

# 2018 Community Health Needs Assessment Report

## Boone County, Indiana

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*Prepared for:*  
Witham Health Services

*By:*  
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# Introduction



**Professional Research Consultants, Inc.**

## Project Overview

### Project Goals

This Community Health Needs Assessment, a follow-up to similar studies conducted in 2012 and 2015, is a systematic, data-driven approach to determining the health status, behaviors and needs of residents in Boone County, Indiana, the service area of Witham Health Services. Subsequently, this information may be used to inform decisions and guide efforts to improve community health and wellness.

A Community Health Needs Assessment provides information so that communities may identify issues of greatest concern and decide to commit resources to those areas, thereby making the greatest possible impact on community health status. This Community Health Needs Assessment will serve as a tool toward reaching three basic goals:

- **To improve residents' health status, increase their life spans, and elevate their overall quality of life.** A healthy community is not only one where its residents suffer little from physical and mental illness, but also one where its residents enjoy a high quality of life.
- **To reduce the health disparities among residents.** By gathering demographic information along with health status and behavior data, it will be possible to identify population segments that are most at-risk for various diseases and injuries. Intervention plans aimed at targeting these individuals may then be developed to combat some of the socio-economic factors that historically have had a negative impact on residents' health.
- **To increase accessibility to preventive services for all community residents.** More accessible preventive services will prove beneficial in accomplishing the first goal (improving health status, increasing life spans, and elevating the quality of life), as well as lowering the costs associated with caring for late-stage diseases resulting from a lack of preventive care.

This assessment was conducted on behalf of Witham Health Services by Professional Research Consultants, Inc. (PRC). PRC is a nationally recognized healthcare consulting firm with extensive experience conducting Community Health Needs Assessments in hundreds of communities across the United States since 1994.



## Methodology

This assessment incorporates data from both quantitative and qualitative sources. Quantitative data input includes primary research (the PRC Community Health Survey) and secondary research (vital statistics and other existing health-related data); these quantitative components allow for trending and comparison to benchmark data at the state and national levels. Qualitative data input includes primary research gathered through an Online Key Informant Survey.

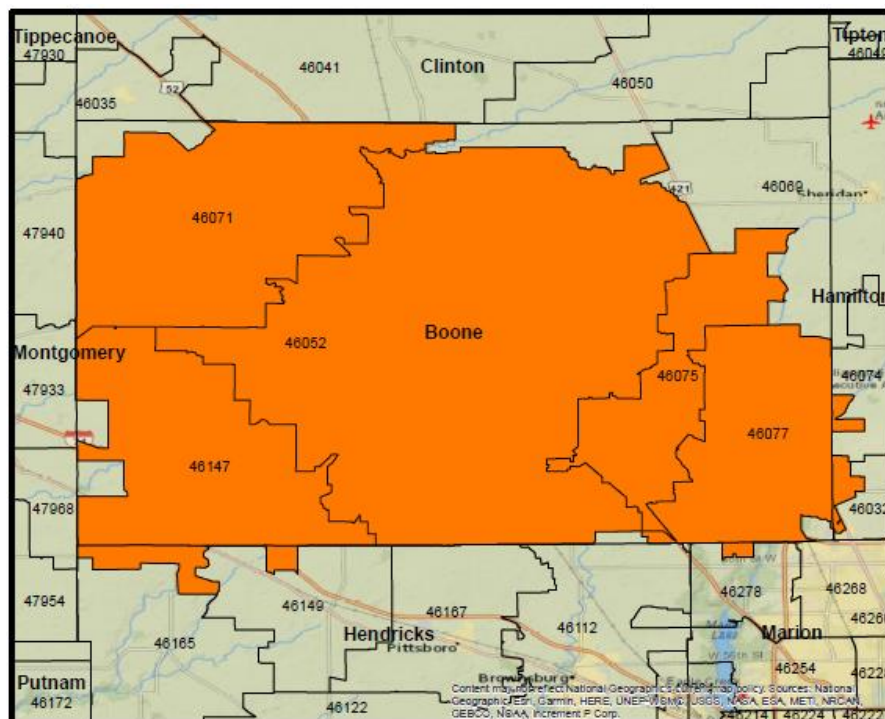
### PRC Community Health Survey

#### *Survey Instrument*

The survey instrument used for this study is based largely on the Centers for Disease Control and Prevention (CDC) Behavioral Risk Factor Surveillance System (BRFSS), as well as various other public health surveys and customized questions addressing gaps in indicator data relative to health promotion and disease prevention objectives and other recognized health issues. The final survey instrument was developed by Witham Health Services and PRC and is similar to the previous surveys used in the region, allowing for data trending.

#### *Community Defined for This Assessment*

The study area for the survey effort (referred to as the “Boone County” in this report) is defined as each of the residential ZIP Codes principally associated with the county. This area represents the hospital’s primary service area and was determined based on the Boone County ZIP Codes of residence of Witham Health Services’ patient population, as illustrated in the following map.



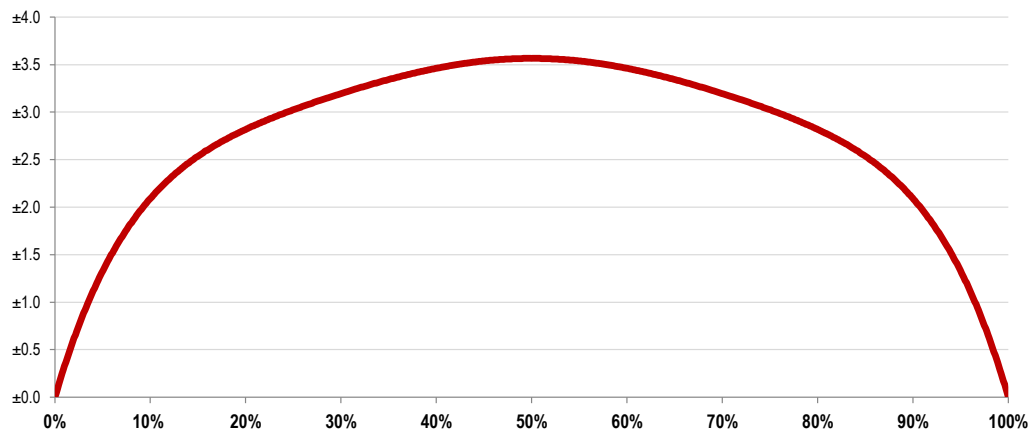
### *Sample Approach & Design*

A precise and carefully executed methodology is critical in asserting the validity of the results gathered in the PRC Community Health Survey. Thus, to ensure the best representation of the population surveyed, a telephone interview methodology — one that incorporates both landline and cell phone interviews — was employed. The primary advantages of telephone interviewing are timeliness, efficiency, and random-selection capabilities.

The sample design used for this effort consisted of a random sample of 752 individuals age 18 and older in Boone County. Once the interviews were completed, these were weighted in proportion to the actual population distribution so as to appropriately represent Boone County as a whole. All administration of the surveys, data collection and data analysis was conducted by PRC.

For statistical purposes, the maximum rate of error associated with a sample size of 752 respondents is  $\pm 3.5\%$  at the 95 percent confidence level.

### **Expected Error Ranges for a Sample of 752 Respondents at the 95 Percent Level of Confidence**



- Note:
- The "response rate" (the percentage of a population giving a particular response) determines the error rate associated with that response. A "95 percent level of confidence" indicates that responses would fall within the expected error range on 95 out of 100 trials.
- Examples:
- If 10% of the sample of 752 respondents answered a certain question with a "yes," it can be asserted that between 7.9% and 12.1% ( $10\% \pm 2.1\%$ ) of the total population would offer this response.
  - If 50% of respondents said "yes," one could be certain with a 95 percent level of confidence that between 46.5% and 53.5% ( $50\% \pm 3.5\%$ ) of the total population would respond "yes" if asked this question.

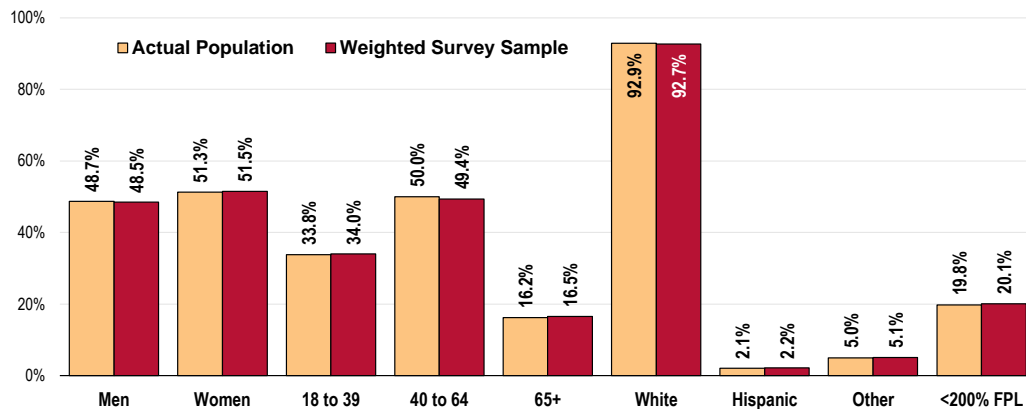
### *Sample Characteristics*

To accurately represent the population studied, PRC strives to minimize bias through application of a proven telephone methodology and random-selection techniques. While this random sampling of the population produces a highly representative sample, it is a common and preferred practice to "weight" the raw data to improve this representativeness even further. This is accomplished by adjusting the results of a random sample to match the geographic distribution and demographic characteristics of the population surveyed (poststratification), so as to eliminate any naturally occurring bias. Specifically, once the raw

data are gathered, respondents are examined by key demographic characteristics (namely sex, age, race, ethnicity, and poverty status), and a statistical application package applies weighting variables that produce a sample which more closely matches the population for these characteristics. Thus, while the integrity of each individual’s responses is maintained, one respondent’s responses may contribute to the whole the same weight as, for example, 1.1 respondents. Another respondent, whose demographic characteristics may have been slightly oversampled, may contribute the same weight as 0.9 respondents.

The following chart outlines the characteristics of the Boone County sample for key demographic variables, compared to actual population characteristics revealed in census data. [Note that the sample consisted solely of area residents age 18 and older; data on children were given by proxy by the person most responsible for that child’s healthcare needs, and these children are not represented demographically in this chart.]

### Population & Survey Sample Characteristics (Boone County, 2018)



Sources: • Census 2010, Summary File 3 (SF 3). US Census Bureau.  
• 2018 PRC Community Health Survey, Professional Research Consultants, Inc.

Further note that the poverty descriptions and segmentation used in this report are based on administrative poverty thresholds determined by the US Department of Health & Human Services. These guidelines define poverty status by household income level and number of persons in the household (e.g., the 2018 guidelines place the poverty threshold for a family of four at \$25,100 annual household income or lower). In sample segmentation: **“low income”** refers to community members living in a household with defined poverty status or living just above the poverty level, earning up to twice (<200% of) the poverty threshold; **“mid/high income”** refers to those households living on incomes which are twice or more (≥200% of) the federal poverty level.

The sample design and the quality control procedures used in the data collection ensure that the sample is representative. Thus, the findings may be generalized to the total population of community members in the defined area with a high degree of confidence.

### Online Key Informant Survey

To solicit input from key informants, those individuals who have a broad interest in the health of the community, an Online Key Informant Survey also was implemented as part of this process. A list of recommended participants was provided by Witham Health Services; this list included names and contact information for physicians, public health representatives, other health professionals, social service providers, and a variety of other community leaders. Potential participants were chosen because of their ability to identify primary concerns of the populations with whom they work, as well as of the community overall.

Key informants were contacted by email, introducing the purpose of the survey and providing a link to take the survey online; reminder emails were sent as needed to increase participation. In all, 54 community stakeholders took part in the Online Key Informant Survey, as outlined below:

Online Key Informant Survey Participation		
Key Informant Type	Number Invited	Number Participating
Physicians	42	9
Public Health Representatives	5	5
Other Health Providers	38	14
Social Services Providers	16f	9
Other Community Leaders	50	17

Final participation included representatives of the organizations outlined below.

- American Health Network
- Boone Circuit Court
- Boone County Cancer Society
- Boone County Commissioners
- Boone County Council
- Boone County Health Department
- Boone County Mentoring Partnership
- Boone County Probation
- Boone County Senior Services, Inc. (BCSSI)
- Boone County WIC
- Boys & Girls Club of Boone County
- Drug Free Boone County
- Excel Home Health Care, LLC
- Excel Personal Services, LLC
- Hattie B. Stokes Elementary
- Integrative Wellness, LLC (InWell)
- Lebanon Community Schools
- Mental Health America of Boone County
- Purdue Extension Boone County
- Sylvia's Child Advocacy Center
- The Arc of Greater Boone County
- Traders Point Christian Schools
- Witham Health Services
- Zionsville Eyecare

Through this process, input was gathered from several individuals whose organizations work with low-income, minority, or other medically underserved populations.

**Minority/medically underserved populations represented:**

*African-Americans, Asians, cancer patients, children, CHIP recipients, those with disabilities, victims of domestic violence, the elderly, English as a Second Language, Hispanics, the homeless, immigrants/refugees, those with low education, the low-income, Medicare/Medicaid recipients, the mentally ill, Parkinson's patients, post-partum mothers, pregnant women, substance abusers, the undocumented, the unemployed/underemployed*

In the online survey, key informants were asked to rate the degree to which various health issues are a problem in their own community. Follow-up questions asked them to describe why they identify problem areas as such and how these might better be addressed. Results of their ratings, as well as their verbatim comments, are included throughout this report as they relate to the various other data presented.

*NOTE: These findings represent qualitative rather than quantitative data. The Online Key Informant Survey was designed to gather input regarding participants' opinions and perceptions of the health needs of the residents in the area. Thus, these findings are not necessarily based on fact.*

**Public Health, Vital Statistics & Other Data**

A variety of existing (secondary) data sources was consulted to complement the research quality of this Community Health Needs Assessment. Data for Boone County were obtained from the following sources (specific citations are included with the graphs throughout this report):

- Center for Applied Research and Environmental Systems (CARES)
- Centers for Disease Control & Prevention, Office of Infectious Disease, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
- Centers for Disease Control & Prevention, Office of Public Health Science Services, Center for Surveillance, Epidemiology and Laboratory Services, Division of Health Informatics and Surveillance (DHIS)
- Centers for Disease Control & Prevention, Office of Public Health Science Services, National Center for Health Statistics
- Community Commons
- ESRI ArcGIS Map Gallery
- Indiana Youth Institute, Indiana State Department of Health
- National Cancer Institute, State Cancer Profiles
- OpenStreetMap (OSM)
- US Census Bureau, American Community Survey
- US Census Bureau, County Business Patterns
- US Census Bureau, Decennial Census
- US Department of Agriculture, Economic Research Service

- US Department of Health & Human Services
- US Department of Health & Human Services, Health Resources and Services Administration (HRSA)
- US Department of Justice, Federal Bureau of Investigation
- US Department of Labor, Bureau of Labor Statistics

## Benchmark Data

### *Trending*

Similar surveys were administered in Boone County in 2012 and 2015 by PRC on behalf of Witham Health Services. Trending data, as revealed by comparison to prior survey results, are provided throughout this report whenever available. Historical data for secondary data indicators are also included for the purposes of trending.

### *Indiana Risk Factor Data*

Statewide risk factor data are provided where available as an additional benchmark against which to compare local survey findings; these data represent the most recent *BRFSS (Behavioral Risk Factor Surveillance System) Prevalence and Trends Data* published online by the Centers for Disease Control and Prevention. State-level vital statistics are also provided for comparison of secondary data indicators.

### *Nationwide Risk Factor Data*

Nationwide risk factor data, which are also provided in comparison charts, are taken from the *2017 PRC National Health Survey*; the methodological approach for the national study is similar to that employed in this assessment, and these data may be generalized to the US population with a high degree of confidence. National-level vital statistics are also provided for comparison of secondary data indicators.

### *Healthy People 2020*

Healthy People provides science-based, 10-year national objectives for improving the health of all Americans. For three decades, Healthy People has established benchmarks and monitored progress over time in order to:



- Encourage collaborations across communities and sectors.
- Empower individuals toward making informed health decisions.
- Measure the impact of prevention activities.

Healthy People strives to:

- Identify nationwide health improvement priorities.
- Increase public awareness and understanding of the determinants of health, disease, and disability and the opportunities for progress.
- Provide measurable objectives and goals that are applicable at the national, State, and local levels.

- Engage multiple sectors to take actions to strengthen policies and improve practices that are driven by the best available evidence and knowledge.
- Identify critical research, evaluation, and data collection needs.

### **Determining Significance**

Differences noted in this report represent those determined to be significant. For survey-derived indicators (which are subject to sampling error), statistical significance is determined based on confidence intervals (at the 95 percent confidence level), using question-specific samples and response rates. For the purpose of this report, “significance” of secondary data indicators (which do not carry sampling error but might be subject to reporting error) is determined by a 15% variation from the comparative measure.

### **Information Gaps**

While this assessment is quite comprehensive, it cannot measure all possible aspects of health in the community, nor can it adequately represent all possible populations of interest. It must be recognized that these information gaps might in some ways limit the ability to assess all of the community’s health needs.

For example, certain population groups — such as the homeless, institutionalized persons, or those who only speak a language other than English or Spanish — are not represented in the survey data. Other population groups — for example, pregnant women, lesbian/gay/bisexual/transgender residents, undocumented residents, and members of certain racial/ethnic or immigrant groups — might not be identifiable or might not be represented in numbers sufficient for independent analyses.

In terms of content, this assessment was designed to provide a comprehensive and broad picture of the health of the overall community. However, there are certainly medical conditions that are not specifically addressed.

## IRS Form 990, Schedule H Compliance

For non-profit hospitals, a Community Health Needs Assessment (CHNA) also serves to satisfy certain requirements of tax reporting, pursuant to provisions of the Patient Protection & Affordable Care Act of 2010. To understand which elements of this report relate to those requested as part of hospitals' reporting on IRS Form 990 Schedule H, the following table cross-references related sections.

IRS Form 990, Schedule H (2017)	See Report Page
<b>Part V Section B Line 3a</b> <i>A definition of the community served by the hospital facility</i>	9
<b>Part V Section B Line 3b</b> <i>Demographics of the community</i>	43
<b>Part V Section B Line 3c</b> <i>Existing health care facilities and resources within the community that are available to respond to the health needs of the community</i>	223
<b>Part V Section B Line 3d</b> <i>How data was obtained</i>	9
<b>Part V Section B Line 3e</b> <i>The significant health needs of the community</i>	17
<b>Part V Section B Line 3f</b> <i>Primary and chronic disease needs and other health issues of uninsured persons, low-income persons, and minority groups</i>	Addressed Throughout
<b>Part V Section B Line 3g</b> <i>The process for identifying and prioritizing community health needs and services to meet the community health needs</i>	18
<b>Part V Section B Line 3h</b> <i>The process for consulting with persons representing the community's interests</i>	12
<b>Part V Section B Line 3i</b> <i>The impact of any actions taken to address the significant health needs identified in the hospital facility's prior CHNA(s)</i>	226



## Summary of Findings

### Significant Health Needs of the Community

The following “Areas of Opportunity” represent the significant health needs of the community, based on the information gathered through this Community Health Needs Assessment and the guidelines set forth in Healthy People 2020. From these data, opportunities for health improvement exist in the area with regard to the following health issues (see also the summary tables presented in the following section).

The Areas of Opportunity were determined after consideration of various criteria, including: standing in comparison with benchmark data (particularly national data); identified trends; the preponderance of significant findings within topic areas; the magnitude of the issue in terms of the number of persons affected; and the potential health impact of a given issue. These also take into account those issues of greatest concern to the community stakeholders (key informants) giving input to this process.

Areas of Opportunity Identified Through This Assessment	
<b>Access to Healthcare Services</b>	<ul style="list-style-type: none"> <li>● Barriers to Access               <ul style="list-style-type: none"> <li>○ Inconvenient Office Hours</li> <li>○ Appointment Availability</li> <li>○ Finding a Physician</li> <li>○ Lack of Transportation</li> </ul> </li> <li>● Specific Source of Ongoing Medical Care</li> <li>● Routine Medical Care (Children)</li> </ul>
<b>Dementia, Including Alzheimer's Disease</b>	<ul style="list-style-type: none"> <li>● Alzheimer's Disease Deaths</li> </ul>
<b>Diabetes</b>	<ul style="list-style-type: none"> <li>● Diabetes Deaths</li> <li>● Diabetes ranked as a top concern in the Online Key Informant Survey.</li> </ul>
<b>Heart Disease &amp; Stroke</b>	<ul style="list-style-type: none"> <li>● Cardiovascular disease is a leading cause of death.</li> <li>● Stroke Deaths</li> <li>● Stroke Prevalence</li> <li>● High Blood Pressure Management</li> </ul>
<b>Injury &amp; Violence</b>	<ul style="list-style-type: none"> <li>● Unintentional Injury Deaths</li> </ul>
<b>Mental Health</b>	<ul style="list-style-type: none"> <li>● “Fair/Poor” Mental Health</li> <li>● Diagnosed Depression</li> <li>● Symptoms of Chronic Depression</li> <li>● Receiving Treatment for Mental Health</li> <li>● Suicide Deaths</li> <li>● Mental Health ranked as a top concern in the Online Key Informant Survey.</li> </ul>

-continued on next page-

<b>Areas of Opportunity (continued)</b>	
<b>Nutrition, Physical Activity, &amp; Weight</b>	<ul style="list-style-type: none"> <li>• Fruit/Vegetable Consumption</li> <li>• Difficulty Accessing Fresh Produce</li> <li>• Food Insecurity</li> <li>• Overweight &amp; Obesity [Adults]</li> <li>• Trying to Lose Weight [Overweight Adults]</li> <li>• Leisure-Time Physical Activity</li> <li>• Children’s Physical Activity</li> <li>• Children’s Screen Time</li> <li>• Used a Food Bank/Received a Free Meal</li> <li>• Availability of Indoor Recreation Spaces</li> <li>• Availability of Year-Round Recreation for Youth</li> <li>• Nutrition, Physical Activity, &amp; Weight ranked as a top concern in the Online Key Informant Survey.</li> </ul>
<b>Oral Health</b>	<ul style="list-style-type: none"> <li>• Children’s Dental Care</li> </ul>
<b>Potentially Disabling Conditions</b>	<ul style="list-style-type: none"> <li>• Osteoporosis Prevalence [Age 50+]</li> <li>• Sciatica/Chronic Back Pain Prevalence</li> <li>• Caregiving</li> <li>• Chronic Lower Respiratory Disease (CLRD) Deaths</li> <li>• Asthma Prevalence [Adults]</li> <li>• Chronic Obstructive Pulmonary Disease (COPD) Prevalence</li> <li>• Pneumonia/Influenza Deaths</li> </ul>
<b>Substance Abuse</b>	<ul style="list-style-type: none"> <li>• Excessive Drinking</li> <li>• Drinking &amp; Driving</li> <li>• Unintentional Drug-Related Deaths</li> <li>• Illicit Drug Use</li> <li>• Substance Abuse ranked as a top concern in the Online Key Informant Survey.</li> </ul>
<b>Tobacco Use</b>	<ul style="list-style-type: none"> <li>• Use of Vaping Products</li> <li>• Tobacco Use ranked as a top concern in the Online Key Informant Survey.</li> </ul>

**Community Feedback on Prioritization of Health Needs**

There are 20 health issues included in the community health needs assessment.

Community stakeholders were asked to rate the degree to which these health issues impact their community. (pg. 37)

The areas of opportunity included in the implementation strategy were determined by input and benchmark data provided by:

- 2018 Community Health Needs Assessment provided by Professional Research Consultants (PRC)
- Key Informant Rankings of the 20 health issues (Page 37, 2018 CHNA Report)
- 2018-2020 CHIP report from the Boone County Health Department
- Hospital Administration and Board of Trustees

2018 Health Issues (listed alphabetically)	2018 Key informant Ranking	CHIP Priority Areas	Addressing	Not Addressing
Access to Health Care Services	19		See Implementation Strategy  Not a significant need but Witham views this as a priority as the community healthcare provider.	
Cancer	9	*	See Implementation Strategy	
Dementia, Including Alzheimer's Disease	7	*	See Implementation Strategy	
Diabetes	3		See Implementation Strategy	
Family Planning	11			Not addressing in the 2018-2021 Implementation Strategy plan, #11 out of 20.
Heart Disease and Stroke	6		See Implementation Strategy	

Hearing & Vision	18			Not addressing in the 2018-2021 Implementation Strategy plan, #18 out of 20.
HIV	15			Not addressing in the 2018-2021 Implementation Strategy plan, #15 out of 20.
Immunization & Infectious Disease	17			Not addressing in the 2018-2021 Implementation Strategy plan, #17 out of 20.
Infant Health	13			Not addressing in the 2018-2021 Implementation Strategy plan, #13 out of 20.

Injury & Violence	8			Not addressing in the 2018-2021 Implementation Strategy plan, #8 out of 20. Other Boone County agencies address this.
Kidney Disease	20			After completing the 2015 CHNA Witham hired a Nephrologist. Since the community did not rank this as a major problem and it is #20 out of 20 we are not addressing in the 2018-2021 Implementation Strategy plan.
Mental Health	2	*	See Implementation Strategy	
Nutrition, Physical Activity & Weight	4	*	See Implementation Strategy	
Oral Health	10			Not addressing in the 2018-2021 Implementation Strategy plan, #10 out of 20. Dentist in the community are more equipped to address this need.

Potentially Disabling Conditions (Arthritis, Osteoporosis & Chronic Back Condition)	16		See Implementation Strategy	
Respiratory Diseases	14			Not addressing in the 2018-2021 Implementation Strategy plan, #14 out of 20.
Sexually Transmitted Diseases	12			Not addressing in the 2018-2021 Implementation Strategy plan, #12 out of 20.
Substance Abuse	1	*	See Implementation Strategy	
Tobacco Use	5	*	See Implementation Strategy	

### Hospital Implementation Strategy

Witham Health Services has used the information from this Community Health Needs Assessment to develop an Implementation Strategy to address the significant health needs in the community. As noted, the hospital will not implement strategies for all of the health issues listed above, the results of this prioritization exercise will be used to inform the development of the hospital's action plan to guide community health improvement efforts in the coming years.

*Note: An evaluation of the hospital's past activities to address the needs identified in prior CHNAs can be found as an appendix to this report.*

## Summary Tables: Comparisons With Benchmark Data

The following tables provide an overview of indicators in Boone County, including comparisons with trend data. These data are grouped to correspond with the Focus Areas presented in Healthy People 2020.

### Reading the Summary Tables

■ In the following tables, Boone County results are shown in the larger, blue column. For survey-derived indicators, this column represents the ZIP Code–defined Boone County; for data from secondary sources, this column represents findings for the county as a whole. *Tip: Indicator labels beginning with a “%” symbol are taken from the PRC Community Health Survey; the remaining indicators are taken from secondary data sources.*

■ ■ The columns to the right of the Boone County column provide trending, as well as comparisons between local data and any available state and national findings, and Healthy People 2020 targets. Symbols indicate whether Boone County compares favorably (☀️), unfavorably (🦋), or comparably (☁️) to these external data.

*Note that blank table cells signify that data are not available or are not reliable for that area and/or for that indicator.*

#### TREND SUMMARY













(Current vs. Baseline Data)

#### Survey Data Indicators:











Trends for survey-derived indicators represent significant changes since 2012.

#### Other (Secondary) Data

















Indicators: Trends for other indicators (e.g., public health data) represent point-to-point changes between the most current reporting period and the earliest presented in this report (typically representing the span of roughly a decade).






