Haywood County 2015 Community Health Assessment

ACKNOWLEDGEMENTS

This document was developed by Haywood County Health and Human Services Agency, in partnership with Haywood Regional Medical Center and the Healthy Haywood Partnership as part of a local community health (needs) assessment process. We would like to thank and acknowledge several agencies and individuals for their contributions and support in conducting this health assessment:

Healthy Haywood Steering Committee

- Chair- Nancy Bauman

Healthy Haywood Partnership

- Member Organizations

Haywood Regional Medical Center

- Philip Wright, CEO
- Susan Schneider, Director of Rehab Services and Cardio Pulmonary Rehab

Haywood County Health and Human Services Agency

- Patrick Johnson- Public Health Director
- Lisa Davis- Nursing Director/Child Health Nursing Supervisor
- Megan Hauser- Health Educator
- Anita Wilkins- Health Educator/Preparedness Coordinator

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

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Purpose and Process

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

Data Summary

Community

Haywood County is home to 59,471 residents, both full-time and seasonal. It has four incorporated towns and several unincorporated communities. Waynesville has 9,761 residents, Canton has 4,159, Maggie Valley has 1,247 and Clyde has 1,235 (US Census Bureau, 2014).

Demographics:

- White- 96.5%
- Hispanic- 3.7%
- Black- 1.2%
- American Indian/Alaskan Native- 0.6%
- Asian- 0.5%
- Adults 65 and older- 23.7%

(US Census Bureau, 2014)

Health Outcomes

2012 Health Priorities

1) Substance abuse
    - Progress:
        - Trainings have been held for the ''Be a Responsible Seller and Server'' program.
        - In 2015, Haywood County's tobacco-free property policy became an ordinance, allowing for stronger enforcement.
        - The Town of Waynesville adopted a tobacco-free ordinance in 2015.
        - In 2015, Haywood Regional Medical Center began offering ''Freedom From Smoking'' classes.

        - All five law enforcement agencies carry Narcan, a reversal medication for opioid overdoses. This project is overseen by Haywood County EMS.
        - A diverse group, ''Pain Changers,'' has formed to address opioid overprescribing.
    - Challenges:
        - Adult tobacco use rates have increased by over 4% (WNC Healthy Impact, 2015).
        - State allocation for tobacco use prevention has significantly declined. No funds are dedicated for youth tobacco use prevention.
        - The opioid overdose death rate remains high (Haywood County Medical Examiner).
        - Many people perceive opioids to be the best option. Research from the National Safety Council shows that an acetaminophen and ibuprofen combination is often more effective.
        - Underage drinking is sometimes seen as a rite of passage.
        - Binge drinking by adults has increased by 4% (WNCHI, 2015).
2) Physical activity and nutrition
    - Progress:
        - Five schools have Girls on the Run (GOTR) teams. GOTR is an effective curriculum that combines running and important life lessons.
        - Several schools participate in Active Routes to School (ARTS) activities. ARTS funding is available through 2019.
        - Two local farmer's markets now accept SNAP/EBT benefits. One market also offered bonus dollars to SNAP users in 2015.
    - Challenges:
        - Adult obesity rates have increased by over 3% (WNC Healthy Impact, 2015).
        - Fewer adults are eating the recommended servings of fruits and vegetables (WNCHI, 2015).
        - Over 16% of adults say it is difficult or very difficult to access fresh produce at an affordable price (WNCHI, 2015).
3) Chronic disease
    - Progress:
        - Diabetes rates among adults have decreased by 5% (WNC Healthy Impact, 2015).
        - Staff at the Haywood Senior Resource Center and Haywood County Health and Human Services Agency have been trained to lead the

Diabetes Prevention Program. Both agencies will begin leading this evidence-based program in spring 2016.
        - The rate of high blood cholesterol has declined among adults (WNCHI, 2015).
    - Challenges:
        - The rate of pre-diabetes rate among adults has increased by nearly 3% (WNCHI, 2015).
        - The rate of adults with high blood pressure has increased. Over 43% of adults experience this condition (WNCHI, 2015).
4) Social Determinants of Health/Access to Care
    - Progress:
        - Haywood County funds a part-time Physician's Assistant at the Good Samaritan Clinic.
        - Blue Ridge Health Center and the Good Samaritan Clinic are merging. Blue Ridge is a federally qualified health center.
        - Health insurance enrollment events were held in February 2015 and January 2016. Health care navigators also assist consumers outside of these events.
    - Challenges:
        - Many people do not qualify for Medicaid and are unable to afford private insurance.
5) Mental health
    - Progress:
        - Smoky Mountain Center will develop suicide prevention plans for each county in their service area. This organization will begin the process by surveying each county served.
        - Over 75% of adults reported that they always or usually get needed social and emotional support (WNC Healthy Impact, 2015).
    - Challenges:
        - More adults reported having greater than seven days of poor mental health within the past month (WNCHI, 2015).
        - Haywood County averages one suicide per month (Haywood County Health and Human Services Agency).
6) Unintentional injury and maternal/infant health/unintended pregnancy tied for priority six.
    - Progress:
        - The infant death rate has decreased (State Center for Health Statistics, 2009-2013).

        - The rate of unintentional motor vehicle injury mortality has decreased (SCHS, 2009-2013).
    - Challenges
        - Haywood County has a higher teen birth rate than North Carolina (County Health Rankings, 2015).
        - The county rate of low birth weight is higher than the state (CHR, 2015).
7) Dental health
    - Progress
        - Among 1-5 year olds with Medicaid, Haywood County has a higher average than the state of receiving dental services within the past year (State Center for Health Statistics, 2011).
    - Challenges:
        - The number of adults who visited a dentist in the past year has declined by 20% (WNC Healthy Impact, 2015).
8) Communicable disease
    - Progress
        - North Carolina's rate of childhood immunizations is higher than the national average (2013, ages 19-35 months, Centers for Disease Control and Prevention).
    - Challenges
        - Norovirus outbreaks have occurred in several locations in the county (Haywood County Health and Human Services Agency).
9) Environmental health
    - Progress
        - Haywood County Health and Human Services Agency (HCHHSA) received grant funds to assist with septic repairs.
        - No rabies cases were reported in 2013 or 2014 (HCHHSA).
    - Challenges
        - In 2015, harmful algae blooms were discovered in Waterville Lake (HCHHSA, The Mountaineer)
        - From 2013-2014, over 300 animal bites were reported (HCHHSA).

Populations at risk

- Individuals in poverty
    - Over 21,000 individuals fall below 200% of the federal poverty level (2009-2013, US Census Bureau).

- Victims of domestic violence

    - From 2012-2014, over 1100 clients experiencing domestic violence were served (2013-2014, Council for Women).

- Uninsured
    - Over 1/5 of 18-65 year olds are uninsured (2013, US Census Bureau)

Health Priorities

In November 2015, the Healthy Haywood Partnership held a prioritization meeting. Local data from a telephone survey was reviewed. Information was also shared from an electronic stakeholder survey. A diverse group of individuals was present, including substance abuse and mental health providers, business, government, faith and community or non-profit. Attendees were presented with a list of 11 health priorities. These priorities were taken from the report ''Healthy North Carolina 2020: A Better State of Health.'' Participants ranked each health priority based on five areas:

Magnitude: number of people who suffer from this problem
Consequences: seriousness to health if not addressed
Feasibility: probability of success in addressing this problem
Needs: needs to be addressed more thoroughly than it currently is
Interest: I am personally interested in helping with this issue

These areas were ranked as high, medium or low importance.

