

## Community Health Needs Assessment

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## **Brookwood Baptist Medical Center**



#### **Brookwood Baptist Medical Center at a Glance**

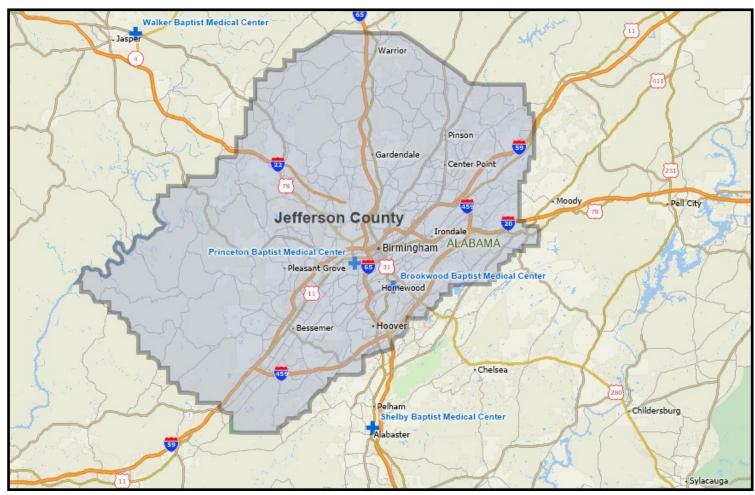
As the largest hospital in the Brookwood Baptist Health network, Brookwood Baptist Medical Center (Brookwood) is dedicated to providing advanced, compassionate care for every healthcare need. As a 607 bed facility with over 700 physicians on staff, Brookwood is well equipped to meet the diverse needs of patients and the surrounding community.

Brookwood offers healthcare services in a variety of specialties, including robust orthopedic and heart and vascular programs, and one of only two neurology programs in the state certified to administer the life-saving stroke medicine tPA. With a state-of-the-art Women's Center – Alabama's first Women's Hospital – Brookwood offers women a range of specialized services including urogynecology services, modern birthing suites, extensive education offerings, and 3D mammograms.

## **Community Overview**

For the purposes of the CHNA report, BBMC chose Jefferson County as its service area. This community was chosen purely by geography, and includes medically underserved, low income, and minority populations.

The map below represents the BBMC service area.

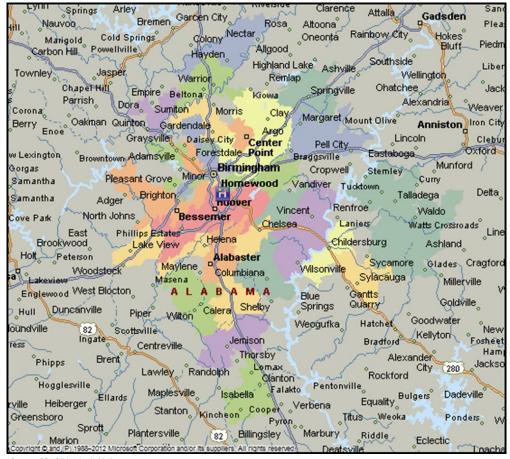


Sources: BBMC; Maptitude 2016

#### Community Overview, continued

While Jefferson County is used for the purposes of this CHNA to develop various county-level analyses, BBMC recognizes that it serves a much broader community. Based on its 75% discharge data for the year ending with Q4 2014, BBMC serves the following area, with ZIP codes into multiple neighboring counties, including Shelby, Talladega, Chilton, St. Clair, and Blount.

The map below represents the BBMC service area.

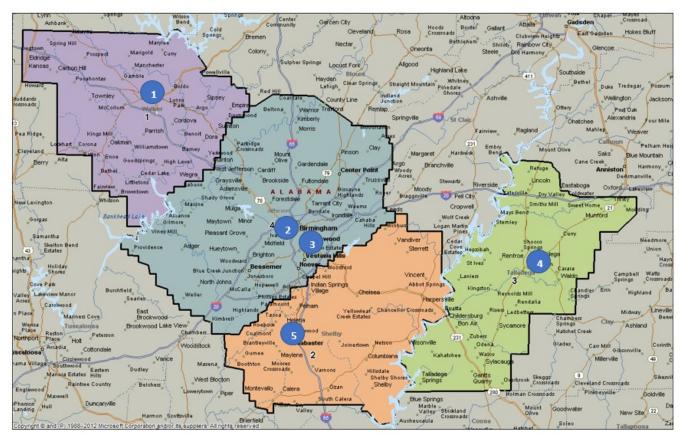


Sources: BBMC; Maptitude 2016

#### **Brookwood Baptist Health**

In 2015, Brookwood Medical Center and Baptist Health System merged, creating the new five-hospital network: Brookwood Baptist Health. The five hospitals, shown in the map below, along with Brookwood Baptist Health's additional convenient primary care and specialty centers throughout the state, now represent the largest primary care network in Alabama.

The map below represents the Brookwood Baptist Health Hospital Network





#### Key:

- 1 Walker Baptist Medical Center
- 2 Princeton Baptist Medical Center
- 3 Brookwood Baptist Medical Center
- **4 Citizens Baptist Medical Center**
- 5 Shelby Baptist Medical Center

#### **Purpose**

#### **Community Health Needs Assessment Background**

On February 15, 2016, BBMC contracted with Carnahan Group to conduct a Community Health Needs Assessment (CHNA) as required by the Patient Protection and Affordable Care Act (PPACA). Please refer to Appendix C: Carnahan Group Qualifications for more information about Carnahan Group.

The PPACA, enacted on March 23, 2010, requires not-for-profit hospital organizations to conduct a CHNA once every three taxable years that meets the requirements the Internal Revenue Code 501(r) set forth by the PPACA. The PPACA defines a hospital organization as an organization that operates a facility required by a state to be licensed, registered, or similarly recognized as a hospital; or, a hospital organization is any other organization that the Treasury's Office of the Assistant Secretary ("Secretary") determines has the provision of hospital care as its principal function or purpose constituting the basis for its exemption under section 501(c)(3).

A CHNA is a report based on epidemiological, qualitative, and comparative methods that assess the health issues in a hospital organization's community and that community's access to services related to those issues. Based on the findings of the CHNA, an implementation strategy for BBMC that addresses the community health needs will be developed and adopted by early 2017.

#### Requirements

As required by the Treasury Department ("Treasury") and the Internal Revenue Service (IRS), this CHNA includes the following:

- A description of the community served;
- A description of the process and methods used to conduct the CHNA, including:
  - A description of the sources and dates of the data and the other information used in the assessment; and,
  - The analytical methods applied to identify community health needs.
- The identification of all organizations with which BBMC collaborated, if applicable, including their qualifications;
- A description of how BBMC took into account input from persons who represented the broad interests of the community served by BBMC, including those with special knowledge of or expertise in public health, written comments regarding the hospital's previous CHNA, and any individual providing input who was a leader or representative of the community served by BBMC; and,
- A prioritized description of all of the community health needs identified through the CHNA and a description of the process and criteria used in prioritizing those needs.

