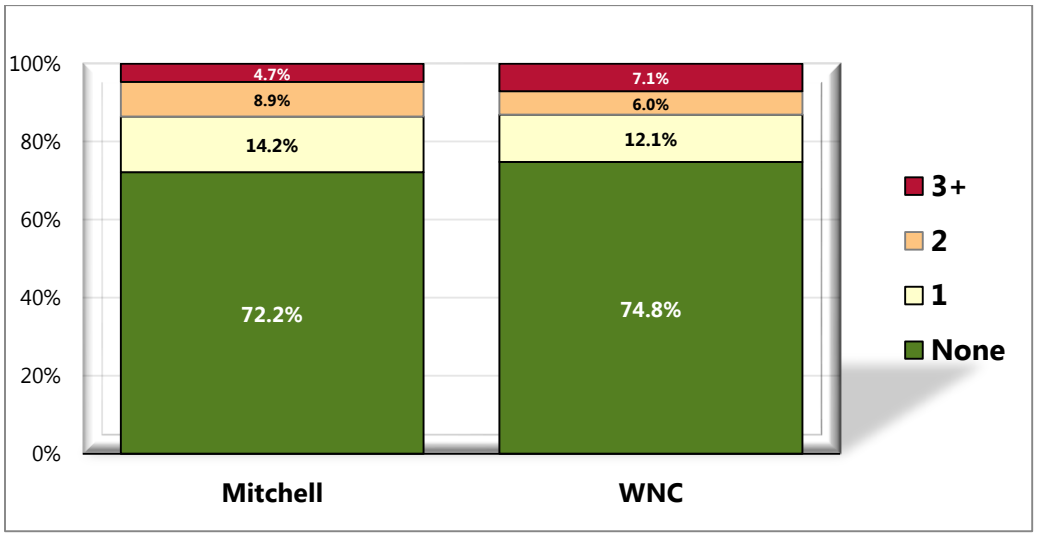
Injuries

Falls

There were six deaths due to falls in Mitchell County in the period 2006-2010. In 2009 alone there was one, and it occurred in the 85-and-over age group) (*Data Workbook*).

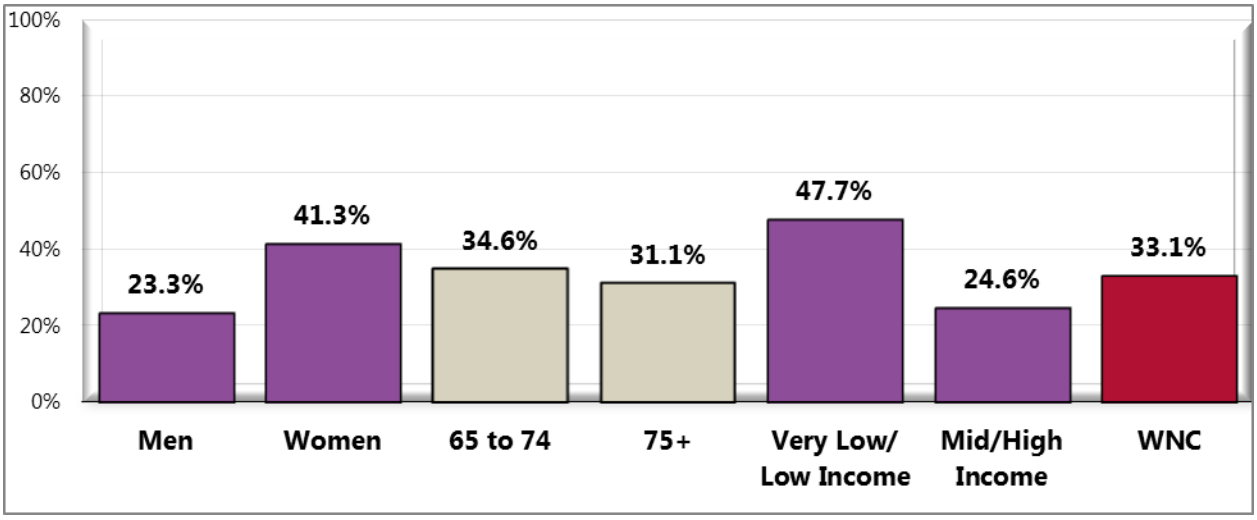
Survey respondents were also asked how many times they have fallen in the past 12 months, and how many of these falls caused an injury. Data is shown below for adults age 65 and older. Due to small county-level sample sizes, fall-related injury data is provided at the regional level.

Figure 50. Number of Falls in the Past Year (WNC Healthy Impact Survey)
(Among Adults Age 65 and Older)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 40]
Notes: Asked of respondents age 65 and older.
* These counties have sample sizes deemed unreliable (n<50).

Figure 51. Sustained a Fall-Related Injury in the Past Year (WNC Healthy Impact Survey)
(Among Adults 65+ Who Have Fallen in the Past Year)
(Western North Carolina, 2012)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 41]
Notes: Asked of respondents age 65 and older who have fallen in the past year.
Includes falls that caused respondent to limit his/her regular activities for at least a day or caused him/her to go see a doctor.
Hispanics can be of any race. Other race categories are non-Hispanic categorizations (e.g., "White" reflects non-Hispanic White respondents).
Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

Vehicle Crashes

The Highway Safety Research Center at the University of North Carolina at Chapel Hill tracks information about vehicle crashes across the state on an annual basis, including detail on the fraction of crashes that are alcohol-related. Table 39 presents trend data on vehicle crashes for the period from 2006 through 2010. In Mitchell County the percentages of crashes that were alcohol-related were lower than the comparable figures for WNC every year except 2010, but higher than the figures for NC in 2008, 2009, and 2010. The data in the table also shows that the percentage of alcohol-related vehicle crashes in WNC were higher than the comparable percentages for the state as a whole throughout the period cited, with the difference varying from 16% to 27% depending on the year.

Table 39. Alcohol-Related Traffic Crashes (2006-2010)

Geography	2006		2007		2008		2009		2010	
	# Crashes	% Alcohol-Related	# Crashes	% Alcohol-Related	# Crashes	% Alcohol-Related	# Crashes	% Alcohol-Related	# Crashes	% Alcohol-Related
Mitchell County	303	4.3	296	3.4	279	6.1	256	5.5	264	6.4
Regional Total	15,004	6.2	15,216	6.5	13,997	7.1	14,075	6.6	14,763	5.8
State Total	220,307	5.1	224,307	5.3	214,358	5.6	209,695	5.4	213,573	5.0

Table 40 presents additional detail on the nature of vehicular crashes for a single year, 2010. In Mitchell County 6.4% of *all* crashes were alcohol-related; although the following number may be unstable since it is based on only one event, 33.3% of the *fatal* crashes (1 of 3) in the county was alcohol-related. In both WNC and NC as a whole, the proportion of *all* crashes that were alcohol-related was less than 6%, but the proportion of *fatal* crashes that were alcohol-related was over 30%. It is noteworthy that the percentages of crashes that were alcohol-related were higher in WNC than in NC for every outcome category displayed in Table 40.

Table 40. Outcomes of Traffic Crashes (2010)

Geography	Total Crashes		Property Damage Only Crashes		Non-Fatal Crashes		Fatal Crashes	
	# Reportable Crashes	% Alcohol-Related Crashes	# Reportable Crashes	% Alcohol-Related Crashes	# Reportable Crashes	% Alcohol-Related Crashes	# Reportable Crashes	% Alcohol-Related Crashes
Mitchell County	264	6.4	164	***4.9***	97	***8.3***	3	***33.3***
Regional Total	14,763	5.8	9,469	4.0	5,192	8.3	102	36.3
State Total	213,573	5.0	143,211	3.4	69,138	7.8	1,224	32.4

Distracted Drivers

There is no comparable data for Mitchell County, WNC or NC, but in the US as a whole in 2010, 3,092 people died and 416,000 were injured as a result of distracted driving (*Data Workbook*).

Workplace Injury

There is no comparable data for Mitchell County, WNC or the US, but in NC as a whole, the mortality rate associated with work-related injury was 3.9 deaths per 100,000 full-time equivalent workers in 2008, and 3.3 in 2009 (*Data Workbook*).

Poisonings

For the five-year aggregate period 2006-2010 there were 23 unintentional poisoning deaths in Mitchell County, with a corresponding age-adjusted mortality rate of 27.5 per 100,000 population. The comparable mean unintentional poisoning mortality rate for WNC was 23.1 over the same period.

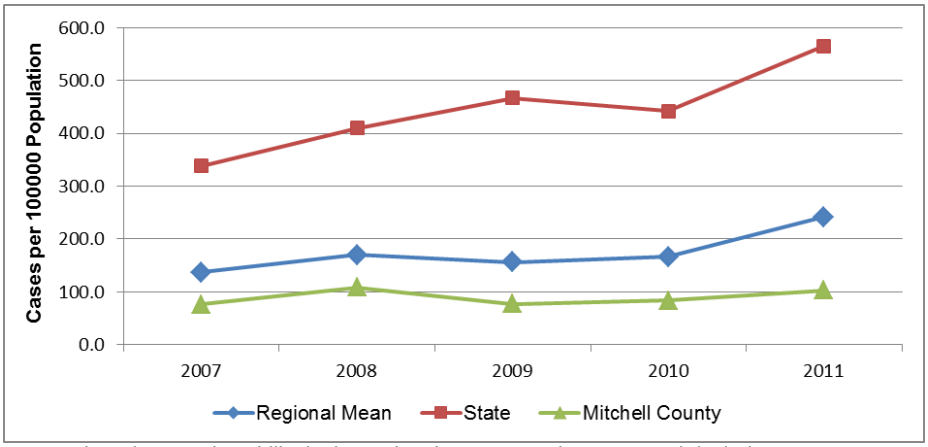
Communicable Disease

A communicable disease is a disease transmitted through direct contact with an infected individual or indirectly through a vector (Merriam-Webster.com). The topic of communicable diseases includes sexually transmitted infections (STIs). The STIs of greatest regional interest are chlamydia and gonorrhea. HIV/AIDS is sometimes grouped with STIs, since sexual contact is one mode of HIV transmission. While AIDS, as the final stage of HIV infection, was discussed previously among the leading causes of death, HIV is discussed here as a communicable disease.

Chlamydia is the most frequently reported bacterial STI in the US. It is estimated that there are approximately 2.8 million new cases of chlamydia in the US each year. Chlamydia cases frequently go undiagnosed and can cause serious problems in men and women, such as penile discharge and infertility respectively, as well as infections in newborn babies of infected mothers (CDC, 2012).

Figure 52 plots chlamydia rates for several years. From this data it appears that in WNC the mean chlamydia infection rate was 57% to 66% lower than the comparable rate for NC as a whole for the time span cited. Chlamydia rates in both NC and WNC increased overall between 2007 and 2011, as the NC rate rose 67.2% (from 337.7 to 564.8) and the mean WNC rate rose 76.4% (from 136.9 to 241.5). In Mitchell County, where the chlamydia infection rate was below both the WNC and NC rates, the local rate increased 34.2%, from 76.5 to 102.7, over the same period.

Figure 52. Chlamydia Rate, All Ages, Cases per 100,000 Population (Five Single Years, 2007-2011)



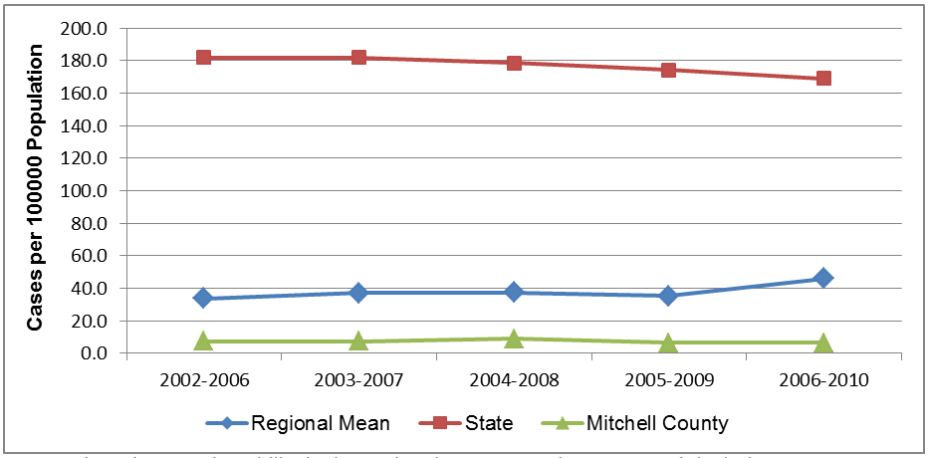
Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

Gonorrhea is the second most commonly reported bacterial STI in the US. The highest rates of gonorrhea have been found in African Americans, people 20 to 24 years of age, and women, respectively. In women, gonorrhea can spread into the uterus and fallopian tubes, resulting in pelvic inflammatory disease (PID). PID affects more than 1 million women in the US every year and can cause tubal pregnancy and infertility in as many as 10 percent of infected women. In

addition, some health researchers think gonorrhea adds to the risk of getting HIV infection (MedcineNet.com, April 2012).

Figure 53 plots gonorrhea rates for several aggregate periods. From this data it appears that gonorrhea is far less prevalent in Mitchell County than in either WNC or NC. Although all the county rates were technically unstable, the county gonorrhea infection rate decreased from 7.5 to 6.4 (14.7%) over the period cited. The mean gonorrhea rate in WNC was 72% to 82% lower than the state rate for the span of aggregate periods shown in Figure 53. It is noteworthy that as the state gonorrhea rate decreased 7.2% (from 182.0 to 168.9) over the period cited, the mean WNC gonorrhea rate increased 36.2% (from 33.7 to 45.9) in the same time span.

Figure 53. Gonorrhea Rate, Cases per 100,000 Population (Five-Year Aggregates, 2002-2006 through 2006-2010)



Note: There is some instability in the regional mean rates because each includes one or more unstable county rate.

HIV infection, an important communicable disease in some regions of NC, is a rare occurrence throughout most of WNC. Only one county in the region (Buncombe) has reported enough cases in some years to calculate a stable incidence rate. The total number of HIV cases in WNC in 2008 was 58; in 2009 the total was 46, and in 2010 the total was 40 (*Data Workbook*).

CHAPTER 4 – HEALTH BEHAVIORS

Physical Activity

Regular physical activity can improve the health and quality of life of Americans of all ages, regardless of the presence of a chronic disease or disability. Among adults and older adults, physical activity can lower the risk of: early death; coronary heart disease; stroke; high blood pressure; type 2 diabetes; breast and colon cancer; falls; and depression. Among children and adolescents, physical activity can: improve bone health; improve cardiorespiratory and muscular fitness; decrease levels of body fat; and reduce symptoms of depression. For people who are inactive, even small increases in physical activity are associated with health benefits.

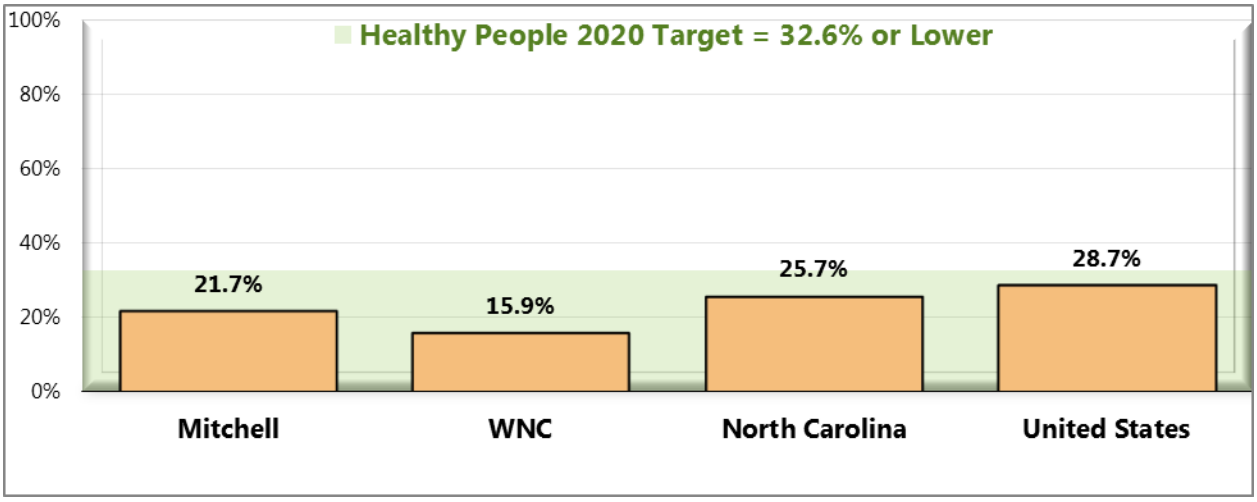
Personal, social, economic, and environmental factors all play a role in physical activity levels among youth, adults, and older adults. Factors **positively** associated with adult physical activity include: postsecondary education; higher income; enjoyment of exercise; expectation of benefits; belief in ability to exercise (self-efficacy); history of activity in adulthood; social support from peers, family, or spouse; access to and satisfaction with facilities; enjoyable scenery; and safe neighborhoods. Factors **negatively** associated with adult physical activity include: advancing age; low income; lack of time; low motivation; rural residency; perception of great effort needed for exercise; overweight or obesity; perception of poor health; and being disabled. Older adults may have additional factors that keep them from being physically active, including lack of social support, lack of transportation to facilities, fear of injury, and cost of programs (DHHS, 2010).

Adults (age 18–64) should do 2 hours and 30 minutes a week of moderate-intensity, or 1 hour and 15 minutes (75 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic physical activity. Aerobic activity should be performed in episodes of at least 10 minutes, preferably spread throughout the week. Additional health benefits are provided by increasing to 5 hours (300 minutes) a week of moderate-intensity aerobic physical activity, or 2 hours and 30 minutes a week of vigorous-intensity physical activity, or an equivalent combination of both.

Older adults (age 65 and older) should follow the adult guidelines. If this is not possible due to limiting chronic conditions, older adults should be as physically active as their abilities allow. They should avoid inactivity. Older adults should do exercises that maintain or improve balance if they are at risk of falling.

For all individuals, some activity is better than none. Physical activity is safe for almost everyone, and the health benefits of physical activity far outweigh the risks (DHHS, 2008).

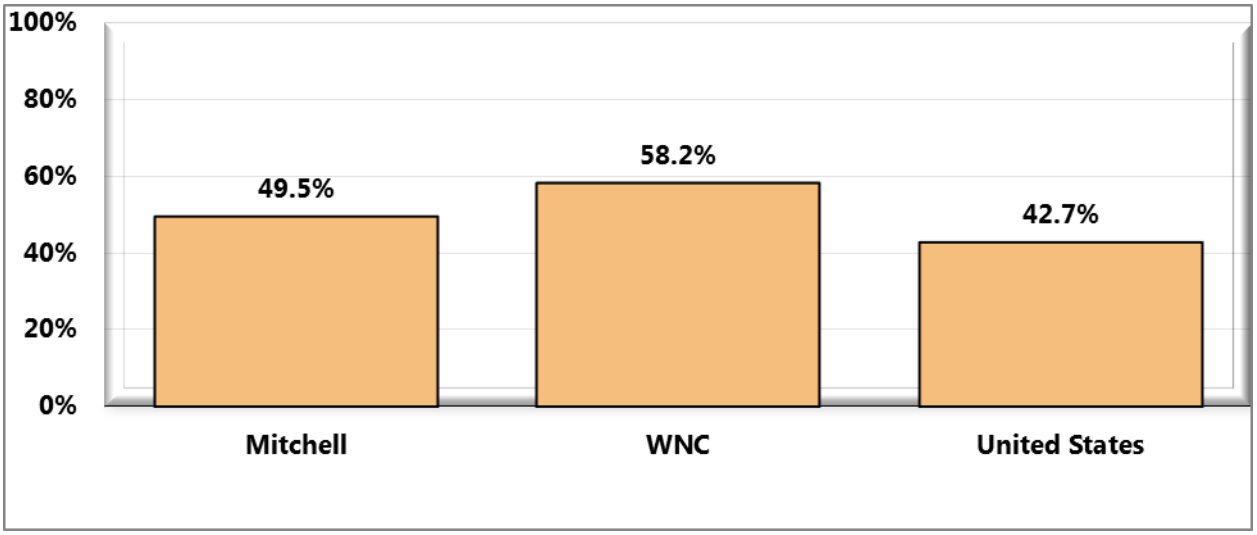
Figure 54. No Leisure-Time Physical Activity in the Past Month (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 56]
Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2010 North Carolina data.
2011 PRC National Health Survey, Professional Research Consultants, Inc.
US Department of Health and Human Services. Healthy People 2020. December 2010. http://www.healthypeople.gov [Objective PA-1]

Notes: Asked of all respondents.

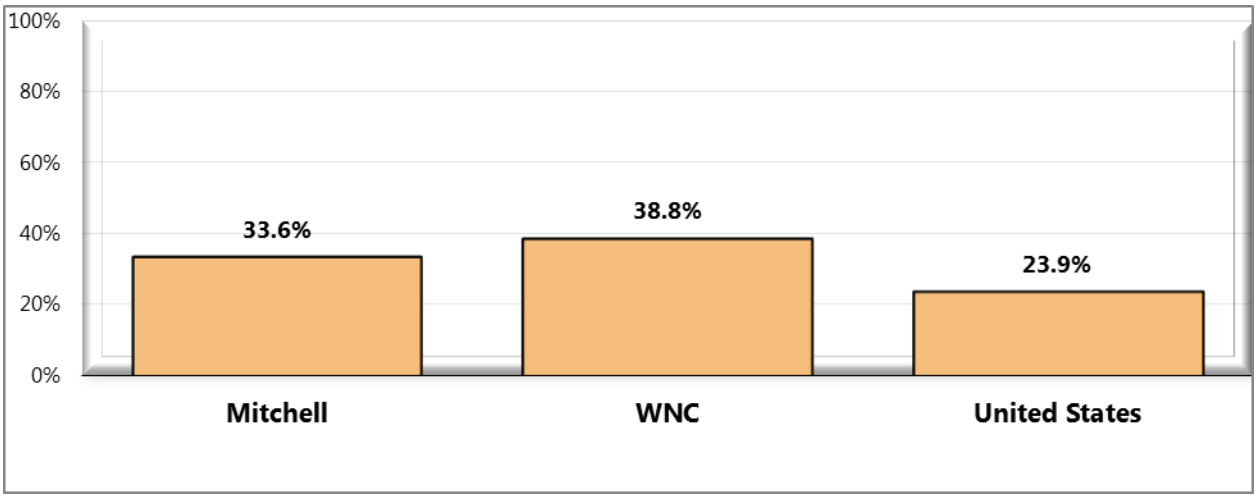
Figure 55. Meets Physical Activity Recommendations (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 80]
2011 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: Asked of all respondents.
In this case the term "meets physical activity recommendations" refers to participation in moderate physical activity (exercise that produces only light sweating or a slight to moderate increase in breathing or heart rate) at least 5 times a week for 30 minutes at a time, and/or vigorous physical activity (activities that cause heavy sweating or large increases in breathing or heart rate) at least 3 times a week for 20 minutes at a time.

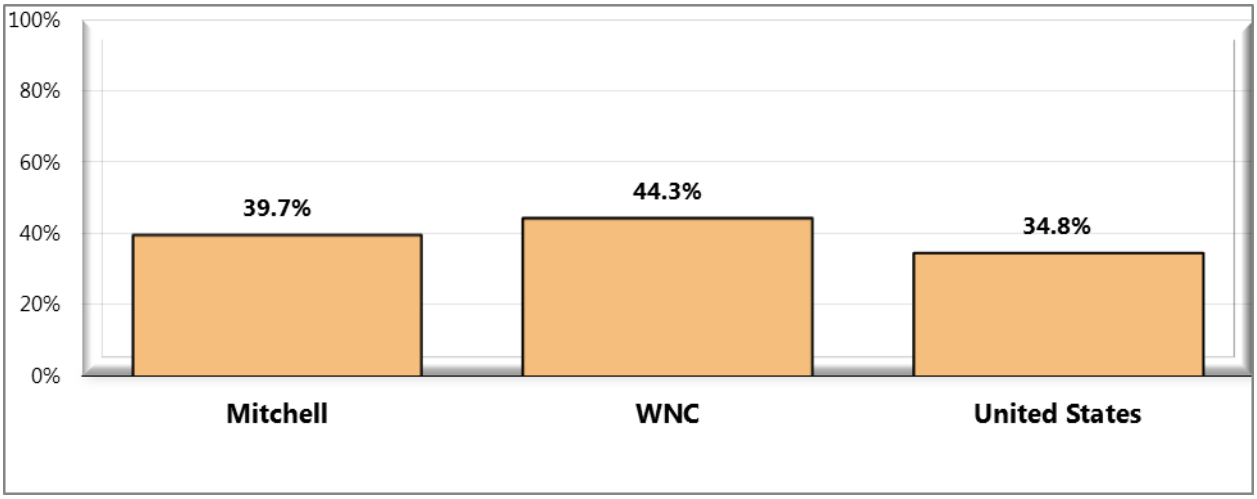
Figure 56. Moderate Physical Activity (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 81]
2011 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: Asked of all respondents.
Moderate Physical Activity: Takes part in exercise that produces only light sweating or a slight to moderate increase in breathing or heart rate at least 5 times per week for at least 30 minutes per time.