Each person's totals were added together. As a result, a new list of health priorities was determined.

2015 Health Priorities

1) Substance abuse (alcohol, tobacco and other drugs)
2) Mental health
3) Physical activity and nutrition
4) Chronic disease
5) Maternal and infant health
6) Sexually transmitted disease and unintended pregnancy
7) Injury and violence
8) Oral health
9) Social determinants of health

10) Infectious diseases and food borne illnesses

Next Steps

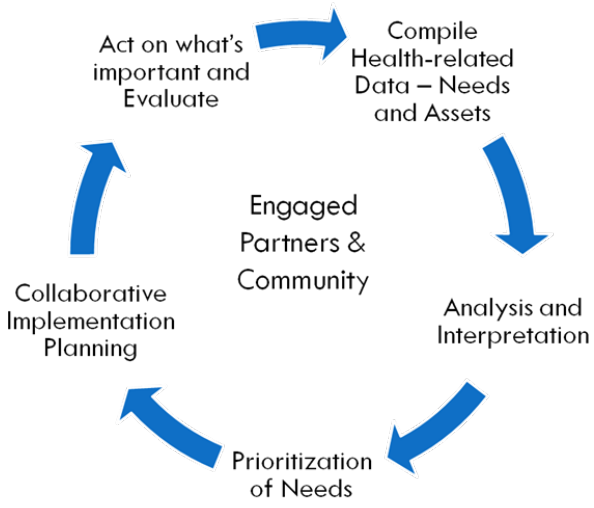
- Findings will be shared through the following methods:
  - Healthy Haywood website
  - Haywood County website
  - Presentations to stakeholders, including the board of the Haywood County Health and Human Services Agency.
  - Copies will be made available at the following locations: all Haywood County libraries and the public health services desk of the Haywood County Health and Human Services Agency.
- Plans for collaborative implementation/action planning and related development of strategies to improve top three health priorities.
  - Three work groups will form through the Healthy Haywood Partnership. Each work group will develop an action plan for one of the top three priorities.

CHAPTER 1 – COMMUNITY HEALTH ASSESSMENT PROCESS

Purpose

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

A community health assessment (CHA), which is both a process and a product, investigates and describes the current health indicators and status of the community, what has changed, and what still needs to change to reach a community's desired health-related results.



Definition of Community

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

WNC Healthy Impact

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

Data Collection

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

Core Dataset Collection

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

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

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

Additional Community-Level Data

Data from the State Center for Health Statistics, County Health Rankings and State of the County Health reports and the local media was reviewed. Data was also obtained from public health department staff.

Health Resources Inventory

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

Community Input & Engagement

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

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

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

At-Risk & Vulnerable Populations

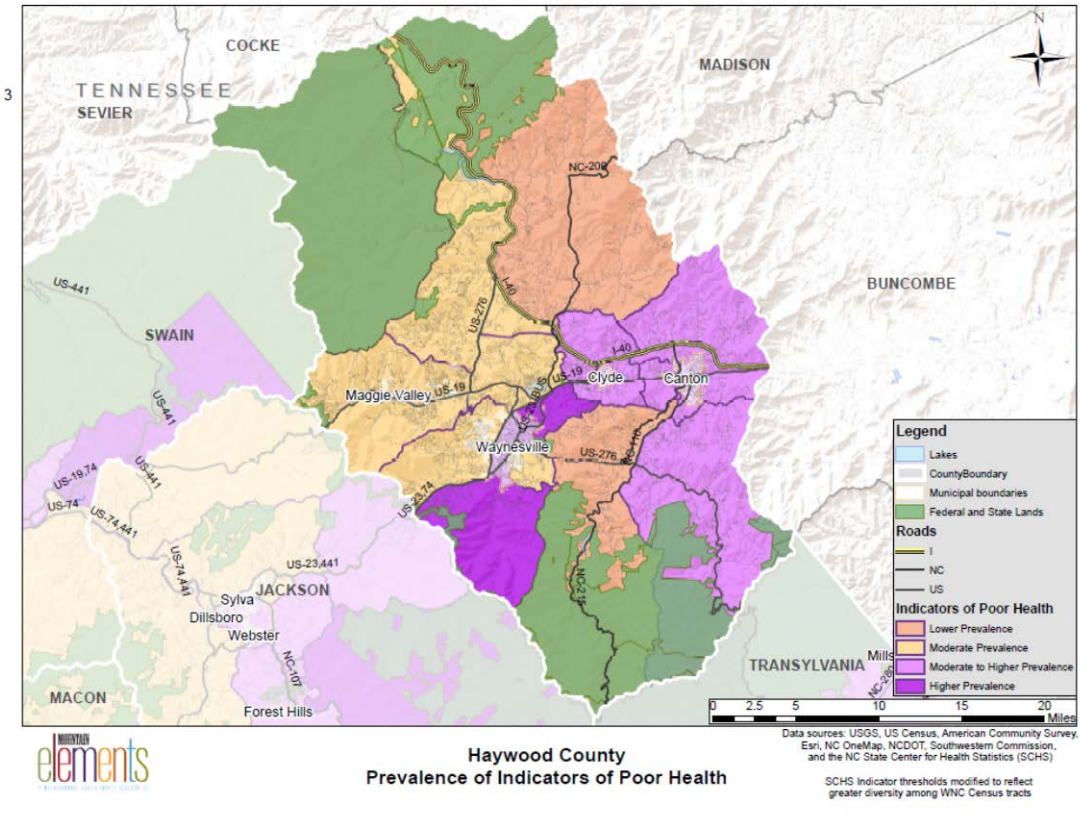
Throughout our community health assessment process and product, our team was focused on understanding general health status and related factors for the entire population of our county as well as the groups particularly at risk for health disparities or adverse health outcomes. In particular, for the purposes of the overall community health assessment, we aimed to understand variability in health outcomes and access of medically underserved, low-income, minority, and others experiencing health disparities. These populations include:

- Individuals who are uninsured or underinsured
- Individuals experiencing poverty
- Victims of domestic violence
- Pregnant women who smoke
- Individuals who have trouble accessing fresh produce

CHAPTER 2 – HAYWOOD COUNTY

Location and Geography

Haywood County covers 546 square miles**.** Waynesville covers 6.9 square miles, Clyde covers 0.8, Maggie Valley covers 1.6 and Canton covers 1.8. Haywood County includes parts of four nationally protected areas: the Blue Ridge Parkway, the Great Smoky Mountains National Park, the Pisgah National Forest and the Cherokee Indian Reservation/ Qualla Boundary. There are 13 peaks above 6,000 feet. All water in Haywood County originates here. Two lakes exist in Haywood County: Lake Logan and Lake Junaluska. Haywood County has 13 peaks with an elevation of over 6,000 feet (haywoodnc.net). Due to many high mountain ranges, travel can take a great deal of time. To drive from the northwestern most part of the county to the southeastern most part of the county is only 62 miles, but the travel time is over an hour and fifty minutes (Healthy Haywood).



History, Tradition and Industry

Haywood County was founded in 1808 and was named after John Haywood. The railroad came to Canton in 1881 and Waynesville in 1882 (haywoodnc.net). The area is a Blue Ridge Hertiage Area and is well-known for arts and crafts. Haywood Regional Arts Theater is an award-winning establishment. The county annually hosts Folkmoot, North Carolina's International Festival. Public street dances are a regular occurrence in the summer months. The population changes significantly depending on the season, as Haywood County has many part-time residents.

