Eastern Band of Cherokee Indians Tribal Health Assessment

July 1

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EBCI Tribal Health Assessment

July 2013

This document is a product of the Eastern Band of Cherokee Indians Health and Medical Division, in partnership with Cherokee Indian Hospital Authority and Western North Carolina Health Network Healthy Impact as part of a Tribal health assessment process. The Tribal Health Assessment (THA) Team oversaw and coordinated the process and is responsible for this document.

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Thank you!

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EXECUTIVE SUMMARY

Overview of THA Purpose and Process

The Eastern Band of Cherokee Indians (EBCI) Health and Medical Division (HMD) has sponsored and coordinated this 2013 Tribal Health Assessment (THA), the first community health assessment conducted by and for the EBCI community. This document is a collaborative product of the Cherokee Health System (EBCI HMD and Cherokee Indian Hospital Authority (CIHA), WNC Healthy Impact (via Western North Carolina Health Network [WNCHN]), the Indian Health Service (IHS) Nashville Area Tribal Epidemiology Center (TEC), and our county and state Public Health partners. The THA is both a process and a document to:

- Collect and present data specific to the health status of the Cherokee community from existing sources
- Invite and present input from the Cherokee community on health status
- Initiate a cycle of assessment, analysis, prioritization, improvement, and evaluation to pull together efforts to reach the best possible health for the Cherokee community

The 2013 THA begins the process with assessment. Data analysis, setting priorities for health improvement actions, implementation, and evaluating implementation actions are the mission of the Tribal Health Improvement Process (THIP) Collaborative. The THIP-C is a group of representatives of EBCI HMD, CIHA, Tribal Government Divisions and Programs, County Public Health and other partners who will work together with the input of the Cherokee community to communicate, coordinate and carry out health improvement steps. Vickie Bradley, EBCI HMD Deputy Health Officer, is the THIP-C convener.

General Review of Data and Trends

The THA presents a wide range of data on Cherokee community health status. Much available data is based on national, state or county statistics, and is not specific to EBCI. The THA uses as much EBCI-specific data as possible, but one of the questions generated by this document is: What additional EBCI-specific data will be necessary to help inform the community and accurately determine next steps, and what is the best way to obtain it?

The EBCI community and partners were invested in this 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.

Next Steps

This Health Assessment belongs to the community. They are invested in the assessment process and what it means to the well-being of all members of the community. The general congruence of community concerns with secondary data shows awareness of the major issues facing the community.

HMD and the THIP Collaborative will communicate these findings to the community after the THA is approved and ask for input on setting priorities for major issues. The THIP Collaborative will reconvene in July and resume the ongoing process of prioritization, asset and needs assessment, gap analysis, improvement planning, implementation, and evaluation. This will be an ongoing process that will take many months. HMD is committed to the cycle of health improvement in collaboration with our community and all EBCI programs and partners who contribute to the health of the community, as we work continually toward our vision:

A healthy Cherokee community
where all people can enjoy health and wellness
in a clean, safe environment,
be protected from public health threats,
and access high-quality health care

CHAPTER 1 - INTRODUCTION

Community Health Assessment

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

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

This process and product are required of Local Health Departments (county and district) in North Carolina as part of their consolidated agreements with the NC Division of Public Health and in local health department accreditation.[1]

Purpose of the Tribal Health Assessment (THA)

The five NC counties with EBCI Tribal lands (Swain, Jackson, Haywood, Graham, and Cherokee Counties) perform periodic CHAs that include EBCI populations within their borders, but a CHA specific to EBCI as a Tribe has never been conducted. In addition, there have been numerous surveys in EBCI that focus on health-related questions, but never a comprehensive health assessment for the entire Tribal community. HMD, as a partner in the Cherokee Health System, believes that such an assessment of EBCI Tribal health is critical to understanding both the

[1] The Eastern Band of Cherokee Indians (EBCI) Health and Medical Division (HMD), the Tribe's public health department, is not recognized as a Local Health Department by the North Carolina Division of Public Health or the NC Association of Local Health Directors.

specifics and the big picture of the health of EBCI as a community, and to promoting coordinated, collaborative change to improve the health of the community. The Cherokee Health System comprises HMD and the Cherokee Indian Hospital Authority (CIHA).

This Tribal Health Assessment (THA) is the first EBCI-specific health assessment. It has been led by the Tribe, for the Tribe, with the support of other EBCI and regional partners, and will be used to identify and prioritize Tribal community health challenges and help assure that our health resources work together effectively and efficiently to meet them. For the EBCI Tribal Health Assessment (THA), our team collected health data from a variety of internal and external sources, as well as input directly from the community through interviews and a Tribal-wide survey. The process was designed to assure a focus on Tribal community needs, respect for each person's privacy, and inclusion of community voices.

The THA also includes a list of current health-related resources EBCI can access internally and externally, the Health Resource Inventory (HRI). EBCI has many strengths and assets, and a complete assessment must begin with an inventory of these resources, in order to align them with health issues identified in the data and community input.

The THA is the foundation of the process of Tribal health improvement. When the findings of the THA are shared with the community and our partners, HMD will lead a collaborative, representative group, the Tribal Health Improvement Process (THIP) Collaborative, to determine gaps between resources and identified health challenges, prioritize the unmet challenges, and together design, implement and evaluate improvements. Only together can we envision the whole spectrum of challenges, priorities and improvements and work toward real change in the health of EBCI.

In addition, HMD has begun the process of national accreditation as a Tribal Public Health Department through the Public Health Accreditation Board (PHAB) in partnership with the National Indian Health Board (NIHB). The THA is the first step in this multi-year process.

To meet the goal of evidence-based health improvement for EBCI, HMD has sponsored and led the THA in collaboration with partners within and outside the Tribe, including Cherokee Indian Hospital Authority (CIHA), WNC Healthy Impact, Indian Health Service Nashville Area Tribal Epidemiology Center (TEC), the NC State Center for Health Statistics (SCHS), Local Health Departments of counties that include Tribal lands, and many Tribal Divisions and Programs. WNC Healthy Impact is a partnership between hospitals and public health in western North Carolina to improve community health. The TEC is a team of epidemiologists housed in the United South and Eastern Tribes (USET) whose mission is to assist 26 member Tribes of the 29 IHS Nashville Area Tribes monitor and improve community health status. TEC's objectives include but are not limited to maintaining health data, advising on programs, distributing population health reports and analyses, and helping maintain outbreak response capacity.

HMD is deeply grateful to these partners and to the dedicated HMD staff who have produced this document.

Definition of Community

For the purposes of this THA, we define the community as all persons eligible for EBCI health services who live on EBCI Tribal lands, which comprise all Tribal lands in Swain, Jackson, Graham, Cherokee, and Haywood Counties. This includes enrolled members of the Eastern Band of Cherokee Indians, as defined in Cherokee Tribal Code, Sec. 49-2; direct lineal descendants; members of other federally recognized Native American Tribes and Alaskan Natives; and a small number of others eligible for EBCI health services under Indian Health Service guidelines.[2] See Appendix A for the IHS guidelines. This document will use the US Census term "American Indian/ Alaska Native" or "AI/AN" to refer to Native Americans as a whole.[3]

Scope of Data Included

Dataset

The overall dataset for the THA includes: 1) primary data from the THA community survey and key informant interviews, and 2) existing secondary data from multiple sources (Table 1). The data collection for the THA includes multiple datasets including the WNC Healthy Impact core dataset, TEC datasets and annual reports, CIHA data from the Resource and Patient Management System (RPMS), HMD Community Food Survey (CFS), data from the EBCI Enrollment Office, Tribal GIS, partner counties, NC SCHS, Racial and Ethnic Approaches to Community Health (REACH), and The 2010 U.S. Census American Community Survey. EBCI-specific data cited in existing reports was also used in the THA (specific references are included below when report is cited): Assessing the Economic and Non-Economic Impacts of Harrah's Cherokee Casino, North Carolina, 2011; Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012; Regional Secondary Data Report, for WNC Healthy Impact, 2012. It has been challenging for HMD to identify data specific to the community, since significant amounts of available data are limited to county, state or federal populations, not Tribal. HMD also has been careful to assure that all data used in the THA is de-identified, that is, that no data can be linked to any specific individual. The dataset is organized into several categories: 1) demographic and socioeconomic data, 2) health status and health outcomes, 3) health behaviors, 4) clinical care, 5) physical environment 6) community survey and 7) key informant input. Throughout this document, we will reference core dataset sources but

[2] "Indian Health Manual," Part 2, Sec. 1.2, http://www.ihs.gov/IHM.

[3] The US Census defines "American Indian or Alaska Native" as "a person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment." (US Census, "The American Indian and Alaska Native Population: 2010," p.1, http;//www.census.gov/prod/cen2010/briefs/c2010br-10.pdf Accessed June 28, 2013) Beginning with the 2000 Census, respondents could identify as one or more races. On the 2010 Census, persons who identified as AI/AN could choose only one "enrolled or principal tribe," i.e., could not enter more than one Tribe. (ibid.)

will not cite them in detail. See Table 1 for a more detailed description of the core dataset and see Appendix B for full citations of our core dataset sources.

Criteria for selecting "highlights"

The THA includes graphs and tables, as well as brief descriptions highlighting key findings. Descriptions of graphs and tables are based on findings the authors deemed notable from a review of the following: 1) EBCI trends over time, 2) EBCI data compared to other populations (i.e., NC overall, U.S. data, and sub-populations such as other races), 3) EBCI sub-populations (e.g., sex and age). For the most part, the authors did not analyze data to determine whether any differences are statistically significant. Because the authors determined highlights from the graphs and tables, readers of this report may choose to highlight other information relevant for their purposes.

Definitions & Data Interpretation Guidance

Reports of this type customarily employ a range of technical terms. This report defines those terms within the section where each term is first encountered. While these technical health data terms are defined in the report at the appropriate time, there are some data caveats that should be applied from the onset. See Appendix C for additional details. Table 1 gives a description of several of the key datasets used in this report including details on the background, specific population included in the dataset, strengths, limitations, and comparison groups.

Table 1. At-a-glance description of secondary data used within this report

Dataset	Background	Population included in Dataset	Strengths	Limitations	Comparison groups
Community Food Survey (CFS) (2010)	The CFS was conducted over a four-week period (Oct-Nov. 2010) in cooperation with the Local Food Network led by Cooperative Extension. It was distributed through Tribal e-mail and community clubs.	EBCI enrolled members	Sample is comprised only of EBCI enrolled members	Convenience sample means that representativeness of the entire EBCI population cannot be ensured. Survey respondents may be different than non-respondents in ways that bias the results (e.g., those without access to e-mail or community clubs may not have been surveyed)	None
Indian Health Service (IHS) Resource and Patient Management System (RPMS) Data was extracted from RPMS by either: 1) Tribal Epidemiology Center (TEC), United South and Eastern Tribes, Inc. or 2) Cherokee Indian Hospital Authority (CIHA)	RPMS is the electronic patient management system used in most Indian Health Service facilities throughout the U.S.	The patient population is AI/AN people who receive care through the Indian health care delivery system. The specific population from which EBCI data is obtained (i.e., the denominator) is either: ○ **Active clinical population:** includes those who are alive at the end of the report period, AI/AN, lives in the 5-county CHSDA, and have had two visits in the last three years ○ **User population:** includes those who are alive at the end of the report period, AI/AI, lives in the 5-county CHSDA, and have had one visit in the last three years.	Data is available for AI/AN residing in the 5-county CHSDA Comparison data is available for the Nashville Area (29 Tribes) and the entire Indian Health Service throughout the U.S.	EBCI-specific data is not available; data includes all AI/AN living in the 5-county CHSDA Data quality may have varied over time	"Nashville Area" is comprised of 29 federally recognized Tribes in 14 states in the 27-state IHS service area. TEC is housed in USET, which serves 26 of the 29 Tribes; IHS-wide data was also extracted State and national data were used as comparisons where appropriate; specific state and national sources are included within the tables in the report

Dataset	Background	Population included in Dataset	Strengths	Limitations	Comparison groups
REACH (Racial and Ethnic Approaches to Community Health) U.S. Risk Factor Survey for EBCI (2002, 2010, 2011, 2012)	In 1999, the CDC launched the REACH demonstration program, multi-year, community based program targeting health priority areas and focusing on racial/ ethnic minority populations. As part of program evaluations, the REACH U.S. Risk Factor Survey was conducted in various communities, including EBCI	AI/AN within EBCI lands in zip codes 28719 and 28789 in Jackson and Swain Counties, NC	Random sample from relatively comprehensive sampling frame strengthens representativeness of sample (though only representative of AI/AN population within EBCI lands in two counties). Used address base sampling design to increase coverage. Used face-to-face interview (year 2010 through 2012) to increase response rate.	Does not include EBCI AI/AN within Cherokee, Graham, or Haywood Includes non-EBCI AI/AN population	North Carolina population (from BRFSS data, which were collected through monthly telephone interviews conducted among a sample of the state's adult population)
WNC Healthy Impact Regional Community Health Assessment (CHA) Report and Workbook (2012) *comprised of:* 1) Part 2A Regional Secondary Data Report, 2) Part 2B. Regional Secondary Data Workbook, and 3) Part 3. Regional Telephone Survey Data Report	WNC Healthy Impact is a partnership between NC hospitals and health departments in 16 counties. As part of a larger community health improvement process, a regional CHA was conducted, comprised of data from secondary sources and a telephone survey.	Regional Secondary Data Workbook is comprised of a wide range of county-specific publically-available data (see http://wnchealthyimpact.com/uploads/Part_2B._Regional_Secondary_Data_Workbook_11.26.12.pdf for detailed source information) Regional Telephone Survey Data Report: The entire dataset is a stratified random sample of 3,300 individuals age 18 and older in Western North Carolina, including 300 in Buncombe County and 200 in each of the remaining counties. In the THA, we show findings stratified by race/ ethnicity.	Random sample from relatively comprehensive sampling frame strengthens representativeness of sample	Data for AI/AN includes those living outside the 5-county CHSDA; it is also not possible to know whether AI/AN in the sample are EBCI	Statewide risk factor data are provided where available; these data are reported in the most recent BRFSS (Behavioral Risk Factor Surveillance System) Prevalence and Trend Data published by the Centers for Disease Control and Prevention and the US Department of Health & Human Services; Nationwide risk factor data are from the 2011 PRC National Health Survey

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Dataset	Background	Population included in Dataset	Strengths	Limitations	Comparison groups
		• In the sample, 84 of 3,300 identified as AI/AN • Of note, 44 of the 88 AI/AN in the sample lived in the 5-county CHSDA • Note that data was weighted by key demographic characteristics (gender, age, race, ethnicity, and poverty status) to produce a sample which more closely matches the population for these characteristics			

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Dataset	Background	Population included in Dataset	Strengths	Limitations	Comparison groups
U.S. Census 2010; American Community Survey (ACS)	The U.S. Census counts every resident in the United States. It is mandated by Article I, Section 2 of the Constitution and takes place every 10 years. The ACS is an ongoing statistical survey that samples a small percentage of the population every year	"AI/AN alone or in combination" represents those who self-identified as "American Indian or Alaska Native" when asked their race. Since 2000, Census respondents could self-identify as more than one race; thus, this category reflects those who only checked "American Indian or Alaskan Native" or those who checked "AI or AN" *and* another race category. Of note, almost half of the AI/AN population reported multiple races. Those who checked AI/AN were asked to identify the name or their enrolled or principal Tribe.	The U.S. Census aims to count every resident. The ACS can estimate character distributions based on smaller sample size; ACS estimates can be combined over multiple years.	In the U.S. Census 2010, American Indians and Alaska Natives living on reservations were undercounted by 4.9 percent, (compared with a 0.9 percent over-count in 2000.) AI/AN data was often missing at the county level; we used NC data instead of the 5-county CHSDA	Where available, we compared EBCI alone in combination, AI/AN alone in combination, within NC and the U.S.
Home Visitation Program Needs Assessment and Implementation Plan (EBCI, 2012)	This comprehensive community needs assessment report was prepared by the Eastern Band of Cherokee Indian Health and Medical Division's Home Visitation Grant Needs Assessment Team in accordance with an award by the Department of Health and Human Services Administration for Children and Families, Office of Child Care to the Eastern Band of Cherokee Indians	This report aims to assess the needs of enrolled members of EBCI residing either on or off Tribal lands within IHS' CHSDA. The target population is all mothers who are enrolled EBCI members and unborn children who will be eligible for enrollment, regardless of the mother's Tribal enrollment status. We used secondary data included in this report.	The report obtained a wide array of information relevant to children and family's health from multiple data sources	Each data source included in this report has strengths and limitations. Specific limitations of datasets are not discussed in THA or EBCI Home Visitation Report.	Comparison groups vary depending on variables of interest, as noted throughout the THA.

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Community Engagement

The input of those who access Tribal public health and healthcare services is a critical component of the THA. HMD used word-of-mouth and existing media channels to inform the community about the THA and to encourage community members to participate including the Tribal television channel (Channel 28); the local newspaper, the Cherokee *One Feather*; Tribal government email; and HMD programs' Facebook pages. The THA team collaborated with EBCI Information Technology to produce and post an electronic version of the survey. To keep individuals and agencies informed on the THA process, HMD also distributed a one-page description of the THA to various Tribal leaders and Tribal offices, via Tribal email, and at relevant interdepartmental meetings. Vickie Bradley, Deputy Health Officer, was instrumental in relaying information to HMD program managers as well as to community health leaders.

The THA team created a Tribal Health Survey and Key Informant Interview script in order to gather Tribal community perceptions of quality of life issues and health priorities and needs. Information on the purpose of the survey and how to receive a copy or access the online version were published in the Cherokee *One Feather* and on HMD Facebook pages, distributed over Tribal e-mail and through flyers posted in public places. HMD distributed 5,000 print copies of the survey. Individual HMD employees provided surveys to their clients, patients, relatives, and associates. Surveys were distributed to all HMD offices, other large Tribal organizations, Cherokee Central Schools, Tribal day care centers, and schools and day care centers in Jackson and Swain counties. HMD staff distributed and collected surveys regularly, including at the annual Rainbow and Ramps festival, AIDS Walk, and community health challenges. HMD also made a concerted effort to reach Snowbird Community and Cherokee County EBCI enrolled residents. HMD program managers participated in a training to administer the survey effectively and to accommodate people whose disabilities might affect their ability to complete it. After the three-week distribution and collection period, over 900 individuals responded to the survey, including over 180 who completed the online version. A total of 795 surveys made up the primary data set. For further details on survey methodology, see Appendix C.

For the key informant interviews, a THA team member interviewed fifteen Tribal and community leaders for their own expert opinions and to glean their perceptions of those they represent or serve. The interviewees included EBCI elected officials, Tribal Health Board members, a CIHA Administrator, HMD Administrators, County Health Directors, a Cherokee Central School Board member, Tribal Government Administrators, a medical consultant to HMD and a community elder. For more information on the Tribal Health Survey and Key Informant interviews, see Chapters 7 and 8.

In order to continue community engagement through the next stages of Tribal health improvement, HMD has convened a Tribal Health Improvement Process (THIP) Collaborative to discuss the THA and share the results with Tribal and partner organizations and communities.

The THIP Collaborative members include representatives from HMD, CIHA administration, and other Tribal agencies, and Health Directors from partner counties. The group will identify gaps in the information gathered from the THA process, identify major health issues, set priorities, and create a plan of action for improving the health of the Tribal community. The THIP Collaborative will present the THA data and improvement plan to the community for further input to guide next steps.

CHAPTER 2 - DEMOGRAPHIC & SOCIOECONOMIC DATA

Location and Geography

The jurisdictional boundaries of the Eastern Band of Cherokee Indians 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. The Qualla Boundary contains approximately 45,550 acres with almost 30,000 acres located in Swain County and approximately 15,550 acres in Jackson County. Smaller discontinuous tracts are located in Cherokee, Graham, and Haywood counties. The overall topography consists of mountainous terrain around one primary small river valley.[4]

Background

The Eastern Band of Cherokee Indians is North Carolina's only federally recognized Indian Tribe whose home is the 56,000-acre Qualla Boundary in Western North Carolina. The Boundary is adjacent to both the Great Smoky Mountains National Park and the Blue Ridge Parkway, both of which are popular tourist destinations.

The Tribal Government of the EBCI provides services to its citizens that are typical of those provided by most municipal governments. Headed by a popularly elected Principal Chief, Vice Chief, and Tribal Council, the EBCI provides police, fire, public safety, EMS and sanitation services to its residents and business community. The Tribal government is responsible for water and sewer services, environmental planning, as well as road construction and maintenance. Additionally, housing assistance in many forms is provided to Tribal members either directly by the EBCI or through other Tribal entitles. Finally, the EBCI conducts a proactive effort for economic development on the reservation through its Division of Commerce.

The overall economy of the Qualla Boundary is based on tourism. The Great Smoky Mountains National Park is the nation's most visited, with yearly visitation typically exceeding 9.4 million people. Harrah's Cherokee Casino and Hotel, located on US 19 in Cherokee, has over 1,100 rooms, and is the largest hotel in either North or South Carolina. A Downtown Cherokee Revitalization Program has been completed, and numerous other projects are in progress.

[4] EBCI Health and Medical Division (2012). *Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012*. Cherokee, NC: EBCI Health and Medical Division.

Social Determinants of Health

According to the Robert Wood Johnson Foundation (RWJF), in a series of issue briefs, there is strong evidence that a variety of socioeconomic factors—including race, ethnicity, income, exposure to violence and chronic stress, education, housing, and the workplace—deeply influence health outcomes.[5] These are known as social determinants of health. They interact in many ways to affect the health of individuals and communities in some ways that have been documented clearly, for example, the relationship of race and ethnicity to infant mortality: "Compared with a baby born to a white mother… an infant born to an American Indian or Alaska Native mother [is] almost 1 ½ times as likely… to die before reaching his or her first birthday."[6] Other social determinants of health, such as adverse childhood experiences and historical trauma, are undergoing active research to determine their influence on individual, family and community health status.

Many studies have documented the effects of chronic stress, food insecurity, and traumatic exposures on the individuals who directly experience them—these effects include changes in physiology and behaviors which affect many life outcomes including risk for chronic diseases. While these stressors have effects whenever they occur in the lifespan, they are particularly strong if they occur in the first few years of life, including during pregnancy. In addition, research in a number of populations, including Holocaust survivors, has shown that the traumatic experiences of one generation often have definite effects on subsequent generations, including on risk factors for behavioral health and chronic disease problems. This early life and intergenerational "programming" of risk for a range of health, mental health, educational, and vocational outcomes is being shown to have profound effects on people and communities that have experienced significant poverty, discrimination, and trauma. This recent research is also starting to elucidate interventions which can reduce the effects of these difficult experiences, but recognition of these issues, let alone funding, too frequently lags behind the science.[7],[8]

RWJF notes that "historically, programs and policies addressing social and/or economic conditions have led to significant reductions in health disparities between racial or ethnic groups."[9] That is, measures that address issues of food safety and security, children's reading levels, housing and transportation status, and economic opportunity for women have impacts on health status.

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[5] Robert Wood Johnson Foundation, "Race and Social Determinants of Health affect opportunities for better health." Issue Brief 5: Race and Social Determinants of Health. Robert Wood Johnson Foundation Commission to Build a Healthier America. Published April 1, 2011. Accessed 6/30/13 at: http://www.rwjf.org/en/research-publications/find-rwjf-research/2011/04/race-and-socioeconomic-factors-affect-opportunities-for-better-h.html

[6] Ibid.

[7] Koplan, Jeffrey P. Institute of Medicine of the National Academies, *Progress in Preventing Childhood Obesity: How Do We Measure Up?* Chapter 3: "Diverse Populations." 2007.

[8] For more information on adverse childhood experiences (ACEs) and historical trauma, see http://www.rwjf.org/en/about-rwjf/newsroom/features-and-articles/ACEs.html .

[9] RWJF, op. cit.

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Income and educational attainment are both strongly related to measures of health status and health behaviors throughout life[10] in obvious ways, including effects of severe poverty such as malnutrition, and less clear ways as effects of chronic stress from living in dangerous areas or in violent relationships. In this document, we present a variety of data that can help assemble a picture of the social determinants of health in the Cherokee community.

Population

Understanding the growth patterns, age, gender, and geographic distribution of the EBCI population will be crucial in allocating health resources for the future. This Tribal Health Assessment aims to assess the health needs and priorities of the EBCI population within a five-county Contract Health Service Delivery Area (CHSDA) which includes Cherokee, Graham, Haywood, Jackson, and Swain Counties. Because no data sources, to our knowledge, completely capture this precise population, we aim to describe the socioeconomic and demographic characteristics of this population by using multiple data sources. Most of the population data comes from the U.S. Census, American Community Survey, and the EBCI Enrollment Office. Strengths and limitations of these data sources are described above in Table 1.

Current population and population growth

The Tribal population distribution reflects the geographical distribution of Tribal lands. According to the EBCI Enrollment Office, as of March 2013, the EBCI has over 14,500 members and enrollment has increased 38% since 1995 and 24% since 2002 (Table 2). More than half of EBCI members live on Tribal lands (Table 2). Approximately 45% primarily reside off trust lands, with some living adjacent to the Qualla Boundary.[11]

Table 2. EBCI enrolled member population (EBCI Enrollment Office)

	Live on Tribal Lands	Live Off Tribal Lands	Total
2002 (Dec 31)	7498 (58.46%)	5327 (41.54%)	12,825
2013 (March 22)	8087 (55.03%)	6609 (44.97%)	14,696

The U.S. Census (2010) counts 11,835 EBCI members in the U.S., which is 2,861 less than counted by the EBCI Enrollment Office even in 2002, pointing to an underrepresentation of EBCI in Census data. Census data is based on self-identity and not Tribal enrollment. Some EBCI members may have checked the "American Indian/ Alaska Native" ("AI/AN") checkbox without specifying a particular Tribe. It is unclear how this underrepresentation may potentially bias socio-demographic information shown in tables below. For example, if low-income EBCI

[10] Ibid.

[11] EBCI Health and Medical Division (2012). *Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012*. Cherokee, NC: EBCI Health and Medical Division.

members are more likely than high-income EBCI to be missing from the Census data, the median income shown here would be higher than it is in reality.

The majority of EBCI members live in Jackson and Swain Counties, with approximately 4,300 AI/AN living in each of these counties (Table 3). Though the raw numbers of AI/AN are similar in these counties, AI/AN represent 31% of Swain County's total population of approximately 14,000 and 11% of Jackson's population of 40,000. According to the U.S. Census, within Jackson, 68% of AI/AN are identified as EBCI and within Swain, 74% of AI/AN are identified as EBCI. In Cherokee County, only 12% of AI/AN are identified as EBCI, and statewide 4% of all AI/AN are identified as EBCI. However, these Census numbers are the results of self-identification without a precise AI/AN definition.

Table 3. Population by County and AI/AN and EBCI Identification (U.S. Census 2010+)

County	Total Population (2010)	AI/AN Alone or in Combination++		EBCI Alone or in Combination++	
		#	% of Total population	#	Percentage of AI/AN who are EBCI
Cherokee	27,444	832	3.03%	102	12.26%
Graham	8,861	691	7.80%	375	54.27%
Haywood	59,036	637	1.08%	N/A	N/A
Jackson	40,271	4,340	10.78%	2,979	68.64%
Swain	13,981	4,314	30.86%	3,211	74.43%
5-county CHSDA	149,593	10,814	7.23%	6,667*	61.65%
North Carolina	9,535,483	184,082	1.93	7,516	4.08%
United States	308,745,538	5,220,579	1.69	11,835	.23%

* Does not include EBCI in Haywood County
+Those who identify as AI/AN or EBCI have self-identified as such and thus may or may not coincide with being enrolled Tribal members
++ "Alone or in Combination" indicates that a person reported a particular race group, either alone, or with one or more other race groups

Another important information source for this THA is clinical data for AI/AN served by CIHA and HMD, which are located within the 5-county CHSDA. The majority of these clinical programs and services are only for those eligible under 42 CFR 136.12, 136.13 and 136.23 (See Appendix A). However, some clinical services, such as those provided by the CIHA Emergency Department, are open to anyone in need of medical attention. Throughout this report, data is shown for the "active clinical population" and "user population."

- *Active clinical population* includes those who are alive at the end of the report period, are AI/AN, live in the 5-county CHSDA, and have had **two or more visits in the last three years.**

- *User population* includes those who are alive at the end of the report period, are AI/AN, live in the 5-county CHSDA, and have had **one visit in the last three years**[12](Table 4).

Because "user population" has a wider definition than "active clinical population," it is closer to our population of interest. Also, the CIHA RPMS data indicates that 96.75% of the AI/AN hospital users are enrolled members of the EBCI (see Appendix D for the full list of Tribal affiliation of all non-EBCI users). As a result, the data from RPMS sources may be a more useful proxy for percentage of AI/AN in the area who are EBCI than the 2010 U.S. Census and may capture the EBCI population more accurately.

Table 4. Clinical "User Population" (Indian Health Service RPMS, TEC)

Year	Total	Female	Male	0-19	20-64	>65
2007	10321	50.96%	49.04%	37.41%	55.52%	7.07%
2011	10787	51.19%	48.81%	35.34%	56.69%	7.97%
2012	11,016	50.90%	49.10%	32.64%	57.93%	9.42%

Data for demographic/ socioeconomic characteristics are not readily available for AI/AN solely residing in the 5-county CHSDA. Table 5 displays the sex and age breakdown for the AI/AN and EBCI populations in North Carolina and in the U.S., and Table 6 shows the number of births and birth rate for EBCI. The EBCI Enrollment Office also provided information about the age breakdown of EBCI enrolled members across the U.S.

Of note, AI/AN and EBCI have a lower median age than within the overall population (Figure 1). In the CHSDA, the median age of AI/AN is approximately 28, while the median age of white non-Hispanics in the CHSDA is 46. Also, AI/AN and EBCI populations have a higher percentage of children, and a lower percentage of senior citizens than the overall NC and U.S. populations.

[12] Those who have had no visits in the last 3 years are not included in the denominators in tables in this report, though they are registered in the system.

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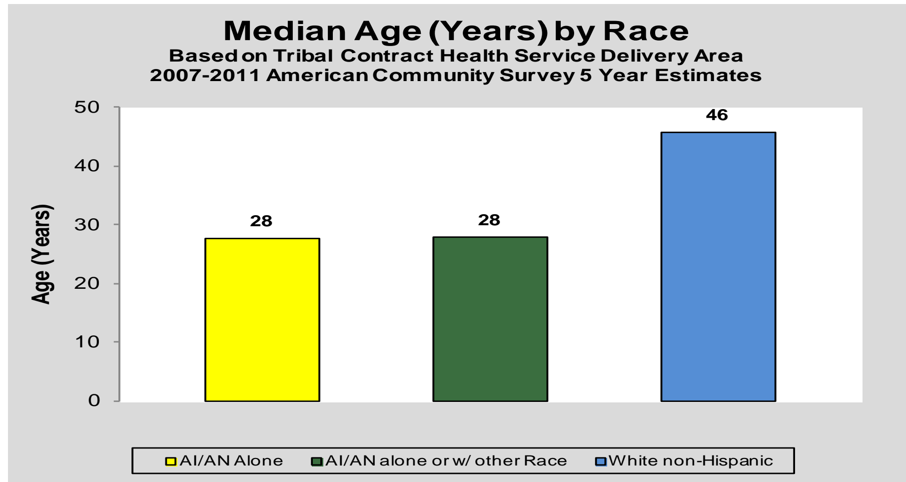
Figure 1. Median Age by Race (in the CHSDA)



Source: TEC "Social Determinants of Health." Based on AI/AN in CHSDA, not on EBCI.

Table 5. Population by sex and age

(Profile of General Population and Housing Characteristics, Census 2010: DP-1+)

	EBCI Enroll-ment Office*	North Carolina Census Data			US Census Data		
		AI/AN alone or in combin-ation++	EBCI	NC Total	AI/AN alone or in combination++	EBCI	US Total
Total Population	14,696**	184,082	7,516**	9,535,483	5,220,579	11,835**	308,745,538
Sex							
% Female	50.70%	51.60%	52.40%	51.28%	50.80%	52.50%	50.84%
% Male	49.30%	48.40%	47.60%	48.72%	49.20%	47.50%	49.16%
Age							
Median Age	N/A	31.2	29.2	37.4	29.6	32.4	37.2
% Under 5	6.60%	8.40%	9.70%	6.63%	8.90%	8.40%	6.54%
% 5-19	27.10%	25.80%	27.90%	20.20%	26.40%	25.60%	20.43%
% 20-64	57.30%	61.40%	54.10%	60.22%	57.40%	58.00%	59.99%
% 65 plus	9.00%	7.70%	8.20%	12.94%	7.30%	8.00%	13.04%

* March 2013
** Note the discrepancy between EBCI population as counted by EBCI enrollment office and U.S. Census, which seems larger than the difference in years would explain, and which could be due to various factors, e.g., the different dates of data collection and undercounting by U.S. Census.
+Those who identify as AI/AN or EBCI have self-identified as such and thus may or may not coincide with being enrolled Tribal members
++ "Alone or in Combination" indicates that a person reported a particular race group, either alone, or with one or more other race groups

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Table 6. Number of births (Indian Health Service RPMS, TEC)

	Number of births	2002-2006 birth rate per 100,000	2006-2010 birth rate per 100,000
2002	132	1401.24	1545.85
2003	113		
2004	161		
2005	147		
2006	134		
2007	156		
2008	260		
2009	130		
2010	128		

Composition of Families with Children

U.S. Census data in Table 7 illustrates that AI/AN in NC and the U.S. (not specifically EBCI) have a higher rate of single parent households than the NC or U.S. overall population. AI/AN also have a higher percentage of grandparents who live with and are responsible for their grandchildren.

Table 7. Composition of families with children under 18

(Selected Social Characteristics in the U.S., 2006-2010, American Community Survey, DP-02+)

	North Carolina		US	
	AI/AN alone or in combination++	Total NC	AI/AN alone or in combination++	Total U.S.
# Family households with own children < 18 yrs	18,344	1,089,890	540,261	34,990,015
% Married-couple family (with own children under 18 years)	54.55%	66.95%	54.37%	68.76%
% Male householder, no wife present (with own children under 18 years)	9.53%	7.16%	10.81%	7.26%
% Female householder, no husband present (with own children under 18 years)	35.91%	25.89%	34.82%	23.99%
# of grandparents living with own grandchildren (<18 yrs)	5,599	187,626	141,943	6,449,387
% grandparents living with grandchildren who are also responsible for grandchildren	57.80%	50.65%	53.97%	40.96%

+Those who identify as AI/AN or EBCI have self-identified and thus may or may not coincide with being enrolled Tribal members
++ "Alone or in Combination" indicates that person reported a particular race group, either alone or with one or more other race groups

Military Veterans

The health and well-being of military veterans are important issues to the Cherokee community, as it is to the nation as a whole. CIHA and the Charles George Veterans Administration Medical Center (CGVAMC) in Asheville, which is named for a heroic fallen Cherokee soldier, have two cooperative programs that focus on veterans' health care: a medical coordination program and a pharmaceutical verification program. In addition, there is a satellite CGVAMC program in Cherokee that coordinates home-based primary care for veterans.

As of July 2013, 976 EBCI veterans are enrolled at CIHA, and 190 of these are enrolled both at CIHA and CGVAMC.[13] Table 8 indicates that the number of AI/AN military veterans, both within North Carolina and the U.S., mirror the rates of the population at large.

Table 8. Population of Military Veterans

(Selected Social Characteristics in the U.S., 2006-2010, American Community Survey, DP-02^{+})

	North Carolina		US	
	AI/AN alone or in combination[++]	Total NC	AI/AN alone or in combination[++]	Total U.S.
Civilian population 18+ years	117,935	6,947,547	3,276,153	228,808,831
% Civilian veterans	9.32%	10.75%	10.44%	9.90%

+Those who identify as AI/AN or EBCI have self-identified and thus may or may not be enrolled Tribal members

++"Alone or in Combination" indicates that person reported a particular race group, either alone, or with one or more other race groups

Education

Educational Attainment

Educational attainment positively correlates with health status. [14] Data is available on the CHSDA level on the educational attainment for the AI/AN population (Figure 2). Within the CHSDA, a smaller percentage of the AI/AN population is graduating from high school, and CHDSA white non-Hispanics are attaining bachelor's or higher degrees at triple the rates of AI/AN in the CHSDA (Table 9).

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[13] Skip Meyers, CIHA, personal communication, 7/26/13.

[14] Tribal Epidemiology Center, United South and Eastern Tribes, Inc. *2013 USET Eastern Band of Cherokee Indians Social Determinants of Health Report.* Nashville, TN: United South and Eastern Tribes, Inc.

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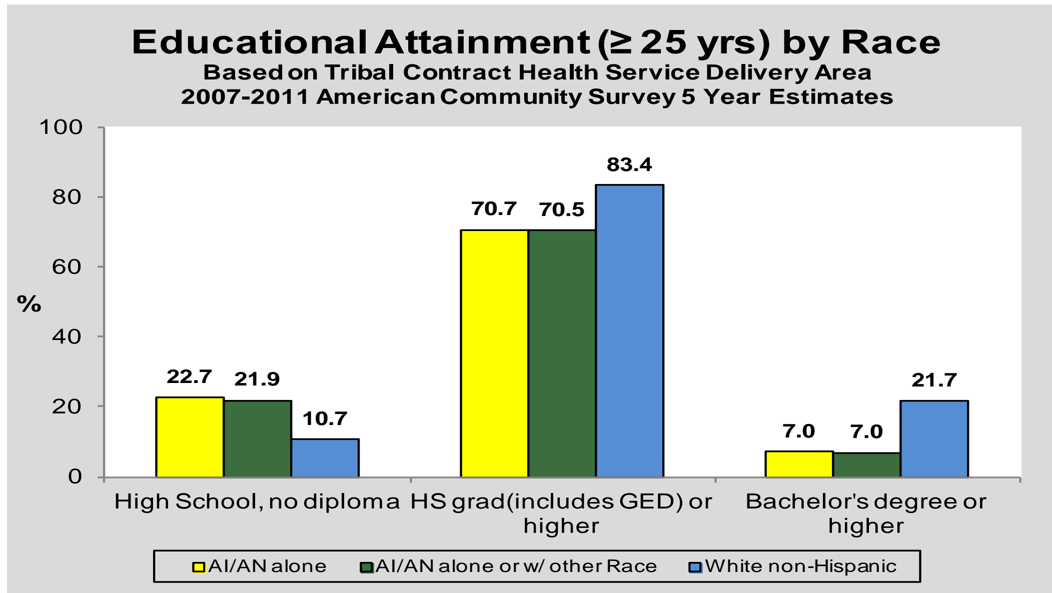
Figure 2. Educational Attainment of Population Age 25 and Older by Race



Source: TEC "Social Determinants of Health." Based on AI/AN in CHSDA, not on EBCI.

Table 9 shows that for the last two school years students at Cherokee High School (CHS) are graduating at a rate that is comparable to NC state graduation rates. The CHS dropout rate has fluctuated, and from 2008-2011 was from 1.59 to 2.99 times the state rate, but in 2010-2011 decreased to 2.80%, lower than NC rates. No data is available for 2012-2013 school year comparison with NC; no further data is available for CHSDA comparison. Graduation and dropout rates do not add up to 100% because they do not include students who earned a General Educational Development (GED®) credential or a certificate, reached the special education maximum age, or who are taking longer than four years to complete high school.

Table 9. Graduation and Dropout Trends (EBCI Home Visiting report[15]; Cherokee Central Schools Annual Report to Bureau of Indian Education, 2013)[16]

School Yr.	Graduation rate (percent)				Dropout rate (percent)			
	Cherokee HS	**AI/AN in CHSDA**	**All races in CHSDA**	**NC**	**Cherokee HS**	**AI/AN in CHSDA**	**All races in CHSDA**	**NC**
2008-2009	43.80%			71.80%	12.77%	N/A	N/A	4.27%+++
2009-2010	49.59%	67.1%	78.60%	68.60%	8.56%	N/A	3.50%	3.75%+++
2010-2011++	77.78%	N/A	N/A	78%	5.47%	N/A	N/A	3.43%+++
2011-2012	78.75%	N/A	N/A	75.10%	2.80%	N/A	N/A	3.01%+++
2012-2013	79.76%+	N/A	N/A	N/A	6%+	N/A	N/A	

+Unofficial as of June 12, 2013

++First year US Dept. of Education used new measure for graduation rates.**17** Previous rates may have been calculated using different standards.

+++NC State Board of Education Dept. of Public Instruction. "Report to the Joint Legislative Education Oversight Committee: Consolidated Data Report, 2011-2012." p. 110 March 15, 2013.

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[15] Op cit.

[16] Cherokee Central Schools, personal communication, Cherokee Central School Board, June 12, 2013. From Native American Student Information System (NASIS) data.

[17] US Department of Education. "Education Department Releases New School-Level Graduation Rate Data to Better Inform Parents, District Leaders." March 5, 2013. http://www.ed.gov/news/press-releases

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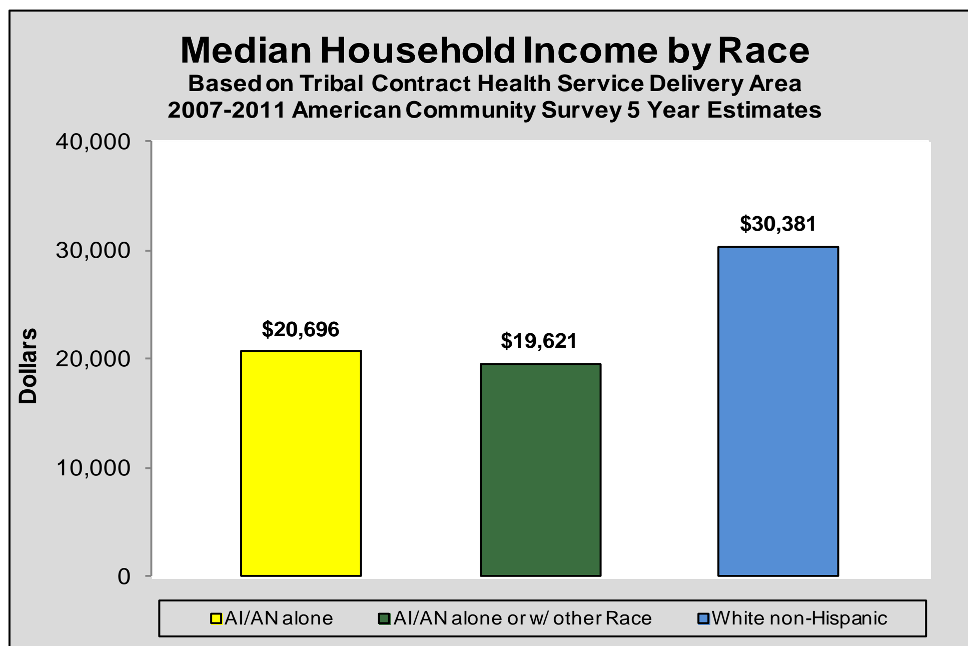
Note: Haywood County was not included in the CHSDA calculations as the AI/AN population in the high school was zero or too low to account for in the data. No other graduation or dropout rate data was available for the CHSDA.

Income

Income and Poverty Status

Overall, NC has a lower median household and family income, and a higher poverty rate, than the U.S. Within NC and the U.S., the AI/AN population has about a $13,000 lower median household income than the overall state and national population, and a $17,000 lower median family income. Compared with white non-Hispanics in the CHSDA in 2010, AI/AN in the CHSDA had a median income that was $9,685 lower[18] (Figure 3). Within NC and the U.S., the AI/AN population has a much higher overall and child poverty rate than the general population, with one-third of AI/AN children living in poverty (Tables 10 and 11). Figure 4 shows that the poverty rate of AI/AN families in the CHSDA is more than triple the white non-Hispanic poverty rate. According to TEC, "low income tends to be correlated with higher rates of chronic disease. This association is related to problems of access to care, obstacles in obtaining and using health insurance, and higher levels of risky behavior."[19]

Figure 3. Median Household Income by Race



Source: TEC "Social Determinants of Health." Based on AI/AN in CHSDA, not on EBCI.

[18] Tribal Epidemiology Center, United South and Eastern Tribes, Inc. *2013 USET Eastern Band of Cherokee Indians Social Determinants of Health Report.* Nashville, TN: United South and Eastern Tribes, Inc.
[19] Ibid.

Table 10. Median income and poverty status

(in 2010 inflation-adjusted dollars)

(Selected Economic Characteristics, 2006-2010, American Community Survey: DP-03+)

	North Carolina		U.S.		Jackson County**	Swain County**
	AI/AN alone or in combination	Total NC	AI/AN alone or in combination	Total U.S.	AI/AN alone or in combination	AI/AN alone or in combinati on
Median household income	32,346	45,570	38,806	51,914	33,506	22,538
Median family income	38,938	56,153	45713	62,982	35,379	23,750
% in poverty (all ages)*	27.04%	15.50%	26.42%	13.80%	N/A	N/A
% in poverty (under age 18)*	33.31%	21.60%	33.34%	19.20%	N/A	N/A

*Poverty data is for AI/AN alone (not in combination with another race)

**CHSDA county-level data only available for AI/AN in Jackson and Swain counties

+Those who identify as AI/AN or EBCI on Census data have self-identified as such and thus may or may not coincide with being enrolled Tribal members

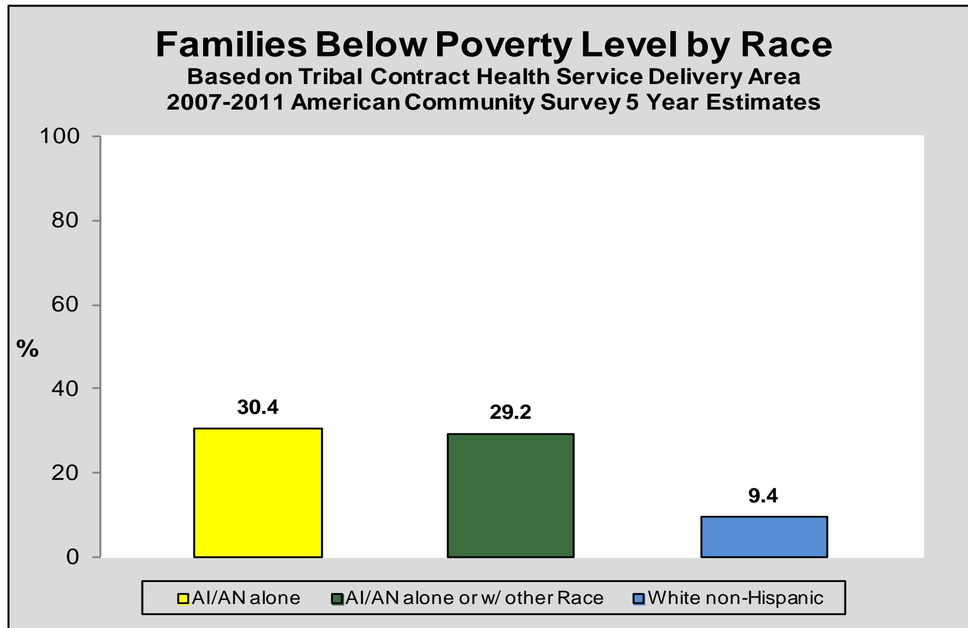
Table 11. Poverty Status in the Past 12 months of Families

(2006-2010, American Community Survey 5-year estimates)

	% of families in poverty with an AI/AN householder+	% of families in poverty with a white householder+
Swain County	43.7%	9.3%
Jackson County	17.1%	10.9%
Graham County	28.1%	15.6%
Cherokee County	40.7%	9.6%
Haywood County	12.8%	8.5%
Average	28.5%	10.8%

+A householder is a person who owns or rents a house

Figure 4. Families Below Poverty Level by Race



Source: TEC "Social Determinants of Health." Based on AI/AN in CHSDA, not on EBCI.

Use of Public Assistance

According to the U.S. Department of Agriculture (USDA), "The mission of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is to safeguard the health of low-income pregnant, postpartum, and breastfeeding women, infants, and children up to age five who are at nutritional risk by providing nutritious foods to supplement diets, information on healthy eating including breastfeeding promotion and support, and referrals to health care."[20] Table 12 shows participation in the WIC program by EBCI members for FY2011 (Oct 2010-Sept 2011). It has been estimated that 62-72% of the EBCI infants are in need of supplemental nutrition services.[21,22] According to US Department of Agriculture Southeast Regional Office, in a report from January 2013, "WIC's overall participation [in EBCI] has fluctuated between 56 and 63 percent of the WIC-eligible population…. Children 1 to 4 years of age make up more than 60 percent of the eligible WIC population."[23] In FY 2012, the average monthly participation in EBCI WIC was 627 persons.

[20] UDSA Food And Nutrition Service. (2011). Retrieved from http://www.fns.usda.gov/wic/aboutwic/mission.htm.
[21] The range is reflective of birth data best estimates ranging from 189 births (Cherokee Indian Hospital Data, 2011) to 215 births (average number of enrollees from 2005-2009, EBCI Enrollment data).
[22] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.
[23] US Department of Agriculture Food and Nutrition Service Southeast Regional Office. Southeastern Sound: Spotlight on North Carolina. April 2013, USDA/FNS/SERO.

Table 12. Participation in WIC program by EBCI members, FY2011
(EBCI Home Visiting Report, 2012)[24]

EBCI Sub-Population	Number participating in WIC
Pregnant women	64
Breastfeeding women	41
Postpartum women	32
Total EBCI women	**137**
Infant up to age 1	134
Children 1-5 yrs	351
Total EBCI children	**485**
Total EBCI participants (women and children)	**622**

Employment and Unemployment

Civilian employment data for the CHSDA shows a greater percentage of jobs among AI/AN in the service arena than in other occupation types[25] (Figure 5), which is consistent with the importance of the tourism and service industries in EBCI. According to TEC, "Employment status and occupation are important with respect to population health due to the fact that health care benefits are often tied to full-time employment."[26] The Jackson/Swain labor market area, which encompasses most of the Qualla Boundary, had an unemployment rate of 10% in 2011, which was the same rate as the state of North Carolina for that year.[27] 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."[28,29]

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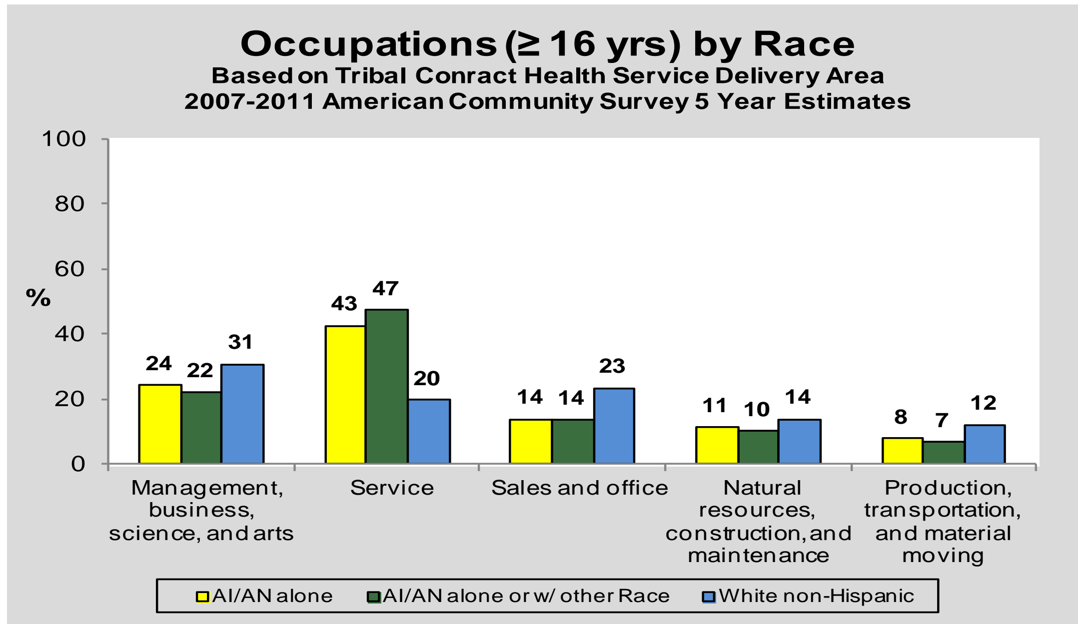
[24] Ibid.
[25] Tribal Epidemiology Center, United South and Eastern Tribes, Inc. *2013 USET Eastern Band of Cherokee Indians Social Determinants of Health Report.* Nashville, TN: United South and Eastern Tribes, Inc.
[26] Ibid.
[27] Dept. of Employment Security, State of NC. (2012). *Labor Market Information*. Retrieved 2/17/12 http://eslmi40.esc.state.nc.us/ThematicLAUS/clfasp/CLFSAAYResults.asp
[28] 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.

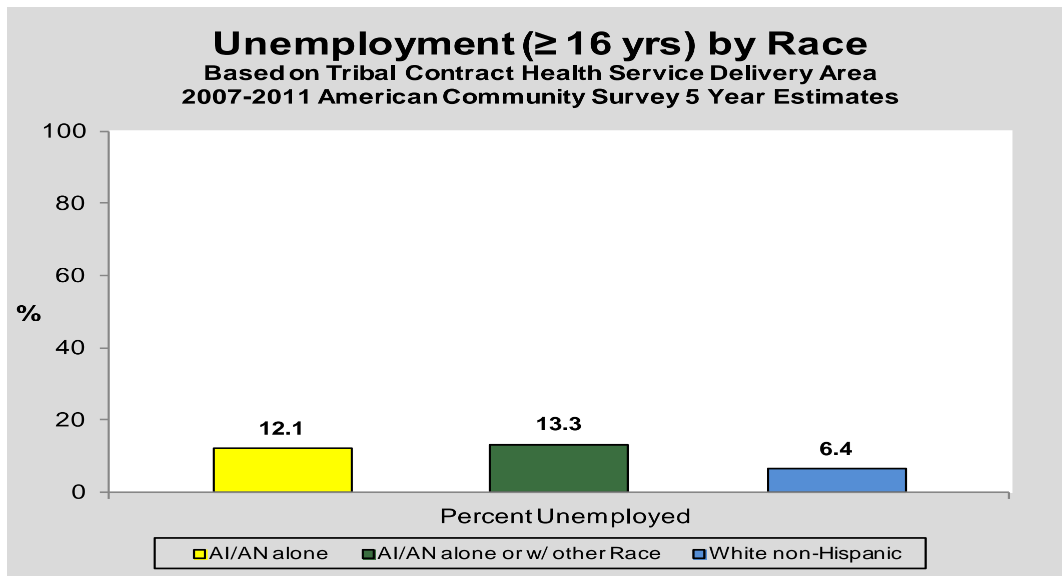
However, Figure 6 shows that in 2007-2011 the unemployment rate for AI/AN in the CHSDA was approximately double the rate among white non-Hispanics.

Figure 5. Occupations of Population Age 16 and Older by Race



Source: TEC "Social Determinants of Health." Based on AI/AN in CHSDA, not on EBCI.

Figure 6. Unemployment of Population Age 16 and Older by Race



Source: TEC "Social Determinants of Health." Based on AI/AN in CHSDA, not on EBCI.