Social Determinants	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
Linguistically Isolated Population (Percent)	1.0	 1.8	 4.5		
Population in Poverty (Percent)	6.1	 15.0	 15.1		
Population Below 200% FPL (Percent)	18.8	 34.3	 33.6		
Children Below 200% FPL (Percent)	23.0	 44.8	 43.3		
No High School Diploma (Age 25+, Percent)	6.8	 11.9	 13.0		
Unemployment Rate (Age 16+, Percent)	2.5	 3.3	 4.1	 3.7	
% Worry/Stress Over Rent/Mortgage in Past Year	17.8		 30.8		
% Have to Choose Between Food and Household Bills	14.4			 16.7	
% Used a Food Bank/Received a Free Meal in the Past Year	9.2			 6.4	
% Low Health Literacy	12.8		 23.3		
% Internet is Primary Source of Healthcare Information	26.8			 23.3	














































Overall Health	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
% "Fair/Poor" Overall Health	14.2	 18.5	 18.1		 12.0
% Activity Limitations	20.2	 21.2	 25.0		 16.7
% Caregiver to a Friend/Family Member	28.8		 20.8		
		 better	 similar	 worse	















  





Access to Health Services	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
% [Age 18-64] Lack Health Insurance	7.9	 13.6	 13.7	 0.0	 8.9
% Difficulty Accessing Healthcare in Past Year (Composite)	40.4		 43.2		 30.0
% Difficulty Finding Physician in Past Year	8.7		 13.4		 4.9
% Difficulty Getting Appointment in Past Year	19.7		 17.5		 10.4
% Cost Prevented Physician Visit in Past Year	9.3		 15.4		 9.8
% Transportation Hindered Dr Visit in Past Year	5.6		 8.3		 3.0
% Inconvenient Hrs Prevented Dr Visit in Past Year	16.7		 12.5		 11.1






























Access to Health Services (continued)	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
% Language/Culture Prevented Care in Past Year	0.3		 1.2		
% Cost Prevented Getting Prescription in Past Year	10.8		 14.9	 11.6	
% Skipped Prescription Doses to Save Costs	9.0		 15.3	 11.0	
% Difficulty Getting Child's Healthcare in Past Year	6.8		 5.6	 3.1	
Primary Care Doctors per 100,000	213.2	 75.9	 87.8	 143.6	
% Have a Specific Source of Ongoing Care	76.8		 74.1	 95.0  92.0	
% Have Had Routine Checkup in Past Year	68.5	 67.2	 68.3	 71.1	
% Child Has Had Checkup in Past Year	87.4		 87.1	 95.0	
% Two or More ER Visits in Past Year	6.6		 9.3	 5.3	
% Rate Local Healthcare "Fair/Poor"	5.7		 16.2	 6.1	
% Aware of Local Palliative Programs	27.2			 28.5	












Cancer	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
Cancer (Age-Adjusted Death Rate)	159.0	 176.2	 158.5	 161.4	 192.9
Lung Cancer (Age-Adjusted Death Rate)	43.0	 50.8	 40.3	 45.5	
Prostate Cancer (Age-Adjusted Death Rate)	18.5	 19.3	 19.0	 21.8	
Female Breast Cancer (Age-Adjusted Death Rate)	20.2	 20.7	 20.3	 20.7	
Colorectal Cancer (Age-Adjusted Death Rate)	12.5	 15.5	 14.1	 14.5	
Female Breast Cancer Incidence Rate	137.1	 120.1	 123.5		
Prostate Cancer Incidence Rate	99.1	 95.7	 114.8		
Lung Cancer Incidence Rate	59.3	 72.8	 61.2		
Colorectal Cancer Incidence Rate	32.4	 43.2	 39.8		
% [Women 50-74] Mammogram in Past 2 Years	84.2	 72.5	 77.0	 81.1	 78.2
% [Women 21-65] Pap Smear in Past 3 Years	78.0	 74.9	 73.5	 93.0	 82.3
% [Age 50-75] Colorectal Cancer Screening	80.7	 64.6	 76.4	 70.5	 71.3






Dementias, Including Alzheimer's Disease	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
Alzheimer's Disease (Age-Adjusted Death Rate)	39.2	 32.5	 28.4		 37.6
% [Age 45+] Increasing Confusion/Memory Loss in Past Yr	10.8		 11.2		
		 better	 similar	 worse	


















Diabetes	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
Diabetes (Age-Adjusted Death Rate)	29.1	 25.8	 21.1	 20.5	 19.7
% Diabetes/High Blood Sugar	9.9	 11.5	 13.3		 9.2
% Borderline/Pre-Diabetes	8.6		 9.5		 7.5
% [Non-Diabetes] Blood Sugar Tested in Past 3 Years	57.1		 50.0		 59.4
% [Diabetics] Dr Visit for Diabetes 2+ Times/Past Year	76.5				 72.3
% [Diabetics] Ever Taken Diabetes Mgmt Course	58.5				 62.3
% [Diabetics] Aware of Local Diabetes Education	65.2				 68.5
















Educational & Community-Based Programs	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
% Attended a Health Event in the Past Year	23.7				 27.4
		 better	 similar	 worse	




















Heart Disease & Stroke	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
Diseases of the Heart (Age-Adjusted Death Rate)	182.8	 181.9	 167.0	 156.9	 190.3
Stroke (Age-Adjusted Death Rate)	48.1	 40.1	 37.1	 34.8	 37.8
% Heart Disease (Heart Attack, Angina, Coronary Disease)	4.8		 8.0		 6.5
% Stroke	4.0	 4.0	 4.7		 1.8
% Blood Pressure Checked in Past 2 Years	96.7		 90.4	 92.6	 97.2
% Told Have High Blood Pressure (Ever)	32.7	 32.4	 37.0	 26.9	 32.8
% [HBP] Taking Action to Control High Blood Pressure	90.3		 93.8		 96.2
% Cholesterol Checked in Past 5 Years	90.7	 73.5	 85.1	 82.1	 92.0
% Told Have High Cholesterol (Ever)	29.8		 36.2	 13.5	 32.9







Heart Disease & Stroke (continued)	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
Diseases of the Heart (Age-Adjusted Death Rate)	182.8	 181.9	 167.0	 156.9	 190.3
% [HBC] Taking Action to Control High Blood Cholesterol	88.9		 87.3		 88.0
% 1+ Cardiovascular Risk Factor	82.3		 87.2		 80.9
		 better	 similar	 worse	

HIV	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
HIV Prevalence Rate	63.3	 176.4	 353.2		
		 better	 similar	 worse	






















Immunization & Infectious Diseases	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
% [Age 65+] Flu Vaccine in Past Year	77.8	 55.2	 76.8	 70.0	 69.5
% [High-Risk 18-64] Flu Vaccine in Past Year	54.1		 55.7	 70.0	 44.5
% [Age 65+] Pneumonia Vaccine Ever	85.8	 73.3	 82.7	 90.0	 70.5
% [High-Risk 18-64] Pneumonia Vaccine Ever	46.7		 39.9	 60.0	 34.9
		 better	 similar	 worse	




Infant Health & Family Planning	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
No Prenatal Care in First Trimester (Percent)	14.6	 30.7		 22.1	
Low Birthweight Births (Percent)	6.8	 8.2	 8.2	 7.8	 5.9
Infant Death Rate	5.3	 7.4	 6.2	 6.0	
Teen Births per 1,000 (Age 15-19)	16.2	 24.0	 20.0		 34.4
		 better	 similar	 worse	



























Injury & Violence	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
Unintentional Injury (Age-Adjusted Death Rate)	45.6	 47.7	 43.7	 36.4	 28.0
Motor Vehicle Crashes (Age-Adjusted Death Rate)	10.9	 11.7	 11.0	 12.4	
% [Age 45+] Fell in the Past Year	32.8		 31.6		
Firearm-Related Deaths (Age-Adjusted Death Rate)	11.5	 13.3	 11.0	 9.3	
Violent Crime Rate	62.3	 384.0	 379.7		
% Victim of Violent Crime in Past 5 Years	1.8		 3.7		
% Victim of Domestic Violence (Ever)	11.8		 14.2	 9.2	
		 better	 similar	 worse	









Kidney Disease	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
Kidney Disease (Age-Adjusted Death Rate)	15.4	 18.7	 13.2		 15.2
% Kidney Disease	3.9	 2.9	 3.8		 2.7




























Mental Health	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
% "Fair/Poor" Mental Health	17.5		 13.0	 9.6	
% Diagnosed Depression	23.1	 15.9	 21.6	 19.6	
% Symptoms of Chronic Depression (2+ Years)	29.9		 31.4	 20.0	
% Typical Day Is "Extremely/Very" Stressful	9.9		 13.4	 9.3	
Suicide (Age-Adjusted Death Rate)	15.8	 14.7	 13.0	 10.2	
% Taking Rx/Receiving Mental Health Trtmt	21.0		 13.9		
% Have Ever Sought Help for Mental Health	36.7		 30.8	 21.7	
% [Those With Diagnosed Depression] Seeking Help	95.3		 87.1	 76.7	
% Unable to Get Mental Health Svcs in Past Yr	3.8		 6.8		
		 better	 similar	 worse	












Nutrition, Physical Activity & Weight	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
% Worried About Food Running Out in the Past Year	14.1		 25.3	 10.0	
% Ran Out of Food at Least Once in the Past Year	11.2		 18.1	 6.7	
% Food Insecure	14.9		 27.9		
% Eat 5+ Servings of Fruit or Vegetables per Day	29.7		 33.5	 45.8	
% "Very/Somewhat" Difficult to Buy Fresh Produce	14.9		 22.1	 6.1	
Population With Low Food Access (Percent)	17.3	 25.3	 22.4		
% Medical Advice on Nutrition in Past Year	42.7			 42.2	
% No Leisure-Time Physical Activity	23.8	 26.8	 26.2	 32.6  18.4	
% Meeting Physical Activity Guidelines	23.8	 15.6	 22.8	 20.1	
Recreation/Fitness Facilities per 100,000	14.1	 9.3	 11.0		
% Medical Advice on Physical Activity in Past Year	49.4			 46.3	











Nutrition, Physical Activity & Weight (continued)	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
% Healthy Weight (BMI 18.5-24.9)	28.8		 30.3	 33.9	 36.4
% Overweight (BMI 25+)	69.3	 67.2	 67.8		 61.9
% [Overweights] Trying to Lose Weight	51.8		 61.3		 55.3
% Obese (BMI 30+)	33.7	 32.5	 32.8	 30.5	 26.9
% Medical Advice on Weight in Past Year	23.4		 24.2		 25.2
% [Overweights] Counseled About Weight in Past Year	29.9		 29.0		 33.8
% Child [Age 5-17] Healthy Weight	71.7		 58.4		 59.2
% Children [Age 5-17] Overweight (85th Percentile)	18.9		 33.0		 26.4
% [Parents] Have Been Told That Overwt Child [5-17] Is Overweight	14.2				 7.7
% Children [Age 5-17] Obese (95th Percentile)	7.9		 20.4	 14.5	 16.1
% Child [Age 2-17] Physically Active 1+ Hours per Day	40.5		 50.5		 43.2








Nutrition, Physical Activity & Weight (continued)	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
% [Age 5-17] Child Watches 3+ Hours of TV per Day	5.2				 6.6
% [Age 5-17] Child Has 3+ Hours of Electronic Use per Day	16.6				 6.6
% Child [Age 5-17] 3+ Hours per Day of Total Screen Time	39.0				 26.0
% Agree That Community Needs More Indoor Recreation Spaces	41.3				 35.6
% Agree That Community Has Enough Year-Round Recreation for Youth	64.6				 76.2
		 better	 similar	 worse	




























Oral Health	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
% Have Dental Insurance	76.9		 59.9		 70.6
% [Age 18+] Dental Visit in Past Year	73.8	 61.9	 59.7	 49.0	 78.1
% Child [Age 2-17] Dental Visit in Past Year	87.1		 87.0	 49.0	 94.2
		 better	 similar	 worse	


























Potentially Disabling Conditions	Boone County	Boone County vs. Benchmarks			TREND	
		vs. IN	vs. US	vs. HP2020		
% Multiple Chronic Conditions	51.9		 56.8			
% [50+] Arthritis/Rheumatism	32.4		 38.3		30.3	
% [50+] Osteoporosis	11.1		 9.4	 5.3	 7.2	
% Sciatica/Chronic Back Pain	21.7		 22.9		 16.7	
% Eye Exam in Past 2 Years	60.8		 55.3		 65.4	
		 better	 similar	 worse		

Respiratory Diseases	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
CLRD (Age-Adjusted Death Rate)	62.4	 54.7	 40.9		 41.4
Pneumonia/Influenza (Age-Adjusted Death Rate)	13.5	 13.6	 14.6		 10.9
% [Adult] Currently Has Asthma	10.8	 10.2	 11.8		 6.7
% Adults Asthma (Ever Diagnosed)	18.3		 19.4		 13.8

Respiratory Diseases (continued)	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
% [Child 0-17] Currently Has Asthma	4.2		 9.3	 6.8	
% Child [Age 0-17] Asthma (Ever Diagnosed)	8.0		 11.1	 12.0	
% COPD (Lung Disease)	11.4	 8.0	 8.6	 6.6	
		 better	 similar	 worse	

Sexually Transmitted Diseases	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
Chlamydia Incidence Rate	239.8	 433.8	 456.1		
Gonorrhea Incidence Rate	13.2	 110.9	 110.7		
		 better	 similar	 worse	

Substance Abuse	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
Unintentional Drug-Related Deaths (Age-Adjusted Death Rate)	19.1	 17.4	 14.3	 11.3	
Cirrhosis/Liver Disease (Age-Adjusted Death Rate)	9.2	 11.0	 10.6	 8.2	
% Current Drinker	62.1		 55.0		 58.5
% Binge Drinker (Single Occasion - 5+ Drinks Men, 4+ Women)	17.6		 20.0	 24.4	 11.9
% Excessive Drinker	20.3		 22.5	 25.4	 14.9
% Drinking & Driving in Past Month	2.2	 5.3	 5.2		 0.9
% Illicit Drug Use in Past Month	3.4		 2.5	 7.1	 1.2
% Ever Sought Help for Alcohol or Drug Problem	3.6		 3.4		 2.0
% Life Negatively Affected by Substance Abuse	36.0		 37.3		
% Unable to Obtain Substance Abuse Help in the Past Year	0.8				 0.2
		 better	 similar	 worse	

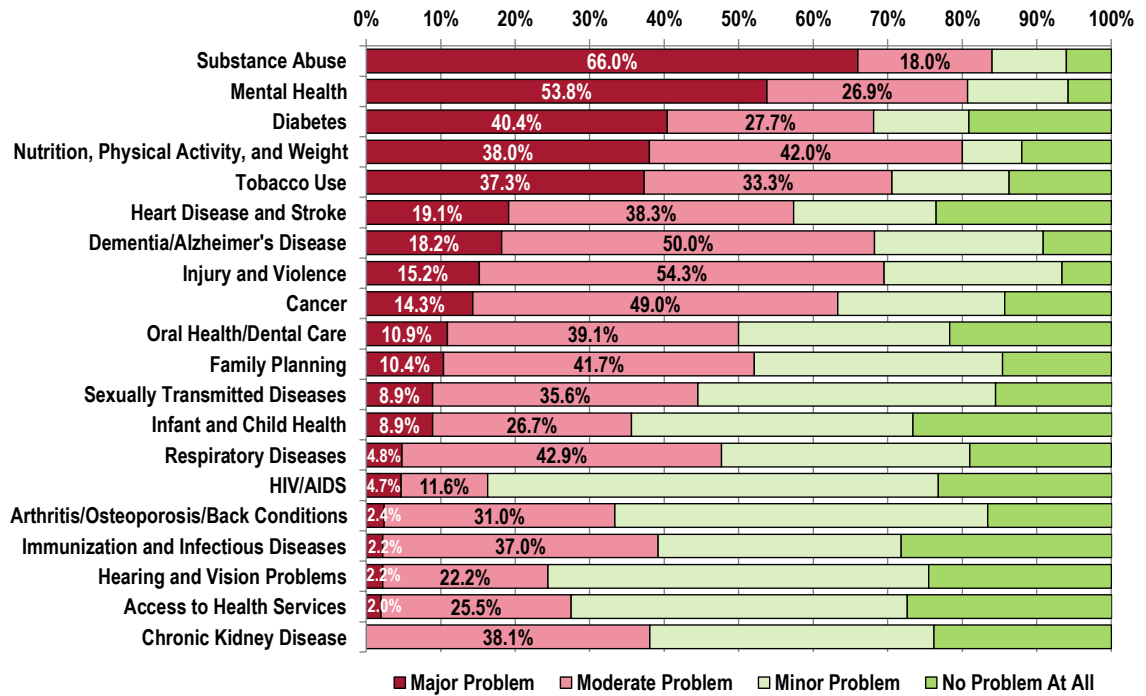
Tobacco Use	Boone County	Boone County vs. Benchmarks			TREND
		vs. IN	vs. US	vs. HP2020	
% Current Smoker	11.9	 21.1	 16.3	 12.0	 17.8
% Someone Smokes at Home	10.6		 10.7		 13.7
% [Nonsmokers] Someone Smokes in the Home	4.2		 4.0		 3.3
% [Household With Children] Someone Smokes in the Home	7.8		 7.2		 8.2
% [Smokers] Have Quit Smoking 1+ Days in Past Year	37.0		 34.7	 80.0	 40.0
% [Smokers] Received Advice to Quit Smoking	78.1		 58.0		 69.7
% Currently Use Vaping Products	6.6	 4.7	 3.8		
% Use Smokeless Tobacco	2.9	 4.1	 4.4	 0.3	 4.4
% Aware of the Tobacco Quit Line	53.5				 54.9
		 better	 similar	 worse	



## Summary of Key Informant Perceptions

In the Online Key Informant Survey, community stakeholders were asked to rate the degree to which each of 20 health issues is a problem in their own community, using a scale of “major problem,” “moderate problem,” “minor problem,” or “no problem at all.” The following chart summarizes their responses; these findings also are outlined throughout this report, along with the qualitative input describing reasons for their concerns. (Note that these ratings alone do not establish priorities for this assessment; rather, they are one of several data inputs considered for the prioritization process described earlier.)

### Key Informants: Relative Position of Health Topics as Problems in the Community



# Community Description



**Professional Research Consultants, Inc.**

## Population Characteristics

### Total Population

Boone County, the focus of this Community Health Needs Assessment, encompasses 422.91 square miles and houses a total population of 61,884 residents, according to latest census estimates.

**Total Population**  
(Estimated Population, 2012-2016)

	Total Population	Total Land Area (Square Miles)	Population Density (Per Square Mile)
<b>Boone County</b>	61,884	422.91	146.33
<b>Indiana</b>	6,589,578	35,826.63	183.93
<b>United States</b>	318,558,162	3,532,068.58	90.19

Sources: 

- US Census Bureau American Community Survey 5-year estimates.
- Retrieved November 2018 from Community Commons at <http://www.chna.org>.

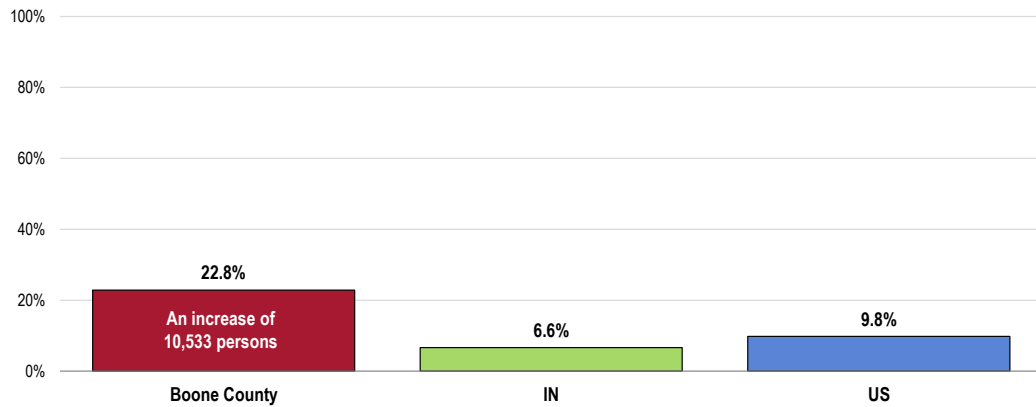
### Population Change 2000-2010

A significant positive or negative shift in total population over time impacts healthcare providers and the utilization of community resources.

**Between the 2000 and 2010 US Censuses, the population of Boone County increased by 10,533 persons, or 22.8%.**

- A far greater proportional increase than seen across both the state and the nation overall.

### Change in Total Population (Percentage Change Between 2000 and 2010)



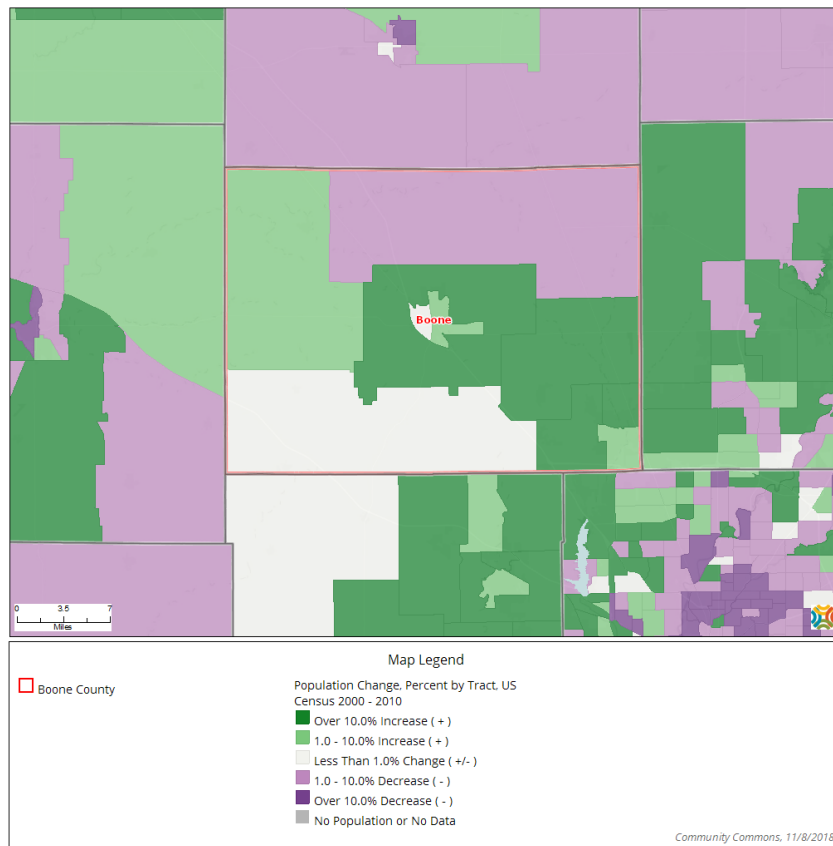
Sources: 

- US Census Bureau Decennial Census (2000-2010).
- Retrieved November 2018 from Community Commons at <http://www.chna.org>.

  
 Notes: 

- A significant positive or negative shift in total population over time impacts healthcare providers and the utilization of community resources.

Note that while the population in Lebanon has remained fairly stable, the outlying areas of the city have substantially grown, as well as the southeastern portion of the county.

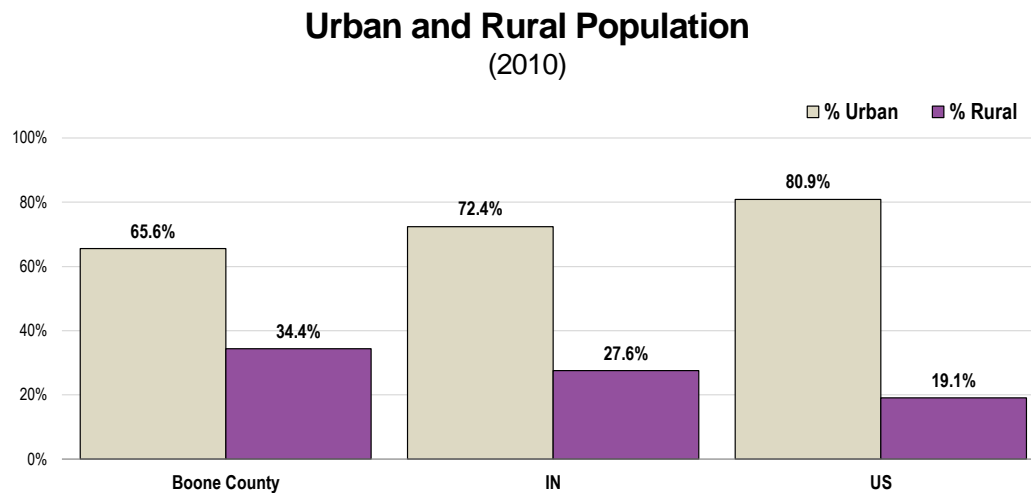


## Urban/Rural Population

Urban areas are identified using population density, count, and size thresholds. Urban areas also include territory with a high degree of impervious surface (development). Rural areas are all areas that are not urban.

**Boone County is predominantly urban, with two-thirds of the population (65.6%) living in areas designated as urban.**

- Note that at least 72% of the state and national populations live in urban areas.



Sources:
 

- US Census Bureau Decennial Census (2010).
- Retrieved November 2018 from Community Commons at <http://www.chna.org>.

 Notes:
 

- This indicator reports the percentage of population living in urban and rural areas. Urban areas are identified using population density, count, and size thresholds. Urban areas also include territory with a high degree of impervious surface (development). Rural areas are all areas that are not urban.

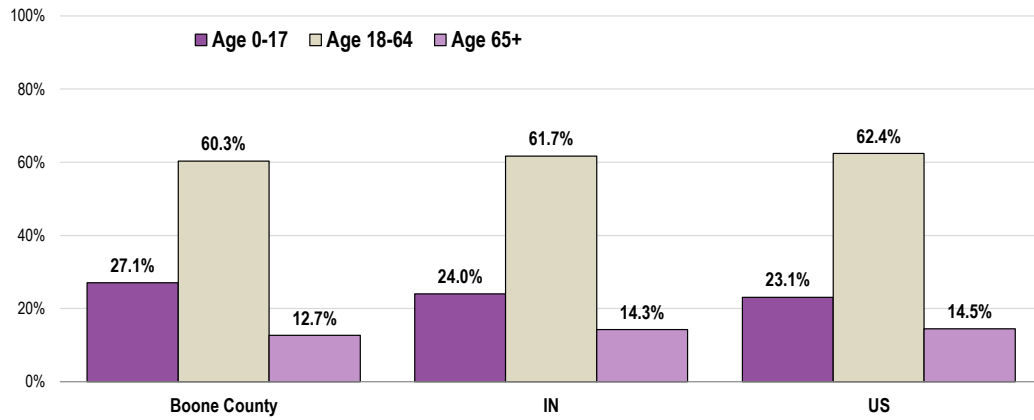
## Age

It is important to understand the age distribution of the population, as different age groups have unique health needs that should be considered separately from others along the age spectrum.

**In Boone County, 27.1% of the population are infants, children, or adolescents (age 0-17); another 60.3% are age 18 to 64, while 12.7% are age 65 and older.**

- The percentage of older adults (65+) is statistically similar to that found statewide and nationally.

### Total Population by Age Groups, Percent (2012-2016)

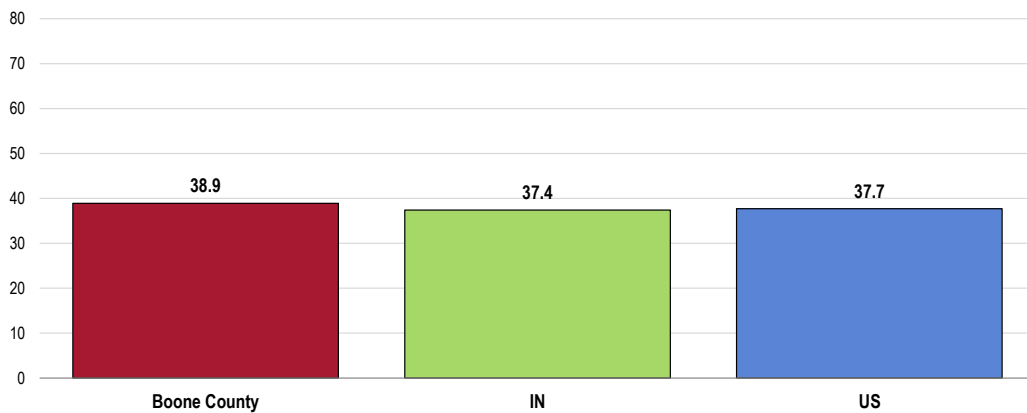


Sources:   
 • US Census Bureau American Community Survey 5-year estimates.   
 • Retrieved November 2018 from Community Commons at <http://www.chna.org>.

### Median Age

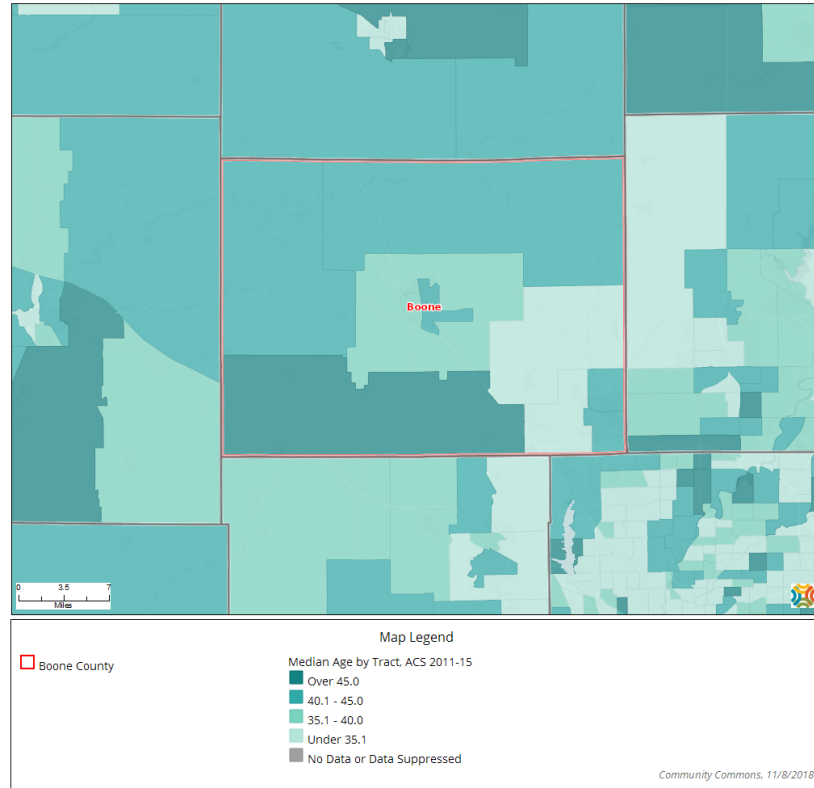
Boone County is slightly “older” than the state and the nation in that the median age is higher.

### Median Age (2012-2016)



Sources:   
 • US Census Bureau American Community Survey 5-year estimates.   
 • Retrieved November 2018 from Community Commons at <http://www.chna.org>.

- The following map provides an illustration of the median age in Boone County, segmented by census tract.



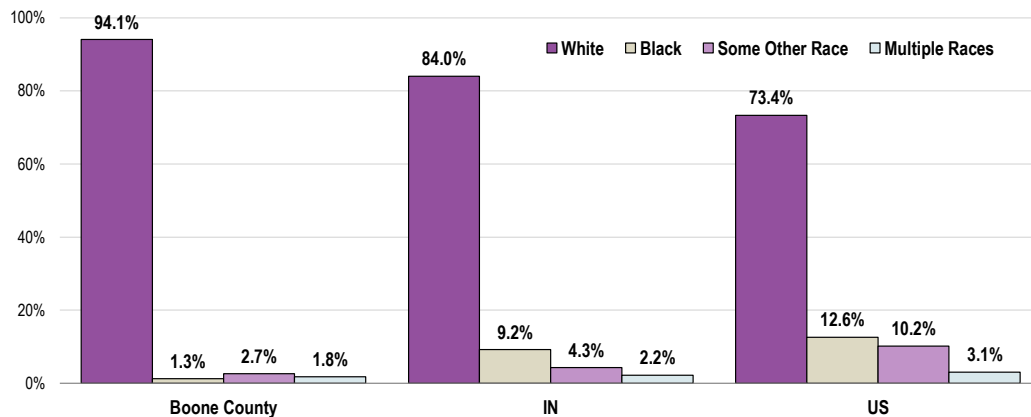
## Race & Ethnicity

### Race

In looking at race independent of ethnicity (Hispanic or Latino origin), 94.1% of residents of Boone County are White, and 1.3% are Black.

- Statewide and (especially) nationally, the population is more diverse.

**Total Population by Race Alone, Percent**  
(2012-2016)



Sources:

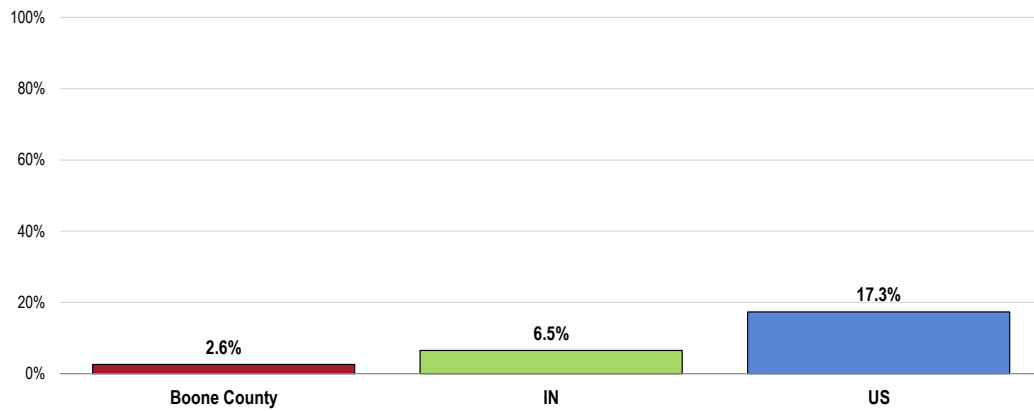
- US Census Bureau American Community Survey 5-year estimates.
- Retrieved November 2018 from Community Commons at <http://www.chna.org>.

### Ethnicity

A total of 2.6% of Boone County residents are Hispanic or Latino.

- Notably lower than statewide and especially national percentages.