The area is home to Haywood Community College (HCC), an institution with over 50 programs. HCC has the only fish and game wildlife program in North Carolina.

Haywood County's largest employer is Evergreen Packaging Group. Other large employers are Haywood Regional Medical Center (a Duke LifePoint Hospital), Haywood County Schools and Haywood County Government.

Haywood County is also home to Lake Junaluska Assembly. Lake Junaluska is the headquarters for the Southeastern Juristiction of the United Methodist Church and the World Methodist Council. The Lake Logan Episcopal Center is located in the Canton area.

Population

- The Haywood County population has a slightly higher proportion of females than males (WNC Healthy Impact, 2015).
- The median age of the Haywood County population (45.6 years) is 0.9 years "older" than WNC regional average and 8.2 years "older" than the NC average (WNCHI, 2015).
- Haywood County has lower proportions of "younger persons" and higher proportions of the "older persons" than NC as a whole (WNCHI, 2015).

General Population Characteristics

2010 US

Census

County	Total Population (2010)	% Males	% Females	Median Age*	% Under 5 Years Old	% 5-19 Years Old	% 20 - 64 Years Old	% 65 Years and Older
Haywood	59,036	48.3	51.7	45.6	4.9	16.8	57.3	21.0
WNC (Regional) Total	759,727	48.5	51.5	44.7	n/a	n/a	n/a	n/a
State Total	9,535,483	48.7	51.3	37.4	6.6	20.2	60.2	12.9

CHAPTER 3 – A HEALTHY HAYWOOD COUNTY

Elements of a Healthy Community

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

- Physical activity opportunities
- Accessible and affordable health care
- Injury prevention
- Educational opportunities
- Communication and collaboration
- Prevention

(WNC Healthy Impact, Key Informant Survey, 2015)

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

Healthy Haywood is based on the concept that community members are the most qualified to effectively prioritize the health concerns in their community and to plan and execute creative solutions to these problems.

MountainWise, a program housed in the local health department, focuses on increasing access to healthy foods.

Community Assets

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

Natural Environment

- Its beautiful landscape and its rich culture & heritage.
- Beautiful mountain views.
- Our beautiful mountains, people, history and culture. For the most part, we are a caring and supportive community with values that support the needy and assist those in troubled times.
- It's a beautiful county that's also convenient to much more in the region.
- Natural water - creeks
- Environment of the mountains and culture of caring
- Water Quality
- Summer climate.
- Location, climate. Beauty of the landscape

Sense of Community

- Various community systems working together to help solve problems and help families find solutions.
- Lots of people and agencies working tirelessly to make change with very little money
- Community members work together effectively and compassionately to meet the needs of the underserved.
- Small-town feel
- Community and beauty of county
- Volunteers. Many great programs with people helping to support others, get the word out about help, and serving others. Of course, it goes without saying, we have many agencies that are there to help and provide opportunities for service. Great sense of community in so many individual areas of service.

People

- Its people
- People want to help and have big hearts but sometimes do not know how to help. Community support
- Its people and the outdoor quality of life.
- Our people. Very kind, generous, loving. But can be ignorant of facts. And set in their ways.

Safe Place to Live

- All law enforcement agencies working together for a better County as a whole and battling the drug issues the plague this community.
- Our leader in law enforcement, Chief of police and sheriff

Innovation

- There are some great innovators here.

Strong Health and Human Services Agency

- We have strong Health and Human Services Agency that works hard to serve our population. A committed staff has and will make a difference.

Tourism

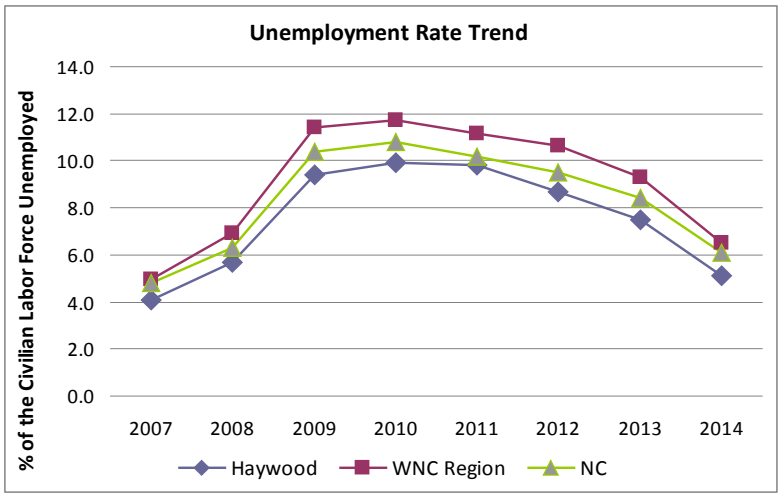
- Tourism

CHAPTER 4 – SOCIAL & ECONOMIC FACTORS

Income

The median household income for Haywood County is $41,557. This is $4,777 less than the median household income for North Carolina (US Census Bureau, 2009-2013). ''Income provides economic resources that shape choices about housing, education, child care, food, medical care, and more. Wealth, the accumulation of savings and assets, helps cushion and protect us in times of economic distress. As income and wealth increase or decrease, so does health.'' (County Health Rankings, 2015)

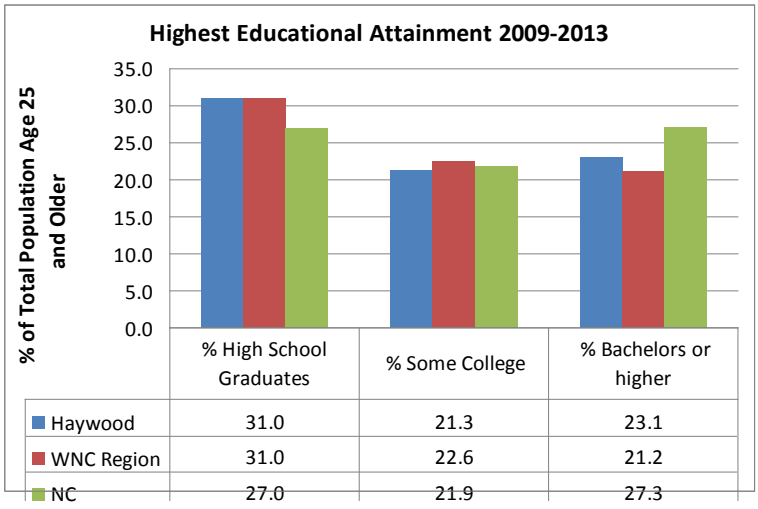
Employment



(NC Department of Commerce)

In 2014, Haywood County had an unemployment rate of 5.1%, having steadily declined since 2010. ''Employment provides income and, often, benefits that can support healthy lifestyle choices. Unemployment and under employment limit these choices, and negatively affect both quality of life and health overall.'' County Health Rankings, 2015

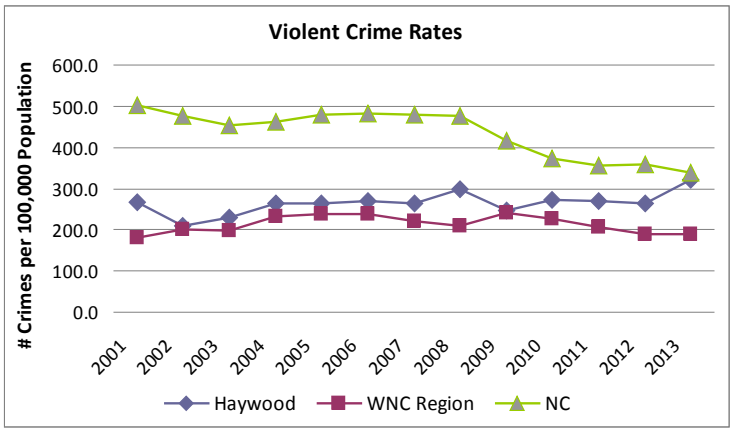
Education



(US Census Bureau)

Haywood County has a high school graduation rate of 79% (County Health Rankings, 2015). For 31% of our population, high school is the highest level of education (WNC Healthy Impact, 2015). ''Better educated individuals live longer, healthier lives than those with less education, and their children are more likely to thrive (CHR, 2015).''

