

2016

Harris Regional Hospital

Community Health Needs Assessment

Jackson and Swain Counties, North Carolina

Paper copies of this document may be obtained at Harris Regional Hospital, 68 Hospital Road Sylva, NC 28779 or by phone 828.586.7000. This document is also available electronically via the hospital website <http://www.myharrisregional.com>

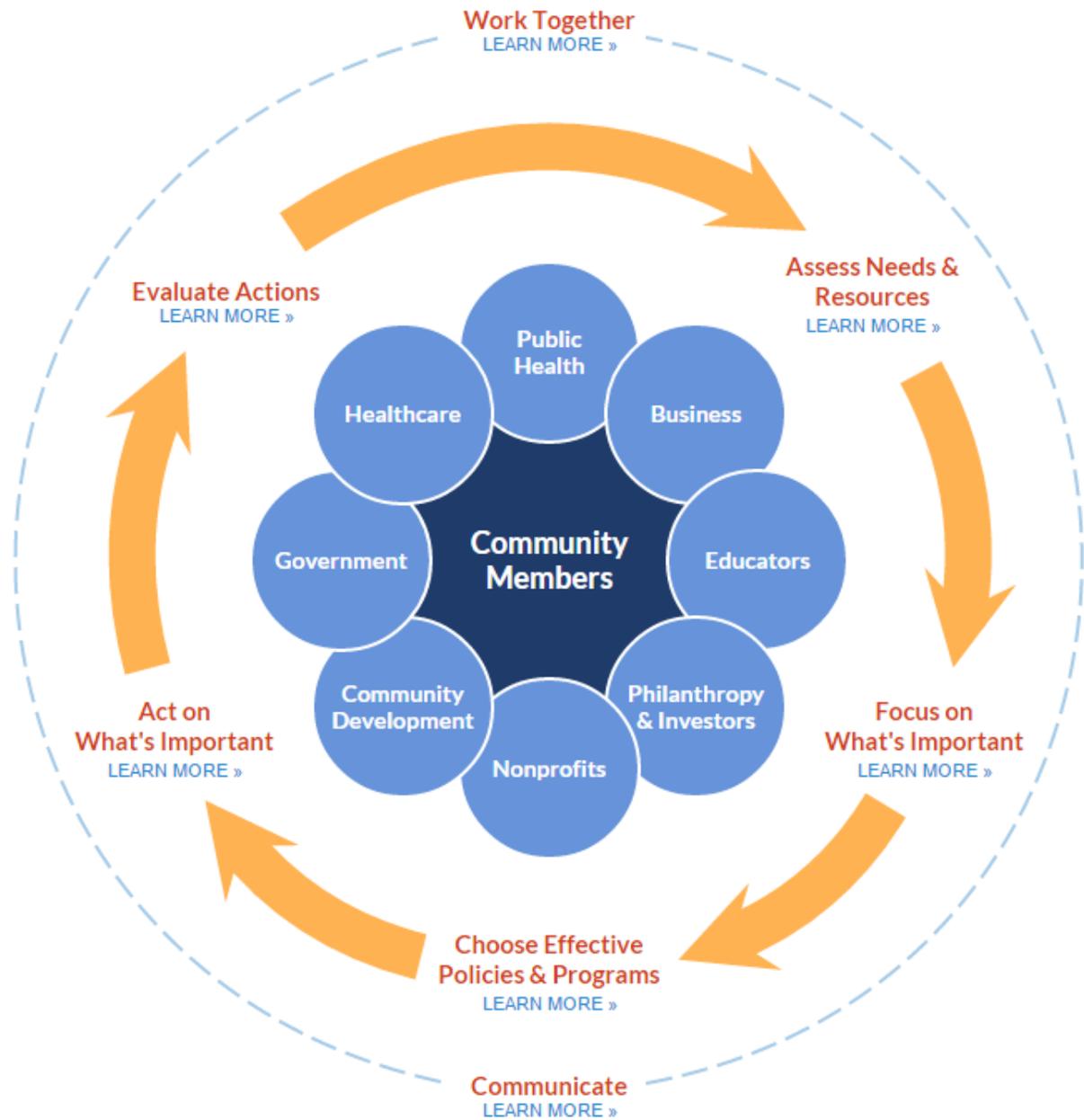
Table of Contents

Perspective/Overview.....	4
Participants.....	6
Project goals.....	6
Community Input and Engagement.....	7
At-Risk & Vulnerable Populations	7
Data Collection and Timeline – Jackson County CHA.....	8
Input of Public Health Officials.....	11
Input of Medically Underserved, Low-Income, and Minority Populations	11
Community Engagement and Transparency.....	11
Community Selected for Assessment	13
Harris Regional Hospital Patients – 2015.....	13
Key Findings of the Community Health Assessment	14
Information Gaps	14
Process and Methods	14
Demographics of the Community	15
Health Status Data.....	17
Causes of Death.....	17
Health Status and Behaviors	17
Overall Health Status	17
Summary of Tribal Health Assessment	19
Clinical Care and Access	24
At Risk Populations	25
Physical Environment.....	26
Air Quality	26
Water Quality.....	27
Access to Healthy Food and Places.....	27
Identification of Health Issues and Priorities.....	28
Prioritization Criteria	28
Identified Priorities.....	31
Data Highlights of Top Health Priorities – Jackson County.....	34

Priority Issue #1: Physical Activity and Nutrition	34
Priority Issue #2: Injury & Substance Abuse Prevention	39
Priority Issue #3: Chronic Disease	44
Data Highlights Priority Health Issues – Swain County	49
Priority Issue #1: Chronic Disease.....	49
Priority #2 Reduce Substance Abuse	51
Priority Issue #3 Promote a Healthy Environment	54
Data Highlights Priority Health Issues - EBCI.....	56
Community Assets and Resources	56
2011 Harris Regional Hospital Implementation Plan/Impact Evaluation	60
2013 HRH CHNA and Implementation Plan Written Comments.....	60

Perspective/Overview

—creating a culture of health in the community



Sourced from the *Robert Wood Johnson Foundation's County Health Rankings* website:

<http://www.countyhealthrankings.org/roadmaps/action-center>

The Community Health Needs Assessment (CHNA) or Community Health Assessment (CHA) defines priorities for health improvement, creates a collaborative community environment to

engage stakeholders, and an open and transparent process to listen and truly understand the health needs of Jackson and Swain Counties, North Carolina. It is an important part of improving and promoting the health of county residents. CHA is a key step in the ongoing community health improvement process outlined above.

The Jackson County Department of Public Health in collaboration with the Healthy Carolinians of Jackson County Partnership and WNC Healthy Impact produced and sponsored a community health needs assessment in 2015. Swain County Health Department partnered with WNC Healthy Impact to conduct a community health assessment in 2015. WNC Healthy Impact is a partnership between hospitals and health departments in western North Carolina to improve community health. This document summarizes both 2015 assessments and includes sections of the 2013 Eastern Band of Cherokee Indians (EBCI) Tribal Health Assessment (THA). The five NC counties with EBCI Tribal lands (Swain, Jackson, Haywood, Graham, and Cherokee Counties) perform CHAs that include EBCI populations within their borders, but a CHA specific to EBCI as a Tribe had never been conducted prior to this one. The jurisdictional boundaries of the EBCI include more than 56,000 acres of mountainous land in the five westernmost counties of North Carolina. The largest contiguous parcel of EBCI trust land is the Qualla Boundary, which spans the Jackson and Swain County border and includes the town of Cherokee.

LifePoint engaged Stratasan, a healthcare analytics and facilitation company out of Nashville, Tennessee to review the process and provide community health process and facilitation expertise. Stratasan conducted a community focus group, reviewed the 2015 Jackson and Swain Counties' Health Department Community Health Assessments and created this Harris Regional Hospital community report. Much of the content of this document is taken from the, [Jackson County 2015 Community Health Assessment](#) and the [Swain County Health Department Community Health Assessment 2015](#). Both of these documents are available on their respective Health Department websites as well as Harris Regional Hospital's website.

Jackson County CHA:

http://static1.squarespace.com/static/51826030e4b04f94760dc52d/t/56687334b204d55efa4065ea/1449685812274/NEW+2015+Jackson+County+CHA_NoAppendices.pdf

Swain County CHA:

http://www.swaincountync.gov/page_files/health/CHA/2015SwainCHA.pdf

The Eastern Band of Cherokee Indians Tribal Health Assessment 2013 is available at the National Indian Health Board Website. Portions of this CHA are also included in this analysis. -

<http://www.nihb.org/docs/11042015/Eastern%20Band%20of%20Cherokee%20THA%20Full%20Report%20and%20Tool.pdf>

In 2015, the EBCI created the Tribal Health Improvement Plan 2015-2017 based on the 2013 Tribal Health Assessment and is available at: <http://www.cherokee-hmd.com/pdfs/THIPFINAL2015.pdf>

Harris Regional Hospital (HRH) board of directors approved and adopted these CHNAs on December 13, 2016

Starting on December 31, 2016 this report and the Community Health Assessments were made widely available to the community via Harris Regional Hospital's website, www.myharrisregional.com, and paper copies are available free of charge at Harris Regional Hospital.

Participants

Over one hundred individuals from over fifty community and health care organizations collaborated to conduct a comprehensive CHNA process focused on identifying and defining significant health needs, issues, and concerns of Jackson and Swain Counties. These community partners will be referred to as "The Partnership" throughout this document. The ten-month process centered on gathering and analyzing data as well as receiving input from persons who represented the broad interests of the community and had special knowledge of or expertise in public health to provide direction for the community and hospital to create a plan to improve the health of the community.

Project goals

1. To coordinate with the Health Departments in a formal and comprehensive community health assessment process that will allow for the identification and prioritization of significant health needs of the community to allow for resource allocation, informed decision-making and collective action that will improve health.
2. To continue a collaborative partnership between all stakeholders in the community by seeking input from persons who represent the broad interests of the community.
3. To support the existing infrastructure and utilize resources available in the community to instigate health improvement in the community.

"We collaborated with The Partnership to conduct the Community Health Needs Assessment with the goals of analyzing significant health needs and priorities and address those needs,"

said Steve Heatherly, Chief Executive Officer, Harris Regional Hospital. “It is our goal to use our findings as a catalyst for community mobilization to improve the health of our residents.”

“The information gathered both from public health data and from community stakeholders provided the insight the community needed to set priorities for significant health issues and was used by HRH to create implementation plan.” added Anetra Jones, Chief Nursing Executive at Harris Regional Hospital. “The prioritization meeting was the final step in the assessment process. Now the real work—improving the health of the community begins.”

Community Input and Engagement

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

- Participation with The Partnership on conducting the health assessment process
- Through primary data collection efforts (community survey, key stakeholder interviews and listening sessions)
- In the identification and prioritization of health issues

At-Risk & Vulnerable Populations

Throughout the community health assessment process and product, The Partnership was focused on understanding general health status and related factors for the entire population of the counties 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.

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

Jackson County

- The underserved – community members who do not access health care either because there is a lack of services or providers available or because of limitations of income, literacy, or understanding on how to access services.
- Those at-risk are community members of a particular group who are likely to, or have the potential to, get a specified health condition.
- The vulnerable are community members that may be more susceptible than the general population to risk factors that lead to poor health outcomes.

Swain County

- Young children
- Residents living in poverty

- Elderly
- Uninsured adults

Data Collection and Timeline – Jackson County CHA

The Jackson County Health Department convened the community in a CHA process in January 2015.

In February, 2015, The Partnership began working on a CHA for Jackson County, North Carolina. The partnership sought input from persons who represent the broad interests of the community using several methods:

Jackson CHA Timeline:

- CHA Steering Committee involved sixteen individuals who provided unique knowledge and community connectivity to the CHA process. They are the Healthy Carolinians of Jackson County. The steering team provided the governing structure and insight into the community engagement aspects of the CHA. They meet quarterly.
- Information gathering, using secondary public health sources occurred in February through October, 2015.
- 200 community surveys were conducted by phone from March 23 to May 28, 2015 to hear about their concerns and priorities.
- Thirteen Jackson County key stakeholders were interviewed by various members of the CHA Steering Committee in April and May, 2015.
- Five listening sessions were conducted with community groups from April 13 – May 10, 2015. 34 people attended the listening sessions.
- On October 22, 2015, thirty-five community members participated in a meeting to hear the results of the information and to prioritize the health issues.
- A community focus group was held on March 15, 2016 with 9 community members participating in a focus group for their perspectives on implementation strategies. The community members were invited based on their representation of low-income, medically underserved, minorities and the community in general.
- Action plans were developed between March and September, 2016.