#### **CHNA Strategy**

- This CHNA was conducted following the requirements outlined by the Treasury and the IRS, which included obtaining necessary information from the following sources:
- Input from persons who represented the broad interests of the community served by BBMC, which included those with special knowledge of or expertise in public health;
- Identifying federal, regional, state, or local health or other departments or agencies, with current data or other information relevant to the health needs of the community served by BBMC, leaders, representatives, or members of medically underserved, low-income, and minority populations with chronic disease needs in the community served by BBMC; and,
- Consultation or input from other persons located in and/or serving BBMC's community, such as:
  - Healthcare community advocates;
  - Nonprofit organizations;
  - Local government officials;
  - Community-based organizations, including organizations focused on one or more health issues;
  - Healthcare providers, including community health centers and other providers focusing on medically underserved populations, low-income persons, minority groups, or those with chronic disease needs.
- The sources used for BBMC's CHNA are provided in the References and Appendix A: Community Leader Interview Organizations. Information was gathered by conducting interviews with individuals representing community health and public service organizations, medical professionals, hospital administration and other hospital staff members.

#### **Health Profile**

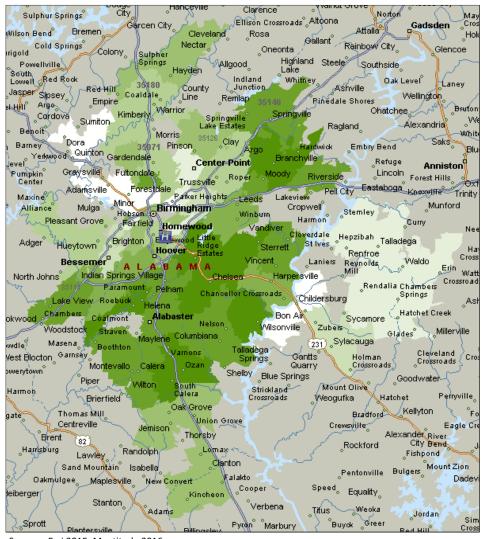
#### **Secondary Data Collection and Analysis Methodology**

A variety of data sources were utilized to gather demographic and health indicators for the community served by BBMC. Commonly used data sources include Esri, the U.S. Census Bureau, the Alabama Department of Public Health (ADPH), and the Centers for Disease Control and Prevention (CDC). As previously mentioned, Jefferson County defines the community for BBMC. Demographic and health indicators are presented at the county level and compared to state benchmarks.

#### **Demographics**

Population in Brookwood Baptist Medical Center's Community





H Brookwood Baptist Medical Center

□ Five-year Percentage Change by ZIP Code

7.0% to 9.3%

4.2% to 6.9%

2.5 to 4.0%

1.1% to 2.1%

0.0% to 0.9%

-0.2% to -0.1%

-0.4 to -0.3%

-2.5% to -0.6%

Sources: Esri 2015; Maptitude 2016

## **Population Change by ZIP Code**

The estimated 2015 population the service area is 971,943 and is expected to grow by 2.4% over the next five years.

#### Service Area Current and Projected Population by ZIP Code

ZIP Code	Community	County	Current Population	Projected 5-year Population	Percent Change
35004	Moody	Saint Clair	10,112	10,728	6.1%
35005	Adamsville	Jefferson	8,114	7,999	-1.4%
35007	Alabaster	Shelby	26,553	27,973	5.3%
35020	Bessemer	Jefferson	25,802	25,778	-0.1%
35022	Bessemer	Walker	20,638	21,369	3.5%
35023	Bessemer	Jefferson	24,883	24,895	0.0%
35040	Calera	Shelby	16,014	17,490	9.2%
35043	Chelsea	Shelby	10,235	11,168	9.1%
35044	Childersburg	Talladega	7,255	7,127	-1.8%
35045	Clanton	Chilton	14,789	15,071	1.9%
35051	Columbiana	Shelby	9,126	9,670	6.0%
35062	Dora	Jefferson	7,498	7,375	-1.6%
35064	Fairfield	Jefferson	11,230	11,227	0.0%
35068	Fultondale	Jefferson	7,446	7,764	4.3%
35071	Gardendale	Walker	15,558	15,641	0.5%
35078	Harpersville	Shelby	2,087	2,174	4.2%
35079	Hayden	Blount	9,235	9,430	2.1%
35080	Helena	Shelby	16,609	17,785	7.1%
35085	Jemison	Chilton	9,411	9,574	1.7%
35094	Leeds	Jefferson	14,221	14,694	3.3%
35111	Mc Calla	Jefferson	16,465	17,357	5.4%
35115	Montevallo	Shelby	14,947	15,686	4.9%
35117	Mount Olive	Jefferson	5,886	5,994	1.8%
35120	Odenville	Saint Clair	16,405	17,794	8.5%
35124	Pelham	Shelby	24,471	25,624	4.7%
35125	Pell City	Saint Clair	10,980	11,510	4.8%
35126	Pinson	Jefferson	22,119	22,393	1.2%
35127	Pleasant Grove	Jefferson	9,901	9,965	0.6%
35146	Springville	Saint Clair	11,753	12,544	6.7%
35147	Sterrett	Shelby	5,463	5,910	8.2%

			Current	Projected 5-year	Percent
ZIP Code	Community	County	Population	Population	Change
35150	Sylacauga	Talladega	18,776	18,769	0.0%
35160	Talladega	Talladega	27,926	27,817	-0.4%
35173	Trussville	Jefferson	25,202	25,417	0.9%
35178	Vincent	Shelby	3,771	4,008	6.3%
35180	Warrior	Jefferson	13,527	13,567	0.3%
35186	Wilsonville	Shelby	5,213	5,696	9.3%
35204	Birmingham	Jefferson	10,522	10,664	1.3%
35205	Birmingham	Jefferson	19,248	19,396	0.8%
35206	Birmingham	Jefferson	16,894	16,823	-0.4%
35207	Birmingham	Jefferson	8,756	8,701	-0.6%
35208	Birmingham	Jefferson	16,937	16,864	-0.4%
35209	Birmingham	Jefferson	30,638	30,904	0.9%
35210	Birmingham	Jefferson	13,255	13,248	-0.1%
35211	Birmingham	Jefferson	25,730	26,195	1.8%
35212	Birmingham	Jefferson	10,939	10,817	-1.1%
35213	Birmingham	Jefferson	14,600	14,959	2.5%
35214	Birmingham	Jefferson	18,224	17,761	-2.5%
35215	Birmingham	Jefferson	46,290	46,112	-0.4%
35216	Birmingham	Jefferson	36,289	36,728	1.2%
35217	Birmingham	Jefferson	13,400	13,423	0.2%
35218	Birmingham	Jefferson	7,458	7,686	3.1%
35223	Birmingham	Jefferson	10,865	10,841	-0.2%
35226	Birmingham	Jefferson	33,729	35,034	3.9%
35228	Birmingham	Jefferson	10,259	10,319	0.6%
35234	Birmingham	Jefferson	6,330	6,400	1.1%
35235	Birmingham	Jefferson	18,946	18,946	0.0%
35242	Birmingham	Shelby	51,593	55,366	7.3%
35243	Birmingham	Jefferson	17,378	17,460	0.5%
35244	Birmingham	Jefferson	34,042	35,623	4.6%
Total			971,943	995,253	2.4%

Source: Esri 2015

### Population Change by Age and Gender

Substantial population growth is expected among residents aged 65 and older (15.9%). Slight growth is expected for children and young adults aged 0 through 19 (2.2%), while the populations of adults aged 20 through 44 and adults aged 45 through 64 are expected to decline marginally (-0.8% and -0.5%, respectively).