Community Safety

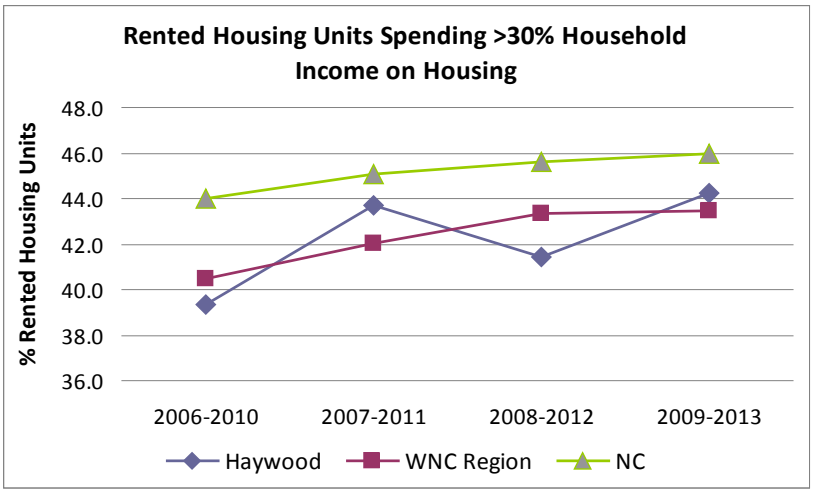


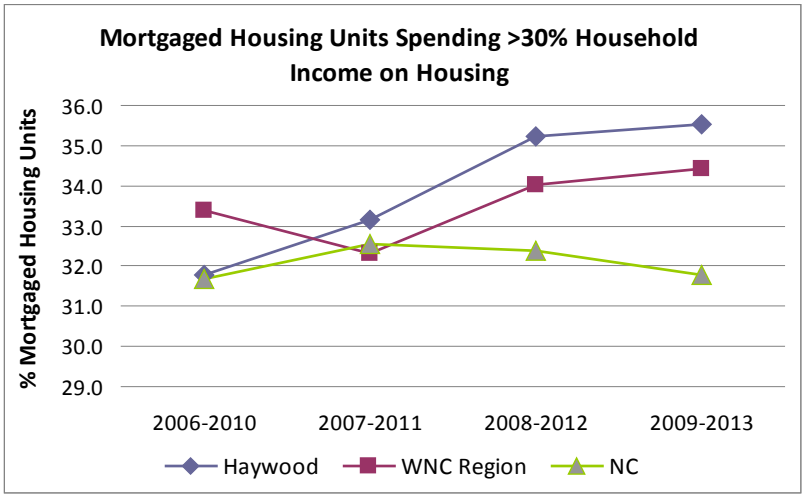
NC Department of Justice, State Bureau of Investigation

In 2013, Haywood County had a violent crime rate of 322.1 per 100,000. This rate has continued to increase since 2009. ''Accidents and violence affect health and quality of life in the short and long-term, for those directly and indirectly affected (County Health Rankings, 2015).

Housing

From 2009-2013, over 44% of renters spent more than 30% of household income on housing. During that same period, over 35% of homeowners spent more than 30% of household income on housing (US Census). ''Housing structures can protect us from extreme weather and provide safe environments for families and individuals to live, learn, grow, and form social bonds. However, houses and apartments can also be unhealthy or unsafe environments (County Health Rankings, 2015).''



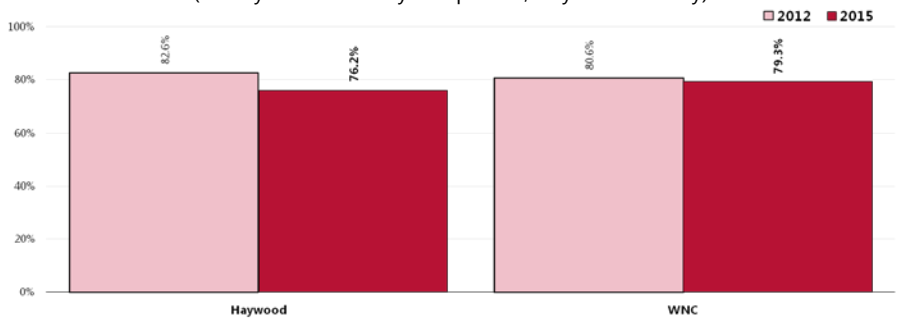


Family & Social Support

Over 82% of Haywood County residents report that they always or usually get necessary social and emotional support (WNC Healthy Impact, 2015). ''People with greater social support, less isolation, and greater interpersonal trust live longer and healthier lives than those who are socially isolated.'' County Health Rankings, 2015

"Always" or "Usually" Get Needed Social/Emotional Support

("Always" and "Usually" Responses; Haywood County)



Sources: • PRC Community Health Surveys, Professional Research Consultants, Inc. [Item 82]
Notes: • Asked of all respondents.

Chapter 5 – Health Data Findings Summary

Mortality

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

Leading Causes of Death, Age-Adjusted Death Rates per 100,000 Population

(5-Year Aggregate, 2009-2013)

Rank	Cause of Death	Haywood	
		# Deaths	Death Rate
1	Diseases of Heart	884	190.7
2	Cancer	733	158.4
3	Chronic Lower Respiratory Diseases	251	51.2
4	Cerebrovascular Disease	199	41.6
5	All Other Unintentional Injuries	136	41.3
6	Pneumonia and Influenza	85	18.8
7	Alzheimer's disease	82	17.0
8	Suicide	49	15.3
9	Unintentional Motor Vehicle Injuries	44	14.9
10	Diabetes Mellitus	66	13.9
11	Chronic Liver Disease and Cirrhosis	54	13.6
12	Nephritis, Nephrotic Syndrome, and Nephrosis	63	13.5
13	Septicemia	35	7.4
14	Homicide	11	**4.4**
15	Acquired Immune Deficiency Syndrome	0	**0.0**
All Causes (some not listed)		3,423	765.8

Rank	Cause of Death	North Carolina	
		# Deaths	Death Rate
1	Cancer	90,717	173.3
2	Diseases of Heart	86,285	170.0
3	Chronic Lower Respiratory Diseases	23,346	46.1
4	Cerebrovascular Disease	21,816	43.7
5	All Other Unintentional Injuries	14,403	29.3
6	Alzheimer's disease	14,000	28.9
7	Diabetes Mellitus	11,220	21.7
8	Pneumonia and Influenza	8,890	17.9
9	Nephritis, Nephrotic Syndrome, and Nephrosis	8,850	17.6
10	Unintentional Motor Vehicle Injuries	6,687	13.7
11	Septicemia	6,731	13.3
12	Suicide	6,070	12.2
13	Chronic Liver Disease and Cirrhosis	5,128	9.5
14	Homicide	2,742	5.8
15	Acquired Immune Deficiency Syndrome	1,471	2.9
All Causes (some not listed)		400,347	790.9

Leading Causes of Death

Table 30 compares the mean rank order of the 15 leading causes of death in Haywood County, NC for the five-year aggregate period 2009-2013. This data shows that heart disease, all other unintentional injuries, pneumonia and influenza, unintentional motor vehicle injuries, suicide, and chronic liver disease and cirrhosis rank higher as causes of death in Haywood County than in the state as a whole. Conversely, cancer, chronic lower respiratory disease, cerebrovascular disease, Alzheimer's disease, diabetes, nephritis, homicide and AIDS rank lower as causes of death in Haywood County than statewide.

