2014-15

Community Health Report
Watauga County

Appalachian District Health Department

A community health report presented by community health partners.

2014-15

Acknowledgments

This report is a result of a collaborative effort of Watauga County. We acknowledge individuals and to organizations who helped play an integral role in the development and implementation of community health assessment plans. See Appendix A for a detailed list of individuals.

Appalachian District Board of Health

High Country Health Vision Council

Appalachian Regional Healthcare System

Western Youth Network

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Executive Summary

The status of health in Watauga County is one of community importance since health affects the community in so many ways. There are many strengths in the county, as pointed out by community members responding to the community opinion survey such as beauty of the rural community offered by natural resources along with many outdoor recreation opportunities, strong healthcare system, strong community agencies and institutions serving people including Appalachian Regional Healthcare System, Appalachian State University, and area non-profit organizations, tourism opportunities in the county, and the willingness of so many residents to care for others. One comment summed up the sense of community by stating that there is evident "human and social capital" in the county. Additional comments about strengths included low crime rates, strong public schools, and available transportation through Appalcart.

Community collaboration led to the development of a comprehensive plan including five main elements in two key phases. The first phase of the process described in this report include the collection and analysis community input through an opinion survey, community leader input, and community secondary data review. During this phase, the community opinion survey was distributed broadly in two ways: electronically by email, website posting, and social media, and through traditional hard copy formats in various community locations including the health department and WIC clinic, county library, Appalachian Regional Healthcare System, High Country Community Health, the Community Care Clinic, and many others. Appalachian District Board of Health members also provided input about the questions included and distribution points for a community leadership survey disseminated only in electronic formats for initial data collection. In addition, High Country Health Vision Council members took efforts to disseminate hard copies and/or electronic links to the survey from the period of mid-November-January 31, 2015. The initial goal of responses for the community opinion survey disseminated in the county was 500, and the responses received was 78% of the goal with 388 responses overall. The community leadership survey had lower response, with 28 overall, but this has been reviewed as an initial step towards collecting leadership input that will be broadened in the second phase of data collection.

The group utilized community convenience sampling methods for the community input due to resources available. At the November, 2015 meeting, the Health Vision Council members adopted a timeline for completing the assessment. Paper copies were distributed to members at this meeting, and members worked diligently to ensure a broad representation was included. Winter weather posed challenges in continuing efforts for the next phase of data review but the group continued to work diligently and met in February, 2015 to review primary and secondary data reports. Health Vision Council members received a powerpoint presentation to guide the selection of community health priorities. The priority selection criterion was outlined (as is described in health priorities section) and members used 3 stickers to vote for their top priorities. Data review included socioeconomic data like population numbers and growth trends, race/ethnic profile of the community, and a review of leading causes of death and illness in the county using trends of incidence and prevalence.

Similarities between secondary data and community opinions

Overall, the analysis of community data along with community opinions indicate that, for many areas, the community members who participated in the survey highlighted key areas of concern that mirrored that in the community statistics from secondary sources. **The community opinion data reflects those that participated in the survey seem in-tune with the concerns related to substance abuse, chronic disease, and behavioral health needs. In addition, those responding also seem aware of the importance of addressing domestic violence, preventing child abuse, and caring for the aging population in the community.** The most risky behaviors selected were related to substance abuse and chronic disease prevention: being overweight, poor eating, tobacco use, and lack of exercise.

Another key theme that emerged in Watauga County, is 21% chose dropping out of school as a top health risk behavior. This is important to recognize since it reflects the community member respondents' awareness of the link between educational attainment and health. Further in the report, the discussion about income and educational attainment provides more information about the link between income and educational attainment is linked.

Chronic diseases claiming most lives and causing the most illness call for preventive measures.

The leading cause of death in the county is heart disease, followed by a close second in cancer, with most cancer deaths attributed to lung cancer. Among cancers, lung cancer is the leading type for new cases and deaths and chronic lower respiratory disease/COPD is the 3rd leading cause of death. If all causes of death for the county are combined, 62% are due to preventable chronic disease. This is important since we know that 3 primary risk factors: poor nutrition, lack of physical activity, and tobacco use are linked to them. We also know that from review of the mortality statistics, chronic diseases often affect some groups more than others. For example, though heart disease is a leading cause of death overall, more men die from heart disease every year when compared to women.

Community members who participated in the survey pointed out the connection between poor eating habits, being overweight, lack of exercise, and tobacco use as impactful aspects of overall community health problems. In addition, most supported the notion of providing indoor and outdoor recreational and active living opportunities in the community, along with tobacco free environments like workplaces, parks, and other public venues beyond indoor areas of restaurants and bars.

Tobacco use is the leading cause of preventable death in the US and is a major risk factor linked to the majority of deaths in the county.

Tobacco use is a well-known risk factor for many community health problems that are noted within the secondary data like low and very low birthweight due to a higher percentage of women who smoked during pregnancy, a high number of people who have died from chronic lower respiratory disease/chronic obstructive pulmonary disease (CLRD/COPD), and that lung cancer and heart disease are leading causes of morbidity and mortality in the community. It is important to remember the demographic who responded to the survey when reviewing this analysis, but this majority support somewhat mirrors that of other statewide policy efforts that have had support, even among some former or current tobacco users. Along with traditional forms of tobacco use, another trend that is emerging in the community is electronic nicotine delivery systems (ENDS), which may be better known as e-cigarettes or some other form. There is much that is unknown about the potential harms that may come as a result of the use of ENDS, but the Office on Smoking and Health of the Centers for Disease Control and Prevention note:

"Smoking is by far the leading cause of preventable death in the U.S., causing nearly 500,000 premature deaths each year, including 42,000 deaths caused by secondhand smoke exposure (DHHS, 2014). ***In North Carolina, 24.6% of young adults aged 18-30 are current cigarette smokers*** *(DHHS, 2014).* ***If smoking persists at the current rate, the 2014 Surgeon General's report projects that 5.6 million of today's American children will die prematurely from a smoking-related illness, including 180,000 North Carolina youth aged 0-17*** *(DHHS, 2014, p.694). "* –Tim McAffee, MD, MPH, Director, Office of Smoking and Health, Centers for Disease Control and Prevention, US DHHS.

Tobacco prevention and control tools are available for healthcare providers, workplaces, and public policy makers at local, state, and national levels. ***Local governments do have authority to adopt and enforce tobacco free policies in public places that can protect those most vulnerable from exposure and further efforts to reduce the illness and deaths related with diseases linked to tobacco use.***

Alcohol, Tobacco and Prescription drugs

Community members recognize alcohol, tobacco, and other drug use as one of the major health problems and one of the major risky behaviors that impact health in the county. The importance of substance abuse review is not only the

potential harmful effects of misuse or abuse of substances, but also because alcohol and other drugs can be linked to other health problems that we are among the leading causes of death: all other unintentional injuries, suicide, and unintentional motor-vehicle injury deaths. In close review of these causes, we see that some trends have increased, including that of all other unintentional injuries, which is now the 4th leading cause of death. Looking more closely at the unintentional injuries due to poisoning provides insight into the importance of addressing this part of the problem. Tobacco and alcohol are important substances to consider along with prescription drugs since each is linked to injury-related or chronic disease-related deaths that are among the leading causes of mortality for the county.

According to the data detailed in the Substance Abuse section, we note that community members pointed out their top 3 substance abuse concerns as methamphetamine use (60%), prescription drug misuse or abuse (60%), alcohol use (56%), and tobacco use (48%). Ranked slightly lower, marijuana use (27%), and driving after using drugs or alcohol (26%).

Prescription drug misuse is a key factor to review when looking at deaths due to all other unintentional injuries since many are due to unintentional poisoning. Efforts have begun to address this concern with the Project Lazarus program, but continued efforts are likely needed to continue to adopt a community wide model that addresses prescription overdose, response to overdose using Naloxone rescue kits by emergency responders or family members of individuals believed to be at-risk, as well as other methods like prescription lockboxes, drop box locations, and community-wide awareness. Operation Medicine Cabinet or Medicine Take back days often coordinated by law enforcement and community partners and permanent drop box locations offer great exposure in the community to safely dispose of medicines.

Alcohol use also warrants additional review due to potential for misuse and abuse along with risk of injury. Research studies have concluded that as blood alcohol concentration rises, so does the risk of injury –as low as a 0.04 BAC can impair some drivers' ability for decision making and coordination (UNC HSRC, 2013). Simple, yet comprehensive approaches can also be applied to addressing alcohol use, especially that among underage users, which community members who participated in the survey believe that most access alcohol from peers or siblings (51%), while others equally believe access is gained from alcohol left accessible (23%), or accessing it at parties (23%), and fewer believed access came from home with parents that approve (16%).

Substance abuse is an important component when considering community behavioral health needs and gaps as well as unintentional injury deaths. All other unintentional injury deaths ranks 4th among the leading causes of death for the county.

Behavioral health and suicide

Behavioral health is a broad area including substance abuse described above, but may also encompass community needs for behavioral healthcare supports like counseling and other therapies. Overall, suicide continues to be among the leading causes of death, but has dropped from 7th leading cause of death in the 2011 report to the 9th leading cause of death in this report (NC SCHS, 2014). The suicide rate viewed over five-year aggregate trends from 2001—2005 to 2009-2013 indicates a decreasing trend to a rate of death of 13.8 per 100,000 (NC SCHS, 2014). The NC suicide rate of 12.2 per 100,000 is lower, but both rates are sensitive due to small numbers and should be interpreted with caution. *Over the period of 2009-2013, there were 32 Watauga County residents who died by suicide (NC SCHS, 2015).*

It is important to understand factors that may influence or give context important in understanding and addressing this community health concern. We know from the community opinion survey, most respondents (60%) recognize that suicide is a problem in the county, some respondents (16%) did not think suicide was a community problem, while another 24% are unsure if suicide is a problem for the county. Most often, if someone was made aware a person had extreme sadness or were contemplating suicide, they would refer them to a doctor, health department, or other clinic

or a pastor or another church member. Consideration for community health improvement should include a greater understanding about whether or not the healthcare and faith community are prepared and equipped with tools they need should someone refer a person near or in crisis to them for help. In addition, further efforts to understand potential behavioral health needs of youth should be explored through use of other tools like the Youth Risk Behavior Survey, so youth needs can be assessed since suicide among youth and young adults has become a national problem.

Additional insights can be gleaned from the NC Suicide Prevention Plan linked to a later section in this report, along with data from the Violent Death Registry System of NC DHHS which shows most common means of suicide across all age groups and common characteristics shared by two groups at higher risk of being a victim of suicide: elder adults and youth.

Aging population trends and projected needs of the elderly

Some community members (19%) recognized the needs of aging problems by noting it among the top 3 health problems that have the greatest impact on the community. There were many needs identified for older adults in the community, but among them, transportation and medication assistance programs were identified as most important by survey participants, 73% and 64%, respectively. Watauga County has an estimated 7,157 adults age 65 and older representing 14% of the overall population. This is an area that should be further assessed to ensure a broad sector of community members understand what is already planned or what needs further support to implement or sustain initiatives for this population group. The High Country Council of Governments Area Agency on Aging plan is linked in the report to describe some needs and actions already identified.

Special populations in the community

Community members at the greatest risk for health problems are described briefly in this report. Notably, those who are youngest, oldest, and without healthcare coverage are important groups, as are those who do not speak English as a first language. Special populations, including children, elderly, those with limited English proficiency, and those with special healthcare needs or disabilities are outlined in the Special Populations section near the end of the report.

Socioeconomic factors that have impacts on the community

Economy impacts health, as is evidence through unemployment rates, poverty, and household income levels well below that of NC. Economic development efforts aimed at growing employment are an important component to supporting long term health in the community. The Watauga County unemployment rate has shown a decreasing trend down to 5.8% below the 6.3% in NC (NC Department of Commerce, 2014). The county has recently been reclassified as a Tier 3 county by the NC Department of Commerce, which is also briefly described in this report.

If I could change one thing to support health in my community

Community members participating in the community opinion survey were asked what they would change if they could impact one thing to improve health in the community. Major themes emerging from those write-in responses were around addressing one of the 3 main chronic disease risk factors tobacco, physical inactivity, poor nutrition that was 45% of all responses, 33% were about healthcare coverage and affordability, 26% were about improving physical activity options including indoor and outdoor recreation opportunities, 18% were about increasing healthy food options and/or nutrition behaviors, 8.4% were about substance abuse prevention, 7.4% were about furthering education, with most specifically about education for preventive health efforts, and 6% were about community supports related to information, transportation, and awareness of local community needs.

The respondents in the survey included several specific comments about these topics in rank order:

#1- More affordable, accessible healthcare services and insurance for those who are uninsured when all categories related to healthcare are combined. Of those responses, the following 2 themes emerged in addition to affordability:

- Mental health service accessibility was the most commonly mentioned specialty service
- Dental health care affordability for uninsured was the second most commonly mentioned specialty service

#2 –An indoor recreation facility in Watauga County; the # 1 response in promoting physical activity category

#3 –Increased healthy food options that are affordable

#4 –Substance Abuse prevention including prescription drug abuse, tobacco, and alcohol

Health priorities selected

Health priorities were selected by the Health Vision Council in February, 2015 as described in methods section. These priorities are not all-inclusive, but highlight priority areas this group will be working to better understand and develop community improvement efforts to improve upon them. However, other key areas highlighted in this report will be reviewed as well to make sure all groups working to support health have the ability to also engage.

Substance Use and Abuse

Drugs, alcohol, and tobacco; including misuse or abuse of prescription drugs and use of e-cigarettes or other devices for nicotine delivery

Physical activity and nutrition

Access to physical activity or recreation, accessing healthy foods, and making healthy choices for eating healthy and making physical activity easier for all

Chronic Disease Management and Awareness

Obesity, Heart disease, chronic lower respiratory disease/COPD, stroke, cancer, diabetes, and hypertension

Next steps for community health improvement planning

The group's next steps in addressing important health priorities are briefly described at the end of this report.

Introduction & Background

Community health assessment is an important part of understanding what the main health problems are in Watauga County. In addition, a review of statistics along with community health opinions help provide context to the leading health problems.

A core function of public health service is assessment. Assessment helps identify the leading causes of death and illness while also providing other important information like community resources that support health and what populations must have special consideration in supporting the public's health.

In 2002, the NC Division of Public Health and the NC Local Health Director's Association led an effort to adopt a mandatory system for local health department accreditation. Since that time, it is now required that every local health department in NC complete a self-assessment and independent peer review process by the NC Local Health Department Accreditation Board of 41 benchmarks and 148 activities that help the local health department assess its own capacity in meeting the 10 essential services and 3 core functions of public health. The community health assessment is a key component of assuring the local health department is monitoring, identifying, and taking action on the most recent community health assessment (NC LHDA Board, UNC Gillings School of Global Public Health, 2002). Prior to this time, Appalachian District Health Department had been completing community health needs assessments, and this new requirement led to further enhancements in the process.

Later, in 2010, the Patient Protection and Affordable Care Act was adopted into law requiring non-profit hospitals to file community health needs assessments along with evidence of addressing community needs through filing a Form 990 Schedule H to the IRS with supporting documentation (NC Hospital Association, 2015).

Locally, both Appalachian District Health Department and Appalachian Regional Healthcare System determined a collaborative community health needs assessment process would lead to greater benefit and efficiency to the community. To better align to meet both needs, Appalachian District Health Department and Appalachian Regional Healthcare System adopted a 3-year cycle for community health needs assessments. The first process linking the two organizations occurred in 2011. Since this time, the NC Division of Public Health allowed greater flexibility to file the community health needs assessment, which has led to the new cycle of publishing this community health report in March, 2015. Following this year, the next cycle of community health report will be published again by March, 2018.

The cross-sector health coalition, High Country Health Vision Council, agreed to advise and implement the community health report efforts. The group had a broad sector of community agency representatives along with community member volunteers who collectively provide a broad-base of community knowledge important in understand what community health issues exist, why they may exist, and how to utilize the data to move towards action. Though this group began under the leadership of High Country United Way as a funding advising group in September, 2011, it has since evolved into a strong coalition focusing on income, education, and health outcomes in the community. The group most involved in this process was the Health Vision Council (Health VC).

The group participated through regular meetings, email correspondence, and by reviewing survey instruments, disseminating community health opinion surveys, and reviewing health report data and opinions. In February, 2015, the group took the next step towards community health improvement by selecting three key priorities for further analysis and community health improvement plan development.

Process & Methods

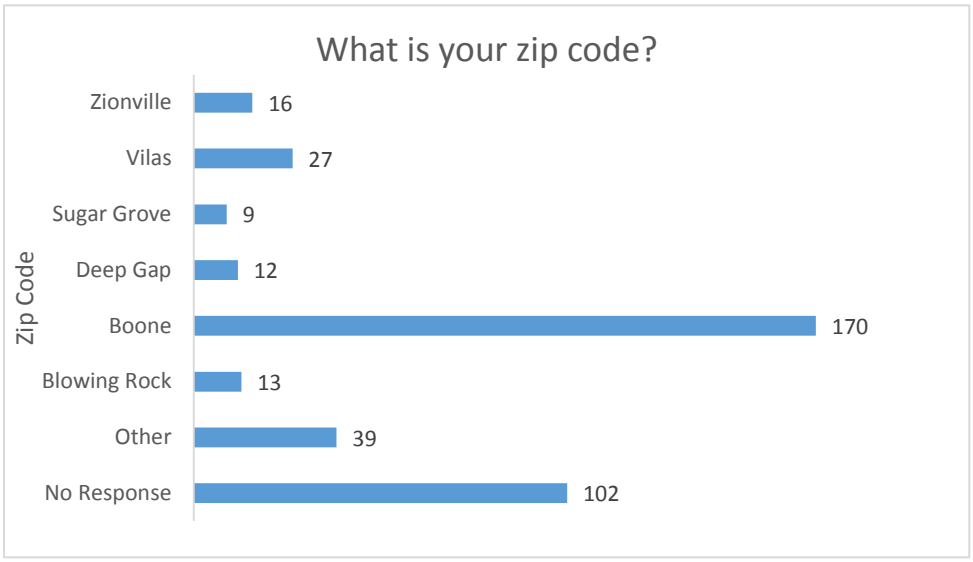
The High Country Health Vision Council members determined three overall themes in conducting the community health needs assessment.

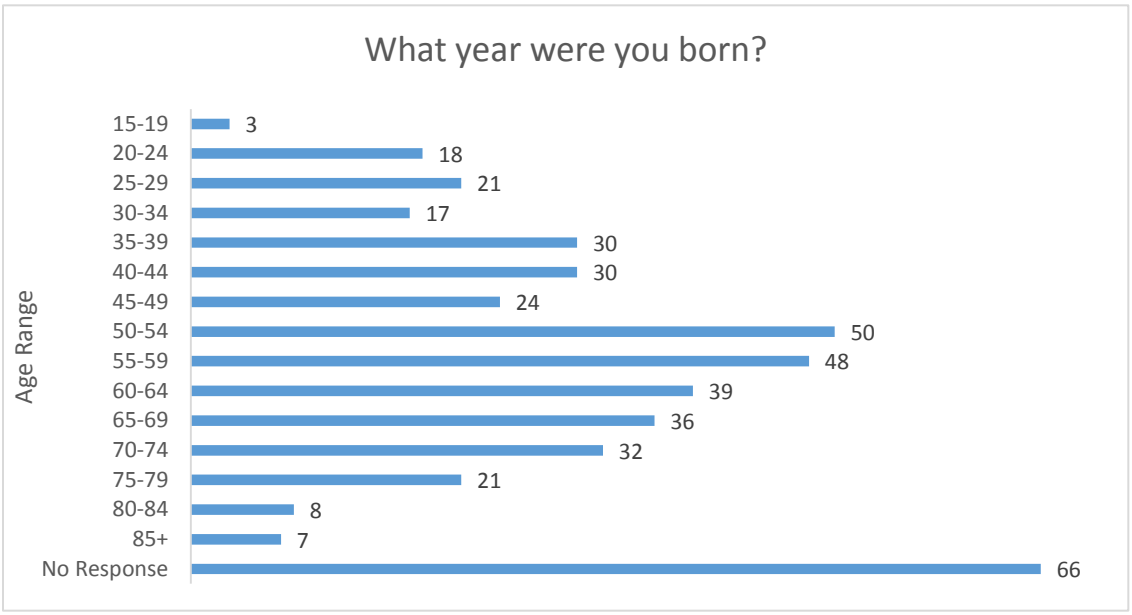
On July 9, 2014, the High Country Health Vision Council met in Foscoe, NC to review the timeline, key components, and actions for the community health needs assessment. Prior to this meeting, some committee members, including staff from Appalachian Regional Healthcare System, provided feedback to the Appalachian District Health Department staff in the development of the community opinion survey.

Methods used for this report include:

Community health opinion survey –see Appendix B to review the community health opinion survey instrument used. This survey was developed to mirror questions that identified community strengths, important health problems, and health behaviors of community residents. Questions were modeled after the National Association of City and County Health Officials and past survey instruments used. Items selected were intended to complement secondary data sources available. A total of 800 English and 200 Spanish survey instruments were printed and distributed in multiple community venues with the support of Health VC members. Locations for distribution included the Watauga County Library, Appalachian Regional Healthcare System, Watauga County Health Department and WIC clinic, Community Care Clinic, Watauga County Department of Social Services, High Country Community Health, and many community locations through special volunteer efforts. In addition, an electronic version of the survey instrument was developed using Survey Monkey, a survey subscription service held by the Appalachian District Health Department. The survey instrument link was emailed to Watauga County stakeholders and Health VC members in November, 2014 and all were asked to distribute and post the link accordingly. In addition, the electronic link was posted online in multiple locations, including the Appalachian District Health website, Appalachian Regional Healthcare System website, along with being promoted through usual media outlets.

The data collection goal of 500 surveys was established through working meetings with stakeholders. However, with both electronic and paper copy distribution, promotion, and links available, the survey respondents totaled 388 people or 78% of the established goal. Community health opinion surveys using a convenience-sampling methodology are most feasible with limited time and financial resources. Though they do provide some insights in community opinions, the data should be interpreted with caution. To address the full understanding and limitations of use of this data, the information below compares the community demographics to those that responded to the survey. The graphs below depict the respondents by township and age. Note that some townships were underrepresented, but those are primarily of the towns with smaller populations that closely border other NC counties. In addition, 39 were coded as "other" because they were of neighboring townships. They were included in the analysis since they may have identified with spending more time in Watauga County even if their primary residence is outside the county. The value of the input was considered more important than the exclusion for this particular purpose.





Community health leadership survey –see Appendix B to review the community health leadership survey instruments and data. This survey was intended to complement the community health opinions and understand how community leaders see community health problems and strengths. The Appalachian District Board of Health provided feedback on distribution of this survey. Unlike the community opinion survey, this survey was only distributed electronically using Survey Monkey, and further results may be warranted to get a full picture of community health leader input. Given the time constraints to meet the report submission deadlines, this may be an avenue the coalition will explore with community listening sessions planned next.

Secondary Data –see Appendix C to review the data book. This is an important part of the overall report since much of the described condition of the community utilizes data collected from trusted sources such as the US Census Bureau and the NC State Center for Health Statistics. This data provides us with information about the demographic profile of the community, population growth trends, and trend analyses of key issues like income and poverty, health behaviors, and leading causes of illness and death.

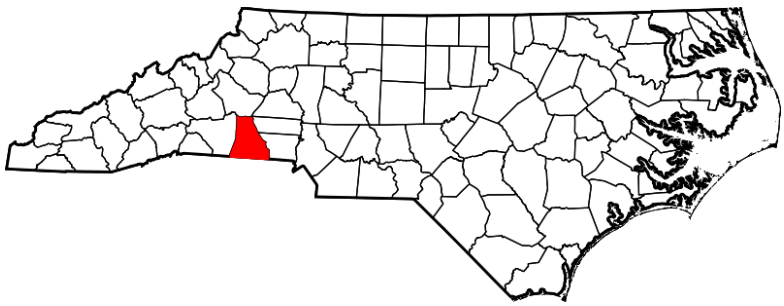
Included in this report are comparisons between the county, a peer county, and the state of NC overall. We use these comparisons to better understand how this county's statistics differ from a similar county or the state. Some data is reported in rates per a certain number in the population (e.g., 100,000) while other is reported as a percent. New cases of a disease are often reported as a rate while health behaviors and prevalence of a disease existing in the population is reported as a percentage.

Special attention is warranted when the county statistics are different from the peer county or NC overall, when the trend overtime is showing significant change, or there are disparities between statistics by age, gender, race or ethnicity (Pfaender, 2015).

Special caution is warranted when the county statistics include a rate below 20 (NC SCHS). Rates can be more sensitive to spikes in the data on particular years and therefore, higher rates one year may level out if tracked using a trend analysis of the measure overtime. This is especially important due to the small size of the county population. When rates were unstable because of small numbers, they may not be reported here. In addition, number of cases is used in some places to provide greater context for the meaning of a rate or percent.

About the peer county –Cleveland County, NC

The NC Division of Public Health has grouped communities into peer subgroups in order to assist counties in drawing comparisons of statistics at the county level. Watauga County is included in Group J along with Cleveland, Lenoir, Edgecombe, Rutherford, and Wilson County. Population size and age distribution, population density, and percentage of people in poverty are utilized to group these counties (NC DPH, 2014).



Community Health Opinions

The community health opinion survey provides important information to utilize in planning community health improvement. Community member opinions often offer confirmation that community problems are noticed, or they may provide insight that an existing problem is not noticed.

While community opinions provide insights, they do not replace hard data that comes from reliable sources. In addition, the community opinion survey results referenced in this report must be interpreted with caution. The results of this survey cannot be generalized to that of the whole community since convenience sampling methods were used rather than random sampling techniques.

Overall, there were 388 responses to the survey, and 89% were white, while 2.4% were African American, 1% were Asian, 1% were Native American or Alaska Native, over 5% were some other race and one respondent was Native Hawaiian or Pacific Islander. Respondents who speak English as a first language were 95% while 3% speak Spanish as a first language and another 1.7% spoke some other first language. When asked whether the respondent was of Hispanic or Latino origin, 3% said yes and 97% said no. Compared to the 2013 American Community Survey estimate demographics for Watauga County overall, the survey respondents profile nearly mirrors it, since approximately 95% of the population is White non-Hispanic, 2% is African American, and 3% is Hispanic or Latino (US Census Bureau ACS, 2013). Given that it is often more likely that racial and ethnic minority groups are underrepresented in this type of convenience sampling technique, this is a close outcome when only considering racial and ethnic representation.

In considering population representation using educational levels, there was a higher representation among those with greater level of education, with 32% who had at least a bachelor's degree and another 33% with a graduate-level education beyond. Other education levels reported by respondents included 5% with no high school diploma, 6% with a high school diploma or GED, 13% with some college but no degree, and nearly 10% with vocational training or an associate's degree. Among Watauga County residents age 25 and older, 4.2% had completed less than 9th grade education, 6.8% completed some high school without graduating, 20.3% completed high school or GED, 22.6% had completed some college but had no degree, 8.2% had earned an Associate's degree, and 22% had a Bachelor's degree while another 15.7% had a graduate level education (US Census Bureau ACS, 2013).

Income levels were represented across the income spectrum provided, with nearly a third of all respondents earning $24,999 or less annually, with the lowest income level of less than $10,000 per year representing the majority of this category. However, 28% respondents reported income levels of $75,000 or more annually. Given the education demographics noted above, that may indicate a higher probability of higher incomes as well. It is often more common that individuals with higher education and income levels may be more likely to take a survey, so this result may be somewhat expected for a convenience sampling method. The survey methods did include promotion and a drawing for a prize that was intended to incentivize those less likely to participate to do so. In addition, surveys were in the community for over 8 weeks in multiple locations.

To address the underrepresentation in the community, the community listening sessions will target zipcodes, age groups, and those who do not speak English as a first language to gain additional information needed for a full understanding in addressing community health priorities.

Some key highlights from the survey are incorporated throughout this report, but in addition, these are additional points:

The top 3 most important community health problems that have the greatest impact on the community

Alcohol or drug use 62%, Mental health problems 47%, Cancers 25%, Diabetes 22%, Heart disease/stroke 20%, Domestic Violence 19%, Aging problems 19%, and Child Abuse/Neglect 18% were the top choices.

The 3 most risky behaviors that have great impacts on health in the community

Alcohol or drug use 71%, Being overweight 47%, Poor eating habits 45%, tobacco use 35%, Lack of exercise 31%, and dropping out of school 21% were the top choices.

The top 3 environmental health concerns in the community

Meth labs 55%, Drinking water 41%, Mold 37%, Septic system failure/straight pipes to creeks and streams 23%, Recycling 23%, Secondhand smoke 22%, and Food Safety (restaurant inspections) 18% were the top choices.

The top substance abuse problems in the community

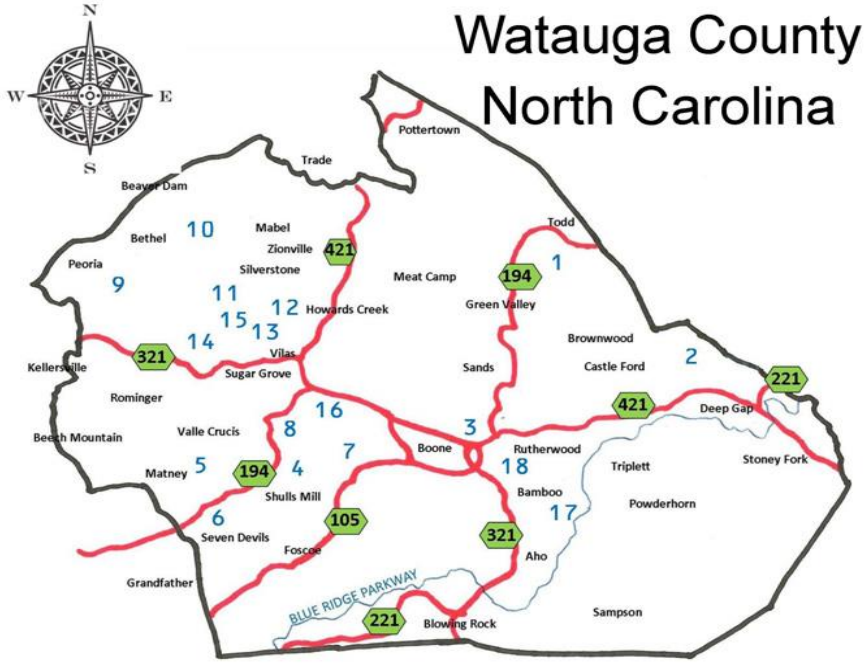
Methamphetamine 60%, Prescription drug misuse and abuse 60%, Alcohol 56%, Tobacco 48%, Marijuana 27%, and Driving after using drugs or alcohol 26% were the top choices.

Watauga County, NC

Watauga County sits in the northwestern corner of North Carolina in the Blue Ridge Mountains, bordering Ashe, Avery, Wilkes, and Caldwell Counties and Tennessee. It offers rich natural resources and history dating back to 1849 when the county was formed and 1872 when the Town of Boone, named after pioneer Daniel Boone, was incorporated.