Swain County CHA Timeline:

- Community Health Assessment (CHA) Steering Committee involved five individuals who provided unique knowledge and community connectivity to the CHA process. The steering team provided the governing structure and insight into the community engagement aspects of the CHA. They meet quarterly.
- Information gathering, using secondary public health sources occurred in February through October, 2015.
- 200 community surveys were conducted by phone from March 23 to May 28, 2015 to hear about their concerns and priorities.
- Nineteen Swain County leaders were surveyed via e-mail (Key Informant Survey) regarding their perspectives on community health status and needs from August 17-September 9, 2015.
- On January 14, 2016 the CHA Team met to review the data and preliminarily prioritize the significant health issues.
- On January 26, 2016 nine community members participated in a meeting to hear the results of the information and to prioritize the health issues.
- A community focus group was held on March 15, 2016 with 9 community members participating in a focus group for their perspectives on implementation strategies. The community members were invited based on their representation of low-income, medically underserved, minorities and the community in general.
- Action plans were developed between March and September, 2016.

As mentioned previously, over one hundred individuals from over fifty community and health care organizations collaborated to conduct a comprehensive CHA process focused on identifying and defining significant health needs, issues, and concerns of Jackson and Swain Counties. Below is a list of the organizations that participated, the population they represented, and how they were involved in the process.

Organization	Population Represented (kids, low income, minorities, those w/o access)	How Involved	Low-Income Resident	Minority Populatio	Medically Underserv
Area Agency on Aging	Seniors	Jackson Community Meeting			
Big Brothers and Big Sisters of Swain		Key Informant Survey Participation	✓	✓	✓
Coalition for a Drug Free Swain		Key Informant Survey Participation	✓	✓	✓
Community Member		Jackson Community Meeting, Jackson CHA Work			
Community Member		Jackson Community Meeting, Jackson CHA Steering Committee & Work Team			
Community Member		Jackson Stakeholder Interviews			
Cooperative Extension		Jackson Stakeholder Interviews			
Great Smokies Health Foundation	All	Jackson Community Meeting			
Harris Regional Hospital	All	Jackson Stakeholder Interviews			
Harris Regional Hospital and Swain Community Hospital	All	Jackson Community Meeting, Jackson & Swain CHA Steering Committees, Key Informant Survey	✓	✓	✓
Jackson Board of Commissioners		Jackson Stakeholder Interviews			
Jackson Co Dept of Social Services	Uninsured, low income	Jackson Stakeholder Interviews, Jackson Community Meeting			
Jackson Co Dept on Aging	Seniors	Jackson Community Meeting, Jackson CHA Steering Committee, Jackson Stakeholder Interviews, Focus Group			
Jackson Co Health Department	All	Focus Group, CHA Facilitator, Jackson Community Meeting, Jackson CHA Work Team, Jackson Stakeholder Interviews			
Jackson Co Planning Director		Jackson Stakeholder Interviews			
Jackson Co Public Schools	Kids	Jackson Community Meeting, Jackson CHA Work Team			
Jackson Co Public Schools	Kids	Jackson Stakeholder Interviews			
Jackson Co Recreation Department		Jackson Community Meeting, Jackson CHA Steering Committee			
Jackson Co Sheriff's Office	All	Focus Group			
Legal Aid of NC	Low income	Jackson Community Meeting			
Mountain Projects	Uninsured, low income	Jackson Community Meeting, Jackson CHA Steering Committee, Key Informant Survey Participation	✓	✓	✓
Mountain Projects Health Insurance Navigator Program		Jackson Community Meeting			
Smoky Mountain High School	High School students	Focus Group			
Smoky Mountain LME/MCO	Mental Health/ substance use disorder, intellectual/ developmental disabled	Jackson Community Meeting, Jackson CHA Steering Committee			
Smoky Mountain Times		Swain CHA Team, Key Informant Survey Participant			✓
Smoky Mountain Urgent Care		Swain CHA Team			
Southwestern Child Development	Kids	Jackson Community Meeting			
Swain Community Hospital	All	Swain CHA Team	✓	✓	✓
Swain County Health Dept	All	Focus Group, Key Informant Survey Participant, Swain CHA Steering Committee, Swain CHA Team	✓	✓	✓
Swain County Schools		Swain CHA Team, Key Informant Survey Participant	✓	✓	✓
Swain County Schools Health		Swain CHA Team			
Swain County Sheriff		Swain CHA Team			
Swain Economic Development		Swain Steering Committee			
Swain School Nurse		Swain CHA Team			
The Community Table		Jackson Stakeholder Interviews			
The Good Samaritan Clinic		Jackson Stakeholder Interviews	✓	✓	✓
Town of Bryson City		Key Informant Survey Participation			
Town of Sylva		Jackson Stakeholder Interviews			
Western Carolina University	Student population	Focus Group, Jackson Community Meeting, Jackson CHA Work Team, Jackson Stakeholder Interviews			
WNC Healthy Impact		Key Informant Survey Participation	✓	✓	✓
	Kids	Jackson Listening Session 1 - Jackson Co 9-10th graders (10 attended)			
	Seniors	Jackson Listening Session 2 - Cashiers Senior Center (12 attended)			✓
	Uninsured	Jackson Listening Session 3 - Good Samaritan Clinic (4 attended)			
		Jackson Listening Session 4 - WCU Nutrition Club (3 attended)			
		Jackson Listening Session 5 - WCU Freshmen (5 attended)			

In many cases, several representatives from each organization participated.

Input of Public Health Officials

North Carolina Health Departments are extremely robust and in many instances lead the CHA and Improvement processes. Jackson and Swain Health Departments were the conveners of the stakeholders, along with WNC Healthy Impact, to gather the secondary community health information, and conducted the primary research. They also convened the Community Health meetings to receive input on the health priorities.

Input of Medically Underserved, Low-Income, and Minority Populations

The previous identifies each organization that was involved in the CHAs , how they provided their input and what groups they represented. Many of the organizations involved represent the medically underserved, low income and minority populations.

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

Minority populations represented:

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

Medically underserved populations represented:

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

Community Engagement and Transparency

We are pleased to share the results of the Community Health Needs Assessment with our communities in hopes of attracting more advocates and volunteers to improve the health of the communities. The following pages highlight key findings of the assessments. We hope you will take the time to review the health needs of our community as the findings impact each

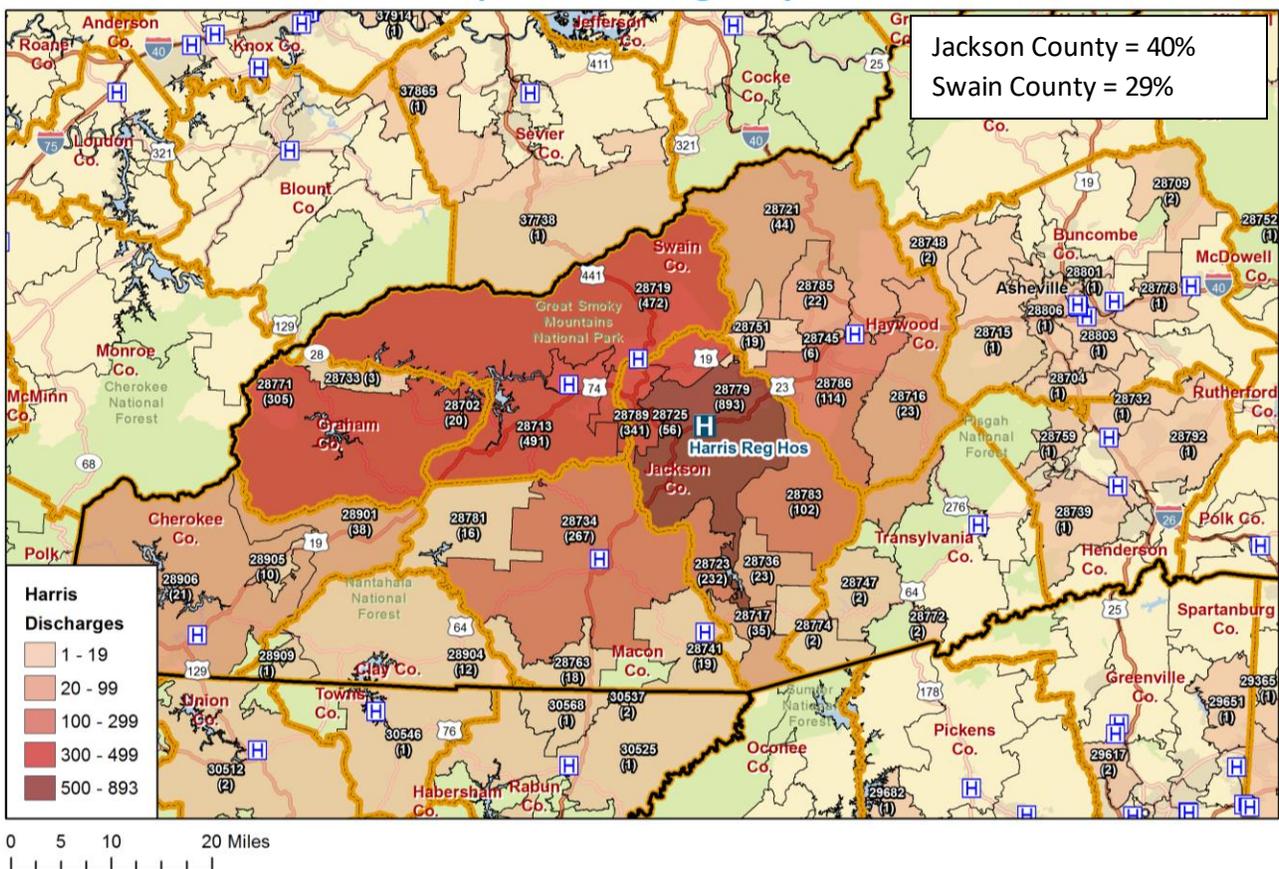
and every citizen in one way or another; and join in the improvement efforts. The comprehensive data analysis may be obtained at Harris Regional Hospital, 68 Hospital Road, Sylva, NC 28779 or by phone 828.586.7000. This document is also available electronically via the hospital website <http://www.myharrisregional.com>.

Community Selected for Assessment

Harris Regional Hospital's (HRH) health information provided the basis for the geographic focus of the CHNA. The map below shows where HRH received its patients; most of HRH's inpatients came from Jackson County with 40% patient origin, followed by Swain County with 29% patient origin. Therefore, it was reasonable to select the Jackson and Swain Counties as the primary focus of the CHNA. However, surrounding counties should benefit from efforts to improve health in the Jackson and Swain Counties.

The community included medically underserved, low-income or minority populations who live in the geographic areas from which HRH draws its patients. All patients were used to determine the service area without regard to insurance coverage or eligibility for financial assistance under HRH's Financial Assistance Policy.

Harris Regional Hospital Patients – 2015



Key Findings of the Community Health Assessment

Information Gaps

While this assessment was 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) were not represented in the primary 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.

Process and Methods

Both primary and secondary data sources were used in the CHAs. Primary methods included:

- Community Health Opinion Survey – telephone survey of a random sample of adults in the counties
- Key Stakeholder Interviews (Jackson)– Interviews with key stakeholders representing special populations
- Key Informant Survey (Swain)– e-mail survey of key stakeholders representing special populations
- Community meetings for prioritization of health issues.
- Community focus group – The focus group was held at Harris Regional Hospital and focused on how Harris Regional Hospital and Swain Community Hospital could help in implementation of the priorities identified in the CHNA.

Secondary methods included:

- A comprehensive set of publicly available secondary data metrics with Jackson and Swain Counties compared to the sixteen county WNC region as a “peer”
- Set of maps accessed from Community Commons and NC Center for Health Statistics
- NC State Center for Health Statistics
- County Health Rankings

- State of the County Health reports

All of Jackson and Swain Counties – Waynesville, Clyde, Maggie Valley, Canton, and the Qualla Boundary of EBCI-- must come together now to improve the health of their communities. A summary of the community health assessment follows. The complete analysis is available in [Jackson County 2015 Community Health Assessment](#) and the [Swain County Health Department Community Health Assessment 2015](#) available on myharrisregional.com website.