The leading causes of death in Haywood County differ in rank order from the comparable list for NC, most notably in a higher county placement for all other unintentional injuries, suicide and heart disease. The county heart disease mortality rate of 190.7 exceeded the NC rate of 170. The county rate for all other unintentional injuries was 41.3, far exceeding the state rate of 29.3. The county suicide rate was 15.3 and the state rate was 12.2. Other differences in mortality statistics will be covered as each cause of death is discussed separately below. It should be noted from the onset, however, that for some causes of death there may not be stable county mortality rates, due to small numbers of deaths. Some unstable data will be presented in this document, but always accompanied by cautions regarding its use. Updated cause of death data has not been released since the 2012 CHA report.

Health Status & Behaviors

- Overall Health Status
    - 17% of adults reported being in fair or poor health (WNC Healthy Impact, 2015).
    - Nearly 32% of adults have to limit activities due to a physical, mental or emotional problem (WNCHI, 2015).
- Maternal & Infant Health
    - In Haywood County, 42.6 of 100,000 15-19 year olds became pregnant in 2013. This is a slight increase from 2012 (State Center for Health Statistics-SCHS, 2006-2013 data).
    - From 2012-2013, prenatal smoking decreased from 21.1 to 20.6 per 100,000 (SCHS).
    - From 2009-2013, 8.9% of babies had low birth weight and 1.5% had very low birth weight. This is a slight improvement over 2008-2012 data (SCHS).
- Chronic Disease (including cardiovascular disease and cancer)
    - Over 43% of adults reported having high blood pressure (WNC Healthy Impact, 2015).
    - Over 28% of adults reported having high blood cholesterol (WNCHI, 2015).
    - Over 12% of adults reported being borderline or pre-diabetic (WNCHI, 2015).
- Injury & Violence

- From 2009-2013, mortality from unintentional injury had a rate of 41.3 of 100,000. This is a slight increase from 2008-2012 (40.7 per 100,000); State Center for Health Statistics.
- Unintentional motor vehicle injury had a mortality rate of 14.9 per 100,000. This was a slight decline from 2008-2012, which had a rate of 15.3 per 100,000 (State Center for Health Statistics).

- Mental Health & Substance Abuse
  - Over 24% of adults currently smoke (WNCH Healthy Impact, 2015).
  - Over 7% of adults were unable to get needed mental health counseling in the past year (WNCHI, 2015).
  - Over 12% of adults reported binge drinking within the past 30 days (WNCHI, 2015).
- Oral Health
  - Nearly 57% of adults have visited a dentist or dental clinic within the past year (WNC Healthy Impact, 2015).

Clinical Care & Access

- Health Insurance
  - In Haywood County, 19% of individuals are uninsured (County Health Rankings, 2015).
- Health Provider ratios
  - Haywood County has 217.59 health care providers per 10,000 individuals (Cecil G. Sheps Center for Health Services Research). Providers include physicians, primary care physicians, dentists, registered nurses and pharmacists (2012).
- Self-reported access to care and barriers
  - Over three-fourths of individuals (77.3%) agreed that there is good access to healthcare in Haywood County (WNC Healthy Impact, 2015) .
  - Seventy nine percent of adults have a specific source of ongoing medical care (WNCHI, 2015).
  - Over 9% of individuals were unable to get needed medical care at some point in the past year (WNCHI, 2015).
  - Nearly 70% of individuals visited a physician for a checkup in the past year (WNCHI, 2015).
- Access to specific care and services
  - Over 1/3 of individuals reported that a healthcare provider connected them to a community resource. The goal of this referral was to educate the individual about their condition (WNC Healthy Impact, 2015).
  - Eighty percent of women aged 50-74 had a mammogram within the past two years (WNC HI, 2015).

- Over 56% of individuals reported having had an eye exam within the past two years. This exam included having pupils dilated (WNCHI, 2015).

At Risk Populations

Individuals who are in poverty, are uninsured or are ethnic minorities are at increased risk for health problems, such as:

- Lung cancer and chronic obstructive pulmonary disorder
- Fetal alcohol syndrome
- Sexually transmitted infections
- Pre-term labor and low birth weight
- Heart disease
- Diabetes or pre-diabetes
- Behavioral health problems
- Dental health problems

CHAPTER 6 – PHYSICAL ENVIRONMENT

The physical environment, including air, water and access to healthy food has the ability to protect or harm our health. Air pollution causes problems such as ''decreased lung function, chronic bronchitis, asthma, and other adverse pulmonary effects.'' Unhealthy drinking water can also lead to countless problems, ''including nausea, lung and skin irritation, cancer, kidney, liver, and nervous system damage.'' Those with limited access to healthy foods are more likely to experience overweight, obesity and premature death (County Health Rankings, 2015).

Air Quality

Haywood County has a score of 13.2 for average daily particulate matter, an improvement over the previous measurement. Sources of air pollution include forest fires, power plant emissions and vehicles. Air pollution is often defined as a level of particulate matter, which ''is the average daily density of fine particulate matter in micrograms per cubic meter.'' County Health Rankings, 2015

Water

The source from which the public gets its drinking water is a health issue of considerable importance. Water from all municipal and most community water systems is treated to remove harmful microbes and many polluting chemicals, and is generally considered to be safe from the standpoint of public health because it is subject to required water quality standards. Municipal drinking water systems are those operated and maintained by local governmental units, usually at the city/town or county level. Community water systems are systems that serve at least 15 service connections used by year-round residents or regularly serves 25 year-round residents.

This category includes municipalities, but also subdivisions and mobile home parks. In 2014, 70.2% or 41,436 Haywood County residents were served by community water systems Environmental Protection Agency). The remaining 29.8% presumably were being served by wells or by some other source, such as springs, creeks, rivers, lakes, ponds or cisterns.

Access to Healthy Food & Places

Limited access to healthy food is defined in several ways. In a rural area, this means that a person lives more than 10 miles from a grocery store. In an urban area, they live more than one mile from this facility. Access is also affected by the price of healthy options (County Health Rankings, 2015). In Haywood County, 16.8% report that fresh produce is somewhat or very difficult to afford (WNC Healthy Impact, 2015). If the closest food retailer is a convenience store, there may be fewer healthy options available.

Access to healthy environments is equally as important as healthy food. Resources like sidewalks, bike lanes and parks make it easier to get regular physical activity. When community organizations open their facilities after-hours, this also helps residents get physical activity. Over 95% believe that facilities should provide this access (WNCHI, 2015). Residents were also surveyed about physical activity options for children. Over 68% believe that options are available for children and youth to be active throughout the year (WNCHI, 2015).

