



**KentuckyOne Health**®  
**Saint Joseph Berea**

## Community Health Needs Assessment FY 2017-19



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# Introduction

## Forward

During 2015-2016, Saint Joseph Berea conducted a community health needs assessment (CHNA) to support its mission to enhance the health of people in the communities it serves by identifying health needs in these communities and prioritizing the allocation of hospital resources to meet those needs. Additionally, the completion of this report and subsequent approval and adoption by the KentuckyOne Health Board of Directors complies with CHNA requirements mandated by the *Patient Protection and Affordable Care Act of 2010* and federal tax-exemption requirements. Special CHNA requirements from Catholic Health Initiatives (CHI) are also reflected in this report.

## Executive Summary

The community health needs assessment process involved the following steps:

- The “community served” was defined utilizing inpatient data on patient county of residence.
- Secondary data in the form of population demographics and socioeconomic characteristics of the community was gathered and reported using various sources.
- Primary data was solicited from the following groups:
  - Madison County Health Department
  - Residents of the community served by Saint Joseph Berea, including individuals representing the senior population and the medically-underserved
  - KentuckyOne Health Strategy and Business Development representatives
  - Comments on Saint Joseph Berea’s previous CHNA
- Health needs were prioritized according to a weighted ranking system using the aforementioned data sources.
- Saint Joseph Berea convened its leadership team to formally identify the priority health needs based on the data and hospital resources. These needs have been identified as:
  - Cardiovascular Disease Reduction through the Promotion of Access to Care
  - Community Safety
- An inventory of health care facilities and resources was prepared.
- These findings were presented to the KentuckyOne Health Board of Directors for approval and adoption for July 1, 2016-June 30, 2019 (FY 2017-19).
- This final report will be made public and widely-available on or before June 30, 2016.

## Organization Description

Saint Joseph Berea, formerly Berea Hospital, began in 1898, as an eight-bed cottage on the Berea College campus in Berea, Kentucky. Now, Saint Joseph Berea is a 25-bed critical access hospital, which serves over 19,000 families. The hospital is known for providing excellence of care while utilizing advanced medical technology in a friendly, family-like atmosphere. The hospital includes Berea Family Medicine, Breast Center, Berea Specialty Clinic, Diabetes and Nutrition Center, Cardiovascular Services, Senior Renewal Center, Sleep Wellness Center, Surgical Services, and Wound Care Center.

Saint Joseph Berea is part of KentuckyOne Health, one of the largest health systems in Kentucky with more than 200 locations including hospitals, outpatient facilities and physician offices, and more than 3,100 licensed beds. An 18-

member volunteer board of directors governs KentuckyOne Health, its facilities and operations, including Saint Joseph Berea, with this purpose:

- **Our Purpose:** To bring wellness, healing and hope to all, including the underserved.
- **Our Future:** To transform the health of communities, care delivery and health care professions so that individuals and families can enjoy the best of health and wellbeing.
- **Our Values:**
  - **Reverence:** Respecting those we serve and those who serve.
  - **Integrity:** Doing the right things in the right way for the right reason.
  - **Compassion:** Sharing in others' joys and sorrows.
  - **Excellence:** Living up to the highest standards.

## Community Served by the Hospital

### Defined Community

For the purposes of our community health needs assessment, the community served by Saint Joseph Berea is defined as the geographic area from which a significant number of the patients utilizing hospital services reside. Inpatient discharge data for Saint Joseph Berea from July 1, 2014-June 30, 2015 (the latest fiscal year available as of data collection for this writing) shows that Madison County was the county of residence for the largest concentration of patients, with 67.7% of patients living in Madison County. Therefore, the service area for this community health needs assessment is defined as Madison County. The chart below shows residence information by county and zip code:

<b>Saint Joseph Berea: FY15 Inpatient Discharges County of Residence</b>				
<i>Zip Code</i>	<i>City</i>	<i>County, State</i>	<i>Discharges</i>	<i>Percent of Total</i>
40403	Berea	Madison - KY	722	59.4%
40447	McKee	Jackson - KY	154	12.7%
40475	Richmond	Madison - KY	101	8.3%
Other			238	19.6%
<b>FY15 Total Discharges</b>			<b>1,215</b>	<b>100.0%</b>
Source: KentuckyOne Health strategy				



### Identification and Description of Geographical Community

Berea is located in Madison County, Kentucky. Berea is 40 miles south of Lexington in central Kentucky and 15 miles from Richmond, Kentucky. Madison County is bordered by Clark, Estill, Fayette, Garrard, Jackson, Jessamine, and Rockcastle counties.

### Madison County Population Demographics

Understanding the population demographics of the community served by Saint Joseph Berea helped the hospital team understand characteristics unique to their community and can impact the identification of health needs. Notable for Madison County as compared to Kentucky state averages is the high population growth in Madison County from 2010 to 2014.

2014 Madison County Community Demographics			
	<i>Community Metric</i>	<i>Madison County</i>	<i>Kentucky</i>
<b>Population</b>	Population, 2014 Estimate	87,340	4,413,457
	Population, Percent Change: April 1, 2010 to July 1, 2014	5.3%	1.7%
<b>Age</b>	Persons Under 5 Years	5.7%	6.3%
	Persons Under 18 Years	21.1%	22.9%
	Persons 65 Years and Over	12.7%	14.8%
<b>Gender</b>	Female Persons	51.5%	50.8%
<b>Race</b>	White (alone)	91.9%	88.3%
	Black or African American (alone)	4.7%	8.2%
	American Indian and Alaska Native (alone)	0.3%	0.3%
	Asian (alone)	1.1%	1.4%
	Native Hawaiian and Other Pacific Islander (alone)	0.1%	0.1%
	Two or More Races	1.9%	1.8%
	Hispanic or Latino	2.3%	3.4%
Source: U.S. Census Bureau: State and County QuickFacts			

# Health Data for Madison County Residents

## Health Outcomes

Health outcomes detail how healthy a community is and are measured by the Robert Wood Johnson Foundation *County Health Rankings* population health model as length of life (mortality) and quality of life (morbidity).

### Mortality

Mortality is described in this county by two data sets: 1) the leading causes of death and 2) premature death.

#### 1. Leading Causes of Death

The 2014 leading causes of death data for this community (the most recent year available as of this writing) shows that cancer and heart disease are the major causes of death in this community and outweigh the third leading cause of mortality by almost three times as many deaths.