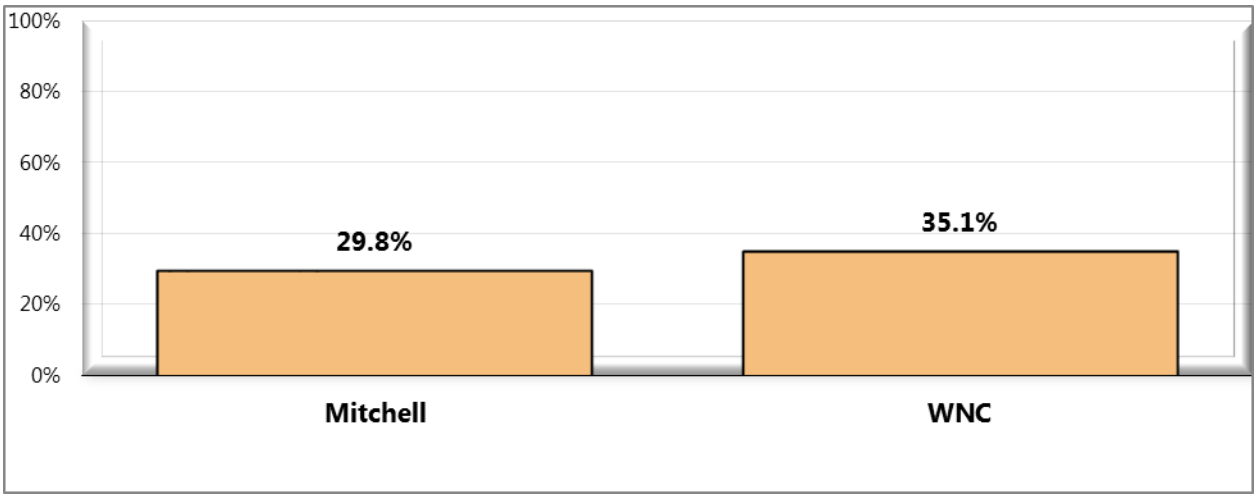
Figure 57. Vigorous Physical Activity (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 82]
2011 PRC National Health Survey, Professional Research Consultants, Inc.
Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2010 North Carolina data.

Notes: Asked of all respondents.
Vigorous Physical Activity: Takes part in activities that cause heavy sweating or large increases in breathing or heart rate at least 3 times per week for at least 20 minutes per time.

Figure 58. Strengthening Physical Activity (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 83]
Notes: Asked of all respondents.
Strengthening Physical Activity: Takes part in physical activities or exercises that strengthen muscles at least 2 times per week.

Diet and Nutrition

Strong science exists supporting the health benefits of eating a healthful diet and maintaining a healthy body weight. Diet and body weight are related to health status. Good nutrition is important to the growth and development of children. A healthful diet also helps Americans reduce their risks for many health conditions, including: overweight and obesity; malnutrition; iron-deficiency anemia; heart disease; high blood pressure; dyslipidemia (poor lipid profiles); type 2 diabetes; osteoporosis; oral disease; constipation; diverticular disease; and some cancers. Efforts to change diet and weight should address individual behaviors, as well as the policies and environments that support these behaviors in settings such as schools, worksites, healthcare organizations, and communities.

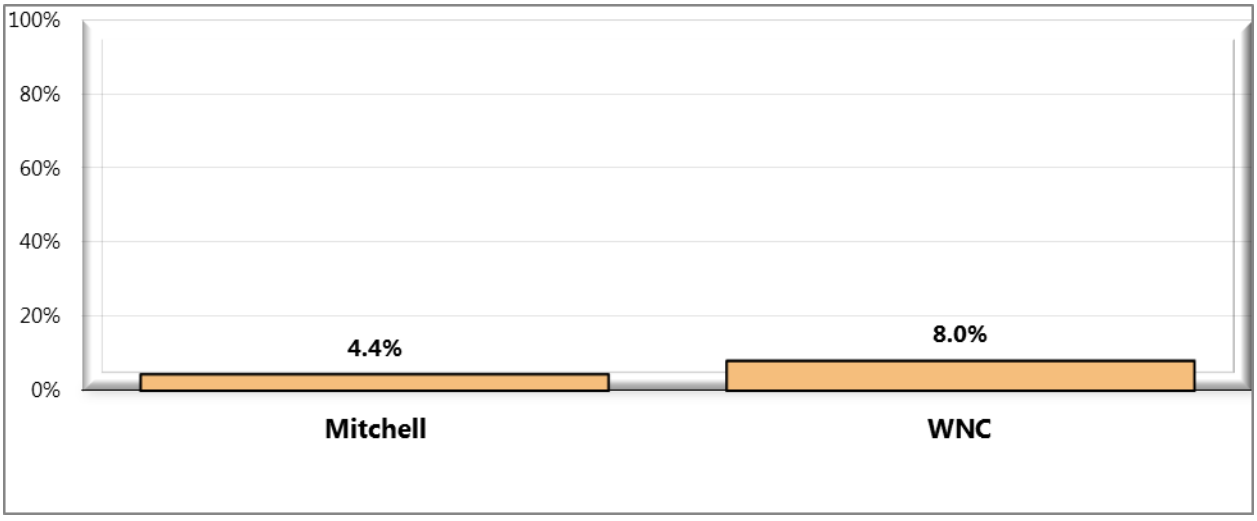
Social Determinants of Diet. Social factors thought to influence diet include:

- Knowledge and attitudes
- Skills
- Social support
- Societal and cultural norms
- Food and agricultural policies
- Food assistance programs
- Economic price systems

Physical Determinants of Diet.
The places where people eat appear to influence their diet. For example, foods eaten away from home often have more calories and are of lower nutritional quality than foods prepared at home. Marketing also influences people's—particularly children's—food choices (DHHS, 2010).

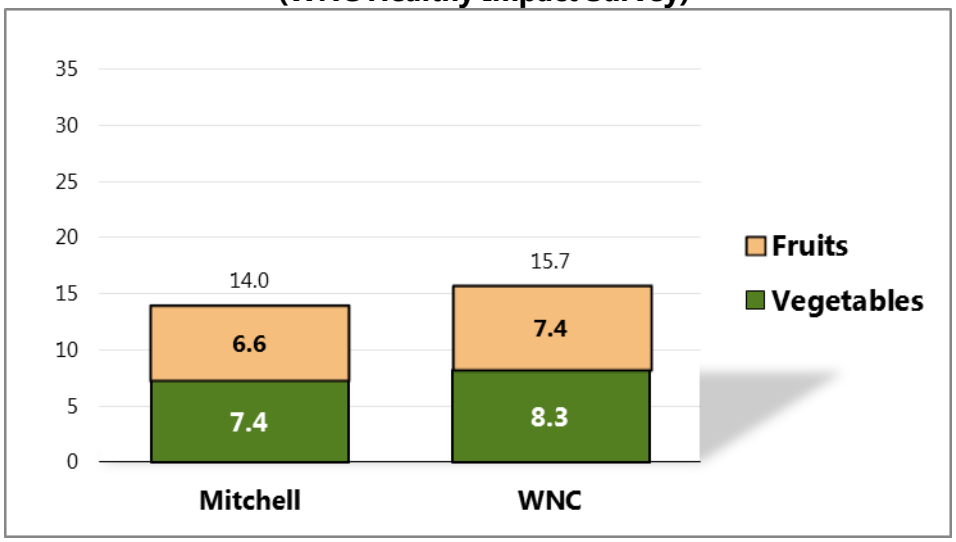
To measure fruit and vegetable consumption, survey respondents were asked how many one-cup servings of fruit and one-cup servings of vegetables (not counting lettuce salad or potatoes) they ate over the past week.

Figure 59. Had an Average of Five or More Servings of Fruits/Vegetables per Day in the Past Week (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 79]
Notes: Asked of all respondents.
For this issue, respondents were asked to recall their food intake during the previous week. Reflects 35 or more 1-cup servings of fruits and/or vegetables in the past week, excluding lettuce salad and potatoes.

Figure 60. Average Servings of Fruits/Vegetables in the Past Week (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 53-54]
Notes: Asked of all respondents.
For this issue, respondents were asked to recall their food intake during the previous week. Reflects 35 or more 1-cup servings of fruits and/or vegetables in the past week, excluding lettuce salad and potatoes.

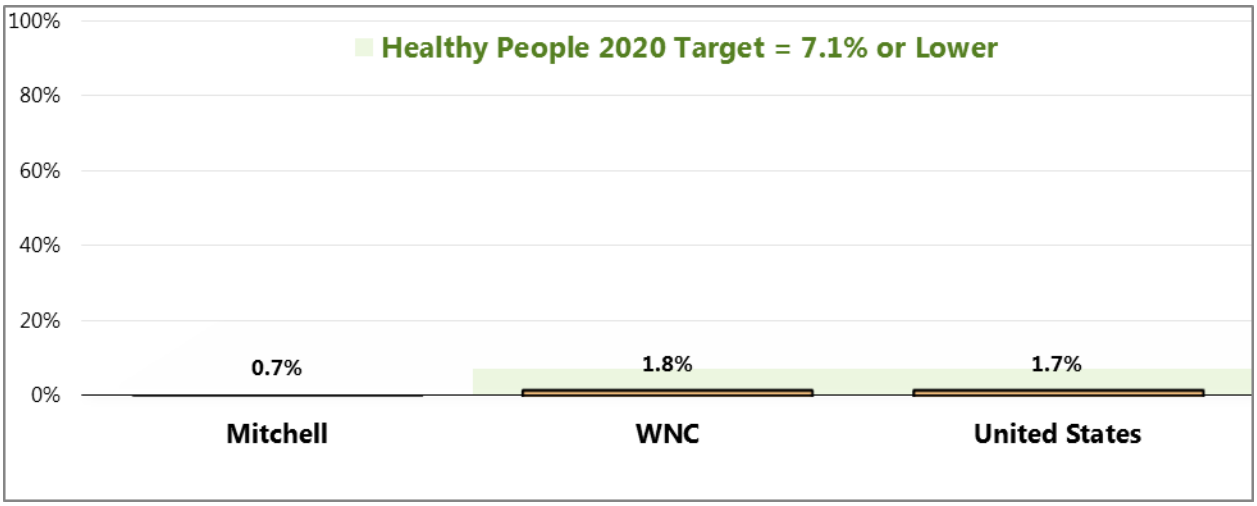
Substance Use/Abuse

Substance abuse refers to a set of related conditions associated with the consumption of mind- and behavior-altering substances that have negative behavioral and health outcomes. Social attitudes and political and legal responses to the consumption of alcohol and illicit drugs make substance abuse one of the most complex public health issues. In 2005, an estimated 22 million Americans struggled with a drug or alcohol problem. Almost 95% of people with substance use problems are considered unaware of their problem. Of those who recognize their problem, 273,000 have made an unsuccessful effort to obtain treatment. These estimates highlight the importance of increasing prevention efforts and improving access to treatment for substance abuse and co-occurring disorders. Substance abuse has a major impact on individuals, families, and communities. The effects of substance abuse are cumulative, significantly contributing to costly social, physical, mental, and public health problems (DHHS, 2010).

Illicit Drugs

For the purposes of the survey, "illicit drug use" includes use of illegal substances or of prescription drugs taken without a physician's order. It is important to note that as a self-reported measure – and because this indicator reflects potentially illegal behavior – it is reasonable to expect that it might be underreported, and that actual illicit drug use in the community is likely higher.

Figure 61. Illicit Drug Use in the Past Month (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 52]
2011 PRC National Health Survey, Professional Research Consultants, Inc.
US Department of Health and Human Services. Healthy People 2020. December 2010. http://www.healthypeople.gov [Objective SA-13.3]

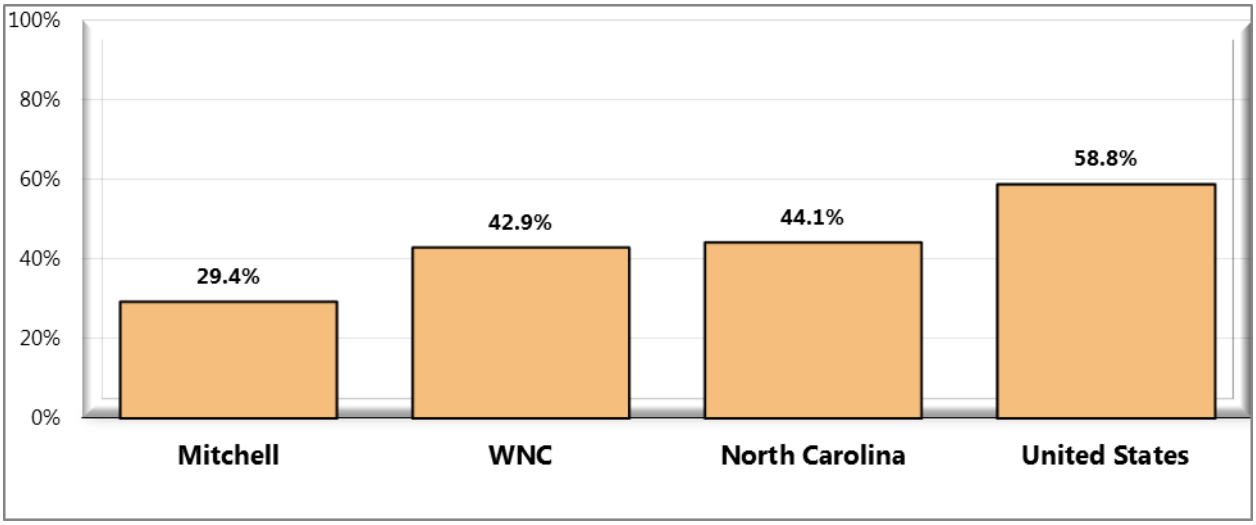
Notes: Asked of all respondents.
Includes reported use of an illegal drug or of a prescription drug not prescribed to the respondent.

Alcohol

"**Current drinkers**" include survey respondents who had at least one drink of alcohol in the month preceding the interview. For the purposes of this study, a "drink" is considered one can or bottle of beer, one glass of wine, one can or bottle of wine cooler, one cocktail, or one shot of liquor. "**Chronic drinkers**" include survey respondents reporting 60 or more drinks of alcohol in the month preceding the interview.

In this assessment, "**binge drinkers**" include adults who report drinking 5 or more alcoholic drinks on any single occasion during the past month. Note that state and national data reflect different thresholds for men (5+ drinks) and women (4+ drinks), so county and regional data is not directly comparable to state and national figures.

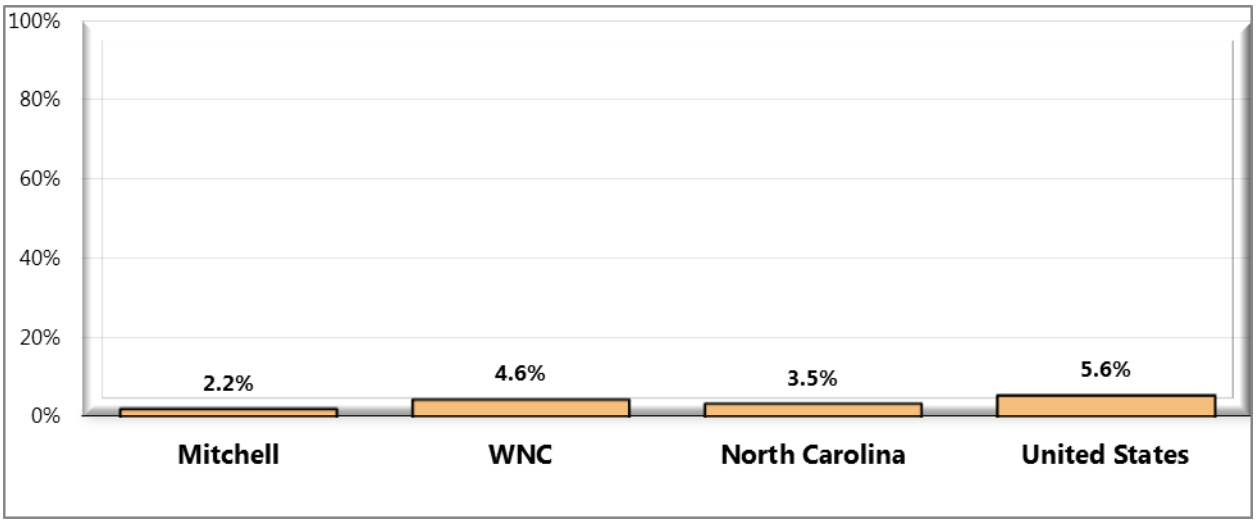
Figure 62. Current Drinkers (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 88]
Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2010 North Carolina data.
2011 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: Asked of all respondents.
Current drinkers had at least one alcoholic drink in the past month.

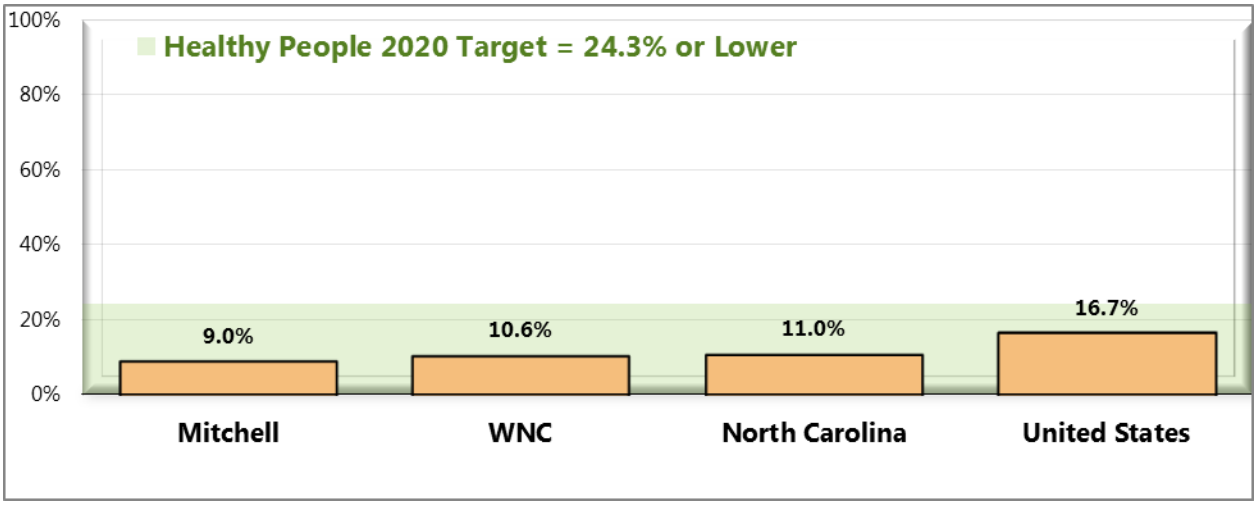
Figure 63. Chronic Drinkers (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 89]
Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2010 North Carolina data.
2011 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: Asked of all respondents.
Chronic drinkers are defined as having 60+ alcoholic drinks in the past month.
*The state definition for chronic drinkers is males consuming 2+ drinks per day and females consuming 1+ drink per day in the past 30 days.

Figure 64. Binge Drinkers (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 90]
Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2010 North Carolina data.
2011 PRC National Health Survey, Professional Research Consultants, Inc.
US Department of Health and Human Services. Healthy People 2020. December 2010. http://www.healthypeople.gov [Objective SA-14.3]

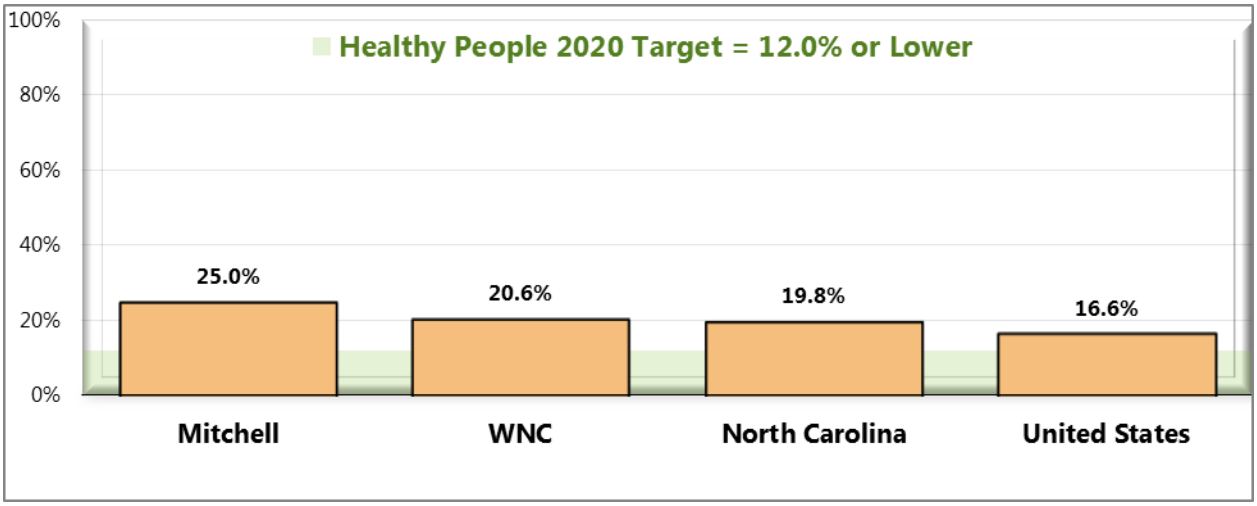
Notes: Asked of all respondents.
Binge drinkers are defined as those consuming 5+ alcoholic drinks on any one occasion in the past 30 days; * note that state and national data reflect different thresholds for men (5+ drinks) and women (4+ drinks).

Tobacco

Tobacco use is the single most preventable cause of death and disease in the United States. Each year, approximately 443,000 Americans die from tobacco-related illnesses. For every person who dies from tobacco use, 20 more people suffer with at least one serious tobacco-related illness. In addition, tobacco use costs the US $193 billion annually in direct medical expenses and lost productivity. Preventing tobacco use and helping tobacco users quit can improve the health and quality of life for Americans of all ages. People who stop smoking greatly reduce their risk of disease and premature death. Benefits are greater for people who stop at earlier ages, but quitting tobacco use is beneficial at any age.

Many factors influence tobacco use, disease, and mortality. Risk factors include race/ethnicity, age, education, and socioeconomic status. Significant disparities in tobacco use exist geographically; such disparities typically result from differences among states in smoke-free protections, tobacco prices, and program funding for tobacco prevention (DHHS, 2010).

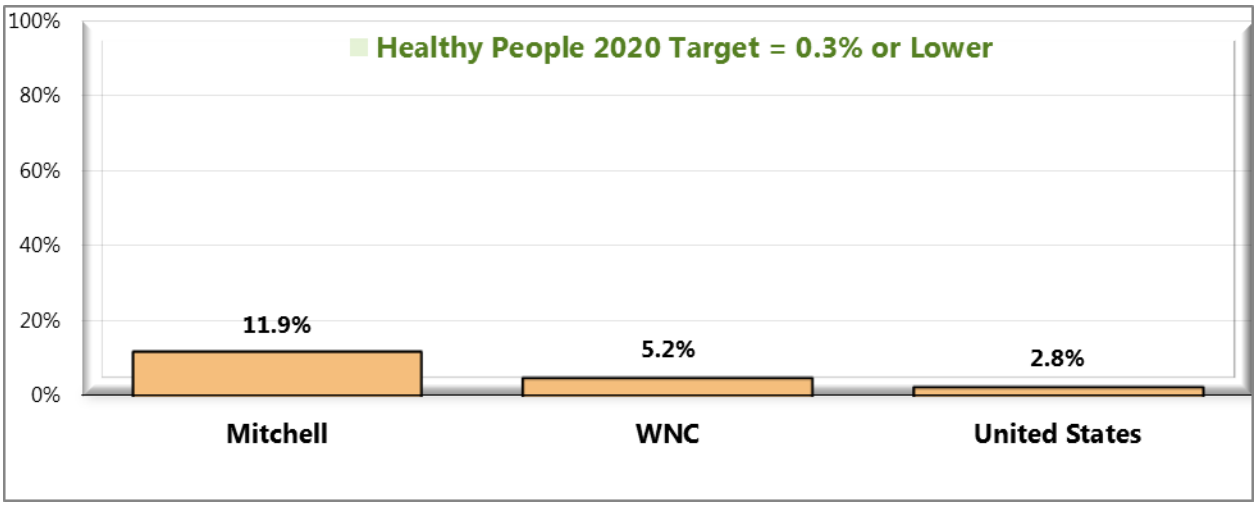
Figure 65. Current Smokers (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 86]
2011 PRC National Health Survey, Professional Research Consultants, Inc.
Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2010 North Carolina data.
US Department of Health and Human Services. Healthy People 2020. December 2010. http://www.healthypeople.gov [Objective TU-1.1]

Notes: Asked of all respondents.
Includes regular and occasional smokers (every day and some days).

Figure 66. Currently Use Smokeless Tobacco Products (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 43]
2011 PRC National Health Survey, Professional Research Consultants, Inc.
US Department of Health and Human Services. Healthy People 2020. December 2010. http://www.healthypeople.gov [Objective TU-1.2]
Notes: Asked of all respondents.
Includes regular and occasional users (every day and some days).

Table 41. Top Three Resources Respondents Would Go to for Help Quitting Tobacco (WNC Healthy Impact Survey)

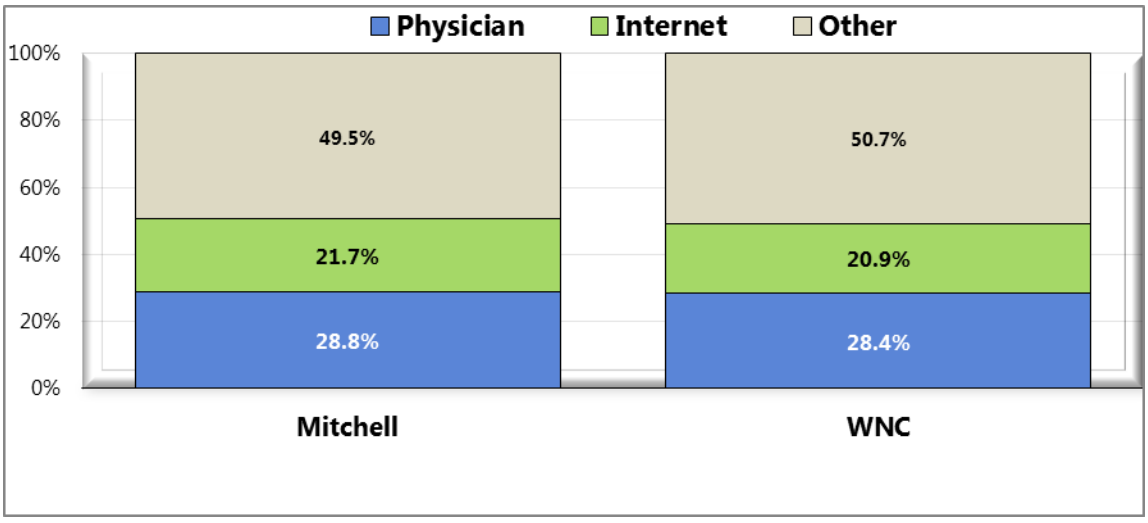
	Doctor	On My Own/Cold Turkey	Don't Know
Mitchell	✓	✓	✓
WNC	✓	✓	✓

Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 48]
Notes: Asked of all respondents.