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[29] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

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Crime

Both national and state sources of crime data caution against comparing statistical data of individual reporting units, i.e. from cities, counties, Tribes, etc., solely on the basis of their population coverage, as there are many known factors that may influence crime data. Thus, the authors have avoided comparisons for the purposes of this report.

According to NC Department of Community Corrections, AI/AN whose county of residence is in the CHSDA represent 10% of the CHSDA population who were either in prison, on probation or parole in 2011.[30] Crime data for EBCI as reported to the US Department of Justice for 2009 and trend data for the Tribal Court/Magistrate are in Tables 13 and 14.

Table 13. Offenses Known to Law Enforcement by State, Tribal, and Other Agencies, 2009 (Cherokee) [1]

Violent crime	**34**
Murder and non-negligent manslaughter	1
Forcible rape	8
Robbery	3
Aggravated assault	22
Property crime	**197**
Burglary	86
Larceny-theft	93
Motor vehicle theft	18
Arson	3
Total	**231**

Table 14. Tribal Court/Magistrate: Warrants, Orders for Arrest, Criminal Summons, and Search Warrants Issued

Year	Total	% Increase (over previous year)
2005	1,021	N/A
2006	1,096	7.3%
2007	1,184	8.0%
2008	1,242	4.9%
2009	1,248	0.5%
TOTAL	**5,791**	**22% since 2005**

This data indicates that juvenile crime in NC has been trending downward for the past 10 years. The juvenile delinquent rate in the CHSDA ranges from 23.4 per 1000 in Jackson County to 7.3 per 1000 in Cherokee County, with an average of 16.1 per 1000 in the CHSDA as a whole.[31] Even Jackson County, which has the highest delinquency rates of the CHSDA counties, has a lower delinquency rate than the state rate of 27.6 per 1000.[32] The 7 AI/AN juveniles from the CHSDA that were admitted to a state detention center in 2011 represent 7.3% of the total CHSDA juveniles (96) admitted in 2011[33,34,35]

[30] NC Dept. of Corrections, Office of Research and Planning. (2012). Automated System Query (A.S.Q. DOC 3.0b). Retrieved 2/23/12 from http://webapps6.doc.state.nc.us/apps/asqExt/ASQ.

[31] NC Dept. of Juvenile Justice and delinquency Prevention. (2010). County Databooks. Retrieved 2/24/12 from http://www.ncdjjdp.org/statistics/databook.html.

[32] Ibid.

[33] Ibid.

[34] NC Department of Public Safety, Division of Juvenile Justice (2010). Special data request, March 1, 2012.

[35] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

Domestic Violence

The National Center for Victims of Crime defines Domestic violence (DV) as "willful intimidation, assault, battery, sexual assault or other abusive behavior perpetrated by one family member, household member, or intimate partner against another".[36,37] Nearly 4.4 million adult American women are abused by their spouse or partner each year, and 30% of women in the United States experience domestic violence at some time in their lives. Women are 7 to 14 times more likely to suffer a severe physical injury from an intimate partner than are men.[38, 39]

DV data is generally underestimated, as the data relies on self-reports by DV programs and does not include hospital or police department data.[40] 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.[41,42] DV rates for AI/AN in the CHSDA are even higher at 21 per 1000.[43] Since the rates are based on the number of clients served, the higher rates may not necessarily be reflective of increased rates of DV but, perhaps, increased availability and accessibility of services. However, the Tribal DV program, housed at the Ernestine Walkingstick Shelter, reports the following:[44,45]

- 232 total clients served in 2011
- 84% of clients in 2011 were AI/AN
- 125 DV protective orders in Cherokee in 2010
- 39 shelter clients from Jan-Oct 2011, 16 of whom were children
- 3 DV murders occurred on Tribal lands Jan-Oct 2010 (75 DV total homicides in NC)

However, clinical data from RPMS (Figure 7) indicate that only 1% of the CHSDA AI/AN 13+ female patient population has a diagnosis of intimate partner violence or domestic violence.

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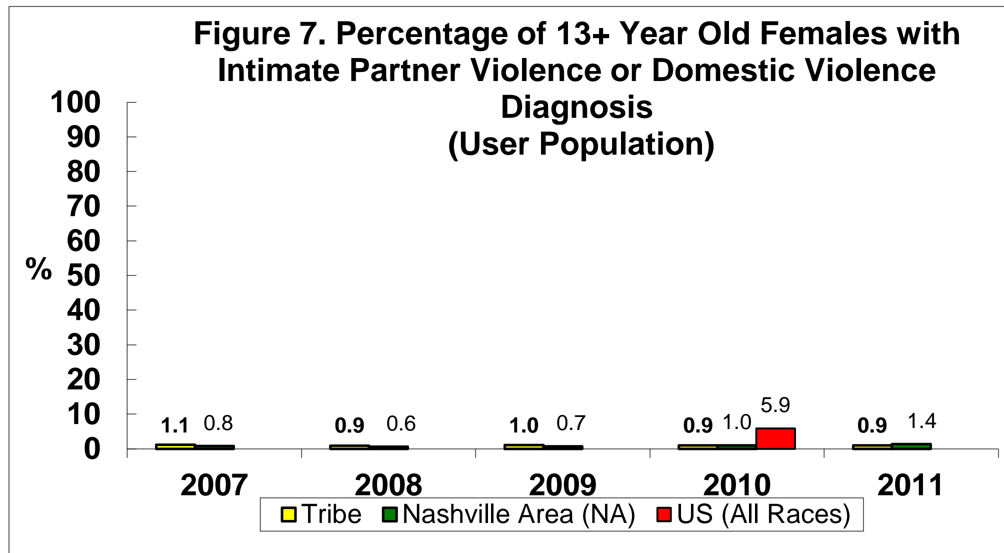
[36] The National Center for Victims of Crime. (2011). Retrived 3/7/12 from http://www.ncvc.org/ncvc/main.aspx?dbName=DocumentViewer&DocumentID=32347#1.)
[37] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.
[38] Tjaden, P. & Thoennes, N. (1998, November). Prevalence, incidence, and consequences of violence against women: Findings from the National Violence Against Women Survey. (NCJ 172837). Washington, DC: National Institute of Justice/Centers for Disease Control and Prevention.
[39] As cited in EBCI CRS Report Spreadsheet, TEC Internal Document
[40] Ibid.
[41] Council for Women, NC Dept. of Administration. (2011). 2010-2011 County Statistics [excel database]. Retrieved 3/2/12 from http://www.nccfwdvc.com/stats.htm.
[42] Note: The DV rates are based on self-reporting by DV service providers and only inlcude providers who are funded through the NC Council For Women.
[43] Note: AI/AN rates are a best estimate as they were based on AI/AN clients served by Council For Women programs in 2010 and Ernestine Walkingstick Shelter data for 2011.
[44] Ernestine Walkingstick Shelter, Brandi Cooper. (2012). Personal Communication, 3/20/12.
[45] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

This discrepancy may be due to many factors such as differences in reporting at clinics versus Tribal DV programs.

Figure 7. Percentage of 13+ Year Old Females with Intimate Partner Violence or Domestic Violence Diagnosis (User Population)



Source: Indian Health Service RPMS, TEC. "Tribe" refers to EBCI.
From 2007 to 2011, on average this Tribe's rate was approximately 1.12 times greater than the Nashville Area's rate.

Child Abuse and Neglect

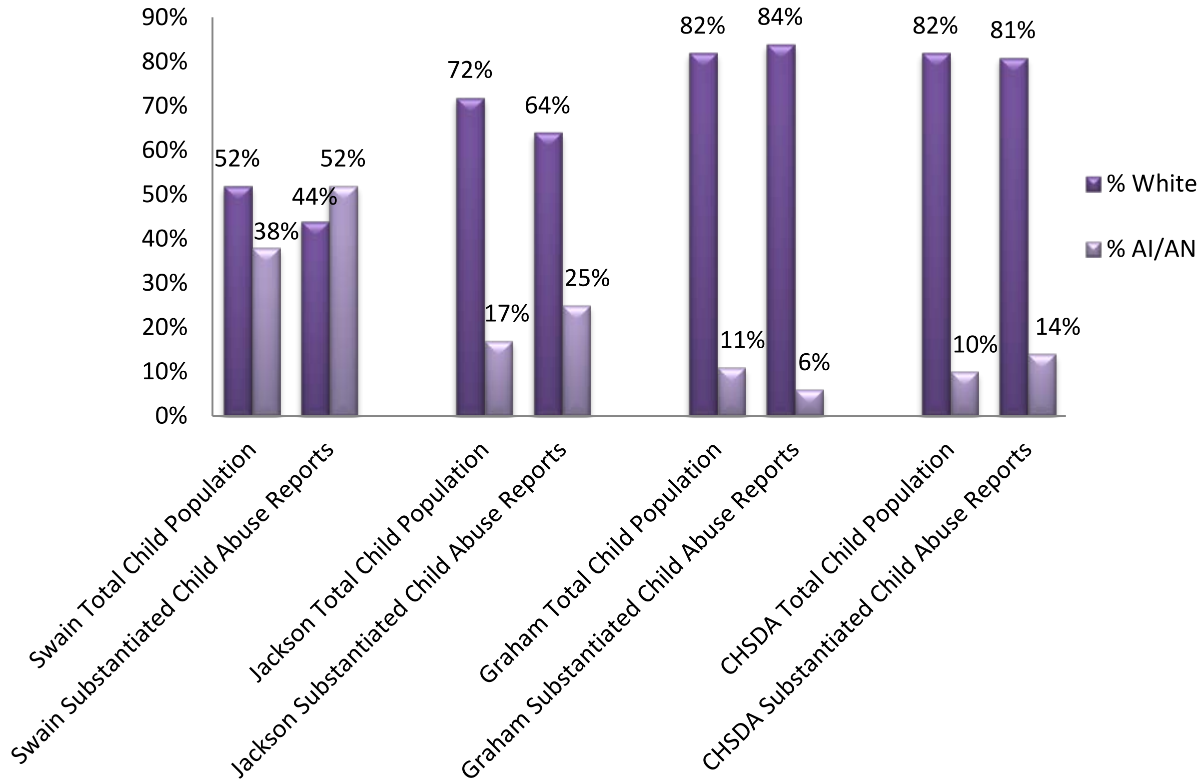
Child maltreatment occurs in many forms including emotional abuse, physical abuse, sexual abuse, or neglect. Child abuse can lead to post-traumatic stress, depression and anxiety disorders, illicit drug use, alcoholism, sex and food addictions, and suicide.[46] According to the Native American Children's Alliance, child abuse in AI/AN communities is explained as the result of the deterioration of the traditional family structure due to US government forced assimilation policies, such as boarding schools.[47] Nationally, AI/AN children suffer from higher rates of abuse than children in the general population. Similarly, AI/AN children in the CHSDA are over-represented in child abuse cases compared to other children within the CHSDA.

Figure 8 shows that AI/AN in the CHSDA make up only 10% of the child population but represent 14% of the substantiated child maltreatment cases[48]. In comparison, white children in the CHSDA account for 82% of the total child population and 81% of the child maltreatment cases. In Swain and Jackson Counties, AI/AN children are overrepresented in child abuse cases,

[46] Native American Children's Alliance. (n.d.). *Child Maltreatment in Indian Country* [fact sheet]. Retrieved from http://nativechildalliance.org/Fact_Sheet.pdf, 12/28/11.
[47] Ibid.
[48] Note: Substantiated child maltreatment cases include 5 finding types: abuse, neglect, abuse and neglect, dependency, services (needed, provided no longer needed, recommended.

making up over half the cases in Swain and a quarter of the cases in Jackson. However, in Graham County, AI/AN children are slightly underrepresented in abuse cases.[49]

Figure 8. Substantiated Child Maltreatment Reports Compared to % of Population (NFP Report, 2012)



[49] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

CHAPTER 3 - HEALTH STATUS & HEALTH OUTCOMES

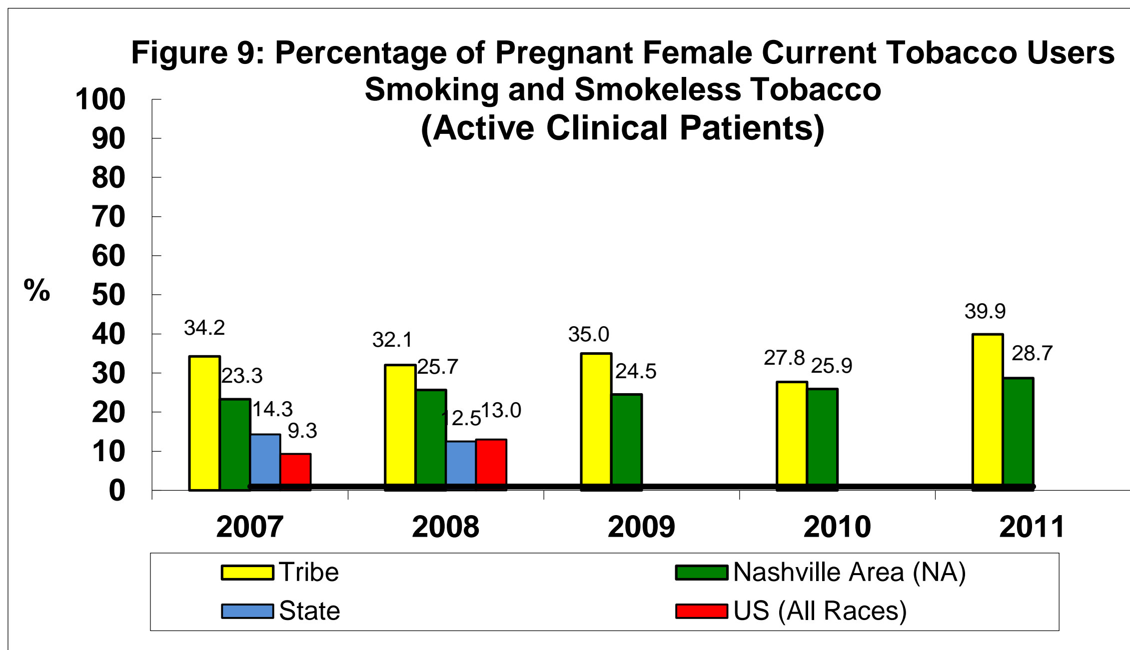
Pregnancy and Birth Data

Pregnancy Risk Factors

Maternal Tobacco Use

According to IHS, "Cigarette smoking is the leading preventable cause of disease and death in the US. It has been well established that commercial tobacco is associated with higher rates of chronic diseases such as lung cancer, heart disease, asthma, and chronic obstructive pulmonary disease."[50] Tobacco use includes smoking, passive smoke exposure and use of smokeless tobacco, all of which pose risks to pregnant women, their fetuses, and their families.[51] Available data from TEC specify smoking and smokeless tobacco use.

From 2007 to 2011, the rate of smoking among pregnant AI/AN living in the 5-county CHSDA ranged from a low of 28% in 2010 to almost 40% in 2011. Rates of smoking in this population were consistently higher than rates within the IHS Nashville Area, North Carolina and the U.S. On average, from 2007 to 2011, the 5-county CHSDA's AI/AN active clinical patient smoking rate was approximately 1.32 times greater than the Nashville Area's rate. (Figure 9)



Source: Indian Health Service RPMS, TEC. "Tribe" refers to EBCI.
Notes: For State/US rates used Mental Health, United States, 2010 publication distributed by Substance Abuse and Mental Health Services Administration (SAMHSA) as well as CDC estimates.

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[50] As cited in EBCI CRS Report Spreadsheet, TEC Internal Document

[51] Centers for Disease Control and Prevention, US DHHS:
http://www.cdc.gov/tobacco/basic_information/health_effects/pregnancy/ ;
http://www.cdc.gov/tobacco/basic_information/secondhand_smoke/index.htm Accessed June 20, 2013.

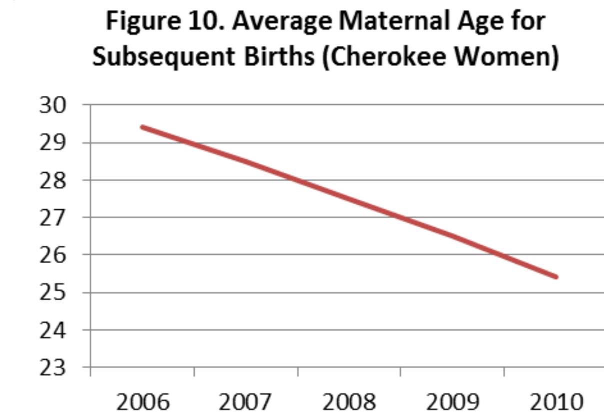
Maternal Age

On average, EBCI women have their first and subsequent children at younger ages than women in the surrounding areas. NC health statistics show that more than 1/5 (23.4%) of AI/AN women in the CHSDA have their first child under the age of 20, while about 1/7 (13.6%) of CHSDA white women and about 1/10 (11.3%) of all women in NC have their first child under the age of 20. Of the women who choose to use CIHA as their main health care provider, more than half (55%) had their first child under the age of 20 in 2011.[52] There has been a consistent downward trend in average age of women having subsequent births (two or more) since 2006 as reported by CIHA, from 29.4 years in 2006 to 25.3 in 2010.[53] (Table 15; Figure 10)

Table 15. Maternal age, 2011 (EBCI Home Visiting Report, 2012)[54]

	EBCI	AI/AN in CHSDA	White CHSDA	AI/AN Non-CHSDA	NC all races
Average age of mother at birth of first child	21.3	20.8	23.5	21.7	N/A
Percentage of mothers under age 20 at birth of first child	55%	23.4%	13.6%	19.0%	11.3%

Figure 10. Average Maternal Age for Subsequent Births (Cherokee Women)



Source: Indian Health Service RMPS, Cherokee Indian Hospital Authority

[52] Indian Health Service, Cherokee Indian Hospital Authority. (2011). Resource and Patient Management System, version [Internet]. Data retrieved for calendar year 2011.

[53] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

[54] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

Maternal Obesity

Risks associated with maternal obesity during pregnancy include increased gestational diabetes, high birth weight, preeclampsia (a pregnancy syndrome with high blood pressure that can cause seizures and other serious problems), caesarean delivery, and stillbirth.[55] For this report, the maternal obesity rate is based upon women's BMI calculation at the time they became pregnant. In 2010, the EBCI maternal obesity rate was 45.1%[56]. In comparison, the 2010 rate of maternal obesity rate for North Carolina was 25.9%.[57]

Maternal Diabetes

Diabetes during pregnancy, either pre-existing or gestational (during pregnancy), is a concern for EBCI women. Women with gestational diabetes have a 20-50% risk of developing Type 2 diabetes in the 5-10 years post pregnancy. For the baby born to a woman with diabetes, birth risks include high birth weight requiring caesarean section, low blood sugar, jaundice, Respiratory Distress Syndrome, and low blood mineral content.[58] Children born to mothers with gestational diabetes are at a higher risk of obesity, abnormal glucose tolerance, and developing diabetes themselves. According to CIHA data, the maternal diabetes rate among AI/AN living in the 5-county CHSDA is 13.7%. In comparison, the NC state prevalence of gestational diabetes was 10.8% in 2008. [59,60]

Maternal Depression

According to local data, in 2011 the EBCI population had a maternal depression rate, not specified whether during pregnancy or post-partum, of 21%.[61] Statewide, 75.4% of women reported having experienced feelings associated with postpartum depression in 2010.[62]

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[55] Centers for Disease Control and Prevention, US DHHS, Pregnancy Complications. http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PregComplications.htm Accessed June 20, 2013.

[56]EBCI HMD (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

[56] IHS RPMS, TEC

[57] 2010 North Carolina Pregnancy Risk Assessment Monitoring System Survey Results. Preconception Health Indicators Women 18-44. Mother's Body Mass Index (BMI) Before Pregnancy*
http://www.schs.state.nc.us/schs/data/preconception/prams/2010/MOM_BMIG.html Accessed June 20, 2013.

[58] National Institute of Health, Eunice Kennedy Shriver National Institute of Child Health and Human Development. (2008). Health Information: *Gestational Diabetes*. Retrieved 2/19/12 from http://www.nichd.nih.gov/health/topics/gestational_diabetes.cfm

[59] NC Diabetes Prevention and Control, NCDHHS. (2010). *The Burden of Diabetes in 2010.* [Factsheet]. Retrieved 2/17/12 from
http://www.gvdhd.org/download/CHA%20Appendix%20K_Diabetes%20Burden%20in%20NC_%202010%20Fact%20Sheet_2012.pdf

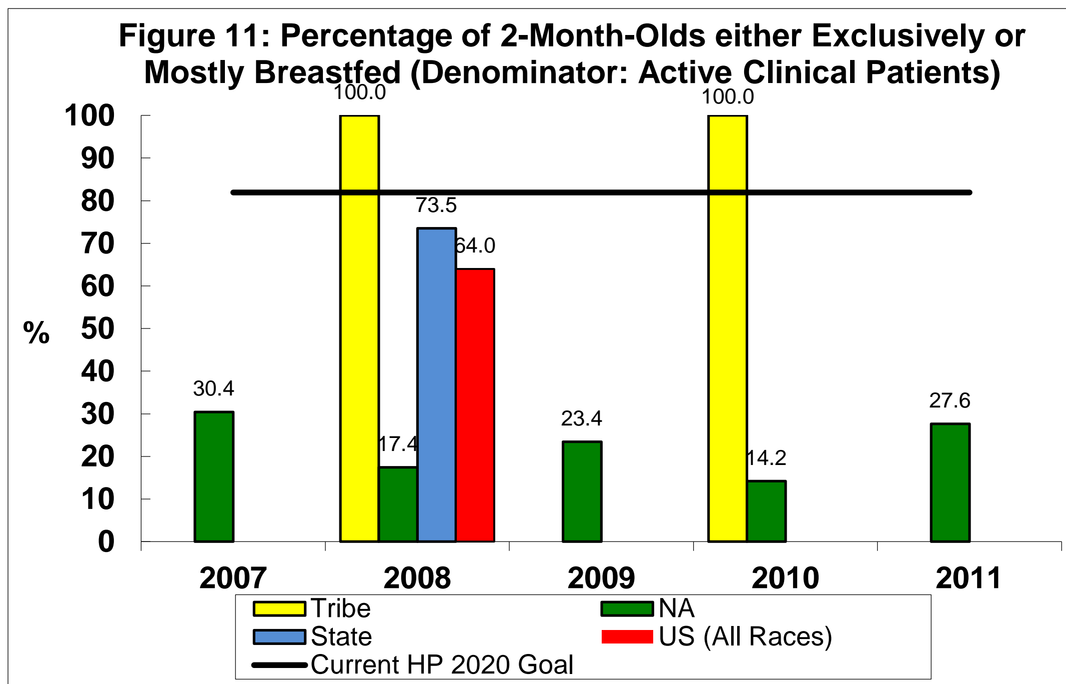
[60] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

[61] Ibid.

Breastfeeding

Breastfeeding is one of the most important ways a mother can benefit her baby. Breast milk transfers important nutrients and antibodies and is more easily digested than formula. Breastfed babies have lower rates of obesity, asthma, certain infections, diabetes, atopic dermatitis, and SIDS (Sudden Infant Death Syndrome) than formula-fed babies. In addition, there are maternal benefits from breastfeeding, such as lower rates of Type 2 diabetes, post-partum depression, and ovarian and breast cancer.[63]

Local AI/AN breastfeeding data are only available from TEC for 2008 and 2010. In these two years, TEC reports 100% of local AI/AN 2 month olds were exclusively or mostly breastfed (Figure 11). This rate was higher than North Carolina, Nashville Area, and US rates. From 2008 to 2011, on average the local AI/AN rate was approximately 3.38 times greater than the Nashville Area's rate. However, in the WIC population in the same years, 2008 and 2010, 53% of EBCI WIC participants breastfed their infants; age of infant is not stated in this data (Figure 12).[64] This data conflicts with the data in Figure 11. In 2007, 50% of local AI/AN 9- month-olds were exclusively or mostly breastfed; in 2011, the rate of breastfeeding for 9 month olds had decreased to 14% (Figure 13).



Source: Indian Health Service RPMS, TEC. "Tribe" refers to EBCI.
Notes: States may have wide confidence intervals which are not displayed.
From 2008 to 2011, on average this Tribe's rate was approximately 3.38 times greater than the Nashville Area's rate.

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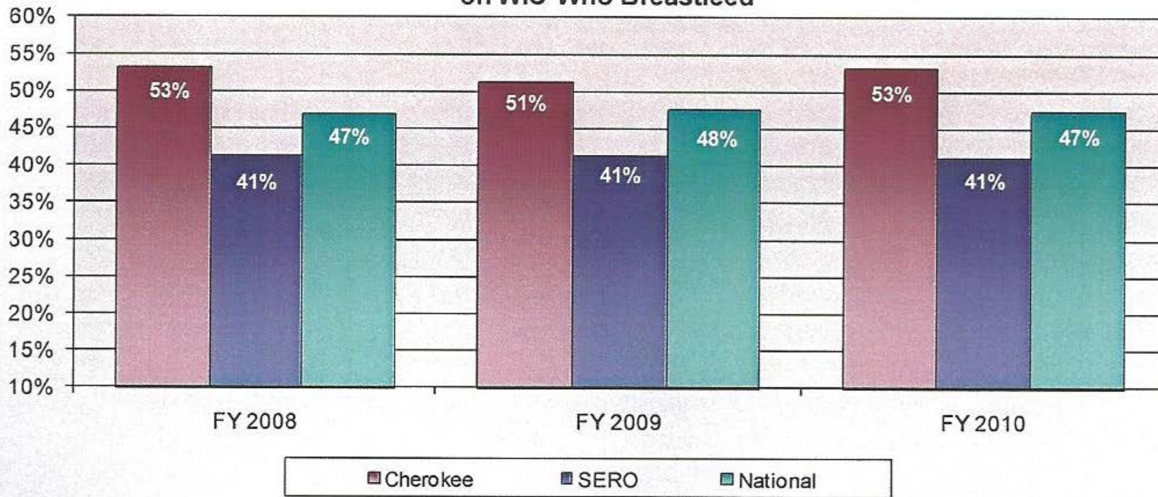
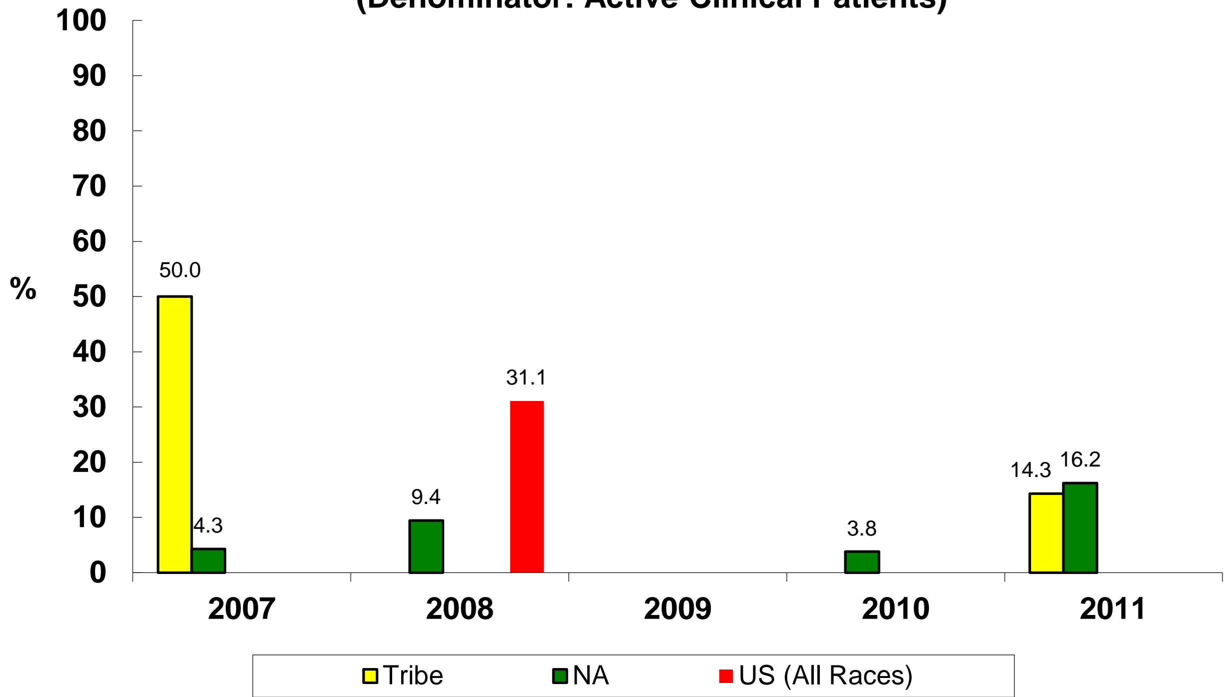
[62] 2010 North Carolina Pregnancy Risk Assessment Monitoring System Survey Results. Preconception Health Indicators Women 18-44. Since your new baby was born, how often have you felt down, depressed, or sad? http://www.schs.state.nc.us/schs/data/preconception/prams/2010/MH_PPDPR.html).
[63] US DHHS Office on Women's Health, http://www.womenshealth.gov/breastfeeding/why-breastfeeding-is-important/index.html#a Accessed June 20, 2013
[64] USDA/FNS/SERO, op. cit.



Source: USDA/FNS/SERO, April 2013



Source: Indian Health Service RPMS, TEC. "Tribe" refers to EBCI.

From 2007 to 2011, on average this Tribe's rate was approximately 3.14 times greater than the Nashville Area's rate.

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Birth Outcomes

Premature Births

Babies born prematurely, before 37 weeks gestation, have higher risks of long-term developmental, behavioral and medical problems than babies born at term.[65] According to national and state data, AI/AN are second only to African-Americans in terms of premature births (<37weeks gestation). However, data in Table 16 shows that locally, 11.7% of AI/AN births are premature, a lower rate than for whites in the CHSDA (13.3%), considerably lower than AI/AN living outside the CHSDA (15.3%), and lower than the overall state rate of 13.1%.[66] In fact, the EBCI rate is close to meeting the Healthy People 2020 goal for premature births.[67]

Table 16. Premature Births , 2011 (EBCI Home Visiting Report, 2012)[68]

	AI/AN in CHSDA	White CHSDA	AI/AN Non-CHSDA	NC all races	Healthy People 2020 Objective
Percentage of live births before 37 weeks	11.70%	13.30%	15.30%	13.10%	11.40%

Birth Weight

Low birth weight is defined by births less than 2500 grams or 5 1/2 pounds. As with premature births, the percentage of low birth weight babies for AI/AN in the CHSDA are considerably less than for whites in the CHSDA and for all races statewide (Table 17). AI/AN outside the CHSDA are twice as likely to have a low birth weight baby as those within the CHDSA. The CHSDA AI/AN rate of 5.7% also meets the Healthy People 2020 objective to reduce low birth weight to no more than 7.8% of live births.

AI/AN in the CHSDA have the highest birth weights of all races in the state -- approximately 5 percentage points more than whites in the CHSDA and for all races in the state of NC.

The CHSDA AI/AN low birth rate of 5.7% surpasses the Healthy People 2020 low birth weight objective.[69]

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[65] US National Library of Medicine, National Institutes of Health, Medline Plus http://www.nlm.nih.gov/medlineplus/ency/article/001562.htm Accessed June 20, 2013

[66] NC State Center for Health Statistics. (2011) Special data run using North Carolina resident live birth and death certificate data

[67] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

[68] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

[69] Ibid.

Table 17. Birth Weight (5 year average, 2006-2011) (EBCI Home Visiting Report, 2012)[70]					
	AI/AN CHSDA	**White CHSDA**	**AI/AN Non-CHSDA**	**NC all races**	**Healthy People 2020 Objective**
Low birth weight: # live births less than 2500 grams/total # live births	5.70%	9.10%	11.30%	9.10%	7.80%
High birth weight: # live births over 4,000 grams/ total # live births	13.30%	8.20%	6.10%	8.00%	N/A
Average birth weight (grams), first time mothers	3336.2	3255	3145.8	N/A	N/A

Infant Mortality

The infant mortality rate is the number of babies per thousand live births who die in the first year of life. In 2004, the US ranked 29th in the world in infant mortality, and the rate did not decrease from 2000 to 2005.[71] In the CHSDA, infant mortality numbers for AI/AN are very low, even after aggregating 5 years of data, so that the data are unstable and meaningful comparisons difficult. The actual number of infant deaths reported for AI/AN in the CHSDA was a total of 9 over a five-year period.[72] Regionally, the 5 county area fares overall as well as or better than the state for neonatal death rates (within the first month of life), but has a slightly higher rate than the state for post-neonatal death (Table 18). Again, statistically speaking, drawing conclusions about AI/AN from these data may not enable accurate conclusions.[73]

Table 18: Infant Mortality[74] (EBCI Home Visiting Report, 2012)[75]

	All Races CHSDA	All Races NC
Infant (Birth to 1 year) Mortality Rate **(per 1000)**	7.9	7.9
Neonatal (0-28 days) Mortality Rate **(per 1000)**	4.8	5.3

[70] Ibid.

[71] Centers for Disease Control and Prevention, US DHHS, NCHS Data Brief: Recent Trends in Infant Mortality in the United States, http://www.cdc.gov/nchs/data/databriefs/db09.htm Accessed June 20, 2013

[72] NC State Center for Health Statistics. (2011) Special data run using North Carolina resident live birth and death certificate data

[73] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

[74] NC State Center for Health Statistics. (2011) Special data run using North Carolina resident live birth and death certificate data

[75] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

Child Developmental Delay

The Individuals with Disabilities Act defines developmental delay as a delay in one or more areas of development, including language, motor, cognitive, sensory, adaptive or social-emotional. Children may be at risk for developmental delay if they have certain diagnosed physical or mental conditions. The indicator for developmental delay used here is enrollment in early intervention services. The data are from two sources: 1) the Child Development Services Agency (CDSA) of the Smokies, an agency that provides developmental screenings for a seven-county region in North Carolina that includes all Tribal lands and all the day care centers on the reservation, and 2) the Hope Center, based at Cherokee Central Schools, which provides and coordinates screening and services for Tribal children. See Table 19 for a comparison of percentages of children 0-3 years old enrolled in disability services. This information should be interpreted with caution, as the EBCI data reflective of enrollment in disability services are from December 2011 and the CDSA data from calendar year 2009. In addition, these numbers reflect children who have been screened and enrolled, which could be related to a difference in identification of children with special needs rather than overall incidence.

Table 19. Children aged 0-3 enrolled in Early Intervention (EI)

(EBCI Home Visiting Report, 2012)[76]

	# enrolled	0-3 population	% of pop
Buncombe/Madison/Henderson/Transylvania Counties, 2009 CDSA Data[77]	345	13,477	2.56%
Child Development Services Agency (CDSA) of the Smokies 2009 Data (CHSDA counties plus Clay and Macon Co.)	265	6003	4.41%
EBCI, 2011 Data, The Hope Center.[78] Pop. estimate based on EBCI enrollment data.[79]	53	820	6.50%

Mortality Data

Life expectancy

The life expectancy at birth for AI/AN in the five-county CHSDA between 2003-2010 is 78.39 years.[80] State-level total life expectancy at birth in NC between 2009-2011 is 78 years,[81] and the US in 2011, 78.7.[82]

[76] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

[77] M. Panther, Executive Director, CDSA of Western North Carolina. *Personal Communication*, Jan – Mar, 2012.

[78] B.Pedersen, Executive Director, Hope Center. *Personal Communication*, February 2, 2012.

[79] The EBCI 0-3yo population is estimated to be 820 based on a 5 year average from 2005-2009. EBCI Enrollment Office. (2011). Special data run: Enrollment Age Report as of Dec. 16, 2011.

[80] IHS RPMS, TEC

Leading causes of death

Table 20 shows age-adjusted[83] leading causes of death in groups of five years. In each five-year aggregate, the rankings of leading causes of death are the same. The number one cause of death among AI/AN population in the CHSDA is heart disease, although the mortality rate from heart disease deaths decreased by over 50% from the 2003-2007 period to 2006-2010. Mortality rates from the four other top causes also decreased from 2005-2009 to 2006-2010.

Table 20: Age-Adjusted Leading Causes of Death per 100,000 Population in CHSDA User Population (Five Year Aggregates) (Indian Health Service RPMS, TEC)

Causes of death	2003-2007		2004-2008		2005-2009		2006-2010	
	# of deaths/ 100,000	Raw Count	# of deaths/ 100,000	Raw Count	# of deaths/ 100,000	Raw Count	# of deaths/ 100,000	Raw Count
Circulatory, Heart Disease	201.29	78	174.95	72	143.56	64	97.15	47
Neoplasm, Malignant	128.93	53	129.28	55	135.07	59	97.01	45
Unintentional Injury	72.42	40	77.85	46	69.37	42	56.01	34
Diabetes Mellitus	68.89	29	58.56	26	54.67	26	44.49	21
Chronic Liver Disease and Cirrhosis	35.61	20	41.94	23	37.49	21	26.65	15

Table 21 shows the leading causes of death in 2003-2010 for the CHSDA user population (AI/AN who lived in the CHSDA and had at least one visit to the clinic in the three years prior to death), based on the National Center for Health Statistics' (NCHS) list of 113 leading causes of death in the US. In the CHSDA, these account for 88% of total AI/AN deaths. The leading causes of death among AI/ANs in the CHSDA, by raw numbers, were: 1) circulatory--acute myocardial infarction, 2) diabetes mellitus, 3) motor vehicle crash, 4) circulatory--chronic ischemic heart disease, 5) circulatory--cerebrovascular diseases.

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[81] NC State Center for Health Statistics, 2009-2011 State-Level Life Expectancies, http://www.schs.state.nc.us/schs/data/lifeexpectancy/2009-2011/North%20Carolina%202009-2011%20Life%20Expectancies.html Accessed June 20, 2013

[82] Centers for Disease Control and Prevention, US DHHS, http://www.cdc.gov/nchs/fastats/lifexpec.htm Accessed June 20, 2013

[83] Many factors can affect the risk of death, including race, gender, occupation, education and income. The most significant factor is age, because an individual's risk of death inevitably increases with age. As a population ages, its collective risk of death increases; therefore, an older population will automatically have a higher overall death rate just because of its age distribution. At any one time some communities have higher proportions of "young" people, and other communities have a higher proportion of "old" people. In order to compare mortality data from one community with the same kind of data from another, it is necessary first to control for differences in the age composition of the communities being compared. This is accomplished by *age-adjusting* the data. Age-adjustment is a statistical manipulation usually performed by the professionals responsible for collecting and cataloging health data.

Table 21. Mortality data for AI/AN in 5-county CHSDA (User Population), 2003-2010

(Indian Health Service RPMS, TEC)

NCHS 113 Leading Causes[84]	# of Deaths	Average Age at Death	% of Total Deaths
Total	482	61.3	N/A
Other than NCHS 113 causes	50	63.3	10%
Circulatory, Acute myocardial infarction	44	66.8	9%
Diabetes mellitus	39	64.4	8%
Injury, Motor vehicle crash	23	41.6	5%
Circulatory, All other forms of chronic ischemic heart dis.	23	64.6	5%
Circulatory, Cerebrovascular diseases	22	69.8	5%
Injury, Accidental poisoning and exposure to noxious substances	21	30.1	4%
Neoplasm, malignant, of trachea, bronchus and lung	19	65.4	4%
Other chronic liver disease and cirrhosis	13	53.3	3%
Neoplasm, all other and unspecified malignant	13	72.4	3%
Alcoholic liver disease	12	49.9	3%
Septicemia	12	51.6	3%
Respiratory, Pneumonia	12	72.1	3%
Circulatory, Atherosclerotic cardiovascular disease, so described	12	78.9	3%
Injury, Other and unspecified nontransport accidents and their sequelae	10	63.3	2%
Respiratory, Other chronic lower respiratory diseases	10	78.1	2%
Renal failure	9	66.3	2%
Circulatory, All other forms of heart disease	9	78.7	2%
Alzheimer's disease	9	86	2%
Injury, Intentional self-harm (suicide) by discharge of firearms	8	46.1	2%
Injury, Assault (homicide) by discharge of firearms	6	31.2	1%

Table 22 shows causes of death for specific causes of interest. Included in this chart are the leading or secondary causes as recorded on the death certificate. For example, diabetes was the

[84] In order to provide a consistent ranking standard, NCHS prepared a list of 113 selected causes of death, from which this table depicts the top 20. ICD-10 codes were removed for brevity. Percentages do not sum to 100% because only the top 20 of 113 causes are listed.

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leading or secondary cause in 11% of AI/AN deaths within 5-county CSHDA. These categories are not mutually exclusive; e.g., one death certificate could include both "Substance-induced" and "Diabetes."

Table 22: Causes of death for specific causes of interest to EBCI, 2003-2010; AI/AN User Population within 5-county CSHDA (Indian Health Service RPMS, TEC) (Total deaths: 482)

Leading or secondary cause of death	Number of deaths
Cardiovascular disease	171 (36% of total deaths)
Substance-induced	92 (19% of total deaths)
Cancer	92 (19% of total deaths)
Diabetes	54 (11% of total deaths)

Morbidity Data

Morbidity data in this report refers generally to the current presence of injury, sickness, or disease (and sometimes the symptoms and/or disability resulting from those conditions) in the living population.

General Health Status

Health and activity limitations

Table 23 refers to self-reported health status in the WNC region of 16 counties in the Healthy Impact 2012 report. (See Ch. 8 for Tribal Health Survey health self-reports among the EBCI community.)

Table 23. Self-reported health and activity limitations, Western North Carolina by race (WNC Healthy Impact, 2012)

	White	AI/AN	Black	Other	WNC	NC	U.S.
% who report "fair" or "poor" overall health	18.1%	19.6%	26.4%	30.0%	19.0%	18.1%	16.8%
% limited in activities in some way due to physical, mental, or emotional problem	27.8%	34.9%	28.1%	29.2%	28.1%	21.2%	17.0%

Diabetes

According to Healthy People 2020, "Diabetes mellitus occurs when the body cannot produce or respond appropriately to insulin. Insulin is a hormone that the body needs to absorb and use glucose (sugar) as fuel for the body's cells. Without a properly functioning insulin signaling system, blood glucose levels become elevated and other metabolic abnormalities occur, leading to the development of serious, disabling complications. Many forms of diabetes exist; the three common types are Type 1, Type 2, and gestational diabetes."

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

- Lowers life expectancy by up to 15 years.
- Increases the risk of heart disease by 2 to 4 times.
- Is the leading cause of kidney failure, lower limb amputations, and adult-onset blindness."[85]

In 2011, according to the Nashville Area TEC, there were 2,336 persons in the EBCI user population with diabetes.[86] Table 24 shows that the AI/AN population in Jackson and Swain Counties, which is mostly EBCI, self-reported a significantly higher rate of diabetes than in the state overall, and that women have a slightly higher rate than men. Figure 14 shows that these self-reports are roughly consistent with the TEC data, and emphasizes the relatively high prevalence of diabetes in EBCI compared to all the other population groups. EBCI's rate was 2.6 times higher than the state rate in 2010.

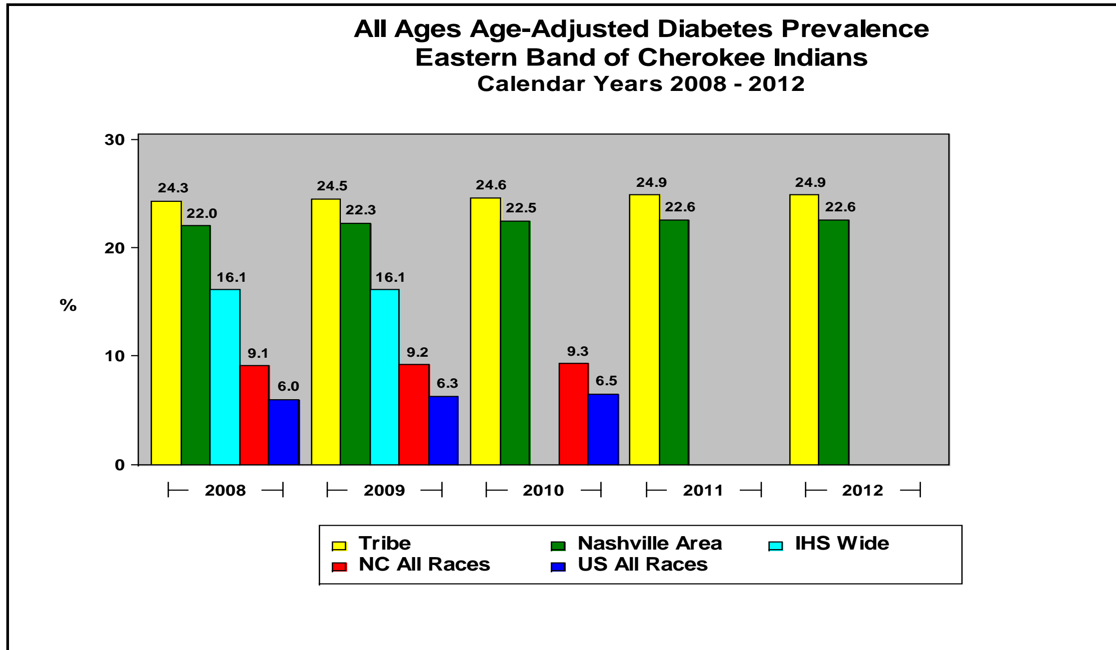
Table 24. Percentage of AI/AN within Jackson and Swain Counties who reported having diabetes (REACH)

	AI/AN Total	AI/AN Men	AI/AN Women	NC Men	NC Women
	% (sample size)	% (sample size)	% (sample size)	%	%
2002	23.9% (952)	20.5% (422)	26.8% (530)	6.8%	6.7%
2010	27.2% (946)	24.6% (405)	29.4% (541)	9.2%	10.0%
2011	30.6% (900)	28.2% (405)	32.5% (495)	9.5%	10.0%
2012	26.3% (910)	24.9% (409)	27.8% (501)	10.8%	10.8%

[85] www.healthypeople.gov as cited in Professional Research Consultants, Inc. (2012). PRC Community Health Needs Assessment Report, Western North Carolina. Asheville, NC: WNC Health Network and WNC Healthy Impact. Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

[86] Ibid.

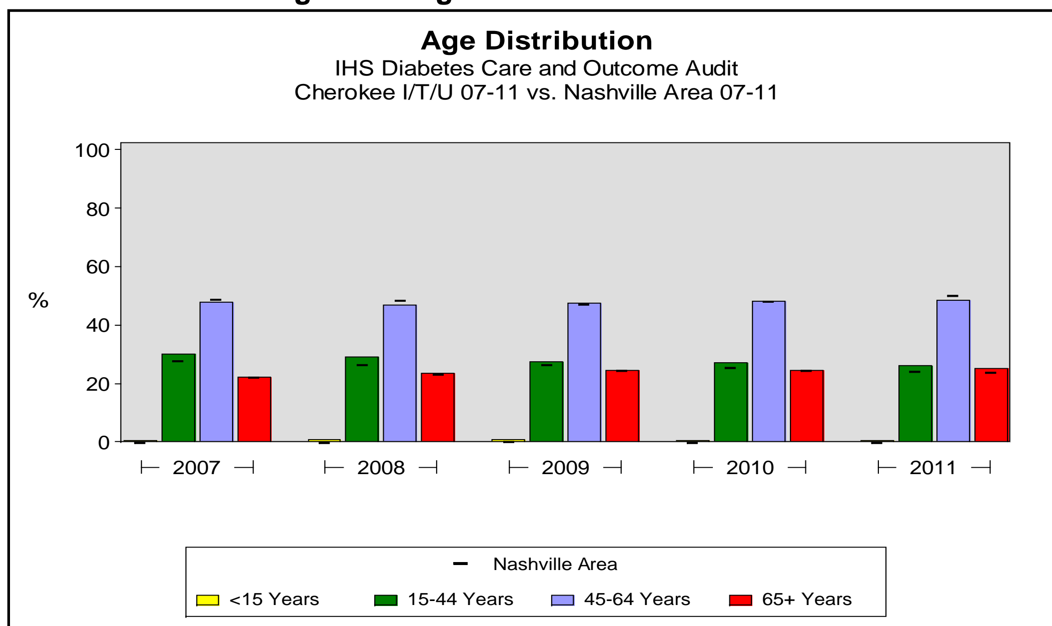
Figure 14. Age-Adjusted Diabetes Prevalence



Source: Indian Health Service RPMS, TEC. EBCI 2013 Diabetes Report. "Tribe" refers to EBCI.
Notes: All rates age-adjusted to US 2000 population. Age categories for I/T/U and Area aggregate calculations differed from categories used to calculate IHS wide, US and State rates. IHS wide rates for persons >= 20 years, US All Races rates for all ages and State All Races rates for persons >= 18 years. I/T/U, Nashville Area and IHS wide rates based on clinical documentation. US and State rates based on self-reports. Caution is warranted because data quality may have varied overtime. IHS wide, US and State data for some years was unavailable.

Figure 15 shows that the majority of those with diabetes are between 45-64 years old, and that there are more persons with diabetes in the 15-44 age group than among elders.

Figure 15. Age Distribution of Diabetes



Source: Indian Health Service RPMS, TEC. EBCI 2013 Diabetes Report.
Notes: Caution is warranted because data quality may have varied over time.

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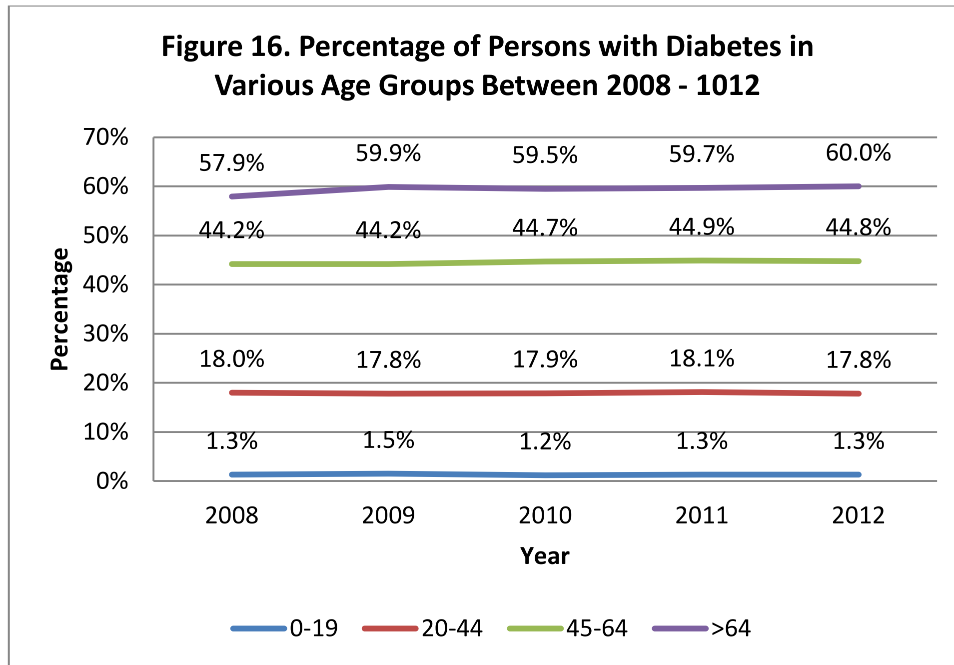
Figure 16 shows the percentage of persons within each age group who have diabetes. During 2008-2012, these percentages remained stable within age groups. Though less than 2% of EBCI children and teens have diabetes, 60% of EBCI elders have diabetes, as do nearly 45% of those 45-64.



Source: Indian Health Service RPMS, TEC. EBCI 2013 Diabetes Report.
Notes: Caution is warranted because data quality may have varied over time.

As more young people are diagnosed with diabetes, the duration of the disease in their lives increases. Duration of diabetes is associated with increased complications such as kidney disease, vision impairment, amputation, and cardiovascular disease. Data on monitoring of diabetes and related conditions is in Chapter 5. Further information on EBCI and diabetes is in the TEC report, "*2013 USET Eastern Band of Cherokee Indians Diabetes Report*," cited above.

The TEC 2013 EBCI Diabetes Report states:

> Having 56.5% of its 65 years and older diagnosed with diabetes and an age-adjusted diabetes prevalence rate that is 1.6 times greater than the Nashville Area rate, 2.1 times greater than the IHS wide rate, 3.2 times greater than the State All Races rate, and 5.9 times greater than the US All Races rate reflects the existing large and disproportionate burden of diabetes in this Tribe's community.[87]

[87] Tribal Epidemiology Center, United South and Eastern Tribes, Inc. *2013 USET Eastern Band of Cherokee Indians Diabetes Report*. Nashville, TN: United South and Eastern Tribes, Inc. (2013).

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Obesity

Adult Obesity Prevalence Trend

Type 2 diabetes is more likely to develop in persons who are obese. The prevalence of obesity in (AI/AN) and the overall US population has increased dramatically over the past 30 years. According to IHS, over 80% of AI/AN adults ages 20-74 are overweight or obese, and between 45% and 51% of children and youth are not at a healthy weight.

According to REACH and RPMS data in Tables 25 and 26 and Figure 17, the percentage of the CHSDA AI/AN population who are either overweight or obese has risen fairly steadily over time. Based on current data, approximately 80% of the CHSDA AI/AN population is overweight or obese. This rate is higher than AI/AN rates in the Nashville Area and IHS-wide, and much higher than state or U.S. rates. REACH data are available only for the years listed.

Table 25. Weight categories for AI/AN in Jackson and Swain Counties (REACH)

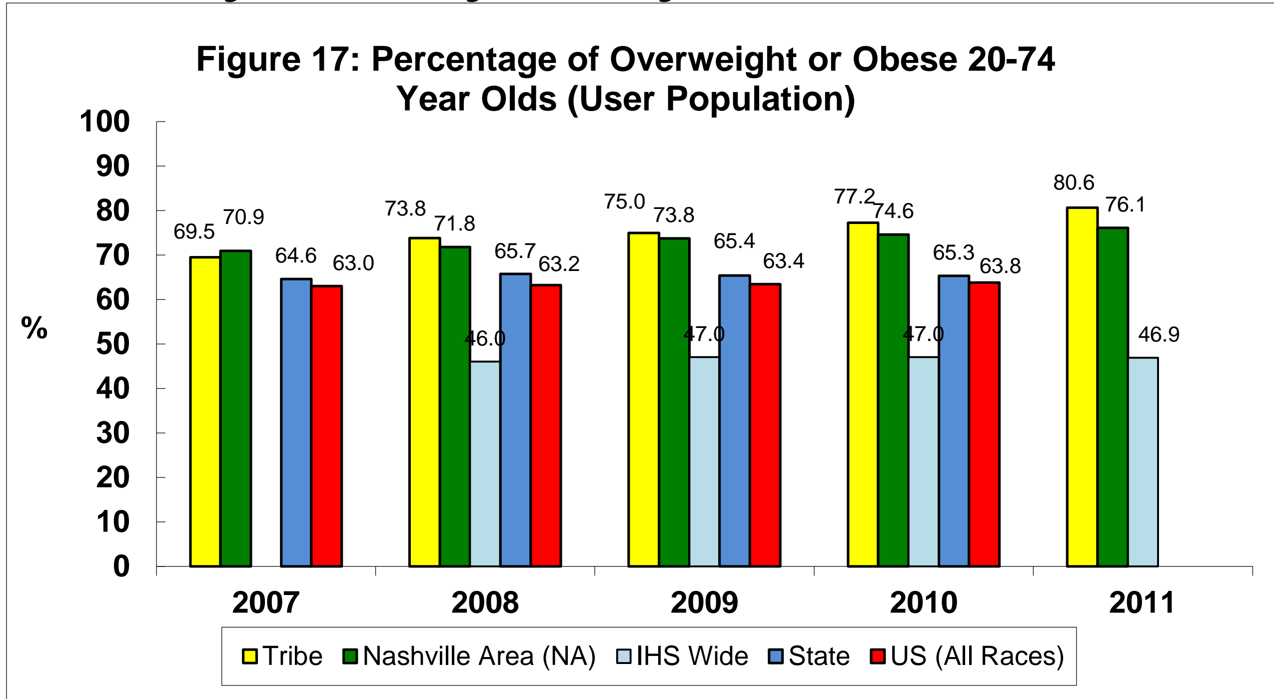
	AI/AN Total			
	Sample Size	% Overweight	% Obese	% Obese or OW
2002	937	34.0%	43.9%	77.9%
2010	920	30.7%	50.4%	81.1%
2011	877	29.6%	50.1%	79.7%
2012	890	30.6%	53.1%	83.7%

Body mass index (BMI) is calculated as self-reported weight in kilograms divided by self-reported height in meters squared (kg/m2). Three weight categories are defined as Normal: BMI<25kgm2; Overweight: BMI>25 kg/m2 and <30 kg/m2; and Obese: BMI>30 kg/m2.