Health Outcomes: Mortality			
Madison County, KY Leading Causes of Death 2014			
#	Leading Causes of Death	Deaths	Crude Rate Per 100,000 Residents
1	Cancer	152	174.0
2	Diseases of the Heart	143	163.7
3	Chronic Lower Respiratory Disease	57	65.3
4	Accidents	45	51.5
5	Alzheimer's Disease	36	41.2
6	Cerebrovascular Disease	29	33.2
7	Kidney Diseases	21	24.0
8	Liver Disease and Cirrhosis	15	Unreliable
9	Diabetes	14	Unreliable
10	Essential Hypertension and Hypertensive Renal Disease	13	Unreliable
11	Influenza and Pneumonia	12	Unreliable
12	Septicemia	11	Unreliable
13	Suicide	11	Unreliable

Source: Centers for Disease Control and Prevention, National Center for Health Statistics (2015)



## 2. Premature Death

Premature death is another mortality measure, but more heavily reflects attention on preventable deaths by reviewing the years of potential life lost before age 75 (YPLL-75). For example, a death at age 50 contributes 25 years of life lost. The most recent data available for this measure is from 2010-2012 and is expressed as a rate per 100,000 Madison County residents. The Madison County rate shows that Madison County residents have fewer years of life lost compared to Kentucky residents overall but experience more years of life lost as compared to top U.S. counties in this performance area.

<b>Health Outcomes: Mortality</b>			
<b>Premature Death</b>			
<i>Years of Life Lost Before Age 75 Per 100,000 Residents (Data from 2010-2012)</i>	<i>Madison County</i>	<i>Kentucky Average</i>	<i>Top U.S. Performer</i>
	7,581	8,900	5,200
Source: 2015 County Health Rankings and Roadmaps			

## Morbidity

Morbidity is described in this county by two data sets: 1) the top ten diagnosis groups responsible for inpatient hospital discharges in Madison County and 2) self-reported quality of health metrics.

### 1. Top Ten Diagnosis Groups Responsible for Inpatient Hospital Discharges

The 2014 Madison County inpatient hospital discharges (the most recent year available as of this writing) show diagnoses related to respiratory and circulatory systems are the most common diagnosis groups responsible for making patients sick enough to be admitted to the hospital.

Health Outcomes: Morbidity			
Madison County, KY Top Ten Diagnosis Groups Responsible for Inpatient Hospital Discharges			
#	Top Diagnosis Groups for Hospital Discharges	CY 2014 Discharges	Percent of Total
1	Respiratory System	964	12.50%
2	Circulatory System	857	11.12%
3	Musculoskeletal System/ Connective Tissue	696	9.03%
4	Digestive System	670	8.69%
5	Nervous System	465	6.03%
6	Kidney and Urinary Tract	417	5.41%
7	Infectious and Parasitic Diseases	400	5.19%
8	Mental Diseases/Disorders	385	4.99%
9	Metabolic Diseases/Disorders	292	3.79%
10	Hepatobiliary System and Pancreas	248	3.22%

Source: Kentucky Hospital Association InfoSuite CY2014 Discharges (excluding Normal Newborn)

### 2. Self-Reported Quality of Health Metrics

The self-reported health metrics show the perception that Madison County residents have about their own health. Madison County residents perceive their own health to be better than the general population perceives their health to be in Kentucky overall, but Madison County residents still report poorer health than national benchmarks.

Health Outcomes: Morbidity			
Quality of Life Metrics			
Self-Reported Health Metric	Madison County	Kentucky	Top U.S. Performers
Poor or Fair Health	18%	21%	10%
# of Poor Physical Health Days in 30 Days	4.2	4.8	2.5
# of Poor Mental Days in 30 Days	3.7	4.3	2.3

Source: County Health Rankings and Roadmaps (2015)

## Health Factors

Health factors influence the health of a community and are measured by four different factors: health behaviors, clinical care, social and economic factors, and physical environment. Each of these factors encompasses several measures, all adding up to what is known as the social determinants of health. The World Health Organization defines social determinants of health as “the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life.”

### Health Behaviors

Health behaviors describe the individual choices community members make that impact their overall health. Behaviors related to tobacco use, diet and exercise, alcohol and drug use, and sexual activity are measured against Kentucky and national rates. Notable for Madison County is a high rate of sexually-transmitted infections compared to national averages. Madison County shows improved behavior over the state averages in the areas of adult smoking, excessive drinking, physical inactivity and obesity. *Health behaviors are responsible for 30% of overall health outcomes.*

Health Factors: Health Behaviors			
<b>Health Behaviors Related to Alcohol and Drug Use</b>			
<i>Health Behaviors</i>	<i>Madison County</i>	<i>Kentucky</i>	<i>Top U.S. Performers</i>
Adult Smoking Rate <sup>1</sup>	22%	26%	14%
Excessive Drinking Rate <sup>1</sup>	7%	12%	10%
Drug Overdose Deaths Per 100,000 Residents <sup>2</sup>	26.3	24.63	13.5
<b>Health Behaviors Related to Sexual Activity</b>			
Chlamydia Incidence Per 100,000 Residents <sup>1</sup>	370	394	138
Teen Births Per 1,000 Female Residents Ages 15-19 <sup>1</sup>	29	48	20
<b>Health Behaviors Related to Diet and Exercise</b>			
Physical Inactivity Rate <sup>1</sup>	28%	29%	20%
Adult Obesity Rate <sup>1</sup>	29%	32%	25%
Sources: County Health Rankings and Roadmaps (2015) <sup>1</sup> and 2014 Overdose and Fatality Report <sup>2</sup>			

### Clinical Care

Clinical care refers to access to care (measured by the uninsured rate and the ratio of community residents to providers) and quality of care (measured by preventable hospital stays). Notable for Madison County is the rate of preventable hospital stays, which is lower than the Kentucky average, potentially indicating that in Madison County there is increased accessibility to primary care services and more effective hospital services than in other parts of Kentucky. The ratio of primary care physicians to residents in Madison County is at the state average. However, the ratio of residents to mental health providers is double the state average and triple national benchmarks, indicating an accessibility issue with this type of care. *Clinical care factors are responsible for 20% of overall health outcomes.*

<b>Health Factors: Clinical Care</b>			
<i>Clinical Care Measures</i>	<i>Madison County</i>	<i>Kentucky</i>	<i>Top U.S. Performers</i>
Uninsured Rate	17%	16%	11%
Preventable Hospital Stays Per 1,000 Medicare Enrollees	67	94	41
Ratio of Residents to One Primary Care Physician	1,542: 1	1,551: 1	1,045: 1
Ratio of Residents to One Mental Health Provider	1,259: 1	621: 1	386: 1
Source: County Health Rankings and Roadmaps (2015)			