Health Information

Survey respondents were asked about where they get their healthcare information. Mitchell County residents were also asked about their internet access: 73.9% of Mitchell County residents have access to the internet for personal use at home, work, or school.

Figure 67. Primary Source of Healthcare Information (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 11]
Notes: Asked of all respondents.

CHAPTER 5 – CLINICAL CARE PARAMETERS

Medical Care Access

Access to comprehensive, quality health care services is important for the achievement of health equity and for increasing the quality of a healthy life for everyone. It impacts: overall physical, social, and mental health status; prevention of disease and disability; detection and treatment of health conditions; quality of life; preventable death; and life expectancy.

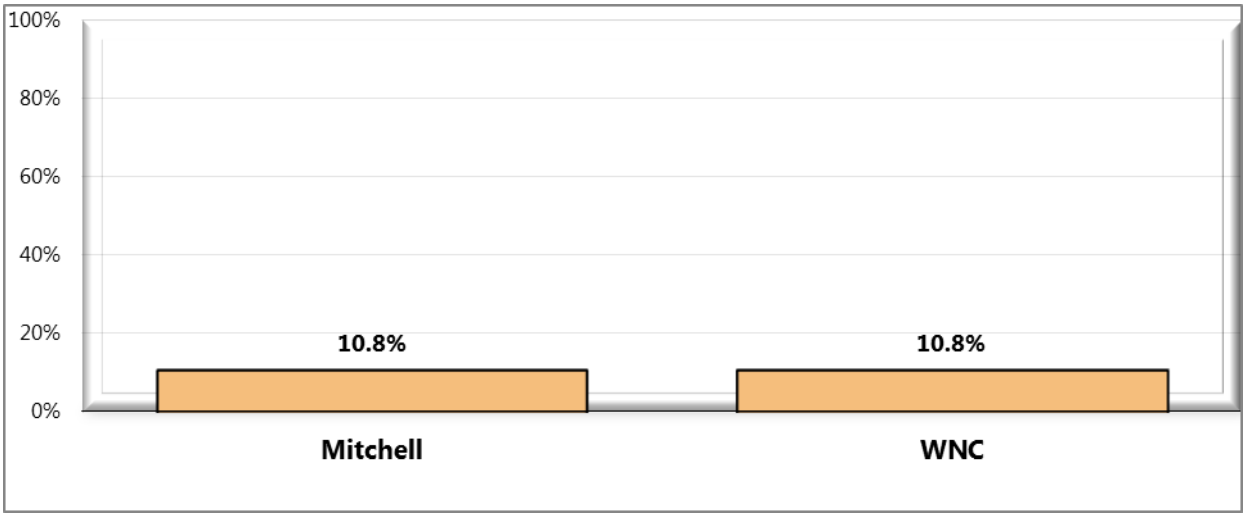
Access to health services means the timely use of personal health services to achieve the best health outcomes. It requires three distinct steps: 1) gaining entry into the health care system; 2) accessing a health care location where needed services are provided; and 3) finding a health care provider with whom the patient can communicate and trust (DHHS, 2010).

Self-Reported Access

Survey respondents were asked if there was a time in the past 12 months when they needed medical care, but could not get it. If they responded, "yes," they were asked to name the main reason they could not get needed medical care. Due to small county-level sample sizes, the responses to the latter question are displayed at the regional-level, below.

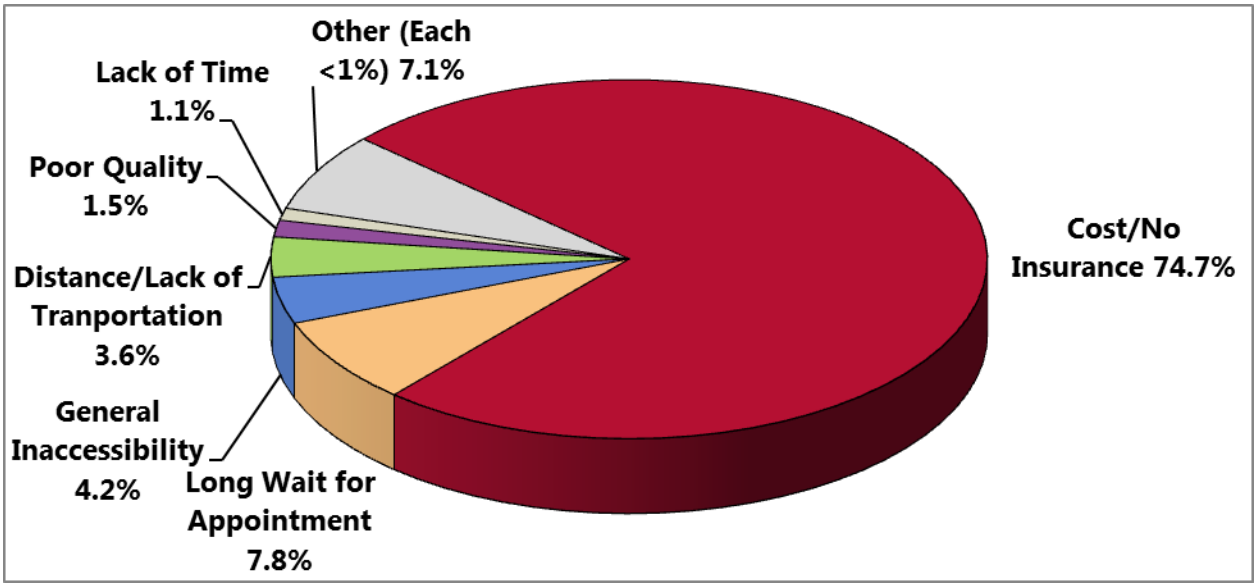
Survey respondents were also asked to indicate their agreement with the following statement: "*Considering cost, quality, number of options and availability, there is good healthcare in my county.*"

Figure 68. Was Unable to Get Needed Medical Care at Some Point in the Past Year (WNC Healthy Impact Survey)



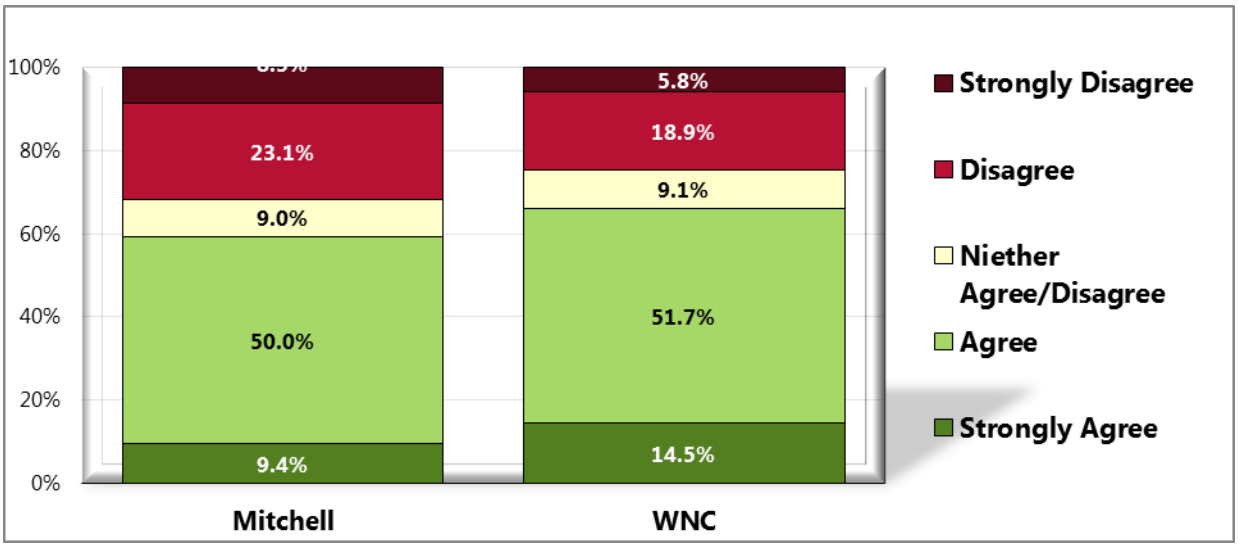
Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 13]
Notes: Asked of all respondents.

Figure 69. Primary Reason for Inability to Get Needed Medical Care (WNC Healthy Impact)
(Adults Unable to Get Needed Medical Care at Some Point in the Past Year)
(Western North Carolina, 2012)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 14]
Notes: Asked of all respondents.

Figure 70. "Considering cost, quality, number of options And availability, there is good health care in my county (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 7]
Notes: Asked of all respondents.

Health Care Providers

Provider/Population Ratios

One way to judge the supply of health care providers in a jurisdiction is to calculate the ratio of the number of health professionals to the number of persons in the population of that jurisdiction. In NC, there is data on the ratio of active health professionals per 10,000 population calculated at the county level. Table 42 presents those data (which for simplicity's sake will be referred to simply as the "ratio") for Mitchell County, WNC, the state as a whole, and the US for five key categories of health care professionals: physicians, primary care physicians, dentists, registered nurses, and pharmacists. The years covered are 2008 and 2010.

According to this data, the ratios for primary care physicians and registered nurses were higher than the comparable ratios in WNC, NC or the US in both years cited. It should be noted that in 2008 and 2010 the average ratios for WNC were lower than the comparable state averages in every professional category listed in the table, and lower than the comparable national average in every professional category except primary care.

Table 42. Active Health Professionals per 10,000 Population (2008 and 2010)

Geography	2008					2010				
	Phys	Primary Care Phys	Dents	RNs	Pharms	Phys	Primary Care Phys	Dents	RNs	Pharms
Mitchell County	16.8	13.7	3.7	104.2	9.4	15.4	12.8	3.2	128.3	9.0
Regional Average	15.0	8.9	3.4	75.3	7.0	14.8	8.9	3.4	74.9	6.9
State Average	21.2	9.0	4.3	95.1	9.3	21.7	9.4	4.4	97.4	9.2
National Average	23.2*	8.5*	4.9	91.4	8.0	22.7**	8.2**	5.7	92.0	8.3

* Data are for 2006
** Data are for 2008

Providers by Specialty

Table 43 lists the number of active health care professionals in Mitchell County and WNC, by specialty, for 2010. According to this data, there were no general practitioners practicing in the county at that time.

Table 43. Active Health Professionals in Mitchell County and WNC, by Specialty (2010)

Category of Professionals	Mitchell County	WNC Total
Physicians		
Primary Care Physicians	20	813
Family Practice	13	368
General Practice	0	10
Internal Medicine	4	240
Obstetrics/Gynecology	1	85
Pediatrics	2	110
Other Specialties	4	853
Dentists and Dental Hygienists		
Dentists	5	342
Dental Hygienists	9	479
Nurses		
Registered Nurses	200	7,981
Nurse Practitioners	5	316
Certified Nurse Midwives	1	28
Licensed Practical Nurses	56	1,854
Other Health Professionals		
Chiropractors	2	192
Occupational Therapists	4	242
Occupational Therapy Assistants	3	99
Optometrists	4	84
Pharmacists	14	669
Physical Therapists	8	511
Physical Therapy Assistants	11	309
Physician Assistants	2	290
Podiatrists	1	24
Practicing Psychologists	2	201
Psychological Assistants	3	87
Respiratory Therapists	10	370

Uninsured Population

Table 44 presents periodic two-year data on the proportion of the non-elderly population (ages 19-64) without health insurance of any kind.

While there was a 21% increase in the percent of the uninsured at the state level from 2006-2007 to 2009-2010, the percent of uninsured adults in Mitchell County as well as WNC decreased from one biennial period to the next throughout the span of years shown in the table. In Mitchell County the decrease was 15.1%, and in WNC it was 5.9%.

Table 44. Estimated Percent Uninsured Adults, Ages 19-64
Biennial Periods (2006-2007, 2008-2009, and 2009-2010)

Geography	Percent Uninsured		
	2006-2007	2008-2009	2009-2010
Mitchell County	23.9	21.8	20.3
Regional Arithmetic Mean	23.4	22.3	22.0
State Total	19.5	23.2	23.6

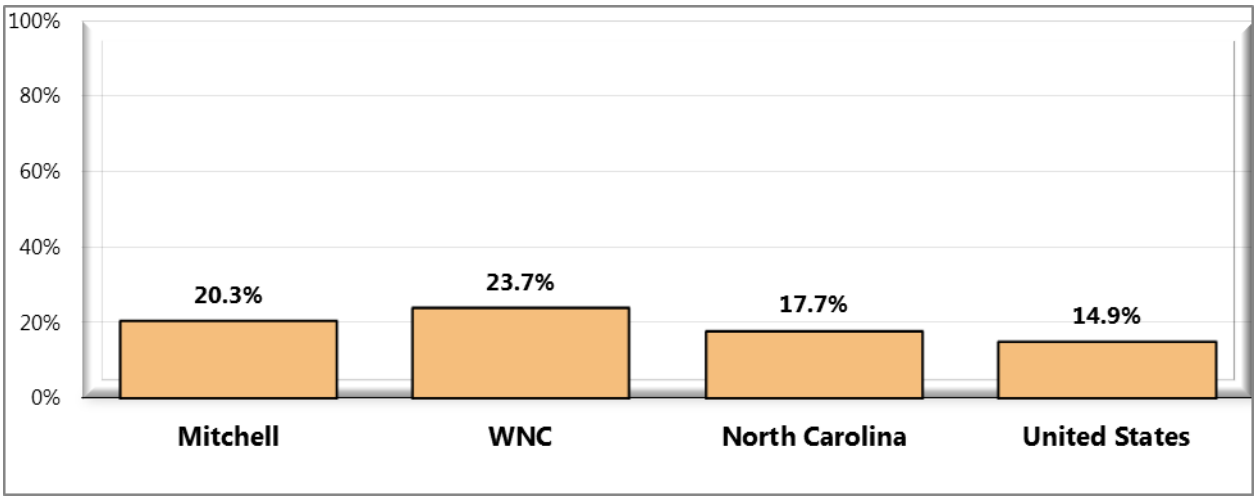
Table 45 shows the percent uninsured for one biennium (2009-2010) stratified by age. This data makes it clear that in Mitchell County as well as in WNC and NC as a whole, insurance coverage is better for children, among whom the percentage uninsured is less than half the percentage uninsured among the 19-64 age group. For all age categories cited, the percent uninsured is lower in Mitchell County and WNC than in NC.

Table 45. Estimated Percent Uninsured, All Ages
(2009-2010)

Geography	2009-2010		
	Children (0-18)	Adults (19-64)	Total (0-64)
Mitchell County	9.3	20.3	17.4
Regional Arithmetic Mean	9.6	22.0	18.6
State Total	10.3	23.6	19.6

Survey data also provides county and regional estimates of health insurance coverage. Lack of health insurance coverage reflects respondents age 18 to 64 (thus, excluding the Medicare population) who have no type of insurance coverage for healthcare services – neither private insurance nor government-sponsored plans (e.g., Medicaid).

Figure 71. Lack of Healthcare Insurance Coverage (WNC Healthy Impact Survey)
(Among Adults 18-64)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 125]
Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2010 North Carolina data.
2011 PRC National Health Survey, Professional Research Consultants, Inc.
US Department of Health and Human Services. Healthy People 2020. December 2010. http://www.healthypeople.gov [Objective AHS-1]

Notes: Reflects adults under the age of 65.
Includes any type of insurance, such as traditional health insurance, prepaid plans such as HMOs, or government-sponsored coverage (e.g., Medicare, Medicaid, Indian Health Services, etc.).

Medicaid Eligibility

Table 46 presents trend data on the number and percent of persons eligible for Medicaid for several state fiscal years. This data demonstrates that in Mitchell County the number and percent of Medicaid-eligible persons have risen since SFY2004. The percent of Medicaid-eligible Mitchell County residents was higher than the comparable figures for WNC and NC for each year shown in the figure. With the exception of SFY2007, the mean percent of the WNC population eligible for Medicaid rose from one year to the next throughout the period cited in the table. Note that between SFY2006 and SFY2007 the number in WNC that were Medicaid-eligible rose even if the percentage did not. Further, the mean percent Medicaid-eligible in WNC exceeded the comparable percent eligible statewide for every period cited.

Table 46. Number and Percent of Population Medicaid-Eligible (SFY2004 through SFY2008)

Geography	SFY 2004		SFY 2005		SFY 2006		SFY 2007		SFY 2008	
	#	%	#	%	#	%	#	%	#	%
Mitchell County	3,198	20.08	3,271	20.45	3,334	20.99	3,335	20.97	3,431	21.51
Regional Total	128,727	-	132,895	-	138,616	-	139,891	-	142,606	-
Regional Arithmetic Mean	16,091	19.90	16,612	20.21	17,327	20.75	17,486	20.52	17,826	20.82
State Total	1,512,360	17.97	1,563,751	18.31	1,602,645	18.46	1,682,028	18.98	1,726,412	19.04

Screening and Prevention

Diabetes

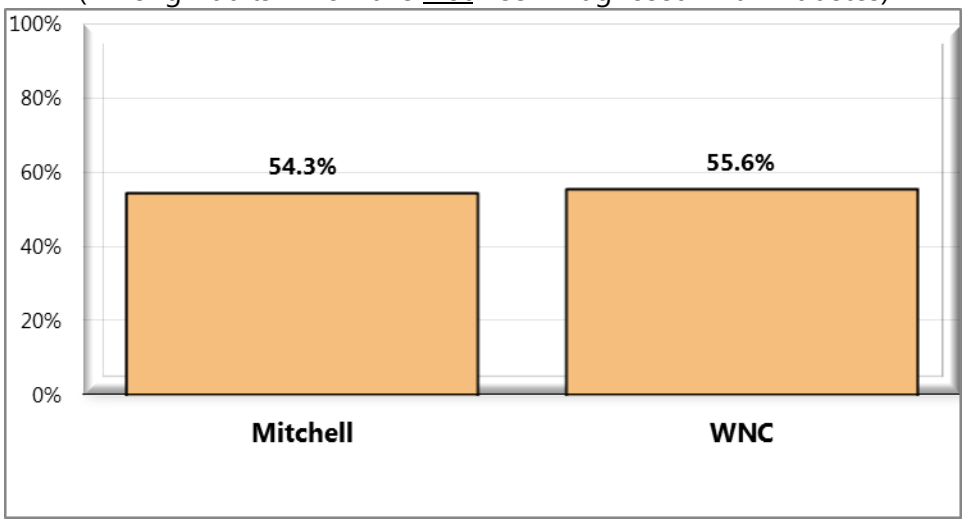
Diabetes mellitus occurs when the body cannot produce or respond appropriately to insulin. Insulin is a hormone that the body needs to absorb and use glucose (sugar) as fuel for the body's cells. Without a properly functioning insulin signaling system, blood glucose levels become elevated and other metabolic abnormalities occur, leading to the development of serious, disabling complications. Many forms of diabetes exist; the three common types are Type 1, Type 2, and gestational diabetes.

Diabetes mellitus affects an estimated 23.6 million people in the United States and is the 7th leading cause of death. Diabetes mellitus:

- Lowers life expectancy by up to 15 years.
- Increases the risk of heart disease by 2 to 4 times.
- Is the leading cause of kidney failure, lower limb amputations, and adult-onset blindness.

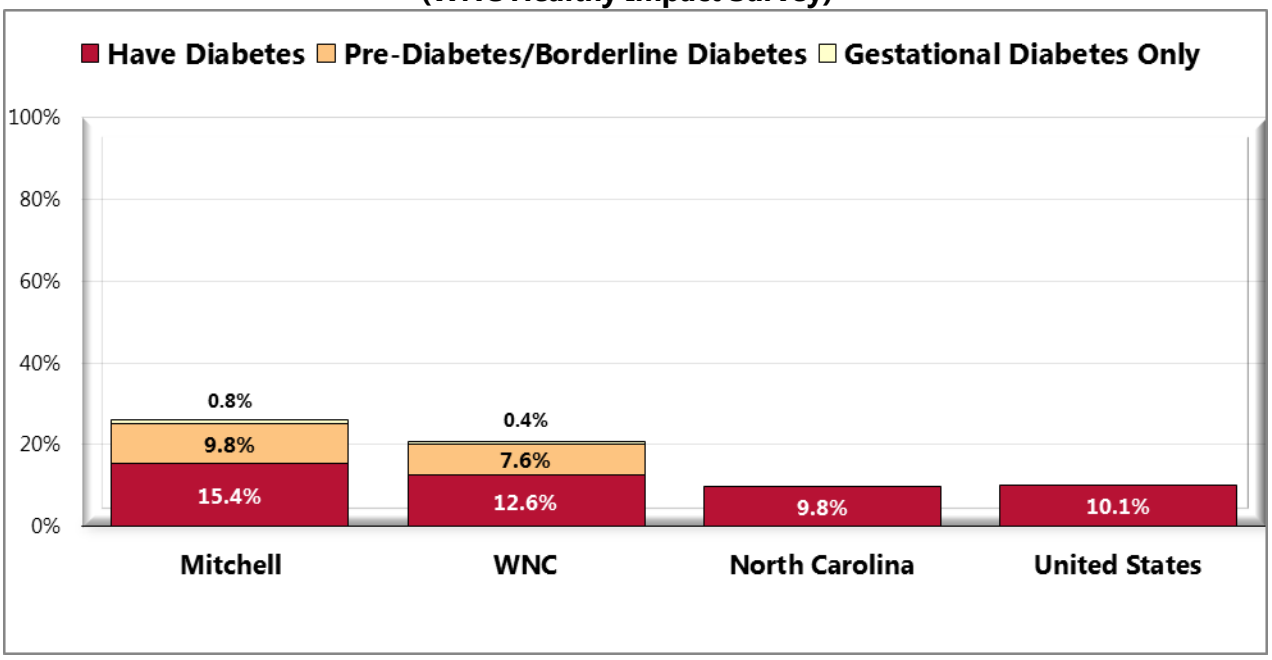
People from minority populations are more frequently affected by type 2 diabetes. Minority groups constitute 25% of all adult patients with diabetes in the US and represent the majority of children and adolescents with type 2 diabetes. Lifestyle change has been proven effective in preventing or delaying the onset of type 2 diabetes in high-risk individuals (DHHS, 2010).

Figure 72. Tested for Diabetes in the Past Three Years (WNC Healthy Impact Survey)
(Among Adults Who Have Not Been Diagnosed With Diabetes)



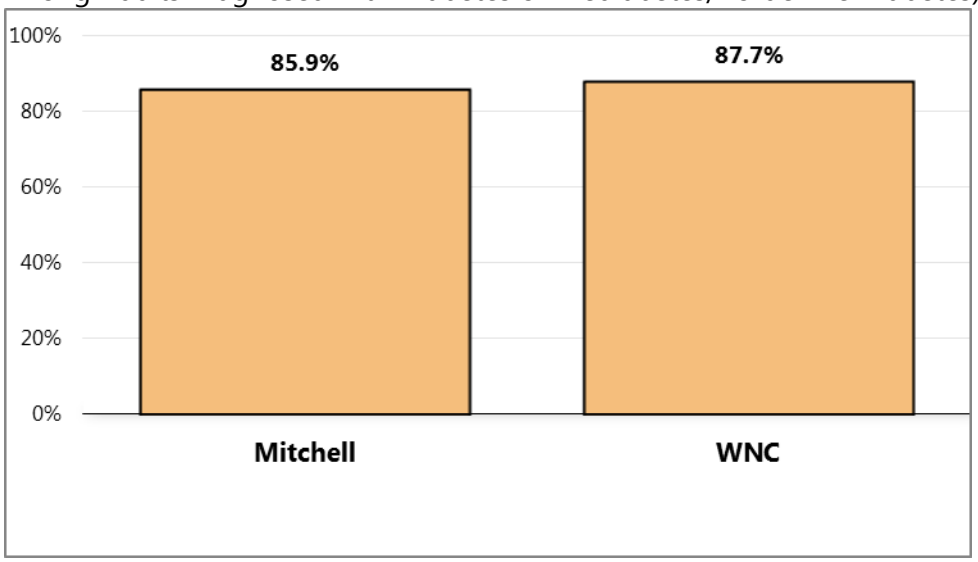
Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 19]
Notes: Asked of respondents who have never been diagnosed with diabetes; also includes women who have only been diagnosed when pregnant.

Figure 73. Prevalence of Diabetes (Ever Diagnosed)
(WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 78]
2011 PRC National Health Survey, Professional Research Consultants, Inc.
Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2010 North Carolina data.
Notes: Asked of all respondents.
Local and national data exclude gestation diabetes (occurring only during pregnancy).

Figure 74. Taking Action to Control Diabetes or Prediabetes (WNC Healthy Impact Survey)
(Among Adults Diagnosed with Diabetes or Prediabetes/Borderline Diabetes)

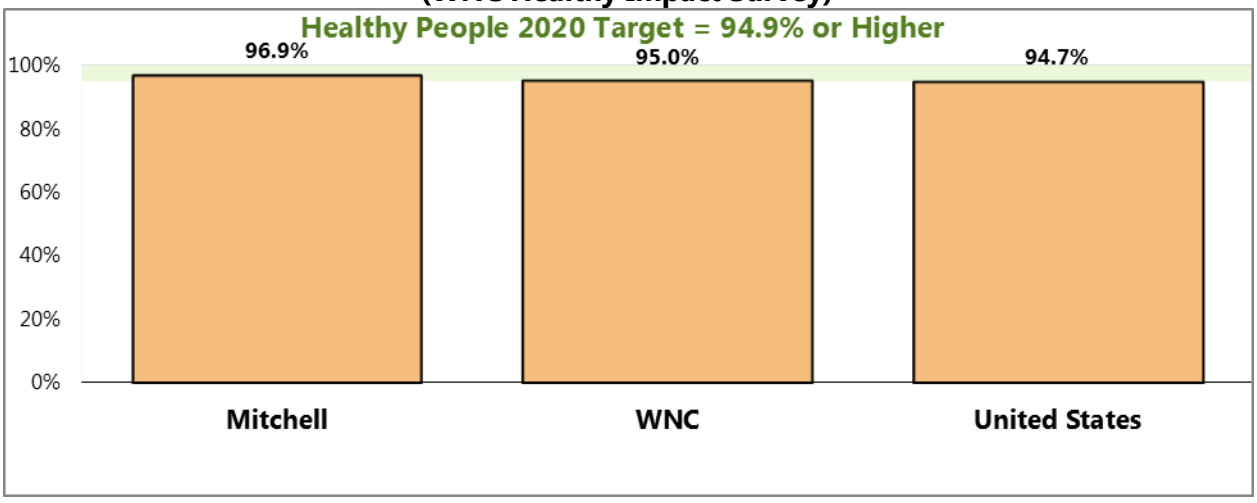


Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 21]
Notes: Asked of respondents who have been diagnosed with diabetes or prediabetes/borderline diabetes. In this case, the term "action" refers to taking natural or conventional medicines or supplements, diet modification, or exercising.