### Hispanic Population (2012-2016)

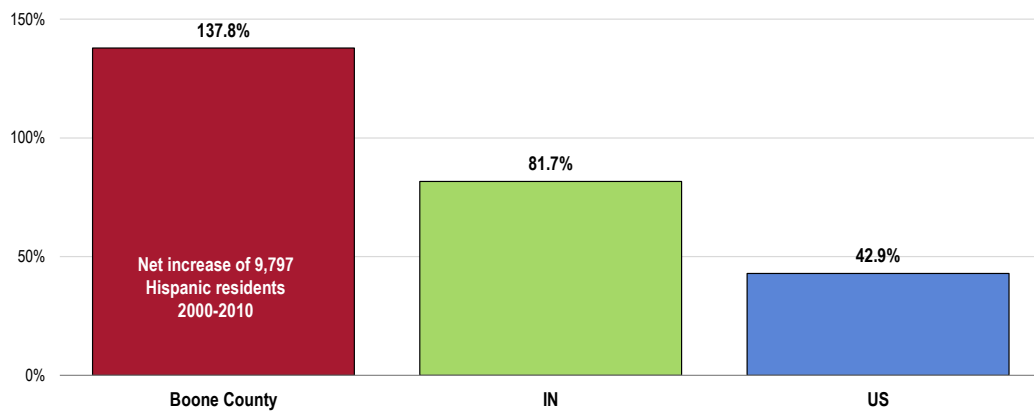


- Sources:
- US Census Bureau American Community Survey 5-year estimates.
  - Retrieved November 2018 from Community Commons at <http://www.chna.org>.
- Notes:
- Origin can be viewed as the heritage, nationality group, lineage, or country of birth of the person or the person's parents or ancestors before their arrival in the United States. People who identify their origin as Hispanic, Latino, or Spanish may be of any race.

Between 2000 and 2010, the Hispanic population in Boone County increased by 9,797 or 137.8%.

- Far higher (in terms of percentage growth) than found statewide and nationally.

### Hispanic Population Change (Percentage Change in Hispanic Population Between 2000 and 2010)



- Sources:
- US Census Bureau Decennial Census (2000-2010).
  - Retrieved November 2018 from Community Commons at <http://www.chna.org>.

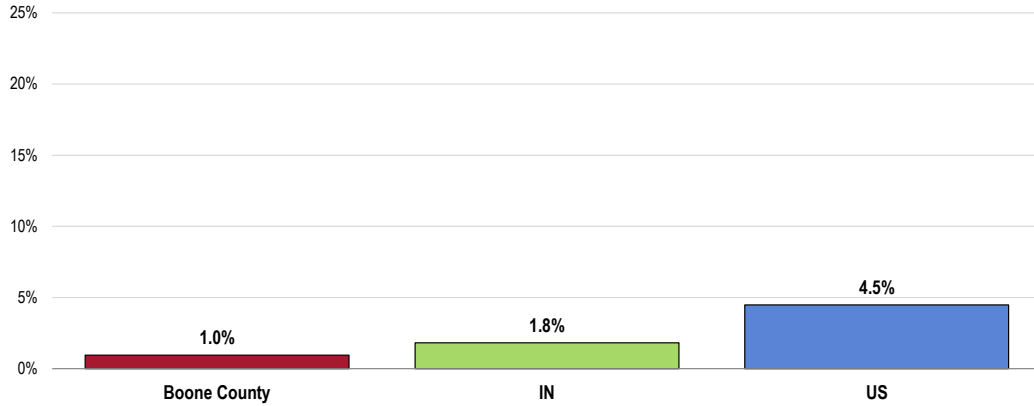


## Linguistic Isolation

A total of 1.0% of the Boone County population age 5 and older live in a home in which no persons age 14 or older is proficient in English (speaking only English, or speaking English “very well”).

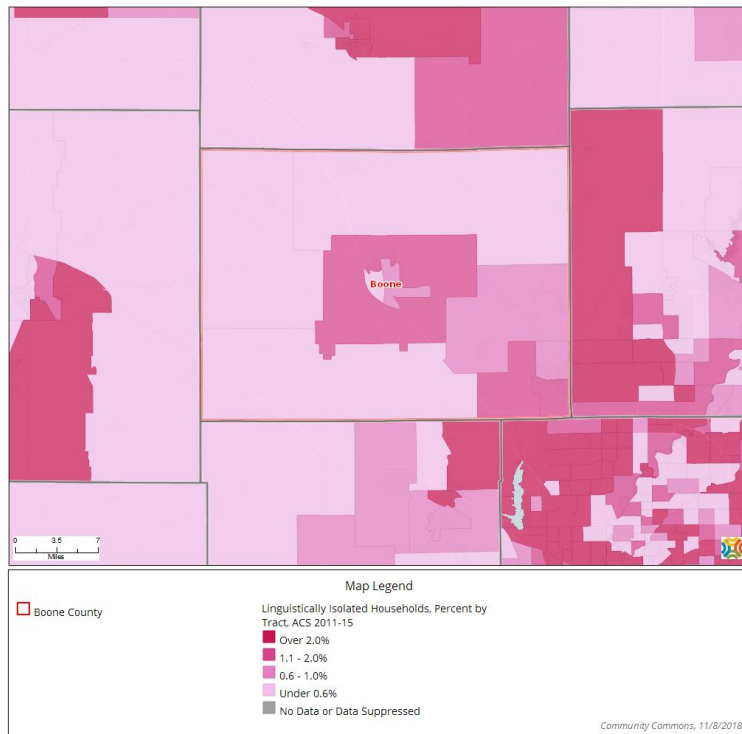
- More favorable than found statewide and especially nationally.

### Linguistically Isolated Population (2012-2016)



- Sources:
- US Census Bureau American Community Survey 5-year estimates.
  - Retrieved November 2018 from Community Commons at <http://www.chna.org>.
- Notes:
- This indicator reports the percentage of the population age 5+ who live in a home in which no person age 14+ speaks only English, or in which no person age 14+ speak a non-English language and speak English “very well.”

- Note the following map illustrating linguistic isolation in Boone County.



## Social Determinants of Health

### About Social Determinants

Health starts in our homes, schools, workplaces, neighborhoods, and communities. We know that taking care of ourselves by eating well and staying active, not smoking, getting the recommended immunizations and screening tests, and seeing a doctor when we are sick all influence our health. Our health is also determined in part by access to social and economic opportunities; the resources and supports available in our homes, neighborhoods, and communities; the quality of our schooling; the safety of our workplaces; the cleanliness of our water, food, and air; and the nature of our social interactions and relationships. The conditions in which we live explain in part why some Americans are healthier than others and why Americans more generally are not as healthy as they could be.

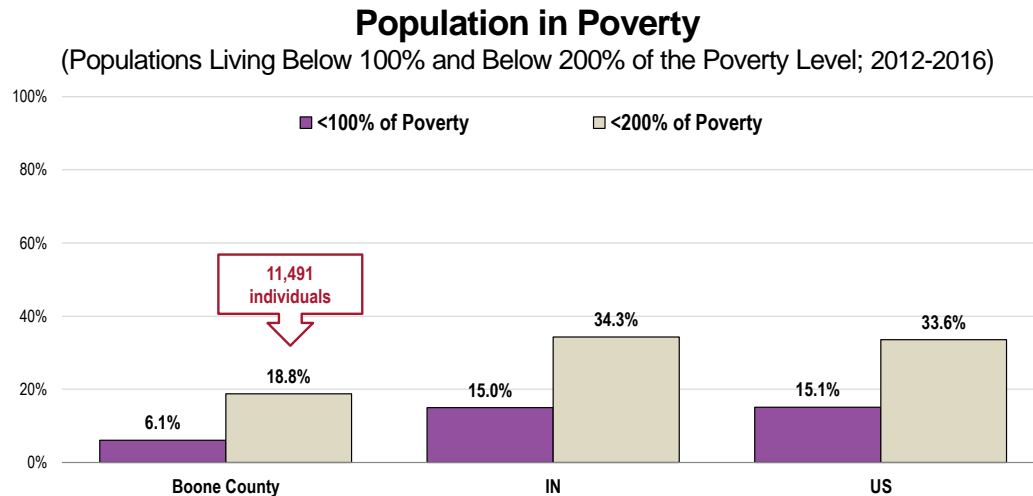
- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

### Poverty

The latest census estimate shows **6.1% of Boone County population living below the federal poverty level.**

**In all, 18.8 % of Boone County residents (an estimated 11,491 individuals) live below 200% of the federal poverty level.**

- Notably lower than the proportions reported across Indiana and the US.

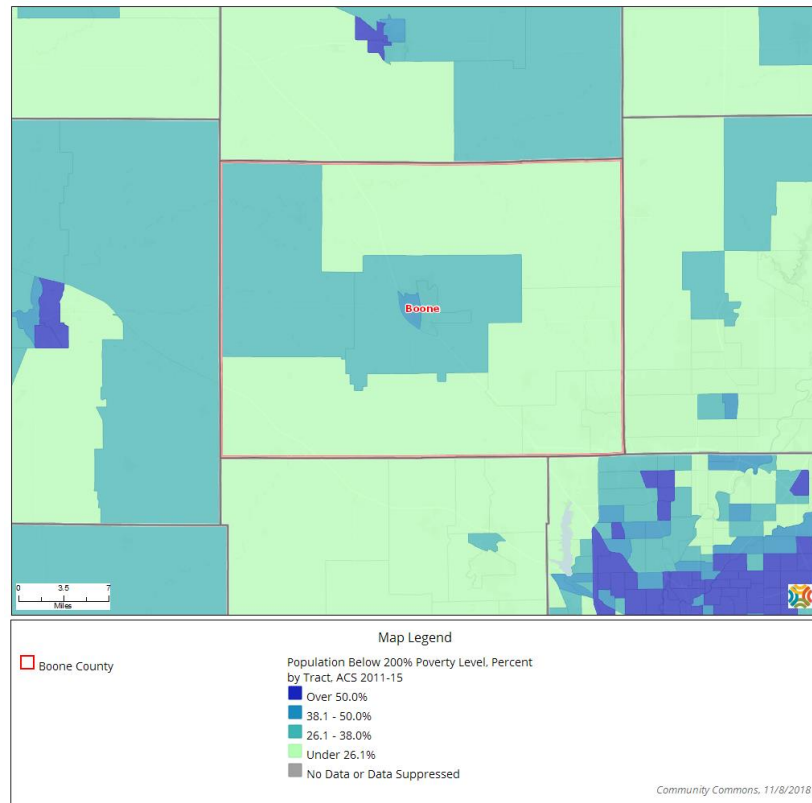


Sources: • US Census Bureau American Community Survey 5-year estimates.

• Retrieved November 2018 from Community Commons at <http://www.chna.org>.

Notes: • Poverty is considered a key driver of health status. This indicator is relevant because poverty creates barriers to access including health services, healthy food, and other necessities that contribute to poor health status.

- A higher concentration of persons living below the 200% poverty threshold is found in the western portion of Lebanon.

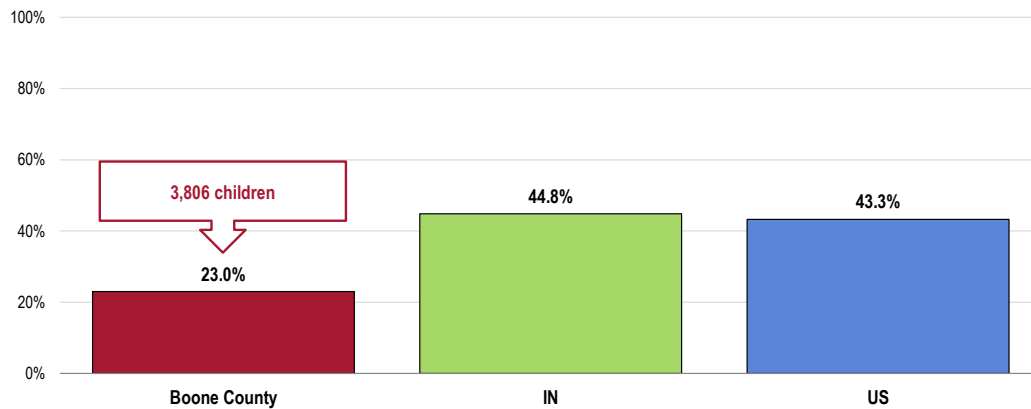


### Children in Low-Income Households

Additionally, 23.0% of Boone County children age 0-17 (representing an estimated 3,806 children) live below the 200% poverty threshold.

- Far more favorable than the proportions found statewide and nationally.

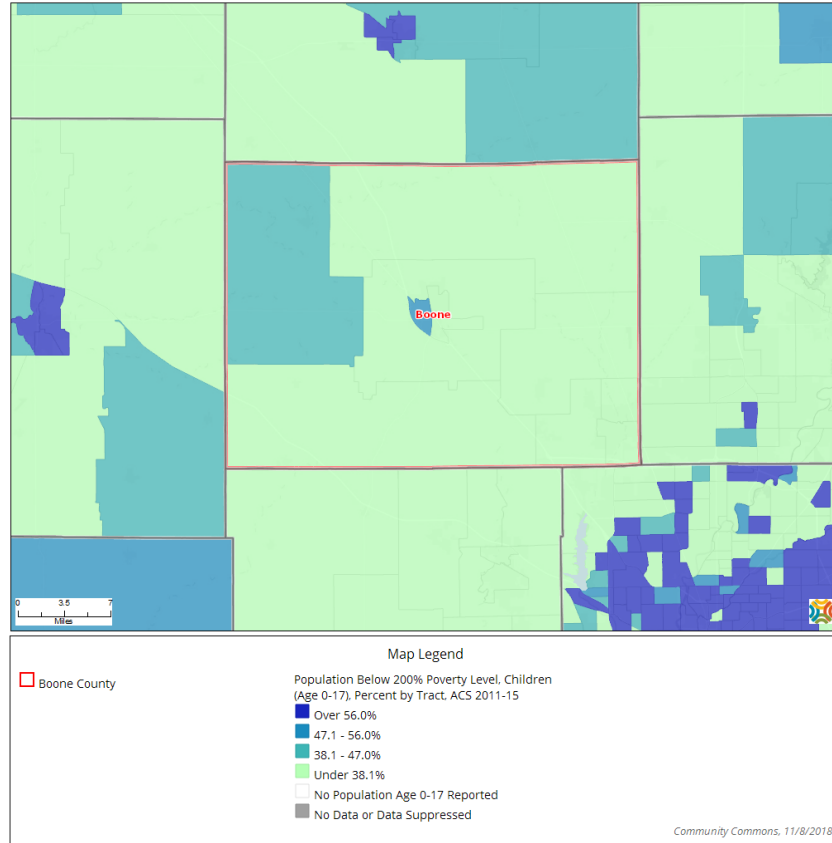
**Percent of Children in Low-Income Households**  
(Children 0-17 Living Below 200% of the Poverty Level, 2012-2016)



Sources: • US Census Bureau American Community Survey 5-year estimates.  
 • Retrieved November 2018 from Community Commons at <http://www.chna.org>.

Notes: • This indicator reports the percentage of children aged 0-17 living in households with income below 200% of the Federal Poverty Level (FPL). This indicator is relevant because poverty creates barriers to access including health services, healthy food, and other necessities that contribute to poor health status.

- Geographically, a notably higher concentration of children in lower-income households is found in the western portion of Lebanon and (to a lesser extent) the northwestern part of the county.

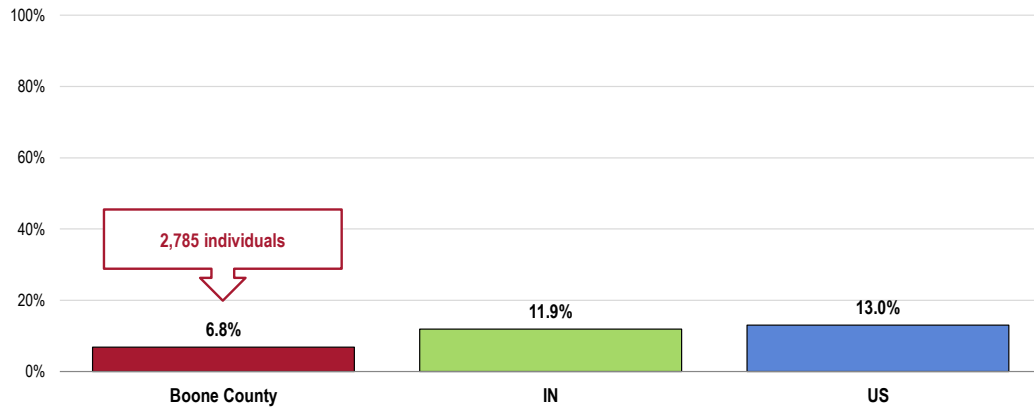


## Education

Among the Boone County population age 25 and older, an estimated 6.8% (over 2,700 people) do not have a high school education.

- More favorable than found across the state and nation.

## Population With No High School Diploma (Population Age 25+ Without a High School Diploma or Equivalent, 2012-2016)



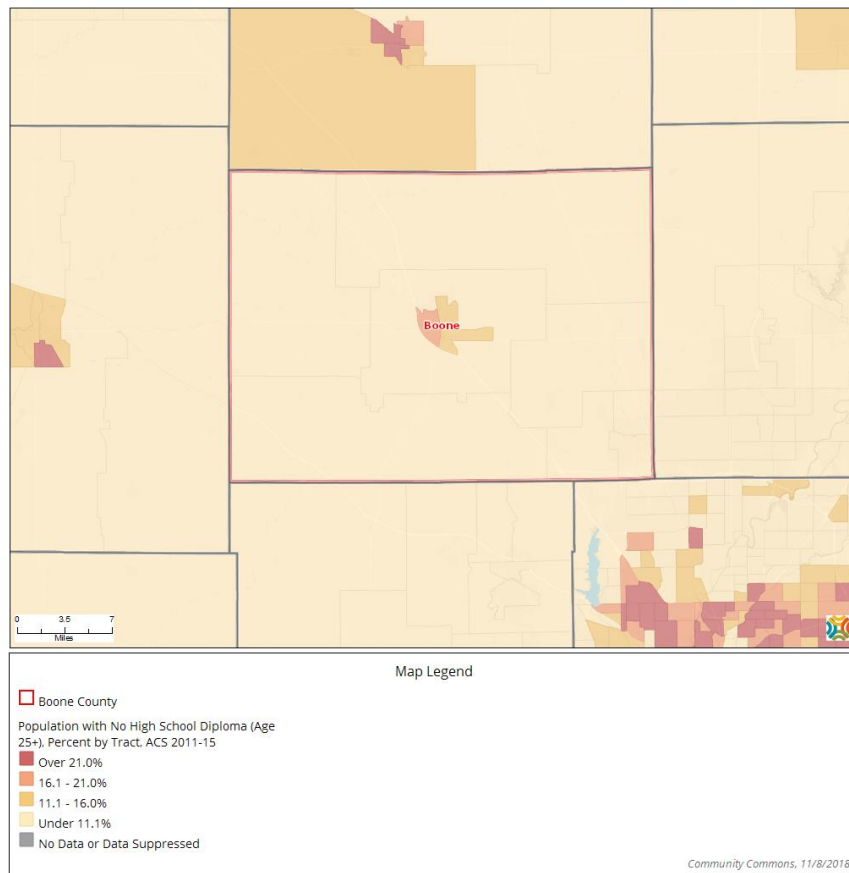
Sources: 

- US Census Bureau American Community Survey 5-year estimates.
- Retrieved November 2018 from Community Commons at <http://www.chna.org>.

  
 Notes: 

- This indicator is relevant because educational attainment is linked to positive health outcomes.

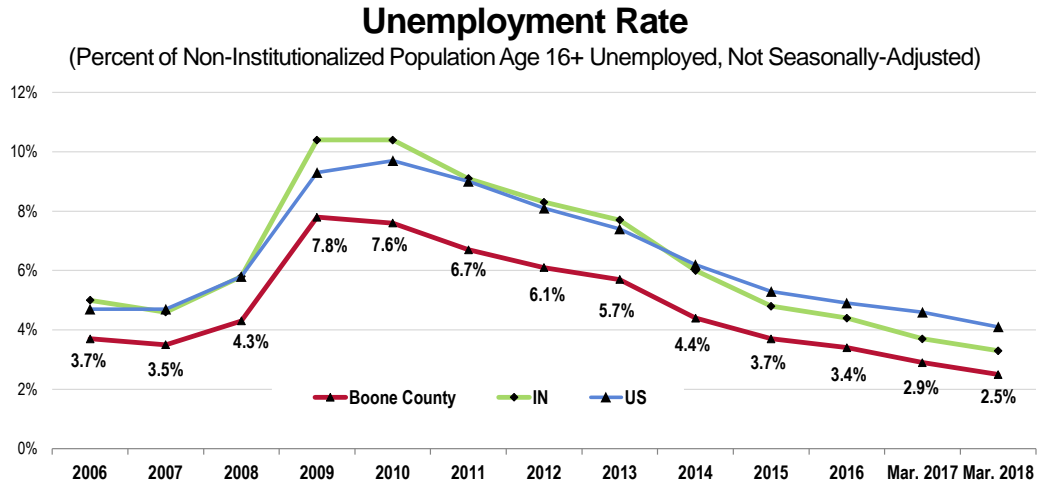
- Geographically, this indicator is more concentrated in Lebanon, particularly the western portion.



## Employment

According to data derived from the US Department of Labor, the unemployment rate in Boone County as of March 2018 was 2.5%.

- Below the unemployment rates across the state and nation.
- TREND: Unemployment for Boone County has trended downward since 2009, echoing the state and national trends.

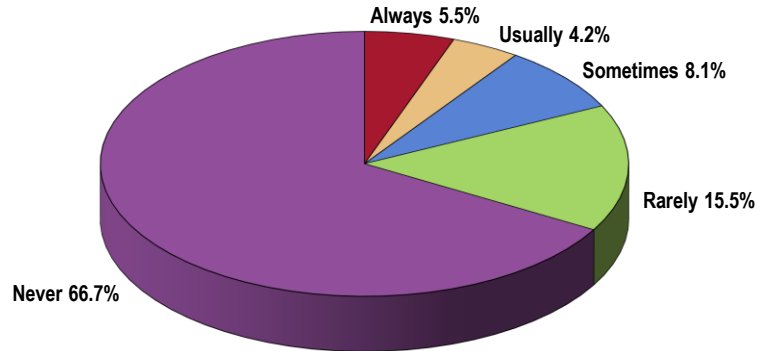


- Sources:
- US Department of Labor, Bureau of Labor Statistics.
  - Retrieved November 2018 from Community Commons at <http://www.chna.org>.
- Notes:
- This indicator is relevant because unemployment creates financial instability and barriers to access including insurance coverage, health services, healthy food, and other necessities that contribute to poor health status.

## Housing Insecurity

While most surveyed adults rarely, if ever, worry about the cost of housing, a considerable share (17.8%) reported that they were “sometimes,” “usually,” or “always” worried or stressed about having enough money to pay their rent or mortgage in the past year.

### Frequency of Worry or Stress Over Paying Rent/Mortgage in the Past Year (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 71]  
 Notes: • Asked of all respondents.

**NOTE:**

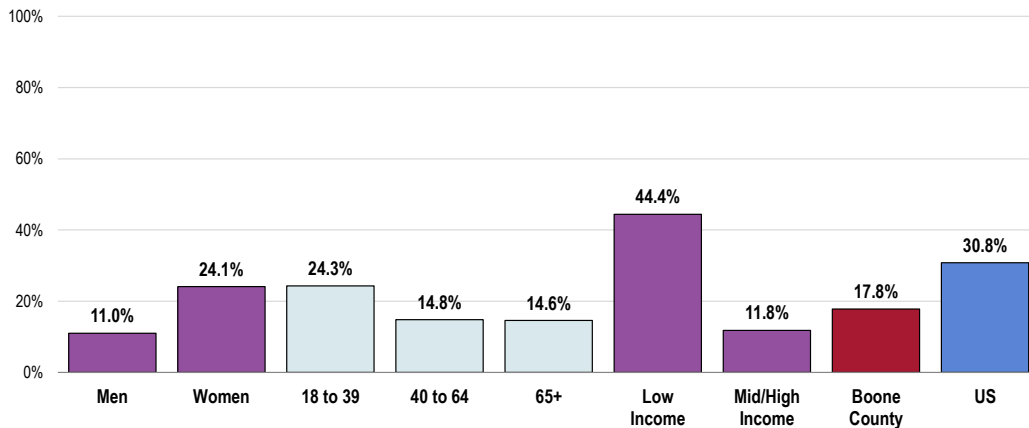
Differences noted in the text represent significant differences determined through statistical testing.

Where sample sizes permit, community-level data are provided.

Charts throughout this report (such as that here) detail survey findings among key demographic groups – namely by sex, age groupings, and income (based on poverty status).

- Compared to the US prevalence, the Boone County proportion of adults who worried about paying for rent or mortgage in the past year is far more favorable.
- Note that four in 10 low-income residents report housing insecurity (compared to 11.8% of those living above 200% of the federal poverty level). Women are also more likely than men to report housing insecurity.
- Other differences within demographic groups, as illustrated in the following chart, are not statistically significant.

### “Always/Usually/Sometimes” Worried About Paying Rent/Mortgage in the Past Year (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 71]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent’s household income as a ratio to the federal poverty level (FPL) for their household size. “Low Income” includes households with incomes up to 200% of the federal poverty level; “Mid/High Income” includes households with incomes at 200% or more of the federal poverty level.

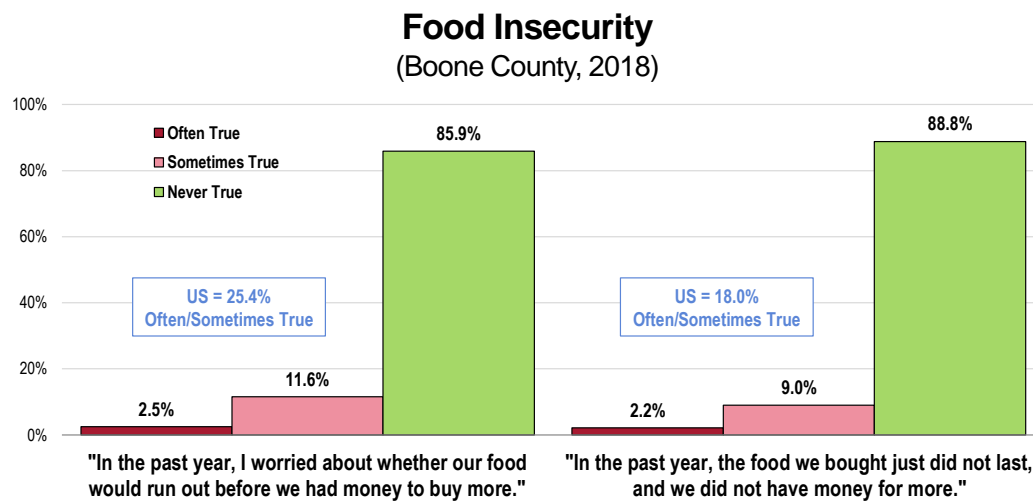
## Food Insecurity

### Running Out of Food

In the past year, 14.1% of Boone County adults “often” or “sometimes” worried about whether their food would run out before they had money to buy more.

Another 11.2% report a time in the past year (“often” or “sometimes”) when the food they bought just did not last, and they did not have money to get more.

- TREND: Though lower than US findings, both are significantly higher than findings from previous years (not shown).



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 87-88]

• 2017 PRC National Health Survey, Professional Research Consultants, Inc.

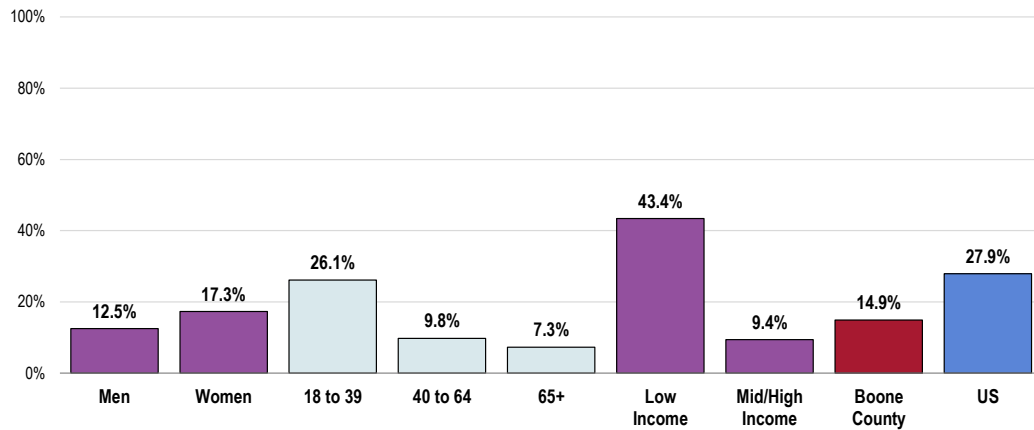
Notes: • Reflects the total sample of respondents.

Overall, 14.9% of community residents are determined to be “food insecure,” having run out of food in the past year and/or been worried about running out of food.

- Well below national findings.
- The prevalence of food insecurity is higher among young adults (age 18-39) and especially low-income residents.



### Food Insecurity (Boone County, 2018)



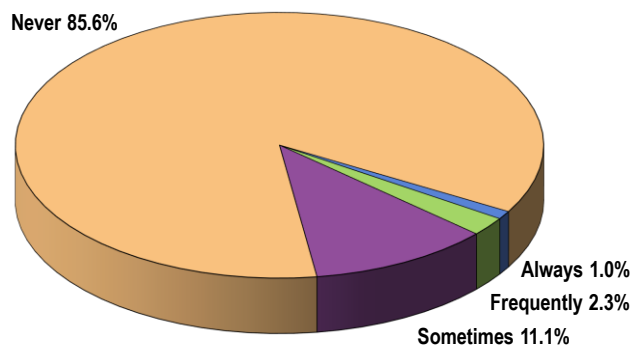
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 149]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.  
 • Includes adults who A) ran out of food at least once in the past year and/or B) worried about running out of food in the past year.

### Budgeting for Food

While the majority of county residents “never” have to choose between buying food and paying household bills, 14.4% do make this choice (“sometimes/frequently/always”).

### Frequency of Having to Choose Between Food and Paying Household Bills (Boone County, 2018)



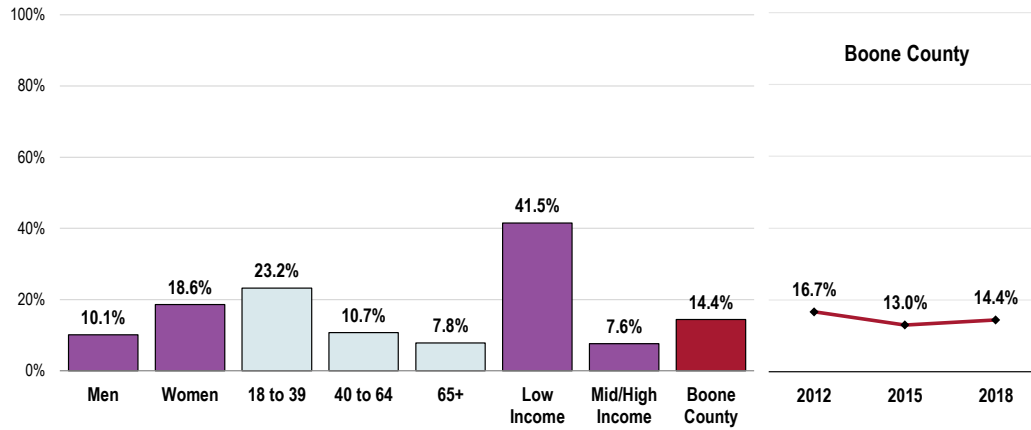
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 310]  
 Notes: • Asked of all respondents.

NOTE:

Trends are measured against baseline data – i.e., the earliest year that data are available or that is presented in this report.

- The proportion of residents having to choose between food and paying household bills is especially high among low-income adults, as well as women and young adults.
- TREND: Lower than 2012 findings, though similar to 2015.