### Social and Economic Factors

Social and economic factors encompass education, employment, income, family and social support, and community safety. Notable for Madison County is high rate of income inequality, indicating the potential for greater health disparities in this community. There are also relatively low numbers of social associations in both Madison County and in the state overall as compared to national benchmarks. This indicates the potential for low levels of social support among Madison County residents. On a positive note, Madison County does have a higher percentage of residents achieving education attainment as compared to state averages, indicated by the percentage of high school graduates and the percentage of residents with some college education. *Social and economic factors are responsible for 40% of overall health outcomes.*

Health Factors: Social and Economic Factors			
<i>Social and Economic Measures</i>	<i>Madison County</i>	<i>Kentucky</i>	<i>Top U.S. Performers</i>
High School Graduation	92%	86%	NA
Some College	65.6%	58.1%	71%
Unemployment	6.8%	8.3%	4%
Children in Poverty	23%	26%	13%
Income Inequality (the ratio of household income at the 80th percentile to that at the 20th percentile)	5.0	5.1	3.7
Social Associations (the number of associations per 10,000 residents)	9.4	10.8	22.0
Violent Crimes Per 100,000 Residents	197	235	59
Source: County Health Rankings and Roadmaps (2015)			

### Physical Environment

Physical environment factors include air and water quality, as well as housing and transit. Transportation is often not considered when measuring housing affordability, so it is included here to better understand the overall affordability of life in Madison County. The lack of transit access in Madison County indicates it is a car-dependent community and means that combined housing and transportation costs make living in Madison County more expensive than the national benchmarking metrics. As far as environmental conditions, particulate matter and drinking water violations in Madison County are at the state average. *Physical environment factors account for 10% of overall health outcomes.*

Health Factors: Physical Environment			
<i>Physical Environment Measures</i>	<i>Madison County</i>	<i>Kentucky</i>	<i>Top U.S. Performers</i>
Air Pollution—Particulate Matter <sup>1</sup>	13	13.5	9.5
% of Residents Affected by Drinking Water Violations <sup>1</sup>	10%	9%	0%
% of Residents with Severe Housing Problems <sup>1</sup>	16%	14%	9%
% of Household Income Spent on Housing and Transportation <sup>2</sup>	61%	NA	≤45%
Transit Ridership % of Workers <sup>2</sup>	1%	NA	NA
Transit Access <sup>2</sup>	0	NA	10
Source: County Health Rankings and Roadmaps (2015) <sup>1</sup> , Housing and Transportation Affordability Index (2015) <sup>2</sup>			

# Community Input, Data Sources and Collaborators

## Data Sources

Data sources used in this report include:

- Center for Neighborhood Technology
  - The *Housing and Affordability Transportation Index* was used to determine the potential impact of housing and transportation costs on the health outcomes in the community.
- Centers for Disease Control and Prevention
  - The *Community Health Status Indicators (CHSI 2015)* were used to provide comparative health data between this community and other like communities.
  - The *Underlying Causes of Death (2014)* were used to determine the mortality in the community served.
- Kentucky Cabinet for Health and Family Services
  - The *March 2016 Inventory of Health Facilities and Services* report was used to identify other community resources potentially-available to address health needs.
- Kentucky Hospital Association
  - The *Top Ten Diagnostic Categories Responsible for Inpatient Hospitalizations (2014)* report was used to determine the morbidity in the community served.
- Kentucky Office of Drug Control Policy (Commonwealth of Kentucky Justice & Public Safety Cabinet)
  - The *2014 Overdose Fatality Report* was used to determine the effect of substance abuse on the community.
- Robert Wood Johnson Foundation
  - The *2015 County Health Rankings and Roadmaps* were used to determine the varying measures of health in the community served.
- United States Census Bureau
  - The *2014 Madison County Quick Facts* report was used to illustrate community demographics.

## Primary Data: Community and Organizational Input

- Community Input
  - Primary data from the community served by the hospital was solicited by the Madison County Health Department (MCHD) from October 2014-December 2014 via paper and electronic surveys. The Madison County Health Department's community health assessment and community health improvement plan can be accessed here: <http://www.madisoncountyhealthdept.org/Documents/Community/CHA2015-2020.pdf>.
  - The MCHD survey asked residents to prioritize their health needs, identify barriers to good health and rate risky health behaviors in the community. The survey asked about perceptions of community safety and where community members access health information. The survey also asked basic demographic questions to cross-walk specific needs to certain populations.
  - Soliciting input from these groups satisfies the IRS requirement to take into account input from leaders, representatives, or members of medically-underserved populations in the community served by the



hospital. Additionally, input from those representing the broad interests of the community was used to prioritize health needs, which complies with IRS requirements.

- Soliciting this input regarding community safety and soliciting input from those representing the senior population satisfies the CHI requirement to include this input.
- Madison County Health Department (MCHD)
  - Primary data collection was completed in conjunction with the MCHD. Community needs were discussed with MCHD, and the aforementioned health department report was used in this report.
  - Soliciting the MCHD's input satisfies the IRS requirement to take into account feedback from local health departments with expertise relevant to the needs of the community served by the hospital. Additionally, feedback from the MCHD further represents feedback from the underserved, including the senior population, in Madison County due to special knowledge that the MCHD has because of the services provided by local health departments.
- Regional Strategy Representative
  - Michael Spine, Senior Vice President, Strategy and Business Development for KentuckyOne Health, provided feedback for this report in the form of prioritizing 13 health needs for each KentuckyOne Health hospital, including Saint Joseph Berea in January 2016. Mr. Spine considered county-level data in conjunction with each measure's potential link to KentuckyOne Health's strategic alignment and the likelihood of building sustainable strategies to address those efforts related to each health need.
  - Soliciting Mr. Spine's input satisfies the CHI requirement for a representative from KentuckyOne Health's regional strategy and business development department to be engaged in the CHNA process.

### Third Party Collaboration

No third-party organizations were involved in the writing of this report outside of the collaborating parties, and their specific involvement efforts detailed on the lists above. KentuckyOne Health is wholly responsible for the data gathering and needs analysis in this report.