Watauga County communities include the townships noted in the table below (US Census Bureau, 2010)

Township	Population	% County Pop	Median Age
Boone	33,059	65%	23.2
Blowing Rock	3,412	7%	49.1
Vilas	4,067	8%	41.6
Deep Gap	2,352	5%	41.3
Zionville	2,256	4%	42.4
Sugar Grove	2,064	4%	43
Valle Crucis	412	1%	45.3
Beech Mountain	320	1%	52
Seven Devils	192	0.38%	49.2



Source: map image courtesy of Watauga County Arts Council

County Demographics

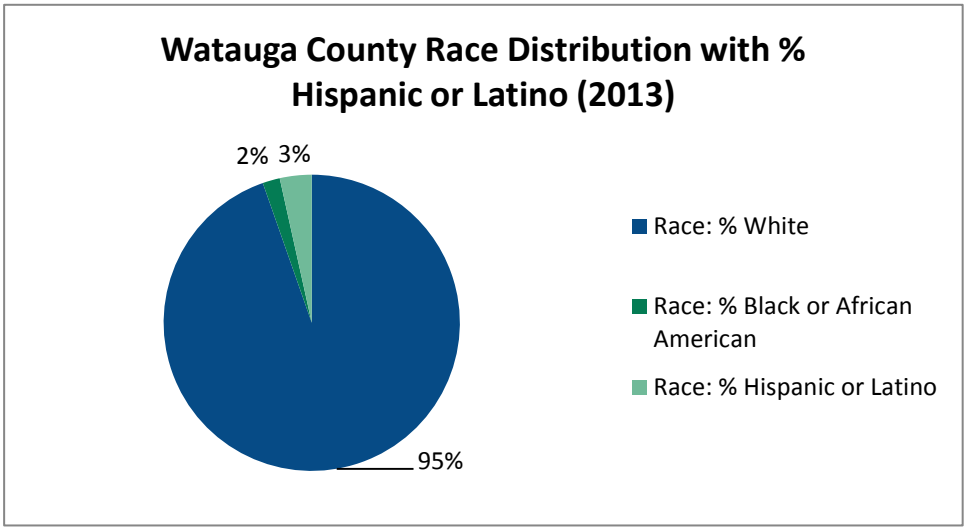
Overall, the Watauga County population is 52,372 (US Census Bureau, ACS 2013 estimate) with even distribution of males and females in the population. The median age for the county is 28.8 years compared to 37.6 years for NC overall (US Census Bureau, 2013). An important consideration about age is the median age by township noted on the previous page since Watauga County is also home to Appalachian State University (ASU). This influences the median age since a younger population attending college is based in Boone.

In the fall, 2014, ASU had an enrollment of 18,026 students with over 16,000 being in-state residents (ASU, 2015). As of this time, 1,045 of the students enrolled were in-state residents of Watauga County and 205 students were residents of Cleveland County, 113 were residents of Avery County, 161 of Ashe County, 45 of Alleghany County, 366 of Caldwell, and 300 of Wilkes (Fact book, Institutional Research, Planning, & Assessment).

The population has increased steadily since 2008 and is expected to grow to 60,707 in 2020 and up to 70,090 in 2030 (NC Office of State Budget and Management, 2014).

The majority of residents in the county, or 95%, identify themselves as White Non-Hispanic compared to that of NC at 69.7%. The percentage of African American Non-Hispanic residents in Watauga County is much lower with 2% compared to 22% in NC. Watauga County has about the same percentage of Hispanic or Latino residents as Cleveland County at 3.4% compared to 8.5% in NC, 5% in Ashe County, and 9.3% in Alleghany County (US Census Bureau, 2013). Approximately 4% of the population is 2 or more races.

Considering ethnicity and race, there are 1,747 Watauga residents or 3.4% that are Hispanic or Latino and any race. Among those who are Hispanic or Latino, 66% are Mexican, 4.9% Puerto Rican, 7.9% Cuban, and 22% are Hispanic or Latino from some other country of origin. Overall, there are 121 residents from Central America with most being from Honduras or Guatemala and 122 residents from South America with most from Colombia (US Census Bureau, 2010). Asian residents represent less than 1% population, and of those, 39% are Vietnamese, 23% are Chinese, 13.6% are Filipino, 6.8% are Asian Indian, and less than 1% of residents are Japanese or Korean. Among the 278 American Indian/Alaska Native residents in the county, 93 have an origin of the Cherokee Indian tribe (US Census Bureau, 2010).

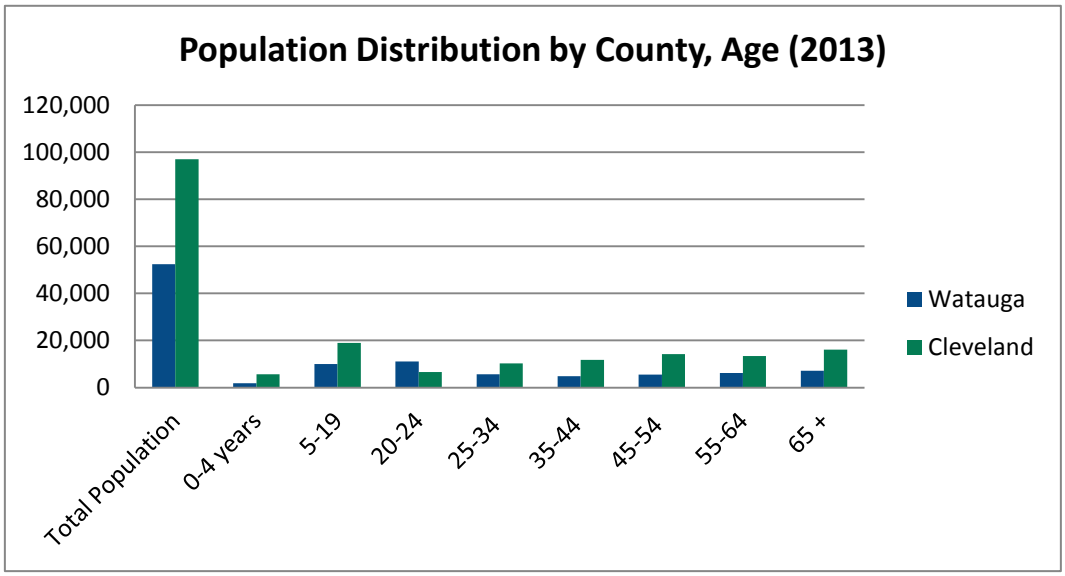


County Demographics

According to the American Community Survey population estimate (2013), the total population between the ages 18-24 years in Watauga County is 16,087 people.

There are 1,848 children age 0-4 and over 10,000 age 5-19 years (US Census, ACS 2013).

The population age 65 and older is 7,157 or nearly 14% of the overall population (NC SCHS). This will be an important trend to monitor since resources and services for seniors will be a major community factor in the future, as it will be for the state of NC. The High Country Area Council on Aging has a strategic plan in place through 2016 which can be accessed through High Country Council of Governments. The plan highlights a variety of key areas including family caregiver support, elder abuse awareness, community outreach, and healthy aging programs.



Community opinion survey respondents were asked what they thought was most important for supporting elderly adults in the county. All issues received support.

Transportation 73%

Home Delivered Meal Programs 58%

Recreation and physical activity opportunities 53%

Retirement neighborhoods 45%

Abuse prevention programs 28%

Medication Assistance Programs 64%

Long Term Care 54%

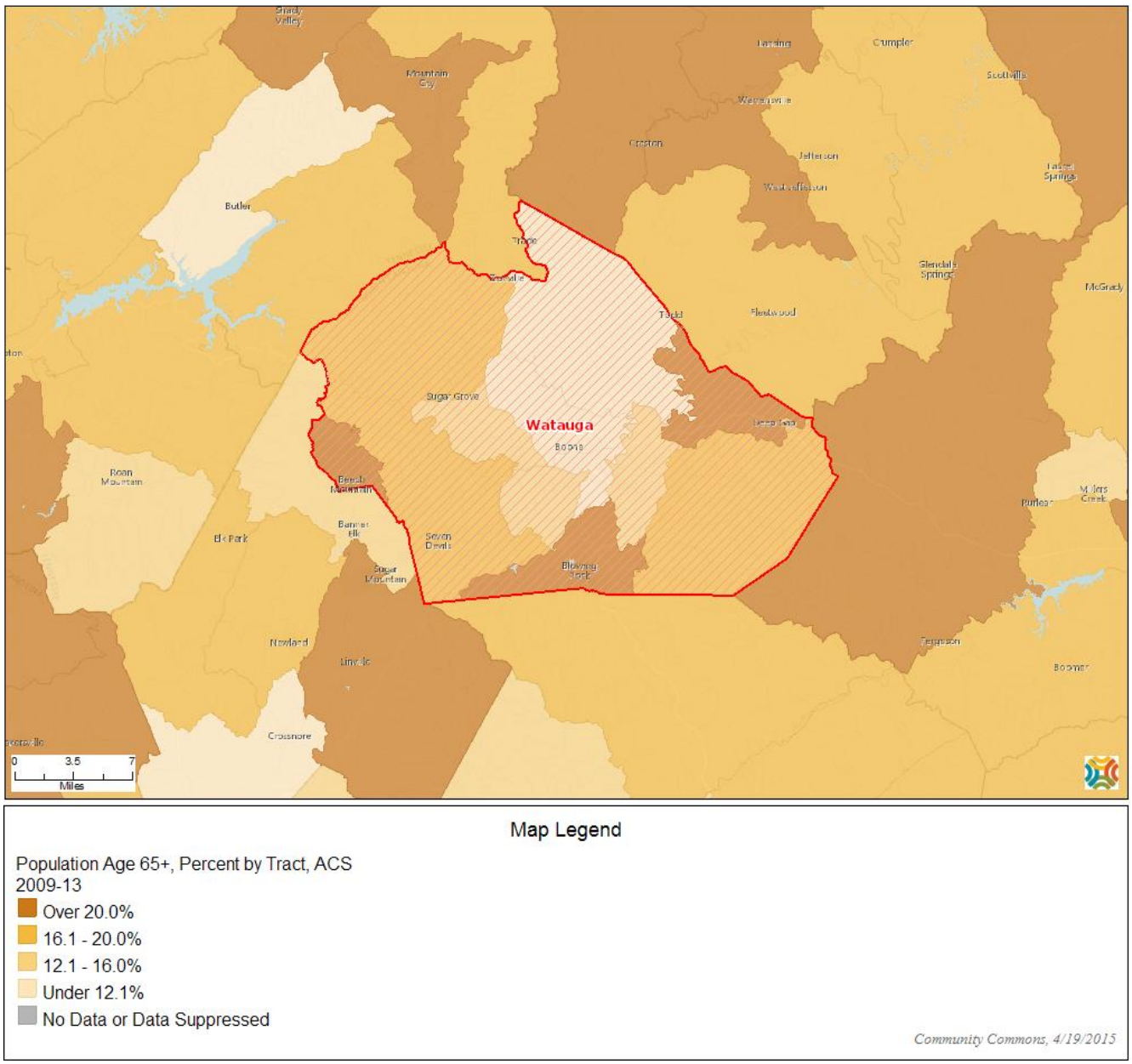
Assistance for buying food 50%

Meal programs offered at the Senior Center 37%

Population Age 65+

The data below shows where people age 65 years and older are living in Watauga County (ACS, 2009-2013; Community Commons, 2015). This is important data for community planning.

Watauga County NC Population Age 65 , Percent by Tract, ACS 2009-2013



Map Legend

Population Age 65+, Percent by Tract, ACS 2009-13

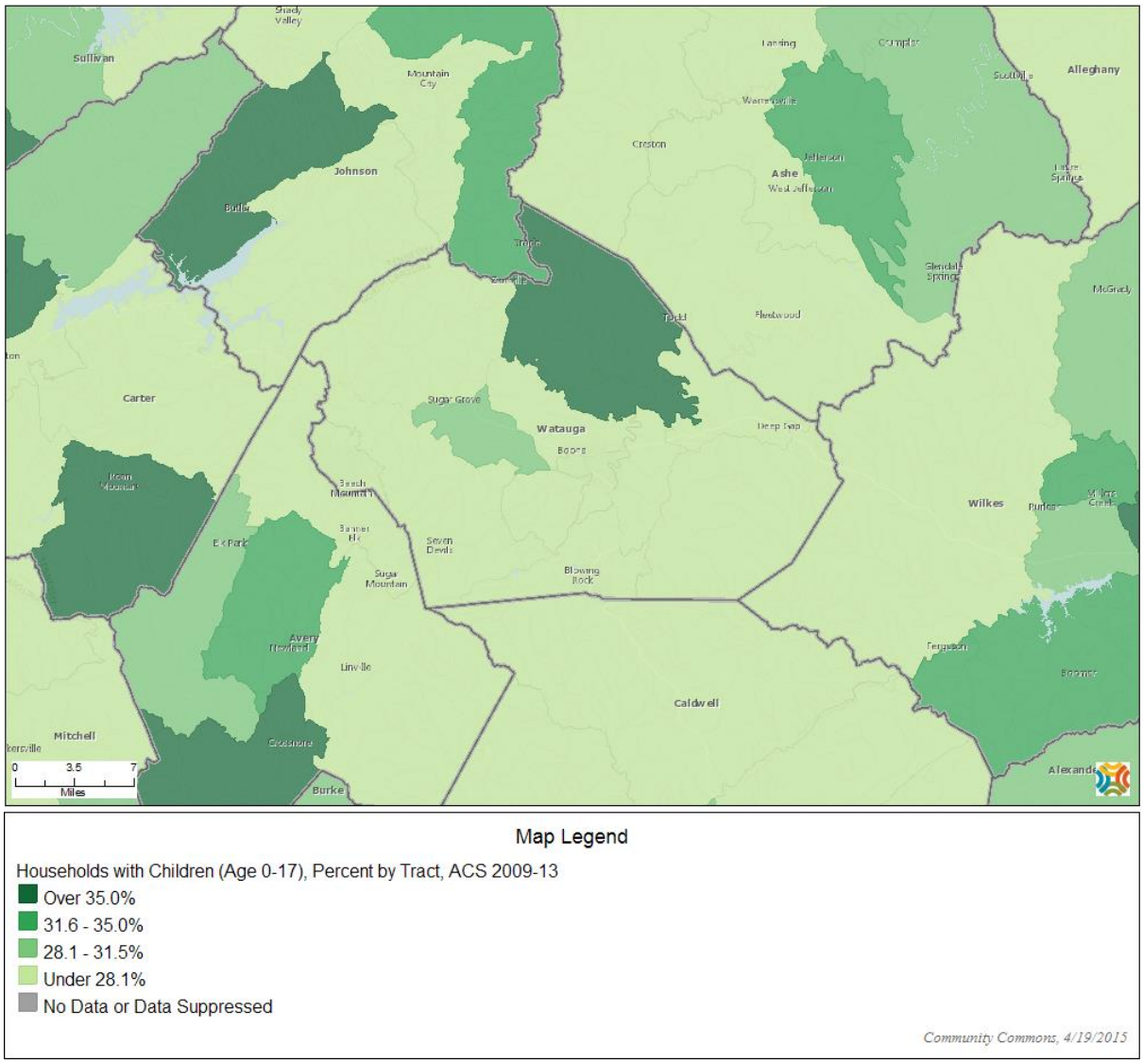
- Over 20.0%
- 16.1 - 20.0%
- 12.1 - 16.0%
- Under 12.1%
- No Data or Data Suppressed

Community Commons, 4/19/2015

Families living in Watauga County

Below is a map that demonstrates the percent of households reporting they live with one or more children age 17 and younger in Watauga County (ACS, 2009-2013; Community Commons, 2015). In addition, using 2010 US Census Bureau data, there are 789 families led solely by a female with related children living in the home.

Watauga County, NC Households with Children (Age 0-17), Percent by tract, 2009-2013



Map Legend

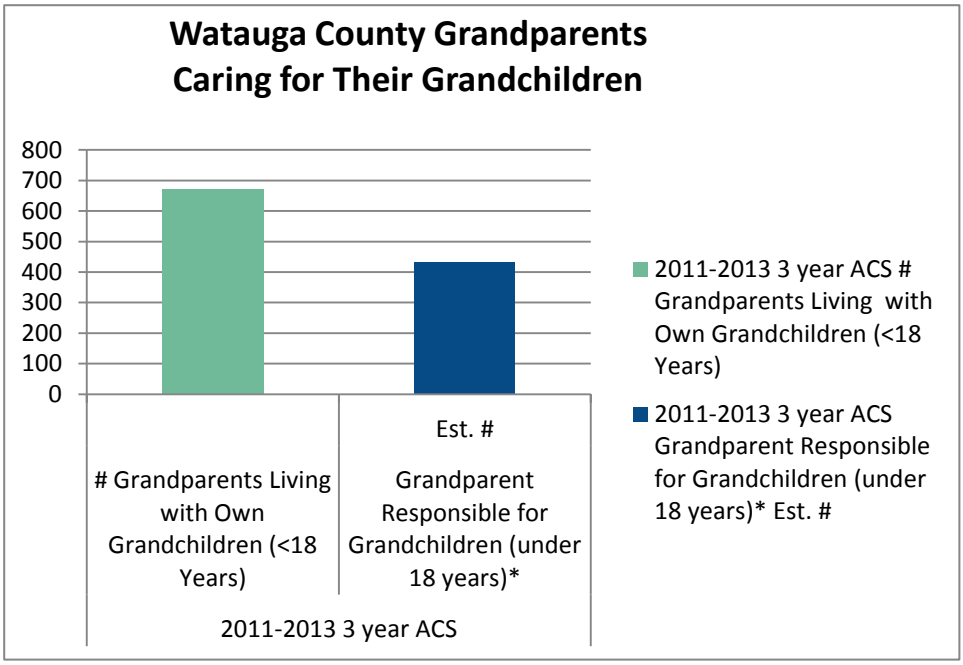
Households with Children (Age 0-17), Percent by Tract, ACS 2009-13

- Over 35.0%
- 31.6 - 35.0%
- 28.1 - 31.5%
- Under 28.1%
- No Data or Data Suppressed

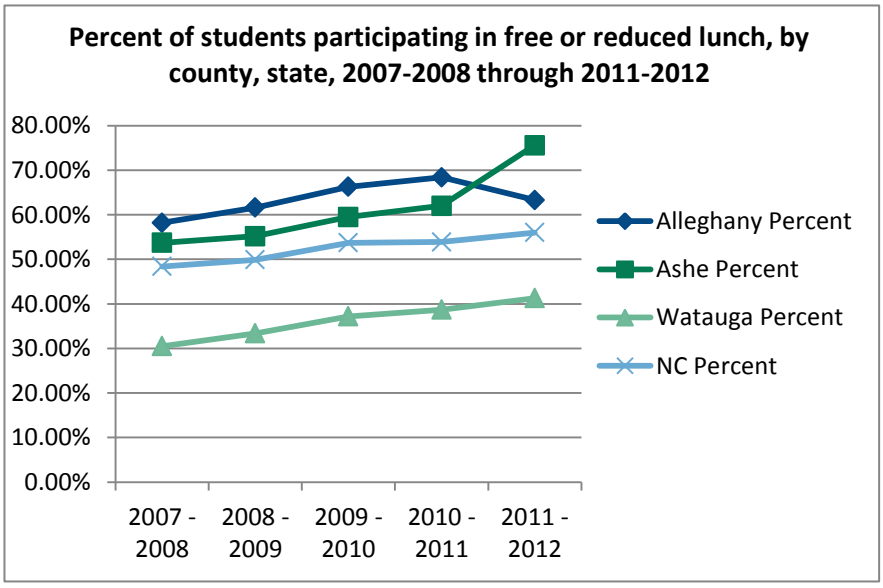
Community Commons, 4/19/2015

Children and Families

One important demographic trend to monitor closely is that of grandparents caring for or living with their grandchildren. For 2011-13, 64% of the estimated 673 Watauga County grandparents living with their minor grandchildren were *also* responsible for their care (NC was 49%).

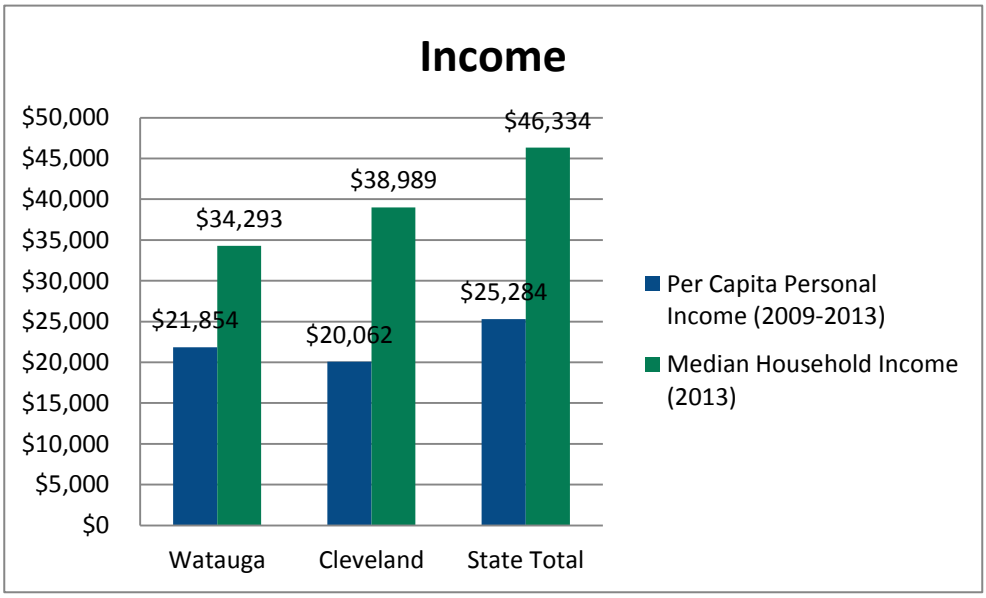


Free and reduced meals are subsidized for families at or below 130% of the Federal Poverty Guidelines and require application submission to the local school nutrition office. Watauga County children participating in the free or reduced meal program has increased from 33% in the 2008-2009 school year to 41% of students in 2011-2012. Though this shows a level of need below that of NC overall, this program is voluntary to families and is based on completion of an application therefore it may be an underestimate. This does not include charter school data. (NC DPI, 2012)

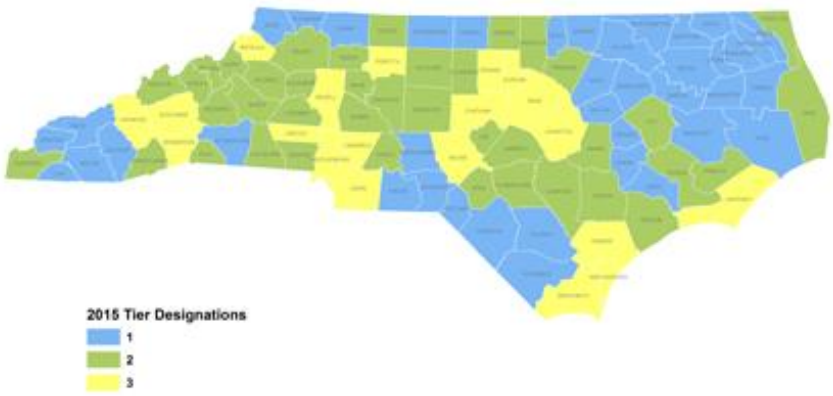


Income and Economy

According to the NC Department of Commerce, Watauga County is considerably below the NC average with $3,430 less for per capita personal income and $12,041 less median household income (2009-2013).

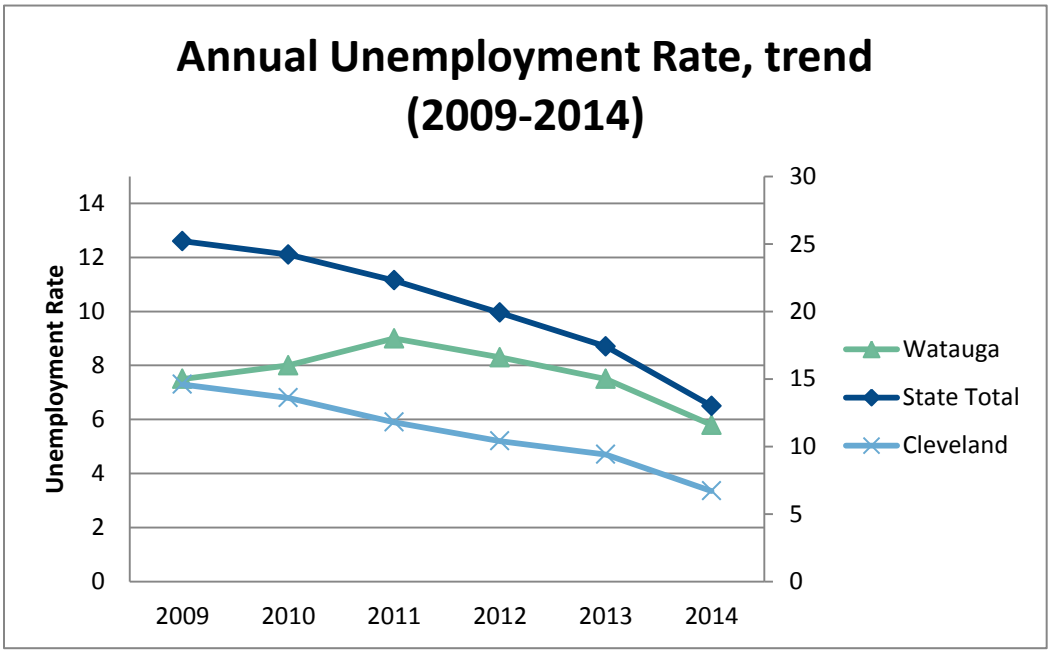


The NC Department of Commerce has announced the 2015 Economic Tier designations. Watauga County is now a Tier 3 county based on this report (2015). Economic tiers are calculated using average unemployment rate, median household income, percentage growth in the population, and adjusted property tax base per capita. (image courtesy NC Department of Commerce, 2015).



Employment

Watauga County remains with the decreasing trend of annual unemployment rate along with NC, dropping from 9% unemployment in 2011 to 5.8% in 2014 compared to 6.3% in NC (NC Office of State Budget Management). The 15 largest employers are noted below and the top 25 are included in the Appendix C Secondary Data book report (NC Department of Commerce)

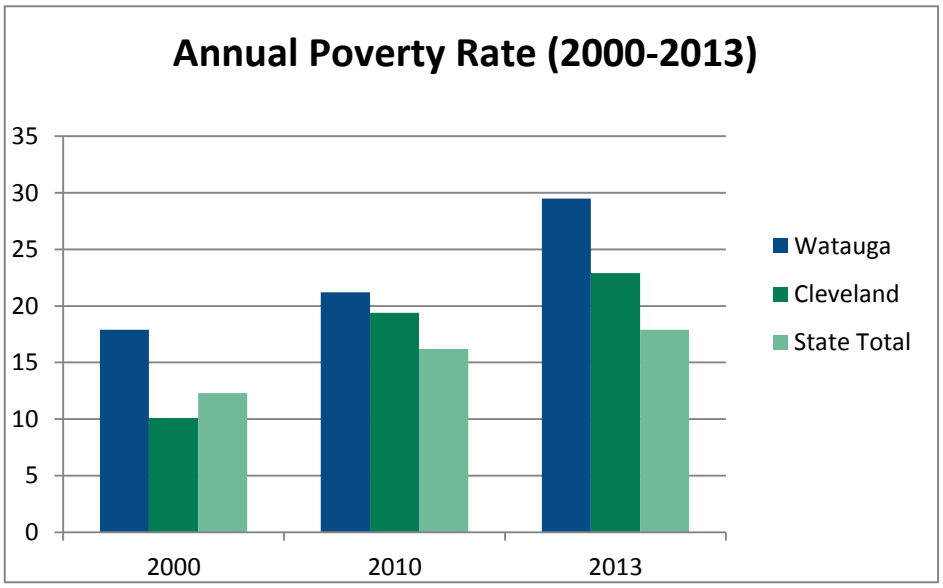


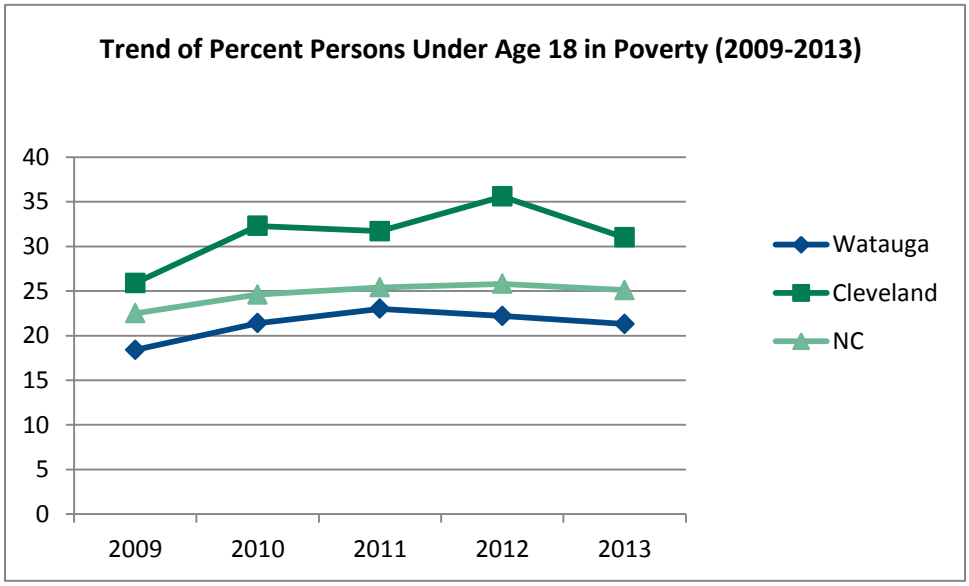
Watauga

Rank	Employer	Industry	No. Employed
1	App. State University	Education & Health Services	1000+
2	App. Regional Healthcare Sys.	Education & Health Services	1000+
3	Watauga County Board of Ed.	Education & Health Services	500-999
4	Samaritans Purse Inc	Education & Health Services	500-999
5	Watauga County	Public Administration	250-499
6	Wal-Mart Associates INC	Trade, Transportation & Utilities	250-499
7	Beech Mtn. Resort Inc	Leisure & Hospitality	100-249
8	Appalachian Ski Mtn. Inc	Leisure & Hospitality	100-249
9	Mast General Store	Trade, Transportation & Utilities	100-249
10	Clinical Trial Services	Professional & Business Services	100-249
11	Glenbridge Health and Rehab.	Education & Health Services	100-249
12	Coach Inc	Trade, Transportation & Utilities	100-249
13	Town of Boone	Public Administration	100-249
14	Hospitality Mints	Manufacturing	100-249
15	Food Lion	Trade, Transportation & Utilities	100-249

Poverty

The total percent of people living in poverty in Watauga County is higher than that in NC overall from 2000-2013 (US Census Bureau ACS, 2014). Overall, 29.5% of people in Watauga County are living in poverty compared to 17.9% in NC. Since 2009, the overall percent of children under age 18 in poverty has increased from 18.4% to 23% in 2011 which has begun to decrease to 21.3% during 2009-2013. This indicates that while poverty has increased in NC, it may have leveled out in Watauga County. However, continuing to monitor trends is important since the decrease is a small percentage.