#### Service Area Current and Projected Population Change by Age and Sex

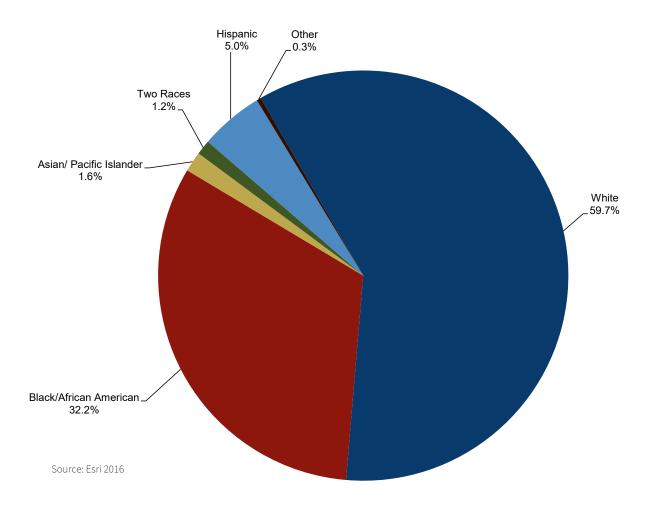
2015		2020		Percent Change					
Age Group	Male	Female	Total	Male	Female	Total	Male	Female	Total
Age 0 through 19	127,941	123,770	251,711	130,801	126,351	257,152	2.2%	2.1%	2.2%
Age 20 through 44	160,212	167,621	327,833	159,820	165,548	325,368	-0.2%	-1.2%	-0.8%
Age 45 through 64	122,109	135,178	257,287	122,549	133,579	256,128	0.4%	-1.2%	-0.5%
Age 65 and older	56,779	78,333	135,112	67,068	89,537	156,605	18.1%	14.3%	15.9%
Total	467,041	504,902	971,943	480,238	515,015	995,253	2.8%	2.0%	2.4%

Source: Esri 2015

#### **Race/Ethnic Composition**

The most common race/ethnicity in BBMC's community is white (59.7%) followed by black/African American (32.2%), Hispanic (5.0%), Asian/Pacific Islander (1.6%), individuals of two or more races (1.2%) and other races (0.3%).

#### Service Area Race/Ethnic Composition 2015



#### Population by Race and Ethnicity

The populations of individuals of two or more races, Hispanics, Asian/Pacific Islanders and individuals of other races are expected to grow substantially by 2020 (22.3%, 21.2%, 19.9% and 10%, respectively). The black/African American population is expected to grow slightly while the white population is expected to decline marginally.

Service Area Current and Projected Population by Race

			Percent
Race	2015	2020	Change
White	579,994	574,913	-0.9%
Black/African American	313,293	325,432	3.9%
Asian/ Pacific Islander	15,418	18,491	19.9%
Two Races	11,255	13,767	22.3%
Hispanic	48,612	58,942	21.2%
Other	3,371	3,708	10.0%

Source: Esri 2015

#### **Socioeconomic Characteristics**

According to the U.S. Bureau of Labor Statistics, the 2014 annual unemployment average for Jefferson County (5.4%) was lower than Alabama's overall rate of 6.8%.

The U.S. Census American Community Survey (ACS) publishes median household income and poverty estimates. According to 2010–2014 estimates, the median household income in Jefferson County (\$45,239) is slightly higher than Alabama's (\$43,511).

Poverty thresholds are determined by family size, number of children, and age of the head of the household. A family's income before taxes is compared to the annual poverty thresholds. If the income is below the threshold, the family and each individual in it are considered to be in poverty. In 2014, the poverty threshold for a family of four was \$24,008. The ACS estimates indicate that Jefferson County residents are as likely to live in poverty (18.7%) as all Alabama residents (18.9%). Children in Jefferson County are as likely to be living below the poverty level (27.9%) as all children in Alabama (27.5%).

#### Socioeconomic Characteristics

	Jefferson County	Alabama
Unemployment Rate, 2014 annual average <sup>1</sup>	5.4%	6.8%
Median Household Income <sup>2</sup>	\$45,239	\$43,511
Individuals Below Poverty Level <sup>2</sup>	18.7%	18.9%
Children Below Poverty Level <sup>2</sup>	27.9%	27.5%

<sup>&</sup>lt;sup>1</sup>Source: Bureau of Labor Statistics

<sup>&</sup>lt;sup>2</sup> Source: U.S. Census - American Community Survey, 2010–2014

#### **Education**

The U.S. Census ACS publishes estimates of the highest level of education completed for residents 25 years and older. Jefferson County residents aged 25 and older are more likely to be college educated compared to all Alabama residents.

The Alabama State Department of Education reported data from the 2014-2015 school year indicating that Jefferson County students were more likely to be approved for free or reduced lunch (55.9%) compared to students in Alabama (52.5%). The projected four-year dropout rate for Jefferson County (3.5%) is below Alabama's (4.8%), which directly relates to a higher high school graduation rate than that of all Alabama students (91% versus 89.0%).

Highest Level of Education Completed Persons 25 Years and Older, 2010--2014

	Jefferson County	Alabama
Less than a high school degree	12.3%	16.3%
High school degree or equivalent	26.6%	31.1%
Some college	23.2%	22.0%
Bachelor's degree	18.4%	14.5%
Graduate or professional degree	11.9%	8.6%

Source: U.S. Census - American Community Survey, 2010-2014

Select Education Indicators, 2014-2015

	Jefferson County	Alabama
Students approved for free or reduced lunch <sup>1</sup>	55.9%	52.5%
Four-year dropout rate <sup>1</sup>	3.5%	4.8%
High school graduation rate <sup>1</sup>	91.0%	89.0%

<sup>1</sup>Source: Alabama State Department of Education, 2014–2015

## **Mortality Indicators**

The ADPH 2013 County Health Profile for Jefferson County reported that its residents have a similar life expectancy at birth (75.1 years) compared to Alabama (75.6 years).

Mortality Indicators, 2013

	Jefferson County	Alabama
Life expectancy at birth in years	75.1	75.6
Death rate (per 1,000 population)	10.6	10.4

Source: Alabama Department of Public Health, 2013 County Health Profiles

Mortality rates in Jefferson County are very similar to that of the overall state of Alabama in all age groups, as shown in the table below.

Age-Specific Mortality Rates per 100,000 Population, 2013

	Jefferson County	Alabama
0 - 14 years old	1.1	0.8
15 - 44 years old	1.8	1.7
45 - 64 years old	9.0	8.9
65 - 84 years old	36.2	34.7
85 years and older	145.7	153.4

Source: Alabama Department of Public Health, 2013 County Health Profiles

## **Leading Causes of Death**

Heart disease, cancer, and stroke are the three leading causes of death in Jefferson County, while heart disease, cancer, and chronic lower respiratory disease (CLRD) are the top three in Alabama. The Chronic Lower Respiratory Disease (CLRD) mortality rate is substantially lower in Jefferson County (46.6 per 100,000) than in Alabama (62.9 per 100,000). Other leading causes of death in Jefferson County include Alzheimer's disease, diabetes, influenza and pneumonia, and homicide. It is important to note that the homicide and HIV mortality rates in Jefferson County are substantially higher than in Alabama.