Table 26. Weight categories by race and sex for AI/AN in Jackson and Swain Counties (REACH)

	AI/AN Males			AI/AN Females			NC Males		NC Females	
	Sample Size	% OW (overwt)	% Obese	Sample Size	% OW	% Obese	% OW	% Obese	% OW	% Obese
2002	419	34.2%	45.7%	518	33.8%	42.3%	46.1%	21.1%	28.9%	22.4%
2010	401	28.9%	52.3%	519	32.3%	48.7%	40.4%	30.2%	30.2%	30.0%
2011	401	29.8%	50.6%	476	29.5%	51.4%	42.6%	28.8%	30.9%	28.4%
2012	405	33.4%	51.2%	485	27.3%	55.2%	42.0%	28.3%	29.9%	30.0%

Figure 17. Percentage of Overweight or Obese 20-74 Year Olds



Source: Indian Health Service RPMS, TEC. "Tribe" refers to EBCI.
Notes: For State/US rates used CDC estimates.
From 2007 to 2011, on average this Tribe's rate was approximately 1.02 times greater than the Nashville Area's rate.

Child Obesity Prevalence Trend

According to CDC, "Obesity in children contributes to immediate and long-term risks for physical, social, and emotional health. The possibility of developing high blood pressure or high cholesterol is greater in obese youth and they may suffer from stigmatization and low self-esteem.[88] Obese children are more likely to be obese adults and therefore are at risk for many chronic conditions such as Type 2 diabetes, cardiovascular disease, osteoarthritis, stroke, and several types of cancer.[89] The overweight and obese rate for NC children in 2009 was 34.2% and local and regional data shows that in 2009, 34.7% of children in the CHSDA (all races, total) were overweight or obese compared to more than half (53.3%) of EBCI children."[90,91]

Figure 18 shows that the rate of overweight and obesity among AI/AN children in the 5-county CHSDA has been rising over time, from 38% in 2007 to 48% in 2011.

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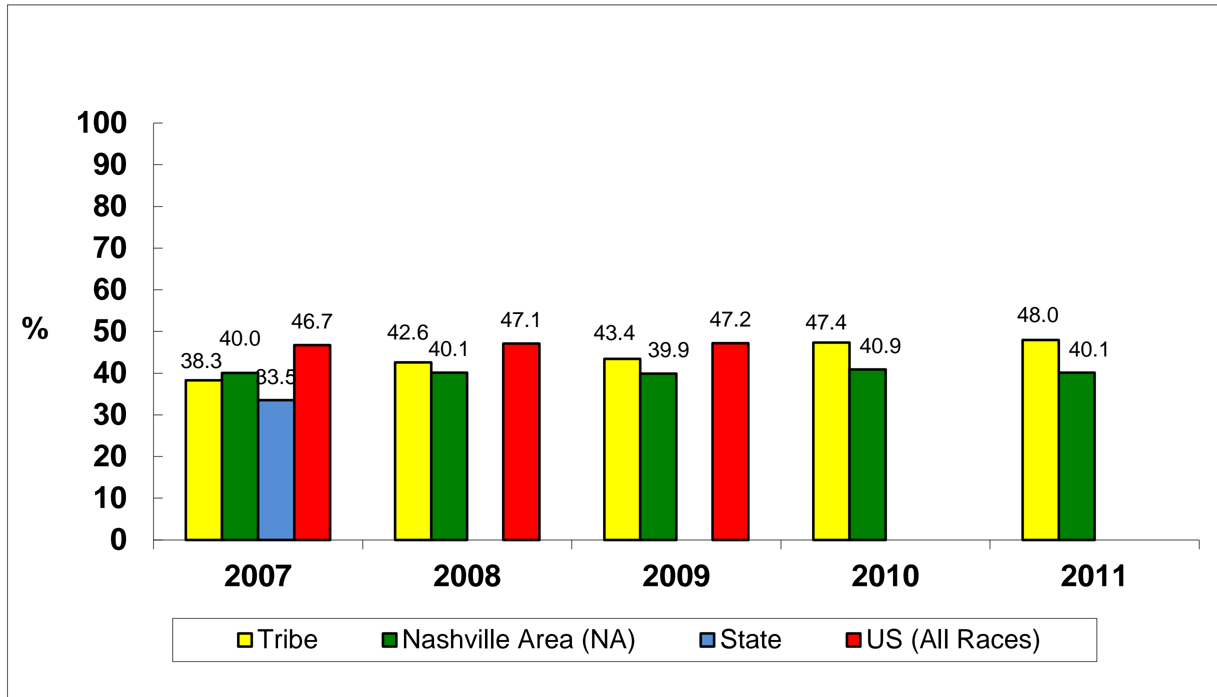
[88] Centers for Disease Control and Prevention. (2011). *Childhood Obesity Facts*. Retrieved 3/9/12 from http://www.cdc.gov/healthyyouth/obesity/facts.htm
[89] Ibid.
[90] North Carolina-Nutrition and Physical Activity Surveillance System (NC-PASS). (2009). Prevalence of Obesity, Overweight, Healthy Weight and Underweight in Children 2 through 18 years of age, by County. Retrieved 2/6/12 from http://www.eatsmartmovemorenc.com/Data/Texts/NCNPASS%202009%20County%202-18%20Years.pdf
[91] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

Figure 18. Rates of Overweight and Obesity in AI/AN Children in CHSDA



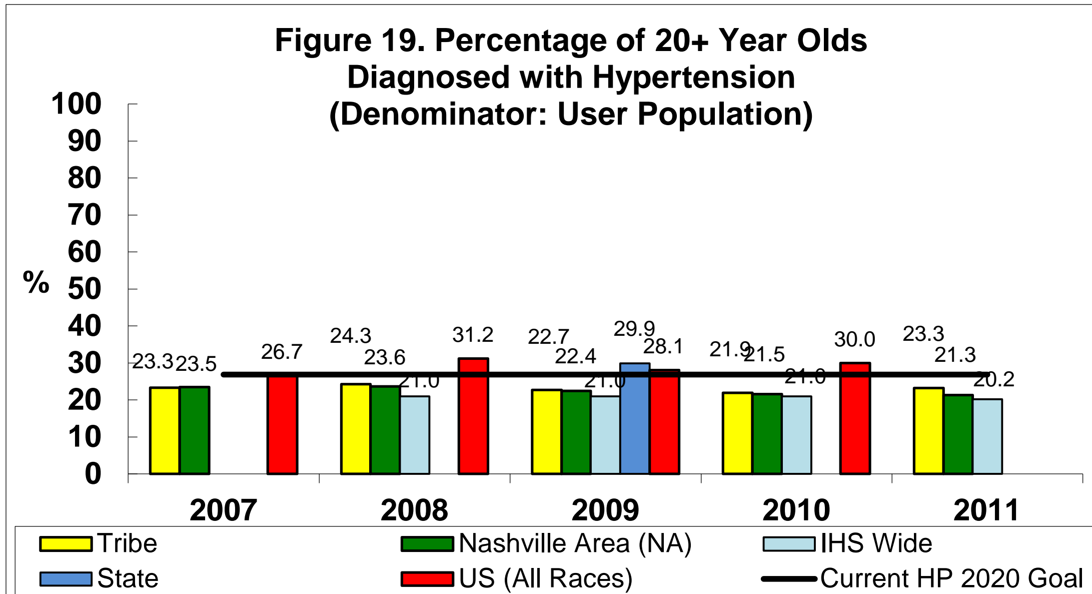
Source: Indian Health Service RPMS, TEC. "Tribe" refers to EBCI.
Notes: For US rates used CDC BRFSS estimates. For State rate used the Trust for America's Health estimate.
From 2007 to 2011, on average this Tribe's rate was approximately 1.09 times greater than the Nashville Area's rate.

Hypertension

According to IHS, "Hypertension is a major risk factor for stroke, myocardial infarction, heart failure, aneurysms of the arteries, peripheral arterial disease, and is a main contributor of chronic kidney disease. Sometimes hypertension is referred to as the 'silent killer,' because it usually has no symptoms. However, even moderate elevations in arterial blood pressure are associated with a shortened life expectancy. Dietary and lifestyle changes can improve blood pressure control and decrease the risk of associated health complications."[92]

Figure 19 shows the percentage of adults with hypertension, and Table 27 shows self-reported high blood pressure in Swain and Jackson among AI/AN. Figures 20 and 21 show hypertension rates in male and female adults, and Table 28 depicts self-reported treatment rates in hypertensive persons.

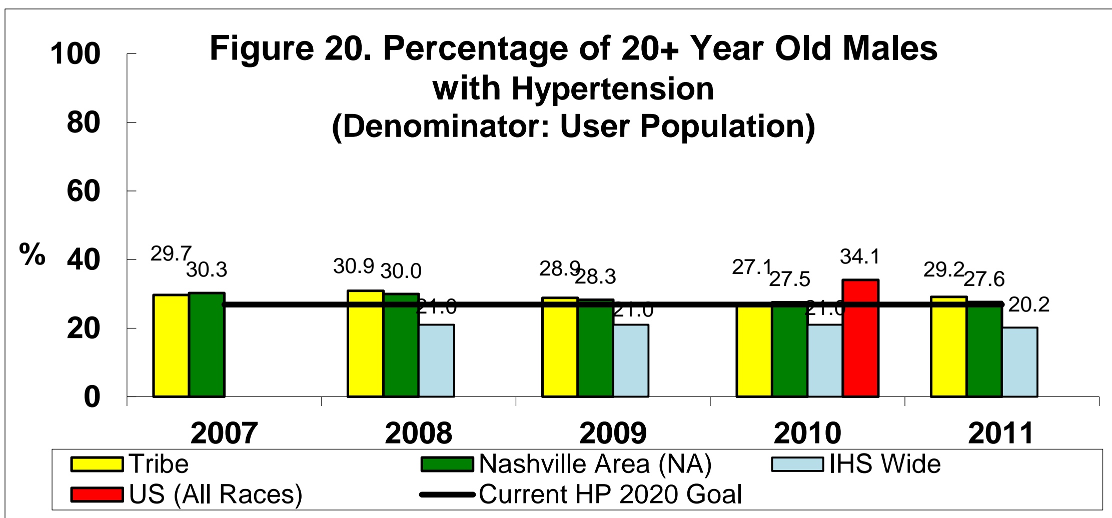
[92] As cited in EBCI CRS Report Spreadsheet, TEC Internal Document



Source: Indian Health Services RPMS, TEC. "Tribe" refers to EBCI.
Notes: For US rates used CDC National Center for Health Statistics estimates. For state rate used Trust for America's Health.
From 2007 to 2011, on average this Tribe's rate was approximately 1.03 times greater than the Nashville Area's rate.

Table 27. Percentage of AI/AN adults in Jackson and Swain Counties who reported having high blood pressure by race and sex (REACH)

	AI/AN Total	AI/AN Men	AI/AN Women	NC Men	NC Women
	% (sample size)	% (sample size)	% (sample size)	%	%
2002	40.5 (952)	40.5 (422)	40.4 (530)	25.4	28.9
2010	46.4 (942)	48.7 (405)	44.4 (537)	31.7	31.4
2011	47.2 (898)	47.4 (405)	47.0 (493)	N/A	N/A
2012	43.3 (910)	43.9 (410)	42.7 (500)	32.6	32.3



Source: Indian Health Services RPMS, TEC. "Tribe" refers to EBCI.
Notes: For US rates used CDC National Center for Health Statistics estimates. For state rate used Trust for America's Health.
From 2007 to 2011, on average this Tribe's rate was approximately 1.01 times greater than the Nashville Area's rate.

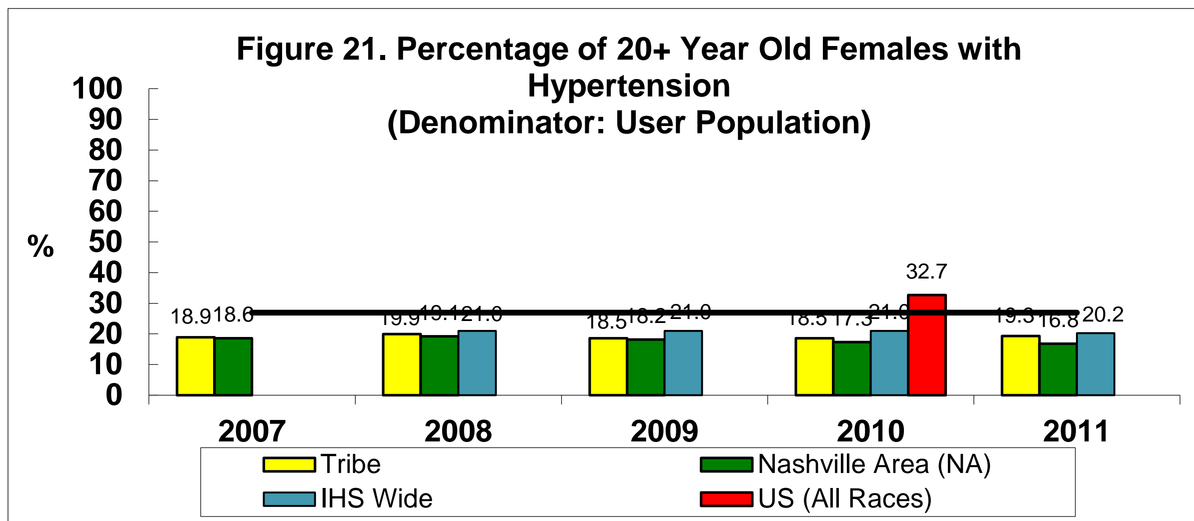


Figure 21. Percentage of 20+ Year Old Females with Hypertension (Denominator: User Population)

Source: Indian Health Services RPMS, TEC. "Tribe" refers to EBCI.
Notes: For US rates used CDC National Center for Health Statistics estimates. For state rate used Trust for America's Health.
From 2007 to 2011, on average this Tribe's rate was approximately 1.06 times greater than the Nashville Area's rate.

Table 28. Percentage of hypertensive AI/AN adults in Jackson and Swain Counties who reported taking medication for high blood pressure by race and sex (REACH)

	AI/AN Total	AI/AN Men	AI/AN Women	NC Men	NC Women
	% (sample size)	% (sample size)	% (sample size)	%	%
2002	66.7 (369)	61.3 (172)	71.3 (217)	68.9	79.7
2010	74.2 (448)	68.7 (201)	79.3 (247)	77.3	85.7
2011	78.5 (432)	77.0 (198)	79.6 (234)	N/A	N/A
2012	74.6 (417)	72.7 (191)	76.9 (226)	79.7	87.8

Cardiovascular Disease (CVD)

According to REACH data, CHSDA AI/AN CVD rates have decreased over time. AI/AN adults have a higher percentage of CVD than overall NC rates. At the same time, the percentage of CHSDA AI/AN adults who recognize the signs of a heart attack and stroke have increased, on average, over time from 2002-2012; recognition is lower among CHSDA AI/AN adults than among the statewide population.

Table 28. Percentage of AI/AN adults in Jackson/Swain Counties who reported having cardiovascular disease (REACH)

	AI/AN Total	AI/AN Men	AI/AN Women	NC Men	NC Women
	% (sample size)	% (sample size)	% (sample size)	%	%
2002	14.1% (951)	15.3% (422)	13.2% (529)	N/A	N/A
2010	13.2% (928)	15.2% (397)	11.6% (531)	10.2%	7.3%
2011	12.4% (891)	14.0% (403)	11.2% (488)	9.6%	8.3%
2012	10.8% (898)	12.5% (408)	8.7% (490)	10.4%	8%

Hypercholesterolemia (High Blood Cholesterol)

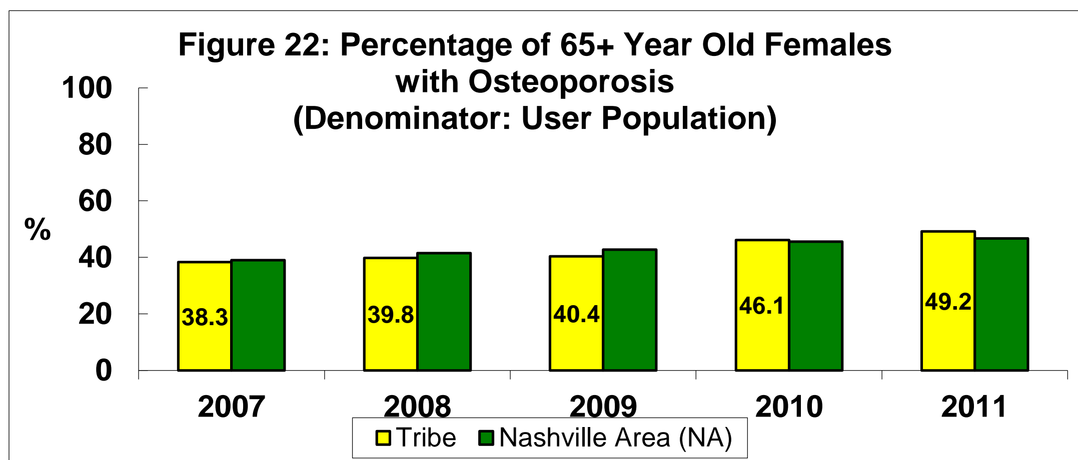
Elevated blood cholesterol is a risk factor for coronary disease and other conditions. High cholesterol often may be controlled by diet and/or medications.

Table 29. Percentage of AI/AN adults in Jackson and Swain Counties who reported having high cholesterol (REACH)

	AI/AN Total	AI/AN Men	AI/AN Women	NC Men	NC Women
	% (sample size)	% (sample size)	% (sample size)	%	%
2002	31.5 (708)	31.9 (293)	31.2 (415)	27.1	30.5
2010	42.4 (725)	47.7 (286)	38.6 (439)	41.7	38.5
2011	39.2 (735)	39.9 (308)	38.8 (427)	N/A	N/A
2012	40.5 (725)	42.2 (310)	38.6 (415)	39.5	37.6

Osteoporosis

According to IHS, "Osteoporosis and fragility fractures have been recognized as major contributors to morbidity and mortality in the United States. Osteoporosis rates vary among racial and ethnic groups. The limited data available describing osteoporosis and fracture rates in the American Indian and Alaska Native (AI/AN) population suggest that they are at least as great a problem in AI/AN communities as they are for the general population."[93]
Figure 22 shows that osteoporosis rates among CHSDA AI/AN female elders appear to have increased steadily over time, from 28% in 2007 to 49% in 2011.



Source: Indian Health Service RPMS, TEC. "Tribe" refers to EBCI.
From 2007 to 2011, on average this Tribe's rate was approximately 0.99 times less than the Nashville Area's rate.

[93] As cited in EBCI CRS Report Spreadsheet, TEC Internal Document

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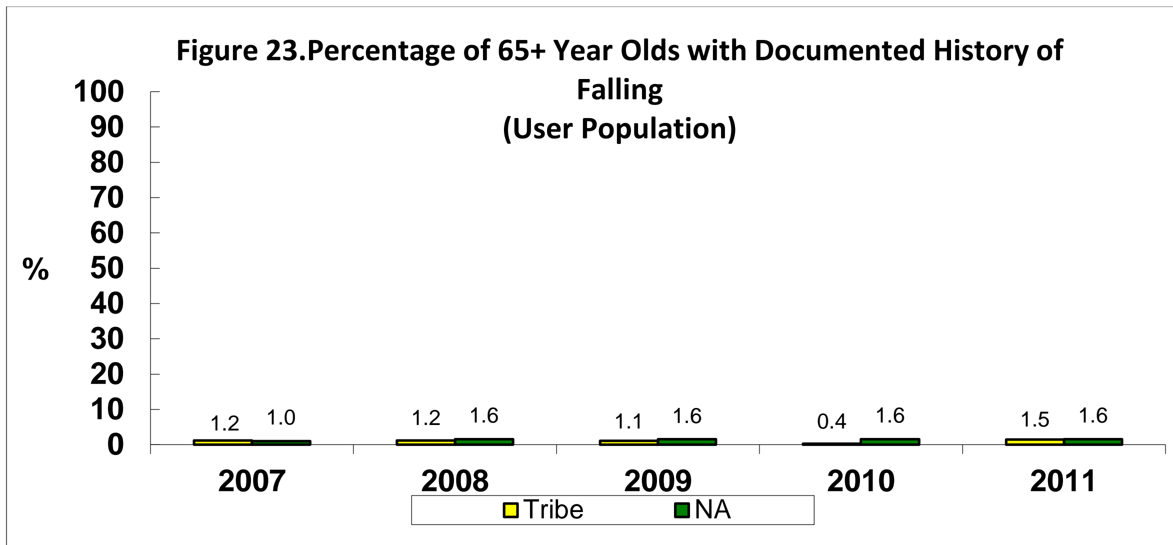
Fall Risk (Elderly)

According to IHS, "In the United States, falls are the leading cause of serious and/or fatal injuries among people age 65 and older. Fully one third of people over the age of 65 who live in the community fall each year; the incidence increases to 50 percent for those over the age of 80. Older adults who have fallen previously or who stumble frequently are two to three times more likely to fall within the next year."[94]

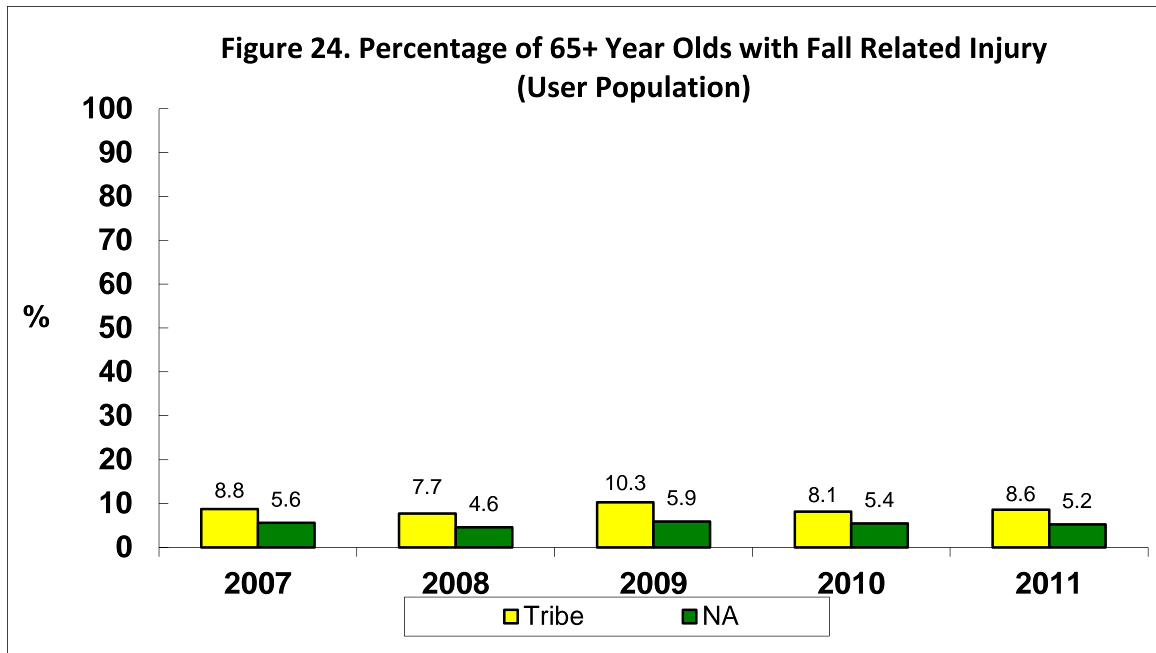
Figures 23 and 24 show that AI/AN elders within the 5-county CHSDA consistently have a lower documented history of falling than in the Nashville Area AI/AN, but a consistently higher percentage of having a fall-related injury; from 2007- 2011, on average the CHSDA AI/AN rate of elders' fall-related injury was approximately 1.63 times greater than the Nashville Area's rate. Table 30 shows the number of fall-related Emergency Department visits in the CHSDA and the percentage of total ED visits.



Source: Indian Health Service RPMS, TEC. "Tribe" refers to EBCI.

From 2007 to 2011, on average this Tribe's rate was approximately 0.73 times greater than the Nashville Area's rate.

[94] As cited in EBCI CRS Report Spreadsheet, TEC Internal Document



Source: Indian Health Service RPMS, TEC. "Tribe" refers to EBCI.
From 2007 to 2011, on average this Tribe's rate was approximately 1.63 times greater than the Nashville Area's rate.

Table 30: Fall-related ED visits, AI/AN User Population within 5-county CSHDA
(Indian Health Service RPMS, CIHA)

Year	User Population	Number of fall-related visits to ED	Total ED Visits	% of total ED visits
2009	11699	453	20,161	2.25%
2010	11516	424	18,167	2.33%
2011	11737	384	17,126	2.24%
2012	11847	345	17,450	1.98%

Asthma

According to CDC, asthma is a respiratory disease that causes wheezing, breathlessness, chest tightness, and/or coughing. It can occur at any point in life, is chronic, and can limit a person's quality of life. People with asthma can prevent asthma attacks if they avoid triggers, such as tobacco smoke, mold, outdoor air pollution, colds, and flu, and if they learn to use asthma medications appropriately.[95]

Asthma rates have remained fairly steady at 8-9% (Figure 25) among the CHSDA AI/AN population, and on average, from 2007-2011, the CHSDA AI/AN asthma rate is 1.9 times higher than the Nashville Area's AI/AN rate. Asthma rates by age are also displayed in Table 31.

[95] As cited in EBCI CRS Report Spreadsheet, TEC Internal Document

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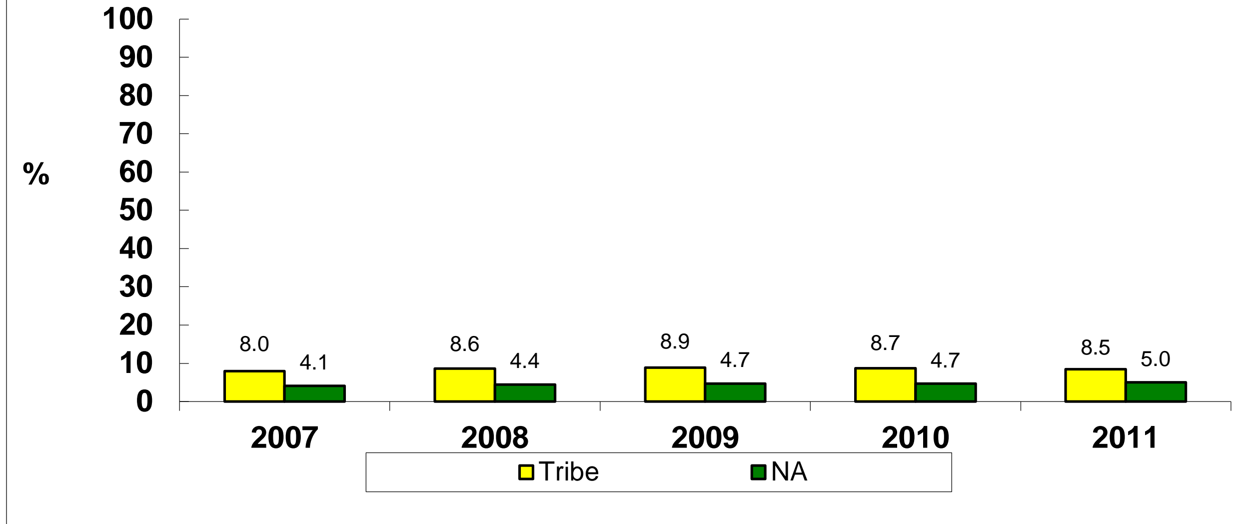

Source: Indian Health Service RPMS, TEC

From 2007 to 2011, on average this Tribe's rate was approximately 1.86 times greater than the Nashville Area's rate.

Table 31. Percentage of Patients with Asthma by Age Category, 2007-2011 (IHS RPMS, TEC)

Age Categories								
	Tribe (EBCI)				**IHS Nashville Area**			
	0-15	**16-34**	**35-64**	**65+**	**0-15**	**16-34**	**35-64**	**65+**
2007	31.1%	22.2%	37.6%	9.1%	37.2%	19.3%	34.5%	8.9%
2008	35.3%	21.2%	34.4%	9.2%	39.0%	21.2%	33.8%	8.4%
2009	33.7%	21.9%	37.6%	9.9%	39.0%	19.2%	33.1%	8.7%
2010	31.4%	22.8%	35.4%	10.4%	35.2%	20.1%	35.4%	9.3%
2011	28.95%	24.0%	35.7%	11.4%	32.7%	21.2%	37.1%	9.1%

Communicable Disease: Sexually-transmitted infections

In Table 32, numbers of cases of chlamydia trended upward overall between 2004-2011 in AI/AN in the CHSDA while gonorrhea rates trended downward overall. HIV incidence numbers (new cases diagnosed) are too low to determine a trend. HIV prevalence data (number of persons living with HIV/AIDS) was not available.

Table 32. HIV, Chlamydia, and Gonorrhea rates for AI/AN within five county CHSDA, User Population (Indian Health Service RPMS, TEC)

HIV Incidence*			
Years	New cases	User Population	Incidence per 100,000
2004	1	9675	10.34
2005	1	9863	10.14
2006	1	10027	9.97
2007	1	10225	9.78
2008	1	10342	9.67
2009	0	10500	0.00
2010	0	10608	0.00
2011	0	10732	0.00
Chlamydia Rates**			
Years	New cases	User Population	Prevalence per 100.000
2007	9	10338	0.09
2008	6	10456	0.06
2009	12	10614	0.11
2010	11	10722	0.10
2011	12	10847	0.11
Gonorrhea Rates**			
2007	7	10338	0.07
2008	0	10456	0.00
2009	2	10614	0.02
2010	4	10722	0.04
2011	4	10847	0.04

* All HIV data was based on Q-man generated user pop. Incidence=(those in the user population in the year of interest who had FIRST diagnosis of HIV in the year of interest)/(Those in the user population who did not have any previous diagnosis of HIV at the beginning of the year of interest). Q-man is a data mining tool in RPMS.
Note: HIV Prevalence data was not included do to questionable data quality.
** All rates used Q-man generated user population for the year of interest in the denominator. Numerator was Q man generated user population in the year of interest who had a diagnosis of 098.0-098.39 (for Gonorrhea) or 099.50-099.55 (for Chlamydia).

CHAPTER 4 – HEALTH BEHAVIORS

Some health behaviors are preventive, that is, engaging them promotes good health and can help avoid or lessen illness and disability. Examples include physical activity, nutrition and immunizations. Other health behaviors, such as substance use and dependence, including illicit drugs, alcohol and tobacco, impair health and have ripple effects on family and community. This section presents data on both kinds of health behaviors, which help fill in the picture of social determinants of health.

Physical Activity

According to REACH survey data (Table 33), it appears that:

- Overall, there has not been significant improvement over time in the percentage of CHSDA AI/AN who have met physical activity recommendations. From the years 2002-2012, the percentage of the AI/AN population who has met physical activity recommendations fluctuated.
- AI/AN men and NC men overall have similar rates for meeting physical activity recommendations.
- AI/AN women have slightly higher rates for meeting physical activity recommendations than NC women overall.

Table 33. Percentage of AI/AN adults living in Jackson and Swain Counties who meet physical activity recommendations* (REACH)

	AI/AN Total	AI/AN Men	AI/AN Women	NC Men	NC Women
	% (sample size)	% (sample size)	% (sample size)	%	%
2002	44.3 (947)	48.1 (419)	41.0 (528)	46.3	38.9
2010	46.6 (928)	50.0 (393)	43.8 (535)	50.1	41
2011	46.8 (889)	53.9 (400)	41.4 (489)	N/A	N/A
2012	40.3 (898)	46.9 (407)	32.8 (491)	N/A	N/A

*Meets recommendation: Doing either moderate activity at least 30 minutes per day and 5 days per week or vigorous physical activity at least 20 minutes per day and 3 days per week.

In October-November 2010, the Community Food Survey (CFS) explored EBCI members' barriers to physical activity. Of the 149 respondents, in Table 34, EBCI members reported the following reasons for their difficulties in getting physical activity:

Table 34. Respondents Noted Barriers to Physical Activity

Barriers to Physical Activity:	Number of Respondents (Percentage):
"Don't have time"	52 (35%)
Have a physical disability which limits exercise	23 (15%)
Not enough walking or bike paths, or recreation opportunities	23 (15%)
Don't feel safe walking or biking in own community	22 (15%)
"Tired and lazy"	21 (14%)

In the CFS, 39 EBCI members (26% of respondents) suggested that "more recreation opportunities" would help community members to get more exercise.

Diet and Nutrition

According to REACH survey data (Table 35), it appears that within the AI/AN population living on EBCI lands, there is not a discernible pattern over time in healthy eating behavior; the percentage of AI/AN adults who reported eating 5 or more fruits and vegetables daily fluctuated, ranging from 16% in 2010 to 9% in 2011.

A much higher percentage of NC men and women, compared to AI/AN men and women, report eating 5 or more fruits and vegetables daily.

Table 35. Percentage of AI/AN adults within Jackson and Swain Counties who reported eating 5 or more fruits and vegetables daily (REACH)

	AI/AN Total	AI/AN Men	AI/AN Women	NC Men	NC Women
	% (sample size)	% (sample size)	% (sample size)	%	%
2002	14.1% (952)	11.9% (422)	15.9% (530)	18.9%	25.1%
2010	15.9% (946)	13.9% (405)	17.6% (541)	17.4%	23.7%
2011	9.3% (899)	8.2% (405)	10.2% (494)	N/A	N/A
2012	11.8% (912)	11.6% (411)	12.1% (501	N/A	N/A

The Community Food Survey (CFS) explored barriers to healthy eating. In Table 36, of the 149 respondents, EBCI members reported the following barriers to eating 5 or more fruits and vegetables daily.

Table 36. Respondents Noted Barriers to Eating 5 or more Fruits and Vegetables Daily

Barriers to Eating 5 or more Fruits and Vegetables daily:	Number of Respondents (Percentage):
Fruits and vegetables are too expensive where I shop	68 (46%)
No time to prepare meals at home	34 (23%)
Fruits and vegetables are poor quality where I shop	28 (19%)

EBCI members were also asked whether they eat wild edible foods. Of the 149 respondents, 135 said yes. The types of wild edible foods consumed included: fruit (pears, apples), berries, chestnuts, ramps, mushrooms (wisi, slicks), greens (Jellico, poke salad, sochan, creasy greens, watercress), mountain salad, honeysuckle, Mayfryers (Mayfair), wild game (deer, bear), and trout. Reasons given by 8 respondents for not eating wild edible food consumption included: don't know how to find them, not physically able, and don't like taste.

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The Community Food Survey also asked for suggestions to improve nutrition. Responses are in Table 37.

Table 37. Respondents' Suggestions to Improve Nutrition

Suggestions to Improve Nutrition:	Number of Responses (Percentage):
More fruits and vegetables in school meals	69 (46%)
More nutritious foods at festivals, events and ball games	64 (43%)
More fruits and vegetables at local stores	58 (39%)
Buying clubs or co-ops to get better prices on foods	58 (39%)
Community gardens	50 (34%)
More fruits and vegetables at local restaurants	48 (32%)
More cooking and nutrition classes	47 (32%)

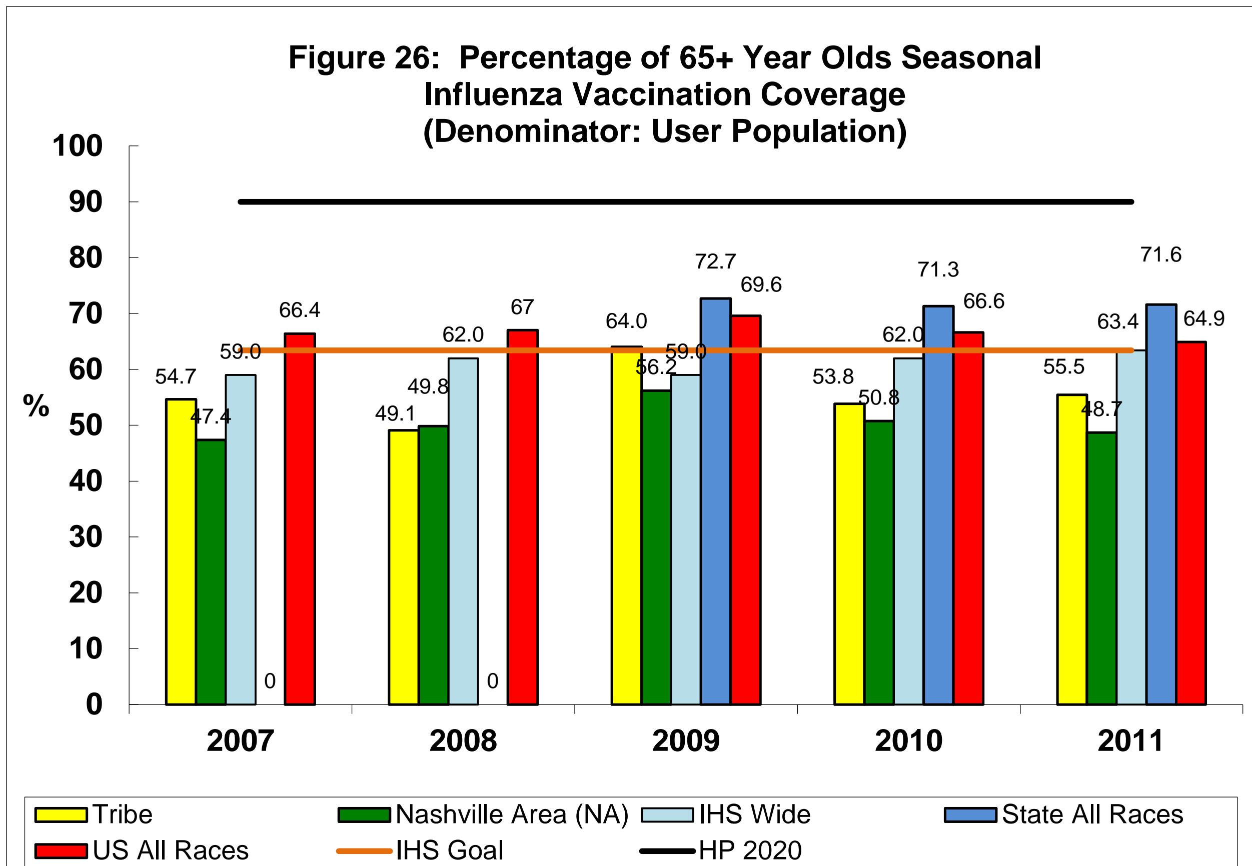
Immunizations

Influenza Vaccination

According to IHS, "influenza (the flu) is a respiratory illness caused by influenza viruses that can easily spread to other people. It can cause mild to severe illness, and at times can lead to death. Some people, such as older people, young children, and people with certain health conditions, are at high risk for serious flu complications. Compared to the general U.S population, American Indian and Alaska Native (AI/AN) people are more likely than others to get seriously ill from the flu, and during the H1N1 pandemic, AI/AN people were 4 times more likely to die from H1N1 flu."[96]

Figure 26 and Table 38 show slightly different rates of influenza vaccination coverage for the elderly AI/AN population; these differences may be due to differences in the REACH survey and RPMS populations or methodology (See Appendix C). Thus, it is important to interpret these results with caution. Both the figure and table show that influenza immunization coverage has fluctuated over time, and that the influenza vaccination rate in this age group is well below the Healthy People 2020 goal and the IHS goal in all years except 2009.

[96] As cited in EBCI CRS Report Spreadsheet, TEC Internal Document



Source: Indian Health Service RPMS, TEC. "Tribe" refers to EBCI.
Notes: Determination of vaccination outside of clinic may not have been done; For State/US rates used CDC vaccination estimates; IHS Goal is for most recent year. State rates may have wide confidence intervals which are not displayed.
From 2007 to 2011, on average this Tribe's rate was approximately 1.10 times greater than the Nashville Area's rate.

Table 38. Percentage of Jackson/Swain County AI/AN 65 and over who had influenza shot in the past year (REACH)

	AI/AN Total	NC
	% (sample size)	%
2010	75.4% (157)	71.6%
2011	72.0% (142)	69.7%
2012	74.2% (163)	66.6%

Figure 27 shows that flu vaccination rates across all age groups in AI/AN in the CHSDA are lower than state and national rates, but higher than the group of Tribes in the IHS Nashville Area.

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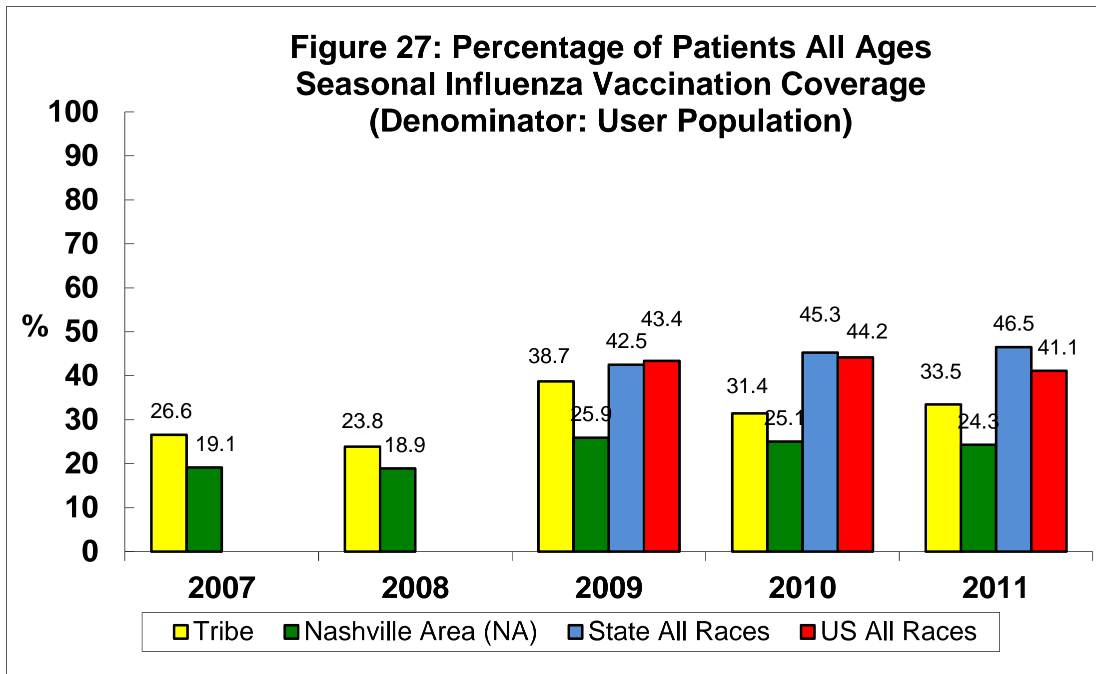


Source: Indian Health Service RPMS, TEC. "Tribe" refers to EBCI.
Notes: Determination of vaccination outside of clinic may not have been done. For state/US rates used CDC vaccination estimates. State rates may have wide confidence intervals which are not displayed.
From 2007 to 2011, on average this Tribe's rate was approximately 1.36 times greater than the Nashville Area's rate.

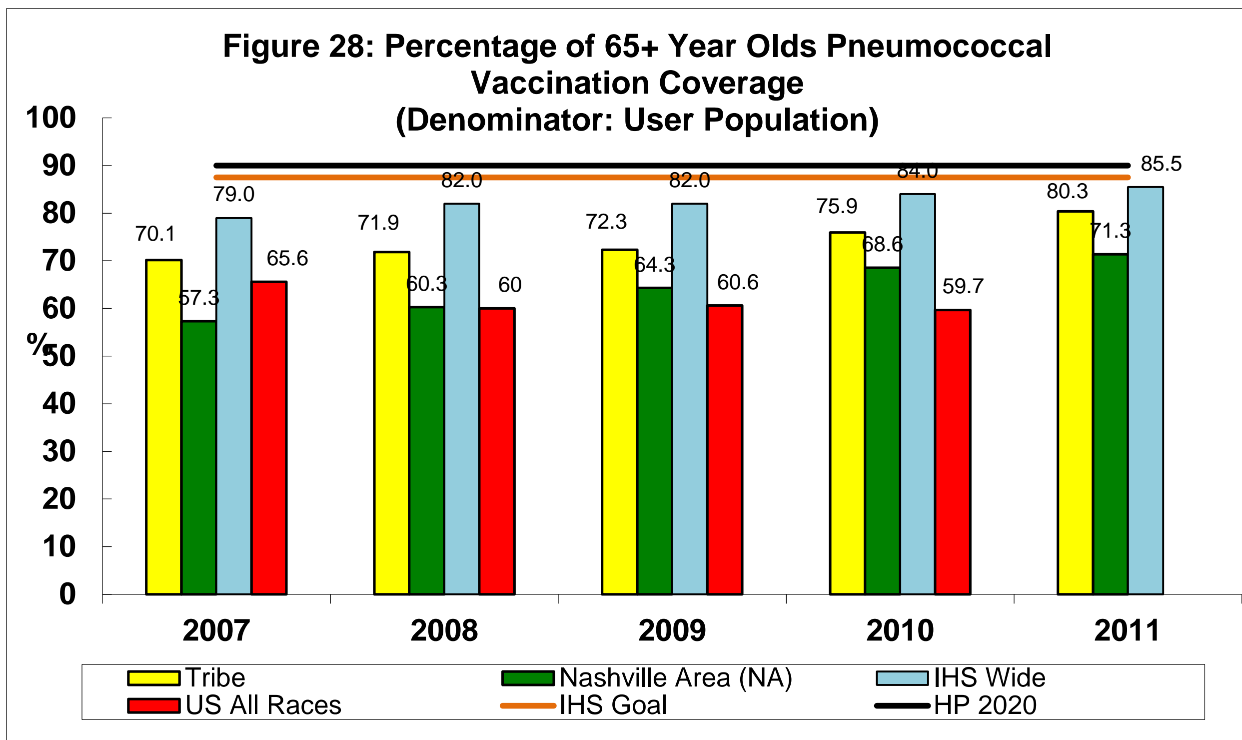
Pneumococcal Vaccination

According to CDC, "pneumonia is an infection of the lungs that is usually caused by bacteria or viruses. Globally, pneumonia causes more deaths than any other infectious disease. However, it can often be prevented with vaccines and can usually be treated with antibiotics or antiviral drugs (http://www.cdc.gov/Features/Pneumonia/)."[97] Table 39 and Figure 28 again show somewhat discrepant data between REACH and TEC. The TEC data show a rise in pneumococcal vaccination in the 5-year period, better than the US and Nashville Area rates, though not meeting the Healthy People 2020 and IHS goals.

Table 39. Percentage of adults 65 and older who reported getting vaccinated for pneumonia - by race (REACH)

	AI/AN Total	NC
	% (sample size)	%
2010	77.3% (154)	69.9%
2011	82.2% (136)	71.2%
2012	79.7% (156)	72.1%

[97] As cited in EBCI CRS Report Spreadsheet, TEC Internal Document



Source: Indian Health Service RPMS, TEC. "Tribe" refers to EBCI.
Notes: Determination of vaccination outside of clinic may not have been done. For State/US rates used CDC vaccination estimates.
From 2007 to 2011, on average this Tribe's rate was approximately 1.15 times greater than the Nashville Area's rate.

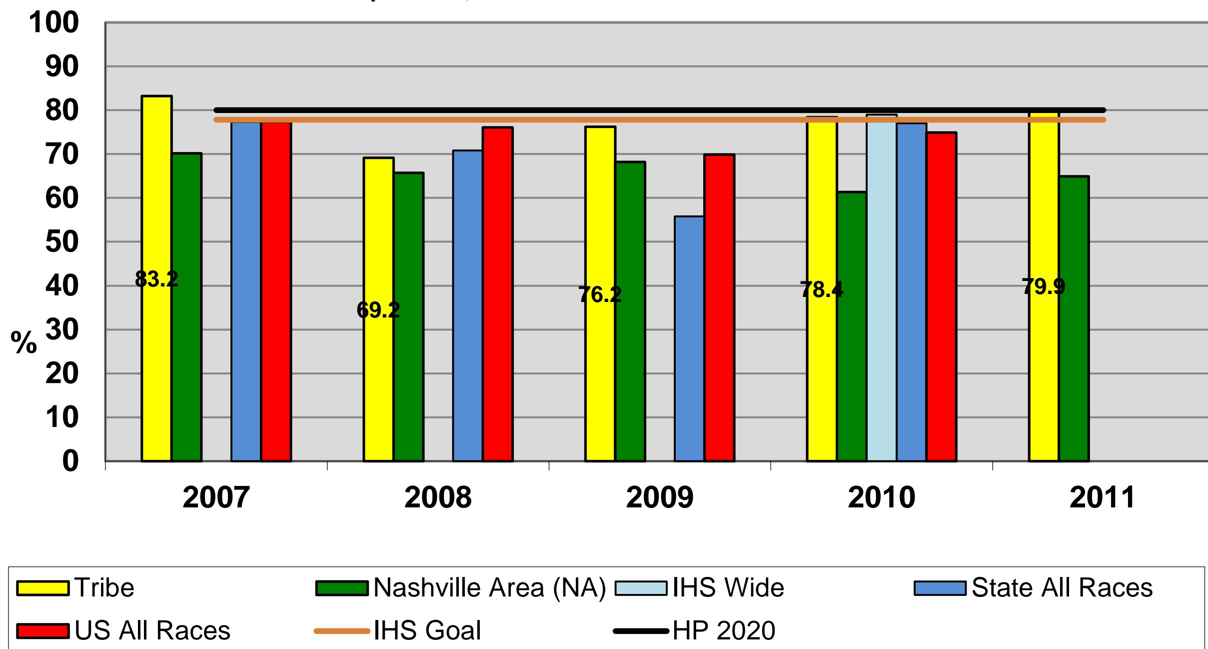
Childhood Vaccinations

Childhood vaccinations are a cost-effective preventive public health measure that significantly improves the health of children and adolescents. Vaccinations help prevent contagious diseases in the people who receive them and protect those who come into contact with unvaccinated individuals. Many childhood diseases that used to be common and injured or killed millions of children, such as polio, diphtheria, and tetanus, have been greatly decreased or wiped out in the US through use of vaccines.

Figure 29 shows that EBCI has nearly met the Healthy People 2020 goals and has surpassed the IHS goals for completion of the childhood primary vaccination series for 2010 and 2011, and also has surpassed state rates for 2009 and 2010.

Figure 29: Percentage of 19-35 Month Olds Vaccination Combo Coverage 2007-2011

4 Diphtheria-Tenus-Pertusis, 3 Polio, 1 Mumps-Measles-Rubella, 3 Haemophilus influenzae type b (HiB), 3 Hepatitis B, and 1 Varicella vaccination series



Source: Indian Health Service RPMS, TEC. "Tribe" refers to EBCI.Notes: For Tribe/NA/IHS, rates calculated from Tribal health data systems user population (e.g. RPMS Clinical Reporting System) data; determination of vaccination outside of clinic may not have been done. For State/ US rates used CDC vaccination estimates. 4:3:1:3:3:1 Combo = 4 Diphtheria-Tetanus-Pertussis, 3 Polio, 1 Mumps-Measles-Rubella, 3 Haemophilus influenzae type b (HiB), 3 Hepatitis B, and 1 Varicella vaccination series. HP 2020 stands for US Healthy People 2020 Objective. State rates may have wide confidence intervals which are not displayed. IHS Wide/State/US data for some years was unavailable.

From	2007	to	2011	, on average this Tribe's rate was approximately	1.21	times	greater	than the Nashville Area's rate.

Adolescent Vaccinations

Continuing vaccination of children after they enter adolescence is important as well, and helps prevent potentially life-threatening infections in teens, their families and other close contacts. Figures 30 and 31 show that EBCI's rates in 2010 and 2011 surpassed Healthy People 2020 goals for Tdap/ Td (tetanus, diphtheria, acellular pertussis/ tetanus, diphtheria) and meningococcal vaccines. Tdap/Td boosters are important to protect populations from tetanus and pertussis, or whooping cough, particularly in the face of recent pertussis outbreaks that have been difficult to contain. Figure 32 shows that EBCI rates for Human Papilloma Virus (HPV) vaccine, a relatively new vaccine, have been increasing since 2008. HPV causes genital warts and can lead to cervical cancer in young women, even if they detect no visible lesions.