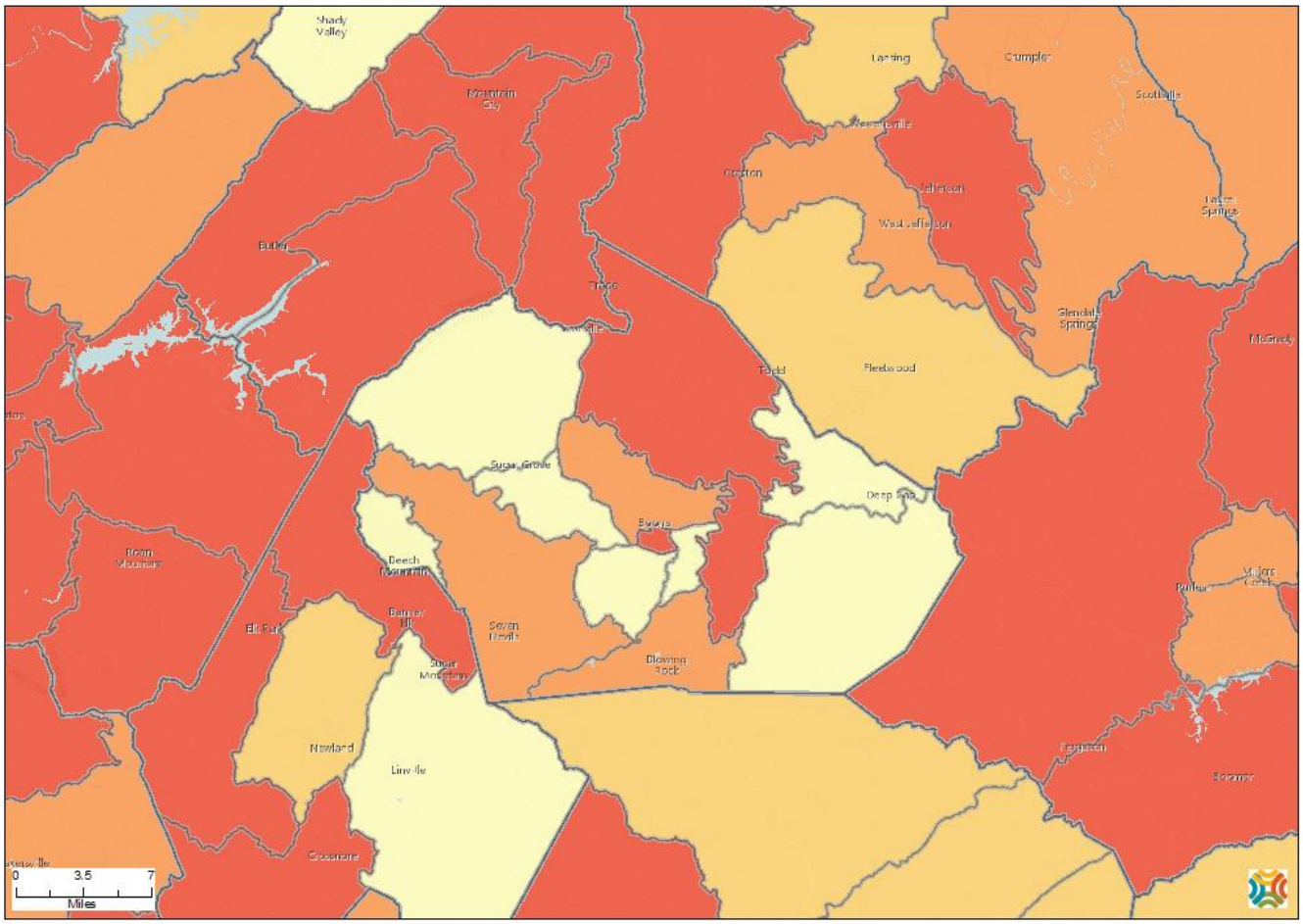




Poverty by census tract

We know from reviewing data more closely by mapping it, we can learn more about where disparities exist and how to best aim for improved health and community outcomes. Below is a map of family households that are living below the poverty level shown by the percentage in a census tract within the county (Community Commons, 2015). Surrounding county areas are included for information.

Watauga County Family Households Living Below the Poverty Level, Percent by Tract, ACS 2008-12



Map Legend

Family Households Living Below the Poverty Level, Percent by Tract, ACS 2008-12

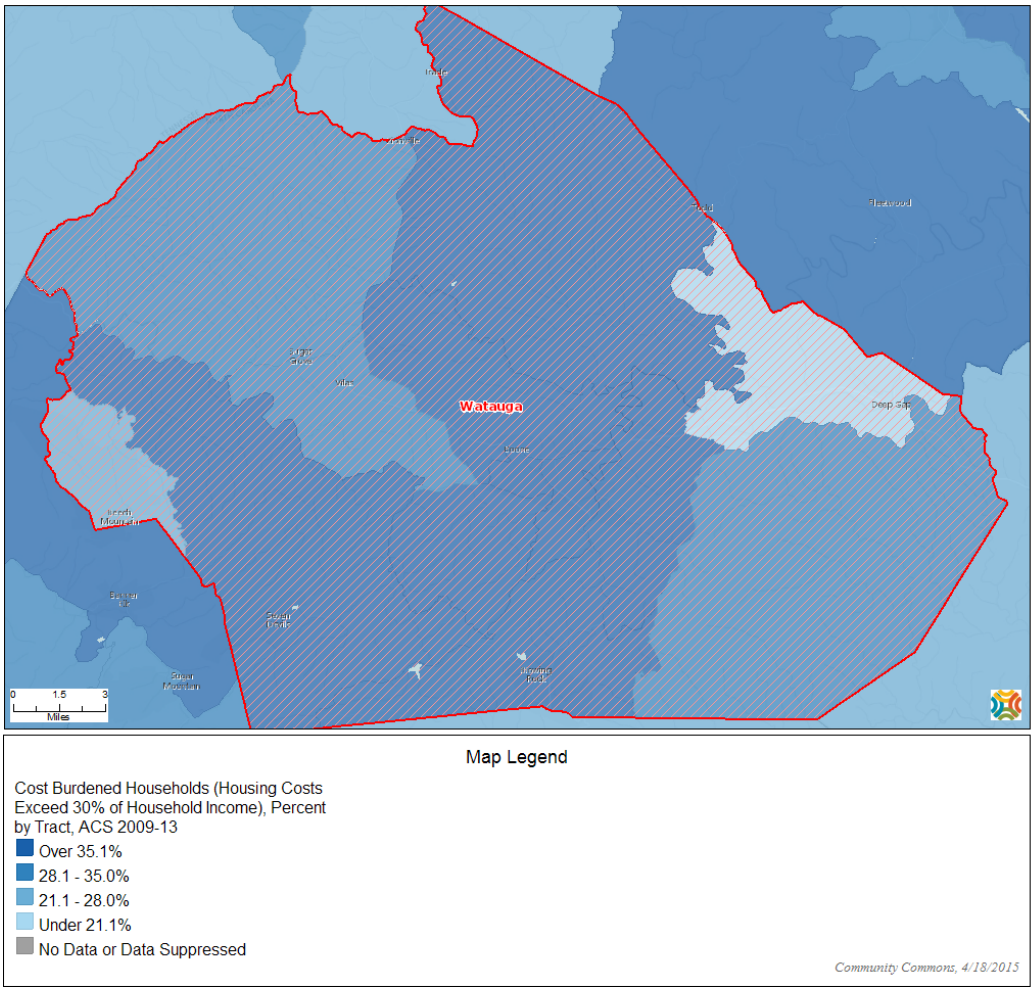
- Over 15.0%
- 11.1 - 15.0%
- 7.1 - 11.0%
- Under 7.1%
- No Family Households Reported
- No Data or Data Suppressed

Community Commons, 4/18/2015

Cost burdened households

The map below highlights areas in the county where housing costs exceeded 30% of household income using a five-year period of 2009-2013 from the American Community Survey population data reported by the US Census Bureau (Community Commons, 2015). The purpose of reviewing this data is to understand housing needs across household incomes in the area. Overall, of the 20,909 households in Watauga County that reported housing costs and income earned, over 9,600 or 46% reported housing expenses that exceeded 30% of their income (Community Commons, 2015; ACS 2009-2013).

Cost Burdened Households (Housing costs >30% of HHI), Percent by tract, ACS 2009-13

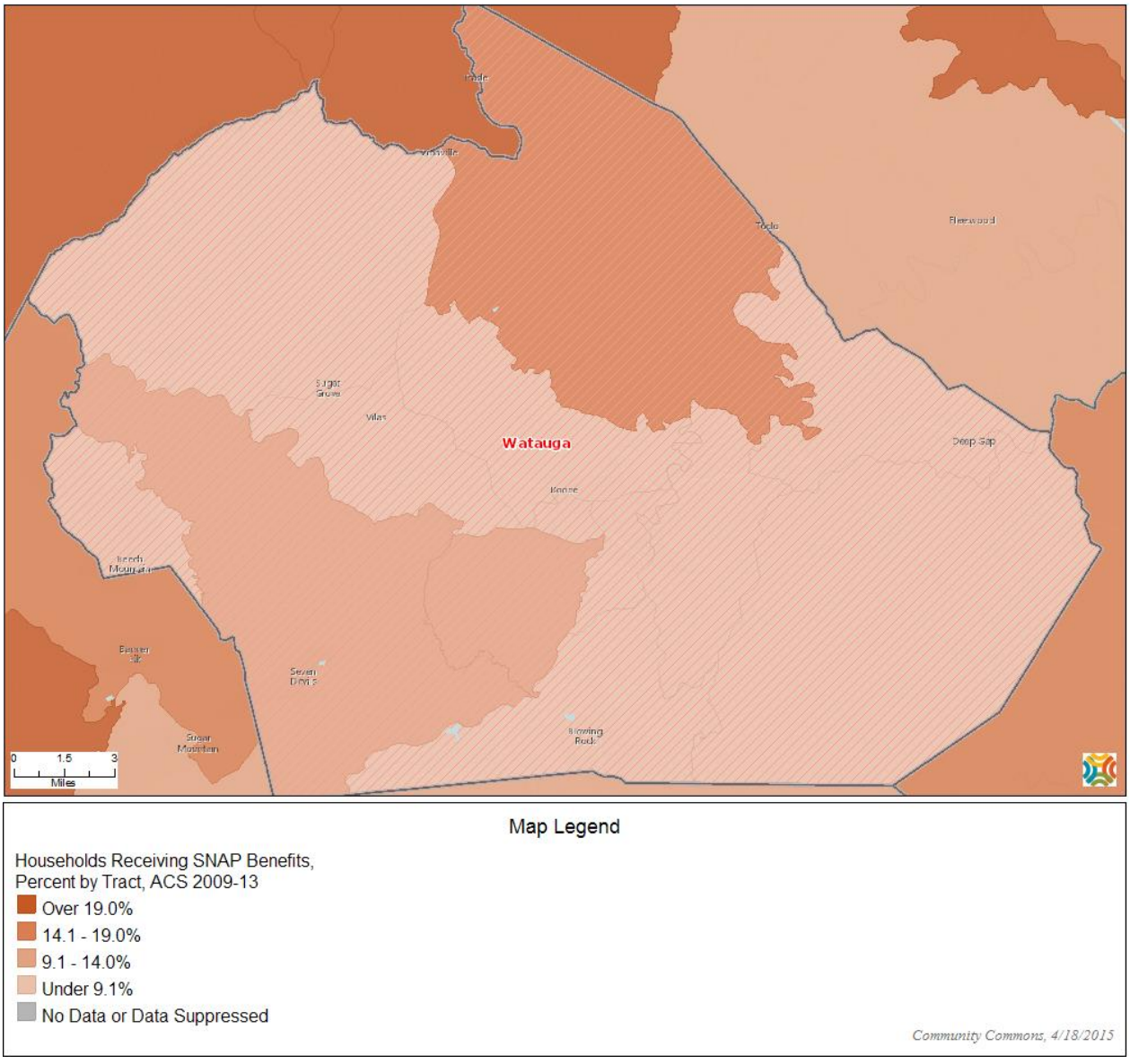


The burden of housing costs are more prevalent among the 9,435 renters, with 68% of rental households spending over 30% of their household income towards housing costs compared to 46% of rental households in NC and 48% of rental households in the US overall (Community Commons, 2015). According to the American Community Survey (2009-2013) the total mortgage paying households in the county is slightly over 7,100 and over 36% of these are paying greater than 30% of their household income towards housing costs (Community Commons, 2015)

Food insecurity & hunger

Watauga County has an estimated 9,730 people or more than 19% residents living in food insecure households (ACS, 2009-2013; Map the Meal Gap Study, Feeding America). According to the American Community Survey (2009-2013) 8.6% of county residents are receiving SNAP benefits compared to 13.7% in NC and 12.4% in the U.S. The map below shows a greater level of detail by highlighting percent of households receiving SNAP benefits by census tract (ACS, 2009-2013; Community Commons, 2015).

Watauga County NC Households Receiving SNAP Benefits, Percent by Tract, ACS 2009-2013



Food insecurity & hunger

Watauga County has 9,730 people who are food insecure, and of these, 1,920 are children.
Feeding America Map the Meal Gap reports an estimated 27% of children in Watauga County are food insecure, compared to 26.7% in NC and 21.6% in the U.S. overall (2014). Among those participating in local food programs, nearly 43% also participated in SNAP (Supplemental Nutrition Assistance Program), another 86% of the nearly 57% not currently receiving SNAP benefits were potentially income eligible.

Average cost per meal

$2.69 per meal in NC

$2.74 per meal in US

Nearly 60% of clients served in local food pantry programs had worked in the past month, and over 80% had worked in the past year. Among clients served through area programs, 844 were responsible for grandchildren in the home and 577 were part time students (Feeding America, 2014)

The gap between food assistance programs is often met by charitable programs. An estimated 23% of adults and 25% of children rely on food assistance programs operated through charitable sources like food pantries and faith-based outreach efforts (Feeding America, 2014).

Local non-profit and charitable food assistance programs serve an estimated 25,000 people living in 9,300 households annually (unduplicated). 73% of clients served were renters, 10% paid a mortgage for their home, and another 11% owned their home "free and clear".

Source: Feeding America, *Hunger in America* (2014), Food Bank Report for Second Harvest Food Bank of Northwest North Carolina: Watauga County Minimum Density Data Tables. August, 2014.

Hard choices for the food insecure

The report data above from Feeding America (2014) certainly indicate a food insecurity problem for many county residents. While hunger is a big concern, so is overall nutrition status since it may have a direct impact on preventing or managing chronic health problems like high blood pressure, diabetes, and obesity.

Watauga County neighbors make choices about *other needs* in order to have food.

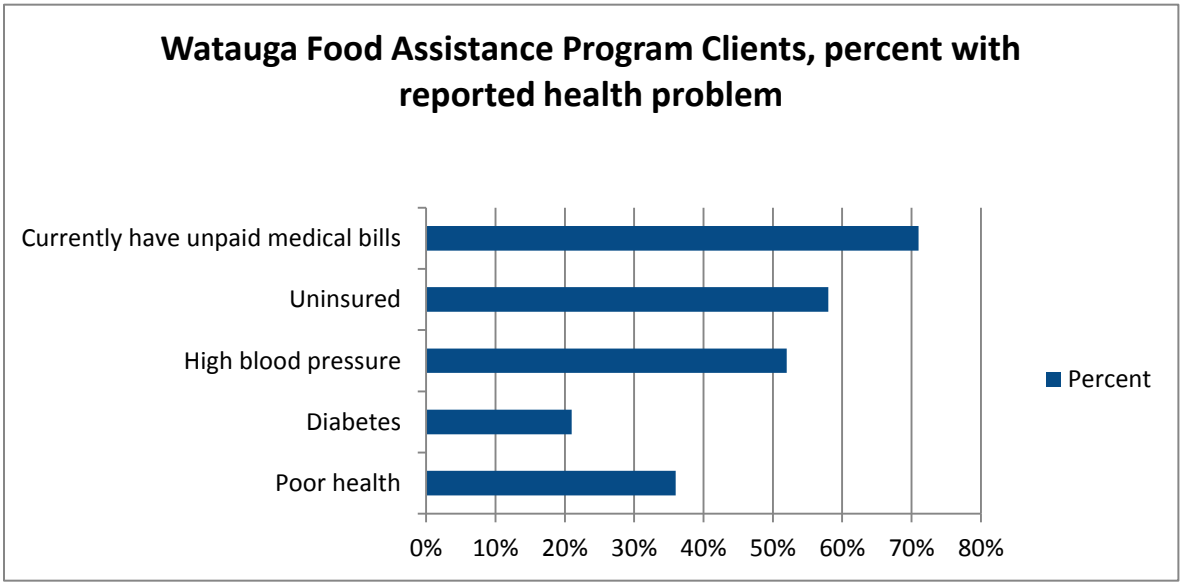
78% had to choose between *medicine or medical care or food,* and 16% of those made this choice *every month*

67% had to choose between *utilities or food,* and 18% of those made this choice *every month*

72% had to choose between *housing or food* and 17% of those made this choice *every month*

67% had to choose between *transportation or food* and 11% of those made this choice *every month*

9% had to choose between *education or food* and 7% of those made this choice *every month*



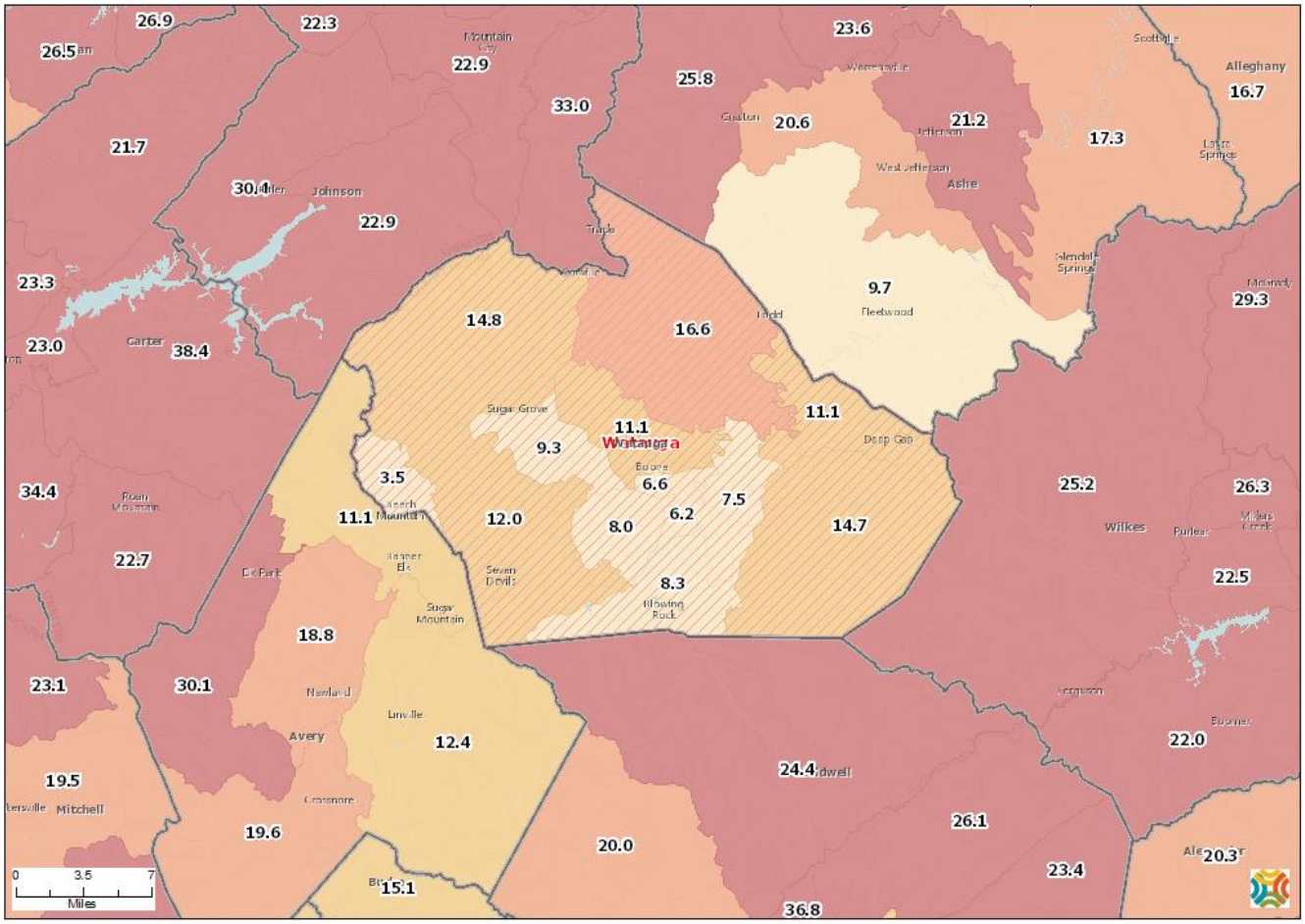
90% of Watauga County non-profit and faith based food assistance clients have purchased inexpensive, unhealthy food as a strategy for combatting food insecurity and hunger (Feeding America, 2014). This increases risks of developing obesity and preventable diseases or further complicating existing conditions noted. Yet, of the items most desired to be available at the food assistance program, 59% selected fresh fruits and vegetables and 55% selected dairy products like milk, yogurt, and cheese, followed by personal hygiene items. This demonstrates potential opportunities to further develop systems to meet these needs and desires.

Source: Feeding America, *Hunger in America* (2014), Food Bank Report for Second Harvest Food Bank of Northwest North Carolina: Watauga County Minimum Density Data Tables. August, 2014.

Education

Education is a critical component of community health for many reasons. Those who graduate from high school or equivalency have a better potential of achieving or maintaining a better health status over time (Freudenberg & Ruglis, 2007). In Watauga, there are an estimated 28,410 residents age 25 and above, and of those, 11% or over 3,000 have no High School Diploma or equivalency (GED), ACS 2009-2013. The map below highlights the percent of population age 25 years and older without a High School Diploma by census tract (Community Commons, 2015). Surrounding areas are included for information.

Watauga County, NC Population with No High School Diploma (Age 25), Percent by tract, ACS 2009-2013



Map Legend

Population with No High School Diploma (Age 25+), Percent by Tract, ACS 2009-13

- Over 21.0%
- 16.1 - 21.0%
- 11.1 - 16.0%
- Under 11.1%
- No Data or Data Suppressed

Community Commons, 4/18/2015

Education

The table on the left below shows the total number of students enrolled by school for all Watauga County School district, as well as public charter school, Two Rivers Community School. Not included in the data below is the number of students enrolled in the county private school, Grace Academy and local Montessori School, Mountain Pathways.

Enrollment (SY 2012-13)

School Name	Enrolled students
Bethel	171
Blowing Rock	327
Cove Creek	287
Green Valley	379
Hardin Park	749
Mabel	182
Parkway	499
Valle Crucis	378
Watauga High School	1408
Total WCS	4380

School Name	Enrolled students
Two Rivers Community School	171

According to the US Census Bureau (ACS 2009-2013) and NC Department of Public Instruction data, compared to the NC average, Watauga County has:

- 5% higher percentage of resident high school graduates, or 87.4% for Watauga, than NC overall, and 7% higher than Cleveland County
- Over 11% more percentage of resident college graduates than NC overall, and over double that of Cleveland County
- Watauga County Schools has a higher percentage of students exhibiting grade level proficiency in 3rd grade and 8th grade end-of-grade (EOG) tests with 71.4% of third graders and 70.6% of eighth graders meeting proficiency levels compared to 60.6% third graders and 55.9% eighth graders in NC respectively (NC DPI, 2015)
- Watauga County high school students exceeded NC achievement in end-of-course (EOC) tests overall with 59.9% of Watauga students meeting proficiency standards in English II, Math, and Biology courses compared to 47.8% of NC overall (NC DPI, 2015; SY 13-14 School Report Card)
- 84-point higher average SAT score compared to NC overall, and over 103 point higher average SAT compared to Cleveland County (2012-2013)
- According to the 2013-14 Watauga County School Report Card (NC DPI) Watauga County Schools had 75.4% of students meeting minimum composite score for the ACT for entrance required for admission to the UNC System institutions. This percent well exceeds that of NC overall at 59.3%.

The Watauga Cohort graduation rate is 87.4% compared to 83.9% in NC overall (NC DPI, 2015; SY 13-14).

Linking education, income, and health

Clearly, there is much to acknowledge and celebrate in education achievements by Watauga County. The cohort graduation rate exceeds that of the Healthy People 2020 goal. Beyond the link of career and college preparation, the table below demonstrates how educational attainment and income is linked in Watauga County using the American Community Survey five-year estimates (2009-2013). Compounding the importance of education is the fact that educational attainment is a major factor in predicting better health (Freudenberg & Ruglis, 2007).

	Watauga County, NC median earnings by educational attainment	
	Estimate	Margin of Error
Total population 25+ years with earnings	27,928	+/-2,332
Less than high school graduate	$16,028	+/-3,919
High school graduate (includes equivalency)	$22,296	+/-2,545
Some college or associate's degree	$24,238	+/-1,946
Bachelor's degree	$31,309	+/-1,847
Graduate or professional degree	$51,332	+/-2,881

21% Community health opinion survey respondents chose not graduating from high school as one of the top health risk behaviors in the county.

Watauga County residents with at least a high school education earn more.

Compared to residents with less than a high school education…

High School graduates earn 39% more

Residents with some college or an Associate's Degree earn 51% more

Bachelor's degree holders earn 95% more

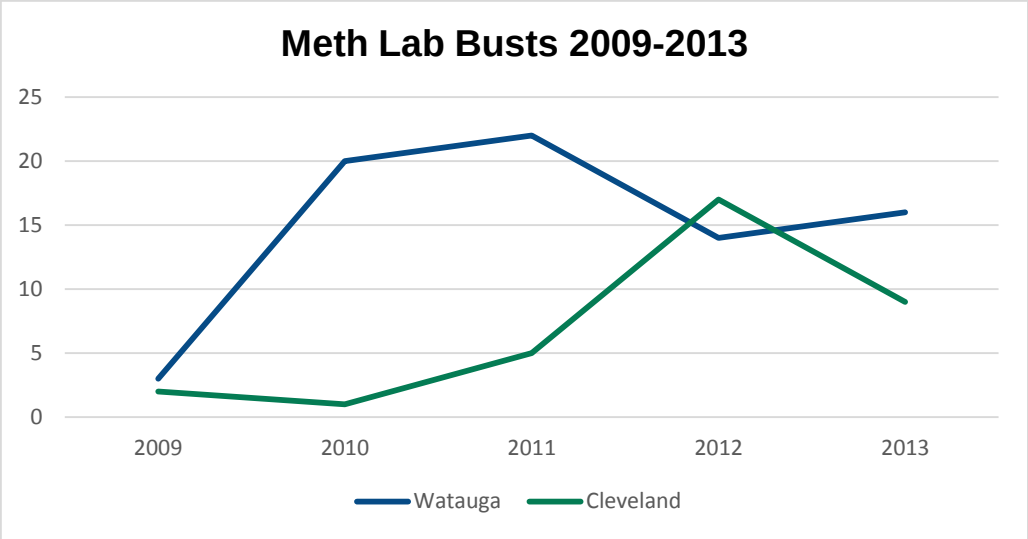
Residents with an advanced graduate or professional degree earn 220% more

Crime & Safety

Crime rates and related data help us better understand community safety and factors. The violent crime rate for Watauga County is 117.6 per 100,000 (FBI 2010-12) which is less than half that of NC at 353.6 and the US at 395.5 per 100,000 during the same time period. Violent crime includes homicide, rape, robbery, and aggravated assault. The low crime rate in the county is noticed and appreciated by some community members as they wrote it in as a community strength in the community opinion survey.

There are over 14,000 sex offenders registered in North Carolina, and of those, 35 live in Watauga County (NC SBI).

During 2009-2013, there were a total of 75 meth lab busts in Watauga County compared to less than half that in Cleveland County. Overall, in NC during the same time period, there were 1806 meth lab busts (NC Department of Justice).



Sexual Assault

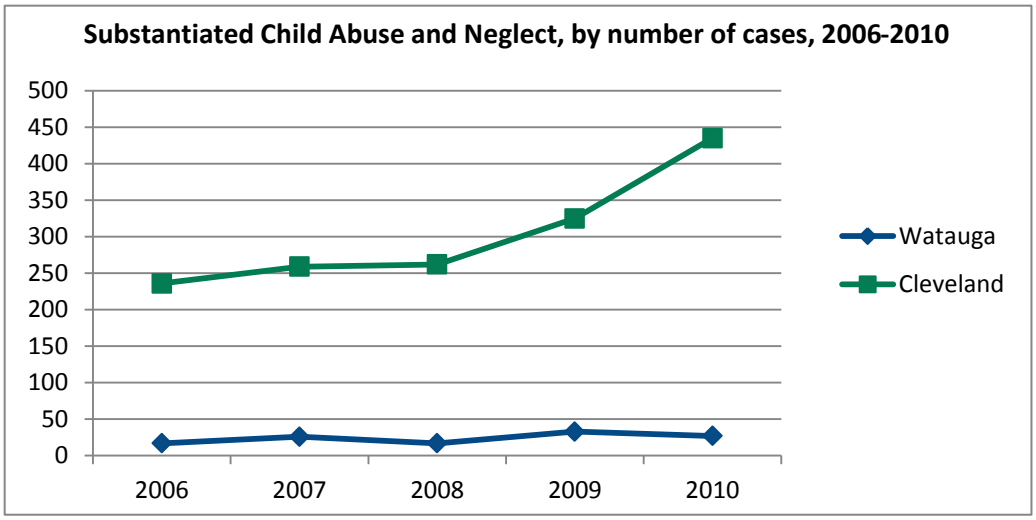
During the 2013-14 year, there were 109 calls placed and 31 clients served by the local agency serving victims of sexual assault and domestic violence, OASIS. All but one client was female, and the age of most clients served was between 18-25 years (42%). Most offenses were adult rape. The agency provided support to victims through information, advocacy, referrals, transportation, hospital, and court services. Offenders were mostly an acquaintance, but a few were relatives (NC DOA, Council for Women, FY 13-14).

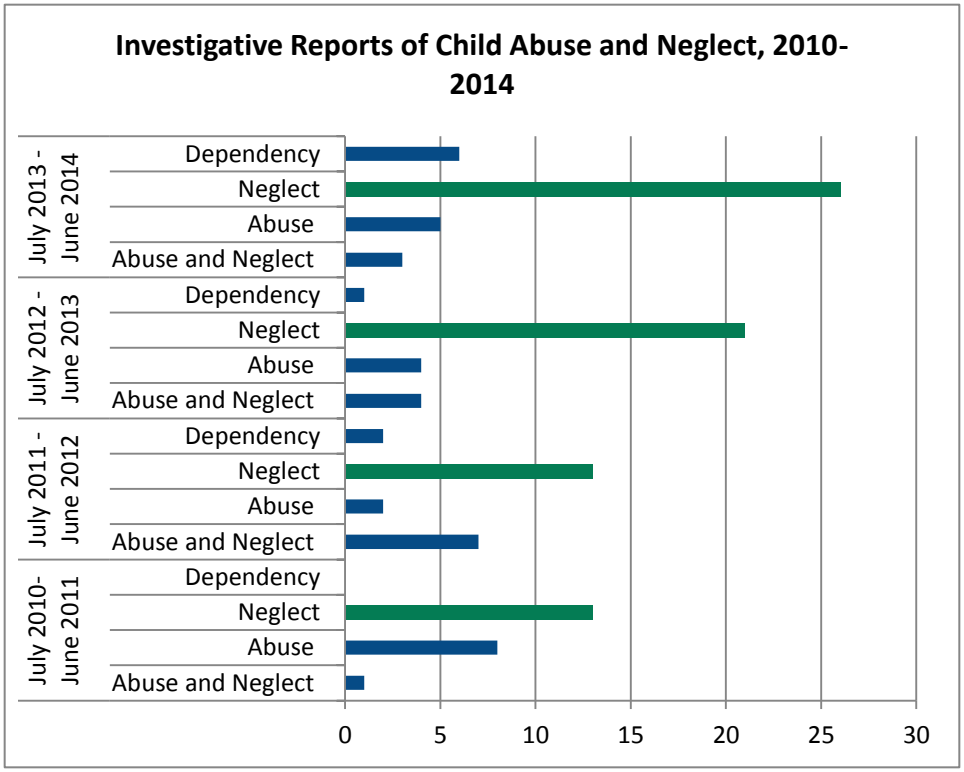
Domestic Violence

During the same time period, there were 1171 calls placed and 307 clients served by the local agency victims of sexual assault and domestic violence, OASIS. There were 287 female clients and 20 male clients. The majority of clients were between 45-54 years (n=85), followed by 55-64 years (n=62), 35-44 years (n=39), under 25 years (n=18), 65 years or older (n=10+), and 25-34 years (n=5). The domestic violence shelter service served 24 children, 32 adults age 18-59, 3 adults age 60 and older, and 6 clients who were disabled. The shelter was full 80 days during the year. There were 12,000 volunteer hours donated by the community to help meet the needs of these victims (NC DOA, Council for Women, FY 13-14). Domestic violence was noted as a major community problem by 19% of community opinion survey respondents.