Leading Causes of Death, 2010-2014

	Jefferson	
	County	Alabama
Heart disease	230.0	257.6
Cancer	217.4	213.7
Chronic lower respiratory disease	46.6	62.9
Accidents	48.2	47.6
Stroke	60.0	53.6
Alzheimer's disease	24.0	28.9
Diabetes	28.1	27.8
Influenza and pneumonia	20.0	21.4
Suicide	13.0	14.9
Homicide	14.3	8.7
HIV	4.5	2.5

Source: Alabama Department of Public Health, 2013 County Health Profiles

Rates are per 100,000 population

#### Cardiovascular Outcomes

Residents aged 65 and older in Jefferson County are less likely to die from heart disease (1,165.1 per 100,000) compared to Alabama (1,357.6 per 100,000). Blacks in Jefferson County are more likely to die from heart disease (1,244.2 per 100,000) compared to whites (1,138.5 per 100,000). Males in Jefferson County and Alabama have a substantially higher likelihood of dying from heart disease compared to females.

Age-Adjusted Heart Disease Mortality Rates per 100,000 Adults Ages 65 and Older by Race and Gender, 2011-2013

	Jefferson	Alabama
	County	Alabama
Heart Disease, All	1,165.1	1,357.6
Heart Disease, White (Non-Hispanic)	1,138.5	1,359.9
Heart Disease, Black (Non-Hispanic)	1,244.2	1,430.0
Heart Disease, Male	1,427.5	1,631.1
Heart Disease, Female	998.4	1,162.9

Source: Centers for Disease Control and Prevention

Deaths from acute myocardial infarctions, commonly known as heart attacks, are less common in Jefferson County than in Alabama. The overall heart attack mortality rate for residents 65 and older in Jefferson County (188.8 per 100,000) is substantially lower than in Alabama (213.6 per 100,000). In Jefferson County, whites are more likely to die from heart attacks than blacks. Males in Jefferson County and Alabama are significantly more likely to die from a heart attack compared to females.

Age-Adjusted Heart Attack Mortality Rates per 100,000 Adults Ages 65 and Older by Race and Gender, 2011-2013

	Jefferson	
	County	Alabama
Heart Attack, All	188.8	213.6
Heart Attack, White (Non-Hispanic)	190.7	212.0
Heart Attack, Black (Non-Hispanic)	181.3	233.5
Heart Attack, Male	226.6	268.4
Heart Attack, Female	161.6	173.1

Source: Centers for Disease Control and Prevention

#### Cardiovascular Outcomes (continued)

Jefferson County residents ages 65 and older are more likely to die from a stroke (349.8 per 100,000) than residents in Alabama (317.7 per 100,000). Blacks in Jefferson County and Alabama are substantially more likely to die from a stroke compared to white residents. There is a slightly lower stroke mortality rate among women in Jefferson County (338.2 per 100,000) compared to men (360.0 per 100,000).

Age-Adjusted Stroke Mortality Rates per 100,000 Adults Ages 65 and Older by Race and Gender, 2011-2013

	Jefferson	
	County	Alabama
Stroke, All	349.8	317.7
Stroke, White (Non-Hispanic)	331.4	311.1
Stroke, Black (Non-Hispanic)	395.6	364.4
Stroke, Male	360.0	318.3
Stroke, Female	338.2	312.9

Source: Centers for Disease Control and Prevention

Hypertension mortality in persons ages 65 and older in Jefferson County (652.8 per 100,000) is higher than in Alabama (614.2 per 100,000). Blacks in Jefferson County and Alabama are substantially more likely to die from hypertension compared to whites. In Jefferson County, hypertension mortality is higher in males (688.2 per 100,000) than females (623.1 per 100,000).

Age-Adjusted Hypertension Mortality Rates per 100,000 Adults Ages 65 and Older by Race and Gender, 2011-2013

	Jefferson County	Alabama
Hypertension, All	652.8	614.2
Hypertension, White (Non-Hispanic)	549.3	559.3
Hypertension, Black (Non-Hispanic)	899.3	899.3
Hypertension, Male	688.2	648.6
Hypertension, Female	623.1	581.1

Source: Centers for Disease Control and Prevention

#### **Cancer Incidence**

Total cancer incidence is higher in Jefferson County (466.5 per 100,000) than in Alabama (461.1 per 100,000) and the United States (453.8 per 100,000).

Lung and bronchus cancer incidence in Jefferson County (66.8 per 100,000 population) is lower than in Alabama (73.4 per 100,000 population) but higher than the United States (63.7 per 100,000 population).

Breast cancer incidence in Jefferson County (131.0 per 100,000 females) is higher than in Alabama (119.5 per 100,000 females) and the United States (123.0 per 100,000 females).

Prostate cancer incidence is higher in Jefferson County (161.0 per 100,000 males) than in Alabama (146.1 per 100,000 males) and the United States (131.7 per 100,000 males).

The cervical cancer incidence rates in Jefferson County (8.3 per 100,000 females) and Alabama (8.5 per 100,000 females) are similar, but both rates are slightly higher than the rate in the United States (7.7 per 100,000 females).

Select Cancer Incidence Rates, 2008-2012

	Jefferson		United
	County	Alabama	States
Total cancer <sup>1</sup>	466.5	461.1	453.8
Lung and bronchus <sup>1</sup>	66.8	73.4	63.7
Breast <sup>2</sup>	131.0	119.5	123.0
Prostate <sup>3</sup>	161.0	146.1	131.7
Cervical <sup>2</sup>	8.3	8.5	7.7

Source: National Cancer Institute, State Cancer Profiles

<sup>&</sup>lt;sup>1</sup>Rates are per 100,000 population

<sup>&</sup>lt;sup>2</sup>Rates are per 100,000 females

<sup>&</sup>lt;sup>3</sup>Rates are per 100,000 males

#### **Cancer Mortality**

Total cancer mortality is lower in Jefferson County (188.0 per 100,000) compared to Alabama (191.2 per 100,000) but higher than the United States (171.2 per 100,000).

Lung and bronchus cancer mortality in Jefferson County (51.8 per 100,000 population) is lower than in Alabama (58.1 per 100,000 population) but higher than the United State (47.2 per 100,000 population).

Breast cancer mortality is higher in Jefferson County (26.4 per 100,000 females) than in Alabama (22.6 per 100,000 females) and the United States (21.9 per 100,000 females).

Prostate cancer mortality is higher in Jefferson County (29.4 per 100,000 males) than in Alabama (26.4 per 100,000 males) and the United States (21.4 per 100,000 males).

Cervical cancer mortality in Jefferson County (2.6 per 100,000 females) is lower than in Alabama (3.0 per 100,000 females) but higher than in the United States (2.3 per 100,000 females).