### Information Gaps

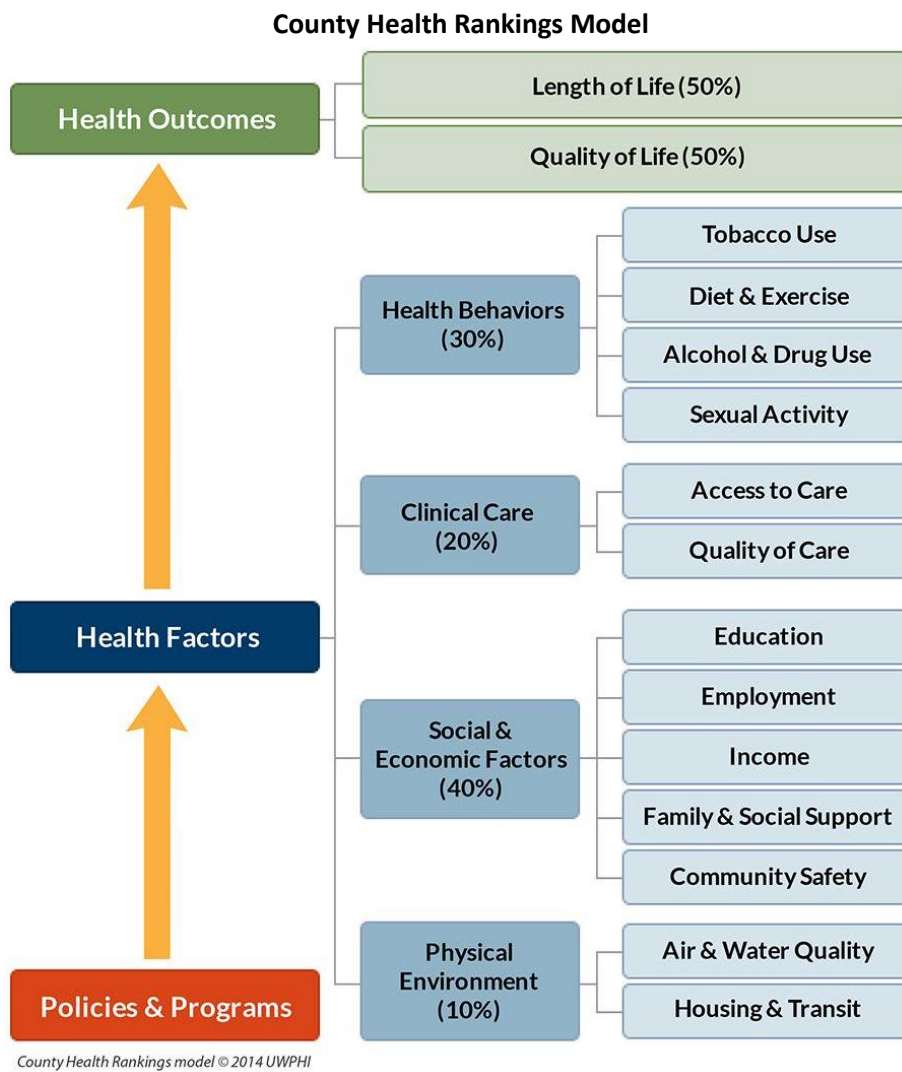
As is often the case with data collection, the data collected for this report contained some data that was two-four years old. In the interest of maintaining consistent reporting sources across all KentuckyOne Health hospitals for this CHNA process, some data, for example the uninsured rate reported by the *County Health Rankings* data, had multiple options for source material that may have reflected differently than the data we chose due to differences in those sources' reporting methods.

# Community Health Needs Assessment Process

## County Health Rankings Population Health Model

As described earlier in this report, our main data source, the *County Health Rankings*, is based on a model of population health that emphasizes the many factors that, if improved, can help make communities healthier places. This model tells us that the vast majority of health outcomes—measured by both length of life and quality of life—are determined by the health factors in these categories: social and economic factors, health behaviors, clinical care and the physical environment.

These health factors represent what is commonly referred to as social determinants of health. The model shows that 40% of our health outcomes are determined by social and economic factors, 30% are determined by health behaviors, 20% are determined by clinical care, and 10% are determined by our physical environment. Each factor has multiple measures associated with it. A fifth set of health factors, genetics, is not included in these rankings because these variables cannot be impacted by community-level intervention.



### Purpose-Focused Prioritization of Health Needs

An analysis of various health outcomes and factors can illustrate opportunities for hospitals to address the community's health needs. By prioritizing which opportunities to address health needs are the most effective and applicable for the hospital's resources, we best understand how to be a community leader who can actively participate in improving the community's habits, culture and environment. In our effort to address the most influential health factors that can be impacted by community-level intervention, we have included a weighted measure of the health needs to give additional emphasis to health needs that more heavily influence health outcomes. Using a ranking system to acknowledge this impact on health illustrates KentuckyOne Health's commitment to bringing wellness, healing and hope to all as we recognize the disproportionately negative impact of these social determinants on the health of the poor, vulnerable and underserved in our communities.

### Process for Collecting and Analyzing Data

Data was collected between December 2015-March 2016 according to the descriptions in the "Data Sources" section, and website links to these resources can be found in the "References" section of this report.

In order to prioritize the health needs of our community, we developed a ranking system. Health needs were assessed on eight prioritization factors: magnitude, impact on mortality, impact on morbidity, trends, community input, strategic alignment, comparison to peer communities and common identification. Each factor received a score of zero to four, with a four indicating the greatest need possible for that particular factor. The total score is the sum of all prioritization factors for that particular measure, and the possible total score is 32.

Additionally, we included a weighted scale to account for the measure of influence of each set of health factors. The measure of influence is the percentage of effect that this category of health factors has on health outcomes. The weighted score was created by multiplying the total score for each health measure by the percentage of their influence on overall health. For example, tobacco use is a health behavior. If all eight prioritization factors added up to a total score of 21, we then multiplied this total score by 30%—the measure of influence for a health behavior according the *County Health Rankings* model. This weighted score was compared against the other categories. The factors with the highest weighted scores were identified as community health needs for the community served.

The descriptions on the following pages provide the methods used to score each health need according to the eight prioritization factors.

**1. Magnitude: How many people are personally affected by this health need?**

Rankings for this factor were based on the magnitude of the health need, or how many residents in the community served were personally affected by this health need. Each health need was correlated with a measurable health behavior or factor. The percentage of the population whose personal health was impacted by that behavior or factor was ranked according to the percent of the community personally affected.

