Health Status of St. Joseph County, Indiana: 2010- 2015

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Contents

List of Figures

List of Tables

INTRODUCTION

This report presents data for St. Joseph County, Indiana, based on public health indicators collected in reports dated 2010 through 2015 by the University of Wisconsin Population Health Institute. The Institute's project includes nearly every county in all 50 states and, using standard measures of health status and health system performance, ranks counties within states.

Data for St. Joseph County are ranked against the remaining 91 other counties in Indiana for each of the six years. Factors that affect people's health are described within four categories: health behavior, clinical care, social and economic factors, and physical environment. Charts and graphs illustrate the data comparatively and over time.

While general measures comprise the outcomes and determinants that result in the overall ranking, a number of health disparities and inequities suggest reasons for those rankings and help focus possible interventions.

Summary of Findings:

- St. Joseph County ranked 42nd, 43rd, 43rd, 43rd, 44th and 41st or the second quartile, among 92 counties for the study periods 2010, 2011, 2012, 2013, 2014 and 2015.
- Over the 2010-2015 study periods, the County became worse in extending life (premature mortality) but better in improving the lives lived (morbidity).
- The risk factors for the County's top killers of heart disease and cancer include eating too few fruits and vegetables, and personal behaviors and lifestyle choices of smoking, obesity, and little exercise.
- There are a number of categories where the County ranks below the median of 46. And, there appear to be trends over time in improvement to improved rankings. The one dimension that looms large in terms of effects on public health, however, include the socio-economic variables which collectively may be fundamental causes of health and health disparities.
- A number of areas constitute potential challenges to the St. Joseph County community that it needs to examine more closely. Measures with meaningful differences between St. Joseph County's values and either the state average, the national benchmark, or the state average in the best state are:
    - Health Behaviors:
        - Smoking
        - Obesity
    - Social & Economic Factors:
        - Graduation rates
        - Children in poverty
        - Violent crime
    - A number of health disparities or differences in health outcomes between groups that reflect social and economic inequalities are present and persist in the County, including disparities by income level, gender, race, and ethnicity.

METHODOLOGY: WHAT GOES INTO THE RANKING

The ranking model (Figure A) shows:

1. **Health Outcomes:** "Today's health" (**the green boxes**)
   - *Length of life – tells whether people are dying too early*
   - *Quality of life – tells how well people feel while living*
2. **Health Factors:** "Tomorrow's health" (**the blue boxes**)
   (a) *Health behaviors*
   (b) *Clinical care*
   (c) *Social and economic factors*
   (d) *Physical environment*

These are factors that determine how long people live and quality of their lives. The blue boxes include factors that communities can work on now to help improve their future health status.

3. **Programs & Policies** that determine outcomes around health factors.
   The policies and programs that are in place determine whether people are more or less likely to engage in risky behaviors, their access to and quality of clinical care, their economic and educational status, how socially connected they feel, and important elements in the physical environment.

The figures (%) in parentheses are weights ascribed to the dimensions. Within Health Outcomes, morbidity and mortality have equal weighting (50%). Across the factors, Social & Economic factors account for 40%, while Health Behaviors, Clinical Care, and Physical Environment make up 30%, 20%, and 10% respectively. Further, within each factor, the individual measures or subfactors are weighted as well (See Appendix, Table A1). Select Policies and Programs are referenced for the priority areas that could be explored (See Appendix, Tables A2-A8).

Selection of Specific Measures
According to the developers, the process of choosing the weights and measures was guided by:

- "Review of the literature around the impact of various factors on health outcomes
- "Ability for factors to be modified through community action
- "Review of America's Health Rankings methodology and indicators[1]
- "Availability and reliability of indicators at the county level throughout the nation Analysis, and
- "Feedback from a panel of technical experts."[2]

Rankings are based on eight (8) summary composites. The overall health outcomes is derived from the weighted scores of mortality and morbidity, while the overall factors scores is calculated from the weighted composite of the four health factor components.

1. **Overall Health Outcomes**
   a. **Mortality**
   b. **Morbidity**
2. **Overall Health Factors**
   a. **Health behaviors**

[1] "America's Health Rankings," United Health Foundation. http://www.americashealthrankings.org/rankings
[2] See: http://www.countyhealthrankings.org/ranking-methods/ranking-system

b. **Clinical care**
c. Social and economic factors
d. **Physical environment**

Health Outcomes Summary Score
The Health Outcomes Summary Score is a combination of mortality and morbidity. The weight for mortality is derived solely from premature mortality in terms of the measure of *years of potential life lost prior to age 75.* Morbidity is calculated for three quality of life indicators and the measures of *poor or fair health, poor physical health days,* and *poor mental health days* and a measure of birth outcomes, *low birth weight*. The last counts for twice the other measures because data are derived from a census rather than a survey sample of the population.

Table 1: **Health Outcomes Measures and Weights**

Outcome	Focus	Measure	Weight
Length of Life	Premature death	Years of potential life lost before age 75 per 100,000 population (age-adjusted)	50%
Quality of Life	Poor or fair health	Percent of adults reporting fair or poor health (age-adjusted)	10%
	Poor physical health days	Average number of physically unhealthy days reported in past 30 days (age-adjusted)	10%
	Poor mental health days	Average number of mentally unhealthy days reported in past 30 days (age-adjusted)	10%
	Low Birth Weight	Percent of live births with low birth weight (< 2500 grams)	20%
Source:	http://www.countyhealthrankings.org/ranking-methods/ranking-system		

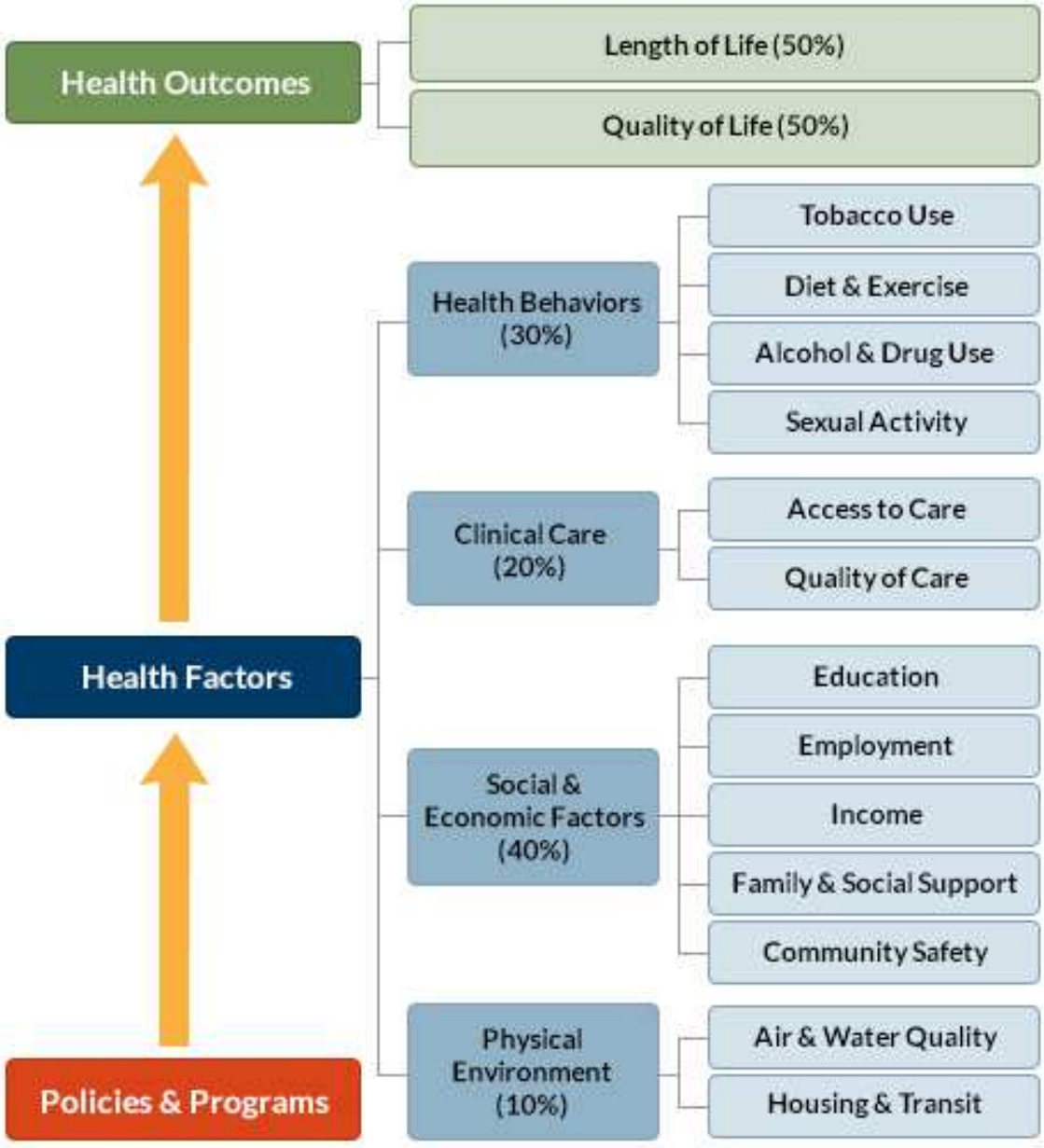
Health Factors Summary Score
Table 2 displays the Factors that influence the health of the county, their related measures, and the weights attached to each measure. Among the four types of health factors - health behaviors, clinical care, social and economic, and physical environment factors – those that comprise the Social and Economic factor account for the largest weight.

Table 2. **Health Factors Measures and Weights**

Factor	Focus	Measure in 2015 Report	Weight
Health Behavior (30%)	Tobacco Use (10%)	Percent of adults that report smoking >= 100 cigarettes and currently smoking	10%
	Diet & Exercise (10%)	Adult obesity (percent of adults that report a BMI >= 30)	5%
		Index of factors that contribute to a healthy food environment	2%
		Physical inactivity (percent of adults 20 and older that report no leisure time physical activity)	2%
		Percent of the population with adequate access to locations for physical activity	1%
	Alcohol & Drug Use (5%)	Excessive drinking (percent of adults who report heavy or binge drinking)	2.5%
		Percent of driving deaths with alcohol involvement	2.5%
	Sexual activity (5%)	Chlamydia rate per 100,000 population	2.5%
		Teen birth rate (per 1,000 females ages 15-19)	2.5%
Clinical Care (20%)	Access to care (10%)	Uninsured (percent of population < age 65 without health insurance)	5%
		Ratio of population to primary care physicians	3%
		Ratio of population to dentists	1%
		Ratio of population to mental health providers	1%
	Quality of care (10%)	Preventable hospital stays (Hospitalization rate for ambulatory-care sensitive conditions per 1,000 Medicare enrollees)	5%
		Percent of diabetic Medicare enrollees that receive HbA1c screening	2.5%
		Percent of female Medicare enrollees ages 67-69 that receive at least one mammogram over a two-year period	2.5%
Social & Economic (40%)	Education (10%)	Percent of ninth grade cohort that graduates in 4 years	5%
		Percent of adults aged 25-44 years with some post-secondary education	5%
	Employment (10%)	Percent of population age 16+ unemployed but seeking work	10%
	Income (10%)	Percent of children under age 18 in poverty	10%
	Family & Social Support (5%)	Percent of children that live in single-parent households	2.5%
		Number of membership associations per 10,000 population	2.5%
	Community Safety (5%)	Violent crime rate per 100,000 population	2.5%
		Injury mortality per 100,000	2.5%
Physical Environment (10%)	Air & Water Quality (5%)	The average daily measure of fine particulate matter in micrograms per cubic meter (PM2.5) in a county	2.5%
		Percent of population potentially exposed to water exceeding a violation limit during the past year	2.5%
	Housing & Transit (5%)	Percent of households with at least 1 of 4 housing problems: overcrowding, high housing costs, or lack of kitchen or plumbing facilities	2%
		Percent of the workforce that drives alone to work	2%
		Among workers that commute alone in their cars, the percent that commute more than 30 minutes	1%

Source: http://www.countyhealthrankings.org/health-factors

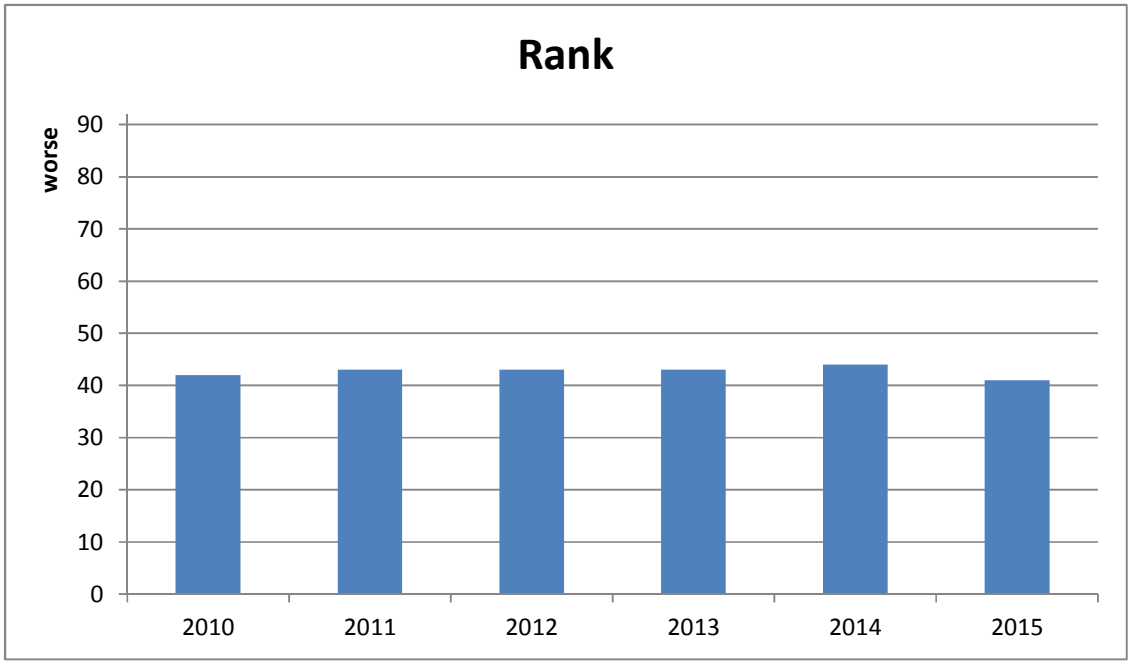
Figure A: Ranking Model



Data Sources[3]

Health information in the *County Health Rankings* model is derived from a variety of national data sources. For the most part, these sources are available to the public at no charge on a regular basis and come with a history of having been used in other valid health assessment models. Some measures were calculated by the National Center for Health Statistics and other units of the Centers for Disease Control and Prevention (CDC) by the authors of the Dartmouth Atlas of Healthcare, using Medicare claims data. An important source for demographic data and other social and economic variables is the American Community Survey from the Census Bureau.

Figure B. St. Joseph County Overall Rank in Outcomes



St. Joseph County Overall Rank in Outcomes

For the reporting years 2010 - 2015, among 91 other counties in the State, St. Joseph County ranked 42, 43, 43, 43, 44 AND 41 (Figure B). If all rankings were distributed in quartiles, St. Joseph County would be in the second quartile, i.e., those ranked between 23rd and 46th. Figure C displays the relative position of St. Joseph County in the State, ranked by their outcome quartile values in 2015.

[3] Appendix Table A2 illustrates the sources for each of the 2014 measures used and the data years covered.

Figure C. Quartile listing of Outcomes by Indiana Counties by Rank.

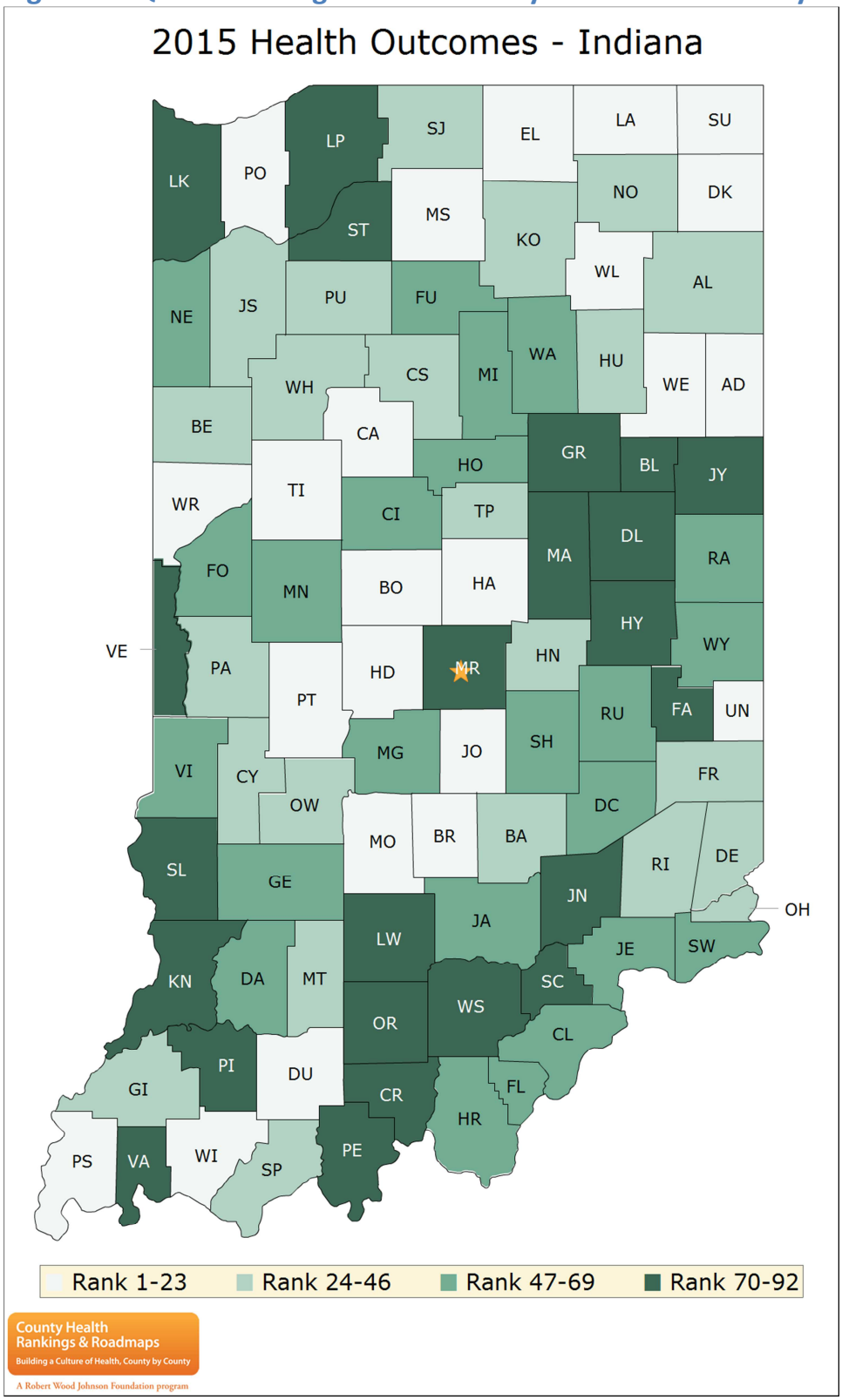
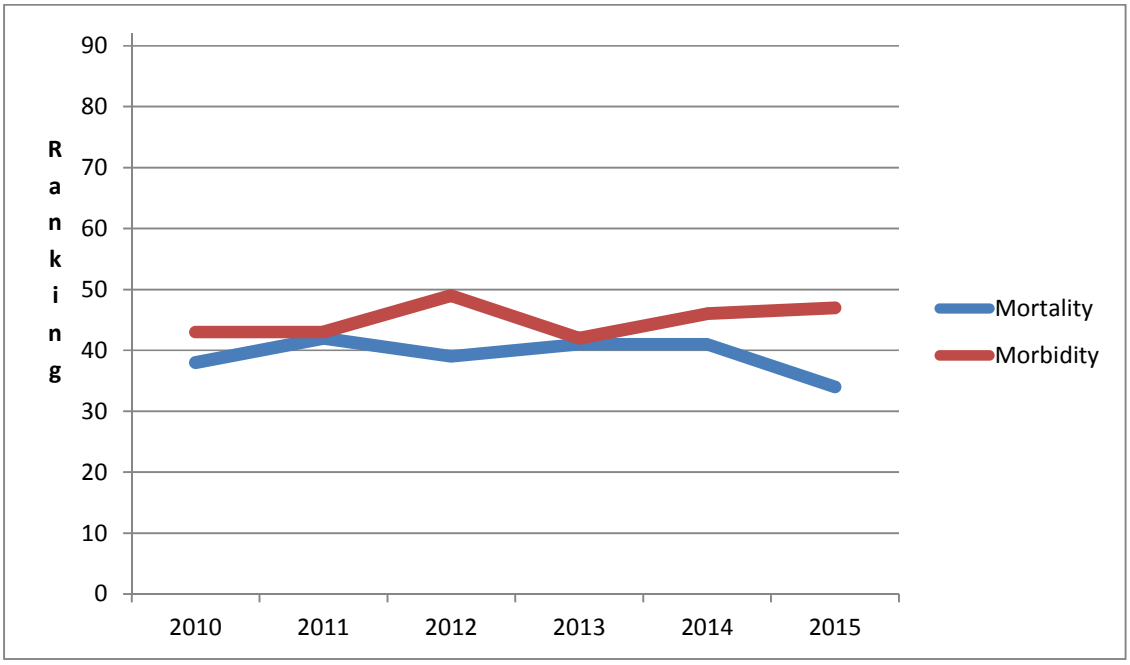


Figure D. Mortality and Morbidity Scores. St. Joseph County, 2010-2015



Mortality and Morbidity Scores, 2010 – 2015

Six-year trends in the ranking of the two dimensions that comprise health outcomes - Mortality and Morbidity (Quality of Life) – are illustrated on Figure D. Basically, the model displays the measure of how long we live, that is, how well we do in preventing death before its time, and how well the population is kept free from disease and protected from harm (what the researchers call its "quality of life"). Each dimension is weighted the same, that is, mortality and morbidity each contributes half or 50% of the final outcome ranking.

