



**BOONE HOSPITAL CENTER
COMMUNITY HEALTH NEEDS ASSESSMENT
REPORT AND IMPLEMENTATION PLAN**

2013

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I. EXECUTIVE SUMMARY

For over 90 years, Boone Hospital Center has provided progressive health care programs, services and technologies in its mission to improve the health of the people and communities in mid-Missouri.

The Patient Protection and Affordable Care Act (PPACA) (March 2010) requires that each not-for-profit hospital conduct a Community Health Needs Assessment (CHNA) every three years. The assessment must take into account input from those who represent the broad interests of the community served by the hospital, including those with special knowledge or expertise in public health. Hospitals are required to define their community. For the purpose of this needs assessment, Boone Hospital Center, located in Columbia, Missouri, has defined its community as Boone County.

Boone Hospital Center conducted an external focus group with representatives from multiple community organizations, including the Boone County Health and Human Services Department, in January and March 2013. The group identified the top needs of concern as mental health, access to health care, dental care, reproductive health, health and cultural literacy, substance abuse, obesity, chronic conditions, injury and violence, and cancer.

In April 2013, an internal workgroup of Boone Hospital Center staff from various areas reviewed the focus group findings and relevant secondary data collected to validate these findings. Sources of secondary data include Healthy Communities Institute, Missouri Department of Health and Senior Services, US Census Bureau, American Communities Survey, National Cancer Institute and additional regional, state and national sources.

Boone Hospital Center's workgroup consisted of staff from various areas of expertise, including social work, emergency medicine, community outreach, and strategic planning. Their task was to list identified community needs based on their subject expertise and then rank these needs.

The hospital workgroup met in July 2013 to review rankings determined by individual members, discuss and review data on identified community health needs, and develop a final ranking of prioritized needs.

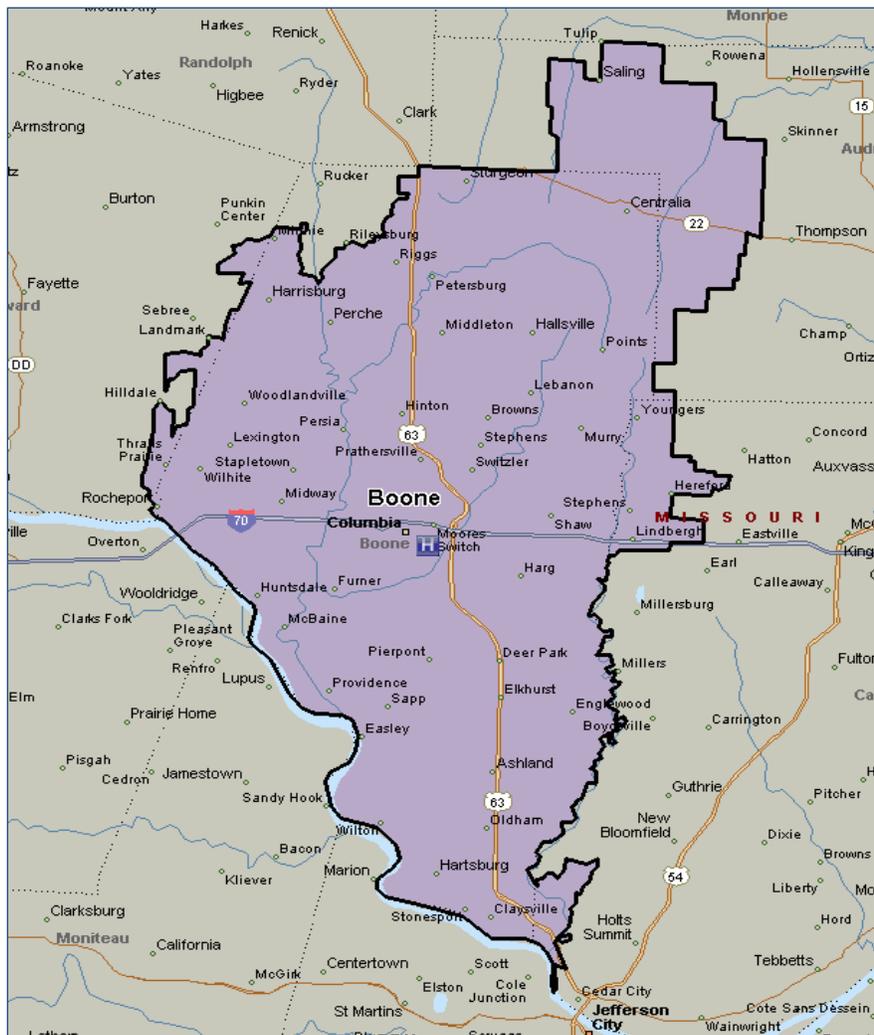
In prioritizing community health care needs, the hospital looked at the magnitude and prevalence of each need; whether the need had been improving or declining; the impact on vulnerable populations in the community; the relationship to other health needs; community programs and resources; and Boone Hospital Center's resources and ability to effectively address the need.

Having determined the hospital's resources and ability to impact areas of need, Boone Hospital Center will maintain or develop programs to address cancer, obesity and access to health care.

II. COMMUNITY DESCRIPTION

A. Overview and Map

Boone Hospital Center is a full service hospital and regional referral center with a service area of 25 counties in mid-Missouri. The hospital is located in the city of Columbia, Missouri, the county seat and largest city of Boone County. Boone Hospital Center is located in Columbia, Missouri, along the I-70 corridor of central Missouri. Columbia is the county seat and largest city of Boone County



Services provided by Boone Hospital Center include cardiology, surgery, neurology, oncology and obstetrics, including a Level-III Neonatal Intensive Care Unit (NICU). The hospital also offers outpatient rehabilitation services and imaging services. The hospital has a staff of 1,700 and a medical staff of about 250 physicians.

Boone Hospital Center has received the Gold Seal of Approval from the Joint Commission, VHA Leadership Award for Clinical Excellence. The hospital has earned Magnet designation from the American Nurses Credentialing Center in 2005 and 2009, and has been recognized by Thomson Reuters 100 Top Hospitals program in 2005, 2009 and 2011. Recognition and awards have also been given to individual hospital service lines, including neurology and stroke treatment, cardiology, and orthopedic surgery.

Boone Hospital Center's inpatient discharges from Boone County composed 39.23% of total inpatient discharges from all regions in 2012.

For the purpose of this community health needs assessment, the hospital's defined community is Boone County.

B. Demographics

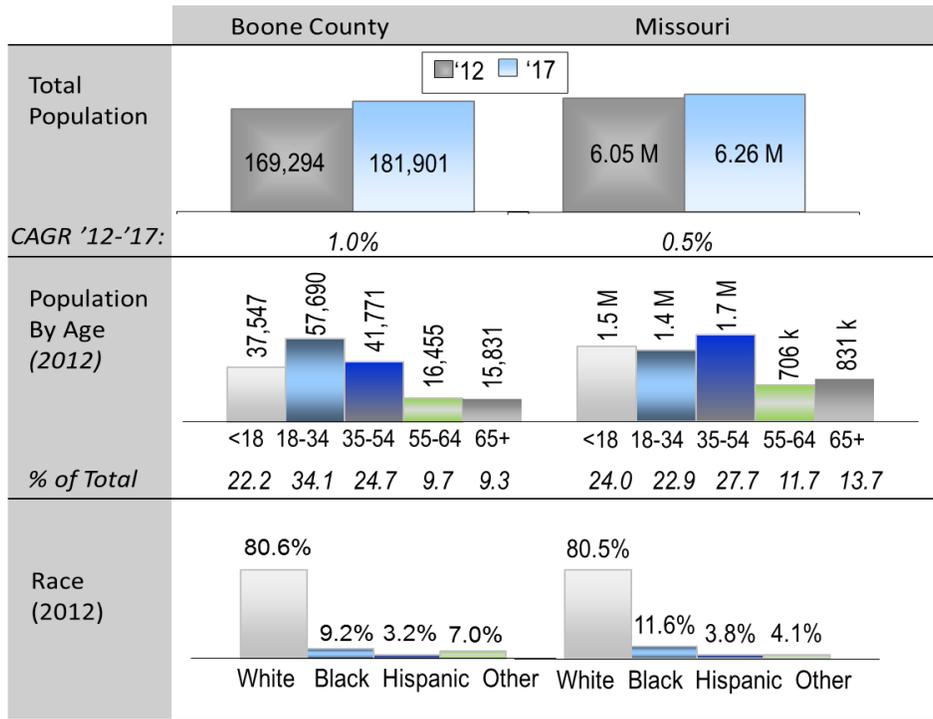
Boone County is the 7th largest of the 115 counties in Missouri. 2010 US Census data recorded the population for Boone County at 162,642 people.

Boone County has experienced significant growth in population. Between the 2000 census and the 2010 census, the county saw a 20.07% increase in population. The estimated 2012 population for Boone County is 168,535 people, an estimated 3.6% growth in population between April 1, 2010 and July 1, 2012.

The majority of the population lives in the city of Columbia. The estimated 2012 population for Columbia is 113,225.

Boone County has a large sub-population of college students. In fall 2012, 34,748 undergrad and graduate students were enrolled at the University of Missouri–Columbia. The student population contributes to Boone County being a relatively young county. The median age in 2010 was 29.6, compared to the state median age of 37.9. Thirty-four percent of Boone County's total population in 2012 was between ages of 18 and 34, compared to 23% of the state population. Seniors (age 65+) make up a smaller proportion of the population in Boone County than of the state population.

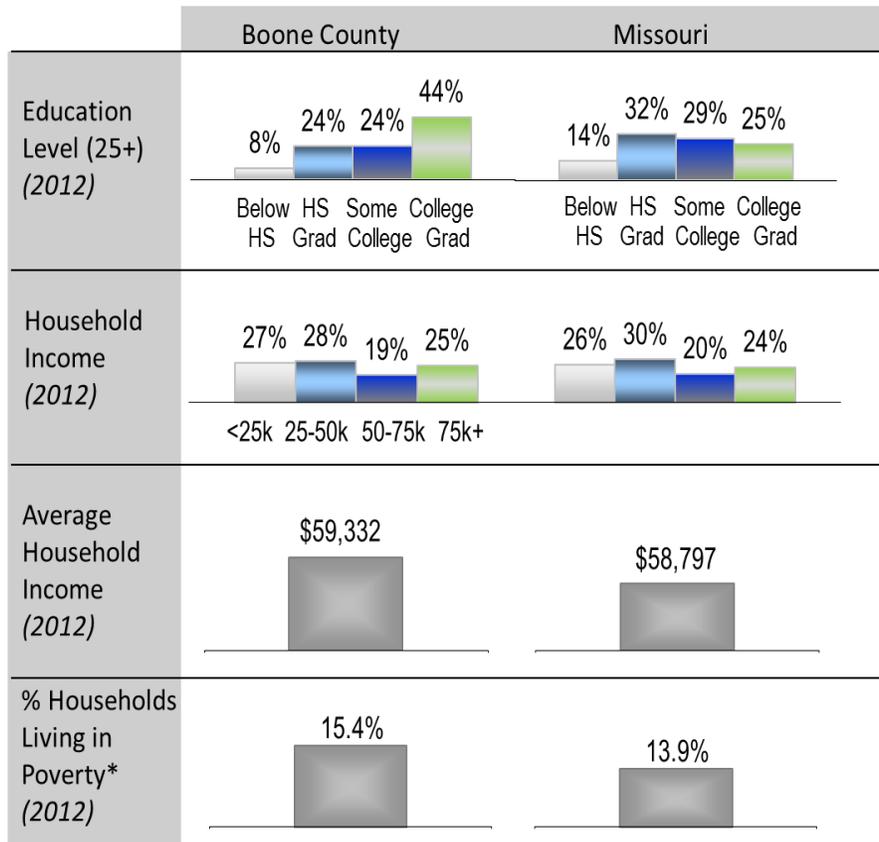
Demographics



Source: Thomson

There is a higher percentage of non-family households in Boone County than in Missouri, which may be the result of the student population. The total number of households does not include dormitory or institutional group housing; however, the majority of University of Missouri-Columbia students reside off-campus.

Socioeconomic Indicators



Source: Thomson

Additional Economic Indicators

Economic Indicators	Boone Co	MO	U.S.
Students Eligible for Free Lunch Program ('09)	29.1% ●	-	39.9%
Unemployed Workers in Civilian Labor Force ('12)	4.3% ●	6.6%	6.7%
Households With Public Assistance ('11)	2.0% ●	-	2.1%
Renters Spending >30% of Income on Rent ('11)	53.3% ●	-	46.8%
Homeownership ('11)	53.1% ●	-	61.1%
Foreclosure Rate ('08)	2.0% ●	4.0%	4.8%

Sources: HCI (County Health Rankings, American Community Survey), MICA

Economic Indicators ('11)	Boone Co	Boone Co		U.S.
		White	African American	
Children Living Below Poverty Level	17.8% ●	10.8% ●	51.1% ●	21.2%
Families Living Below Poverty Level	9.9% ●	7.0% ●	34.5% ●	10.8%
People 65+ Living Below Poverty Level	5.4% ●	4.8% ●	19.7% ●	9.7%
People 25+ With a High School Degree or Higher	92.4% ●	93.8% ●	81.7% ●	85.2%
People 25+ With a Bachelor's Degree or Higher	45.9% ●	47.7% ●	18.5% ●	17.1%

Sources: HCI (County Health Rankings, American Community Survey), MICA

With an estimated poverty rate of 19.2%, Boone County has a higher percentage of persons living in poverty than the state of Missouri. While this higher poverty rate might be attributable to the sub-population of college students who earn less income, it is important not to overlook families who live below the poverty level.