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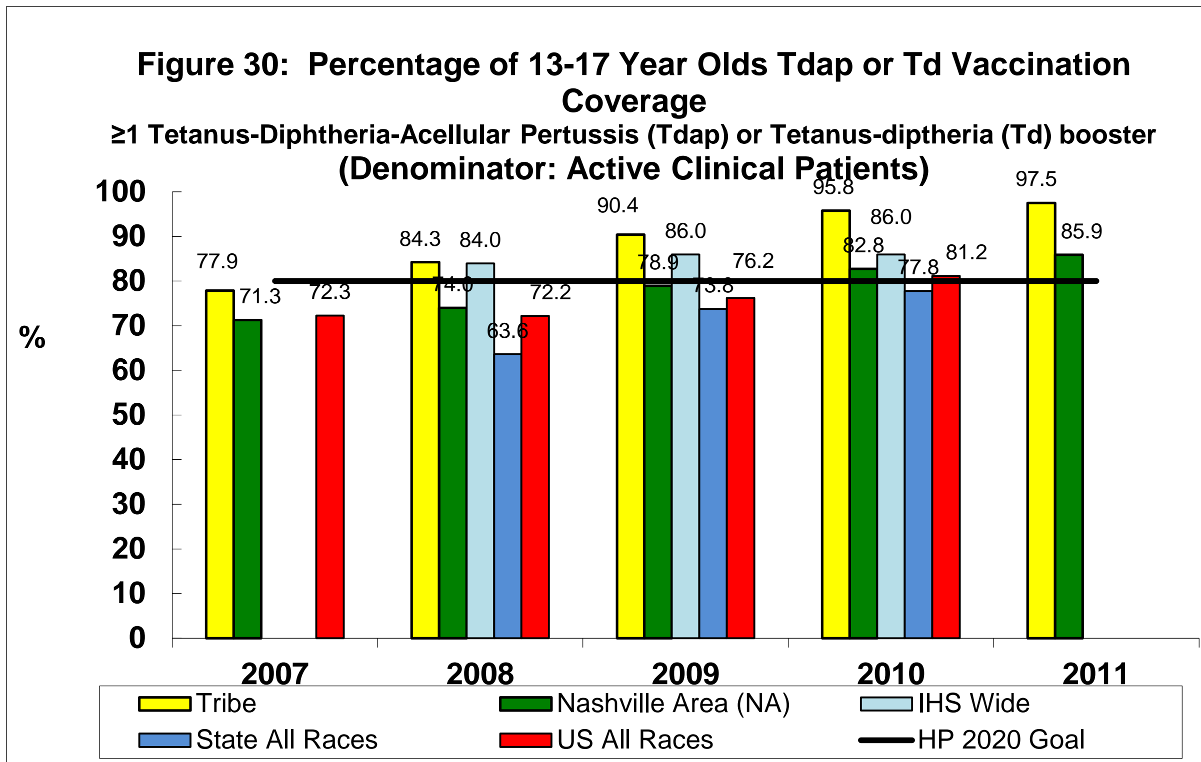
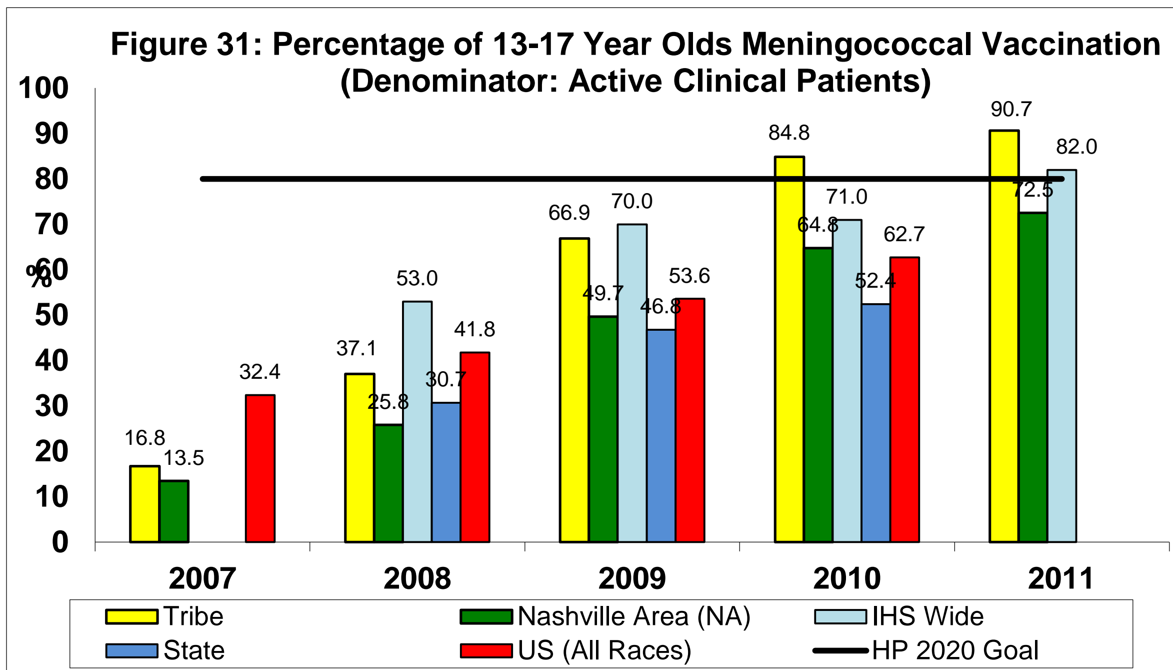


Source: Indian Health Service RPMS, TEC. “Tribe” refers to EBCI.
Notes: Determination of vaccination outside of clinic may not have been done; ≥1 Tetanus-Diphtheria-Acellular Pertussis (Tdap) or Tetanus-diphtheria (Td) booster vaccine. For IHS Wide used IHS National Immunization Reporting System estimates. For State/US rates used CDC vaccination estimates. State/US rates may have wide confidence intervals which are not displayed.
From 2007 to 2011, on average this Tribe’s rate was approximately 1.13 times greater than the Nashville Area’s rate.



Source: Indian Health Service RPMS, TEC. “Tribe” refers to EBCI.
Notes: Determination of vaccination outside of clinic may not have been done. For IHS Wide used IHS National Immunization Reporting System estimates. For State/US rates used CDC vaccination estimates. State/US rates may have wide confidence intervals which are not displayed.
From 2007 to 2011, on average this Tribe’s rate was approximately 1.31 times greater than the Nashville Area’s rate.

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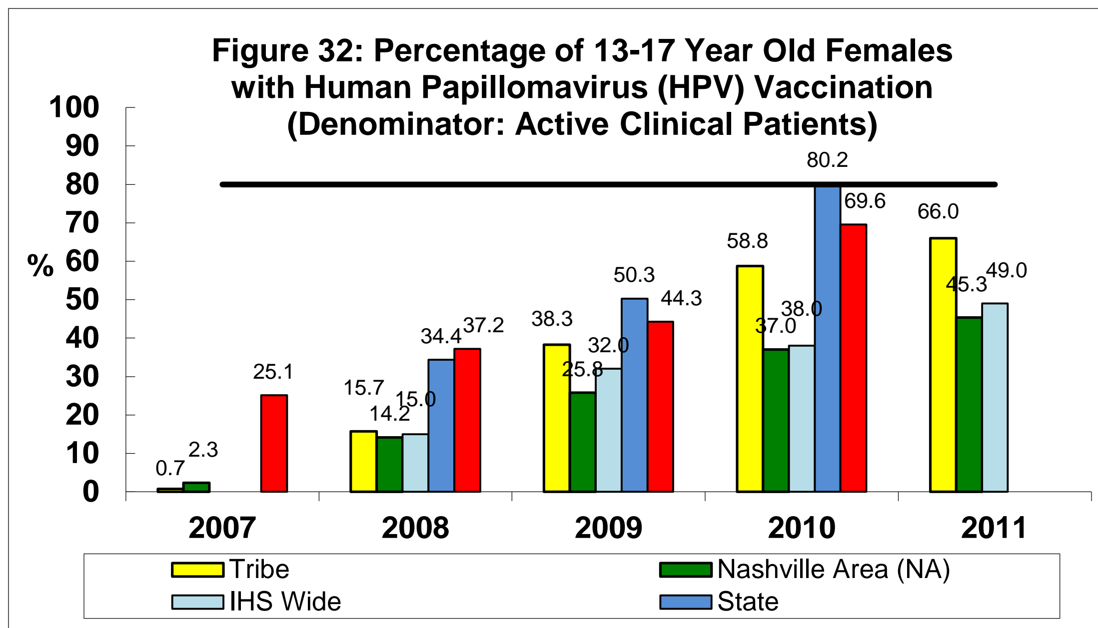

Source: Indian Health Service RPMS, TEC. "Tribe" refers to EBCI.
Notes: Determination of vaccination outside of clinic may not have been done. For IHS Wide used IHS National Immunization Reporting System estimates. For State/US rates used CDC vaccination estimates. State/US rates may have wide 95% confidence intervals which are not displayed.
From 2007 to 2011, on average this Tribe's rate was approximately 1.44 times greater than the Nashville Area's rate.

Substance Use

Nationally, the rate of substance abuse or dependence among AI/AN is 16%, the highest among all races.[98,99] Substance use prevalence, patterns, and consequences for EBCI and AI/AN in the Western region are reported in this section.

Illicit & Prescription Drugs

Within the U.S., the 2010 rate of illicit drug use for AI/AN was 12.1%. This was the 2nd highest rate among racial groups, only trailing those indicating 2 or more races at 12.5%.[100,101] Conversely, recent data (Table 40) found that in 16 Western North Carolina counties, AI/AN reported the lowest rate of illicit drug use compared to other races.

[98] Substance Abuse and Mental Health Services Administration. (2011). *Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings*, NSDUH Series H-41, HHS Publication No. (SMA) 11-4658. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2011.
[99] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.
[100] Substance Abuse and Mental Health Services Administration. (2011). *Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings*, NSDUH Series H-41, HHS Publication No. (SMA) 11-4658. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2011.
[101] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

Table 40. Illicit drug use in the past month by race/ethnicity within Western North Carolina (WNC Healthy Impact, 2012)

	White	AI/AN	Black	Other	WNC	U.S.
% of Illicit Drug Use	2.0	0.3	0.8	0.4	1.8	1.7

Table 41 shows that, since 2001, there has been a very large net increase (38%) in the number of AI/AN patients within the 5-county CHSDA who have had a drug-related issue. Most of this increase has occurred since 2008. It is unknown from the data whether this increase reflects an actual change in drug use, or another factor/factors such as availability/accessibility of screening or services.

Table 41. Patients with at least one visit in the last year with a drug-related diagnosis code* (Indian Health Service RPMS, CIHA)

Year	Number of patients
FY01	1109
FY02	1128
FY03	1117
FY04	1126
FY05	1138
FY06	1121
FY07	1145
FY08	1132
FY09	1395
FY10	1365
FY11	1471
FY12	1530

Alcohol

According to SAMHSA, Substance Abuse and Mental Health Services Administration, a lower percentage of AI/AN use alcohol than do other races, but AI/AN tend to have a pattern of consumption more inclined toward binge and heavy drinking.[102,103]

Recent data from the 16 counties in the WNC Healthy Impact Survey, however, show a different pattern. According to this data (Table 42) AI/AN have a lower rate of current and binge drinking (29% and 5%, respectively) than their counterparts in other racial groups.

Table 42. Alcohol consumption by race in Western North Carolina

(WNC Healthy Impact, 2012)

	White	AI/AN	Black	Other	WNC	NC	U.S.
% current drinkers	44.5%	29.3%	32.1%	31.3%	42.9%	44.1%	58.8%
% chronic drinkers	4.9%	1.6%	0.3%	4.4%	4.6%	3.5%	5.6%
% binge drinkers	10.6%	5.4%	9.2%	18.1%	10.6%	11.0%	16.7%

* Notes: Current drinkers had at least one alcoholic drink in the past month; Chronic drinkers are defined as those having 60+ alcoholic drinks in the past month (the state definition for chronic drinkers is males consuming 2+ drinks per day and females consuming 1+ drink per day in the past 30 days.) Binge drinkers are defined as those consuming 5+ alcoholic drinks on any occasion in the past 30 days; state and national data reflect different thresholds for men (5+ drinks) and women (4+ drinks)

Tobacco

Cigarette smoking is the leading preventable cause of disease and death in the US. It has been well established that commercial tobacco is associated with higher rates of certain chronic diseases including lung cancer, heart disease, asthma, and chronic obstructive pulmonary disease.[104, 105]

Within the U.S., AI/AN consistently have the highest rate of tobacco use prevalence at 35.8% compared to 29.5% for whites and 27.3% for blacks in 2010.[106,107] According to the 2011 WNC

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[102] Substance Abuse and Mental Health Services Administration. (2011). *Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings*, NSDUH Series H-41, HHS Publication No. (SMA) 11-4658. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2011. Retrieved January 5, 2012 from http://www.samhsa.gov/data/NSDUH/2k10NSDUH/2k10Results.htm

[103] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

[104] Intercepting the Safety Pitfalls of the Electronic Health Record. (2009). The IHS Primary Care Provider (34):9. Retrieved June 21, 2012 from http://www.ihs.gov/Provider/documents/2000_2009/PROV0909.pdf

[105] As cited in EBCI CRS Report Spreadsheet, TEC Internal Document

[106] Substance Abuse and Mental Health Services Administration. (2011). *Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings*, NSDUH Series H-41, HHS Publication No. (SMA) 11-4658. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2011. Retrieved January 5, 2012 from http://www.samhsa.gov/data/NSDUH/2k10NSDUH/2k10Results.htm

Healthy Impact Survey, within western North Carolina, AI/AN also show the highest rate of smoking (41%) compared to other races (27% among blacks, 20% among whites). (Table 43)

According to REACH data, the rate of smoking within the AI/AN population living on EBCI lands appears to have decreased slightly from 2002 (44% in 2002 and 41% in 2012). Table 43 illustrates sex differences in the smoking trend over time; while smoking among AI/AN men seems to have decreased over time, the rate among women was 43% in both 2002 and 2012. AI/AN smoking rates are much higher than overall NC rates of smoking. See Chapter 3 for more information on rates of smoking among pregnant women.

RPMS data shows a lower rate of smoking for the AI/AN clinical population residing in the 5-county CHSDA (approximately 32% in 2011), but did not show a significant change in the percentage of CHSDA AI/AN population's tobacco use from 2007 to 2011.

Table 43. Percentage of adults who currently smoke by race and sex (REACH)

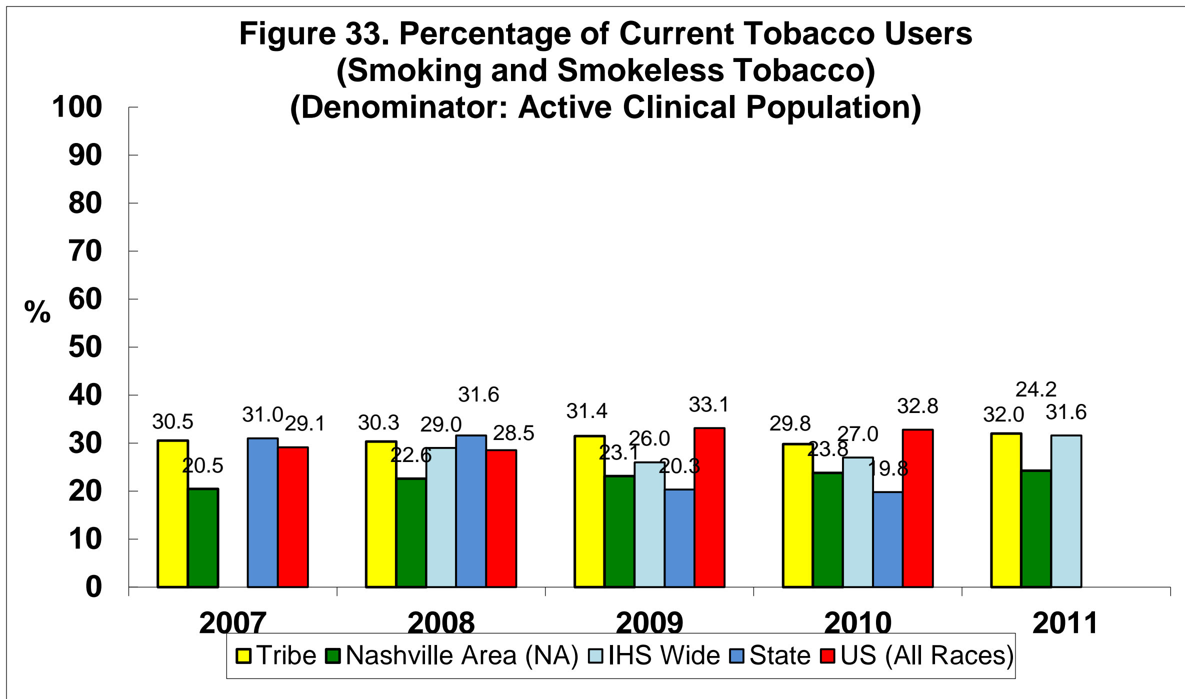
	AI/AN Total	AI/AN Men	AI/AN Women	NC Men	NC Women
	% (sample size)	% (sample size)	% (sample size)	%	%
2002	43.7% (952)	45.0% (422)	42.7% (530)	28.4%	23.9%
2010	38.8% (944)	39.2% (404)	38.5% (540)	23.1%	17.7%
2011	39.0% (897)	38.7% (403)	39.2% (494)	23.4%	16.4%
2012	40.5% (906)	38.7% (408)	42.5% (498)	24.5%	19.2%

*A person who smokes cigarettes everyday or some days now is defined as a current smoker.

Smokeless tobacco is also believed to cause cancer in humans as it contains carcinogens, which contribute to cancers of the oral cavity and the risk of other head and neck cancers. Smokeless tobacco use also causes a number of noncancerous oral conditions and can lead to nicotine addiction similar to that produced by cigarette smoking. Figure 33 shows that rates of use for smoking and smokeless tobacco among EBCI members are higher than the Nashville Area as a whole, and slightly higher than the IHS-wide rates.[108]

[107] EBCI Health and Medical Division (2012). Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012. Cherokee, NC: EBCI Health and Medical Division.

[108] National Cancer Institute, Centers for Disease Control and Prevention, Stockholm Centre of Public Health. Smokeless Tobacco Fact Sheets. Third International Conference on Smokeless Tobacco; Stockholm. September 22–25, 2002.



Source: Indian Health Services RPMS, TEC. “Tribe” refers to EBCI
Notes: For IHS Wide used IHS National Reporting System estimates. For State/US rates used Mental Health, United States, 2010 publication distributed by Substance Abuse and Mental Health Services Administration. State/US rates may have wide confidence intervals which are not displayed.
From 2007 to 2011, on average this Tribe’s rate was approximately 1.35 times greater than the Nashville Area’s rate.

Among the AI/AN population residing in the CHSDA, youth tobacco use rates appear to be on the decline. Figure 34 indicates that in 2007, 11% of 5-17 year olds were tobacco users and 4 years later in 2011, only 4% of 5-17 year olds were smokers. Among adult AI/AN in the CHSDA, there has been a slight increase in tobacco use rates from 2007-2011 among all age groups.

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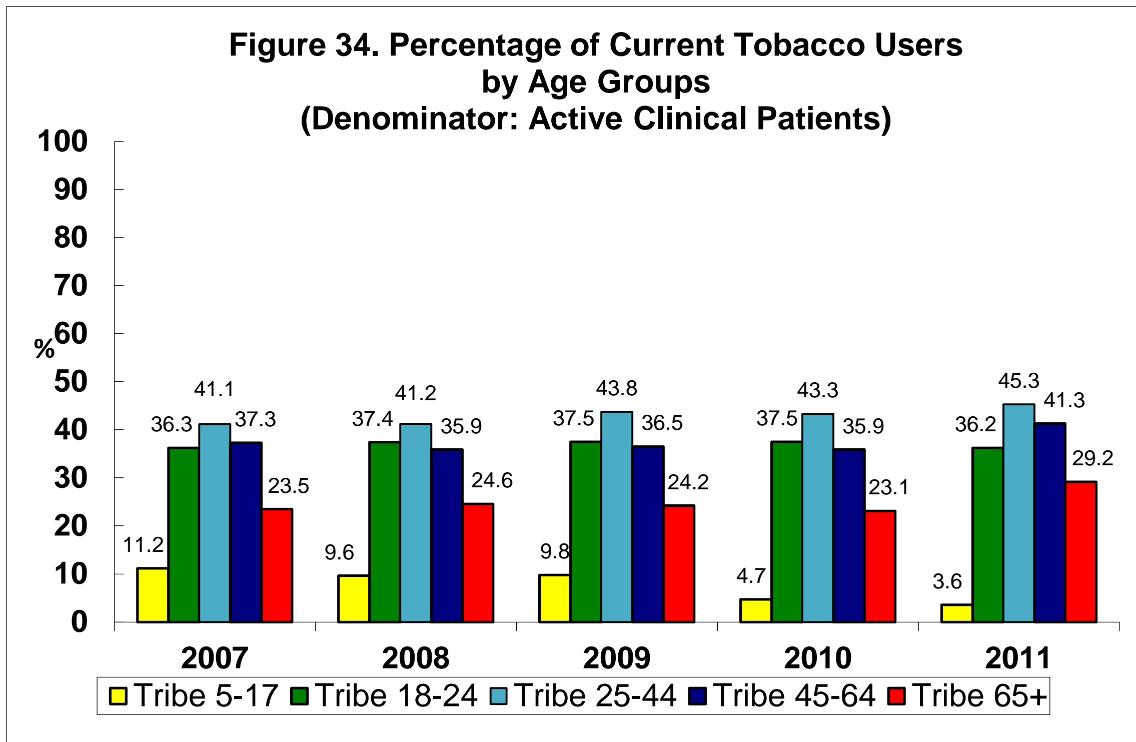

Source: Indian Health Services RPMS, TEC. "Tribe" refers to EBCI.

Tobacco Cessation

Tobacco cessation means beating tobacco dependence by quitting smoking, chewing and dipping. More than 50 million Americans smoke regularly, and 70 percent of those men, women, and children want to quit. Quitting is not easy, best studies show that tobacco users are two to three times more likely to quit successfully if they receive help, especially skills training, counseling, and medication, such as nicotine replacement patches and gum.[109, 110]

Overall, within the AI/AN population, tobacco use quitting rates have been increasing from 2007-2010 (Figure 35). While the rates of quitting within the AI/AN population residing in the 5-county CHSDA have been increasing (1% in 2007 and 6% in 2011), quitting rates have been consistently lower than rates within the Nashville Area, and much lower than IHS-wide rates. In 2011, there was a 29% quit rate among the population IHS-wide, and a 6% quit rate among AI/AN living in the 5-county CSHDA.

[109]Smoking Cessation. www.ihs.gov/epi/documents/tobacco/CessationA1.doc
[110] As cited in EBCI CRS Report Spreadsheet, TEC Internal Document

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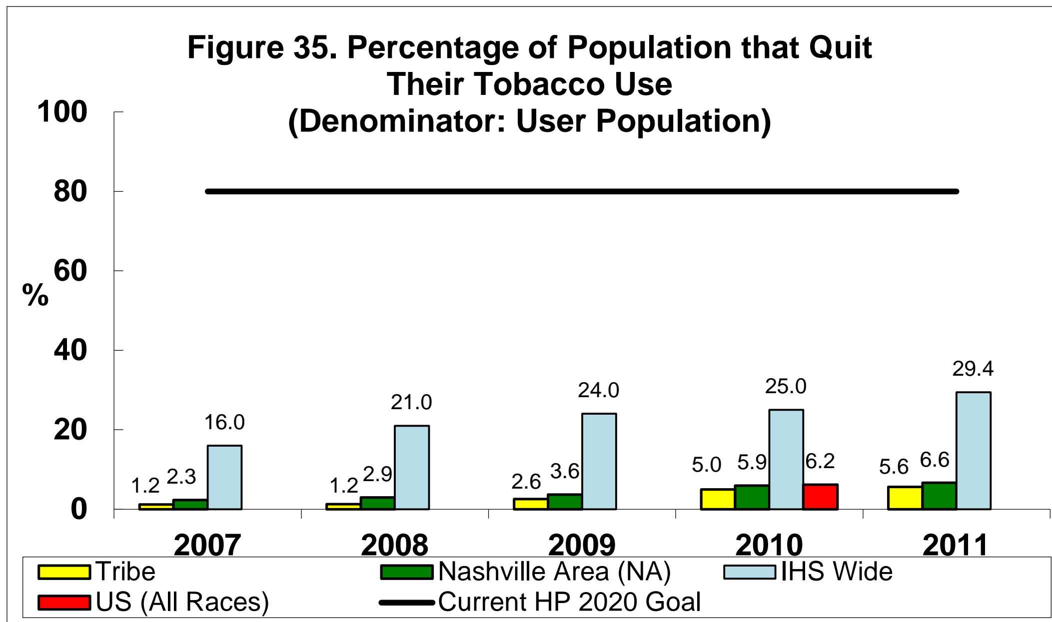
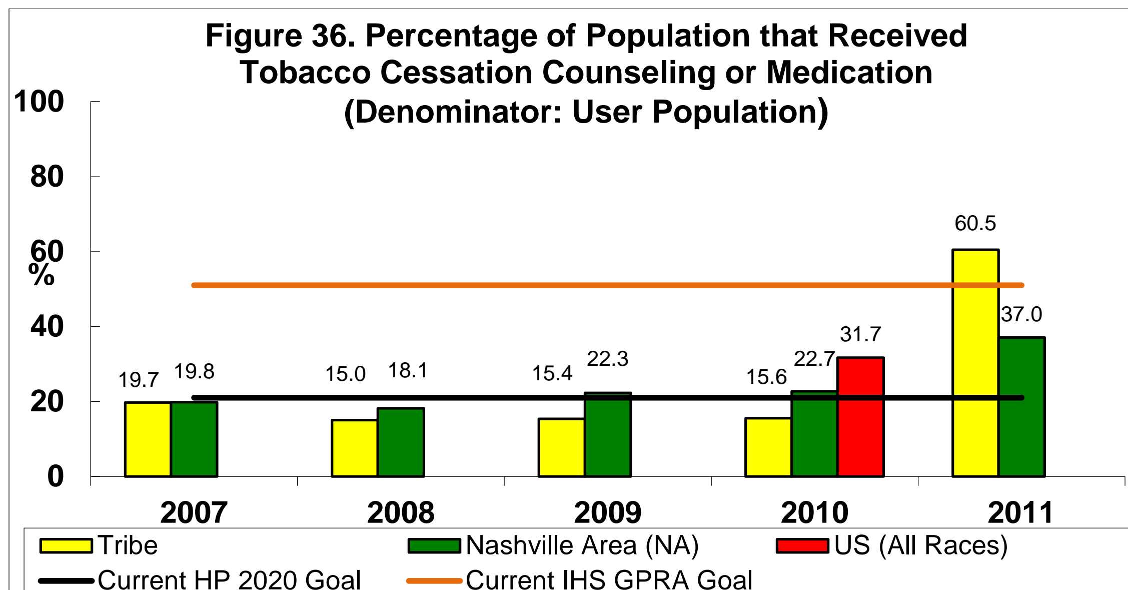


Source: Indian Health Services RPMS, TEC. "Tribe" refers to EBCI

Notes: For US rates used CDC estimate for the Morbidity and Mortality Weekly Report (November 11, 2011/60 (44); 1513-1519)

From 2007 to 2011, on average this Tribe's rate was approximately .73 times less than the Nashville Area's rate.

The percentage of the AI/AN population residing in the 5-county CHSDA who received tobacco cessation counseling or medication rose dramatically in 2011 with 61% of the clinical population receiving cessation counseling or medication, which surpasses the IHS GPRA goal (Figure 36). From 2008-2010, those receiving cessation counseling or medication had remained stagnant at 15%. It is not apparent from the data whether this dramatic rise reflects a change in need, availability of services, accessibility of services, or other factors (e.g., new or improvement clinical guidelines, performance management of clinicians).



Source: Indian Health Services RPMS, TEC. "Tribe" refers to EBCI.

Notes: For US rates used CDC estimate from the Morbidity and Mortality Weekly Report (November 11, 2011/60(44); 1513-1519)

From 2007 to 2011, on average this Tribe's rate was approximately 1.05 times greater than the Nashville Area's rate.

CHAPTER 5 - CLINICAL CARE

Health Access

Access to Personal Health Care Services

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

Access means the timely use of personal health care services to achieve the best health outcomes. It requires three distinct steps: 1) gaining entry into the health care system; 2) accessing a health care location where needed services are provided; and 3) finding a health care provider with whom the patient can communicate and trust.[111]

Self-Reported Access

Table 44 shows that among 16 Western North Carolina counties, 16% of AI/AN report being unable to get needed medical care in the past year, compared to 10% of whites and 12% of blacks. This data does not distinguish between access to primary care and to specialty care or referral services. The Tribal Healthy Survey of the EBCI population also gathered self-reported health services access data (For full results see Chapter 7, Barriers to Receiving Needed Health Services).

Table 44. Self-reported access to health care in Western North Carolina, by race

(WNC Healthy Impact, 2012)

	White	AI/AN	Black	Other	WNC
% unable to get needed medical care at some point in the past year	10.0%	16.0%	12.2%	24.0%	10.8%

[111] www.healthypeople.gov as cited in Professional Research Consultants, Inc. (2012). PRC Community Health Needs Assessment Report, Western North Carolina. Asheville, NC: WNC Health Network and WNC Healthy Impact. Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

Health Care Providers

Provider/Population Ratios

One way to determine the level of access that persons have within a jurisdiction is to calculate the ratio of the number of health professionals to the number of persons in the population of that jurisdiction. In Cherokee, CIHA provides personal health services to all eligible members of the population. There are 15 providers for CIHA. With a user population (as of July 1, 2013) of 11,088, there is a 1: 739 ratio of providers to user population patients.

Approximately 9% of user population patients are not empanelled to a primary care provider (PCP). CIHA asks patients to choose a primary care/team as part of the Patient Centered Medical Home (PCMH) and integrated models of care, where patients build relationships with their care team and provider. There are some patients in the user population who chose not to select a PCP, and most often they use the Emergency Department and Immediate Care Center for care. In the CIHA model:

- Each patient has a Personal Clinician who provides continuous and comprehensive care, leading a care team while taking responsibility for the ongoing care of patients.
- Each team provides Whole Person Orientation for all its patients, providing for all the patient's health care needs while taking responsibility for appropriately arranging care with other qualified health professionals, such as acute care, chronic care, preventive services, and end of life care.
- Patient care is coordinated to assure that patients get the indicated care when and where they need and want it, facilitated by information technologies, health information exchange and other means.

Health Care Coverage

Tables 45 and 46 show estimates of the health care coverage rates of AI/AN adults in Jackson/Swain counties and in the 16-county WNC region, which includes health insurance, prepaid plans, or non-IHS government plans such as Medicare. However, 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. Thus, the statistics in the WNC and REACH Survey data may be inaccurate, as those eligible for the Cherokee Health System may have interpreted "health care coverage" differently than the non-AI/AN population. According to REACH survey data in Table 45, health care coverage among the AI/AN population on EBCI lands has increased from 65% in 2010 to 92% in 2012. In 2010 and 2011, health care coverage rates were higher in the NC general population than in the AI/AN population. In contrast, the 2012 health coverage rates were higher among the AI/AN population. WNC-specific

information shows slightly different numbers (Table 46); 73% of the WNC AI/AN population has health insurance, compared to 77% of blacks and whites. Again, it is difficult to interpret these numbers because of different possible definitions in the community of "health care coverage."

Table 45. Percentage of AI/AN adults in Jackson and Swain Counties who reported having any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare (REACH)

	AI/AN Total	AI/AN Men	AI/AN Women	NC Men	NC Women
	% (sample size)	% (sample size)	% (sample size)	%	%
2010	65.4 (939)	65.9 (399)	65.0 (540)	80.2	83.5
2011	63.5 (897)	60.3 (403)	66.0 (494)	79.0	82.9
2012	91.6 (904)	90.9 (404)	92.4 (500)	77.0	81.4

Table 46. Healthcare Insurance Coverage (Among Adults 18-64) in Western North Carolina
(WNC Healthy Impact, 2012)

	White	AI/AN	Black	Other	WNC	NC	U.S.
% with healthcare insurance coverage	76.8	73.3	76.9	66.6	76.3	82.3	85.1

Table 47 shows health care coverage for AI/AN EBCI clinic patients. Almost one-third of patients had private insurance, 10% had Medicaid, and 29% were covered under Medicare. Seventy-one percent of patients had some type of health care coverage. However, it is unknown from this data whether the other 29% were uninsured or their coverage was not documented.

Table 47. Health care coverage among registered patient population in EBCI Health Clinics in CHSDA in 2011 (Indian Health Service RPMS, CIHA); Total registered patients=8,363

Type of Coverage	Number of patients	% of Total registered patients
Medicare Part A/B/D	1026	12.3%
Medicaid	1671	20.0%
Private Insurance	2298	27.5%
Total with Health Coverage	**4995**	**59.7%**
No insurance	3368	40.3%

*Note that Registered Patient Population includes living patients who have ever had a visit to EBCI health clinic; includes those living outside of the CHSDA.

Screening and Monitoring

How do screening and monitoring relate to prevention?

This section presents screening and monitoring data specific to CHSDA AI/AN adults for diabetes, hypertension, cholesterol, breast and cervical cancer, and colorectal cancer. Screening can be done to detect an undiagnosed disease or condition, and is an opportunity to engage persons in prevention activities, education and/or referral. Monitoring is keeping track of indicators of an existing disease or condition to prevent further complications. Screening, monitoring and prevention can occur on population or individual levels. Prevention is often described in three categories:

- *Primary prevention*: Prevention aimed at keeping a disease or condition from occurring, including actions to protect against diseases or conditions and health promotion activities (Prevention). Primary prevention measures such as immunizations are described above in Chapter 4, Health Behaviors.
- *Secondary prevention*: Prevention activities after a disease or condition has been diagnosed but before significant complications have developed (Screening, Monitoring)
- *Tertiary prevention*: Prevention aimed at keeping complications of a disease or condition from occurring or worsening, or slowing the course of a progressive disease (Monitoring)

<u>Diabetes</u>

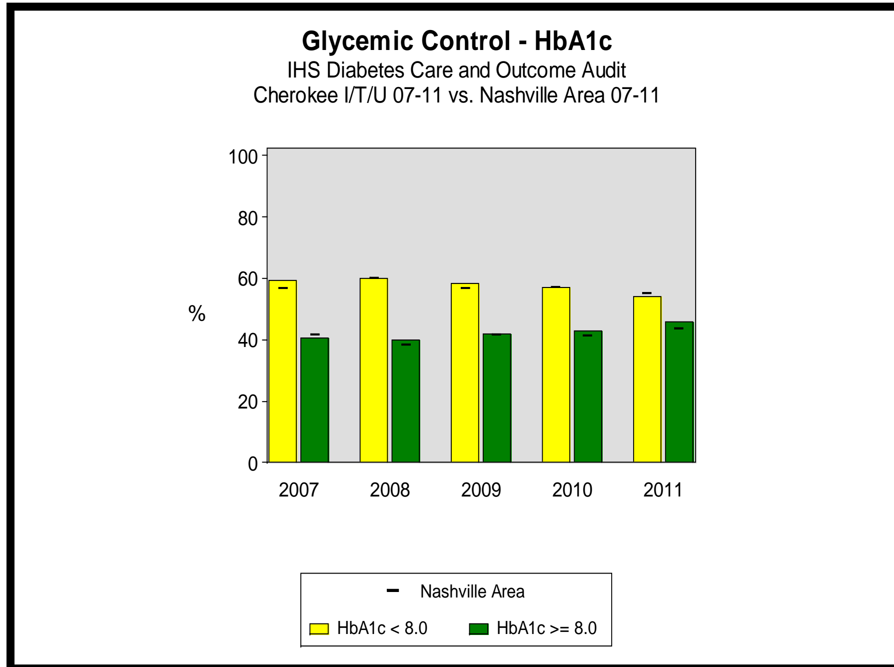
Chapter 3 presented data on the prevalence, age distribution and burden of diabetes in the community. In addition, when diabetes exists in combination with other chronic conditions, it can be more difficult to control and its effects can become worse. When persons receive excellent diabetes care and education and appropriately monitor, treat and take preventive measures, they can decrease complications of diabetes.

Table 48 shows self-reports of diabetic persons who reported having a hemoglobin A1c test in the past year, and Figure 37 shows the extent of glycemic control among diabetic persons, i.e., how well they control their blood sugar over time. Generally, the population goal for Hemoglobin A1c is <8.0%. (Levels of 6.5%-7.0% are recommended for some patients.)

Table 48. Percentage of AI/AN adults in Jackson and Swain Counties with diabetes who reported having a hemoglobin A1c test within the past year (REACH)

	AI/AN	NC
	% (sample size)	%
2002	83.7 (229)	N/A
2010	86.4 (272)	90.9
2011	89.1 (279)	92.6
2012	91.0 (255)	N/A

Figure 37.Glycemic Control (HbA1c) in EBCI Diabetic Persons



Source: TEC, 2013 EBCI Diabetes Report

Persons with diabetes should undergo regular monitoring and screening in a number of areas, including periodic:

- Foot examinations
- Eye examinations
- Dental examinations
- Kidney function tests
- Blood pressure checks
- Blood lipids
- Weight monitoring
- Depression screening
- Tobacco and alcohol use counseling
- Immunizations including influenza, pneumococcal vaccine and hepatitis B for those under 60
- Tuberculosis testing

Use of certain medications can help prevent or delay complications such as heart failure and kidney damage. Discussion of pharmaceutical treatments for diabetes and its complications is beyond the scope of this report.

Tables 49 and 50 and Figures 38, 39 and 40 show self-reported and IHS data on EBCI rates of selected screenings for diabetic persons in EBCI.

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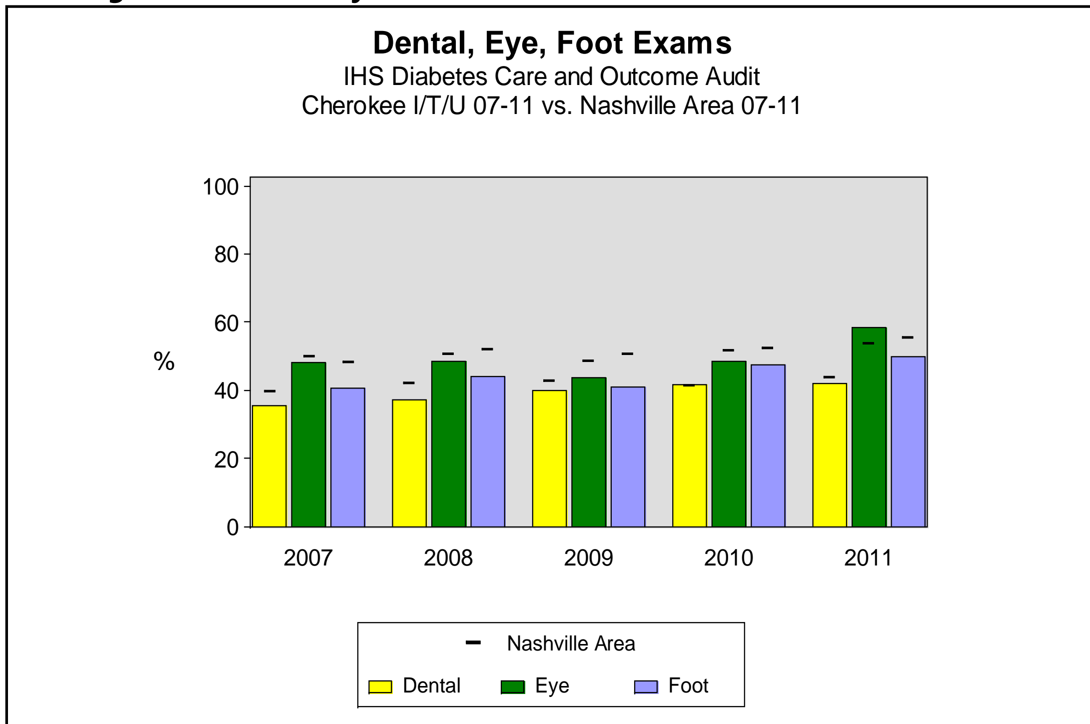
Table 49. Percentage of AI/AN adults in Jackson and Swain Counties with diabetes who reported having their feet examined within the past year by race (REACH)

	AI/AN	NC
	% (sample size)	%
2002	85.7 (229)	N/A
2010	85.5 (268)	75.7
2011	89.4 (277)	76.7
2012	85.3 (254)	N/A

Table 50. Percentage of AI/AN adults in Jackson and Swain Counties with diabetes who reported having a dilated eye exam within the past year (REACH)

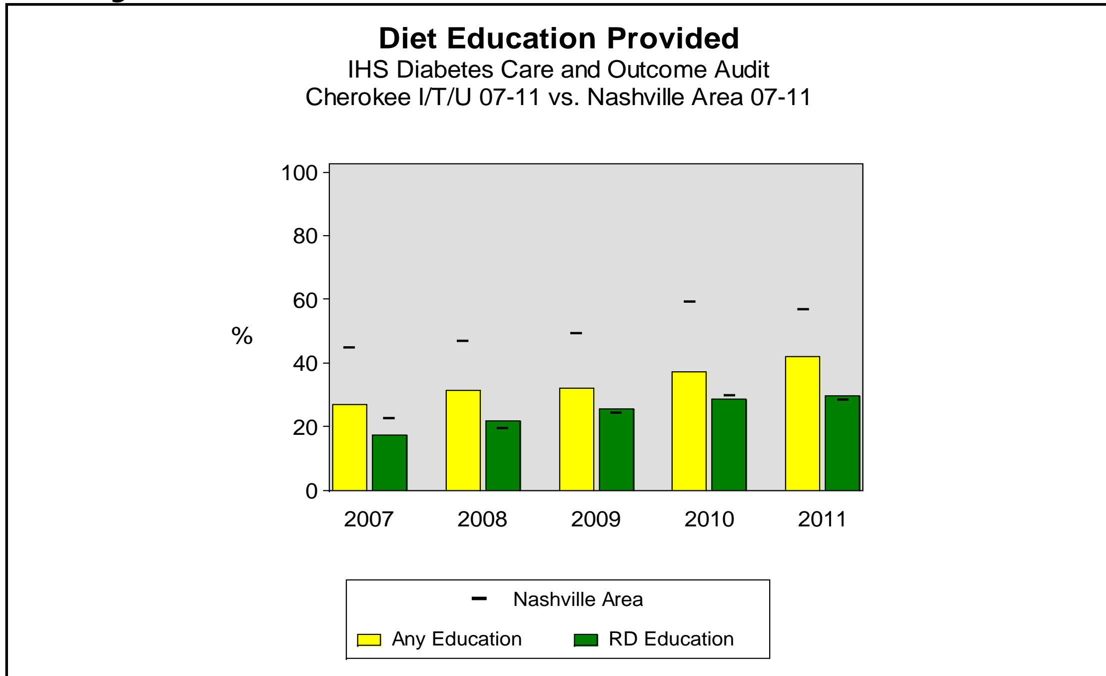
	AI/AN	NC
	% (sample size)	%
2002	68.4 (228)	N/A
2010	70.2 (271)	68.5
2011	70.6 (273)	70.9
2012	76.6 (252)	N/A

Figure 38. Dental, Eye, Foot Exams for EBCI Persons with Diabetes



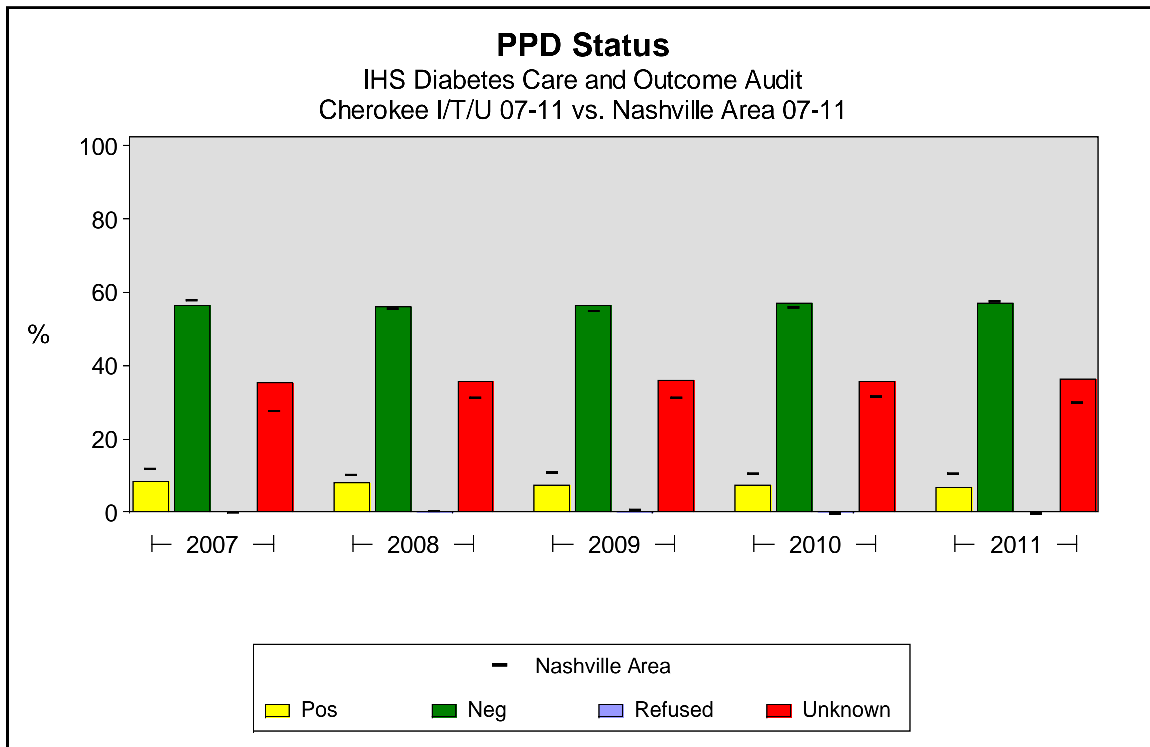
Source: TEC, 2013 EBCI Diabetes Report

Figure 39. Diet Education Provided to EBCI Persons with Diabetes



Source: TEC 2013 EBCI Diabetes Report. RD = Registered Dietitian

Figure 40. PPD Status (Tuberculosis Screening) in EBCI Persons with Diabetes



Source: TEC 2013 EBCI Diabetes Report

Hypertension

According to RPMS data, as of April 1, 2013, 5,668 of 10,118 patients (56% of total population of active patients) aged 20 + have had their blood pressure checked at least two times in the last two years.

Hypercholesterolemia

High blood cholesterol is also a major contributor to the national epidemic of cardiovascular disease. REACH survey respondents were asked a series of questions about their blood cholesterol checks and levels (Table 51).

Table 51. Percentage of AI/AN adults in Jackson and Swain Counties who reported having had their total blood cholesterol checked by race and sex (REACH)

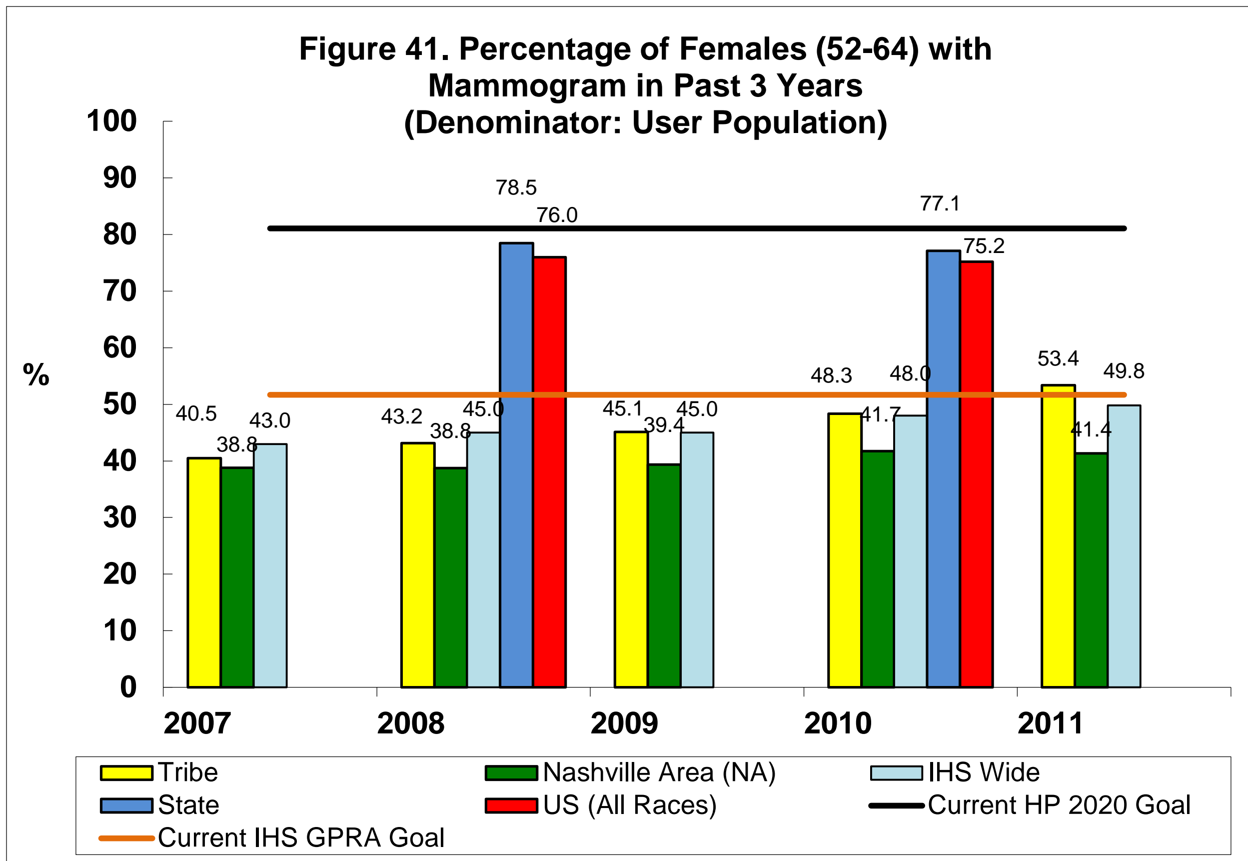
	AI/AN Total	AI/AN Men	AI/AN Women	NC Men	NC Women
	% (sample size)	% (sample size)	% (sample size)	%	%
2002	74.2 (944)	69.4 (417)	78.3 (527)	76.6	81.3
2010	82.4 (885)	76.7 (379)	87.2 (506)	79.3	84.4
2011	84.7 (877)	78.9 (394)	89.0 (483)	78.1	84.6
2012	82.1 (872)	77.8 (394)	82.1 (872)	N/A	N/A

Women-Specific Preventative Health Screening Behavior

Mammograms

According to IHS, "Screening women ages 50 to 64 every two years has been shown to lower the death rate from breast cancer. Breast cancer is the second leading cause of cancer death among U.S. women (lung cancer is first). Although breast cancer deaths have dropped since 1990, this is not the case for AI/AN women. Between 1992 and 2002, the death rate from breast cancer was lower for all racial and ethnic groups except for AI/AN women."[112] Figure 41 shows the rate of performance of mammograms over the last 3 years. Table 52 shows the self-reported mammogram rate.

[112] As cited in EBCI CRS Report Spreadsheet, TEC Internal Document



Source: Indian Health Services RPMS, TEC. "Tribe" refers to EBCI.
Notes: For State/US rates used CDC BRFSS estimates for female 40+ years. IHS Goal is for most recent year.
From 2007 to 2011, on average this Tribe's rate was approximately 1.15 times greater than the Nashville Area's rate.

Table 52. Percentage of AI/AN women in Jackson and Swain Counties, older than 40 years who reported receiving a mammogram in the past 2 years (REACH)

	AI/AN	NC
	% (sample size)	%
2002	77.1 (210)	80.3
2010	62.1 (348)	78.5
2011	68.1 (298)	77.1
2012	68.9 (300)	N/A

Pap Smear

According to IHS, "More American Indian women report that they have never had a Pap smear test as compared to other ethnic groups. Having a regular Pap smear lowers the chance of cervical cancer. Early testing can find pre-cancerous cervical lesions that can be treated. If cervical cancer is found early, the chance of survival is almost 100% with appropriate treatment

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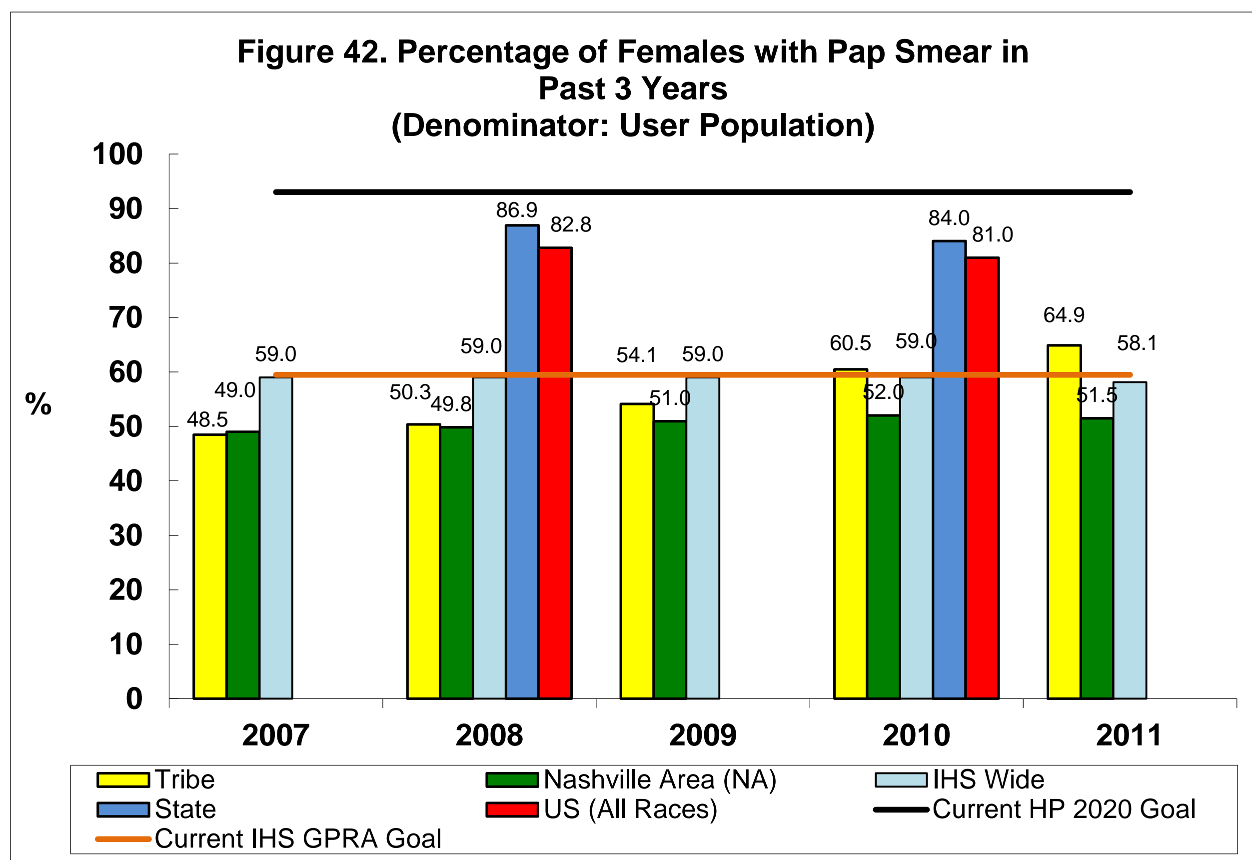
and follow-up. Cervical cancer was once the leading cause of cancer death among women. But it has dropped to thirteenth (13th) among all U.S. races, due to the use of Pap smears."[113]

Note that REACH data shows that Pap Smear rates have been decreasing from 2002 (84%) to 2012 (78%) (Table 53), while RPMS data shows rates increasing over time among the clinical CHSDA AI/AN population: 29% in 2007 to 75% in 2011 (Figure 42). This may be due to differences in data collection (self-report versus clinical data), in population, or other factors.