Select Cancer Mortality Rates, 2008-2012

	Jefferson County	Alabama	United States
Total cancer <sup>1</sup>	188.0	191.2	171.2
Lung and bronchus <sup>1</sup>	51.8	58.1	47.2
Breast <sup>2</sup>	26.4	22.6	21.9
Prostate <sup>3</sup>	29.4	26.4	21.4
Cervical <sup>2</sup>	2.6	3.0	2.3

Source: National Cancer Institute, State Cancer Profiles

<sup>&</sup>lt;sup>1</sup>Rates are per 100,000 population

<sup>&</sup>lt;sup>2</sup>Rates are per 100,000 females

<sup>&</sup>lt;sup>3</sup>Rates are per 100,000 males

#### **Cancer Screenings and Risk Factors**

Jefferson County adults are as likely to have received a blood stool test in the past two years (14.3%) as all Alabama adults (14.8%).

Jefferson County adults are more likely to have ever had a sigmoidoscopy or colonoscopy (72.5%) compared to all Alabama adults (67.8%).

Men in Jefferson County are more likely to have received a PSA test in the past two years (55.9%) compared to all men in Alabama (50.7%).

Jefferson County women aged 40 and older are more likely to have received a mammogram in the past two years (80.3%) compared to all Alabama women (74.3%).

Women aged 18 and older in Jefferson County are about as likely to have had a pap test in the past three years (80.6%) compared to all women aged 18 and older in Alabama (80.1%).

Adults in Jefferson County are less likely to be smokers (20.0%) compared to all Alabama adults (23.8%).

Select Cancer Screenings and Risk Factors, 2012

	Jefferson	
	County	Alabama
Had a blood stool test in the past two years <sup>1</sup>	14.3%	14.8%
Ever had a sigmoidoscopy or colonoscopy <sup>1</sup>	72.5%	67.8%
Had a PSA test within the past two years <sup>2</sup>	55.9%	50.7%
Had a mammogram in the past two years <sup>3</sup>	80.3%	74.3%
Had a pap test within the past three years <sup>4</sup>	80.6%	80.1%
Adults who are current smokers	20.0%	23.8%

Source: Behavioral Risk Factor Surveillance Survey

<sup>&</sup>lt;sup>1</sup>Adults aged 50 and older

<sup>&</sup>lt;sup>2</sup>Men aged 40 and older

<sup>&</sup>lt;sup>3</sup>Women aged 40 and older

<sup>&</sup>lt;sup>4</sup>Women aged 18 and older

#### **Diabetes**

According to the State of Obesity, diabetes rates have doubled in the past 20 years and Alabama has the third highest rates of diabetes. Adults in Jefferson County are less likely to be diagnosed with Diabetes (12.0) when compared to adults in Alabama (12.5%), however are more likely than adults in the United States (9.2%).

Males in Jefferson County are more likely to be diagnosed with diabetes when compared to males in the United States and females in Jefferson County are more likely to be diagnosed with diabetes when compared to females the United States (see Table).

Diagnosed Diabetes, 2013

Jefferson		United	
	County	Alabama	States
Population with Diagnosed Diabetes*	12.0%	12.5%	9.2%
Percent Males with Diabetes*	12.4%	13.1%	9.8%
Percent Females with Diabetes*	11.7%	12.0%	8.6%

 $Source: Centers for Disease \ Control \ and \ Prevention, National \ Center for \ Chronic \ Disease \ Prevention \ and \ Health \ Promotion \ 2013 \ Promotion \ 20$ 

The Dartmouth Atlas of Health Care reports on the percentage of diabetes Medicare patients who in the last year have had a hemoglobin A1c (hA1c) test, which is a blood test that measures blood sugar levels. This test is instrumental in early detection as well as treatment of subsequent health problems. Medicare enrollees who have been diagnosed with diabetes in Jefferson County are less likely to have had an annual A1c (hA1c) test (84.0%) when compared to Medicare enrollees diagnosed with diabetes in Alabama (84.2%) and in the United States (84.6%).

Diabetes Annual Exam, 2012

	Jefferson		United
	County	Alabama	States
Percentage with Diabetes who have had an Annual Exam*	84.0%	84.2%	84.6%

Source: Dart mouth Atlasof Health Care, 2012

 $<sup>^{\</sup>star} Adults aged\,20\,who\,have\,been\,diagnosed\,wit\,h\,diabet\,es$ 

<sup>\*</sup>Medicare Enrollees diagnosed with Diabetes

#### Reported Health Status, Risk Factors, and Behaviors

Adults in Jefferson County are less likely to report having fair or poor general health (20.5%) compared to all Alabama adults (25.0%).

Physical inactivity is defined as not participating in any leisure-time physical activities (physical activities or exercises other than their regular job). Adults in Jefferson County are less likely to report physical inactivity (24.5%) than all adults in Alabama (27.2%).

Jefferson County adults aged 65 and older are more likely to report receiving a flu shot within the past 12 months (66.6%) compared to all Alabama adults aged 65 and older (61.2%).

Jefferson County adults are as likely to report engaging in heavy drinking in the 30 days prior to the survey or binge drinking on at least one occasion during that period (12.2%) as all Alabama adults (12.3%).

Jefferson County residents are about as likely to be diagnosed with diabetes (11.4%) as Alabama residents (11.1%).

Obesity is defined as having a BMI greater than or equal to 30. Respondents in Jefferson County are more likely to report being obese (34.8%) compared to all Alabama respondents (33.0%).

Reported Health Status, Risk Factors, and Behaviors

	Jefferson	
	County	Alabama
Fair or poor health	20.5%	25.0%
Physical inactivity	24.5%	27.2%
Flu vaccination	66.6%	61.2%
Binge drinking	12.2%	12.3%
Diabetes	11.4%	11.1%
Obesity	34.8%	33.0%

Source: Centers for Disease Control and Prevention

#### **Communicable Diseases**

Data on reported communicable diseases are available through the ADPH. Reported HIV incidence in Jefferson County (26.5 per 100,000) is substantially higher than in Alabama (13.5 per 100,000). Jefferson County has a substantially higher chlamydia incidence rate (804.1 per 100,000) compared to Alabama (613.3 per 100,000). The gonorrhea and syphilis incidence rates in Jefferson County are substantially higher than Alabama's. The tuberculosis incidence rates were similar in Jefferson County (2.4 per 100,000) and Alabama (2.2 per 100,000).

Communicable Disease Incidence Rates, 2015

	Jefferson	
	County	Alabama
HIV	26.5	13.5
Chlamydia	804.1	613.3
Gonorrhea	291.0	173.2
Syphillis	30.0	13.8
Tuberculosis	2.4	2.2

Source: Alabama Department of Public Health, 2013 County Health Profiles

Rates are per 100,000 population

#### Maternal and Child Health

A birth rate is defined as the number of live births per 1,000 persons in a given year. According to the ADPH 2013 County Health Profiles, the birth rate in Jefferson County (13.1 per 1,000) is higher than the birth rate in Alabama (12.0 per 1,000). The teen birth rate in Alabama is defined as the number of births per 1,000 persons aged 10-19. Teen births are slightly less common in Jefferson County (16.5 per 1,000) than in Alabama (17.4 per 1,000).