Child Abuse & Neglect

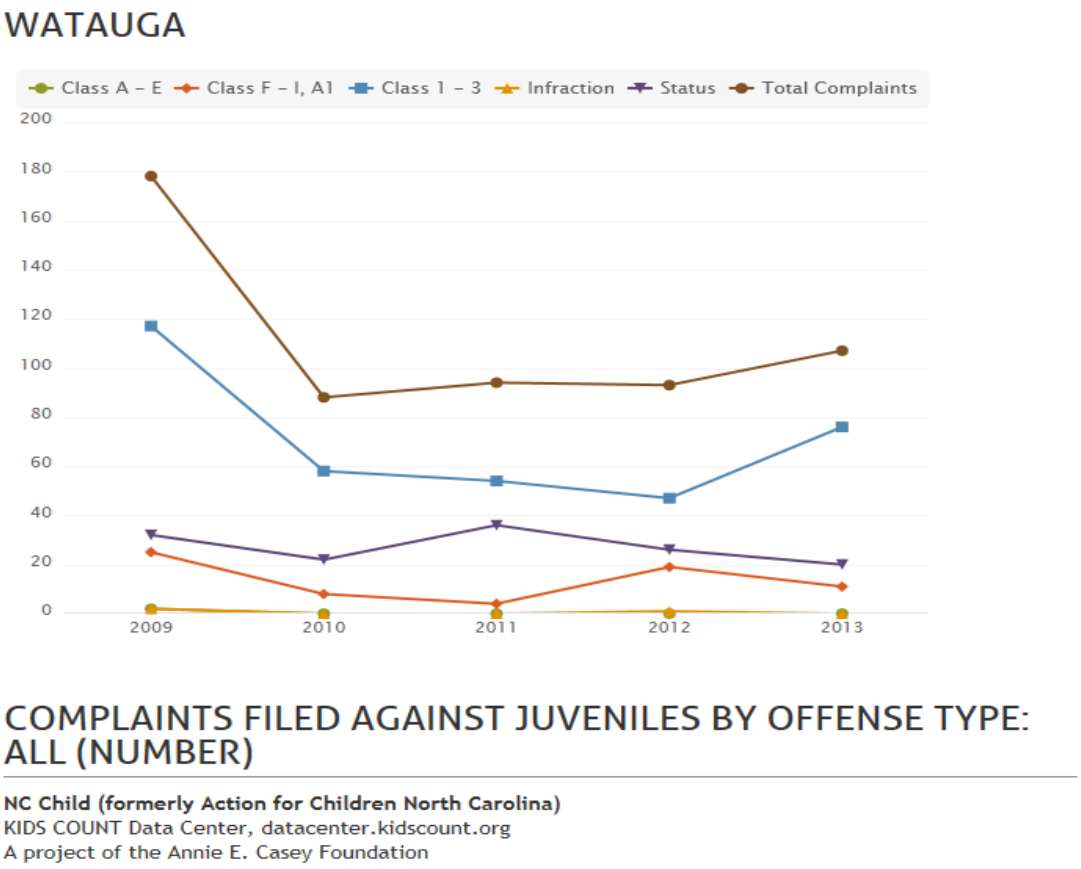
We review child abuse and neglect statistics to understand trends and potential patterns to better aim for improvements. The substantiated cases of child abuse and neglect have remained relatively the same over time (Duncan, Kim, Flair, & Steward, 2010). Observing the investigative reports of more recent years, the clear leading reason is connected to neglect and most recently, during 2013-2014, we see an increase in the number of investigative reports related to dependence (UNC). According to NC Child (2010), the percent of children without a repeated substantiated report of abuse and/or neglect within 6 months of the first occurrence is 89%.





Juvenile Crime Prevention

A key area worth careful review and further monitoring is that of juvenile crime. Overall, the rate of delinquent youth age 6-17 years was 17.18 per 1,000 youth (NC Child, 2013) compared to 26.3 per 1,000 in NC. In 2013, there were 84 youth served (NC Child). The majority of juvenile delinquent complaints were class I-3, which are classified as minor offenses and misdemeanors. The county population of juveniles age 6-17 is 4,693.



Healthcare Resources: Health insurance

According to the American Community Survey (2009-2013 estimates), of the 37,820 residents included in the civilian noninstitutionalized population, 13.3% or 6,809 had no health insurance coverage. In addition, among adults 18-64 years in the labor force, approximately 23,775 were employed and of those, 16.8% had no health insurance. There were 2,623 adults age 18-64 in the labor force who were unemployed and of those, 799 or 30.5% who had no health insurance. Therefore, an important fact worth noting among this age group of working adults is that there are nearly 4,000 people who were uninsured despite being employed. The overall percentage of uninsured adults has increased from 22.1% in 2008 to 23.4% as of 2012 (SAHIE, US Census Bureau, 2012; Community Commons, 2015).

The age group 0-18 years tends to have a lower percentage of uninsured than the 19-64 year age group, due partly at least to NC Health Choice. According to the 2012 Small Area Health Insurance Estimates (US Census Bureau) data, Watauga County had a total of 7,383 under age 19 and of those 581 or 7.9% are uninsured which mirrors the percentage in NC. Keep in mind that the adult data does not include the most recent enrollment in the Health Insurance Marketplace, which is noted in the separate table.

Uninsured Population in Watauga County by Age Group

Location	Age Group	Data Type	Data
Watauga County, NC (SAHIE, 2012)	Population <19	Number	581
		Percent	7.9%
	Population 18-64	Number	7,646
		Percent	23.4%
	Total	Number	8,227

Watauga County 2015 Healthcare Enrollment by zipcode, Nov 2014-Jan 16 2015

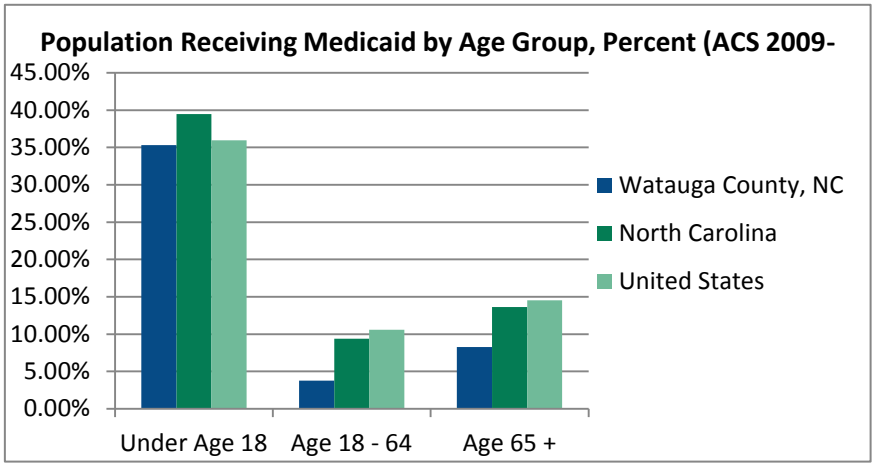
Blowing Rock	28605	268
Boone	28607	1542
Todd	28684	144
Zionville	28698	186
Vilas	28692	281
Sugar Grove	28679	149
Valle Crucis	28691	Not Rpt
Beech Mtn	28622	199
Seven Devils	28604	502
Deep Gap	28618	188
TOTAL		3191

According to the 2015 Plan selections by zip code report for states participating in the federal health insurance marketplace, the table below shows that over 3,000 Watauga County residents in the reported townships who selected a plan or were automatically re-enrolled for the 2015 coverage year as of January 16, 2015. Keep in mind, in order to protect privacy, this report does not contain data for zip codes that had 50 or fewer enrollees (US DHHS, 2015).

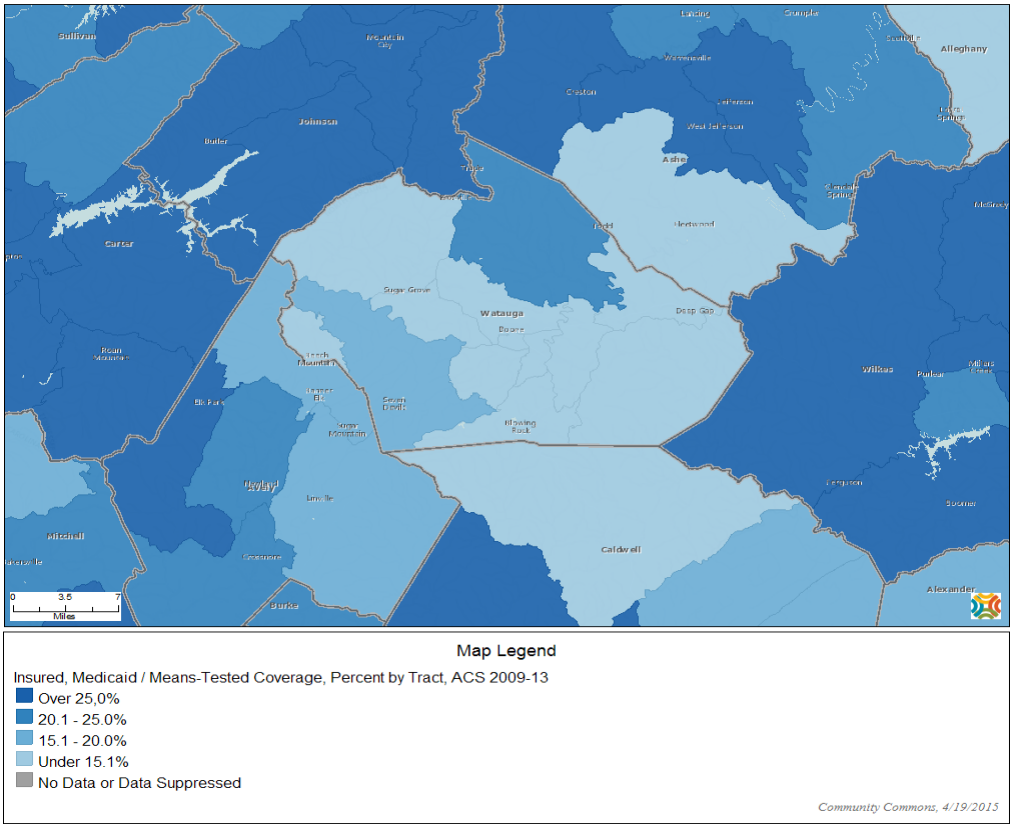
Health Resources: Health insurance

The NC Institute of Medicine estimates nearly 500,000 individuals in NC will remain uninsured without Medicaid expansion in the state, with most being working adults under the age of 65 years. Read more about the potential implications for expanding health coverage in NC in the NC Institute of Medicine report located at http://www.nciom.org/publications/?impactaca.

The chart below shows the population that is receiving Medicaid by location (ACS 2009-2013; Community Commons, 2015). The map at the bottom of the page shows the percent of population receiving Medicaid by census tract.



Watauga County NC Insured Medicaid/Means-Tested Coverage, Percent by Tract, ACS 2009-2013



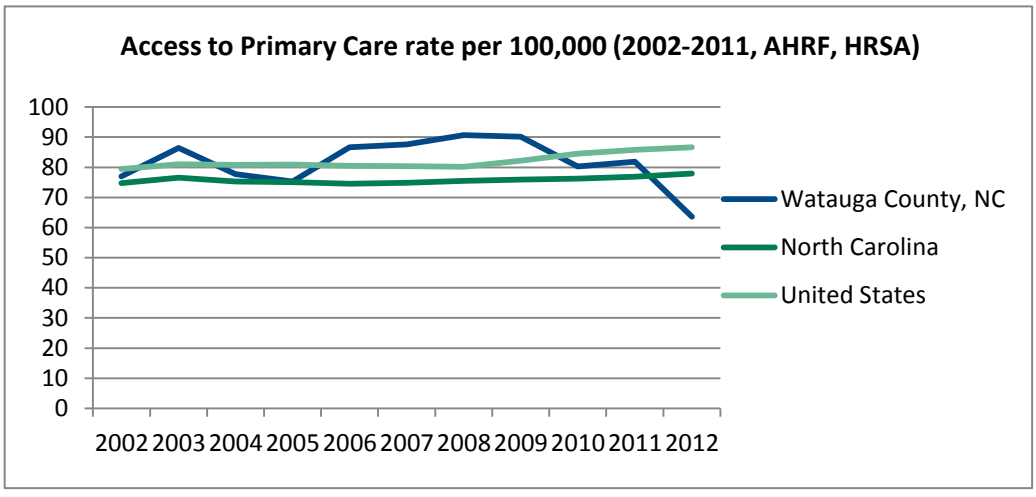
Health Resources: Healthcare

The available health resources in the community have great influence on access to healthcare services, and in particular, understanding access to primary healthcare services is important to consider since we know that having a primary medical home and access to wellness screenings and medical care to prevent, treat, or manage disease helps support better health outcomes as well as lower healthcare costs in the community overall.

The table below shows the access to primary care rate per 100,000 is worse in Watauga County when compared to NC and the U.S. (Health Resources and Services Administration [HRSA] 2013-14 Area Health Resource File). The American Medical Association (AMA) defines primary care providers as the following provider groups: General Family Medicine, General Practice, General Internal Medicine, and General Pediatrics. Physicians age 75 and older, those practicing sub-specialties within the above listed practice categories, and those who are hospital residents and full-time hospital based staff are not included in the data presented.

Access to Primary Care Rate per 100,000 (2013-14 AHRF, HRSA)

Report Area	Total Population, 2012	Primary Care Physicians, 2012	Primary Care Physicians, Rate per 100,000 Pop.
Watauga County, NC	51,871	33	63.62
North Carolina	9,752,073	6,737	69.08
United States	313,914,040	233,862	74.5



The trend graph above shows the Primary Care Physicians rate per 100,000 from 2002-2011 (HRSA, AHRF) which has decreased from 77 per 100,000 in 2002 to the current rate of 63.68 per 100,000 as noted in the table above. Unlike some rates that we look to decrease as a good outcome, this is one that a decrease shows a greater gap in the number of providers to give the primary care to the population. While the state and national rates have improved since 2002 (NC 74.76; US 79.41 respectively), Watauga's rate has become worse.

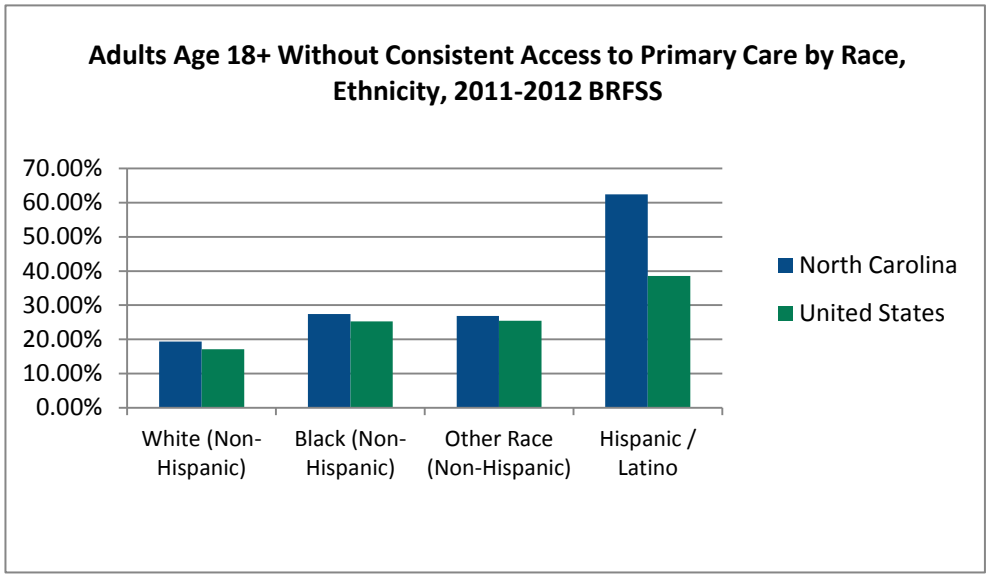
Health Resources: Healthcare

The Behavioral Risk Factor Surveillance System (BRFSS) is a national random-digit dial survey conducted across the United States with partnership efforts between the Centers for Disease Control and Prevention (CDC) and the state public health agency, NC Division of Public Health State Center for Health Statistics of the NC Department of Health and Human Services. The data below shows a key insight into the adults age 18 years and older who are lacking in primary care by stating that they do not have at least 1 person who they think of as their personal doctor or health care provider (BRFSS, 2011-12). Note that among the population surveyed in Watauga County, there are over 9,000 people who reported they do not have a regular doctor or healthcare provider, though the percentage overall is slightly better than the state and national data (Community Commons, 2015).

Adults 18+ years that Lack Consistent Access to Primary Care --2011-12 Behavioral Risk Factor Surveillance System

Report Area	Survey Population (Adults Age 18+)	Total Adults Without Any Regular Doctor	Percent Adults Without Any Regular Doctor
Watauga County, NC	42,645	9,138	21.43%
North Carolina	7,304,218	1,790,298	24.51%
United States	236,884,668	52,290,932	22.07%

Across NC and the United States, the data demonstrate disparities in access among racial and ethnic groups. The Hispanic Latino population has the greatest percentage of those without consistent access to primary healthcare (BRFSS, 2011-12; Community Commons, 2015).



Health Resources: Dental Care

Dental care is an important part of overall healthcare, and accessing preventive services can be influenced by the number of dental care providers and other factors.

The table below shows that Watauga County has a higher rate of dentists per 100,000 when compared to NC and is only slightly less than the national rate per 100,000 (2013-14 AHRF, HRSA).

Access to Dentists per 100,000 (2013-14 AHRF, HRSA)

Report Area	Total Population, 2013	Dentists, 2013	Dentists, Rate per 100,000 Pop.
Watauga County, NC	52,372	32	**61.1**
North Carolina	9,848,060	4,998	50.75
United States	316,128,839	199,743	63.18

Adults Age 18+ without a Dental Exam in the past 12 months (2006-2010 BRFSS)

Report Area	Total Population (Age 18+)	Total Adults Without Recent Dental Exam	Percent Adults with No Dental Exam
Watauga County, NC	42,783	11,260	**26.32%**
North Carolina	7,156,319	2,289,421	31.99%
United States	235,375,690	70,965,788	30.15%

The table above indicates that there is a lower percentage of adults who have not had a dental exam in the past year (of the surveyed population) when compared to NC and the U.S. overall (2006-2010 BRFSS; Community Commons, 2015).

The data below is from the Watauga County Community Health Opinion Survey. Note: this should only be interpreted based on the survey population, not a generalization. However, it does provide some insight about why some are not receiving dental care. Costs and lack of insurance were the biggest reasons chosen by survey respondents, including those with write-in responses. Some commented ensuring their child(ren) received care, but skipped care for themselves or rotated to be able to afford care. See more in Appendix B: Community Health Opinion Survey Report.

What is the #1 reason you or your family do not get dental care?

Did get dental care	57%
Costs more than I can pay	25%
No dental insurance	13%
Afraid to go	3%
Cannot find a dentist taking Medicaid	1%
Not important to me	< 1%

Healthcare: Hospital resources

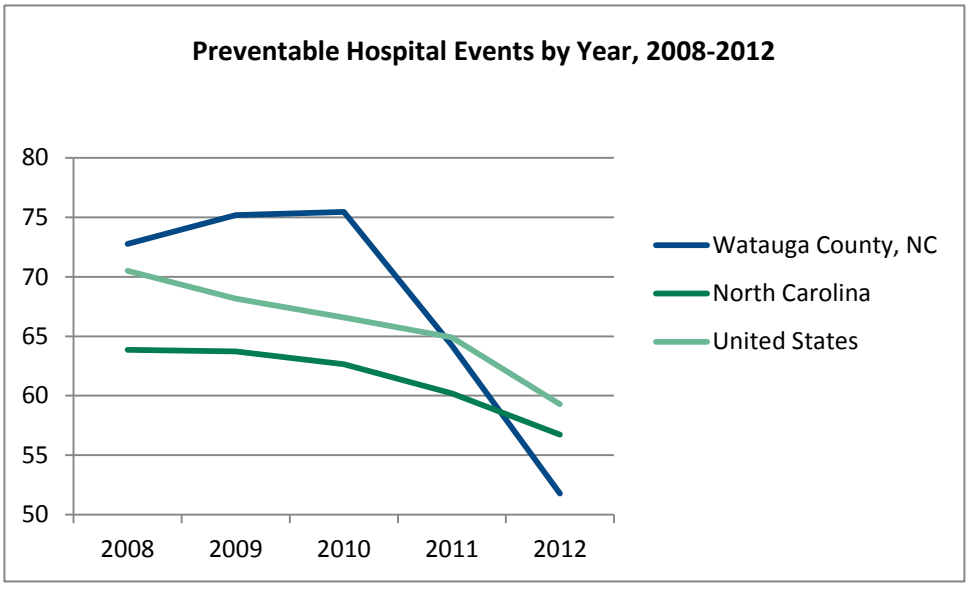
Appalachian Regional Healthcare System is the healthcare system serving Watauga County and the surrounding region. Learn more about their services by reading the 2013 Annual Report. The system includes a variety of healthcare services, including Watauga Medical Center, a 117-bed regional medical complex, that offers primary, secondary, acute, and specialty care as well as the Blowing Rock Rehabilitation & Davant Extended Care Center (ARHS). According to the Annual Report referenced above, Appalachian Regional Healthcare System donated nearly $7.5 million in charity care in 2013.

The WMC campus includes The Cardiology Center, The Sleep Center, The Wound Care Center, and the Seby B. Jones Cancer Center. Additional facilities include the Paul H. Broyhill Wellness Center, The Rehabilitation Center, Appalachian Regional Pain Clinic, and a local branch of the Northwest Area Health Education Center. Watauga Medical Center has also earned The Joiny Commission's Gold Seal of Approval™ for certification as a Primary Stroke Center.

Preventable Hospital Events

The data below is the trend of preventable hospital events from 2008-2012 (Dartmouth College Health Institute for Health Policy and Clinical Practice, Dartmouth Atlas, 2008-2012). It's important to understand the context of this data set. The data is calculated using the ambulatory care sensitive condition discharges per 1,000 Part A Medicare beneficiaries. This data is based on conditions like diabetes, dehydration, asthma, COPD, and pneumonia that may have not required a hospital stay if there were adequate primary healthcare resources available and accessed (Community Commons, 2015). It should be interpreted with this in mind, rather than a measure of care provided by the local hospital.

The current rate in Watauga County is better than both the state and national rate at 51.77 per 1,000 compared to 56.72 per 1,000 for NC and 59.29 per 1,000 for the U.S. Thus, we see that Watauga County is doing slightly better in comparison with the rest of NC and the U.S. This is a key factor in clinical care rankings that influence the County Health Ranking reported by the Wisconsin Population Health Institute and Robert Wood Johnson Foundation.



County Health Ranking

According to America's Health Rankings, NC ranked 35th overall out of 50 states where 1 is "best." This is important when considering the fact that County Health Rankings since all are compared to the 100 counties within NC. These are two data sources so we must remember that fact, however, it does provide some context when considering rankings levels within NC. The other important consideration is that County Health Rankings is a data warehouse that uses other data sources to compile into the health outcomes and health behaviors models. The data used in the ranking may be older than what is available in this report or through other data sources available in NC like the NC State Center for Health Statistics.

According to County Health Rankings in 2015, **Watauga County was ranked #3 among the 100 NC counties** (where 1 is "best"):

#3 in Health Outcomes and # 9 in Health Factors, with the following contributing to the overall rankings

- #3 in length of life
- **#2 in quality of life**
- #4 in health behaviors (and included here, the county ranked 63rd in tobacco use)
- #16 in clinical care
- #16 in social and economic factors
- #83 in physical environment: lower rank linked to housing and single occupancy motor vehicle commuting

The message of County Health Rankings is that **where we live matters to our health**. The factors that influence our health are far greater than access to medical care, though this is also a part of the overall ranking (County Health Rankings, 2015).

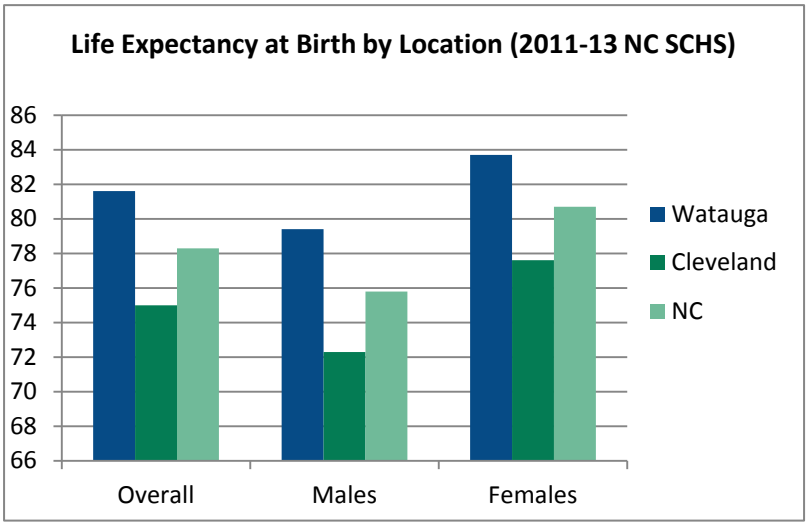
QUICK FACT

Did you know that the Northwest Regional Housing Authority has adopted smokefree policies for all properties since 2014?

In doing so, they have responded to feedback from tenants and protected many families from breathing secondhand smoke. This effort occurred as part of the Northwest Community Transformation Grant.

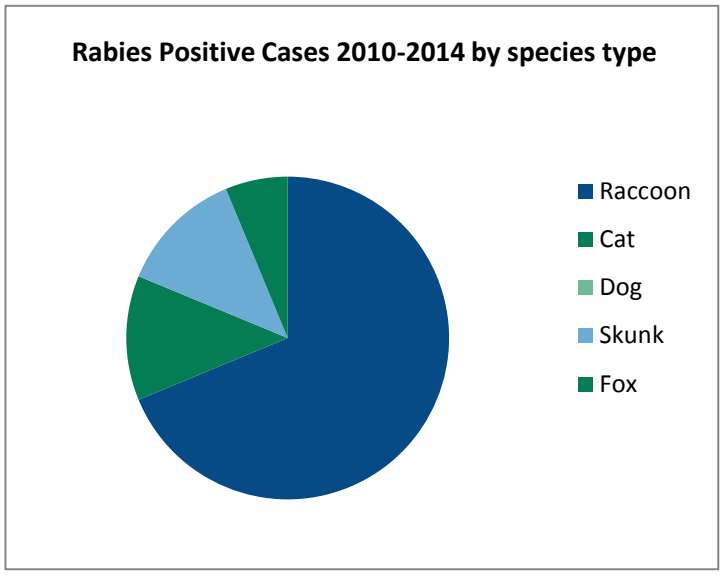
Environmental Health

Our environment does impact our health. This is clearly important when considering how long we live. Socioeconomic factors like income and education are linked to health outcomes overtime. The graph below shows the difference in life expectancy by county and NC overall (NC SCHS, 2015). Notably, there is major disparity between male and female life expectancy in all 3 locations. Addressing the issues that may negatively impact health, or conversely, addressing assets in the environment that may add value to health is an important concept when reviewing the environmental health data.



Rabies

Rabies is an environmental hazard that calls for action by communities to do more in ensuring pets are vaccinated against this deadly disease. Overall, in NC, 380 of 4,314 mammals tested for rabies were positive in 2013 (NC State Laboratory of Public Health, 2014). The highest percentage of mammals positive for rabies by those tested were skunks at 63.2%, foxes at 47.7%, and raccoons at 42.6%. There were 1.8% of cats and 0.6% of dogs tested were positive, and 2.2% of bats tested were positive. In addition, in 2002-2013, the NC State Laboratory for Public Health (2014) reports a trend in seasonality of rabies positive bats in the state with an upward trend in spring and summer months in NC, a peak in August, and decreasing trend in fall and winter months.



The pie chart above shows the positive cases of rabies by species for Watauga County for 2010-2014. Overall, there have been 16 positive rabies cases during this time period, with the most occurring in 2014 with 8 positive raccoons. This data should not be confused with rabies risk and the laws required to be enforced to protect people if an incident occurs with an animal without proof of current rabies vaccination since these listed are only those animals that have been euthanized for testing. There were 153 bite/exposure cases in the county in 2013, and 19 cases of people where post-exposure Rabies Therapy was recommended (ADHD 2013 CD Report). The best protection against rabies is vaccinating pets (and it is NC law) and using caution to avoid interacting with wildlife that may be more likely to have rabies.

Environmental health

Air Quality –Ozone

In Watauga County, there was 1 day that exceeded the emission standard of 75 parts per billion (ppb). This indicator reports the percent of days per year with Ozone (O3) levels that exceed thresholds of the National Ambient Air Quality Standard (NAAQS) noted previously. The figure of **0.27%** of annual period exceeding the NAAQS is calculated using data from monitoring stations and modeling it to census tracts where no monitoring exists. When air quality is poor, there is an increased risk of respiratory health issues that have influence on overall health (Community Commons, 2015). The local percentage of days exceeding 75 ppb is the same for NC overall, and less than the US overall at 0.47% of days in the year over the standard.

Particulate Matter

There were no days in the past year when the NAAQS standard for particulate matter (PM 2.5) was exceeded in Watauga County. There were 1.7 days in NC and 4.17 days in the U.S. when this level was exceeded in the past year (National Environmental Public Health Tracking Network; Community Commons, 2015).

Indoor Air Quality

Air quality in the county is somewhat challenging to measure because data is quite limited from the EPA. What we do know is in considering indoor air quality, secondhand smoke is a major pollutant raising particulate matter in the air that increases risk of health effects.