### “Always/Frequently/Sometimes” Have to Choose Between Food and Paying Household Bills (Boone County, 2018)



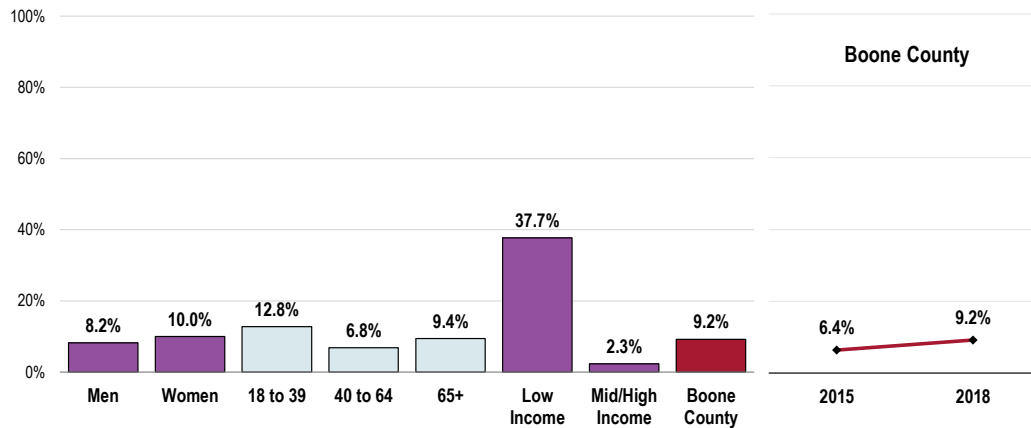
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 310]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

### Use of Food Banks or Free Meals

A total of 9.2% of respondents used a food bank or received a free meal in the past year.

- This prevalence is notably higher among low-income adults.
- TREND: Marks a statistically significant increase over 2015 findings.

### Used a Food Bank or Received a Free Meal in the Past Year (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 311]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

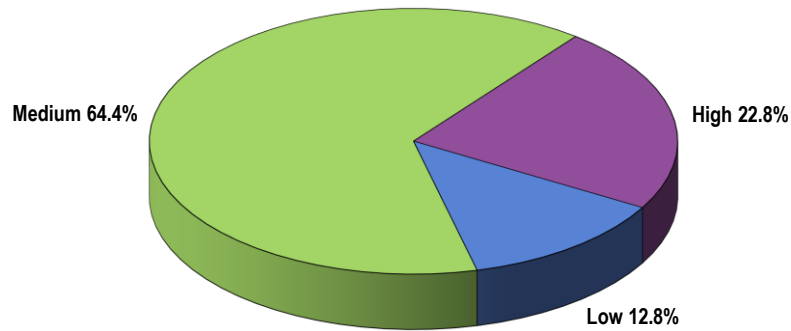
## Health Literacy

### Population With Low Health Literacy

A total of 12.8% Boone County adults are found to have low health literacy.

Low health literacy is defined as those respondents who "seldom/never" find written or spoken health information easy to understand, and/or who "always/nearly always" need help reading health information, and/or who are "not at all confident" in filling out health forms.

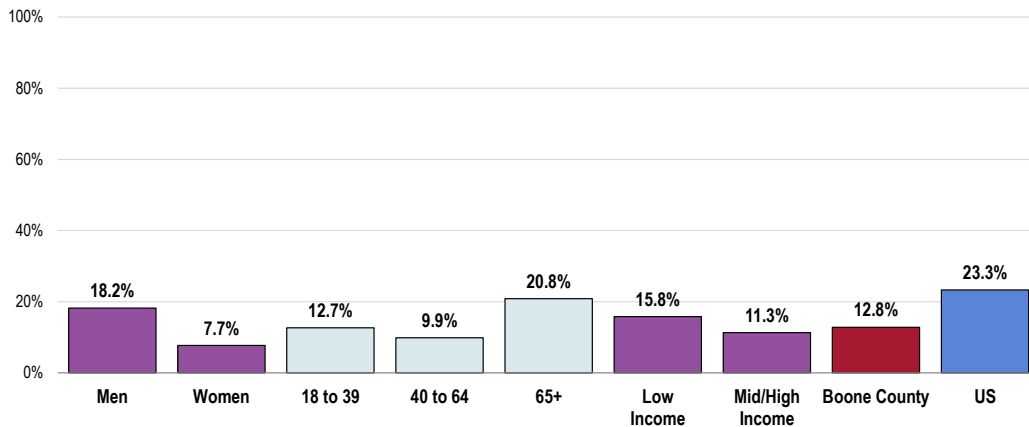
**Level of Health Literacy**  
(Boone County, 2018)



- Sources:
- 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 172]
- Notes:
- Asked of all respondents.
  - Respondents with low health literacy are those who "seldom/never" find written or spoken health information easy to understand, and/or who "always/nearly always" need help reading health information, and/or who are "not at all confident" in filling out health forms.

- Far lower than national findings.
- Local adults more likely to have low levels of health literacy include men and older adults (age 65+).

**Low Health Literacy**  
(Boone County, 2018)



- Sources:
- 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 172]
  - 2017 PRC National Health Survey, Professional Research Consultants, Inc.
- Notes:
- Asked of all respondents.
  - Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.
  - Respondents with low health literacy are those who "seldom/never" find written or spoken health information easy to understand, and/or who "always/nearly always" need help reading health information, and/or who are "not at all confident" in filling out health forms.

### Understanding Health Information

Respondents were read:

"You can find written health information on the internet, in newspapers and magazines, on medications, at the doctor's office, in clinics, and many other places.

How often is health information written in a way that is easy for you to understand?

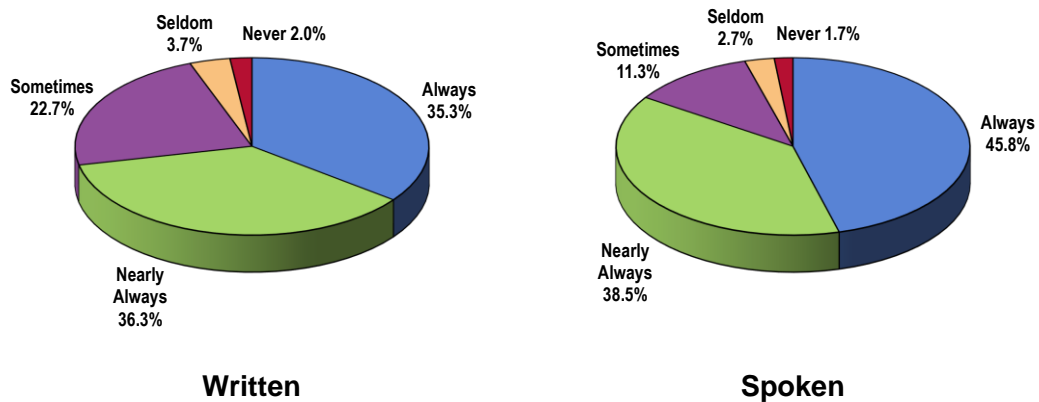
How often is health information spoken in a way that is easy for you to understand?"

The following individual measures are used to determine the health literacy levels described above.

#### Written & Spoken Information

**While a majority of Boone County adults generally find health information to be easy to understand, 5.7% experience considerable difficulty with written health information and 4.4% experience considerable difficulty with spoken health information** (responding "seldom" or "never" easy to understand).

**Frequency With Which Health Information Is \_\_\_\_\_ in a Way That is Easy to Understand (Boone County, 2018)**



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 74, 76]  
 Notes: • Asked of all respondents.

### Reading Health Information & Completing Health Forms

Respondents were read:

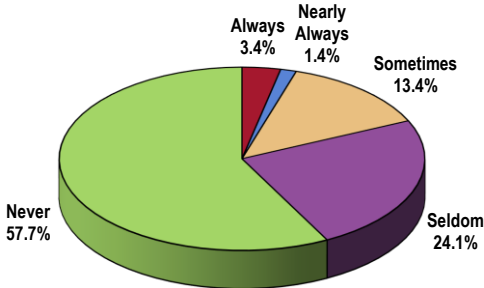
"People who might help you read health information include family members, friends, caregivers, doctors, nurses, or other health professionals. How often do you need to have someone help you read health information?"

"Health forms include insurance forms, questionnaires, doctor's office forms, and other forms related to health and health care. In general, how confident are you in your ability to fill out health forms yourself?"

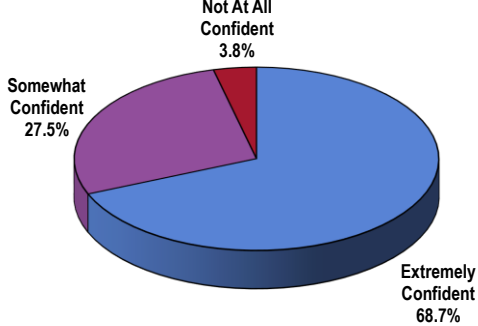
**A total of 4.8% of Boone County adults "always" or "nearly always" need to have someone help them read health information.**

**A total of 3.8% of adults are "not at all confident" in their ability to fill out health forms by themselves.**

**Frequency of Needing Help Reading Health Information**  
(Boone County, 2018)



**Confidence in Ability to Fill Out Health Forms**  
(Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 75, 77]  
Notes: • Asked of all respondents.  
• In this case, health forms include insurance forms, questionnaires, doctor's office forms, and other forms related to health and healthcare.

# General Health Status



Professional Research Consultants, Inc.

## Overall Health Status

### Evaluation of Health Status

**A total of 58.9% of Boone County adults rate their overall health as “excellent” or “very good.”**

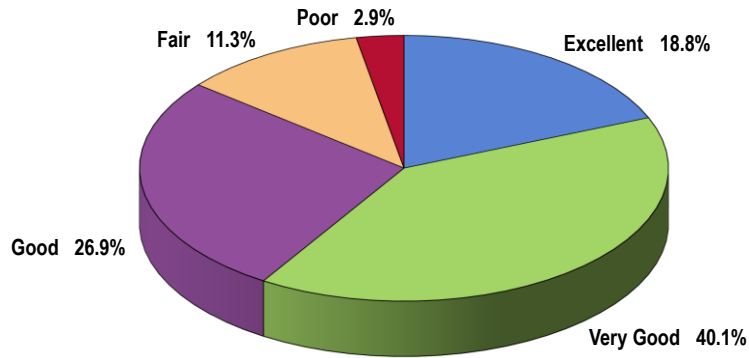
- Another 26.9% gave “good” ratings of their overall health.

The initial inquiry of the PRC Community Health Survey asked respondents the following:

“Would you say that in general your health is: excellent, very good, good, fair, or poor?”

### Self-Reported Health Status

(Boone County, 2018)

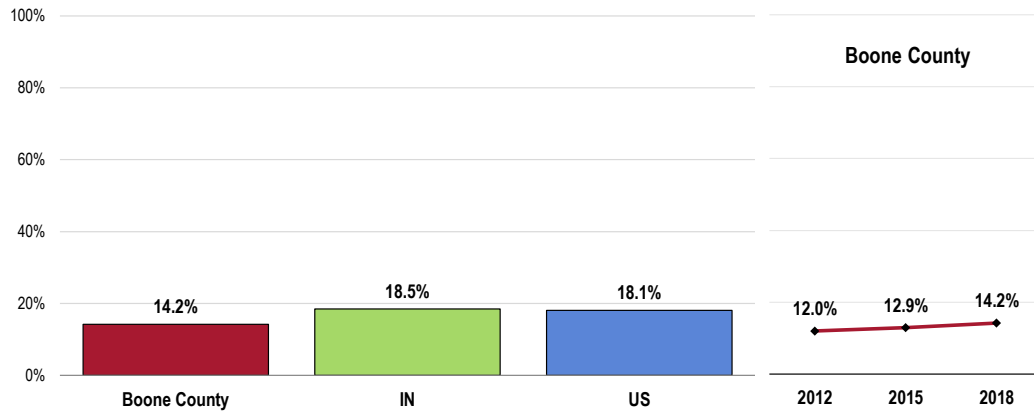


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 5]  
 Notes: • Asked of all respondents.

**However, 14.2% of Boone County adults believe that their overall health is “fair” or “poor.”**

- Better than statewide and national findings.
- TREND: No statistically significant change has occurred when comparing “fair/poor” overall health reports to previous survey results.

### Experience “Fair” or “Poor” Overall Health

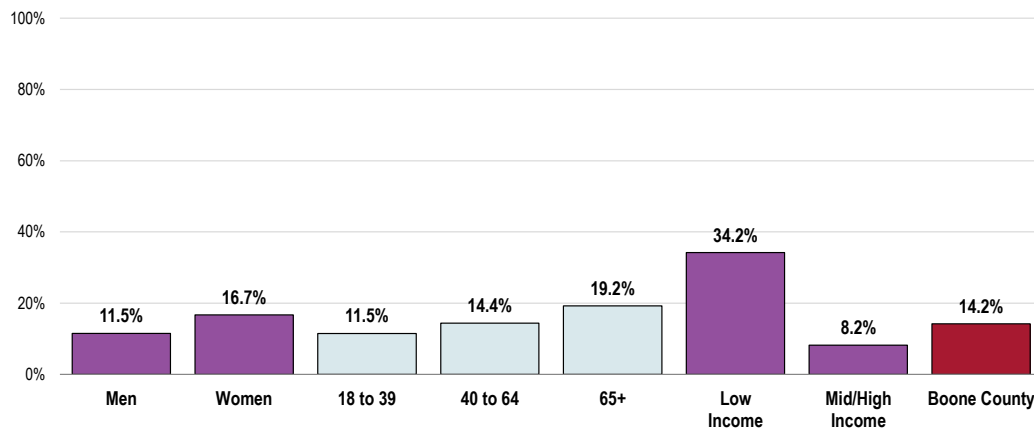


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 5]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: • Asked of all respondents.

- Higher among women and especially residents living at lower incomes.

### Experience “Fair” or “Poor” Overall Health (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 5]  
 • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.



## Activity Limitations

### About Disability & Health

An individual can get a disabling impairment or chronic condition at any point in life. Compared with people without disabilities, people with disabilities are more likely to:

- Experience difficulties or delays in getting the health care they need.
- Not have had an annual dental visit.
- Not have had a mammogram in past 2 years.
- Not have had a Pap test within the past 3 years.
- Not engage in fitness activities.
- Use tobacco.
- Be overweight or obese.
- Have high blood pressure.
- Experience symptoms of psychological distress.
- Receive less social-emotional support.
- Have lower employment rates.

There are many social and physical factors that influence the health of people with disabilities. The following three areas for public health action have been identified, using the International Classification of Functioning, Disability, and Health (ICF) and the three World Health Organization (WHO) principles of action for addressing health determinants.

- **Improve the conditions of daily life** by: encouraging communities to be accessible so all can live in, move through, and interact with their environment; encouraging community living; and removing barriers in the environment using both physical universal design concepts and operational policy shifts.
- **Address the inequitable distribution of resources among people with disabilities and those without disabilities** by increasing: appropriate health care for people with disabilities; education and work opportunities; social participation; and access to needed technologies and assistive supports.
- **Expand the knowledge base and raise awareness about determinants of health for people with disabilities** by increasing: the inclusion of people with disabilities in public health data collection efforts across the lifespan; the inclusion of people with disabilities in health promotion activities; and the expansion of disability and health training opportunities for public health and health care professionals.

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

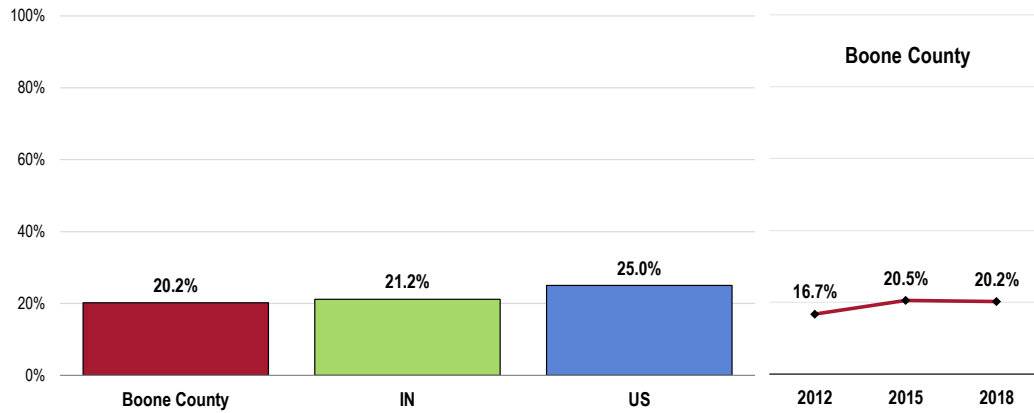
**One in five Boone County adults (20.2%) are limited in some way in some activities, due to a physical, mental, or emotional problem.**

- Similar to the prevalence statewide.
- More favorable than the national prevalence.
- **TREND:** Activity limitations in Boone County have not significantly changed since 2012.

#### RELATED ISSUE:

See also *Potentially Disabling Conditions in the Death, Disease, & Chronic Conditions* section of this report.

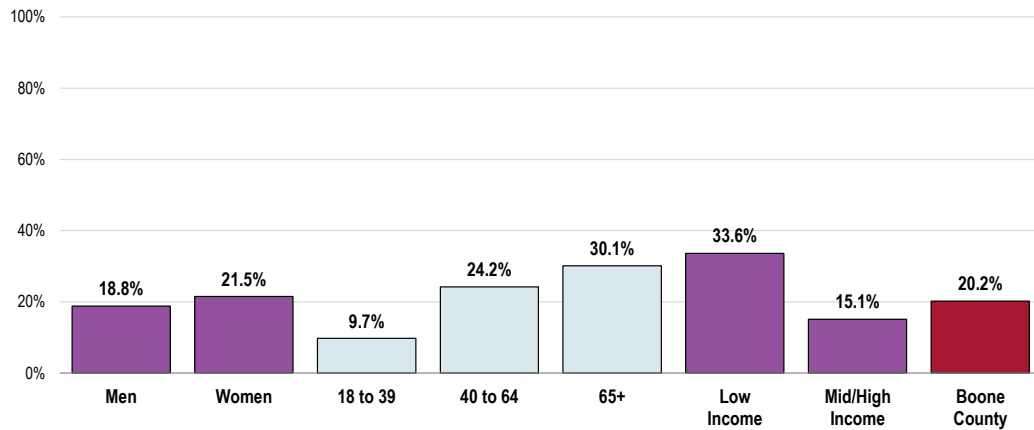
### Limited in Activities in Some Way Due to a Physical, Mental or Emotional Problem



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 109]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2015 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

- Low-income adults and those age 65+ are more likely to report some type of activity limitation (note the positive correlation with age).

### Limited in Activities in Some Way Due to a Physical, Mental or Emotional Problem (Boone County, 2018)

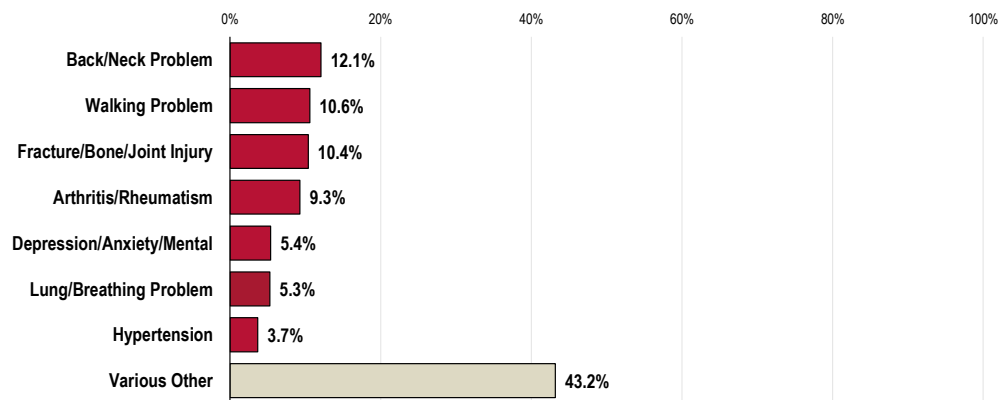


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 109]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

Among persons reporting activity limitations, these are most often attributed to musculo-skeletal issues, such as back/neck problems, difficulty walking, fractures or bone/joint injuries, or arthritis/rheumatism.

Other limitations noted with some frequency include those related to mental health (depression, anxiety), lung/breathing problems, or hypertension.

**Type of Problem That Limits Activities**  
(Among Those Reporting Activity Limitations; Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 110]  
Notes: • Asked of those respondents reporting activity limitations.

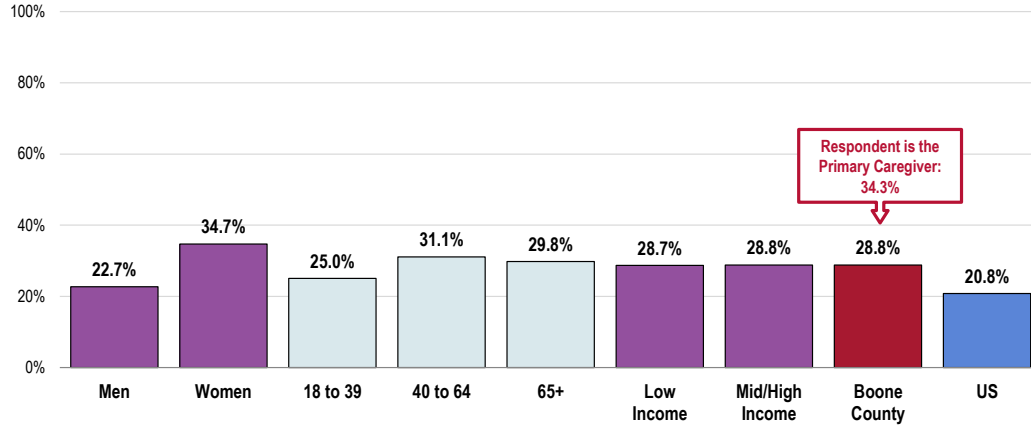
## Caregiving

A total of 28.8% of Boone County adults currently provide care or assistance to a friend or family member who has a health problem, long-term illness, or disability.

- Above the national finding.
- The prevalence of caregivers in the community is notably higher among women.

Of these adults, 34.3% are the **primary** caregiver for the individual receiving care.

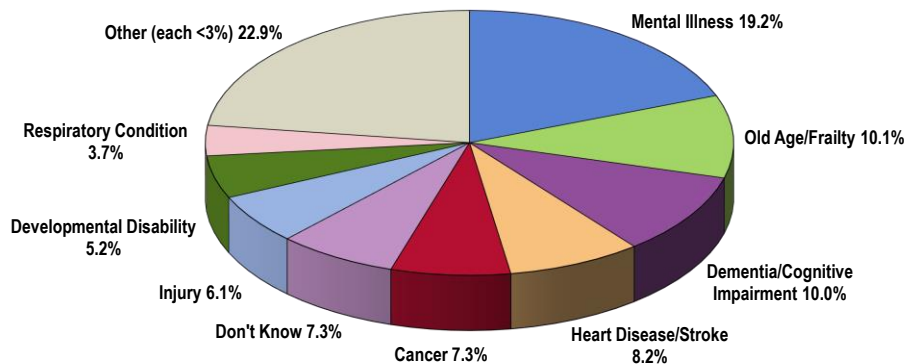
### Act as Caregiver to a Friend or Relative with a Health Problem, Long-Term Illness, or Disability (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 111, 113]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

For those who provide care or assistance, the top health issues affecting those receiving their care include **mental illness** (19.2%), **old age/frailty** (10.1%), **dementia/cognitive impairment** (10.0%), **heart disease/stroke** (8.2%), and **cancer** (7.3%).

### Primary Health Issue of Person Receiving Care or Assistance (Among Caregivers Providing Regular Care to a Friend/Family Member; Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 112]  
 Notes: • Asked of those respondents reporting providing regular care or assistance to a friend or family member with a health problem, long-term illness, or disability.

## Mental Health

### About Mental Health & Mental Disorders

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

Mental health and physical health are closely connected. Mental health plays a major role in people's ability to maintain good physical health. Mental illnesses, such as depression and anxiety, affect people's ability to participate in health-promoting behaviors. In turn, problems with physical health, such as chronic diseases, can have a serious impact on mental health and decrease a person's ability to participate in treatment and recovery.

The existing model for understanding mental health and mental disorders emphasizes the interaction of social, environmental, and genetic factors throughout the lifespan. In behavioral health, researchers identify: **risk factors**, which predispose individuals to mental illness; and **protective factors**, which protect them from developing mental disorders. Researchers now know that the prevention of mental, emotional, and behavioral (MEB) disorders is inherently interdisciplinary and draws on a variety of different strategies. Over the past 20 years, research on the prevention of mental disorders has progressed. The major areas of progress include evidence that:

- MEB disorders are common and begin early in life.
- The greatest opportunity for prevention is among young people.
- There are multiyear effects of multiple preventive interventions on reducing substance abuse, conduct disorder, antisocial behavior, aggression, and child maltreatment.
- The incidence of depression among pregnant women and adolescents can be reduced.
- School-based violence prevention can reduce the base rate of aggressive problems in an average school by 25 to 33%.
- There are potential indicated preventive interventions for schizophrenia.
- Improving family functioning and positive parenting can have positive outcomes on mental health and can reduce poverty-related risk.
- School-based preventive interventions aimed at improving social and emotional outcomes can also improve academic outcomes.
- Interventions targeting families dealing with adversities, such as parental depression or divorce, can be effective in reducing risk for depression in children and increasing effective parenting.
- Some preventive interventions have benefits that exceed costs, with the available evidence strongest for early childhood interventions.
- Implementation is complex, and it is important that interventions be relevant to the target audiences.
- In addition to advancements in the prevention of mental disorders, there continues to be steady progress in treating mental disorders as new drugs and stronger evidence-based outcomes become available.

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

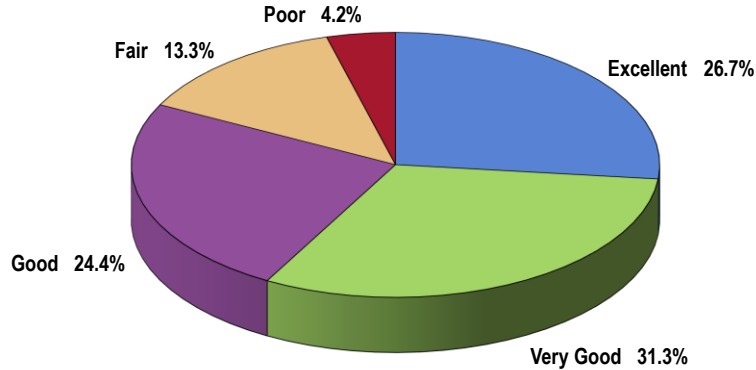
"Now thinking about your mental health, which includes stress, depression and problems with emotions, would you say that, in general, your mental health is: excellent, very good, good, fair or poor?"

## Evaluation of Mental Health Status

A total of 58.0% of Boone County adults rate their overall mental health as "excellent" or "very good."

- Another 24.4% gave "good" ratings of their own mental health status.

### Self-Reported Mental Health Status (Boone County, 2018)

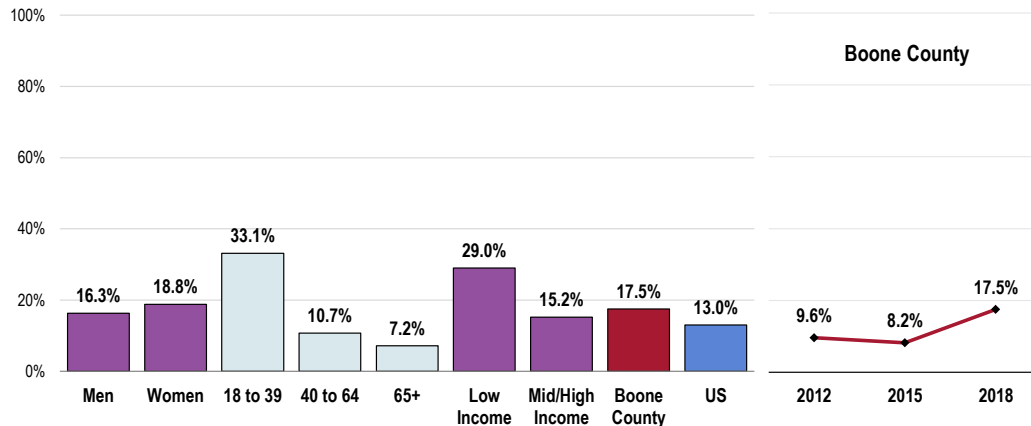


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 99]  
Notes: • Asked of all respondents.

A total of 17.5% of Boone County adults, however, believe that their overall mental health is "fair" or "poor."

- Above the "fair/poor" response reported nationally.
- Note that one-third of young adults report "fair/poor" mental health. Low-income adults also report a significantly higher prevalence.
- TREND: Higher than findings from previous years.

### Experience "Fair" or "Poor" Mental Health (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 99]  
• 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
Notes: • Asked of all respondents.  
• Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

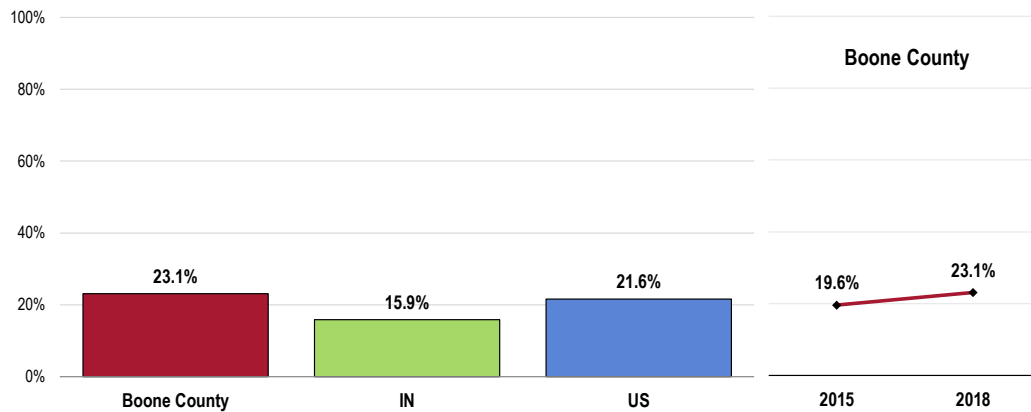
## Depression

### Diagnosed Depression

A total of 23.1% of Boone County adults have been diagnosed by a physician as having a depressive disorder (such as depression, major depression, dysthymia, or minor depression).

- Above the state prevalence.
- Similar to the nation.
- TREND: Statistically unchanged over time.

### Have Been Diagnosed With a Depressive Disorder



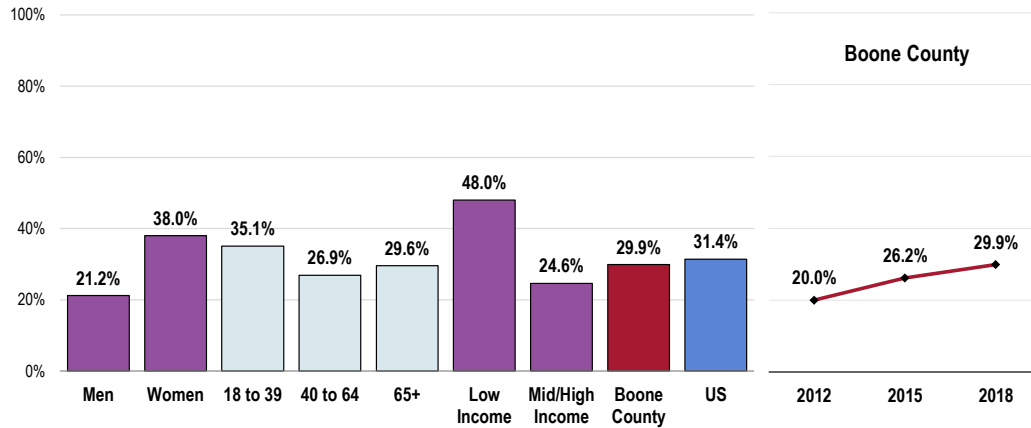
- Sources:
- 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 102]
  - Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.
  - 2017 PRC National Health Survey, Professional Research Consultants, Inc.
- Notes:
- Asked of all respondents.
  - Depressive disorders include depression, major depression, dysthymia, or minor depression.