In Boone County, 9.9% of families and 17.8% of children live below the poverty line. The rate for children living in poverty is significantly higher among black residents: 51.1% of black children in Boone County live below the poverty level, compared to 10.8% of white, non-Hispanic children

Families with a single female head of household are much more likely to live in poverty – 45.7% of families with a single female head of household live below the poverty level in Boone County, compared to 42.5% of similar families in Missouri and 38.2% nationally, and 65.9% of families with a single female parent with children below age 5 live in poverty in Boone County.

Children Living Below Poverty

Children Living Below Poverty Level ('11)	Boone Co	Boone Co		MO
		White	African American	
Married couple with children < age 18	4.1% ●	4.6% ●	15.4% ●	7.6%
Married couple with children < age 5	2.8% ●	6.3% ●	27.8% ●	7.4%
Female head of household with children < age 18	45.7% ●	34.7% ●	52.6% ●	42.5%
Female head of household with children < age 5	65.9% ●	57.4% ●	63.1% ●	54.3%

Source: American Community Survey

Race and Ethnicity

As of 2011, the racial makeup of Boone County is 83.6% White, 9.4% Black or African-American, 0.5% Native American, 3.9% Asian, 0.1% Native Hawaiian or Pacific Islander, and 2.7% of two or more races. Approximately 3.2% of the population is Hispanic, of any race.

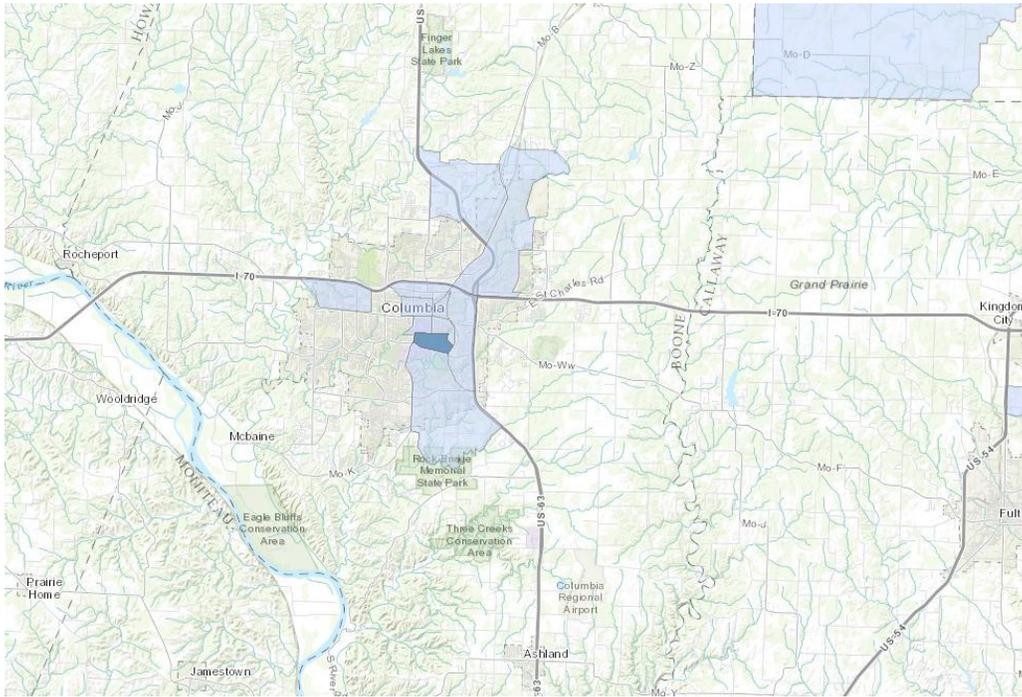
At 6.1%, Boone County has a higher percentage of foreign-born residents compared to the state of Missouri. This includes foreign-born students attending the University of Missouri and a growing refugee population of persons from African and Asian nations. 7.7% of Boone County residents (age 5+) speak a primary language other than English at home, and 2.8% are reported to speak English less than “very well.”

Race and Ethnicity	Boone County	Missouri
White persons, percent, 2011	83.6%	84%
Black persons, percent, 2011	9.4%	11.7%
American Indian and Alaska Native persons, percent, 2011	0.5%	0.5%
Asian persons, percent, 2011	3.9%	1.7%
Native Hawaiian and Other Pacific Islander persons, percent, 2011	0.1%	0.1%
Persons reporting two or more races, percent, 2011	2.7%	1.9%
Persons of Hispanic or Latino Origin, percent, 2011	3.2%	3.7%
White persons not Hispanic, percent, 2011	80.9%	80.8%
Foreign born persons, percent, 2007-2011	6.1%	3.8%
Language other than English spoken at home, percentage 5+, 2007-2011	7.7%	6.4%
Speaks English less than “very well”	2.8%	2.4%

Sources: HCI; American Community Survey; US Census

Low-Income Areas

Low-income areas are defined as census tracts with a poverty rate of 20% or higher or with a median family income below 80% of the median family income for the state or metropolitan area.



Source: USDA Economic Research Food Access Research Atlas

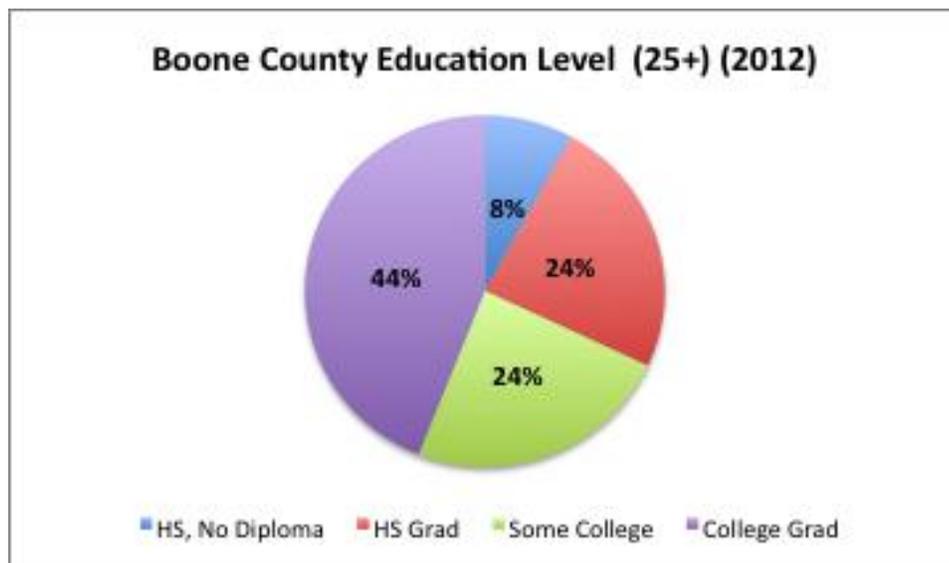
In the above map, low-income areas of Columbia are indicated in blue. The dark blue region indicates high-density housing and is located close to the University of Missouri. The northeast corner of Boone County, surrounding the town of Centralia, is also designated as a low-income area.

Education

Education	Boone County	Missouri
Students who graduate high school within 4 years	84.5%	80%
High school diploma or higher, percent of persons age 25+, 2007-2011	92.4%	86.8%
Bachelor's degree or higher, percent of persons age 25+, 2007-2011	45.9%	25.4%

Sources: HCI, County Health Rankings

Almost half of all Boone County adults age 25+ hold a bachelor's or higher degree. An additional 24% have attended college. Three colleges in Columbia -- University of Missouri – Columbia, Columbia College and Stephens College – offer two-year, four-year and graduate degree programs.



Source: U.S. Census Bureau

The University of Missouri-Columbia is the largest post-secondary academic institution in Boone County, with a total of 34,748 undergrad and graduate students enrolled in Fall 2012. Of this group, 5,020 (14.4%) were minority students, and 2,135 (6.1%) were international students, primarily from China, South Korea and India. The university has seen an increase in freshmen enrollment in recent years. In Fall 2007, 4,982 first-time college students had enrolled. In Fall 2011, the number of first-time college students had risen to 6,138. (Source: registrar.missouri.edu)

Housing

Housing	Boone County	Missouri
Housing units, 2011	69,961	2,723,415
Homeownership rate, 2007-2011	57.6%	69.5%
Foreclosure Rate, 2008	2.0%	4.0%
Median value of owner-occupied housing units, 2007-2011	\$156,600	\$138,900
Housing units in multi-unit structures, percent, 2007-2011	29.2%	19.6%
Households with housing costs >30% of income, percent, 2007-2011	32%	30%
Renters spending >30% of Income on rent, 2007-2011	53.3%	46.8%
Living in same house 1 year & longer, percent, 2007-2011	72.0%	US* 83.5%

*Compared to national data

Sources: HCI, American Community Survey, US Census Bureau

Housing data for Boone County reflects the impact of the college student sub-population. College students are more likely to rent housing and typically earn less income.

Boone County has a lower home ownership rate compared to the state of Missouri, with only 57.6% of housing units occupied by owners. Of these units, the median value is \$156,600, slightly higher than the median value of homes in Missouri. Housing costs have risen 12.2% from 2005 to 2011, but remain lower than average when compared to the U.S. The 2008 foreclosure rate in Boone County was 2%, half the rate of foreclosures in all Missouri.

Over half of renters in Boone County spend 30% or more of their total income on rental costs. Cost-burdened renters (tenants who spend 30% or more of their total income on rental costs) are more prevalent in Boone County compared to state and national rates.

In 2011, nearly a third of all housing units in Boone County were located in multi-unit structures. A shortage of on-campus housing and record-breaking enrollment numbers at the University of Missouri-Columbia have contributed to increased private development of apartment complexes. In 2012, residential building permits were issued in Boone County for 288 units in 11 new buildings of five or more units. As of June 2013, building permits have been issued this year for 305 units in 8 new buildings.

III. CONDUCTING THE ASSESSMENT

A. WORKGROUP STRUCTURE

The Affordable Care Act requires every tax-exempt hospital to complete an individual Community Health Needs Assessment (CHNA) that takes into account primary data from those who represent the broad interests of the community served by the hospital, including those with specialized knowledge or expertise in public health.

To assist each individual hospital in the organization satisfy the requirements for the CHNA, BJC HealthCare formed a CHNA Work Group with representatives from corporates and major hospitals.

The BJC CHNA Work Group developed a standardized process for collecting primary and secondary data. Primary data was collected by way of external focus groups of community stakeholders, including representatives of public health agencies. Additionally, an internal workgroup was established comprised of hospital staff with some expertise and experience with community health and outreach. For secondary data collecting, BJC HealthCare set up accounts with the Healthy Communities Institute (HCI) for the counties in which BJC HealthCare hospitals were located. HCI aggregates updated data on community and health indicators from multiple sources and provides a dashboard of all indicators.

B. PRIMARY DATA COLLECTION

BACKGROUND

In the Patient Protection and Affordable Care Act (PPACA) passed in March 2010, non-profit hospitals were mandated to conduct a community-based health needs assessment every three years. As a part of that process, each hospital is required to solicit input from those who represent the broad interests of the community served by the hospital as well as those who have special knowledge and expertise in the area of public health.

RESEARCH OBJECTIVES

The main objective for this research is to solicit input from health experts and those who have a special interest in the populations served by Boone Hospital Center (BHC) in Boone County.

METHODOLOGY

Hospital representatives formulated a two-step process. An initial focus group was conducted in January 2013 to solicit feedback on the needs of the Boone county population. A second meeting was held in February to share the results of the first focus group as well as the findings from additional secondary data analyses.

The first focus group was held on the evening of January 29, 2013 in the Small Conference Room on the 3rd floor of the Broadway Medical Plaza 3 in Columbia, MO. It lasted 2 hours and was moderated by the Manager of Market Research for BJC HealthCare.

Ten individuals representing various Boone County organizations were in attendance at either one or both focus groups. (See Appendix A.) These organizations were identified by the hospital as representing key stakeholders who would have specific insights into the health needs of the area. Each individual was sent a worksheet to complete prior to that evening to identify their perceptions of the greatest healthcare needs in Boone County, their knowledge of available resources to address these needs and the greatest “gap” that exists between need and available resources. (See Appendices B, C and D)

On March 5, the same group of community leaders was invited back to BHC. At that meeting, the moderator presented the healthcare needs that were identified in the earlier group, along with available secondary data that attempted to quantify the size of each need. At the end of the second meeting, community leaders were asked to re-evaluate the identified health needs in terms of their priority for the community as well as the ability for the community to collaborate around them. Those results were compiled and are presented in this report.

KEY FINDINGS: FOCUS GROUP #1 (January 29, 2013)

The transcript of the focus group was analyzed in conjunction with the completed worksheets that were returned by community stakeholders. The following needs were identified and are listed from those most frequently mentioned to least. Comments made during the focus group have also been included.

Mental Health: (8 mentions)

- There are limited service options available in Boone County for those who require mental health evaluation and treatment.
- There is a lack of inpatient beds for those who require inpatient care, including stabilization and medication review.
- Lack of health insurance coverage prevents many from seeking the care they need, especially the “working poor.”
- For children and their families, there is a need for case management services to help coordinate access.
- There are still stigmas associated with mental health that prevent some from seeking care.
- Medications are expensive and those who need them often cannot afford them.

Dental Care: (5 mentions)

- There is limited access to dental care for those on Medicaid and without insurance. They will end up being seen in the hospital emergency department as a result.
- Dentists who will treat children covered by Medicaid are also in short supply.

- There is a need for oral health education among school age children.

Obesity and Nutrition: (4 mentions)

- Obesity contributes to many chronic conditions including heart disease, diabetes and kidney failure.
- Many people do not have access to healthy, fresh food. It is often more expensive than higher calorie options. Many people are not familiar with how to buy and prepare it.
- Smoking is not as big an issue as it used to be.