Demographics of the Community

Below are demographics and social & economic factors:

Jackson County

- Jackson County had 40,981 residents in 2014, an increase of 1.8% from 2010.
- The median age of the Jackson County population (36.3 years) was 8.4 years younger than WNC regional average and 11 years younger than the NC average (WNCHI, 2015).
- The population in all major age groups age 65+ was projected to increase between 2010 and 2030. The proportion age 85+ will more than double in that period, an increase of 87%. (U.S. Census Bureau)
- The racial make-up of Jackson County was 85.2% white, 9.6% American Indian, 2.3% African American, 1% Asian, and 5.1% Hispanic origin (The numbers will total to over 100% due to Hispanic being an ethnic group, not a race) (QuickFacts, Jackson County, North Carolina, 2014)
- The median household income for Jackson County was \$36,951, which was \$1,936 less than the median household income for North Carolina (U.S. Census Bureau, 2009-2013).
- 21.8% of the population is below 100% of the poverty level compared to 17.5% of NC
- In 2014, Jackson County had an unemployment rate of 4.8%, having steadily declined since 2010. (FactFinder, Poverty Status in the Past 12 Months. NC Department of Commerce)

Swain County

- Swain County had 14,274 residents in 2014, an increase of 293 from 2010 or 2.1% increase.
- The median age of the Swain County population was 40.3 years, which was 4.4 years younger than WNC regional average and 2.9 years older than the NC average (WNCHI, 2015).
- The population age 75-84 was projected to increase 524 from 2010 to 2030. There will be more than 3,200 persons age 65+ in Swain County. (U.S. Census Bureau)

- The racial make-up of Swain County was 65% white, 28% American Indian, 1.3% black, and 4.7% Hispanic origin. (The numbers will total to over 100% due to Hispanic being an ethnic group, not a race)
- The median household income for Swain County was \$34,632, which was \$12,061 less than the median household income for North Carolina (U.S. Census Bureau, 2009-2013). 19.3% of Swain County lived in poverty compared to 17.2% in NC.
- In 2014, Swain County had an unemployment rate of 8%, having steadily declined since 2011, but still higher than WNC Region and NC. (NC Department of Commerce)

Eastern Band of Cherokee Indians

- 8,087 live on tribal lands and 6,609 live off tribal lands for a total of 14,696 enrolled member population (this 2013 enrollment is higher than the 2010 Census Bureau numbers due to collection methods). The majority of EBCI members live in Jackson and Swain Counties, 8,654, representing 10.8 % of Jackson County and 30.9% of Swain County.
- The Tribal Health Assessment (THA) covered five counties: Cherokee, Graham, Haywood, Jackson and Swain Counties. The median age of American Indian/Alaska Native (AI/AN refers to Native Americans as a whole) in the five counties was 28 (2007-2011 American Community Survey). The median age of white non-Hispanics in the same area was 46. The percentage 65 and over was 8.2% for the EBCI, compared to 12.9% for NC and 13.0% for the U.S.
- The median household income for AI/AN was \$20,696 compared to White non-Hispanics of \$30,381. (2007-2011 American Community Survey)
- In Swain County, the percentage of families in poverty with an AI/AN householder was 43.7% and 17.1% for Jackson County (2006-2010 American Community Survey)
- The unemployment rate for AI/AN population in the five counties was 12.1% compared to White non-Hispanics of 6.4%. According to the 2011 Casino Report, Assessing the Economic and Non-Economic Impacts of Harrah's Cherokee Casino, "directly and indirectly, casino operations have reduced the historically high unemployment rate in Jackson and Swain counties which was 1.87 times the state average through 1997." (Johnson, Jr., James H., Kasarda, John D., and Appold, Stephen J. UNC Frank Hawkins Institute of Private Enterprise. (2011) Assessing the Economic and Non-Economic Impacts of Harrah's Cherokee Casino, North Carolina. p.iii.)

Health Status Data

Causes of Death

The life expectancy for residents in Jackson County was 78.6 years and for Swain County was 73.1. (2011-2013 NC Center for Health Statistics). The life expectancy at birth for American Indians/Alaska Natives (AI/AN) in the five county Contract Health Service Delivery Area (CHSDA) between 2003-2010 was 78.4. The leading causes of death in Jackson County mirror both those of WNC and NC. Cancer, diseases of the heart, chronic lower respiratory disease are the top three leading causes of death in our community. Swain County has a higher mortality rate than NC for eight of the leading causes of death. The leading causes of death in Swain County were heart disease followed by cancer, which mirrors the U.S., and cerebrovascular disease.

Age-adjusted Death Rates (2009-2013)	Jackson Co. # of Deaths	Jackson Co. Mortality Rate	Jackson Co Rate Difference from NC	Swain Co. # of Deaths	Swain Co. Mortality Rate	Swain Co Rate Difference from NC
Cancer	420	177.8	2.6%	196	216.5	25.0%
Diseases of the Heart	362	163.0	-4.1%	217	245.0	11.1%
Chronic lower respiratory disease	107	47.9	3.9%	58	66.1	43.4%
All other unintentional injuries	82	41.2	40.6%	41	56.4	92.5%
Alzheimer's Disease	62	29.9	3.8%	30	35.8	23.9%
Cerebrovascular disease	66	29.8	-31.8%	58	71.6	63.8%
Pneumonia and influenza	41	19.2	7.3%	27	32.3	80.4%
Diabetes Mellitus	42	17.0	-21.7%	45	51.2	2.4X
Suicide	31	16.0	31.1%	15	22.0	80.3%
Nephritis, Nephrotic Syndrome, Nephrosis	34	16.0	-9.1%	18	20.8	18.2%
Septicemia	24	10.8	-31.7%	13	14.3	3.6%
Chronic liver disease and cirrhosis	23	10.4	9.5%	16	19.3	2X
Unintentional motor vehicle injuries	20	9.5	-30.7%	13	21.5	56.9%
Homicide*	4	1.5	-74.1%	7	11.1	91.4%
AIDS*	1	0.6	-79.3%	0	0.0	n/a

Source: NC State Center for Health Statistics

* Rate unstable due to small numbers

(Age-adjusted death rates per 100,000 population (5-year aggregate, 2009-2013))

The leading causes of death for the CHSDA five-counties of the THA were: heart disease (97.15 per 100,000 population), cancer (97.01), unintentional injury (56.01), diabetes (44.49) and chronic liver disease and cirrhosis (26.65). (Indian Health Service, 2006-2010)

Health Status and Behaviors

Overall Health Status

Jackson County Health Rankings

According to American's Health Rankings, the state of NC ranked 35th overall out of 50 States in the U.S. (where #1 is "best"). Bringing this closer to home, the 2015 County Health Rankings ranked Jackson County 24th in Health Outcomes compared to 100 NC counties. (County Health Rankings, Jackson: Health Outcomes, 2015) In terms of health outcomes, Jackson County ranked:

- 28th in length of life (Includes premature death)
- 26th in quality of life (Includes poor or fair health, poor physical health days, poor mental health days, low birthweight)

Jackson County ranked 38th in Health Factors out of 100 NC counties. In terms of health factors, Jackson County ranked:

- 34th in health behaviors (Includes adult smoking, adult obesity, physical inactivity, access to exercise opportunities, alcohol-impaired driving deaths, and more)
- 65th in clinical care (Includes uninsured, primary care physicians, dentists, mental health providers, mammography screenings, and more)
- 36th in social and economic factors (Includes high school graduation, unemployment, children in poverty, social associations, violent crime, and more)
- 93rd in physical environment (Includes air pollution-particulate matter, drinking water violations, severe housing problems, and more)

Swain County Health Rankings

In the 2015 County Health Rankings, Swain County ranked 94th in health outcomes out of 100 NC counties. In terms of health outcomes, Swain County ranked:

- 100th in length of life (Includes premature death)
- 46th in quality of life (Includes poor or fair health, poor physical health days, poor mental health days, low birthweight)

Swain County ranked 94th in Health Factors. In the health factor category, Swain County ranked:

- 90th in health behaviors (Includes adult smoking, adult obesity, physical inactivity, access to exercise opportunities, alcohol-impaired driving deaths, and more)
- 97th in clinical care (Includes uninsured, primary care physicians, dentists, mental health providers, mammography screenings, and more)
- 86th in social and economic factors (Includes high school graduation, unemployment, children in poverty, social associations, violent crime, and more)

- 79th in physical environment (Includes air pollution-particulate matter, drinking water

Summary of Tribal Health Assessment

The EBCI community and partners were invested in the assessment process, which was highly informative, and showed that the community's expressed issues are congruent with secondary data. Different readers will come away with different impressions of the data. Here are some general highlights from the THA chosen by the authors:

- THA data and community input reinforce existing concerns about the looming burden of the economic, personal, family, and social aspects of diabetes and its complications.
- The same is true of obesity and its repercussions through the life cycle, including:
 - The top negative effects on community members' lives are personal health problems and family/ home life stress/ problems with relationships.
 - A theme from the community is the general awareness of obesity's relationship to chronic disease, and the importance of accountability for and access to ways to make lifestyle changes.
- The community has expressed concerns about food access and affordability.
- The community has expressed continuing concerns about receiving respectful clinical care with cultural competence.
- There is a community desire for improved health facilities.
- There are continuing concerns about substance use, including alcohol and drugs, and their effects on families, e.g. mental-behavioral health issues and the protection of children and elders.
- EBCI elders are generally satisfied with quality of life and are appreciative of services available to them.

Jackson County Community Survey

Based on the 200-person community survey, 13% of Jackson County residents surveyed reported that Jackson County is a fair/poor place to live. Additionally, 14.8% of residents stated that they experience "fair" or "poor" overall health. Finally, of those who reported that they were limited in activity in some way due to physical, mental, or emotional problems, most listed difficulty walking, back/neck problems, and "other" as the types of problems that limit activity. (Professional Research Consultants, Inc. 2015)

Swain County Community Survey

Based on the 200-person community survey, approximately 63% of respondents felt that existing community resources or services for chronic diseases such as diabetes, heart disease or COPD were sufficient, 7% were more than sufficient, 20% were insufficient and 10% answered services and resources were not available.

52% responded their life had “not at all” been negatively affected by substance abuse issues (respondent’s or another person). 17% responded, “a little”, 16% “somewhat”, and 15% responded “a great deal”.

34% responded it was “not at all difficult” accessing fresh produce at an affordable price. 25% responded it was “not too difficult”, 28% responded it was “somewhat difficult” and 13% responded it was “very difficult”.

Eastern Band of Cherokee Indians Tribal Survey

A total of 795 paper and electronic surveys were completed and included in the analysis.

- When asked, “was there a time in the past 12 months when you or a family member needed medical care, but could not get it?”, 22% responded yes, unable to receive care when needed and 78% responded no, able to get care. The primary reason they could not receive care was “too long of a wait for an appointment”, “it costs too much”, and Inconvenient office hours”.
- When asked, “how would you rate your own quality of life over the past month?”, 59% responded good, 25% very good, 12% neither good nor poor, 4% responded poor.
- When asked about positive impacts on quality of live, 27% responded “love, support, and spending time with friends/family”, 13% responded “satisfying job/school and financial stability”, 9% responded “receiving care (surgery and/or medication) and 8% responded “getting exercise” (walking and going to the gym).
- When asked about negative impacts on quality of life over the past month, 16% responded “personal health problems”, 10% “family/home life stress/problems with personal relationships (family/spousal) and there was a three-way tie with 8%, “work stress/employment struggles”, “finances”, and “stress” (in general).
- When asked, “over the past month, how satisfied are you with your health?” 49% responded “satisfied”, 21% responded “neutral”, 16% responded “very satisfied”, 13% responded “dissatisfied” and 1% responded “very dissatisfied.”
- When asked what the biggest concerns related to own health and wellbeing in the past year, 27% responded “weight”, 15% responded “Diabetes/kidneys”, and three

responses tied for third, “heart disease/high blood pressure/stroke/cholesterol”, “mobility/pain issues (fear of falling, arthritis, knee, shoulder, neck, back problems)” and “other chronic disease and infections.”

- When asked about their biggest concerns related to family’s health and wellbeing, 20% responded “Diabetes concerns (kidney, dialysis, amputation and eyesight loss)”, 11% responded “quality of healthcare and access to insurance”, 10% responded “eating well as a family”, and 10% “maintaining a healthy weight (obesity concerns).”
- When asked about their biggest health related concerns related to EBCI Tribal community, 33% responded “diabetes concerns (kidney, dialysis, amputation and eyesight loss)”, 30% “addiction (drugs/alcohol/smoking)” and 21% “maintaining a healthy weight (obesity concerns).”
- When asked, “what ideas do you have to improve the health of the EBCI tribal community?” responses were: more community exercise/recreation activities and incentives at 20% followed by health education, awareness and outreach with 14%, then healthier and more affordable foods in school, eateries and grocery stores.