Women in Jefferson County are more likely to receive prenatal care in the first trimester (84.1%) than all women in Alabama (80.6%). Adequate prenatal care in this report is defined as receiving 80% or more of the expected prenatal visits based on the Kotelchuck Index; whereas, inadequate care in this report is defined as 79% or less of expected prenatal visits. The percentage of women in Jefferson County who receive adequate prenatal care (80.8%) is higher than Alabama (76.2%). Women in Jefferson County are less likely to receive inadequate care (9.6%) compared to women in Alabama (12.8%).

Low birthweight is defined as less than 2,500 grams (5 lbs. 8oz). Low birthweight births are more likely to occur in Jefferson County (11.0%) than in Alabama (10.0%). Teen women in Jefferson County were more likely to have low birthweight babies (12.7%) than teen women in Alabama (10.4%).

The infant mortality rate in Jefferson County (12.6 per 1,000) is substantially higher than in Alabama (8.6 per 1,000).

Maternal and Child Health Indicators, 2013

	Jefferson	
	County	Alabama
Birth rate (per 1,000 population)	13.1	12.0
Teen birth rate (per 1,000 population aged 10-19 years)	16.5	17.4
Women receiving prenatal care in first trimester	84.1%	80.6%
Women receiving adequate prenatal care	80.8%	76.2%
Women receiving inadequate care	9.6%	12.8%
Low weight births*	11.0%	10.0%
Low weight births to teen women (10-19 years old)	12.7%	10.4%
Infant mortality rate (per 1,000 births)	12.6	8.6

Source: Alabama Department of Public Health, 2013 County Health Profiles

<sup>\*</sup> Percent of all births with known status

#### **Access to Care**

According to the ACS 2010–2014 estimates, Jefferson County residents are slightly more likely to have health insurance coverage (87.5%) compared to all Alabama residents (86.5%).

Private insurance coverage is about as common among Jefferson County residents (66.3%) as all Alabama residents (65.4%).

Public insurance coverage is slightly less common among Jefferson County residents (32.5%) compared to all Alabama residents (33.9%).

Residents in Jefferson County are less likely to be uninsured (12.5%) compared to all Alabama residents (13.5%), while children in Jefferson County are as likely to be uninsured (4.6%) as all children in Alabama (4.6%).

Health Insurance Coverage, 2010-2014

	Jefferson	
	County	Alabama
Health insurance coverage	87.5%	86.5%
Private insurance	66.3%	65.4%
Public coverage	32.5%	33.9%
No health insurance coverage	12.5%	13.5%
No health insurance coverage (Children)	4.6%	4.6%

Source: U.S. Census - American Community Survey, 2010-2014

Note: Individuals may be included in more than one group due to dual enrollement in Private and Public Insurance.

#### **Phone Survey Critical Analysis**

One of the most commonly mentioned concerns communicated by respondents of the phone survey was substance abuse, with special emphasis on children. Cancer was another commonly mentioned area of concern by participants. Many were concerned with the perceived lack of funds that are being infused into cancer-related research. While many of these areas would likely be dealt with more efficiently and effectively by law enforcement in the extended community of BBMC, there are some initiatives that could be handled by hospital. For example, respondents mentioned that "enhanced parenting skills" and "better education" could help mitigate some of the drug issues in the community. The most frequently mentioned concern by respondents, pollution, includes air, water, and trash buildup in the community. Some respondents were concerned about appearance and cleanliness, while others were concerned with chemicals and the environment.

#### **Community Health Priorities**

The overarching goal in conducting this Community Health Needs Assessment is to identify significant health needs of the community, prioritize those health needs, and identify potential measures and resources available to address the health needs. For the purpose of identifying health needs for BBMC, a health priority is defined as a medical condition or factor that is central to the state of health of the residents in the community. An exhaustive list of health needs was compiled based on the health profile, interviews, and focus group data. Concerns that did not fall within the definition of an identified health priority, such as social determinants of health, are discussed in conjunction with the health priorities where applicable. A modified version of Fowler and Dannenberg's Revised Decision Matrix was developed to capture priorities from the primary and secondary data. This matrix tool is used in health program planning intervention strategies, and uses a ranking system of "high," "medium," and "low" to distinguish the strongest options based on effectiveness, efficiency, and sustainability. As the CHNA is meant to identify the community's most significant health needs, only the health needs falling under the "high" and "medium" categories are highlighted.

Brookwood Baptist Medical Center's leadership team reviewed the primary and secondary data compiled and then ordered the priority health needs based on capacity to meet the needs identified. The four health priorities identified through the CHNA are: maternal fetal medicine, cardiovascular disease, obesity, and diabetes.

#### **Maternal Fetal Medicine**

- Infant mortality, teen pregnancy rate, prenatal care, and low birthweight are typically included in the Maternal and Child Health initiative.
- Infant mortality in Jefferson County is substantially higher than in Alabama.
- Jefferson County has a higher rate of low birth weight infants when compared to infants in Alabama

#### Cardiovascular Disease

- Heart disease is the leading cause of death in Jefferson County.
- The stroke mortality rate in Jefferson County is higher than the statewide rate.
- Residents aged 65 and older are more likely to die from a stroke compared to all residents aged 65 and older in Alabama.
- Jefferson County residents surveyed as part of the BRFSS are more likely to report being physically inactive and obese compared to all Alabama residents.
- Heart disease was the fifth most commonly mentioned health concern among phone survey participants.

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## **Obesity**

- More than one-third of Jefferson County residents surveyed as part of the BRFSS reported being obese.
- Diabetes and hypertension, medical conditions associated with obesity, were commonly mentioned by community leaders as health concerns in Jefferson County.
- Obesity/overweight was the sixth most commonly mentioned health concern mentioned by phone survey participants.

#### **Diabetes**

- Adults in Jefferson county are more likely to be diagnosed with diabetes when compared to adults in the United States.
- Males in Jefferson County are moderately more likely to be diagnosed with diabetes when compared to males in the United States.
- Females in Jefferson County are moderately more likely to be diagnosed with diabetes when compared to females in the United States.
- Medicare enrollees diagnosed with diabetes in Jefferson County are less likely to have had an annual hemoglobin A1c (HA1c) test when compared to Medicare enrollees diagnosed with diabetes in Alabama and the United States.
- During community phone surveys, diabetes was the fifth most mentioned health concern by community members.
- During community leader interviews, interviewees noted diabetes as being one of their main health concerns.

#### Resources

#### **Maternal Fetal Medicine**

Brookwood Baptist Health System offers maternity care, women's health, and children's care at BBMC and has a specialized program for high-risk births. BBMC offers an extensive amount of educational classes and programs focused at preparing mothers and their families for a new baby. The Steps Ahead Maternity Care Program ensures that mothers-to-be are receiving adequate prenatal care. Beyond this, BBMC offers a postpartum Mother and Baby suite for new mothers and their families once the baby has been born. New mothers also have available to them the Lactation Center where they will have access to in-hospital education about breast feeding, the ability to purchase breast feeding equipment such as the Medela Breast Pump and Nursing Bra, and a breast feeding helpline once they have left the hospital. Women who have had trouble breast feeding in the past have the opportunity to attend a breast feeding class where fathers and family members are encouraged to attend as well. BBMC also offers a class for Grandparents-to-be; this two-hour course will prepare grandparents for their new arrival and focuses on new guidelines for infant care and safety, car seat safety, current trends in childbirth, and how to be helpful without interfering.