A score of 0-4 was given to each of the 16 health measures as follows:

- 0= none of the residents in the community served are affected by health need
- 1= Health measure ranked thirteen-sixteen by number of residents affected
- 2= Health measure ranked nine-twelve by number of residents affected
- 3= Health measure ranked five-eight by number of residents affected
- 4= Health measure ranked one-four by number of residents affected

Percentage of Madison County Residents Impacted by Health Needs				
Ranking	Health Behavior/Factor	% of Population	Correlating Health Measure	Score
1	Physical Inactivity <sup>1</sup>	28%	Diet and Exercise	4
2	Adult Smokers <sup>1</sup>	22%	Tobacco Use	4
3	Living in Poverty <sup>4</sup>	22%	Income	4
4	Uninsured <sup>1</sup>	17%	Access to Care	4
5	Inadequate Social Support <sup>4</sup>	17%	Family and Social Support	3
6	Severe Housing Problems <sup>1</sup>	16%	Housing and Transit	3
7	Drinking Water Violations <sup>1</sup>	10%	Air & Water Quality	3
8	Did Not Graduate High School <sup>1</sup>	8%	Education	3
9	Preventable Hospital Stays <sup>4</sup>	7.4%	Quality of Care	2
10	Excessive Drinking <sup>1</sup>	7%	Alcohol and Drug Use	2
11	Unemployment Rate <sup>1</sup>	6.8%	Employment	2
12	Do Not Live Close to Grocery Store <sup>4</sup>	4%	Diet and Exercise	2
13	% of Deaths Due to Drug Use <sup>2</sup>	3%	Alcohol and Drug Use	1
14	Transit Ridership % Workers <sup>3</sup>	1%	Housing and Transit	1
15	Chlamydia Rate <sup>1</sup>	0.37%	Sexual Activity	1
16	Violent Crime <sup>1</sup>	0.20%	Community Safety	1
Sources: County Health Rankings <sup>1</sup> , 2014 Overdose Fatality Report <sup>2</sup> , Housing and Transportation Affordability Index <sup>3</sup> , Centers for Disease Control and Prevention <sup>4</sup>				

## 2. Impact on Mortality (Length of Life): How is this health need related to the leading causes of death in this community?

Rankings for this factor were based on risk of mortality associated with this health need by reviewing the Centers for Disease Control and Prevention's *15 Underlying Causes of Death* in the community for the most recent year available as of this writing (2014). The leading causes of death were ranked in order at the top of the chart and given an "X" as they related to the health measures listed on the side of the chart. For our purposes, a health measure was defined as being related to a leading cause of death if there is an established causal and/or correlating relationship between the two. The number of linkages to the leading causes of death (indicated by the number of "X's") was totaled for each health measure.

A score of 0-4 was given to each of the 13 health measures as follows:

- 0= health measure does not correlate to any leading causes of death
- 1= health measure correlates to one leading cause of death
- 2= health measure correlates to two leading causes of death
- 3= health measure correlates to three leading causes of death
- 4= health measure correlates to four or more leading causes of death

Leading Causes of Death—Madison County (2014)														
Measures	#1: Cancer	#2: Diseases of the Heart	#3: Chronic Lower Respiratory Disease	#4: Accidents	#5: Alzheimer's Disease	#6: Cerebrovascular Disease	#7: Kidney Disease	#8: Liver Disease and Cirrhosis	#9: Diabetes	#10: Essential Hypertension and Hypertensive Renal Disease	#11: Influenza and Pneumonia	#12: Septicemia	#13: Suicide	Score
Tobacco Use	X	X	X	X			X	X		X	X			4
Diet and Exercise	X	X	X				X	X	X	X				4
Alcohol and Drug Use	X	X	X	X		X	X	X		X	X		X	4
Sexual Activity	X													4
Access to Care	X	X	X	X			X	X	X	X	X	X	X	4
Quality of Care		X	X	X			X	X	X		X	X		3
Education		X												3
Employment													X	1
Income	X	X		X			X				X	X		4
Family & Social Support		X								X			X	3
Community Safety						X							X	1
Air & Water Quality	X			X							X			4
Housing & Transit	X	X	X	X		X	X				X		X	4

Source: Centers for Disease Control and Prevention, National Center for Health Statistics (2015)

### 3. Impact on Morbidity (Quality of Life): How does this need relate to this hospital community's discharge data and indicate what makes this community sick?

Rankings for this factor were determined by the impact that this health need can have on quality of life by assessing underlying reasons for inpatient hospitalization in the community served. The Kentucky Hospital Association provided the top ten diagnosis groups responsible for all of Madison County hospital discharges. The diagnosis groups are listed on the chart in the order of the greatest to least number of discharges. Each health measure was assessed for its relation to the diagnosis group. For our purposes, a health measure was defined as being related to a diagnosis group if there was an established causal and/or correlating relationship between the measure and the diagnosis group.

A score of 0-4 was given to each of the 13 health measures as follows:

- 0= this health measure does not correlate with any diagnosis groups
- 1= this health measure directly correlates with the diagnosis group responsible for inpatient hospitalizations in the top four-ten diagnosis groups (#4-#10)
- 2= this health measure directly correlates with the diagnosis group responsible for the third-highest (#3) inpatient hospitalizations
- 3= this health measure directly correlates with the diagnosis group responsible for the second-highest (#2) inpatient hospitalizations
- 4= this health measure directly correlates with the diagnosis group responsible for the highest (#1) inpatient hospitalizations

Madison County, KY Top Ten Diagnosis Groups Responsible for Inpatient Hospital Discharges (2014)											
Measures	#1: Respiratory System	#2: Circulatory System	#3: Musculoskeletal System/ Connective Tissue	#4: Digestive System	#5: Nervous System	#6: Kidney and Urinary Tract	#7: Infectious and Parasitic Diseases	#8: Mental Disease /Disorders	#9: Metabolic Diseases/Disorders	#10: Hepatobiliary System and Pancreas	Score
Tobacco Use	X	X							X		4
Diet and Exercise	X	X	X	X		X		X	X		4
Alcohol and Drug Use		X				X		X	X	X	3
Sexual Activity						X				X	1
Access to Care	X	X	X	X	X	X	X	X	X	X	4
Quality of Care	X	X	X	X	X	X	X	X	X	X	4
Education											0
Employment											0
Income	X	X	X	X	X	X	X	X	X	X	4
Family & Social Support								X			1
Community Safety			X								2
Air & Water Quality	X										4
Housing & Transit	X										4

Source: Kentucky Hospital Association InfoSuite CY2014 Discharges (excluding Normal Newborn)

#### 4. Trends: How does the measure of this need compare to previous years?

Rankings for this factor reflected the need to assess progress made toward improved community health since the previous CHNA. Data was collected from the Robert Wood Johnson Foundation *County Health Rankings* to compare the community's 2015 health rankings to its 2012 health rankings (when this community data was last gathered for the previous CHNA). Areas that are worsening, or are improving but are still comparatively unhealthy outcomes as compared to other communities (considered an "Area to Explore"), were recognized in the ranking of these measures.