Maternal and Infant Health

Jackson County

- The pregnancy rate for women aged 15-44 decreased since 2006 for Jackson County, 46.9 as well as WNC (63.4) and NC (70.8). (2013 rates in parenthesis)
- The teen pregnancy rate for women age 15-19 decreased significantly since 2007 in Jackson County.
- The WNC region has very high percentages of women who smoke during pregnancy. Jackson County is one of the many counties in the region where the percentage of women who smoked during pregnancy exceeds 20% (24% in 2013).
- 76% of women received prenatal care in the first trimester which is higher than NC at 70.3%, so women should have received messages from providers about the hazards of smoking while pregnant.
- For the last two data points available (2007-2011 and 2008-2012), Jackson County’s infant mortality rate was higher than NC and WNC Region at approximately 8 deaths per 1,000 live births.

Swain County

- Swain County’s pregnancy rate in 2013 was higher than NC and the WNC region, rising from 80.4% in 2010 to 87.1% in 2013.

- 27.5% of Swain County mothers reported smoking while pregnant in 2013, significantly higher than WNC (20%) and NC (10%).
- Infant mortality increased from 2007-2011 to 2008-2012 equal to NC and higher than the WNC region at approximately 7.9 deaths per 1,000 live births.

Tribal Health Assessment

- 39.9% of EBCI mothers reported smoking while pregnant in 2010, significantly higher than Jackson and Swain Counties, WNC (20%) and NC (10%).
- Maternal obesity in the EBCI was 45.1% compared to NC at 25.9% (2010).
- 11.7% of babies in EBCI were premature compared to 13.1% for NC (2012).
- Only 5.7% of American Indians in the CHSDA were low birth weight (less than 2500 grams). This is less than NC at 9.1% and less than the Healthy People 2020 Objective of 7.8%.
- Infant mortality for the CHSDA was 7.9 per 1,000 live births the same as NC.

Chronic Diseases

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

Jackson County

- Estimated adult diabetes prevalence in Jackson County was 10.7% in 2011, higher than WNC at 9%. Additionally, 10% of Jackson County residents self-report they have been diagnosed with borderline or pre-diabetes.
- Cancer was the leading cause of death in Jackson County. Lung, prostate, breast and colorectal cancers lead in site-specific cancers. Incidence increased in all four sites, however mortality is down for all but lung cancer which is up.
- Cardiovascular disease is the second leading cause of death in Jackson County. Over 5% of Jackson County residents have been diagnosed with heart disease. This prevalence is less than that of WNC at 6.5% and NC at 6.1%. (PRC, 2015) Heart disease mortality was clustered geographically in the Sylva/Balsam area of Jackson County with mortality rates of 200.7 to 283.2 per 100,000 population.

Swain County

- Swain County's percentage of self-reported diabetes in adults was 11.4% in 2011, and WNC's was 9%. The percentage of diabetes increased from 2008 to 2011 significantly in Swain County.

- Cancer was the second leading cause of death. Swain County’s cancer mortality rate was significantly higher than WNC and NC at approximately 220 deaths per 100,000 population. Lung cancer had the highest mortality rate by site at 67.9 followed by prostate at 38, then colorectal, then female breast.
- Heart disease was the leading cause of death in Swain County. 14% of Swain County residents surveyed reported being diagnosed with heart disease compared to 6.5% for WNC and 6.1% for the U.S. (PRC, 2015)

EBCI

- The American Indian population in Jackson and Swain reported significantly higher rates of diabetes than in the state overall at 26.3%.
- AI/AN adults have a higher percentage of cardiovascular disease 10.8% than NC (2012).

Injury and Violence

Jackson County

- For age groups 00-64 years, injuries (whether motor vehicle or intentional) were the leading cause of death for residents in Jackson County. The primary injuries that lead to death or debilitation in Jackson County were falls, unintentional poisonings and motor vehicle crashes.

Swain County

- For the age group 20-39 years, unintentional injuries and motor vehicle injuries were the leading causes of death in Swain County.

EBCI

- Domestic violence data is generally underreported, however according to data by the Council for Women, NC Department of Administration, the overall DV rates in the CHSDA are 16.3 per 1000, which is more than twice the state DV rate of 6.4 per 1000. (Council for Women, NC Dept of Administration)
- Unintentional injury is the third leading cause of death in CHSDA User Population (Indian health Service, 2006-2010). Motor vehicle accidents is the third leading cause of death among AI/Ans in the CHSDA. (NCHS)

Mental Health and Substance Abuse

Jackson County

- In the community survey, when asked if they got needed social/emotional support, 20% responded that they did not. (PRC, 2015)
- Mental health and substance abuse services came up as a need over and over again during listening sessions and key stakeholder interviews. Lack of mental health services was defined as a resource gap.

Swain County

- In the key informant surveys, 66.7% determined mental healthcare the as the most difficult to access.
- Over half the key informants characterized mental health as a “major problem” (PRC, 2015)
- In the listening sessions, substance abuse was described as a great concern.

EBCI

- WNC Healthy Impact data (2012) shows the percent of illicit drug use in the past month in Western North Carolina was .3% for AI/AN compared to 1.7% for the U.S. and 1.8% for Western North Carolina.
- WNC Healthy Impact data shows that AI/AN had a lower rate of current and binge drinking (29% and 5%) than WNC, NC and the U.S.
- WNC Healthy Impact data shows that AI/AN had a higher rate of smoking (41%) compared to blacks at 27% and whites at 20%.
- 13.4% of the EBCI were diagnosed with mood disorder (2011) compared to 20% of the U.S. (2010)
- EBCI also had lower average number of poor mental health days in the past 30 days at .3 compared to WNC at 3.6 (WNC Healthy Impact, 2012).

Clinical Care and Access

Jackson County

- 29% of Jackson County age 18-64 was uninsured in 2013. This is down from a high of 31.4% in 2010. 10% under age 18 were uninsured in Jackson County in 2013 down from a high of 12.1% in 2012. These percentages were higher than WNC and NC. (U.S. Census Bureau) NC did not expand Medicaid leaving many without insurance.
- Jackson County qualifies as a Health Professional Shortage Area (HPSA) by the federal government. However, Jackson County has a slightly higher number of active primary care physicians per 10,000 population than WNC and NC, but less than the U.S.

- Specific care and services were noted by key stakeholders as lacking during the CHA interview process. They were: subspecialty care (Endocrinology, Neurology), mental health care, and substance abuse treatment services.

Swain County

- 27.4% of Swain County age 18-64 was uninsured in 2013 down from a high of 29% in 2012. 10% under age 18 were uninsured down from a high of 12% in 2012. These percentages were higher than WNC and NC. (U.S. Census Bureau)
- Swain County had the lowest ratio among comparators in all categories of active health professionals (physicians, primary care physicians, dentists and pharmacists) except RNs.
- In 2015, 7.7% of respondents to the community survey indicated they were unable to get needed medical care at some point in the past year. This was down from 13% in 2012. (PRC, 2015)
- Over half of the key informants characterized access to health care services as a moderate problem and 16.7% rated access to health care as a major problem.

EBCI

- Health care coverage can have multiple meanings and interpretations, especially in the Cherokee area. All those eligible to receive health care through the Cherokee Health System can do so at no charge, regardless of whether or not they have the above types of coverage. This is possible through coverage by IHS, though IHS is not considered an insurer. WNC Healthy Impact data (2012) reports that 73.3% of AI/AN have healthcare insurance coverage compared to 76.3% for WNC, 82.3% for NC and 85.1% for the U.S.
- In 2012, 16% of AI/AN respondents to the community survey indicated they were unable to get needed medical care at some point in the past year. This percentage is higher than WNC at 10.8%.
- There is a ratio of one primary care provider to 739 population patients. 9% of user population patients are not empaneled to a PCP.

At Risk Populations

At-risk populations in Jackson County include (but are not limited to) those that are minorities, un- and under-insured, and low-income. Often times, these populations are likely to, or have the potential to, get a specified health condition.

- Minorities (Native Americans)
- Un and Under insured

- Low-income
- Residents who smoke
- Residents abusing substances
- Residents who are obese or overweight
- Residents who are sedentary
- Residents who consume poor nutrition
- Older adults

At-risk populations in Swain County include:

- The growing over 65 population
- The homeless population
- The uninsured

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

Clean air is a prerequisite for health. In 2014, the Air Quality Index (AQI) measurement for Jackson County were as follows:

- 71/80 days with good air quality
- 9/80 days with moderate air quality
- Small particulate matter was present at the level of pollutant on 80 of 80 monitored days (EPA, 2014)
- The average indoor radon levels in Jackson County was 2.8 pCi/L (2 times the national average). Radon is the number one cause of lung cancer among non-smokers.
- Second-hand smoke or environmental tobacco smoke (ETS) is a known carcinogen. Over 25% of residents in Jackson County indicated they have breathed someone else’s cigarette smoke at work in the past week. (PRC, 2015)

Swain County’s air quality was higher (worse) than NC and the U.S.

- Swain County’s average density of fine particulate matter was 13.3 in 2011 with NC at 12.3 and the U.S. with 12.3. During this timeframe, Swain County had 188 days with “good” air quality and 50 days with “moderate” air quality.
- The average indoor radon level in Swain County was 4.7 pCi/L, 15% higher than the regional mean and 3.6 times the average national level. The 5-county regional mean was 4.6 pCi/L. (Jackson, Swain, Haywood, Graham and Cherokee Counties)
- Over 30% of residents in Swain County indicated they have breathed someone else’s cigarette smoke at work in the past week. (PRC, 2015)

EBCI

The EBCI share the same air as Swain and Jackson Counties.

- 16.7% of AI/AN had breathed someone else’s cigarette smoke at work in the past week (among employed respondents) (WNC Healthy Impact, 2012) compared to 14.2% in WNC.

Water Quality

Clean water is also a prerequisite for health.

- In Jackson County, only 21,541 (or 54%) of the county’s 2010 population was served by community water systems. (SDWIS, 2014) The remainder of the population accesses water from wells, directly from a body of surface water, or from bottled water.
- In 2015, the Jackson County Department of Public Health informed residents of an advisory not to eat some fish in Lake Glenville. Based on a findings of high levels of mercury by the NC Department of Environment and Natural Resources (DENR).
- In Swain County, the community water system served an estimated 5,065 people, or 36% of the 2010 county population, 35% lower than the average for the WNC region and NC.
- There were 6 national pollutant discharge elimination permits (1 small, municipal wastewater treatment facility and 5 are domestic wastewater producers) issues in Swain County that allow municipal, domestic or commercial facilities to discharge products of water/wastewater treatment and manufacturing into waterways.

Access to Healthy Food and Places

Access to healthy foods and places to recreate are both indicators of health. In Jackson County:

- Seven grocery stores and three farmer’s markets exist to serve approximately 40,000 residents.
- 5% of residents live in food deserts (USDA)
- 30% surveyed responded they found it very or somewhat difficult to access fresh produce at an affordable price
- 27.5% surveyed responded they worried in the past year about food running out before having money to buy more, an increase from 21.4% in 2012 (PRC, 2015)

Additionally, if residents do you have access to a safe place to recreate – whether a park, greenway, walking trail, playground, etc., they are less likely to live an active lifestyle. In Jackson County:

- There are two public recreation and fitness facilities to serve approximately 40,000 residents, less than the arithmetic mean of WNC (4 facilities) (USDA ERS, Health and Physical Activity, 2014)

In Swain County:

- Three supermarkets, one farmer’s market and various fruit stands serve Swain County.
- Over 40% of Swain County residents surveyed responded they found it very or somewhat difficult to access fresh produce at an affordable price.
- There was one private gym and one recreation department in Swain County. There was also whitewater rafting and multiple walking trails throughout the county. Residents can also access an indoor pool, gym, track and basketball court located within the EBCI boundary within Swain County, however this is a 30-minute drive.

Identification of Health Issues and Priorities

Prioritization Criteria

To identify the significant health issues in our community, key partners reviewed data and discussed the facts and circumstances of our community. Jackson County 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 via listening sessions or key stakeholder interviews

Swain County used the following criteria to identify significant health issues:

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

The Jackson County CHA Work Team selected the following priority health issues.