### Symptoms of Chronic Depression

A total of 29.9% of Boone County adults have had two or more years in their lives when they felt depressed or sad on most days, although they may have felt okay sometimes (symptoms of chronic depression).

- Statistically comparable to national findings.
- Particularly high among low-income adults, as well as women.
- TREND: Above the 2012 prevalence.

## Have Experienced Symptoms of Chronic Depression (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 100]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: • Asked of all respondents.  
 • Chronic depression includes periods of two or more years during which the respondent felt depressed or sad on most days, even if (s)he felt okay sometimes.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

## Stress

Just under four in 10 Boone County adults consider their typical day to be "not very stressful" (28.0%) or "not at all stressful" (11.1%).

RELATED ISSUE:

See also *Substance Abuse* in the **Modifiable Health Risks** section of this report.

- Another 50.9% of survey respondents characterize their typical day as "moderately stressful."

## Perceived Level of Stress On a Typical Day (Boone County, 2018)



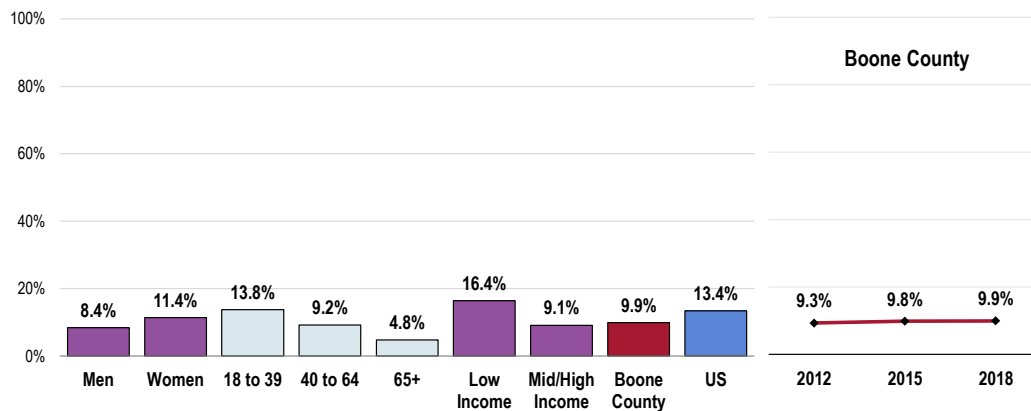
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 101]  
 Notes: • Asked of all respondents.



**In contrast, 9.9% of Boone County adults experience “very” or “extremely” stressful days on a regular basis.**

- More favorable than national findings.
- Note that high stress levels are more prevalent among young adults.
- TREND: Similar to findings from previous years.

**Perceive Most Days As “Extremely” or “Very” Stressful  
(Boone County, 2018)**



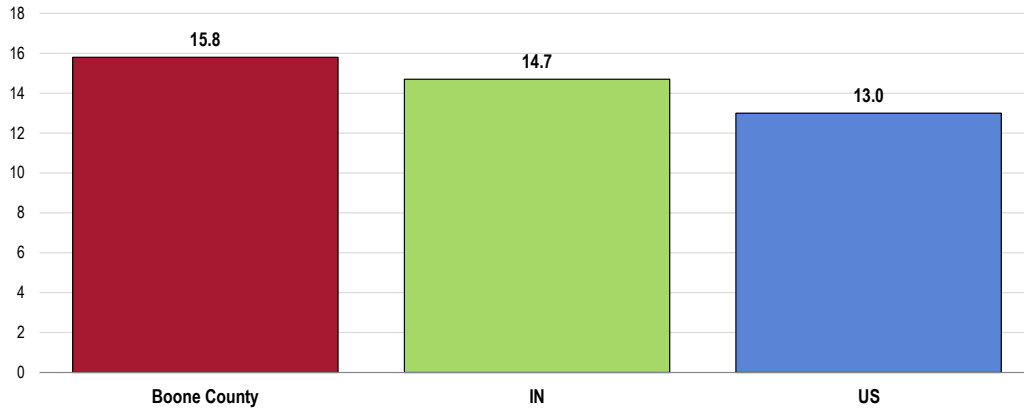
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 101]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

**Suicide**

**Between 2014 and 2016, there was an annual average age-adjusted suicide rate of 15.8 deaths per 100,000 population in Boone County.**

- Statistically comparable to the statewide rate.
- Higher than the national rate.
- Fails to satisfy the Healthy People 2020 target of 10.2 or lower.

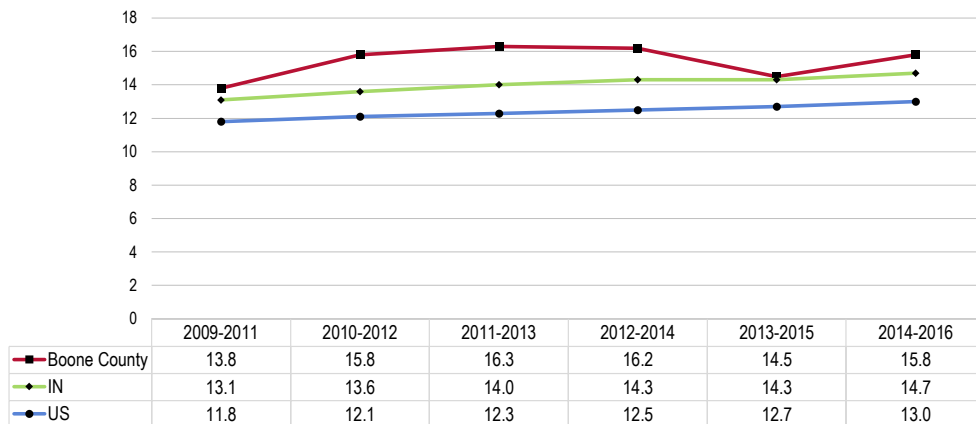
### Suicide: Age-Adjusted Mortality (2014-2016 Annual Average Deaths per 100,000 Population) Healthy People 2020 Target = 10.2 or Lower



- Sources:
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
  - US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective MHMD-1]
- Notes:
- Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
  - Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

- **TREND:** Despite some fluctuations, the area suicide rate has overall trended upward, following state and national trends.

### Suicide: Age-Adjusted Mortality Trends (Annual Average Deaths per 100,000 Population) Healthy People 2020 Target = 10.2 or Lower



- Sources:
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
  - US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective MHMD-1]
- Notes:
- Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
  - Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

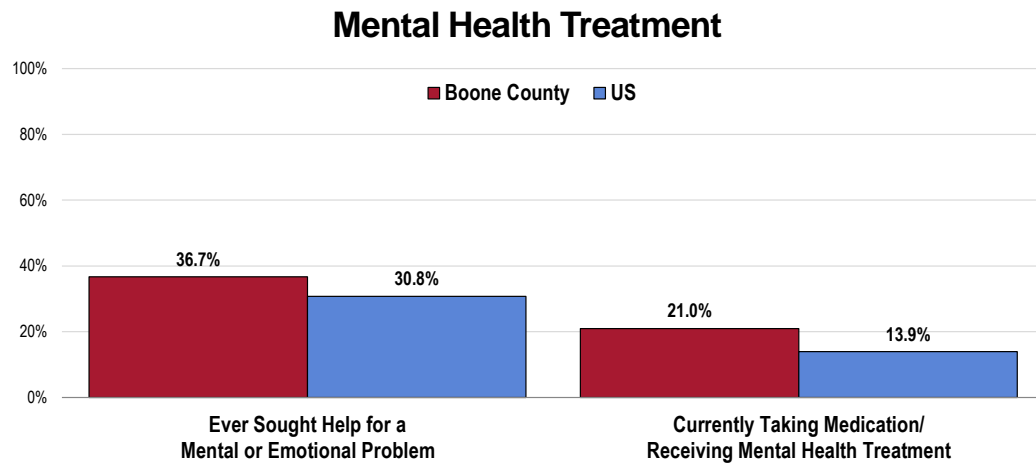
## Mental Health Treatment

A total of 36.7% of Boone County adults acknowledge having ever sought professional help for a mental or emotional problem.

- Higher than national findings.
- TREND: More favorable than 2015 findings (not shown).

A total of 21.0% are currently taking medication or receiving treatment from a doctor or other health professional for some type of mental health condition or emotional problem.

- Higher than national findings.



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 103-104]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.

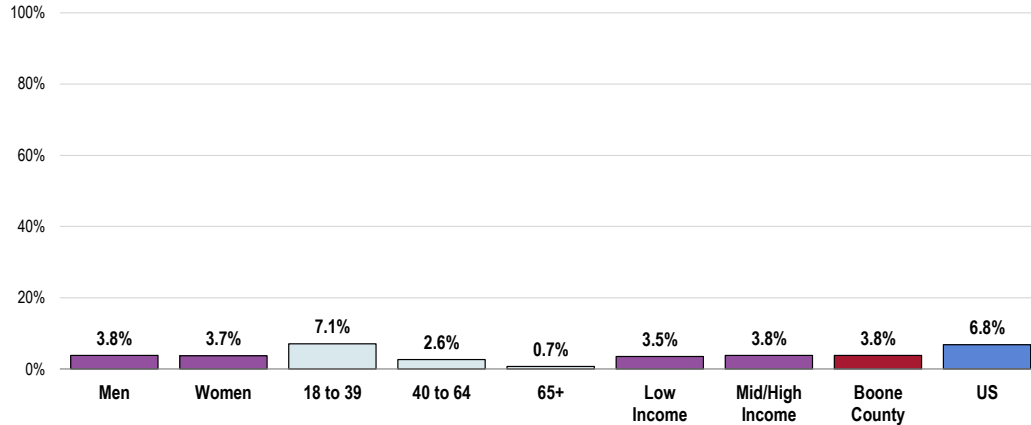
Notes: • Reflects the total sample of respondents.

## Difficulty Accessing Mental Health Services

A total of 3.8% of Boone County adults report a time in the past year when they needed mental health services, but were not able to get them.

- Under the national finding.
- Access difficulty is notably more prevalent among younger adults.

### Unable to Get Mental Health Services When Needed in the Past Year (Boone County, 2018)



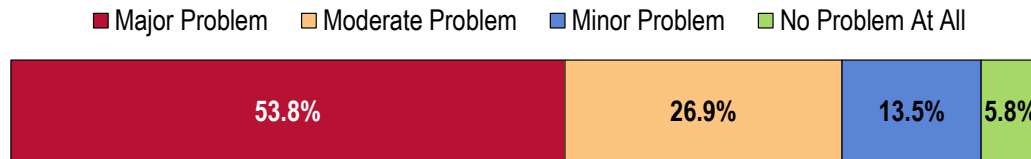
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 105]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

Among persons citing difficulties accessing mental health services in the past year, these are predominantly attributed to **cost issues**; barriers mentioned much less frequently include lack of services, lack of time, and perceived poor doctor care (not shown).

### Key Informant Input: Mental Health

More than half of key informants taking part in an online survey characterized *Mental Health* as a "major problem" in the community.

### Perceptions of Mental Health as a Problem in the Community (Key Informants, 2018)



Sources: • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

## Top Concerns

Among those rating this issue as a “major problem,” reasons related to the following:

### Access to Care/Services

*Access to mental health services when they are in crisis and need to be placed in facility. Our ER will see a patient in crisis, and it takes hours (if not over 24 hours) in the ER before we can get placement, after talking and faxing 10 or more facilities to try and get placement. This is taking ER resources away from other patients and backing up the ER if they are there for hours/days. Patients just want help, and there are way too many hoops to jump through to get that for them. - Other Health Provider*

*There are not enough pediatric health care providers both for counseling services and for psychiatric medication management. The participation of counseling centers with the schools is wonderful, but it still seems there are just not enough providers for the need in the community - Physician*

*Finding qualified professionals available to assist patients with mental health issues, as well as motivating patients in need of these services to overcome public and personal stigma to seek such help. - Other Health Provider*

*We have several mental health providers, but not a lot of additional support services, such as support groups. - Community Leader*

*Trying to get in to see a psychiatrist. Then if they miss an appointment, it takes forever to get back in to see them. We also have very few child psychiatrist appointment slots. - Physician*

*The delay for intake of patients with mental health issues is unacceptably long. Access to psychiatric services is poor. - Physician*

*Lack of adherence or access to mental health providers. - Other Health Provider*

### Denial/Stigma

*The stigma for having depression, anxiety or a mental health disorder has gotten better in the past 10 years but it still has a long way to go. Insurance companies covering the cost of medication and the access to competent providers is an additional concern. I have had issues personally finding a counselor within Boone County who was in my network and who I felt was competent. - Social Services Provider*

*Individuals attending and sticking with services to address their mental health needs. We have several great organizations, but it's hard to get people to buy into services long-term. - Social Services Provider*

*People with mental health issues are too scared to ask for help, or they don't know where to turn. Especially in a small community. They are also too scared because they may not feel their identity will be protected or confidential. Especially in the community they may have grown up in for most of or all of their life. Cost is another concern.... taking time away from work. Or, no healthcare coverage. It also seems to be challenging to get into a treatment program when they are ready...sometimes when they are ready for help, there are no openings for assistance at that very point in time. - Community Leader*

*Same as violence, stigma towards mental health difficulties. Low to no insurance coverage. - Social Services Provider*

*Overcoming the stigma of mental health issues. Affordable mental health services. - Public Health Representative*

*Stigma. - Social Services Provider*

### Affordable Care/Insurance Issues

*Access to affordable services, awareness of services, and stigma. We're so lucky to have so many different groups available to help with mental health, but I wonder how many people are aware of these resources? I also notice there's a concentration of resources in Lebanon. This is fantastic because we have such a high population, but if you're in Zionsville or Whitestown, you'll probably have to hope your insurance can cover a private provider (if you even have insurance), but you might be flat out of luck if you live in Advance, Thorntown, or Jamestown. I do think attitudes are changing when it comes to the stigma of mental illness, but we still have a long way to go. Stigma prevents people from realizing they might have a problem and from their concerned friends or family members talking about their worries. It stops people from recognizing they might have a problem they can't get through on their own. And it stops people from being unashamed of their diagnosis. - Social Services Provider*

*Mental health providers that will work with individuals on Medicaid is needed. For persons with intellectual and developmental disabilities, access to mental health professionals who understand dual diagnoses is critical - this is an issue throughout Indiana, not just Boone County. - Social Services Provider*

*Affordable service. Access to uninsured services. No services at the health department. - Community Leader*

### **Prevalence/Incidence**

*It seems there are a lot of people depressed, on medication like anti-depressants, committing suicide, taking drugs, I feel there are not a lot of affordable counseling options for citizens. I also think we need to remove the stigma that goes with seeing a counselor and seeking out help for needs. No one wants to think they have a mental problem, but we all have problems in this life. It's just a matter of support and beliefs that a person has that gets them through their problems. Sometimes people feel there is no hope or no way out of their situation. And even with insurance it's not very affordable to see a counselor on a regular basis. - Other Health Provider*

*Mental illness and addictive disorders impact every part of the community. Though we have good resources, many people can't afford mental health care or have limited care through their insurance. Stigma also exists surrounding mental health and addiction and some people will not reach out for assistance. - Public Health Representative*

*Both young and old dealing with mental health issues. - Public Health Representative*

### **Alcohol/Drug Use**

*Adolescents and young adults self-medicating for the lack of knowledge and support for depression, attention and focusing issues and anxiety. Unfortunately, this is also contributing to our drug abuse problems. - Other Health Provider*

### **Early Diagnosis/Prevention**

*I would like to see more emphasis on promoting mental well-being and tools to do so. Just as we promote healthy living physically, let's promote health living mentally and what would that look like. - Community Leader*

### **Suicide**

*Suicides, lack of sense of self-worth and belonging, high anxiety, kids with lack of self-confidence and independence. So much time online, relationships are suffering. - Physician*

# Death, Disease, & Chronic Conditions



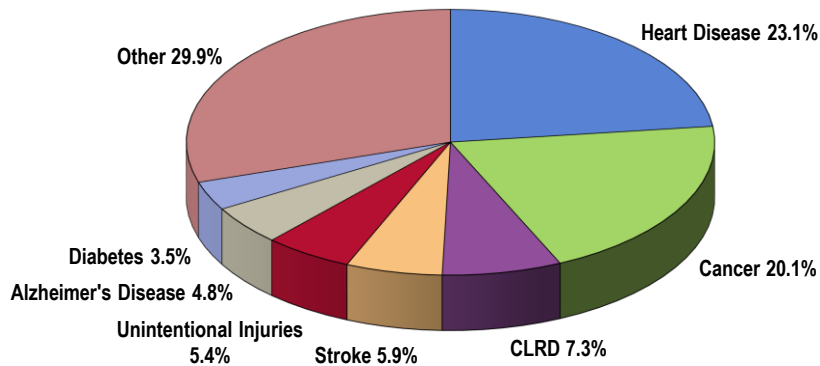
Professional Research Consultants, Inc.

## Leading Causes of Death

### Distribution of Deaths by Cause

Together, cardiovascular disease (heart disease and stroke) and cancers accounted for nearly one-half of all deaths in Boone County between 2014 and 2016.

**Leading Causes of Death**  
(Boone County, 2014-2016)



- Sources:
  - CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
- Notes:
  - Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
  - CLRD is chronic lower respiratory disease.

### Age-Adjusted Death Rates for Selected Causes

In order to compare mortality in the region with other localities (in this case, Indiana and the United States), it is necessary to look at *rates* of death — these are figures which represent the number of deaths in relation to the population size (such as deaths per 100,000 population, as is used here).

Furthermore, in order to compare localities without undue bias toward younger or older populations, the common convention is to adjust the data to some common baseline age distribution. Use of these “age-adjusted” rates provides the most valuable means of gauging mortality against benchmark data, as well as *Healthy People 2020* targets.

The following chart outlines 2014-2016 annual average age-adjusted death rates per 100,000 population for selected causes of death in Boone County.

Each of these is discussed in greater detail in subsequent sections of this report.



## Age-Adjusted Death Rates for Selected Causes (2014-2016 Deaths per 100,000 Population)

For infant mortality data, see *Birth Outcomes & Risks* in the *Births* section of this report.

	Boone County	Indiana	US	HP2020
<b>Diseases of the Heart</b>	182.8	181.9	167.0	156.9*
<b>Malignant Neoplasms (Cancers)</b>	159.0	176.2	158.5	161.4
<b>Chronic Lower Respiratory Disease (CLRD)</b>	62.4	54.7	40.9	n/a
<b>Cerebrovascular Disease (Stroke)</b>	48.1	40.1	37.1	34.8
<b>Unintentional Injuries</b>	45.6	47.7	43.7	36.4
<b>Alzheimer's Disease</b>	39.2	32.5	28.4	n/a
<b>Diabetes Mellitus</b>	29.1	25.8	21.1	20.5*
<b>Drug-Induced</b>	19.1	17.4	14.3	11.3
<b>Intentional Self-Harm (Suicide)</b>	15.8	14.7	13.0	10.2
<b>Kidney Diseases</b>	15.4	18.7	13.2	n/a
<b>Pneumonia/Influenza</b>	13.5	13.6	14.6	n/a
<b>Cirrhosis/Liver Disease</b>	9.2	11.0	10.6	8.2

- Sources:
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
  - US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov>.
- Note:
- Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population and coded using ICD-10 codes.
  - \*The Healthy People 2020 Heart Disease target is adjusted to account for all diseases of the heart; the Diabetes target is adjusted to reflect only diabetes mellitus-coded deaths.

## Cardiovascular Disease

### About Heart Disease & Stroke

Heart disease is the leading cause of death in the United States, with stroke following as the third leading cause. Together, heart disease and stroke are among the most widespread and costly health problems facing the nation today, accounting for more than \$500 billion in healthcare expenditures and related expenses in 2010 alone. Fortunately, they are also among the most preventable.

The leading modifiable (controllable) risk factors for heart disease and stroke are:

- High blood pressure
- High cholesterol
- Cigarette smoking
- Diabetes
- Poor diet and physical inactivity
- Overweight and obesity

The risk of Americans developing and dying from cardiovascular disease would be substantially reduced if major improvements were made across the US population in diet and physical activity, control of high blood pressure and cholesterol, smoking cessation, and appropriate aspirin use.

The burden of cardiovascular disease is disproportionately distributed across the population. There are significant disparities in the following based on gender, age, race/ethnicity, geographic area, and socioeconomic status:

- Prevalence of risk factors
- Access to treatment
- Appropriate and timely treatment
- Treatment outcomes
- Mortality

Disease does not occur in isolation, and cardiovascular disease is no exception. Cardiovascular health is significantly influenced by the physical, social, and political environment, including: maternal and child health; access to educational opportunities; availability of healthy foods, physical education, and extracurricular activities in schools; opportunities for physical activity, including access to safe and walkable communities; access to healthy foods; quality of working conditions and worksite health; availability of community support and resources; and access to affordable, quality healthcare.

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

## Age-Adjusted Heart Disease & Stroke Deaths

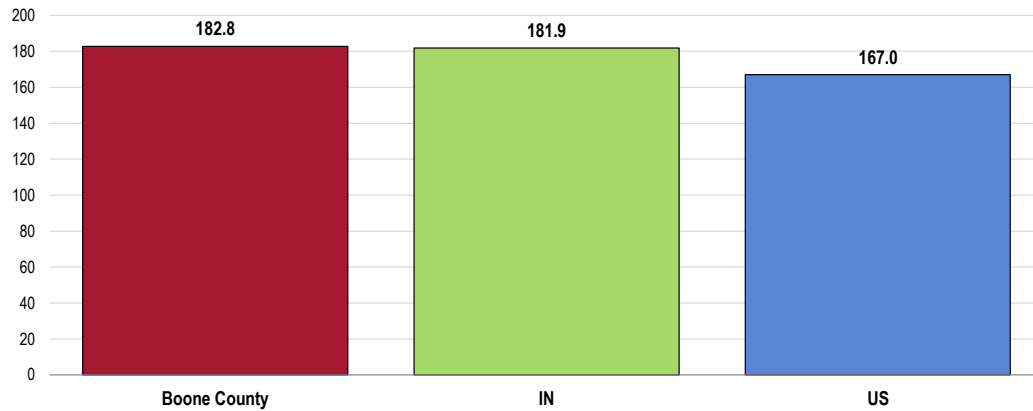
### Heart Disease Deaths

**Between 2014 and 2016 there was an annual average age-adjusted heart disease mortality rate of 182.8 deaths per 100,000 population in Boone County.**

- Similar to statewide and national rates.
- Statistically similar to the Healthy People 2020 target of 156.9 or lower (as adjusted to account for all diseases of the heart).

The greatest share of cardiovascular deaths is attributed to heart disease.

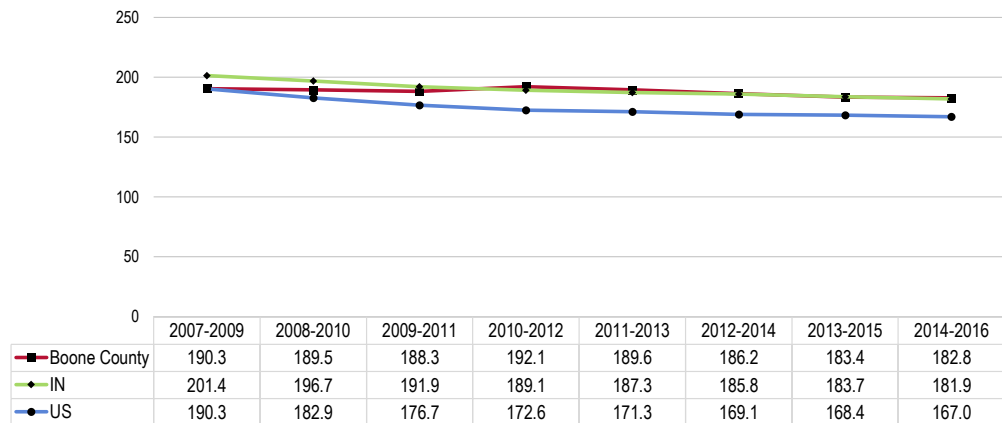
### Heart Disease: Age-Adjusted Mortality (2014-2016 Annual Average Deaths per 100,000 Population) Healthy People 2020 Target = 156.9 or Lower (Adjusted)



- Sources:
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
  - US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective HDS-2]
- Notes:
- Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
  - Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.
  - The Healthy People 2020 Heart Disease target is adjusted to account for all diseases of the heart.

- **TREND:** The heart disease mortality rate has decreased in Boone County, though at a slower rate than the state or nation.

### Heart Disease: Age-Adjusted Mortality Trends (Annual Average Deaths per 100,000 Population) Healthy People 2020 Target = 156.9 or Lower (Adjusted)



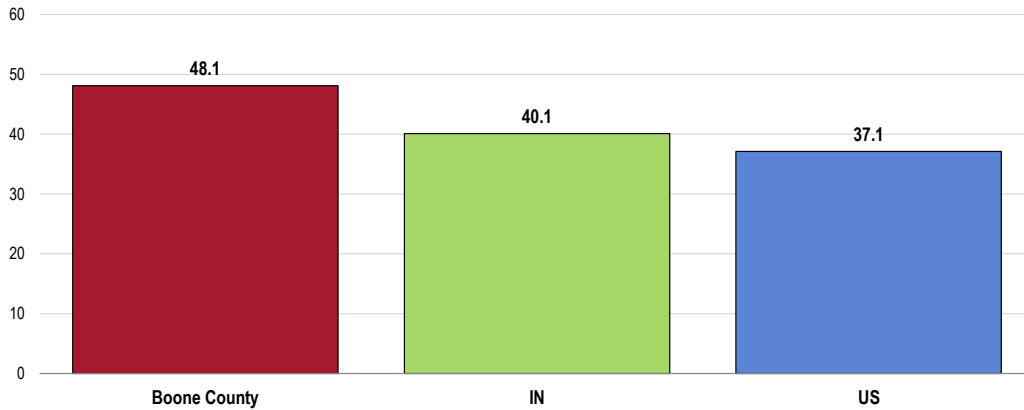
- Sources:
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
  - US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective HDS-2]
- Notes:
- Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
  - Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.
  - The Healthy People 2020 Heart Disease target is adjusted to account for all diseases of the heart.

### Stroke Deaths

Between 2014 and 2016, there was an annual average age-adjusted stroke mortality rate of 48.1 deaths per 100,000 population in Boone County.

- Less favorable than the Indiana and national rates.
- Fails to satisfy the Healthy People 2020 target of 34.8 or lower.

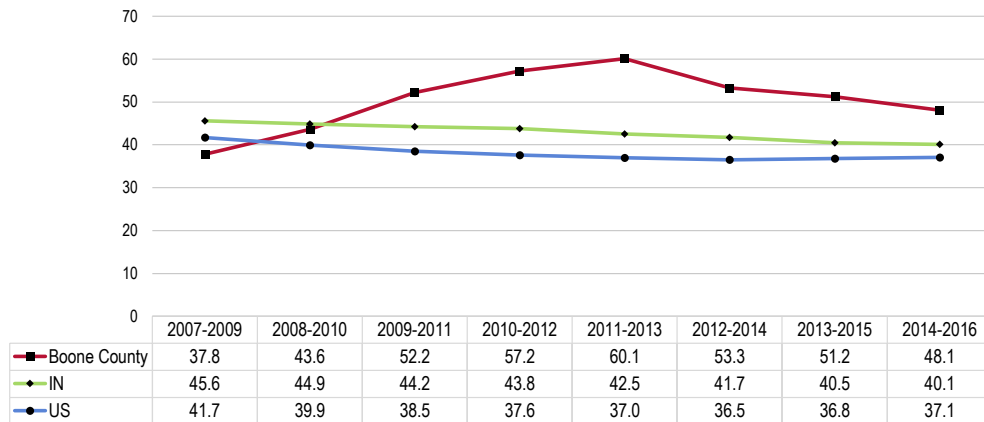
**Stroke: Age-Adjusted Mortality**  
(2014-2016 Annual Average Deaths per 100,000 Population)  
Healthy People 2020 Target = 34.8 or Lower



Sources: • CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.  
• US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective HDS-3]  
Notes: • Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).  
• Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

- TREND: The stroke rate has declined since the 2011-2013 reporting period, following a period of increase; statewide and nationally, the stroke rate has declined gradually.

**Stroke: Age-Adjusted Mortality Trends**  
(Annual Average Deaths per 100,000 Population)  
Healthy People 2020 Target = 34.8 or Lower



Sources: • CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.  
• US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective HDS-3]  
Notes: • Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).  
• Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

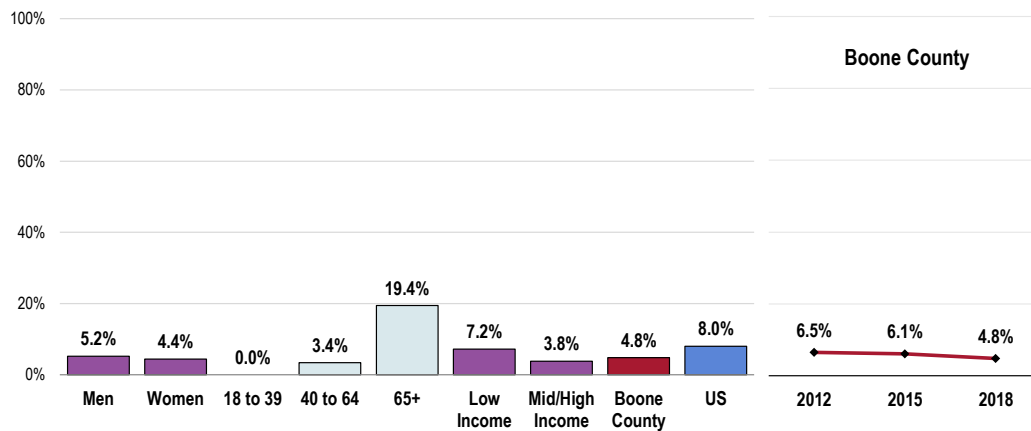
## Prevalence of Heart Disease & Stroke

### Prevalence of Heart Disease

A total of 4.8% of surveyed adults report that they suffer from or have been diagnosed with heart disease, such as coronary heart disease, angina, or heart attack.

- Under the national prevalence.
- Notably higher among older adults (age 65+).
- TREND: Statistically unchanged since 2012.

### Prevalence of Heart Disease (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 128]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.