Hypertension

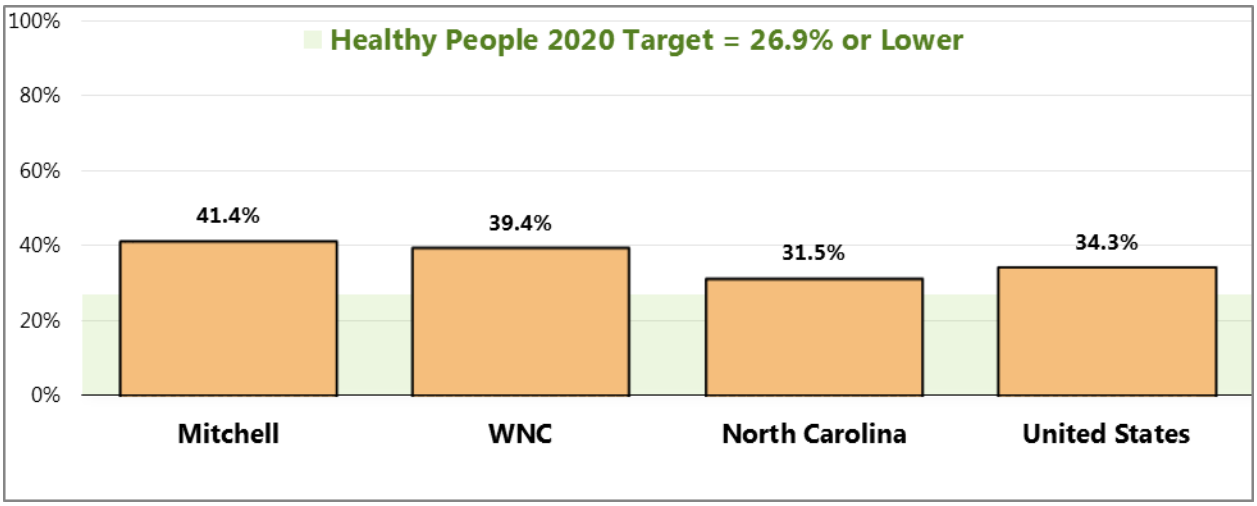
Controlling risk factors for heart disease and stroke remains a challenge. High blood pressure is still a major contributor to the national epidemic of cardiovascular disease. High blood pressure affects approximately 1 in 3 adults in the United States, and more than half of Americans with high blood pressure do not have it under control (DHHS, 2010).

Figure 75. Have Had Blood Pressure Checked in the Past Two Years (WNC Healthy Impact Survey)



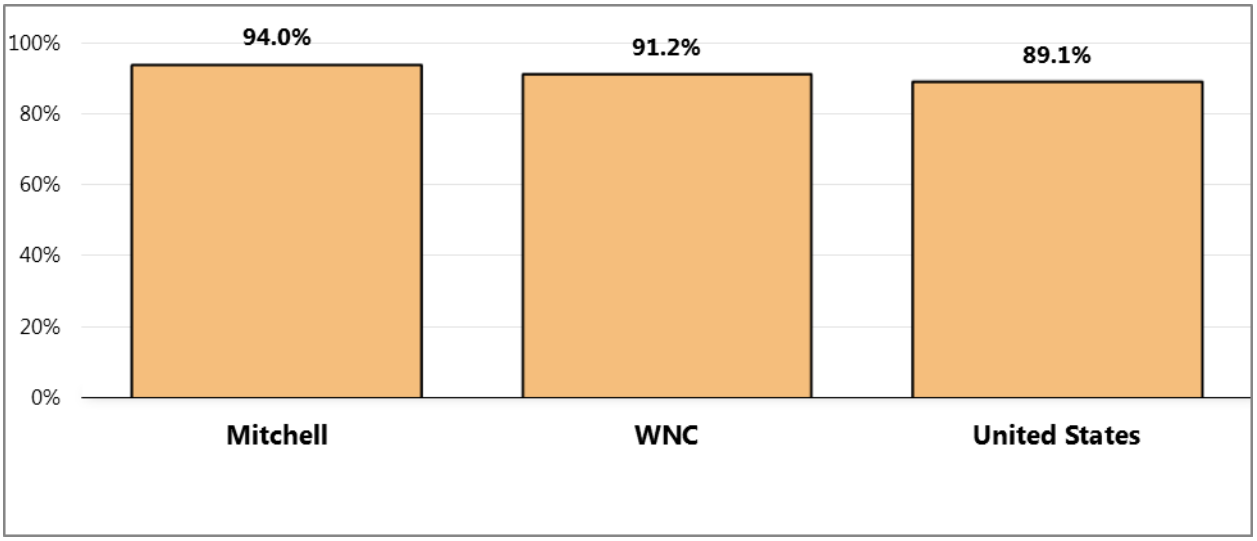
Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 24]
2011 PRC National Health Survey, Professional Research Consultants, Inc.
US Department of Health and Human Services. Healthy People 2020. December 2010. http://www.healthypeople.gov [Objective HDS-4] Notes: Asked of all respondents.

Figure 76. Prevalence of High Blood Pressure (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 76]
Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2009 North Carolina data.
2011 PRC National Health Survey, Professional Research Consultants, Inc.
US Department of Health and Human Services. Healthy People 2020. December 2010. http://www.healthypeople.gov [Objective HDS-5.1]
Notes: Asked of all respondents.

Figure 77. Taking Action to Control Hypertension (WNC Healthy Impact Survey)
(Among Adults with High Blood Pressure)

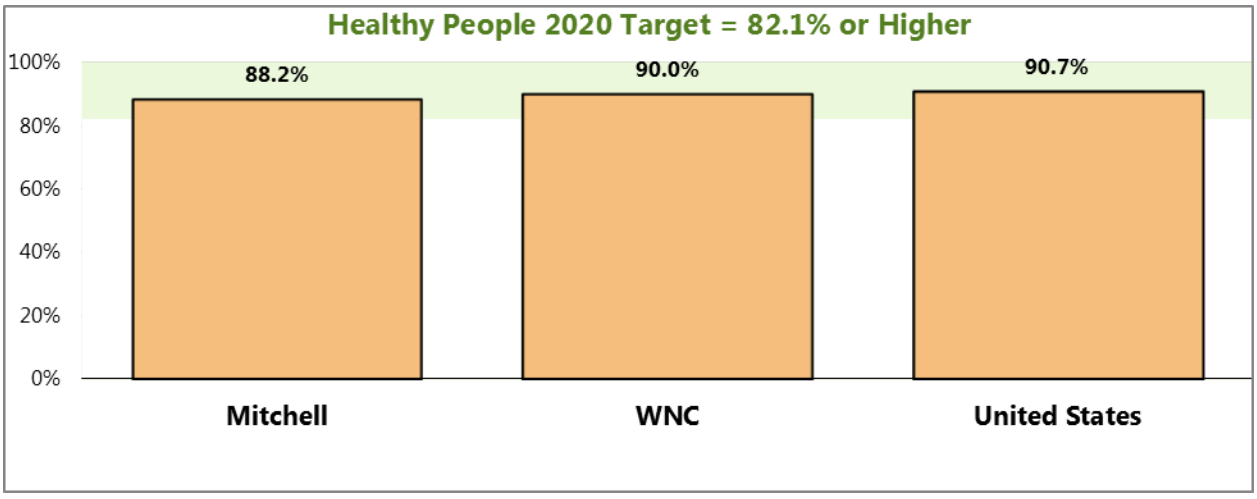


Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 23]
2011 PRC National Health Survey, Professional Research Consultants, Inc.
Notes: Asked of respondents who have been diagnosed with high blood pressure.
In this case, the term "action" refers to medication, change in diet, and/or exercise.

Cholesterol

Cholesterol is also a major contributor to the national epidemic of cardiovascular disease. Survey respondents were asked a series of questions about their blood cholesterol levels.

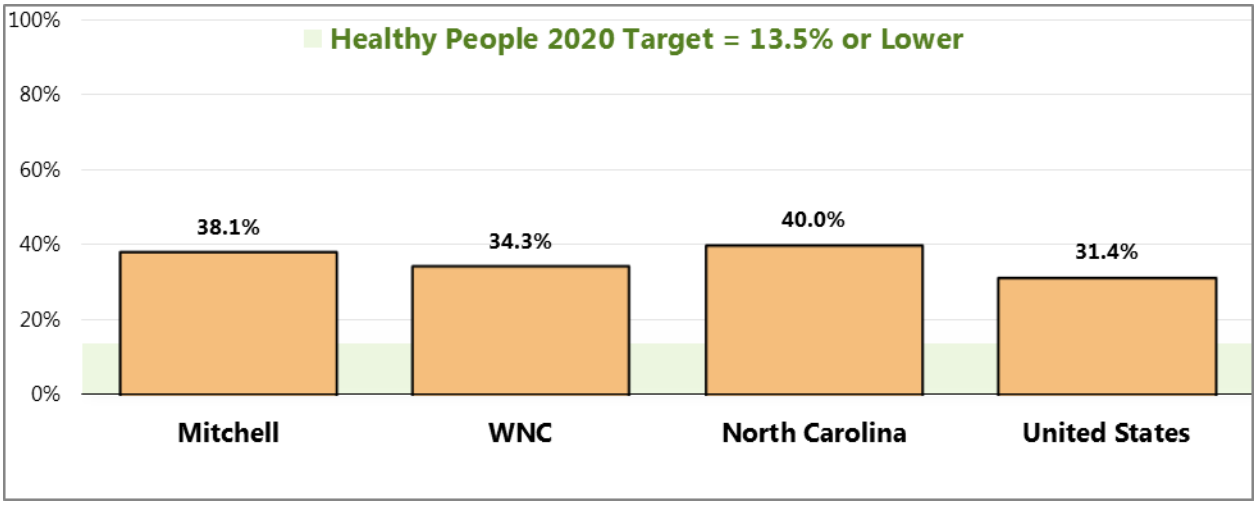
Figure 78. Have Had Blood Cholesterol Levels Checked in the Past Five Years (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 27]
2011 PRC National Health Survey, Professional Research Consultants, Inc.
US Department of Health and Human Services. Healthy People 2020. December 2010. http://www.healthypeople.gov [Objective HDS-6]

Notes: Asked of all respondents.

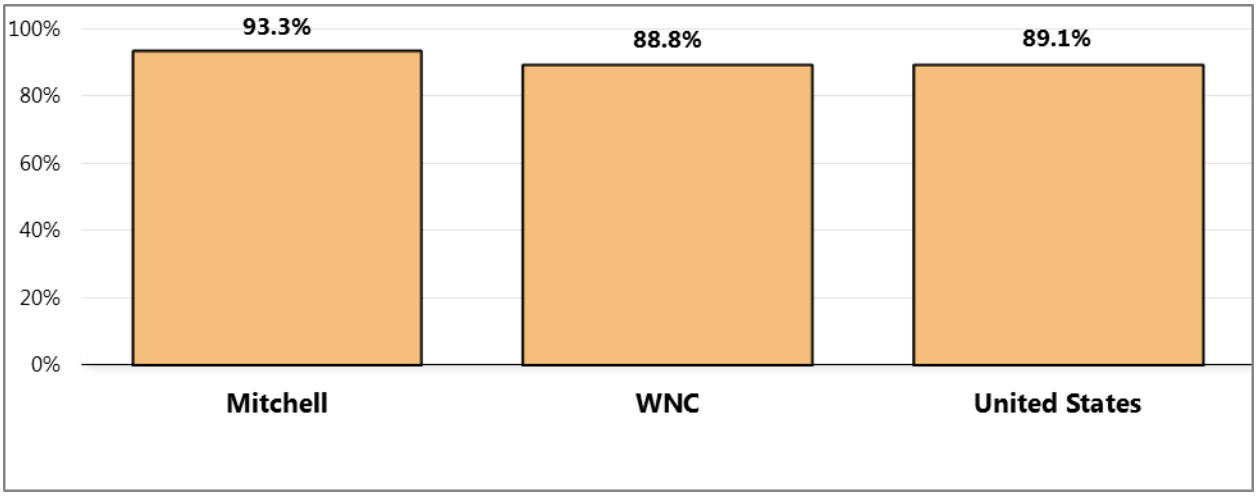
Figure 79. Prevalence of High Blood Cholesterol (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 77]
Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2009 North Carolina data.
2011 PRC National Health Survey, Professional Research Consultants, Inc.
US Department of Health and Human Services. Healthy People 2020. December 2010. http://www.healthypeople.gov [Objective HDS-7]

Notes: Asked of all respondents.

Figure 80. Taking Action to Control High Blood Cholesterol (WNC Healthy Impact Survey)
(Among Adults With High Blood Pressure)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 26]
2011 PRC National Health Survey, Professional Research Consultants, Inc.
Notes: Asked of respondents who have been diagnosed with high blood cholesterol.
In this case, the term "action" refers to medication, change in diet, and/or exercise.

Healthcare Utilization

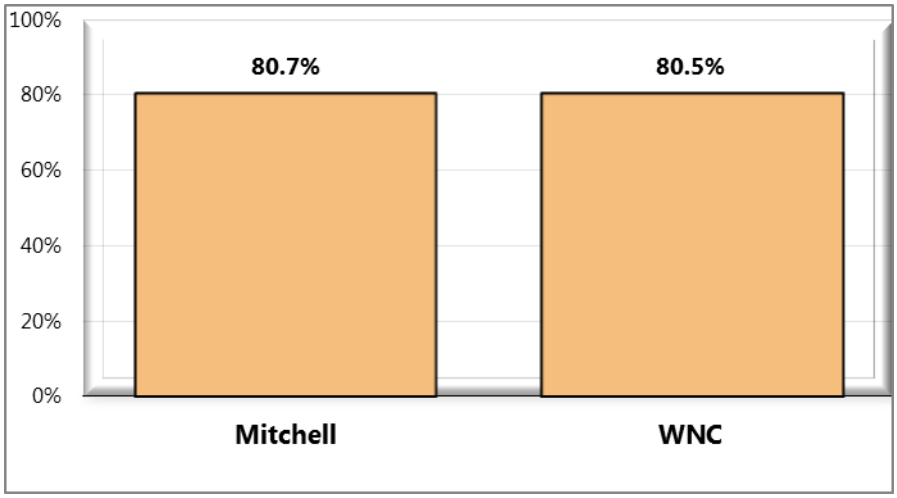
Routine Medical Care

Improving health care services depends in part on ensuring that people have a usual and ongoing source of care. People with a usual source of care have better health outcomes and fewer disparities and costs. Having a primary care provider (PCP) as the usual source of care is especially important. PCPs can develop meaningful and sustained relationships with patients and provide integrated services while practicing in the context of family and community. Having a usual PCP is associated with:

- Greater patient trust in the provider
- Good patient-provider communication
- Increased likelihood that patients will receive appropriate care

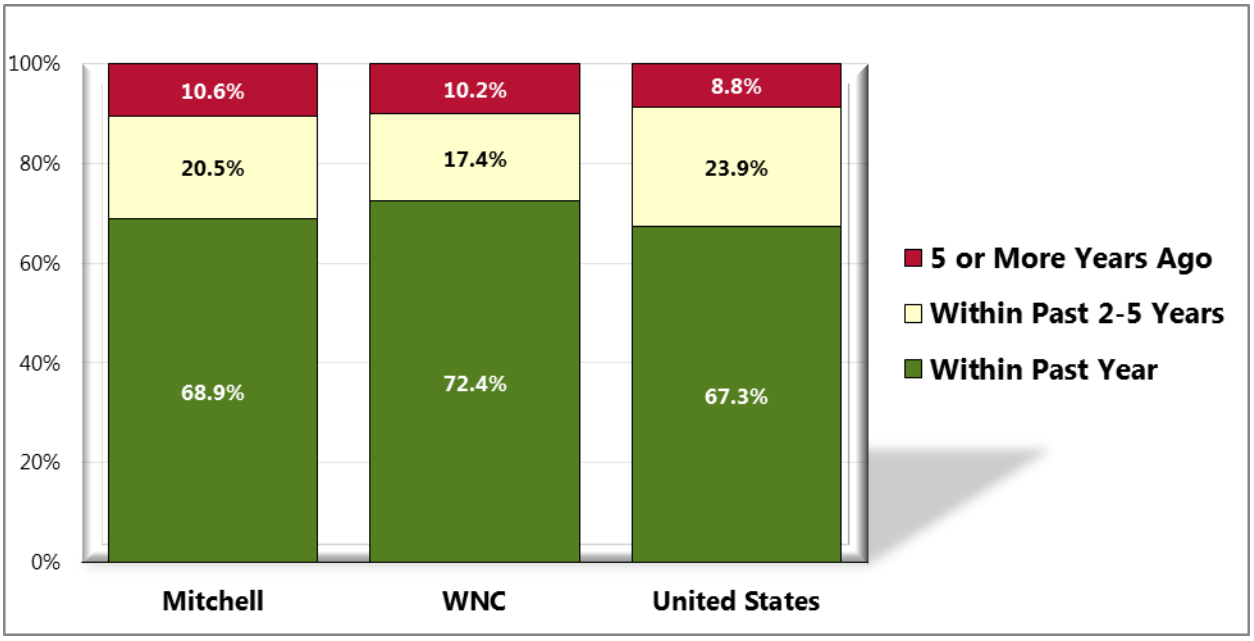
Improving health care services includes increasing access to and use of evidence-based preventive services. Clinical preventive services are services that: **prevent** illness by detecting early warning signs or symptoms before they develop into a disease (primary prevention); or **detect** a disease at an earlier, and often more treatable, stage (secondary prevention) (DHHS, 2010).

Figure 81. Have One Person Thought of as Respondent's Personal Doctor or Health Care Provider (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 16]
Notes: Asked of all respondents.

Figure 82. Length of Time Since Last Routine Check-Up (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 15]
2011 PRC National Health Survey, Professional Research Consultants, Inc.
Notes: Asked of all respondents.

Emergency Department Utilization

According to data in Table 47, the diagnoses associated with the highest frequency of emergency department visits in Mitchell County in 2010 were chest pain/ischemic heart disease (12.10% of all ED visits), followed by diabetes (9.20%) and psychiatric disorders (7.94%). On the regional level, the diagnoses associated with the highest frequency of ED visits were chest pain/ischemic heart disease (11.83% of all ED visits), followed by psychiatric disorders (10.98%) and lower respiratory disorders (9.48%)

Table 47. North Carolina Emergency Department Visits, NC DETECT Data (2010)

Diagnosis	Mitchell County		WNC Mean
	#	%	%
Chest pain/ischemic heart disease	1,004	12.10	11.83
Heart failure	233	2.81	2.58
Cardiac arrest	S	S	0.14
Lower respiratory disorders	594	7.16	9.48
Diabetes	763	9.20	8.80
Neoplasms	91	1.10	1.57
Dental problems	122	1.47	1.85
Stroke/TIA	43	0.52	0.62
Traumatic brain injury	S	S	0.30
Psychiatric disorders	659	7.94	10.98
Substance abuse	179	2.16	2.99
Total ED Visits	8,295	n/a	n/a

* % represents percent of total ED visits
** "S" indicates the data was suppressed due to a case count under 10
Note: for the full description of the disease group diagnosis codes included in each diagnosis line, see the *Data Workbook*.

Table 48 presents a summary of the major first-listed emergency department diagnoses for the WNC region according to DRG code. According to this data, the most common first-listed diagnosis codes in emergency departments across the region are abdominal pain (2.37% of all ED visits) and back pain, sprains of the lumbar spice, and sciatica (also 2.37%). It would appear that some of these cases could qualify for diversion to other health care providers *if* they were present in the community.

Table 48. Most Common First-Listed Diagnosis Codes in Emergency Departments, WNC
NC DETECT Data
2010

Diagnosis	Diagnosis Codes	# ED Visits	% of Total ED Visits
Abdominal pain	789.0, 789.00, 789.03, 789.09	7,597	2.37
Back pain, sprains of lumbar spine, sciatica	724.2, 724.3, 724.5, 847.2	7,590	2.37
Essential hypertension	401.9	7,490	2.34
Nausea with vomiting or vomiting alone	787.01, 787.03	5,873	1.83
Headache, Migraine, unspecified	784.0, 346.9	5,584	1.74
Acute URI/Pharyngitis, Streptococcal sore throat	034.0, 465.9, 462	5,458	1.70
Cough, Bronchitis	786.2, 466.0, 490	4,703	1.47
Dental caries, periapical abscess, tooth structure, disorders	521.00, 522.5, 525.9	4,210	1.31
UTI	599	4,027	1.26
Fever, Unknown origin	780.6, 780.60	3,285	1.03
Asthma, unspecified	493.90, 439.92	2,823	0.88
Neck sprains/stains	723.1, 847.0	2,728	0.85
Pain in joint	719.41, 719.45, 719.46	2,609	0.81
Pain in limb	729.5	2,486	0.78
Chest pain	786.5, 786.50, 786.59	2,186	0.68
Otitis media	382.9	2,083	0.65
Pneumonia	486	1,934	0.60
Open wound of hand or finger without complication	882.0, 883.0	1,644	0.51
Contusion of face, scalp, and neck except eyes	920	1,622	0.51
Syncope and collapse	780.2	1,552	0.48
TOTAL ED VISITS		320,429	

Inpatient Hospitalizations

Table 49 lists the diagnostic categories accounting for the most cases of inpatient hospitalization for 2010. The source data is based on a patient's county of residence, so the regional totals presented in the table represent the sum of hospitalizations from each of the 16 WNC counties.

According to data in Table 49, the diagnosis resulting in the highest number of cases of hospitalization in 2010 among Mitchell County residents was for respiratory diseases, including pneumonia/influenza and chronic obstructive pulmonary disease, which accounted for 347 hospitalizations. The next highest number of hospitalizations was for cardiovascular and circulatory diseases, including heart disease and cerebrovascular disease (331 cases), followed by digestive system diseases, including chronic liver disease and cirrhosis (268 cases).

Table 49. Inpatient Hospital Utilization by Mitchell County Residents, by Principal Diagnoses Excluding Newborns and Discharges from Out-of-State Hospitals (2011)

Diagnostic Category	Total # Cases		
	Mitchell County	Region	North Carolina
INFECTIOUS & PARASITIC DISEASES	81	2,741	41,705
-- Septicemia	56	1,604	27,412
-- AIDS	3	41	1,456
MALIGNANT NEOPLASMS	65	2,599	31,225
-- Colon, Rectum, Anus	8	324	3,770
-- Trachea, Bronchus, Lung	4	346	4,541
-- Female Breast	6	157	1,498
-- Prostate	4	192	2,505
BENIGN, UNCERTAIN & OTHER NEOPLASMS	15	650	8,948
ENDOCRINE, METABOLIC & NUTRITIONAL DISEASES	85	2,905	40,208
-- Diabetes	35	1,240	18,101
BLOOD & HEMOPOETIC TISSUE DISEASES	25	770	14,011
NERVOUS SYSTEM & SENSE ORGAN DISEASES	42	1,597	19,315
CARDIOVASCULAR & CIRCULATORY DISEASES	331	12,961	162,327
-- Heart Disease	239	9,006	108,060
-- Cerebrovascular Disease	51	2,259	29,429
RESPIRATORY DISEASES	347	8,683	93,891
-- Pneumonia/Influenza	187	3,089	29,852
-- Chronic Obstructive Pulmonary Disease	95	2,557	30,832
DIGESTIVE SYSTEM DISEASES	268	8,527	95,068
-- Chronic Liver Disease/Cirrhosis	1	178	2,361
GENITOURINARY DISEASES	93	4,123	45,978
-- Nephritis, Nephrosis, Nephrotic Synd.	23	1,036	14,368
PREGNANCY & CHILDBIRTH	147	7,921	125,271
SKIN & SUBCUTANEOUS TISSUE DISEASES	50	1,287	17,734
MUSCULOSKELETAL SYSTEM DISEASES	134	5,950	58,753
-- Arthropathies and Related Disorders	76	3,155	30,683
CONGENITAL MALFORMATIONS	7	294	3,318
PERINATAL COMPLICATIONS	8	198	4,035
SYMPTOMS, SIGNS & ILL-DEFINED CONDITIONS	114	3,916	48,299
INJURIES & POISONING	154	7,474	78,637
OTHER DIAGNOSES (INCL. MENTAL DISORDERS)	120	7,329	84,657
ALL CONDITIONS	2,086	79,925	973,380

Source: *Inpatient Hospital Utilization and Charges by Principal Diagnosis, and County of Residence, North Carolina, 2010 (Excluding Newborns & Discharges from Out of State Hospitals)* Retrieved June 20, 2012, from North Carolina State Center for Health Statistics (NC SCHS), 2012 County Health Data Book website: http://www.schs.state.nc.us/schs/data/databook/

Dental Services

The significant improvement in the oral health of Americans over the past 50 years is a public health success story. Most of the gains are a result of effective prevention and treatment efforts. One major success is community water fluoridation, which now benefits about 7 out of 10 Americans who get water through public water systems. However, some Americans do not have access to preventive programs. People who have the least access to preventive services and dental treatment have greater rates of oral diseases. A person's ability to access oral healthcare is associated with factors such as education level, income, race, and ethnicity.