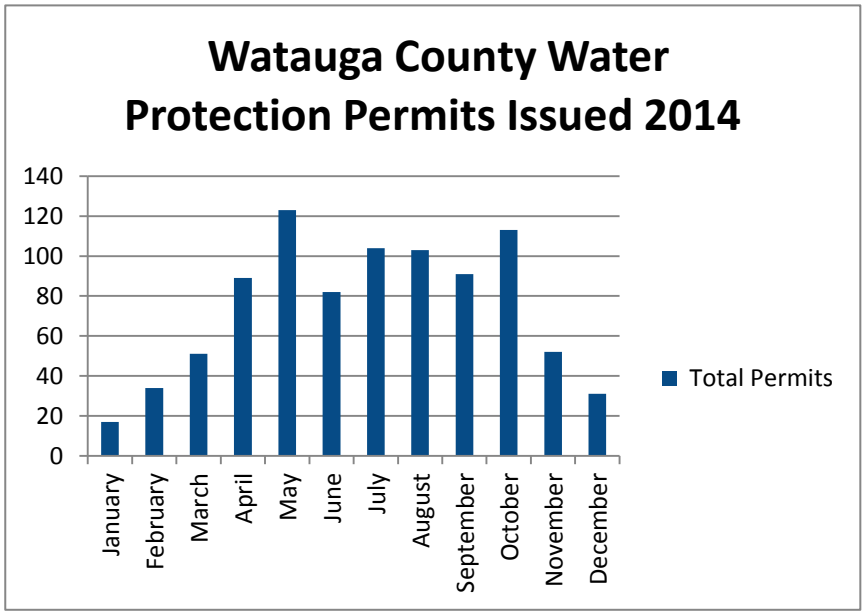
In January, 2015, NC celebrated the 5th anniversary of the smokefree restaurants and bars law. This law has protected millions of North Carolinians from the dangers of secondhand smoke and contrary to what some may have thought, has not shown a negative impact on businesses. Local governments also have the authority to adopt tobacco free policies to protect people in their communities. The Northwest Tobacco Prevention coalition, a part of Appalachian District Health Department, is a resource for communities, policymakers, and business leaders in understanding best practices in adopting tobacco free policies.

Environmental health

Water protection

In 2014, a total of 890 permits were issued in Watauga County (Appalachian District Environmental Health, 2015). This includes water protection applications, improvement permits, authorization to construct permits, operational permits, compliance notifications, well construction permits issued, and well grouts.

Environmental Health services protect the public in additional ways through food, lodging, and child care facility inspections, pool plan review and permitting, tattoo parlor permitting, and childhood lead poisoning prevention among other activities.



Private Well Water Testing Report

The data summary of private well water testing in Watauga County from 1998-2010 is listed on the NC Division of Public Health Epidemiology website. To see the full report go to:

http://epi.publichealth.nc.gov/oee/wellwater/county_J-Z/watauga.pdf

This website provides guidelines for learning more about testing your own well water as well as health information about various contaminants and the UNC Superfund Research program.

http://epi.publichealth.nc.gov/oee/wellwater/howtotest.html

In addition, there is a statewide fish consumption advisory for mercury which may especially affect children under 15, women 15-44, or women who are pregnant or nursing. It can be found here: http://epi.publichealth.nc.gov/oee/fish/advisories.html.

Childhood Elevated Blood Lead Levels

Childhood blood lead levels remain low in the county. According to the most recent data, 67.6% of children age 1-2 were tested for elevated blood lead levels, and of those, 0.2% were positive compared to 0.4% in NC overall (NC Blood Lead Surveillance data, 2010).

Environmental health

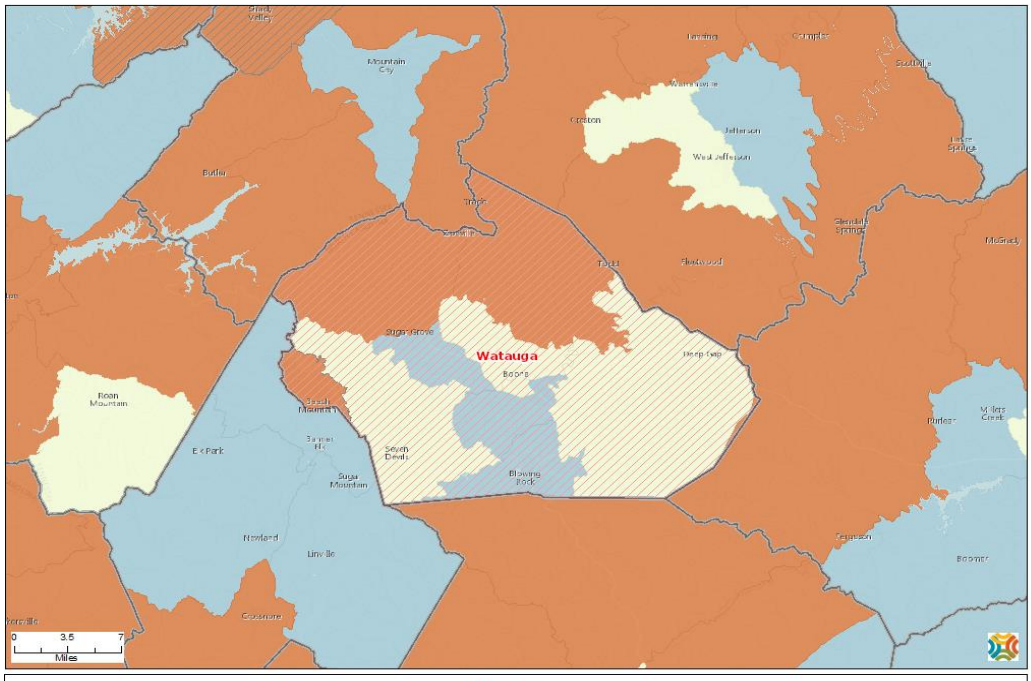
Access to healthy foods

Access to healthy foods at grocery stores, convenience stores, and farmer's markets is important to ensure all people can have the ability to buy fresh foods that are more nutrient dense like fresh fruits and vegetables, 1% fat or less milk, and whole grains.

The map below uses a data report from the Centers for Disease Control and Prevention Modified Retail Food Environment Index (CDC DNPAO, 2011) to demonstrate where there is low access to healthy food outlets. Overall, Watauga County has a higher percentage of population with moderate access to healthy foods when compared to NC and US, but larger disparities between those with moderate to no access.

According to this data, there are over 8,600 people with no access to healthy foods in the county. Using a different perspective, the Watauga County number of fast food establishments rate per 100,000 population is 78.31, slightly higher than NC at 74..72 and US at 71.97. The rate of establishments accepting WIC and SNAP per 100,000 are lower in Watauga when compared to NC and US. This is particularly important in considering where some community members may have far less access than others to buy healthy foods, or where there may be more opportunity to buy less healthy options.

Watauga County Modified Retail Food Environment Index Score by tract, DNPAO 2011



Map Legend

Modified Retail Food Environmental Index Score by Tract, DNPAO 2011

- Index Score Over 30 (High Access)
- Index Score 15 - 30 (Moderate Access)
- Index Score 5 - 15 (Low Access)
- Index Score Under 5 (Poor Access)
- No Healthy Retail Food Outlet (No Access)
- No Retail Food Outlets Present (Food Desert)

Community Commons, 4/19/2015

Environmental health

Access to safe places for physical activity and recreation

Accessible indoor and outdoor recreation opportunities like parks and indoor recreation opportunities offer community members ability to engage in physical activity. School walking tracks also provide a wonderful community shared resource since schools and community members can benefit from having them. Smart growth, mixed use development along with sidewalks, crosswalks, and shared lanes, markings, and signage also help support physical activity in the community.

According to Community Commons (2015) the Recreation and Facilities rate per 100,000 is 11.75 in Watauga County compared to 10.11 in NC and 9.44 in the U.S. overall (US Census Bureau County Business Patterns, 2008-12). This rate only includes facilities that are registered as a business that offers "exercise and other active physical fitness conditioning or recreational sports activities" by indicating the associated code according to the North American Industry Classification System (NAICS).

Outdoor recreation

Parks and recreation facilities that seek to offer a variety of opportunities may support broader use by community members since leisure and recreation opportunity interest varies. Some may specifically help support active tourism. Many parks are listed below. Some additional include the Middle Fork Greenway with information at www.middleforkgreenway.org and Rocky Knob Park with information at www.exploreboone.com/things-to-do/attractions/rocky-knob-park/.

Watauga County Parks
NC SP Elk Knob State Park
Green Valley Community Park
Todd Island Park
Howard's Knob County Park
Brookshire Park
Junaluska Park
North Street Park
Boone Jaycee Park
Jones House
Clawson-Burnley Park
Optimist Park
Blowing Rock Memorial Park
Julian Price Memorial Park
Blowing Rock Broyhill Park
Grandfather Mountain State Park
Valle Crucis Park
Old Cove Creek Historic School Park
Beech Mtn Park/Buckeye Recreation Center
Payne Branch Park
Niley Cook Trail
Moses Cone Memorial Park
Watauga Tot Lot
Lee and Vivian Reynolds Greenway Trail
Ted Mackorell Soccer Complex

Maternal & Child Health

The live birth rate is 12.6 per 1,000 in Watauga County compared to 11.4 per 1,000 in Cleveland County and 12.6 per 1,000 in NC (NC SCHS, 2015). Among the total 1,752 births in the county during this time period, most were born to white, non-Hispanic mothers and of those 8% were born to Hispanic mothers. The Watauga County teen (age 15-17) pregnancy rate is 14.8 per 1,000 compared to 25.1 per 1,000 in Cleveland County and 22.7 per 1,000 in NC. Overall, there was 21,016 teen pregnancies among 15-17 year olds in NC from 2009-2013 (NC SCHS, 2014). Watauga County has historically had one of the lowest teen pregnancy rates in NC.

Live Births by Trimester when care began in Watauga County (2013, NC SCHS)

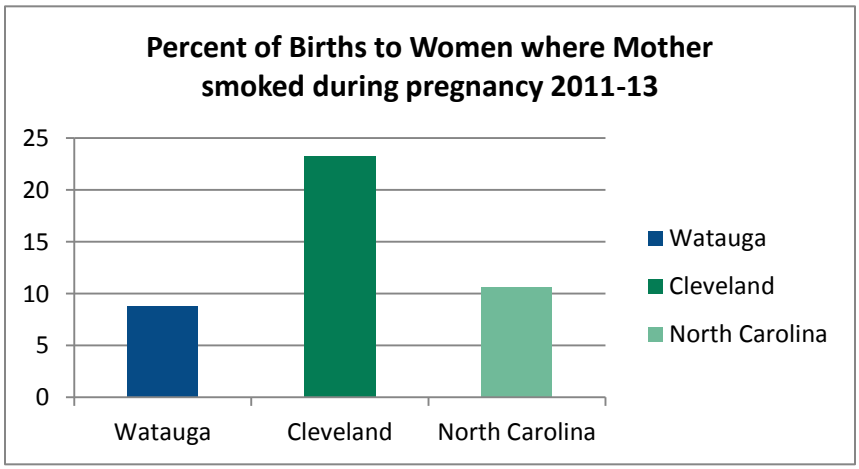
Number of births	Percent of all births	Trimester when care began
290	85.5%	First
36	10.6%	Second
6	1.8%	Third
2	0.6%	No prenatal care

‘

Live Births with late or no prenatal care (2011-2013 NC SCHS)

Percent of births	Year
2.8%	2011
2.6%	2012
2.4%	2013

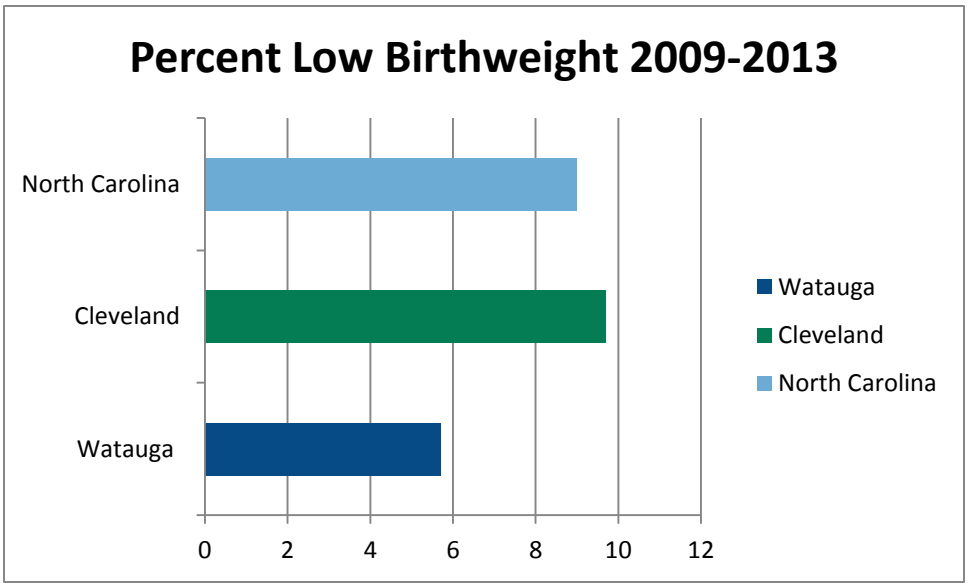
Pregnancy risk factors are important to review as well. Early prenatal care and postpartum care is important for healthy moms and babies. Watauga County only had 2.4% of births to mothers with very late or no prenatal care compared to 5.8% in Cleveland County in 2013 (NC SCHS). Watauga has a much lower percentage of 8.8% births where the mother smoked during pregnancy according to the NC SCHS 2011-2013.



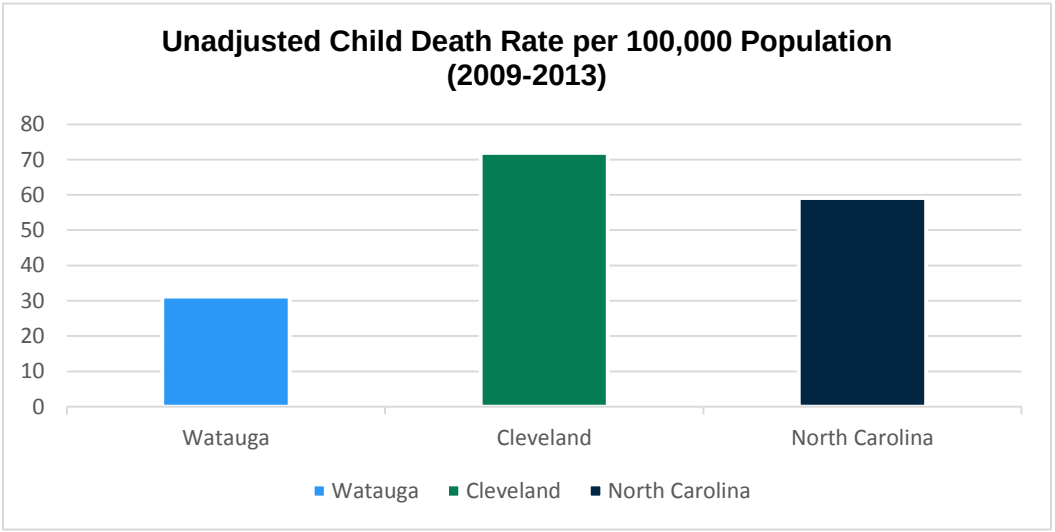
Maternal & Child Health

Pregnancy outcomes

We look at pregnancy outcomes to understand risk factors related to infant health and to target prevention efforts of infant illness and mortality. For the period of 2009-2013, Watauga County had 100 low birth weight births (<5.5 pounds at birth) which is well below that of Cleveland County that had 542 which represented nearly double the percent of low and very low birth weight babies born in Watauga (NC SCHS, 2014). There were 13 very low birth weight births compared to 113 in Cleveland County (<3.3 pounds). There were 31.6% of deliveries by caesarian section in Watauga County compared to 31.2% in Cleveland County and 30.9% in NC (NC SCHS, 2014).



The infant mortality rate is very low, with 4 infant deaths during 2009-2013 compared to 55 in Cleveland County during the same time period (NC SCHS, 2014). No year during that time period had more than 2 infant deaths (2013).



The unadjusted child death rate per 100,000 for children age 0-17 is 31.2 per 100,000 for Watauga County compared to 71.9 per 100,000 in Cleveland County and 59.1 per 100,000 in NC (NC SCHS, 2014). The Watauga County rate represents 11 child deaths during the time period of 2009-2013.

Leading Causes of Death

The leading causes of death, ranked by number of deaths caused 2009-2013, remain largely due to chronic diseases. Watauga County deaths are mostly due to heart disease and cancer, with analysis of 2009-2013 heart disease still claims more lives than cancer in the county. Cancer is the leading cause of death in NC.

In addition, the causes with rates per 100,000 higher than the state rate are highlighted for emphasis (NC SCHS, 2014). *All rates below 20 should be interpreted with caution (NC SCHS). It is also important to take notice where Watauga mortality rates are lower than the state. The cause of death with a rate most concerning is All Other Unintentional Injuries where Watauga is well above the NC rate.

Age Adjusted Leading Causes of Death (2009-2013, NC SCHS)

Watauga Rank	Cause of Death	Watauga # deaths	Watauga Rate per 100,000	NC Rate per 100,000
1	Heart disease	399	158	170
2	Total cancer	345	135.9	173.3
3	Chronic Lower Respiratory Disease/COPD	103	41.9	46.1
4	All Other Unintentional Injuries	100	**42.5**	29.3
5	Alzheimer's Disease	83	**33.3**	28.9
6	Stroke	75	30.1	43.7
7	Diabetes	43	17.7*	21.7
8	Pneumonia & Influenza	34	13.3*	21.7
9	Suicide	32	13.8*	12.2*
10	Chronic Liver Disease, Cirrhosis	29	10.9*	9.5*

Age groups and causes of death

By understanding which age groups are most affected by which cause of death, we can better target prevention efforts. You can see the chart below that demonstrates that both suicide and other unintentional injuries are affecting multiple age groups, and both are affecting 40-64 year olds the most. Among those middle-aged, cancer and heart disease are also leading causes, but so are other unintentional injuries. It's important to note that Alzheimer's Disease is affecting those in the oldest age category of 85 years and above.

2009-2013 Unadjusted Leading Cause of Death by Age Group (NC SCHS 2014)

			# OF DEATHS	DEATH RATE
00-19 YEARS	**1**	**Suicide**	3	5.1
		Other Unintentional injuries	3	5.1
	3	**Cancer - All Sites**	2	3.4
		Conditions originating in the perinatal period	2	3.4
		Congenital anomalies (birth defects)	2	3.4
20-39 YEARS	**1**	**Other Unintentional injuries**	11	11.5
	2	**Diseases of the heart**	6	6.3
		Suicide	6	6.3
40-64 YEARS	**1**	**Cancer - All Sites**	81	115.6
	2	**Diseases of the heart**	75	107.0
	3	**Other Unintentional injuries**	31	44.2
	4	**Suicide**	17	24.3
65-84 YEARS	**1**	**Cancer - All Sites**	196	675.2
	2	**Diseases of the heart**	162	558.1
	3	**Chronic lower respiratory diseases**	59	203.2
	4	**Other Unintentional injuries**	26	89.6
85+ YEARS	**1**	**Diseases of the heart**	156	3877.7
	2	**Cancer - All Sites**	64	1590.9
	3	**Alzheimer's disease**	58	1441.7

Mortality Trends

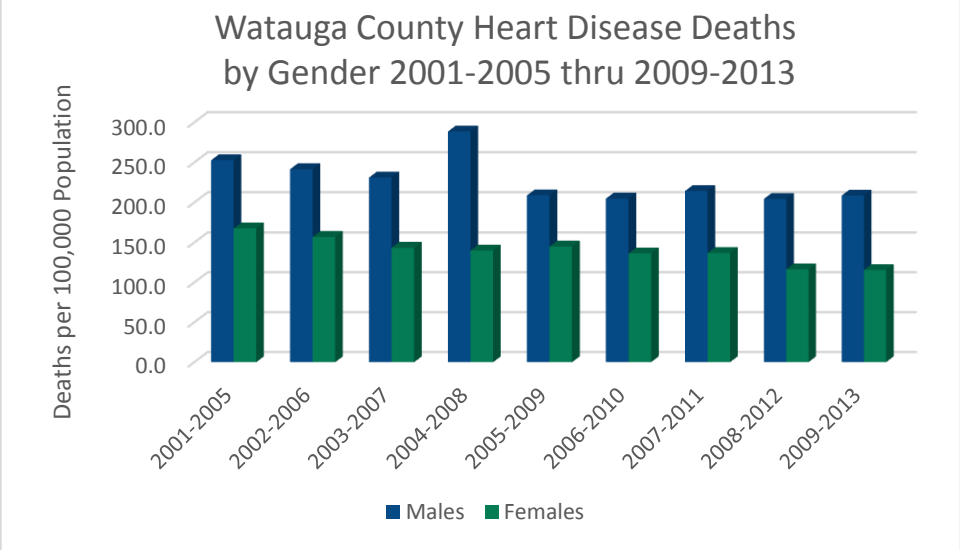
The table below depicts the leading causes of death currently to those in the last community health report in 2011 Note that heart disease and cancer deaths have decreased significantly. Chronic lower respiratory disease remains the 3rd leading cause and all other unintentional injury deaths have increased while suicide deaths have decreased (NCSCHS).

2011 Rank	Cause of Death	Rate per 100,000 2005-09	2015 Rank	Cause of Death	Change since last community health report	Rate per 100,000 2009-2013
1	Heart disease	175	1	Heart disease	Rate ↓↓ Rank =	158
2	Total Cancer	168.2	2	Cancer	Rate ↓↓ Rank =	135.9
3	Chronic Lower Respiratory Disease	42.4	3	Chronic Lower Respiratory Disease	Rate ↓ Rank =	41.9
4	Cerebrovascular Disease (Stroke)	36.5	4	All Other Unintentional Injuries	Rate ↑ Rank ↑	42.5
5	All Other Unintentional injuries	37.7	5	Alzheimer's Disease	Rate ↑ Rank ↑	33.3
6	Alzheimer's Disease	25	6	Cerebrovascular Disease (Stroke)	Rate ↓ Rank ↓	30.1
7	Suicide	19.5	7	Diabetes	Rate ↑ Rank ↑	17.7
8	Diabetes	15.6	8	Pneumonia & Influenza	Rate ↓ Rank↑	13.3
9	Unintentional Motor Vehicle Injuries	16.7	9	Suicide	Rate ↓ Rank ↓	13.8
10	Pneumonia & Influenza	13.7	10	Chronic Liver Disease, Cirrhosis	Rate ↑ Rank ↑	10.9

Gender differences in death rates

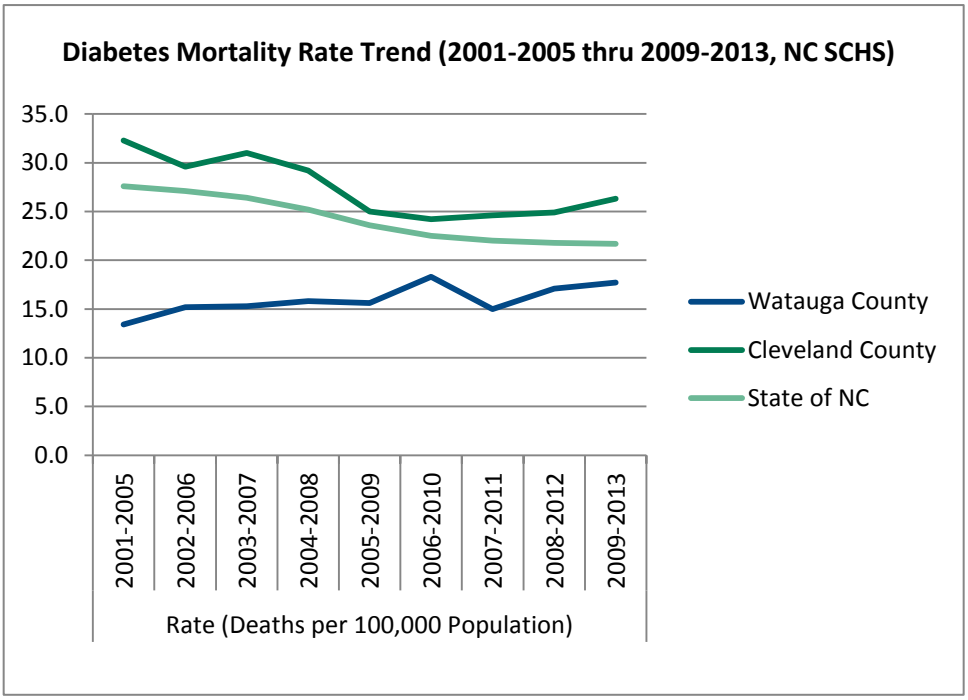
We take special notice when certain conditions disproportionately affect some groups more than others. This is true for gender differences. In Watauga County, we can see that heart disease mortality rates is much higher for males than females, which is not unlike trends statewide (NC SCHS, 2014). The trend over time indicates that the gap has not shifted much with male deaths due to heart disease at 208.7 per 100,000 compared to female deaths 115.6 per 100,000. There does not seem to be much change in this gap over time since 2001-2005 through 2009-2013 (NC SCHS, 2014).

This data indicates an opportunity to ensure messaging and outreach efforts related to primary healthcare and prevention programs targeting risk factors for heart disease mortality such as prevention and control of high blood pressure, high cholesterol, obesity, smoking, physical inactivity, poor nutrition, and other factors to include strategies to reach males in the population.



Adult Diabetes

The diabetes mortality rate per 100,000 among adults is lower in Watauga County than in Cleveland County and NC as demonstrated in the trend graph below (NC SCHS, 2014). It demonstrates long term trends showing the diabetes mortality rate is about level to what it has been since 2007-2011 time period (NC SCHS, 2012).



Diabetes Prevalence

The diabetes prevalence is a measure that helps us understand how many adults in the population have diabetes. The percentage of adults age 20+ years that have been diagnosed with diabetes in Watauga County is 8.4% (CDC, National Center for Chronic Disease Prevention and Health Promotion, 2012). In NC, there are slightly over 10% with a diabetes diagnosis and slightly over 9% in the U.S. overall. This data should be interpreted with caution since we may estimate there are some people who are unaware that they may have diabetes. The table below is based on modeled data using the BRFSS data and population estimates (CDC, 2012; Community Commons, 2015).

Watauga County Adults with a Diabetes Diagnosis by Gender (CDC, 2012)

Gender	Percent of Population with Diabetes	Number of Population with Diabetes
Males	10.3%	1,864
Females	9%	1,763

Obesity

Obesity is a known risk factor for many chronic diseases. More than a third, 35.7%, of US adults are overweight or obese (CDC, 2012). Obesity is linked to heart disease, stroke, diabetes, and cancer and an estimated $147 billion in annual healthcare costs in the US, or an additional $1,429 in medical costs in comparison to those of normal weight (CDC, 2013).

Obesity is measured through body mass index, or a calculation of weight relative to height. A body mass index between 25-29.9 kg/m^2 is considered overweight while a BMI of 30.0 or above is obese.

Watauga County percent of adults that participated in the BRFSS who are overweight 33.43% compared to 36.08% NC and 35.7% US (CDC, BRFSS, 2012). The percentage of adults who are obese is 26.5% compared to 29% NC and 27% US (CDC, BRFSS 2012).

Watauga County Adults who are either overweight or obese (BRFSS, 2012)

Category	Percent of Population	Number of Population
Overweight	33.43%	13,306
Obese	26.5%	10,618
Total Overweight and Obese	**59.9%**	**23,924**

This data is very concerning. If we considered the total adult population estimate for Watauga County (ACS 2013) of approximately 52,372 less the total under age 18 of 7,080 (ACS, 2013; Community Commons, 2015) and then consider that an estimated 23,924 people are either overweight or obese, we can estimate our overall population of nearly half of the adult population has a major risk factor for one or chronic diseases like diabetes, cancer, and heart disease due to their higher body mass index.

The prevalence of adults who are overweight or obese in Western NC has increased slightly since 2012 to the most current data that demonstrates over 64% of adults are either overweight or obese (BRFSS, 2012).

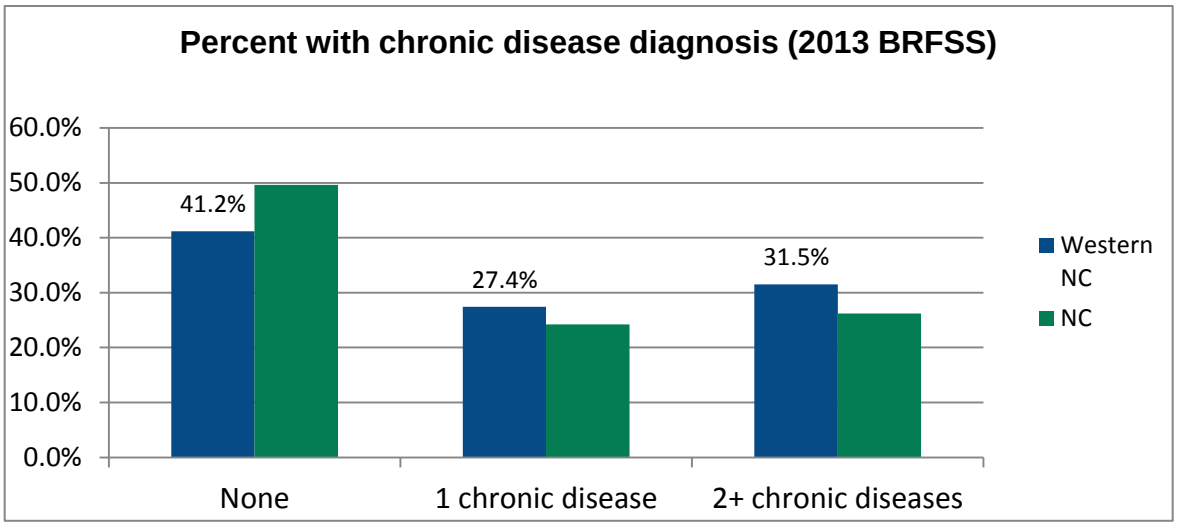
Obesity in childhood can lead to pre-diabetes or other chronic health conditions and associated with years of potential life loss later. According to the 2007-2012 NC NPASS sample of children from Watauga County 15.9% were considered overweight and another 15.6% who are obese. Obesity as a 2-4 year old sets a child on a path for increased risk of long term obesity. Combined, this means that a third of the preschool age children in this group is either overweight or obese (2013, NC NPASS). One point of information about this data is that it is collected among children participating in the WIC program and may not accurately reflect the obesity prevalence among all children in the county, but is one of the best measures we have available.