Access: (3 mentions)

- The issue is not one of supply. There are plenty of physicians and services in this area.
- Those who are un-or under-insured have a difficult time accessing care, including the “working poor.”
- Those who are newly released from incarceration have no regular source of primary care. They end up being seen in the emergency room because they have no alternatives.
- The cost of medications can be prohibitive for some.
- Urgent care centers are not used because they often require a co-pay up front. The emergency room becomes the primary care provider of choice, because they must treat you and do not require payment at the time of service.
- A lack of public transportation creates obstacles for those who do not have a vehicle.
- In the summer, when the area’s population increases significantly due its recreational focus, the need for emergency health services dramatically increases.

Health Disparities among African Americans: (3 mentions):

- Being African American is a predictor of poor health status.

Reproductive Health (2 mentions):

- Teen pregnancy rates are an area of concern.
- STDs are especially high in this area.
- Men need education about their role and responsibility as fathers.
- The media has a negative influence on women’s view of themselves. They perceive their value only as a sexual object.

Better Coordination of Care/Communication: (1 mention)

- Patients do not always have a “healthy mindset.” They do not understand the impact their choices have on their health and why it is important for them to care about making healthy choices.
- The communication process between physicians and patients does not always function as it should. Better communication and coordination of care between patients and providers would result in more appropriate utilization of health care services.

- Health literacy is often an obstacle to establishing and maintaining health.
- There are a large number of refugees in Columbia. Their access to healthcare services is limited both because of language and cultural barriers that exist.
- The same is true for the families of international students at the University.

Substance Abuse: (1 mentions)

- Students are taking more risks than ever before with drug experimentation.
- There is a general concern about drug use/abuse, especially the abuse of prescription medications, meth, bath salts and heroin.
- There are reports of parents increasingly using their children’s medications for ADD or ADHD, and their children going without as a result.
- Providers assume that African Americans are drug-seekers and are less like to prescribe pain medication for them.

Injury Prevention: (1 mention)

- Issues like seat belt use, texting and driving and gun violence are major public health issues in the community.

Cancer:

- There are major disparities in access to preventive services by race.

Chronic Conditions:

- Lack of access to preventive health services results in African Americans having higher rates of chronic conditions than other groups.

WHAT ROLE SHOULD THE HOSPITAL PLAY?

When asked about what role hospitals should play in addressing these community health needs, several members of the stakeholder group felt they should be advocates for policy changes to improve access, including health care reform and Medicaid expansion.

The hospital should also offer educational opportunities to help people understand the value of health and being healthy, and how you create a culture where health is valued in the community. This would include the value of healthy eating and the importance of an active lifestyle.

Helping the community to understand that mental health is not mental illness is also an area where the hospital can serve a role. The schools are trying to incorporate these concepts into their curriculum so that students and teachers are just as comfortable talking about mental health as physical health.

Involving medical providers in creating a culture of health is also an area where the hospitals can be involved. It may be easier for them to prescribe a medication for lowering cholesterol than to focus on the education that may be needed to modify diet and exercise.

But getting practitioners involved in this part of the discussion may be more beneficial for the community in the long run.

The hospitals in the Columbia area are also major employers within the community. They have an opportunity to pay their employees a living wage with full benefits that will keep them from being part of the “working poor.” There are many within the community who work for area hospitals who cannot afford to pay for their basic needs. The area hospitals have a social responsibility to pay people a living wage.

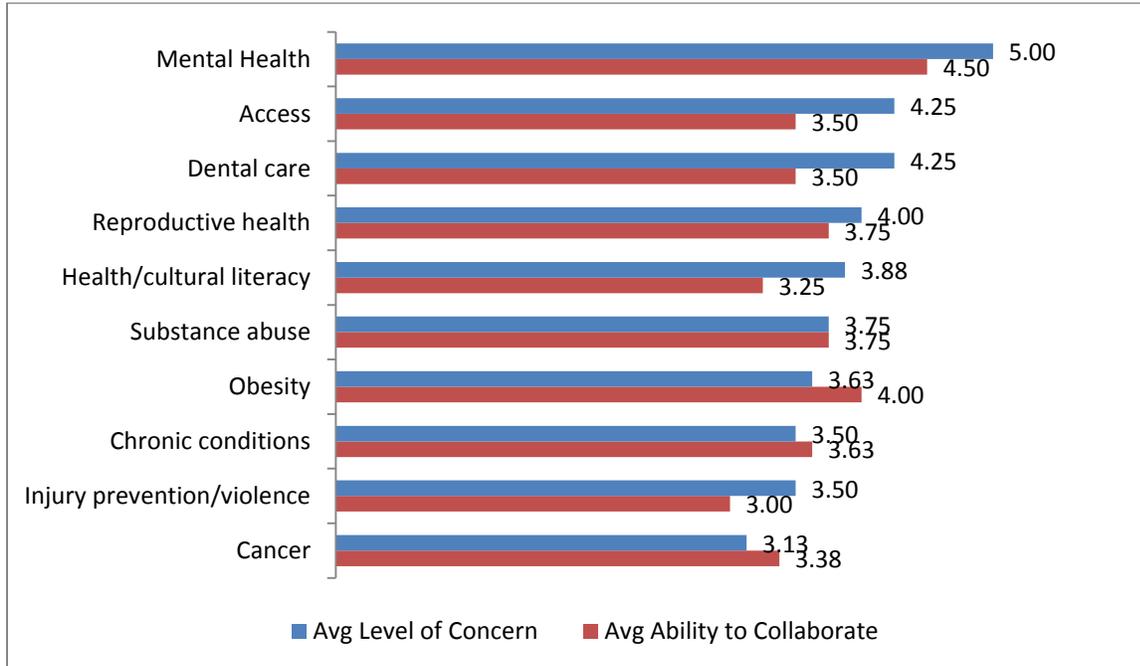
Raising awareness of the racial disparities that exist in the treatment of the minorities and the poor is also an area in which the hospitals can be involved. In addition, there is a need for training medical providers in cultural competence and sensitivity so that every patient will get the quality medical care they deserve. Boone Hospital should consider how such a training program could be developed and implemented among its entire staff.

We also need to recognize that there is more than one population whose needs Columbia must address. Not only should the cultural differences among African Americans be recognized, but the needs of other diverse groups who make up this community must be acknowledged as well, including the Hispanic population and other refugee groups.

For those segments who have limited access to primary care, including those with no insurance, hospitals should explore whether there are other less expensive alternatives to the ER where care can be administered.

For those who are frequent users of the Emergency Department, are there care management programs that could be put in place to find other more appropriate levels of care for them?

KEY FINDINGS: FOCUS GROUP #2 (March 5, 2013)



In preparing the secondary data for review and analysis, the hospital team decided to incorporate the issue of racial disparities into each area of need rather than make it a separate topic.

After viewing these secondary data on the previously identified community health needs, community stakeholders were asked to evaluate each of them based on two attributes: level of community concern and potential to collaborate around the health issue. Each was rated on a scale of 1 (low) to 5 (high). An average score was calculated for each healthcare need. No issue had an average score less than 3.0. The average score for Level of Concern was 3.89 and was 3.63 for Ability to Collaborate.

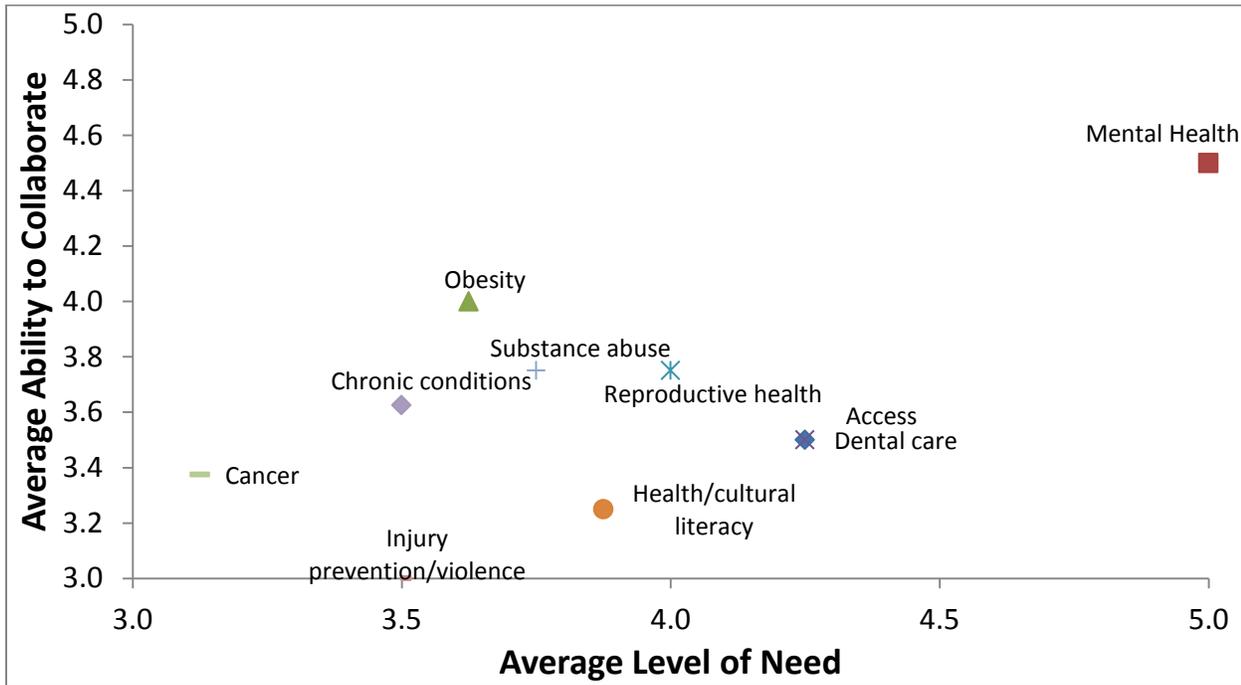
Mental Health and Reproductive Health were rated the highest in terms of level of community concern and ability to collaborate, with average scores greater than the attribute averages.

Access and Dental Health also scored high relative to community concern (average score \geq 3.90) but their ability to collaborate was rated lower.

Obesity and Substance Abuse ranked high on ability to collaborate but were lower in terms of level of concern.

Health/Cultural Literacy, Cancer, Chronic Conditions, and Injury and Violence rated below the average ratings for both level of concern and ability to collaborate.

Plot of Average Ability to Collaborate by Level of Community Concern



		Health Topic Ranking	
		High	Obesity Substance abuse
Potential to Unify	Lower	Health/cultural literacy Chronic conditions Cancer Injury prevention/violence	Access Dental care
		Lower	High
		Level of Community Concern	

C. SECONDARY DATA COLLECTION

Secondary data is provided for each of the needs identified by the community stakeholder focus group, in order of the focus group's final ranking.

Members of the focus group mentioned health disparities among African-Americans as an area of need in Boone County. Racial disparities were found for many health indicators. Rather than addressing racial disparities in health as a separate area of need, this reports includes data (if available) comparing findings for whites and African-Americans in Boone County for all other identified health needs.

Data Sources

Healthy Communities Institute (HCI): This online dashboard of health indicators for Boone County evaluates and tracks information against state and national data and Healthy People 2020 goals. Sources of data include the National Cancer Institute, Environmental Protection Agency, US Census Bureau, US Department of Education, and other national, state, and regional sources.

Missouri Information for Community Assessment (MICA): This system, run by Missouri Department of Health and Human Services, reports demographics and data about diseases and conditions, hospitalizations, births, deaths and other health statistics at state and county levels.

County Health Rankings: This program, collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, uses a variety of health and lifestyle measures, such as smoking, obesity, income, unemployment, education, air and water quality, and access to healthy food, to rank the overall health of nearly every county in the United States.

Healthy People 2020: An initiative of the US Department of Health and Human Services, Healthy People 2020 provides evidence-based, 10-year national objectives for improving the health of all Americans. These goals encourage collaborations across communities and sectors, empower individuals to make informed health decisions, and measure the impact of prevention activities.

MENTAL HEALTH

The World Health Organization defines mental health as “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.” Mental health needs in a community include, but are not limited to, treatment for mental illness.

Mental Health	Boone Co	MO	U.S.	HP 2020
Age-Adjusted Death Rate due to Suicide (per 100,000 pop) ('09)	8.9 ●	15.2	-	10.2
Age-Adjusted Death Rate due to Self-Injury (per 100,000 pop) ('09)	11.4 ●	12.9	-	-
Poor Mental Health Days ('10)	3.4 ●	-	3.4	-
Inadequate Social Support ('10)	17.5% ●	-	19.1%	-

Sources: HCI (MO Dept. of Health & Senior Services, County Health Rankings), MICA

Mental illness describes disorders of mood, thought and/or behavior, as recognized by the Diagnostic and Statistical Manual, 4th edition, of the American Psychiatric Association (DSM-IV). This includes mood disorders, such as depressive disorder, behavioral disorders, psychotic disorders, bipolar disorder or schizophrenia.

Individuals with suspected or diagnosed mental illness may not seek care due to limited service options, lack of insurance coverage, and health insurance with limited mental health coverage and/or high co-pays. Psychiatric medications can also be too expensive for individuals who may need them. Social stigmas associated with mental illness may also discourage individuals from seeking care.

There are limited service options available in Boone County for those who require mental health evaluation and treatment, and very few inpatient services for persons who require stabilization. Due to limited inpatient capabilities, patients with mental illness in need of immediate attention and stabilization may be admitted into other medical units in hospitals.

Missouri Psychiatric Center at the University of Missouri Medical Center is the only inpatient facility in Boone County that accepts patients on an emergency basis. The facility has 57 inpatient beds – 44 for adults, 13 for pediatric patients.