Oral health is essential to overall health. Good oral health improves a person's ability to speak, smile, smell, taste, touch, chew, swallow, and make facial expressions to show feelings and emotions. However, oral diseases, from cavities to oral cancer, cause pain and disability for many Americans. Good self-care, such as brushing with fluoride toothpaste, daily flossing, and professional treatment, is key to good oral health. Health behaviors that can lead to poor oral health include:

- Tobacco use
- Excessive alcohol use
- Poor dietary choices

There are also social determinants that affect oral health. In general, people with lower levels of education and income, and people from specific racial/ethnic groups, have higher rates of disease. People with disabilities and other health conditions, like diabetes, are more likely to have poor oral health (DHHS, 2010).

Utilization of Dental Services by the Medicaid Population

Table 50 presents data on the percent of the Medicaid population eligible for dental care that utilizes it. This data represents the Medicaid population of all ages, but split into under-age-21 and age-21-and over-categories. In all three jurisdictions the Medicaid population under age 21 appears to be more likely to utilize dental services than the population age 21 and older.

Table 50. Medicaid Recipients Receiving Dental Services, All Ages (2010)

Geography	Medicaid Recipients Utilizing Dental Services (by Ages Group)					
	<21 Years Old			21+ Years Old		
	# Eligible for Services	# Receiving Services	% Eligibles Receiving Services	# Eligible for Services	# Receiving Services	% Eligibles Receiving Services
Mitchell County	1,797	850	47.3	1,621	460	28.4
Regional Total	85,652	42,135	49.2	62,817	18,536	29.5
State Total	1,113,692	541,210	48.6	679,139	214,786	31.6

Table 51, focusing only on children ages 1-5, helps in understanding why utilization in the under 21 age group is so high. In this youngest age group, approximately half of the eligible population received dental services in all three jurisdictions.

Table 51. Medicaid-Recipients Receiving Dental Services, Ages 1-5 (2010)

Geography	Children (aged 1-5) Enrolled in Medicaid Who Received Any Dental Service In the Previous 12 Months)		
	# Eligible for Services*	# Receiving Services**	% Eligibles Receiving Services
Mitchell County	552	269	48.7
Regional Total	26,820	14,407	53.7
State Total	n/a	n/a	51.7

Dental Screening Results among Children

Table 52 presents 2009 dental screening results for kindergarteners. While the screening process captures other data, this data covers only the average number of decayed, missing or filled teeth. The average number of decayed, missing or filled teeth discovered among kindergarteners screened in Mitchell County (1.92 per child) was 14% lower than the mean percentage for WNC (2.18) but 28% higher than the state average (1.50).

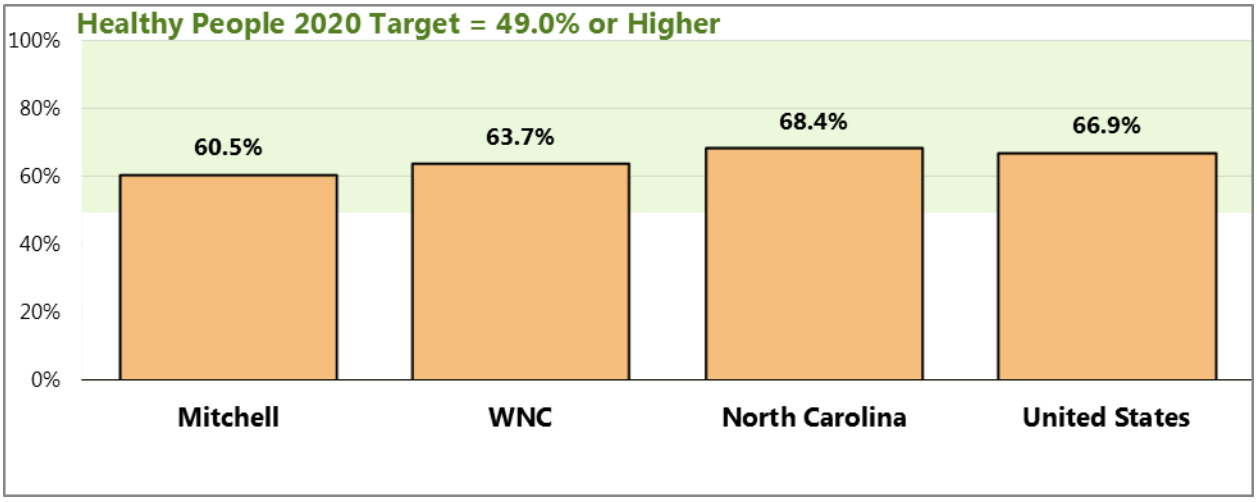
Table 52. Dental Screening Results, Kindergarteners (2009)

Geography	Average # Decayed, Missing or Filled Teeth
Mitchell County	1.92
Regional Arithmetic Mean	2.18
State Total	1.50

Utilization of Preventive Dental Care

Survey respondents were asked, "About how long has it been since you last visited a dentist or a dental clinic for any reason? This includes visits to dental specialists, such as orthodontists."

Figure 83. Have Visited a Dentist or Dental Clinic Within the Past Year (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 17]
2011 PRC National Health Survey, Professional Research Consultants, Inc.
US Department of Health and Human Services. Healthy People 2020. December 2010. http://www.healthypeople.gov [Objective OH-7]
Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2010 North Carolina data.

Notes: Asked of all respondents.

Mental Health

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

Mental disorders are among the most common causes of disability. The resulting disease burden of mental illness is among the highest of all diseases. According to the national Institute of Mental Health (NIMH), in any given year, an estimated 13 million American adults (approximately 1 in 17) have a seriously debilitating mental illness. Mental health disorders are the leading cause of disability in the United States and Canada, accounting for 25% of all years of life lost to disability and premature mortality. Moreover, suicide is the 11th leading cause of death in the United States, accounting for the deaths of approximately 30,000 Americans each year.

Mental health and physical health are closely connected. Mental health plays a major role in people's ability to maintain good physical health. Mental illnesses, such as depression and

anxiety, affect people's ability to participate in health-promoting behaviors. In turn, problems with physical health, such as chronic diseases, can have a serious impact on mental health and decrease a person's ability to participate in treatment and recovery.

In addition to advancements in the prevention of mental disorders, there continues to be steady progress in treating mental disorders as new drugs and stronger evidence-based outcomes become available (DHHS, 2010).

The unit of NC government responsible for overseeing mental health services is the Division of Mental Health, Developmental Disabilities and Substance Abuse Services (DMH/DD/SAS). The NC mental health system is built on a system of Local Management Entities (LMEs)—area authorities or county programs—responsible for managing, coordinating, facilitating and monitoring the provision of MH/DD/SAS services in the catchment area served. There are two LMEs serving the population in WNC: Smoky Mountain Center and Western Highlands Network (NC Division of Mental Health, August 2012).

Mental Health Service Utilization Trends

Table 53 presents figures on the numbers of persons receiving services in Area Mental Health Programs in 2006 through 2010. No clear pattern of service utilization is apparent from this data in any of the three jurisdictions. It should be noted that the mental health system in NC is in some disarray, as reform of the recent past is being reconsidered.

Table 53. Persons Served in Area Mental Health Programs (2006-2010)

Geography	# Persons Served in Area Mental Health Programs				
	2006	2007	2008	2009	2010
Mitchell County	729	652	516	589	688
Regional Total	30,952	31,271	28,380	24,527	28,453
State Total	322,397	315,338	306,907	309,155	332,796

Table 54 presents figures on the numbers of persons receiving services in NC state alcohol and drug treatment centers. Although the pattern of increase is not straight-line, it appears that increasing numbers of persons in WNC have received services from NC state alcohol and drug treatment centers since 2007. Noteworthy at the regional level was a 23% increase in persons being served between 2009 and 2010. There was no clear pattern discernible in the data for Mitchell County.

Table 54. Persons Served in NC State Alcohol and Drug Treatment Centers (2006-2010)

Geography	# Persons Served in NC Alcohol and Drug Treatment Centers				
	2006	2007	2008	2009	2010
Mitchell County	15	14	25	7	20
Regional Total	664	604	774	751	921
State Total	4,003	3,733	4284	4,812	4,483

Table 55 presents figures on the numbers of persons receiving services in NC state psychiatric hospitals. The number of persons in Mitchell County utilizing these services fell every year from 2006 to 2009, decreasing by 76% over the period before increasing again in 2010. The number of persons in WNC receiving these services also fell. The number of persons in WNC utilizing state psychiatric hospital services in 2010 (564) was 63% lower than the number utilizing services in 2006 (1,509). The decrease in persons receiving services likely is a reflection of a decreasing availability of state services, rather than a decreasing need for services.

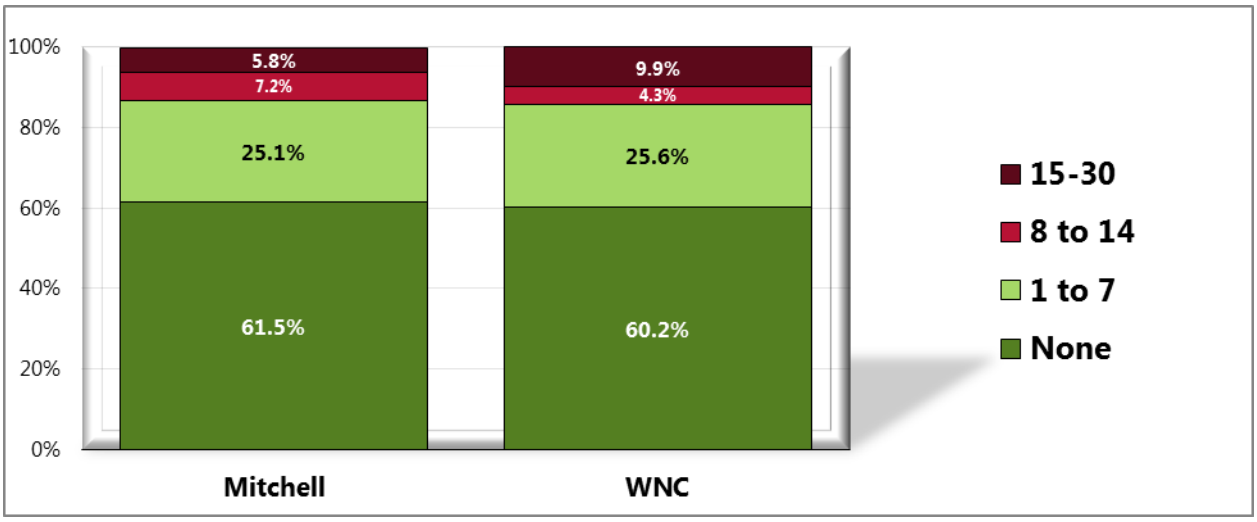
Table 55. Persons Served in NC State Psychiatric Hospitals (2006-2010)

Geography	# Persons Served in NC State Psychiatric Hospitals				
	2006	2007	2008	2009	2010
Mitchell County	33	28	20	8	13
Regional Total	1,509	1,529	1190	818	564
State Total	18,292	18,498	14643	9,643	7,188

Poor Mental Health Days

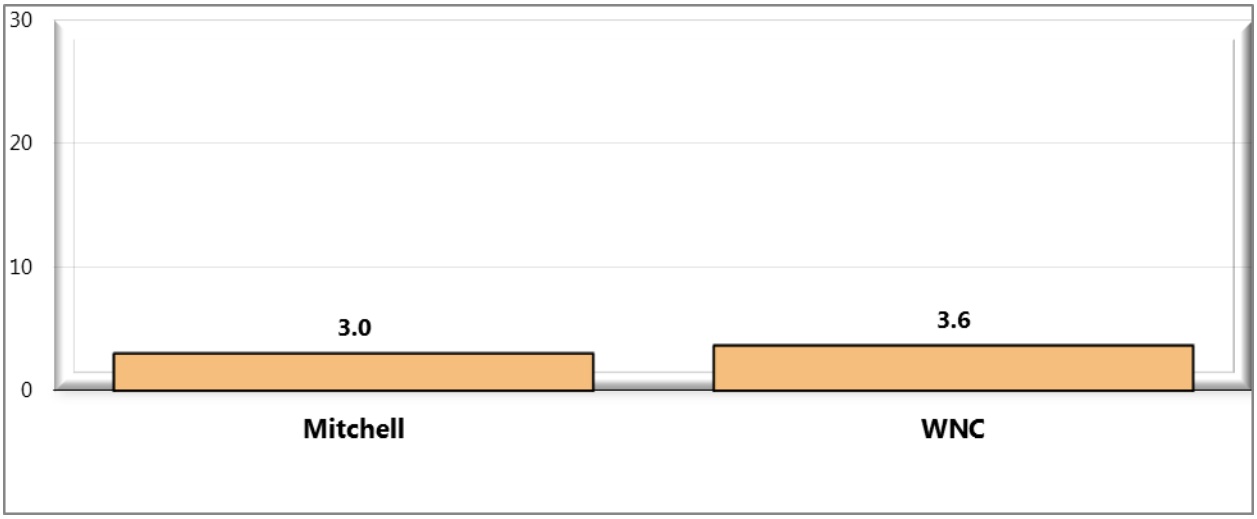
Survey respondents were asked, "Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many of the past 30 days was your mental health not good?"

Figure 84. Number of Days in the Past 30 Days on Which Mental Health Was Not Good (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 64]
Notes: Asked of all respondents.

Figure 85. Average Number of the Past 30 Days on Which Mental Health Was Not Good (WNC Healthy Impact Survey)

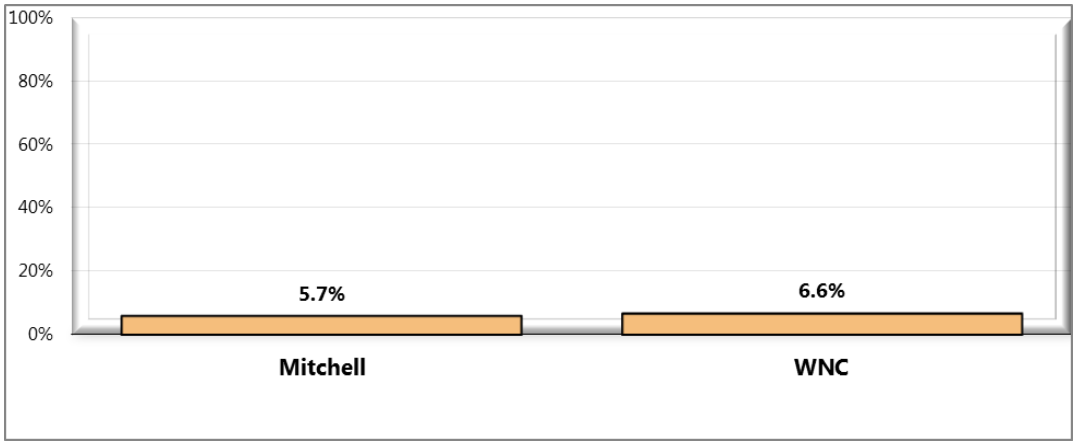


Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 64]
Notes: Asked of all respondents.

Access to Mental Health Services

Survey respondents were asked if they had a time in the past year when they needed mental health care or counseling, but did not get it at that time. Those who responded, "yes," were asked to name the main reason they did not get mental health care or counseling. Due to small county-level sample sizes, responses to the latter question are displayed below for the region.

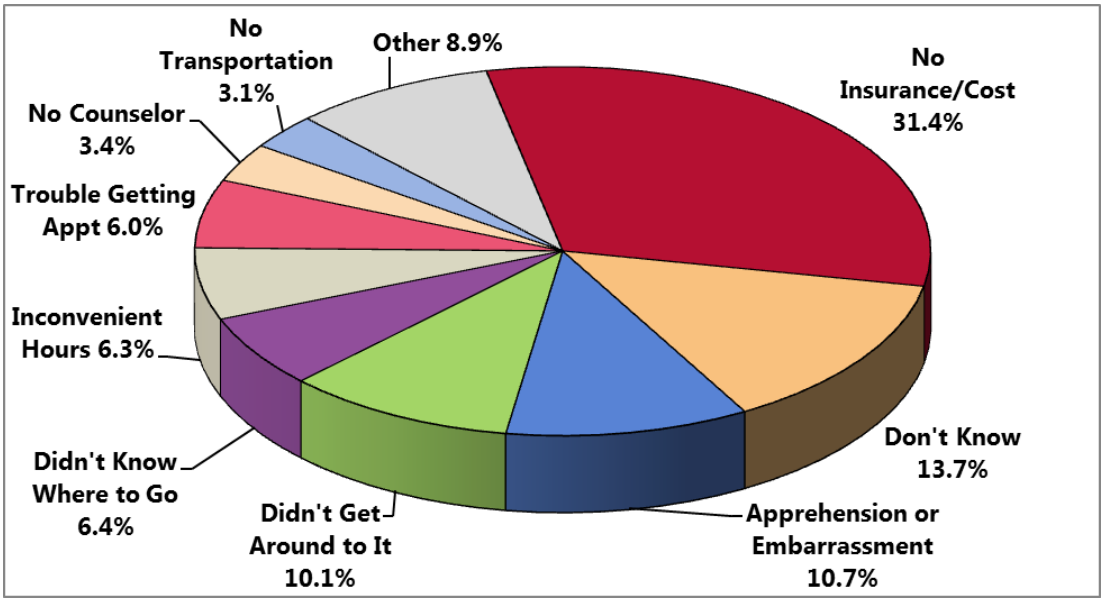
Figure 86. Had a Time in the Past Year When Mental Health Care or Counseling Was Needed, But Was Unable to Get It (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 65]
Notes: Asked of all respondents.

Figure 87. Primary Reason for Inability to Access Mental Health Services (WNC Healthy Impact Survey)

(Adults Unable to Get Needed Mental Health Care in the Past Year)
(Western North Carolina, 2012)

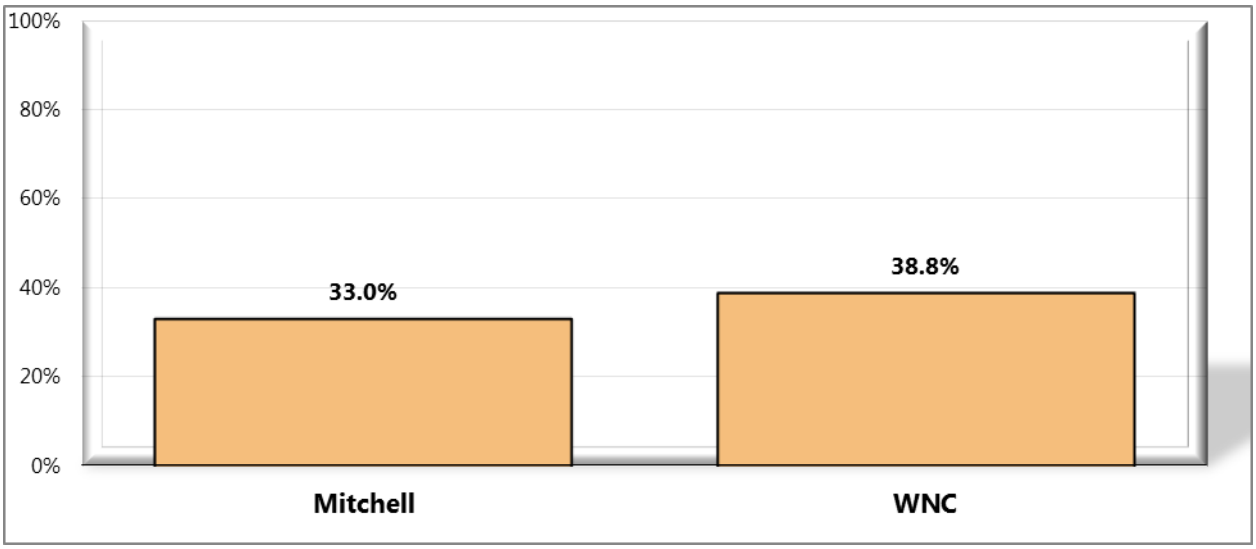


Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 66]
Notes: Asked of those respondents who were unable to get needed mental health care in the past year.

Advance Directives

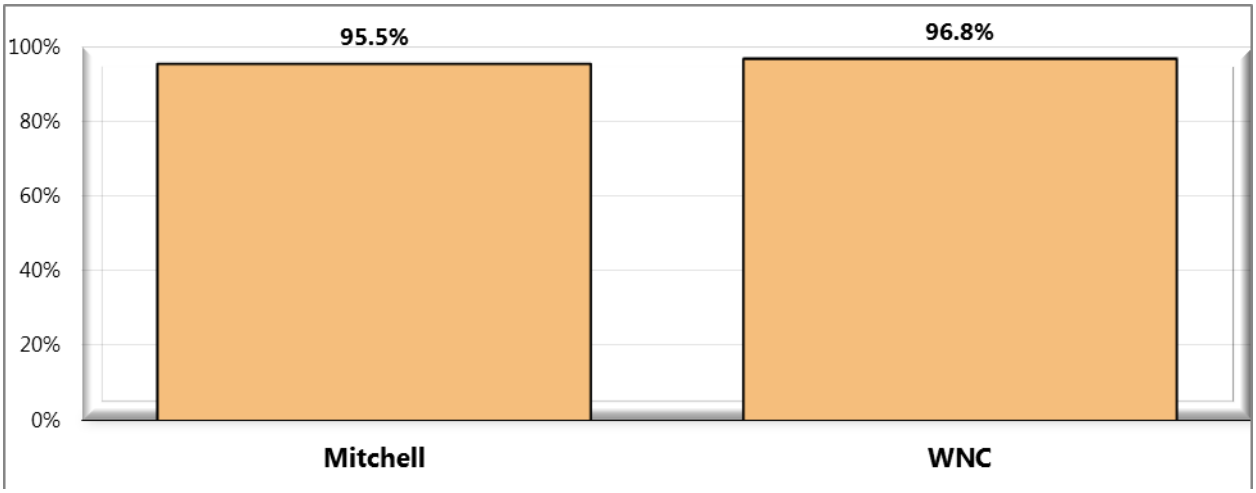
An Advance Directive is a set of directions given about the medical care a person wants if he/she ever loses the ability to make decisions for him/herself. Formal Advance Directives include Living Wills and Healthcare Powers of Attorney. Survey respondents were asked whether they have any completed Advance Directive documents, and if so, if they have communicated these health care decisions to their family or doctor.

Figure 88. Have Completed Advance Directive Documents (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 34]
Notes: Asked of all respondents.

Figure 89. Have Communicated Health Care Decisions to Family or Doctor (WNC Healthy Impact Survey)
(Among Respondents with Advance Directive Documents)

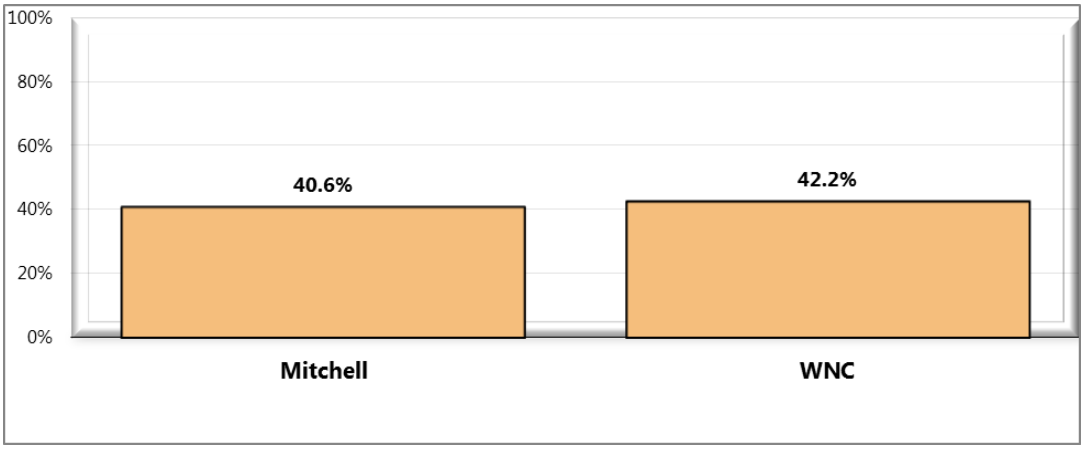


Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 35]
Notes: Asked of respondents with completed advance directive documents.

Care-giving

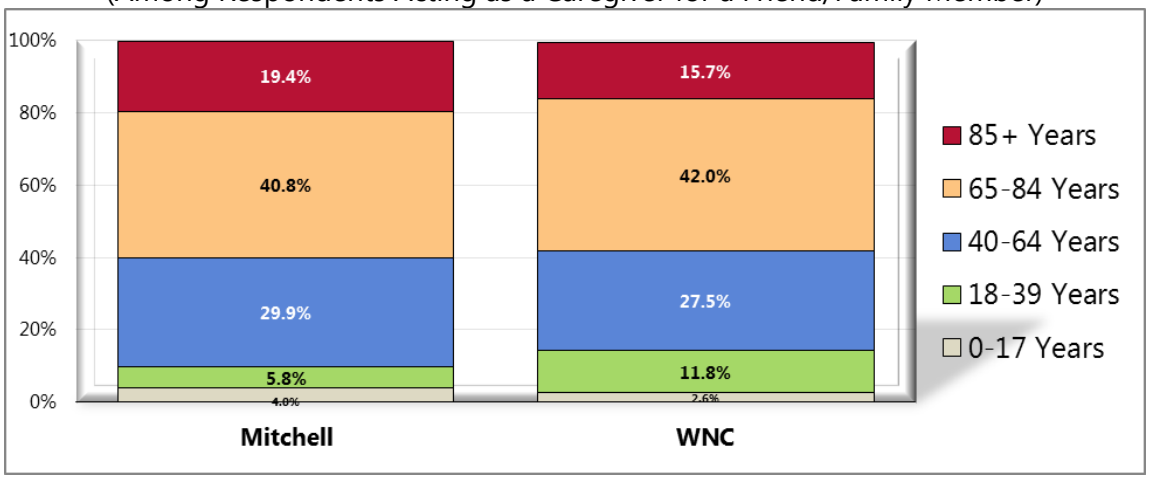
People may provide regular care or assistance to a friend or family member who has a health problem, long-term illness, or disability. Respondents were asked, "During the past month, did you provide any such care or assistance to a friend or family member?" Those who answered, "yes," were asked for the age, primary health issue, and the primary type of assistance needed by the person for whom the respondent provides care.

Figure 90. Provide Regular Care or Assistance to a Friend/Family Member Who Has a Health Problem or Disability (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 69]
Notes: Asked of all respondents.