CHAPTER 7- HEALTH RESOURCES

Health Resources

Process

Health resource information was primarily gathered from a previous community assessment report.

Findings

Haywood County is home to Haywood Regional Medical Center, which includes a behavioral health unit. There are a number of private medical offices, some of which are owned by the hospital. The county's health and human services agency provides programs such as immunizations, dental care, family planning, environmental health inspections and Women, Infants, and Children. The Good Samaritan Clinic is a free primary care facility. It helps individuals who are uninsured or have low-income. Several outpatient providers offer treatment for substance abuse and mental health disorders. These providers include Mountain Area Recovery Center, Smoky Mountain Center and Meridian Behavioral Health Services.

Resource Gaps

While local transit is available, an appointment must be made. Services are also unavailable on the weekends. There are also gaps in the treatment of substance abuse. For instance, no inpatient treatment facilities are available in Haywood County. Facilities such as the Good Samaritan Clinic may have long wait times due to the high volume of people needing care.

CHAPTER 8 – IDENTIFICATION OF HEALTH PRIORITIES

Health Issue Identification

Process

To identify the significant health issues in our community, our key partners reviewed data and discussed the facts and circumstances of our community. We used the following criteria to identify significant health issues:

- County data deviates notably from the region, state or benchmark
- Significant disparities exist
- Data reflects a concerning trend related to burden, scope or severity
- Surfaced as a priority community concern

Data review and priority setting took place through the following methods:
Key informant survey
Prioritization meeting
Review of county, state and national resources, such as the County Health Rankings and State Center for Health Statistics reports.

Identified Issues

The following health issues were surfaced through the above process:

- ***Substance abuse***: The abuse and misuse of alcohol, tobacco and other drugs.

- ***Mental health***: ''Mental health includes our emotional, psychological, and social well-being.'' (mentalhealth.gov)

- ***Physical activity and nutrition***: meeting daily or weekly guidelines for exercise and nutrient intake.

- ***Chronic disease:*** ''Noncommunicable diseases (NCDs), also known as chronic diseases, are not passed from person to person. They are of long duration and generally slow progression.'' (World Health Organization)

- ***Maternal and infant health***: The health status of women of childbearing years and infants.

- ***Sexually transmitted disease (STD) and unintended pregnancy***: STD's are transmitted sexually and include HIV and Hepatitis C. Unintended pregnancies occurred when conception was not intended.

- ***Injury and violence***: intentional or unintentional acts that result in physical or mental trauma.

- ***Oral health***: ''It is a state of being free from mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking, and psychosocial wellbeing (World Health Organization).''

- ***Infectious disease and food borne illness***: Infectious diseases can be spread to a living being. Food borne illness is when infections are transmitted via food.

- ***Social determinants of health***: ''Social determinants of health are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.'' (Healthy People 2020)

Priority Health Issue Identification

Process

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

1) Magnitude- number of people who suffer from this problem
2) Consequences- seriousness to health if not addressed
3) Feasibility- probability of success in addressing this problem
4) Needs- to be addressed more thoroughly than it currently is
5) Interest- I am personally interested in helping with this issue

Identified Priorities

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

- Substance Abuse – Haywood County has high rates of prescription pill and heroin abuse. There are also high tobacco use rates among all ages. Especially troubling is the high smoking rate among pregnant women.

- Mental Health – Haywood County continues to have a high suicide rate. Over a four-year period, there was nearly one recorded suicide per month (Haywood County Health and Human Services Agency).

- Physical Activity and Nutrition – Alarming numbers of children and adults are overweight or obese.

PRIORITY 1- SUBSTANCE ABUSE

Local minister praying at a walk against drugs.

Substance abuse continues to be identified as a top health priority. Alcohol, tobacco and other drugs negatively impact the health of our community. No age or ethnic group is immune from the devastating effects of these substances.

Data Highlights

Health Indicators

- Over 12% of survey respondents reported having binge drank within the past month. This is defined by men consuming five or more drinks in a setting and women consuming four or more. This is a four percent increase from the 2012 survey (WNC Healthy Impact, 2015).
- Over 24% of adults currently smoke, which is higher than regional, state and national averages. This number has increased by over four percent from the 2012 survey (WNCHI, 2015).
- Over 11% of adults use smokeless tobacco. This is nearly a seven percent increase since 2012 (WNCHI, 2015).
- From 2012-2015, 41 drug overdose deaths were identified in Haywood County (Haywood County Medical Examiner). This is at a rate of almost one death per month.

Understanding the Issue

- Nearly 80% of key informants ranked substance abuse as a major problem. Key informants included community or business leaders, physicians, other health providers, public health representatives and social service providers (WNCHI, 2015).
- Substance abuse has a strong link to criminal activity, as described by Haywood County Sheriff Greg Christopher: ''Eventually, the addiction becomes so encompassing and

expensive, users turn to crimes such as breaking and entering, theft, shoplifting and even prostitution to support their habit.''

Specific Populations At-Risk

In 2013, over 1/5 of women in Haywood County smoked while pregnant (State Center for Health Statistics).

Individuals with mental health disorders smoke at a higher rate than the general population.

Health Resources available/needed

- Haywood Helps is a non-profit organization with an online resource directory. Information is provided for food, transportation, housing and utility assistance (www.haywoodhelps.org).
- The Region 1 Tobacco Prevention Program focuses on tobacco prevention and cessation. Education and policy support are provided. Policy foci include smoke-free multiunit housing and tobacco-free government grounds. http://www.tobaccopreventionandcontrol.ncdhhs.gov/about/localtpcgroups.htm
- 211 is available: https://www.youtube.com/watch?v=BSonIAWAKa0&feature=youtu.be
- Substance abuse resource guide- This guide was developed by Healthy Haywood http://www.healthyhaywood.org/resources/substance-abuse.html
- Mountain Projects provides prevention and early intervention services. (www.mountainprojects.org)
- Smoky Mountain Center serves those with mental health, developmental disabilities and substance abuse issues. (www.smokymountaincenter.com)
- Meridian Behavioral Health Services provides services to both adults and children. (www.meridianbhs.org)
- Aspire Youth and Family provides a day school/day treatment program, an intensive in-home program, substance abuse services, assessment and counseling, and the ''Kids at Work!'' culinary arts program (www.aspireyouthandfamily.com).
- Mountain Area Recovery Center-West provides addiction treatment services (www.marc-otp.com).
- Celebrate Recovery ©- faith-based program operated by Longs Chapel United Methodist Church
- Alcoholics Anonymous (16 meetings are held weekly in the county), Al-Anon Blueprint for Recovery (Grace Church in the Mountains), Narcotics Anonymous (Waynesville Triangle Club, Faith Community Church, Longs Chapel United Methodist Church).
- Haywood Pathways Center- a partnership that is transforming an old jail into a soup kitchen, halfway house and homeless shelter (www.haywoodpathwayscenter.org).

- The Sheriff's Office operates a tip line. Individuals may report calls about underage drinking and drug use, such as drug parties.
- Family support groups meet regularly at the Haywood County Sheriff's Office and the Canton Community Kitchen.

PRIORITY #2- MENTAL HEALTH

In previous years, mental health has been one of Haywood County's top three priorities. Figures from area mental health facilties give us a glimpse of the great need. In WNC, over 3,100 people sought services in 2013 (NC Office of State Budget and Management). One of our greatest needs is suicide prevention. The county suffers from a higher suicide rate than the state (State Center for Health Statistics, 2009-2013). Though the rate has improved, we have much work to do.