The Junior League of Birmingham is focused on several initiatives that are dedicated to improving the lives of women and infants. Its mission is to "improve the quality, availability, and affordability of maternal and infant health educational materials, programs, and services." One initiative is supporting the Mothers' Milk Bank of Alabama; this is a nonprofit organization that collects, processes, and facilitates the distribution of excess mothers' milk to provide nourishment to babies in need and sick or premature infants to helps moms who can't supply their own milk. Beyond this, the Junior League will also be implementing a program in 2017 that is a Diaper Bank for mothers and infants in need.

### Resources (continued)

#### Cardiovascular Disease

Brookwood Baptist Heart Health and Cardiology provides advanced resources to the community through Brookwood Baptist Medical Center. These services include diagnostic services like echocardiology, remote monitoring, screenings, interventional cardiology, vascular care, and electrophysiology.

Brookwood Baptist Health System has a Workforce Wellness Program aimed at decreasing cardiovascular disease for Hospital employees and community partners. These efforts include smoking cessation classes, discounted memberships to *Weight Watchers*, enhanced access to gym/physical fitness activities, and healthy eating/nutritional education. A group of Brookwood Baptist Health Primary Care Network clinics have been selected by the Centers for Medicare & Medicaid Services (CMS) as an awardee to help reduce the risk of heart attacks and strokes among millions of Medicare fee-for-service beneficiaries. Healthcare practitioners participating in the Million Hearts® Cardiovascular Disease Risk Reduction Model will work to decrease cardiovascular disease risk by assessing an individual patient's risk for heart attack or stroke and applying prevention interventions.

The American Heart Association proposed a Smoke Free Ordinance in Mountain Brook that was passed this year in an effort to become a more heart healthy city. The ordinance covers most of the community and is limiting the heart health impacts that smoking makes. The American Heart Association in Birmingham hosts several heart health focused events in the community including Heart Healthy Walks and the Birmingham Heart Ball, an elegant fundraiser that allows the American Heart Association to fund several heart health initiatives.

### **Resources (continued)**

### **Obesity**

Brookwood Baptist Medical Center houses its accredited Bariatric center, providing weight loss surgeries for qualifying patients. The center also holds informational sessions and seminars for interested candidates. These seminars are scheduled all throughout the year, with a schedule currently available for the 2017 meetings. BBMC also spearheaded the "Healthy over Hungry" campaign which served to promote healthy eating habits and decisions, while providing thousands of hungry children and their families with a healthy breakfast.

The Junior League of Birmingham has partnered with the Jefferson County School System to take "small steps to end childhood obesity" by disseminating information to the community about obesity and hosting a 1 Mile Fun Run for children 12 years and younger. Similar events are planned for the area's high schools.

Brookwood Baptist Health's website offers an online Weight-Loss Surgery Profiler, which helps participants identify their weight category along with any weight-related issues and conditions. Beyond this, there is a multitude of fitness centers in the community where residents can become more active and become better equipped to combat obesity.

#### Resources (continued)

#### **Diabetes**

Brookwood Baptist Medical Center offers Diabetes Education Classes for the community. The classes educate the public about proper eating habits, exercise, and managing their disease. Each participant begins with a one-on-one meeting with a Diabetes Educator to review his or her medical history and goals. Participants are then given a tailored plan to improve their own health, in a way that is most effective for them. The hospital also provides wellness screenings for those wanting to be tested for diabetes or pre-diabetes risk factors.

Children's of Alabama, with several locations throughout Jefferson County, provides accredited diabetes education and care for infants, children, adolescents, and young adults. Its website hosts a Diabetes Center with education for those with diabetes and their families as well as helpful tools such as a food diary and blood glucose record.

The County Department of Health for Jefferson County also provides an open clinic for diabetic patients in conjunction with the Samford University School of Pharmacy. This clinic provides both educational and coaching services under the guidance of licensed Pharmacists. The goal of this clinic is to provide an enhanced plan of care for diabetic patients in the community.

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# **Appendix A: Community Leader Interview Organizations**

Organization	Area Represented
Birmingham Regional EMSS	Public Service Organization
Community Foundation of Greater Birmingham	Medically Underserved and Low-Income Populations
Division of Youth Services	Child Health
Greater Shiloh Baptist Church	Faith Based Organization
lda V. Moffitt School of Nursing	Hospital Leaders/Medical Professionals
The University of Alabama at Birmingham	Education
Urban Ministry	Faith Based Organization

## **Appendix B: Additional Data**

- 1. Are you at least 18 years of age? [Yes or No]; If No, not eligible for survey
- 2. Are you a resident of [County of interest]? [Yes or No]; If No, not eligible for survey
- 3. When thinking about your community, what do you feel is the number one health concern facing your community today?

Record <PRIMARY> verbatim:

- 4. Are you satisfied with your local hospital's ability to deal with <PRIMARY>? [Yes or No]
- 5. Has there been improvement in <PRIMARY> in the community over time? [Yes or No]
- 6. What do you feel the community can do to address <PRIMARY>?
- 7. What do you feel is your second highest health concern in your community? Record <SECOND> verbatim:
- 8. Are you satisfied with your local hospital's ability to deal with <SECOND>? [Yes or No]
- 9. Has there been improvement in <SECOND> in the community over time? [Yes or No]
- 10. And finally, what do you feel is your third highest health concern in your community? Record <THIRD> verbatim.
- 11. Are you satisfied with your local hospital's ability to deal with <THIRD>? [Yes or No]
- 12. Has there been improvement in <THIRD> in the community over time? [Yes or No]

#### **Community Leader Interviews**

#### Interview Methodology

Seven phone interviews were conducted from May 9–19, 2016. Interviews required approximately 20 minutes to complete. Interviewers followed the same process for each interview, which included documenting the interviewee's expertise and experience related to the community. Additionally, the following community-focused questions were used as the basis for discussion:

- Interviewee's name
- Interviewee's title
- Interviewee's organization
- Overview information about the interviewee's organization
- What are the top three strengths of the community?
- What are the top three health concerns of the community?
- What are the health assets and resources available in the community?
- What are the health assets or resources that the community lacks?
- What are the barriers to obtaining health services in the community?
- What is the single most important thing that could be done to improve the health in the community?
- That other information can be provided about the community that has not already been discussed?