Table 53. Percentage of AI/AN women in Jackson and Swain Counties who reported getting pap smear in the past 3 years[+] (REACH)

	AI/AN	NC
	% (sample size)	%
2002	84.1 (406)	89.3
2010	81.0 (386)	86.9
2011	81.7 (354)	84
2012	77.7 (362)	N/A

[+]Note that guidelines for pap smears have changed to testing every 5 years

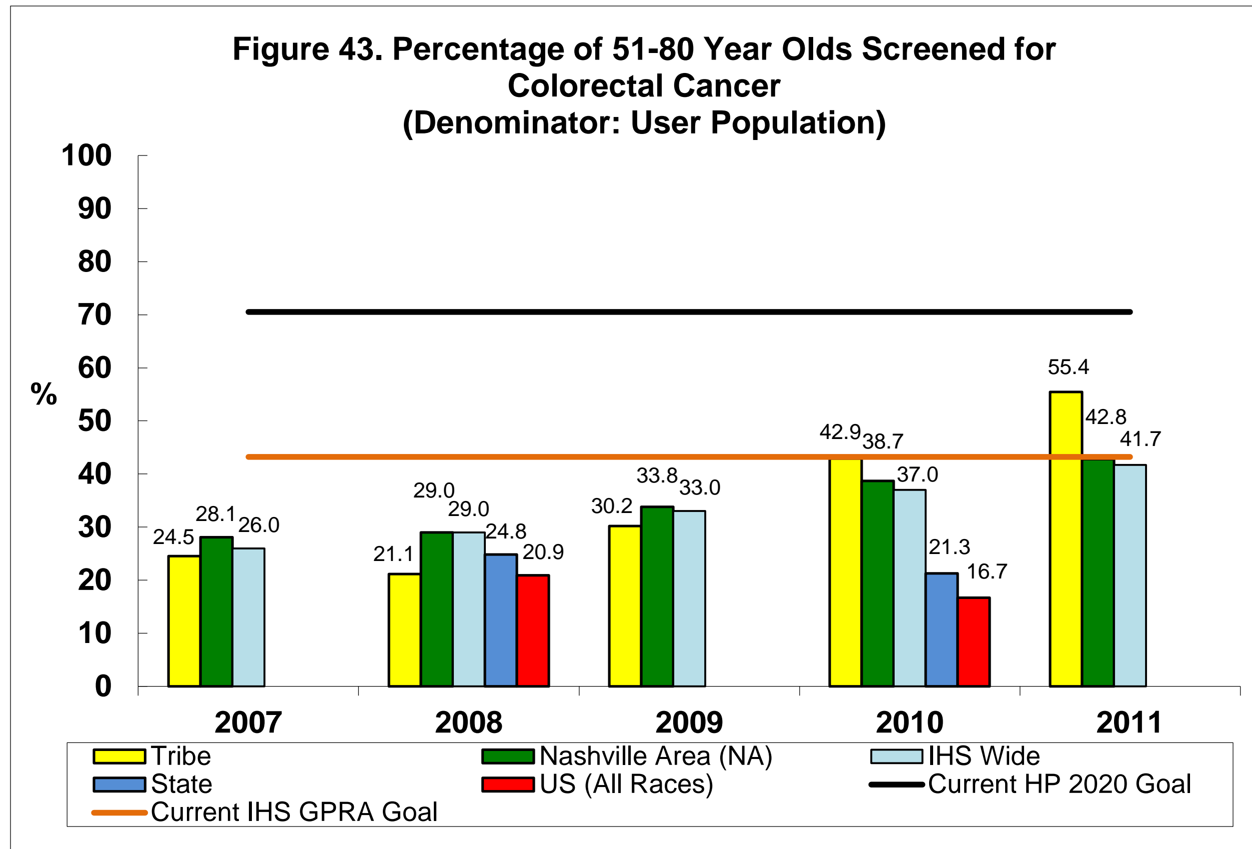


Source: Indian Health Services RPMS, TEC. "Tribe" refers to EBCI.
Notes: For State/US rates used CDC BRFSS estimates. IHS Goal is for most recent year.
From 2007 to 2011, on average this Tribe's rate was approximately 1.10 times greater than the Nashville Area's rate.

[113] As cited in EBCI CRS Report Spreadsheet, TEC Internal Document

Colorectal Cancer Screening

RPMS data shows a striking increase in colorectal cancer screening among 51-80 year old the CHSDA clinical AI/AN population, from 25% in 2007 to 55% in 2011 (Figure 43). Nashville Area and IHS-wide AI/AN clinical populations also show an increase over time, while state and U.S. rates overall seem to have decreased.

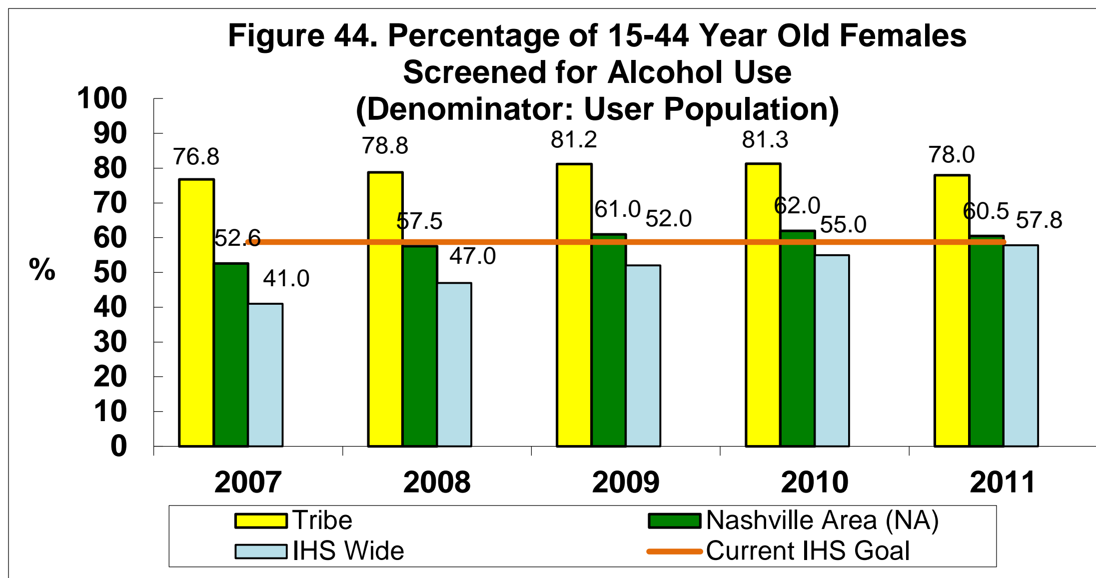


Source: Indian Health Services RPMS, TEC. "Tribe" refers to EBCI.
Notes: For State/US rates used CDC BRFSS estimates for persons ages 50+ years. IHS Goal is for most recent year.
From 2007 to 2011, on average this Tribe's rate was approximately 1.01 times greater than the Nashville Area's rate.

Alcohol Screening

The American Medical Association has endorsed universal substance use screening for all women of childbearing age.[114] Figure 44 presents alcohol screening data for AI/AN women of reproductive age in the 5-county CHSDA. Of note, in 2011, the Cherokee Health System had a 78% alcohol screening rate, which surpasses the current IHS goal that 60% of women aged 15-44 be screened. The Cherokee Health System also has a higher screening rate than the overall health systems in the Nashville Area and IHS-wide.

[114] ACOG Committee on Ethics. (2005). ACOG Committee opinion: maternal decision making, ethics, and the law. Obstetrics and Gynecology, 106(5), 1127-1137.



Source: United South and Eastern Tribes (USET), Tribal Epidemiology Center (TEC). “Tribe” refers to EBCI.
From 2007 to 2011, on average this Tribe’s rate was approximately 1.35 times greater than the Nashville Area’s rate.

Healthcare Utilization

Primary Care Providers

Healthy People 2020 notes, “Improving health care services depends in part on ensuring that people have a usual and ongoing source of care. People with a usual source of care have better health outcomes and fewer disparities and costs. Having a primary care provider (PCP) as the usual source of care is especially important. PCPs can develop meaningful and sustained relationships with patients and provide integrated services while practicing in the context of family and community. Having a usual PCP is associated with:

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

Improving health care services includes increasing access to and use of evidence-based preventive services. Clinical preventive services are services that: **prevent** illness by detecting early warning signs or symptoms before they develop into a disease (primary prevention); or **detect** a disease at an earlier, and often more treatable, stage (secondary prevention).”[115]

Data on availability of PCPs is available for AI/AN within the 16 county WNC region (Table 54). Primary care services at CIHA for persons meeting IHS requirements are described at the beginning of this chapter.

[115] www.healthypeople.gov as cited in Professional Research Consultants, Inc. (2012). PRC Community Health Needs Assessment Report, Western North Carolina. Asheville, NC: WNC Health Network and WNC Healthy Impact. Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

Table 54. Routine Medical Care, Western North Carolina by race (WNC Healthy Impact, 2012)							
	White	AI/AN	Black	Other	WNC	NC	US
% have one person they consider their personal healthcare provider	81.1%	69.9%	87.7%	66.1%	80.5%	N/A	N/A
% have visited a physician for a checkup in past year	71.3%	72.4%	94.8%	67.9%	72.4%	N/A	67.3 %

Inpatient Hospital Utilization

CIHA compiled data for patients (AI/AN beneficiaries only) admitted to the 20-bed inpatient unit for 2012. In 2012, there were 782 admissions, accounting for 3,163 patient days. The average length of stay was 4 days compared to 3.7 in 2011. The five leading primary diagnoses (the top diagnoses when the patient was discharged) and top ten admitting diagnoses (when the patient came into the hospital) are in Tables 55 and 56. Three of the four top primary diagnoses and two of the top admitting diagnoses are drug-related, and drug withdrawal not only was the number one admitting and primary diagnosis in 2012, but there was a striking increase in drug withdrawal admissions over 2011-2012.

Table 55. Five leading primary diagnoses for inpatient hospitalizations, 2012
(Indian Health Service RPMS, CIHA)

Primary diagnosis	Number of patients	% change from 2011
Drug withdrawal	134	+55.8
Alcohol withdrawal	50	-7.4
Pneumonia, Organism NOS[116]	35	-31.4
Opioid Dependence Cont	21	-32.3
Cellulitis of leg	18	-41.9

[116] Not Otherwise Specified

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Table 56. Top ten admitting diagnoses for inpatient hospitalizations, 2012
(Indian Health Service RPMS, CIHA)

Admitting diagnosis	Number of patients	% change from 2011
Drug withdrawal	96	+43.3
Opioid Dependence Cont	61	+35.6
Pneumonia, Organism Nos	40	-24.5
DMII [Diabetes] WO CMP UNCNTRLD	36	+38.5
Chest pain NOS	27	-6.9
Alcohol withdrawal	22	+100.0
Abdominal pain	20	+81.8
AC Alcohol intox-contin	15	-6.3
Alcohol abuse	15	-42.3
Dehydration	15	-31.8

Dental Services

The significant improvement in the oral health of Americans over the past 50 years is largely due to public health efforts centered on effective prevention and treatment of oral diseases. One major success is community water fluoridation, which is in place in the Cherokee community. However, some Americans do not have access to preventive programs. People who have the least access to preventive services and dental treatment have greater rates of oral diseases. A person's ability to access oral healthcare is associated with factors such as education level, income, race, and ethnicity.

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

- Tobacco use
- Excessive alcohol use
- Poor dietary choices

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There are also social determinants that affect oral health. In general, people with lower levels of education and income, and people from specific racial/ethnic groups, have higher rates of disease. People with disabilities and other health conditions, like diabetes, are more likely to have poor oral health.[117]

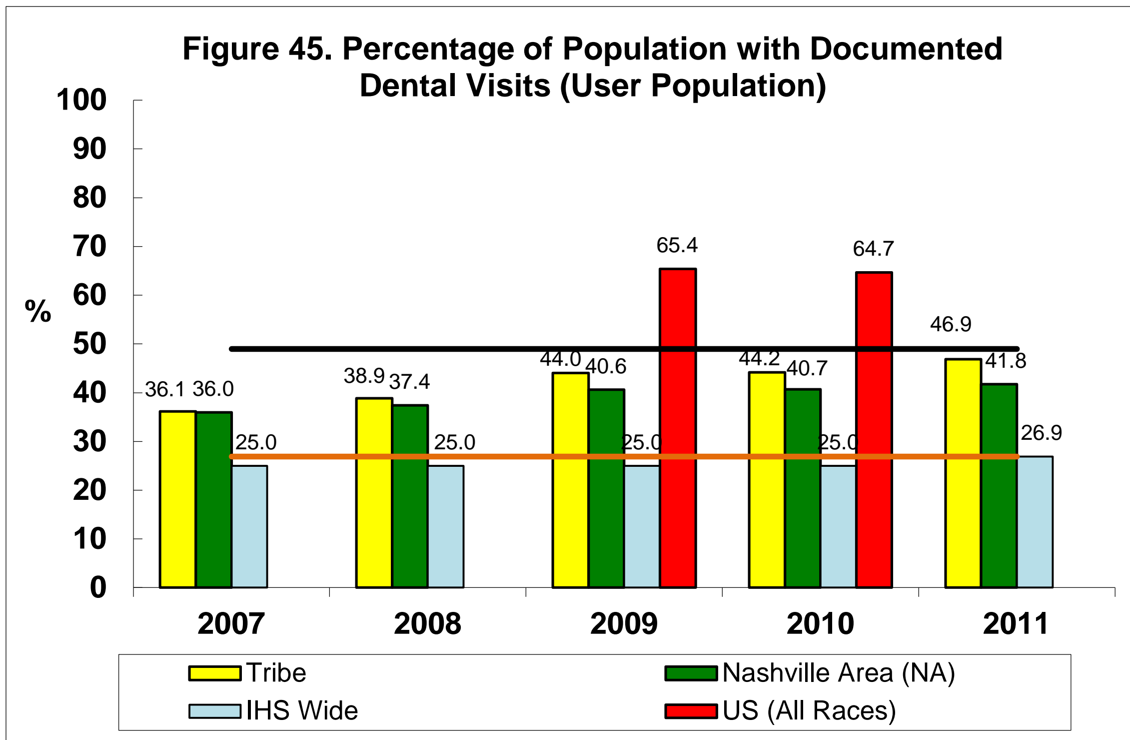
In 2009, the EBCI conducted the Nashville Area Oral Health Screening Survey; community-based screenings were conducted, with 902 children in grades preschool through five, by a pediatric dentist and dental hygienist at schools. Key findings highlighted in the report included (See full report for detailed information):[118]

- 33.8% of EBCI children age 2-5 had untreated decay compared to 37% in the Nashville Area community surveys. While a lower percentage of EBCI young children had untreated decay compared to the Nashville Area, a higher percentage of EBCI children had untreated decay compared to nearby state surveys of preschool children.
- By age 3, over half of EBCI children had experienced dental caries.
- 44.9% of EBCI children age 8-10 had untreated decay compared to 35.8% in the Nashville Area community surveys.
- 54.1% of EBCI children age 8-10 had at least one molar sealant compared to 8.4% in the Nashville Area community surveys.
- A lower percentage of young EBCI children had urgent dental needs compared to the Nashville Area-all settings and similar community surveys. Children in the older age group had a slightly higher percentage of urgent needs.
- Most of the children assessed had good oral hygiene. Children in grade 5 had the highest percentage of poor oral hygiene.

Figure 45 shows a steady rise in documented dental visits by the AI/AN CHSDA patient population, from 36% in 2007 to 47% in 2012. The CHSDA AI/AN population is still below the current HIS GPRA goal of 50%. Dental visit rates are higher among the AI/AN CHSDA population than AI/AN in the Nashville Area or IHS-wide, but lower than U.S. rates.

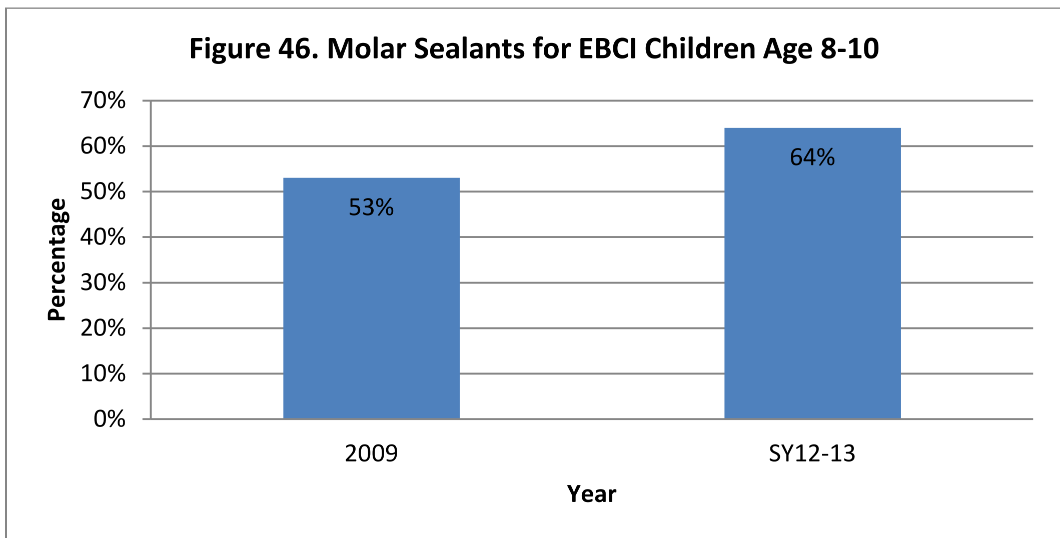
[117] www.healthypeople.gov as cited in Professional Research Consultants, Inc. (2012). PRC Community Health Needs Assessment Report, Western North Carolina. Asheville, NC: WNC Health Network and WNC Healthy Impact. Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

[118] Dental Support Center, United South and Eastern Tribes, Inc (2010) Eastern Band of Cherokee Indians I/T/U Specific 2009 Oral Health Screening Survey Report, Nashville, TN



Source: Indian Health Service RPMS, TEC. "Tribe" refers to EBCI.
At least one visit during the reporting period (e.g., 2008 data represents those with at least one dental visit in 2008)
From 2007 to 2011, on average this Tribe's rate was approximately 1.07 times less than the Nashville Area's rate.

During the 2012-2013 school year, Eastern Band of Cherokee (EBCI) dental staff conducted screenings for children at the elementary schools to determine oral health status and dental needs. The 2009 Nashville Area Oral Health Screening Survey was used as a comparison group and EBCI dental staff found that since 2009, the number of EBCI children with molar sealants has increased and the number of children with untreated tooth decay has decrease slightly, however the percentage of EBCI children with urgent dental needs has increased. Figures 46-49 depict these data trends.



Source: Eastern Band of Cherokee Indians Dental Screening Results, School Year 2012-13

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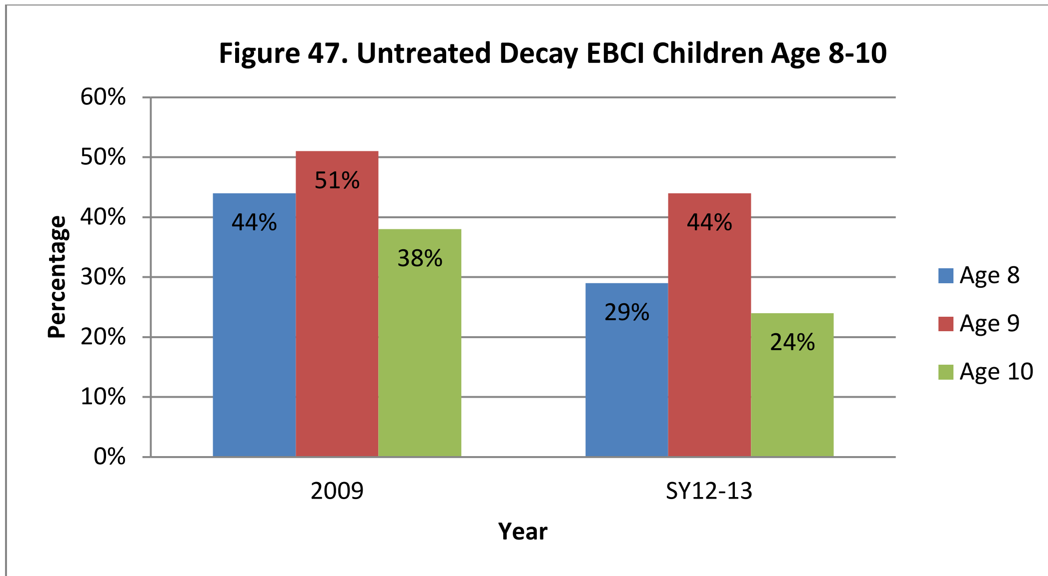
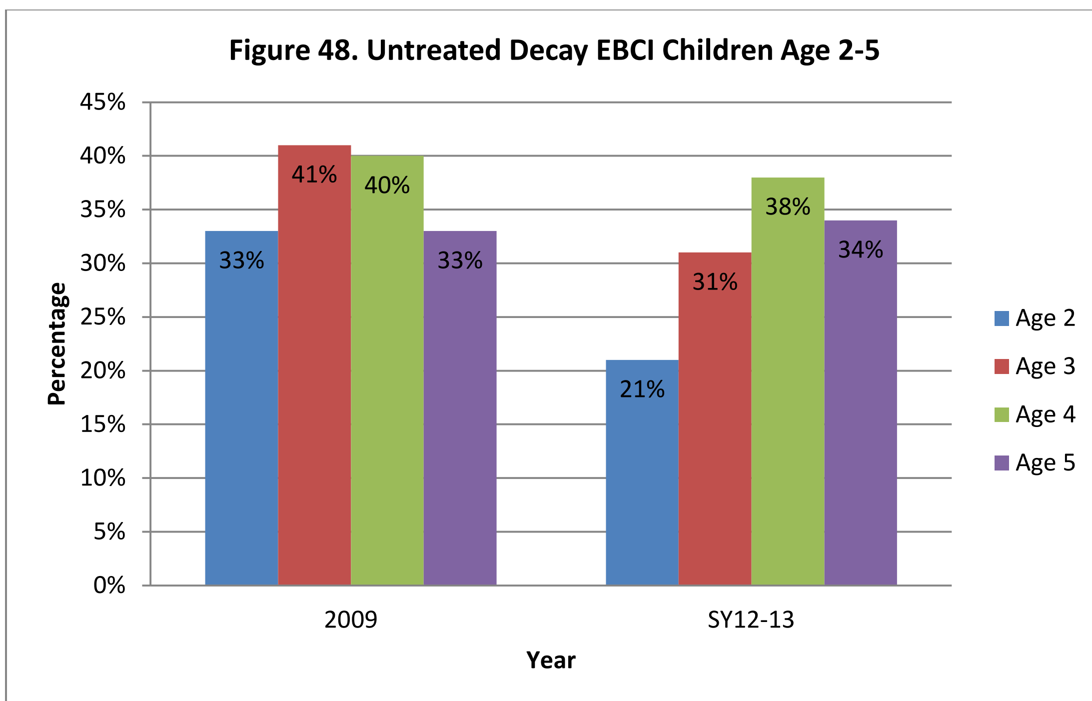
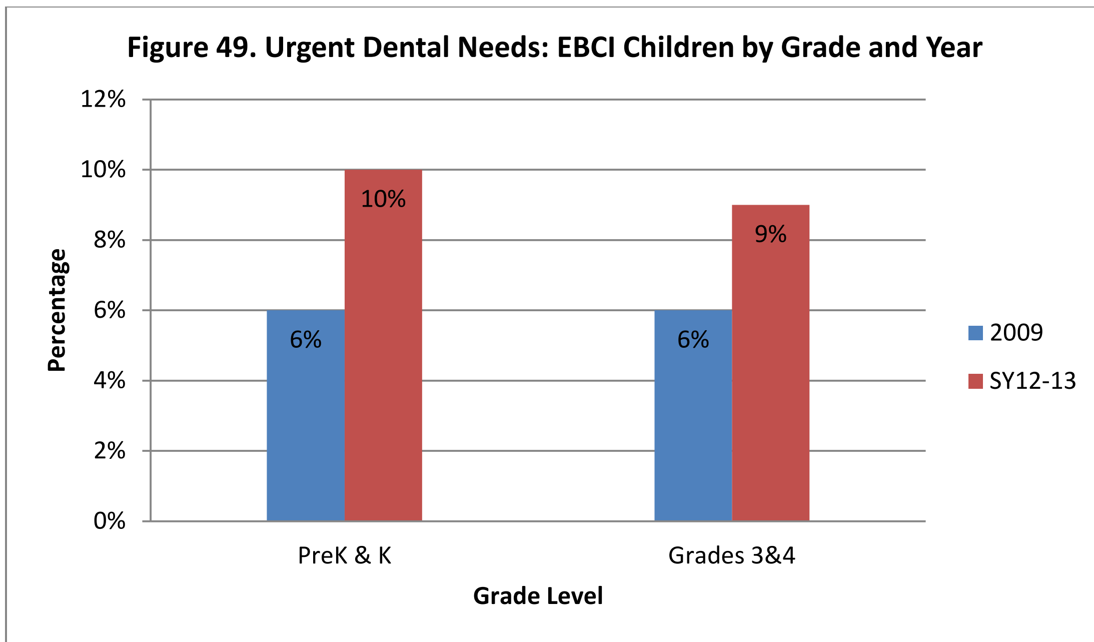


Source: Eastern Band of Cherokee Indians Dental Screening Results, School Year 2012-13



Source: Eastern Band of Cherokee Indians Dental Screening Results, School Year 2012-13



Source: Eastern Band of Cherokee Indians Dental Screening Results, School Year 2012-13

Mental Health

Healthy People 2020 gives the following description of mental health and disorders:

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

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

Mental health and physical health are closely connected. Mental health plays a major role in people's ability to maintain good physical health. Mental illnesses, such as depression and anxiety, affect people's ability to participate in health-promoting behaviors. In turn, problems

with physical health, such as chronic diseases, can have a serious impact on mental health and decrease a person's ability to participate in treatment and recovery.

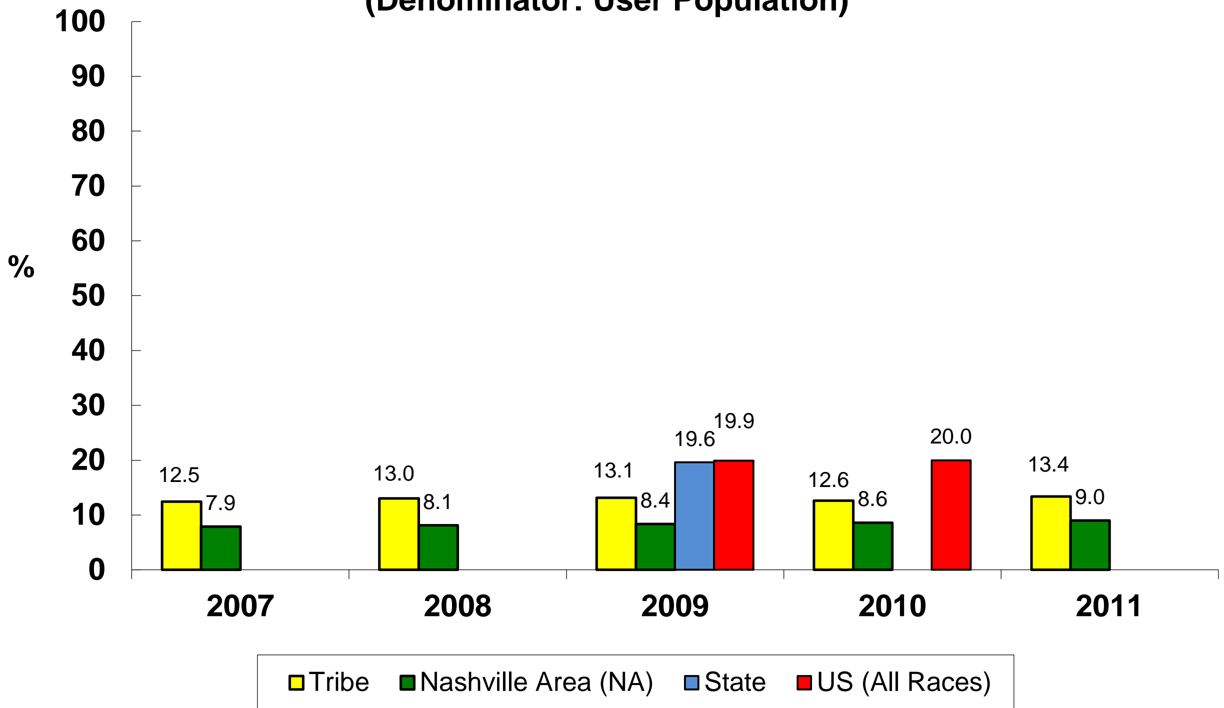
In addition to advancements in the prevention of mental disorders, there continues to be steady progress in treating mental disorders as new drugs and stronger evidence-based outcomes become available."[119]

Mental Health Status

IHS notes that "about 1 in 20 adults experience major depression in a given year. Depression and anxiety disorders may affect heart rhythms, elevate blood pressure, and alter blood clotting. Depression can also lead to elevated insulin and cholesterol levels. Depression or anxiety may result in chronically elevated levels of stress hormones such as cortisol and adrenaline. Depression also frequently increases the risk of suicidal behavior. The risk for suicide linked with depressive disorders is significantly increased compared to the general population. Screening for depression is the first step to identifying patients who need help and follow up."[120]

Figure 50 shows the percentage of the CHSDA AI/AN patient population diagnosed with a mood disorder. Mood disorders are defined here as at least two visits within the reporting period with a diagnosis code of at least one of the following: Major Depressive Disorder, Dysthymic Disorder, Depressive Disorder NOS, Bipolar I or II Disorder, Cyclothymic Disorder, Bipolar Disorder NOS, Mood Disorder Due to a General Medical Condition, Substance-induced Mood Disorder, or Mood Disorder NOS.

[119] www.healthypeople.gov as cited in Professional Research Consultants, Inc. (2012). PRC Community Health Needs Assessment Report, Western North Carolina. Asheville, NC: WNC Health Network and WNC Healthy Impact. Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/
[120] As cited in EBCI CRS Report Spreadsheet, TEC Internal Document



Source: Indian Health Services RPMS, TEC. "Tribe" refers to EBCI.
Notes: For State/US rates used Mental Health, United States, 2010 publication distributed by Substance Abuse and Mental Health Services Administration. State/US rates may have wide confidence intervals which are not displayed.
From 2007 to 2011, on average this Tribe's rate was approximately 1.54 times greater than the Nashville Area's rate.

Table 57 shows that within the past 30 days in the sixteen county western North Carolina region, AI/AN have a higher reported average number of days during which their mental health was not good.

Table 57. Mental health status by race/ethnicity within western North Carolina
(WNC Healthy Impact, 2012)

	White	AI/AN	Black	Other	WNC
Avg. Number of past 30 days on which mental health was not good	3.4	.3	4.5	6.0	3.6

Social Emotional Support

Table 58 shows that, within Western NC, a lower percentage of AI/AN, compared with other races, report "always" or "usually" getting needed social/emotional support (61%), compared to other races.

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Table 58. Social/Emotional Support by race/ethnicity within western North Carolina(WNC Healthy Impact, 2012)					
	White	**AI/AN**	**Black**	**Other**	**WNC**
% “Always” or “usually” get needed social/ emotional support	82.5%	61.2%	62.9 %	74.3%	80.6%

Access to Mental Health Services

Table 59 shows the number of behavioral health visits among AI/AN in the CHSDA has doubled (99% increase) from 2006 (486 visits) to 2010 (965 visits).

Table 59. Number of behavioral health visits by AI/AN in Indian health care delivery system in 5-county CHSDA (Indian Health Service RPMS, TEC)

Year	# of visits
2006	486
2007	785
2008	1001
2009	1057
2010	965

Table 60 provides information for mental health access across the sixteen county western North Carolina region. Eight percent of AI/AN felt that they had a time in the past year when they needed mental health care or counseling, but were unable to get it.

Table 60. Access to mental health care by race/ethnicity within western North Carolina (WNC Healthy Impact, 2012)

	White	AI/AN	Black	Other	WNC
% had a time in past year when mental health care or counseling was needed, but unable to get it	6.4%	8.4%	3.6%	12.8%	6.6%

CHAPTER 6 - PHYSICAL ENVIRONMENT

Air Quality

Outdoor Air Quality

Nationally, outdoor air quality monitoring is the responsibility of the Environmental Protection Agency (EPA); most of the following information and data originate from that agency. In NC, the agency responsible for monitoring air quality is the Division of Air Quality (DAQ) in the NC Department of Environment and Natural Resources.[121]

The EPA categorizes outdoor air pollutants as either "criteria air pollutants" (CAPs) or "hazardous air pollutants" (HAPs). CAPs, which are covered in this report, are six chemicals that can injure human health, harm the environment, or cause property damage: carbon monoxide, lead, nitrogen oxides, particulate matter, ozone, and sulfur dioxide. The EPA has established National Ambient Air Quality Standards (NAAQS) to define the maximum legally allowable concentration for each CAP, above which human health may suffer adverse effects.[122]

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

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

[121] As cited in Pfaender, Sheila, MS (2012). Regional Secondary Data Report, for WNC Healthy Impact, September 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

[122] Ibid.

The EPA reports AQI measures for four of the five counties in the CHSDA: Graham, Haywood, Jackson and Swain. The figures presented in Table 61 represent the arithmetic means of the values for the four monitored counties. This data shows that in 2011, in the 5-County CHSDA, a large majority of days were considered "good" air quality.

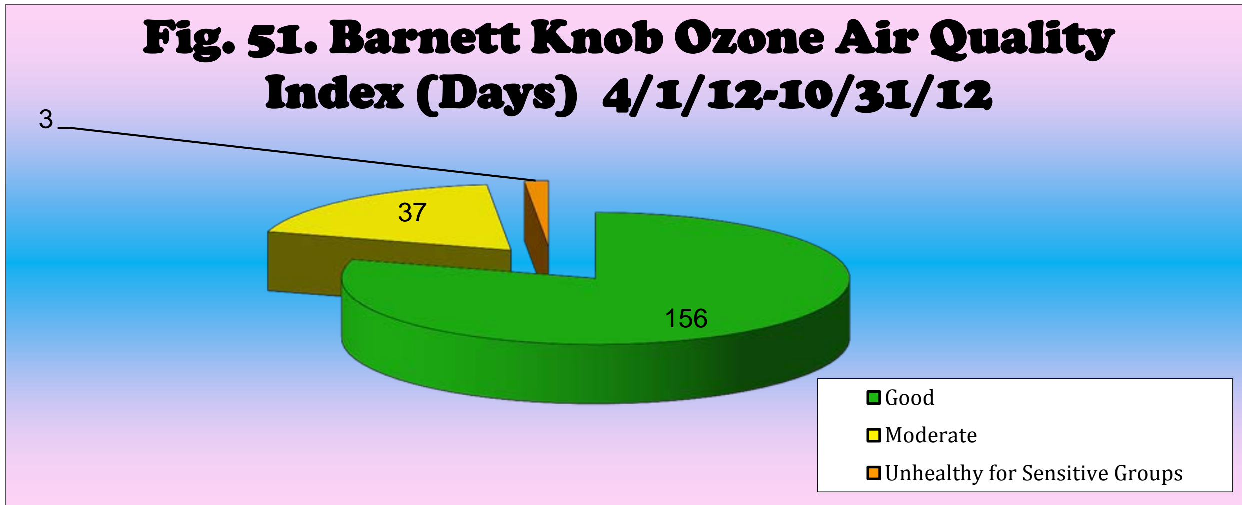
Table 61. Air Quality Index Summary, CHSDA (2011)[123]

Geography	No. Days with AQI	Number of Days When Air Quality Was:				
		Good	Moderate	Unhealthy for Sensitive Groups	Unhealthy	Very Unhealthy
Arithmetic Mean (CHSDA)	272.8	235.5	35.3	2.7*	N/A	N/A

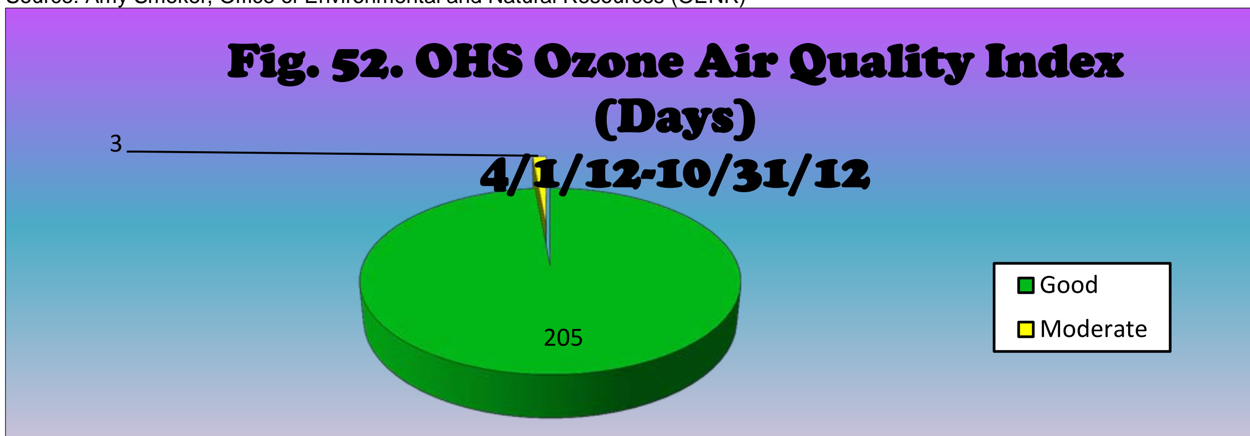
Source: Air Quality Index Reports, 2012. Retrieved on March 11, 2013 from United States Environmental Protection
* Based on data from Graham, Haywood, and Jackson

According to Amy Smoker, EBCI Office of Environmental and Natural Resources (OENR), "Additional FY12 air quality data is available from three local sites: Barnett Knob, OHS, and PM2.5. Figures 51, 52 and 53 display the air quality index report for each site. The Barnett Knob site captures higher concentrations of ozone due to the high elevation location; therefore, many more moderate and a few unhealthy days are captured at the site. The OHS site captures population exposure levels of ozone concentration, which resulted in mostly good days. The PM2.5 site is also in a population exposure area and shows the majority of days being good days according to the air quality index system." All three of these sites are on the contiguous Qualla Boundary and their AQI data is presented in the graphs below (in Swain and Jackson).

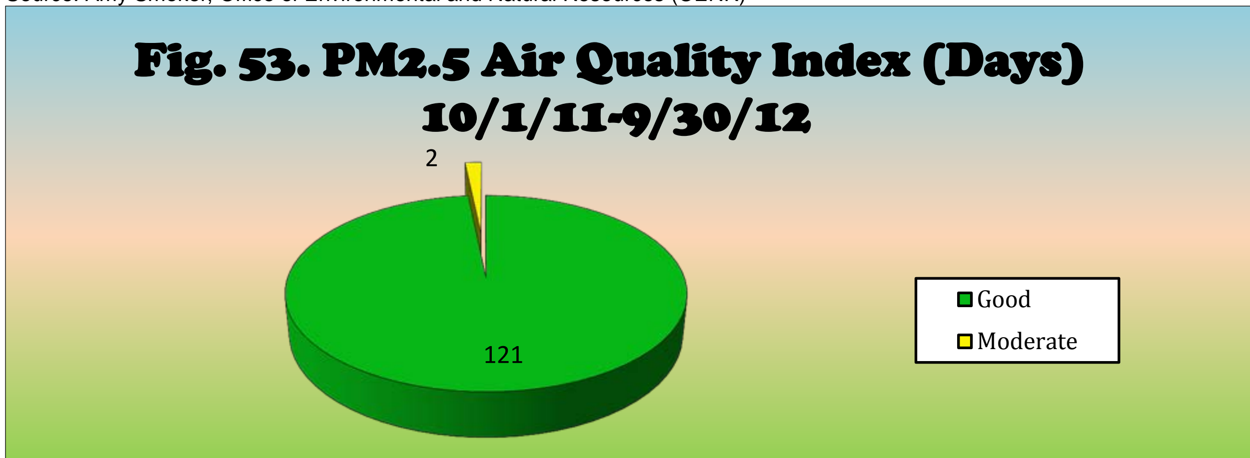
[123] Special analysis of data from: WNC Healthy Impact (2012). Regional Secondary Data Workbook, 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/



Source: Amy Smoker, Office of Environmental and Natural Resources (OENR)



Source: Amy Smoker, Office of Environmental and Natural Resources (OENR)



Source: Amy Smoker, Office of Environmental and Natural Resources (OENR)

Table 62 lists the pollutants causing air quality deficiencies. This data shows that in the CHSDA in 2012, major air pollutants included ozone (O_3) and small particulate matter ($PM_{2.5}$). Data does not exist at the local level for other possible pollutants.

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Ozone, the major component of smog, is not usually emitted directly but rather formed through chemical reactions in the atmosphere. Peak O_3 levels typically occur during the warmer and sunnier times of the day and year. The potential health effects of ozone include damage to lung tissues, reduction of lung function and sensitization of lungs to other irritants.[124]

Particulate matter is usually categorized on the basis of size, and includes dust, dirt, soot, smoke, and liquid droplets emitted directly into the air by factories, power plants, construction activity, fires and vehicles.[125] Particulates in air can affect breathing, aggravate existing respiratory and cardiovascular disease, and damage lung tissue.[126]

Table 62. CAPs Causing Air Quality Problems, CHSDA (2011)[127]

Geography	No. Days with AQI	Number of Days When Air Pollutant Was:					
		CO	NO_2	O_3	SO_2	$PM_{2.5}$	PM_{10}
Arithmetic Mean (CHSDA)	272.8	N/A	N/A	201.5	N/A	95.0*	N/A

Source: Air Quality Index Reports, 2012. Retrieved on March 11, 2013 from United States Environmental Protection * Data only available for Graham, Haywood, Jackson

Toxic Chemical Releases

Over 4 billion pounds of toxic chemicals are released into the nation's environment each year. The US Toxic Releases Inventory (TRI) program, created in 1986 as part of the Emergency Planning and Community Right to Know Act, is the tool the EPA uses to track these releases. Approximately 20,000 industrial facilities are required to report *estimates* of their environmental releases and waste generation annually to the TRI program office. However, these reports do not cover all toxic chemicals, and they omit pollution from motor vehicles and small businesses.[128]

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[124] As cited in Pfaender, Sheila, MS (2012). Regional Secondary Data Report, for WNC Healthy Impact, September 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

[125] As cited in Pfaender, Sheila, MS (2012). Regional Secondary Data Report, for WNC Healthy Impact, September 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

[126] Ibid.

[127] Special analysis of data from: WNC Healthy Impact (2012). Regional Secondary Data Workbook, 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

[128] As cited in Pfaender, Sheila, MS (2012). Regional Secondary Data Report, for WNC Healthy Impact, September 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

According to EPA data, all five counties of the CHSDA had measurable TRI releases in 2011. In 2011, Haywood County was the ninth leading emitter of TRIs in NC in terms of tonnage of TRI chemicals released. Graham County ranked 48, Cherokee County ranked 75, Jackson County ranked 76 and Swain County ranked 78.

Table 63 presents the 2011 Toxic Release Inventory (TRI) Summary for the 5-County CHSDA. None of the industries listed below are Tribally owned or located on Tribal lands, though they have the potential to affect the Cherokee community as members may live or travel to areas with these industries regularly and chemicals and by-products of these industries can be deposited on Tribal lands.

Table 63. Toxic Release Inventory (TRI) Summary, CHSDA, 2010[129]

County (rank of Total Releases out of 86 reporting)	Total On-and Off-Site Disposal or Other Released, in Pounds	Compounds Released in Greatest Quantity	Quantity Released, in Pounds	Releasing Facility	Facility Location
Cherokee (75)	201	Propylene Lead	185 16	Team Industries Andrews Inc. Moog Components Snap-On Power Tools Inc	Andrews Murphy Murphy
Graham (48)	138,782	Methyl Isobutyl Ketone Methanol N-Butyl Alcohol Lead	79,583 33,725 25,470 4	Stanley Furniture Co. Stanley Furniture Co. Stanley Furniture Co. Stanley Furniture Co.	Robbinsville Robbinsville Robbinsville Robbinsville
Haywood (9)	2,494,846	Methanol Manganese Compounds Ammonia Sulfuric Acid (1994 and after "acid Aerosols" only) Barium Compounds	1,400,865 234,956 215,987 163,242 103,437	Blue Ridge Paper Products Inc (DBA Evergreen Packaging) Blue Ridge Paper Products Inc (DBA Evergreen Packaging) Blue Ridge Paper Products Inc (DBA Evergreen Packaging) Blue Ridge Paper Products Inc (DBA Evergreen Packaging) Blue Ridge Paper Products Inc (DBA Evergreen Packaging)	Canton Canton Canton Canton Canton
Jackson (76)	147	Lead	147	Jackson Paper Manufacturing	Sylva
Swain (78)	55	Diisocyanates	55	Consolidated Metco Inc	Bryson City

Source: *TRI Release Reports: Chemical Reports, 2011.* Retrieved on March 15, 2013 from US EPA TRI Explorer, Release Reports, Chemical Reports website: http://iaspub.epa.gov/triexplorer/tri_release.chemical

Indoor Air Quality

Environmental tobacco smoke

Tobacco smoking has long been recognized as a major cause of death and disease, responsible for hundreds of thousands of deaths each year in the U.S. Smoking is known to cause lung cancer in humans, and is a major risk factor for heart disease. And it is not only active smokers

[129] Special analysis of data from: WNC Healthy Impact (2012). Regional Secondary Data Workbook, 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

who suffer the effects of tobacco smoke. In 1993, the EPA published a risk assessment on passive smoking and concluded that the widespread exposure to environmental tobacco smoke (ETS) in the US had a serious and substantial public health impact.[130]

ETS is a mixture of two forms of smoke that come from burning tobacco: sidestream smoke (smoke that comes from the end of a lighted cigarette, pipe, or cigar) and mainstream smoke (smoke that is exhaled by a smoker). When non-smokers are exposed to secondhand smoke it is called involuntary smoking or passive smoking. Non-smokers who breathe in secondhand smoke take in nicotine and other toxic chemicals just like smokers. The more secondhand smoke that is inhaled, the higher the level of these harmful chemicals will be in the body.[131]

In the 2012 WNC Healthy Impact survey, respondents were asked about their second-hand smoke exposure in their workplace. Specifically, they were asked, "During how many of the past 7 days, at your workplace, did you breathe the smoke from someone who was using tobacco?" In order to evaluate community members' perceptions about environmental tobacco smoke in public areas, survey respondents were asked about their level of agreement with the following statements: "I believe it is important for universities and colleges to be 100% tobacco-free," "I believe it is important for government buildings and grounds to be 100% tobacco-free," and, "I believe it is important for parks and public walking/biking trails to be 100% tobacco free."

A slightly lower percentage of WNC AI/AN believe in the importance of 100% tobacco-free places than other races. However, the majority of AI/AN *do* believe that it is important that public places are 100% tobacco-free. Within WNC, it appears that a higher percentage of American Indians and Alaskan Natives are exposed to environmental tobacco smoke at work than compared to whites and blacks (Table 64).

Table 64. Environmental Tobacco Smoke exposure and beliefs, western North Carolina by race (WNC Healthy Impact, 2012)

	White	AI/AN	Black	Other	WNC
Have breathed someone else's cigarette smoke at work in past week (among employed respondents)	13.8	16.7	12.1	21.5	14.2
Believe it is important that the following places are 100% tobacco-free:					
Universities and colleges	74.3	69.1	74.6	82.3	74.4
Gov't buildings and grounds	78.4	74.5	75.2	75.0	77.8
Public walking/biking trails	61.7	58.9	62.1	65.0	61.5

[130] As cited in Pfaender, Sheila, MS (2012). Regional Secondary Data Report, for WNC Healthy Impact, September 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

[131] Ibid.

Drinking Water

Community water systems

The source from which the public gets its drinking water is a health issue of considerable importance. Water from all municipal and most community water systems is treated to remove harmful microbes and many polluting chemicals, and is generally considered to be "safe" from the standpoint of public health because it is subject to required water quality standards. Municipal drinking water systems are those operated and maintained by local governmental units, usually at the city/town or county level. Community water systems are systems that serve at least 15 service connections used by year-round residents or regularly serves 25 year-round residents. This category includes municipalities, but also subdivisions and mobile home parks. In January 2013, approximately 55% of the 5-County CHSDA population (81,817 of 149,593 total CHSDA population) was being served by community water systems.[132] The 45% remaining presumably were being served by wells or by some other source, such as springs, creeks, rivers, lakes, ponds or cisterns. According to the Cherokee Water Treatment Office, in Cherokee there are two community wells located at Rough Branch and Snowbird. The Snowbird Well only requires chlorine as a disinfectant and the Rough Branch Well requires chlorine and a pH adjustment chemical due to water having a pH around 6. The Cherokee water system serves all communities on the Qualla Boundary except for the 3200 Acre Tract community, which is served by the Whittier System.

Radon

Radon is a naturally occurring, invisible, odorless gas that comes from soil, rock and water. It is a radioactive decay product of radium, which is in turn a decay product of uranium; both radium and uranium are common elements in soil. Radon usually is harmlessly dispersed in outdoor air, but when trapped in buildings it can be harmful. Most indoor radon enters a home from the soil or rock beneath it, in the same way air and other soil gases enter: through cracks in the foundation, floors, hollow-block walls, and openings around floor drains, heating and cooling ductwork, pipes, and sump pumps. The average outdoor level of radon in the air is normally so low that it is not a problem.[133]

Radon may also be dissolved in water as it flows over radium-rich rock formations. Dissolved radon can be a health hazard, although to a lesser extent than radon in indoor air. Homes supplied with drinking water from private wells or from community water systems that use wells

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[132] Special analysis of data from: WNC Healthy Impact (2012). Regional Secondary Data Workbook, 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

[133] As cited in Pfaender, Sheila, MS (2012). Regional Secondary Data Report, for WNC Healthy Impact, September 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

as water sources generally have a greater risk of exposure to radon in water than homes receiving drinking water from municipal water treatment systems. This is because well water comes from ground water, which has much higher levels of radon than surface waters. Municipal water tends to come from surface water sources which are naturally lower in radon, and the municipal water treatment process itself tends to reduce radon levels even further.[134]

There are no immediate symptoms to indicate exposure to radon. The primary risk of exposure to radon gas is an increased risk of lung cancer (after an estimated 5-25 years of exposure). Smokers are at higher risk of developing radon-induced lung cancer than non-smokers. There is no evidence that other respiratory diseases, such as asthma, are caused by radon exposure, nor is there evidence that children are at any greater risk of radon-induced lung cancer than are adults.[135]

Elevated levels of radon have been found in many counties in NC, but the highest levels have been detected primarily in the upper Piedmont and mountain areas of the state where the soils contain the types of rock (gneiss, schist and granite) that have naturally higher concentrations of uranium and radium.[136] Three counties in the CHSDA have had the highest levels of radon, exceeding, on average, 4 pCi/L (pico curies per liter): Cherokee, Graham, and Swain.[137] Though there is no current data on radon levels on the Boundary, the OENR in Cherokee plans to conduct a study to measure radon levels in the winter of 2013/2014.

The regional mean indoor radon level for the 5-county CHSDA was 4.6 pCi/L, over three times the national indoor radon level of 1.3 pCi/L[138].

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[134] Ibid.
[135] Ibid.
[136] As cited in Pfaender, Sheila, MS (2012). Regional Secondary Data Report, for WNC Healthy Impact, September 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/
[137] Special analysis of data from: WNC Healthy Impact (2012). Regional Secondary Data Workbook, 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/
[138] Special analysis of data from: WNC Healthy Impact (2012). Regional Secondary Data Workbook, 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

Built Environment

The term "built environment" refers to the human-made surroundings that provide the setting for human activity, ranging in scale from buildings and parks or green space to neighborhoods and cities that can often include their supporting infrastructure, such as water supply, or energy networks. In recent years, public health research has expanded the definition of built environment to include healthy food access, community gardens, "walkability", and "bikeability."[139]

According to the EBCI Department of Commerce, there are 0.92 miles of bike trail on the Qualla Boundary, and the following walking trails:

- Total walking trails: 2.26 miles
- Existing trails including: The River Greenway Trail, US 441 trail near the GSMNP Entrance, and Trails along/near Acquoni Rd): approx. 1.38 miles
- Unofficial trails on Oconaluftee Island Park: Approx. 0.55 Miles
- Bridge crossings: Approx. 0.33 Miles

Access to Farmer's Markets & Grocery Stores

According to the US Department of Agriculture (USDA) Economic Research Service's *Your Food Environment Atlas,* there were a total of 12 farmers' markets in the 5-county CHSDA in 2009. This number was reported to have grown by 1, to a total of 13, in 2012, an increase of 10.2%.[140]

Your Food Environment Atlas study also indicates that there were a total of 30 grocery stores in the 5-county CHSDA in 2007. This number was reported to have stayed the same in 2009.[141] There are 1 main chain grocery store and 1 tailgate market on the Qualla Boundary. To access larger grocery stores or farmers' markets, community members must leave the Boundary.

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[139] Wikipedia, 2012.

[140] Special analysis of data from: WNC Healthy Impact (2012). Regional Secondary Data Workbook, 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

[141] Special analysis of data from: WNC Healthy Impact (2012). Regional Secondary Data Workbook, 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

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Access to Fast Food Restaurants

According to the Office of Tribal Treasurer's Revenue Department, as of May 2012, there were 25 businesses serving food in Cherokee, 17 of which served fast-food items.

Also according to the USDA, mean per capita fast food expenditures in WNC rose 45% (from $514 to $746) between 2002 and 2007, and mean per capita restaurant expenditures in WNC also rose 45% (from $459 to $665) over the same period.[142]

Access to Recreational Facilities

The WNC Healthy Impact Survey found that there were a total of 14 recreation and fitness facilities in the 5-county CHSDA in 2007. This number was reported to have dropped by 6, to a total of 8 in 2009, a decrease of 34%.[143] According to the Community Education and Recreation Services Division, there are 8 community recreational facilities on the Qualla Boundary. Generally, one facility is located in each of the Tribal communities. Hours and activities may vary by community.

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[142] Special analysis of data from: WNC Healthy Impact (2012). Regional Secondary Data Workbook, 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

[143] Special analysis of data from: WNC Healthy Impact (2012). Regional Secondary Data Workbook, 2012. Asheville, NC: WNC Health Network and WNC Healthy Impact, Retrieved May 6, 2013, from http://www.wnchealthyimpact.com/

CHAPTER 7 – PRIMARY DATA - TRIBAL HEALTH SURVEY RESULTS

Introduction

The purpose of the Tribal health survey was to gather perceptions of quality of life issues and to understand health priorities and needs from the Tribal health service users' perspective. A 23-question survey was administered both electronically and by paper for a 3-week period in March/April 2013. Participants were Tribal community members within the Qualla Boundary. A convenience sample of respondents was collected and yielded a total of 795 valid survey responses. Completed surveys were deemed valid if the following criteria were met: 1) respondent was 18 years old or older; 2) respondent was or had a household member who was eligible to receive services through the Tribal health system (Cherokee Indian Hospital Authority or HMD clinics or programs); and 3) respondents completed at least 1/3 of the survey. For a complete description of survey methodology, distribution, and data limitations please see Appendix C.