ER VISITS DUE TO MENTAL HEALTH

Mental Health	Boone Co	Boone Co		MO
		White	African American	
ER Visits for Mental Disorders (per 1,000 pop) ('10)	9.6 ●	8.7 ●	18.4 ●	12.6
ER Visits for Affective Disorders (per 1,000 pop) ('10)	1.5 ●	1.4 ●	2.6 ●	1.9
ER Vists for Schizophrenia and Related Disorders (per 1,000 pop) ('10)	0.2 ●	0.1 ●	1.0 ●	0.5
ER Visits for Dissociative and Personality Disorders (per 1,000 pop) ('10)	2.9 ●	2.7 ●	5.0 ●	3.1
ER Visits for Other Mental Conditions (per 1,000 pop) ('10)	1.6 ●	1.4 ●	3.3 ●	2.1
Mental Health Admits (per 10,000 pop) ('10)	102.0 ●	92.1 ●	198 ●	130.5
Mental Health Admits (per 10,000 pop <15) ('10)	62.9 ●	52.9 ●	97.4 ●	60.5

Sources: MICA

ER VISITS BASED ON AGE GROUPS

Mental Health	Boone Co	Boone Co		MO
		White	African American	
ER Visits for Mental Disorders age < 15 (per 1,000 pop) ('10)	3.9 ●	3.6 ●	6 ●	3.0
ER Visits for Mental Disorders Age 15 - 24 (per 1,000 pop) ('10)	12.4 ●	11.3 ●	22.2 ●	19.0
ER Visits for Mental Disorders Age 25 - 44 (per 1,000 pop) ('10)	14.2 ●	13.4 ●	23.9 ●	19.6
ER Visits for Mental Disorders Age 45 - 64 (per 1,000 pop) ('10)	8.3 ●	6.9 ●	25.1 ●	12.1
ER Visits for Mental Disorders Age 65+ (per 1,000 pop) ('10)	6.8 ●	6.7 ●	10.7* ●	6.1
Mental Health Admits (per 10,000 pop <15) ('10)	62.9 ●	52.9 ●	97.4 ●	60.5
Mental Health Admits (per 10,000 pop 15-24) ('10)	93.6 ●	80.2 ●	189.8 ●	179.1
Mental Health Admits (per 10,000 pop 25-44) ('10)	118.9 ●	110.3 ●	234.1 ●	172.7
Mental Health Admits (per 10,000 pop 45-64) ('10)	117.7 ●	106.4 ●	250.7 ●	125.3
Mental Health Admits (per 10,000 pop 65+) ('10)	90.2 ●	85.6 ●	174.0* ●	97.8

Sources: MICA

Dental Health

The Centers for Disease Control ranked Missouri 47th in terms of the percentage of the population that visited a dentist last year. 50 of Missouri’s 115 counties have a shortage of dental professionals.

In Boone County, the availability of dentists is better, however, there remains limited access to dental care for those without dental insurance or who receive dental coverage from Medicaid. Often, due to cost, patients will defer dental care and end up being seen in the hospital emergency department for pain and infections.

Dental Care ED Visits

Dental Care	Boone Co		Boone Co		MO	U.S.		
			White	African American				
Dentist Rate (per 100,000 pop) ('07)	57	●	-	-	-	30		
ED Visits for Disorders of Teeth & Jaw (per 1,000 adults) ('10)	8.1	●	5.8	●	31.1	●	10.2	-
ED Visits for Disorders of Teeth & Jaw (per 1,000 pop <15) ('10)	1.0	●	0.6	●	2.5	●	2.1	-
ED Visits for Disorders of Teeth & Jaw (per 1,000 pop 15-24) ('10)	8.9	●	6.0	●	35.2	●	16.4	-
ED Visits for Disorders of Teeth & Jaw (per 1,000 pop 25-44) ('10)	18.7	●	14.3	●	66.7	●	22.0	-
ED Visits for Disorders of Teeth & Jaw (per 1,000 pop 45-64) ('10)	5.3	●	3.1	●	30.4	●	4.6	-
ED Visits for Disorders of Teeth & Jaw (per 1,000 pop 65+) ('10)	0.8	●	0.7	●	0.0	●	0.8	-

- There is limited access for those on Medicaid and without insurance to dental care. They will end up being seen in the hospital emergency department as a result.
- Even children in the Head Start program have difficulty finding a dentist.
- There is a need for oral health education among school age children.

Healthy Lifestyles

- Obesity contributes to many chronic conditions including diabetes, heart disease and kidney failure.
- Access to healthy food is an obstacle for some because it is more expensive, and some people are not familiar with how to buy and prepare it.
- As a community, we do not participate in regular physical activity as much as we should.
- Smoking is not as big an issue as it used to be.

Healthy Lifestyles	Boone Co	MO	U.S.	HP 2020
Adult Fruit and Vegetable Consumption ('11)	14.2% ●	11.4%	-	-
Adults who are Obese ('11)	29.1% ●	32.9%	-	30.6%
Adults who are Overweight ('11)	33.3% ●	34.6%	-	-
Adults who are Sedentary ('09)	21.1% ●	30.6%	-	32.6%
Low-Income Preschool Obesity ('11)	11.9% ●	-	13.9%	-
Poor Physical Health Days ('10)	2.9 ●	-	3.7	-
Self-Reported General Health Assessment: Poor or Fair ('10)	11.5% ●	-	16.0%	-
Adults who Smoke ('10)	18.6% ●	-	20.9%	-

Source: HCI (MO Dept. of Health & Senior Services, County Health Rankings, US Dept. of Agriculture Food Environment Atlas)

Healthy Lifestyles	MO	MO		HP 2020
		White	African American	
Adults who are overweight ('11)	34.3%	34.6% ●	31.1% ●	-
Adults who are obese ('11)	30.2%	29.2% ●	40.8% ●	32.6%
Adults who ate < 5 fruits/vegetables per day ('11)	87.4%	87.7% ●	88.0% ●	-
Strongly agree: Easy to purchase healthy food ('11)	82.2%	83.8% ●	72.2% ●	-
No leisure time physical activity ('11)	23.7%	23.0% ●	29.6% ●	-
Current cigarette smoker ('11)	23.0%	22.5% ●	24.9% ●	-

Source: MICA 2011 County Health Rankings

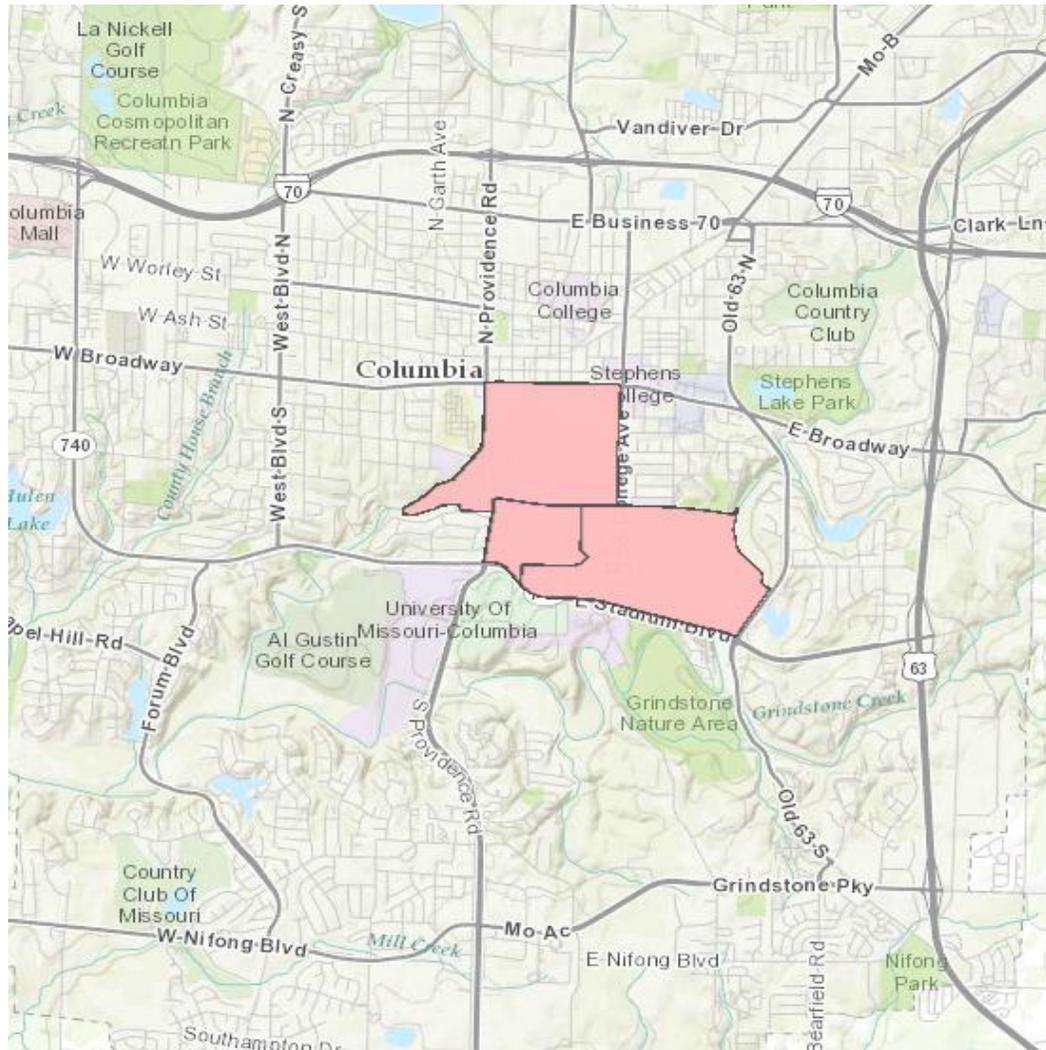
Healthy Lifestyles Continued

A fast food restaurant is defined as a limited service establishment where people pay before eating

Healthy Lifestyles	Boone Co	U.S.
Farmers Market Density (per 1,000 pop) ('12)	0.04 ●	0.03
Fast Food Restaurant Density (per 1,000 pop) ('09)	0.78 ●	0.57
Grocery Store Density (per 1,000 pop) ('09)	0.17 ●	0.21
Households without a Car and >1 Mile from a Grocery Store ('10)	1.9% ●	2.6%
Low-Income and >1 Mile from a Grocery Store ('10)	11.6% ●	6.2%
Recreation and Fitness Facilities (per 1,000 pop) ('09)	0.12 ●	0.07
SNAP Certified Stores (per 1,000 pop) ('10)	0.6 ●	0.9

Source: HCI (US Dept. of Agriculture Food Environment Atlas)

Food Deserts



- A food desert is defined as a low-income census tract where a substantial number or share of residents has low access to a supermarket or large grocery store.
 - Food deserts exist in the southeast portion of Boone County.

Access to Health Care

The ability to access and afford health care services from primary care providers increases the likelihood that community members will have routine checkups and screenings. Moreover, those with access to primary care are more likely to know where to go for treatment in acute situations. Communities that lack a sufficient number of primary care providers typically have members who delay necessary care when sick and conditions can become more severe and complicated.

Regular visits with a primary care physician can result in better health outcomes for patients, reduce the number of preventable hospitalizations for ambulatory care sensitive conditions, and allow better coordination of care when a patient requires hospitalization or aftercare.

Access	Boone Co	Boone Co		MO	U.S.	HP 2020
		White	African American			
ER Visits (All Diseases and Conditions per 1,000 pop) ('10)	290	252.0	636.3	372.7	-	-
Preventable Hospitalizations (<65) ('10)	103.5	90.8	223.3	141.3	-	-
Adults with Health Insurance ('11)	88.4%	89.4%	82.7%	-	81.1%	100%
Children with Health Insurance ('11)	97.9%	97.3%	100%	-	94.2%	100%

Sources: HCI (County Health Rankings, American Community Survey), MICA

The metric for children with health insurance is derived from the American Community Survey. It is based on children ages 0 - 17 that have any type of insurance coverage. The time period is one year, but it is unclear if it reflects children who had insurance at any time during the year or at a single point in time when the measurement was taken.

Access Continued

Access	Boone Co	MO	U.S.
Primary Care Provider Rate (per 100,000 pop) ('09)	179 ●	-	52
Preventable Hospital Stays (ACSC per 1,000 Medicare enrollees) ('09)	55 ●	-	75
No Health Insurance Coverage (Ages 18-64) ('11)	18.4% ●	23.7%	-
Could Not Get Needed Care in Past 12 Months ('11)	8.8% ●	8.9%	-
Workers Commuting by Public Transportation ('10)	0.5% ●	-	0.4%

Sources: HCI (County Health Ranking, American Community survey), MICA

Public transportation

- Columbia Transit runs 9 main bus routes and ADA Para transit service for those eligible.
 - Service hours: 6:20 AM – 6:30 PM M-W, 6:20 AM – 9:15 PM Th-F, 10 AM – 7:05 PM Sat
 - No Sunday or holiday service
 - Reduced fares available for low-income passengers
- OATS Mid-Missouri operates transportation shuttles in Boone County two days a week
- Services for Independent Living provides door-to-door service for eligible seniors or disabled residents

Ambulatory Care Sensitive Conditions: conditions for which appropriate ambulatory care could prevent unnecessary hospitalizations. They include: angina, asthma, COPD, diabetes, heart failure and hypertension.

Boone County has a primary care ratio of 105 providers per 100,000 persons, higher than the state overall and ranking third of 115 Missouri counties for highest primary care provider rate. Primary care providers are practicing physicians specializing in general practice medicine, family medicine, internal medicine and pediatrics.

Despite this, there are those in Boone County who are either uninsured or under-insured who experience difficulties accessing primary health care. This is especially true among “working poor” families.

Underinsured persons or families may have health insurance, but the coverage is limited or insufficient for patients. Underinsured individuals might seek little or no primary care because they cannot afford co-pays or deductibles.

Additionally, prescribed medications can also be prohibitively expensive, resulting in patients improperly taking needed prescriptions or not taking any at all.