St. Joseph County was ranked 38, 42, 39, 41, 41 and 34 for mortality and 43, 43, 49, 42, 46 and 47 for morbidity over the 2010 - 2015 reports. The County improving in extending life, but appears to be doing worse in improving the lives lived.

Mortality

In this model, mortality is measured not in death rates as such but in the rate of premature deaths, here, deaths that occurred before age 75 and expressed as "Years of Potential Life Lost" (YPLL). Years of Potential Life Lost (YPLL) emphasizes the processes underlying premature mortality in a population. The YPLL involves using the number of years of life ('life-years') lost due to premature death, defined by a standard cut-off age in a population. The calculation of the YPLL involves taking the sum of the life-years lost before ages 65, 75, or 85 for example. There is debate over how "premature" death is defined and which age – 65, 75, or 85 – is most appropriate to use as the upper age limit for calculating YPLL. The Center for Disease Control at the National Center for Health Statistics adopted the age of 75 in 1997 and

Other researchers followed around 2000.[4] In fact, the average life expectancy of Indiana residents was 77.7 years in 2011, giving the state a ranking of 35 out of 51 states and D.C.[5]

The YPLL is age-adjusted to the 2000 U.S. population to allow comparison between counties and is reported as a rate per 100,000 people. Three-year averages are used to create more robust estimates of mortality. Table 3 suggests a continuous improvement in this indicator, despite the erratic change in ranking. Still, the 2010-12 rate for the county was 43 percent higher than the national target rate (i.e. rate at the 90th percentile).

Table 3. **Years of Potential Life Lost Rates. St. Joseph County, Indiana and National Benchmarks 2004-06, 2005-07, 2006-08, 2008-2010, and 2010-12. Rate per 100,000 population.**

		St. Joseph Co.			
Report Year	Years of Data	YPLL	RANK	Indiana	National Benchmark *
2010	2004-2006	7,636	38	7,820	6,324
2011	2005-2007	7,579	42	7,781	5,564
2013	2006-2008	7,399	39	7,687	5,466
2013	2008-2010	7,377	41	7,520	5,317
2014	2008-2010	7,377	41	7,520	5,317
2015	2010-2012	7,424	34	7,528	5,200
	2011-2013	7,557	41	7,611	

* 90th percentile

Movements in age-adjusted YPLL rates illustrated on Figure E show declines for the United States – from 7,705 in 1997-99 to 6,605 in 2011-13 –but upticks in Indiana and St. Joseph County. Over the past five years (2005-07 to 2011-13), the national rate declined over 8 percent while the rates for Indiana and the County 1.8 and 1.0 percent respectively. Neither the State nor the County declines were significant while there was a significant decline in the U.S. rate. By 2011-13, the gap between the County and State rates was closed.

Compared with peer counties, YPLL rates were higher in Lake and Vanderburgh Counties but lower in Allen and Hamilton Counties in the 2010-2012 data period. Since YPLL measures early death (i.e., before age 75) it weights deaths among younger persons more heavily than older persons.

The rates of years of potential life lost before age 75 differ by sex and race. Males in the U.S. in 2013 had a 62.5 percent higher YPLL rate compared with females, and Blacks showed a 38.5 percent higher rate of premature death. Causes of death were illustrative of the differences as well. YPLL rates due to

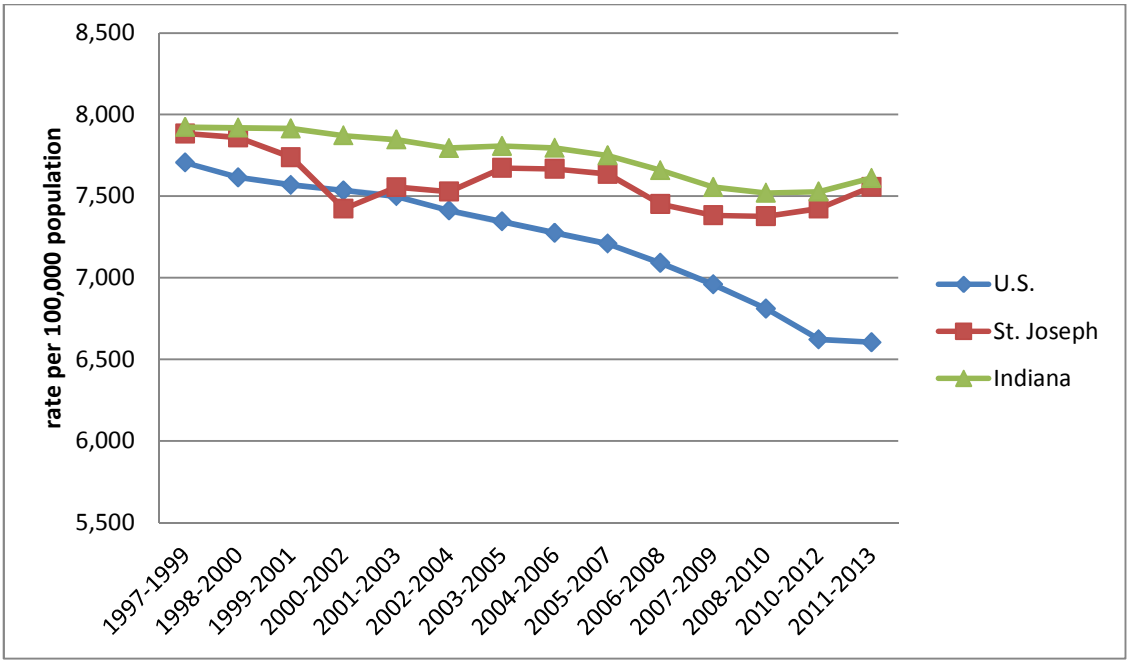
[4] Social Science Research Council. American Human Development Report. http://www.measureofamerica.org/. Despite improvements in longevity, "alarming disparities persist among racial groups and between the well-educated and those with less education." For recent trends, see: Olshansky SJ, Antonucci T, Berkman L, et al., "Differences In Life Expectancy Due To Race And Educational Differences Are Widening and Many May Not Catch Up, " *Health Affairs*, 31, no. 8 (2012): 1803-1831.

[5] http://www.worldlifeexpectancy.com/usa/indiana-life-expectancy

homicides were 7 times greater among Blacks than Whites in the U.S. in 2013. In Indiana in 2013, homicides among Blacks accounted for 15.2 percent of YPLL compared with 3.5 percent among Whites.[6]

Better-educated, higher-income people enjoy longer life expectancies than less-educated, lower-income people. The causes include early life conditions, behavioral factors (such as nutrition, exercise, and smoking behaviors), stress, and access to health care services, all of which can vary across education and income.[7] A recent publication by the president of the World Medical Association argues that health inequalities are getting worse in part because we have failed to get past the assumption that inequalities in health arise from inequalities in healthcare.[8]

Figure E. Premature Death Rates. U.S., Indiana, and St. Joseph County, 1997-2010[9]



Morbidity

The dimension of Morbidity measures the quality of being healthy, here labeled the 'quality of life.' The measures used are a combination of survey questions asking respondents how healthy they think they are ("Overall, my health is excellent, very good, good, fair or poor.") or how many days they were

[6] *Health United States, 2014.* CDC, NCHS. Table 19. Years of potential life lost before age 75 for selected causes of death, by sex, race, and Hispanic origin: United States, selected years 1980-2013.
[7] National Academy of Sciences, *The Growing Gap in Life Expectancy by Income.* Washington, D.C.: National Academies Press, 2015.
[8] Marmot, M. *The Health Gap.* New York: Bloomsbury Publishing, 2015.
[9] Years of potential life lost before age 75 (per 100,000). Health Indicators Warehouse. National Vital Statistics System – Mortality. http://www.healthindicators.gov/Indicators/Years-of-potential-life-lost-before-age-75-per-100000_3/Profile

physically or mentally ill in the past 30 days. Finally, low birth weight, or the percent of live births for which the infant weighed less 2,500 grams (about 5-1/2 pounds) is included in the model since it provides a direct measure of maternal exposure to health risks as well as the infant's current and future morbidity and premature mortality risks. The data covers seven (7) years for each reporting year (2002-08, 2003-09, 2004-10, 2005-2011, and 2006-2012[10]) for more reliable estimates (Figure F).

Table 4. **Morbidity Measures. St. Joseph County, Reporting Years 2010-2015.**

	Reporting Year					
	2010	**2011**	**2012**	**2013**	**2014**	**2015**
Morbidity						
Overall Rank	**43**	**43**	**49**	**42**	**46**	**47**
Poor or fair health (%)	14	14	15	15	14	14
Poor physical health (days)	3.3	3.4	3.4	3.5	3.5	3.5
Poor mental health (days)	3.6	3.6	3.6	3.3	3.4	3.4
Low Birthweight (%)	8.0	8.1	8.3	8.3	8.4	8.3

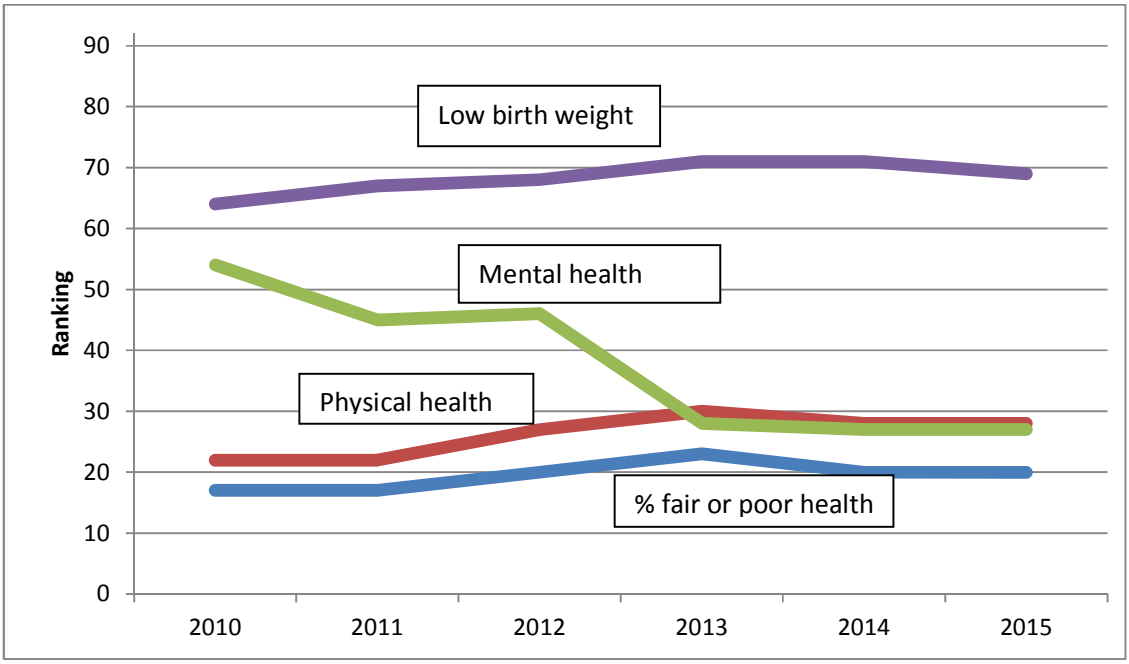
Table 5. **St. Joseph County Morbidity Measures, 2015**

		Indiana County Range			
	St. Joseph County	Low	High	State	National Benchmark *
Percent poor or fair health	14.3	7.0	28.0	16.0	10.0
Average poor physical health days	3.5	2.1	6.2	3.6	2.5
Average poor mental health days	3.4	1.8	6.7	3.7	2.3
Percent low birth weight babies	8.4	5.1	9.8	8.2	5.9

* 90th percentile

[10] For reporting year 2015, data sources for low birth weight babies was 2006-2012.

Figure F. Ranking of Morbidity Measures, St. Joseph County, 2010-2015



Number of Poor Health Days. The 'number of poor physical health days' measure is based on self-reports to the question: "Thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?" The datum is the average number of days a county's adult respondents report that their physical health was not good, and this measure is age-adjusted to the 2000 U.S. population. The respondents to this question are the non-institutionalized population over 18 years of age living in households with a land-line telephone.

The poor mental health days measure is a companion measure to the poor physical health days and is based on responses to the question: "Thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?" Again, the average number of days a county's adult respondents report that their mental health was not good was age-adjusted to the 2000 U.S. population. Data is self-reported.

From 2010 to 2015 reporting periods, the ranking of respondents that indicated fair or poor mental health improved from 54 to 27. In 2010, using data from 2002-2008, the average number of days was 3.6; by 2015, using data over the period 2006-2012, the rate dropped to 3.4 days - down 5.6 percent.

Low Birth Weight. The low birth weight (LBW) indicator is the percent of live births weighing less than 2,500 grams (approximately 5-½ lbs.). The health consequences of LBW are numerous. From the perspective of maternal health outcomes, LBW indicates maternal exposure to health risks in all categories of health factors, including her health behaviors, access to health care, the social and economic environment the mother inhabits, and environmental risks to which she is exposed. Modifiable maternal health behaviors — including weight gain, smoking, and alcohol and substance use — have been found to account for more than 10% of the variation in birth weight. Maternal smoking alone accounts for 7% of variation in birth weight. A systematic review of the evidence reveals that

maternal nutrition, smoking, and excessive alcohol intake result in LBW.

In terms of the infant's health outcomes, LBW serves as a predictor of premature mortality and/or morbidity over the life course. Gestational age, which is correlated with birth weight, is inversely related to psychological distress. LBW children have greater developmental and growth problems, are at higher risk of cardiovascular disease later in life, have a greater rate of respiratory conditions, and are at greater risk of developing type 2 diabetes.

LBW has also been associated with cognitive development problems. LBW children have higher rates of sensorineural impairments, such as cerebral palsy, and visual, auditory, and intellectual impairments. Very preterm infants have lower median IQ scores at age 6, and they have global learning deficits compared to their peers. In short, preterm birth and LBW can "impose a substantial burden on special education and social services, on families and caretakers of the infants, and on society generally."[11]

The ranking of St. Joseph County for LBW has not improved over the 2010-2015 health ranking period. The County ranked 64 in 2010 but 69 in 2015 – with an increase from 8.0 percent to 8.3 percent over five years.

The variation in rates by race and ethnicity, shown for the County on Figure G, indicates that in 2013 compared with whites, black mothers had over 1.7 times the rate of low birth weight babies. In 2013, mothers ages 20-24 show average rates that are nearly 30 percent higher than all age groups and nearly 60 percent higher that than the age group with the lowest rate (ages 25-29). Recent figures suggest fewer low birth weight babies to mothers ages 15-19 as well as to older mothers (>35) (Figure H).

While the incidence of LBW in the County's population over the five-year period 2009-2013 was about 7.5 per 100, the rate was over 27 per 100 for women that received no prenatal care and 25.5 for women with less than a high school diploma and nearly 12 percent for those that used tobacco products.

[11] Petrou S, Petrou S, Sach T, Davidson L. The long-term costs of preterm birth and low birth weight: Results of a systematic review. Child Care Health Dev. 2001;27:97-115.