A score of 0-4 was given to each of the 13 health measure as follows:

- 0= health measure is currently trending towards improved health
- 1= health measure is trending the same as in previous years
- 2= health measure is trending the same as or better than in previous years AND is an Area to Explore in the *County Health Rankings* (marked in red)
- 3= health measure is trending towards worse health
- 4= health measure is trending towards worse health AND is an Area to Explore in the *County Health Rankings* (marked in red)

Madison County Health Trends: County Health Rankings Trends 2012 to 2015					
Measures	Data Used	2012 CHR Data	2015 CHR Data	Trend	Score
Tobacco Use	Adult Smoking <sup>1</sup>	22%	22%	Same	2
Diet and Exercise	Physical Inactivity <sup>1</sup>	30%	28%	Better	0
Alcohol and Drug Use	Excessive Drinking <sup>1</sup>	6%	7%	Worse	3
Sexual Activity	Sexually-Transmitted Infections Per 100,000 Residents <sup>1</sup>	223	370	Worse	3
Access to Care	Uninsured <sup>1</sup>	18%	17%	Better	0
Quality of Care	Preventable Hospital Stays Per 1,000 Medicare Enrollees <sup>1</sup>	66	67	Worse	3
Education	High School Graduation <sup>1</sup>	77%	92%	Better	0
Employment	Unemployment <sup>1</sup>	8.8%	6.8%	Better	0
Income	Children in Poverty <sup>1</sup>	25%	23%	Better	0
Family & Social Support	Inadequate Social Support <sup>2</sup>	17%	17%	Same	1
Community Safety	Violent Crime Rate Per 100,000 Residents <sup>1</sup>	204	197	Better	0
Air & Water Quality	Air Pollution—Particulate Matter <sup>1</sup>	12.4 (2013 data)	13.0	Worse	3
Housing & Transit	Severe Housing Problems <sup>1</sup>	15% (2014 data)	16%	Worse	3

Source: County Health Rankings and Roadmaps (2015)<sup>1</sup>,  
Centers for Disease Control and Prevention Community Health Status Indicators (2015)<sup>2</sup>



### 5. Importance to the Community: Was this need identified as a priority by the community served?

Rankings for this factor were based on the primary data collected for community input. In cases where communities were not asked to rate the specific health measures in this report, their responses were grouped as they related to the established measure. The total number of related responses applicable to that measure was summed and then each health need was ranked according to the number of responses.

A score of 0-4 was given to each of the 13 health measure as follows:

- 0= health need not identified as health need by the community
- 1= health need identified as a health need, but not in top ten community-identified health needs
- 2= health need identified as sixth through tenth most important community-identified health needs
- 3= health need identified as fourth or fifth most important community-identified health needs
- 4= health need identified in top three community-identified health needs

<b>2015 Madison County Community Input: Primary Data</b>	
<i>Measures</i>	<i>Score</i>
Tobacco Use	2
Diet and Exercise	4
Alcohol and Drug Use	4
Sexual Activity	3
Access to Care	3
Quality of Care	2
Education	0
Employment	0
Income	2
Family & Social Support	0
Community Safety	4
Air & Water Quality	2
Housing & Transit	0
Source: primary data solicited by the Madison County Health Department	

## 6. Alignment and Sustainability: How closely does this need match with state-wide strategic efforts by KentuckyOne Health?

Rankings for this factor were determined by representatives from KentuckyOne Health's strategy and business development team according to strategic vision. Michael Spine, Senior Vice President for Strategy and Business Development assigned these values to each of the health needs in January 2016.

A score of 0-4 was given to each of the 13 health measure as follows:

- 0= health need not aligned with strategic efforts
- 1= health need aligned with system strategic efforts, but not this hospital's strategic efforts
- 2= health need aligned with this hospital's local strategic efforts, but not system's strategic efforts
- 3= health need aligned with system and this hospital's strategic efforts
- 4= health need aligned with system and this hospital's strategic efforts AND has sustainability plan/option

Health Measures Related to Strategic Alignment	
<i>Measures</i>	<i>Score</i>
Tobacco Use	4
Diet and Exercise	4
Alcohol and Drug Use	4
Sexual Activity	4
Access to Care	4
Quality of Care	4
Education	0
Employment	4
Income	0
Family & Social Support	0
Community Safety	4
Air & Water Quality	0
Housing & Transit	0
Source: KentuckyOne Health Strategy	

### 7. Comparison to Peer Communities: What are the community's health needs compared to peer communities?

Rankings for this factor were determined by identifying how this community compares to peer communities elsewhere in Kentucky and the United States to provide a broader view of the health outcomes in this community. The Centers for Disease Control and Prevention's county-level Community Health Status Indicators (CHSIs) provided such a comparison. Each health measure has a related data point found in the CHSI and that metric is compared to the data point in other communities. The quartile this health measure fell into was described as better, moderate or worse as compared to other peer communities.

A score of 0-4 was given to each of the 13 health measure as follows:

- 0 = this health need is not identified with peer county values
- 1 = this health need is in the first quartile (the "Better" category as compared to peer communities)
- 2 = this health need is in the second quartile (the "Moderate" category as compared to peer communities)
- 3 = this health need is in the third quartile (the "Moderate" category as compared to peer communities)
- 4 = this health need is in the fourth quartile (the "Worse" category as compared to peer communities)

Madison County Comparison to Peer United States Communities			
Measures	Data Point from CHSI for Improving Community Health	Comparison to Peer Counties (Quartile)	Score
Tobacco Use	Adult Smoking	Moderate-Q3	2
Diet and Exercise	Limited Access to Healthy Foods	Better-Q1	0
Alcohol and Drug Use	Adult Binge Drinking	Better-Q1	3
Sexual Activity	Gonorrhea Rate	Moderate-Q2	3
Access to Care	Uninsured	Moderate-Q2	0
Quality of Care	Older Adult Preventable Hospitalizations	Moderate-Q2	3
Education	No High School Diploma	Moderate-Q3	0
Employment	Unemployment	Moderate-Q2	0
Income	Poverty	Better-Q1	0
Family & Social Support	Inadequate Social Support	Moderate-Q2	1
Community Safety	Violent Crime	Moderate-Q2	0
Air & Water Quality	Annual Average PM2.5 Concentration	Moderate-Q3	3
Housing & Transit	Housing Stress	Better-Q1	3
Source: Centers for Disease Control and Prevention			

**8. Commonly Identified: How many data sources identified this as a need?**

Ratings for this factor are based on the alignment of all major sources of data identifying this as a health need. A common alignment represents opportunities for synergistic efforts to address these needs. The scores for each health measure were listed with their score for each prioritization factor described on the previous pages of this report. These factors were then averaged and rounded, resulting in a final score 0-4.