Figure 91. Age of Person for Whom Respondent Provides Care (WNC Healthy Impact Survey)
(Among Respondents Acting as a Caregiver for a Friend/Family Member)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 70]
Notes: Asked of respondents acting as a caregiver for a friend or family member.

Table 56. Primary Health Issue of Person for Whom Respondent Provides Care (WNC Healthy Impact Survey)

(Among Respondents Acting as a Caregiver for a Friend/Family Member)

	Aging	Alzheimers /Dementia	Cancer	Diabetes	Emotional/ Mental	Heart Disease	Stroke	Other (Each <4%)	Don't Know/Not Sure
Mitchell	20.0%	3.0%	10.2%	4.7%	6.2%	11.7%	1.0%	38.9%	4.3%
WNC	7.9%	8.4%	8.6%	4.3%	4.8%	7.4%	4.9%	46.3%	7.4%

Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 71]
Notes: Asked of respondents acting as a caregiver for a friend or family member.

Table 57. Primary Type of Assistance Needed by Person for Whom Respondent Provides Care (WNC Healthy Impact Survey)

(Among Respondents Acting as a Caregiver for a Friend/Family Member)

	Other (Each <2%)	Learning/ Remembering	Communi-cating	Moving Around the Home	Taking Care of Living Space	Taking Care of Self	Help with Anxiety/ Depression	Transportation Outside Home
Mitchell	3.0%	5.6%	5.2%	1.8%	18.9%	23.7%	22.3%	19.6%
WNC	2.0%	3.8%	3.9%	6.3%	18.5%	20.1%	20.9%	24.5%

Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 72]
Notes: Asked of respondents acting as a caregiver for a friend or family member.

CHAPTER 6 – PHYSICAL ENVIRONMENT

Air Quality

Outdoor Air Quality

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

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

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

The AQI is an information tool to advise the public. The AQI describes the general health effects associated with different pollution levels, and public AQI alerts (often heard as part of local weather reports) include precautionary steps that may be necessary for certain segments of the population when air pollution levels rise into the unhealthy range. The AQI measures concentrations of five of the six criteria air pollutants and converts the measures to a number on a scale of 0-500, with 100 representing the NAAQS standard. An AQI level in excess of 100 on a given day means that a pollutant is in the unhealthy range that day; an AQI level at or below 100 means a pollutant is in the "satisfactory" range (AIRNow, 2011). Table 58 defines the AQI levels.

Table 58. General Health Effects and Cautionary Statements, Air Quality Index

Index Value	Descriptor	Color Code	Meaning
Up to 50	Good	Green	Air quality is satisfactory, and air pollution poses little or no risk.
51 to 100	Moderate	Yellow	Air quality is acceptable; however, for some pollutants there may be a moderate heath concern for a very small number of people who are unusually sensitive to air pollution.
101 to 150	Unhealthy for sensitive groups	Orange	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
151 to 200	Unhealthy	Red	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
201-300	Very unhealthy	Purple	Health alert: everyone may experience more serious health effects.
301-500	Hazardous	Maroon	Health warnings of emergency conditions. The entire population is more likely to be affected.

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

The EPA reports AQI measures for nine of the 16 counties in the WNC region: Buncombe, Haywood, Graham, Jackson, Macon, McDowell, Mitchell, Swain and Yancey. The WNC figures presented in Tables 59 and 60 below represent the arithmetic means of the values for those nine counties. Data in Table 59 shows that there were no days rated "very unhealthy" or "unhealthy" in 2011, and only one day was rated "unhealthy for sensitive groups". Of the 2011 mean of 275 days in WNC with an assigned AQI, 227 had "good" air quality and 47 had "moderate" air quality. Of the 117 days in Mitchell County with an assigned AQI, 108 had "good" air quality, and nine had "moderate" air quality.

Table 59. Air Quality Index Summary, WNC (2011)

Geography	No. Days with AQI	Number of Days When Air Quality Was:				
		Good	Moderate	Unhealthy for Sensitive Groups	Unhealthy	Very Unhealthy
Mitchell County	117	108	9	0	0	0
Regional Arithmetic Mean	275	227	47	1	0	0

Table 60 lists the pollutants causing the air quality deficiencies. This data shows that in WNC in 2011 the primary air pollutants were ozone (O_3) and small particulate matter ($PM_{2.5}$). The primary offending pollutant in Mitchell County was small particulates.

Ozone, the major component of smog, is not usually emitted directly but rather formed through chemical reactions in the atmosphere. Peak O_3 levels typically occur during the warmer and sunnier times of the day and year. The potential health effects of ozone include damage to lung tissues, reduction of lung function and sensitization of lungs to other irritants (Scorecard, 2011).

Particulate matter is usually categorized on the basis of size, and includes dust, dirt, soot, smoke, and liquid droplets emitted directly into the air by factories, power plants, construction activity, fires and vehicles (Scorecard, 2011). Particulates in air can affect breathing, aggravate existing respiratory and cardiovascular disease, and damage lung tissue (reference).

Table 60. CAPs Causing Air Quality Problems, WNC (2011)

Geography	No. Days with AQI	Number of Days When Air Pollutant Was:					
		CO	NO_2	O_3	SO_2	$PM_{2.5}$	PM_{10}
Mitchell County	117	0	0	0	0	117	0
Regional Arithmetic Mean	275	0	0	156	0	118	0

Toxic Chemical Releases

Over 4 billion pounds of toxic chemicals are released into the nation's environment each year. The US Toxic Releases Inventory (TRI) program, created in 1986 as part of the Emergency Planning and Community Right to Know Act, is the tool the EPA uses to track these releases. Approximately 20,000 industrial facilities are required to report *estimates* of their environmental releases and waste generation annually to the TRI program office. These reports do not cover all toxic chemicals, and they omit pollution from motor vehicles and small businesses (US Environmental Protection Agency, 2012).

According to EPA data, twelve of the 16 WNC counties had measurable TRI releases in 2010. (Only Clay, Madison, Polk and Transylvania Counties did not.) In 2010, Haywood County in WNC was the eighth leading emitter of TRIs in NC in terms of tonnage of TRI chemicals released. Although not among the "top ten", Rutherford County, also in WNC, ranks just off the list, at number eleven. (No other WNC county ranks higher than 21st.) The *Data Workbook* presents detail on toxic chemical releases in all 16 WNC counties.

Table 61 presents the 2010 TRI Summary for Mitchell County, which ranks 67th among the state's 86 ranked counties. The TRI chemical released in the greatest quantity in Mitchell County was styrene, from BRP US, Inc., in Spruce Pine

Table 61. Toxic Release Inventory (TRI) Summary, Mitchell County, 2010

Total On-and Off-Site Disposal or Other Released, in Pounds	Compounds Released in Greatest Quantity	Quantity Released, in Pounds	Releasing Facility	Facility Location
10,532	Styrene	10,532	BRP US Inc.	Spruce Pine

Indoor Air Quality

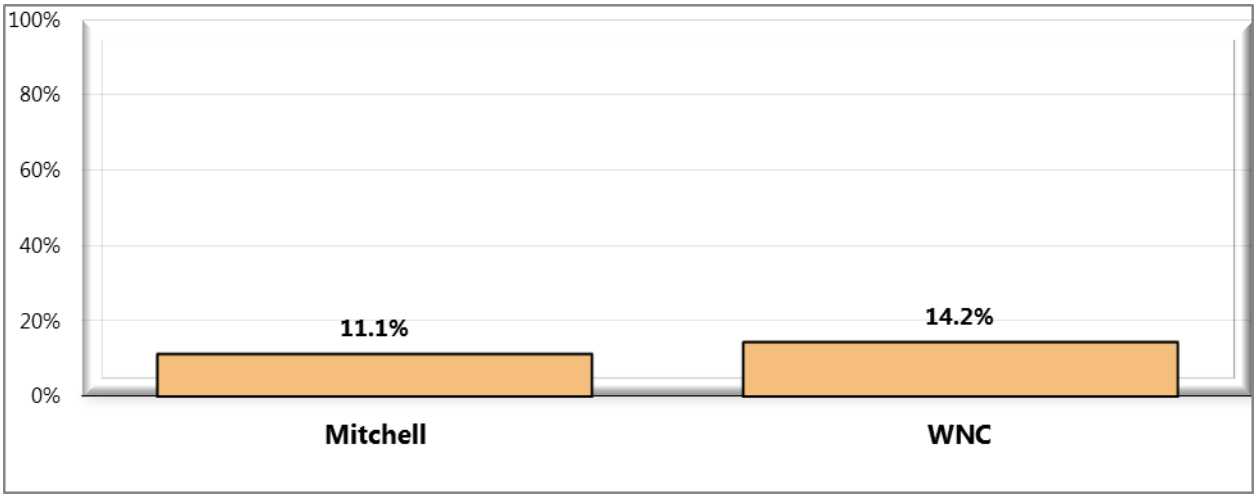
Environmental tobacco smoke

Tobacco smoking has long been recognized as a major cause of death and disease, responsible for hundreds of thousands of deaths each year in the U.S. Smoking is known to cause lung cancer in humans, and is a major risk factor for heart disease. However, it is not only active smokers who suffer the effects of tobacco smoke. In 1993, the EPA published a risk assessment on passive smoking and concluded that the widespread exposure to environmental tobacco smoke (ETS) in the US had a serious and substantial public health impact (US Environmental Protection Agency, 2011).

ETS is a mixture of two forms of smoke that come from burning tobacco: sidestream smoke (smoke that comes from the end of a lighted cigarette, pipe, or cigar) and mainstream smoke (smoke that is exhaled by a smoker). When non-smokers are exposed to secondhand smoke it is called involuntary smoking or passive smoking. Non-smokers who breathe in secondhand smoke take in nicotine and other toxic chemicals just like smokers do. The more secondhand smoke that is inhaled, the higher the level of these harmful chemicals will be in the body (American Cancer Society, 2011).

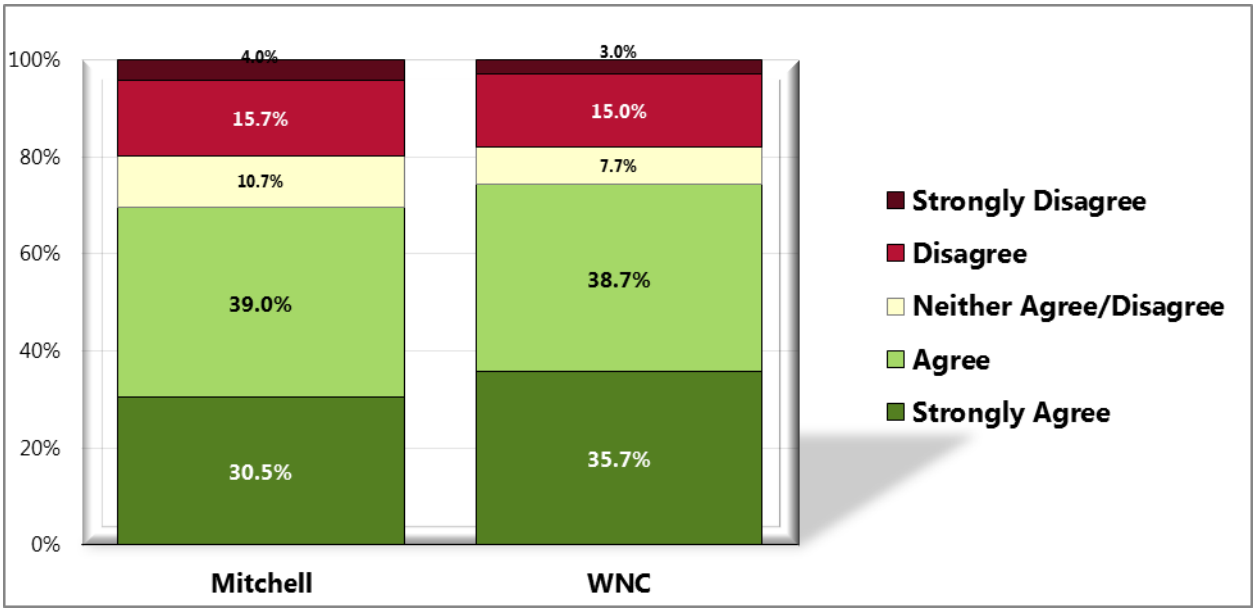
Survey respondents were asked about their second-hand smoke exposure in their workplace. Specifically, they were asked, "During how many of the past 7 days, at your workplace, did you breathe the smoke from someone who was using tobacco?" In order to evaluate community members' perceptions about environmental tobacco smoke, survey respondents were given a series of three statements regarding smoking in public places and asked whether they "strongly agree," "agree," "neither agree nor disagree," "disagree" or "strongly disagree" with each statement. The statements were: "I believe it is important for universities and colleges to be 100% tobacco-free," "I believe it is important for government buildings and grounds to be 100% tobacco-free," and, "I believe it is important for parks and public walking/biking trails to be 100% tobacco free."

Figure 92. Have Breathed Someone Else's Cigarette Smoke at Work in the Past Week (WNC Healthy Impact Survey)
(Among Employed Respondents)



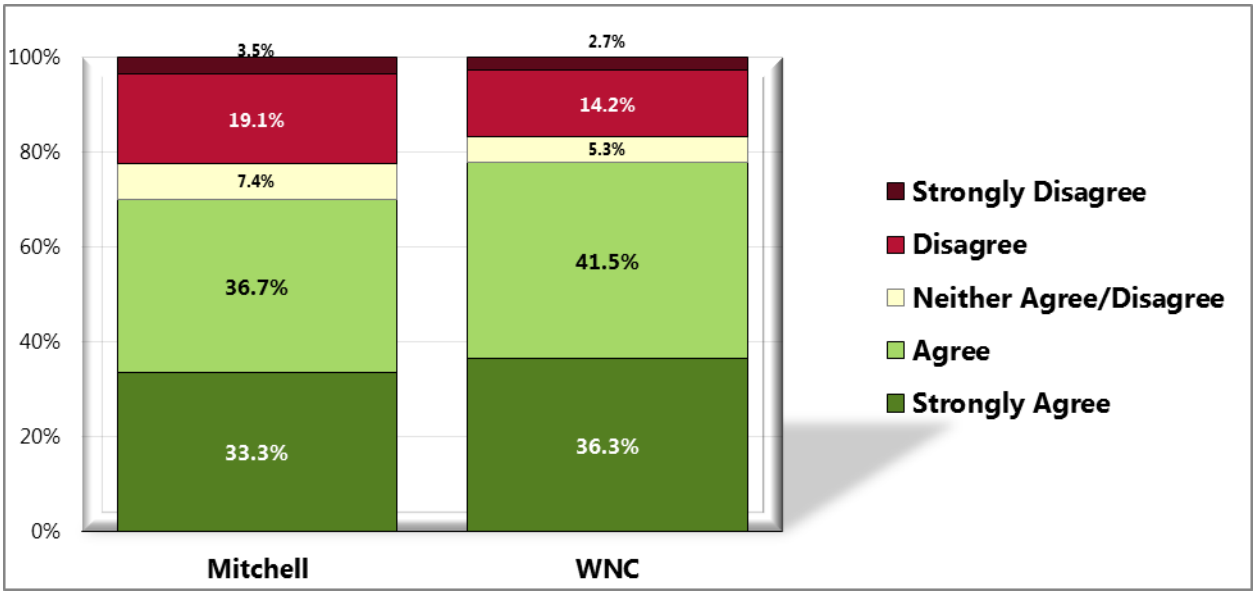
Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 44]
Notes: Asked of employed respondents.

Figure 93. "I believe it is important for universities and colleges to be 100% tobacco-free" (WNC Healthy Impact Survey)



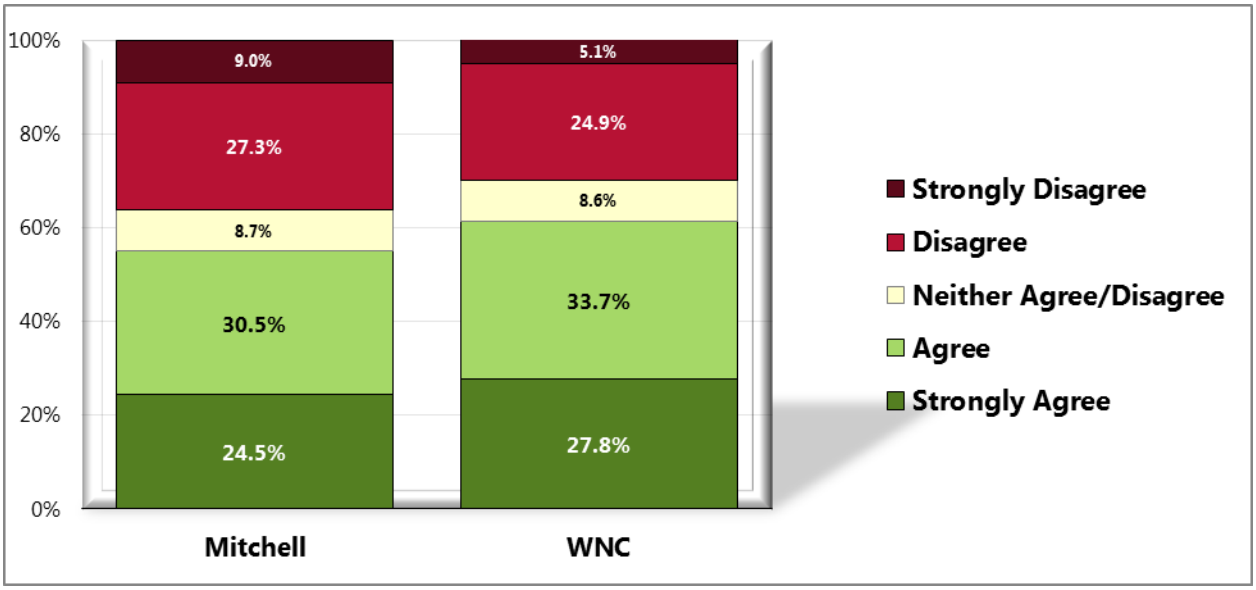
Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 45]
Notes: Asked of all respondents.

Figure 94. "I believe it is important for government buildings and grounds to be 100% tobacco-free (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 46]
Notes: Asked of all respondents.

Figure 95. "I believe it is important for parks and public walking/biking trails to be 100% tobacco-free (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 47]
Notes: Asked of all respondents.

Drinking Water

The source from which the public gets its drinking water is a health issue of considerable importance. Water from all municipal and most community water systems is treated to remove harmful microbes and many polluting chemicals, and is generally considered to be "safe" from the standpoint of public health because it is subject to required water quality standards. Municipal drinking water systems are those operated and maintained by local governmental units, usually at the city/town or county level. Community water systems are systems that serve at least 15 service connections used by year-round residents or regularly serves 25 year-round residents. This category includes municipalities, but also subdivisions and mobile home parks. In February 2012, a regional mean of 55% of the WNC population was being served by community water systems (*Data Workbook*). The 45% remaining presumably were being served by wells or by some other source, such as springs, creeks, rivers, lakes, ponds or cisterns.

Individual counties in WNC, however, have highly varied percentages of their populations served by community water systems; in some counties the figure is as low as 18% and in others it is as high as 65%. In Mitchell County, 6,272 of 15,579 county residents, or 40.3%, were being served by community water systems in February of 2012. Presumably the remaining 59.7% were served by wells or other sources.

The town of Spruce Pine recently entered into a conservation easement agreement on the Town Watershed in an effort to permanently protect the town water supply.

Radon

Radon is a naturally occurring, invisible, odorless gas that comes from soil, rock and water. It is a radioactive decay product of radium, which is in turn a decay product of uranium; both radium and uranium are common elements in soil. Radon usually is harmlessly dispersed in outdoor air, but when trapped in buildings it can be harmful. Most indoor radon enters a home from the soil or rock beneath it, in the same way air and other soil gases enter: through cracks in the foundation, floors, hollow-block walls, and openings around floor drains, heating and cooling ductwork, pipes, and sump pumps. The average outdoor level of radon in the air is normally so low that it is not a problem (NC Department of Environment and Natural Resources).

Radon may also be dissolved in water as it flows over radium-rich rock formations. Dissolved radon can be a health hazard, although to a lesser extent than radon in indoor air. Homes supplied with drinking water from private wells or from community water systems that use wells as water sources generally have a greater risk of exposure to radon in water than homes receiving drinking water from municipal water treatment systems. This is because well water comes from ground water, which has much higher levels of radon than surface waters. Municipal water tends to come from surface water sources which are naturally lower in radon, and the municipal water treatment process itself tends to reduce radon levels even further (NC Department of Environment and Natural Resources).

There are no immediate symptoms to indicate exposure to radon. The primary risk of exposure to radon gas is an increased risk of lung cancer (after an estimated 5-25 years of exposure).

Smokers are at higher risk of developing radon-induced lung cancer than non-smokers. There is no evidence that other respiratory diseases, such as asthma, are caused by radon exposure, nor is there evidence that children are at any greater risk of radon-induced lung cancer than are adults (NC Department of Environment and Natural Resources).

Elevated levels of radon have been found in many counties in NC, but the highest levels have been detected primarily in the upper Piedmont and mountain areas of the state where the soils contain the types of rock (gneiss, schist and granite) that have naturally higher concentrations of uranium and radium (NC Department of Environment and Natural Resources). Eight counties in NC historically have had the highest levels of radon, exceeding, on average, 4 pCi/L (pico curies per liter). These counties are Alleghany, Buncombe, Cherokee, Henderson, Mitchell, Rockingham, Transylvania and Watauga, five of which are in the WNC region. There are an additional 31 counties in the central and western Piedmont area of the state with radon levels in the 2-4 pCi/L range; the remaining 61 NC counties, mostly in the piedmont and eastern regions of the state have predicted indoor radon levels of less than 2 pCi/L (NC Department of Environment and Natural Resources).).

According to one recent assessment, the regional mean indoor radon level for the 16 counties of WNC was 4.3 pCi/L, over three times the national indoor radon level of 1.3 pCi/L. According to this same source, the level for Mitchell County was 2.8 pCi/L, 2.2 times the national indoor radon level (*Data Workbook*).

Built Environment

The term "built environment" refers to the human-made surroundings that provide the setting for human activity, ranging in scale from buildings and parks or green space to neighborhoods and cities that can often include their supporting infrastructure, such as water supply, or energy networks. In recent years, public health research has expanded the definition of built environment to include healthy food access, community gardens, "walkability", and "bikability" (Wikipedia, 2012).

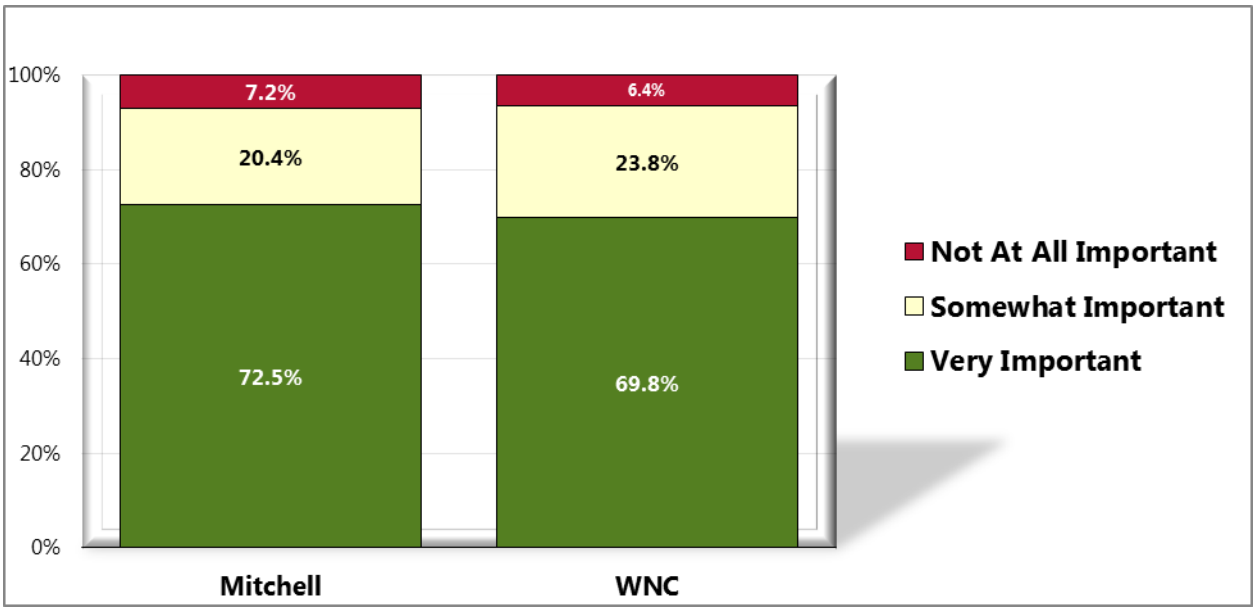
Access to Farmers' Markets and Grocery Stores

According to the US Department of Agriculture (USDA) Economic Research Service's *Your Food Environment Atlas,* there were a total of 49 farmers' markets in the 16 WNC counties in 2009. This number was reported to have grown by 5, to a total of 54, in 2011, an increase of 10%. According to this source, in Mitchell County there were two farmers' markets in both 2009 and 2011 (*Data Workbook*).

According to the same source, there were a total of 158 grocery stores in the 16 WNC counties in 2007. This number was reported to have shrunken by 4, to a total of 154, in 2009, a decrease of 2%. In Mitchell County the number of grocery stores was two in both 2007 and 2009 (*Data Workbook*).

Survey respondents were asked, "How important do you feel it is for your community to make it easier for people to access farmer's markets, including mobile farmer's markets and tailgate markets?"

Figure 96. Importance of Communities Making It Easier to Access Farmer's Markets, Including Mobile/Tailgate Markets (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 55]
Notes: Asked of all respondents.

Access to Fast Food Restaurants

According to the same source cited above, there were a total of 526 fast food restaurants in the 16 WNC counties in 2007. This number was reported to have dropped by 21, to a total of 505, in 2009, a decrease of 4%. In Mitchell County the number of fast food restaurants rose from eight to 11 over the same period (*Data Workbook*).

Also according to the USDA, mean per capita fast food expenditures in WNC rose 45% (from $514 to $746) between 2002 and 2007, and mean per capita restaurant expenditures in WNC also rose 45% (from $449 to $665) over the same period (*Data Workbook*).