Prevalent chronic diseases

Multiple Chronic Diseases

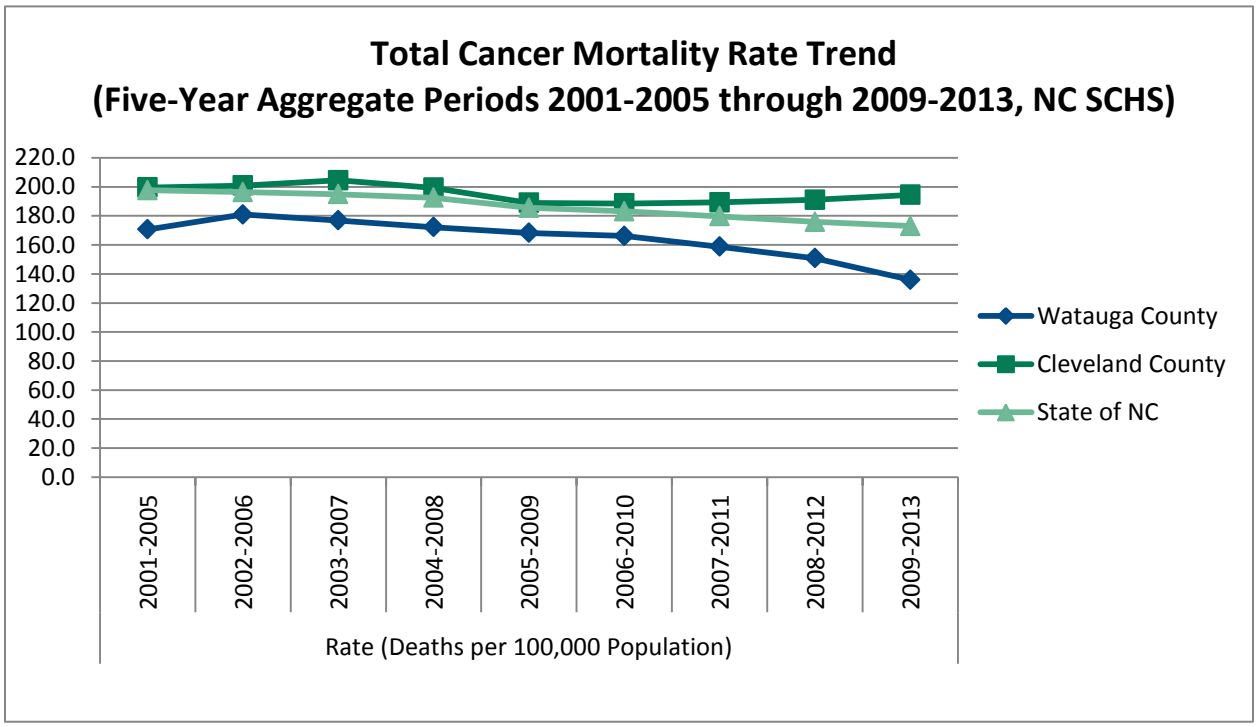
According to the Behavioral Risk Factor Surveillance System (2013), we see that over half of Western NC adults are living with at least one chronic disease, and of those 31.5% have two or more chronic diseases. This is likely not surprising given the leading causes of death for the county, but it does emphasize the importance of acknowledging the burden of these diseases when planning public health improvements.

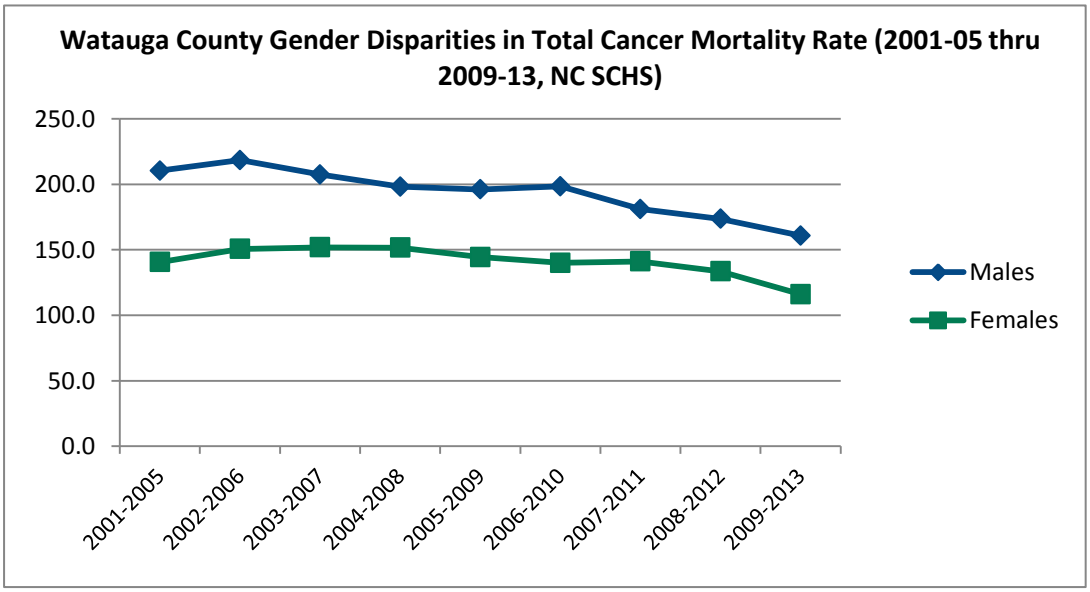
According to the most recent data showing all causes of death for Watauga County (NC SCHS, 2009-2013), 62% of all deaths were due to chronic diseases that are often preventable and better managed by having community-based prevention measures in place in conjunction with access to primary health care and associated linkages between them.



Cancer deaths

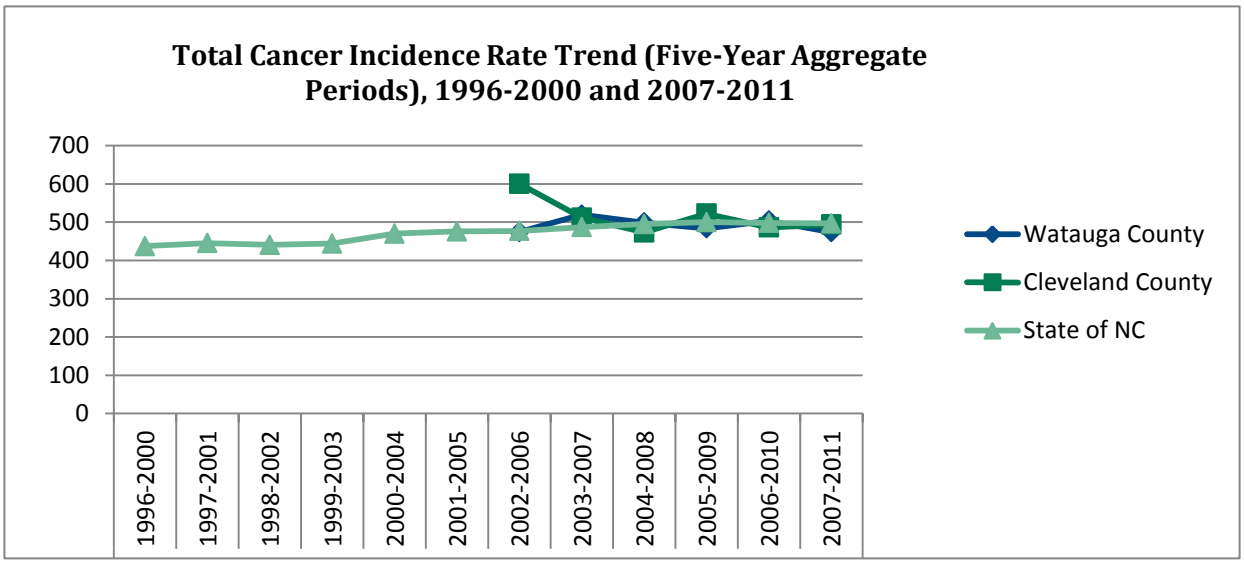
Cancer is the second leading cause of death in Watauga County according to the 2009-2013 NC SCHS mortality data and the greatest percentage of these deaths are attributable to lung cancer. The long term trend shows that cancer death rates has shown a decreasing trend since the first five-year period noted in 2001-2005 (NC SCHS, 2014). This is something to recognize as a positive outcome for Watauga County. Similar to heart disease, more males than females die from cancer which is a trend that is not quite as wide as in earlier periods, but the male mortality rate is 160.8 per 100,000 while the female mortality rate is 116..1 per 100,000 using the most recent five-year period (NC SCHS).





Cancer incidence & projections

Cancer incidence is an important trend to monitor as we also look at cancer mortality rates. While we may be concerned about increasing trends, we must consider a balanced viewpoint since we know that incidence rates will increase as more cases of cancer are detected and early detection is important for saving lives. Currently, the Watauga County cancer incidence rate is 473.8 per 100,000 population, compared to 493.8 in Cleveland and 496.7 per 100,000 in NC overall (NC SCHS, 2015). The trend graph below shows that there has not been much change in this trend over time, though the incidence rates in all locations was highest during the 2003-2007 time period at 519.1 per 100,000 in Watauga, 511.7 in Cleveland, and 487 in NC.



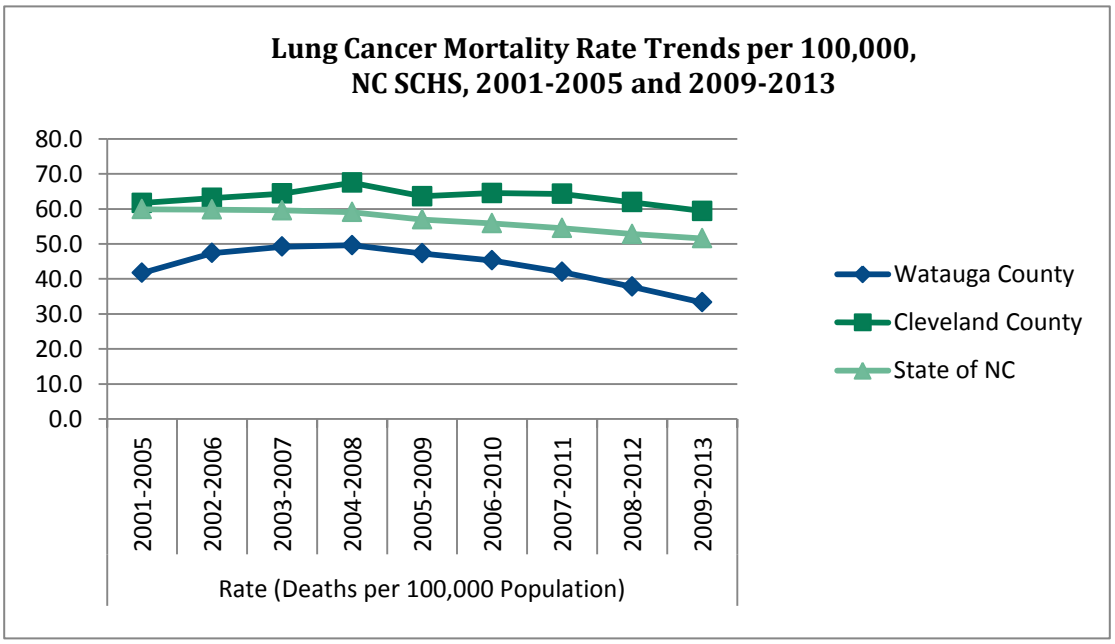
Cancer incidence and mortality projections

The table below includes data from the NC Central Cancer Registry (NC DHHS) shows the total number of new cases of cancer projected overall and by type for Watauga County and NC based on invasive cancer incidence (2008-12), cancer mortality rates (2009-13), and NC population estimates (Office of State Budget and Management, 2015). Due to rounding, the types summed may not equal the total.

Cancer Type	Projected new cases Watauga	Projected new cases NC	Projected deaths Watauga	Projected deaths NC
Lung	44	8,669	32	6,171
Female breast	44	9,772	6	1,391
Prostate	41	7,998	6	987
Colorectal	23	4,633	8	1,642
Total	284	57,624	104	20,302

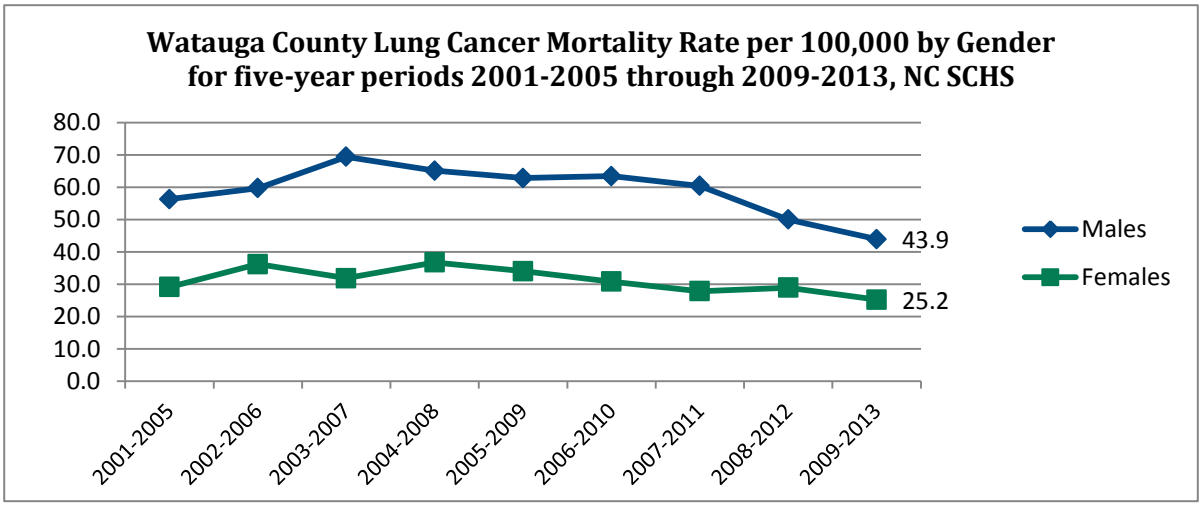
Lung cancer

In reviewing cancer mortality and incidence, lung cancer far exceeds other types of cancer in the number of people who die due to any type of cancer in Watauga County. Smoking is a primary risk factor for many chronic diseases, including lung cancer. The trend graph below shows that Watauga has had a lower mortality rate for lung cancer when compared to Cleveland County and NC over several years (NC SCHS, 2015). Currently, the lung cancer mortality rate per 100,000 is 33.3 in Watauga compared to 59.4 in Cleveland County and 51.6 in NC overall (NC SCHS, 2015). In addition, the lung cancer incidence rate of 56.7 per 100,000 is much lower than that in Cleveland County with 77.9 and NC overall 73.4 per 100,000 (NC SCHS, 2012).



Gender disparities in lung cancer mortality

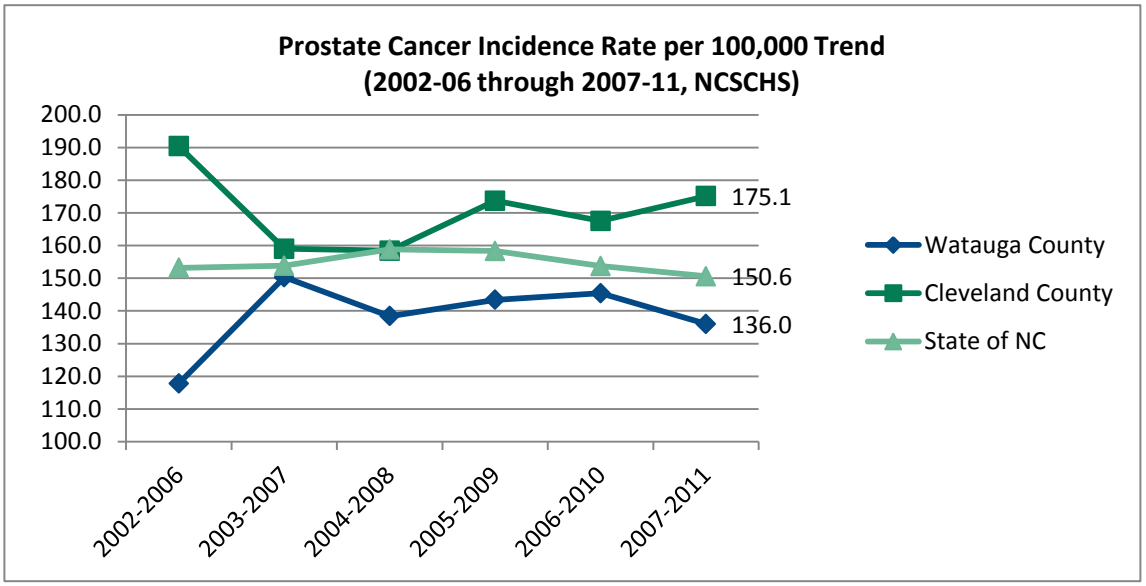
The graph below shows the disparity that exists between male and female deaths due to lung cancer.



Prostate Cancer

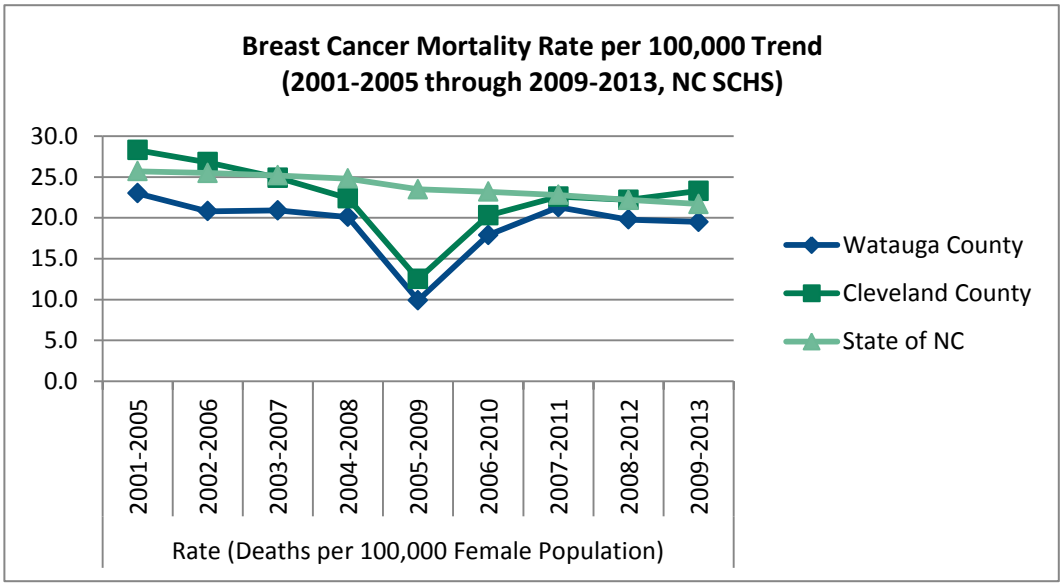
Prostate cancer is the cause of 15 total deaths in Watauga County during 2009-2013 (NC SCHS, 2015). This is much lower compared to that of Cleveland County which is 50 total deaths. In NC overall, there were 4,287 deaths due to prostate cancer during this time period.

The trend graph below shows the new case rate per 100,000 which is much lower in Watauga County compared to Cleveland County and NC (NC SCHS, 2012). Since the death rate is also low, we can assume this may mean fewer cases of prostate cancer exist in Watauga in comparison, rather than fewer men are getting prostate cancer diagnosis early for treatment. According to the NC Central Cancer Registry, there are a projected 41 new cases and 6 deaths due to prostate cancer expected for Watauga County (NC CCR, 2015).



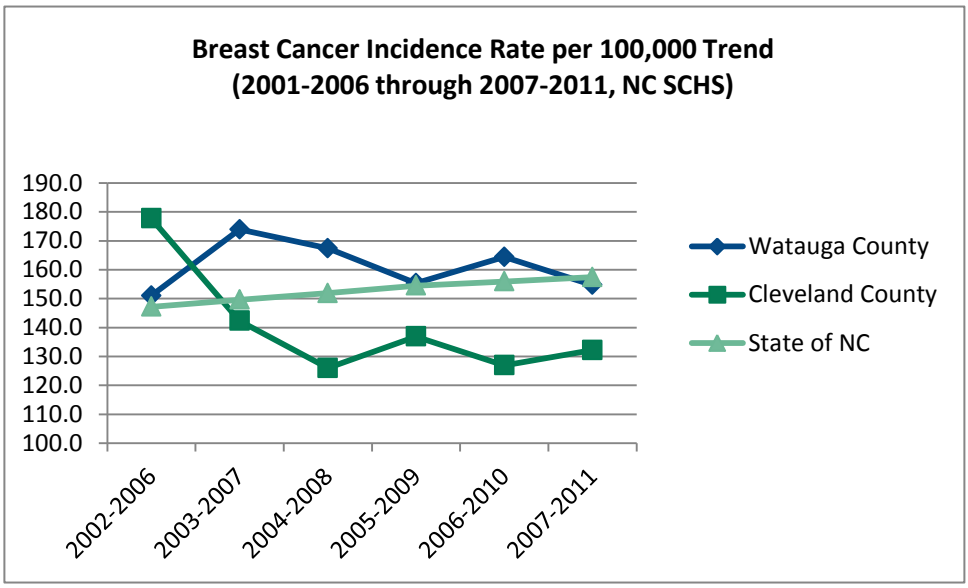
Female breast cancer

The female breast cancer mortality rate per 100,000 in Watauga County is 19.5 compared to 23.3 per 100,000 in Cleveland County and 21.7 per 100,000 in NC overall (NC SCHS, 2015). The trend graph below shows how the mortality rate has decreased slightly from the 2001-2005 period.



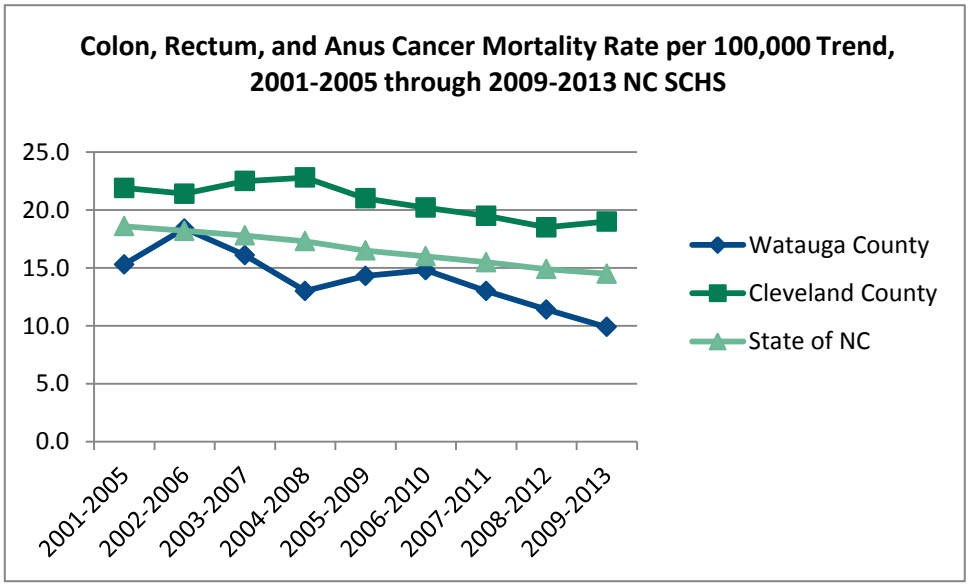
Breast cancer incidence

The female breast cancer incidence rate in Watauga County is 154.7 per 100,000 compared to 132.2 in Cleveland County and 157.4 per 100,000 in NC overall (NC SCHS, 2012). According to the NC Central Cancer Registry, there are 44 projected new cases of female breast cancer and 6 projected deaths due to female breast cancer as of 2015 (NC SCHS).



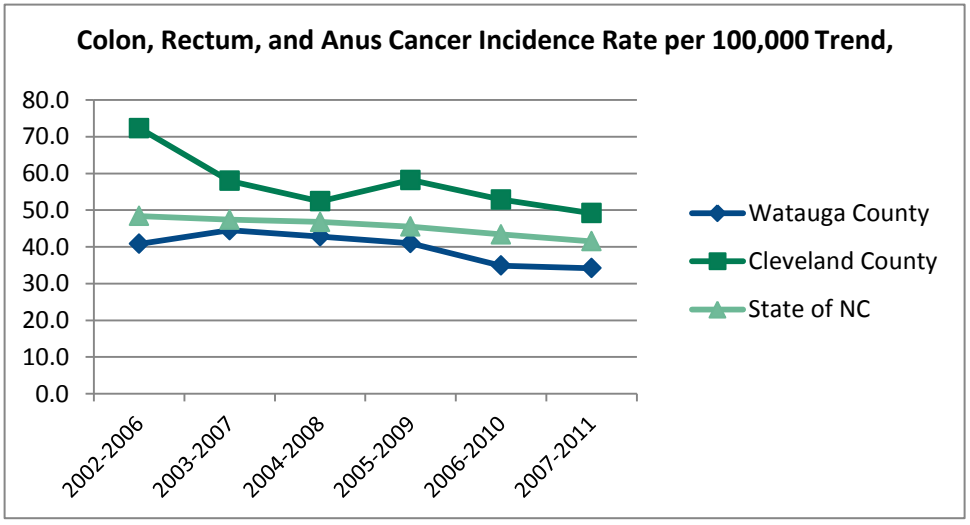
Colorectal Cancer

Colorectal cancer has the lowest mortality rate of all the major types of cancer reported for Watauga County. The graph below shows the decreasing trend of the rate of death per 100,000 due to colon, rectum, and anus cancer for five year aggregate periods in Watauga County. Note that the rates are below 20, which means they should be interpreted with caution due to small numbers (NC SCHS). During the most recent time period observed, 2009-2013, there were a total of 25 deaths due to colorectal cancer in Watauga County, and of those, 13 were males and 12 were females (NC SCHS, 2015). According to the NC Central Cancer Registry, there are 23 projected new cases and 8 deaths due to colorectal cancer in Watauga County (NC CCR, 2015).



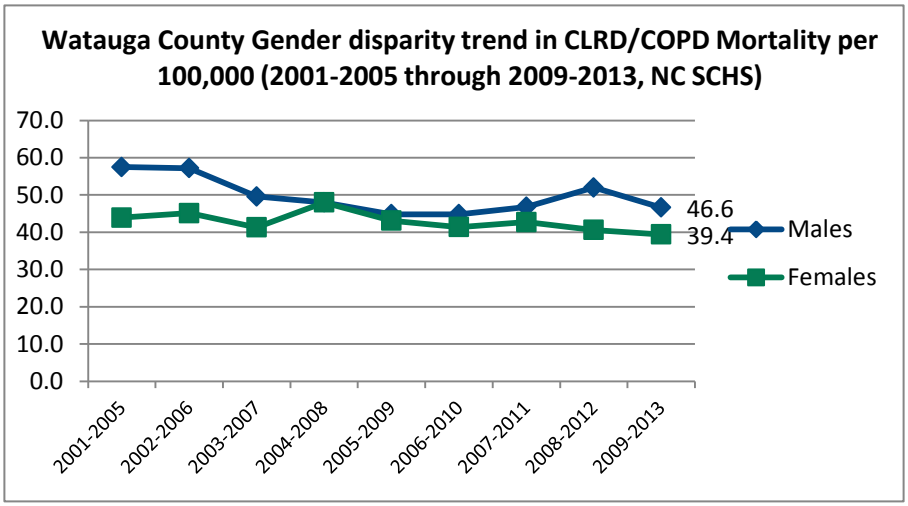
Colorectal Cancer Incidence

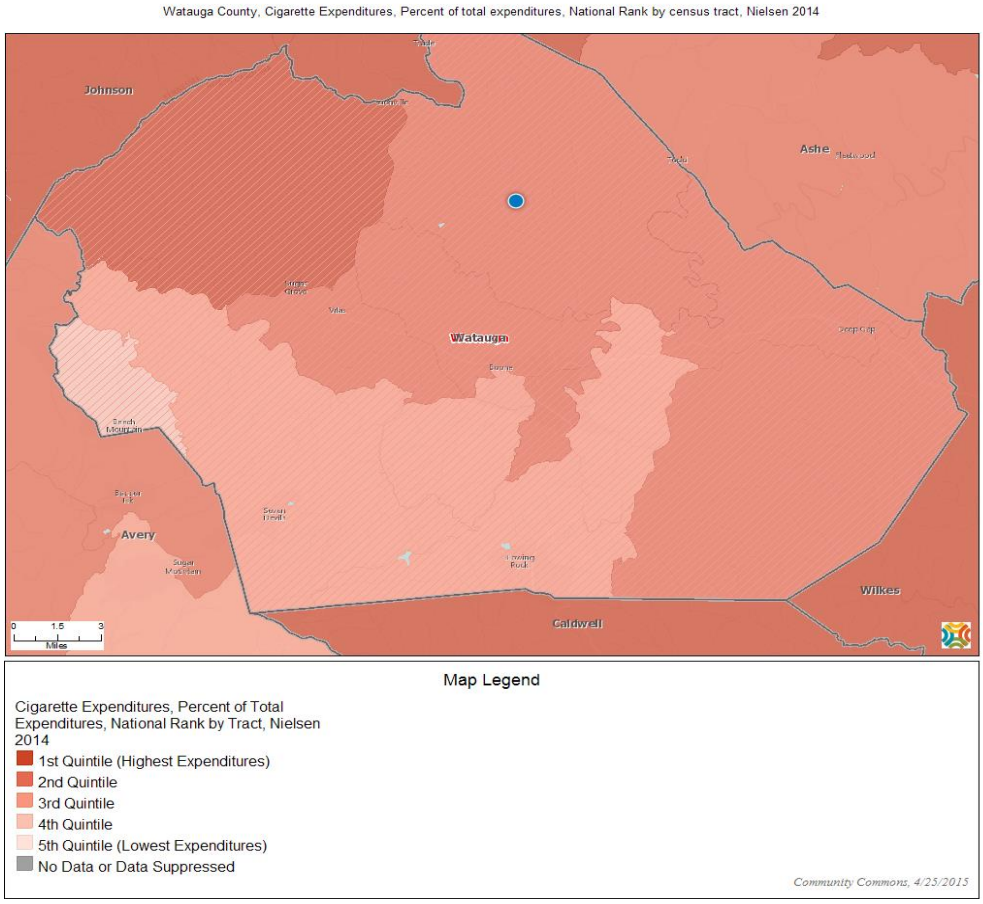
The incidence rate of colorectal cancer is also lower in Watauga County with 34.2 per 100,000 compared to 49.2 in Cleveland County and 41.5 in NC overall (NC SCHS, 2012). The incidence rate has decreased slightly since 2002-06.



Chronic lower respiratory disease

Chronic lower respiratory disease or COPD is the 3rd leading causes of death for Watauga County, attributing to 103 deaths during the most recent five-year aggregate period of 2009-2013. It was the 3rd leading cause of death in the last community health needs assessment report (Appalachian District Health Department, 2011). Currently, the mortality rate per 100,000 in Watauga County for CLRD/COPD is 41.9 compared to 55.5 in Cleveland County and 46.1 in NC overall (NC SCHS, 2015). Unlike many other chronic diseases where we find major disparities between male and female death rates, this is one disease that has a much less difference between gender groups. During the most recent time period (2009-2013) we find that there were 54 female deaths and 49 male deaths that equal the total 103 CLRD/COPD deaths overall.



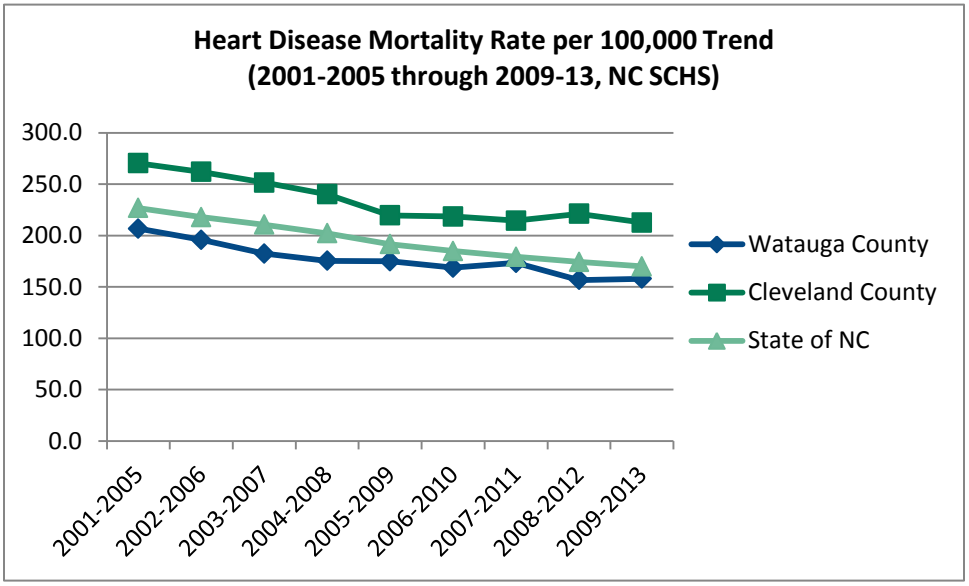


Smoking is the #1 risk factor for chronic lower respiratory disease, and is the leading cause of preventable death in the U.S. (CDC, 2015)

The map to the left shows the rank of census tract by percentage of overall expenditures that were spent on cigarettes based on data collected by Nielsen, 2014 (Community Commons, 2015). This shows where there may be opportunities to promote smoking cessation resources to decrease the trend of chronic lower respiratory disease as part of a comprehensive strategy for tobacco prevention and control.