A score of 0-4 was given to each of the 13 health measure as follows:

- 0= health need not identified in any of the sources of data
- 1= health need identified by few sources of data
- 2= health need identified by some sources of data
- 3= health need identified by most sources of data
- 4= health need identified by all sources of data

Commonly Identified Health Needs in Madison County									
<i>Measures</i>	Identified in Magnitude	Identified in Mortality	Identified in Morbidity	Identified in Trends	Identified in Community Input	Identified in Alignment	Identified in Comparison	Average	Score
Tobacco Use	4	4	4	2	2	4	2	3.14	3
Diet and Exercise	4	4	4	0	4	4	0	2.86	3
Alcohol and Drug Use	2	4	3	3	4	4	3	3.29	3
Sexual Activity	1	4	1	3	3	4	3	2.71	3
Access to Care	4	4	4	0	3	4	0	2.71	3
Quality of Care	2	3	4	3	2	4	3	3.00	3
Education	3	3	0	0	0	0	0	0.86	1
Employment	2	1	0	0	0	4	0	1.00	1
Income	4	4	4	0	2	0	0	2.00	2
Family & Social Support	3	3	1	1	0	0	1	1.29	1
Community Safety	1	1	2	0	4	4	0	1.71	2
Air & Water Quality	3	4	4	3	2	0	3	2.71	3
Housing & Transit	3	4	4	3	0	0	3	2.43	2
Source: see original tables with data									

## Prioritized Significant Community Health Needs

### Prioritization of Community Health Needs According to Data

Below is the chart of each health measure's ranking according to each priority. The total score, as indicated on the previous charts, is listed here. The weighted score is the multiplication for the total score by the measure of influence on overall health outcomes, as described by the Robert Wood Johnson *County Health Rankings* model. A total score and a weighted score are both provided. The health needs with the top three highest weighted scores are highlighted in red.

Prioritization of Community Health Needs: Saint Joseph Berea												
Community: Madison County												
Health Factors	Measures	Prioritization Factors								Total Score	Measure of Influence	Weighted Score
		Magnitude	Mortality	Morbidity	Trend	Importance to the Community	Alignment	Comparison to Peers	Commonly Identified			
Health Behaviors	Tobacco Use	4	4	4	2	2	4	2	3	25	30%	7.5
	Diet and Exercise	4	4	4	0	4	4	0	3	23	30%	6.9
	Alcohol and Drug Use	2	4	3	3	4	4	3	3	26	30%	7.8
	Sexual Activity	1	4	1	3	3	4	3	3	22	30%	6.6
Clinical Care	Access to Care	4	4	4	0	3	4	0	3	22	20%	4.4
	Quality of Care	2	3	4	3	2	4	3	3	24	20%	4.8
Social and Economic Factors	Education	3	3	0	0	0	0	0	1	7	40%	2.8
	Employment	2	1	0	0	0	4	0	1	8	40%	3.2
	Income	4	4	4	0	2	0	0	2	16	40%	6.4
	Family & Social Support	3	3	1	1	0	0	1	1	8	40%	3.2
	Community Safety	1	1	2	0	4	4	0	2	14	40%	5.6
Physical Environment	Air & Water Quality	3	4	4	3	2	0	3	3	22	10%	2.2
	Housing & Transit	3	4	4	3	0	0	3	2	19	10%	1.9

### Final Priorities Identified by Hospital Leadership

To achieve consistency across the KentuckyOne Health system and to identify opportunities for cross-hospital collaboration, we have chosen to identify our priorities as named in the Robert Wood Johnson *County Health Rankings* measures.

In March 2016, the leadership team at Saint Joseph Berea gathered to review the Madison County data and the aforementioned prioritization chart. The team discussed each of the health measures in the chart and where they believed the hospital had the greatest capacity to make the most marked improvement. The areas below were chosen as the FY2017-2019 community health needs assessment priority areas:

- **Cardiovascular Disease Reduction through the Promotion of Access to Care**
  - Cardiovascular Disease is a result of many of poor many factors related to diet and exercise, tobacco use, and lack of access to care. Saint Joseph Berea intends to provide free screenings for cardiovascular diseases throughout the years to identify high risk patients. These screenings are a secondary prevention to address the conditions that are a result of lack of access to care, poor diet, tobacco use and a lack of exercise.
- **Community Safety**
  - The data in the health needs prioritization chart showed community safety to have the sixth-highest weighted score of all the health measures assessed. The leadership teams discussed this health need in relation to the violence prevention work in which Saint Joseph Berea will be involved as increasing efforts in KentuckyOne Health overall focus on violence prevention work. The leadership team decided that community safety should be an area of focus due to the current violence prevention initiatives already in place. In particular, Saint Joseph Berea was the recipient of a grant to fund violence prevention in high schools to reduce bullying through Green Dot training.

### Needs Not Addressed

One health need appeared in the data analysis which the Saint Joseph Berea leadership team chose not to select as a priority area for this community health needs assessment:

- Alcohol and Drug Abuse
  - The data in the health needs prioritization chart showed alcohol and drug abuse to be in the top three highest weighted scores of all the health measures assessed. The leadership team chose not to address this area specifically in the Implementation Strategies report due to the lack of resources available at Saint Joseph Berea for this specific type of health need.

## Potentially Available Resources in Community

The availability of health care resources is critical to the health of a county's residents and addressing health needs, including those identified in this assessment. A limited supply of health resources, especially providers, results in poorer health status of the community. The sections below briefly describe potentially available resources to address the health needs of Saint Joseph Berea's community. The Kentucky Cabinet for Health and Family Services updates the list of these resources monthly in their report "Inventory of Kentucky Health Facilities, Health Services and Major Medical Equipment" at this link: <http://chfs.ky.gov/ohp/con/inventory.htm>.