Figure G. Percent Low Birth Weight Births by Race/Ethnicity, St. Joseph Co., 2013[12]

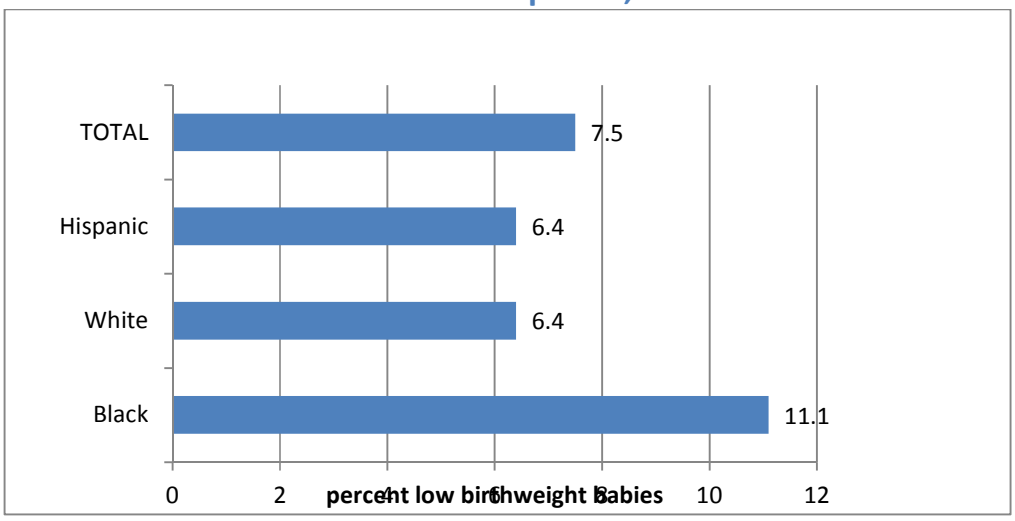
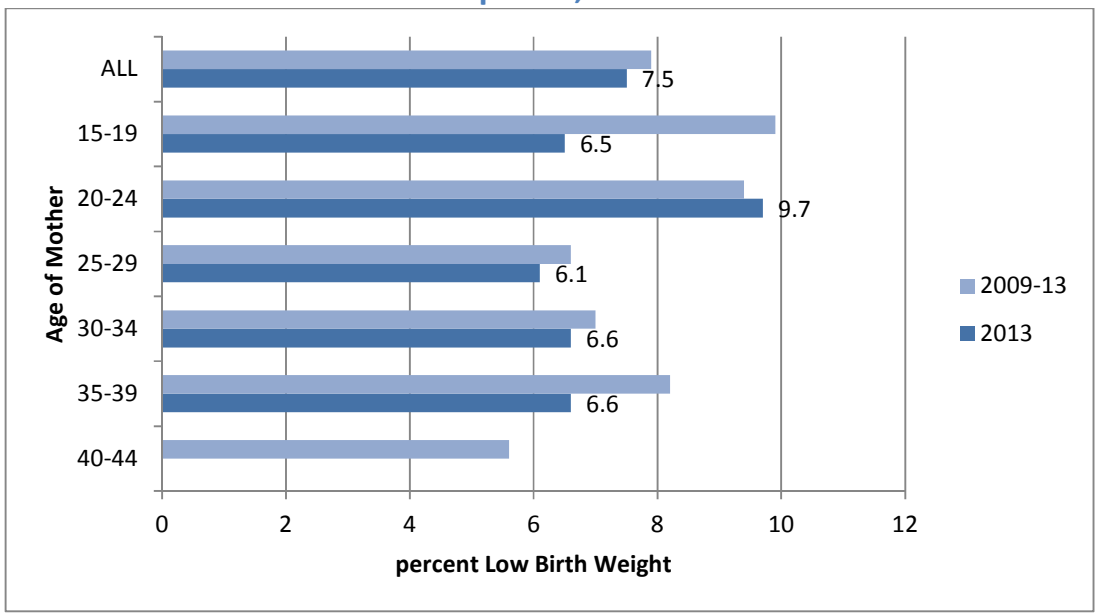


Figure H. Percent Low Birth Weight Births by Age of Mother, St. Joseph Co., 2009-13 and 2013[13]



[12] Indiana State Department of Health, ERC, Data Analysis Team, 2015

[13] Source: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics, Natality public-use data 2009-2013, on CDC WONDER Online Database, January 2015. Accessed at http://wonder.cdc.gov/natality-current.html on Aug 28, 2015 9:23:07 PM

St. Joseph County Health Factors Ranking

The combined rankings for all health factors in St. Joseph County changed little over the six-year reporting periods – from 50th in 2010 to 52nd in 2015 (Figure K). There were 30 measures in 2015 that comprised the four domains of health behavior, clinical care, social and economic, and physical environment. The weights of those factor sets are illustrated on Figure L.[14]

Figure I. Health Factors Ranking. St. Joseph County, 2010 - 2015 Reports

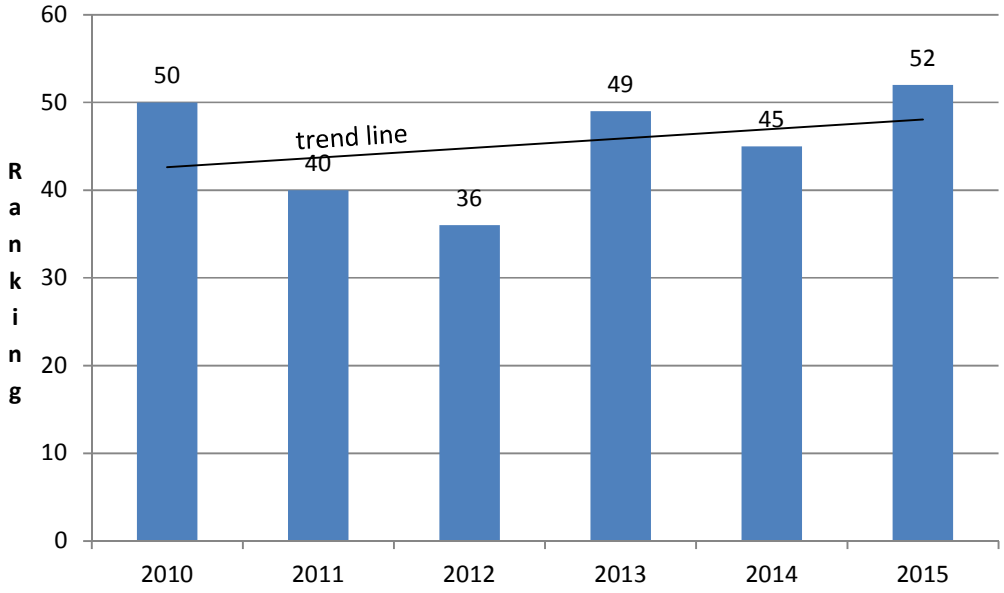
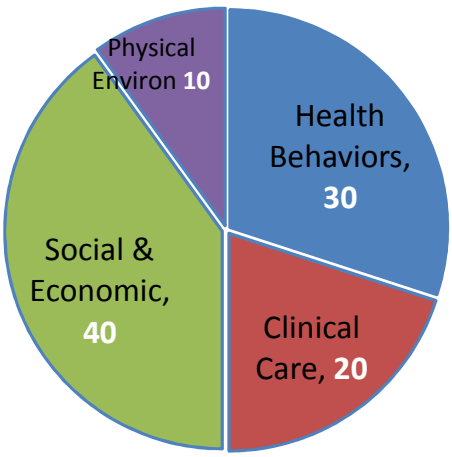


Figure J. What influences our health? Health Factors Weights



[14] Not all measures remained the same over the five-year reporting period.

Table 6. **Health Factors Rankings. St. Joseph County, Indiana. 2010-2015.**

Report Year	2010	2011	2012	2013	2014	2015	% Chg
Health Factors	50	40	36	49	45	52	4.0
Behaviors	60	43	31	25	35	35	-41.7
Clinical Care	9	10	10	12	15	10	11.1
Socio-Economic	78	69	72	81	66	79	1.3
Physical Environ.	42	12	34	24	7	7	-83.3

Health Behaviors

Health Behaviors carries a weight of 30 percent overall and includes four areas: tobacco use, diet and exercise, alcohol use and sexual activity, and comprises nine factors, over most of which there exists some good measure of control (See Table 2). St. Joseph County's most recent ranking for Health Behaviors was 35. This represented a notable improvement over prior years, when, for example in the 2010 Report, the County ranked 60th.

Tobacco Use is declining among adults in St. Joseph County. In the 2010 report, nearly one quarter of County adults (24%) reported that they currently smoke every day or most days and had smoked at least 100 cigarettes in their life time. That proportion declined to 21 percent in 2014 and 2015. Tobacco use in St. Joseph County was ranked 23 in the most current reporting year among the State's 92 counties (down from 30th in 2010) and better than the mean rate for the State.

Each year hundreds of thousands of premature deaths occur primarily due to smoking. Cigarette smoking is identified as a cause in multiple diseases including various cancers, cardiovascular disease, respiratory conditions, low birth weight, and other adverse health outcomes.

Some Diet and exercise measures were changed by researchers over the 2010 – 2015 reporting periods and so this aggregate focus area cannot always be compared. Some measures within that area can, however. The *adult obesity* measure, for example, covers all five reporting periods. The percent of adults deemed obese showed a positive change 65th in 2010 to 84th in 2015 in ranking. The underlying measure, namely the percent of adults that report a BMI (body mass index) of 30 or more - changed little, however - from 30 percent to 29 percent over those years.

The percent of adults aged 20 and over reporting no leisure-time physical activity (*Physical Inactivity*) incorporated into the Diet & Exercise focus area beginning in 2012. Over the years 2012-2015 the trend was positive – declining slightly from 27 to 25 percent.

The remaining measures – Food Environment Index and Access to Exercise Opportunities – cover only two periods. The *Food Environment Index* is "an index of equally weighted factors that contribute to a healthy food environment, including limited access to healthy foods and food insecurity." Over the reporting years, the index for St. Joseph County was 6.9 (where 10 is best) in 2014 and 6.6 in 2015. *Access to Exercise Opportunities* expresses the percent of the population with adequate access to locations for physical activity. St. Joseph County ranked 7th with 78 percent of the population having adequate access in 2014 and 17th with 77 percent in 2015.

Alcohol and Drug Use

Excessive Drinking. Excessive drinkers are either those that are binge drinkers, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinkers, defined as drinking more than 1 (women) or 2 (men) drinks per day on average. The ranking model tracked just binge drinking in the 2010 report but excessive drinking thereafter. Each reporting year estimate is based on seven years of data from the Behavioral Risk Factor Surveillance System. A measure of drug abuse is not included due to widespread suppression of county-specific data.[15]

Figure K. Health Behaviors. Ranking by Factor. St. Joseph County, 2010 - 2015

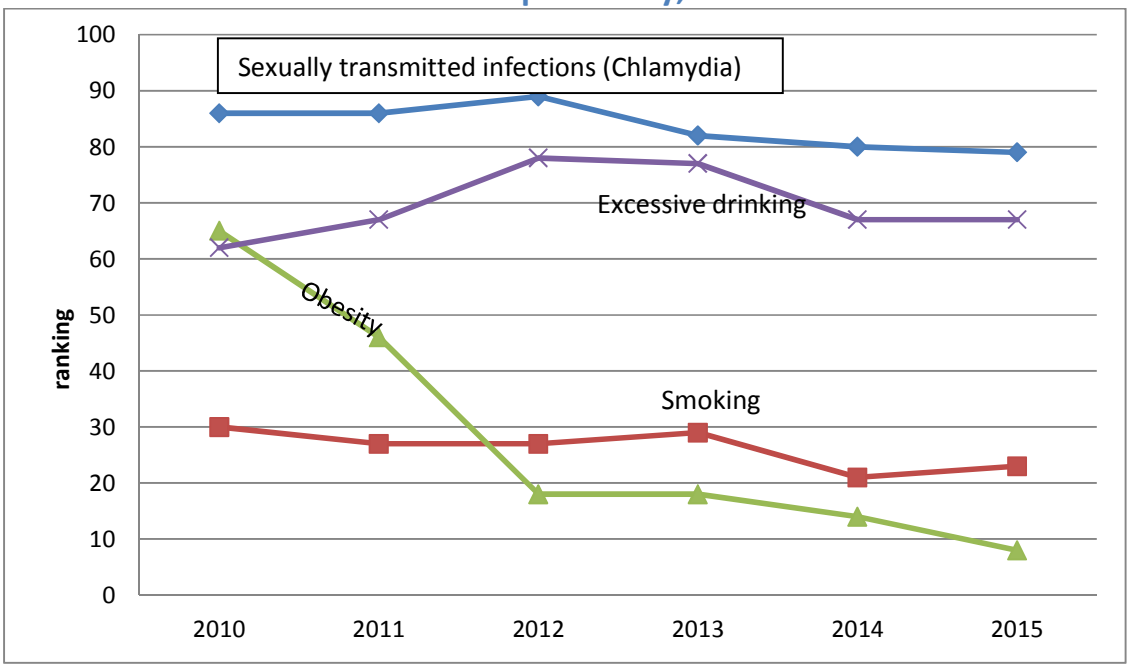
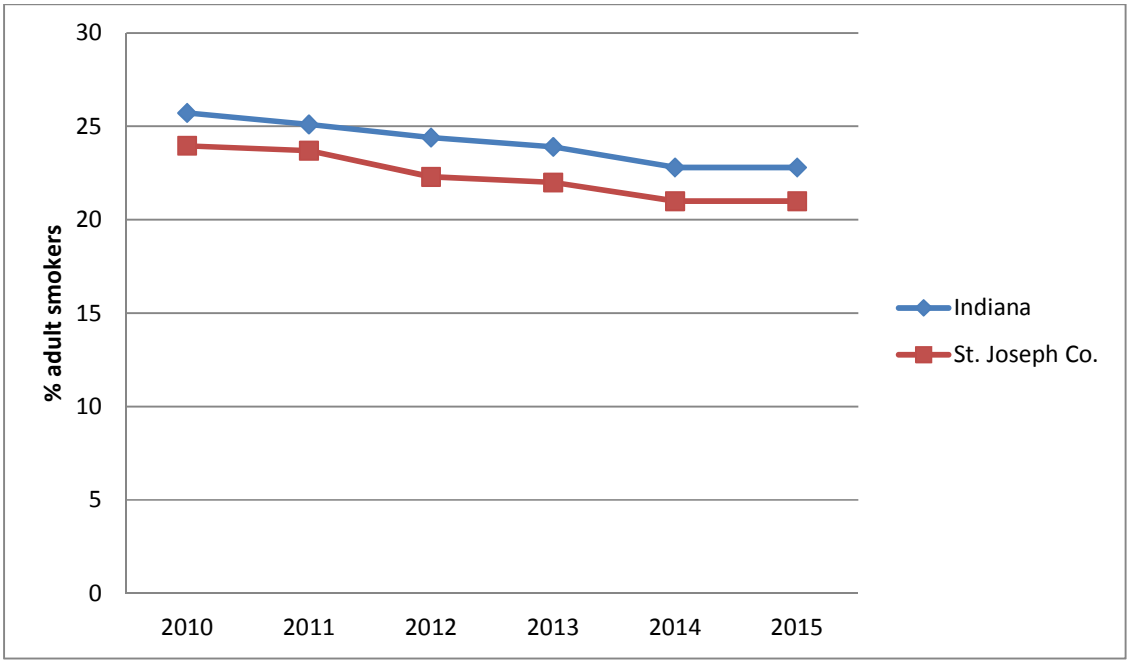


Table 6. **Measures of Behavioral Factors and Percent Change. St. Joseph County, 2010-2015**

	2010	2011	2012	2013	2014	2015	% Chg
Adult Smoking (%)	24	23.7	22	22	21	21	-12.5
Adult Obesity (%)	30	29.6	30	30	29	28.6	-4.7
Excessive Drinking (%)	16	18.3	20	20	19	19.1	19.4
Sexually Transmitted Infection Rate	391	408	507	348	415	407	4.1

[15] For county-specific drug and alcohol use/abuse data, see IUPUI, Center for Health Policy, "EPI Profiles." Accessed August 30, 2015 at: http://www.healthpolicy.iupui.edu/projectDetail.aspx?ProjectID=4395

Figure L. Percent of Adults that Smoke. St. Joseph County and Indiana, Reporting Years 2010-2015.



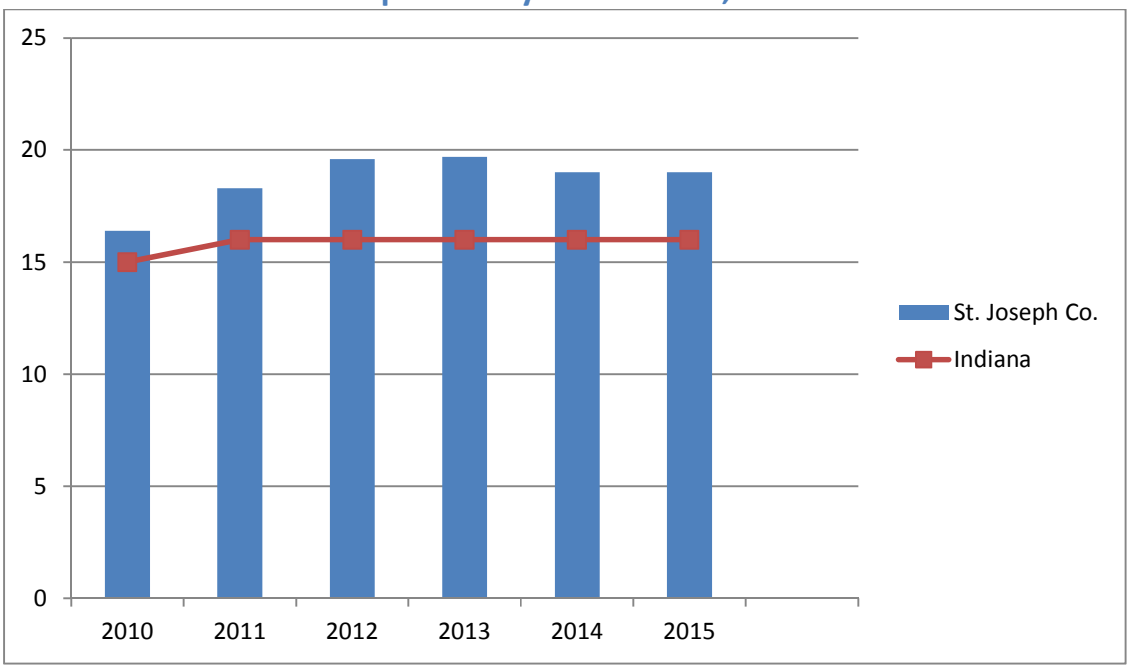
Over time, excessive alcohol consumption can be a risk factor for hypertension, acute myocardial infarction, fetal alcohol syndrome, liver disease, and certain cancers. Excessive drinking is linked to unintentional and intentional injuries, alcohol poisoning, intimate partner violence, risky sexual behaviors, failure to fulfill responsibilities at home, work, and school, and motor vehicle crashes.[16]

The expectation that binge drinking will likely continue can be inferred from surveys that indicate that among persons ages 12 and older in Indiana as in the U.S. as a whole 22 to 24 percent report binge drinking in the past 30 days.[17]

[16] "Fact Sheets: Binge Drinking," CDC. http://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm

[17] Indiana Center for Health Policy, "The Consumption And Consequences Of Alcohol, Tobacco And Drugs In Indiana: A State Epidemiological Profile 2014." Available at: http://www.healthpolicy.iupui.edu/PubsPDFs/2014 State Epi Report.pdf

Figure M. Percent Adults 18 and older that are Excessive Drinkers. St. Joseph County and Indiana, 2010-2015.



Alcohol-impaired Driving Deaths. The second measure of alcohol and drug use behavior is alcohol-impaired crashes. This measure is defined as the proportion of driving deaths with alcohol involvement, as reported by the Fatality Analysis Reporting System. Over the data years 2008-2012, alcohol-related traffic deaths accounted for nearly one-third of all traffic-related deaths in 2010—over 10,000 fatalities in the United States. In St. Joseph County, 30 out of 93 driving deaths (32%) were alcohol-related – considerably higher than the overall State rate of 26 percent. In general, binge drinkers are 14 times more likely to report alcohol-impaired driving than non binge drinkers.

In the 2015 report, St. Joseph County ranked 83rd with 37 percent of driving deaths alcohol-impaired. The ranking meant the county was in the 4th or last quartile among the other Indiana counties.

Sexual Behavior

Chlamydia infection. The indicator for sexual behavior is measured by the rate of sexually transmitted infections expressed as the number of new cases of Chlamydia reported per 100,000 population. Chlamydia infection is the most common sexually transmitted disease in the United States. Sexually active individuals and individuals with multiple partners are at highest risk.[18] Some populations are of greater concern for this STD than others:

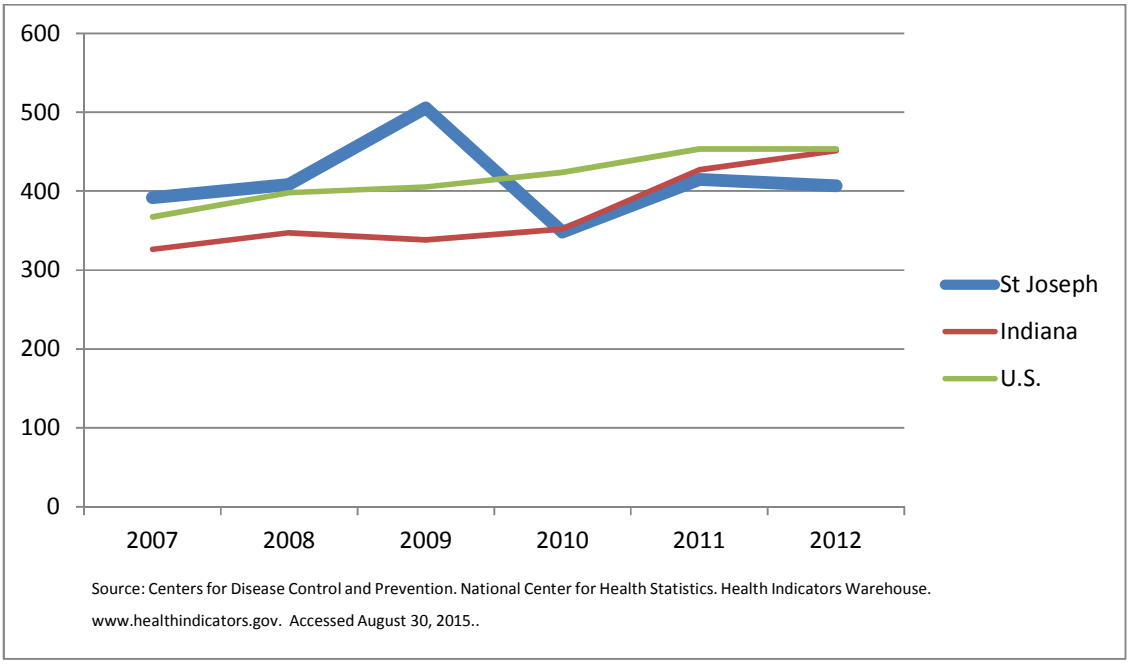
- Women had 2.7 times the reported Chlamydia rate compared with men in 2009
- Young people (15-24) had 4 times the reported Chlamydia rate as the general population (ages 10-65+)
- African Americans had 8.7 times the reported Chlamydia rate compared with Whites.