Results - Demographics

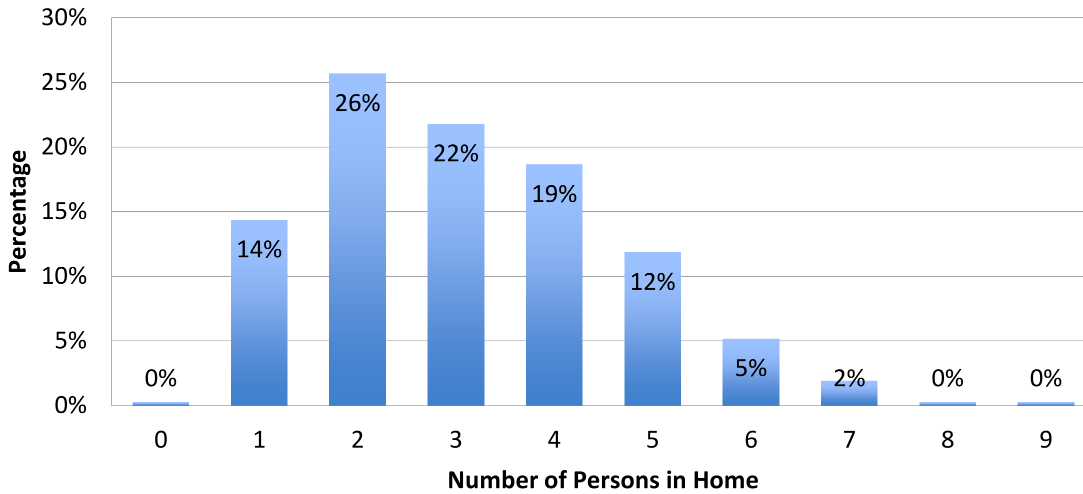
What is your age?
What community do you live in?
What is your gender?
How many people (adults and children) currently live in your home?
How many children under the age of 18 currently live in your home?
Is anyone in your household ELIGIBLE to receive health services through the Cherokee Health System?

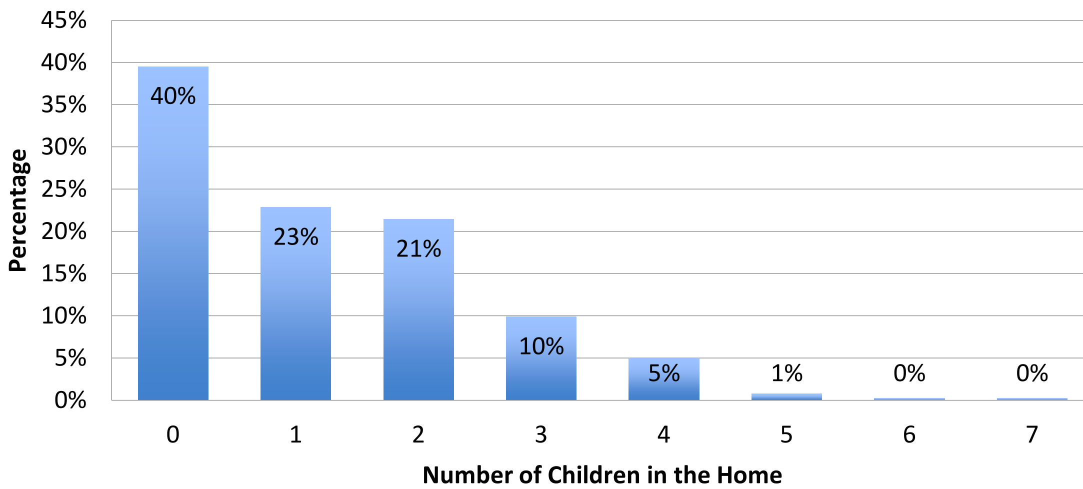
(Tribal Health Survey Questions 1, 2, 3, 4, 5, 6a, see Appendix E)

Demographics of Survey Respondents		Count	Percentage	Cherokee Population Counts (Percentage)[#]
Age	18-24	79	9.99%	1935 (18.72%)
	25-34	164	20.73%	2046 (19.80%)
	35-44	156	19.72%	1859 (17.99%)
	45-54	154	19.47%	1837 (17.78%)
	55-64	116	14.66%	1322 (12.79%)
	65 or older	122	15.42%	1335 (12.92%)
	No answer	4	0.50%	N/A
	Total	791	100%	10334 (100%)
Gender	Female (F)	556	69.94%	7499 (50.70%)
	Male (M)	237	29.81%	7291 (49.30%)
	No answer	2	0.25%	N/A
	Total	793	100%	14790 (100%)
Community	Birdtown	195	24.97%	2242 (27.79%)
	Wolfetown	152	19.46%	1636 (20.28%)
	Yellowhill	87	11.14%	905 (11.22%)
	Big Cove	81	10.37%	1052 (13.04%)
	Painttown	74	9.48%	1138 (14.11%)
	Snowbird	64	8.19%	567 (7.03%)
	Big Y	51	6.53%	440 (5.45%)
	Other**	35	4.48%	N/A
	3200 Acre Tract	25	3.20%	N/A
	Other (doubles)*	14	1.76%	N/A
	Cherokee Co.	10	1.28%	88 (1.09%)
	Towstring	7	0.90%	N/A
	Total	795	101.76%***	8068 (100%)
Anyone in household Eligible to Receive Services through the Cherokee Health System?	Yes	795	100%	N/A

[#]EBCI Enrollment Office data
***Majority of Other = Bryson City, Whittier, or Sylva*
**** Total exceeds 100% as some respondents marked a specific community as well as the other category.*

Demographics –continued	Range	Average per home
How many people (adults and children) currently live in your home?	0-9 people	3.13
How many children under the age of 18 currently live in your home?	0-7 children	1.23





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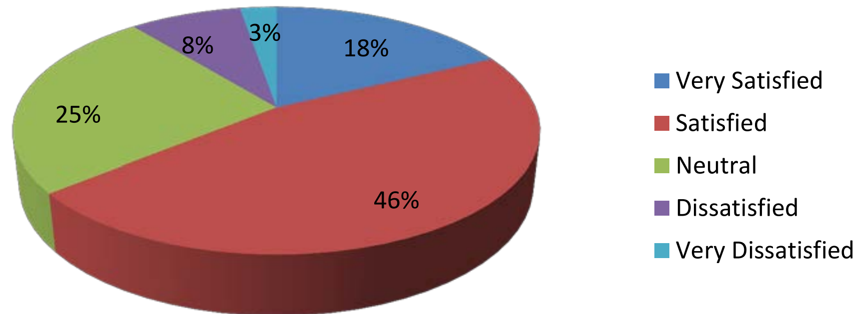
Results – Satisfaction with Tribal Health System Services

If "Yes", how satisfied are you with the health services YOU AND YOUR FAMILY RECEIVE from the Cherokee Health System (as described in question 6a)? Briefly describe why you responded that way. *(Tribal Health Survey Questions 6b, 6c, see Appendix E)*

Percentage by Satisfaction with Cherokee Health System Services (n=782)



To understand the respondents' level of satisfaction with the health system, survey participants were asked to "Briefly describe why you responded that way." Responses are outlined in the below chart. Note that the comments are not specific to satisfaction level. For example, someone may have indicated "Very Satisfied" but made a comment that indicated dissatisfaction.

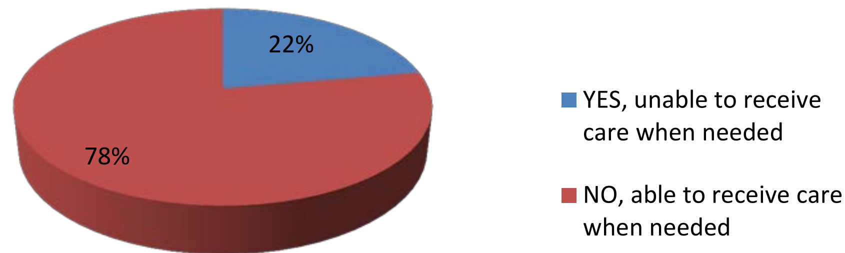
Comments Indicating Satisfaction	Comments Indicating Dissatisfaction
• The high quality of the care they received • Accessible services • Appreciation of convenience and access to free care and medications locally • Positive attitudes of nurses and doctors in hospital and HMD clinics • Being treated with respect • The system being well run • Improvement of services from previous years	• Appointment scheduling difficulty with hospital (by far the most commonly reported criticism) • Long wait times throughout the system, specifically noting Emergency Room, Pharmacy, Physician's Offices • Inconsistent quality of care • Need for more on-sight specialty care providers • Critiques of pharmacy policies • Critiques of mental health/substance abuse services • Concerns with patient confidentiality • Lack of prompt payments to external providers • Timeliness of getting test results • Poor communication about patients across clinics • Desire for more holistic approaches to care • Need for more clinic access in Cherokee County • Concerns about limited care for first descendants

Results – Barriers to Receiving Needed Health Services

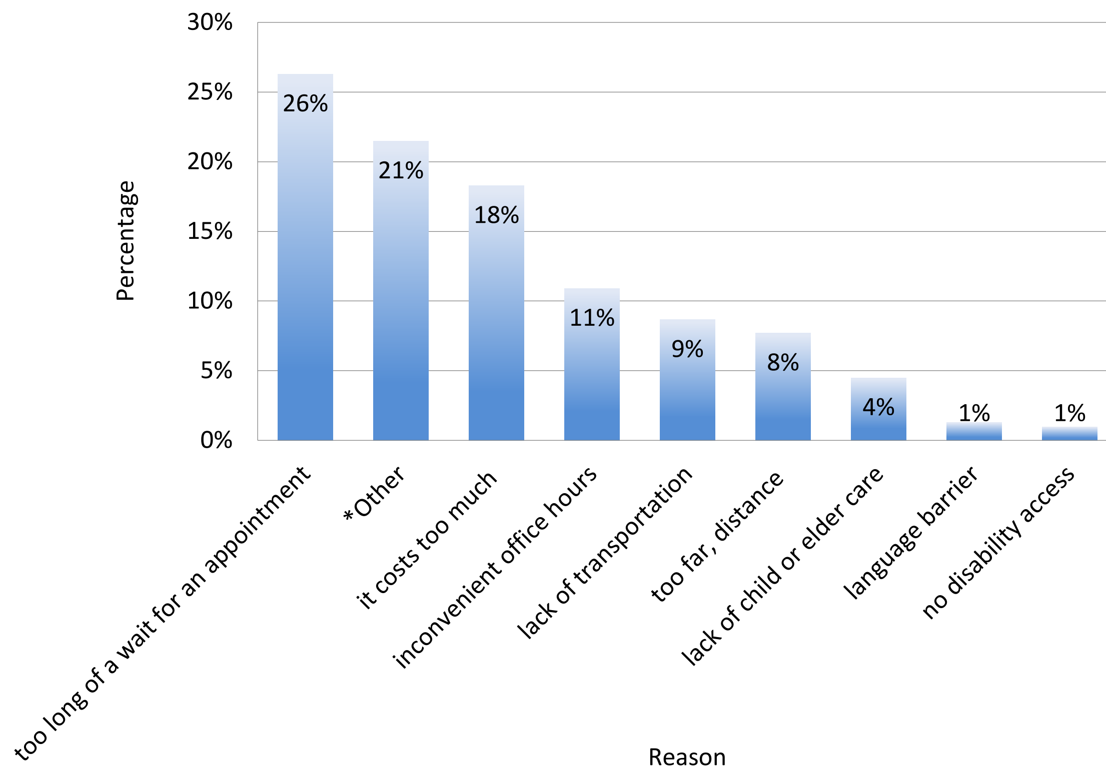
Was there a time in the past 12 months when YOU OR A FAMILY MEMBER needed medical care, but could not get it? If "YES", please answer why.

(Tribal Health Survey Questions 14a, 14b, see Appendix E)

Unable to Receive Medical Care When Needed, past 12 months
(n=770)



(Percentage by Reason for Not Receiving Medical Care (n=312



** "Other" responses most often included the wait time in clinics/ER, doctors not taking patient complaints seriously, refusing to act, or lacking knowledge, service or medications needed not available at hospital, not having insurance or losing Medicaid, or the attitude of medical system staff.*

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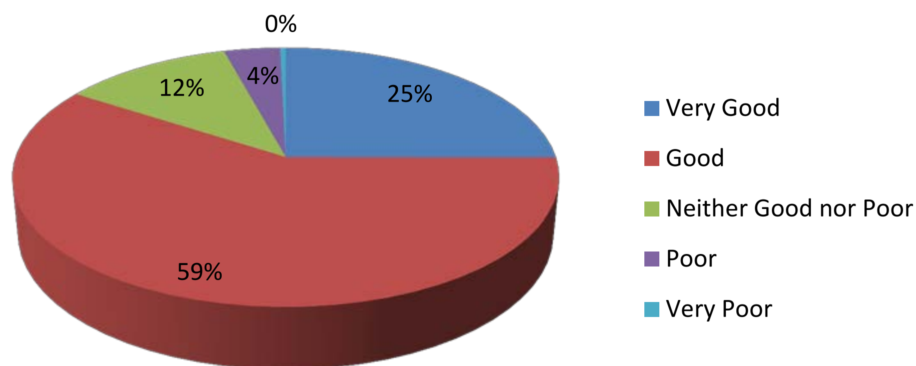
Results – Quality of Life

How would you rate YOUR OWN quality of life OVER THE PAST MONTH?
Please describe the two things that have had the greatest POSITIVE impact on YOUR OWN quality of life OVER THE PAST MONTH.
Please describe the two things that have had the greatest NEGATIVE impact on YOUR OWN quality of life OVER THE PAST MONTH.
(Tribal Health Survey Question7,8,9, see Appendix E)

Survey respondents were asked to rate their Quality of Life (QOL) and name two things that have had the greatest positive and negative impacts on their QOL over the past month. QOL generally refers to the broad, overall well-being of a person or persons. A QOL definition was not specified in the survey question so the participant's responses are purely subjective and reflect their own personal interpretation of what QOL means.

Percentage by Quality of Life Rating (n=779)



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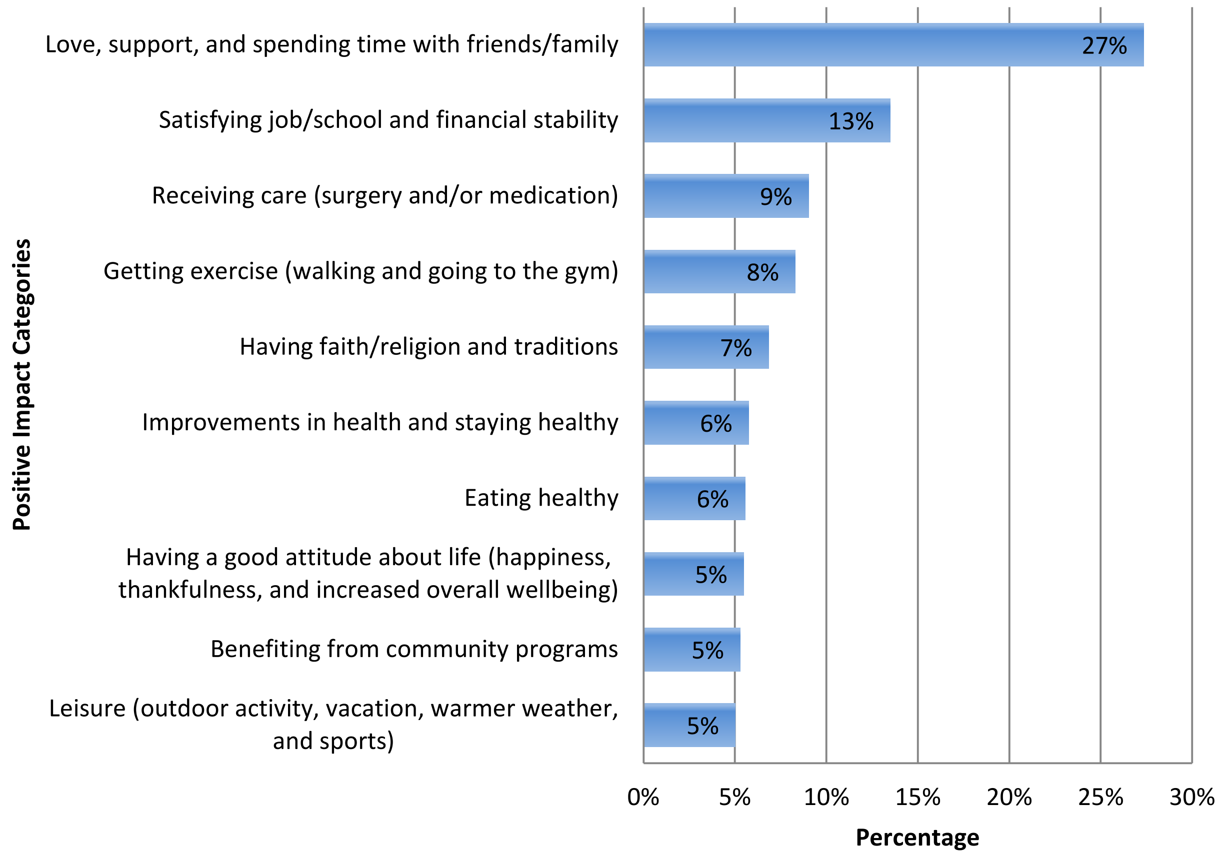

**some respondents listed more than one answer which made the number of total responses larger than the number of participants*

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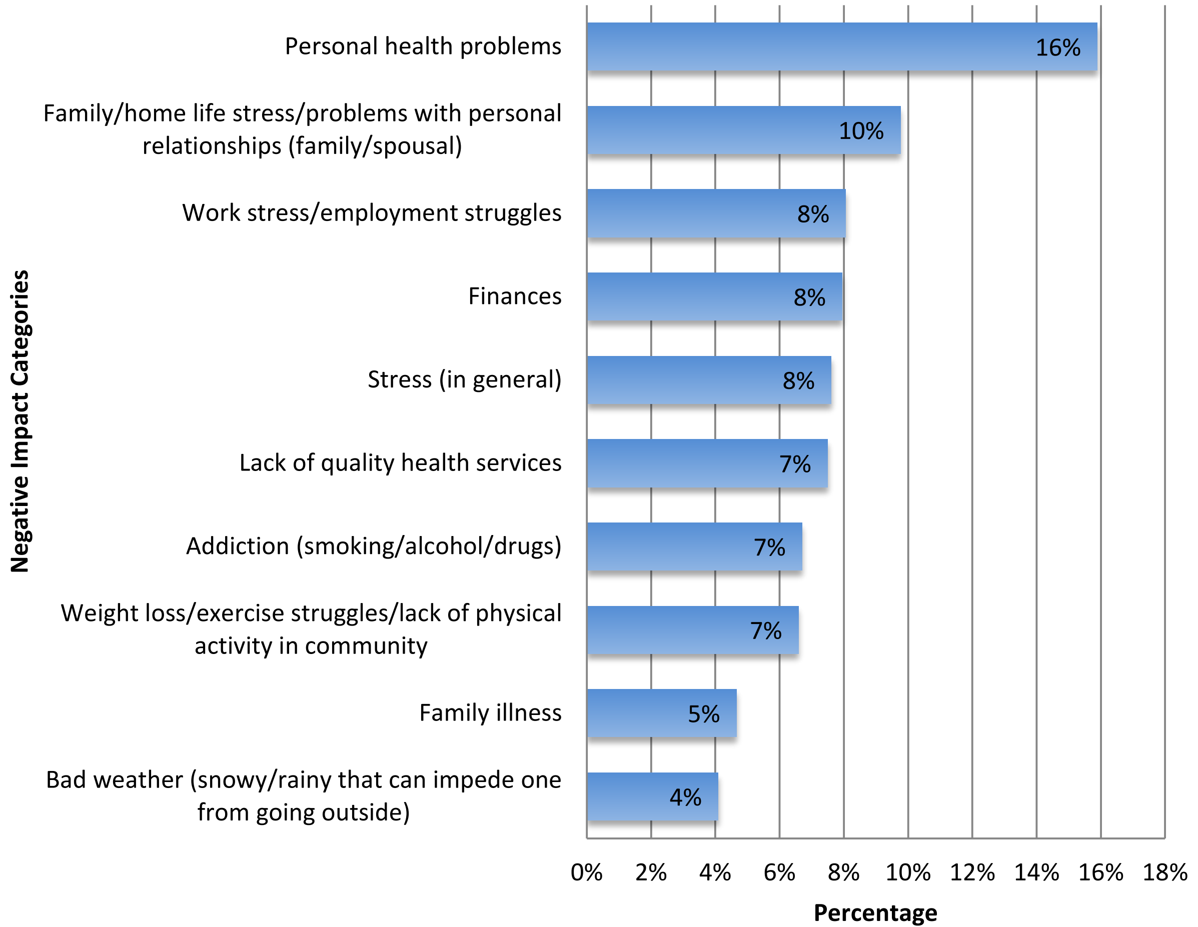

**some respondents listed more than one answer which made the number of total responses larger than the number of participants*

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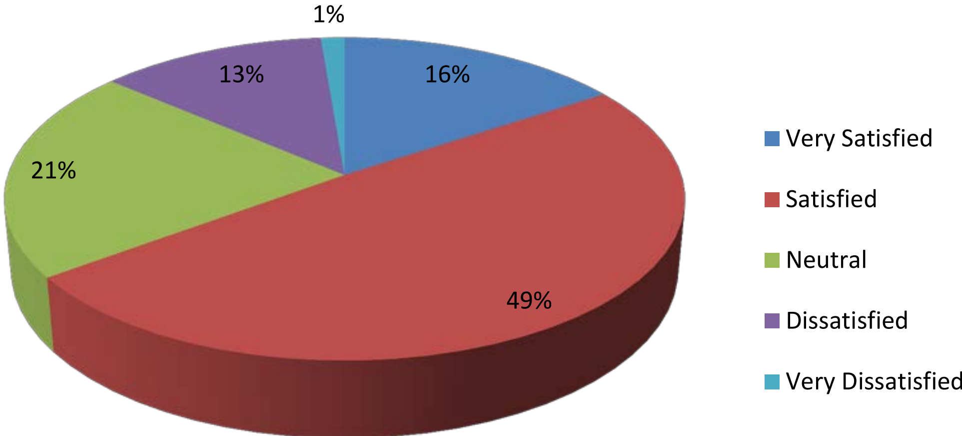
Results – Satisfaction with Health

OVER THE PAST MONTH, how satisfied were you with your health?

(Tribal Health Survey Question 10, see Appendix E)

Percentage by Satisfaction with Individual Health **(n=772)**

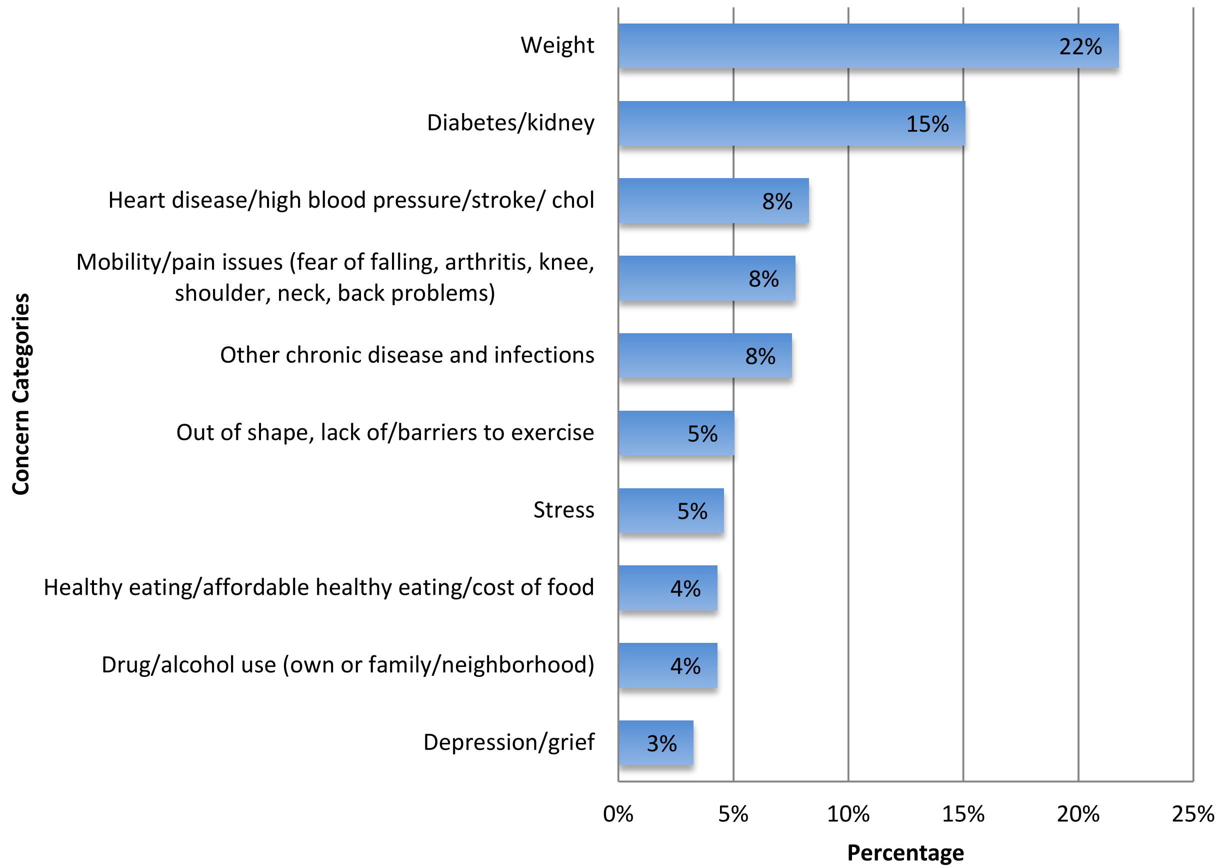


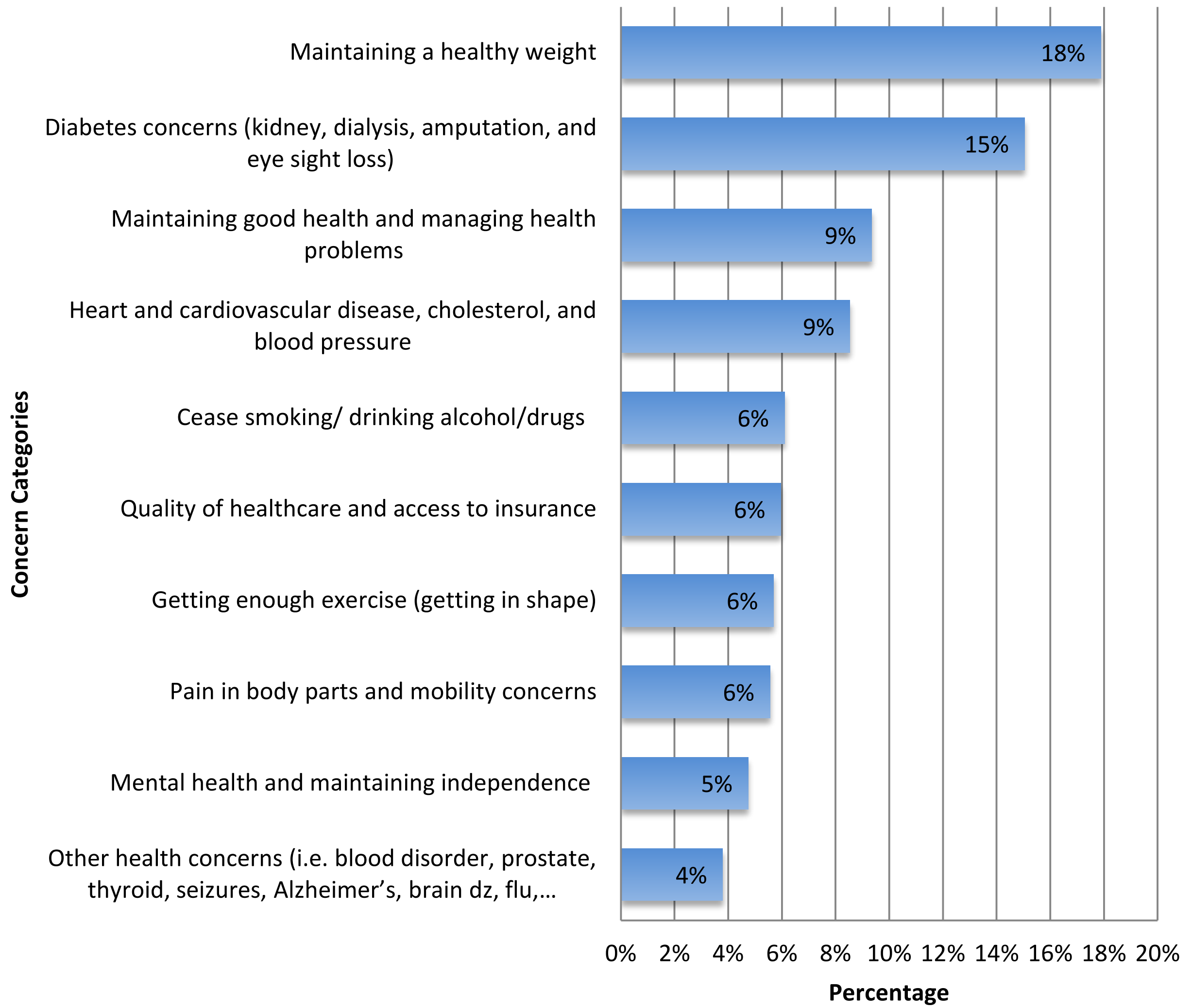
Results – Health Concerns of Self, Family, Community and Tribe

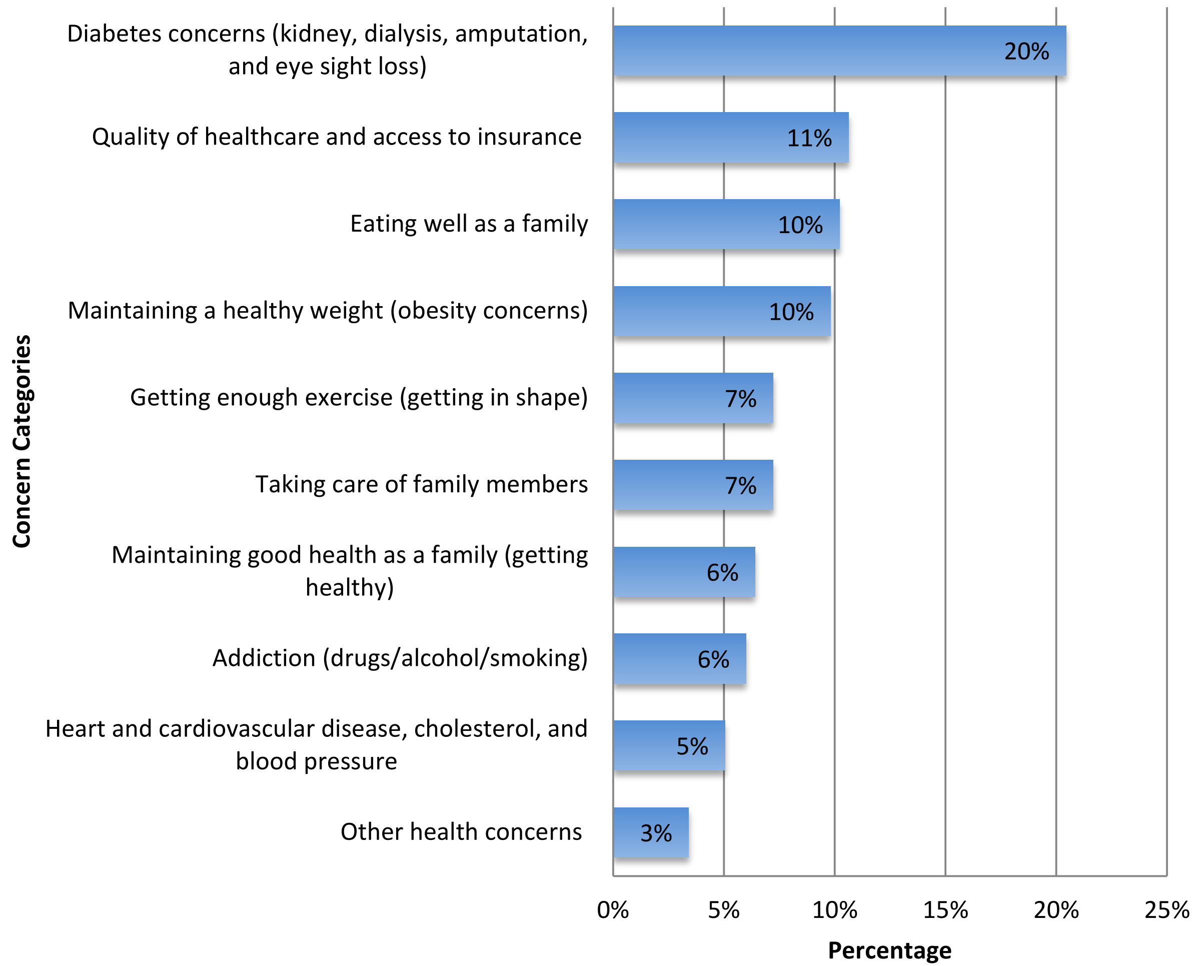
DURING THE PAST YEAR, what have been your BIGGEST concerns related to YOUR OWN health and well-being?
Thinking about your future (the next 5-10 years), what are your BIGGEST concerns related to YOUR OWN health and well-being?
What are your biggest concerns related to the health and well-being OF YOUR FAMILY?
What do you consider the biggest health-related concerns for the EBCI tribal community?
Choose the FIVE THINGS that YOU think most NEGATIVELY affect the health and well-being of the EBCI tribal community.
(Tribal Health Survey Questions 11, 12, 13, 16, 20, see Appendix E)

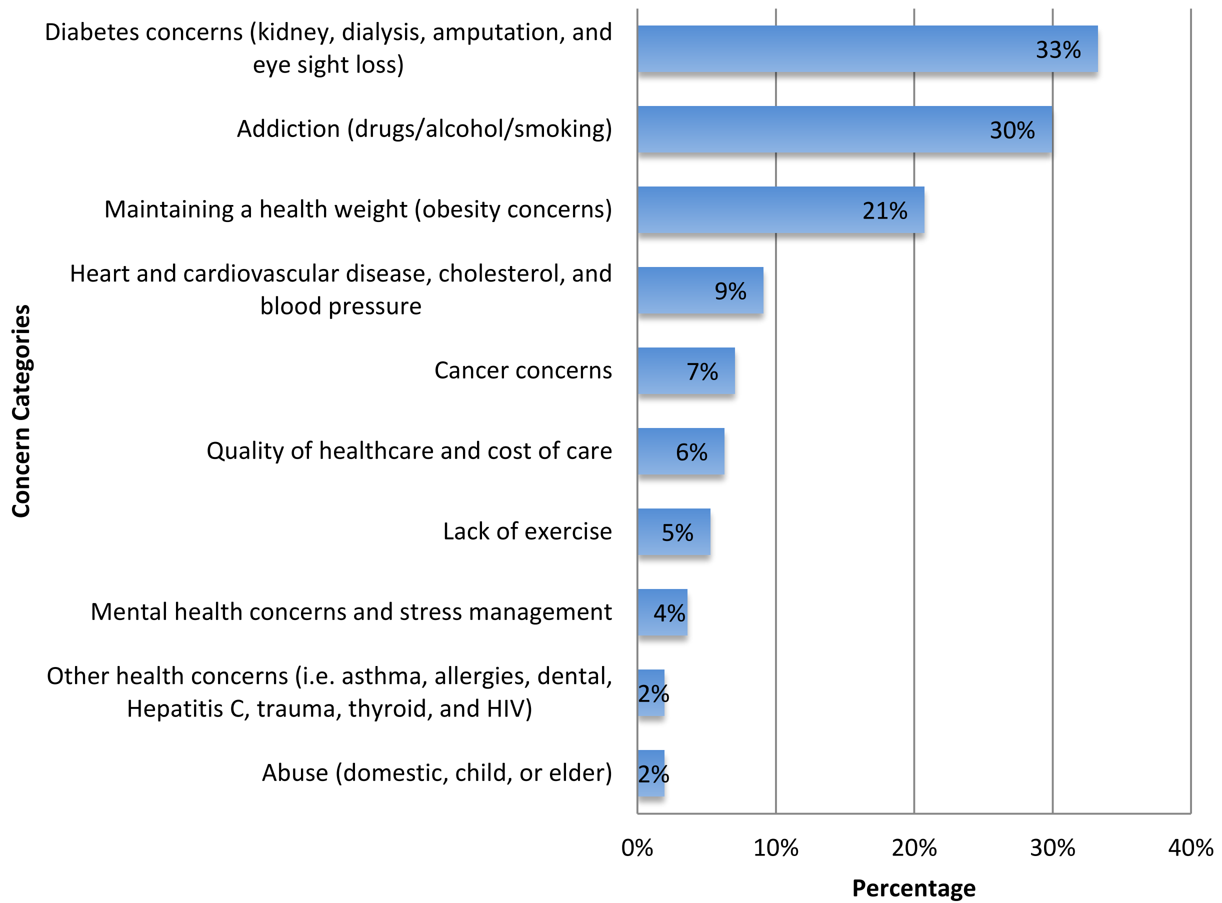
Several questions were asked to glean the health concerns of the survey respondents. Note that concerns for self may be different from concerns for others in the family and concerns for the larger Tribal population. These differing concerns are useful in designing, implementing, and evaluating programs, services and interventions tailored to the individual, family, and for the Tribe.

Respondents' Biggest Concerns Related to OWN Health and Wellbeing in the Past Year, 10 Most Common Responses n=676




Respondents' Biggest Concerns Related to Future Health and Wellbeing, 10 Most Common Responses n=738
Maintaining a healthy weight
18%
Diabetes concerns (kidney, dialysis, amputation, and eye sight loss)
15%
Maintaining good health and managing health problems
9%
Heart and cardiovascular disease, cholesterol, and blood pressure
9%
Cease smoking/ drinking alcohol/drugs
6%
Quality of healthcare and access to insurance
6%
Getting enough exercise (getting in shape)
6%
Pain in body parts and mobility concerns
6%
Mental health and maintaining independence
5%
Other health concerns (i.e. blood disorder, prostate, thyroid, seizures, Alzheimer's, brain dz, flu,...
4%
Concern Categories
0% 2% 4% 6% 8% 10% 12% 14% 16% 18% 20%
Percentage


Respondents' Biggest Concerns Related to Family's Health and Wellbeing, 10 Most Common Responses n=734
Concern Categories
Diabetes concerns (kidney, dialysis, amputation, and eye sight loss)
20%
Quality of healthcare and access to insurance
11%
Eating well as a family
10%
Maintaining a healthy weight (obesity concerns)
10%
Getting enough exercise (getting in shape)
7%
Taking care of family members
7%
Maintaining good health as a family (getting healthy)
6%
Addiction (drugs/alcohol/smoking)
6%
Heart and cardiovascular disease, cholesterol, and blood pressure
5%
Other health concerns
3%
0%
5%
10%
15%
20%
25%
Percentage



**some respondents listed more than one answer which made the number of total responses larger than the number of participants*

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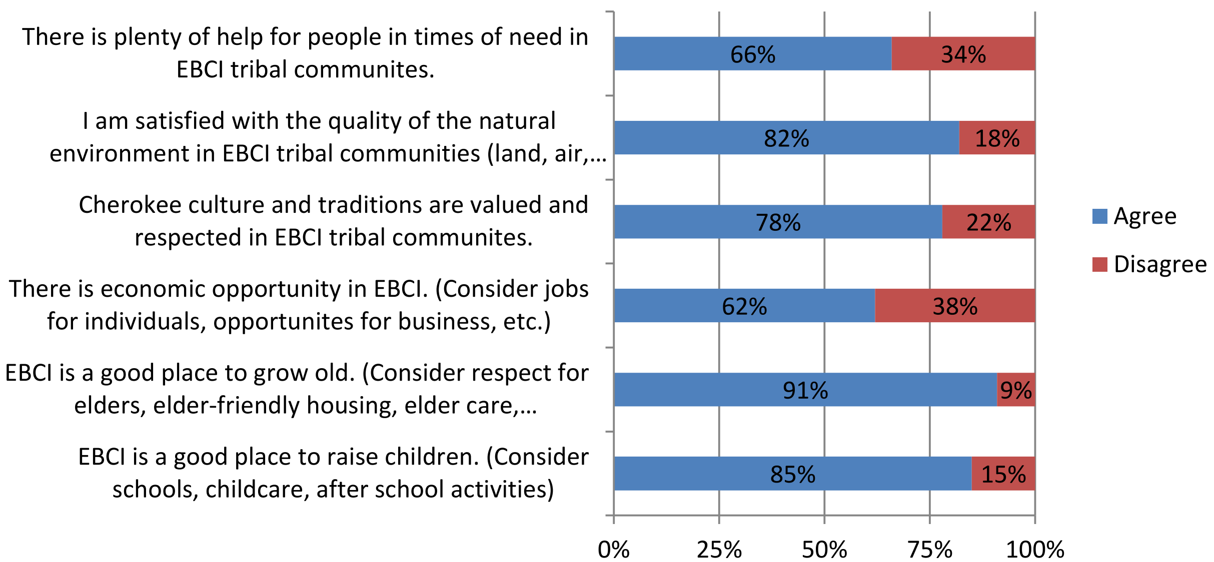
Results – Perceptions on Community Health Indicators

Mark the one box that indicates how much you agree or disagree with the following statements AND describe why you feel that way.

(Tribal Health Survey Questions 19a-e, see Appendix E)



After choosing the level of agreement with each statement, respondents were given the opportunity to elaborate on "WHY?" they answered that way. Responses to "WHY" included both positive and negative comments. The comments did not necessarily reflect the level of agreement (e.g. positive comments with favorable agreement and negative comments with disagreement), so the comments are presented below as a summary of the comments made that were in agreement and those that were in disagreement with the statement.

"There is plenty of help for people in times of need in EBCI Tribal communities."

Comments in Agreement	**Comments in Disagreement**
• There are many resources and programs available to help people o There are many support services (Family Support Services, Analenisgi, Tribal Council Members) available for families • Family, friends, co-workers, and Tribal leaders come together in times of need	• Per cap and two parent homes are disqualified from assistance • Must know the right person to receive help (nepotism is also a problem) • There is a spoiled sense of things, handouts are given out too easily • People don't know what services are being offered • It is easy to get declined from an assistance program • It is hard to find services that you qualify for

"I am satisfied with the quality of the natural environment in EBCI Tribal communities (land, air, water)."

Comments in Agreement	**Comments in Disagreement**
• Clean water and fresh air. Very clean and well- kept land. • Very beautiful land • The Tribe does a good job in preserving land, ensuring the drinking water is safe, and monitoring the quality of air • There are good programs for land preservation, and employees are knowledgeable • Green building products are used (solar panels, natural gas fleet, and LEED school system)	• People need to do a better job of maintaining roads, roadsides, picnic areas, riverways, and preserving mountains • Natural environment is overdeveloped by trying to advance the commercial economy • Allow people to gather wild herbs and plants in the mountains again • There is a lot of littering • Water quality is bad, rivers could be clearer, and air/water should be tested for cancer contributions o There is sewage in the water in Birdtown

"Cherokee culture and traditions are valued and respected in EBCI Tribal communities."

Comments in Agreement	Comments in Disagreement
• There has been a resurgence in culture and traditions o Traditions are coming back because of Kituwah Immersion Academy o More people are realizing the importance of traditions and are becoming more involved Cherokee people do not want to lose their culture, so more programs are geared toward keeping traditions alive o Traditions, history and culture are taught in schools and supported by Tribal government Heritage and culture are very important, and there is pride in being Cherokee o Many in the community respect culture (by utilizing the language, dancing, singing, and food) o Families keep traditions alive o Culture and traditions are strong in Snowbird	• Younger generations do not value culture as much as older (eg. get high at functions), and they are not respecting elders • Schools are not stressing the importance of culture (there needs to be more education to the younger generation) • There needs to be ways to revive culture and traditions • Culture is being extorted for money (focus has shifted to casinos and waterparks to make money) • The Tribe is more concerned with making money • A lot of people are not attending cultural events • It's a thing of the past • Not many people know about traditions or use them (few people know the language) • Culture is valued and respected only in some communities • Culture valued by some, not all • Some use being Cherokee conveniently

"There is economic opportunity in EBCI (consider jobs for individuals, opportunities for businesses, etc.)"

Comments in Agreement	Comments in Disagreement
• Many available jobs (casino and Tribe) • Tribal preference helps with hiring • Opportunities are plentiful compared to rest of WNC region • Huge emphasis on economic development and growth • Tribe provides training and education for enrolled members (Job Corps)	• Politics and familial preference involved in hiring process • Lack of willingness to work and many living off the system • Difficult to start businesses and turn profit because of red tape • Little variety and opportunity outside of food service, craft shops, casino • Troubled past/criminal record then no jobs • Many jobs given to people who aren't local (Whites, foreigners)

"EBCI is a good place to grow old (consider respect for elders, elder-friendly housing, elder care, transportation options, social and nutritional support)."

Comments in Agreement	Comments in Disagreement

• Elders are respected and treated well
• EBCI takes care of their own
• There are a lot of (very good) services to help elders: housing, healthcare, transportation, meals and community events (Tsali Manor, Transit, Ginger Lynn, etc.)
• Options for elderly have gotten better
	• Elders are not respected/ honored enough.
	  o Many young people in particular do not have enough respect for elders.
	  o Elders are not treated well and are disrespected by the Council and Chief
	  o Elder abuse is a big concern
	  o Elders are forgotten about
	• Services for elderly are not as available in some areas (e.g. Snowbird)
	• Tsali Care needs improvement
	• A lot of elders have to take care of grandchildren because parents are not able (usually due to substance abuse)
	• Elders need heating assistance
	• Elders need more programs and classes

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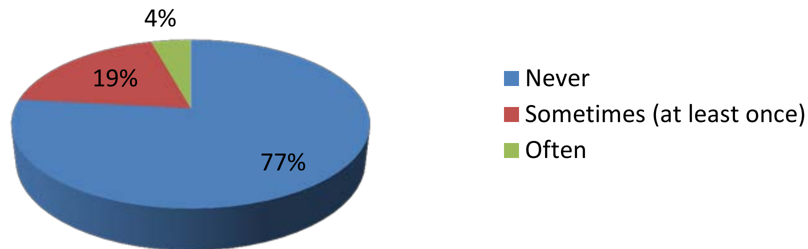
Results – Food Security

During the past 12 months, how often did you eat less than you felt you should because there was not enough money for food?

(Tribal Health Survey Questions 15, see Appendix E)

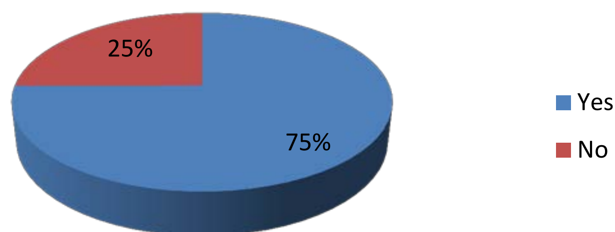
Percentage of Respondents Eating Less Due to Lack of Money, past 12 months (n=767)



Results – Household Preparedness for Emergencies

(Tribal Health Survey Question 21, see Appendix B)

Percentage of Respondents Who Indicate Readiness* for 3-Day Emergency (n= 753)



** having enough food, water, and supplies in the home to last for 3 days without outside help*

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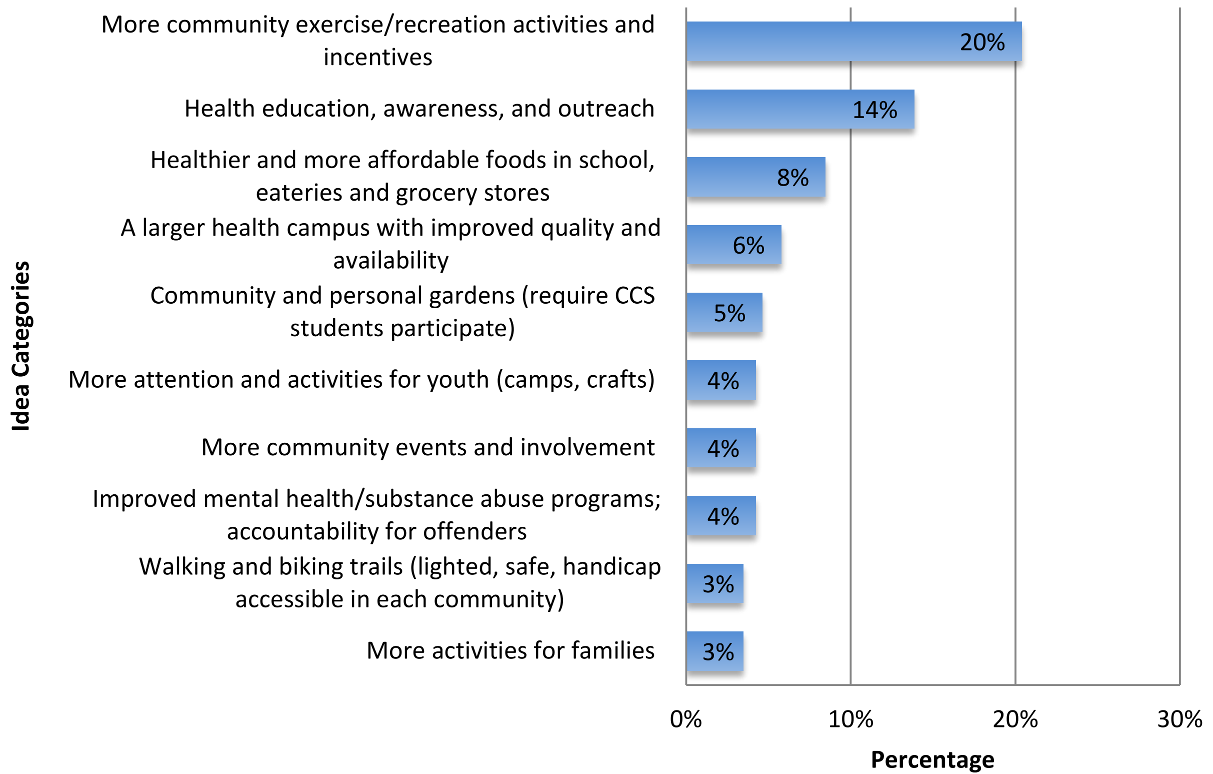
Results – Respondents' Ideas for Improving Health

What idea(s) do you have to improve the health of the EBCI tribal community?
(Tribal Health Survey Question17a, 17b, see Appendix E)



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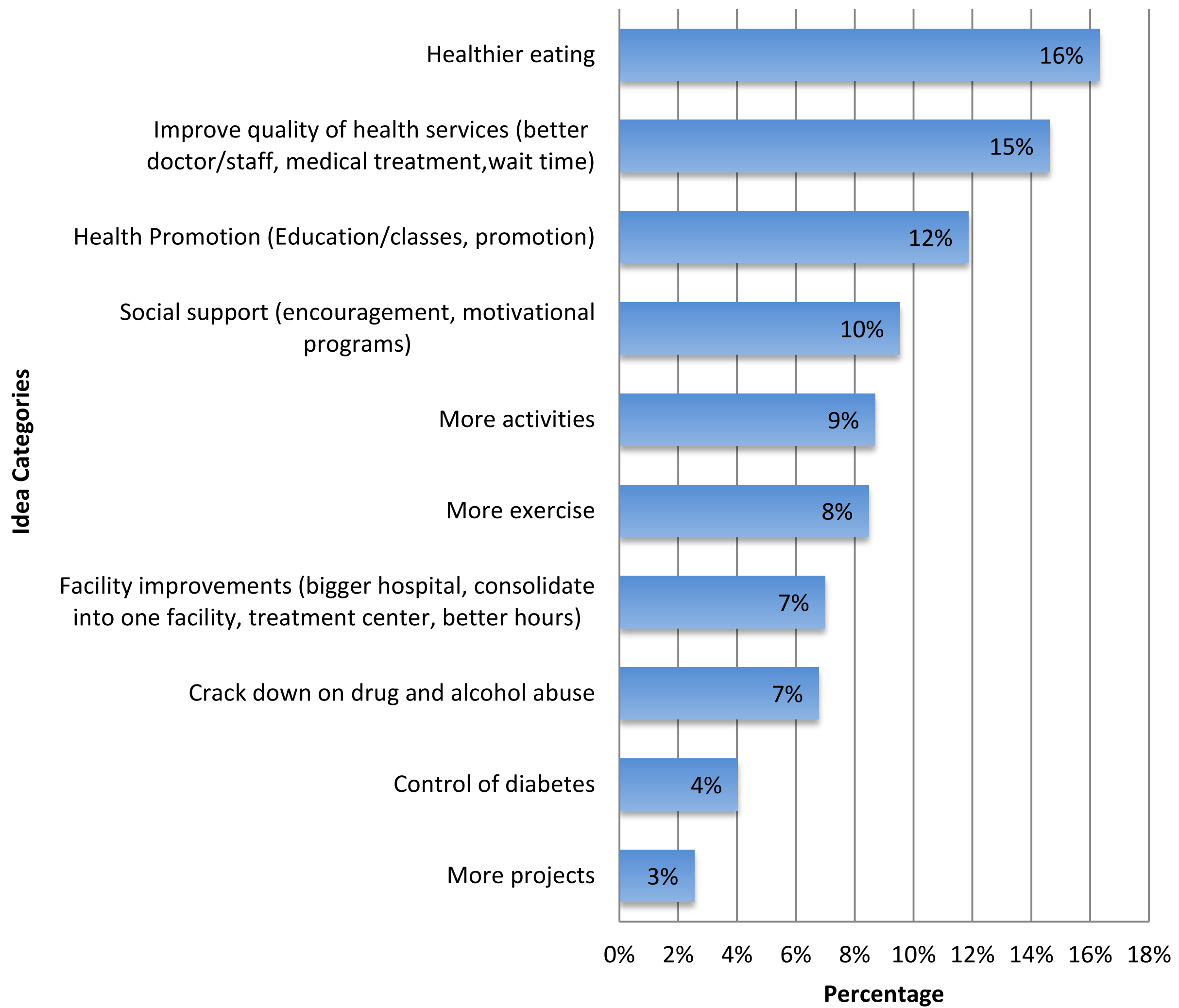
Ideas to Improve the Health of the TRIBE, 10 Most Common Responses
n=472
Healthier eating
16%
Improve quality of health services (better doctor/staff, medical treatment,wait time)
15%
Health Promotion (Education/classes, promotion)
12%
Social support (encouragement, motivational programs)
10%
More activities
9%
More exercise
8%
Facility improvements (bigger hospital, consolidate into one facility, treatment center, better hours)
7%
Crack down on drug and alcohol abuse
7%
Control of diabetes
4%
More projects
3%
Idea Categories
0% 2% 4% 6% 8% 10% 12% 14% 16% 18%
Percentage

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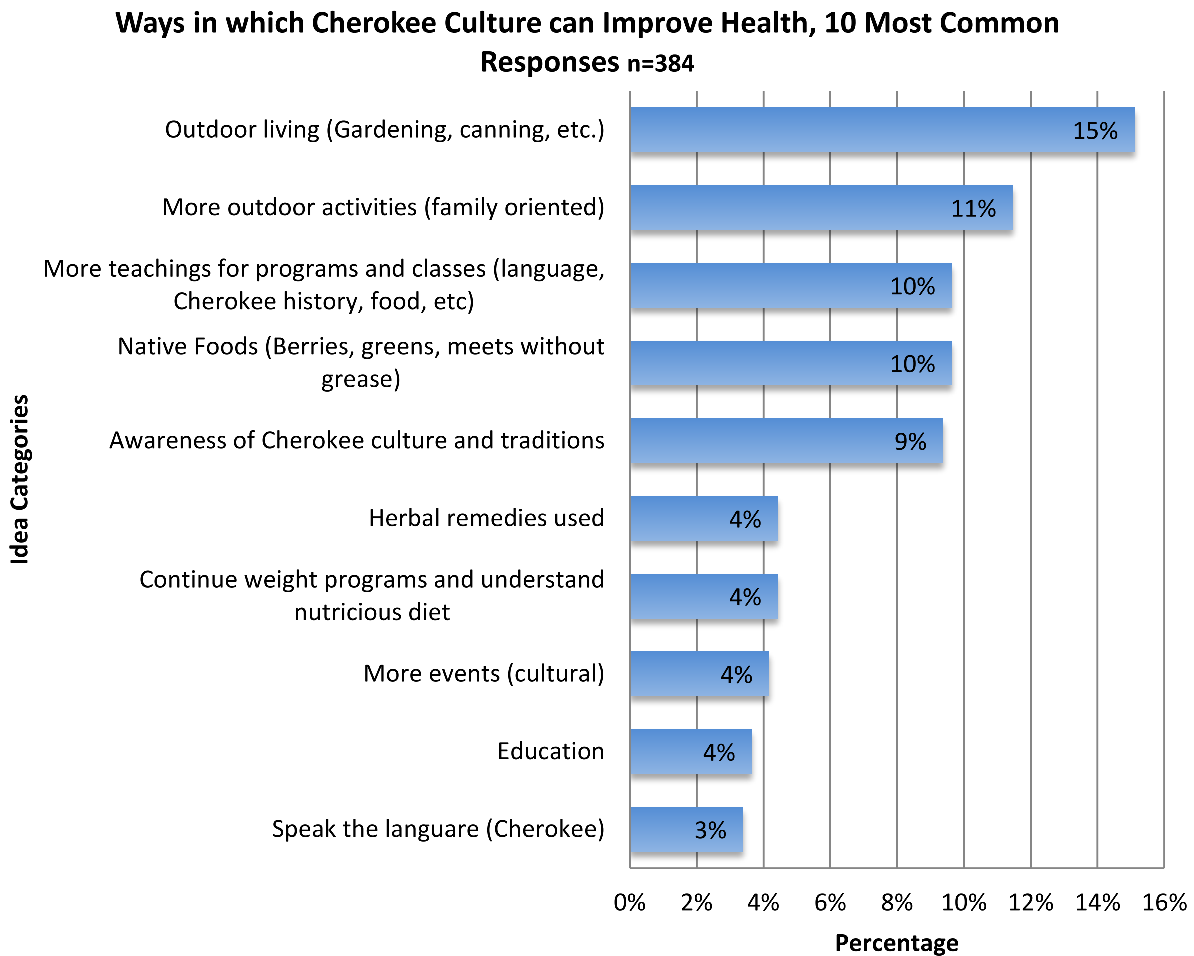
Results – Respondents' Ideas for Cherokee Culture Improving Health

In what ways can Cherokee culture help improve the health of the tribal community?