### Hospitals and Ambulatory Care Clinics

According to the Kentucky Hospital Association, the facilities below were licensed as hospitals and ambulatory care clinics in Madison County as of March 2016:

- **Hospitals:** Baptist Health Richmond, Saint Joseph Berea
- **Ambulatory Care Centers:** Baptist Health Richmond Urgent Care

### Other Licensed Facilities

According to the Kentucky Cabinet for Health and Family Services, the facilities below offered services to Madison County residents as of March 2016:

- **Long-Term Care Beds:** Berea Health Care Center, Crestview Personal Care Home, Dominion Senior Living of Richmond, Kenwood Health and Rehabilitation Center, Morning Pointe of Richmond, Madison Health and Rehabilitation Center, Telford Terrace Personal Care Facility, The Terrace Nursing and Rehabilitation Center
- **Home Health Services:** Amedisys Home Health, Baptist Health Home Care, Cardinal Hill Homecare, Caretenders, Deaconess—Lifeline Home Health, Gentiva Health Services, Brookdale Home Health Lexington, Mepco Home Health Agency, Commonwealth Home Health, Saint Joseph—ANC Home Care Services, Option Care
- **Hospice:** Hospice Care Plus
- **Adult Day Health Programs:** Active Day of Richmond, Horizon Adult Health Care Center – Madison
- **Rehabilitation Agencies:** Baptist Health Physical Therapy Richmond, Drayer Physical Therapy Institute, Family Choice Care Home, Heartland Rehabilitation Services, Kentucky Hand – Richmond, KORT - Richmond Physical Therapy, Premier Home Care
- **Private Duty Nursing:** NR, Inc., VNA Nazareth Home Care
- **Limited-Service Clinics:** none

### Health Care Provider Ratios

According to the 2015 Robert Wood Johnson *County Health Rankings*, Madison County had mixed response in terms of ratios of residents to health care providers as compared to the Kentucky state average. Madison County had 1,542 residents for every one primary care physician as compared to a state average of 1,551 residents to one primary care physician. Madison County had 1,259 residents for every one mental health provider as compared to a Kentucky state average of 621 residents to one mental health provider.



### Health Departments

The Madison County Health Department (MCHD) is the local health department that serves Madison County residents to provide health promotion and education. Saint Joseph Berea collaborated with the MCHD to conduct its community health needs assessment. The MCHD provides an array of services both adult and child health services, WIC services, and community health education. The health department also has emergency preparedness and environmental health divisions, as well as oversees animal control. More information about the MCHD can be found here:

<http://www.madisoncountyhealthdept.org/Index.html>.

## Evaluation of Impact

The following section describes the evaluation of impact of the previous community health needs assessment conducted by Saint Joseph Berea in 2013 to cover FY2014-16.

### Needs Identified in 2013-2016 CHNA and Impact of Actions

The health needs addressed in Saint Joseph Berea's FY2014-2016 CHNA included: mental health issues, obesity and physical activity, cardiopulmonary, senior issues and collaboration of care. The hospital's actions toward improving these health needs over the previous CHNA coverage period are described below.

- Mental Health Issues
  - Partnered with Our Lady of Peace in Louisville to offer dual-diagnosis intensive outpatient services.
- Obesity and Physical Activity
  - Developed a Community Wellness Council.
  - Improved health awareness by promoting available resources for nutrition, healthy weight control and fitness and provide education at community events.
  - Developed and distributed a community activity/healthy eating resource guide and healthy activity calendar. Included restaurants that offer healthy options, local gyms and activity centers.
  - Promoted food showcases involving local restaurants that have healthy meal choices.
- Cardiopulmonary
  - Provided community-based wellness services to include "cardiovascular" screenings (blood pressure, cholesterol screening, glucose screening, Ankle-Brachial index, body mass Index, exercise guidelines, heart health dietary guidelines and nutritional counseling, diabetes counseling, and smoking cessation information) at the new SJB Heart Institute to extend into non-traditional settings (e.g. schools, churches, etc.) in the community.
  - Extended an outreach program to local schools to provide education about heart health prevention to include exercise and nutritional guidelines during "Back-to-School" events and for Heart Awareness Month.
  - Implemented a public relations plan for a "Cardiologists' Corner" in one of the local newspapers and/or other media to provide the public with the latest information including risk factors and warning signs of cardiovascular disease.
- Senior Issues
  - Established a Gait and Balance Clinic for seniors in an effort to improve mobility for seniors.
  - Provided education, screenings and support to seniors to improve health outcomes.
  - Provided quarterly educational sessions and social events to seniors on health issues related to aging.
  - Provided medication reconciliation service for seniors.
- Collaboration of Care
  - Developed a Health and Social Services Resource Directory of the Saint Joseph Berea Community.
  - Provided an in-service education offering on the utilization of the Health and Social Services Resources.
  - Placed the Health and Social Services Resources Directory in each patient care unit, laboratory, radiology, physical therapy and medical testing office and in all physicians' offices.

### Evaluation of Written Comments

Feedback on the most recently-conducted CHNA and implementation strategy was solicited via a link on the KentuckyOne Health website: <http://www.kentuckyonehealth.org/healthy-community-contact-us>. Although the link has been accessed, none of the information shared through this link have been related to the previous CHNA or Implementation Strategies reports. So, Saint Joseph Berea has solicited feedback with a readily-accessible tool, but has not received any written comments and thus has no opportunity to evaluate those comments.

### Learning from Previous CHNA

This second cycle of the CHNA process lends itself as a learning opportunity to improve the CHNA process. Across the KentuckyOne Health system, discussions at the executive and hospital leadership levels indicated the need to concentrate resources to most effectively address community health needs, which led to the conclusion that fewer priorities should be of focus in the 2017-2019 CHNAs.

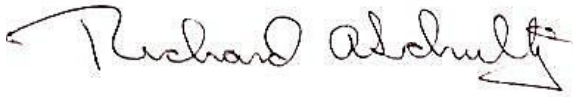
In the interest of further unifying our state-wide health system and leveraging system expertise, KentuckyOne Health decided to use consistent reporting resources across all hospital CHNAs and identify health needs with consistent naming conventions. This will allow for greater synergies among our hospitals and a greater potential to positively impact the health of citizens in our communities across the Commonwealth of Kentucky.

### Next Steps

Saint Joseph Berea will use the findings in this community health needs assessment to guide the coordinated efforts in addressing the identified health priorities. This community health needs assessment will be made public and widely available no later than June 30, 2016. The efforts to address these identified health priorities will be described in an accompaniment to this document known as the Saint Joseph Berea's Implementation Strategies. This will be made public and widely available no later than November 15, 2016.

## Adoption/Approval

KentuckyOne Health's Board of Directors includes representation across the state and support the work that each facility completes to improve the health of their community. The Board of Directors approves Saint Joseph Berea's community health needs assessment and the methods used to identify priority areas of need in this hospital's community.

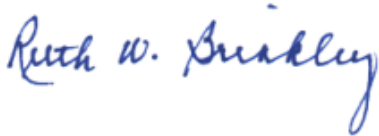


4/27/2016

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Chair, KentuckyOne Health Board of Directors

Date



4/27/2016

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President & Chief Executive Officer, KentuckyOne Health

Date

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