- **Falls:** Jackson County has an increasing aging population. It is vital that we plan for this aging population in terms of health and human services—long-term care facilities, services for persons with Alzheimer’s, services that support aging-in-place, transportation systems, special needs registries, and more. Further, with an aging population comes an increased risk of falls and fall-related deaths among adults age 65+ years.
- **Substance Abuse/Overdose:** Unintentional injuries, including overdose, are a leading cause of death in Jackson County. We have expanded this to include substance abuse to account for the high tobacco use and other drug use rates our community is experiencing.
- **Prevalence of Diabetes:** Similar to the U.S. rates, the prevalence of diabetes is rising in Jackson County. Our community’s rate of diabetes is greater than that of WNC and NC as a whole.
- **Food Insecurity:** Close to one-third of residents in Jackson County have stated that they experience difficulty accessing fresh produce at an affordable price. Further, a similar percentage of residents state that they have worried in the past year about food running out before having money to buy more.
- **Fruit and Vegetable Consumption:** The USDA recommends that adults eat five servings of fruits and vegetables daily. In Jackson County, residents are eating closer to two serving of fruits and vegetables daily (6.8 servings of fruit/week and 8.2 servings of vegetables/week).
- **Physical Inactivity:** To experience health benefits, it is recommended that adults exercise for 150 minutes/week. In Jackson County, only 52.2% of residents meet this recommendation—less than that of WNC.
- **Obesity:** The prevalence of obesity (residents with a BMI of 29.9 or greater) in Jackson County is increasing and is higher in Jackson County than in WNC.

- **Access to Healthcare:** Access to healthcare can refer to many things—the presence or absence of resources that facilitate healthcare (having health insurance, having a primary care provider, having an adequate ratio of providers to patients), how easily a patient can gain access to that care (transportation, financial means), successful receipt of needed services, and more. Time and time again, access to healthcare was listed as an issue in Jackson County by key stakeholders and during listening sessions.
- **Affordable Housing:** One measure of economic burden in a community is the percent of housing units spending more than 30% of household income on housing. In Jackson County, larger proportions of both renters and mortgage holders spend >30% of household income on housing than the WNC or NC average.
- **Insurance Coverage:** With the implementation of the Affordable Care Act, many communities saw a decrease in the percent of population without health insurance. In Jackson County, the percent of uninsured adults age 18-64 increased between 2009 and 2010 but has decreased since. However, Jackson County has the highest percent uninsured among WNC and NC in all age groups from 2009-2013.

On January 2, 2016, the Swain County CHA Team identified the following health issues:

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

At a Jackson County community meeting on October 20, 2015, thirty-five attendees were asked to select health priorities for the community to focus on for the next three years using the following criteria:

1. How important or relevant is the issue?
2. What will we get out of addressing this issue or how impactful is it?

3. Can we adequately address this issue or how feasible is it?

At a Swain County community meeting on January 26, 2016, the attendees were asked to select health priorities using the following criteria:

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

Community members reviewed data from the previously mentioned identified health issues during a community meeting. A summarized list of common themes identified through the key stakeholder interviews and listening session process was also made available for those in attendance at the meeting. After a question and answer session on the data provided, community members ranked the identified issues using the criteria (relevancy, impact, and feasibility) explained above and a tool developed by WNC Healthy Impact, adapted from *Rating/Ranking Key Health Issues* (Health Resources in Action) and the *Hanlon Method for Prioritizing Health Problems* (NACCHO). Community members then voted on the issues that scored the highest leading to the following identified priorities.

Identified Priorities

The following Jackson County priority health issues were selected through the process described above:

- **Physical Activity and Nutrition** – Healthy eating and physical activity emerged as health priorities during the 2011 Community Health Assessment. Much progress has occurred in these areas but much is still to be done, based on our fruit/vegetable consumption rates, physical inactivity rates, and overweight/obesity rates. During the prioritization process, many community members voted for the following identified health issues:
 - Fruit and vegetable consumption
 - Physical inactivity
 - Obesity

The CHA Steering Committee opted to combine these similar health issues to form one health priority (Physical Activity and Nutrition) with hopes of addressing all aspects of this priority. This health priority is also in line with the NC Healthy People 2020 objectives:

- Increase the percentage of high school students who are neither overweight nor obese (from 72% to 79.2%)

- Increase the percentage of adults getting the recommended amount of physical activity (from 46.4% to 60.6%)
- Increase the percentage of adults who consume five or more servings of fruits and vegetables daily (from 20.6% to 29.3%)
- **Injury and Substance Abuse Prevention** – Substance abuse emerged as a health priority during the 2011 CHA. During the prioritization process for the 2015 CHA, the community decided to expand this health priority to include injury prevention based on notable rates of not only substance abuse (to include illicit drugs, prescription drugs, and tobacco) but also falls in our elderly population.
- **Chronic Disease** – Prevalence of diabetes emerged as the highest ranked health issue during the prioritization process. To encompass many diseases affecting Jackson County residents, chronic disease was selected as the final health priority. Further, chronic disease is in line with the NC Healthy People 2020 objectives:
 - Reduce the cardiovascular disease mortality rate (from 256.6 to 161.5)
 - Decrease the percentage of adults with diabetes (from 9.6% to 8.6%)
 - Reduce the colorectal cancer mortality rate (from 15.7 to 10.1)

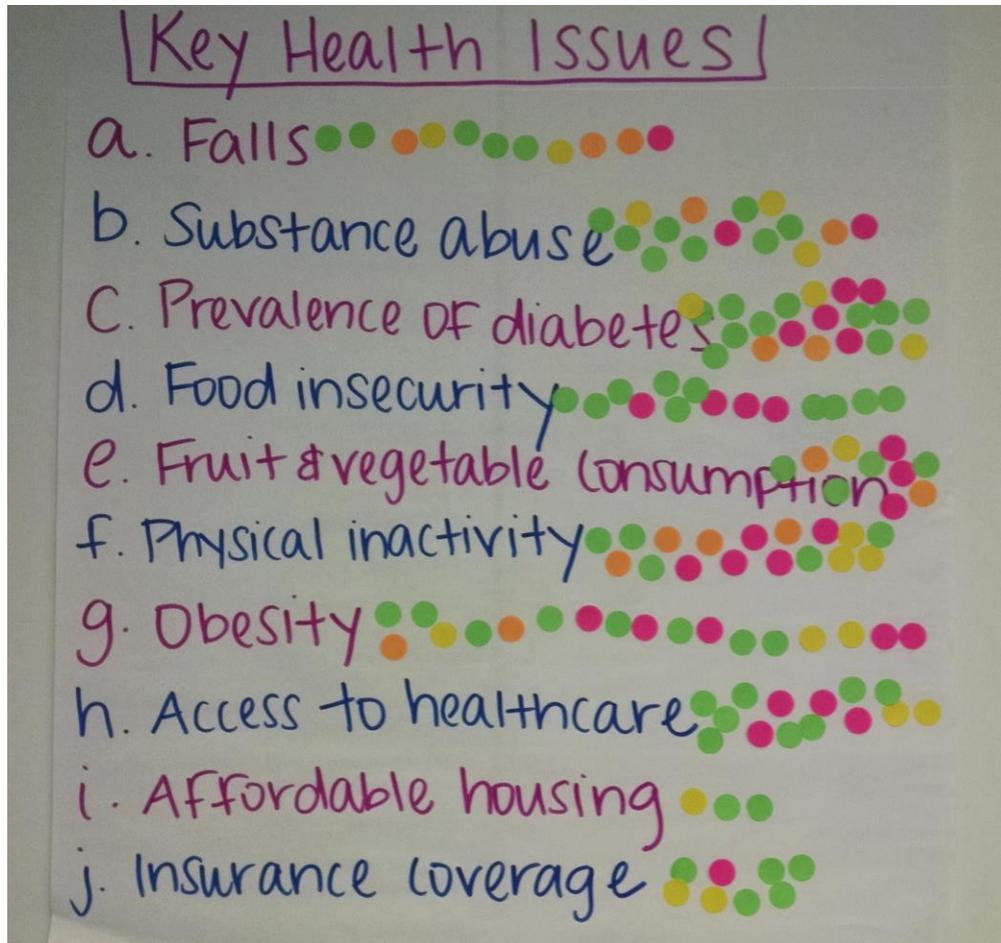


Photo courtesy of Melissa McKnight

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

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

The Eastern Band of Cherokee Indians finished a Tribal Health Improvement Plan (THIP) 2015-2017 in March 2015.

The three priority areas that the THIP points to are diabetes, substance abuse and depression.

1. Diabetes is now considered one of the most important health threats within Indian Country. Being overweight or obese can lead to diabetes, and we have a high number of people who are overweight or obese. And in EBCI, six out of ten people aged 65 and over had diabetes.
2. Rates of substance abuse vary greatly among tribal nations. That's why EBCI PHHS, CIHA and the Nashville Area Tribal Epidemiology Center have been working hard over the past 10 years to collect and maintain data on substance abuse in our area.
3. Depression is one of the top diagnoses within Cherokee Indian Hospital. Depression often occurs with another health concern. Within Indian Country, people who have depression sometimes also have diabetes or substance abuse problems.

Data Highlights of Top Health Priorities – Jackson County

Priority Issue #1: Physical Activity and Nutrition

The Jackson County CHA Work Team and CHA Steering Team, using input from the community, decided that **Physical Activity and Nutrition** was still a prominent health issue in 2015 in Jackson County and deserved to be tackled further as a priority issue.

- When asked about their consumption of fruits and vegetables within the past week, Jackson County residents ate only 6.8 servings of fruit and 8.2 servings of vegetables significantly less than the 35 recommended servings per week (or 5 per day). (Professional Research Consultants, Inc, 2015)
- Over half (52.2%) of Jackson County residents indicate that they meet physical activity recommendations, exercising 150 minutes or more per week. When split among moderate, vigorous, and strengthening physical activity, Jackson County residents participate in these activities as follows:
 - Moderate activity at least 5 times per week: 36.2%
 - Vigorous at least 3 times per week: 42.3%
 - Strengthening at least 2 times per week: 40.8%
- The Healthy People 2020 Target for healthy weight (percent of adults with a body mass index between 18.5 and 24.9) is 33.9% or higher. In Jackson County, 30.3% of residents are at a self-reported healthy weight. This is a decrease from what was reported in 2012 (37.6%). Consequently, 68% of residents are classified as overweight/obese, and 36.3% as obese. (Professional Research Consultants, Inc, 2015)

Understanding the Issue

Digging a little deeper into this issue, we know that it is difficult to adopt healthy behaviors if we do not live in an environment that supports these behaviors.

- 22% of residents in Jackson County live below the poverty level. This, combined with the fact that
- 29.9% of residents stated that it is somewhat or very difficult to access fresh produce at an affordable price could explain the low fruit and vegetable consumption rates in Jackson County. (Professional Research Consultants, Inc, 2015)
- In 2015, 27.5% of residents stated that they worried in the past year about food running out before having money to buy more—up from 21.4% in 2012. (Professional Research Consultants, Inc, 2015) When 27% of WNC children are food insecure—that’s 1 in 4 children—many are looking for any food to feed their families and are less concerned with the nutritional quality of that food. (The Community Table, 2014)

Food deserts are defined as urban or rural areas without ready access to fresh, healthy, and affordable food. To qualify as a food desert, a census tract must be low income (have a poverty rate of 20% or greater) and have low access (500 persons and/or at least 33% of the census tract’s population live more than 10 miles from a grocery store). Jackson County has only seven grocery stores and three farmer’s markets that serve the whole community. (USDA ERS, Access and Proximity to Grocery Store, 2012) As compared to other counties in NC, Jackson County experiences both low income and low access to grocery stores, explaining why many may have difficulties purchasing and consuming fruits and vegetables. (USDA ERS, Food Environment Atlas, 2010)

Again, without the proper supportive environment, it is difficult if not impossible to adopt healthy lifestyle changes.