Data Highlights

Health Indicators

- Sixteen percent of adults reported experiencing seven or more days of poor mental health in the past month. This is an increase of over two percent from 2012 (WNC Healthy Impact, 2015).
- Fewer adults are reporting that they receive necessary social or emotional support. In 2012, 82.6% agreed with this statement. In 2015, 76.2% agreed with this statement (WNCHI, 2015).
- Suicide is the 8th leading cause of death for Haywood County (State Center for Health Statistics, 2009-2013).

Understanding the Issue

- Nearly 41% of key informants ranked mental health as a major concern (WNC Healthy Impact, 2015).

Specific Populations At-Risk

- Individuals who also suffer from substance use disorders

Health Resources available/needed

- 211 is available: https://www.youtube.com/watch?v=BSonIAWAKa0&feature=youtu.be

- Mountain Projects provides prevention and early intervention services. (www.mountainprojects.org)
- Smoky Mountain Center serves those with mental health, developmental disabilities and substance abuse issues. (www.smokymountaincenter.com)
- Meridian Behavioral Health Services provides services to both adults and children. (www.meridianbhs.org)
- Reach of Haywood County provides services for victims of domestic violence and sexual assault, including an emergency shelter and legal assistance (reachofhaywood.org).
- 30th Judicial District Domestic Violence-Sexual Assault Alliance, Inc. - This organization serves victims of domestic violence and sexual assault (www.30thalliance.org).
- Aspire Youth and Family provides a day school/day treatment program, an intensive in-home program, substance abuse services, assessment and counseling, and the ''Kids at Work!'' culinary arts program (www.aspireyouthandfamily.com).
- Kids Advocacy Resource Effort focuses on preventing child abuse and neglect. They also provide advocacy services for victims (www.karehouse.org).
- Haywood Pathways Center- a partnership that is transforming an old jail into a soup kitchen, halfway house and homeless shelter (www.haywoodpathwayscenter.org).
- Haywood Regional Medical Center has a 16-bed behavioral health unit.
- The Sheriff's Office operates a tip line. Individuals may report calls about underage drinking and drug use, such as drug parties, or for mental health concerns.

PRIORITY #3- PHYSICAL ACTIVITY AND NUTRITION

Overweight and obesity rates continue to be high. Of particular concern is the high obesity rate among children. Obesity is a key factor chronic health issues, such as diabetes and heart disease.

Data Highlights

Health Indicators

- Over 55% of survey respondents meet physical activity recommendations. For adults, this was defined as one hour of vigorous activity or 150 minutes of moderate activity per week (WNC Healthy Impact, 2015).
- Over 64% of adults self-identified as being overweight or obese (WNCHI, 2015).
- The average number of vegetable servings was 7.4 per week. This is a decline from 2012 (WNCHI, 2015).

Understanding the Issue

- Over one-half of key informants ranked nutrition, physical activity and weight as a major issue.
- Key informants shared comments such as: ''We have populations that are not able to afford fresh produce and barely make enough to cover their food costs for the month. Need to work on properly educating the public on malnutrition and ensuring they know how to access, afford, and utilize healthy foods.''

Specific Populations At-Risk

- African-American and Hispanic individuals
- Individuals experiencing poverty

Health Resources available/needed

- 211 is available: https://www.youtube.com/watch?v=BSonIAWAKa0&feature=youtu.be
- Fitness Finder- This is a guide with local physical activity opportunities that was developed by Healthy Haywood

- http://www.healthyhaywood.org/resources/healthy-living.html

- Town of Waynesville: www.waynesvillenc.gov: Waynesville Skate Park, Pepsi Dog Park, Waynesville Disc Golf Course, Recreation Park, Vance Street Park, Sulphur Springs Park, Dutch Fisher Park, East Street Park and the Waynesville Greenway.

- Town of Canton: www.cantonnc.com: Canton Recreation Park and the Canton International Sports Complex.

- Town of Clyde: www.townofclyde.com: Clyde Park, River's Edge Park and Spencer Park.

- Town of Maggie Valley: www.townofmaggievalley.com: Greenway, Maggie Valley Town Hall Playground and Picnic Area, McCracken Park, Todd and Ruth Henry Memorial Park and Parham Park.

- Haywood County, www.haywoodnc.net: Allen's Creek Park

- 2015 Healthy Haywood Fitness Challenge Facilities:

  Angie's Dance Academy, Body Lyrics Belly Dance, CrossFit 2311, CrossFit Haywood, CrossFit Yona, Haywood Regional Health and Fitness Center, Maggie Martial Artss, Maggie Valley Fitness and Massage, Maggie Valley Wellness Center, Raqs Beledi Bellydance Studio, Smoky Mountain Sk8Way and Fun Zone, Susan's Sassy Slimdown, The Fitness Connection, The Old Armory Rec Center, Urban Athletic Training Center, Waynesville Recreation Center, Waynesville Wellness, Youth Kung Fu

- Lake Junaluska Assembly is affiliated with the Southeastern Jurisdiction of the United Methodist Church. Lake Junaluska offers several miles of walking trails, a pool and other physical activity opportunities.

Chapter 9 - Next Steps

Sharing Findings

Data will be presented to local stakeholders, including the Haywood County Health and Human Services Agency board. The Community Health Assessment report will also be shared through website, social media and distribution to each county library.

Collaborative Action Planning

Collaborative action planning with hospitals and other community partners will result in the creation of a community-wide plan that outlines what will be aligned, supported and/or implemented to address the priority health issues identified through this assessment process.

After completion and approval of the Community Health Assessment, three work groups will be formed. Each work group will create an action plan for one of the top three health priorities. Group members will primarily be recruited from the Healthy Haywood Partnership. Community members are strongly encouraged to participate in this process.

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APPENDICES

Appendix A – Data Collection Methods & Limitations

Appendix B – WNC Healthy Impact Survey Instrument and Primary Data Collection

Appendix C – Key-Informant Survey Findings

APPENDIX A - DATA COLLECTION METHODS & LIMITATIONS

Secondary Data from Regional Core

Secondary Data Methodology

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

The principal source of secondary health data for this report was the NC State Center for Health Statistics (NC SCHS), including its County Health Data Books, Behavioral Risk Factor Surveillance System, Vital Statistics unit, and Cancer Registry. Other health data sources included: NC Division of Public Health (DPH) Epidemiology Section; NC Division of Mental Health, Developmental Disabilities and Substance Abuse Services; National Center for Health Statistics; NC DPH Nutrition Services Branch; UNC Highway Safety Research Center; and NC DETECT. Because in any CHA it is instructive to relate local data to similar data in other jurisdictions, throughout this report representative county data is compared to like data describing the 16-county region and the state of NC as a whole. The WNC regional comparison is used as "peer" for the purposes of this assessment. Where appropriate and available, trend data has been used to show changes in indicators over time.

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

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

Data Definitions

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

Error

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

Age-adjusting

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

Rates

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

While rates help make data comparable, it should be noted that small numbers of events tend to yield rates that are highly unstable, since a small change in the raw count may translate to a large change in rate. To overcome rate instability, another convention typically used in the presentation of health statistics is *data aggregation*, which involves combining like data gathered

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

Regional arithmetic mean

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

Describing difference and change

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

of difference and change, both positive (e.g., increase, larger than, etc.) and negative (e.g., decrease, smaller than, etc.)