(Tribal Health Survey Question 18, see Appendix E)



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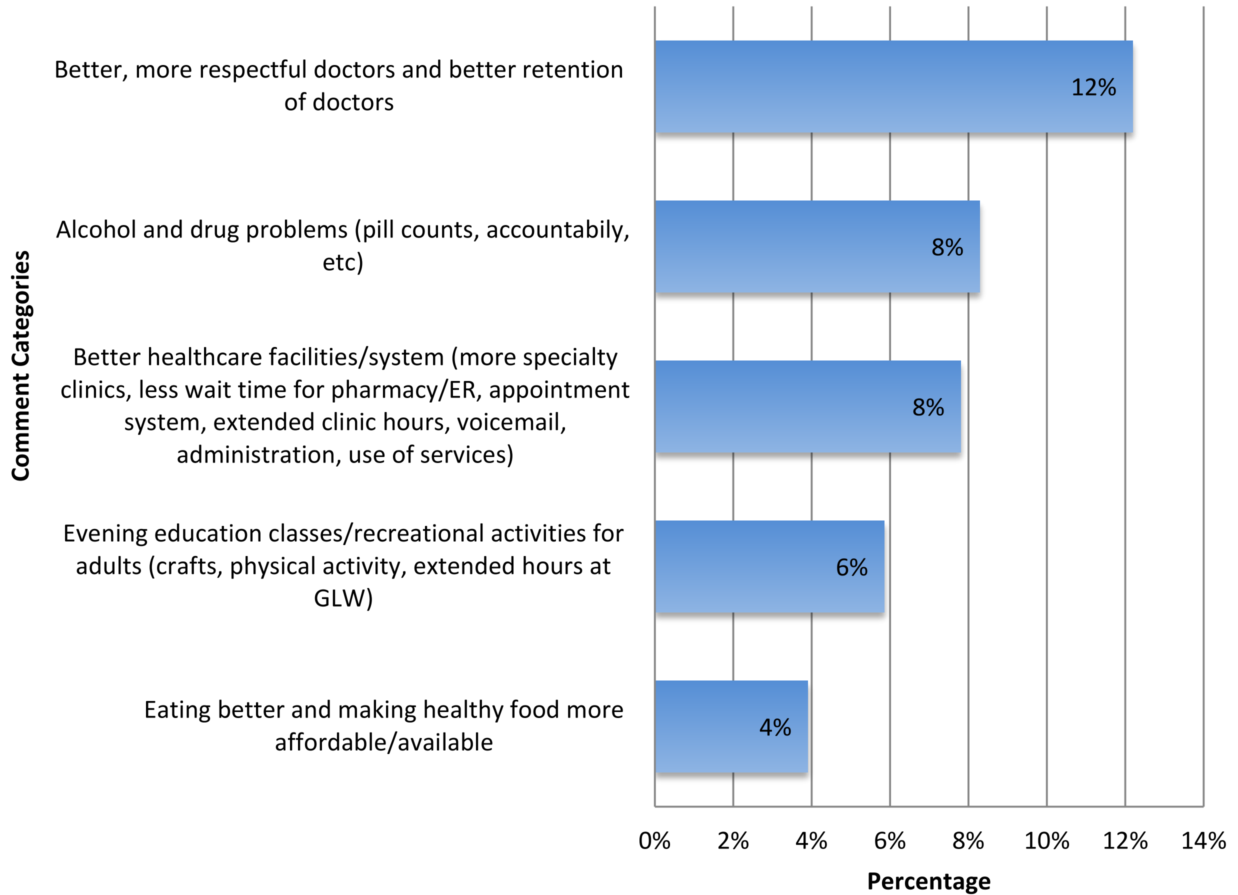
Results – Additional Comments by Respondents

Survey participants were offered the opportunity to make additional comments (*Tribal Health Survey, Question 22. See Appendix E)*. Responses are outlined below.



CHAPTER 8 – KEY INFORMANT INTERVIEWS

Key Informant Interviews: Introduction

In addition to the Tribal Health Survey, HMD used key informant interviews as a method of primary data collection. The purpose of the key informant interviews was to obtain the perspective of the community leaders who are already involved in health services or community health. This perspective is important as these individuals have specialized knowledge from working with health-related issues on a daily basis and many have been in their positions for years. Several are also involved in Tribal and county decision-making processes and were able to provide an administrative and historical context for current health issues. The Tribal Health Assessment Team chose 15 interviewees which included EBCI elected officials, EBCI Health Board members, a Cherokee Indian Hospital Authority Administrator, HMD Administrators, County Health Directors, a Cherokee Central School Board member, Tribal Government Administrators, a medical consultant to HMD and a community elder. The key informants represented a wide range of organizations and their positions could be described as upper level within their organizations.

Forty-five minute interviews were conducted with four goals in mind:

- To understand the leaders' vision for a healthy Tribe;
- To find out what health-related concerns community members bring to these leaders;
- To obtain their perception of the health status of Tribal members; and
- To understand their perception of the capacity of the current services to improve health status.

All the interviewees were asked the same questions (See Appendix F for interview script). Interviews were recorded and later transcribed. Below are the summarized results grouped by these goals.

Vision for a Healthy Tribe

When asked "What is your vision for a healthy Tribe?" the informants generally referenced a holistic view of health, citing physical, mental, and spiritual dimensions. Several key informants pinpointed specific health disparities that should be lessened such as those related to diabetes, substance abuse, chronic stress, and child abuse. They stressed the importance of primary prevention, "starting young" and being "proactive". Informants also envisioned Tribal members having healthy lifestyles and being empowered, motivated, and happy.

Key informants cited the role of their organizations as integral to providing or directing resources, policies, and funding toward health issues and needs. They described their organizations as "partners," "facilitators" and part of a "support system" to health improvement.

Perception of Health Status of Tribal Members

When asked about the overall health of the people they represent, some viewed health as "poor" or "fair". Others who did not make a specific classification cited that health is "improving".

Two questions were asked to determine if health differences exist within the Tribal population, as this information could be difficult to discern from existing quantitative data. The majority of the informants stated "no," that specific health issues are not more pronounced in one part of the boundary than in another. However, one informant noted that "we don't really measure anything that way." One commented that trauma and poverty are more concentrated in some parts of the Boundary, but did not specify a given location. This informant commented that this is a socioeconomic discrepancy related to income variations and gaming profits. When asked to describe any "underserved" populations, two broad groups of people emerged: one group is underserved due to lack of available services (cosmetic adult dental, mental health, social services, alternate health insurance, behavioral health, substance abuse, and homebound); the second group is underserved because they are unable to access available services due to being indigent, disenfranchised, having little education or low literacy skills. The latter group was described as those without familial and social support to help them access service or advocate for them; those unable to speak for themselves, which includes some elders, some children of substance abusing parents, and some victims who, due to silence and secrecy of abuse, do not access services. Cultural factors may come into play related to not accessing services because, as one key informant described "It's not native to ask for something, no matter how desperately you need it. People have a hard time asking or following though." Attitudes of family members may also factor in an individual's choice to seek health services. For example, one key informant describes that there may be a risk of losing family loyalty if accessing the available services is not accepted and supported by family members.

When asked about the top three priority areas for health, informants' answers could be grouped into 3 main categories: 1) Priorities related to diseases/health conditions, 2) Priorities related to specific risk factors, and 3) Priorities related to health services.

1) Priorities related to diseases/health conditions: (Note: These responses were similar to the informants' comments on visions for a healthy Tribe)

- Diabetes
- Substance Abuse
- Chronic Stress
- Child Abuse
- Mental Health

2) Priorities related to risk factors:

- Nutritional status
- Obesity
- Chronic stress and trauma
- Environmental endocrine disrupting chemicals
- Lifestyle changes
- Early life intervention
- Education (especially in relation to lifestyle change and health behaviors)

3) Priorities related to health services:

- Establishing an on-site health clinic at Cherokee Central Schools
- Making more services available in Cherokee rather than referring patients out to other hospitals and clinics for certain procedures
- Improving health facilities
- Increasing and building a more robust behavioral health system, including reducing stigma related to accessing behavioral health services

When asked about the biggest negative impact on the quality of life for Tribal members, the Key Informants cited diverse factors. Five informants referred to substance abuse including alcohol, illegal drugs and prescription drug abuse. "It's killing us" and "Alcohol and drugs are a symptom of people accepting things the way they are." Spiritual poverty was cited by one informant: "Spiritual poverty leaves us wanting for things that don't necessarily contribute to our happiness." Three informants noted economic factors that contribute to poor quality of life, namely high unemployment rates (Swain County), lack of job facilities, and the per capita distribution to 18 year olds[144] which affects their choices for education. Two informants cited environmental factors of endocrine disrupting chemicals and the visual impact of seeing trash on roads and communities. "Dysfunctional families", teens relying on parents to raise their children, and children being affected by parents' substance use, were also factors cited as negatively affecting quality of life for Cherokee people.

Community Concerns about Health and Health Services

Two questions were asked of informants to help understand Tribal members' health concerns and what was most frustrating about the health system to Tribal families (See Appendix F). Four themes related to service emerged:

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[144] Per Capita distribution refers to a semi-annual monetary disbursement of casino profits to enrolled members over the age of 18. Upon turning 18, members receive a sizeable lump sum distribution encompassing their disbursements from the previous 18 years.

1) Informants most often cited factors related to health service access, namely wait times for appointments and referrals, scheduling difficulties, using the hospital phone system, and timely service.

2) Informants named lack of availability of services as a complaint and source of frustration for people, citing examples such as expenses related to traveling (to Duke University for specialty services for example), lack of mental health inpatient services, the hospital referral process[145]and the uncertainty of the Affordable Care Act.

3) Informants cited that people are concerned about the quality of service, citing misdiagnosis and turnover of providers as indicators of poor quality. Informants did stress that people have a perception of poor quality and did not commit to judging the quality themselves.

4) Informants spoke to the patient-provider relationship as a source of concern, expressing that they have heard people complaining about providers "not listening" and how providers' definition of family was inconsistent with Cherokee definition of family, contributing to perceptions of poor quality of service.

Perception of Tribal Capacity to Improve Health

Six questions were asked of the key informants to glean their perspective on community capacity to improve health (See Appendix F). Informants were asked about strengths and challenges meeting addressing the priorities they previously identified. Challenges included identifying needs, problem-solving, "finding the right tools" and funding. Informants commented that funding for health is a challenge because of competing political priorities and issues in recruiting and retaining quality staffing. Informants related these challenges to perceptions about individual responsibility such as people need to "gain self-efficacy to be able to change," and "people don't think about what they are doing and how it affects anyone else," referring to the cost of individual health choices to the larger society. Referring to the importance of community involvement, informants noted that "people need to step up" and get involved. Others cited big picture challenges such as social determinants and community-wide denial about the prevalence of behavioral disorders and abuse and neglect. Another informant stated that denial, i.e. the things "we're not talking about" is a challenge to meeting health needs.

The key informants also identified a number of strengths. Cherokee people were identified as a strength and described as being creative, strong, compassionate, and able to survive. The leadership and support of the Principal Chief, Vice Chief, Deputy Health Officer and Cherokee Indian Hospital CEO were all identified as a strength. Three informants recognized that EBCI's

[145] The Cherokee Indian Hospital's Managed Care Committee makes decisions regarding patient's eligibility of Contract Health Services, i.e. medical need and funding.

governing structure allows for "control over the community" to implement laws and ordinances that other places cannot or allows EBCI to go above federal standards (e.g. food programs). Informants view Cherokee as being resource rich, with many existing facilities, programs and funding. "We have the tools, we just need to use them the right way."

When asked about what type of change model works for EBCI (See Appendix F), four of the informants mentioned grassroots movements and "people coming together." According to one key informant, "Because EBCI is small but has efficient [political] representation....when a coalition demands change, it can happen very rapidly." Three informants noted the power of social media as a change agent. "Social media is exploding all over." One informant cited providing incentives is a change agent and another cited the importance of interpersonal relationships in change, that is, people and families influencing each other through their normal communications.

Informants were asked what changes to improve health they have witnessed or been a part of during their tenure. Below is a list as cited by the informants. Note that the average tenure of the key informants is 7 years. The groupings were made by the author.

Changes That Have Improved Health (as cited by Key Informants)

Health system:

- More quality focused
- More customer oriented
- Diagnostic Tools and Technology
- Tsali Care (quality of care improvements and addition of the Memory Care Unit)

Programs:

- Healthy Cherokee Weight Loss Challenge
- Mandatory Employee Health Program
- Cherokee Runners
- Chief's Seed Kit distribution
- WIC

Policies:

- Tobacco policies
- Incentives to get fit (administrative leave)
- School Wellness Policy

Environment:

- Sanitation improvements
- More walking trails
- Recreational Centers in communities

Other:

- Flyers and emails about health programs (constant reminders)
- Successful evolution of self-determination (Tribe taking over state and federally funded programs)
- Gaming (provided funding for infrastructure and health initiatives)
- Change in attitude: It's OK to live a healthy lifestyle. It's more acceptable or more trendy to adopt a healthy lifestyle

CHAPTER 9 - HEALTHCARE & HEALTH PROMOTION RESOURCES

Health Resources

Purpose:

The purpose of a Health Resource Inventory (HRI) is to research and list the health services offered in a specific community in order to determine how well the health needs of the community are being met. For the Cherokee community, there are many health related resources available. The majority of these resources are Tribal, but due to the unique land boundaries of the EBCI land trust and the diverse residency of enrolled members, EBCI members often also utilize services that are managed by the Counties and the State. In addition, though enrolled members most often use Tribal health services because they are free, many specialty services are not offered within the Cherokee Health System and members must seek those services outside of Tribal health entities. Thus, when creating a HRI for the EBCI community, Tribal, County, and State entities were all considered and researched. The chief objective of this HRI is to determine health service assets and gaps. With the next steps in the THA process, this information will be compared to that from primary and secondary data sources to establish priorities and strategies in order to address large gaps in care.

Data Collection:

For the HRI, team members started compiling lists of medical services provided on the Qualla Boundary by Tribal entities, assuming these would be most readily utilized because the services were at no cost to enrolled members. If certain medical services were not available on the Boundary, team members then tried to identify entities and providers in the surrounding counties of the CHSDA. After compiling a list of basic medical services, the team then expanded to identifying public health services, allied health entities, organizations that support health services, and other social entities that affect health. The final report contained sections on Health, Mental Health, Prevention, Parks and Recreation, Social, Environmental, Educational, Transportation, and Cultural resources. The team made every effort to obtain the most current data available on the location, hours, services provided, and population served for each resource listed. This inventory will also be distributed and made available for community members to access as a comprehensive community resource guide.

See Appendix G for the HRI, a summary list of the healthcare and health promotion resources and facilities available to respond to the health needs of the EBCI community.

CHAPTER 10 - NEXT STEPS

Now that the first EBCI specific community health assessment, the Tribal Health Assessment, is complete and has been approved by the Tribal Executive, the next step is to share the information. There is a very large amount of data that needs to be analyzed and interpreted. Each person, program, entity, or partner will find data that speaks to him or her, and may analyze and interpret it in his or her own way.

To help bring this data together and make sense of it in order to channel it toward improving the health of the EBCI community, the THA Team commits to taking the following steps:

- **Share the information with the community.** We will develop ways to bring the information to the whole community in print, in person, as a whole and in summary. We will respond to requests for information and explanation to the highest degree possible.

- **Begin the Tribal Health Improvement process.** We will convene the Tribal Health Improvement Process Collaborative (THIP-C) again, and initiate the following steps:
    - Assure that we have the right people at the table
    - Identify the major health issues of the community identified in the THA
    - Agree on the top issues to address in the THIP process
    - Examine the issues compared to our existing resources
    - Conduct a gap analysis
    - Set priorities for the top gaps/ challenges/ issues
    - Brainstorm strategies to address the top gaps/ challenges/ issues
    - Develop a plan to implement the strategies
    - Assure implementation of the strategies
    - Gather data on the effects of implementation
    - Evaluate successes and challenges
    - Begin the cycle again!

This can appear to be a large and complicated process, but with the wealth of resources in EBCI, the dedicated and resourceful people, strong partnerships, and shared goals, we can do it. This process will take many months, even years, but if we approach it and walk the path together in support and collaboration, we can achieve our vision:

A healthy Cherokee community where all people can enjoy health and wellness in a clean, safe environment, be protected from public health threats, and access high-quality health care

APPENDICES

Appendix A – IHS Guidelines for Services

Appendix B – Reference List of Major Documents Cited

Appendix C - Data Collection Methods & Limitations

Appendix D – Tribal Affiliation of Persons Seen at Cherokee Indian Hospital Authority

Appendix E – Tribal Health Survey

Appendix F – Key Informant Interview Guide

Appendix G – Health Resource Inventory

Appendix H – Acronyms

Appendix A – IHS Guidelines for Services

Source: http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title42/42cfr136_main_02.tpl

Authority: 25 U.S.C. 13; sec. 3, 68 Stat. 674 (42 U.S.C., 2001, 2003); Sec. 1, 42 Stat. 208 (25 U.S.C. 13); 42 U.S.C. 2001, unless otherwise noted.

Subpart A—Purpose and Definitions

Source: 64 FR 58319, Oct. 28, 1999, unless otherwise noted. Redesignated at 67 FR 35342, May 17, 2002

§ 136.1 Definitions.

When used in this part:

Bureau of Indian Affairs (BIA) means the Bureau of Indian Affairs, Department of the Interior.

Indian includes Indians in the Continental United States, and Indians, Aleuts and Eskimos in Alaska.

Indian health program means the health services program for Indians administered by the Indian Health Service within the Department of Health and Human Services.

Jurisdiction has the same geographical meaning as in Bureau of Indian Affairs usage.

Service means the Indian Health Service.

§ 136.2 Purpose of the regulations.

The regulations in this part establish general principles and program requirements for carrying out the Indian health programs.

§ 136.3 Administrative instructions.

The service periodically issues administrative instructions to its officers and employees, which are primarily found in the *Indian Health Service Manual* and the Area Office and program office supplements. These instructions are operating procedures to assist officers and employees in carrying out their responsibilities, and are not regulations establishing program requirements which are binding upon members of the general public.

Subpart B—What Services Are Available and Who Is Eligible To Receive Care?

Source: 64 FR 58319, Oct. 28, 1999, unless otherwise noted. Redesignated at 67 FR 35342, May 17, 2002.

§ 136.11 Services available.

(a) *Type of services that may be available.* Services for the Indian community served by the local facilities and program may include hospital and medical care, dental care, public health

nursing and preventive care (including immunizations), and health examination of special groups such as school children.

(b) *Where services are available.* Available services will be provided at hospitals and clinics of the Service, and at contract facilities (including tribal facilities under contract with the Service).

(c) *Determination of what services are available.* The Service does not provide the same health services in each area served. The services provided to any particular Indian community will depend upon the facilities and services available from sources other than the Service and the financial and personnel resources made available to the Service.

§ 136.12 Persons to whom services will be provided.

(a) *In general.* Services will be made available, as medically indicated, to persons of Indian descent belonging to the Indian community served by the local facilities and program. Services will also be made available, as medically indicated, to a non-Indian woman pregnant with an eligible Indian's child but only during the period of her pregnancy through postpartum (generally about 6 weeks after delivery). In cases where the woman is not married to the eligible Indian under applicable state or tribal law, paternity must be acknowledged in writing by the Indian or determined by order of a court of competent jurisdiction. The Service will also provide medically indicated services to non-Indian members of an eligible Indian's household if the medical officer in charge determines that this is necessary to control acute infectious disease or a public health hazard.

(2) Generally, an individual may be regarded as within the scope of the Indian health and medical service program if he/she is regarded as an Indian by the community in which he/she lives as evidenced by such factors as tribal membership, enrollment, residence on tax-exempt land, ownership of restricted property, active participation in tribal affairs, or other relevant factors in keeping with general Bureau of Indian Affairs practices in the jurisdiction.

(b) *Doubtful cases.* (1) In case of doubt as to whether an individual applying for care is within the scope of the program, the medical officer in charge shall obtain from the appropriate BIA officials in the jurisdiction information that is pertinent to his/her determination of the individual's continuing relationship to the Indian population group served by the local program.

(2) If the applicant's condition is such that immediate care and treatment are necessary, services shall be provided pending identification as an Indian beneficiary.

(c) *Priorities when funds, facilities, or personnel are insufficient to provide the indicated volume of services.* Priorities for care and treatment, as among individuals who are within the scope of the program, will be determined on the basis of relative medical need and access to other arrangements for obtaining the necessary care.

§ 136.13 [Reserved]

§ 136.14 Care and treatment of ineligible individuals.

(a) In case of an emergency, as an act of humanity, individuals not eligible under §136.12 may be provided temporary care and treatment in Service facilities.

(b) Charging ineligible individuals. Where the Service Unit Director determines that an ineligible individual is able to defray the cost of care and treatment, the individual shall be charged at rates approved by the Assistant Secretary for Health and Surgeon General published in the Federal Register. Reimbursement from third-party payors may be arranged by the patient or by the Service on behalf of the patient.

[64 FR 58319, Oct. 28, 1999. Redesignated and amended at 67 FR 35342, May 17, 2002]

Subpart C—Contract Health Services

Source: 64 FR 58320, Oct. 28, 1999, unless otherwise noted. Redesignated at 67 FR 35342, May 17, 2002.

§ 136.21 Definitions.

(a) *Alternate resources* is defined in §136.61 of subpart G of this part.

(b) *Appropriate ordering official* means, unless otherwise specified by contract with the health care facility or provider, the ordering official for the contract health service delivery area in which the individual requesting contract health services or on whose behalf the services are requested, resides.

(c) *Area Director* means the Director of an Indian Health Service Area designated for purposes of administration of Indian Health Service programs.

(d) *Contract health service delivery area means* the geographic area within which contract health services will be made available by the IHS to members of an identified Indian community who reside in the area, subject to the provisions of this subpart.

(e) *Contract health services* means health services provided at the expense of the Indian Health Service from public or private medical or hospital facilities other than those of the Service.

(f) *Emergency* means any medical condition for which immediate medical attention is necessary to prevent the death or serious impairment of the health of an individual.

(g) *Indian tribe* means any Indian tribe, band, nation, group, Pueblo, or community, including any Alaska Native village or Native group, which is federally recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

(h) *Program Director* means the Director of an Indian Health Service “program area” designated for the purposes of administration of Indian Health Service programs.

(i) *Reservation* means any federally recognized Indian tribe's reservation. Pueblo, or colony, including former reservations in Oklahoma, Alaska Native regions established pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601 *et seq.*), and Indian allotments.

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(j) *Secretary* means the Secretary of Health and Human Services to whom the authority involved has been delegated.

(k) *Service* means the Indian Health Service.

(l) *Service Unit Director* means the Director of an Indian Health Service "Service unit area" designated for purposes of administration of Indian Health Service programs.

[64 FR 58320, Oct. 28, 1999. Redesignated and amended at 67 FR 35342, May 17, 2002]

§ 136.22 Establishment of contract health service delivery areas.

(a) In accordance with the congressional intention that funds appropriated for the general support of the health program of the Indian Health Service be used to provide health services for Indians who live on or near Indian reservations, contract health service delivery areas are established as follows:

(1) The State of Alaska;

(2) The State of Nevada;

(3) the State of Oklahoma;

(4) Chippewa, Mackinac, Luce, Alger, Schoolcraft, Delta, and Marquette Counties in the State of Michigan;

(5) Clark, Eau Claire, Jackson, La Crosse, Monroe, Vernon, Crawford, Shawano, Marathon, Wood, Juneau, Adams, Columbia, and Sauk Counties in the State of Wisconsin and Houston County in the State of Minnesota;

(6) With respect to all other reservations within the funded scope of the Indian health program, the contract health services delivery area shall consist of a county which includes all or part of a reservation, and any county or counties which have a common boundary with the reservation.

(b) The Secretary may from time to time, redesignate areas or communities within the United States as appropriate for inclusion or exclusion from a contract health service delivery area after consultation with the tribal governing body or bodies on those reservations included within the contract health service delivery area. The Secretary will take the following criteria into consideration:

(1) The number of Indians residing in the area proposed to be so included or excluded;

(2) Whether the tribal governing body has determined that Indians residing in the area near the reservation are socially and economically affiliated with the tribe;

(3) The geographic proximity to the reservation of the area whose inclusion or exclusion is being considered; and

(4) The level of funding which would be available for the provision of contract health services.

(c) Any redesignation under paragraph (b) of this section shall be made in accordance with the procedures of the Administrative Procedure Act (5 U.S.C. 553).

§ 136.23 Persons to whom contract health services will be provided.

(a) *In general.* To the extent that resources permit, and subject to the provisions of this subpart, contract health services will be made available as medically indicated, when necessary health services by an Indian Health Service facility are not reasonably accessible or available, to persons described in and in accordance with §136.12 of this part if those persons:

(1) Reside within the United States and on a reservation located within a contract health service delivery area; or

(2) Do not reside on a reservation but reside within a contract health service delivery area and:

(i) Are members of the tribe or tribes located on that reservation or of the tribe or tribes for which the reservation was established; or

(ii) Maintain close economic and social ties with that tribe or tribes.

(b) *Students and transients.* Subject to the provisions of this subpart, contract health services will be made available to students and transients who would be eligible for contract health services at the place of their permanent residence within a contract health service delivery area, but are temporarily absent from their residence as follows:

(1) Student—during their full-time attendance at programs of vocational, technical, or academic education, including normal school breaks (such as vacations, semester or other scheduled breaks occurring during their attendance) and for a period not to exceed 180 days after the completion of the course of study.

(2) Transients (persons who are in travel or are temporarily employed, such as seasonal or migratory workers) during their absence.

(c) *Other persons outside the contract health service delivery area.* Persons who leave the contract health service delivery area in which they are eligible for contract health service and are neither students nor transients will be eligible for contract health service for a period not to exceed 180 days from such departure.

(d) *Foster children.* Indian children who are placed in foster care outside a contract health service delivery area by order of a court of competent jurisdiction and who were eligible for contract health services at the time of the court order shall continue to be eligible for contract health services while in foster care.

(e) *Priorities for contract health services.* When funds are insufficient to provide the volume of contract health services indicated as needed by the population residing in a contract health

service delivery area, priorities for service shall be determined on the basis of relative medical need.

(f) *Alternate resources.* The term “alternate resources” is defined in §136.61(c) of Subpart G of this part.

[64 FR 58319, Oct. 28, 1999. Redesignated and amended at 67 FR 35342, May 17, 2002]

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Appendix B – Reference List of Major Documents Cited

Centers for Disease Control and Prevention (2002, 2010, 2011, 2012). *Racial and Ethnic Approaches to Community Health (REACH) Survey Report.* Atlanta, GA: Centers for Disease Control.

EBCI Health and Medical Division (2010). *HMD Community Food Survey (CFS).* Cherokee, NC: EBCI Health and Medical Division.

EBCI Health and Medical Division (2012). *Home Visitation Program Needs Assessment and Implementation Plan, Eastern Band of Cherokee Indians, 2012*. Cherokee, NC: EBCI Health and Medical Division.

Professional Research Consultants, Inc. (2012). *PRC Community Health Needs Assessment Report, Western North Carolina.* Asheville, NC: WNC Health Network and WNC Healthy Impact.

Substance Abuse and Mental Health Services Administration. (2011). *Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings, NSDUH Series H-41* (HHS Publication No. (SMA) 11-4658). Rockville, MD: Substance Abuse and Mental Health Services Administration.

Tribal Epidemiology Center, United South and Eastern Tribes, Inc. (2013). *USET Eastern Band of Cherokee Indians Diabetes Report.* Nashville, TN: United South and Eastern Tribes, Inc.

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U.S. Census Bureau (2010). *American Community Survey.* Washington, DC: U.S. Census Bureau.

WNC Healthy Impact (2012). *WNC Healthy Impact Community Health Assessment (CHA) Regional Secondary Data Report and Workbook.* Asheville, NC: WNC Health Network and WNC Healthy Impact

APPENDIX C – DATA COLLECTION METHODS & LIMITATIONS

Secondary Data

Secondary Data Methodology

In order to learn about the specific factors affecting the health and quality of life of residents of WNC, the EBCI THA data workgroup and consulting team identified and tapped numerous secondary data sources from public sources, internal reports, Tribal agency sources, and the Tribal health data system (RPMS). The team made every effort to obtain the most current data available *at the time the report was prepared*.

Data on the demographic, economic and social characteristics of the region mainly came from the US Census Bureau. The principal sources of other secondary health data are described in the table included earlier in this report in the "at a glance" secondary data source description.

EBCI-specific data may not be available for some of the data parameters included in this report; in those cases the best available data was utilized. Where appropriate and available, trend data has been used to show changes in indicators over time.

It is important to note that this report contains some data that was collected and analyzed by other sources. Note also that the names of organizations, facilities, geographic places, etc. presented in the tables and graphs in this report are quoted exactly as they appear in the source data. In some cases these names may **not** be those in current or local usage; nevertheless they are used so readers may track a particular piece of information directly back to the source.

Data Limitations and Explanations

Reports of this type customarily employ a range of technical terms, some of which may be unfamiliar to many readers. This report defines technical terms within the section where each term is first encountered. While these technical health data terms are defined in the report at the appropriate time, there are some data caveats that should be applied from the onset.

Some data that is used in this report may have inherent limitations, due to the sample size, its geographic or population focus, or its being out-of-date, for example, but it is used nevertheless because we were not aware of a better alternative. Whenever this kind of data is used, it will be accompanied by a warning about its limitations.

Error. Readers should note that there is some error associated with every health data source. Surveillance systems for communicable diseases and cancer diagnoses, for instance, rely on reports submitted by health care facilities across the state and are likely to miss a small number

of cases, and mortality statistics are dependent on the primary cause of death listed on death certificates without consideration of co-occurring conditions.

See "at-a-glance" description of data sources for more information on specific sources.

Gaps in Available Information

Much available data about the EBCI community is not specific to the Tribe. North Carolina maintains most Public Health data on a state and/ or county basis, and does not keep separate or searchable records for the EBCI population specifically. Much data in NC and the US Census may not distinguish EBCI from other American Indian/ Alaska Native populations. In addition, US and NC data may not be congruent with Tribal data in a variety of areas, e.g., as noted above, the total number of enrolled EBCI members.

The Tribal Epidemiology Center has the most comprehensive health data set that pertains to EBCI and comparison Tribal populations in the Nashville Area and across all Tribes. However, TEC data includes only those eligible for services at CIHA under IHS rules, and does not include other persons who are not enrolled but are members of families in EBCI.

Community Survey (Primary Data)

Survey Methodology

Purpose:

The purpose of the EBCI Tribal Health Survey was to gather adult community members' perceptions of priorities and needs that influence health and quality of life. The specific goals of the survey were to:

1. Compile adult community members' perceptions of greatest health concerns and challenges for themselves and their family
2. Document perceptions' community members have about existing local programs, services, and environments, and their ideas on improvements that could positively impact health and quality of life.

Instrument Development:

Contractor Karen Schlanger, Ph.D developed the survey in consultation with the Tribal Health Assessment Team and the Data Workgroup. The survey included both open and closed-ended questions and was piloted prior to broad administration. Both paper and electronic versions of the survey were created to facilitate higher completion rates. They electronic survey was administered using LimeSurvey®.

Methods:

Eligibility: EBCI enrolled members 18 years of age and older were eligible to participate in the survey, as were any community member who resides with someone who is eligible to receive health services through the Cherokee Health System (e.g. a parent of an enrolled member). Using these criteria, eligibility was confirmed through responses to survey questions 1. "What is your age?" and 6a. "Is anyone in your household eligible to receive health services through the Cherokee Health System?".

Distribution: The survey was administered to a convenience sample using a number of distribution strategies to facilitate that broad range of community members were encouraged to voice their perspectives. Distribution strategies included the following:

- Surveys were distributed to and available in all HMD clinics (e.g.Tsali Care, Women's Wellness Clinic, Analenisgi behavioral health clinic, Cherokee Diabetes Clinic, Snowbird Health Clinic, Cherokee Health Clinic) and most other Tribal offices that have direct customer contact.
- At all the HMD clinics, front office staff were instructed to administer the survey directly to those who indicate having difficulty reading.
- All HMD employees were encouraged to provide surveys to their relatives and associates, and to assist them if they had difficulty reading.
- Surveys were made available at all schools and daycares in Jackson and Swain Counties.
- Information about the survey, including a link to the electronic version and a listing of locations where paper versions were available, were sent out to all Tribal employees through the EBCI Tribal e-mail listserve. Similar information was written up in the OneFeather e-newspaper (the local newspaper) and all HMD Facebook pages.

In total, approximately 5,000 copies of the survey were distributed. The paper version of the survey was available for the community members to complete during a three-week period, from March 18, 2013 to April 8, 2013. During this time period, survey drop-off boxes were available in all HMD clinics and other large Tribal offices. The on-line version of the survey was open to submissions from March 18, 2013 to April 2, 2013.

Analysis:

A total of 978 surveys were submitted (approximately 20% electronically). After excluding 108 submissions that did not meet the inclusion criteria and 75 submissions that we considered incomplete (i.e. with less than 15 of the survey questions answered), a total of 795 surveys were included in the analysis. Trained HMD staff entered the responses of all paper survey submissions verbatim into the LimeSurvey® database. For closed ended questions, analyses were conducted by running simple descriptive queries in LimeSurvey® which were then

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summarized in table, graph or narrative format. For the open-ended questions, responses were thematically coded and tallied, and then summarized in table or narrative format.

Survey Limitations and Explanations:

This survey was done on a convenience sample of the EBCI community, thus results may not be as representative as they would be in a different type of sampling group. The sample size for this survey was also small with 795 valid responses out of a community of around 8,000 EBCI enrolled individuals (10% response rate). However, as the Demographic Results show in Chapter 8, the survey sample had an age and community distribution that mirrored that of the Cherokee population at large. The sex breakdown of the survey respondents, on the other hand, was female heavy but this is often the case with qualitative survey respondents.

APPENDIX D –TRIBAL AFFILIATIONS OF PERSONS SEEN AT CHEROKEE INDIAN HOSPITAL AUTHORITY

Absentee-Shawnee
Alabama-Quassarte
Native Village of Aleknagik
Arikara (Three Affiliated Tribes)
Aroostook Band of Micmacs
Assiniboine/ Sioux
Blackfeet
Catawba Indian Nation (SC)
Cherokee Nation
Cheyenne River Sioux
Cheyenne and Arapaho
Chickasaw Nation
Chippewa-Cree
Chitimacha
Choctaw Nation
Chugach Natives, Incorporated
Circle Native Community
Coast Indian Community of Yurok Indians
Comanche Nation
Confederated Tribes of the Colville Reservation
Cook Inlet
Coushatta
Creek Nation (OK)
Crow Creek Sioux
Crow
Doyon, Limited
Eastern Band of Cherokee Indians
Elk Valley Rancheria
Fort Belknap
Hoopa Valley
Hopi
Houlton Band of Maliseet
Iowa Tribe of KS and NE
Keweenaw Bay
Kiowa
Lac Courte Oreilles Band of
Lake Superior Chippewa
Lac Vieux Desert Band of
Lake Superior Chippewa
Mashpee Wampanoag
Menominee
Mescalero Apache
Miccosukee
Minnesota Chippewa
Mississippi Band of Choctaw
Navajo Nation
Nez Perce
Nisqually
Noorvik Native Community
Northern Cheyenne
Oglala Sioux
Oneida Nation
Onondaga Nation
Osage Nation
Otoe-Missouria
Paiute-Shoshone
Passamaquoddy
Pawnee Nation
Penobscot Nation
Poarch Band of Creeks
Ponca (OK)
Prairie Band Potawatomi Nation
Pueblo of Acoma
Pueblo of San Juan
Kewa Pueblo (Santo Domingo)
Quechan
Quileute
Red Lake Band of Chippewa
Rosebud Sioux
Saginaw Chippewa
Salt River Pima-Maricopa
San Carlos Apache
Santee Sioux Nation
Sault Ste. Marie Tribe of Chippewa
Seminole Nation (OK)
Seminole Tribe (FL)
Seneca Nation
Shakopee Mdewakanton Sioux

Southern Ute
Spirit Lake
Saint Regis Mohawk
Standing Rock Sioux
Thirteenth Regional Corporation
Tonawanda Band of Seneca
United Keetoowah Band of Cherokee
Ute
White Mountain Apache
Wichita and Affiliated Tribes
Yavapai-Apache Nation
Yurok

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APPENDIX E – TRIBAL HEALTH SURVEY

1. What is your age? (Circle one)

18-24 25-34 35-44 45-54 55-64 65 or older

2. What community do you live in? (Circle one)

Big Cove Towstring Birdtown 3200 Acre Tract Snowbird

Cherokee Co. Painttown Wolfetown Big Y Yellowhill

Other: (write in)______________________

3. What is your gender? (Circle one) Male Female

4. How many people (adults and children) currently live in your home? _______

5. How many children under the age of 18 currently live in your home? _______

6a. Is anyone in your household ELIGIBLE to receive health services through the Cherokee Health System (i.e. Cherokee Hospital, Immediate Care Clinic, Tsali Care, Women's Wellness Clinic, Analenisgi, Cherokee Diabetes Clinic, Snowbird Health Clinic, Cherokee Clinic, etc**)?** (Circle one)

Yes No

6b. If "Yes", how satisfied are you with the health services YOU AND YOUR FAMILY RECEIVE from the Cherokee Health System (as described in question 6a)? Consider availability, cost, and quality (circle one)

Very Satisfied Satisfied Neutral Dissatisfied Very Dissatisfied

6c. Briefly describe why you responded that way: ___________________________________

____

____

7. How would you rate YOUR OWN quality of life OVER THE PAST MONTH? (Consider your health, well-being, sense of safety, community life, etc.) (Circle one)

Very Good Good Neither Good Nor Poor Poor Very Poor

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8. Please describe the two things that have had the greatest POSITIVE impact on YOUR OWN quality of life OVER THE PAST MONTH?

1)____

2)____

9. Please describe the two things that have had the greatest NEGATIVE impact on YOUR OWN quality of life OVER THE PAST MONTH?

1)____

2)____

10. OVER THE PAST MONTH, how satisfied were you with your health?

Very Satisfied Satisfied Neutral Dissatisfied Very Dissatisfied

11. DURING THE PAST YEAR, what have been your BIGGEST concerns related to YOUR OWN health and well-being? ____

____

12. Thinking about your future (the next 5-10 years), what are your BIGGEST concerns related to YOUR OWN health and well-being? ____________________________________

____

13. What are your biggest concerns related to the health and well-being OF YOUR FAMILY?

____

____

____

14a. Was there a time in the past 12 months when YOU OR A FAMILY MEMBER needed medical care, but could not get it? ___YES ____NO

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14b. If "YES", please answer why (mark all that apply):

___ it costs too much
___ too far, distance
___ inconvenient office hours
___ lack of child or elder care
___ lack of transportation

___ language barrier
___ no disability access
___ too long of a wait for an appointment
___ other (explain) ______________________
____

15. During the past 12 months, how often did you eat less than you felt you should because there was not enough money for food?

Never Sometimes (at least once) Often

16. What do you consider the biggest health-related concerns for the EBCI Tribal community?

____

____

____

17. What idea(s) do you have to improve the health of the EBCI Tribal community?

For the WHOLE TRIBE: ____

____

For YOUR COMMUNITY: ____

____

18. In what ways can Cherokee culture help improve the health of the Tribal community?

____

____

____

19. Mark the one box that indicates how much you agree or disagree with the following statements AND describe why you feel that way:

	Strongly Agree	Agree	Disagree	Strongly Disagree
a. EBCI is a good place to raise children. (Consider schools, childcare, after school activities)				
WHY? ______________________________				
b. EBCI is a good place to grow old. (Consider respect for elders, elder-friendly housing, elder care, transportation options, social and nutritional support)				
WHY? ______________________________				
c. There is economic opportunity in EBCI. (Consider jobs for individuals, opportunities for businesses, etc.)				
WHY? ______________________________				
d. Cherokee culture and traditions are valued and respected in EBCI Tribal communities.				
WHY? ______________________________				
e. I am satisfied with the quality of the natural environment in EBCI Tribal communities (land, air, water)?				
WHY? ______________________________				
f. There is plenty of help for people in times of need in EBCI Tribal communities.				
WHY? ______________________________				

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20. Choose the FIVE THINGS that YOU think most NEGATIVELY affect the health and well-being of the EBCI Tribal community:

___ Child neglect or abuse
___ Elder neglect or abuse
___ Domestic violence
___ Rape or sexual assault
___ Theft and violent crime
___ Mental Illness/historical trauma/lack of access to quality mental health services
___ Drug and alcohol abuse/lack of access to quality drug and alcohol treatment services
___ Chronic disease (diabetes, hypertension, obesity, cancer, etc.)
___ Gambling
___ Teen pregnancy
___ Smoking
___ Physical inactivity
___ Lack of employment opportunities
___ Lack of affordable or better housing
___ Lack of access to low-cost, healthy food
___ Poor nutrition/unhealthy eating
___ Environmental concerns (land, air, water, wildlife)
___ Lack of transportation
___ Discrimination or racism
___ Lack of respect for Cherokee culture
___ Poor quality education
___ Dropping out of school
___ Lack of positive youth activities
___ Not enough or poor quality childcare
___ Lack of access to quality health services
___ Lack of culturally appropriate healthcare
___ Not enough recreational or social opportunities for adults
___ Being unprepared to respond to disasters
___ Other: ____________________

21. If an emergency happens, do you have enough food, water and supplies in your home to last for 3 days without outside help? (Circle one) YES NO

22. Is there anything else you would like to share with us as we move forward in our efforts to improve the health and well-being of our community?

____

____

____

23. Please give the name of the person (and program name if you know it) who suggested you take this survey as we would like to recognize their efforts in distributing the survey:

____

THANK YOU FOR COMPLETING THIS SURVEY!

Results will be presented by the EBCI Health and Medical Division at a public meeting in late spring.

Please see the BACK PAGE for places you can drop off your completed survey.

WHERE CAN YOU DROP OFF COMPLETED SURVEYS?

LOOK FOR TRIBAL HEALTH SURVEY DROP-OFF BOXES AT THE FOLLOWING LOCATIONS
UNLESS YOUR FAMILY HAS BEEN ASKED TO RETURN THE SURVEY TO THE SCHOOL SYSTEM!!

HMD Administration Building

Cherokee Indian Hospital lobby

Ginger Lynn Welch Complex (Education receptionist)

Beloved Women's and Children's Center

Cherokee Choices

Diabetes Clinic

Analenisgi

Tsali Care

Cherokee County Clinic

Snowbird Clinic

Qualla Library

Tribal Council House

Cherokee Boys Club lobby

Please call Jill Lossiah 554-6191 if you have any questions.

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APPENDIX F - KEY INFORMANT INTERVIEW GUIDE

Briefly describe your position in the Tribe or your relationship with EBCI (for non-Tribal key informants); and how long have you been in that position.

What is YOUR vision for a healthy Tribe? What is the role of your organization in fulfilling this vision?

How would YOU describe the overall health of the community or group of people you represent?

Are there any health concerns that are more pronounced in one part of the boundary than in other parts of the boundary?

Describe any groups of people you might call the "underserved population" when it comes to health.

From your perspective, what do YOU see as having the biggest negative impact on quality of life for Tribal members?

What are the main complaints that you hear from Tribal members that affect health?

What seems to be most frustrating to Tribal families about the current health system?

In your view, what are the three top priority areas for improving health of people in the boundary?

> What are some of the challenges the Tribe faces in getting these needs met?
>
> What are the strengths of the Tribe in getting these needs met?

During your tenure, what changes have you been a part of or witnessed in the community that you feel have improved health?

> Explain different models of change: coalition, resolution, policy change, chief's initiative, social marketing. Does any one of these types of models seem to work better with the Tribe than another? Please explain.

What future changes could be made in policies or the health system that would improve health status?

In what ways do you think Tribal organizations could build on Cherokee traditions and values to improve the health of our community?