- Approximately 50% of residents meet the physical activity recommendations, however much of our community is without environmental provisions to support an active lifestyle. Jackson County has only two recreation facilities serving the community. (USDA ERS, Health and Physical Activity, 2014) Further, the county has one greenway that serves the entire community. This greenway, located in Cullowhee, is used frequently indicating that residents are looking for places to recreate but may not have adequate access.
- Throughout the listening session and key stakeholder interview process, access to places to recreate came up. Residents in the south end of the county (Cashiers) spoke at length on the need for a community pool. Cashiers is a community of primarily older adults who believe that they would benefit from a pool as a means of gentle exercise. Other stakeholders identified the northwest end of the county (Whittier) as in dire need of any

recreation facilities. And finally, many spoke of the need to expand out county's sidewalk and greenway system in general. This expansion would help connect our community and support an active lifestyle in general.

Specific Populations At-Risk

While all residents in Jackson County can benefit from strategies that focus on physical activity and nutrition, the lives of at-risk populations may be improved even greater. Food insecurity and obesity often co-exist. Both food insecurity and obesity can be consequences of poverty, resulting in the lack of access to enough nutritious food and from the stresses of poverty.

(FRAC, 2015) **Low income and food insecure residents** often deal with a lack of full-service grocery stores, are less likely to have their own vehicle for regular food shopping, have greater availability of fast food restaurants, and cycle between deprivation and over-eating. Further, low income residents often live in neighborhoods with fewer physical activity resources, are less likely to participate in organized sports, and students of lower-income schools spend less time being active during physical education than students of higher-income schools. (FRAC, 2015)

Health Resources available/needed

As Healthy Eating and Physical Activity were noted as health priorities from the 2011 CHA, many health resources are available in our community. Further, many health resources are still needed.

Available Health Resources		
Resource	Lead Agency	2014-15 Highlights
Eat Smart, Move More, Weight Less	JCDPH	21 participants
BlastOff	Harris Regional Hospital	~15 participants
Worksite Wellness Programs	Jackson County Government, Jackson County Public Schools, Harris Regional Hospitals, MountainWise	Working to create healthy, supportive work environments with our largest employers
Living Healthy: Chronic Disease Self-Management	Area Agency on Aging	More trainers needed and in the pipeline to be trained in 2016
5-2-1-Almost None campaign	Healthy Carolinians of Jackson County	Shared throughout the community annually through various venues
Food of the Month Campaign	Healthy Carolinians of Jackson County	Food highlighted monthly; Cooking demos; Press releases
Food relief agencies	The Community Table, United Christian Ministries, MANNA	Assist those in need, reaching ~30% suffering from food insecurity

School-based gardens	Cullowhee Valley School, WCU	Teach students the importance of gardening and where food comes from
Community gardens	Cullowhee Community Garden, Sylva Community Garden	Half of harvest donated to food relief agencies as a means of plot rental; 530 lbs donated from one garden alone
Cooking Matters at the Store	JCDPH	Grocery store tours
Healthy Snack Competition	School Health Advisory Council	13 participants
Community Eligibility Program	Jackson County Schools	Free lunch and breakfast for all students at schools that qualify based on federal guidelines (Smokey Mt. High School, Blue Ridge School, Blue Ridge Early College, The School of Alternatives)
Summer Feeding Program	Jackson County Schools	Feeding sites set up annually to help students and families in need throughout the summer
Annual Healthy Living Festival	Healthy Carolinians of Jackson County	43 vendors, 153 participants
Home delivered meals	Jackson County Department on Aging	Reach seniors who are unable to leave their homes easily
Arthritis Foundation Exercise Program	Jackson County Department on Aging	1193 participants
Walk with Ease	Jackson County Department on Aging	423 participants
Tai Chi for Arthritis	Jackson County Department on Aging	525 participants
WNC Get Fit Challenge	Healthy Carolinians of Jackson County	539 participants
Senior Games	Jackson County Parks and Recreation	Large participation from older adults throughout the community

Needed Health Resources	
Resource	Potential Lead Agency(ies)
Greenways/sidewalks	Public Works, NC DOT, Planning Commission, Department of Parks & Recreation

Additional recreation centers	Department of Parks & Recreation
Sliding scale recreation resources	Department of Parks & Recreation
Healthy food options	Planning Commission, Chamber of Commerce
Cooking classes	JCDPH, Cooperative Extension
Nutritious food donations	Food relief agencies
Additional health education for youth	JCDPH, Harris Regional Hospital, Cooperative Extension
Additional health education for parents	JCDPH, Harris Regional Hospital, Cooperative Extension

Priority Issue #2: Injury & Substance Abuse Prevention

Unintentional injuries are injuries that are unplanned yet predictable and preventable when proper safety precautions are taken. These injuries are not accidents. Often, these injuries occur in a short period of time and the harmful outcome was not sought. The most common unintentional injuries result from motor vehicle crashes, suffocation, drowning, poisoning, fires/burns, falls, and sports/recreation. (CDC, Protect the Ones You Love: Child Injuries are Preventable, 2012)

In Jackson County, **unintentional injuries** (especially falls and overdoses) are notable.

Unintentional injuries (both from and not from motor vehicle injuries) are a leading cause of death for residents aged 00-64 years. (NC SCHS, 2009-2013 Race-Specific and Sex-Specific Age-Adjusted Death Rates by County (CD21B), 2009-2013) When mapped by census district, “pockets” of mortality from unintentional injuries emerge—residents in Glenville, Cashiers, and Balsam experience higher unintentional injury mortality rates that other communities in Jackson County.

For seniors age 65+, 38.7% have fallen in the past year. This is an increase from 22.9% in 2012 and greater than the comparator jurisdiction of WNC (25.2% in 2012 and 33.0% in 2015).

(Professional Research Consultants, Inc, 2015) Further, from 2011 through 2013, 13 Jackson County residents died as a result of an unintentional fall. Of those 13 fall-related deaths 54% occurred in the population 65 years and older while 31% occurred in the population 85 years and older. From this data, one can glean that older adults are not only at greater risk for falls but also at greater risk of dying from a fall-related injury.

A general characteristic of WNC is high mortality rates due to unintentional poisoning, especially by medication and drug overdose. Jackson County is one of the WNC counties with higher than state average poisoning and drug overdose mortality rates. In the period 2009-2013, 34 Jackson County residents died as a result of unintentional poisoning. Of the 34 unintentional poisoning deaths in the county in that period, 76% were due to medication or drug overdoses—significantly higher than the NC average but lower than the WNC average.

(Injury and Violence Prevention Branch, 2015)

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

- **Other opioids:** Examples include hydrocodone (Vicodin), oxycodone (OxyContin, Percocet), morphine (Kadian, Avinza), codeine, and related drugs
- **Methadone:** A synthetic opioid usually associated with treatment for drug abuse
- **Other synthetic narcotics:** Examples include bath salts, synthetic marijuana, incense, air fresheners, things known as “designer drugs”
- **Benzodiazepines:** Anti-anxiety medications such as sleeping pills, anti-seizure drugs, and muscle relaxers (Xanax, Klonopin, Valium, Rohypnol, Ativan)
- **Alcohol**
- **Cocaine**
- **Heroin**

“Other” opioids contributed to the highest percent of drug overdose deaths (38.7%) in Jackson County in the period 2009-2013—the highest among all comparator jurisdictions. (Injury and Violence Prevention Branch, 2015) Other medications of note include synthetic narcotics (25.8%) and benzodiazepines (16.1%).

Unintentional injuries like falls and overdose/poisonings often result in residents utilizing hospital services. When broken down by category, 9% of all hospital discharges in Jackson County in 2012 were due to injuries and poisonings. (NC SCHS, Inpatient Hospital Utilization and Charges by Principal Diagnosis, and County of Residence, North Carolina 2012 (Excluding Newborns & Discharges from Out of State Hospitals, 2014) By working on preventative measures, we could have a large impact on inpatient hospital utilization and healthcare cost overall. *Source: NC DPH, Chronic Disease and Injury Section, Injury and Violence Prevention Branch*

While overdose and poisonings are significant in Jackson County, other abused substances (tobacco and alcohol) should not be ignored. These substances are often the gateway to illicit drugs and can lead to unintentional injuries as they can inhibit the user’s faculties. In Jackson County, 22% of residents are current smokers—greater than the Healthy People 2020 target of 12%. More residents in Jackson County are smokers than that of all comparator jurisdictions.

WNC, NC, and the U.S. Further, 4.3% of residents use smokeless tobacco—again, greater than the Healthy People 2020 target of 0.3% or lower. Finally, the newer phenomenon of e-cigarettes has reached the residents of Jackson County. Currently, 6.6% of residents state that they are e-cigarette users. Finally, over one-fourth (25.5%) of residents surveyed indicate that

they have breathed someone else's cigarette smoke at work in the past week (Professional Research Consultants, Inc, 2015)

Intervening early, before drug use or excessive alcohol use progresses to addiction, is among the most cost-effective ways to address substance abuse, reduce cost to society, and improve public health. (Office of National Drug Control Policy, 2012) Through data collected in 2013, we learned that drug use increases with age among high school students. Further, as student age, their perception of risk of cigarettes, alcohol, marijuana, and prescription drugs decreases dramatically. (Pride Surveys, 2013)

Understanding the Issue

Jackson County has a growing older adult population. In fact, the U.S. Census Bureau predicts that the population in each major age group age 65 years and older in Jackson County will increase between 2010 and 2030. The proportion of the population age 85 years and older will more than double in that period and the population age 75-84 years will increase by 87%. By 2030, projections estimate that there will be more than 9,500 persons (roughly 25% of the total population) age 65+years in Jackson County. (U.S. Census Bureau, Profile of General Demographic Characteristics: 2000 (DP-1), SF1, 2000) With a growing aging population, it is pertinent that we plan with sufficient health and human service resources—resources such as long-term care facilities, services for persons with Alzheimer's, adult day care, respite care, congregate feeding sites, transportation systems, special needs registries, and programs that support the medical needs of residents as they age (balance programs, fall support groups, aging-in-place support, home modification, etc.). As residents age, they are more likely to experience a fall and die from a fall-related injury. We as a community need to assist our aging population to not only help seniors recover from falls but put measures in place to prevent falls from happening. By partnering with local senior centers, assisted living facilities, EMS, environmental health and more, we can develop a multi-pronged community approach to address falls through fall risk identification, home assessments, balance classes, and more.

It is evident from the data shown above that Jackson County, in line with the rest of the United States, is dealing with a drug overdose and poisoning epidemic. Since 1999, the amount of prescription painkillers prescribed and sold in the U.S. has nearly quadrupled yet there has not been an overall change in the amount of pain that Americans report. (CDC, Injury Prevention and Control: Prescription Drug Overdose, 2015) Addressing this epidemic will require the multi-faceted approach of Project Lazarus:

- Community education

- Provider education
- Hospital ED policies
- Diversion control
- Pain patient support
- Harm reduction
- Addiction treatment

However, talking about drugs is still viewed as taboo in this community. Residents don't know who to turn to if their loved ones are battling addiction. Many do not believe their loved ones are at risk or do not understand the risk of overdose. To clarify, 99.5% of Jackson County residents said that they had not taken a prescription drug that was not prescribed to them in the past month. Additionally, 97.5% of residents stated that they had never shared a prescription with someone else. (Professional Research Consultants, Inc., 2015) Finding an effective way to communicate the severity and change the "not in my backyard" mentality of this public health issue to our residents coupled with other spokes of the Project Lazarus wheel will prove effective at reducing drug/poisoning overdose and death.

Finally, all injury and substance abuse interventions should begin in the early years of life. Intervening early is not only a cost-effective way to address these issues but also works to vastly improve public health in the long run. Fall prevention programs (such as Otago Exercise Program, Stepping On) can have a return-on-investment (ROI) ranging from \$1.36-2.27. (CDC, Preventing Falls: A Guide to Implementing Effective Community-Based Fall Prevention Programs, 2015) Programs that prevent drug abuse and other problem behaviors also produce benefits for the community that outweigh monetary costs; for every dollar spent, up to a \$10 ROI results. (Ingebrigtsen)

Specific Populations At-Risk

While all residents in Jackson County can benefit from strategies that focus on injury and substance abuse prevention, the lives of at-risk populations may be improved even greater. **Older adults**, those 65+ years, are at greater risk of not only falling but of dying from a fall-related injury. Seniors may be secluded, without social support, putting them at greater risk. Implementing programs and environmental changes that target this population is vital to address this health priority. Further, **minorities** (like Native Americans) and **white males** are at greater risk of both substance abuse and overdose in our community. (OWH, 2012) (Paulozzi, 2012) Additionally, anyone who has a **history of substance abuse, history of chronic pain, or is living**

with mental health problems is also an at-risk population for this health behavior. Finally, **low-income residents** are at greater risk for all unintentional injuries, including overdose.