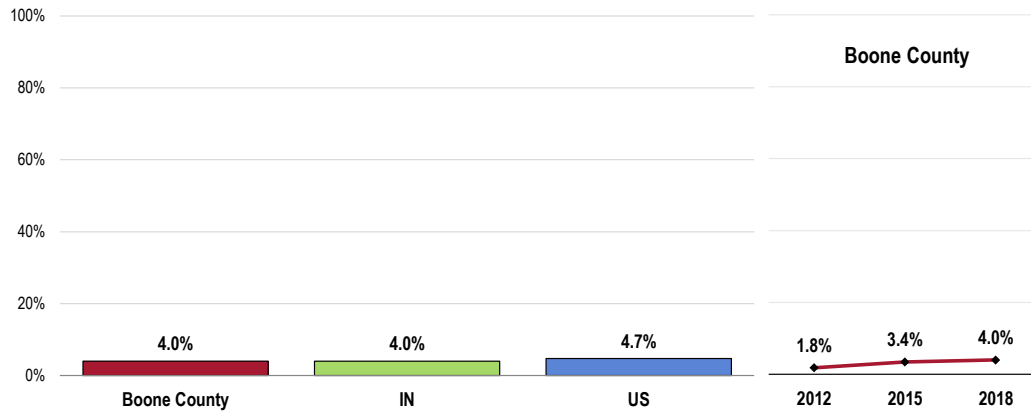
Notes: • Asked of all respondents.  
 • Includes diagnoses of heart attack, angina, or coronary heart disease.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

### Prevalence of Stroke

A total of 4.0% of surveyed adults report that they suffer from or have been diagnosed with cerebrovascular disease (a stroke).

- Similar to statewide and national findings.
- TREND: Denotes a statistically significant increase in stroke prevalence over time.

## Prevalence of Stroke



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 33]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: • Asked of all respondents.

## Cardiovascular Risk Factors

### About Cardiovascular Risk

Controlling risk factors for heart disease and stroke remains a challenge. High blood pressure and cholesterol are still major contributors to the national epidemic of cardiovascular disease. High blood pressure affects approximately 1 in 3 adults in the United States, and more than half of Americans with high blood pressure do not have it under control. High sodium intake is a known risk factor for high blood pressure and heart disease, yet about 90% of American adults exceed their recommendation for sodium intake.

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

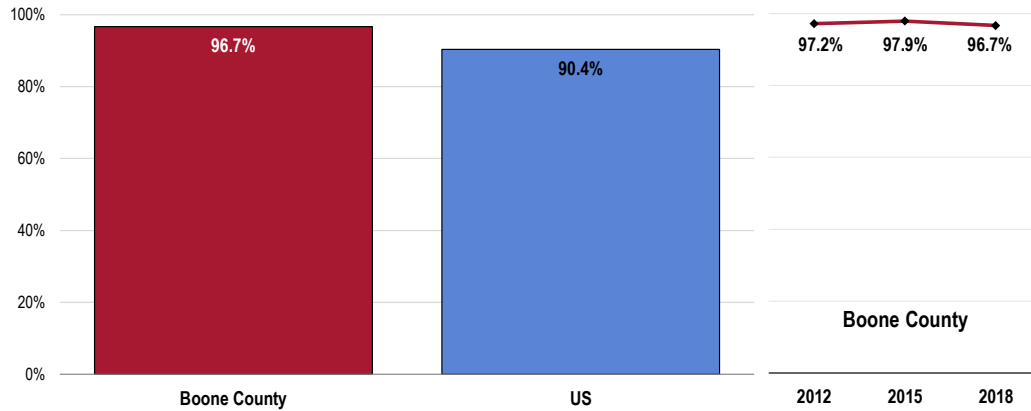
### High Blood Pressure

#### High Blood Pressure Testing

**A total of 96.7% of Boone County adults have had their blood pressure tested within the past two years.**

- Above national findings.
- Satisfies the Healthy People 2020 target (92.6% or higher).
- TREND: Statistically unchanged since 2012.

### Have Had Blood Pressure Checked in the Past Two Years Healthy People 2020 Target = 92.6% or Higher



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 42]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective HDS-4]  
 Notes: • Asked of all respondents.

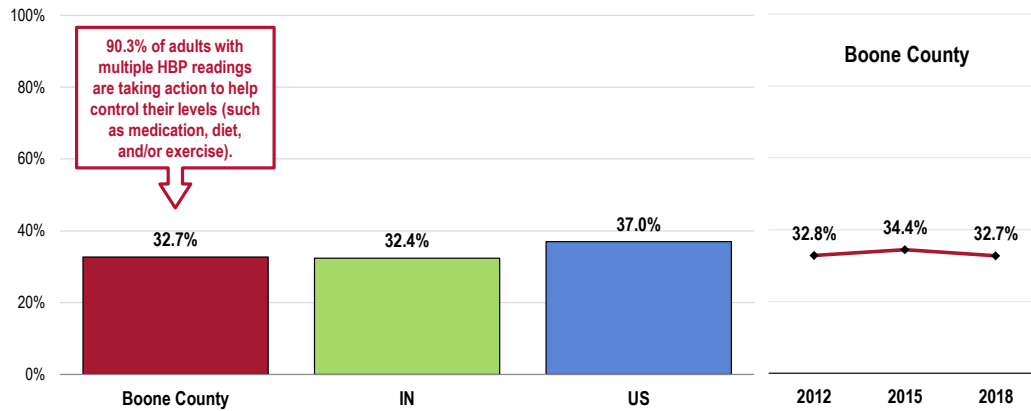
#### Prevalence of High Blood Pressure

A total of 32.7% of Boone County adults have been told at some point that their blood pressure was high.

- Comparable to the Indiana and US prevalence.
- Fails to satisfy the Healthy People 2020 target (26.9% or lower).
- TREND: Statistically unchanged since 2012.

Among adults with multiple high blood pressure readings, 90.3% are taking action to lower their blood pressure (such as medication, change in diet, and/or exercise).

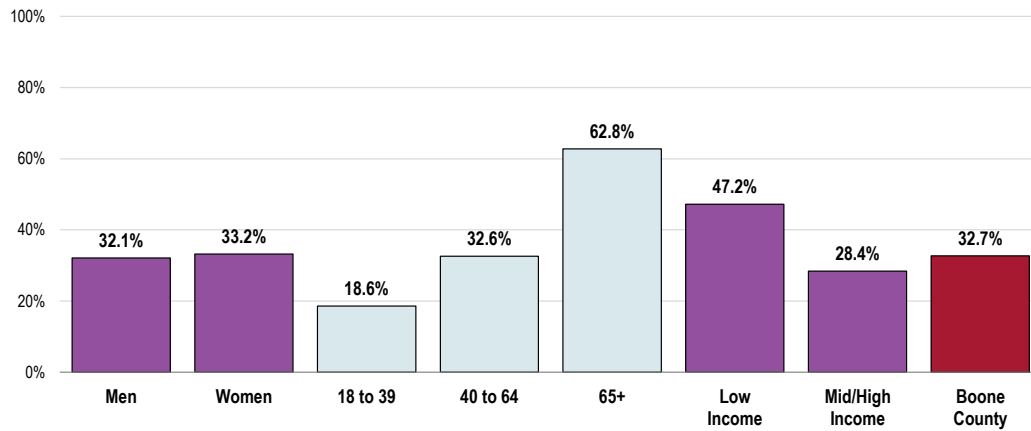
### Prevalence of High Blood Pressure Healthy People 2020 Target = 26.9% or Lower



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 41, 129]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2015 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective HDS-5.1]  
 Notes: • Asked of all respondents.

- Note the strong correlation between age and high blood pressure.
- Low-income adults also report a higher prevalence.

**Prevalence of High Blood Pressure**  
 (Boone County, 2018)  
 Healthy People 2020 Target = 26.9% or Lower



Sources:
 

- 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 129]
- US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective HDS-5.1]

 Notes:
 

- Asked of all respondents.
- Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

**High Blood Cholesterol**

*Blood Cholesterol Testing*

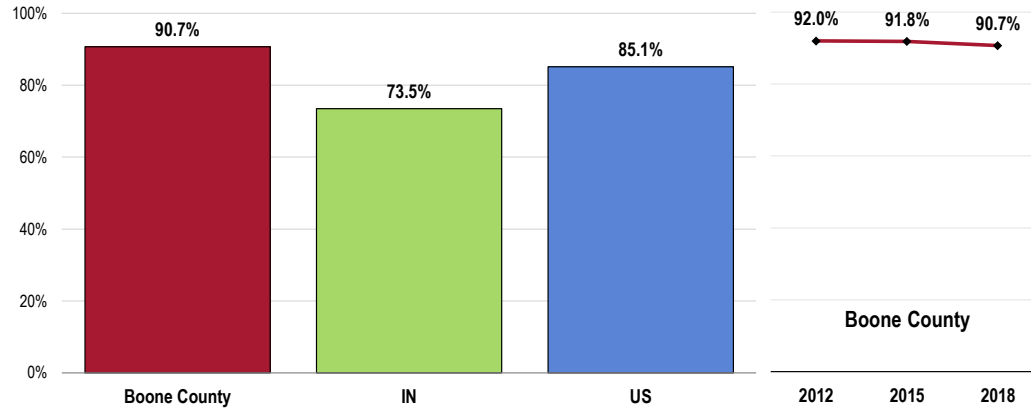
**Nine in 10 Boone County adults (90.7%) have had their blood cholesterol checked within the past five years.**

- More favorable than Indiana and national findings.
- Satisfies the Healthy People 2020 target (82.1% or higher).
- TREND: Statistically similar to 2012 findings.



## Have Had Blood Cholesterol Levels Checked in the Past Five Years

Healthy People 2020 Target = 82.1% or Higher



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 45]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2015 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective HDS-6]

Notes: • Asked of all respondents.

### *Prevalence of High Blood Cholesterol*

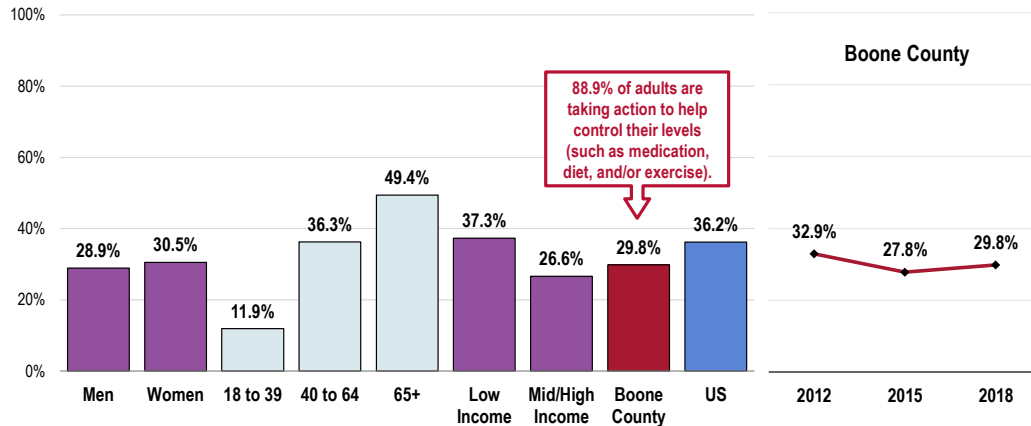
**A total of 29.8% of adults have been told by a health professional that their cholesterol level was high.**

- Under the national prevalence.
- Over twice the Healthy People 2020 target (13.5% or lower).
- There is a strong correlation between age and high blood cholesterol. There is also a higher prevalence among lower-income adults.
- TREND: Statistically unchanged since 2012.

Among adults with high blood cholesterol readings, 88.9% are taking action to lower their numbers (such as medication, change in diet, and/or exercise).

## Prevalence of High Blood Cholesterol (Boone County, 2018)

Healthy People 2020 Target = 13.5% or Lower



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 130]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective HDS-7]

Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

### About Cardiovascular Risk

Individual level risk factors which put people at increased risk for cardiovascular diseases include:

- High Blood Pressure
  - High Blood Cholesterol
  - Tobacco Use
  - Physical Inactivity
  - Poor Nutrition
  - Overweight/Obesity
  - Diabetes
- National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention

Three health-related behaviors contribute markedly to cardiovascular disease:

**Poor nutrition.** People who are overweight have a higher risk for cardiovascular disease. Almost 60% of adults are overweight or obese. To maintain a proper body weight, experts recommend a well-balanced diet which is low in fat and high in fiber, accompanied by regular exercise.

**Lack of physical activity.** People who are not physically active have twice the risk for heart disease of those who are active. More than half of adults do not achieve recommended levels of physical activity.

**Tobacco use.** Smokers have twice the risk for heart attack of nonsmokers. Nearly one-fifth of all deaths from cardiovascular disease, or about 190,000 deaths a year nationally, are smoking-related. Every day, more than 3,000 young people become daily smokers in the US.

Modifying these behaviors is critical both for preventing and for controlling cardiovascular disease. Other steps that adults who have cardiovascular disease should take to reduce their risk of death and disability include adhering to treatment for high blood pressure and cholesterol, using aspirin as appropriate, and learning the symptoms of heart attack and stroke.

- National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention

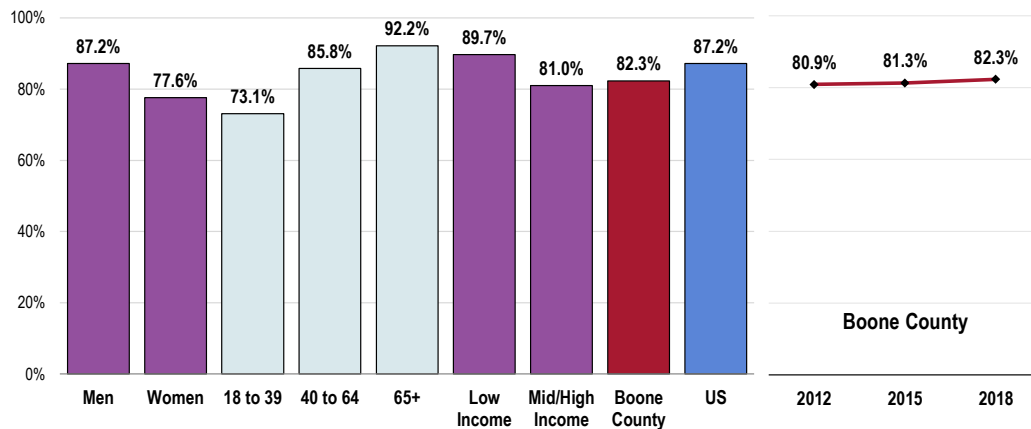
### Total Cardiovascular Risk

A total of 82.3% of Boone County adults report one or more cardiovascular risk factors, such as being overweight, smoking cigarettes, being physically inactive, or having high blood pressure or cholesterol.

RELATED ISSUE:  
See also *Nutrition, Physical Activity, Weight Status, and Tobacco Use* in the **Modifiable Health Risks** section of this report.

- Under national findings.
- Adults more likely to exhibit cardiovascular risk factors include men, adults age 40+ (and especially those age 65+), and low-income adults.
- TREND: Statistically similar to the 2012 findings.

### Present One or More Cardiovascular Risks or Behaviors (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 131]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.  
 • Cardiovascular risk is defined as exhibiting one or more of the following: 1) no leisure-time physical activity; 2) regular/occasional cigarette smoking; 3) hypertension; 4) high blood cholesterol; and/or 5) being overweight/obese.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

### Key Informant Input: Heart Disease & Stroke

The greatest share of key informants taking part in an online survey characterized *Heart Disease & Stroke* as a "moderate problem" in the community.

## Perceptions of Heart Disease and Stroke as a Problem in the Community

(Key Informants, 2018)

■ Major Problem   ■ Moderate Problem   ■ Minor Problem   ■ No Problem At All



Sources: • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
Notes: • Asked of all respondents.

### Top Concerns

Among those rating this issue as a “major problem,” reasons related to the following:

#### *Lifestyle*

*Heart disease and stroke are a major problem due to lifestyle factors such as smoking, alcohol use, fatty diets, lack of exercise and lack of healthcare. - Public Health Representative*

*Obesity and lack of knowledge. - Other Health Provider*

#### *Access to Healthy Food*

*A lack of access and education on healthy, fresh, and affordable foods. Lebanon sure has a plethora of fast food restaurants that can be much more affordable than fruits and veggies! I'm also curious as to how many people recognize the symptoms of stroke, or how many women understand that the symptoms of a heart attack may be different than a man's. - Social Services Provider*

#### *Prevalence/Incidence*

*Nationwide problem. Boone County is no different. - Other Health Provider*

## Cancer

### About Cancer

Continued advances in cancer research, detection, and treatment have resulted in a decline in both incidence and death rates for all cancers. Among people who develop cancer, more than half will be alive in five years. Yet, cancer remains a leading cause of death in the United States, second only to heart disease.

Many cancers are preventable by reducing risk factors such as: use of tobacco products; physical inactivity and poor nutrition; obesity; and ultraviolet light exposure. Other cancers can be prevented by getting vaccinated against human papillomavirus and hepatitis B virus. In the past decade, overweight and obesity have emerged as new risk factors for developing certain cancers, including colorectal, breast, uterine corpus (endometrial), and kidney cancers. The impact of the current weight trends on cancer incidence will not be fully known for several decades. Continued focus on preventing weight gain will lead to lower rates of cancer and many chronic diseases.

Screening is effective in identifying some types of cancers (see US Preventive Services Task Force [USPSTF] recommendations), including:

- Breast cancer (using mammography)
  - Cervical cancer (using Pap tests)
  - Colorectal cancer (using fecal occult blood testing, sigmoidoscopy, or colonoscopy)
- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

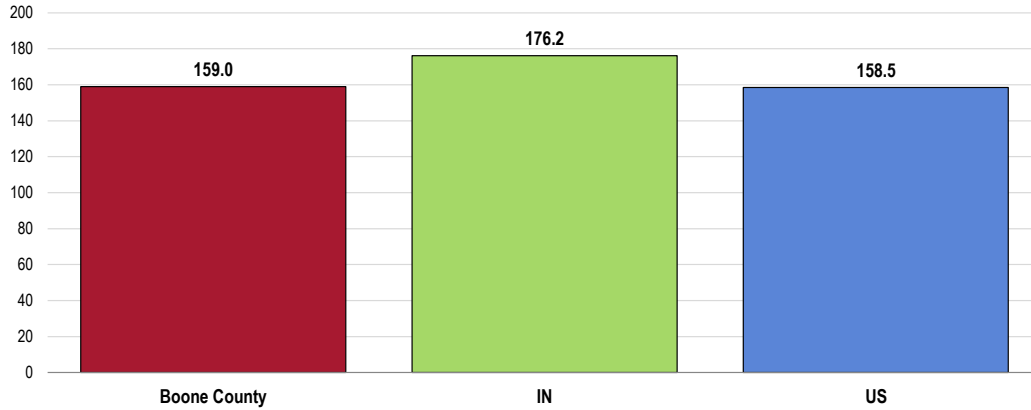
## Age-Adjusted Cancer Deaths

### All Cancer Deaths

**Between 2014 and 2016, there was an annual average age-adjusted cancer mortality rate of 159.0 deaths per 100,000 population in Boone County.**

- Statistically similar to the statewide and national rates.
- Similar to the Healthy People 2020 target of 161.4 or lower.

### Cancer: Age-Adjusted Mortality (2014-2016 Annual Average Deaths per 100,000 Population) Healthy People 2020 Target = 161.4 or Lower



Sources: 

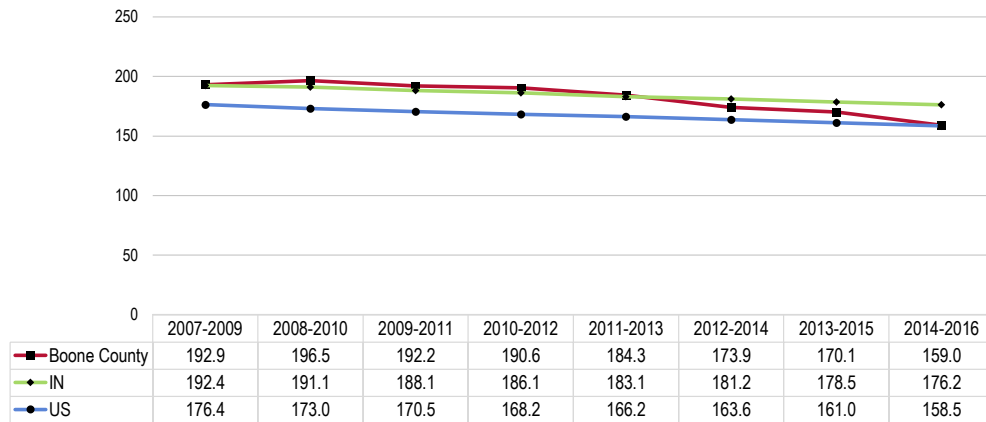
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
- US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective C-1]

Notes: 

- Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
- Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

- TREND: Cancer mortality has decreased consistently over the past decade in Boone County and at a slightly greater rate than apparent both state- and nationwide.

### Cancer: Age-Adjusted Mortality Trends (Annual Average Deaths per 100,000 Population) Healthy People 2020 Target = 161.4 or Lower



Sources: 

- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
- US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective C-1]

Notes: 

- Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
- Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

## Cancer Deaths by Site

**Lung cancer is by far the leading cause of cancer deaths in Boone County.**

Other leading sites include breast cancer among women, prostate cancer among men, and colorectal cancer (both sexes).

As evident in the following chart (referencing 2014-2016 annual average age-adjusted death rates):

- The Boone County **lung cancer** and **colorectal cancer** death rates are better than the respective state rates.
- Each cancer death rate is similar to the respective national rates.
- Note that each of the Boone County cancer death rates detailed in the following chart satisfies or is similar to the related Healthy People 2020 targets.

**Age-Adjusted Cancer Death Rates by Site**  
(2014-2016 Annual Average Deaths per 100,000 Population)

	Boone County	Indiana	US	HP2020
<b>ALL CANCERS</b>	<b>159.0</b>	<b>176.2</b>	<b>158.5</b>	<b>161.4</b>
<b>Lung Cancer</b>	<b>43.0</b>	<b>50.8</b>	<b>40.3</b>	<b>45.5</b>
<b>Female Breast Cancer</b>	<b>20.2</b>	<b>20.7</b>	<b>20.3</b>	<b>20.7</b>
<b>Prostate Cancer</b>	<b>18.5*</b>	<b>19.3</b>	<b>19.0</b>	<b>21.8</b>
<b>Colorectal Cancer</b>	<b>12.5</b>	<b>15.5</b>	<b>14.1</b>	<b>14.5</b>

Sources: • CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted November 2018.  
• US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov>  
• \*Note that the Boone County prostate rate is for 2012-2016.

## Cancer Incidence

Incidence rates reflect the number of newly diagnosed cases in a given population in a given year, regardless of outcome. These rates are also age-adjusted.

**These 2010-2014 Boone County annual average age-adjusted cancer incidence rates are better than US rates.**

- Prostate cancer.
- Colorectal cancer.

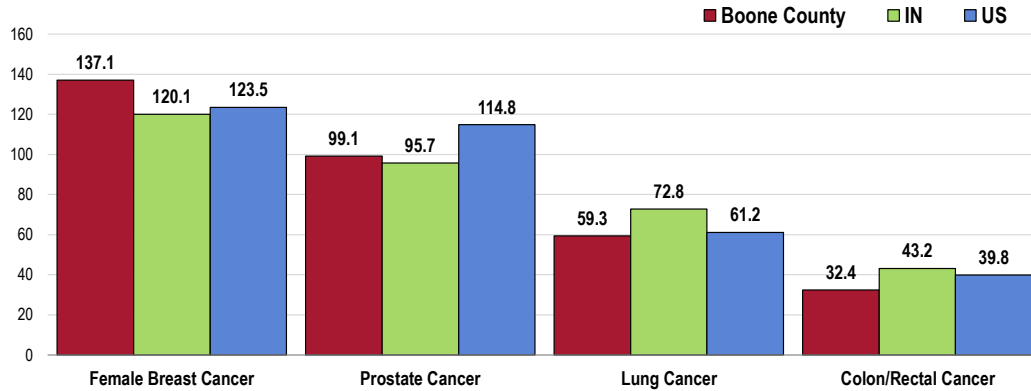
Incidence rate" or "case rate" is the number of new cases of a disease occurring during a given period of time.

It is usually expressed as cases per 100,000 population per year.

These Boone County cancer incidence rates are better than state rates for the same years.

- Lung cancer.
- Colorectal cancer.

**Cancer Incidence Rates by Site**  
(Annual Average Age-Adjusted Incidence per 100,000 Population, 2010-2014)



Sources: • State Cancer Profiles.  
 • Retrieved November 2018 from Community Commons at <http://www.chna.org>.  
 Notes: • This indicator reports the age adjusted incidence rate (cases per 100,000 population per year) of cancers, adjusted to 2000 US standard population age groups (under age 1, 1-4, 5-9, ..., 80-84, 85 and older). This indicator is relevant because cancer is a leading cause of death and it is important to identify cancers separately to better target interventions.

RELATED ISSUE:  
 See also *Nutrition, Physical Activity, Weight Status, and Tobacco Use* in the **Modifiable Health Risks** section of this report.

**Cancer Risk**

**About Cancer Risk**

Reducing the nation’s cancer burden requires reducing the prevalence of behavioral and environmental factors that increase cancer risk.

- All cancers caused by cigarette smoking could be prevented. At least one-third of cancer deaths that occur in the United States are due to cigarette smoking.
- According to the American Cancer Society, about one-third of cancer deaths that occur in the United States each year are due to nutrition and physical activity factors, including obesity.
- National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention

**Cancer Screenings**

The American Cancer Society recommends that both men and women get a cancer-related checkup during a regular doctor's checkup. It should include examination for cancers of the thyroid, testicles, ovaries, lymph nodes, oral cavity, and skin, as well as health counseling about tobacco, sun exposure, diet and nutrition, risk factors, sexual practices, and environmental and occupational exposures.

Screening levels in the community were measured in the PRC Community Health Survey relative to three cancer sites: female breast cancer (mammography); cervical cancer (Pap smear testing); and colorectal cancer (sigmoidoscopy and fecal occult blood testing).



## Female Breast Cancer Screening

### About Screening for Breast Cancer

The US Preventive Services Task Force (USPSTF) recommends screening mammography, with or without clinical breast examination (CBE), every 1-2 years for women age 40 and older.

Rationale: The USPSTF found fair evidence that mammography screening every 12-33 months significantly reduces mortality from breast cancer. Evidence is strongest for women age 50-69, the age group generally included in screening trials. For women age 40-49, the evidence that screening mammography reduces mortality from breast cancer is weaker, and the absolute benefit of mammography is smaller, than it is for older women. Most, but not all, studies indicate a mortality benefit for women undergoing mammography at ages 40-49, but the delay in observed benefit in women younger than 50 makes it difficult to determine the incremental benefit of beginning screening at age 40 rather than at age 50.

The absolute benefit is smaller because the incidence of breast cancer is lower among women in their 40s than it is among older women. The USPSTF concluded that the evidence is also generalizable to women age 70 and older (who face a higher absolute risk for breast cancer) if their life expectancy is not compromised by comorbid disease. The absolute probability of benefits of regular mammography increase along a continuum with age, whereas the likelihood of harms from screening (false-positive results and unnecessary anxiety, biopsies, and cost) diminish from ages 40-70. The balance of benefits and potential harms, therefore, grows more favorable as women age. The precise age at which the potential benefits of mammography justify the possible harms is a subjective choice. The USPSTF did not find sufficient evidence to specify the optimal screening interval for women age 40-49.

- US Preventive Services Task Force, Agency for Healthcare Research and Quality, US Department of Health & Human Services

Note that other organizations (e.g., American Cancer Society, American Academy of Family Physicians, American College of Physicians, National Cancer Institute) may have slightly different screening guidelines.

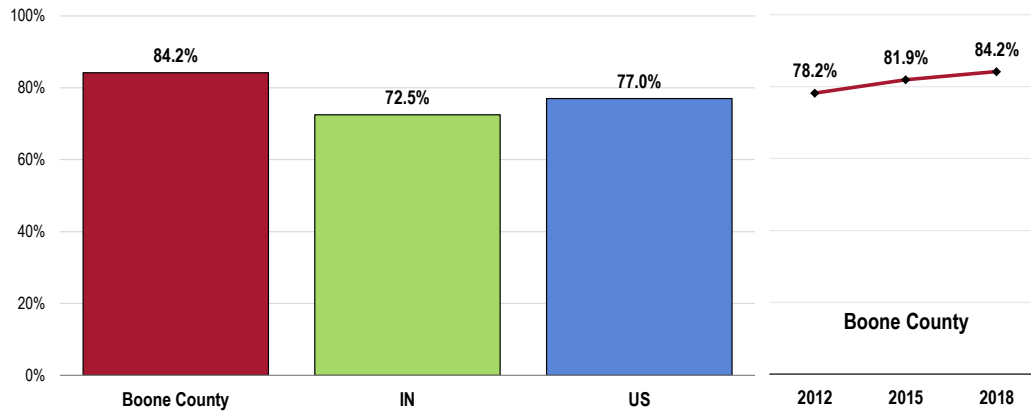
### *Mammography*

**Among women age 50-74, 84.2% have had a mammogram within the past 2 years.**

- More favorable than statewide and national findings.
- Similar to the Healthy People 2020 target (81.1% or higher).
- TREND: Statistically unchanged since 2012.

## Have Had a Mammogram in the Past Two Years (Among Women Age 50-74)

Healthy People 2020 Target = 81.1% or Higher



- Sources:
- 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 133]
  - Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.
  - 2017 PRC National Health Survey, Professional Research Consultants, Inc.
  - US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective C-17]
- Notes:
- Reflects female respondents 50-74.

## Cervical Cancer Screenings

### About Screening for Cervical Cancer

The US Preventive Services Task Force (USPSTF) strongly recommends screening for cervical cancer in women who have been sexually active and have a cervix.

Rationale: The USPSTF found good evidence from multiple observational studies that screening with cervical cytology (Pap smears) reduces incidence of and mortality from cervical cancer. Direct evidence to determine the optimal starting and stopping age and interval for screening is limited. Indirect evidence suggests most of the benefit can be obtained by beginning screening within 3 years of onset of sexual activity or age 21 (whichever comes first) and screening at least every 3 years. The USPSTF concludes that the benefits of screening substantially outweigh potential harms.

The USPSTF recommends against routinely screening women older than age 65 for cervical cancer if they have had adequate recent screening with normal Pap smears and are not otherwise at high risk for cervical cancer.

Rationale: The USPSTF found limited evidence to determine the benefits of continued screening in women older than 65. The yield of screening is low in previously screened women older than 65 due to the declining incidence of high-grade cervical lesions after middle age. There is fair evidence that screening women older than 65 is associated with an increased risk for potential harms, including false-positive results and invasive procedures. The USPSTF concludes that the potential harms of screening are likely to exceed benefits among older women who have had normal results previously and who are not otherwise at high risk for cervical cancer.

The USPSTF recommends against routine Pap smear screening in women who have had a total hysterectomy for benign disease.

Rationale: The USPSTF found fair evidence that the yield of cytologic screening is very low in women after hysterectomy and poor evidence that screening to detect vaginal cancer improves health outcomes. The USPSTF concludes that potential harms of continued screening after hysterectomy are likely to exceed benefits.

- US Preventive Services Task Force, Agency for Healthcare Research and Quality, US Department of Health & Human Services

Note that other organizations (e.g., American Cancer Society, American Academy of Family Physicians, American College of Physicians, National Cancer Institute) may have slightly different screening guidelines.