As a result, these patients will use hospital emergency rooms as their care provider. While urgent care centers are available in Boone County, they often require co-pays or payments for service up front.

Preventable Hospitalizations

Missouri Department of Health and Human Services defines preventable hospitalizations as “diagnoses for which timely and effective outpatient care can help reduce risks of hospitalization by either preventing the onset of an illness or condition, controlling an acute episodic illness or condition, or managing a chronic disease or condition.”

Financial Assistance

Charity care is a specific financial assistance policy for free or discounted health service to persons who meet the hospital’s criteria, based upon income, assets and family size. It does not include bad debt, uncollectable charges or the difference between the cost of care and revenue received from Medicare or Medicaid.

Boone Hospital Center has a financial assistance program for patients. A separate admissions program assists uninsured patients with determining eligibility for Medicaid or other assistance programs.

In 2011, Boone Hospital Center provided \$5,463,468 in financial assistance to patients.

Reproductive Health

Boone County's teen pregnancy rate is 24.1 per 1,000 females ages 15-17. This is lower than the state teen pregnancy rate of 27.4. The teen pregnancy rate for African-American females in Boone County, however, is nearly 4 times higher than that for white females.

Teen Pregnancy ('09)	Boone Co	Boone Co		MO
		White	African American	
Births by Age of Mother (% of all births)				
· Under 15 years old	0.1% ●	0.05% ●	0.2% ●	0.1%
· 15-17 years old	2.3% ●	1.6% ●	6.7% ●	3.3%
· 18-19 years old	5.7% ●	4.6% ●	13.1% ●	7.9%
Teen Pregnancy Rate (per 1,000 females 15-17)	24.1 ●	16.9 ●	63.4 ●	27.4

Source: MICA

Sexually transmitted infections

Sexually transmitted infections (STIs) are associated with an increased risk of morbidity and mortality, including increased risks for cervical cancer, infertility and death. Incidence rates are associated with unsafe sexual activity.

In Boone County, the incidence rates of reported STIs are significantly higher for black females than for white females, especially among teenagers. The incidence rate for gonorrhea among all females between 15 and 44 was 392.6 per 100,000, higher than the Missouri rate of 367 per 100,000

Sexually Transmitted Diseases (per 100,000 females 15-44)	Boone Co	Boone Co		MO
		White	African American	
Chlamydia	1,447.7 ●	817.3 ●	5,922.3 ●	1,471.2
Gonorrhea	392.6 ●	186.4 ●	2,060.3 ●	367.0
Syphilis	0.8 ●	0.0 ●	8.1 ●	1.8

Sexually Transmitted Diseases (per 100,000 females 15-19)	Boone Co	Boone Co		MO
		White	African American	
Chlamydia	2,096.3 ●	1,019.0 ●	8,779.7 ●	2,129.1
Gonorrhea	605.9 ●	219.3 ●	3,112.2 ●	625.3
Syphilis	2.9 ●	0.0 ●	24.8 ●	4.2

Source: MICA

Maternal and Pediatric Health

Pediatric Health	Boone Co	Boone Co		MO	U.S.	HP 2020
		White	African American			
Children with Health Insurance ('11)	97.9%	97.3%	100%	-	94.2%	100%
Babies with Low Birth Weight ('09)	7.6%	5.7%	15.0%	7.4%	-	7.8%
Preterm Births ('09)	12.1%	11.3%	15.0%	11.7%	-	11.4%
Children Living Below Poverty Level ('10)	17.8%	10.8%	51.1%	-	20.4%	-
Child Abuse Rate (per 1,000 children) ('09)	1.5	1.3	2.5	4.4	-	8.5
Infant Mortality Rate (per 1,000 live births) ('09)	6.6	5.4	15.7	7.1	-	-

Source: HCI (MO Dept. of Health & Senior Services, American Community Survey, US Dept. of Agriculture Food Environment Atlas)

The percentage of all pregnant women who received early prenatal care in Boone County is higher than all of Missouri and surpasses the Healthy People 2020 target.

15.1% of mothers in Boone County smoked during pregnancy, compared to 18.7% of all mothers in Missouri. The Healthy People 2020 target for this behavior is 1.4%.

Racial disparities are consistent in maternal health indicators. Fewer African-American mothers receive prenatal care. A greater percentage of African-American mothers have not completed high school or have given birth more than once before reaching age 20.

Maternal Health ('09)	Boone Co	Boone Co		MO	HP 2020
		White	African American		
Mothers who Received Early Prenatal Care	85.7%	88.0%	72.5%	85.7%	77.9%
Mothers who Smoked During Pregnancy	14.0%	13.3%	24.2%	23.8%	1.4%
Mothers Education <12 Years	11.1%	8.9%	25.2%	18.1%	-
Repeat Births Under Age 20	1.2%	0.9%	3.8%	2.2%	-
Abortions Mother Under 18 (% pregnancies <18)	23.8%	23.6%	22.1%	19.6%	-

Source: HCI (MO Dept. of Health & Senior Services, American Community Survey, US Dept. of Agriculture Food Environment Atlas)

Substance Abuse

Alcohol

Alcohol abuse is the third leading lifestyle-related cause of death in the United States. A risk factor for many adverse health outcomes, including heart disease, liver disease and motor vehicle crashes; excessive drinking contributes to approximately 80,000 deaths each year in the U.S.

The rate of adults who reported drinking excessively is higher than the national average. Excessive drinking includes binge drinking and heavy drinking. Binge drinking is defined as consuming more than 4 (for women) or 5 (for men) alcoholic beverages in a single day. Heavy drinking is defined as drinking more than one (for women) or 2 (for men) drinks per day on average.

The density of liquor stores is low in Boone County; however, Missouri has few restrictions on the retail (off-premises) sale of alcohol. Beer, wine and liquor can be purchased in grocery stores, drug stores and convenience stores.

Drug Use & Abuse ('10)	Boone Co	Boone Co		MO
		White	African American	
ER Visit for Alcohol/Substance Abuse (per 1,000 pop)	2.5 ●	2.3 ●	5.1 ●	3.1
· Alcohol Abuse ER Visits (per 1,000 pop)	1.8 ●	1.6 ●	3.9 ●	2.3
· Substance Abuse ER Visits (per 1,000 pop)	0.8 ●	0.8 ●	1.1 ●	1.4
Alcohol Abuse Inpatient Admits (per 10,000 pop)	19.8 ●	19.3 ●	31.3 ●	10.4
Substance Abuse Inpatient Admits (per 10,000 pop)	5.6 ●	4.8 ●	15.0 ●	8.5

Drug Use & Abuse ('10)	Boone Co	MO	U.S.	HP 2020
Adults who Drink Excessively	16.1% ●	-	14.5%	25.3%
Liquor Store Density (per 100,000 pop)	4.3 ●	-	10.4	-

Sources: HCI (US Census Bureau County Business Partners, County Health Rankings), MICA

Substance Abuse: Grades 6-12

Current Substance Abuse for Grades 6-12 *	Boone Co	MO
Cigarettes	13.0% 	13.7%
Alcohol	21.4% 	19.8%
Binge**	11.2% 	11.4%
Marijuana	11.2% 	9.4%
Inhalants	2.4% 	3.0%
Rx Abuse	7.0% 	6.7%
OTC Abuse	5.0% 	4.8%

Source: May 2012 Behavioral Health Profile

In Boone County,

- 62.1% of youth believe that it would be easy to get cigarettes and 50.6% have friends who smoke.
- 65.5% of youth believe that it would be easy to get alcohol and 66.2% have friends who drink alcohol.
- 22.2% of youth believe it would be easy to get other drugs such as cocaine, methamphetamine, and ecstasy.

Substance Abuse: Ages 18+

Current Substance Abuse for Ages 18+*	Region	MO
Cigarettes	28.7% 	30.4%
Alcohol	53.3% 	53.8%
Binge**	24.2% 	25.8%
Marijuana	4.7% 	5.6%
Illicit Drug excluding MJ	3.6% 	3.9%

Source: May 2012 Behavioral Health Profile

*30 Day Use

**5+ drinks on a single occasion

Health Literacy and Cultural Competence

Based on Health Literacy Missouri, PPACA 2010, Healthy People 2020 Health literacy is the degree to which an individual has the capacity to obtain, communicate and understand the basic health information necessary to make appropriate health decisions. Poor health literacy is often an obstacle to establishing and maintaining health. The abilities to understand health information, ask appropriate questions, access health services when needed, and maintain self-management, including correct use of medications, are necessary for a person to receive timely, effective care.

Low health literacy costs the U.S. economy between \$106 billion and \$236 billion annually. Patients need to understand the impact that their choices have on their health and why is it important to care about making healthy choices.

Adults with lower health literacy are more likely to have poorer overall health, less likely to seek preventive care with a primary health care provider, less likely to follow treatment plans and more likely to use emergency rooms for treatment of ambulatory-sensitive conditions. Lower health literacy can lead to increased re-admissions and an increased risk of premature or preventable death.

Low health literacy has been found to be associated with a person's age, education and ethnicity. Unfamiliarity with medical terminology; inability or limitations in speaking, reading or writing English; and sensory, mental or other impairments can all present obstacles to understanding health information. Improved communication and coordination of care between patients and providers results in more appropriate utilization of health services.

Like the U.S., Boone County's population is growing increasingly diverse; in 2010, 6.1% of the population of Boone County was foreign-born; a higher percentage than in the state. Approximately 2,000 international undergrad and graduate students attend the University of Missouri Columbia ever year. About 200 refugees resettle in Boone County each year. Over the last five years, most have arrived from Eritrea, Iraq, Jordan, Afghanistan and Burma. Increased cultural literacy in health care will be necessary to assist these groups in achieving health literacy.

Cultural Competency

Cultural Competence in health care is defined as the ability of systems to provide care to patients with diverse values, beliefs and behaviors, including tailoring delivery to meet patients' social, cultural, and linguistic needs.

The goal of cultural competence is to create a health care system and workforce capable of delivering the highest-quality care to every patient regardless of race, ethnicity, culture or language proficiency.

Health care experts have made a clear connection between cultural competence, quality improvement, and the elimination of racial/ethnic disparities. Improved communication between providers and patients is linked to patient satisfaction, adherence to medical instructions, and health outcomes.

Place of Birth and Citizenship Status	Boone Co		Missouri	
	Number	%	Number	%
US Native	156,298	94.4	5,767,425	96
Foreign-Born	9,329	5.6	243,263	4
Naturalized US Citizen	3,786	40.6	101,137	40.6
Not a US Citizen	5,543	59.4	142,126	58.4

International Students

- 1,943 international students (undergrad and graduate) were enrolled at the University of Missouri

Source: 2011 Missouri Census Data Center (American Community Survey), missouri.edu, Refugee and Immigration Services DJC

Language Spoken At Home	Boone Co		Missouri	
	Number	%	Number	%
Total population, 5 years and over	155,529	93.9	5,629,071	93.7
Language spoken at home other than English	12,044	7.7	362,210	6.4
Speaks Spanish at home	3,386	2.2	152,223	2.7
Speaks English less than "very well"	4,297	2.8	137,657	2.4

Refugee Population

- Approximately 200 refugees resettle in Boone County each year
- Over the last 5 years, most refugees arrived from Eritrea, Iraq, Jordan, Afghanistan, Burma

Source: 2011 Missouri Census Data Center (American Community Survey), missouri.edu, Refugee and Immigration Services DJC

Injury Prevention and Violence

Injury and violence includes motor vehicle injuries, assault, homicide and other violent crimes or accidents. (Suicide and self-injury data are reported above, under Mental Health.)

Unintentional injuries due to accidents or assault are the fifth leading cause of death in Boone County (source: MICA). Major categories of unintentional injuries include motor vehicle accidents, falls and accidental poisonings.