Health Resources available/needed

Substance Abuse was noted as a health priority from the 2011 CHA, and many health resources have been developed in our community. Many health resources are still needed to address both substance abuse and injury prevention.

Available Health Resources		
Resource	Lead Agency	2014-15 Highlights
Arthritis Foundation Exercise Program	Jackson County Department on Aging	1193 participants
Walk with Ease	Jackson County Department on Aging	423 participants
Tai Chi for Arthritis	Jackson County Department on Aging	525 participants
Senior Games	Jackson County Parks and Recreation	Large participation from older adults throughout the community
Safe Kids Jackson County	JCDPH	Coalition of active members focused on injury prevention of residents 0-19 years
Project Alert	Mountain Projects, Inc.	Substance abuse prevention curriculum for 7 th -8 th graders
WNC Teen Institute	Mountain Projects, Inc.	High school student club focused on empowering students to make positive decisions
Prescription Drug Take Back Events	Healthy Carolinians of Jackson County	2 events
Permanent Drop Box	Jackson County Sheriff's Office	Installed in 2011 and emptied almost daily
Prescription Drug Abuse Lunch and Learn	Healthy Carolinians of Jackson County	1 lunch and learn held
Smoky Mountain LME/MCO	Smoky Mountain LME/MCO	Support and services for mental health, developmental disabilities, and substance
Naloxone distribution	Mountain Projects, Inc.	Free naloxone

Needed Health Resources	
Resource	Potential Lead Agency(ies)
Aging-in-place services	Department on Aging, JCDPH
Fall prevention team	Department on Aging, JCDPH, EMS, Harris Regional Hospital
Substance abuse prevention programs for youth	Mountain Projects, Inc.
Increased naloxone distribution	Mountain Projects, Inc.; JCDPH
More local in-patient treatment centers	Hospital, Smoky Mountain LME/MCO
Increase community awareness about available substance abuse/mental health resources	Smoky Mountain LME/MCO; JCDPH

Priority Issue #3: Chronic Disease

Data collected during the 2015 CHA process indicated that **chronic disease** was a notable health issue and should be treated as a priority. In fact, the prevalence of diabetes was selected as the health issue of highest priority during the community prioritization process. To be more inclusive, the CHA Work Team and Steering Committee decided to expand this priority issue from solely diabetes to **chronic disease**, to account for the variety of diseases that lead to increased morbidity and mortality in Jackson County.

Chronic diseases are long-lasting conditions that can be controlled but not cured. These diseases are the leading cause of death and disability in the United States, accounting for 70% (1.7 million) of all deaths annually. Although costly and common, chronic diseases are among the most preventable and most can be effectively controlled. Examples of chronic disease include Alzheimer’s disease, asthma, cancer, diabetes, heart disease, overweight/obesity, and more. (The Center for Managing Chronic Disease, 2011) In Jackson County, the three leading causes of death are cancer, diseases of the heart, and chronic lower respiratory disease—in line with both WNC and NC. (NC SCHS, 2013 North Carolina Vital Statistics, Volume 2: Leading Causes of Death, 2013) Another chronic disease of note due to its high prevalence and cost in our community is diabetes.

For almost all age groups (less 20-39), cancer is a leading cause of death. Lung, prostate, breast, and colorectal cancer all have increased in incidence from 1999-2003 to 2006-2012 while only lung cancer has increased in mortality from 2002-2006 to 2009-2013. (NC SCHS, 2013 North Carolina Vital Statistics, Volume 2: Leading Causes of Death, 2013).

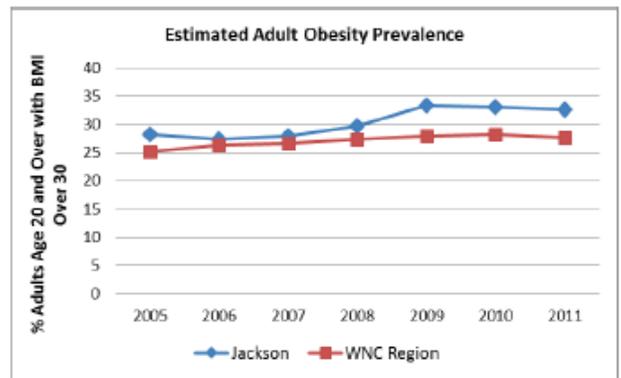
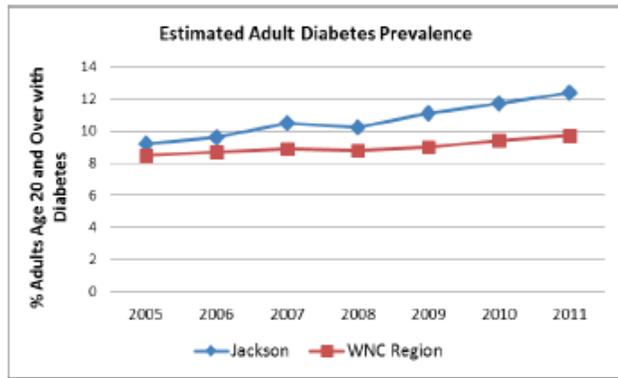
While cancer incidence is higher in Cashiers, cancer mortality is higher in the Savannah/Whitter area of the county. When broken down by type of cancer, lung/bronchus cancer incidence rates are higher in the southeastern (Tuckasegee and Sapphire) part of the county while breast cancer is more often diagnosed in the south (Cashiers) end of the county.

In Jackson County, 5.6% of residents state that they have been diagnosed with heart disease (to include heart attack, angina, or coronary heart disease). This prevalence is less than that of WNC and NC (6.5% and 6.1% respectively). (Professional Research Consultants, Inc., 2015) To dig deeper into this issue, we surveyed residents about their prevalence of high blood pressure and high cholesterol as both can lead to heart disease if left untreated. Over 30% of Jackson County residents have been diagnosed with both high blood pressure and high cholesterol—greater than the Healthy People 2020 targets of 26.9% and 13.5% respectively. While the prevalence seems high, many residents are taking action (through change in diet, exercise, and/or medication) to control both diagnoses—89.2% are taking action to control hypertension while 82.8% are taking action to control high cholesterol. (Professional Research Consultants, Inc., 2015)

Chronic lower respiratory diseases (CLRD) are diseases that affect the lungs. These may include chronic obstructive pulmonary disease (COPD), emphysema, chronic bronchitis, and asthma. In Jackson County, both asthma and COPD rates are lower than that of WNC while similar to those of NC.

In 2012, the highest proportion of hospital discharges in Jackson County was for respiratory diseases (14%) to include pneumonia, influenza, COPD, and asthma. (NC SCHS, Inpatient Hospital Utilization and Charges by Principal Diagnosis, and County of Residence, North Carolina 2012 (Excluding Newborns & Discharges from Out of State Hospitals), 2014)

The eighth leading cause of death in Jackson County is diabetes mellitus. Though not listed in the top three causes of death, diabetes is of great concern due to increased prevalence of the disease and the financial burden the disease has on Jackson County residents. From 2005-2011, the average self-reported prevalence of Jackson County adults with diabetes was 10.7%, higher than the WNC average of 9%. The prevalence of diabetes has been rising (which may be correlated with the high prevalence of adult obesity) over time in both Jackson County and WNC. (CDC, County Level Estimates of Diagnosed Diabetes- of Adults in NC, 2005 [and other years as noted], 2005)



Source: Centers for Disease Control and Prevention, via BRFSS

Only two-thirds of residents surveyed indicate that they were tested for diabetes within the past year. An additional 10% of Jackson County residents indicate that they have been diagnosed with borderline or pre-diabetes, a condition that will develop into diabetes if not treated with lifestyle changes. And, of those diagnosed with the pre- or diabetes, 13.7% are still not taking action to control it. (Professional Research Consultants, Inc., 2015)

Understanding the Issue

Taking action to control chronic disease will require a multi-faceted approach. We cannot expect individuals to control chronic disease on their own if environmental, social, and community supports are not in place to assist them. The Circles of Influence in Self-Management of Chronic Disease clearly explains each level of support for those dealing with chronic disease:

- Self-management by the person
- Family involvement
- Clinical expertise and systems
- Work/school support
- Community awareness and action
- Environmental measures
- Policy

The first step to controlling chronic disease is having a patient put themselves at the center of disease control solutions. From there, health care teams can design patient education, service delivery, and payment systems that all focus on supporting that patients' efforts while building the capacity of the individuals and their families to manage their disease effectively. Working in concert, disease control increases, healthcare costs go down, and well-being improves. (The Center for Managing Chronic Disease, 2011)

Specific Populations At-Risk

While all residents in Jackson County can benefit from strategies that focus on chronic disease prevention, the lives of at-risk populations may be improved even greater. There are many health risk behaviors, however, that put one at greater risk for developing a chronic condition—**lack of exercise or physical activity, poor nutrition, tobacco use, and drinking too much alcohol**. These health risk behaviors are directly linked to much of the illness, suffering, and early death related to chronic diseases and conditions. Additional vulnerable populations, such as **low-income**, the **un- or under-insured**, and those of **low socioeconomic status**, are all at greater risk of not only developing a chronic condition but also of not receiving adequate care once diagnosed. **Poverty** and chronic disease are interconnected in a vicious cycle. Often, the poorest people are at most risk for developing a chronic condition and die prematurely from said condition. These people are at-risk for several reasons:

- Chronic disease burden is concentrated among the poor.
- Poor people have increased exposure to risk and decreased access to health services.
- Chronic disease can cause poverty in individuals and families as they seek treatment, continuing the downward spiral. (WHO, 2015)

These reasons explain why investment in chronic disease management programs are vital among low income populations.

Health Resources available/needed

Many resources to address chronic disease are already in place in our community. Yet there are opportunities to increase these resources to meet the needs of the population.

Available Health Resources		
Resource	Lead Agency	2014-15 Highlights
Diabetes Self-Management Program (DSME)	JCDPH, Harris Regional Hospital	Multiple participants; Hospital recently acquired ADA recognition
Medical Nutrition Therapy (MNT)	JCDPH, Harris Regional Hospital	Participants seen at no cost at JCDPH
Eat Smart, Move More, Weigh Less	JCDPH	21 participants
Diabetes Prevention Program (DPP)	JCDPH	Pilot program of 8 participants; Working towards CDC recognition
Living Healthy: Chronic Disease Self-Management	Area Agency on Aging	More trainers needed and in the pipeline to be trained in 2016
ODHDSP grant	MountainWise	Working on community-clinical connections for obesity, diabetes, heart disease, and stroke
Stroke risk screening	Healthy Carolinians of Jackson County, Harris Regional Hospital	~100 participants screened at no cost
Freshstart	JCDPH, Harris Regional Hospital	Free cessation classes offered every other month or upon request
Worksite Wellness Programs	Jackson County Government, Jackson County Public Schools, Harris Regional Hospitals, MountainWise	Working to create healthy, supportive work environments with our largest employers

Needed Health Resources	
Resource	Potential Lead Agency(ies)
Expanded Diabetes Prevention Program	JCDPH, MountainWise
Living Healthy: Chronic Disease Self-Management	Area Agency on Aging
Strengthen community-clinical connections for bi-directional chronic disease management	MountainWise
Additional Worksite Wellness Programs (private sector)	MountainWise, JCDPH, Harris Regional Hospital
Breast, colorectal, & prostate cancer screening events	Harris Regional Hospital, JCDPH, Local providers
Expanded tobacco cessation programs	JCDPH, Harris Regional Hospital
Expanded tobacco control ordinances	MountainWise
Weight loss/management programs	JCDPH, Cooperative Extension

Data Highlights Priority Health Issues – Swain County

Priority Issue #1: Chronic Disease

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

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

Diabetes also increases the risk for stroke. Diabetes is a chronic, progressive disease impacting and influencing over 347 mill individuals throughout the world. Diabetes is a chronic, progressive disease impacting and influencing over 347 million individuals throughout the world. Your body needs glucose (sugar) for energy. Insulin is a hormone made in the pancreas that helps move glucose from the food you eat to your body's cells. If you have diabetes, your

body doesn't make enough insulin, can't use its own insulin as well as it should, or both (Rise, 2013). These areas have been shown as preventive measures for heart disease, stroke, and diabetes prevention:

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

Health Indicators

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

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

Understanding the Issue

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

Populations At-Risk

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

Health Resource Available/Needed

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

Priority #2 Reduce Substance Abuse

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

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

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

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

Adolescents and impressionable youngsters are most susceptible to the allure of drugs and that is why preventing the first use of illegal drugs, alcohol, and tobacco is essential.