[18] National Center for HIV/AIDS, Viral Hepatitis, STD and TP. *Reported STDs in the United States: 2012 National data for chlamydia, gonorrhea, and syphilis*. Atlanta: Centers for Disease Control and Prevention (CDC); 2014. Rates see http://www.cdc.gov/std/stats13/chlamydia.htm

- Hispanics had 2.8 times the reported rates as did Whites.

Between 2007 and 2012, the case rate per 100,000 population of Chlamydia in St. Joseph County increased from 392 to 407 – up 3.8 percent while the U.S. and State rates increased 23.3 and 38.1 percent respectively. In 2012 (2015 report), the County ranked 79 out of 92 (Figure K).[19]

Figure N. Chlamydia Case Rate per 100,000 population, St. Joseph County, Indiana and Nation, 2007-2012.



Source: Centers for Disease Control and Prevention. National Center for Health Statistics. Health Indicators Warehouse. www.healthindicators.gov. Accessed August 30, 2015..

Teen Birth Rates. The second component of the Sexual Activity focus area is the teen birth rate, or the number of births per 1,000 females ages 15-19 years of age. The Teen Birth Rate has declined statewide and in the nation, and In St. Joseph County the rate dropped from 42 over the years 2000-2006 to 27.9 in 2006-2012, or nearly 38 percent compared to the state and nation decline of 23 and 29 percent respectively. Teen birth rates continued declines in 2013 for the State and Nation (Figure O).

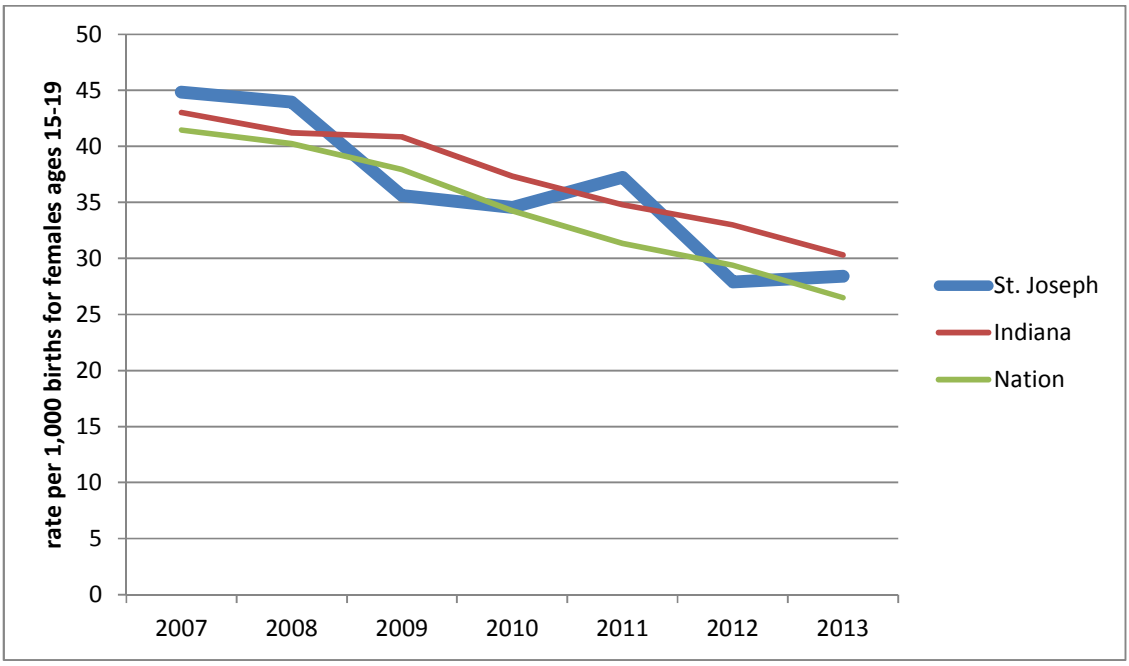
Generally, teen childbearing has been on a long-term decline in the United States since the late 1950s. And, since 2002, the rate has fallen by more than 25 percent in Indiana and by 41 percent in St. Joseph County. [20] In spite of these declines, the U.S. teen birth rate remains one of the highest among other industrialized countries. Childbearing by teenagers continues to be a matter of public concern because

[19] Source. CDC, STD Surveillance System. Chlamydia Rate per 100,000 Health Indicators Warehouse. Accessed at: http://www. http://www.healthindicators.gov/Indicators/Chlamydia-per-100000_20/Profile/Download on August 29, 2015.

[20] http://www.americashealthrankings.org/Measures/Measure/IN/TeenBirth
http://www.cdc.gov/nchs/fastats/teen-births.htm

of the elevated health risks for teen mothers and their infants. Significant public costs are associated with teen childbearing in terms of higher health care costs, foster care, criminal justice services, and lost tax revenue, estimated at $9.4 billion nationally in 2010 and about $227 million in Indiana.[21]

Figure O. Teen Birth Rates. St. Joseph County and Indiana, 2007-2013[22]



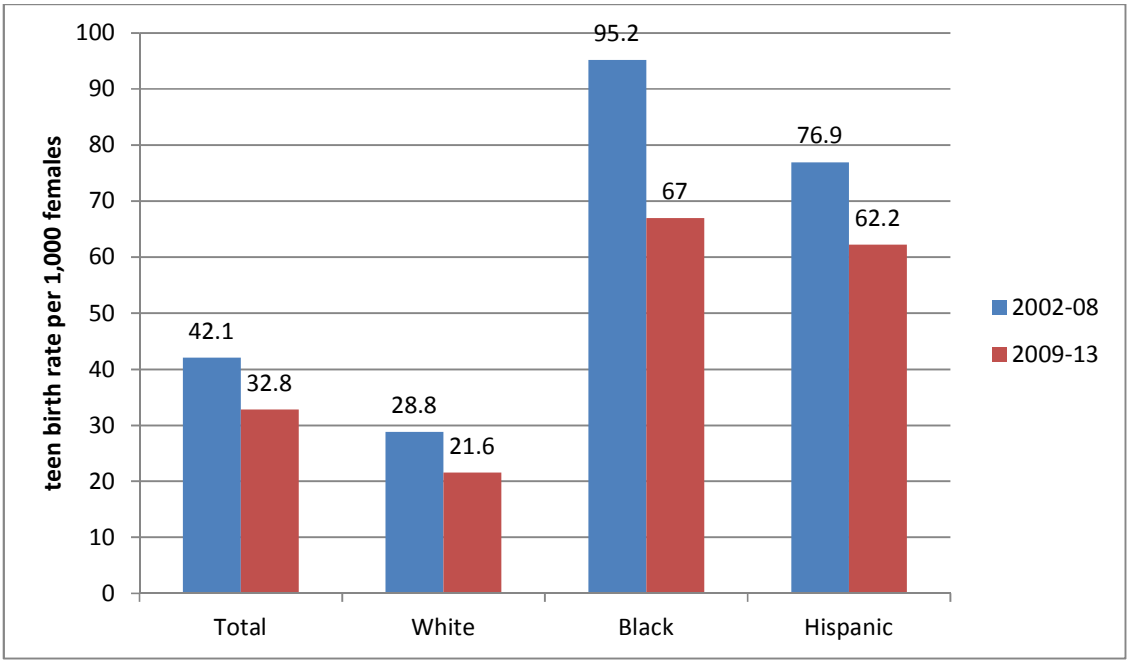
Age-specific teen birth rates break out those ages 15-17 from those ages 18-19. St. Joseph County women show higher rates for the older cohort and lower rates for the younger one. The younger cohort in the County had a birth rate per 1,000 females ages 15-17 of 19.1 and for females ages 18-19 a rate of 48.2 over the 2009-2013 data period. From 2002-2008 to 2009-13, teens 15-17 evidenced sharper declines in birth rates than did older teens ages 18-19 - -27 percent vs. -20 percent respectively.

Age-specific rates by race and ethnicity indicate higher rates for minorities including Hispanics and Blacks although all groups show declines between 2000 and 2009. Age-specific birth rates for White and Black racial groups differed by a factor of 3.1 in 2009-13 when the white teen birth rate was 21.6 compared with the black rate of 67. Teen birth rates (ages 15-19) over the years 2002-08 to 2009-2013 declined 30 percent for Blacks, 19 percent for Hispanics, and 25 percent for white teen birth rates.

[21] National Campaign to Prevent Teen and Unplanned Pregnancy, *Counting It Up: The Public Costs of Teen Childbearing* 2011; for Indiana: http://thenationalcampaign.org/sites/default/files/resource-primary-download/fact-sheet-indiana.pdf . Accessed August 30,2015.

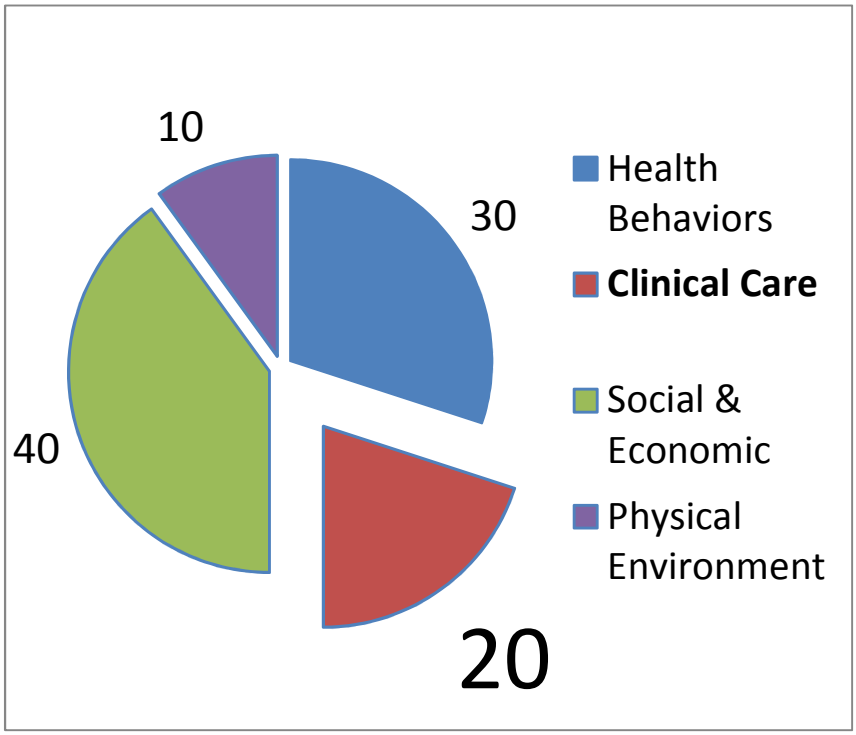
[22] CDC Wonder and U.S. Census, American Factfinder.

Figure P. Age-specific Teen Birth Rates by Race. St. Joseph County, 2002-2008 and 2009-13.[23]



[23] Centers for Disease Control and Prevention. National Center for Health Statistics. Health Indicators Warehouse. www.healthindicators.gov. Accessed August 30, 2015.

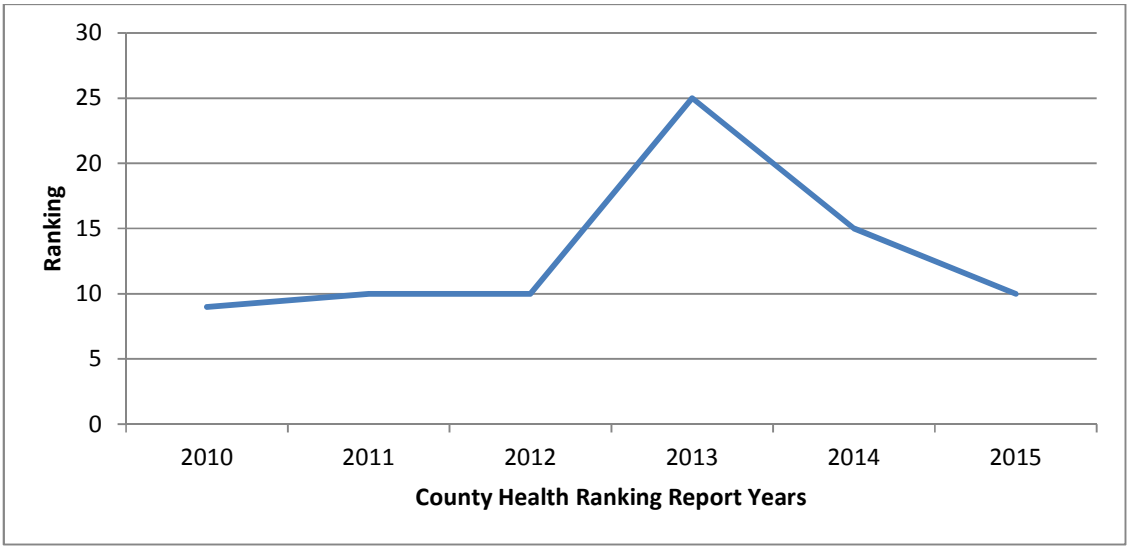
Clinical Care



Clinical care covers two foci – access to care and quality of care received. Indicators for the former include: (lack of) health insurance, and availability of primary care physicians, dentists and mental health providers. Quality of care measures cover preventable hospital stays, and screening for diabetes and breast cancer. Twenty percent (20%) of the factor weighting score is due to clinical care.

Figure Q illustrates the strong ranking of the County for its Clinical Care. On both access to care – the proportion of the population under 65 that is uninsured and the ratio to the population of the number of primary care physicians – and quality of care - that is a combination of preventable hospital stays, and screening for diabetes and breast cancer - the County ranks in the top quartile.

Figure Q. Ranking of St. Joseph County on Clinical Care Components. 2010-2015 reports



ACCESS TO CARE

Uninsured by Age. During this reporting period, the number of Americans who did not have health insurance continued to increase. The National Health Interview Survey found that 45.2 million people under 65 (16.9%) and 6.6% of children were uninsured at the time of interview in 2012.[24]

In 2012, the estimated population that lacked health insurance in St. Joseph County registered 16.8 percent of those under age 65. This was 1.4 percentage points higher than five years earlier.[25]

Additionally, disparities in access to care based on race/ethnicity, employment, gender, and income level continued. Ethnic minorities were more likely to be uninsured than non-Hispanic whites. With employment-based coverage as the largest source of health coverage in the U.S., many unskilled jobs did not offer health coverage benefits.

The consequences for those lacking insurance are that they become sicker and are less likely to get care.

> *Evidence shows that uninsured individuals experience more adverse outcomes (physically, mentally, and financially) compared to insured individuals. The uninsured are less likely to receive preventive and diagnostic health care services, are more often diagnosed at a later disease stage, and on average receive less treatment for their condition compared to insured individuals.*[26] *The Institute of Medicine reports that the uninsured population has a 25% higher mortality rate than the insured population.*[27]

Figure R highlights the proportion without health insurance in Indiana and in St. Joseph County. The graph shows a convergence in the rates in 2010 to approximately 17 percent of the group at interest – up from 15.4 percent two years earlier.

St. Joseph County's uninsured rate of 17 percent in 2012 gave it a ranking in the *County Health Rankings* 2015 report among 91 other counties of 55 and put it in the third quartile on this measure. Table 7 shows that in 2012 those under 19 were more protected than the general population (partly due to the Children's Health Insurance Program (CHIP)), that the age group 18 to 64 shows the highest uninsured rate (21%), and that lower income groups have higher rates of uninsurance (e.g., 26.5% for those under 200 percent of poverty).

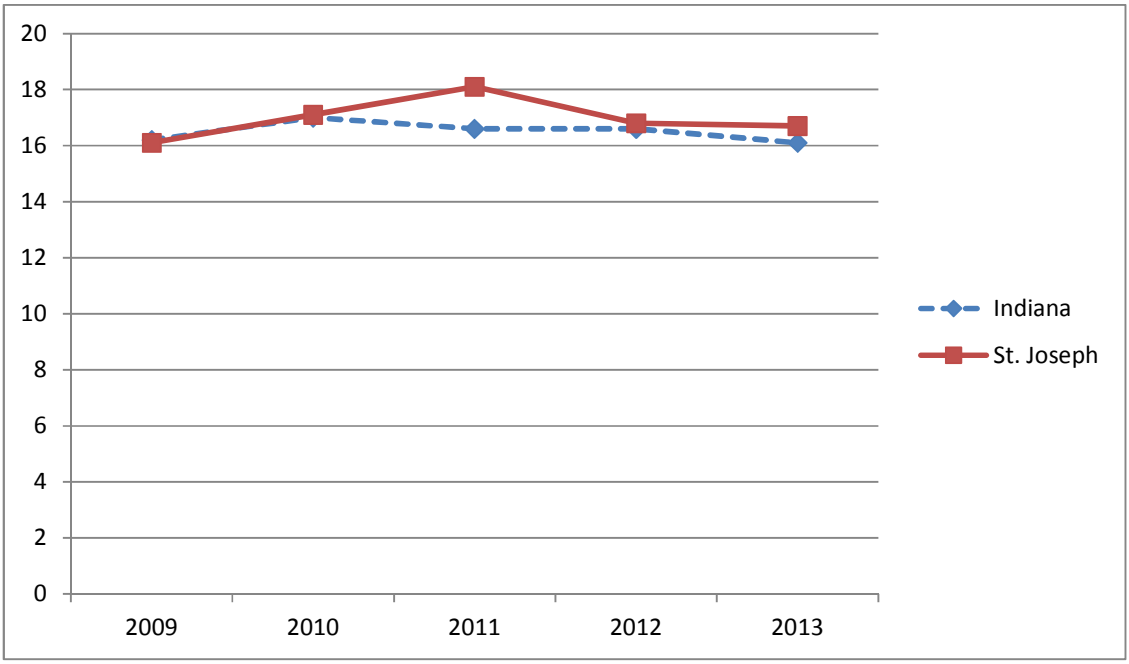
[24] Martinez M, Cohen RA. Health Insurance Coverage: Early Release of Estimates From the National Health Interview Survey, 2012. Atlanta, GA: Centers for Disease Control and Prevention, 2012. Available at: http://www.cdc.gov/nchs/data/nhis/earlyrelease/insur201306.pdf

[25] Small Area Health Insurance Estimates. http://www.census.gov/did/www/sahie/

[26] Fronstin P. Sources of Health Insurance and Characteristics of the Uninsured: Analysis of the March 2009 Current Population Survey. Employee Benefit Research Institute; 2009. EBRI Issue Brief no. 334.

[27] Institute of Medicine. Hidden Costs, Value Lost: Uninsurance in America. Washington, DC: Institute of Medicine;2003.

Figure R. Percent Under 65 That Lacked Health Insurance. Indiana and St. Joseph County, 2009-2013.[28]



When age and race are combined, Blacks between the ages of 18 and 64 were uninsured at the rate of 29.1 percent. Compared with Whites, Blacks were 1.6 times more likely to lack health insurance in St. Joseph County in the three-year period 2010-2012.

The effect of education on health insurance status is dramatically illustrated on Figure T. While about 9 percent of persons with a college degree are uninsured, over 5 times that rate or 41 percent of those not high school graduates lack health insurance.