Data limitations

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

Gaps in Available Information

- Many people do not have landlines, limiting how many people the phone survey can reach.
- Only 300 people were surveyed per county.
- The telephone survey only reached adults.
- Among other survey data, it is difficult to get information that is current and county-specific.

Appendix B- WNC Healthy Impact Survey (Primary Data) and Data Collection Instrument

Survey Methodology

Survey Instrument

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

Professional Research Consultants, Inc.

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

Sample Approach & Design

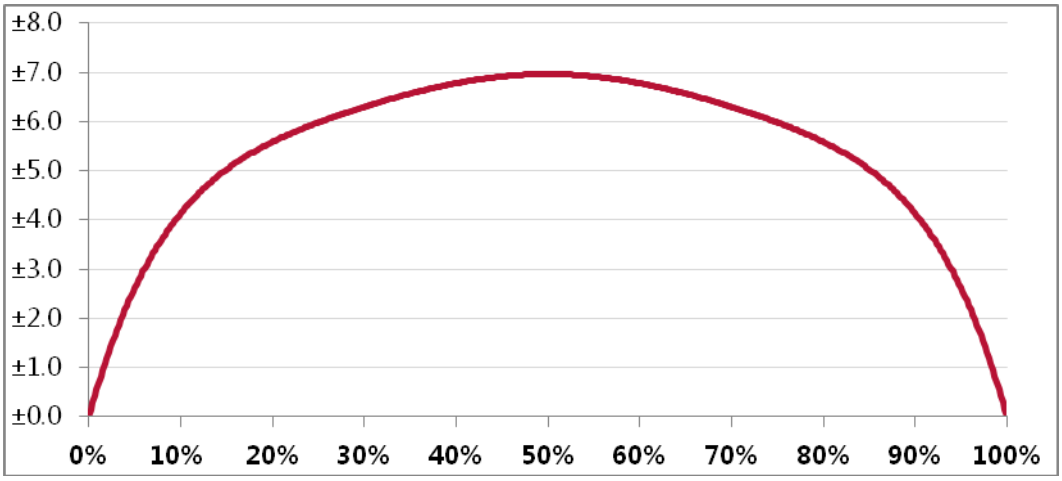
To ensure the best representation of the population surveyed, a telephone interview methodology (one that incorporates both landline and cell phone interviews) was employed. The primary advantages of telephone interviewing are timeliness, efficiency and random-selection capabilities.

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

Sampling Error

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

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



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

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

Sample Characteristics

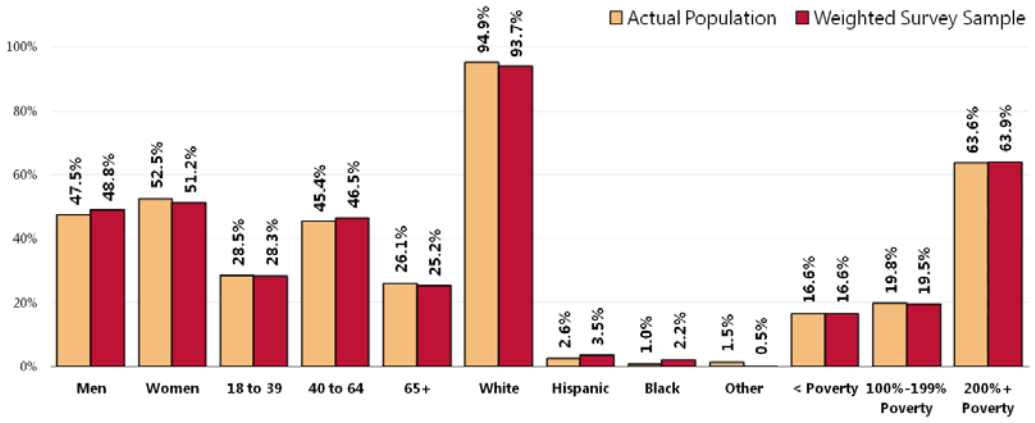
To accurately represent the population studied, PRC worked to minimize bias through application of a proven telephone methodology and random-selection techniques. And, while this random sampling of the population produces a highly representative sample, it is a common and preferred practice to apply post-stratification weights to the raw data to improve this representativeness even further. Specifically, once the raw data are gathered, respondents are examined by key demographic characteristics (namely gender, age, race, ethnicity, and poverty status) and a statistical application package applies weighting variables that produce a

sample which more closely matches the population for these characteristics. Thus, while the integrity of each individual's responses is maintained, one respondent's responses may contribute to the whole the same weight as, for example, 1.1 respondents. Another respondent, whose demographic characteristics may have been slightly oversampled, may contribute the same weight as 0.9 respondents. In order to determine WNC regional estimates, county responses were weighted in proportion to the actual population distribution so as to appropriately represent Western North Carolina as a whole.

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

Population & Sample Characteristics

(Haywood County, 2015)



Sources:
- 2015 Census Estimates/Projections. Geolytics, Inc.
- 2015 PRC Community Health Survey, Professional Research Consultants, Inc.

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

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

income" refers to those households living on incomes which are twice or more the federal poverty level.

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

Benchmark Data

North Carolina Risk Factor Data

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

Nationwide Risk Factor Data

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

Healthy People 2020

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

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

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

Survey Administration

With more than 700 full- and part-time interviewers who work exclusively with healthcare and health assessment projects, PRC uses a state-of-the-art, automated CATI interviewing system that assures consistency in the research process. Furthermore, PRC maintains the resources to

conduct all aspects of this project in-house from its headquarters in Omaha, Nebraska, assuring the highest level of quality control.

Interviewing Protocols and Quality Assurance

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

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

PRC employs the latest CATI (computer-aided telephone interviewing) system technology in its interviewing facilities. The CATI system automatically generates the daily sample for data collection, retaining each telephone number until the Rules of Replacement are met. Replacement means that no further attempts are made to connect to a particular number, and that a replacement number is drawn from the sample. To retain the randomness of the sample, telephone numbers drawn for the sample are not discarded and replaced except under very specific conditions.

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

Cell Phones

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

Minimizing Potential Error

In any survey, there exists some degree of potential error. This may be characterized as sampling error (because the survey results are not based on a complete census of all potential respondents within the population) or non-sampling error (e.g., question wording, question

sequencing, or through errors in data processing). Throughout the research effort, Professional Research Consultants makes every effort to minimize both sampling and non-sampling errors in order to assure the accuracy and generalizability of the results reported.

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

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

Measurement Error. Measurement error occurs when responses to questions are unduly influenced by one or more factors. These may include question wording or order, or the interviewer's tone of voice or objectivity. Using a tested survey instrument minimizes errors associated with the questionnaire. Thorough and specific interviews also reduce possible errors. The automated CATI system is designed to lessen the risk of human error in the coding and data entry of responses.

Information Gaps

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

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

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

Appendix C- Online Key Informant Survey (Primary Data)

Online Survey Methodology

Purpose and Survey Administration

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

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

Online Survey instrument

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

Participation

In all, 50 community stakeholders took part in the Online Key Informant Survey for our county, as outlined below:

Local Online Key Informant Survey Participation		
Key Informant Type	**Number Invited**	**Number Participating**
Community/Business Leader	31	13
Other Health Provider	11	6
Physician	1	1
Public Health Representative	4	2
Social Service Provider	3	3

Through this process, input was gathered from several individuals whose organizations work

with low-income, minority populations, or other medically underserved populations.

Online Survey Limitations

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

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