Adolescents who do not use illegal drugs, alcohol or tobacco are less likely to develop a chemical dependency. Successful substance-abuse prevention leads to reductions in traffic fatalities, violence, unwanted pregnancy, child abuse, sexually transmitted diseases, HIV/AIDS, injuries, cancer, heart disease, and lost productivity (Preventing 2016).

Health Indicators

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

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

- Methadone
- Cocaine
- Heroin
- Alcohol
- Benzodiazepines
- Other Synthetic Narcotics
- Other Opioids

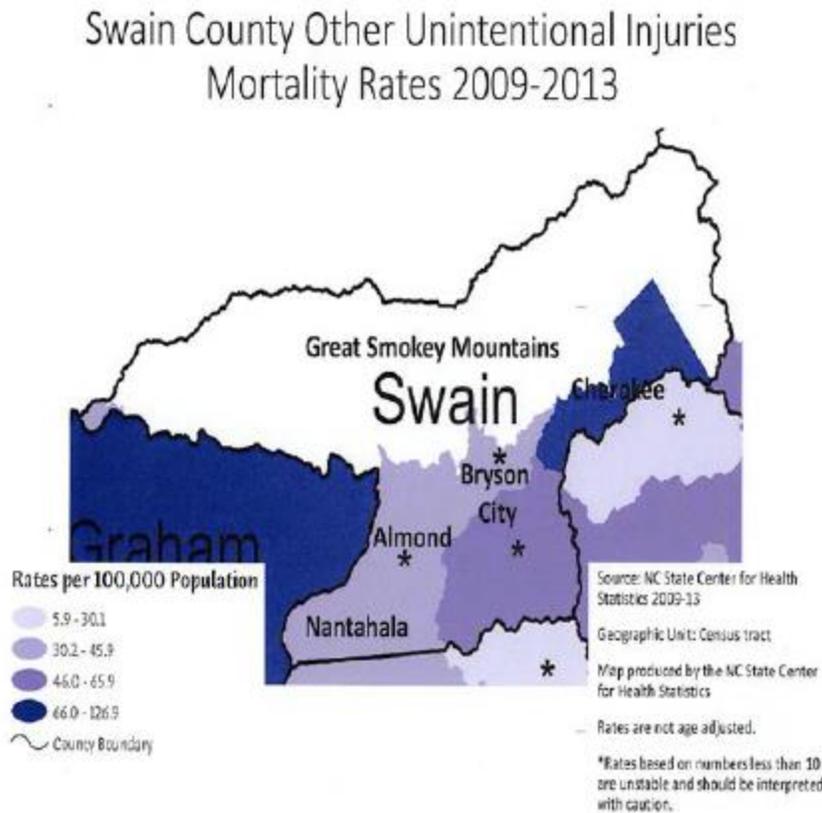
“Other Opioids” caused the highest proportion of drug overdose deaths (68.4%) in Swain County in the period 2009-2013. Methadone is a synthetic opioid usually associated with treatment for drug abuse. “Other opioids” could include: hydrocodone, oxycodone, morphine, codeine, and related drugs. Benzodiazepines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

Understanding the Issue

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

Populations At-Risk

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



It is evident Swain County, in line with the rest of the United States, is dealing with a drug overdose and poisoning epidemic. Since 1999, the amount of prescription painkillers prescribed and sold in the U.S. has nearly quadrupled yet there has not been an overall change in the amount of pain that Americans report (CDC, Injury Prevention and Control: Prescription Drug Overdose, 2015). Greater community education, provider education, pain patient support and addiction treatment facilities are needed to address this epidemic. However, talking about drugs is still viewed as taboo in this community. Residents don't know who to turn to if their loved ones are battling addiction. Many do not believe their loved ones are at risk or do not understand the risk of overdose. To clarify, 97.5% of Swain County residents said that they had not taken a prescription drug that was not prescribed to them in the past month. Additionally, 97% of residents stated that they had never shared a prescription with someone else. (Professional Research Consultants, Inc., 2015) Finding an effective way to communicate the severity and change the "not in my backyard" mentality of this public health issue to our residents will prove effective at reducing drug/poisoning overdose and death.

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

Health Resources Available/Needed

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

Priority Issue #3 Promote a Healthy Environment

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

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

Data Highlights

- Radon - Western North Carolina has the highest radon levels in the state. The arithmetic mean indoor radon level for the 16 counties of the WNC region is 4.1 pCi/L

which is 3.2 times the average national indoor radon level. In Swain County, the current average indoor radon level is 4.7 pCi/L, 15% higher than the regional mean, and 3.6 times the average national level

- Teen Pregnancy - Among Swain County women aged 15-44 this new rate was 104.6, and although it is not plotted below, it would have been the highest pregnancy rate among the stratified groups. Among Swain County teens, the pregnancy rate for non-Hispanic American Indians was suppressed, due to a below threshold number of pregnancies (n=3).
- Smoking While Pregnant - The percentage of women who smoked during pregnancy within WNC did not improve significantly between 2008 and 2013. The occurrence of pregnant women in Swain County who smoked actually increased after 2009. Among comparators, in every year cited except 2009 Swain County had the highest percentage of pregnant women who smoked.

Understanding the Issue

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

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

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

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

Populations At-Risk

The entire community.

Data Highlights Priority Health Issues - EBCI

Diabetes

Issue – High rate of Type 2 diabetes among Tribal members

Focus – Prevention

- Address obesity
- Decrease stress
- Increase physical activity
- Improve nutrition

Success - A decrease in incidence of Type 2 diabetes within the Tribe.

Substance Abuse

Issue: Overindulgence or dependence on an addictive substance that is harmful to individual, family and/or friends.

Focus – Prevention

Success – Lower incidence of addiction in community.

Depression

Issue – Lack of understanding of signs and symptoms associated with depression among children and adults.

Focus – Awareness

Success – People in the community able to identify when they are depressed and know where to go for help.

Community Assets and Resources

To compile a Health Resource List, the CHA Work Team began by reviewing the Health Resource List developed during the 2011 CHA. Any outdated or incorrect information was edited and saved for future reference. The Team split the list into three categories:

- Health resources
- Supportive services
- Needed resources

Additionally, the CHA Facilitator met with the local Community Resource Coordinator (CAC) at the Department on Aging to compare our Health Resource List with her Resource List. Further additions and edits were made. Finally, the CHA Facilitator compared all data gathered to the

2-1-1 dataset provided by WNC Healthy Impact. Further additions and edits were made and sent to the 2-1-1 coordinator so that the 2-1-1 online directory could be updated. In lieu of a printed directory, the CHA Work Team opted to focus on updating the 2-1-1 online directory for a number of reasons. The reasons are as follows:

- 2-1-1 is an easy to remember, three-digit telephone number that connects people with important community services to meet every day needs and the immediate needs of people in crisis.
- 2-1-1 is free, confidential, and available 24 hours a day. 2-1-1 can be accessed through the internet (www.nc211.org) or by calling 2-1-1 from any home, office or cell phone or the toll-free number of 1-888-892-1162.
- 2-1-1 can be updated in real-time, by sending updates to the 2-1-1 coordinator out of Asheville, NC.

In working with the 2011 Community Resource List and the CAC from the Department on Aging, the CHA Work Team updated the 2-1-1 Directory for Jackson County. Resources available to our residents can be found by visiting www.nc211.org or by calling 2-1-1 or 1-888-892-1162. During this updating process, much was found in terms of available health resources and supportive services.

To begin, Jackson County has many health and supportive services in place for older adults. The CAC at the Department on Aging works closely with older adults, identifying their needs—whether they be housing-, insurance-, medical-, or else-related—and assists the older adults in accessing these services. Our community has access to many support groups (such as Alcoholics Anonymous, Appalachian Community Services, Leukemia and Lymphoma Society, Memory Care, and more). Further, our community provides resources for those who are uninsured or under-insured (Blue Ridge Free Dental Clinic, Mountain Area Pro Bono PT Clinic, Good Samaritan Clinic, Nurse Family Partnership, and more). Finally, Jackson County offers a plethora of county services to its residents (Health Department, Animal Shelter, Department on Aging, Recreation Department, Department of Social Services, Emergency Management, and more).

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

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

EBCI – Community Resources

The EBCI Tribal Health Improvement Plan 2015 includes a section for community resources for each of the top three priorities, pages 38-40.

Resource Gaps – Jackson County

Though many resources are available, there are gaps that need to be filled so that Jackson County residents have adequate access to services. The following is a list of gaps identified through reviewing available resources, key stakeholder interviews, and listening sessions:

- **Affordable childcare:** High-quality, affordable childcare is a huge need in the community. Many parents have difficulty balancing work with childcare costs.
- **Affordable housing:** Few affordable housing options are available for residents, especially seniors.
- **Communication channels:** Living in a remote and isolated community, there needs to be more communication channels (newspapers, internet connectivity, radio stations, etc.).
- **Greenway system/sidewalks:** An extended, connected greenway would increase physical activity and active living opportunities for residents.
- **Healthy food options:** Healthy food options in the form of grocery stores, farm stands, etc. are needed to meet the needs of residents.
- **Homeless shelter:** A plan for a homeless shelter, not a handout, is recommended for those in need in the community.
- **Medicaid expansion:** A large number of residents would benefit from Medicaid expansion.
- **Mental health services:** Services such as housing and treatment facilities would help those suffering from mental health issues. Helping our residents avoid incarceration or ED admittance is vital.

- **Protection for renters:** Many feel that renters have no rights or protection. Increased protection is needed as there are many renters (especially among older adults) in this community.
- **Access to health care (including subspecialty care):** Residents have difficulty accessing healthcare due to a lack of providers, financial constraints, and more. Further, many residents travel out of county for subspecialty care (neurology, endocrinology, etc.) Often, residents don't have the means to travel and go without care.

Resource Gaps – Swain County

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

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

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

There were four broad themes that emerged in this process:

- Jackson and Swain Counties need to create a “Culture of Health” which permeates throughout the cities, employers, churches, and community organizations to engender total commitment to health improvement.
- There is a direct relationship between health outcomes and affluence (income and education). Those with the lowest income and education generally had the poorest health outcomes.
- While any given measure may show an overall good picture of community health, there are significantly challenged subgroups.
- It will take a partnership with a wide range of organizations and citizens pooling resources to meaningfully impact the health of the community. Many assets exist in the counties to improve health.

2011 Harris Regional Hospital Implementation Plan/Impact Evaluation

Harris Regional Hospital was a key stakeholder in the previous CHA conducted in 2011. The top health issues were:

Physical Activity and Nutrition has been a priority issue in Jackson County for many years, going by a variety of names. In the 2011 CHA, two priorities and action teams emerged (Healthy Eating and Physical Activity) to address this health priority. Action teams worked diligently to increase the percentage of Jackson County residents consuming five or more one-cup servings of fruits and vegetable daily and increasing the percentage of Jackson County residents exercising 150 minutes or more weekly. The Health Department partnered with a variety of agencies and organizations to tackle these health issues—Jackson County Parks and Recreation Department, Jackson County Department on Aging, Harris Regional Hospital, Jackson County Public Schools, Jackson County Department of Social Services, and more. With a collective effort, we were able to “move the needle,” increasing the physical activity of Jackson County residents while keeping consumption of fruits and vegetables among Jackson County residents the same.

The Jackson County 2011 CHA identified substance abuse prevention as a health priority. An action team emerged and worked diligently to reduce the percentage of 12-19 year-old students that report the use of illicit drugs, alcohol, and tobacco within the past 30 days. Over the course of four years, our action team saw a new health priority arise in this field and responded. We incorporated the Project Lazarus model into our action plan, working persistently to increase knowledge and awareness about prescription drug abuse, reduce the presence of unwanted medication in our community, educate the public about naloxone, and reduce prescription drug overdose in Jackson County. During data collection for the 2015 CHA, we learned unintentional injuries (to include overdose, falls, and more) were a leading cause of death in our community. To continue the work begun in 2011 but account for all unintentional injuries, we expanded this health priority to **Injury and Substance Abuse Prevention**.

2013 HRH CHNA and Implementation Plan Written Comments

No written comments were received on the previous plan. There is an opportunity to provide comments on the 2016 CHA and implementation plan on the HRH website.