APPENDIX G – HEALTH RESOURCE INVENTORY

HEALTH RESOURCES	Resource Name (Tribal, County, Non-Profit, etc.) and Website	Physical Location and Main Phone	Hours	Services Provided	Population Served, Eligibility Requirements
HEALTH FACILITIES	Cherokee Indian Hospital Authority (Tribal)	1 Hospital Road, Cherokee, NC, 28723, (828) 497-9163		Anatomical laboratory, blood bank, clinical laboratory, dental services,, outpatient, pediatrics, pharmacy, physical therapy, pre-natal services, radiology (diagnostic), social, emergency services. Secondary care is provided through private contractors?	Enrolled in a federally recognized Tribe
	Cherokee Immediate Care Clinic (Tribal)	75 Paint Town Road, Cherokee NC 28719, 828-554-5550		Providing Urgent, Non-Emergent Health Care With No Appointment Necessary	Enrolled in a federally recognized Tribe
	MedWest - Haywood (Private), http://www.haymed.org/locations/haywood/medwest-haywood.aspx	262 Leroy George Drive Clyde, NC 28721 Phone: (828) 456-7311		Behavioral Health, Cancer, Cardiac & Invasive Radiology, Case Mgmnt, Chaplaincy Program, Continence Services, Critical Care (ICU), Diabetes Education, Emergency Dept., Emergency Medical Services, Endoscopy, Health Promotion and Education, Health & Fitness Center, Home Care, Hospice & Palliative Care, Hospitalist, Imaging, Lab, Med. Acupuncture, Med. Records, Nutritional Services, Nursing, Occupational Services, Orthopedic Services, Osteoporosis Ctr., Pain Mgmnt, Patient Financial Services,	Anyone

				Pharmacy, Progressive Care Unit, Pulmonary, Rehabilitation, Senior Life Solutions, Sleep, Sports Medicine, Surgery, Urgent Care, Vascular Access Nurse, Women & Children, Wound Care, Orthopedics, Women's Care	
	MedWest-Harris (Private), http://www.haymed.org/locations/harris/medwest-harris.aspx	68 Hospital Road, Sylva, NC 28779, Phone: (828) 586-7000,		Cancer, Cardiopulmonary, Case Management, Chaplaincy Program, Critical Care (ICU), Diabetes Education, Emergency Department, Emergency Medical Services, Health Promotion and Education, Health & Fitness Center, Home Care, Hospice & Palliative Care, Hospitalist, Imaging, Laboratory, Medical Acupuncture, Medical Records, Nutritional Services, Nursing Services, Occupational Services, Orthopedic Services, Patient Financial Services, Pharmacy, Progressive Care Unit, Pulmonary, Senior Life Solutions, Sports Medicine, Surgery, Urgent Care, Women and Children (birthing), Wound Care	Anyone

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	MedWest-Swain (Private), http://www.haymed.org/locations/swain/medwest-swain.aspx	45 Plateau Street, Bryson City, NC 28713, Phone: (828) 488-2155		Cancer, Cardiopulmonary, Case Mgmnt, Chaplaincy Program, Diabetes Education, Emergency Department, Emergency Medical Services, Health Promotion and Education, Health & Fitness Center, Home Care, Imaging, Lab, Med. Records, Nutritional Services, Nursing Services, Occupational Services, Orthopedic Services, Pain Management, Patient Financial Services, Pharmacy, Progressive Care Unit, Pulmonary, Senior Life Solutions, Sports Medicine, Surgery, Urgent Care	Anyone
	MedWest-Franklin (Private), http://www.haymed.org/locations/franklin/medwest-franklin.aspx	55 Holly Springs Park Dr, Franklin, NC 28734-0719 (828) 349-5000		Outpatient care	All
	Highlands-Cashiers Hospital (Private), http://www.highlandscashiershospital.org/inside/discover.htm	190 Hospital Drive, Highlands, NC 28741, Phone: (828) 526-1200		General Surgery, Family Practice, Internal Medicine, Emergency Medicine, Anesthesiology, Dermatology, Gastroenterology, Gynecology, Laboratory, Ophthalmology, Orthopedics, Plastic & Cosmetic Surgery, Radiology, Sleep Medicine, Hand Surgery, and Urology	

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	Murphy Medical Center (Private)	3990 East US Highway 64 Alternate, Murphy, NC 28906-8707, (828) 837-8161		Alzheimers, Cancer, Cardio & Pulmonary, Diabetes Self Management, Emergency Care, Hospitalist, Intensive Care (ICU), Laboratory, Labor and Delivery, Nursing home, Surgery, Radiology, Rehabilitation, Wound Care and Hyperbaric therapy	
	Dialysis Center (private)	53 Echota Church Rd, Cherokee, NC, 28719, 828-497-6866		Dialysis treatment	Anyone
	MedWest Urgent Care -- Sylva (Private), http://medwesthealth.org/services/services_a-z/urgent_care.aspx	176 Walmart Plaza, Sylva, NC 28779, 7 Days, 8am - 6:30pm,828-631-9462.	7 Days, 8am to 6:30pm	Providing Urgent, Non-Emergent Health Care With No Appointment Necessary	Anyone
	MedWest Urgent Care -- Canton (Private), http://medwesthealth.org/services/services_a-z/urgent_care.aspx	Exit 31 off I-40, Canton, 7 Days, 8am. to 6:30pm, 828-648-0282	7 Days, 8am to 6:30pm	Providing Urgent, Non-Emergent Health Care With No Appointment Necessary	Anyone
	MedWest Urgent Care --West (Private), http://medwesthealth.org/services/services_a-z/urgent_care.aspx	556 Hazelwood Ave., Waynesville, 828-452-8890	7 Days, 8am to 6:30pm	Providing Urgent, Non-Emergent Health Care With No Appointment Necessary	Anyone
	Urgent Care --Murphy (Private), http://www.murphymedical.org/clinics.html	183 Ledford St Murphy, NC 28906, , 828-837-4712	M-Sa, 8am until 8pm, and Su. 10am until 6pm	Providing Urgent, Non-Emergent Health Care With No Appointment Necessary	Anyone

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EMERGENCY SERVICES	Tribal EMS http://nc-cherokee.com/operations/home/public-safety/emergency-medical-services/	969 Acquoni Road, Cherokee, NC 28719, (828) 554-6452 or (828) 497-6402, ,	Monday - Friday, 7:45 am - 4:30 pm	Urgent medical care needs	Everyone on Tribal lands
	Cherokee Indian Police Dept.(Tribal) http://nc-cherokee.com/cpd/cpd_info/	468 Sequoyah Trail (PO Box 1330), Cherokee, North Carolina 28719, 828-554-6600,	Monday - Friday-7:45 am - 4:30 pm	Court security, Home confinement monitoring, investigations, drug enforcement, domestic violence unit, child victim unit, K-9 unit, traffic enforcement	Everyone on Tribal lands
	Dispatch (Tribal) http://nc-cherokee.com/cpd/cpd_info/	468 Sequoyah Trail, Cherokee, North Carolina 28719, 828-554-6168	24/7	Route calls to appropriate emergency responders	Everyone on Tribal lands
	Fire and Rescue (Tribal)	837 Acquoni Rd, Cherokee, NC 28719, 828 -497-6584,	24/7	Fire prevention, fire safety inspections, fire safety classes, and other emergency assistance	Everyone on Tribal lands
	Qualla Volunteer Fire (County), http://em.jacksonnc.org/html/fire_depts.html	147 Shoal Creek Road, Whittier NC 28789 (Main Station)	24/7	Fire prevention, fire safety inspections, fire safety classes, and other emergency assistance	
	Bryson City Volunteer Fire (County), https://www.facebook.com/pages/Bryson-City-Fire-Department/260699818424	Bryson City, NC 28713 Edit details (828) 488-2385	24/7	Fire prevention, fire safety inspections, fire safety classes, rescue squad participation and other emergency assistance	
DENTAL	EBCI Health and Medical Division Children's Dental	43 John Crowe Hill Rd, Cherokee, NC, 28719, (828) 554-6197,	Monday-Friday, 7:45 am -4:30 pm	Dental screenings, classroom dental health education, braces referral, fluoride varnish applications	children (7-17) enrolled in a federally recognized Tribe

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	Cherokee Indian Hospital Authority (Tribal)	see above			
LONG-TERM CARE	Tsali Care (Tribal)	59 Echota Rd, Cherokee, NC, 28719, (828) 554-6506,	Monday-Friday, 7:45 am -4:30 pm	60-bed nursing facility, 24 hour care, physical, occupational and respiratory therapy classes, and exercise classes	Those in need of long or short term care
	Tsali Manor (Tribal)	133 Tsali Manor Street, Cherokee, North Carolina 28719, (828) 554-6860	Monday-Friday, 7:45 am -4:30 pm	Provides services to senior citizens such as: heating, plowing home repair, nutritious meals, daily activities and independent living quarters for seniors.	
	SnowBird Senior Center (Tribal)	157 County Road 1149 Robbinsville, NC 28771, (828) 479-9145	Monday-Friday, 7:45 am -4:30 pm	Provides services to senior citizens such as: heating, plowing home repair, nutritious meals and daily activities.	
	John Welch Senior Center	302 Airport Rd., Marble, NC, (828) 835-9741	Monday-Friday, 7:45 am -4:30 pm	Provides services to senior citizens such as: heating, plowing home repair, nutritious meals and daily activities.	
COMMUNITY HEALTH	EBCI HMD Diabetes (Tribal)	806 Acquoni Rd, Suite 100, Cherokee, NC, 28719, (828) 554-6180,	M-F, 7:45 am - 4:30 pm	Clinical services for diabetes patients, diabetes screening, education, and prevention	Enrolled in a federally recognized Tribe
	EBCI HMD Healthy Heart Initiative (Tribal)	806 Acquoni Rd, Suite 100, Cherokee, NC, 28719, (828) 554-6197	M-F, 7:45 am - 4:30 pm	Prevention of heart disease	EBCI enrolled with diabetes diagnosis

	EBCI HMD Home Health (Tribal)	73 Kaiser Wilnoty Rd, Cherokee, NC, 28719, (828) 554-6872	M-F, 7:45 am - 4:30 pm	CAP aide service, respite caregiver services, in home RN, physical therapy and CAN services	Homebound persons (adults and children) living on the Qualla boundary
	EBCI HMD Wound Care Treatment and Prevention (Tribal)	806 Acquoni Rd, Suite 100, NC, 28719, (828) 554-6561	M-F, 7:45 am - 4:30 pm	Preventative foot care, and wound treatment.	EBCI enrolled with a diabetes diagnosis or wound
	EBCI HMD Women's Wellness (Tribal)	73 Kaiser Wilnoty Rd, Cherokee, NC, 28719, (828) 554-6250	M-F, 7:45 am - 4:30 pm	Women's health exams and screening, family planning services, and immunization services	Women enrolled in a federally recognized Tribe
	Jackson County Department of Public Health (County)	538 Scotts Creek Road, Suite 100 Sylva NC 28779 828-586-8994	M-F, 8am-5pm	Personal Health, Communicable Diseases, Specialty Clinics, Family Outreach Services, Laboratory Services, Environmental Health and Ancillary Service	Residents of Jackson County
	Swain County Department of Public Health (County)	545 Center St, Bryson City, NC 28713,	M-F, 7:45 am – 4:45 pm	Adult Health Clinic, Communicable Disease, Eye General Clinic, Family Planning, Environmental, Child Health and Injury prevention, WIC, and In home care services	Residents of Swain County
	Haywood County Health Department (County)	157 Paragon Parkway, Suite 800 Clyde, NC 28721 (828) 452-667	M-F, 8am-5pm	Clinical services for children and adults, dental services, community health education services, and environmental health services	Residents of Haywood County

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	Graham County Department of Public Health (County)	21 S Main St, Robbinsville, NC 28771, (828) 479-7900	M-F, 8am-5pm, Free Clinic Weds., 9am-1pm	Adult and child health clinics and screenings, Child injury prevention, WIC, Smart Start, Diabetes education, Newborn Home visits, Dental, Environmental, immunization, Maternity Care, Communicable disease testing, monitoring, and education, and Family Planning	Residents of Graham County
	Cherokee County Health Department (County)	224 Main St, Andrews, NC 28901, (828) 321-4167	M-F, 8am-5pm	Environmental Health, Family Planning, Prenatal Clinic, WIC, Immunizations, Child Health Nurse Screenings, Breast/Cervical Cancer Screening Program, Women's Health Program, Medication Management, Health Education, Pregnancy Care Management, Child Care Management, Communicable Disease and STD Management, Smart Start, and FREE HIV Testing	Residents of Cherokee County

MENTAL HEALTH RESOURCES	Resource Name (Tribal, County, Non-Profit, etc.) and Website	Physical Location and Main Phone	Hours	Services Provided	Population Served, Eligibility Requirements
	CIHA (Tribal)	59 Echota Rd, Cherokee, NC, 28719, (828) 554-6550,	Monday-Friday, 7:45 am -4:30 pm,	Anatomical laboratory, blood bank, clinical laboratory, dental services,, outpatient, pediatrics, pharmacy, physical therapy, pre-natal services, radiology (diagnostic), social, emergency services. Secondary care is provided through private contractors?	Adults, children, enrolled in federally recognized Tribe
	Cherokee Immediate Care Clinic (Tribal)			see individual locations below for services provided	Adults, children, families; 7 westernmost counties
	MedWest - Haywood (County)	262 Leroy George Drive Clyde, NC 28721 Phone: (828) 456-7311		Child and Family Services	Children, Families
	MedWest-Harris (County)	Swain County 234 Bryson Walk Bryson City, NC 28713 828.488.9939		Child and Family Services	Children, Families
	MedWest-Swain (County)	Jackson County 154 Medical Park Loop, Sylva, NC 28779 828.631.3973		Recovery Education Center, Assertive Community Treatment Team, Medication Management, Child & Family Services, Therapeutic Foster Care	Adults, Children, Families

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	MedWest-Franklin (County)	Cherokee Co. - Marble 27 Bona Vista Marble, NC 28905 828.837.7466		Psycho-Social Rehabilitation Center, Assertive Community Treatment Team	Adults
	Murphy Medical Center (County)	Cherokee Co. - Peachtree Central Bldg.. 1, Unit #2 1835 NC Hwy 141 Murphy, NC 28906 828.835.7205		Child and Family Services	Children, Families
		Haywood Co. - Broadview 307 Broadview St. Waynesville, NC 28786 828.452.9258		Psycho-Social Rehabilitation, Offender Services, Substance Abuse Intensive Outpatient Program	Adults
		Haywood Co. - Canton 2 Church St. Canton, NC 28716 828.492.0660		Assertive Community Treatment Team	Adults
		Haywood County - Walnut 131 Walnut St. Waynesville, NC 28786 828.456.9018		Recovery Education Center, Medication Management	Adults
	Smoky Mountain Center http://www.smokymountaincenter.com/	44 Bonnie Lane, Sylva, NC 28719		Managed Care Organization which links consumers with providers of crisis intervention, adult and child clinical mental health services, developmental disabilities services, care coordination, recovery awareness, peer support, housing protection program	Adults, children 7 westernmost counties, either have no insurance or have Medicaid Eligibility

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	Appalachian Community Services http://www.acswnc.com/			Crisis Intervention, walk-ins, group treatment, adult and child therapy, family therapy, medication mgmnt, case mgmnt, therapeutic foster care, referrals, SA Intensive Outpatient	Adults, children
		Swain County: 100 Teptal Terrace, Bryson City, NC 28713 , Phone: 828-488-3294	M-F: 9-5, walk-ins M-F: 9-3,		
		Haywood County: 1482 Russ Ave, Waynesville, NC 28786 , Phone: 828-452-1395	M-F: 9-5, walk-ins M-F: 9-3		
		Graham County 217 South Main St., Robbinsville, NC 28771, Phone: 828-479-6466	M-F: 9-5, walk-ins M-F: 9-3		
		Cherokee County: 750 US Hwy. 64 W Murphy, NC 28906, Phone: 828-837-0071	M-F: 9-5, walk-ins M-F: 9-3		
PRIVATE PRACTICES	Avenues Counseling				

SUBSTANCE ABUSE INPATIENT FACILITIES	Unity Healing Center http://www.ihs.gov/Nashville/?module=unity	448 Sequoyah Trail Dr. Cherokee, NC 28719		Residential Treatment Center (Substance Abuse)	Enrolled member of a federally recognized Tribe, age 13-18, diagnosis of Substance Abuse or Dependence
	Appalachian Community Services - The Balsam Center http://www.acswnc.com	91 Timberlane Rd., Waynesville, NC 28786 Psychiatric Clinic (828) 454-7220 Adult Recovery Unit (828) 454-1098			
	Christian Love Ministries	150 Penny Ln Murphy, NC 28906 (828) 835-3895		Men and women's separate residential treatment center, 56 day program	anyone
	Centerpointe Alcohol and Drug	5310 Ball Camp Pike, Knoxville, TN 37921 Phone:(865) 523-4704		residential treatment center, 21 DAY PROGRAM	anyone
	The Cambridge Place	109 Cambridge Place Smithfield, NC, Phone: (919) 938-2272		residential treatment center, 1 YR. PROGRAM	anyone
	Mary Benson House, http://www.arpnc.org/images/stories/resources/MBH_Ref_sheet.pdf?phpMyAdmin=zRLFPof0hDgxUvgoIy%2CTk6qG9H6	Mary Benson House in Asheville, North Carolina 450 Montford Avenue 28801 (828)-252-5280		residential treatment center, 1 YR. PROGRAM	anyone

	Sunrise Perinatal @ Horizons, https://www.med.unc.edu/obgyn/Patient_Care/unc-horizons-program/sunrise-casaworks-residential-program	PO Box 9438 Chapel Hill, NC 27515, Phone: (919)-960-3775		residential treatment center, 1 YR. PROGRAM	pregnant women and/or mothers with up to 3 children under age 12
	Swain Recovery, http://insightnc.org/swain.html	932 Old Us Hwy 70 W Black Mountain, NC 28711 (828) 669-4161		residential treatment center, 42 DAY PROGRAM	anyone
	Synergy Treatment Centers, www.synergytc.org/	2305 Airport Interchange Ave Memphis, TN 38132 (901) 332-2227		1 YR. PROGRAM	anyone
	Trosa, https://www.google.com/search?q=TROSA+IN+DURHAM+NC&aq=f&oq=TROSA+IN+DURHAM+NC&aqs=chrome.0.57j0l3.344j0&sourceid=chrome&ie=UTF-8	1820 James St, Durham, NC 27707 Phone:(919) 419-1059		residential treatment center, 18 TO 24 MTH. PROGRAM	anyone
	Rosebud Sioux Tribe Alcohol and Drug Treatment Program	# 7 Hospital Lane, Rosebud, SD 57570 Phone: (605) 747-2342		residential treatment center, 1 YR. PROGRAM	anyone

PREVENTION RESOURCES	Resource Name (Tribal, County, Non-Profit, etc.) and Website	Physical Location and Main Phone	Hours	Services Provided	Population Served, Eligibility Reqments
	EBCI HMD Cherokee Choices (Tribal), http://cherokee-hmd.com/	806 Acquoni Rd, Suite 100, Cherokee, NC, 28719, (828) 554-6782,	Monday-Friday, 7:45 am -4:30 pm	healthy eating/lifestyle and fitness classes, and obesity prevention	EBCI enrolled members
	EBCI HMD Community Health (Tribal), http://cherokee-hmd.com/	93 Children's Home Loop, Cherokee, NC, 28719, (828) 554-6882	Monday-Friday, 7:45 am -4:30 pm	medication management, health promotion, disease prevention, injury prevention	enrolled in a federally recognized Tribe
	EBCI HMD Community Health- Snowbird (Tribal), http://cherokee-hmd.com/	96 Snowbird School Rd., Robbinsville, NC, 28771	Monday-Friday, 7:45 am -4:30 pm	Worksite wellness, communicable disease surveillance?	enrolled in a federally recognized Tribe
	EBCI HMD Emergency Preparedness (Tribal), http://cherokee-hmd.com/	43 John Crowe Hill Rd, Cherokee, NC, 28719, (828) 554-6185,	Monday-Friday, 7:45 am -4:30 pm	disaster kits, emergency preparedness education and resources,	Anyone on the Qualla Boundary
	EBCI HMD Healthy Cherokee (Tribal), http://cherokee-hmd.com/	43 John Crowe Hill Rd, Cherokee, NC, 28719, (828) 554-6181,	Monday-Friday, 7:45 am -4:30 pm	injury prevention, substance abuse education, handwashing education	EBCI enrolled members and those living on the Qualla Boundary
	EBCI HMD WIC Program (Tribal), http://cherokee-hmd.com/	73 Kaiser Wilnoty Rd, Cherokee, NC 28719 (828) 554-6234	Monday-Friday, 7:45 am -4:30 pm	Nutrition and breastfeeding education, monthly WIC food issuance for women and children	EBCI enrolled women or family members (pregnant, postpartum, or breastfeeding), infants (0-12 m.o.) and children (under 5) with income eligibility

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PARKS AND RECREATIONAL RESOURCES	Resource Name (Tribal, County, Non-Profit, etc.) and Website	Physical Location and Main Phone	Hours	Services Provided	Population Served, Eligibility Requirements
	Great Smoky Mountains	Oconaluftee Visitor Center, 2 miles north of Cherokee, NC, on US-441		Cherokee is a key entrance to the Great Smoky Mountains National Park with more than 2.2 million visitors coming through Cherokee via the park each year.	anyone
	Blue Ridge Parkway, www.chrokee-nc.com	Cherokee Travel & Promotion, 489 Tsali Rd., Cherokee, NC 28719, (800) 438-1601		Each year more than 500,000 people travel through Cherokee via the Blue Ridge Parkway, which is the country's second most visited recreation area, and Cherokee is the southern terminus of this scenic roadway.	anyone
	Healthy Roots-Cherokee Choices (Tribal and grant funded)	806 Acquoni Rd, Suite 100, NC, 28719, (828) 554-6782,		Trails promotion, track trails, coordinate 5K runs	anyone
County	Jackson County Recreational Center (County), http://rec.jacksonnc.org/jackson-county-recreation-center	Cullowhee Mountain Rd Cullowhee, NC 28723 (828) 293-3053	M – F: 6am - 9pm, Sat: 7am - 8pm, Sun: 1pm-6:pm	Full size gymnasium, Fitness Room, Nautilus weight equipment, and free weights. Aerobics room, Yoga/Spinning room, along with Men's and Women's locker and shower facilities.	anyone
	Roscoe Poteet Swimming Pool (County), http://rec.jacksonnc.org/jackson-county-recreation-center	Municipal Drive in Sylva	late May through August.	Swimming	anyone

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	Swain County Recreation Indoor Facility (County) http://www.swaincountync.gov/recreation.html	30 Rec Park Drive Bryson City, NC 28713, Phone 828-488-6159	Monday – Friday: 8:00 am–12:00 pm; 1:00 pm–5:00 pm	Year 'round programs for Adults and Youths and includes resources include basketball, soccer, football, tennis, free weights, playground, swimming, skateboarding and baseball.	anyone
	Swain County Pool (County) http://www.swaincountync.gov/recreation.html	31 Rec Park Drive Bryson City, NC 28713, Phone 828-488-6159	Memorial Day Weekend through September 1 Mon– Sat: 12pm –6pm, Sun: 1 pm–5pm	Swimming	anyone
	Haywood County Recreational Center (County), http://www.haywoodnc.net/index.php?option=com_content&view=article&id=125&Itemid=109	15 N. Main Street Waynesville, NC 28786 Phone: 828-452-6789		Dedicated to enhancing the quality of life in our county by coordinating and providing recreation programs and facilities.	anyone
	Allens Creek Park (county), http://www.haywoodnc.net/index.php?option=com_content&view=article&id=129:allens-creek-park&catid=59:Rec&Itemid=122	1725 Allens Creek Road, Waynesville, Phone: 828-452-6789.		Four multipurpose fields, a paved .4 mile walking path, playground equipment, park benches, wood fencing and a storage building.	anyone

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	Cherokee County Rec. Center (county), http://www.cherokeecounty-nc.gov/index.aspx?page=129	699 Connahetta St. Murphy, NC 28906, (828) 837-6617		Includes Murphy and Andrews recreational complexes with swimming pool, skate park, ball fields, walking trails, basketball courts, shuffleboard, tennis courts, soccer, picnic tables, grills, performing stage, playground, free WIFI, and community center	anyone
	Graham County Rec. Center	12 North Main Street Robbinsville, NC 28771, Phone: (828) 479-7681	M-F 8:30 – 5:00 /closed 12:00-1:00(Lunch)		anyone
	KOA	92 KOA Campground Rd Cherokee, NC 28719 (828) 497-9711		RV Park, RV Campground, Tent Camping and Cabin Camping	anyone
	Oconaluftee Island park	Hwy 441 Cherokee, NC 28719		Picnic area, fishing, grilling, swimming, etc.	anyone
	Cherokee Skate Park	1036 Acquoni Rd., Cherokee, NC 28719		6-8′ ft. pool, a 3500 sq. ft. flow bowl, a combination manual pad, and a unique free standing flow-street	anyone
Community Centers	Ginger Lynn Welch Life Center/Complex	810 Acquoni Rd. Cherokee, NC 28719		community gathering space, gymnasium, weight room, indoor pool and track	anyone
	Big Cove Rec Center	8715 Big Cove Rd, Cherokee, NC 28719, Phone: (828) 497-7172		community gathering space, gymnasium,	anyone

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	Big Y Gym	2641 Wrights Creek Rd Cherokee, NC 28719, Tim Smith 497-9649		community gathering space, gymnasium,	anyone
	Birdtown	1212 Birdtown Rd Pepper Taylor 554-6895		community gathering space, gymnasium,	anyone
	Cherokee Co.			community gathering space, gymnasium,	anyone
	Painttown Gym	1556 Painttown Rd, Cherokee, NC 28719, Pam Taylor 497-3345		community gathering space, gymnasium,	anyone
	Snowbird	50 Snowbird Indian School Rd Robbinsville, NC 28771 Mag Teesateskie 554-6962		community gathering space, gymnasium,	anyone
	3200 Acre Tract			community gathering space, gymnasium,	anyone
	Tow String			community gathering space, gymnasium,	anyone
	Wolfetown Gym	27 Long Branch Rd, Cherokee, NC 28719 Dave McCoy 497-4728		community gathering space, gymnasium,	anyone
	Yellowhill			community gathering space, gymnasium,	anyone

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PARKS AND RECREATIONAL RESOURCES	Resource Name (Tribal, County, Non-Profit, etc.) and Website	Physical Location and Main Phone	Hours	Services Provided	Population Served, Eligibility Requirements
	Great Smoky Mountains	Oconaluftee Visitor Center, 2 miles north of Cherokee, NC, on US-441		Cherokee is a key entrance to the Great Smoky Mountains National Park with more than 2.2 million visitors coming through Cherokee via the park each year.	anyone
	Blue Ridge Parkway, www.chrokee-nc.com	Cherokee Travel & Promotion, 489 Tsali Rd., Cherokee, NC 28719, (800) 438-1601		Each year more than 500,000 people travel through Cherokee via the Blue Ridge Parkway, which is the country's second most visited recreation area, and Cherokee is the southern terminus of this scenic roadway.	anyone
	Healthy Roots-Cherokee Choices (Tribal and grant funded)	806 Acquoni Rd, Suite 100, NC, 28719, (828) 554-6782,		Trails promotion, track trails, coordinate 5K runs	anyone
County	Jackson County Recreational Center (County), http://rec.jacksonnc.org/jackson-county-recreation-center	Cullowhee Mountain Rd Cullowhee, NC 28723 (828) 293-3053	M – F: 6am - 9pm, Sat: 7am - 8pm, Sun: 1pm-6:pm	Full size gymnasium, Fitness Room, Nautilus weight equipment, and free weights. Aerobics room, Yoga/Spinning room, along with Men's and Women's locker and shower facilities.	anyone
	Roscoe Poteet Swimming Pool (County), http://rec.jacksonnc.org/jackson-county-recreation-center	Municipal Drive in Sylva	late May through August.	Swimming	anyone

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	Swain County Recreation Indoor Facility (County) http://www.swaincountync.gov/recreation.html	30 Rec Park Drive Bryson City, NC 28713, Phone 828-488-6159	Monday – Friday: 8:00 am–12:00 pm; 1:00 pm–5:00 pm	Year 'round programs for Adults and Youths and includes resources include basketball, soccer, football, tennis, free weights, playground, swimming, skateboarding and baseball.	anyone
	Swain County Pool (County) http://www.swaincountync.gov/recreation.html	31 Rec Park Drive Bryson City, NC 28713, Phone 828-488-6159	Memorial Day Weekend through September 1 Mon– Sat: 12pm –6pm, Sun: 1 pm–5pm	Swimming	anyone
	Haywood County Recreational Center (County), http://www.haywoodnc.net/index.php?option=com_content&view=article&id=125&Itemid=109	15 N. Main Street Waynesville, NC 28786 Phone: 828-452-6789		Dedicated to enhancing the quality of life in our county by coordinating and providing recreation programs and facilities.	anyone
	Allens Creek Park (county), http://www.haywoodnc.net/index.php?option=com_content&view=article&id=129:allens-creek-park&catid=59:Rec&Itemid=122	1725 Allens Creek Road, Waynesville, Phone: 828-452-6789.		Four multipurpose fields, a paved .4 mile walking path, playground equipment, park benches, wood fencing and a storage building.	anyone
	Cherokee County Rec. Center (county), http://www.cherokeecounty-nc.gov/index.aspx?page=129	699 Connahetta St. Murphy, NC 28906, (828) 837-6617		Includes Murphy and Andrews recreational complexes with swimming pool, skate park, ball fields, walking trails, basketball courts, shuffleboard, tennis courts, soccer, picnic tables, grills, performing stage, playground, free WIFI, and community center	anyone

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	Graham County Rec. Center	12 North Main Street Robbinsville, NC 28771, Phone: (828) 479-7681	M-F 8:30 – 5:00 /closed 12:00-1:00(Lunch)		anyone
	KOA	92 KOA Campground Rd Cherokee, NC 28719 (828) 497-9711		RV Park, RV Campground, Tent Camping and Cabin Camping	anyone
	Oconaluftee Island park	Hwy 441 Cherokee, NC 28719		Picnic area, fishing, grilling, swimming, etc.	anyone
	Cherokee Skate Park	1036 Acquoni Rd., Cherokee, NC 28719		6-8′ ft. pool, a 3500 sq. ft. flow bowl, a combination manual pad, and a unique free standing flow-street	anyone
Community Centers	Ginger Lynn Welch Life Center/Complex	810 Acquoni Rd. Cherokee, NC 28719		community gathering space, gymnasium, weight room, indoor pool and track	anyone
	Big Cove Rec Center	8715 Big Cove Rd, Cherokee, NC 28719, Phone: (828) 497-7172		community gathering space, gymnasium,	anyone
	Big Y Gym	2641 Wrights Creek Rd Cherokee, NC 28719, Tim Smith 497-9649		community gathering space, gymnasium,	anyone
	Birdtown Gym	1212 Birdtown Rd Pepper Taylor 554-6895		community gathering space, gymnasium,	anyone

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	Cherokee Co.			community gathering space, gymnasium,	anyone
	Painttown Gym	1556 Painttown Rd, Cherokee, NC 28719, Pam Taylor 497-3345		community gathering space, gymnasium,	anyone
	Snowbird Gym	50 Snowbird Indian School Rd Robbinsville, NC 28771 Mag Teesateskie 554-6962		community gathering space, gymnasium,	anyone
	3200 Acre Tract			community gathering space, gymnasium,	anyone
	Tow String			community gathering space, gymnasium,	anyone
	Wolfetown Gym	27 Long Branch Rd, Cherokee, NC 28719 Dave McCoy 497-4728		community gathering space, gymnasium,	anyone
	Yellowhill			community gathering space, gymnasium,	anyone

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SOCIAL RESOURCES	Resource Name (Tribal, County, Non-Profit, etc) and Website	Physical Location and Main Phone	Hours	Services Provided	Population Served, Eligibility Requirements
General	United Way 211 Service	Dial 211	N/A	Phone service to find community health and human service resources, by county	All
	BIA Social Services (Federal)	257 Tsali Blvd. Cherokee, NC, 28719, 828-497-9131		Assistance to protect abused and neglected children and at risk adults, to provide permanency for children, and to provide economic assistance to eligible county residents	enrolled member of any Tribe and living in CHSDA
	Family/Social Services (Tribal) http://nc-cherokee.com/education/hom/community-recreation-services/familysocial-services/	52 Boys Club Loop Rd., Cherokee, NC, 28719	M- F, 7:45am - 4:30pm	Food pantry, casework services, Indian Child Welfare, Tribal Wood Program, Parents as Teachers (Snowbird), emergency assistance, burial expenses, make a wish, medical travel, parenting classes, supervised court ordered parent/child visitations, wheelchair lift program	
	Water and Sewer Bill Payment Assistance	Mary Wolfe Lambert			
	VOC- Vocational Opportunities (Tribal)	#79 Bingo Loop Rd. Cherokee, NC, 28719		Tribal rehabilitation services, adult developmental and educational services, lawn maintenance, janitorial and landscaping work for Qualla boundary businesses and enrolled members	Enrolled member or business on the boundary

	Swain County Department of Social Services http://www.swaincountydss.org	80 Academy Street, Bryson City, NC 28713, (828) 488-6921	Monday thru Friday: 8:00-5:00	Adult Care Home Case Management and monitoring, guardianship, payee-ship, placement, protective services, services for the blind, adoption, child protection, domestic violence, family preservation, foster services, protective services, Commodity Distribution, Day Care Subsidy, Domestic Violence, Emergency Assistance, Energy Assistance, Food Stamps, Fraud Investigation, Medicaid, NC Senior prescription program, work first, youth employment permit services	Residents of Swain County
	Cherokee County Department of Social Services	40 Peachtree St, Murphy, NC 28906, (828) 837-7455, http://www.cherokeecounty-nc.gov/index.aspx?page=182	county	Child Protective Services, Foster Care Services and Permanency Planning Services, Adoption Services, Day Care Services, WorkFirst Employment Services, Family Planning Services, Food Stamp Program, TANF (Temporary Assistance for Needy Families, previously AFDC), Medicaid to Families and Children, Medicaid Transportation Services, North Carolina Health Choice for Children, Family Crisis and Assistance Fund, CRISIS Program, Carolina Access, Program Integrity or Fraud Investigations, Adult Protective Services, Guardianship Services Protective Payee Services, In-home Aide Services, Food Stamp Program, Adult Medicaid, Medicaid Transportation Services, LIEAP (Low Income Energy Assistance Program)	Residents of Cherokee County

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	Graham County Department of Social Services	196 Knight St, Robbinsville, NC 28771, (828) 479-7911,	county	Child Protective Services, Adoption Services, Program Integrity services, Adult Care Home Services, Income Assistance services, Health Choice for Children, Work First, Medicaid, Medicaid Transportation, Child Support Enforcement services	Residents of Graham County
	Haywood County Department of Social Services http://www.haywoodnc.net/index.php?option=com_content&view=article&id=80&Itemid=59	157 Paragon Parkway, Suite 300 Clyde, NC 28721 (828) 452-6620	Monday thru Friday: 8:00-5:00	Medicaid, Work First, Family Assistance Eligibility, General Assistance, Energy Assistance Programs, Program Integrity - Fraud, Food and Nutrition Services, Child Protective Services, Child Support, and Adult Protective Services	Residents of Haywood County
	Jackson County Department of Social Services http://www.jcdss.org/	15 Griffin Street Sylva, NC 28779, 828-586-5546	Monday thru Friday: 8:00-5:00	Child Support, Emergency Assistance, Food and Nutrition Services, Low Income Energy Assistance, Medicaid, Medicaid Transportation, Health Choice for Children, Program Integrity, Work First, Family Assistance	Residents of Jackson County
	Juvenile Services (Tribal)	Public Safety, 282 Seven Clans Rd., Cherokee, NC 28719, (828) 554-6833	M- F, 7:45am - 4:30pm	Court diversion, counseling, therapy, community service projects, drug testing and referrals for out of home placement	

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Food Assistance	Commodity Foods (federal, USDA)	Community Education & Recreation Services, (828) 497-9751,	M- F, 7:45am - 4:30pm	Distributes food packages twice monthly to families	Those on Qualla Boundary who meet who meet income, resources, and residency requirements
	Table Rock Ministries	Call Brother Rd (828) 736-6334			
	Cherokee Compassionate Ministries	7243 Big Cove Rd., Cherokee, NC 28719	M-Th 4-8pm	Food pantry	eligibility unknown
	Christ Fellowship Church	1655 Acquoni Rd., Cherokee, NC 28719	as needed	Food pantry	eligibility unknown
	Grace Christian Academy/Hillside Baptist	495 Arlington Ave., Bryson City, NC	M-F 8-5	Food pantry	eligibility unknown
	The Community Table (Non-profit) http://www.communitytable.org/ +facebook page	23 Central St., Sylva NC 28779 (828) 586-6782	Meals M,T,Th,F 4pm-6pm ; Pantry opens 11am on same days	Serves meals 4 evening/week, food pantry, community garden	Anyone
	Living waters Food Pantry	30 Locust Rd., Cherokee NC 28719	Every other Weds. 1-4pm	Food pantry	eligibility unknown

	United Christian Ministries, facebook	191 Skyland Dr., Sylva NC 28779	M,Th,F 10-3; Tu 12:30-5; W 10-12:30	Food pantry	eligibility unknown
	Whittier United Methodist Church/Grace House	150 church St., Whittier, NC	Sa 9am-1pm	Food pantry	Anyone
	Cherokee Church of the Nazarene	72 Old School Loop off Big Cove Road. 497-2819	M-Th 4-8pm	Food and Clothing Ministry	eligibility unknown
	see Family/Social Services above			Food pantry	
Housing	Housing and Community Development (HCD) Down-Payment Assistance Program	85 Children's Home Loop, Cherokee, NC 28719, (828) 554-6900	M- F, 7:45am - 4:30pm	Loan from EBCI to assist with down payment on a home	EBCI enrolled and building on boundary
	Cherokee Children's Home (State), http://cherokeechildrenshome.com	Cherokee Children's Home PO Box 507 Cherokee, NC 28719, Phone: 828-497-5009	Office: M- F, 8:00am - 4:30pm	Aid the family and/or the Department of Social Services in meeting as many of the well-being needs of the child as possible while in care and help in any way to reunify the family if that plan is appropriate.	Any child living in the state of NC
	Ernestine Walkingstick Domestic Violence Shelter	P.O. Box 455 Cherokee, NC 28719 (828) 488-5572		Crisis Shelter, Transitional Housing/Shelter, Family Violence Prevention, Domestic Violence Intervention Programs, Child Abuse Reporting/Emergency Response, Domestic Violence Support Groups, Domestic Violence Volunteer Opportunities, Abuse Counseling, Spouse/Domestic, Partner Abuse Counseling, and Domestic Violence Shelter Residents.	EBCI enrolled women

	HCD Transitional Housing Program (Tribal)	85 Children's Home Loop, Cherokee, NC 28719, (828) 554-6900	M- F, 7:45am - 4:30pm	short-term housing for those who experience temporary homelessness due to unforeseen circumstances	EBCI enrolled and dependents
Financial	HCD Portfolio Lending Program (Tribal)	85 Children's Home Loop, Cherokee, NC 28719, (828) 554-6900	M- F, 7:45am - 4:30pm	Loan from EBCI to assist non-bankable and/or higher risk potential borrowers	EBCI enrolled and building on boundary
Health (Medical Expenses)	EBCI HMD Supplemental Health Insurance Program (Tribal)	43 John Crowe Hill Rd, Cherokee, NC, 28719, (828) 554-6184	M- F, 7:45am - 4:30pm	hearing aid services, Medicare reimbursement assistance, disability claim assistance	EBCI enrolled seniors or members w/ disabilities
Violence	Rural Domestic Violence (Tribal)	Public Safety, 282 Seven Clans Rd., Cherokee, NC 28719, (828) 554-6829	M- F, 7:45am - 4:30pm	advocacy, outreach, crisis counseling, intervention and education on domestic violence	All individuals on the Qualla boundary
	Heart to Heart Child Advocacy Center (Tribal)	Public Safety, 282 Seven Clans Rd., Cherokee, NC 28719, (828) 497-7477	M- F, 7:45am - 4:30pm	Assist in investigation, prosecution, and prevention of child abuse, counseling, assist with recovery of victims and families	

ENVIRONMENTAL RESOURCES	Resource Name (Tribal, County, Non-Profit, etc.) and Website	Physical Location and Main Phone	Hours	Services Provided	Population Served, Eligibility Requirements
	Land Trust for the Little Tennessee (Non-profit) http://www.ltlt.org/about-ltlt/	557 East Main St., Franklin, NC, 28744-1148, 828-524-2711		Land and water conservation, easements, stream monitoring, streambank restoration, water quality protection, technical advice	Upper Little Tennessee and Hiawassee River valleys
	Bureau of Indian Affairs - Branch of Forestry (Federal)	257 Tsali Blvd. Cherokee, NC, 28719, 828-497-9131		management of forest inventory and planning, development of integrated resource management, forest protection, forest development, woodland management, and wildland fire management	Federally recognized Tribes
	Environmental and Natural Resources (Tribal)	1840 Painttown Rd. Cherokee, NC, 28719, 828-497-1898		Air quality, water quality, environmental permitting/regulatory compliance, underground storage tanks, watershed/stream bank stabilization, and forestry management	Boundary
	Fisheries and Wildlife (Tribal)	1840 Painttown Rd. Cherokee, NC, 28719, 828-497-1826		Tribal trout hatchery management, management of fisheries and wildlife resources, and protection of threatened and endangered species	Boundary
	Natural Resources Enforcement (Tribal)	517 Sequoyah Trail Cherokee, NC, 28719, 828-497-1786		Enforcement of Tribal fishing, hunting, and natural resource laws and ordinances	Boundary

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	Sanitation (Tribal)	1842 Painttown Rd. Cherokee, NC, 28719, 828-497-1827		Daily trash collections of the boundary, tree removal, and demolition services	Boundary
	Water and Sewer (Tribal)	1840 Painttown Rd. Cherokee, NC, 28719, 828-497-1823		Provide safe, adequate water distribution and adequate wastewater services to the public	Boundary
	Water Treatment (Tribal)	270 Water Dam Rd. Cherokee, NC 28719, 828-554-6750		Maintain municipal drinking water supply as well as water testing and water analysis	Boundary
	WATR (Non-profit)	835 Main Street, PO Box 2593, Bryson City, NC 28713, 828-488-8418, info@watrnc.org		WATR is a grassroots organization working to improve your water quality and habitat of the Tuckasegee River Basin	Jackson and Swain county
	Canary Coalition (Non-profit)	1286 West Main Street, Sylva, NC 28779, 828-631-3447, http://www.canarycoalition.org		Raise public awareness about the air quality crisis in the Smoky Mountains, the Greater Appalachian region, and nationwide, generating a groundswell of public support to reduce or eliminate major sources of air pollution	Appalachian region
	EBCI Compost Facility		Monday-Friday, 7:45 am -4:30 pm	Gather sewage, food waste, and other waste materials and package them until they mature into compost	
	Cherokee Tribal Utilities				
	Cherokee Recycling Program (grant funded)				

ECONOMIC RESOURCES	Resource Name (Tribal, County, Non-Profit, etc.) and Website	Physical Location and Main Phone	Hours	Services Provided	Population Served, Eligibility Requirements
	EBCI Office of Planning and Development (Tribal) http://nc-cherokee.com/economicdevelopment/	810 Acquoni Rd. Cherokee, NC, 28719, 828-497-1679	M-F, 7:45am-4:30pm	Counseling and assistance to new and existing business owners, including plan development, financial projection, loan packaging, bookkeeping, and any other applications	New and existing business owners
	Chamber of Commerce (Non-profit) http://www.cherokeesmokies.com/ + facebook page	1148 Tsali Boulevard, Cherokee, NC 28719, 828-497-6700		Promotion and economic development	Business owners in Cherokee
	Harrah's Cherokee Casino and Hotel (Tribal/private)	77 Casino Dr., Cherokee, NC 28719, (828) 497-7777	24 /7	With 3.6 million visitors annually, Harrah's Cherokee is the most visited attraction in North Carolina with a range of shopping, dining, and entertainment for visitors. Harrah's Cherokee is the largest hotel in North Carolina.	anyone
	NC Cooperative Extension, EBCI office (Tribal) http://ebci.ces.ncsu.edu/	12 Blythe Hill St, Cherokee, NC, 28719, 828-554-6991	M-F, 7:45am-4:30pm	Qualla Financial Freedom (financial education, services, and counseling)	anyone

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	Mountain Credit Union (private) https://www.mountaincu.org/	375 Sequoyah Trl Cherokee, NC 28719 (828) 497-6211	M-Th, 8:30-5pm, F, 8:30-5:30pm	Mountain Credit Union is a full-service financial institution with seven branch offices located throughout Western North Carolina.	anyone who lives, worships or attends school in Buncombe, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison and Swain Counties
	First Citizens Bank (private) https://www.firstcitizens.com/	701 Tsali Blvd, Cherokee, NC, (828) 497-2041,	M-F, 8:30am-5:00pm	First-Citizens Bank & Trust Company is a North Carolina state-chartered commercial bank	Anyone
	United Community Bank (private) http://www.ucbi.com/	3273 Hwy 441 N Cherokee, NC 28719 (828) 497-3734	M-Th: 9-5, F: 9-6, Drive up M-F: 8:30-5, F: 8:30-6, Sa: 8:30-noon	Full service financial institution	Anyone

EDUCATIONAL RESOURCES	Resource Name (Tribal, County, Non-Profit, etc.) and Website	Physical Location and Main Phone	Hours	Services Provided	Population Served, Eligibility Requirements
Pre-K through 3rd grade	New Kituwah Academy (Tribal)	60 Waterdam Rd. Cherokee NC 28719		Language immersion elementary school	Enrolled children elementary school age
0-K	EBCI Tribal Child Care/ Head Start Early Head Start (Tribal)	Dora Reed Children's Center: 897 Acquoni Rd. Cherokee, NC 28719, Phone: (828) 497-9416 and Big Cove center: 7201 Big Cove Rd., Cherokee NC 28719, Phone: (828) 497-9408		250 children served. Provides Child Care Resource And Referral Services, Children Care Services, Child Care Referral Services, Home Child Care Services and Child Care Choice Services.	Enrolled children ages 3-5
	Kaleidoscope Dreams Day Care (Tribal)	10 ADAMS CREEK RD, CHEROKEE NC 28719 Contact Phone: (828) 497-4946		Day care	
	Log Cabin (Independent)	52 Keener Cabin Rd., Cherokee NC 28719 Contact Phone: (828) 497-9033		Early education and pre-school	
	Agelink (Independent)	61 Children's Home Rd Cherokee, NC 28719 (828) 497-6726		Age Link Child Care is Independent and has a capacity of 100 children. Age Link Child Care offers instructional programs in reading and math.	Preschool that serves children ages 0-7+

K-12	Cherokee Central Schools (BIE)	1968 Big Cove Rd Cherokee, NC 28719 828.497-4092 http://cherokeecentral.sharpschool.com/		Elementary, Middle, and High school curriculum/levels available	
	Jackson County Public Schools (county), http://www.jcps.k12.nc.us/Pages/default.aspx	398 Hospital Road Sylva, NC 28779 (828) 586-2311		Elementary, Middle, High school and Early college curriculum available	County Residents
	Swain County Public Schools (County), http://www.swain.k12.nc.us/	Swain County Schools 280 School Drive Bryson City, NC 28713, Phone: (828) 488-3129		Pre-K, Elementary, Middle, and High school curriculum/levels available	County Residents
	Haywood County Public Schools (County), http://www.haywood.k12.nc.us/about-us/general-information/	1230 North Main Street Waynesville, NC 28786 Phone: 828.456.2400		Elementary, Middle, High school and Early college curriculum/levels available	County Residents
	Cherokee County Public Schools (County), http://www.cherokee.k12.nc.us/	911 Andrews Rd., Murphy, NC 28906, Phone: (828) 837-2722		Elementary, Middle, High school, alternative middle and high school, and Early college curriculum/levels available	County Residents
	Graham County Public Schools (County), http://www.grahamcountyschools.org/education/components/layout/default.php?sectionid=1	52 Moose Branch Rd., Robbinsville, NC 28771, Phone: (828) 479-3413		Elementary, Middle, and High school curriculum/levels available	County Residents

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	Mountain Discovery Charter School	890 Jenkins Branch Road, North, Bryson City, NC 28713 828-488-1222		Elementary and Middle school curriculum/levels available	Anyone
College/ University	Southwestern Community College (public), http://www.southwesterncc.edu/	447 College Dr. Sylva, NC 28779 (828) 339-4000		two-year college located in Sylva, North Carolina, an educational institution providing post-secondary education and lower-level tertiary education, granting certificates, diplomas, and associate's degrees	Anyone
	Western Carolina University(public), http://www.wcu.edu/	1 University Way, Cullowhee, NC 28723, Phone: (828) 227-7170		Western Carolina University is a coeducational public university located in Cullowhee, North Carolina, United States. The university is a constituent campus of the University of North Carolina system.	Anyone
Vocational/ Technical Education	JOB CORPS (non-profit), http://oconaluftee.jobcorps.gov/home.aspx	502 Oconaluftee Job Corps Rd, Cherokee, NC 28719, Phone: (828) 497-5411		Job Corps is a no-cost education and career technical training program administered by the U.S. Department of Labor that helps young people ages 16 through 24 improve the quality of their lives through career technical and academic training.	anyone (16-24 yrs. of age)
	Cherokee Boys Club (Tribal), http://www.cherokeeboysclub.com/about-us/	52 Boys Club Loop, Cherokee, NC, 28719828-497-9101		Provides full-time employment for our staff and on-the-job training for Cherokee Youth	Current and former CCS students

Other Educational Programs	EBCI Recreation and Education Service (Tribal)	828-497-1662	Monday - Friday: 7:45 am - 4:30 pm	The Education Program will give highest priority to all enrolled members of the Eastern Band of Cherokee Indians with access to financial assistance in pursuit of a post-secondary education.	EBCI enrolled

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TRANSPORTA-TION RESOURCES	Resource Name (Tribal, County, Non-Profit, etc.) and Website	Physical Location and Main Phone	Hours	Services Provided	Population Served, Eligibility Requirements
	Cherokee Transit (Tribal) http://www.cherokeetransit.com/community.htm		M-Sa, 6:45 am to 11:30 pm, Closed Sunday	A 3200 acre route serving: Big Cove, Birdtown, Snowbird, Soco; Transportation to medical appointments in Cherokee and nearby towns, the dialysis center for patients, and weekly shopping trips to Wal-Mart	Anyone
	Jackson County Transit (County) http://jacksoncountytransit.com/	876 Skyland Drive, Suite 1 Sylva, NC 28779, (828) 586-0233	M-F, 7am-5pm	Transportation to medical appointment, VA facilities, adult day care facilities, child daycare/Head Start, shopping, medical, and social trips, scheduled Asheville airport trips, and periodic regional recreational trips	Anyone
	Swain Public Transit (County) http://www.swaintransit.com/	125 Brendle St., Bryson City, N.C. 28713, (828) 488-3213,	M- F, 5:30am - 6:00pm,	Transportation to public employment offices, downtown Bryson city, out-of-county medical appointments, dialysis/cancer treatment, WCU and SCC, senior citizen route, smart start, day care, AM and PM employment routes	Anyone

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	Graham County Transit (County) http://www.grahamcounty.org/grahamcounty_departments_transportation.html	74 S Main Street, Robbinsville, N.C. 28771, , 828-479-4129,	M- F, 5:30am to 5:00pm	Daily transport to Andrews, Marble, and Cherokee. Scheduled trips are available to Asheville, Bryson City, Sylva, Waynesville, Murphy and Hayesville. Transport available to non-emergency medical appointments, shopping, Senior Center, and employment.	Anyone
	Cherokee County Transit (County) http://www.cherokeecounty-nc.gov/index.aspx?page=194	5465 U.S. 64, Murphy, NC 28906, 828-837-1789,	Office hours: M-F, 8am-5pm, transportation hours can vary (call)	Transportation for shopping, educational purposes, to/from work as well as in and out of county medical transportation	Anyone (sometimes only Cherokee county residents)
	Cherokee Boys Club Charter Bus Services (Tribal), http://www.cherokeeboysclub.com/commercial-services/bus-and-truck/	52 Boys Club Loop, Cherokee, NC 28719, Phone: 828-497-9101		Provides all school bus and charter bus service for the Cherokee Central School System, charter service for several churches, community organizations and schools. The Club has an agreement with the Cherokee Historical Association to provide shuttle service, motel shuttle service, traffic directing and parking for Unto These Hills, an agreement with the Tribal Roads Department to provide roadside mowing and trimming for the reservation road system, and an agreement with the Tribe, to transport 687 loads of municipal solid waste to a regional landfill in Georgia.	

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CULTURAL RESOURCES	Resource Name (Tribal, County, Non-Profit, etc.) and Website	Physical Location and Main Phone	Hours	Services Provided	Population Served, Eligibility Requirements
	Cherokee Preservation Foundation (Tribal), www.cherokeepreservationfdn.org/	71 John Crowe Hill Rd , Cherokee, NC 28719, (828) 497-5550	Monday - Friday: 7:45am - 4:30pm,	Preservation of the Cherokee language, revitalization of traditional Cherokee artisan resources, development of a sustainable environment, and the creation of life, culture-based learning opportunities to develop strong leadership abilities through various programs and grant funded initiatives.	EBCI enrolled members living on the Qualla boundary
	Cherokee Historical Association (non-profit), http://www.cherokeehistorical.org/index.html	564 Tsali Blvd (HWY 441) Cherokee, North Carolina 28719, Phone: 828-497-2111	Monday - Friday 8:00AM to 4:30PM	Perpetuate and preserve the history and culture of the Cherokee People through the operation of two cultural attractions; the Oconaluftee Indian Village living history site and the renowned outdoor drama Unto These Hills.	Anyone
	Kituwah Preservation and Education Program (Tribal)	60 Waterdam Rd. Cherokee NC 28719, Phone: (828) 554-6410		Curriculum development, teaching materials and teacher training for a total immersion program for children, community based language programs, and cultural and historical interpretation to schools and the public.	anyone (sometimes only EBCI enrolled)

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	WCU Cherokee Studies Program (Public), http://www.wcu.edu/academics/departments-schools-colleges/cas/casdepts/anthsoc/cherokee-studies/index.asp	262 Leroy George Drive Clyde, NC 28721 Phone: (828) 456-7311		Post-secondary degree program for future certified elementary education teachers of Cherokee language	anyone
	Qualla Arts and Crafts Mutual (Tribal) , http://www.quallaartsandcrafts.org/contact.php	645 Tsali Blvd. Cherokee, NC 28719, 828.497.3103	Monday - Saturday: 8-4:30pm, Sunday: 9-5pm	Nation's oldest Native American cooperative, supporting the responsible use and maintenance of natural resources for traditional art making practices.	anyone
	Museum of the Cherokee Indian (Tribal), http://www.cherokeemuseum.org/	589 Tsali Boulevard Cherokee, NC 28719 (828) 497-3481,	Monday-Sunday: 9 am - 5 pm, Extended summer hours til 7pm.	Sharing the 11,000 year history of EBCI through permanent and traveling exhibits.	anyone
	Oconaluftee Village (Tribal), http://visitcherokeenc.com/attractions/the-village/		Monday - Friday: 10:00 AM – 5:00 PM (May 1, 2013 until October 19, 2013)	Re-enactors and interactive demonstrations exhibit traditional Cherokee villages and villagers	anyone

	Unto These Hills	688 Drama Road Cherokee, NC,	Daily shows at 7:30pm during the summer season	This play traces the history of the Cherokee people through the aeon to the present day	anyone
	Fairgrounds	441 Sequoyah Trail - Cherokee, NC 28719-ND (828) 497-3028	Tribal	Grounds and exhibit hall for many cultural and social events that take place in the Tribal community	anyone
	Kituwah Mound		Tribal	Kituwah Mound is a sacred and incredibly historic site to the Cherokee. This mound once sat at the center of the first Cherokee village -- Kituwah, which is often referred to as the "mother town of the Cherokee."	anyone
	NAWA, Native American Women's Association (non-profit)			Educational and service association, which seeks to promote inter-Tribal-communications, betterment of home, family life and community, betterment of health and education, awareness of Indian cultures, and fellowship among North American Indian people	
	Junaluska Museum (tribal), http://www.main.nc.us/graham/junaluskamemorial.html	1 Junaluska Drive, Robbinsville NC 28771, 828-479-4727	Monday - Saturday, 8:00 a.m. - 4:00 p.m.	Located at the burial site of Cherokee Warrior Junaluska this memorial is dedicated to preserving Cherokee history and culture.	anyone

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CHURCHES	Acquoni Baptist Church.	722 Acquoni Road. 497-7106. Pastor Ed Kilgore 497-6521 (h)		Christian church services	anyone
	Antioch Baptist Church.	Coopers Creek Road.		Christian church services	anyone
	Beacon of Hope Baptist Church.	(828) 226-4491		Christian church services	anyone
	Bethabara Baptist Church.	1088 Birdtown Road. 497-7770		Christian church services	anyone
	Big Cove Missionary Baptist Church.	6183 Big Cove Road. 497-4141		Christian church services	anyone
	Big Cove Pentecostal Holiness Church.	7710 Big Cove Road. 497-4220		Christian church services	anyone
	Calico Church of Christ.	Big Cove Community. 497-6549		Christian church services	anyone
	Cherokee Baptist Church.	812 Tsalagi Road. 497-2761, 497-3799 (fax)		Christian church services	anyone
	Cherokee Bible Church.	Olivet Church Road. 497-2286		Christian church services	anyone
	Cherokee Church of Christ.	2350 Old Mission Road and Hwy. 19. 497-3334		Christian church services	anyone
	Cherokee Church of God.	21 Church of God Drive. (828) 400-9753		Christian church services	anyone

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	Cherokee Church of the Nazarene.	72 Old School Loop off Big Cove Road. 497-2819		Christian church services	anyone
	Cherokee Pentecostal Holiness Church.	135 Long Branch Road. 828-497-5829		Christian church services	anyone
	Cherokee United Methodist Church.	Hwy 19 – Soco Road. (336) 309-1016, www.cherokeemission.org		Christian church services	anyone
	Cherokee Wesleyan Church.	Hwy 19 across from Happy Holiday Campground. 586-5453		Christian church services	anyone
	Christ Fellowship Church.	Great Smokies Center. 736-8912		Christian church services	anyone
	Church of Jesus Christ of Latter Day Saints	26 Cattle Drive. Whittier, NC 28719, 497-7651		Christian church services	anyone
	Ela Missionary Baptist Church.	Hwy 19 South. Pastor Larry W. Foster		Christian church services	anyone
	Goose Creek Baptist Church.	Pastor – Bro. James Gunter		Christian church services	anyone
	Living Waters Lutheran Church.	30 Locust Road. 497-3730, prjack@frontier.com, lwcherokee@frontier.com		Christian church services	anyone

	Macedonia Baptist Church.	1181 Wolftown Rd. 828-508-2629 dconseen@gmail.com		Christian church services	anyone
	Olivet United Methodist Church.	811 Olivet Church Road. www.gbgm-umc.org/olivetumnc-whittier/		Christian church services	anyone
	Our Lady of Guadalupe Catholic Church.	82 Lambert Branch Road. 497-9755 or 497-9498		Christian church services	anyone
	Piney Grove Baptist Church.	Grassy Branch Road. 736-7850.		Christian church services	anyone
	Potter's House of Prayer	Preacher: William Cornwell 736-6925, Charlene Cornwell 736-2232 or Deacon John Biddix		Christian church services	anyone
	Rock Hill Baptist Church.	Pastor Red Woodard (828) 356-7312		Christian church services	anyone
	Rock Springs Baptist Church.	129 Old Gap Road. Pastor Greg Morgan 497-6258, 736-1245 (cell)		Christian church services	anyone
	Sequoyah Sovereign Grace Church.	3755 Big Cove Road. Pastor Tim James 497-7644		Christian church services	anyone

	St. Francis of Assisi Episcopal Church of Cherokee.	82 Old River Road. Holy Communion. Rev. Dr. Norma H. Hanson (828) 277-7399		Christian church services	anyone
	Straight Fork Baptist Church.	Big Cove Loop. Pastor Charles Ray Ball 488-3974		Christian church services	anyone
	Waterfalls Baptist Church.	Pastor James “Red” Bradley		Christian church services	anyone
	Wilmot Baptist Church.	Thomas Valley Road. Pastor: Johnny Ray Davis		Christian church services	anyone
	Wrights Creek Baptist Church..	Wrights Creek Rd. Pastor Dan Lambert.		Christian church services	anyone
	Yellowhill Baptist Church.	Pastor Foreman Bradley 506-0123 or 736-4872		Christian church services	anyone

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APPENDIX H – ACRONYMS

ACS	American Community Survey
AI/AN	American Indian/ Alaska Native
AQI	Air Quality Index
BMI	Body Mass Index
BRFSS	Behavioral Risk Factor Surveillance System
CAP	Criteria Air Pollutant
CDC	Centers for Disease Control and Prevention
CGVAMC	Charles George Veterans Administration Medical Center
CHA	Community Health Assessment
CHIP	Community Health Improvement Process
CHS	Cherokee High School
CHSDA	Contract Health Services Delivery Area
CIHA	Cherokee Indian Hospital Authority
DV	Domestic Violence
EBCI	Eastern Band of Cherokee Indians
EPA	Environmental Protection Agency
FY	Fiscal Year
GED®	General Educational Development
GIS	Geographic Information Systems
HAP	Hazardous Air Pollutant
HMD	Health and Medical Division
HPV	Human Papillomavirus
HRI	Health Resource Inventory
IHS	Indian Health Service
NAAQS	National Ambient Air Quality Standards
NACCHO	National Association of County and City Health Officials
NIHB	National Indian Health Board
OENR	Office of Environment and Natural Resources
PCP	Primary Care Provider
PHAB	Public Health Accreditation Board
RD	Registered Dietitian
REACH	Racial and Ethnic Approaches to Community Health
RPMS	Resource and Patient Management System
SAMHSA	Substance Abuse and Mental Health Services Agency
SCHS	State Center for Health Statistics
Td	Tetanus-diphtheria
Tdap	Tetanus-diphtheria-acellular pertussis
TEC	Tribal Epidemiology Center
THA	Tribal Health Assessment
THIP	Tribal Health Improvement Process
THIP-C	Tribal Health Improvement Process Collaborative

TRI	Toxic Releases Inventory
US DHHS	US Department of Health and Human Services
USDA	US Department of Agriculture
USDA/FNS/ SERO	USDA Food and Nutrition Service Southeastern Regional Office
USET	United South and Eastern Tribes
WIC	Women, Infants and Children
WNCHN	Western North Carolina Health Network

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