Under the Affordable Care Act (ACA), as of 2014, Medicaid coverage was extended to low-income adults in states that have opted to expand eligibility (including Indiana), and tax credits are available for middle-income people who purchase coverage through a health insurance Marketplace. Many in Indiana enrolled in these options but many still remain without coverage.

A recent analysis by the Kaiser Family Foundation provided state-by-state estimates of eligibility for ACA coverage options among those who remained uninsured. Based on the 2015 Current Population Survey, combined with other data sources, estimates for eligibility as of early 2015 but prior to the end of the 2015 Marketplace open enrollment period, Indiana showed a total uninsured population of 686,000 persons. This represented a decline in the number of health uninsured under age 65 since 2012 of 25

[28] Small Area Health Insurance Estimates (SAHIE). http://www.census.gov/did/www/sahie/index.html

percent. Of those, 45 percent are believed to be Medicaid eligible, 19 percent tax credit eligible, and the remaining 36 percent ineligible due to income, ESI offer, or citizenship.[29]

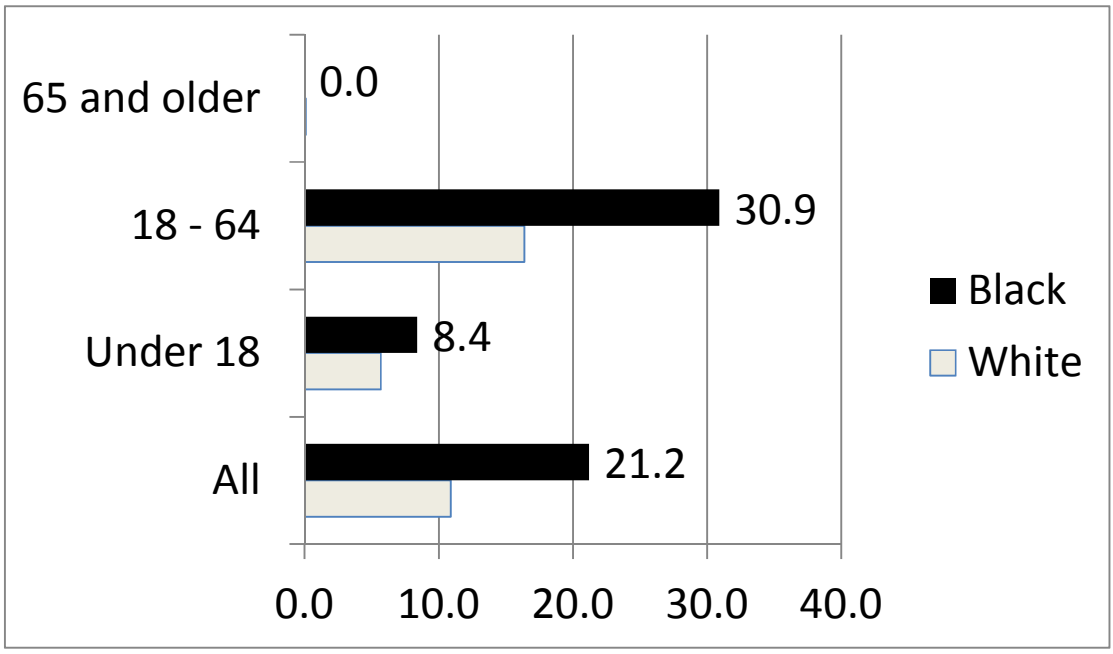
Table 8. **Percent Uninsured in St. Joseph County, 2009 vs. 2013 and in 2013 by Age, Sex and Income.**

Year	Uninsured	Percent	State
2009	35,608	16.1	16.2
2013	36,763	16.7	16.1
	YEAR = 2013		
AGE			
Under 65	36,763	16.7	16.1
Under 19	5,402	8.2	8.3
18 – 64	31,838	20.3	19.3
40 – 64	13,907	16.4	14.9
50 – 64	7,212	13.8	12.9
SEX			
Male	19,079	17.5	
Female	17.684	16.0	
INCOME			
All	36,763	16.7	16.1
< 200% FPL	23,854	27.6	27.4
< 400% FPL	33,491	221.2	20.9

Source: Small Area Health Insurance Estimates.
http://www.census.gov/did/www/sahie/index.html

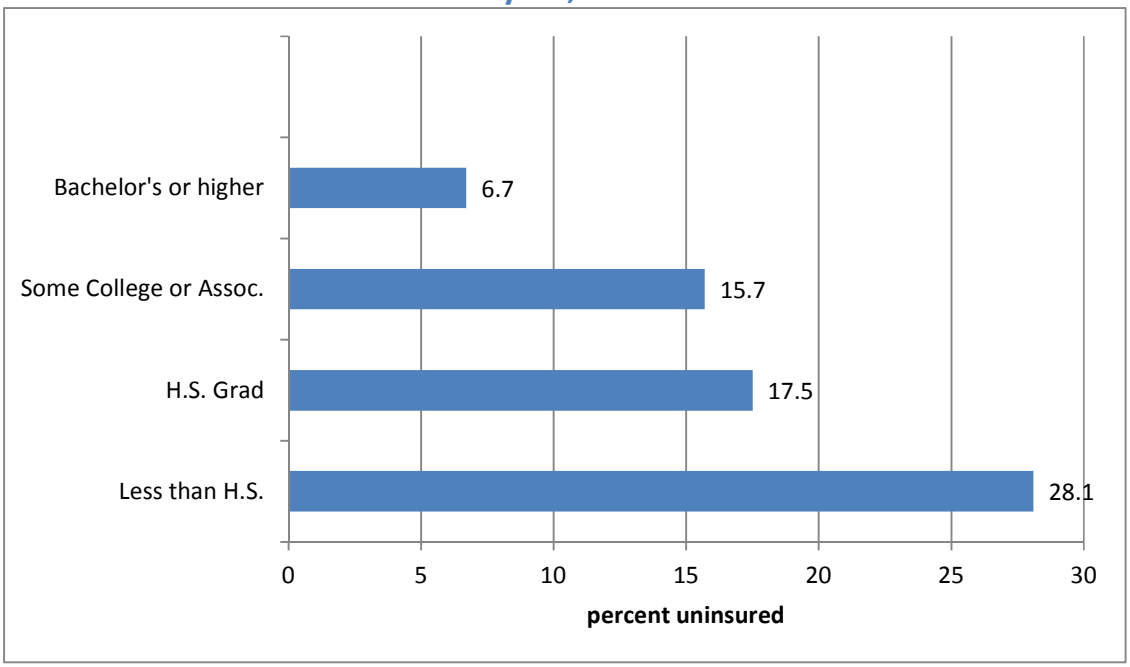
[29] Garfield, R et al., "New Estimates of Eligibility for ACA Coverage among the Uninsured," Kaiser Family Foundation, Oct 13, 2015. http://kff.org/uninsured/issue-brief/new-estimates-of-eligibility-for-aca-coverage-among-the-uninsured

Figure S. Percent Uninsured by Age Group and Race. St. Joseph County and Indiana, 2014.



Source: U.S. Census Bureau, American Factfinder. American Community Survey, 2014.

Figure T. Uninsurance by Education Level. St. Joseph County, Ages 25 and older 5-year, 2009-2013



Source: U.S. Census Bureau, American Factfinder. American Community Survey, 2009-2013.

Availability of Primary Care Physicians. Primary care, characterized by continuity of care through an established relationship between patient and physicians, is considered the central grounding of our healthcare system. Access to timely and effective primary care has the potential to improve health status and reduce costs.[30] However, nearly one in five Americans lacks adequate access to primary care due in part to a shortage of primary care physicians in their communities.[31] And

Health reform has placed growing attention on the need to increase access to and availability of primary care services by increasing coverage and improving reimbursement and quality of working conditions for primary care professionals.

Primary care comprises four main features:[32]

- A first contact for any new health issue or need
- Long-term, person-focused care
- Comprehensive care for most health needs
- Coordination of care when it must be received elsewhere (i.e. with a specialist)

> "Between 2010 and 2020, the estimated total supply of primary care physicians grows more slowly than the levels needed to meet projected demand for health care services from physicians. The number of primary care physicians is projected to increase from 205,000 FTEs in 2010 to 220,800 in 2020, an 8-percent increase. However, the total demand for primary care physicians is projected to grow by 28,700, from 212,500 FTEs in 2010 to 241,200 FTEs in 2020, a 14-percent increase... Without changes such as how primary care is delivered, the growth in primary care physician supply will not be adequate to meet demand in 2020, with a projected shortage of 20,400 physicians."
> - HRSA, "Projecting the Supply and Demand for Primary Care Practitioners Through 2010." Nov 2013.

One measure used to determine adequacy of primary care coverage is the Primary Care Physician (PCP) ratio. The PCP ratio includes non-Federal doctors of medicine (M.D.) and doctors of osteopathy (D.O.) under age 75 providing direct patient care that practice principally in one of the primary care specialties: general practice medicine, family medicine, internal medicine, and pediatrics.[33] The measure represents the population per physician. (Physicians engaged solely in administration, research and teaching are excluded as are hospital residents). This measure does not include nurse practitioners, physician assistants or other practitioners available for primary care services.

In 2013, with 252 PCPs, this ratio was 1,058:1 in St. Joseph County, that is, 1,058 people to one PCP (lower is better). For Indiana, the ratio was higher – 1,490:1 (Figure U).

One recommendation for a Primary Care Health Professional Shortage Area (HPSA) is 3,500:1.[34] On that basis, St. Joseph County's current supply would appear to be quite adequate.

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[30] Starfield, B., L. Shi, and J. Macinko. 2005. Contribution of primary care to health systems and health. Milbank Quarterly, 83:457-502

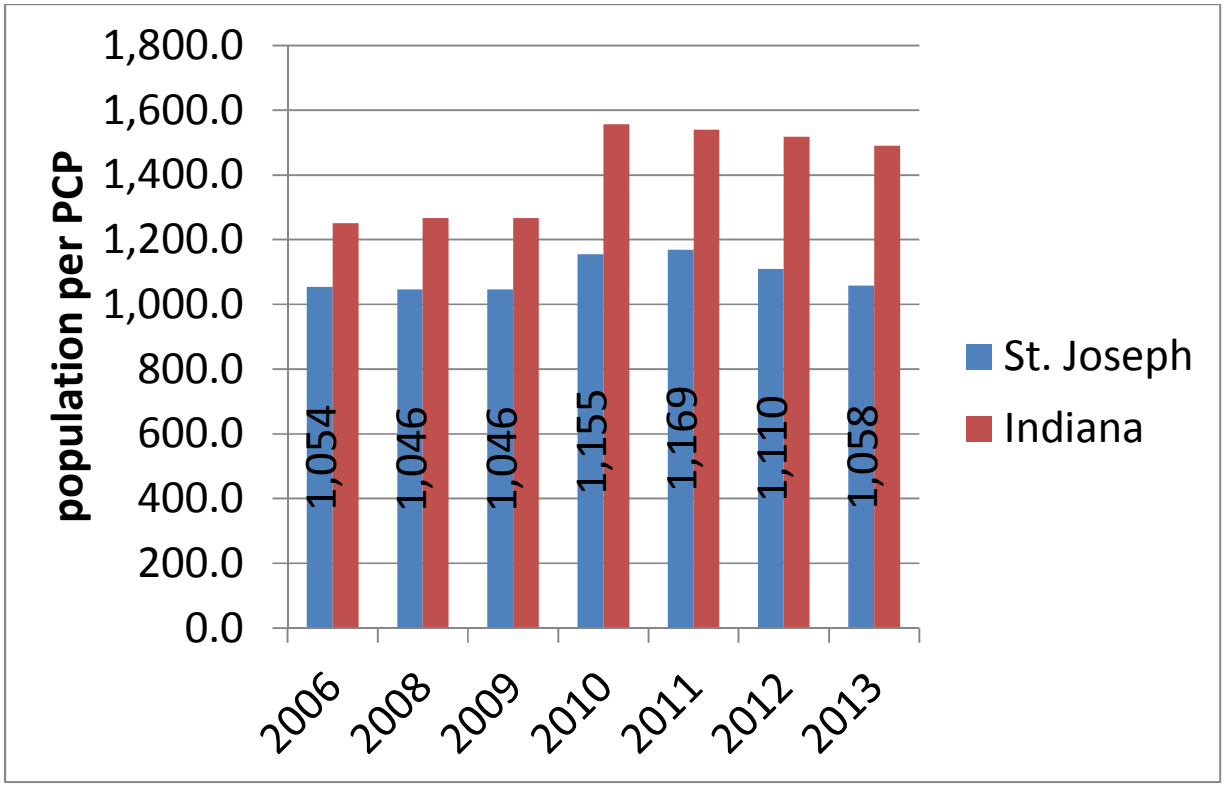
[31] National Association of Community Health Centers. March 2009. Primary Care Access: An Essential Building Block of Health Reform.

[32] Kaiser Foundation. "Primary Care Shortage," http://www.kaiseredu.org/Issue-Modules/Primary-Care-Shortage/Background-Brief.aspx#footnote4

[33] This figure excludes hospital residents.

[34] For complete criteria and guidelines, see the Health Resources and Services Administration, "Shortage Designation," http://www.hrsa.gov/shortage/. Note that "…there is no generally accepted ratio of physician to population ratio."

Figure U. Ratio of Population to Primary Care Physicians.
St. Joseph County & Indiana, data 2006, 2008, 2009, 2010, 2011 and 2012[35]



Availability of Dentists. The measure of clinical care by dentists was introduced for the first time in County Health Rankings in the 2013 report. The Health Professional Shortage Area ratio for dentists is 5,000:1. Data for the year 2013 indicate that St. Joseph County had 1,766 persons per dentist while the State as a whole had a ratio of 1,973. The County ratio represented a value that fell in the first quartile at a ranking among the other 91 counties of 13.

Availability of Mental Health Providers. New to the 2014 report was the measure of mental health providers. Mental health providers include psychiatrists, psychologists, licensed clinical social workers, counselors, and advanced practice nurses specializing in mental health care. With a ratio of 510:1, St. Joseph County ranked 5th and in the first quartile among the other counties. Overall, in Indiana in 2014, the ratio stood at 750:1, or 1.5 times higher than St. Joseph County.

[35] Source: Health Resources and Services Administration, Area Resource File (ARF) http://ahrf.hrsa.gov/

QUALITY OF CARE

According to *County Health Rankings,* "High quality health care is [one that is] timely, safe, effective, and affordable–the right care for the right person at the right time. High quality care in inpatient and outpatient settings can help protect and improve health and reduce the likelihood of receiving unnecessary or inappropriate care."

The *County Health Rankings* use three separate measures to report health care quality for each county:

1. **Preventable hospital stays**, or the hospitalization rate for ambulatory-care sensitive conditions (ACSC) per 1,000 Medicare enrollees.
2. **Diabetic screening** is the percent of diabetic Medicare enrollees that receive HbA1c screening; and
3. **Mammography screening** is the percent of female Medicare enrollees age 67-69 having at least one mammogram over a two-year period.

Preventable Hospital Stays. Hospitalizations that could have been prevented may be expressed for certain conditions - sometimes called "ambulatory care-sensitive" - because they could have been cared for in an ambulatory care setting.

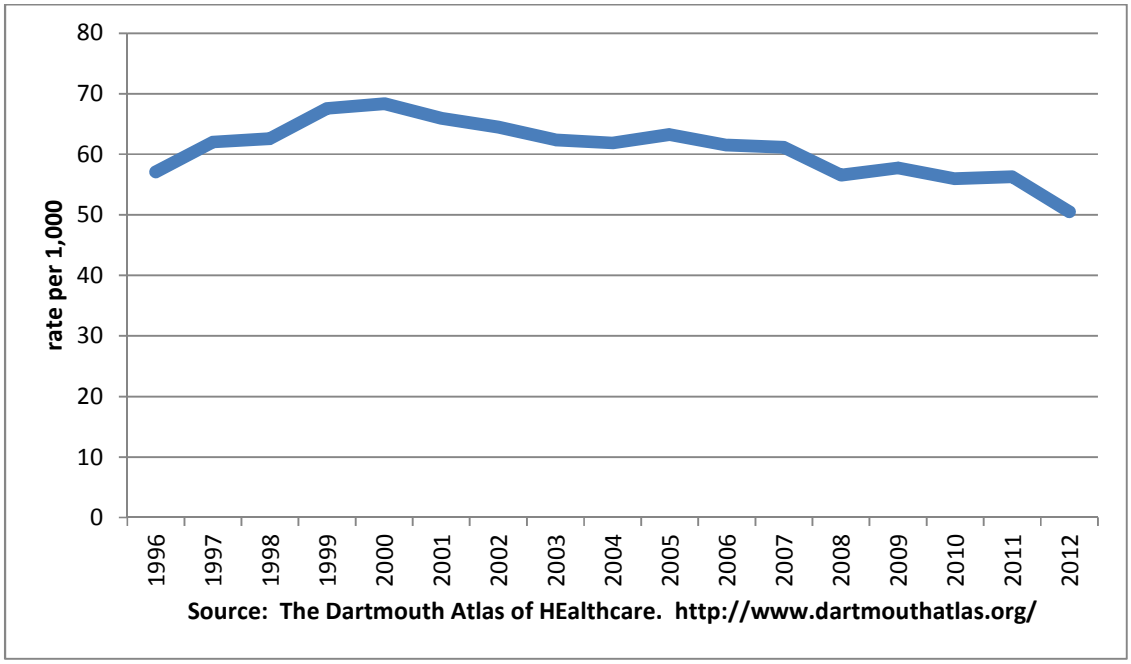
For example, in 2012, the ACSC hospital admission rate was higher in Indiana compared with the rate in St. Joseph County. The range in Indiana counties was from 35 to 117, the State rate was 70, and the national benchmark (90th percentile) was 41. St. Joseph County stood at 51 per 1,000 Medicare enrollees. Over the past four data years (2009-2012), the State rate was from 15 to 23 percent higher than the County rate.

The Preventable Hospital Stay indicator is often used to assess the effectiveness and accessibility of primary healthcare.[36,37,38] Rates of hospitalization have been found to be higher for individuals in middle and low income areas compared to high income areas, and higher for African Americans compared to non-Blacks (Figure W).[39, 40]

[36] Basu J, Friedman B, Burstin H. Primary care, HMO enrollment, and hospitalization for ambulatory care sensitive conditions: A new approach. Med Care. 2002;40:1260-1269.
[37] Laditka JN, Laditka SB, Probst JC. More may be better: Evidence of a negative relationship between physician supply and hospitalization for ambulatory care sensitive conditions. Health Serv Res. 2005;40:1148-1166.
[38] National Quality Measures Clearinghouse. Ambulatory care sensitive conditions: Complete summary. National Quality Measures Clearinghouse, Agency for Healthcare Research and Quality, U.S. Department of Health and Human Services. Accessed January 27, 2010 from www.qualitymeasures.ahrq.gov/summary/summary.aspx?ss=1&doc_id=9984. Updated January 25, 2010.
[39] Laditka JN, Laditka SB, Mastanduno MP. Hospital utilization for ambulatory care sensitive conditions: Health outcome disparities associated with race and ethnicity. Soc Sci Med. 2003;57:1429-1441.
[40] Some ambulatory care-sensitive conditions include: Bacterial pneumonia; Congestive heart failure; Diabetes; Asthma; Dehydration; Pyelonephritis/Urinary infection; Perforated or bleeding ulcer; Angina; Cellulitis; Chronic obstructive pulmonary disease; Appendicitis with rupture; Convulsions; Gastroenteritis; Epilepsy Hypertension;

For the South Bend Hospital Service Area[41] the trend over the past 17 years has shown a declining ACS condition hospitalization rate (Figure V). However, over the past five-year period 2008-2012, the gap between races (Black compared with non-Black) has widened – from 13 percent to 30 percent higher for Black persons within the St. Joseph County Hospital Referral Region (Figure W).