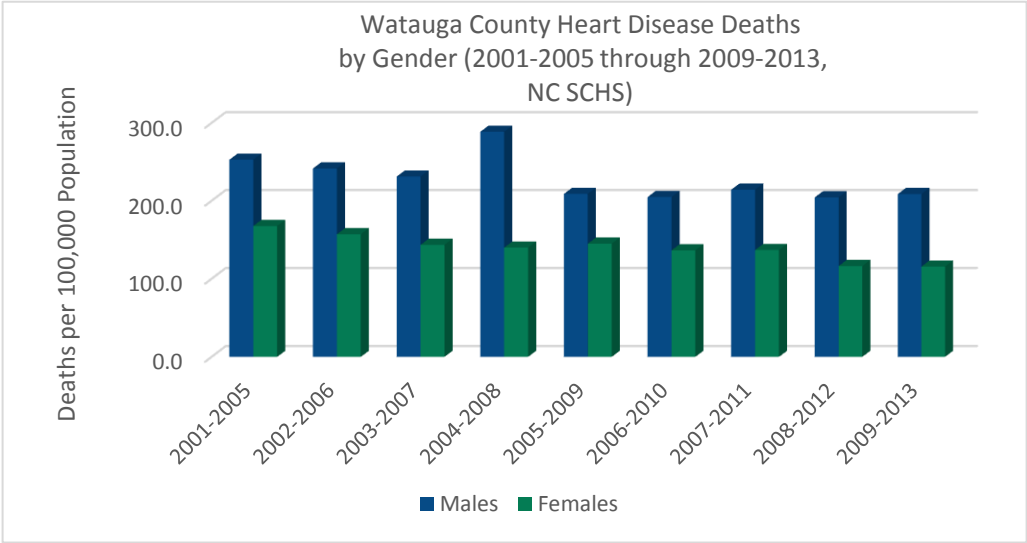
Heart disease

Heart disease remains the leading cause of death in Watauga County, attributing to 399 deaths during the five-year aggregate period of 2009-2013 (NC SCHS). Though this is still the chief contributor to deaths, the rate of mortality for heart disease is much lower in Watauga County than in Cleveland County and NC overall with 158 per 100,000 in Watauga, 212.6 per 100,000 in Cleveland, and 170 per 100,000 in NC overall (NC SCHS, 2015).



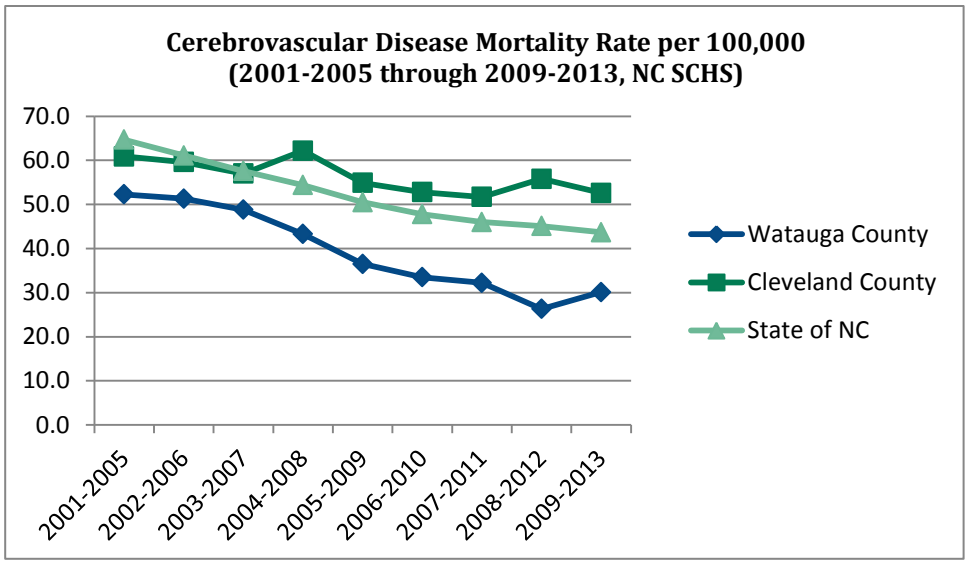
Gender disparities

The differences between male and female death rates due to heart disease demonstrate the importance of continued focus to link men to preventive health care and design communities to support more healthy behaviors among both males and females. The mortality rate for males is nearly double with 208.7 per 100,000 while the female rate is 115.6 per 100,000 (NC SCHS, 2015).



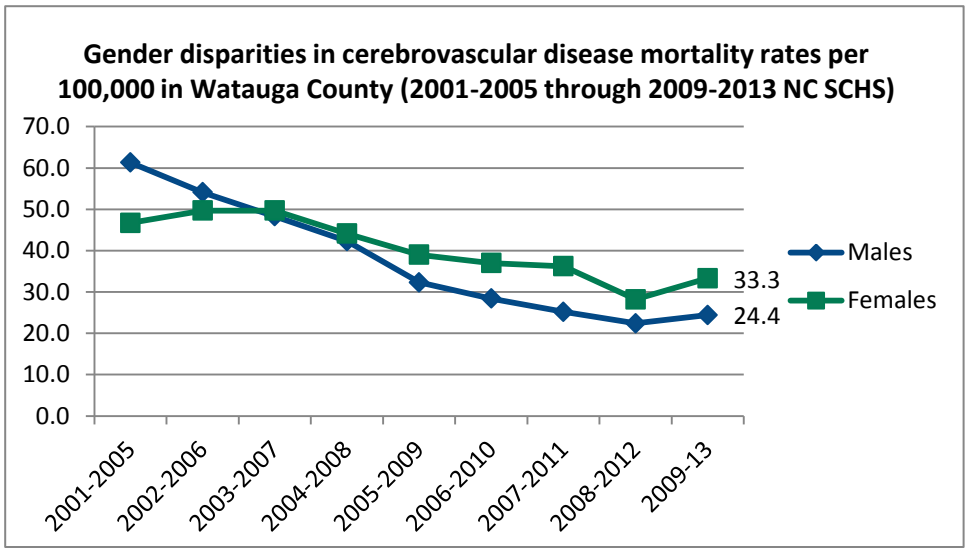
Stroke

Cerebrovascular disease or stroke is among the leading causes of death in Watauga County, attributing to 75 deaths during the most recent five-year aggregate period of 2009-2013 (NC SCHS). The rate of death due to stroke is much lower in Watauga County with 30.1 per 100,000 when compared to Cleveland County with 52.6 per100,000 and NC with 43.7 per 100,000 (NC SCHS, 2015).



Gender disparities

Similar to the narrow gap between males and females with chronic lower respiratory disease deaths, there is a narrow difference between males and females that die from cerebrovascular disease (stroke).



Leading Risk Factors

Chronic diseases such as heart disease, cancer, stroke, and diabetes have become the leading causes of death and disability in the United States. Our area is similar in the majority of death and much of healthcare costs can be linked back to chronic disease.

3-4-50

Three behaviors: poor nutrition, lack of physical activity, and tobacco use contribute to 4 major chronic diseases that cause over 50 % of deaths worldwide. These behaviors not only rob us years of life, but life in our years costing us quality of life and major expense in healthcare.

Nutrition

- Make healthy food available for all
- Support policies and practices that provide access to healthier foods
- Educate and support individuals and families in learning and practicing healthy eating behavior

Physical Activity

- Create safe places to be active
- Encourage active transportation
- Increase active living opportunities for adults and youth

Tobacco

- Support youth tobacco prevention efforts
- Promote and enforce policies and laws that protect the public from harmful secondhand smoke
- Provide support to those who want to quit
- Monitor and educate the public about emerging tobacco products

Tobacco Use

Tobacco use remains the single leading cause of preventable death and disability in the United States (CDC, 2013). In 2011, the current percentage of adults who smoked was 21.8%, ranking 29th among the states (CDC, 2013). In addition, 5.2% of adults reported use of smokeless tobacco (snuff, dip, chewing) in 2011 ranking 36th among the states (CDC, 2013).

QuitNow NC is a resource that provides free counseling to individuals who want to quit using tobacco. It is promoted in various methods through partnerships with local healthcare providers who can refer patients who are interested that can receive a call from a trained quit-coach. During 2009-2010 year, 55% of smokers in NC made an attempt to quit (CDC, 2012).

In NC, the percent of youth grades 9-12 engaging in smoking was 17.7% in 2011 putting NC at a rank of 26 among other states in the US. Smokeless tobacco use was 11% setting a rank of 28th among other states (CDC, 2013).

One of the most powerful tools to encourage adults and youth to quit smoking or avoid starting is to raise the amount of cigarette excise tax. As of June 30, 2012, the NC rate of 0.45/pack of cigarettes puts NC ranking 45th among the states with the national median being $1.339/pack (CDC, 2013). The community opinion survey showed that 72.7% would support at least a $1 excise tax increase, while 12% would not and another 15% had not determined whether they would support this type of policy change or not. In addition, there was broad support of tobacco free policies in multiple public places, including outdoor areas of restaurants, parks, and workplaces.

Percent of current smokers

The graph below shows the trend of Western NC smokers based on self-reported data for those age 18 and older participating in the Behavioral Risk Factor Surveillance System (BRFSS). According to Community Commons, the total survey sample for Watauga County adults was 43,372 and of those 16.8% were current smokers that smoked some days or every day compared to 20.4% in NC and 18% in the United States overall (BRFSS, 2012). When combining former and current smokers, nearly 18,000 Watauga County BRFSS participants reported smoking currently or formerly. In addition, when we look closer to see the number of smokers who have attempted to quit within the past year, nearly 62%, or slightly less than NC and slightly more than US smokers had attempted to quit (BRFSS, 2012; Community Commons, 2015).

Among community opinion survey participants, 8.6% were current smokers, 6% were trying to quit and another 24% had quit. When asked about electronic cigarettes or other electronic nicotine delivery systems (ENDS), 86% reported never having tried them while another 4.6% were using them as a cessation tool (which is not proven to help a smoker quit), another 5% reported using them for pleasure and 3% used them when going to locations that had smoke free policies. When asked about where they would seek help to quit or refer others for help, most chose a healthcare provider, followed by the 1-800-QUIT-NOW free hotline, health department, or counselor/therapist for support.

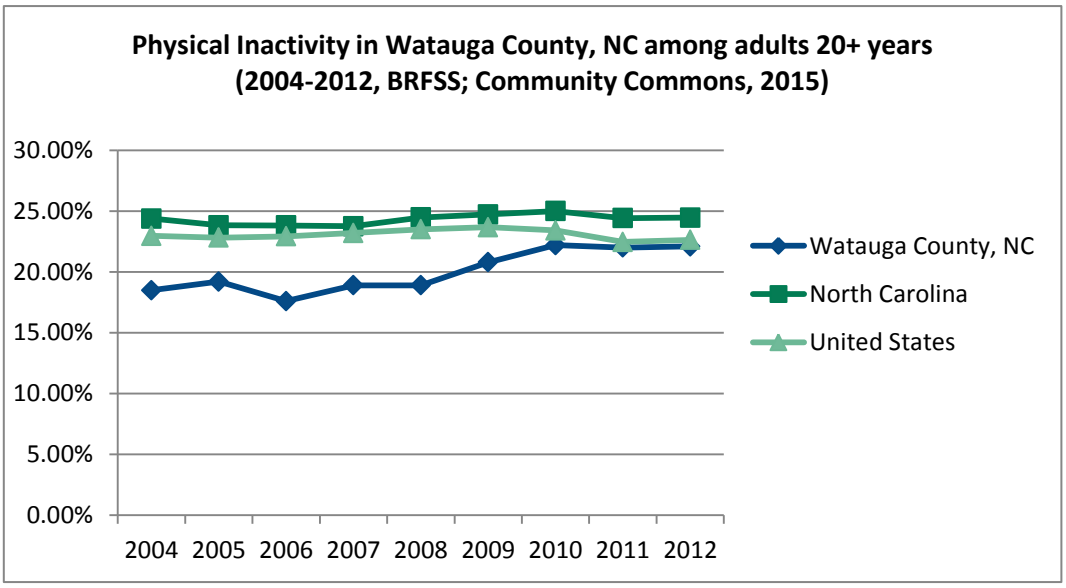
Overall, many people participating in the survey showed support for tobacco free policies, with child care centers, workplaces, University and Community college campuses, parks, greenways, outdoor areas of restaurants and bars, bus stops, and apartment building/complexes. There were 7.4% who did not support tobacco free policies.

This, along with tobacco expenditure maps shown previously demonstrate the need to continue linking individuals to smoking cessation resources as part of an overall comprehensive tobacco prevention and control approach.

Physical Activity

Along with tobacco use, physical activity and nutrition are key health behaviors that may increase risk of many chronic diseases. The Behavioral Risk Factor Surveillance System, a random telephone survey coordinated by CDC and the NC State Center for Health Statistics, provides important health behavior data like physical activity and nutrition. When looking regionally, over 25% of Western NC adults reported no physical activity in the past month (BRFSS, 2012). More recent data show that as of 2013, adults who participated in the BRFSS reported over 28% physical inactivity.

The graph below shows the trend of physical inactivity for survey participants who were age 20 and older (n=40,274) that indicate the increasing trend of sedentary lifestyles, or 22% (n=8,820) in Watauga County (BRFSS, 2012; Community Commons, 2015). Similar to some other trends observed, some gender disparities exist with 24% of females reported inactivity while a lesser 20% of males report inactivity (BRFSS, 2012; Community Commons, 2015). It is important to consider the broad definition of activity used in this survey so it does not mean that the other part of the population are meeting recommended physical activity standards for better health, but rather, these are those most at-risk for adverse health in terms of no physical activity.



Community opinion survey respondents show broad support for recreation.

When asked what community members believed was most helpful to support physical activity in the area, many areas received broad support, chiefly, access to outdoor recreation opportunities (>85%) and indoor recreation facilities (>75%). Bicycling and walking facilities like sidewalks, crosswalks, marked bike lanes and bike routes with signage received support, followed by workplace physical activity programs, pedestrian/bicycling safety campaigns, and community walking groups. Clearly, among the respondents, there was a lot of support for creating environments that support active transportation, recreation, and leisure activity.

Nutrition

Nutrition is one of the key factors important for prevention of chronic disease, create energy balance to achieve and maintain a healthy weight, and support good health status. Many people in the community are not getting one of the most important food components for healthy eating: fruits and vegetables. All too often, these are components that may not be purchased due to lack of access, perceived or real lack of affordability, or other reasons like not knowing how to cook or prepare the fruit or vegetable or not having the parenting tips needed to deal with picky eaters in the family.

According to the regional BRFSS data, 90% of Western NC adults did not consume enough fruits and vegetables (NC SCHS, 2014). Looking more closely at Watauga County residents, among the BRFSS participants age 18 and older (n=38,189), 68.4% or over 26,000 did not meet the recommended fruit and vegetable intake (BRFSS, 2012; Community Commons, 2015). This increases risks for obesity, diabetes, cancer, and heart disease.

Community opinion survey results indicate that some community members are aware of the importance of nutrition ranking poor eating habits among the most risky behaviors and most buy their fresh fruits and vegetables at the grocery store or Farmer's Market. Some purchased their fruits and vegetables by supporting local farmers and producers through a community supported agriculture (CSA) produce box program (13%) while some grew their own food in a garden (30%). When asked about where respondents would likely buy local food, the answers were quite similar to current patterns of grocery store, farmer's market, and community supported agriculture/produce box program.

The table below shows the responses and percent of respondents that selected the strategy for promoting and supporting healthy eating in the county.

Healthy eating strategy	Percent supporting this strategy for Watauga County
Healthy food & drink is offered and promoted at schools, colleges, and universities	62%
Food pantries and assistance programs offer fruits and vegetables	57%
Restaurants offer and promote healthy food options	50%
Buy local healthy food promotion programs	48%
Healthy food and drink is available at my community convenience store	45%
Community, neighborhood, and school gardens	42%

Communicable disease

In the past year, there has been discussion about the global outbreak of Ebola Virus Disease and the potential for its spread to North Carolina. There were no cases of Ebola Virus Disease reported in Watauga County during the past year, but public health, healthcare, and emergency response staff remained vigilant instituting screening practices to inquire about travel outside the United States among other methods to be able to identify any potential case early. In addition, advanced planning between Emergency Medical Services, local, and regional hospitals occurred to have plans in place for potential cases. Public health staff activated the epidemiology team and partnered in the efforts to ensure plans were reviewed, updated, and training occurred to protect any healthcare workers that may be exposed. These efforts strengthened local partnerships further and has led to more plans for coordinating communication response efforts in the coming years for any future public health emergency that may arise.

Vaccine Preventable Diseases in North Carolina

Overall, the rate of new cases of vaccine preventable disease in NC remains low, with the exception of the measles incidence that occurred after an outbreak of measles occurred in 3 counties in NC in 2013, none included Watauga County or Appalachian District areas. In NC overall, there were 22 cases of measles associated with an unvaccinated traveler who went to India and returned to NC symptomatic. The cases affected included 85% who were unvaccinated against measles, 14% under age 5, 59% age 5-19, and 23% age 20-49 (NC DPH, NC VPR 2014). This was the first measles outbreak in 20 years.

Pertussis cases totaled 622 for 2013 in NC overall, with affected age groups being 16% infants under 1 year, 18% 1-6 years, 18% 7-10 years, 24% 11-19 years, and 23% 20 years and older (NC DPH, NC VPR 2014). This was consistent with the rise seen in 2012 and the national trend of more pertussis cases across the country.

Communicable Disease

Communicable Diseases in Appalachian District 2012-2013

The data table below is from the Appalachian District Communicable Disease Annual Report showing the number of cases and trend for each reported disease. Those that did not occur are not listed in the table.

Communicable Disease	2012 Cases	2013 Cases	Trend	Communicable Disease	2012 Cases	2013 Cases	Trend
Campylobacter	35	9	↓	Legionellosis	2	0	↓
Chlamydia	149	148	↓	Listeriosis	0	1	↑
Cryptosporidosis	0	1	↑	Lyme disease	6	3	↓
E. coli (shiga toxin producing)	1	3	↑	Meningitis – invasive disease	1	1	=
Gonorrhea	9	4	↓	Non-gonorrheal urethritis	1	1	=
Haemophilus Influenza	1	2	↑	Pertussis	8	1	↓
Hepatitis A	0	5	↑	PID	1	0	↓
Hepatitis B-Acute	3	5	↑	Rocky Mtn Spotted Fever	3	1	↓
Hepatitis B-Chronic	3	5	↑	Salmonellosis	11	16	↑
Staph aureus, reduced	0	1	↑	Tuberculosis	1	0	↓
Vibrio not cholera or vulnificus	0	1	↑				

Overall, there were 234 communicable diseases in 2012 and 206 in 2013 (Appalachian District Communicable Disease Annual Report, 2014).

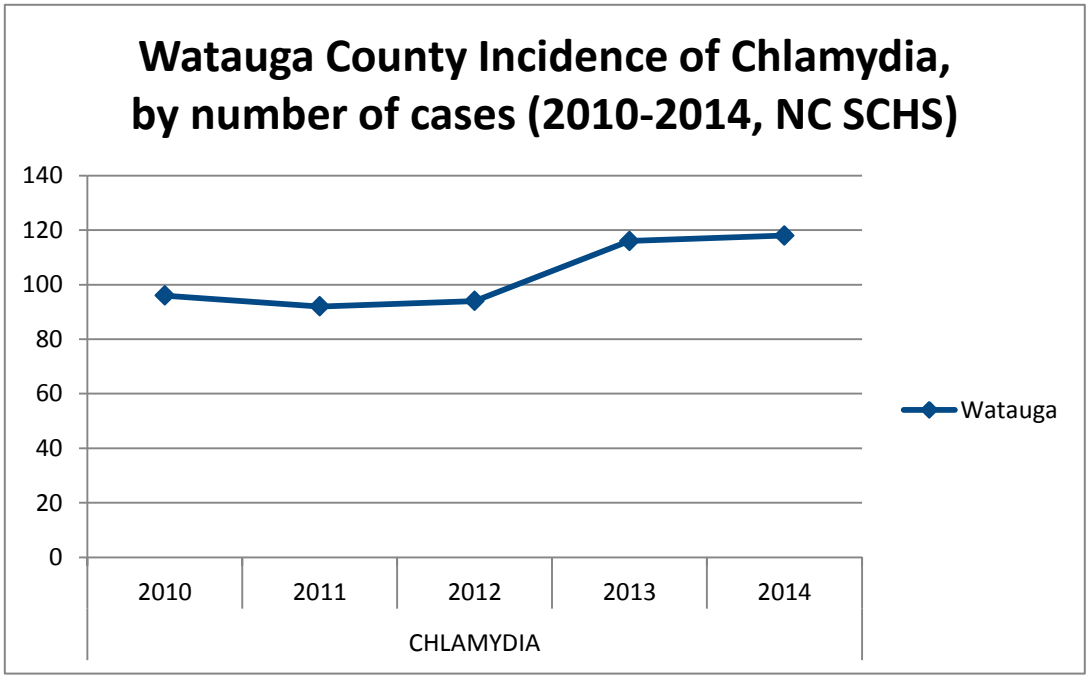
Sexually transmitted infections

Sexually Transmitted Infections

Watauga County has had a history of lower rates of sexually transmitted infections compared to NC overall. The past years have continued this trend. The table below shows all sexually transmitted infections by number of new cases for 2014 and the total for 2010-2014 overall. (NC HIV/STD Surveillance Report, 2011-2014). The largest number of new sexually transmitted infections is caused by chlamydia followed by gonorrhea. Community Commons reports the 2010 HIV prevalence rate for Watauga County at 62.3 per 100,000 and NC with a rate of 309.47 per 100,000 with non-Hispanic black males being the largest racial group that is disproportionately affected.

New Cases of Sexually Transmitted Infections, 2014 and 2010-2014

STI	Watauga		Cleveland	
	2014	2010-2014	2014	2010-2014
Chlamydia	118	516	415	2189
Gonorrhea	15	42	111	732
P. & S. Syphilis	2	5	1	6
E.L. Syphilis	0	0	0	2
HIV	2	8	11	52
AIDS	0	1	10	42

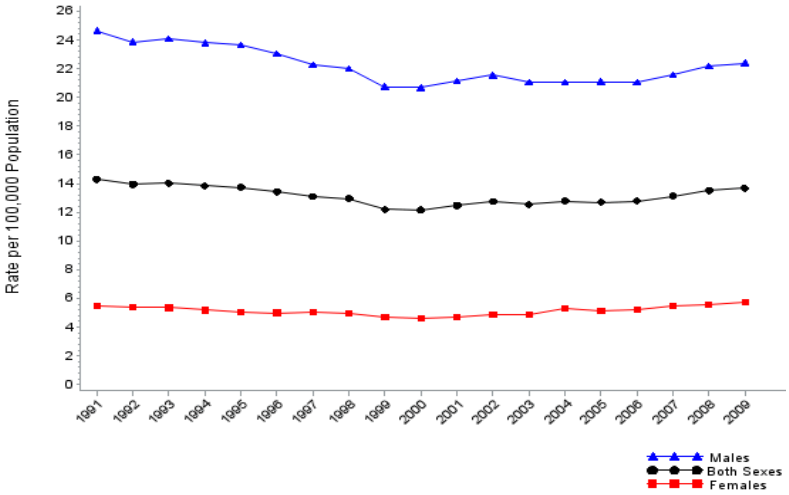


Behavioral Health

Behavioral health is a broad category of health that includes considerations of substance abuse, mood disorders, and mental illness. It has become more important over the past year as the national trend of deaths by suicide have increased from 2000-2009 as demonstrated in the graph below (CDC, 2015).

Mental health disorders ranked #2 among the chief health problems in Watauga County among community opinion survey respondents.

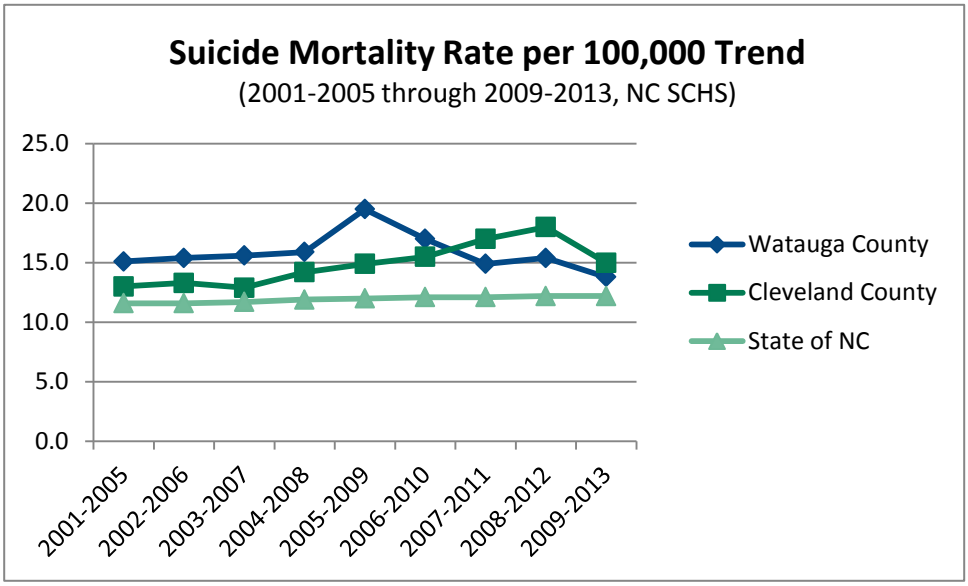
Trends in Suicide Rates among Persons ages 10 years and older, by sex, United States, 1991-2009 (CDC)



We know there are risk factors place a person at higher risk for suicide mortality, including depression, social isolation, substance abuse or family history of suicide or child maltreatment (CDC, 2015). In 2012, the Behavioral Risk Factor Surveillance System data demonstrated 25% of adults in Western NC reported depression, anxiety, or trouble with emotions during the past 30 days (NC SCHS, 2013). Some of the challenge in addressing the public health burden of behavioral health needs is stigma. On a positive note, the most recent BRFSS data (2013) indicates that, in general, people believe that most people are "generally caring and sympathetic to mental illness" and that "treatment can help people with mental illness lead normal lives" (NC SCHS, 2014).

Suicide

Suicide is the 9th overall cause of death in Watauga County according to the most recent data from the NC SCHS (2009-2013) which has dropped from 7th cause of death in the previous community health assessment report (2005-09).



For 0-19 year olds, it is the leading cause of death with 3 deaths during this time period, among 20-39 year olds it is the 2nd leading cause of death with 6 deaths during this time period, and the 4th leading cause of death for 40-64 year olds with 17 deaths (NC SCHS, 2015). This data is based on county of residence.

According to the most recent available data that separates suicide by county of death versus county of residence, there are some slight differences between them for Watauga County. This may be due to the difference if there are some population demographics more likely to be living in Watauga County, but claiming another county of residence. Among the suicide deaths by county of death, 21% had alcohol present at the time of death, and 14% had a BAC of 0.08 or above (NC OCME, 2003-2007; NC SCHS).

Suicide deaths reported by the NC Office of Chief Medical Examiner

Year	County of Death	County of Residence
2003	4	5
2004	6	4
2005	6	5
2006	8	8
2007	9	3

Suicide

Community opinion survey participants reported concerns about mental health in the community *and 60% noted that suicide is a community health problem, 16% said it was not a problem, and 24% did not know if it was a problem.* They also noted that the place they would refer a person who "needed counseling or support for emotional pain and/or feelings of hopelessness, anxiety, nerves, loneliness, or sadness" would most often be a doctor, health department, or clinic (30%), Other Counselor or therapist (25%), Daymark Recovery Services (17%), a pastor or church member (14%), and very few wrote in options like the emergency room.

This tells us something important: many people are unsure about whether suicide is even a community problem and most would refer someone to a healthcare provider or counselor/therapist so ensuring there are services in supply to meet what could be potential demands in the future would be important to further assess. In addition, since pastor/church member was listed a fair amount, ensuring the faith community is prepared and equipped with information about local resources is also important. Finally, we know that emergency room use should be considered carefully since it is a costly option when there may be other alternatives better suited for non-urgent counseling needs.

When asked about where they would refer someone who was "thinking about hurting themselves or ending their life", community members is mostly the Smoky Mountain LME Local Crisis Number 1-877-492-2785 (24%), a doctor, the health department, or other clinic (18%), followed by Daymark Recovery Services (12%), a pastor or church member (11%), another counselor or therapist (10%), or the National Suicide Prevention Hotline 1-800-273-8255.

To learn more about suicide, read the NC Suicide Prevention Plan. This report details what suicide trends are in NC, common means of suicide, who is at most risk, and where suicide rates are highest. Below are facts from the Violent Death Registry System (VDRS, NC DPH, NC DHHS, 2008-12) about characteristics shared among youth and elder populations who were victims of suicide. According to the VDRS, most suicide death means across all age groups are linked to firearms 55%, hanging 20%, and poisoning 20%. The percentages shift slightly, but the rank order in elder and youth groups is the same.

Youth Facts (2008-2012, VDRS)

- Forty-nine percent of female and 31 percent of male suicide victims were characterized as having a current mental health problem.
- A similar trend was seen for mental health treatment. Females (43%) were more likely than males (26%) to be receiving treated for a mental health problem at the time of death.
- Thrity-six percent of female and 35 percent of male suicide victims had an intimate partner problem.
- Twenty-four percent of male and 26 percent female victims had disclosed their intent to commit suicide to someone else.
- Females (31%) were more likely to leave a suicide note than males (23%).

Elder Facts (2008-2012, VDRS)

- Nearly half (46%) of elder male suicide victims with circumstance information were characterized as having a current depressed mood at the time of death compared to 34 percent of females.
- Fifty-five percent of elder female and 39 percent of elder male suicide victims had a current mental health problem.
- Twenty percent of elder females whereas only 5 percent of elder males had a history of prior suicide attempts.
- Fifty-seven percent of males and 48 percent of females had a physical health problem.

Substance Abuse

Substance abuse is an issue worth further exploration since poisoning deaths, tobacco use, and alcohol related crashes all are influencing health outcomes for the county. Substance abuse may include alcohol use, tobacco use, or other drugs, including prescription drugs. We also know that substance abuse history increases risk of suicide (CDC, 2015).

The community opinion survey results also indicate that people are aware of substance abuse problems that may exist in the county. Drugs and alcohol was as the top concern with 63% of survey participants ranking it the leading health problem in the county and 79% believe that underage drinking is a problem in the county. Over 38% said that teens likely access alcohol through their peers or older siblings, and an additional 22% said that alcohol is accessed from parties, 16.5% believe it is accessed due to unsupervised (unlocked) alcohol being left in the home, 11% believe parents provide it/approve, 8% believe youth use a fake ID, and many people wrote-in comments that all of the above applied.