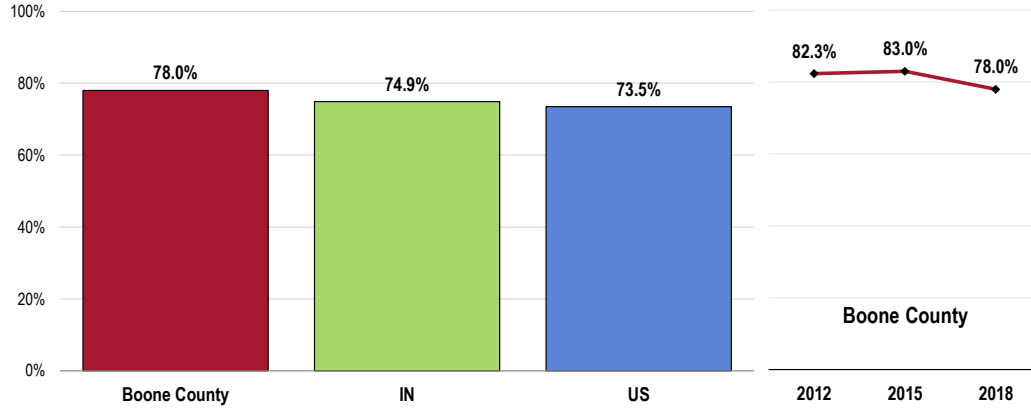
### *Pap Smear Testing*

**Among Boone County women age 21 to 65, 78.0% have had a Pap smear within the past 3 years.**

- Comparable to Indiana and US findings.
- Fails to satisfy the Healthy People 2020 target (93% or higher).
- TREND: Statistically unchanged since 2012.

## Have Had a Pap Smear in the Past Three Years (Among Women Age 21-65)

Healthy People 2020 Target = 93.0% or Higher



- Sources:
- 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 134]
  - Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.
  - 2017 PRC National Health Survey, Professional Research Consultants, Inc.
  - US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective C-15]
- Notes:
- Reflects female respondents age 21 to 65.

## Colorectal Cancer Screenings

### About Screening for Colorectal Cancer

The USPSTF recommends screening for colorectal cancer using fecal occult blood testing, sigmoidoscopy, or colonoscopy in adults, beginning at age 50 years and continuing until age 75 years.

The evidence is convincing that screening for colorectal cancer with fecal occult blood testing, sigmoidoscopy, or colonoscopy detects early-stage cancer and adenomatous polyps. There is convincing evidence that screening with any of the three recommended tests (fecal occult blood testing, sigmoidoscopy, colonoscopy) reduces colorectal cancer mortality in adults age 50 to 75 years. Follow-up of positive screening test results requires colonoscopy regardless of the screening test used.

- US Preventive Services Task Force, Agency for Healthcare Research and Quality, US Department of Health & Human Services

Note that other organizations (e.g., American Cancer Society, American Academy of Family Physicians, American College of Physicians, National Cancer Institute) may have slightly different screening guidelines.

### Colorectal Cancer Screening

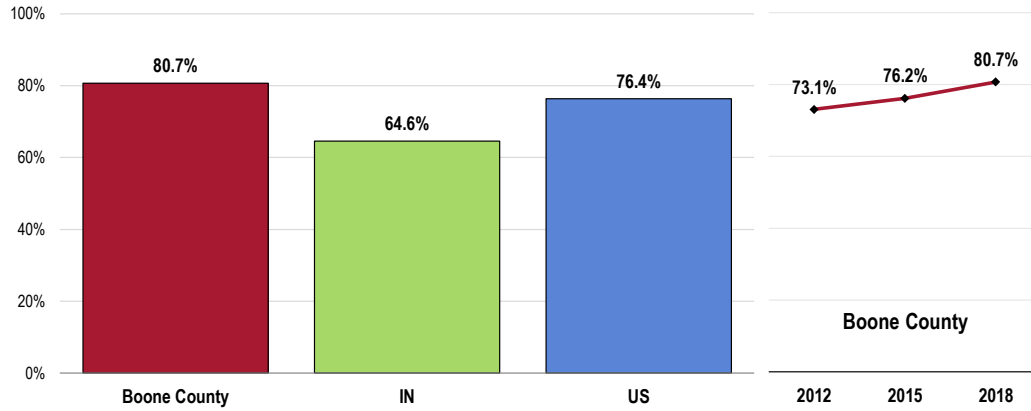
Among adults age 50-75, 80.7% have had an appropriate colorectal cancer screening.

- Higher than state findings.
- Similar to national findings.
- Satisfies the Healthy People 2020 target (70.5% or higher).
- TREND: Over time, the Boone County prevalence has favorably increased.

"Appropriate colorectal cancer screening" includes a fecal occult blood test within the past year and/or a lower endoscopy (sigmoidoscopy or colonoscopy) within the past 10 years.

## Have Had a Colorectal Cancer Screening (Among Adults Age 50-75)

Healthy People 2020 Target = 70.5% or Higher



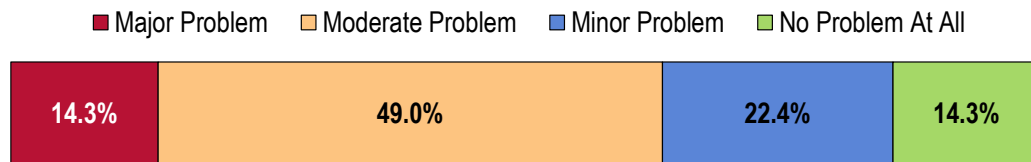
- Sources:
- 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 137]
  - Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.
  - 2017 PRC National Health Survey, Professional Research Consultants, Inc.
  - US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective C-16]
- Notes:
- Asked of all respondents age 50 through 75.
  - In this case, the term "colorectal screening" refers to adults age 50-75 receiving a FOBT (fecal occult blood test) in the past year and/or a lower endoscopy (sigmoidoscopy/colonoscopy) in the past 10 years.

### Key Informant Input: Cancer

The greatest share of key informants taking part in an online survey characterized **Cancer** as a "moderate problem" in the community.

### Perceptions of Cancer as a Problem in the Community

(Key Informants, 2018)



- Sources:
- PRC Online Key Informant Survey, Professional Research Consultants, Inc.
- Notes:
- Asked of all respondents.

### Top Concerns

Among those rating this issue as a "major problem," reasons related to the following:

#### Prevalence/Incidence

*It seems that there are a lot of people with cancer. It probably has touched at least one out of three families. And it is very costly for treatment. It seems like there should be a cure or better outcomes than the patients are getting. With all the money going to research, why has there been no breakthroughs for a cure? Is it because of a loss of money to big pharmaceutical companies, facilities, and physicians? I hope that human life means more to them than money. - Other Health Provider*

*It seems there is an increased number of cases of cancer in the area. - Social Services Provider*

*Wish we knew more on the causes, so we could avoid them. Cancer is happening to healthy friends and children. - Community Leader*

**Obesity**

*We still struggle with obesity, tobacco use and other health issues that can increase a person's risk of cancer. - Social Services Provider*

**Tobacco Use**

*Many people smoke and use smokeless tobacco. - Community Leader*

## Respiratory Disease

### About Asthma & COPD

Asthma and chronic obstructive pulmonary disease (COPD) are significant public health burdens. Specific methods of detection, intervention, and treatment exist that may reduce this burden and promote health.

Asthma is a chronic inflammatory disorder of the airways characterized by episodes of reversible breathing problems due to airway narrowing and obstruction. These episodes can range in severity from mild to life threatening. Symptoms of asthma include wheezing, coughing, chest tightness, and shortness of breath. Daily preventive treatment can prevent symptoms and attacks and enable individuals who have asthma to lead active lives.

COPD is a preventable and treatable disease characterized by airflow limitation that is not fully reversible. The airflow limitation is usually progressive and associated with an abnormal inflammatory response of the lung to noxious particles or gases (typically from exposure to cigarette smoke). Treatment can lessen symptoms and improve quality of life for those with COPD.

The burden of respiratory diseases affects individuals and their families, schools, workplaces, neighborhoods, cities, and states. Because of the cost to the healthcare system, the burden of respiratory diseases also falls on society; it is paid for with higher health insurance rates, lost productivity, and tax dollars. Annual healthcare expenditures for asthma alone are estimated at \$20.7 billion.

**Asthma.** The prevalence of asthma has increased since 1980. However, deaths from asthma have decreased since the mid-1990s. The causes of asthma are an active area of research and involve both genetic and environmental factors.

Risk factors for asthma currently being investigated include:

- Having a parent with asthma
- Sensitization to irritants and allergens
- Respiratory infections in childhood
- Overweight

Asthma affects people of every race, sex, and age. However, significant disparities in asthma morbidity and mortality exist, in particular for low-income and minority populations. Populations with higher rates of asthma include: children; women (among adults) and boys (among children); African Americans; Puerto Ricans; people living in the Northeast United States; people living below the Federal poverty level; and employees with certain exposures in the workplace.

While there is not a cure for asthma yet, there are diagnoses and treatment guidelines that are aimed at ensuring that all people with asthma live full and active lives.

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

[NOTE: COPD was changed to chronic lower respiratory disease (CLRD) with the introduction of ICD-10 codes. CLRD is used in vital statistics reporting, but COPD is still widely used and commonly found in surveillance reports.]

## Age-Adjusted Respiratory Disease Deaths

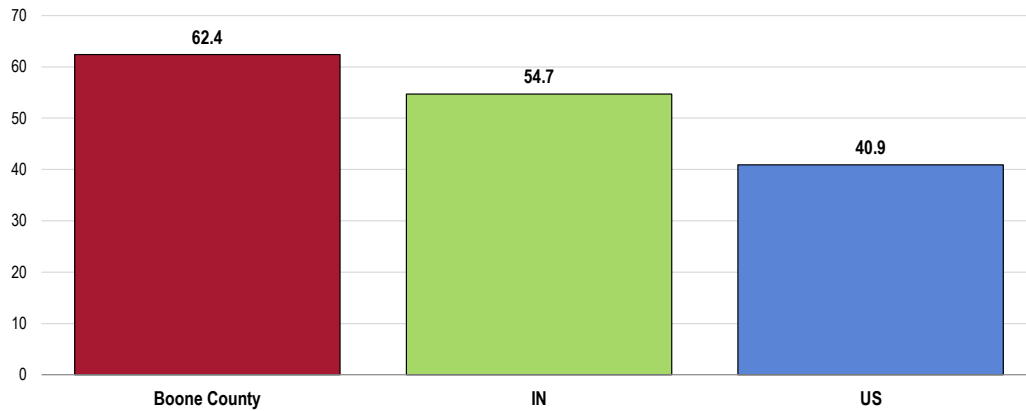
### Chronic Lower Respiratory Disease Deaths (CLRD)

Between 2014 and 2016, there was an annual average age-adjusted CLRD mortality rate of 62.4 deaths per 100,000 population in Boone County.

- Comparable to that found statewide.
- Notably higher than the national rate.

Note: COPD was changed to chronic lower respiratory disease (CLRD) in 1999 with the introduction of ICD-10 codes. CLRD is used in vital statistics reporting, but COPD is still widely used and commonly found in surveillance reports.

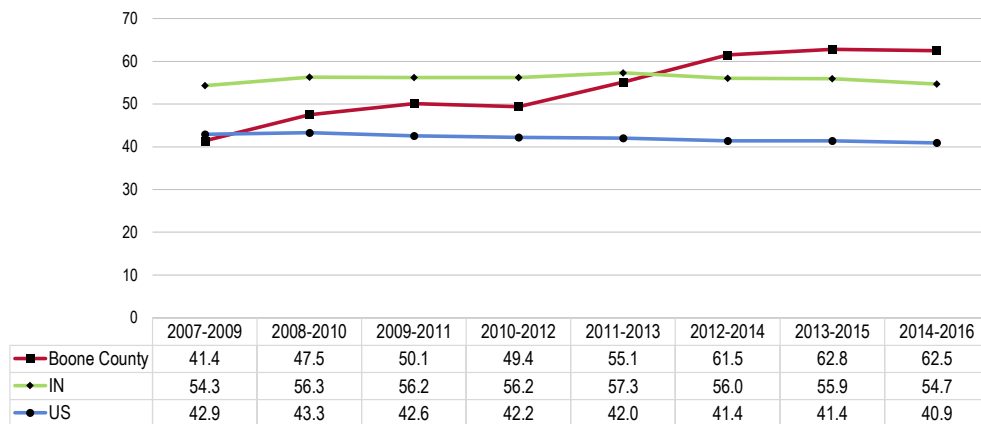
**CLRD: Age-Adjusted Mortality**  
(2014-2016 Annual Average Deaths per 100,000 Population)



- Sources:
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
- Notes:
- Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
  - Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.
  - CLRD is chronic lower respiratory disease.

- **TREND:** The CLRD mortality in Boone County has increased over time, while statewide and national trends have slightly decreased.

**CLRD: Age-Adjusted Mortality Trends**  
(Annual Average Deaths per 100,000 Population)



- Sources:
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
- Notes:
- Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
  - Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.
  - CLRD is chronic lower respiratory disease.



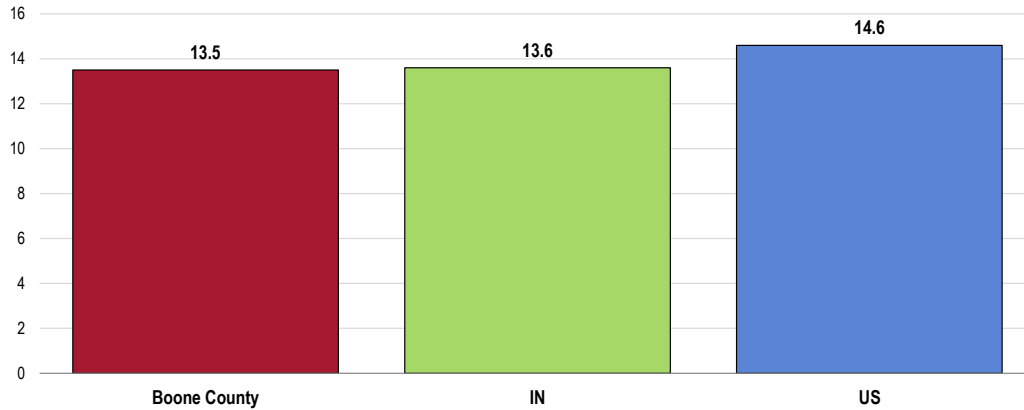
### Pneumonia/Influenza Deaths

Between 2014 and 2016, Boone County reported an annual average age-adjusted pneumonia influenza mortality rate of 13.5 deaths per 100,000 population.

- Comparable to that found statewide and nationally.

For prevalence of vaccinations for pneumonia and influenza, see also *Immunization & Infectious Diseases* in the **Infectious Disease** section of this report.

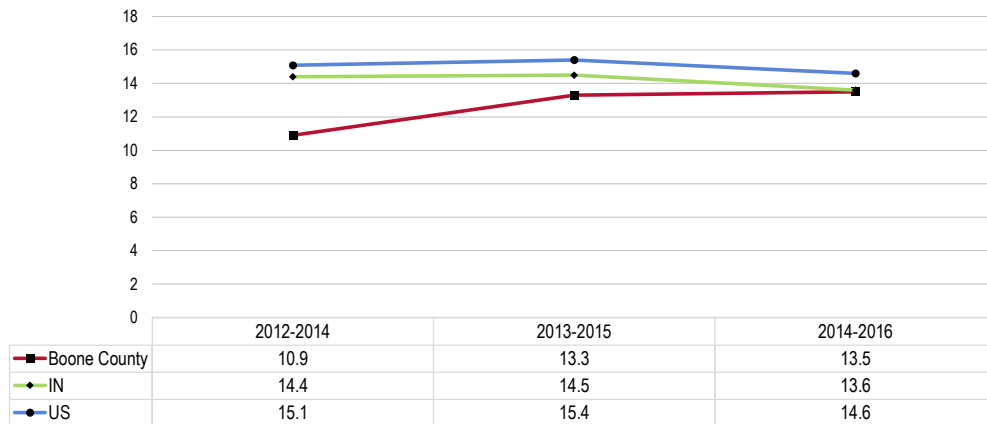
### Pneumonia/Influenza: Age-Adjusted Mortality (2014-2016 Annual Average Deaths per 100,000 Population)



- Sources:
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
- Notes:
- Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
  - Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

- TREND: Boone County pneumonia/influenza mortality has increased since 2012.

### Pneumonia/Influenza: Age-Adjusted Mortality Trends (Annual Average Deaths per 100,000 Population)



- Sources:
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
- Notes:
- Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
  - Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

## Asthma

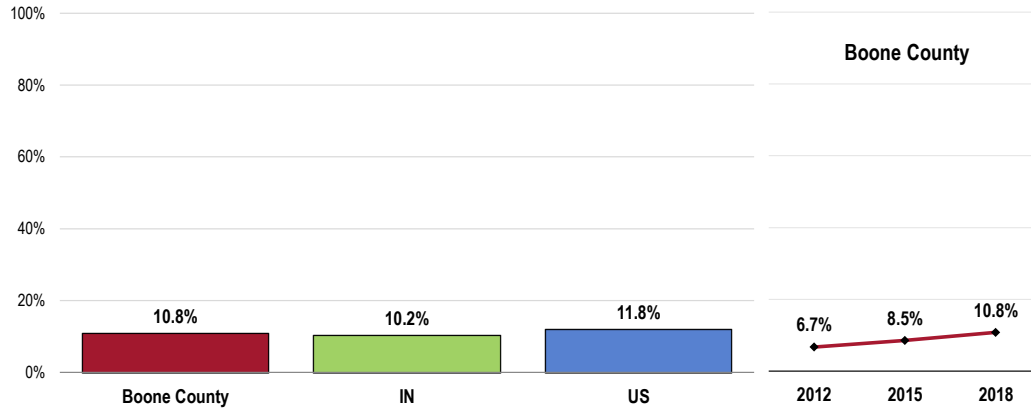
### Adults

Survey respondents were asked to indicate whether they suffer from or have been diagnosed with various respiratory conditions, including asthma and COPD.

**A total of 10.8% of Boone County adults currently suffer from asthma.**

- Similar to the statewide and national prevalence.
- **TREND:** The prevalence of adults with current asthma has increased significantly since 2012.

### Adult Asthma: Current Prevalence

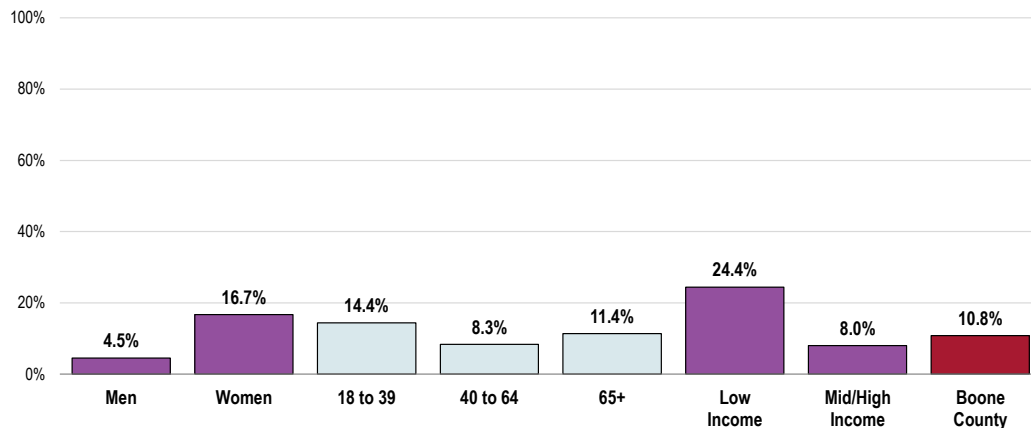


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 138]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.  
 • Includes those who have ever been diagnosed with asthma, and who report that they still have asthma.

The following adults are more likely to suffer from asthma:

- Women.
- Low-income residents.

### Currently Have Asthma (Boone County, 2018)



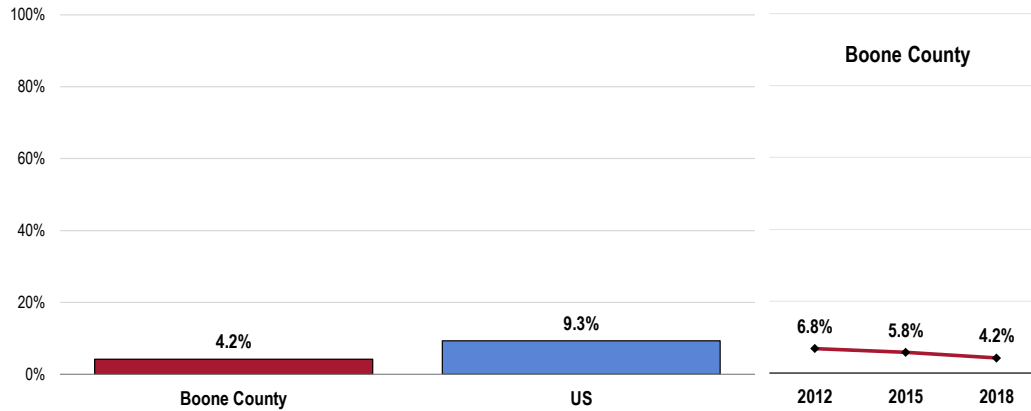
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 138]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

**Children**

**Among Boone County children under age 18, 4.2% currently have asthma.**

- Much lower than national findings.
- TREND: Statistically unchanged over time.

**Childhood Asthma: Current Prevalence**  
(Among Parents of Children Age 0-17)



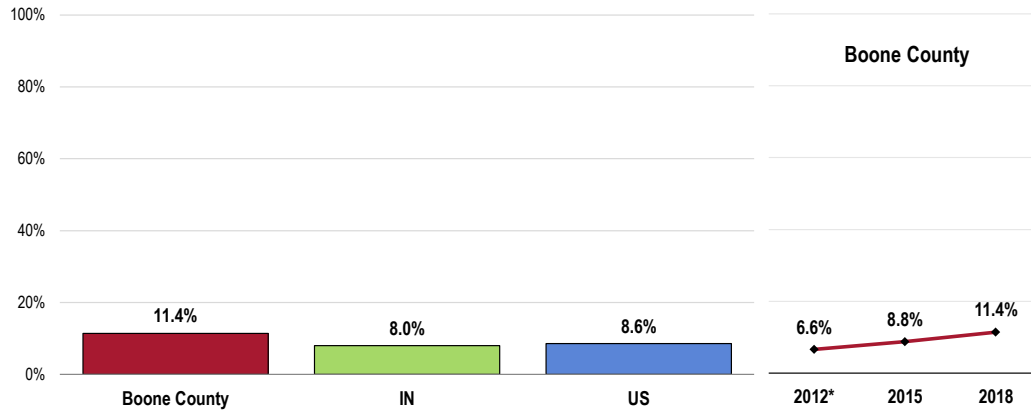
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 139]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents with children 0 to 17 in the household.  
 • Includes children who have ever been diagnosed with asthma, and whom are reported to still have asthma.

**Chronic Obstructive Pulmonary Disease (COPD)**

**A total of 11.4% of Boone County adults suffer from chronic obstructive pulmonary disease (COPD, including emphysema and bronchitis).**

- Above the state prevalence.
- Similar to the nation.
- TREND: In comparing to 2012 data, the change in prevalence has statistically increased.
- NOTE: Respondents in 2012 were asked if they had ever been diagnosed with “chronic lung disease, including bronchitis or emphysema,” rather than “COPD or chronic obstructive pulmonary disease, including bronchitis or emphysema,” as is asked currently.

## Prevalence of Chronic Obstructive Pulmonary Disease (COPD)



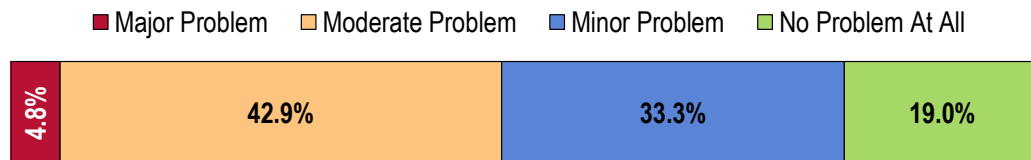
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 24]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2016 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: • Asked of all respondents.  
 • Includes those having ever suffered from or been diagnosed with COPD or chronic obstructive pulmonary disease, including bronchitis or emphysema.  
 • In 2012 data, the term "chronic lung disease" was used, which also included bronchitis or emphysema.

### Key Informant Input: Respiratory Disease

The greatest share of key informants taking part in an online survey characterized *Respiratory Disease* as a “moderate problem” in the community.

### Perceptions of Respiratory Diseases as a Problem in the Community (Key Informants, 2018)



Sources: • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

### Top Concerns

Among those rating this issue as a “major problem,” reasons related to the following:

#### Prevalence/Incidence

*The number of students who have allergy issues and use inhalers. - Other Health Provider*

#### Tobacco Use

*There seems to be more people that are addicted to smoking in the Lebanon area of Boone County. The low-income population rely on health resources but don't want to adhere to making lifestyle changes. There is a large population of farmers that inhaled dust and chemicals over many years and now have COPD. - Social Services Provider*

## Injury & Violence

### About Injury & Violence

Injuries and violence are widespread in society. Both unintentional injuries and those caused by acts of violence are among the top 15 killers for Americans of all ages. Many people accept them as “accidents,” “acts of fate,” or as “part of life.” However, most events resulting in injury, disability, or death are predictable and preventable.

Injuries are the leading cause of death for Americans ages 1 to 44, and a leading cause of disability for all ages, regardless of sex, race/ethnicity, or socioeconomic status. More than 180,000 people die from injuries each year, and approximately 1 in 10 sustains a nonfatal injury serious enough to be treated in a hospital emergency department.

Beyond their immediate health consequences, injuries and violence have a significant impact on the well-being of Americans by contributing to:

- Premature death
- Disability
- Poor mental health
- High medical costs
- Lost productivity

The effects of injuries and violence extend beyond the injured person or victim of violence to family members, friends, coworkers, employers, and communities.

Numerous factors can affect the risk of unintentional injury and violence, including individual behaviors, physical environment, access to health services (ranging from pre-hospital and acute care to rehabilitation), and social environment (from parental monitoring and supervision of youth to peer group associations, neighborhoods, and communities).

Interventions addressing these social and physical factors have the potential to prevent unintentional injuries and violence. Efforts to prevent unintentional injury may focus on:

- Modifications of the environment
- Improvements in product safety
- Legislation and enforcement
- Education and behavior change
- Technology and engineering

Efforts to prevent violence may focus on:

- Changing social norms about the acceptability of violence
- Improving problem-solving skills (for example, parenting, conflict resolution, coping)
- Changing policies to address the social and economic conditions that often give rise to violence

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

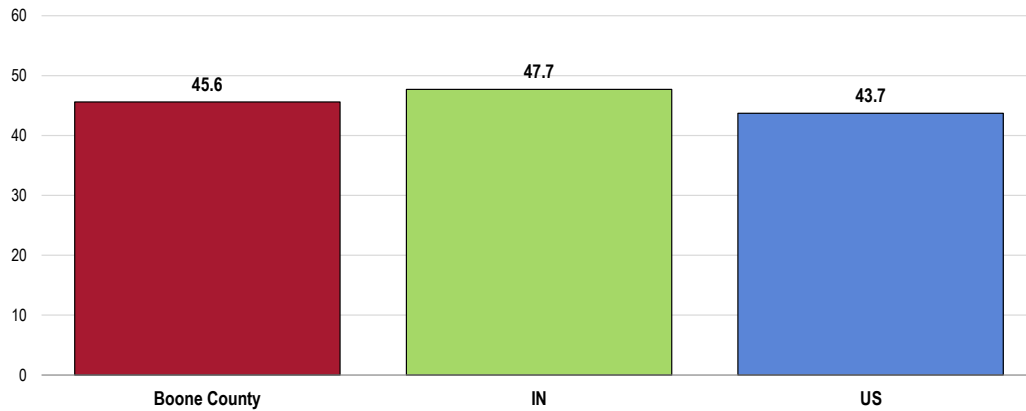
## Unintentional Injury

### Age-Adjusted Unintentional Injury Deaths

**Between 2014 and 2016, there was an annual average age-adjusted unintentional injury mortality rate of 45.6 deaths per 100,000 population in Boone County.**

- Comparable to the Indiana and national rates.
- Above the Healthy People 2020 target (36.4 or lower).

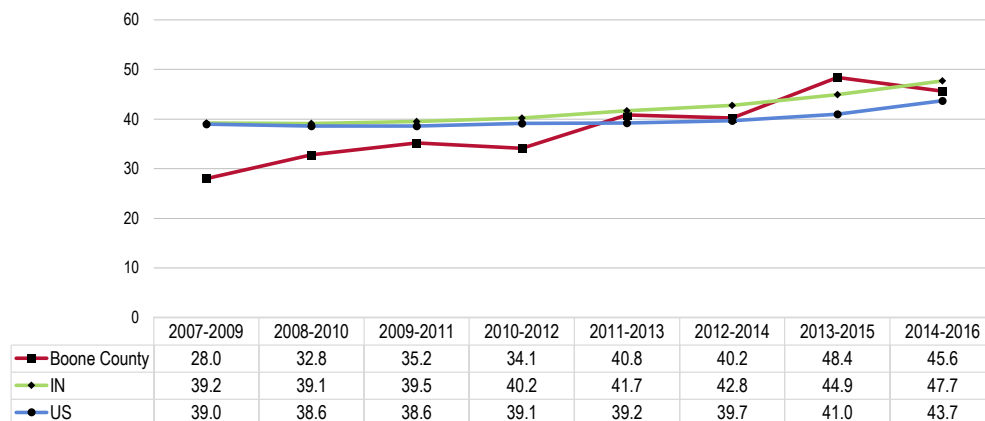
### Unintentional Injuries: Age-Adjusted Mortality (2014-2016 Annual Average Deaths per 100,000 Population) Healthy People 2020 Target = 36.4 or Lower



Sources: ● CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.  
● US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective IVP-11]  
Notes: ● Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).  
● Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

- **TREND:** There is an overall upward trend in the unintentional injury mortality rate in Boone County, echoing the slowly increasing trends reported in Indiana and the US overall.

### Unintentional Injuries: Age-Adjusted Mortality Trends (Annual Average Deaths per 100,000 Population) Healthy People 2020 Target = 36.4 or Lower

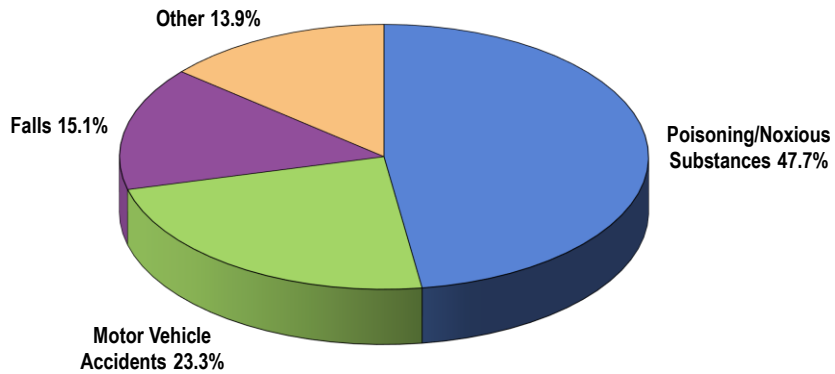


Sources: ● CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.  
● US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective IVP-11]  
Notes: ● Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).  
● Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

### Leading Causes of Accidental Death

Poisoning (including accidental drug overdose), motor vehicle accidents, and falls accounted for most accidental deaths in Boone County between 2014 and 2016.

#### Leading Causes of Accidental Death (Boone County, 2014-2016)



Sources: • CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.

Notes: • Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).