Assault/Injury ('09)	Boone Co		Boone Co		MO		
			White	African American			
Deaths from Assault/Injury (per 100,000 pop)	3.6	●	2.6	●	14.2	●	7.8
Hospitalizations for Assault/Injury (per 10,000 pop)	2.3	●	2.3	●	9.1	●	3.1
ER Visits for Assault/Injury (per 1,000 pop)	2.6	●	1.9	●	7.2	●	4.0

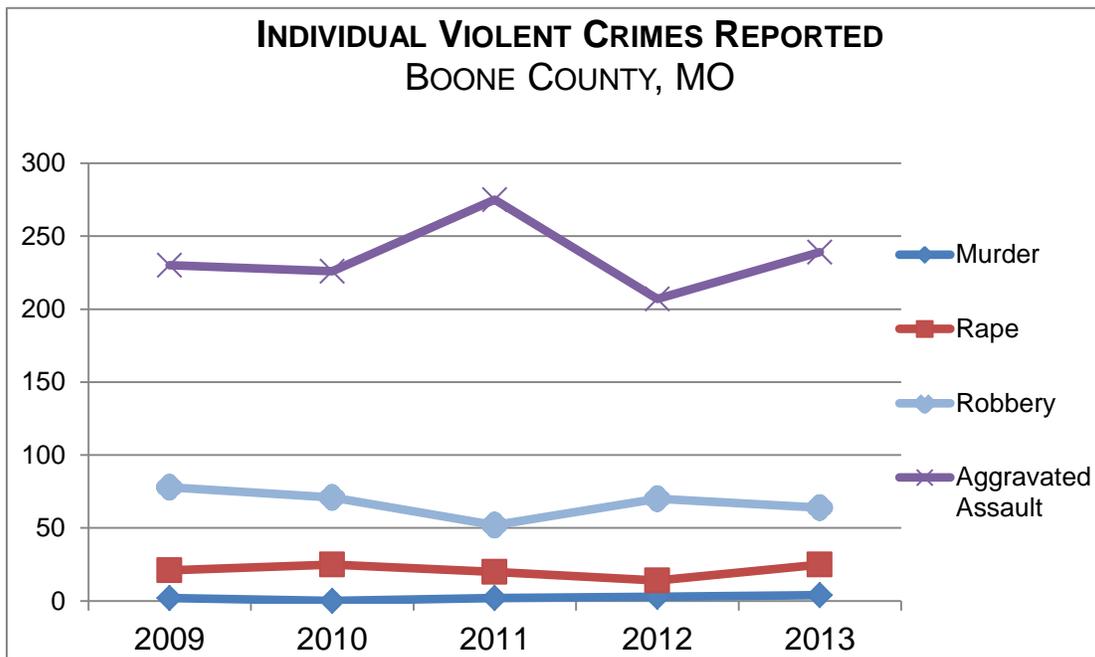
Source: MICA

Violent crimes

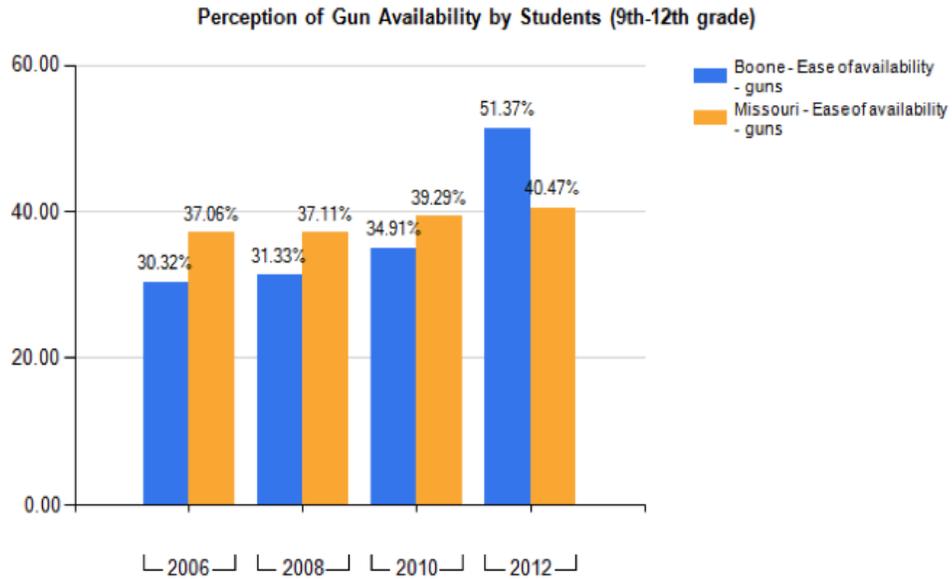
Violent crimes include homicide, forcible rape, robbery, and aggravated assault.

Aggravated assault is the most frequently reported violent crime in Boone County. In 2011 seventy five cases were reported.

Homicide is the least frequently reported violent crime. In 2010, no homicides were reported in Boone County. However, as of June 2013, there had been four homicides in the county this year (source: Columbia Police Department).



Source: Boone County Sheriff's Department



Source: Missouri Department of Mental Health

According to the 2012 Missouri Student Survey of high school students in grades 9 through 12, 51.37% of students in Boone County perceived that guns were easy to obtain or somewhat easy to obtain. In all Missouri, 40.47% of students shared this perception.

The perception of gun availability among Boone County youth dramatically increased by 21% since 2010. In that year, 39.29% of Boone County high school students thought guns were easy or somewhat easy to obtain.

Cancer

While heart disease is the leading cause of death in Missouri and most counties in the state, in Boone County, the primary cause of death is cancer. Lung, colorectal and breast and prostate cancers lead to the greatest number of deaths in the United States.

Some of the most common cancers can be prevented with healthier lifestyle choices or detected early through self-management of one’s health, including recommended cancer screenings.

Cancer Type	Metric ('09)	Boone Co		Boone Co		MO	U.S.	HP 2020		
				White	African American					
All Cancer	Incidence Rate (per 100,000)	473.6	●	467.3	●	572.0	●	468.9	466.0	-
	Hospitalizations (per 10,000)	34.4	●	33.9	●	43.7	●	39.1	-	-
	Death Rate (per 100,000)	177.6	●	175.6	●	240	●	191.4	189.0	160.6
Breast	Incidence Rate (per 100,000)	134.6	●	131.2	●	183	●	121.9	116.7	-
	Hospitalizations (per 10,000)	2.4	●	2.4	●	2.5	●	2.2	-	-
	Death Rate (per 100,000)	25.5	●	-	-	-	-	24.9	23.4	20.6
Prostate	Incidence Rate (per 100,000)	150.8	●	142.5	●	201	●	132.9	145.6	-
	Hospitalizations (per 10,000)	3.7	●	3.7	●	2.0	●	2.8	-	-
	Death Rate (per 100,000)	21.4	●	-	-	-	-	22.7	24.9	21.2
Colorectal	Incidence Rate (per 100,000)	36.2	●	35.7	●	44.8	●	49.2	48.5	38.6
	Hospitalizations (per 10,000)	3.4	●	3.4	●	5.1	●	4.9	-	-
	Death Rate (per 100,000)	14.7	●	-	-	-	-	17.6	17.9	14.5
Lung & Bronchus	Incidence Rate (per 100,000)	74.8	●	72.8	●	116	●	79.5	74.6	-
	Hospitalizations (per 10,000)	4.5	●	4.5	●	7.1	●	5.2	-	-
	Death Rate (per 100,000)	52.4	●	52.0	●	69.3	●	60.2	57.3	45.5

Source: HCI (MO Dept. of Health & Senior Services, County Health Rankings, National Cancer Institute), MICA

Cancer Screenings Rates

Cancer Screening	Boone Co	MO	U.S.
Mammography Screening: Medicare Population ('09)	74.3% ●	-	64.8%
Colon Cancer Screening ('11)	76.3% ●	59.4%	-
Pap Test History ('11)	81.9% ●	68.9%	-

Source: HCI (MO Dept. of Health & Senior Services, County Health Rankings, National Cancer Institute)

Boone County's cancer incidence rate is slightly higher than the Missouri state rate. The death rate for all cancers is below the Missouri state rate, but higher than the national rate and fails to meet the Healthy People 2020 target of 160.6 or fewer deaths per 100,000 people due to all forms of cancer.

Racial disparities can be seen in the incidence and death rates for most forms of cancers.

Chronic Conditions

Chronic Condition	Metric	Boone Co	Boone Co		MO	U.S.
			White	African American		
Diabetes	Adults with Diabetes ('09)	6.9% ●	-	-	-	10.3%
	Diabetic Screening (Medicare patients) ('09)	85.8% ●	-	-	-	83.7%
	Death Rate - Diabetes (per 100,000 pop) ('11)	22.7 ●	21.3 ●	63.9 ●	20.6	-
Respiratory Disease	Death Rate - CLRD (per 100,000 pop) ('11)	39.9 ●	40.7 ●	40.4 ●	50.4	-
	Adults with Current Asthma ('11)	9.8% ●	-	-	9.6%	-
	Hospitalizations for Asthma (per 10,000 pop) ('09)	10.6 ●	8.1 ●	31.1 ●	13.4	-
	ER Visits for Asthma (per 1,000 pop) ('09)	4.0 ●	2.9 ●	13.3 ●	5.1	-
	ER Visits for COPD (per 1,000 pop) ('09)	3.5 ●	3.1 ●	8.6 ●	5.4	-
	Hospitalizations for COPD (per 10,000 pop) ('09)	14.7 ●	14.2 ●	26.1 ●	23.2	-
	Hospitalizations for Asthma age < 15 (per 10,000 pop) ('10)	18.8 ●	11.6 ●	41.5 ●	22.0	-
	ER Visits for Asthma age < 15 (per 1,000 pop) ('10)	7.2 ●	4.4 ●	19.7 ●	10.6	-

Source: HCI (MO Dept. of Health & Senior Services, County Health Rankings), MICA

Diabetes:

Diabetes is the seventh leading cause of death both in Boone County and nationally.

Complications of diabetes include kidney failure, amputation of feet or legs, and blindness. Persons with diabetes are at increased risk for heart disease and stroke. Obesity and physical inactivity are major risk factors for adult Type II Diabetes. Diabetes disproportionately affects minority populations and seniors.

In 2009, the rate of adults with diabetes in Boone County was below the national average, and the percentage of Medicare patients who received screenings for Type II Diabetes was high. However, the 2011 death rate due to diabetes in Boone County was above the Missouri average. African-Americans are three times more likely to die from complications from diabetes than white patients.

Chronic lower respiratory disease is the third leading cause of death in Boone County.

Asthma is a condition in which airways become inflamed and narrow, causing difficulty in breathing. Genetic, environmental and lifestyle factors contribute to one's risk for and severity of asthma, including being overweight, smoking and exposure to second-hand smoke. In 2011, 9.8% of adults in Boone County experienced symptoms of asthma, slightly higher than the percentage of adults in Missouri.

Chronic Obstructive Pulmonary Disease (COPD) describes progressive diseases that restrict or block airflow to the lungs, such as emphysema or chronic bronchitis. Cigarette smoking is the primary cause of COPD, and the severity of COPD increases with age.

Hospitalization rates for both asthma and COPD are lower in Boone County per 10,000 persons than respective rates for Missouri. Among African-Americans in Boone County, the hospitalization rates for both asthma and COPD are higher than rates of hospitalization for white persons.

The death rate for chronic lower respiratory disease for Boone County is better than the state overall.

Chronic Conditions Continued

Heart Disease

Heart disease describes a variety of diseases affecting the heart and/or blood vessels, including coronary artery disease, the most common type of heart disease in the nation.

In Boone County, heart disease is the second leading cause of death (source: MICA). In the United States, heart disease is the number one cause of death and the leading cause of death among women. Risk factors for heart disease include tobacco smoking, obesity, sedentary lifestyle, and high levels of low-density lipoprotein in blood serum.

Stroke is the fourth leading cause of death in Boone County. The Healthy People 2020 target for deaths due to stroke of 33.8 or fewer deaths per 100,000 persons has not been met.

Overall deaths and ER visits related to heart disease are lower in Boone County compared to Missouri. Racial disparities are evident in death rates due to heart disease and stroke.

Chronic Condition	Metric	Boone Co	Boone Co				MO	U.S.
			White		African American			
Heart Disease	High Cholesterol Prevalence (Age 35+) ('11)	45.1% ●	-	-	-	-	44.5%	-
	High Blood Pressure Prevalence (>140/90, % of pop) ('11)	31.6% ●	-	-	-	-	33.5%	-
	Death Rate - Stroke (per 100,000 pop) ('11)	48.5 ●	45.8 ●	45.6 ●	43.1	-		
	Death Rate - Heart Disease (per 100,000 pop) ('11)	140.7 ●	136.6 ●	242.3 ●	196.4	-		
	ER Visits (per 1,000 pop) ('10)							
	Heart Disease	12.0 ●	10.9 ●	25.3 ●	12.95	-		
	Stroke	0.5 ●	0.5 ●	0.6 ●	0.79	-		
	Hospitalizations (per 10,000 pop) ('09)							
	Heart Disease	118.7 ●	113.7 ●	184.3 ●	152.4	-		
Stroke	26.7 ●	25.2 ●	40.6 ●	30.4	-			

Source: MICA

High Blood Cholesterol

High blood cholesterol prevalence in adults aged 35 and over is slightly higher in Boone County. High blood cholesterol is one of the major risk factors for coronary artery disease, and lowering cholesterol levels reduces the chance of having a heart attack. Since high blood cholesterol does not have symptoms, it is important for people to get screenings and find out their cholesterol numbers.

D. PRIORITIZATION

Following the two focus group sessions, Boone Hospital Center's internal workgroup reviewed the community focus group results and secondary data resources. Additional data was collected based on questions raised in the second focus group.

Workgroup participants were asked to evaluate the list of needs and, based upon their expertise and experience, rank needs of greatest concern, list needs not identified by the focus group, and prepare to discuss these needs at the next session.

In ranking community health care needs, workgroup members were instructed to take the following into consideration:

Magnitude and prevalence of the need

Trend: Improving or declining

Impact on vulnerable populations, including low-income, uninsured/underinsured, children, pregnant women, seniors, minorities, immigrants, disabled

Relationship to other health needs, including social, economic or environmental factors

Existence of programs in the community that are effectively addressing the need

The resources and ability of Boone Hospital Center to effectively address the need

Individual rankings were collected, weighted and tallied before the workgroup met again on July 10, 2013. At this two-hour meeting, the workgroup revisited the focus group rankings and reviewed and discussed individual lists of ranked needs. Additional secondary data from the HCI was also considered.

Based upon the discussion and data, each participant was then asked to develop a new list of priorities, which were then weighted and tabulated. This final list of priorities was approved by consensus by the workgroup.

	Focus Group Ranking	Work Group-Identified Needs	Final Ranking
	1	Mental Health	Cancer
	2	Access to Health Care	Obesity
	3	Dental Care	Mental Health
	4	Reproductive Health	Access to Health Care
	5	Health Literacy	Reproductive Health
	6	Racial Disparities	Health Literacy
	7	Substance Abuse	Substance Abuse
	8	Obesity	Injury/Violence
	9	Chronic Conditions/Cancer	
	1	Injury/Violence	
	1		Cultural Literacy
	1		Reproductive Health
	1		Injury/Violence

Some health needs, including obesity and cancer, were ranked higher by the hospital workgroup than by the community focus group. When ranking obesity, the hospital workgroup considered the relationship between obesity and chronic conditions, such as heart disease and Type II diabetes. Cancer was ranked higher by the hospital than the community stakeholders based on internal and community data, as well as the hospital's ability to address this health need.