Access to Recreational Facilities

According to the same source cited above, there were a total of 81 recreation and fitness facilities in the 16 WNC counties in 2007. This number was reported to have dropped by 26, to a total of 55, in 2009, a decrease of 32%. In Mitchell County there were two recreational and fitness facilities in 2007 and only one 2009 (*Data Workbook*).

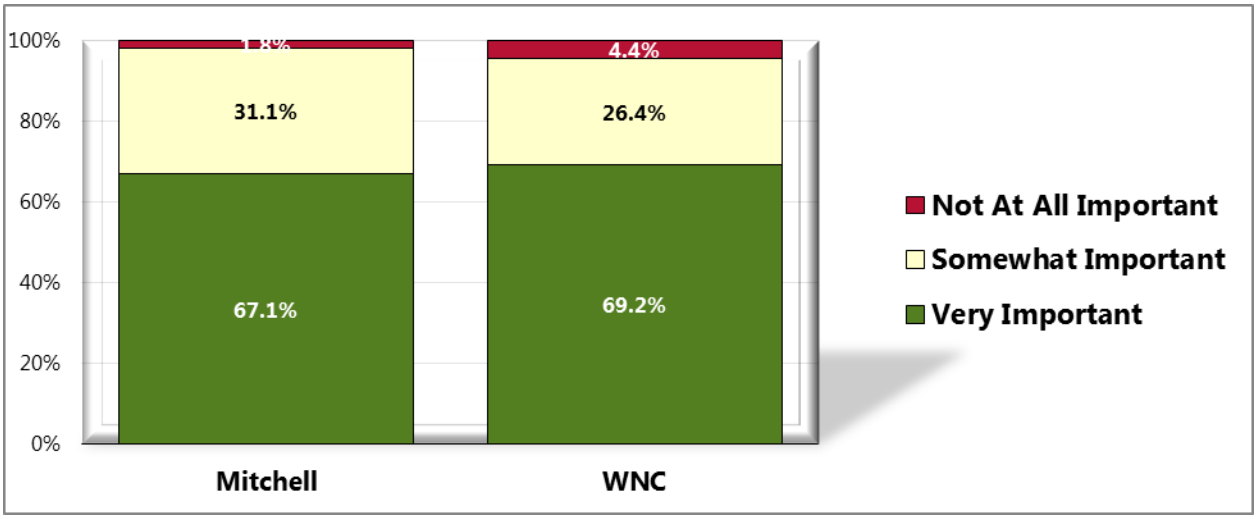
Survey respondents were asked whether they feel it is important for community organizations to explore ways to increase the public's access to physical activity spaces during off-times, as well as whether it is important for communities to improve access to trails, parks, and greenways. Survey respondents in Mitchell County were also asked about the availability of recreational options available to community residents, including children and youth.

Mitchell County in partnership with the towns of Bakersville and Spruce Pine formed a North Toe River Greenways Committee tasked with identifying possible greenway corridors for future development into pubic greenway pedestrian/bike trails. This is in collaboration with the High Country Council of Governments who will be developing the North Toe River Greenway Master Plan.

The Brad Ragan Park Sports Complex will be constructed at the town of Spruce Pine's public park pending the security of funding. The facility will include a full size basketball court and a five foot wide walking track around the parameter of the court. This complex will provide a place for youth recreation sports, as well as, open gym space for other users because the kids that do not play team sports have no access to indoor court space outside of school PE class. Wrestling, gymnastics and other sports and exercise programs can also utilize the complex. The five-foot wide walking track around the court will provide users access to an indoor track for use during rainy or colder weather. According to recreation surveys, walking/running areas are the highest rated fitness activities for communities. The Sports Complex offers the opportunity to expand access and provide diverse activities that will meet the needs of the entire family in one convenient location by providing a public walking track for all age users and a safe gathering place for our youth.

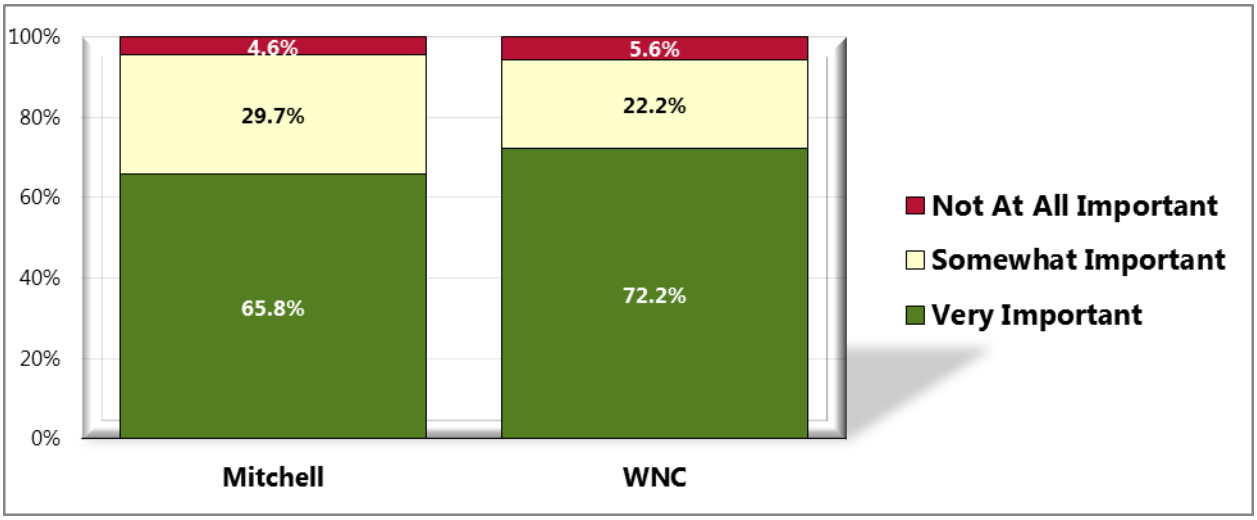
A recent study published by Action for Children entitled Place Matters: Where Children Grow Up Can Help Determine Health Outcomes (2010) notes "It is clear that being healthy and fit in adulthood is at least partly determined by the communities we live in as children…When children do not have access to healthy environments or opportunities to make healthy choices, their health and quality of life are often compromised."

Figure 97. Importance That Community Organizations Make Physical Activity Spaces Available for Public Use After Hours (WNC Healthy Impact Survey)



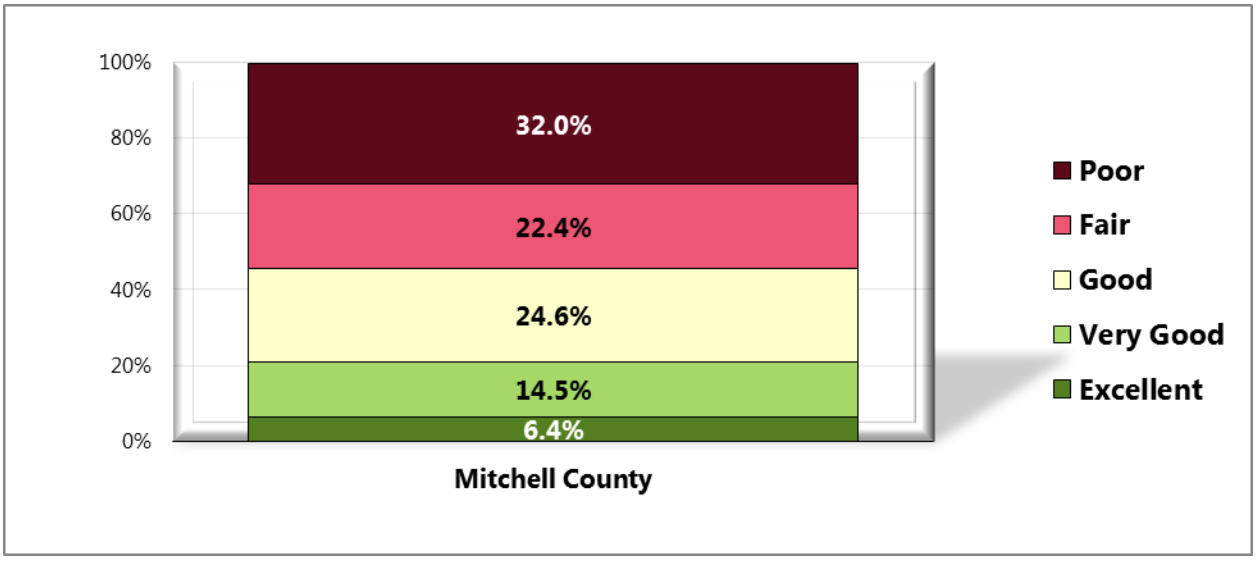
Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 60]
Notes: Asked of all respondents.

Figure 98. Importance That Communities Improve Access to Trails, Parks, and Greenways (WNC Healthy Impact Survey)



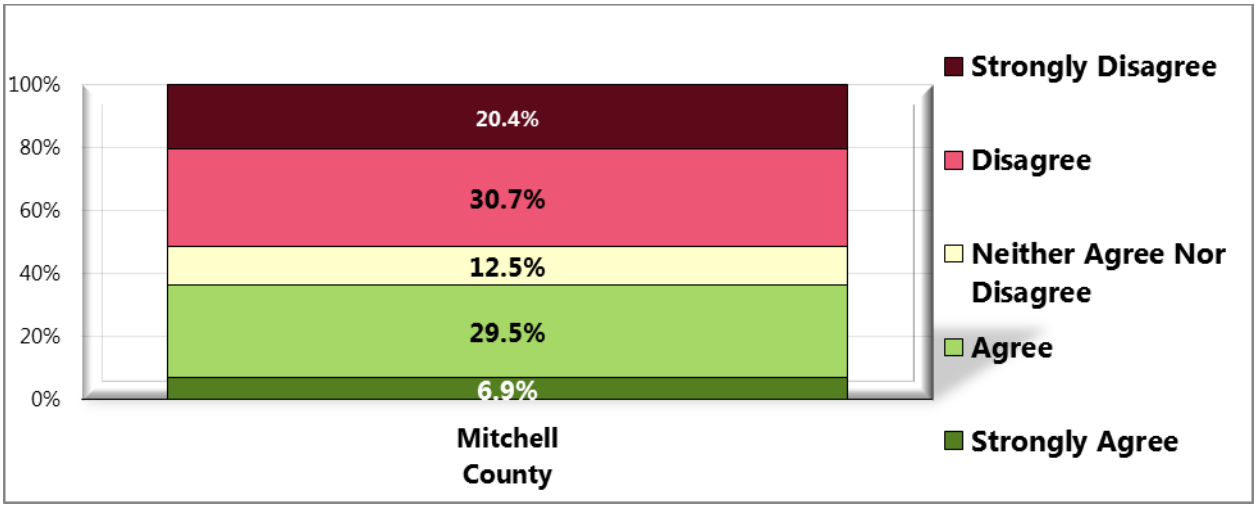
Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 61]
Notes: Asked of all respondents.

Figure 99. Evaluation of the Recreational Options Available to Community Residents Throughout the Year (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 117]
Notes: Asked of all respondents.

Figure 100. "I believe my county provides the facilities and programs needed for children and youth to be physically active throughout the year." (WNC Healthy Impact Survey)



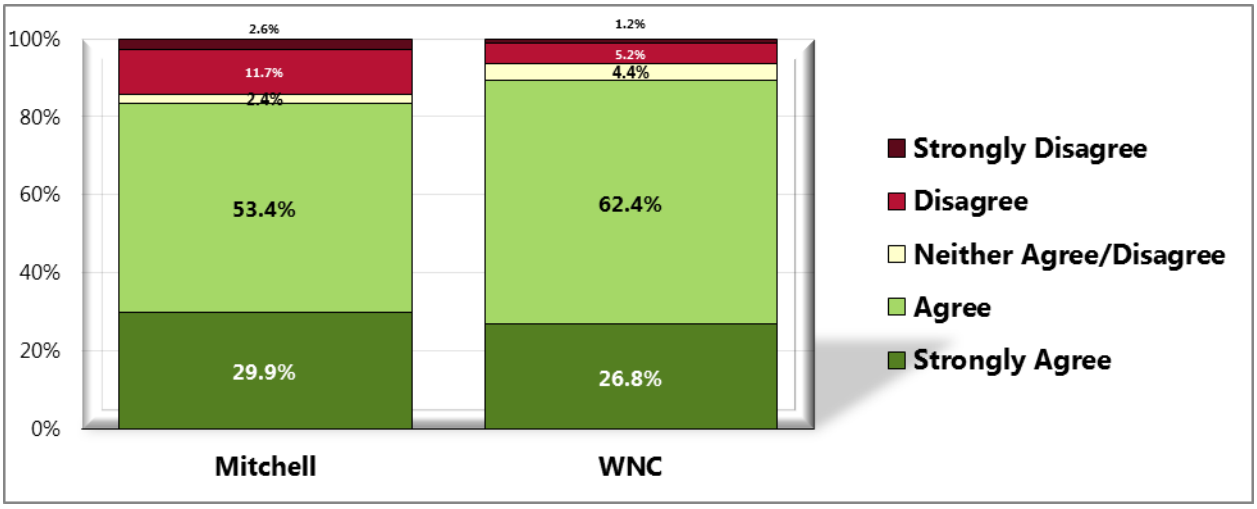
Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 118]
Notes: Asked of all respondents.

CHAPTER 7 – QUALITY OF LIFE

Perception of County

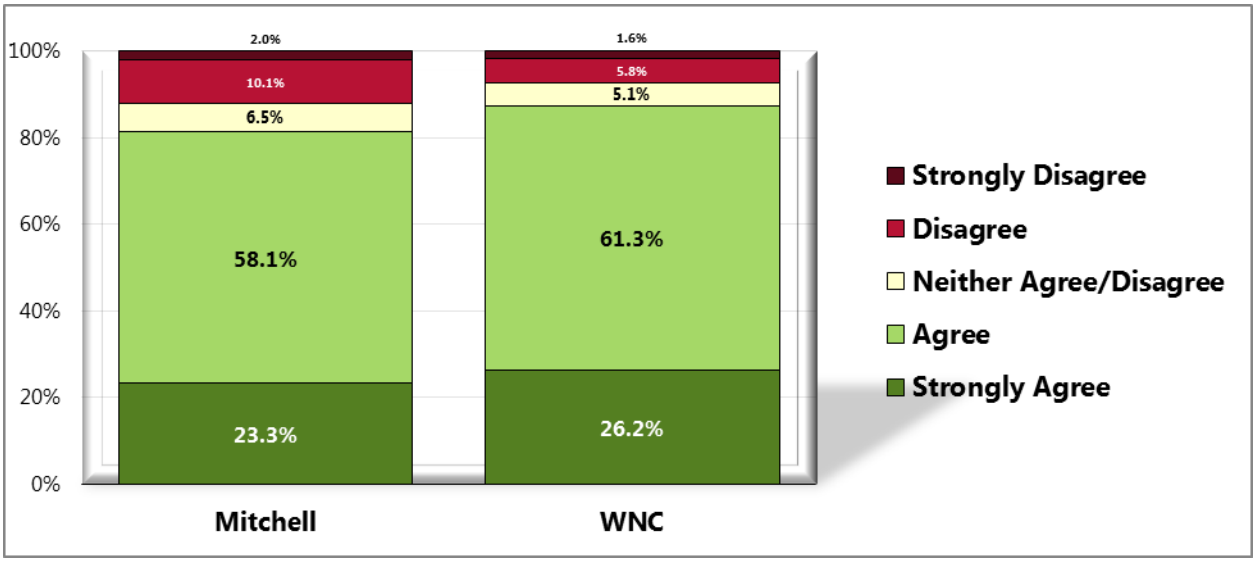
In order to evaluate community members' perceptions about the quality of life in western North Carolina (WNC), survey respondents were given a series of three statements regarding life in their county (my county is a good place to raise children, my county is a good place to grow old, and there is plenty of help for people during times of need in my county) and asked whether they "*strongly agree*," "*agree*," "*neither agree nor disagree*," "*disagree*" or "*strongly disagree*" with each statement. Survey respondents were also asked about their frequency of getting needed social and emotional support, their satisfaction with life, the one thing that needs the most improvement in their neighborhood or community, and the one issue which has the most negative impact on the quality of life in their county.

Figure 101. "My county is a good place to raise children"
(WNC Healthy Impact Survey)



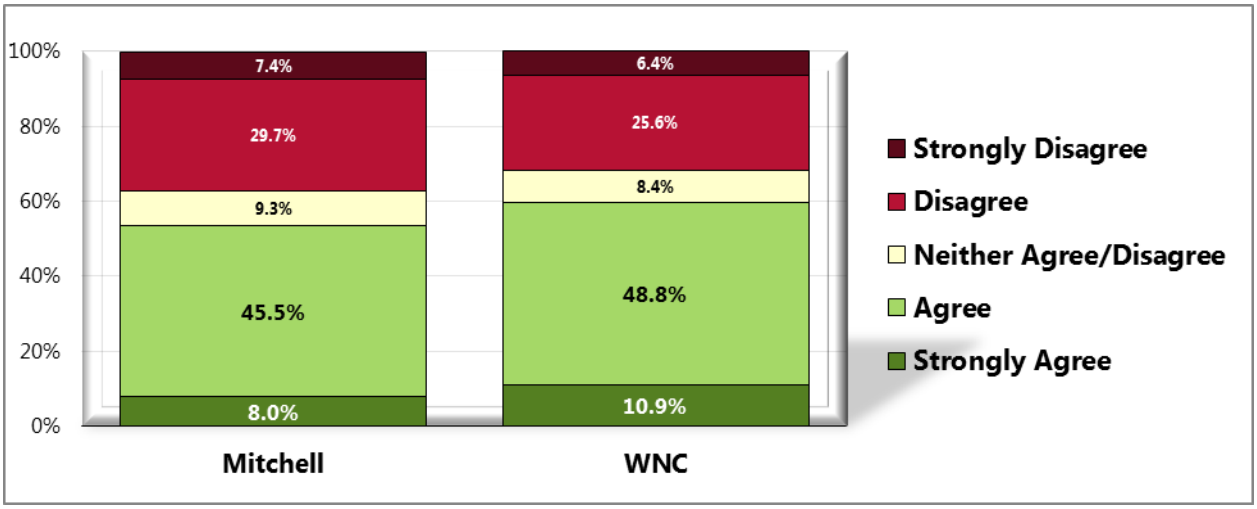
Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 5]
Notes: Asked of all respondents.

Figure 102. "My county is a good place to grow old."
(WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 6]
Notes: Asked of all respondents.

Figure 103. "There is plenty of help for people during times of need in my county."
(WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 8]
Notes: Asked of all respondents.

Table 62. Top Three County Issues Perceived as Having the Most Negative Impact on Quality of Life (WNC Healthy Impact Survey)

	Economy/ Unemployment	Nothing	Don't Know	Substance Abuse	Government/ Politics	Health Care
Mitchell	✓	✓		✓		
WNC	✓	✓	✓			

Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 10]
Notes: Asked of all respondents.

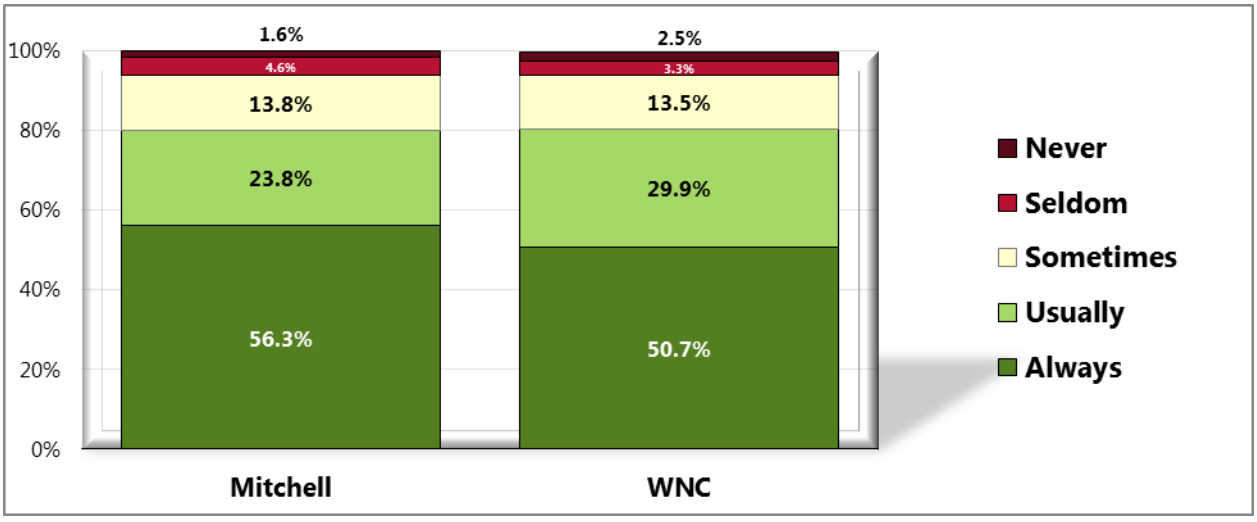
Table 63. Top Three Neighborhood/Community Issues Perceived as in Most Need of Improvement (WNC Healthy Impact Survey)

	Economy/ Unemployment	Healthcare Services	Activity/Recreation Options	Nothing
Mitchell	✓		✓	✓
WNC	✓	✓		✓

Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 9]
Notes: Asked of all respondents.

Social and Emotional Support

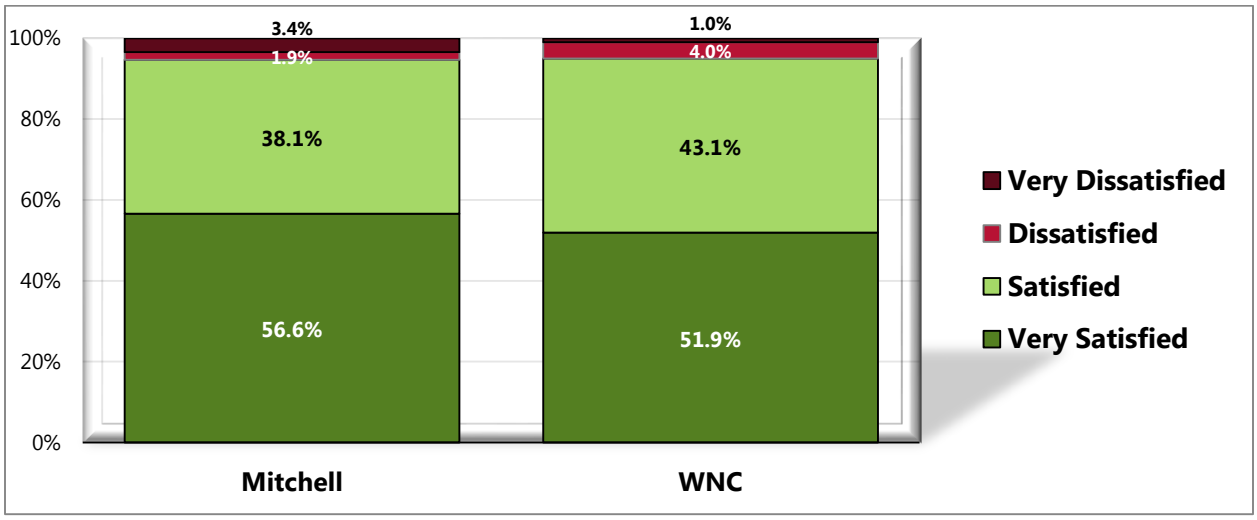
Figure 104. Frequency of Getting Needed Social/Emotional Support (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 63]
Notes: Asked of all respondents.

Satisfaction with Life

Figure 105. Satisfaction with Life (WNC Healthy Impact Survey)



Sources: 2012 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 62]
Notes: Asked of all respondents.

CHAPTER 8 - HEALTHCARE & HEALTH PROMOTION RESOURCES

Health Resources

See Appendix A for a description of the data collection methods use to gather this information.

See Appendix C for a summary list of the healthcare and health promotion resources and facilities available in Mitchell County to respond to the health needs of the community.

Resource Gaps

The following resource gaps are based on local review and collaborative discussions around availability of services specifically related to Mitchell County's prioritized needs of improving Behaviors and Lifestyles of our residents, increasing Availability/Access to Mental Health Services and preventing Substance Abuse, and assisting our families with Everyday Needs.

Recreational and Fitness Facilities (Indoor and Outdoor)
Free and Accessible Youth Programs
Comprehensive County Plan for Sidewalks and Bike Lanes
Stable Mental Health Services In-County
Substance Abuse Treatment Center In-County
Resources/Funding to support and sustain local food pantries
Community Gardens
Mitchell County On-Going/Updated Volunteer Database
Dental Care for Medicaid Population and Uninsured

CHAPTER 9 - HEALTH PRIORITIES & NEXT STEPS

Prioritization Process & Criteria

During the 2013 Community Health Assessment Process, county data information was collected from community health resources. Committee members of the CHA Team compiled the information and reviewed a wide variety of quantitative data, highlighting areas of significance. This data was placed into the following categories:

1. Chronic Disease (Heart Disease, Respiratory Disease, Alzheimer's, Diabetes, Hypertension)
2. Cancer (All types)
3. Substance Abuse (Prescription & Recreational Drugs, Alcohol Use)
4. Health Behaviors/Lifestyles (Obesity, Poor Nutrition, Physical Inactivity)
5. Access to Healthcare (Lack of Health Insurance)
6. Lack of Mental Health Services
7. Aging Problems & Care For Elderly
8. Economy/Unemployment
9. Activity/Recreation/Healthful Options (Access to affordable healthy food, Need Recreation Center, Need Playgrounds and Parks)
10. Assistance for Low-Income Households (Food Assistance, Heating Oil Assistance, Expenses of Everyday Life)

To identify these top ten priority issues for Mitchell County to focus on over the next several years, the following process was used:

1. Residents shared their concerns and priorities regarding the county's health in surveys and community meetings. WNC Healthy Impact assisted with gathering primary and secondary data via various sources including a phone survey. This data was then reviewed locally, priority areas were determined, and a community forum was held.
2. Partakers, at the April 2013 Community Health Forum, participated in a voting process to narrow "the top ten list" down to three to direct our focus. The group prioritized the list by giving each participant 3 dot stickers (pink one=high, orange one=medium, and green one=low priority) and having a poster with the list of the top ten health concerns. Then each participant was instructed to choose their top choices based on the data and personal belief by placing a sticker dot next to the health concern listed on the poster.
3. The Mitchell County Community Health Assessment Team reviewed the CHA results. The CHA Team discussed the community concerns, and concluded on the issues to be addressed over the next several years. The CHA Team thought if the health concerns were important enough to be brought up by citizens of Mitchell County and discussed among community members, these would be the priorities we would address.