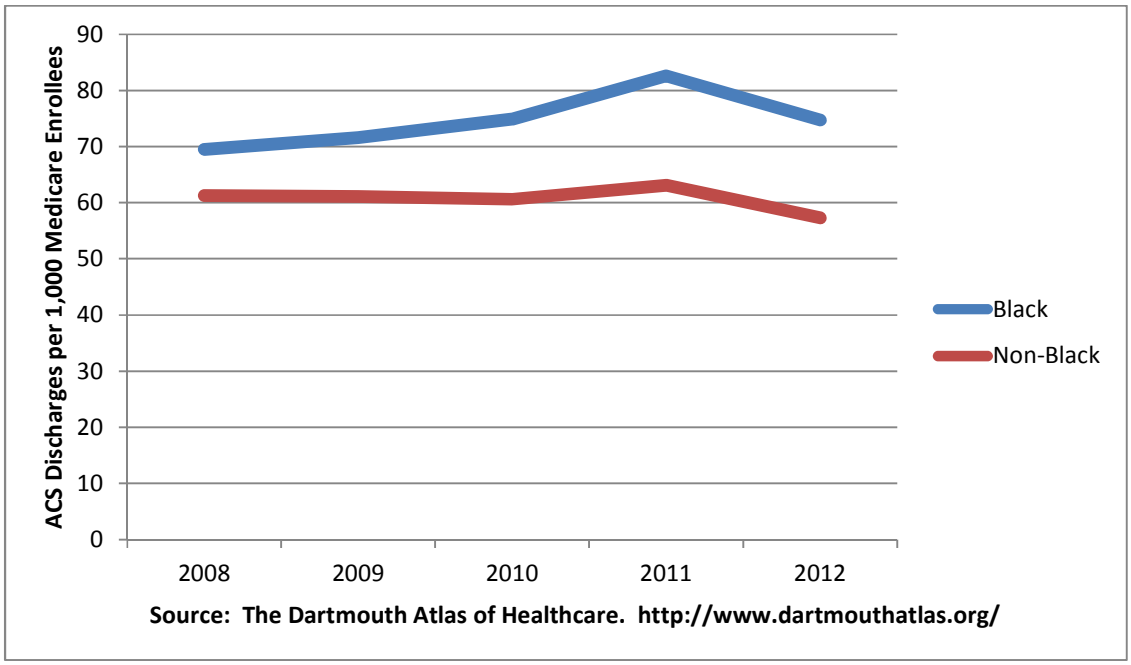
Figure V. Discharges for ACS Conditions per 1,000 Medicare Enrollees, 1996 – 2012. South Bend Hospital Service Area.



Severe E.N.T. infections; Invasive cervical cancer. Utah Department of Health, "List of ACS Conditions," http://health.utah.gov/opha/IBIShelp/codes/ACS.htm

[41] The South Bend "Hospital Service Area" (HSA) is a local health care markets for hospital care. An HSA is a collection of ZIP codes whose residents receive most of their hospitalizations from the hospitals in that area. HSAs were defined by assigning ZIP codes to the hospital area where the greatest proportion of their Medicare residents were hospitalized. Minor adjustments were made to ensure geographic contiguity. Most hospital service areas contain only one hospital. There are 3,436 HSAs.

Figure W. Discharges for ambulatory care sensitive conditions per 1,000 Medicare enrollees by Race. St. Joseph County Hospital Referral Region, (2008-2012)



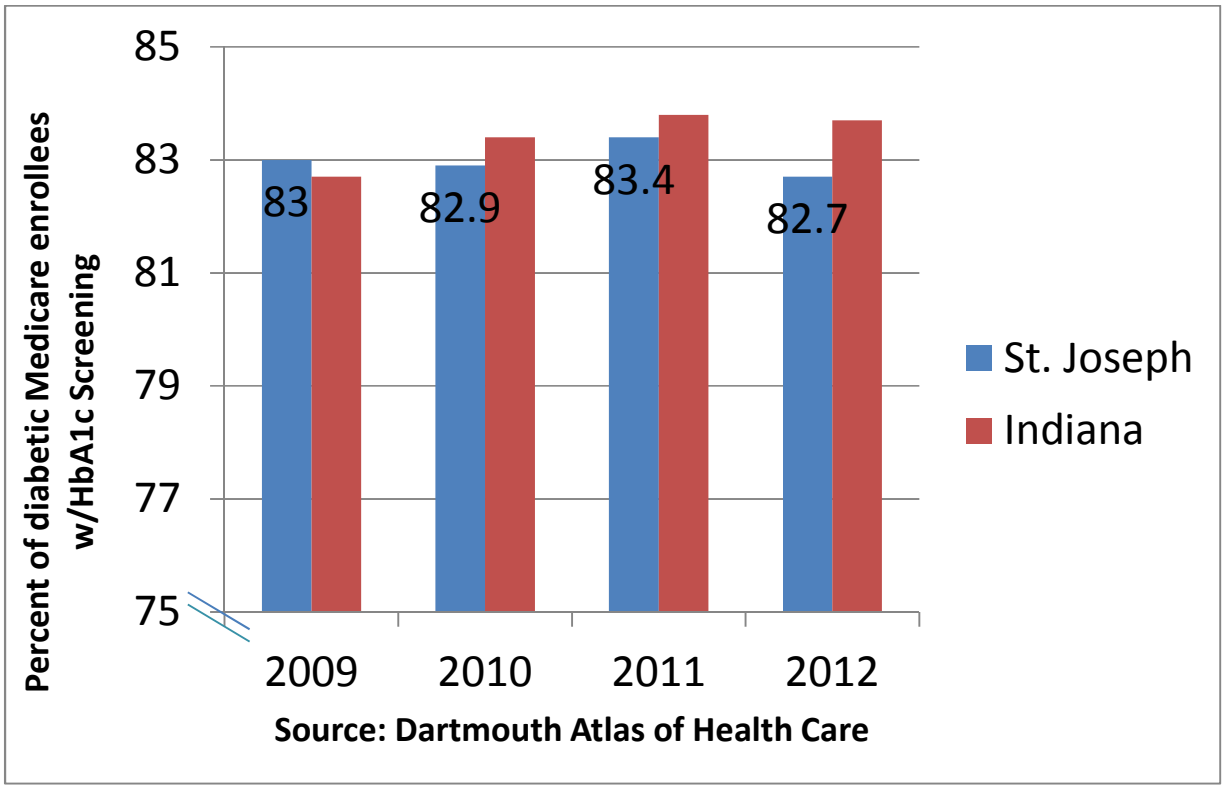
Source: The Dartmouth Atlas of Healthcare. http://www.dartmouthatlas.org/

Diabetic Screening. Improvements in quality of care can happen via disease management programs that target multiple components of chronic diseases.[42] The use of HbA1c testing (a lab test that shows the average level of blood sugar (glucose) over the previous 3 months) to measure glycated hemoglobin for long-term monitoring of diabetes is widely accepted as one component of a comprehensive disease management program. It is recommended for all patients with diabetes as part of the initial assessment after a diabetes diagnosis, and then on a routine basis as a part of the patient's comprehensive diabetes care plan.[43] The use of HbA1c testing is an ideal indicator to estimate the quality of care provided.

While recommended for ALL diabetics, about 83 percent of diabetic Medicare enrollees received it in 2012 in St. Joseph County. The range among Indiana counties was 79 - 86%, and the National target at the 90th percentile benchmark was 90% in 2012 (Figure X).

[42] Villagra VG, Ahmed T. Effectiveness of a disease management program for patients with diabetes. Health Aff. 2004;23:255-266.
[43] Goldstein D, Little RR, Lorenz R, et al. Tests of glycemia in diabetes. Diabetes Care 2004;27:1761-1773.

Figure X. Percent of Diabetic Medicare enrollees ages 65-75 receiving a hemoglobin A1c test in the past year. Indiana and St. Joseph County, 2009-2012[44]



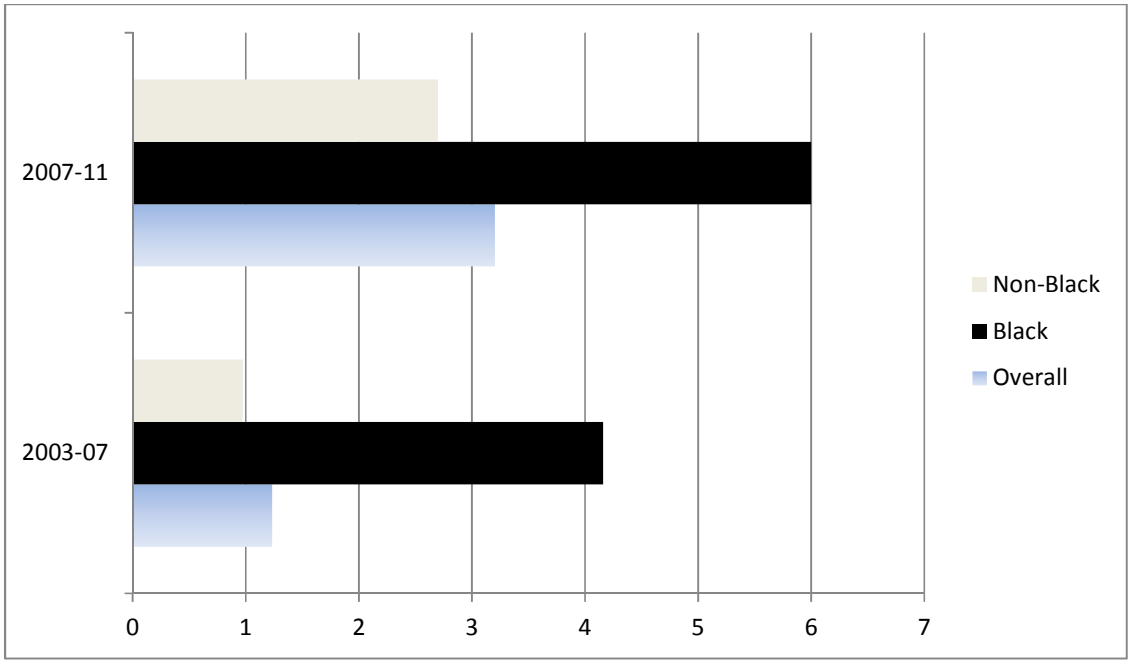
The rate of leg amputation – a devastating complication of diabetes and peripheral vascular disease – has been more than twice as high in blacks as in whites (Figure Y). Rates of amputation also differ by a factor of three among U.S. states and nearly tenfold among regions.

Although the overall rates have increased in the hospital region over the two five-year periods by 2.6 times, the ratio of black to non-black rates declined.

Because poverty is an important risk factor for amputations, addressing these remarkable disparities in health outcomes will require attention to the full spectrum of health determinants, ranging from lower levels of schooling, limited health literacy, inadequate housing and lack of transportation, to inadequate access to high quality, well-coordinated primary and specialty care.

[44] http://www.healthindicators.gov/Indicators/HbA1c-test-diabetic-Medicare-beneficiaries-percent_29/Profile

Figure Y. Leg Amputation rate per 1,000 Medicare Enrollees by Race. St. Joseph County Hospital Referral Region, 2003-2007, 2007-2011.[45]



Mammography Screening

Breast cancer is the second most common type of cancer among women in the United States. The three most common forms of breast cancer screening include self-breast exam, clinical breast exam, and mammogram. An estimate based on rigorous randomized trials suggests that screening reduces breast cancer mortality by from 15% to 35%.[46,47]

There continues to be debate around the effectiveness and cost/benefit of regular mammograms for women under 50, and whether screening for breast cancer ultimately does more harm than good. Some researchers point out that while screening reduces breast cancer mortality by 15%, it also leads up to a 30% increase in over diagnoses and overtreatment.[48]

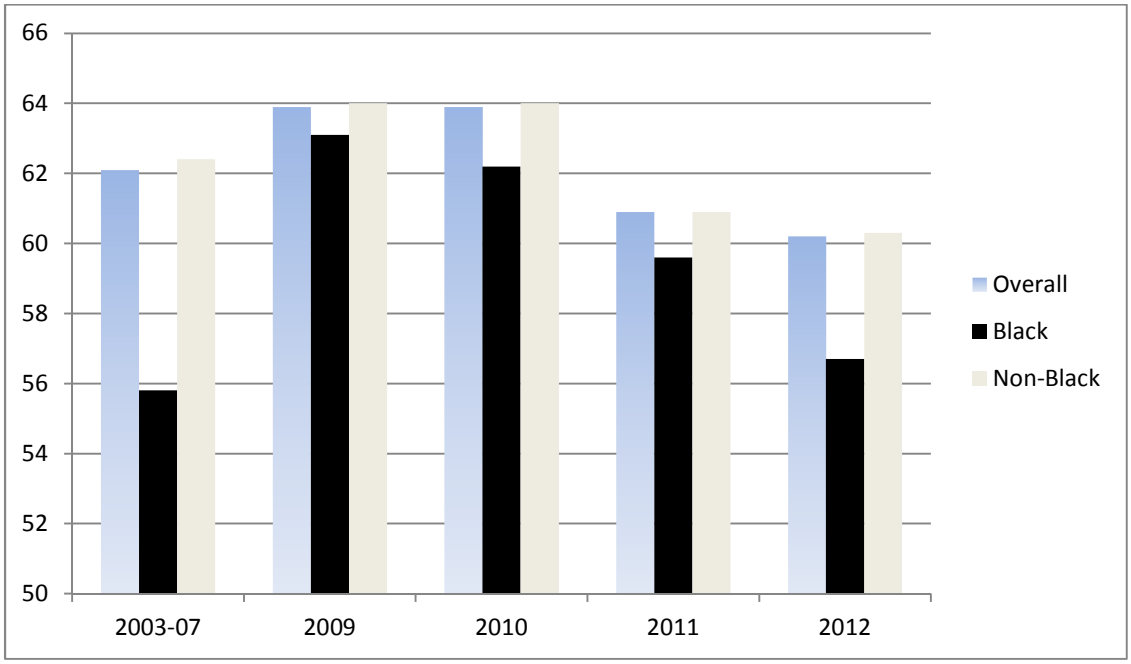
That said, there is agreement that the sensitivity and specificity of mammograms are highest among older women, and the benefit-to-harm ratio of screening improves as women age. The use of data on

[45] Source: Medicare claims/The Dartmouth Atlas of Healthcare .
[46] Gøtzsche PC, Nielsen M. Screening for breast cancer with mammography. Cochrane Database of Systematic Reviews 2009,Issue 4. Art. No.: CD001877. DOI: 10.1002/14651858.CD001877.pub3
[47] Elmore, J. G., Armstrong, K., Lehman, C. D., Fletcher, S. W. Screening for breast cancer. JAMA. 2005;293(10):1245-1256)
[48] Elmore, op. cit.

women age 67-69 for the ranking in this study can avoid some of the controversial issues summarized above.

The percent of female Medicare enrollees ages 67-69 that had at least one mammogram every two years did not differ notably by race for the years 2009 - 2012 for the South Bend Hospital Referral Region. The average for those four years was 60.4 percent for Black females and 62.3 percent for non-Black females. While the rate improved for Black females over that of the 2003-07 years, there was a noted decline in the percent screened from 2009 through 2012.

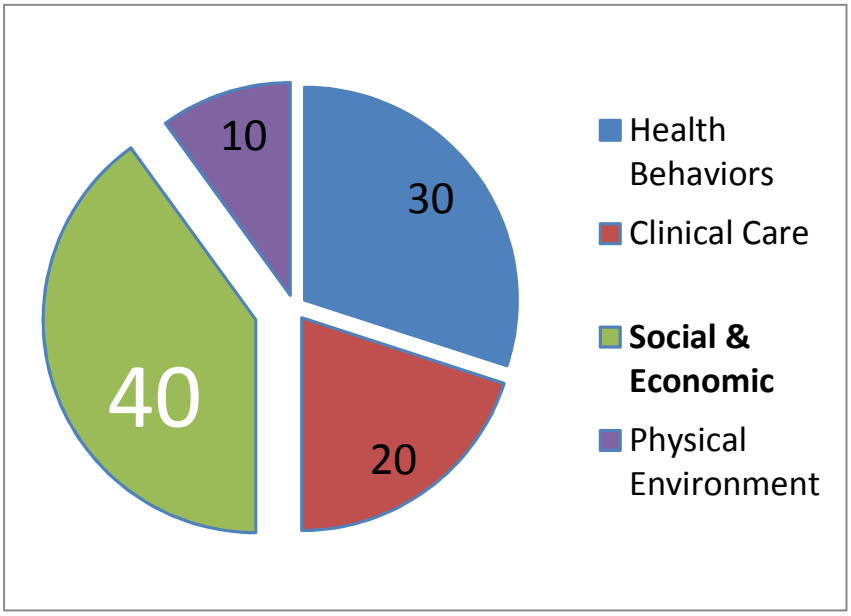
Figure Z. Percent of Female Medicare enrollees age 67-69 receiving mammography screening by race. St. Joseph County Hospital Referral Region, 2003-07, 2009 - 2012.



At the 90th percentile, the national benchmark of 67.3 percent in 2012 was over 10 percentage points higher than St. Joseph County's Region's 2012 level of 56.7 percent (Figure AA).

Social & Economic Health Factors

Socio-economic factors account for the largest weighting of importance among health factors. In the 2015 Report, these factors include areas covered by five indicators:



Education
- high school graduation
- post-secondary ed.

2. Employment
   - Unemployment rate
3. Income
   - Children in poverty
   - Income inequality
4. Family & Social Support
   - Lack of social support
   - Social associations
   - Children in single-parent households
5. Community Safety
   - Violent Crime rate
   - Injury rates

In the following Figure (AB) that displays the ranking of these measures for the five reporting periods, only Violent Crime (Community Safety appears as an improving trend in the County; the rest not (see also Table 8).

Education

High School Graduation Rates. High school graduation is reported as the percent of a ninth-grade cohort in public schools that graduates from high school in four years. In 2011, graduation rates were calculated from the National Center for Education Statistics (NCES) using an estimated cohort and generally known as the Averaged Freshman Graduation Rate (AFGR). Starting in 2012, cohort graduation rates collected from state Department of Education websites were reported. These rates are an improvement over the AFGR rates previously reported due to student-level outcomes tracking that accounts better for transfers, early and late completers.

The relationship between more education and improved health outcomes is well known, with years of formal education correlating strongly with improved work and economic opportunities, reduced psychosocial stress, and healthier lifestyles. The overall graduation rate across the 5 school corporations in St. Joseph County was 84 percent, and while that represented an improvement over previous years, the County ranked only 80 out of 92 counties for the 2011-2012 data years.

Some college. This indicator provides an estimate of the percentage of the population age 25-44 with some post-secondary education, such as enrollment at vocational/technical schools, junior colleges, or four-year colleges. It includes individuals who pursued education following high school but did not receive a degree. The data are from the American Community Survey (ACS) and aggregated over a five-

year period. At 64 percent over the 2009-2013 years, the county showed a strong ranking of 14 out of 92.

Employment. *The Rankings* uses the annual average **unemployment** rate: the total unemployed persons, as a percent of the civilian labor force ages 16 and older. With an unemployment rate of 8.8 percent in 2013, the County ranked 76.

Income. A measure of children under 18 years of age living in poverty is used, specifically, the percent of children living in poverty as defined by the federal poverty threshold based on data from the Census' ACS. Over the five reporting periods, this measure has averaged about 29 percent, and most recently the County had a ranking of 85.[49] The national benchmark (at the 10th percentile) was 13 percent in data from 2013 (See Figure AB).

Income inequality. A reinstated measure of income inequality was present in the 2015 Report. This measure is the ratio of the top income earners to the bottom earners, specifically, the ratio of household income at the 80th percentile to that at the 20th percentile. A higher ratio indicates greater divisions between income levels. A Gini coefficient was used in the 2010 Report. St. Joseph County had a 4.5 on a 0 to 10.0 scale.

Family & Social Support

The *Rankings* uses two measures of family and social support:

- **Social Associations**. Number of membership associations per 10,000 population.
- **Children in single-parent households** defined as the percent of children living in family households that are raised by a single parent. Data come from the American Community Survey.