From this final list, the workgroup identified five priority areas of focus:

- Cancer
- Obesity
- Mental health
- Access to health care
- Reproductive health

Boone Hospital Center's CHNA team determined which issues could be addressed by the hospital through community benefit programs, taking into consideration the hospital's resources, current programs, programs that could reasonably be implemented and other programs in the community. Based on these factors, it was determined that Boone Hospital

Center programs would address the following prioritized areas of need:

1. Cancer
2. Obesity
3. Access to health care

IV. Implementation Plan

A. Needs to Be Addressed by Boone Hospital Center

I. Cancer

Cancer is the second leading cause of death in the United States. It is estimated that 1,638,910 men and women (848,170 men and 790,740 women) will be diagnosed with cancer in 2012. Out of these 2012 numbers, 577,190 men and women (301,820 men and 275,370 women) died of cancer of all kinds. Therefore, Boone Hospital Center (BHC) will focus its effort on decreasing lung and skin cancers incidences in the service areas.

a. Lung Cancer

Rationale: Lung cancer remains the number one cause of cancer-based mortality in men and women. Every year, more than 228,000 people in the United States are diagnosed with lung cancer.

While the current five-year survival rate for lung cancer is only 15 percent, a lung cancer screening test can decrease the chance of dying from lung cancer by 20 percent in patients who are considered high-risk for developing lung cancer.

Therefore, Boone Hospital Center chooses to implement Lung Cancer Screening program in its community to help with early diagnosis and prevention of the disease.

Goal: Increase the number of individuals screened for lung cancer.

Objectives:

- 1.*** Within 12 months, Boone Hospital Center's multi-services and radiology staff will conduct at least 500 lung cancer screenings for individuals living in BHC service areas.
- 2.*** Within 90 days of screenings, the nurse navigator will confirm medical follow-ups for at least 10% of all individuals presented with abnormal results.

Action Plan: Boone Hospital Center will offer lung cancer screening exams at no charge to people in the community who qualify as high-risk for lung cancer. Boone Hospital Center will use the National Comprehensive Cancer Network (NCCN) guidelines to establish patients at high-risk for lung cancer. NCCN has two criteria for the guidelines.

Pack-year history of smoking is calculated as the number of years a person has smoked times the number of packs per day. For example, a person who smoked two packs per day for 15 years has a pack-year history of 30.

NCCN Guidelines Criteria

Criteria One	Criteria Two
Age 55-74	Age greater than 50
Greater than or equal to 30 pack-year history of smoking	Greater than or equal to a 20 pack-year of smoking
Having quit smoking less than 15 years ago	

People who meet the above criteria will be referred for screening through their primary care physician or by contacting the hospital directly. Information about lung cancer screenings will be available on the hospital website at www.boone.org

The screening exam, conducted at Boone Hospital Center, is a low-dose computed tomography (CT) exam of the chest. A CT exam is a study that takes x-rays of the chest from multiple angles and allows detection of lung nodules as small as 1 or 2 millimeters.

The CT Exam results will be reviewed by a radiologist within one business day following the screening. Participants and their physicians will be contacted with the results.

A nurse navigator will conduct a follow-up call to individuals with abnormal screenings to make sure that follow-up medical appointment is made with their individual's primary care physician.

The nurse navigator will make referrals and appointments for those without a primary care physician.

Outcome: Early detection of lung cancer

Outcome Measurement: The nurse navigator will document in a log all follow-up calls made to individuals with abnormal screenings.

The nurse navigator will keep a record of all physician referrals and those who maintain their follow-up medical appointments.

b. Skin Cancer:

Rationale: One in five Americans will develop some type of skin cancer over the course of their lifetimes. With early detection and treatment, however, most skin cancers are completely curable. Early detection and treatment of any form of skin cancer is essential both to prevent the disease from spreading to other areas of the body and to achieve better outcomes. Research has shown that most skin cancers are detected by patients rather than doctors. Learning how to examine your own skin can promote skin health and also can dramatically reduce the risks of having significant problems with skin cancer. Therefore, Boone Hospital Center is implementing skin cancer screening and education in its service areas.

Goal:

- I. To increase the number of individuals screened for skin cancer*
- II. To increase education of self-detection of skin cancer*

Objectives:

Goal (I): *To increase the number of individuals screened for skin cancer*

Objective: *Within late spring to fall of each year, Boone Hospital Center WELLAWARE department staff will conduct at least 350 skin cancer screenings in its service areas.*

Action plan: Skin cancer screenings will be conducted by WELLAWARE both at BHC and at various locations in the mobile health unit.

The kick off community screening event will be held at the hospital in April of each year, followed by two screenings per month in the mobile health unit, starting in May through September.

Upon arrival at the screening location, participants will be asked by the staff to read and sign consent forms.

There will be clinicians who will perform the screening. Participants will receive a non-invasive head-to-toe skin check using dermoscopy.

Each responsible clinician will document the findings on the WELLAWARE skin cancer screening report form. All concerning lesions will be photographed.

Participants will receive a copy of their screening report form with a 4" X 6" colored photograph depicting any concerning lesions.

After the skin screening, each participant receives a seven-item questionnaire in the mail asking if they followed up. If the questionnaire is not received back by the WELLAWARE nurse, a nurse will attempt a phone call to get the questionnaire completed over the phone. If it is an access to care issue, the BHC referral phone number is given again.

A nurse navigator will conduct a follow-up call to individuals with abnormal screenings to make sure that follow-up medical appointment is made with their individual's primary care physician.

Outcome: *Early detection of skin cancer*

Outcome measurement: Attendance sheets will be kept by the WELLAWARE staff responsible for the skin cancer screening.

Information about individuals with abnormal screening results, including questionnaire responses and whether the individual maintained a follow-up medical appointment, will be recorded.

Goal (II): *To increase education of self-detection of skin cancer*

Objective: *By the end of the education session and screening, participant knowledge level of skin cancer prevention and self-examination will increase by 10%.*

Action plan: The education session is done on the same day and time as the screening.

Staff will conduct a pre-knowledge assessment test to determine the knowledge level of the participants in reference to awareness, prevention and self-detection.

Participants will then be educated on the proper way to conduct self-examination, proper use of sunscreen as well as the best sunscreen to use.

Post-knowledge assessment test will be done to conclude the education process and to determine if individual's knowledge level has increased.

All participants will receive a folder with educational information detailing the process of conducting a self-exam at home, as well as how to prevent skin cancer. Information on sunscreen and its proper use is also included in the folder.

Outcome: Improve knowledge of self-examination of skin and skin cancer prevention.

Outcome Measurement: The progress of the program is evaluated by comparing the pre- and post-test score. Pre- and post-test scores of participants will be recorded in a log by the staff. Participant's first name will be used when recording the scores. Both scores will be analyzed at the end to assess change in participant's knowledge level.

II. OBESITY

The obesity epidemic is one of the country's most serious health problems. Adult obesity rates have doubled since 1980, from 15 to 30 percent, while childhood obesity rates have more than tripled. Rising obesity rates have significant health consequences, contributing to a major health risk factor linked to increased cardiovascular disease (CVD), stroke, cancer, hypertension, diabetes, and early death. Until this some times this year, obesity was primarily seen as a behavioral and environmental problem. Today, obesity is viewed as a complex disorder. These conditions create a major strain on the health care system. More than one-quarter of health care costs are now related to obesity.

As of 2011, in Boone County more than 29% of adults and almost 12% of children are considered obese, as defined by their body mass index (BMI). The vast majority of obesity is caused by the calories consumed and lack of physical activities. Losing body fat requires healthy eating and calorie restriction as well as daily physical activity.

Boone Hospital Center will address overweight and obesity among adult and children in their service areas. BHC will work to help reduce obesity and health conditions that can occur with it, like high blood pressure, diabetes, and heart disease as well as to improve the quality of life of children and teens who are overweight or obese. This will be addressed through three different programs such Kids on Track, Head to Toe and Know Your Numbers.

a. "Kids on Track"

Regular physical activity can lower the risk of becoming obese. Children become less active every year they get older. Half of all school children aren't getting the exercise needed to build healthy hearts and lungs, and many cannot pass standard fitness tests.

The "Kids on Track" program is implemented over a three-month period in summer by BHC WELLAWARE staff in collaboration with Columbia Public Schools and local businesses, to address the lack of physical activity among children and teenagers and families living in Boone County, Mo. The program begins in May and ends in August. "Kids on Track" is designed to encourage the participants to walk, run or bike to complete an accumulated 26.2 miles within the three months of the program.

Rationale: Children and adolescents who are obese are at greater risk for bone and joint problems, sleep apnea, and are more likely than normal-weight peers to be teased and stigmatized, which can lead to poor self-esteem. Moreover, obese youth are more likely to have risk factors for cardiovascular disease, such as high cholesterol or high blood pressure. They are more likely than normal-weight peers to be overweight or obese adults and are therefore at risk for the associated adult health problems, including heart disease, type II diabetes, stroke and several types of cancer.

Goal: *To increase physical activity among children and their families.*

Objectives:

- 1. WELLAWARE staff will establish a baseline number of children aged 3-14, living in Boone County, who will participate in the program in the first year.*
- 2. To increase the baseline by 10% of participants each year after the initial start year.*
- 3. To establish a baseline number of the participants who have incorporated physical activities into their life after the three months participation period.*
- 4. To increase each past year number of participants who have incorporated physical activity in their life after participation by 10 % in the following year.*

Action Plan: The Kids on Track program will be promoted in spring of each year in Boone County by Boone Hospital Center and WELLAWARE staff. Information about the program and sign-up sheets are included in Friday Folders (informational packets for parents that are given each week to students at Columbia Public Schools). The program will also be advertised in Boone Hospital Center community publications and social media.

Children and their families will register in spring to participate in the program.

Each registrant is invited to participate in a kick-off day in May of each year. At this event, participants will run or walk one mile and receive program materials, including a progress-tracking sheet.

Participants are asked to track their miles on a provided progress sheet.

When a designated number of miles are reached, participants are to take their sheet to a participating local vendor for a small prize.

Participants take part in a final event in August including a mile run/walk. *Note:* The participants can ride a bike for the miles that they complete on their own between the kick-off and finale.

Participants receive T-shirts and medals for completion of the program.

Participants are encouraged to continue with physical activities after the three months of the program period. They are also encouraged to participate each year the program is offered.

Outcome: *Increase children's physical activity*

Outcome Evaluation: In the first year the “Kids on Track” staff will establish a baseline by documenting the number of participants who return on the final event day to measure the retention number.

Twice in the year WELLAWARE staff will reach out to participants and track how many participants who self-report that they incorporate physical activity in their life.

Staff will keep a record of each participant’s first name on a spreadsheet. Using the record sheet, the staff will check “Yes” if participant indicates that he or she continues with physical activities or “No” for no continued physical activity. This is considered the baseline for the first year.

In the following year, staff will track the same information and analyze previous and current sheets to determine if there was an increase or decrease in the participation level after three months of participation.

The staff will also keep records of returning participants who took part in the program in any previous year to measure the number of recurring participants.

b. “Head to Toe”

Rationale: Obesity now affects 17% of all children and adolescents in the United States - triple the rate from just one generation ago, according to the Centers for Disease Control. Childhood obesity can have a harmful effect on the body and lead to a variety of adult-onset diseases in childhood, such as high blood pressure, high cholesterol, diabetes, breathing problems, socio-emotional difficulties and musculoskeletal problems.

Boone Hospital Center WELLAWARE currently provides the Head to Toe program twice annually to serve children in within Boone County as well as the surrounding community who have a written recommendation from their physician stating their need for the program.

Goal: *To improve knowledge of leading a healthy lifestyle among children and their families.*

Objectives:

- 1. Provide intensive group educational sessions that focus on nutrition, physical activity and emotional health to 30 children per year.*
- 2. Increase knowledge of nutrition, physical activity and emotional health among participants by a 5% increase in average knowledge score among participants at post-test compared to pre-test.*

Action Plan: A pre-knowledge assessment test will be given to participants at the beginning of the program.

An exercise specialist will work with participants to increase their participation in physical activities.

A registered dietician will educate participants on healthy eating, healthy choice, portion control, etc.

A social worker and health promotion professional will facilitate 12 intensive group sessions on topics regarding physical activity, nutrition and emotional health.

Knowledge post-test will be given at the end of the 12 weeks.

Outcomes: *Increase in heart healthy behavior*

Outcome Measurements: This program is evaluated by measuring improvements in physical activity, nutrition, self-image, family relationships and healthy behaviors. The tools used to measure these outcomes capture changes in behavior, knowledge, skill and readiness to change assessment tools. Progress will be evaluated by measuring the number of sessions and the number of participants who complete pre-and post-assessment tools.

c. Heart Fair / Know Your Numbers

Heart fair is a yearly fair that provides free screening for body composition, blood pressure, and cholesterol and blood glucose. The screening is conducted at Boone Hospital Center and in the mobile health unit.

Rationale: Cardiovascular disease is the leading cause of morbidity and accounts for 35% of all deaths in the U.S. Interventions that reduce obesity, blood pressure, and cholesterol and increase physical activity and healthy eating have been proven effective in reducing risks for cardiovascular disease as well as diabetes and stroke.

Boone Hospital Center, therefore, will raise awareness about the risks of cardiovascular disease and to encourage its community to get screened and know their numbers. Early detection is critical to successfully managing many health issues. Boone Hospital Center in partnership with the local health departments or YMCAs, provide free screenings for a variety of conditions, including blood pressure, cholesterol, glucose, body mass index and body composition

“Know Your Numbers” is a BHC program that is based on a system of “numbers” that we need to know in order to tell how we compare to the healthy state. By knowing your numbers, you can take action to make positive changes that will help prevent the onset of chronic health conditions. Some of the numbers that are important for you to know are:

Blood Pressure is the strongest markers for heart disease risk.

Cholesterol Levels – Too much bad cholesterol can lead to a heart attack or stroke.