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# **Community Leader Interview Summary**

Topic	Discussion Points/Highlights
Health Strengths	<ul> <li>The fact that Birmingham is a medical hub with a large network of hospitals and healthcare professionals was mentioned as a strength by the majority of interviewees.</li> <li>Interviewees also mentioned the breadth of available services and resources ranging from screenings, sports programs for children and young adults, and education opportunities as community strengths.</li> </ul>
Health Concerns	<ul> <li>Main health related concerns mentioned during interviews include diabetes, hypertension, and mental health.</li> <li>One interviewee pointed out that while there are several organizations who focus on different health related issues, there seems to be a lack of partnership between organizations.</li> </ul>
Resources Available	<ul> <li>The Baptist hospitals were mentioned as some of the most important health resources in the community. One interviewee noted "Princeton is a hospital that can be depended on, they are always open and available. Working with them is superb and the quality of care they provide is excellent."</li> <li>Health related resources in the community include the Cahaba Valley Health Center, Equal Access Birmingham, and M-Power Ministries.</li> </ul>
Resources Needed	<ul> <li>Several interviewees noted that there is a high number of transient people who are underserved in the community. Resources that address their health concerns are needed.</li> <li>More programs for seniors, especially those in assisted living facilities.</li> <li>Mobile based services were suggested by several interviewees.</li> </ul>
Ways to improve the overall health in the community	<ul> <li>Prevention was a widely discussed topic during interviews. Most interviewee's noted that preventative programs in the community is the key to having a healthier community.</li> <li>One interviewee noted that utilizing churches to get health related messages out is a good way to promote healthy living.</li> </ul>

#### **Community Health Phone Survey**

Phone surveys were conducted between March 2, 2016 and March 17, 2016. There were 200 respondents to the survey, all from Jefferson County. Respondents were asked about their top concerns for the health of the community, their satisfaction with their local hospital's ability to deal with their concerns, and whether their concerns were improving over time.

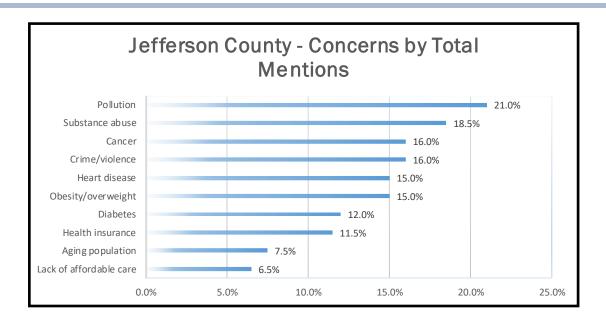
#### **Total Service Area Phone Survey Responses**

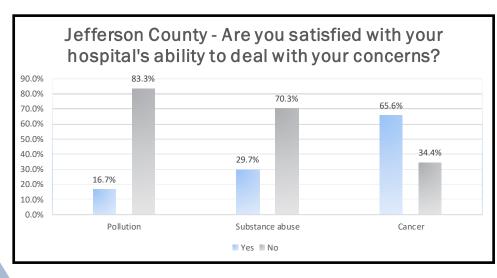
The total service area's top three concerns by total mentions are pollution (21.0%), substance abuse (18.5%), and cancer (16.0%). Most respondents are unsatisfied with their hospital's ability to deal with pollution and substance abuse, but are satisfied with their hospital's ability to deal with cancers. Most respondents feel that their concerns were improving over time.

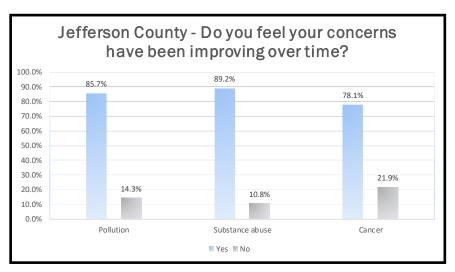
Total Service Area Top Health Concerns by Total Mentions

Community Concerns	Primary Concern	Secondary Concern	Tertiary Concern	Total Mentions
Pollution	11.0%	5.5%	4.5%	21.0%
Substance abuse	9.5%	6.0%	3.0%	18.5%
Cancer	8.0%	5.0%	3.0%	16.0%
Crime/violence	11.0%	3.5%	1.5%	16.0%
Heart disease	4.0%	7.5%	3.5%	15.0%
Obesity/overweight	5.5%	6.0%	3.5%	15.0%
Diabetes	4.5%	4.5%	3.0%	12.0%
Health insurance	9.0%	2.5%	0.0%	11.5%
Aging population	3.5%	1.5%	2.5%	7.5%
Lack of affordable care	3.5%	2.5%	0.5%	6.5%

## **Jefferson County Phone Survey Responses**







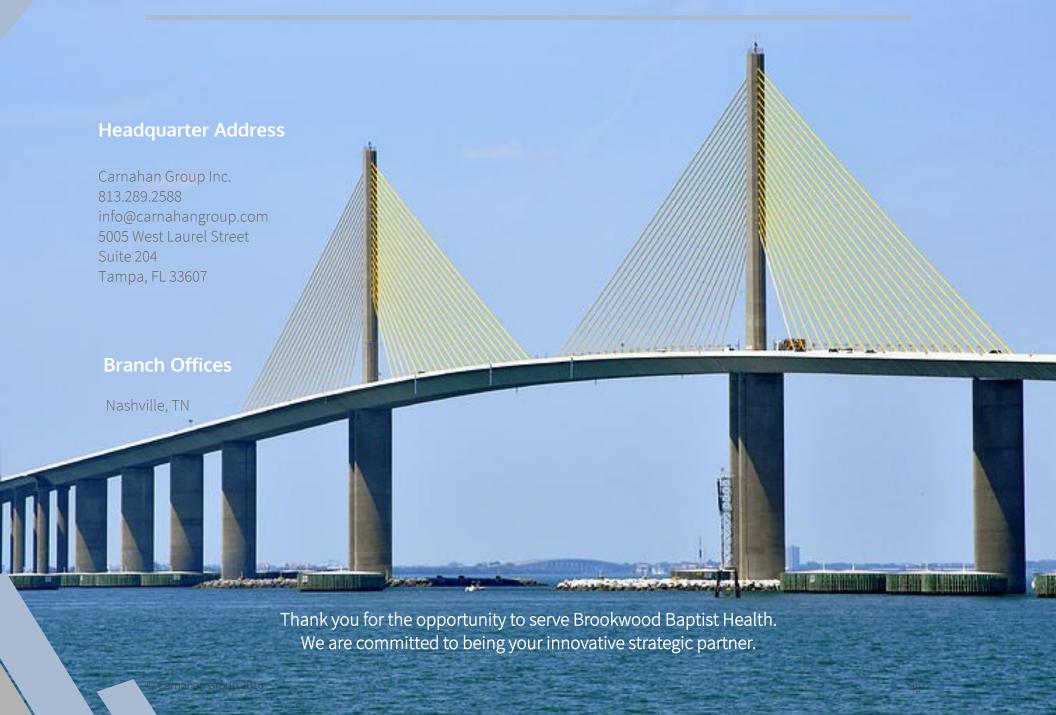
### Appendix C: Carnahan Group Qualifications

Carnahan Group is an independent and objective healthcare consulting firm that focuses on the convergence of regulations and planning. For over 10 years, Carnahan Group has been trusted by healthcare organizations throughout the nation as an industry leader in providing Fair Market Valuations, Medical Staff Demand Analyses, Community Health Needs Assessments, and Strategic Planning. Carnahan Group serves a variety of healthcare organizations, such as, but not limited to, hospitals and health systems, large and small medical practices, imaging centers and ambulatory surgery centers. Carnahan Group offers services through highly trained and experienced employees, and Carnahan Group's dedication to healthcare organizations ensures relevant and specific insight into the needs of our clients.

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## **Company Overview**





Strategic Healthcare Advisors