In past report, the measure of adults lacking adequate social support in the County was used and that figure remained flat over the previous five reporting periods, with a ranking of 42 for the data reflecting measures during 2005 to 2010. That measure was supplanted by 'Social Associations' – the rate of membership associations in the population. In the 2015 Report, the rate of 11.2 in St. Joseph County gave the county a ranking of 18 where the range was from 8 to 22 per 10,000 and the national benchmark was 22.

The percent of children in families with a single parent shows St. Joseph County with a ranking of 79 for a value of 36 percent in both the 2014 and 2015 Reports.

Community Safety

Two measures are used to assess community safety:

- **Violent Crime Rate.** The rate of violent crime per 100,000 population as reported in the FBI's annual *Uniform Crime Reports*. Violent crime is composed of four offenses: murder and non-

[49] "While negative health effects resulting from poverty are present at all ages, children in poverty face greater risks. Children face greater morbidity and mortality due to greater risk of accidental injury, lack of health care access, and poor educational achievement. Early (or prenatal) poverty may result in development damage. Children's age-five IQ correlates more with family income than with maternal education, ethnicity, and single female-headed household." Brooks-Gunn J, Duncan GJ. The effects of poverty on children. Future Child. 1997;7(2):55-71; Aber JL, Bennett NG, Conley DC, Li JL. The effects of poverty on child health and development. Annu Rev Public Health. 1997;18:463-483.

negligent manslaughter, forcible rape, robbery, and aggravated assault – all crimes that involve force or threat of force. That rate has declined over the period but the relatively high rate in the County (370 crimes per 100,000 in 2010-2012) meant a ranking 67 out of 71 reporting counties in the State. 2013 data show a decline in the violent crime rate.

- **Injury deaths. T**he injury mortality rate per 100,000 persons that includes data on all injury deaths was introduced in the 2014 report for the first time. In the 2015 report, the injury death rate of 55 gave the county a ranking of 16 out of 92 counties.

Table 9. **Social & Economic Environment Measures. St. Joseph County, 2010 – 2015 Report Dates.**

	2010	2011	2012	2013	2014	2015
SOCIAL-ECONOMIC RANKINGS	**78**	**69**	**72**	**81**	**66**	**79**
EDUCATION						
High School graduation rate[1]	67.4	70	81	84*	83	84
Some College[2]		60.7	61	62	64	63.9
EMPLOYMENT						
Percent unemployed	6.6	11.2	11.5	10.1	9.7	8.8
INCOME						
Pct children in poverty	20	19	24	30	24	29.1
Income Inequality[3,4]						4.5
FAMILY & SOCIAL SUPPORT						
Inadequate support[4]	20.24	20.1	19.7	19.7	20	
Social Associations[4]						11.2
Children in single-parent households[5]		33.1	34.9	36.6	36	36
COMMUNITY SAFETY						
Violent crime rate	412	421	419	408	392	370
Injury death rate					53	55

Note: Shaded areas indicate no data or data of a different measure.

[1] 2013 data Should not be compared with prior years due to change in definition.
[2] 2011 data definition is different from 2010.
[3] Measure modified in 2015.
[4] Some States lack data after 2014 report. New definition in 2015.
[5] Change in definition for 2011 report

Figure AA. Ranking of Social & Economic Environment Measures. St. Joseph County, 2010 – 2015 Report Dates.

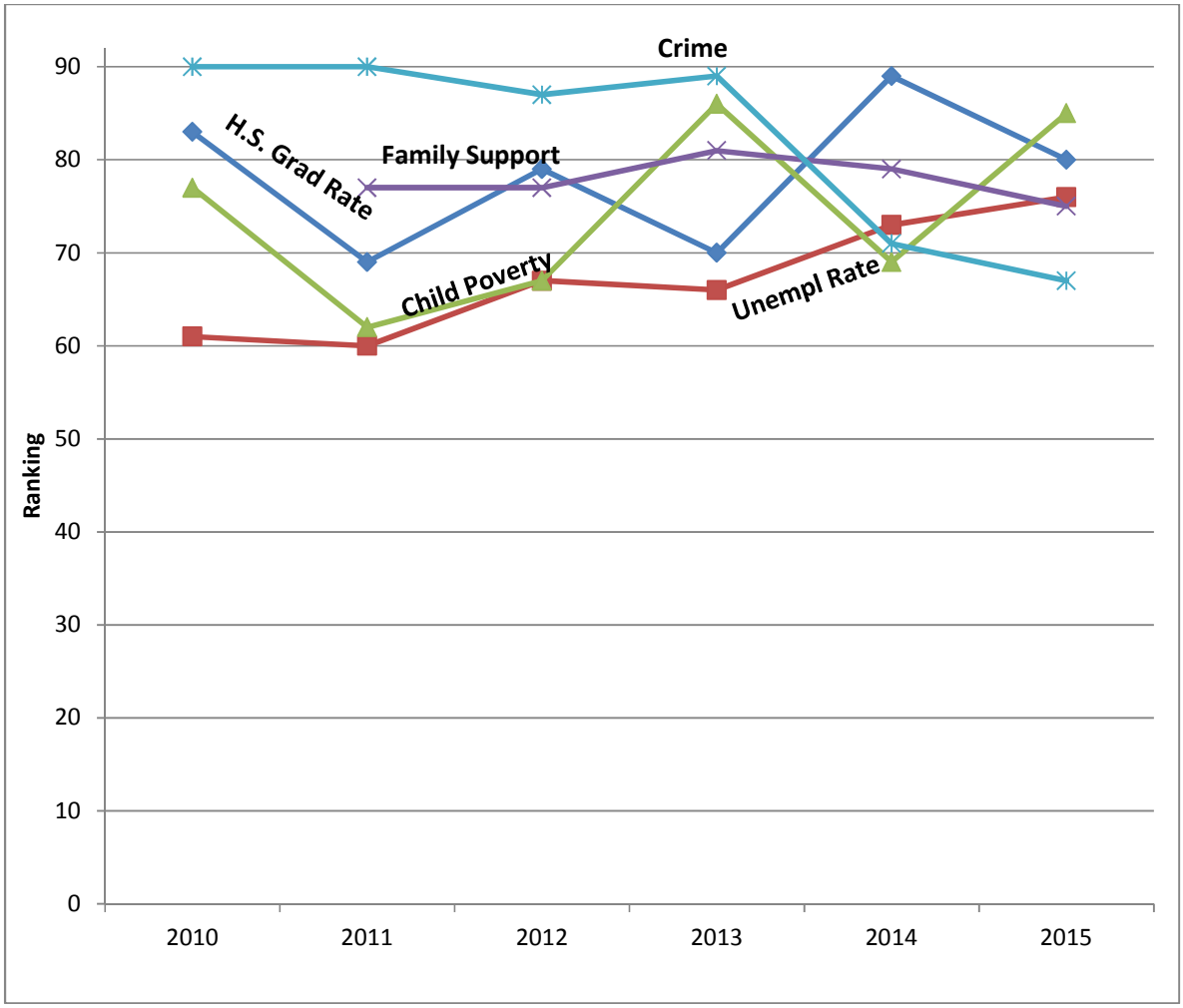
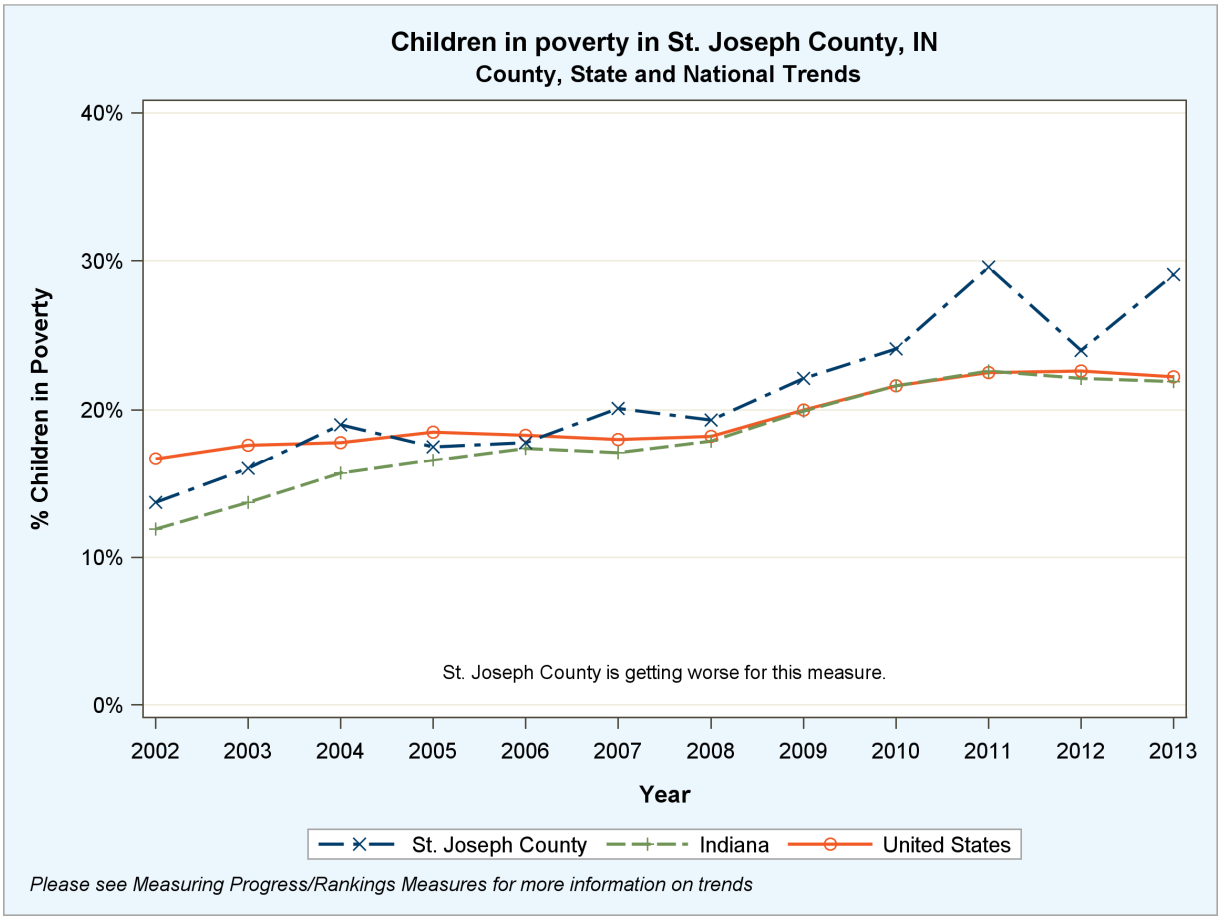
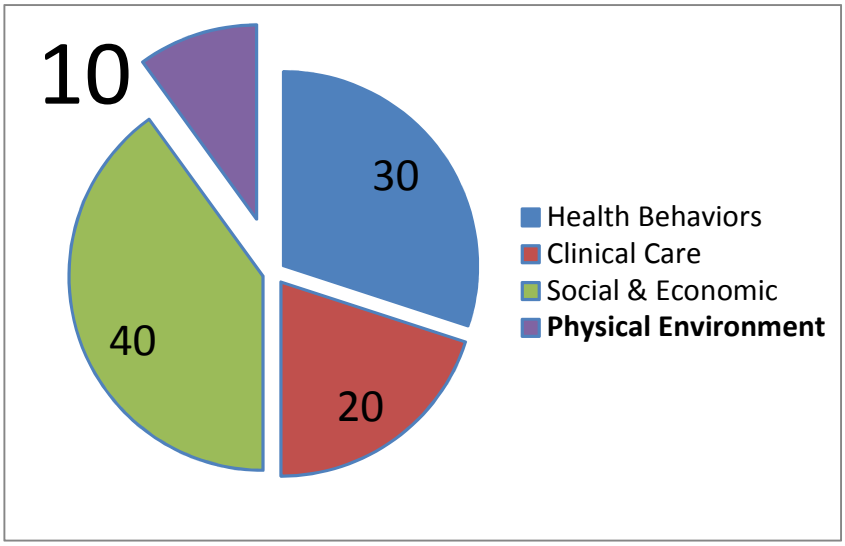


Figure AB. Percent of Children in Poverty. St. Joseph County, Indiana and U.S., 2002-2013.[50]



[50] Source: *County Health Rankings and Roadmaps.* http://www.countyhealthrankings.org/app/indiana/2015/rankings/st-joseph/county/outcomes/overall/snapshot

Physical Environmental Factors



Physical environmental factors account for 10 percent of total health factors and comprise measures regarding the quality of the air, water, transportation, and housing.

Two domains are covered:

Environmental Quality:

- Air pollution – average daily density of particulate matter (µg/m^3)
- Safe drinking water (% violations)

Housing & Transit

- Severe housing problems (%)
- Driving alone to work (%)
- Long commute – driving alone (%)

Clean air and water support healthy brain and body function, growth, and development. Air pollutants such as fine particulate matter, ground-level ozone, sulfur oxides, nitrogen oxides, carbon monoxide, and greenhouse gases can harm our health and the environment. Excess nitrogen and phosphorus run-off, medicines, chemicals, lead, and pesticides in water also pose threats to well-being and quality of life.[51]

- **Air Pollution.** The average daily amount of fine particulate matter in micrograms per cubic meter reported in 2015 with 2011 data was 13.1 compared with the State average of 13.5 and a national benchmark of 9.5. The County has been showing steady improvement in this air quality measure.

- **Safe Drinking Water.** The percentage of the population potentially exposed to water that exceeded a violation limit during FY2013-FY2014 in the County was 0. In Indiana, 4 percent of the population has unsafe drinking water while nationally the proportion was 7 percent.

[51] Environmental Protection Agency. About Air. http://www2.epa.gov/learn-issues/learn-about-air

Housing and Transportation.

- **Severe housing problems** is captured by the U.S. Department of Housing and Urban Development's (HUD) Comprehensive Housing Affordability Strategy (CHAS) data that measures the percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, or lack of kitchen or plumbing facilities. In the CHAS 2007-2011 data, 14 percent of housing in the County was considered "severe" giving the County a ranking of 74 out of 92 counties. The best county came in at 7 percent while the worst had 24 percent of its housing problems judged "severe."
- **Commuting to work.** The percentage of the Indiana population that drives alone to work ranges from 52 – 90 percent (2009-2013 data). In St. Joseph County, the figure was 82 percent according the Census Bureau's American Community Survey reports. A higher percentage means less use or lack of public transportation and, most likely, a greater reliance on the automobile.

  Our current transportation system has important impacts on our health. According to Frank et al, each additional hour spent in a car per day is associated with a 6 percent increase in the likelihood of obesity.[52] Among the St. Joseph County workers who commute in their car alone, the 21 percent that commute more than 30 minutes ("long commuters" 2009-2013 data) likely experience decreased physical activity, increased weight gain and higher blood pressure. About 30 percent of Hoosiers are "long commuters."

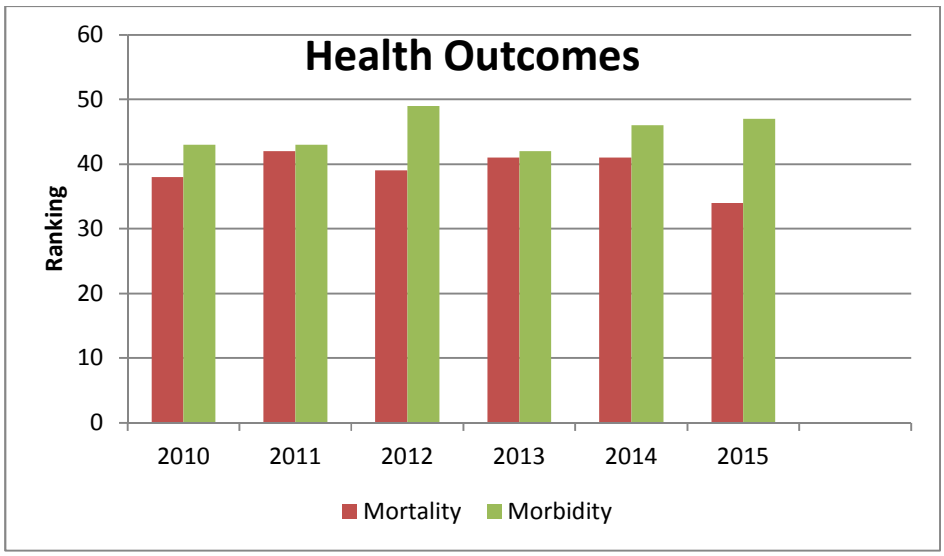
[52] Frank, Lawrence D., Martin A. Andresen, and Thomas L. Schmid. "Obesity relationships with community design, physical activity, and time spent in cars."*American Journal of Preventive Medicine* 27.2 (2004): 87-96.

Summary

Figure AD and AE illustrate the rankings of health outcomes and its subcomponents and health factors and its subcomponents respectively for St. Joseph County over the six reporting periods of 2010 - 2015. Amid 92 Counties in the State, with a ranking of 46 being a mid-point, any item greater than 46 as demarcated by the dashed line is a ranking beyond the median. That is at least a beginning point for a summary of these scores.

Figure AD illustrates the ranking of health outcomes weighted equally by mortality (premature mortality) and morbidity (quality of life) measures. Premature death rates as captured by years-of-potential-life- lost (YPLL) over the long-term indicates that the County's age-adjusted YPLL per 100,000 declined from 7,636 to 7,377 (down 3.4%) yet, while moving in the right direction, did not match the declines seen with other counties, the state or nation.

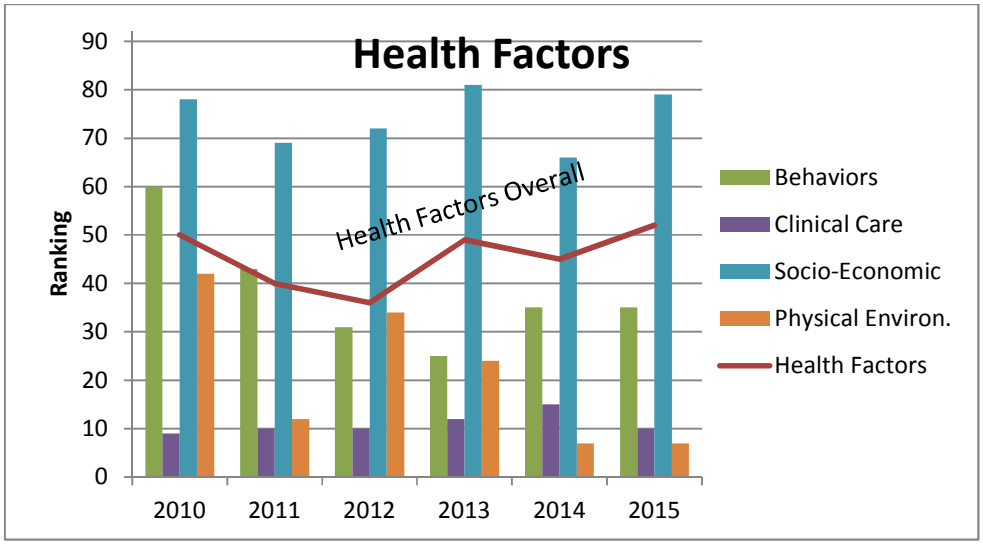
Figure AC. Summary of Rankings by Health Outcomes. St. Joseph County, 2010-2015



Still, these outcomes appear to driven more by issues relating to morbidity. The summative measure – Quality of Life – includes four subsets regarding self-measures on physical and mental health and one objective measure on low birthweight infants. All physical measures and low birthweight show regressions, while mental health indicated a clear improvement. However, since low birthweight has twice the weighting for morbidity as the other measures, the overall ranking for morbidity (quality of life) was in decline (See Figure F).

Health Factors (Figure AE) show a stubborn return to a prior status. Among the measures, socio-economic factors were weighted highest and there was little evidence of a trend toward improvement. Sharper declines from the 2010 Report were evident with improvements in the physical environment and heathy behaviors.