Blood Sugar – A blood sugar test is commonly used to diagnose the presence of diabetes.

Body Mass Index (BMI) is calculated from your weight and height to determine if you are normal weight, overweight or obese.

Goal: *To increase awareness of the risks of abnormal cardiovascular diseases*

Objectives:

1. *In 2014, WELLAWARE staff will establish a baseline number for screenings of individuals living at Boone County.*
2. *At each yearly screening, after the baseline is established, WellAware staff will increase the number of previous year number by 15% among Boone County Residents.*
3. *At each yearly screening the nurse navigator will confirm that at least 25% of all abnormal screenings had a follow-up appointment with their primary physician or were referred to a medical home by BHC staff.*

Action plan: Boone Hospital Center, in collaboration with local health department and community organizations, bring its “Know Your Numbers” events once a year to its community. This event includes health screenings, educational seminars and special events.

Upon arriving at the screening, the participant will fill out a simple form asking about knowledge about any health risk factors such as smoking, family history, age, gender, race and ethnicity, etc.

Participants will also fill out a consent form in order to be screened.

A pressure cuff will be used around the upper arm by the medical clinicians to measure and monitor the blood pressure during the screening. The results will be compared to a standardized blood pressure chart.

A quick and easy finger-stick is done on participants to measure their blood sugar level during the glucose screening. Participants are asked to fast for eight before the screening to help identify diabetes.

A simple finger-stick screening is used to measure the total cholesterol and the kind of lipids such as HDL, LDL and triglycerides in your blood.

Medical clinicians will compare all individual test results to the standard charts.

All individuals with abnormal screenings will receive individual coaching, a follow-up calls from WELLAWARE staff to confirm if they had scheduled an appointment with their primary care physician.

Outcome: Increase awareness and identify those at risk for cardiovascular disease.

Outcome Evaluation: Boone Hospital Center staff will keep a record of those who have been screened each year on a spreadsheet or electronically. Each year, the past year's records will be compared to the current year to determine if there is an increase in the participation level.

WELLAWARE staff will also keep a record (on a spread sheet or electronically) of individuals who received follow-up. The spreadsheet should contain information on the patient's first name and last initial, date, and time called, and how the participant was contacted.

Staff will also keep a record of individuals that she or he referred to a primary care physician, if she or he kept the medical appointment for a follow-up.

III. ACCESS TO HEALTH CARE

Rationale:

Access to health care is an ongoing and national concern. Access to comprehensive, quality health care services is important for the achievement of health equity and for increasing the quality of a healthy life for everyone. It allows individuals to gain entry into the health care system, access a health care location where needed services are provided and finding a health care provider with whom the patient can communicate and trust.

There are several components of access to health services such as coverage, services, timeliness, and workforce. BJC HealthCare, as a system of hospitals, understands the importance of health insurance coverage, which helps patients get into the health care system. Lack of adequate coverage makes it difficult for people to get the health care they need and, when they do get care, burdens them with large medical bills. Therefore, all BJC hospitals has a policy that focus on the provision of insurance coverage as the principal means of ensuring access to health care among the underinsured and uninsured population.

Goal: *Improve access to comprehensive, quality health care services.*

Objectives: *Every year, Boone Hospital Center will increase the number of underinsured and uninsured individuals who live in its service areas and qualified for Medicaid and other financial assistance enrollment by 15% from the previous year number.*

Action Plan: Boone Hospital Center provides a Patient Account Representative who works with Case Management and Social Work to identify patients in need of assistance and meets with uninsured patients to determine their eligibility for any insurance and financial assistance. Eligible patients receive assistance with enrollment.

Boone Hospital Center has policies and programs in place to provide financial assistance to low-income, underinsured or uninsured patients. All patients are provided with financial assistance information upon admission.

Boone Hospital Center's Social Work, Customer Relations and Emergency Department coordinate with OATS transportation system to provide patients access to reliable transportation between their homes and the hospital.

Boone Hospital Center's Emergency Department works closely with Family Health Center, a Federally Qualified Health Clinic in referring patients who meet established criteria for follow-up care. Emergency Department social workers follow up with discharged patients and providers as needed regarding aftercare.

Outcome: *Increase access to health care*

Outcome measurement: The number of individuals who receive assistance for insurance eligibility and the number of those who are enrolled in programs are tracked by the hospital. Financial assistance is tracked and reported.

The number of patients served by our transportation services program is tracked by Customer Relations.

B. Community Health Needs That Will Not Be Addressed

Mental Health

Boone Hospital Center does not provide inpatient mental health services, but does offer an outpatient Cognitive Behavioral Therapy program and contracts with local employers to provide Employee Assistance Program services to their staff. Boone Hospital Center currently supports community programs and initiatives to expand access to mental health services in Boone County.

Reproductive Health

While Boone Hospital Center specializes in obstetrics, with a level-III intensive care nursery, the hospital lacks the resources to provide a community program to improve maternal and child health. There are no resources at this time for prevention, detection or treatment of sexually transmitted infections. Columbia/Boone County Public Health Department offers free or low-cost STD screenings, pregnancy tests and sexual education for teenagers. Several organizations in Boone County, including Planned Parenthood in Columbia, provide birth control, family planning and sexual health education, and resources for pregnancy.

C. Community Health Needs Programs Outside of Boone County

Boone Hospital Center is a regional hospital and referral center that serves a 25-county service area. Many of these counties are rural with lower-income populations and fewer resources for specialized or primary care. The majority of Boone Hospital Center patients reside in the following counties:

County	Percentage Total Cases	Health Outcomes Ranking, 2013	Health Factors Rating, 2013
Boone	56.44%	6	2
Callaway	6.97%	80	53
Randolph	5.13%	76	77
Cooper	3.79%	37	27
Audrain	2.95%	74	43
Cole	2.71%	16	8
Macon	2.60%	23	28
Saline	2.45%	36	49
Howard	2.12%	12	24
Pettis	1.69%	54	65
Linn	1.68%	51	104

Sources: Boone Hospital Center data, County Health Rankings

Some of Boone Hospital Center’s Know Your Number health screenings are targeted to serve rural communities without a hospital and are conducted in partnership with community health departments or other community organizations. The Know Your Numbers Mobile Health Unit, a 26-foot vehicle equipped with everything needed to conduct body composition, blood pressure, cholesterol, blood glucose and additional testing, allows the hospital to take its services beyond Boone County.

Patient transportation is a need for our patients outside of Boone County and is arranged by the hospital’s Customer Relations department.

Boone Hospital Center recognizes the value of and provides support for regional acute hospitals and health care access in other counties in our service area, contributing administrative expertise and time, in addition to direct contributions to these hospitals or regional development programs.

D. SPECIFIC INPUT FROM THE COLUMBIA/BOONE COUNTY

Department of Public Health and Human Services

Health Department Representatives/Title/Department

Name: Sarah Rainey, Epidemiology, Planning and Evaluation Supervisor

Name: Steve Hollis, Human Services Manager

Name: Stacia Reilly, Community Health Promotions Supervisor

Source of Need Information: Written feedback received on January 29, 2013

Public Health Department Identified Need #1: Obesity

While Boone County's obesity and overweight rates are good compared to Missouri, over one-third of area residents have a BMI outside the healthy range. Boone Hospital Center will offer programs targeted to children (Kids on Track) and adults (Know Your Numbers) to promote increased awareness of the health risks associated with obesity and offer screenings to track indicators that are affected by obesity (blood pressure, cholesterol, blood glucose).

The anticipated impact of these programs is to identify those who are at risk of chronic conditions that are affected by obesity and offer early interventions to improve their health status.

The programs will be measured by the number of screenings that are offered in the community and the number of individuals who participate.

Public Health Department Identified Need #2: Mental Health

Boone Hospital Center does not provide inpatient mental health services, and thus has limited resources to address this need.

Public Health Department Identified Need #3: Injury prevention

Boone Hospital Center will not address this need because it does not have sufficient resources to address all of the identified needs, and this need is of a lower priority.

Public Health Department Identified Need #4: Dental care

Boone Hospital Center will not address this need because it is beyond the scope of services provided by the hospital.

Public Health Department Identified Need #5: Reproductive Health

Boone Hospital Center will not address this need because it lacks the resources to provide a community program to improve maternal and child health. Columbia/Boone County Department of Public Health offers free or low-cost STD screenings, pregnancy tests and sexual education for teenagers.

Public Health Department Identified Need #6: Health inequities/social determinants of health

Boone Hospital Center will not address this need because it is beyond the scope of services provided by the hospital.

Public Health Department Identified Need #7: Transportation

Boone Hospital Center will not address this need because it is beyond the scope of services provided by the hospital.

V. APPENDICES

APPENDIX A PARTICIPANT ROSTER

- | | |
|-------------------|--|
| 1. Julie Arment | Columbia Public Schools, Health Services |
| 2. Angela Ayers | Boone County Sheriff's Department |
| 3. Gloria Crull | Family Health Center |
| 4. Steve Hollis | Columbia Public Health and Human Service |
| 5. Sarah Klaasen | Central Missouri Community Action |
| 6. Lorenzo Lawson | Youth Empowerment Zone |
| 7. Lori Osborne | Columbia Public Schools, Health Services |
| 8. Sarah Rainey | Columbia Public Health and Human Service |
| 9. Stacia Reilly | Columbia Public Health and Human Service |
| 10. Phil Steinaus | Columbia Housing Authority |

Observers:

- | | |
|---|---------------------|
| Angela Chambers (focus group facilitator) | BJC Market Research |
| Debra Denham | BJC HealthCare |
| Karley M. King | BJC HealthCare |
| Jessica Park | BHC |

APPENDIX B

BOONE COUNTY NEEDS ASSESSMENT WORKSHEET

1. In your opinion, what are the three greatest health needs or challenges that exist within the Boone County population?

1.)

2.)

3.)

2. To your knowledge, what resources are currently available in Boone County for addressing each one of them? Who/what organization is trying to address them?

1.)

2.)

3.)

3. In your opinion where is the largest gap between an existing need and available services in Boone County?

APPENDIX C
RESOURCES AVAILABLE

# of mentions	Areas of Need	Available Resources
8	Mental health - for students and families - for the uninsured - domestic violence	UMC Mental Health Center MUPC Burrell Phoenix New Horizons UPS Hospitals Pathways
5	Dental care (for the uninsured)	More dentists are accepting Medicaid Family Dental Family Health Center
4	Obesity/nutrition - contributes to chronic disease - lack of exercise	Preventive measures Health department FHC Hospitals
3	Access - transportation - working poor	

- refugee services

Refugee Services

- to subspecialty care, esp for Medicaid and uninsured patients

3 **Health disparities among African Americans**

- in pain medication prescription

- in health outcomes

- social determinants of health

2 **Maternal Infant health issues**

Health department

- birth control to avoid unwanted pregnancies

LFCS

- STDs

1 **Better coordination of care**

- between ER and PCP

1 **Community wide collaboration for care mgt of "frequent fliers"**

1 **Substance abuse**

1 **Injury prevention**

- seat belt use, driving and texting

APPENDIX D

FEEDBACK ON GREATEST GAPS

BETWEEN NEEDS AND AVAILABLE RESOURCES

<u># of Mentions</u>	<u>Greatest Gap</u>
3	Mental health and substance abuse
1	Case management for children and families who are dealing with mental health issues
1	Preventive medicine
1	Disparity of Treatment of African Americans
1	Access to oral health services

APPENDIX E

Boone County Needs Assessment

Focus Group #2 Notes March 5, 2013

Prepared by Jessica Park and edited by Angela Chambers.

Can we break out mental health admits / ED visits by age? A chart was included in the revised presentation that shows both mental health admissions and ED visits by age and race.

- All children under age 15 and adults over age 65 have ER visit rates higher than seen in the state overall.
- In the African American population, ER visit rates are higher in the age segments between 15 and 64.
- Hospital admission rates for mental health conditions are higher for African Americans than Whites among all age groups.

What is the definition of a fast food restaurant? A fast food restaurant is defined as a limited-service establishment where people pay before eating.

What are included on the list of Ambulatory Care Sensitive Conditions?

Hospitalization for an ambulatory care sensitive condition (ACSC) is considered to be a measure of access to appropriate primary health care. While not all admissions for these conditions are avoidable, it is assumed that appropriate ambulatory care could prevent the onset of this type of illness or condition, control an acute episodic illness or condition, or manage a chronic disease or condition. A disproportionately high rate is presumed to reflect problems in obtaining access to appropriate primary care.

Ambulatory care sensitive conditions include the follow: angina, asthma, chronic obstructive pulmonary disease, diabetes, grand mal status and other epileptic convulsions, heart failure, pulmonary edema and hypertension.

How are children with insurance is measured and what is measured?

This indicator comes from the American Community Survey shows the percentage of children ages 0-17 that have any type of health insurance coverage. It is a one year estimate. There is no discussion of whether it is measured at a single point in time, or if it reflects a child who has coverage at any time during the year versus during the entire year.

Can we provide any more information on children living in poverty? Data were obtained from the American Community Survey that shows children living in poverty who are in a married household versus a single mother household. We were also able to obtain the data by race and age of the child.

- Children living in poverty are more likely to be in a single parent household than with two married parents.
- Boone County children under the age of 5 living in poverty are more likely to be in single parent households (66%) than in Missouri overall (54%). Their mothers are as likely to be White (57%) as African American (63%).

Is STD information available for any other ages besides 15 – 44? There were data found for females ages 15 – 19 by race. Rates for chlamydia, gonorrhea and syphilis are much higher among African American females in the age group than Whites.

Please provide ED use and hospitalization rates for asthma by age (particularly children, and by race.) We were able to provide hospitalization and ED use rates for asthma for children under age 15 and by race. The rates for African American children are around four times higher than for White children

Additional data are needed on mental health and dental resources.