Community members ranked the top 3 substance abuse problems in the county and methamphetamines were ranked the top concern at 64%, followed by abuse or misuse of prescription drugs as the highest substance abuse problem at 60%, alcohol 56%, tobacco 48%, marijuana 27%, driving after using alcohol or other drugs 26%, liquid nicotine 4%, hallucinogen/club drugs (ecstasy, mushrooms) 4%, and synthetic drugs (bath salts, spice, K2).

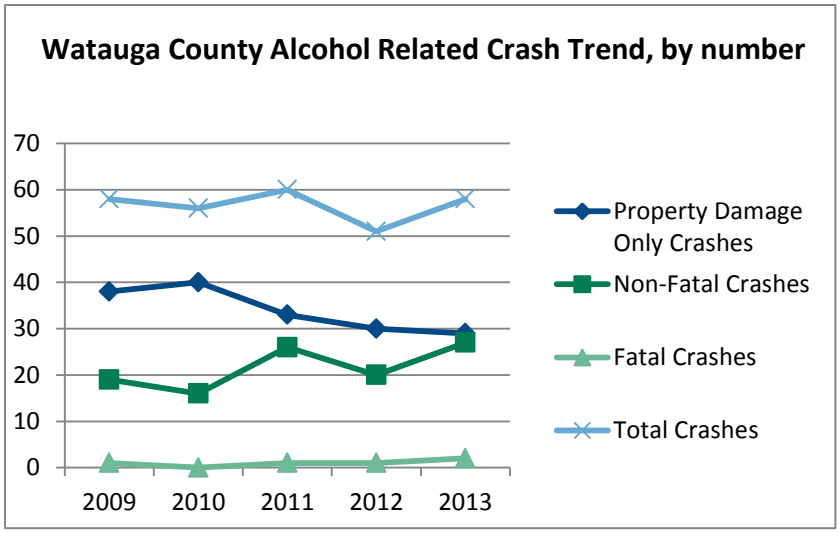
The leading substance abuse concerns ranked by community opinion survey responses

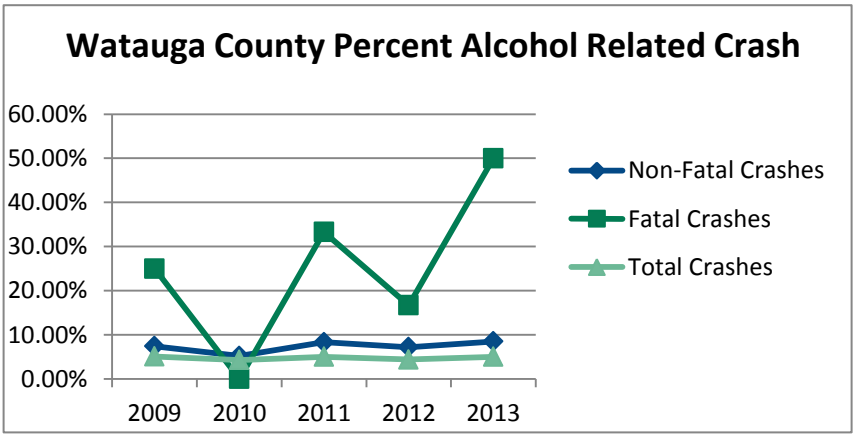
Rank	Substance	Percent selected by survey respondents
1	Methamphetamine	64%
2	Prescription Drug Misuse/Abuse	60%
3	Alcohol	56%
4	Tobacco	48%
5	Marijuana	27%
6	Driving after using alcohol or drugs	26%

Emerging substances such as electronic nicotine delivery systems (ENDS) are also important to consider since they may be misleading as they have been marketed as water "vapor" or non-addictive substance. Currently, there is no FDA regulation that provides consistency in the products sold, and much is unknown about the potential harmful effects that may occur. Most survey respondents reported never using an electronic nicotine device 86%, while 8% reported current use of electronic nicotine devices (4.6% to help quit smoking [which is unproven], 3% so they can use it in places that prohibit smoking [places may adopt policies that include e-cigarettes as part of a comprehensive tobacco free policy], 8.6% reported using tobacco currently, 6% reporting desire to quit using tobacco, and 24% reported having quit tobacco product use.

Alcohol related crashes and DWI

The data below shows the trend of alcohol-related crashes in Watauga County for the 2009-2013 time period (NC Alcohol Facts, UNC HRSC). The graphs show two perspectives: the number of crashes related to alcohol (top) and the percentage of all motor vehicle crashes related (bottom). Note that though alcohol-related crashes represent a smaller percentage of overall crashes at 5% in Watauga compared to 4.9% in NC, the crashes that are related to alcohol have been deadly, with over half of all fatal crashes in 2013 being related to alcohol (NC Alcohol Facts, UNC HRSC, 2014).





Driving While Impaired and Driving After Consuming Charges

In 2013, there were 410 motorists charged with Driving While Impaired and 70 motorists under the legal alcohol consumption age of 21 years charged with Driving After Consuming (NCAF, UNC HRSC, 2014). The Driving While Impaired charges show an increasing trend up from 341 in 2009 while the Driving After Consuming show a decreasing trend down from 104 in 2009. This data is important to note and review further with law enforcement and community coalition members since this data indicates risk behavior that could cause a future alcohol-related crash and warrants ongoing education and enforcement efforts. Learn more about NC Driving While Impaired Laws at the NC Department of Public Safety. The Watauga Substance Abuse Prevention coalition is a great resource for getting involved.

Unintentional injury deaths

Unintentional injuries can encompass a broad category of causes of death. In particular, we are interested in the ones that may be leading among the types of unintentional injuries that could have been prevented. Overall, there were 43 deaths due to poisoning between 2009-2013 (NC SCHS, 2015) with 63% due to unintentional poisoning and 19% due to suicide, 19% due to other mental disorders.

Suicide 8 deaths

Unintentional poisoning 27 deaths

Mental disorders 8 deaths

Overall 43 deaths

Among those who died due to unintentional poisoning, 89% or 24 were due to use of narcotics, one was due to antiepileptic, sedative hypnotic drugs, one due to antiparkinson drugs, 10 were due to other opioids, 4 methadone, 4 other synthetic narcotics, 3 cocaine, 1 benzodiazepine, 1 psychotropic drug, 4 unspecified, and 3 alcohol.

Unintentional injuries are the 4th leading cause of death overall for Watauga County with a mortality rate of 42.5 per 100,000 compared to 29.3 per 100,000 in NC (NC SCHS, 2015). During this time period, there were 100 deaths due to unintentional injuries.

It affects age groups across the lifespan, with the following rank order by age group, 2009-2013 NC SCHS

Cause of death Rank in age group	Age Group	Number of deaths	Mortality rate per 100,000
2	0-19 years	3	5.1
1	20-39 years	11	11.5
3	40-64 years	31	44.2
4	65-84 years	26	89.6

Community assets that support health

There are many community assets that support health. The health of the economy and education system is an important part of having a healthier population, and the reverse is also true.

Below are some assets in *Watauga County* that help support health, though this list is not exhaustive. For more information about community assets that support health, see **Appendix D: Community Health Resources.**

Access to outdoor recreation and parks

Parks and recreation are not only important for promoting physical activity for all ages, they are also good for improving quality of life and can be used as economic tools to attract business sectors. Recreation plans that are updated routinely are important for garnering additional resources through grants or other opportunities that can also boost tourism like fishing, biking, or hiking.

Access to healthy foods

Healthy foods are an important asset that not everyone has easy access to or can afford. Providing multiple locations where more healthy foods are available through farmer's markets, community stores that sell healthy foods, community produce box programs, and restaurants that feature healthy menu items all support the easy access of healthy foods. So are healthy foods and beverages available at faith, work, schools, and childcare settings. Supporting locally grown or produced products means shortening the food supply chain and increasing economic wealth for community residents, another key ingredient for healthy living. Policies like farmland preservation and Farmer's Market land use protection provides important policy to support these efforts.

Access to indoor recreation opportunities

Due to the seasonal climate in the NC Mountains, indoor recreation opportunities are particularly important. Providing safe places for indoor physical activity is an important component of providing support for healthy behaviors like walking or taking an exercise class, which can offer additional social support. These types of opportunities should include low cost and free options for community members who would otherwise be unable to afford them. Though these assets may not be considered community healthcare assets, they could serve as sources for healthcare needs.

Active transportation options

Rural communities are dispersed sparsely and often transportation options are limited to cars alone. However, communities can adopt street designs that make downtown areas more attractive and safer for physical activity to both boost physical activity, but also boost economic development. Active living plans that incorporate connectivity of greenways, bikeways, and sidewalks or multi-use paths offer interconnection opportunities that make it possible to move for function rather than only health reasons.

Smart growth and complete streets

Smart growth incorporates a set of principles of design and growth that is managed and supports the culture the community would like to maintain over time. Most often this is a design principle incorporated into Comprehensive plans of Counties and Municipalities. Complete streets policies allow for street design plans and maintenance efforts to incorporate needs of all users, not just cars. Complete streets support active transportation.

Clean water, air, sanitation, and safe food in permitted establishments

Public health permitting supports maintenance critical to maintaining sanitation and safe food, clean water, and air. Public health staff members support the clean water, smoke-free air in restaurants and bars, and safe food handling in a variety of establishments that serve those most vulnerable including preschool and school aged children and hospital patients.

Healthcare coverage and services

Providing healthcare coverage is often synonymous with having a primary healthcare provider. A practitioner knowing about your healthcare needs and being able to coordinate those needs with other specialists or supportive therapies means that care is coordinated, costs are often reduced, and better healthcare outcomes are achieved.

Access to the local hospital means special healthcare needs that are urgent or require special inpatient care can be provided without the strain of travel to another community. In addition, hospitals and hospital systems are often among the largest employers in the county, which provide important economic benefit to the community.

Services that meet the needs of special groups in the population

Special services that meet the needs of special groups that require consideration include special social services like those offered at the Department of Social Services, but they may also include innovative partnerships that address complex healthcare or developmental delay issues. They may also be groups aimed at addressing poverty and homelessness or organizations that serve the community members who are food insecure. Finally, this may include ensuring that services available to the general public include special considerations for those who do not speak English as a first language.

Faith community resources

Faith community resources can be very important in communities, and may help address important health needs including social support or respite services for caregivers. Faith communities often have programs that support substance abuse like AA or they may have services that seek to engage special populations like youth. These services are important for the community connectedness and social support mechanisms can help provide important fabric to initiate and support health promotion programs.

Non-profit organizations, volunteer groups and civic organizations

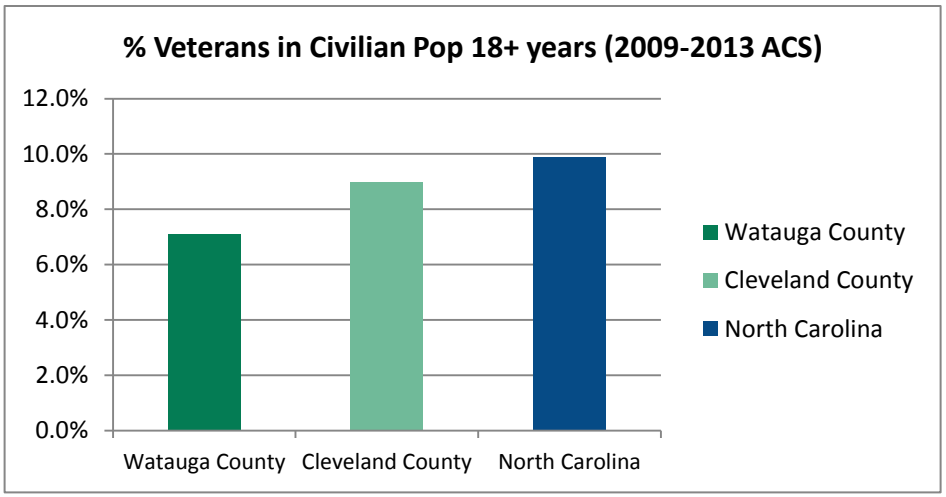
Non-profit organizations are an important part of addressing community needs, supporting prevention efforts, and serving community members by providing services that may otherwise be unavailable. Volunteer groups and civic organizations engaged in community efforts are important in acknowledging and promoting important community concerns and also can be helpful in addressing important priorities. First responders are volunteers and offer quick response to neighbors in need during emergencies before EMS arrives. These organizations, such as volunteer fire departments, along with county and municipal public safety, are important for community safety and social support.

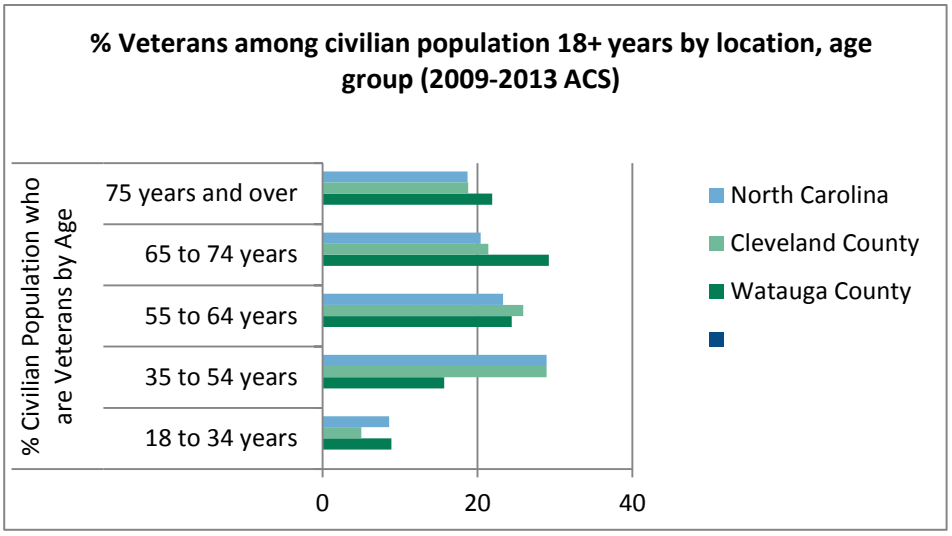
Special populations to remember

Special considerations are warranted for specific groups in the population to ensure that they have been considered when policy and health planning decisions are made. A special population may be such because of their socioeconomic status, age, gender, or first language.

Veterans

Our service men and women are considered a special population by the Centers for Disease Control and Prevention. Recent news has shed light on the national concern of the challenges that military service veterans and their families face. Overall, Watauga has *a lower* overall percentage of veterans compared to the peer county, and that for NC overall. Veteran ages are mostly distributed between middle-aged to elderly population, but about 9% are younger ages (US Census Bureau, 2013). Among those in the civilian population where poverty status is determined, an estimated 11.2% of veterans are living below the poverty level and 28% of veterans have a type of disability (ACS, 2009-2013).





Children

Children are an important population to remember since they may be disproportionately affected by health or social problems beyond their control. In addition, considering developmental needs of children during public health emergencies or natural disasters that may require emergency response is important in developing preparedness plans. According to the American Community Survey (ACS) estimates 2009-2013, there are 11,857 people age 0-19 years living in Watauga County, and of those, 1,848 are children age 0-4.

Elderly

The elderly population is an important group to consider not only because of age, but there may be mobility and transportation challenges that come with age which is more frequent in older adults when compared to others. Older adults have needs such as in home care or special nursing care, may have food insecurity challenges, and may have challenges in transportation which may be needed to access important resources such as medical appointments or congregate meals important for social support. According to the American Community Survey (ACS) estimates 2009-2013, there are 7,157 people who are age 65+ years living in Watauga County.

People with developmental disabilities or special healthcare needs

People with special healthcare needs or developmental disabilities are important groups that require additional planning for emergency response, but also for health programming and services that may be available in the community. This group may include those with developmental disabilities or other needs such as blindness, deafness, or autism disorders, among others. Transportation may be a challenge for these individuals, especially given the specialty healthcare and other complementary health services like physical therapy that is often needed by people in this group. According to Community Commons, using the ACS estimates, there are an estimated 4,864 people or 9.48% of the non-institutionalized civilian population in Watauga County that have some type of disability. There is nearly an even distribution between gender, with 9.1% who are male and 9.8% who are female within this population. The largest group included are those who are 65 years and older which represents 29.41%, followed by adults age 18-64 who represent 6.84%, and children under age 18 that represent 5.58% of this population group (Community Commons; ACS).

People without health insurance

Considering people without health insurance is important since lack of health insurance may be linked to lack of affordability of healthcare services. In addition, individuals without health insurance may not have a primary medical home, which may result in more simple, acute care needs that could be addressed or prevented in a primary healthcare setting being seen in a more urgent, costly setting such as the hospital emergency department. This group may also have challenges in adhering to medical advice since prescription medications or diabetic supplies may be very costly without health coverage. According to the Small Area Health Insurance Estimates (SAHIE, 2012), Watauga County has 32,643 in the total population age 18-64, and of those, 7,646 or 23.4% have no health insurance. If applying the same data source for children, the total population age 18 and younger is 7,383 and of those, 581 or 7.9% are uninsured. Currently, there are some services in the community designed to help meet this need including the personal healthcare services offered by the Watauga County Health Department, Community Care Clinic, High Country Community Health (a federally qualified health center), and Appalachian Regional Healthcare System's Appalachian Healthcare Project that serves uninsured adults. In addition, medication assistance programs are offered by the Hunger and Health Coalition in addition to that offered by Appalachian Healthcare Project. Often, state and federal grant resources are needed to ensure the most vulnerable adults receive primary healthcare and medication assistance.

People who speak a language other than English at home

People who speak another first language other than English are a population important consideration. The data from the American Community Survey (ACS) and Community Commons indicate that the ethnicity of most of those in Watauga County who do not speak English as a first language are Hispanic or Latino. Overall, of the population age 5 years and older, there is an estimated 832 people who are considered to have limited English proficiency, or, they speak another language at home and speak English less than "very well" and of those 643 are Hispanic or Latino and 189 and not Hispanic or Latino. When considering those who may be linguistically isolated in Watauga County, there is an estimated 489 or 1.8% of the population age 5 years and older who live in a home in which no person 14 years or older speaks English or in which no person 14 years or older speaks a non-English language and speaks English "very well." The linguistically isolated population in NC overall is estimated to be 3.14% (ACS; Community Commons, 2015).

People living in a geographically isolated location

Watauga County is considered 44.5% urban and 55.4% rural county based on US Census 2010 data about population density, count, and size thresholds (Community Commons, 2015). The age distribution of Watauga County residents living in rural areas include 5,159 who are under age 18, 18,517 who are 18-64 years, and 4,640 who are age 65+ years. While living in a more geographically isolated location does not necessarily equal poorer health, it does call for special attention. In particular, during public health emergencies, natural disasters, or urgent medical needs requiring emergency response, these individuals must have special consideration since their location may increase the risk of poor communication and reduced access to needed services. This is particularly important when also considering the impact of sparse location and transportation needs to stay healthy like shopping for healthy foods, going to safe places to be physically active, or accessing medical or social services located in town.

People who are living in food insecure households

According to Feeding America Map the Meal Gap 10,200 people in Watauga County were living in food insecure households in 2012, and the rate of food insecurity was 19.8%, compared to 18.6% in NC overall. Food insecurity is a concern not only because of hunger, but also nutritional quality since higher calorie foods are often less nutritious and can put people at increased risk for obesity. Overall, 72% of those who are food insecure are eligible for food assistance programs when only considering meeting < 200 % federal poverty level incomes. Another 28% or nearly 1/3 of all food insecure rely on charitable responses to local food pantries, kitchens, and programs to meet their needs.

Among children in Watauga County, 27.1% or 1,920 are living in food insecure households (Feeding America Map the Meal Gap, 2014). This is above the NC percentage of children in food insecure households which is 26.7%.

Of the children who are food insecure, 25% are ineligible for federal food assistance and must rely on charitable programs offered by non-profit organizations and faith communities.

People who are homeless

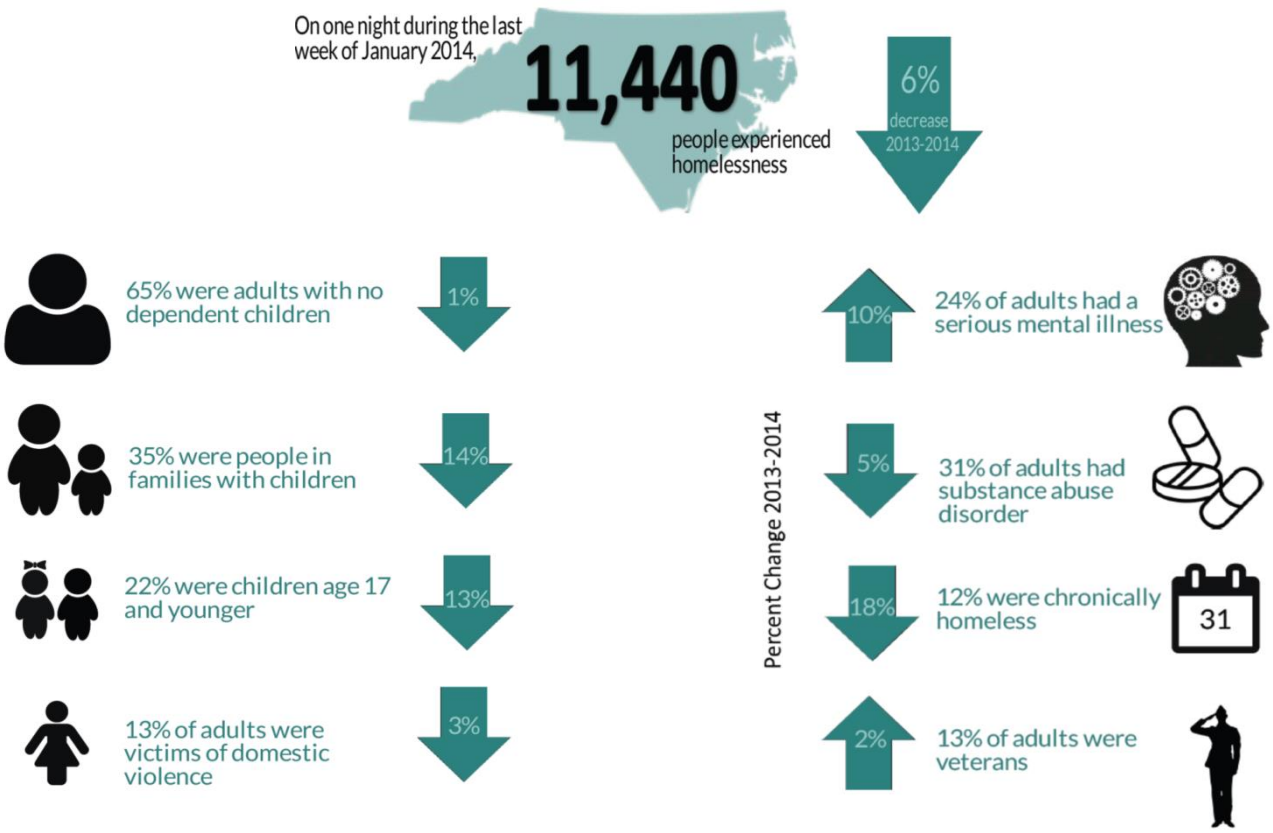
Homeless populations are important when considering those most vulnerable. The infographic below is from the NC Coalition to End Homelessness with data from January 2014. Overall, the Northwest Region has the highest incidence of homelessness, 41 per 10,000 people. The estimated homeless population for the region is 854 people. The Hospitality House of Boone is a regional facility offering emergency, transitional, and permanent housing assistance for individuals and families. In addition, three meals a day and laundry facilities are also available for individuals and families beyond those offered shelter. Learn more about the Hospitality House. Shelter and support services are also offered by OASIS for victims of domestic violence.

Read about students in NC experiencing homelessness in the NC Report Card by the National Center on Family Homelessness.

Homelessness in Watauga County

According to the 2014 point-in-time calculation **Watauga County has 190 people who are homeless, and of those 58% were unsheltered and over 22% of those unsheltered were children age 17 and younger.** Three unsheltered homeless were veterans and one additional veteran was in emergency shelter.

2014 NC Facts about Homelessness (NC Coalition to End Homelessness, 2014)



Priority health concerns

Reviewing community health needs is only part of the importance of conducting community health needs assessments. The graphic below indicates the overarching goals of this community to lead efforts around solving community health problems through cross-sector engagement and strong community input and collaboration.

The Health Vision Council was the steering group involved in consulting on the survey design, distribution, and analysis. In addition, this group participated in reviewing the community health data in two ways. First, group members participated in distributing and promoting the surveys in paper and electronic formats that provided greater response. During the February, 2015 meeting in which the group reviewed the results of the community health opinion survey and were presented a powerpoint presentation detailing the secondary data results created by Appalachian District Health Department.

Each member saw the criteria for prioritization to use when choosing the Top 3 health issues in the February, 2015 meeting:

✓ **This health issue is a problem for many people living in the County.**

✓ **This is an issue that could be changed with more resources and/or action steps to address it by collaborative groups in this community.**

✓ **If action is not taken to prevent or address this health issue, it could be more damaging to County residents long-term.**

✓ **This is a complex issue that is best solved through working together.**

✓ **I am personally and/or professionally interested in working towards addressing this health issue.**

Health Vision Council members used sticker votes to choose their top 3 priority health concerns to improve:

- ✓ Chronic Disease Prevention, Management, & Awareness
- ✓ Physical Activity & Nutrition
- ✓ Substance Use/Abuse

Next steps for the coalition

Each priority among the list was provided a brief description so group members could understand the intention behind the priority chosen.

Chronic Disease Management and Awareness

Obesity, Heart disease, chronic lower respiratory disease/COPD, stroke, cancer, diabetes, and hypertension

Physical activity and nutrition

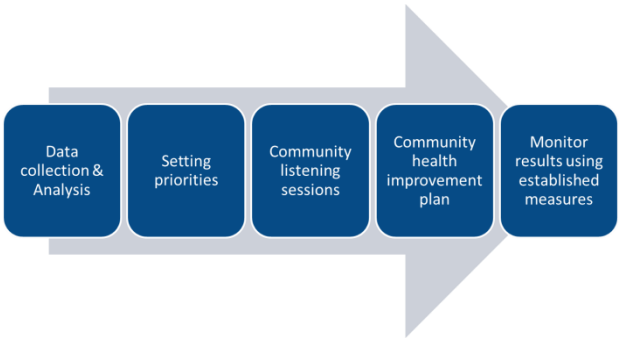
Access to physical activity or recreation, accessing healthy foods, and making healthy choices for eating healthy and making physical activity easier for all

Substance Use and Abuse

Drugs, alcohol, and tobacco; including misuse or abuse of prescription drugs and use of e-cigarettes or other devices for nicotine delivery

Next steps for community health improvement planning

The group's next steps in addressing important health priorities are briefly described below in the graphic. Since each priority requires both the use of evidence-based interventions (where they exist) and community context, and because some sectors of the population were not adequately heard during the community opinion survey process, the next steps will be conducting 2 to 4 community listening sessions in community locations selected by the coalition. One specific additional session will be aimed at asset mapping so community collaborators already engaged can participate in identifying assets that support health and potential gaps that may exist. Community members will learn some key facts about their community's health, with some of the time will be spent on gathering input from community members about solutions or reactions to proposed solutions using evidence based strategies. This process will take place in the Spring/Summer of 2015. Results from community listening sessions will lead the group towards the development of a comprehensive community health improvement plan that will be used for the next two to three years to implement and measure results. This report will be released in a variety of ways using networking, media, and other outreach. Community health improvement plan elements will be disseminated to further engage community members in solving health problems.



A Healthy NC in 2020

Local public health efforts are linked up to state and national efforts working toward the same goals over time. Appalachian District Health Department builds upon Healthy People 2020 national strategies and Healthy NC 2020 for statewide strategies. Learn more about Healthy NC 2020 http://publichealth.nc.gov/hnc2020/foesummary.htm

In addition, the Healthy NC 2020 plan will serve as a guide for future development of action plans to lead community health improvement for the county. There are objectives to utilize as a guide for local objectives.

Using evidence to inform the work moving forward will be important as will ensuring that approaches used fit the community needs and cultural context. Community partnerships are critical to this important work since improving the health of the public involves multiple stakeholders in public, private, non-profit, and community based members.

References & Appendices

For a complete list of references, please see the secondary data book appendix referenced below.

Appendix A: Acknowledgments & community partners list

Appendix B: Community opinion survey databook, including the survey instruments

Appendix C: Secondary databook with references

Appendix D: Community Resource Guide

Promoting safe & healthy living, preventing disease, & protecting the environment

Alleghany County Health Department
157 Health Services Road
Sparta, NC 28675
(336) 372-5641 Clinic
(336) 372-5644 WIC & Nutrition
(336) 372-8813 Business Office
www.apphealth.com

Ashe County Health Department
413 McConnell Street
Jefferson, NC 28694
(336) 246-9449 Clinic
(336) 246-2013 WIC & Nutrition
(336) 246-3356 Environmental Health Office
www.apphealth.com

Watauga County Health Department
126 Poplar Grove Connector
Boone, NC 28607
(828) 264-6635 Clinic
(828) 264-6641 WIC & Nutrition
(828) 264-4995 District Office/Environmental Health
www.apphealth.com

Appendix A: Acknowledgments

Special acknowledgments go to the High Country Health Vision Council, supported by partners and High Country United Way, for supporting the development of the community health opinion survey, the community health needs assessment timeline, community opinion survey data analysis, and community needs assessment priority selection. Special thanks to NC Farm Bureau Healthy Living for a Lifetime & Watauga County Farm Bureau for some sponsorship used to support this effort.

The group below details names involved with the Health Vision Council of the High Country Vision Council crossing income, health, and education.

Name	Organization/Community role
Josh Jarman	Appalachian Regional Healthcare System
Rachel Miller	Appalachian District Health Promotion/Triple P
Beth Fornadley-Johnson	Appalachian District-Region 3 ARTS Coordinator
Melissa Selby	Community Care Clinic
Jennifer Greene	Appalachian District Health Department
Bryan Belcher	High Country Community Health
Alice Salthouse	High Country Community Health
Margie Mansure	NC Cooperative Extension, Food & Nutrition
Stephen Poulos	Watauga County Parks and Recreation
David Willard	Northwest Tobacco Prevention Coalition, ADHD
Hollie Storie-Wilcox	Western Youth Network
Elizabeth Young	Hunger and Health Coalition
Jessica Farley	Toe River Health District
Bob Wilson	Daymark Recovery Services
Tom Hughes	Watauga Department of Social Services
Gillian Baker	Appalachian Regional Healthcare System
Melissa Bracey	Appalachian District Health Department
Beth Lovette	Health Director, Appalachian District Health Dept
Susan Marlowe	NC Access Care of the Blue Ridge
Gretchen Summerville	Western Youth Network
Robin Winkler	Smoky Mountain Center, LME/MCO
Clint Cresawn	Appalachian District Health Department
Stephanie Craven Bunch	Appalachian District Health Department
Jennifer Greene	Appalachian District Health Department
Nancy Reigel	High Country United Way Board of Directors
Gary Childers	High Country United Way

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Gretchen Summerville, of Western Youth Network, for her contributions to draft, revise, and disseminate the community health opinion survey report across the region.

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Gillian Baker & Vicki Stevens, of Appalachian Regional Healthcare System for their support of the community health needs assessment process and report development.

Nancy Reigel, Chair of Community Impact, High Country United Way Board of Directors and leader of the High Country Vision Council for her vision to change community conditions that impact Avery and Watauga Counties by weaving education, income, and health together with the shared vision of all to create lasting collective impact in the community.

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David Triplett	Watauga, Board Vice-Chair
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