Priority Health Issues

The 2013 top three health concerns that we will be focusing for the several three years for Mitchell County are:

1. Healthy Living Behaviors and Lifestyles (primarily, focusing on Activity/Recreation/Healthful Opportunities)
2. Substance Abuse Prevention and Increasing Availability/Access to Mental Health Services
3. Access and Assistance for Low-Income Households (Lack of Healthcare, Insurance, and Everyday items to survive)

The last Community Health Assessment was conducted in 2009. In the last four years, health concerns have changed somewhat. These top three priorities come into view from the 2009 Mitchell County Community Health Assessment:

SUBSTANCE ABUSE:

- Concerned about abuse of illegal drugs among residents
- Disturbed by the misuse of prescription drugs among teens and adults
- Increased alcohol abuse because in March of 2009 the town of Spruce Pine in Mitchell County approved beer, wine, and ABC store sales
- Troubled by the risk factors of tobacco use rates continuing to be high

Since 2009, Mitchell County hosted two Drug-Take Back Days annually and received grant funding to hire a part-time Substance Abuse Coordinator for a two-county area (Mitchell & Yancey Counties).

UNEMPLOYMENT/UNDEREMPLOYMENT:

- Low wages and no benefits
- Property values driving up housing values and making homes unaffordable for lower and middle class
- Young families have to move out of the area to find jobs or drive extensive mileage to and from work
- Demographics shifting as more older people moving into the county and young adults moving out to find jobs

As a health partnership, and when it comes to job creation and industry movement, there is very little that can be done. Therefore, minimal action has taken place regarding unemployment and underemployment. The fact that this issue should rank so high on a health survey is significant. It gives validity to the idea that just living in Mitchell County is an economic hardship for most residents and creates a health disparity for many of them.

On a brighter note, Tourism in Mitchell County has rebounded from a pair of lean years at the peak of the national recession to reach a new high in 2011, according to figures released in August 2012. Tourism is thriving and growing in Mitchell County by continuing to see increases

in visitation each year during the last four years. It is easy to promote our area because of the vast amount of outdoor recreation arts, beautiful and unique properties, breathtaking scenery and our local hospitality. Locally, more than 160 jobs were directly attributed to travel and tourism.

MENTAL HEALTH & LACK OF SERVICES

- Lack of primary care physicians, dentists, and mental health support, including expanded hours and services
- Mental health services are perplexing and not accessible
- Doctors and dentists requiring upfront payments
- Lack of adequate transportation
- Lack of health insurance and prescription medication not affordable
- Need for an Urgent Care Clinic

Mental Health in Mitchell County is still very confusing and frustrating for our residents. With the county population shrinking, and two new Community Health Clinics opened as of January 2013, and positive changes coming to our local mental health services, hope is in the air and help is on the way for the coming years.

Next Steps

The next steps will be to formulate action plans regarding these three health concerns, starting with answering the questions to eliminate duplicate of services and creating work that is not useful:
What is currently going on regarding these top three health concerns?
What would you like to see going on regarding the top three health concerns?

The health partnership will create subcommittees for each health concern and these committees will work on creating collaborative action planning and implementation efforts. Upcoming meetings will be scheduled and partners will be notified.

After action plans are brainstormed and forthcoming in June 2013. Dissemination of this report will include, but not limited to:
Present to the Toe River Health District Board of Health
Present to the Mitchell County Board of Commissioners
Present to the Mitchel Community Health Partnership
Distribution to Mitchell County School Administration
Distribution to doctors & nurses at Blue Ridge Regional Hospital
Distribution to Mitchell County Senior Center
Post on the local radio station website: www.wtoe.com
Conduct a Public Services Announcement with the local radio station
Publish on the monthly Health Page and posted on the local newspapers websites: www.mitchellnewsjournal.com & www.blueridgechristainnews.com
Make available on local agency websites and local libraries in Spruce Pine and Bakersville

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APPENDICES

Appendix A – Data Collection Methods & Limitations
Appendix B – WNC Healthy Impact Survey Instrument
Appendix C – Health Resource Inventory

APPENDIX A - DATA COLLECTION METHODS & LIMITATIONS

Secondary Data

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 narrative past a certain date; in most cases that end-point was June 30, 2012.

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; NC Department of Transportation; NC DETECT and the NC DPH Oral Health Section.

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. WNC Healthy Impact received approval from the NC Division of Public Health to use this regional comparison as "peer" for the purposes of our assessments (and related requirements). County data may not be available for some of the data parameters included in this report; in those cases state-level data is compared to US-level data or other standardized measures. 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. This report defines technical terms within the section where each term is first encountered.

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

Regional arithmetic mean

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

Describing difference and change

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

6 point difference to a percent yields a relative change factor of 50%; that is, the smaller number increased by half, a large fraction. In the second example, converting the 6 point difference to a percent yields a relative change factor of 2.8%; that is, the smaller number increased by a relatively small fraction. In these examples the application of percent makes it very clear that the difference in the first example is of far greater degree than the difference in the second example. This document uses percentage almost exclusively to describe and highlight degrees of difference and change, both positive (e.g., increase, larger than, etc.) and negative (e.g., decrease, smaller than, etc.)

Data limitations

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

WNC Healthy Impact Survey (Primary Data)

Survey Methodology

Survey Instrument

To supplement the secondary core dataset, meet additional stakeholder data needs, and hear from community members about their concerns and priorities, a community survey, *2012 WNC Healthy Impact Survey* (a.k.a. 2012 PRC Community Health Survey), was developed and implemented in 16 counties across western North Carolina. The survey instrument was developed by WNC Healthy Impact's data workgroup, consulting team, and local partners, with assistance from Professional Research Consultants, Inc. (PRC). Many of the questions are derived from the Centers for Disease Control and Prevention (CDC) Behavioral Risk Factor Surveillance System (BRFSS), as well as other public health surveys; other questions were developed specifically for WNC Healthy Impact to address particular issues of interest to communities in western North Carolina. Each county was given the opportunity to include three additional questions of particular interest to their county, which were asked of their county's residents.

Professional Research Consultants, Inc.

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

Sample Approach & Design

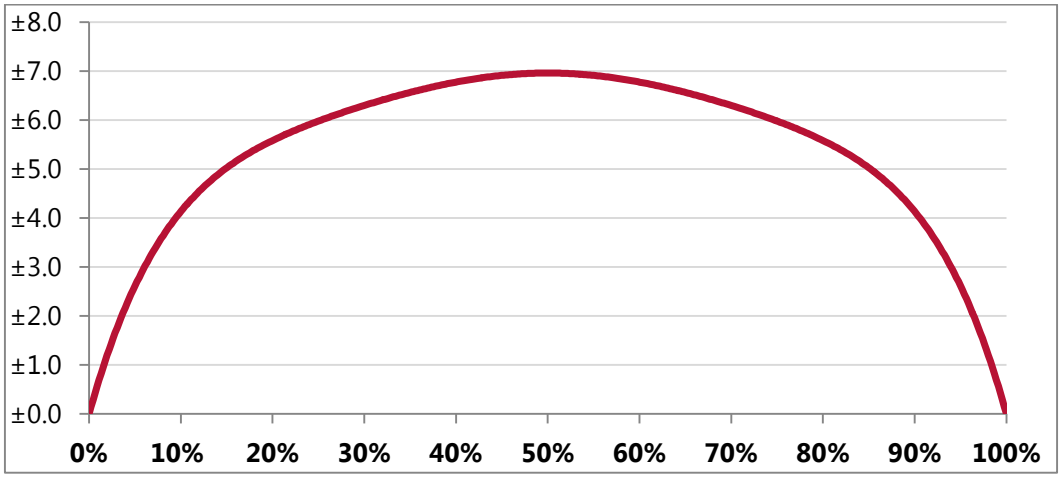
To ensure the best representation of the population surveyed, a telephone interview methodology (one that incorporates both landline and cell phone interviews) was employed. The primary advantages of telephone interviewing are timeliness, efficiency and random-selection capabilities.

The sample design used for this regional effort consisted of a stratified random sample of 3,300 individuals age 18 and older in Western North Carolina. Our county's sample size was 200. 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 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

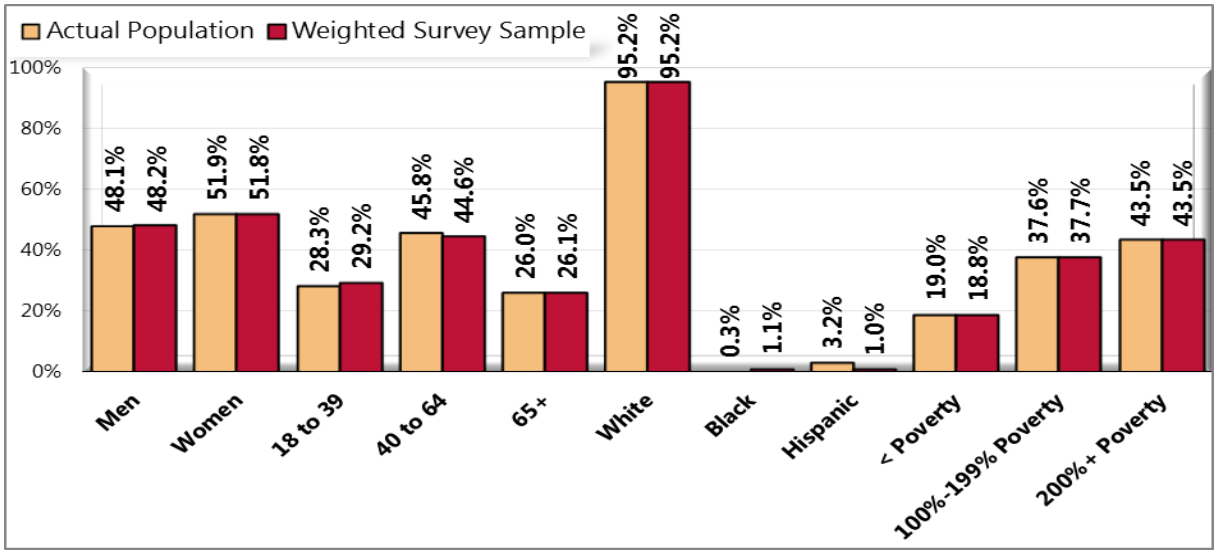
To accurately represent the population studied, PRC worked to minimize bias through application of a proven telephone methodology and random-selection techniques. And, while this random sampling of the population produces a highly representative sample, it is a common and preferred practice to "weight" the raw data to improve this representativeness

even further. This is accomplished by adjusting the results of a random sample to match the geographic distribution and demographic characteristics of the population surveyed (poststratification), so as to eliminate any naturally occurring bias. 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.

Population and Sample Characteristics

(Mitchell County, 2012)



Sources:
- Census 2010, Summary File 3 (SF 3). U.S. Census Bureau.
- 2012 PRC Community Health Survey, Professional Research Consultants, Inc.

Notes:
- Hispanics can be of any race. Other race categories are non-Hispanic categorizations (e.g., "White" reflects non-Hispanic White respondents).

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 2012 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 *2011 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

Pilot Testing & Quality Assurance

Before going into the field in the latter half of May, 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'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.

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.

Random-Digit Dialing

PRC employs the latest CATI (computer-aided telephone interviewing) system technology in its interviewing facilities. The system PRC uses is a hybrid variation of a commercial application enhanced with internally developed software applications designed to specifically meet the needs of its health care client base. Since 1998 PRC has maintained, refined and developed proficiency in using this CATI system.

The CATI system automatically generates the daily sample for data collection using a random-digit dialing technique, retaining each telephone number until the Rules of Replacement (see description, below) are met. Up to five call attempts are 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.

Rules of Replacement

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.

Minimizing Potential Error

In any survey, there exists some degree of potential error. This may be characterized as sampling error (because the survey results are not based on a complete census of all potential

respondents within the population) or non-sampling error (e.g., question wording, question sequencing, or through errors in data processing). Throughout the research effort, Professional Research Consultants makes every effort to minimize both sampling and non-sampling errors in order to assure the accuracy and generalizability of the results reported.

Noncoverage Error. One way to minimize any effects of underrepresentation of persons without telephones is through poststratification. In poststratification, the survey findings are weighted to key demographic characteristics, including gender, age, race/ethnicity and income.

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. Poststratification, 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.

APPENDIX B - COMMUNITY HEALTH SURVEY INSTRUMENT

Double-click on the survey coversheet below to access the complete survey instrument. If you cannot access this, please contact your local health department for a copy.

Date _____
Interviewed by _____ ID# __ __ __ __

2012-0615-02

WESTERN NORTH CAROLINA
2012 Community Health Needs Assessment MASTER
Asheville, North Carolina

Hello, this is _____ with Professional Research Consultants. We are conducting a survey to study ways to improve the health of your community.

(IF NECESSARY, READ:) Your number has been chosen randomly to be included in the study, and we'd like to ask some questions about things people do which may affect their health. Your answers will be kept completely confidential.

(IF Respondent seems suspicious, READ:) Some people we call want to know more before they answer the survey. If you would like more information regarding this research study, you can call '+chaname+' at '+chanumb+' during regular business hours.

Note that this survey is for processing & reports only. It is <u>not</u> to be used for interviewing in its current form. The notes in this survey do not have supporting logic, and this survey did not receive the review that the individual child surveys received from quality assurance.

Version:(1.0) 6/14/2012 1

APPENDIX C - HEALTH RESOURCE INVENTORY

Mitchell County Health & Human Services Provider Directory 2013

DAY-CARE & PRESCHOOL

Granny's Place..... (828) 688-3033
Hollifield's Christian Before and After School Program/Childcare ..... (828) 766-7552 or 766-2293
Intermountain Children's Place..... (828) 765-6712
Jack and Jill Before and After School Program/Daycare..... (828) 765-0747
Jessica and Dimple's Playhouse ..... (828) 467-5782
Laurel Creek Child Development Center..... (828) 766-7677
Little Lambs..... (828) 766-6575
Spruce Pine Montessori School Preschool..... (828) 765-7779
Sunflower Family Childcare Center ..... (828) 765-6802
Tiny Tots ..... (828) 688-9955

DENTAL SERVICES

Dr. Julius Aldridge..... (828) 765-8125
Dr. Taylor Townsend..... (828) 765-7383
Toe River Children's Dental Clinic..... (828) 688-8384

EMERGENCY SERVICES

Bakersville Police Department..... (828) 688-2113
Bakersvillle Volunteer Fire Department..... (828) 688-9027
Bradshaw Volunteer Fire Department..... (828) 688-9008
Buladean Volunteer Fire Department..... (828) 688-4322
Fork Mountain Fire Department..... (828) 688-4794
Mitchell County Emergency Management..... (828) 688-4615
Mitchell County Emergency Medical Services..... (828) 688-2014
Mitchell County Sheriff's Department..... (828) 688-3982
Parkway Volunteer Fire Department.....(828) 765-0080 or (828) 765-2117
Spruce Pine Police Department..... (828) 765-2233

HOME CARE SERVICES

Blue Ridge Home Care..... (828) 765-5731
Carolina Home Care Specialists..... (828) 765-4343
High Country Home Care..... (828) 766-9977
Mitchell County Community Alternative Program (DSS)..... (828) 688-2175
Mitchell County Home Health..... (828) 688-3421
Hospice & Palliative Care Center..... (828) 765-5677

HOUSING SERVICES

Cane Creek Village..... (828) 688-3744
Mitchell County Building Inspectors..... (828) 688-4771

Mitchell County Group Home..... (828) 688-2521
Mitchell County Septic Permit Program and Environmental Health Division..... (828) 688-2371
Mitchell House .....(828) 766-7771
Mitchell-Yancey Habitat for Humanity..... (828) 766-9000
Spruce Pine Housing Authority..... (828) 765-9182
USDA Rural Development..... (828) 765-0889

HUMAN SERVICES

Brian Center Health & Rehabilitation..... (828) 765-7312
JobLink Career Center and Employment Security Commission..... (828) 765-7376
MAY Coalition..... (828) 765-8880
Mitchell County Department of Social Services..... (828) 688-2175
Mitchell County Forest Resources..... (828) 688-9405
Mitchell County Safe Place..... (828) 765-4015
Mitchell County Transportation..... (828) 688-4715
Mitchell County Veterans Service Office..... (828) 688-2200
Mountain Opportunity Center..... (828) 688-3050
NC Cooperative Extension..... (828) 688-2051
NC Independent Living Services..... (828) 265-5410
Service Center for Latinos..... (828) 765-9980
Shepherd's Staff Secondhand Store and Food Pantry..... (828) 765-5385
Tri-County Pregnancy Center ..... (800) 676-9482
USDA Farm Loan Program..... (828) 765-5648
USDA Farm Service Agency..... (828) 765-5049
USDA Natural Resource Conservation Service..... (828) 765-4701
W.A.M.Y. Community Action, Inc..... (828) 766-9150

MEDICAL SERVICES

AltaRidge Foot Care..... (828) 766-7667
American Cancer Society..... (828) 675-0066
Appalachian Eye Association..... (828) 765-2020
Bakersville Community Medical Clinic & FQHC..... (828) 688-2104
- Dr. James Carroll, Family Practice
- Dr. Steve North, Adolescent Health
- Dr. Barbara Anne Stagg, Family Practice
- Dr. Rebecca Brooks, Family Practice
- Dr. Arch Woodard, OBGYN
- Family Nurse Practitioner, Jeanette Dellinger

Blue Ridge Medical Center General Surgery..... (828) 766-3010
- Dr. David Robinson

Blue Ridge Medical Center –Mayland Campus..... Adult (828) 765-5672…Pediatrics 765-4111
- Dr. Richard Rheinbolt, Pediatrics Only
- Dr. Joyce Thisse, Family Practice
- Dr. Sergio Cassanego, Family Practice

Blue Ridge Medical Center – Spruce Pine Campus..... (828) 765-0170
Dr. Ian Garriques, Adult Health
Dr. Jennifer Larson, Adult Health
Dr. Ryckman Caplan, Obstetrics/Gynecology
Physician Assistant, Nicole Fuller
Blue Ridge Medical Center –Yancey Campus..... (828) 682-0200
Dr. Lucia Crivenau, Pediatric Only
Dr. Kyle Kramer, Family Practice
Dr. Susan MacLean, Pediatric Only
Dr. Shehla Khan, Internal Medicine
Dr. Ryckman Caplan, Obstetrics/Gynecology
Physician Assistants, Andrea McAlister & Nicole Fuller
Blue Ridge Orthopedics..... (828) 765-8200
Dr. Robert Miller
Blue Ridge Regional Hospital..... (828) 765-4201
Blue Ridge Hospital Rehabilitation – Spruce Pine..... (828) 765-7901
Blue Ridge Hospital & Rehabilitation Center – Burnsville..... (828) 678-3488
Blue Ridge Women's Care..... (828) 766-3030
Blue Ridge Urology..... (828) 766-1670
Dr. Samuel Steele
Boone Ear, Nose & Throat Associates..... (828) 688-2104
Burnsville Family Medicine..... (828) 682-7333
Dr. Joseph Antinori
Care Partners..... (828) 874-9567
Celo Health Center..... (828) 675-4116
Dr. Roger Scott, Family Practice
Dr. Phillip Mitchell, OBGYN
Dr. Meri Stella, Women's Health
Dr. Elizabeth Peverall, Family Practice
Family Nurse Practioner, Karen Casey
Certified Nurse Midwife, Lisa Goldstein
Community Care of WNC.....Adult (828) 358-2835...Children (828) 688-2371
Dr. Fulknor & Dr. Smoker Family Practice..... (828) 765-6101
Mayland Chiropractic..... (828) 765-5555
Mitchell Community Health Partnership Parish Nurse Program.....765-7516 or 467-3837
Mitchell County Health Department..... (828) 688-2371
Mitchell County home Health..... (828) 688-3421
MY Meds..... (828) 766-6337
NC Services for the Blind..... (828) 265-8100
Regional Resource Center for the Deaf and Hard of Hearing..... (800) 681-7998
Toe River Project Access..... (828) 766-1850
Toe River Health District Self-Management Diabetic Program..... (828) 682-6118

MENTAL HEALTH SERVICES

RHA Mental and Behavioral Health..... (828) 765-8808
Aurora Behavioral Intervention, LLC ..... (828) 766-7637
CNC/Access..... (828) 678-9116
Families Together..... (828) 698-7823
Maxim Healthcare Services..... (828) 682-6561
New River Mental Health Center..... (828) 733-4357
Yancey Counseling Center..... (828) 678-1551

PET CARE & ANIMAL SERVICES

Mitchell County Animal Rescue & Shelter..... (828) 765-6952
Mitchell Veterinary Clinic..... (828) 765-6039
Mountain View Animal Hospital..... (828) 765-7059

SENIOR SERVICES

Alzheimer's Association..... (828) 254-7363
Brian Center Health and Rehabilitation Center ..... (828) 765-7312
High Country Area on Aging..... (828) 265-5434
Mary's Helping Hands Adult Daycare..... (828) 765-7254
Mitchell Senior Center..... (828) 688-3019

YOUTH SERVICES

Appalachian Therapeutic Riding Center..... (828) 675-5814
Car Passenger/Seat Program..... (828)766-1592
Child Care Resource and Referral..... (828) 682-0717
Children's Developmental Services of the Blue Ridge..... (828) 682-4772
Intermountain Children's Services..... (828) 688- 2190
JobLink "Get Real" Youth Program..... (828) 765-7758
Mayland Community College Basic Skills Program..... (828) 765-7351
Mitchell County WIC Program..... (828) 688-4668
Mitchell County Head Start Home Base Program..... (828) 688-2190
Mitchell – Yancey Partnership for Children..... (828) 765-5130
Penland School of Crafts..... (828) 765-2359
Project Challenge North Carolina, Inc..... (828) 765-0776
Mitchell County 4-H Program..... (828) 688-4811

MISCELLANEOUS

American Red Cross..... (828) 258-1785
Bakersville Post Office..... (828) 688-2571
Bakersville Town Hall..... (828) 688-2113
Driver's License Offices..... Spruce Pine Office (828) 766-7649... Burnsville Office 678-9886
Fitness Express ..... (828) 765-6336
Mitchell County Administration..... (828) 688-2139
Mitchell County Board of Education..... (828) 688-4432

Mitchell County Board of Elections..... (828) 688-3101
Mitchell Co. Chamber of Commerce..... (828) 765-9033 or 1-800-877-3912
Mitchell County Clerk of Court..... (828) 688-2161
Mitchell County Manager/Finance..... (828) 688-1239
Mitchell Co. Economic Dev. Commission..... (828) 688-2139 or 765-9033
Mitchell County Public Library.....(828) 688-2511
Mitchell County Magistrate's Office..... (828) 688-2146
Mitchell County Parks and Recreation..... (828) 688-5901
Mitchell County Register of Deeds..... (828) 688-2451
Mitchell County Sheriff's Department..... (828) 688-3982
Mitchell County Tax Office..... (828) 688-2451
Mitchell News Journal..... (828) 765-7169
National Forest/Park Service..... (828) 688-9405
NC Department of Motor Vehicles..... (828) 765-2926
Spruce Pine Parks and Recreation..... (828) 765-3000
Spruce Pine Police Department..... (828) 765-2233
Spruce Pine Post Office..... (828) 765-4508
Spruce Pine Public Library..... (828) 765-4673
Spruce Pine Town Hall..... (828) 765-3000
Henline-Hughes Funeral Home..... (828) 688-4813
Webb Funeral Home..... (828) 765-4277

Mitchell County Pharmacies

Bakersville Pharmacy..... (828) 688-3241
CVS Pharmacy..... (828) 765-7076
Hospital Drive Pharmacy..... (828) 765-2025
Ingles Pharmacy..... (828) 765-7997
Wal-Mart Pharmacy..... (828 766-8456

Mitchell County Schools Public Schools

Bowman Middle School.....(828) 766-3370
Deyton Elementary School..... (828) 766-2070
Gouge Elementary School..... (828) 766-2260
Greenlee Primary School..... (828) 766-9562
Harris Middle School..... (828) 766-3340
Mayland Early College High School..... (828) 766-3794
Mitchell County Board of Education..... (828) 766-2220
Mitchell High School..... (828) 766-3400

Private School

Spruce Pine Montessori..... (828) 765-7779
Tri-County Christian School..... (828) 765-2969
Corner Stone Christian School..... (828) 688-4047

Mitchell County Support Groups

AA Meetings… Every Monday – 8pm @ Ledger Baptist Church
Every Thursday – 8pm and Saturday – 10am and 8pm @ Trinity Episcopal Church, Spruce Pine
www.booneaa.org or www.aa-carolina.org

Abused Women Support Group…Every Tuesday – 6pm @ Mitchell County Safe Place

Al-Anon…Every Monday – 8pm @ Ledger Baptist Church
Every Thursday – 8pm @ Trinity Episcopal Church, Spruce Pine

Cancer Support Group…Last Thursday of every month @ Blue Ridge Regional Hospital – 6:30pm

English as a Second Language…Every Tuesday and Thursday – 6pm @ Trinity Episcopal Church, Spruce Pine

Grief Share….. GriefShare is a Christ-centered ministry designed to help those in grief to face the challenges and move toward rebuilding their lives. For more information, call Carolyn Dotts at 828- 467-1433.

Mitchell-Avery-Yancey Multiple Sclerosis Support Group…1st Tuesday of month @ Blue Ridge Regional Hospital – 11am

Parents Healing Together…First Tuesday of every month @ Blue Ridge Regional Hospital – 7pm

The Compassionate Friends International…2nd Monday of month – 7pm **@** First Baptist Church of Spruce Pine (parlor)

Weight Control Meetings…Every Tuesday – 5:30pm @ Snow Hill Baptist Church, Bakersville

Weight Watchers… Every Tuesday – 5:30pm and Thursday – 5pm @ Spruce Pine United Methodist Church