Figure AD. Summary of Rankings by Health Factors. St. Joseph County, 2010-2015



In summary, the one dimension that looms largest in terms of effects on public health and that stands out as a ranking most in need of improvement is the domain of the socio-economic variables which collectively may be fundamental causes of health status and health disparities. Despite improvements, high school graduation rates, the employment rate, the proportion of children in single-parent households, and the county's violent crime rate continue to be challenges needing improvement.

Areas to Explore

The following "Areas to Explore" are challenges our community may want to examine more closely. Accounting for the relative influence of each measure on health outcomes, a variety of techniques was used to identify the Health Factor measures for St. Joseph County that seem to have the greatest potential opportunity for improvement. Measures where there are meaningful differences between St. Joseph County's values and either Indiana's State average, the national benchmark, or the state average in the best state. As with the County's ranks, these Areas to Explore are just one starting point to consider toward improving health in our community. (See Appendix Table A1 for time periods covered by the data).

Figure AE. Suggested Areas to Explore[53]

Behaviors

- Adult smoking
- Adult obesity
- Alcohol-impaired driving deaths

Socio-Economic

- High School graduation rates
- Unemployment
- Children in poverty
- Children in single-parent households
- Violent crime rate

[53] Based on 2015 CountyHealthRankings report. Access at: http://www.countyhealthrankings.org/app/indiana/2015/rankings/st-joseph/county/factors/2/snapshot

APPENDIX

Table A1. Data Sources and Covered Periods for 2015 Report.

Tables A2.1 to A.2.8 What Works for Areas to Explore

Table A1. Data Sources and Covered Periods. 2015 Report

	Measure	Data Source *	Year(s)
HEALTH OUTCOMES			
Mortality	Premature death	NCHS	2010-2012
Morbidity	Quality of Life		
	Poor or fair health	BRFSS	2006-2012
	Poor physical health days	BRFSS	2006-2012
	Poor mental health days	BRFSS	2006-2012
	Low birth weight	NCHS	2006-2012
HEALTH FACTORS			
HEALTH BEHAVIORS			
Tobacco	Adult smoking	BRFSS	2006-2012
Diet and Exercise	Adult obesity	NCCDPHP	2011
	Food Environ. Index	USDA Food Environ. Atlas	2012
	Physical Inactivity	NCCDPHP	2011
	Access to exercise opportunities	Business Analyst, Delorme data	2010&2013
Alcohol Use	Excessive drinking	BRFSS	2006-2012
	Alcohol-impaired driving deaths	FARS	2009-2013
Sexual Activity	Sexually transmitted infections	NCHIV/AIDS	2012
	Teen birth rate	NCHS	2006-2012
CLINICAL CARE			
Access to Care	Uninsured adults under 65	SAHIE	2012
	Primary care physicians	AHRF, AMA	2012
	Dentists	AHRF/NPIDF	2013
	Mental Health Providers	CMS/NPIDF	2014
Quality of Care	Preventable hospital stays	Dartmouth Atlas of Healthcare	2012
	Diabetic screening	Dartmouth Atlas of Healthcare	2012
	Mammography screening	Dartmouth Atlas of Healthcare	2012
SOCIOECONOMIC FACTORS			
Education	High school graduation	Data.gov, NCES	2011-2012
	Some college	ACS	2009-2013
Employment	Unemployment	BLS	2013
Income	Children in poverty	SAIPE	2013
	Income inequality	ACS	2009-2013
Family and Social Support	Children in single-parent HH	ACS	2009-2013
	Social Associations	CBP	2012
Community Safety	Violent crime	UCR	2009-2011
	Injury deaths	CDC Wonder	2008-2012
PHYSICAL ENVIRONMENT			
Air & Water Quality	Air pollution-particulate matter days	CDC Wonder	2011
	Drinking Water Violations	Safe Drinking Water Info Sys	FY2013-14
Housing & Transit	Severe housing problems	CHAS Data	2007-2011
	Driving to work alone	ACS	2009-2013
	Long commute-driving alone	ACS	2009-2013

*Key to Table A1

Acronym	Agency
ACS	American Community Survey (Census Bureau)
BLS	Bureau of Labor Statistics
BRFSS	Behavioral Risk Factor Surveillance System
CHAS	Comprehensive Housing Affordability Strategy
EPA/CDC	Environmental Protection Agency/Center for Disease Control
CBP	County Business Patterns
HRSA	Health Resources & Services Administration
NCCDPHP	National Center for Chronic Disease Prevention and Health Promotion
NCES	National Center for Education Statistics
NCHHSTP	National Center for Hepatitis, HIV, STD and TB Prevention
NCHS	National Center for Health Statistics
SAHIE	Small Area Health Insurance Estimates, U.S. Census
SAIPE	Small Area Income and Poverty Estimates, U.S. Census
USDA	U.S. Department of Agriculture, Food Environmental Atlas
UCR	Uniform Crime Reporting, Federal Bureau of Investigation
ZBP	Census Zip Code Business Patterns

What Works

The following table includes policies and programs that have been determined to be effective in meeting various challenges to public health identified in the County Health Rankings. What are listed are just those policies and programs that have been judged to be "scientifically supported."[54]

By way of examples, just those areas identified as "Areas to Explore" (See Figure AF) are included and just five "scientifically supported programs or policies" are listed (where available).

[54] "Scientifically supported" are "most likely to make a difference. These strategies have been tested in many robust studies with consistently positive results."

Table A2.1. What Works for Tobacco Use Reduction

Area	Scientifically Supported Strategy
Adult Smoking	**Cell phone-based tobacco cessation interventions**
	"Mobile phone-based tobacco cessation interventions utilize interactive features such as text messages to deliver evidence-based information, strategies, and behavioral support directly to tobacco users interested in quitting." (1)
	Provider reminder systems: tobacco cessation
	"Provider reminder systems for tobacco cessation include efforts to identify clients who use tobacco products and to prompt providers to discuss and/or advise clients about quitting." (2)
	Increase funding for a comprehensive statewide tobacco program
	"Comprehensive statewide tobacco control programs use educational, clinical, regulatory, economic and social strategies to prevent tobacco uptake, promote quitting, eliminate secondhand smoke exposure, and reduce tobacco-related disparities." (3)
	Increase the price of tobacco.
	"Tobacco taxes increase the cost of using tobacco products through increased excise taxes. Such taxes can be levied at the state, federal, or municipal level." (4)
	Reduce cost for tobacco cessation therapy
	"Interventions that reduce the cost of tobacco cessation therapy aim to minimize financial barriers to therapies like nicotine replacement and behavioral therapies (e.g., cessation groups). Services may be provided through the health care system or clients may be reimbursed for their expenses." (5)

Notes:
(1) Whittaker R, McRobbie H, Bullen C, et al. Mobile phone-based interventions for smoking cessation. Cochrane Database Systematic Reviews. 2012;(11):CD006611
(2) Abrams DB, Graham AL, Levy DT, Mabry PL, Orleans CT. Boosting population quits through evidence-based cessation treatment and policy. American Journal of Preventive Medicine. 2010;38(3 Suppl):S351-63.
(3) Farrelly MC, Pechacek TF, Chaloupka FJ. The impact of tobacco control program expenditures on aggregate cigarette sales: 1981-2000. Journal of Health Economics. 2003;22(5):843-59.
(4) "Reducing tobacco use and second hand smoke," The Community Guide. http://www.thecommunityguide.org/tobacco/index.html
(5) Reda A, Kotz D, Evers S, van Schayck C. Healthcare financing systems for increasing the use of tobacco dependence treatment. Cochrane Database of Systematic Reviews. 2012;(6):CD004305.

Table A2.2 What Works for Obesity

Area	Scientifically Supported Strategy
Obesity	**Breastfeeding promotion programs**
	"Breastfeeding promotion programs aim to increase breastfeeding initiation, exclusive breastfeeding, and duration of breastfeeding." (1)
	Nutrition and physical activity interventions in preschool and child care
	"Nutrition and physical activity interventions in preschool and child care offer young children opportunities to eat healthy foods and engage in physical activity throughout the day." (2)
	School Breakfast Programs
	"School breakfast programs offer students a nutritious breakfast, often incorporating a variety of healthy and culturally relevant choices. Breakfast can be served in the cafeteria before school starts, from grab and go carts in hallways, or in classrooms as the school day begins." (3)
	Prescriptions for Physical Activity.
	"Prescriptions for physical activity and exercise are one way for primary care physicians and other health care providers to give patients physical activity advice and information. There is strong evidence that medical prescriptions for physical activity increase physical activity and physical fitness." (4)
	Fitness Programs in Community Settings
	"Fitness programs can be offered in a variety of community settings including fitness, community, senior, and community wellness centers. Program offerings vary by location, but often include exercise classes such as spinning/indoor cycling, aerobic dance classes, Zumba, Pilates, Yoga, and Tai Chi." (5)

Notes:

(1) Renfrew M, McCormick F, Wade A, Quinn B, Dowswell T. Support for healthy breastfeeding mothers with healthy term babies. Cochrane Database of Systematic Reviews. 2012;(5):CD001141

(2) Grantham-McGregor, S., Fernald, L, Kagawa, R, and Walker, S. Effects of integrated child development and nutrition interventions on child development and nutritional status. Ann. Of the New York Acad of Sci. 2014; (1308): 11-32.

(3) Frisvold DE. Nutrition and cognitive achievement: An evaluation of the School Breakfast Program. Journal of Public Economics. 2015:124:91-104

(4) Müller-Riemenschneider F, Reinhold T, Nocon M, Willich SN. Long-term effectiveness of interventions promoting physical activity: A systematic review. Preventive Medicine. 2008;47(4):354-368.

(5) Holland SK, Greenberg J, Tidwell L, et al. Community-based health coaching, exercise, and health service utilization. Journal of Aging and Health. 2005;17(6):697-716.

Table A2.3. What Works for Improving Alcohol-Impaired Driving Deaths

Area	Scientifically Supported Strategy
Alcohol-Impaired Driving Deaths	**BAC Laws**
	"Blood alcohol concentration (BAC) laws set legal limits for driver's blood alcohol concentration (BAC). In the United States, lower BAC limits are generally set for drivers under the legal drinking age." (1)
	Family Treatment Drug Courts
	"Family treatment drug courts (FTDC) treat parents involved in the child welfare system who may lose custody of their children due to substance abuse. FTDCs include intensive judicial monitoring, drug treatment and other wrap-around services, frequent drug testing, and rewards and sanctions linked to program compliance." (2)
	Drug Courts
	"Drug courts are specialized courts that offer criminal offenders with drug dependency problems an alternative to adjudication or incarceration. These courts intensively supervise offenders, require drug testing and treatment, and impose graduated sanctions for failed drug tests or program non-compliance. Drug courts can specialize in subpopulations such as juvenile offenders or adults charged with drunk driving." (3)
	Maintain Current Drinking Age Laws
	"Minimum legal drinking age (MLDA) laws specify an age below which the purchase or public consumption of alcoholic beverages is illegal. In the United States, the age in all states is currently 21 years." (4)
	Ignition Interlock Devices
	"Ignition interlocks are devices that can be installed in vehicles to prevent operation by a driver who has a blood alcohol concentration (BAC) above a specified level. Interlocks are most often installed in vehicles of people who have been convicted of alcohol-impaired driving. Interlocks can be mandated by courts or offered by state licensing agencies as an alternative to a suspended driver's license, often as a provision of a restricted license." (5)

Notes:

(1) Motor Vehicle-Related Injury Prevention: Reducing Alcohol-Impaired Driving. http://www.thecommunityguide.org/mvoi/AID/index.html

(2) Bruns EJ, Pullman MD, Weathers ES, Wirschem ML, Murphy JK. Effects of a multidisciplinary family treatment drug court on child and family outcomes: Results of a quasi-experimental study. Child Maltreatment. 2012;17(3):218-30.

(3) Mitchell O, Wilson D, Eggers A, and MacKenzie D. Drug Courts' Effects on Criminal Offending for Juveniles and Adults. The Campbell Library. 02.02.2012. http://campbellcollaboration.org/lib/project/74/

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Table A2.4. What Works for Improving High School Graduation Rates

Area	Scientifically Supported Strategy
High School Graduation	**School based social and emotional instruction**
	"School-based social and emotional instruction aims to teach children skills such as recognizing and managing emotions and setting and reaching goals, as well as increasing ability to appreciate others' perspectives, establish and maintain relationships, and handle interpersonal situations constructively." (1)
	School-wide Positive Behavioral Interventions and Supports (SWPBIS)
	"School-wide Positive Behavioral Interventions and Supports (SWPBIS) is the first tier of the three tier Positive Behavioral Interventions and Supports (PBIS) school-wide behavioral system. In schools using SWPBIS, staff teams establish three to five positively stated behavior expectations. These expectations are taught to all students and staff and reinforced through student rewards such as prizes or privileges." (2)
	No excuses charter school model
	"No Excuses charter schools focus heavily on reading and math achievement, enforce high behavioral expectations through a formal discipline system, and substantially increase instruction time relative to traditional public schools." (3)
	Enhance instruction with educational technology
	"A variety of electronic tools (e.g., computers, mobile devices, internet access, interactive white boards) can help educators deliver learning materials and support learning in otherwise traditional classrooms. Enhancing instruction entails incorporating technology into instruction, rather than simply making it available to students." (4)
	Targeted truancy interventions
	"Targeted truancy interventions focus only on students who have demonstrated chronic truancy. Such programs can be implemented by schools, courts, community or police agencies, or a collaboration of these organizations." (5)

Notes:

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Table A2.5. What Works for Unemployment

Area	Scientifically Supported Strategy
Unemployment	**Vocational Training for Adults**
	"Vocational training supports acquisition of job-specific skills through education, certification programs, or on-the-job training. Programs may also include training and assistance in job searches, personal development resources, and other comprehensive support services (e.g., child care during training). . ." (1)
	Flexible Scheduling
	"Flexible scheduling is characterized by worker control over some aspect of their schedule. This flexibility can include self-scheduling of shift work, sometimes used in nursing and manufacturing positions; flex time, where workers set their own start and end times around a core schedule; compressed work weeks, such as working 10 hours a day for four days rather five 8-hour shifts; and partial retirement for older workers." (2).
	Transitional Jobs
	"Transitional jobs are time-limited, subsidized, paid jobs intended to provide a bridge to unsubsidized employment. These positions are generally available to hard–to-employ individuals, such as those with limited or no job history, Temporary Assistance for Needy Families (TANF) recipients, or individuals with criminal records." (3).

Notes:

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(3) Maxwell N, and Rotz D. Building the employment and self-satisfaction of the disadvantaged: The potential of Social Enterprises. Mathematica Policy Research. Working paper 35. http://www.mathematica-mpr.com/our-publications-and-findings/publications/working-paper-building-the-employment-and-economic-selfsufficiency-of-the-disadvantaged

Table A2.6. What Works for Children in Poverty

Area	Scientifically Supported Strategy
Childhood Poverty	**Increases the Earned Income Tax Credit (EITC)**
	"The Earned Income Tax Credit (EITC) is a refundable income tax credit for low to moderate income working individuals and families. EITCs are offered by the federal government and many state governments." (1)
	Full child support pass-through and disregard
	"Families eligible for Temporary Assistance for Needy Families (TANF) are required to assign their rights to child support to the state in order to receive TANF benefits. States may retain child support payments collected on behalf of TANF families to offset the cost of welfare payments or may pass some or all collected funds to the custodial parent. States may also disregard some or all of a pass-through amount when determining TANF participants' benefits so that portion of the child support is not considered in benefit calculations. Full pass-through policies allow the custodial parent (usually the mother) to receive all child support paid; no portion is retained by the state." (2)
	Increase Funding for Child Care Subsidy
	"Child care subsidy programs provide financial assistance to working parents or, in some cases, parents attending school, to cover the costs of certified in-home or center-based child care. Child care subsidies are usually available to low income families; eligibility criteria vary by state." (3)

Notes:

(1) Hotz VJ and Schotz JK. The Earned Income Tax Credit. National Bureau of Economic Research. Working Paper Number 8078, January 2001. http://www.nber.org/papers/w8078

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(3) Ahn H. Child care subsidy, child care costs, and employment of low-income single mothers. Children and Youth Services Review. 2012;34(2):379-87.

Table A2.7. What Works for Children in Single-Parent Households

Area	Scientifically Supported Strategy
Single-Parent Households	**Early Childhood Home Visiting Programs**
	"In early childhood home visiting programs, trained personnel visit parents and children in their homes. Visitors provide parents with information, support, and/or training regarding child health, development, and care. Programs vary widely . . . [and] often begin prenatally and continue during the child's first two years of life . . . ." (1)
	Group-Based Parenting Programs
	"Families eligible for Temporary Assistance for Needy Families (TANF) are required to assign their rights to child support to the state in order to receive TANF benefits. States may retain child support payments collected on behalf of TANF families to offset the cost of welfare payments or may pass some or all collected funds to the custodial parent. States may also disregard some or all of a pass-through amount when determining TANF participants' benefits so that portion of the child support is not considered in benefit calculations. Full pass-through policies allow the custodial parent (usually the mother) to receive all child support paid; no portion is retained by the state." (2)
	Nurse-Family Partnership (NFP)
	"The Nurse-Family Partnership (NFP) is a voluntary home-visiting program that supports low income, first-time mothers and their babies. Home visits by registered nurses begin during pregnancy and continue through a child's second birthday. The program aims to improve prenatal, birth, and early childhood outcomes." (3)

Notes:

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Table A2.8. What Works for Reducing Violent Crime

Area	Scientifically Supported Strategy
Violent Crime Reduction	**Preschool programs with family support services**
	"Preschool programs with family support services are programs to enhance the cognitive and social development of low income children prior to kindergarten. These intensive programs promote healthy child development, school readiness, and parental skill development. Such programs usually include high quality preschool and often offer additional services such as home visiting, health, and family services." (1)
	Focused Deterrence Strategies
	"Law enforcement and community agencies using focused deterrence strategies (i.e., pulling levers) unite to target a particular crime in a community. Program implementers research typical offenders, behavior patterns, and context of offense then use all legal tools (levers) against offenders or groups committing the target crime and direct social services to offenders. These changes are communicated to offenders through mandatory meetings with law enforcement, service providers, and community figures." (2)
	Drug Courts
	"Drug courts are specialized courts that offer criminal offenders with drug dependency problems an alternative to adjudication or incarceration. These courts intensively supervise offenders, require drug testing and treatment . . . and impose graduated sanctions for failed drug tests or program non-compliance . . . Drug courts can specialize in subpopulations such as juvenile offenders or adults charged with drunk driving." (3)
	Early Childhood Home Visiting Programs
	"In early childhood home visiting programs, trained personnel visit parents and children in their homes. Visitors provide parents with information, support, and/or training regarding child health, development, and care. Programs vary widely . . . [and] often begin prenatally and continue during the child's first two years of life . . . ." (4).
	Cognitive-behavioral therapy (CBT): Recidivism
	"Cognitive-behavioral therapy (CBT) helps clients discover and change the thought processes that lead to maladaptive behavior (Wilson 2005). Programs for offenders emphasize personal accountability and help offenders understand the thoughts and choices that led to their crimes. Offenders learn alternative behaviors and thought processes." (5)

Notes:
(1) Manning M, Homel R, Smith C. A meta-analysis of the effects of early developmental prevention programs in at-risk populations on non-health outcomes in adolescence. Children and Youth Services Review. 2010;32(4):506-19.
(2) Braga A and Weisburd D. The effects of "Pulling Levers:" Focused Deterrence Strategies on Crime. The Cambell Library 03.04.2012. http://campbellcollaboration.org/lib/project/96/
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(4) Selph SS, et al. Behavioral Interventions and Counseling to Prevent Child Abuse and Neglect: A Systematic Review to Update the U.S. Preventive Services Task Force Recommendation. Annals of Internal Medicine. 5 Feb 2013, vol 158, no. 3. http://annals.org/article.aspx?articleid=1558515
(5) Lipsey M et al. Effects of Cognitive-Behavioral Programs for Criminal Offenders: A Systematic Review. The Campbell Library. 13.08.2007. http://campbellcollaboration.org/lib/project/29/