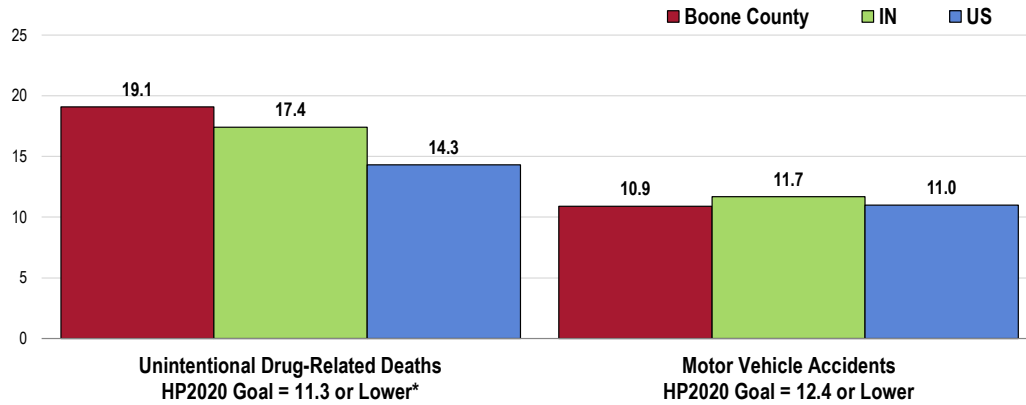
#### Selected Injury Deaths

The following chart outlines mortality rates for unintentional drug-related deaths and motor vehicle crashes.

- The Boone County age-adjusted **unintentional drug-related** mortality rate is worse than the US rate and also fails to satisfy the Healthy People 2020 target of 11.3 or lower.
- The mortality rate for motor vehicle crashes is similar to both the nation and the associated Healthy People 2020 target.

### Select Injury Death Rates

(By Cause of Death; 2014-2016 Annual Average Deaths per 100,000 Population)



- Sources:
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
  - US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective IVP-13.1, IVP-23.2, SA-12]
- Notes:
- Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
  - Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.
  - \*Healthy People 2020 goal reflects all drug-induced deaths, both intentional and unintentional.

## Falls

### Falls

Each year, an estimated one-third of older adults fall, and the likelihood of falling increases substantially with advancing age. In 2005, a total of 15,802 persons age ≥65 years died as a result of injuries from falls.

Falls are the leading cause of fatal and nonfatal injuries for persons aged ≥65 years ... In 2006, approximately 1.8 million persons aged ≥65 years (nearly 5% of all persons in that age group) sustained some type of recent fall-related injury. Even when those injuries are minor, they can seriously affect older adults' quality of life by inducing a fear of falling, which can lead to self-imposed activity restrictions, social isolation, and depression.

In addition, fall-related medical treatment places a burden on US healthcare services. In 2000, direct medical costs for fall-related injuries totaled approximately \$19 billion. A recent study determined that 31.8% of older adults who sustained a fall-related injury required help with activities of daily living as a result, and among them, 58.5% were expected to require help for at least 6 months.

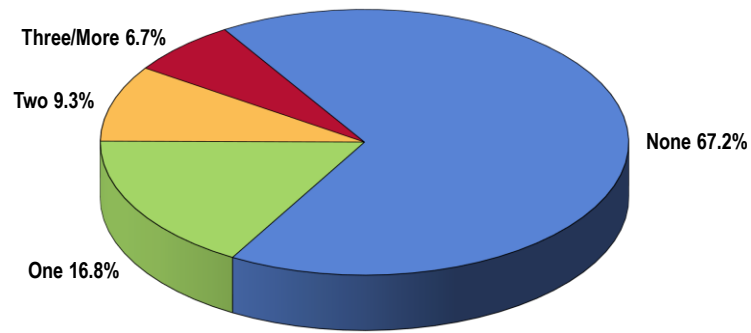
Modifiable fall risk factors include muscle weakness, gait and balance problems, poor vision, use of psychoactive medications, and home hazards. Falls among older adults can be reduced through evidence-based fall-prevention programs that address these modifiable risk factors. Most effective interventions focus on exercise, alone or as part of a multifaceted approach that includes medication management, vision correction, and home modifications.

- Division of Unintentional Injury Prevention, National Center for Injury Prevention and Control, CDC



Among surveyed Boone County adults age 45 and older, 32.8% fell at least once in the past year, including 6.7% who fell three or more times.

### Number of Falls in Past 12 Months (Among Adults Age 45 and Older; Boone County, 2018)

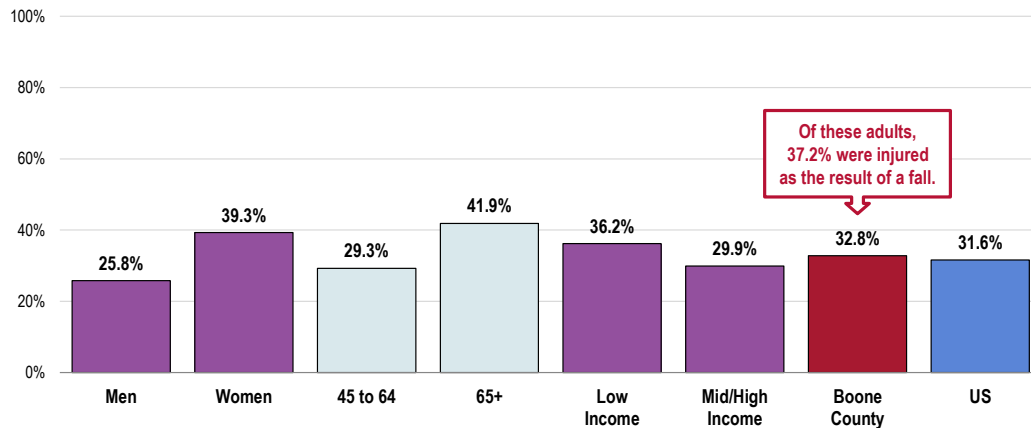


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 107]  
Notes: • Asked of all respondents age 45+.

- The prevalence of adults age 45+ who fell at least once in the past year is similar to the national proportion.
- Women (age 45+) and older adults (age 65+) are more likely to have fallen in the past year.

Among those who fell in the past year, 37.2% were injured as a result of the fall.

### Fell One or More Times in the Past Year (Among Respondents Age 45 and Older; Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 107-108]  
• 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
Notes: • Asked of those respondents age 45 and older.  
• Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

## Firearm Safety

### Age-Adjusted Firearm-Related Deaths

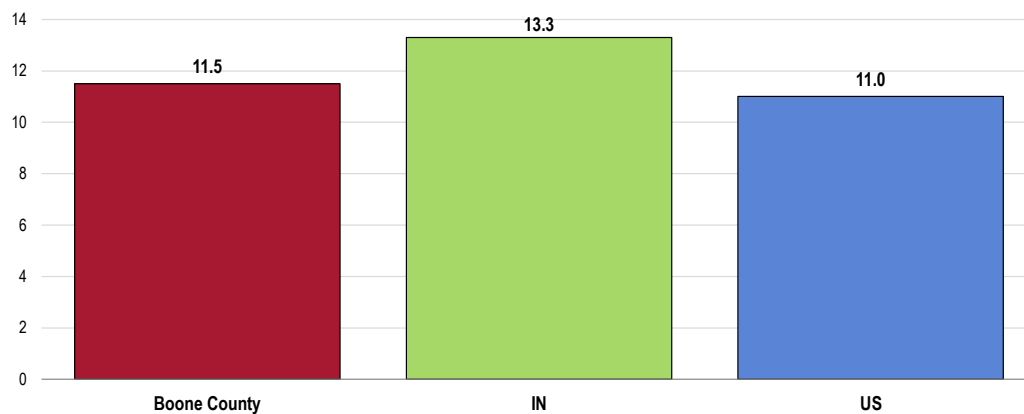
Between 2014 and 2016, firearms in Boone County contributed to an annual average age-adjusted rate of 11.5 deaths per 100,000 population.

- Lower than found statewide.
- Similar to the national rate.
- Fails to satisfy the Healthy People 2020 objective (9.3 or lower).

### Firearms-Related Deaths: Age-Adjusted Mortality

(2014-2016 Annual Average Deaths per 100,000 Population)

Healthy People 2020 Target = 9.3 or Lower



Sources: • CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.

• US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective IVP-30]

Notes: • Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).  
• Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

## Intentional Injury (Violence)

### Violent Crime Rates

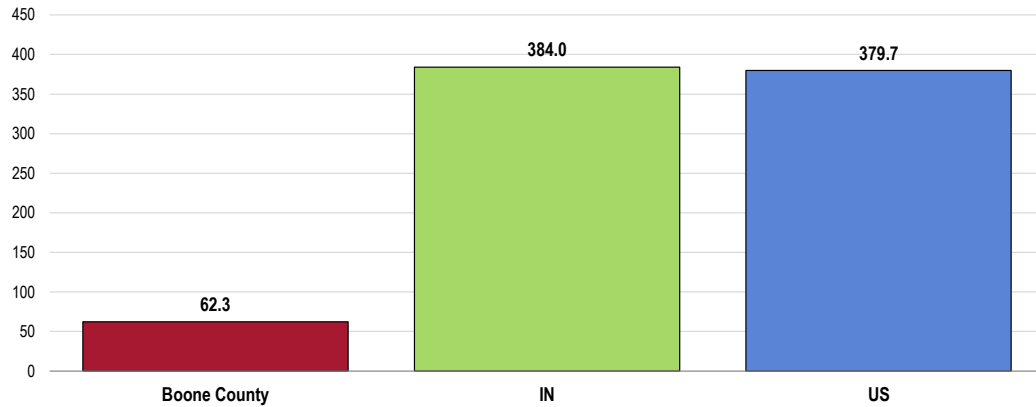
Between 2012 and 2014, there were a reported 62.3 violent crimes per 100,000 population in Boone County.

- Far lower than the Indiana and national rates for the same period.

Violent crime is composed of four offenses (FBI Index offenses): murder and non-negligent manslaughter; forcible rape; robbery; and aggravated assault.

Note that the quality of crime data can vary widely from location to location, depending on the consistency and completeness of reporting among various jurisdictions.

### Violent Crime (Rate per 100,000 Population, 2012-2014)



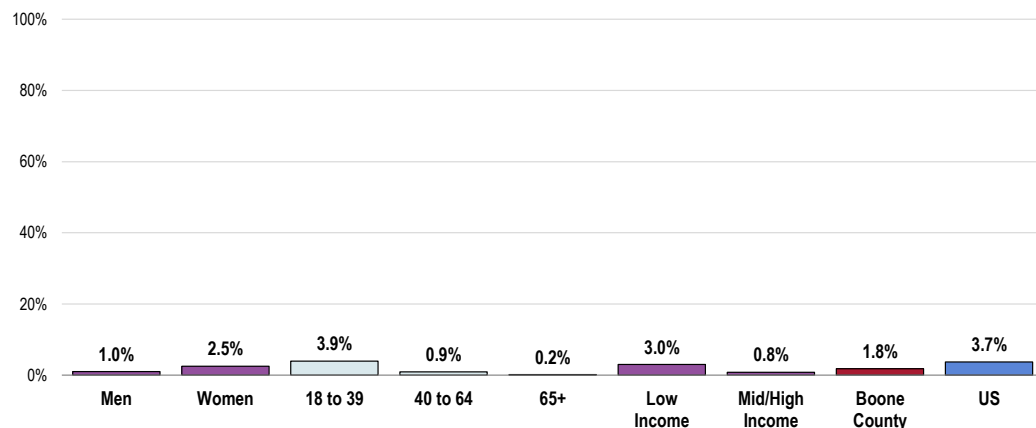
Sources: • Federal Bureau of Investigation, FBI Uniform Crime Reports.  
 • Retrieved November 2018 from Community Commons at <http://www.chna.org>.  
 Notes: • This indicator reports the rate of violent crime offenses reported by the sheriff’s office or county police department per 100,000 residents. Violent crime includes homicide, rape, robbery, and aggravated assault. This indicator is relevant because it assesses community safety.  
 • Participation by law enforcement agencies in the UCR program is voluntary. Sub-state data do not necessarily represent an exhaustive list of crimes due to gaps in reporting. Also, some institutions of higher education have their own police departments, which handle offenses occurring within campus grounds; these offenses are not included in the violent crime statistics, but can be obtained from the Uniform Crime Reports Universities and Colleges data tables.

### Community Violence

**A total of 1.8% of surveyed Boone County adults acknowledge being the victim of a violent crime in the area in the past five years.**

- Lower than national findings.
- No significant differences in reports of violence by demographics.

### Victim of a Violent Crime in the Past Five Years (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 46]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent’s household income as a ratio to the federal poverty level (FPL) for their household size. “Low Income” includes households with incomes up to 200% of the federal poverty level; “Mid/High Income” includes households with incomes at 200% or more of the federal poverty level.

### Family Violence

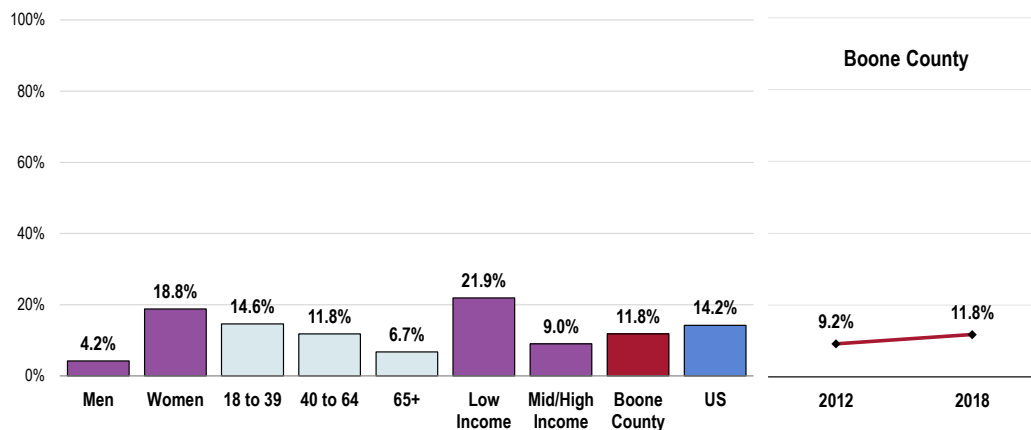
**A total of 11.8% of Boone County adults acknowledge that they have ever been hit, slapped, pushed, kicked, or otherwise hurt by an intimate partner.**

Respondents were read:

"By an intimate partner, I mean any current or former spouse, boyfriend, or girlfriend. Someone you were dating, or romantically or sexually intimate with would also be considered an intimate partner."

- Statistically similar to national findings.
- Higher among women, young adults, and low-income adults (especially).
- TREND: Statistically similar to 2012 findings (not asked in 2015).

### Have Ever Been Hit, Slapped, Pushed, Kicked, or Hurt in Any Way by an Intimate Partner (Boone County, 2018)



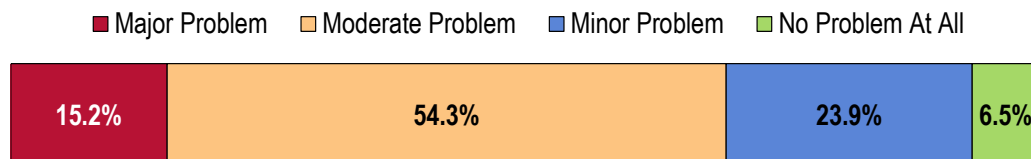
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 47]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

### Key Informant Input: Injury & Violence

**More than half of key informants taking part in an online survey characterized *Injury & Violence* as a "moderate problem" in the community.**

### Perceptions of Injury and Violence as a Problem in the Community (Key Informants, 2018)



Sources: • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

## Top Concerns

Among those rating this issue as a “major problem,” reasons related to the following:

### Prevalence/Incidence

*The number of DCS reports we make. - Other Health Provider*

*Read the Lebanon Reporter and the charges made. - Public Health Representative*

### Alcohol/Drug Use

*I think our issues with violence and injury are largely due in part to our substance use problems.*

*Substance use, as we know, changes a person into someone they're not and causes them to do desperate things in order to get their hands on drugs. I think more inpatient substance use treatment resources would help with this, and perhaps more access to GED and job training resources. - Social Services Provider*

### Denial/Stigma

*The stigma of admitting the issue is evident and fear of involvement from natural resources. - Social Services Provider*

### Domestic Violence

*Domestic violence, families without resources to learn to cope with their children's normal crying and behaviors. Lack of cohesive family units to support each other with the difficulties of raising children and working through relationships. Too much gun violence and suicide. - Physician*

## Diabetes

### About Diabetes

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

Diabetes mellitus:

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

The rate of diabetes mellitus continues to increase both in the United States and throughout the world. Due to the steady rise in the number of persons with diabetes mellitus, and possibly earlier onset of type 2 diabetes mellitus, there is growing concern about the possibility that the increase in the number of persons with diabetes mellitus and the complexity of their care might overwhelm existing healthcare systems.

People from minority populations are more frequently affected by type 2 diabetes. Minority groups constitute 25% of all adult patients with diabetes in the US and represent the majority of children and adolescents with type 2 diabetes.

Lifestyle change has been proven effective in preventing or delaying the onset of type 2 diabetes in high-risk individuals.

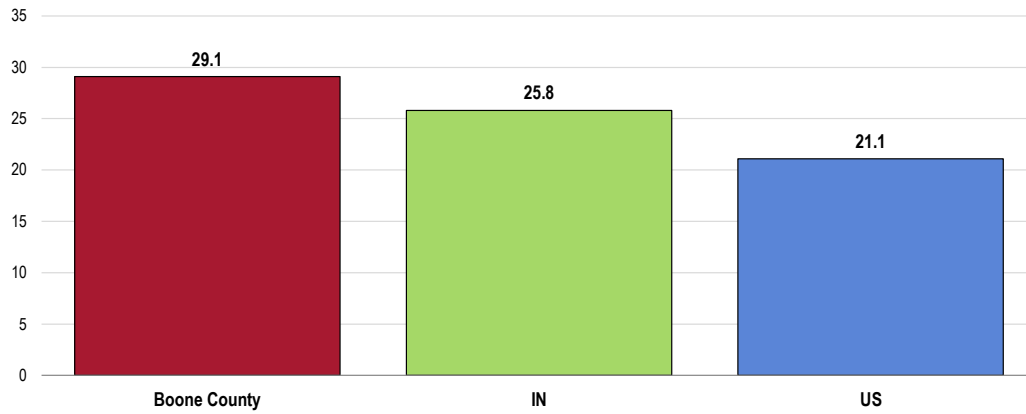
- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

### Age-Adjusted Diabetes Deaths

**Between 2014 and 2016, there was an annual average age-adjusted diabetes mortality rate of 29.1 deaths per 100,000 population in Boone County.**

- Comparable to the Indiana rate.
- Less favorable than that found nationally.
- Fails to satisfy the Healthy People 2020 target (20.5 or lower, adjusted to account for diabetes mellitus-coded deaths).

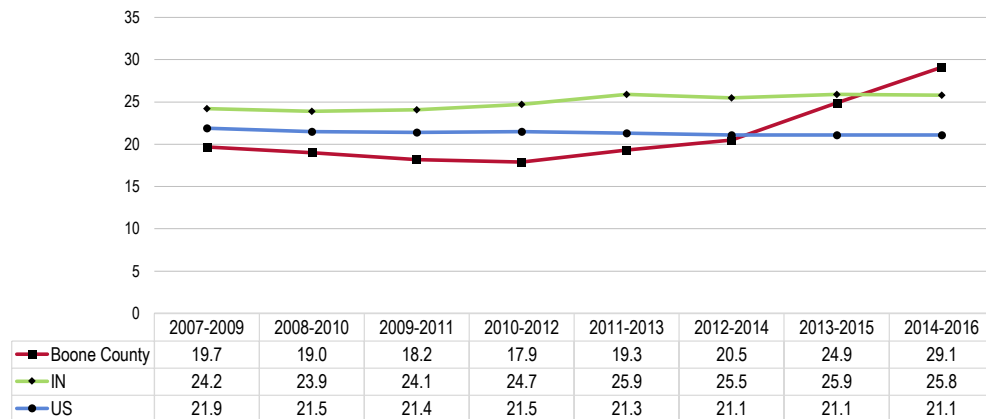
### Diabetes: Age-Adjusted Mortality (2014-2016 Annual Average Deaths per 100,000 Population) Healthy People 2020 Target = 20.5 or Lower (Adjusted)



- Sources:
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
  - US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective D-3]
- Notes:
- Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
  - Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.
  - The Healthy People 2020 target for Diabetes is adjusted to account for only diabetes mellitus coded deaths.

- TREND: Diabetes mortality in Boone County has increased since 2010, surpassing state and national levels.

### Diabetes: Age-Adjusted Mortality Trends (Annual Average Deaths per 100,000 Population) Healthy People 2020 Target = 20.5 or Lower (Adjusted)



- Sources:
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
  - US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective D-3]
- Notes:
- Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
  - Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.
  - The Healthy People 2020 target for Diabetes is adjusted to account for only diabetes mellitus coded deaths.

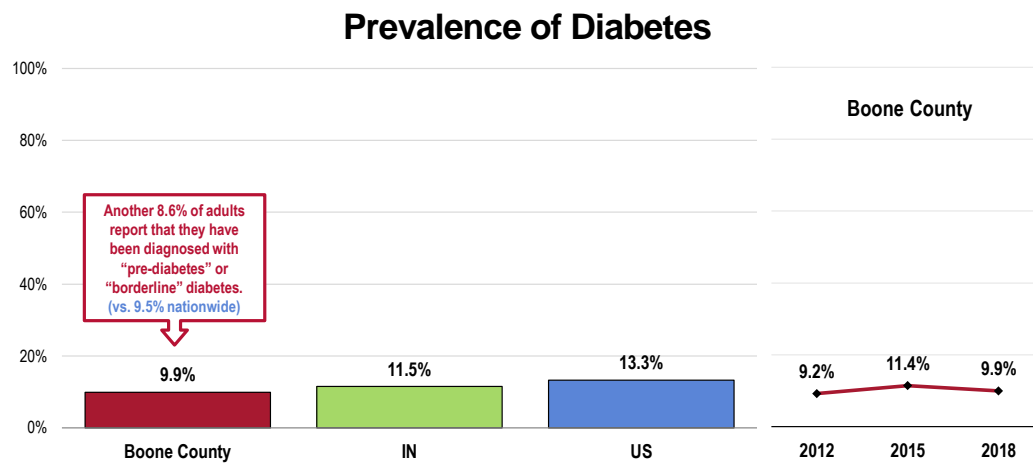
## Prevalence of Diabetes

A total of 9.9% of Boone County adults report having been diagnosed with diabetes.

- Similar to the statewide proportion.
- Better than the national proportion.
- TREND: Statistically unchanged since 2012.

In addition to the prevalence of diagnosed diabetes referenced above, another 8.6% of Boone County adults report that they have “pre-diabetes” or “borderline diabetes.”

- Comparable to the national prevalence.



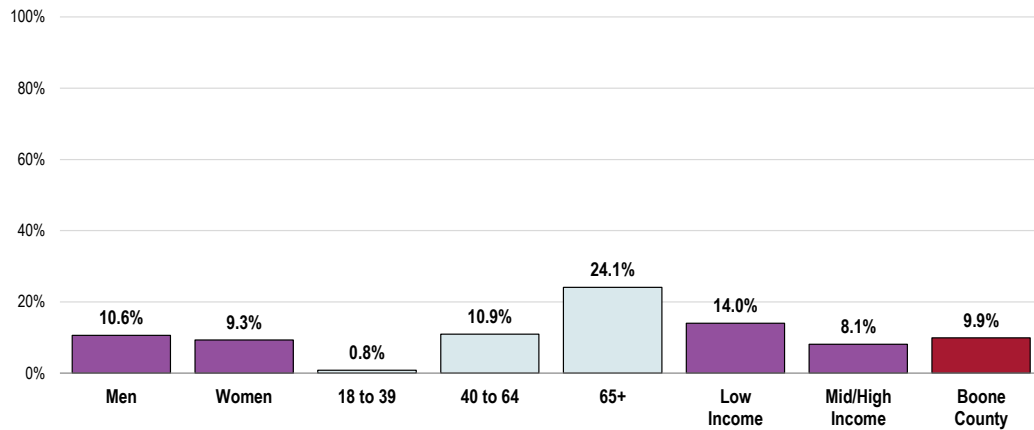
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 140]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: • Asked of all respondents.

- A higher prevalence of diagnosed diabetes (excluding pre-diabetes or borderline diabetes) is reported among older adults (note the strong correlation between diabetes and age, with 24.1% of seniors diagnosed with diabetes).



### Prevalence of Diabetes (Boone County, 2018)



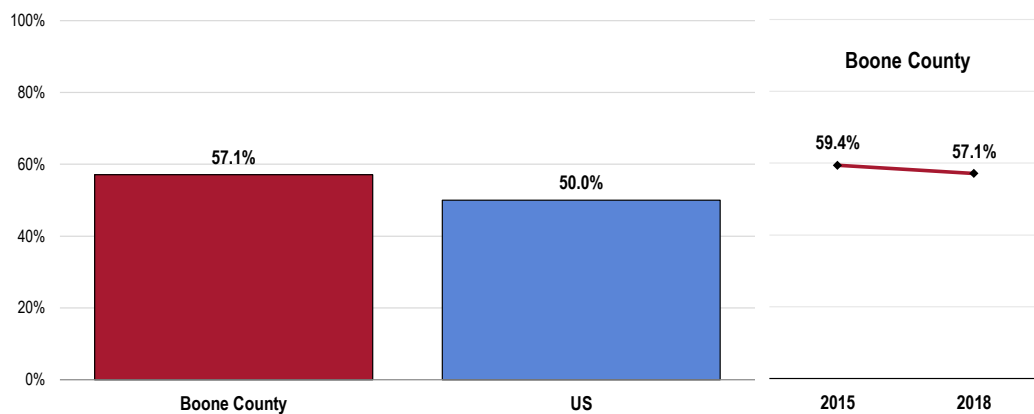
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 140]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.  
 • Excludes gestational diabetes (occurring only during pregnancy).

### Diabetes Testing

Of area adults who have not been diagnosed with diabetes, 57.1% report having had their blood sugar level tested within the past three years.

- Above the national proportion.
- TREND: Statistically unchanged since 2015.

### Have Had Blood Sugar Tested in the Past Three Years (Among Nondiabetics)



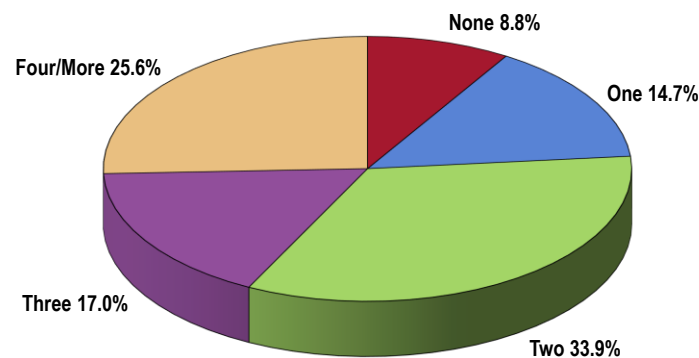
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 37]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of respondents who have not been diagnosed with diabetes.

## Diabetes Treatment

In the past year, 14.7% of diabetic adults saw a health professional about their diabetes on one occasion, while 33.9% had two diabetes-related visits, 33.9% had three visits, and 25.6% had four or more visits with a health professional for their diabetes.

- Note that 8.8% of diabetics did not see a professional about their diabetes in the past year.

**Number of Diabetes-Related Visits to a Health Professional in the Past Year**  
(Boone County Diabetics, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 304]  
Notes: • Asked of all respondents with diabetes.

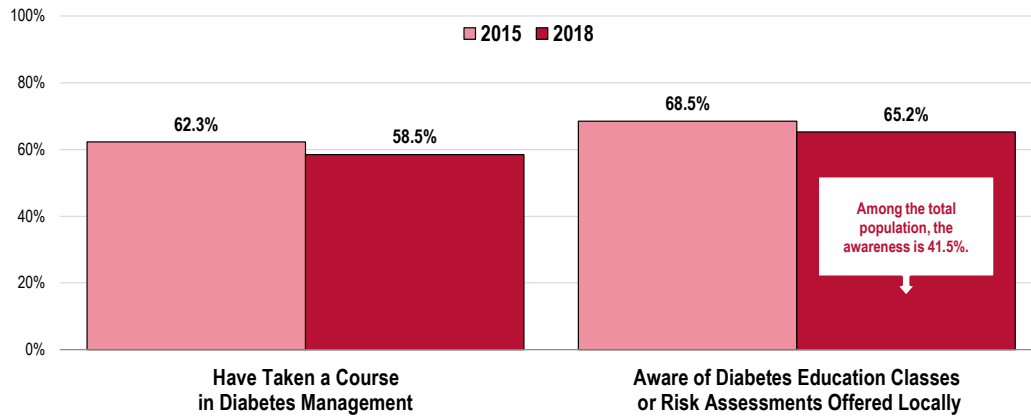
## Diabetes Education

Boone County diabetics were also asked about their experience with diabetes education.

As shown, 58.5% have taken a course in diabetes management, and 65.2% are aware of diabetes education classes or risk assessments offered in the community.

- TREND: Both indicators have not changed significantly since 2015 findings.

### Diabetes Education (Among Boone County Diabetics, 2018)

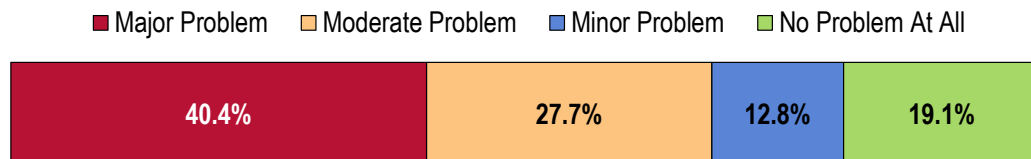


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 305-306]  
 Notes: • Reflects respondents with diabetes.

### Key Informant Input: Diabetes

A high percentage of key informants taking part in an online survey characterized *Diabetes* as a “major problem” in the community.

### Perceptions of Diabetes as a Problem in the Community (Key Informants, 2018)



Sources: • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

### Top Concerns

Among those rating this issue as a “major problem,” reasons related to the following:

#### Disease Management/Education

*Nutritional education and management of their diabetes and access to medications. - Public Health Representative*

*The prevention of diabetes, getting youth to become active and make an active lifestyle while eat healthier. - Social Services Provider*

*Chronic condition. Compliance is an issue. Diet and exercise, as well as overall lacking prevention. - Other Health Provider*

*Proper medical care and education of the disease. - Community Leader*

**Lifestyle**

*A lack of physical activity as it is not the "norm" for our county's society. Work environments are not conducive to employees wearing active clothing, promoting exercise before, lunchtime, after work exercise programs. Making it more normal for our citizens to be active and more affordable. Being less judgmental toward those who are trying or would like to try to be active. Also, by the description of foods and calories on menus. And about portion control measures. All of these things need to be taught from an early age. - Other Health Provider*

*Improving diets, better choices, less expensive choices, education. - Physician*

*Choosing healthy lifestyles, and cost. - Social Services Provider*

*Weight, nutrition, and activity. - Physician*

**Prevalence/Incidence**

*Type 2 diabetes is on the rise and impacts the community. Additional education and awareness about the risk factors for Type 2 diabetes is needed. People with Type 2 diabetes should be made aware and given tools to make more informed nutrition choices, engage in physical activity, and modify their lifestyle to change risk factors such as smoking and other substance use and obesity. - Public Health Representative*

*I see the number of diabetic cases increasing. Both young children and older adults. Poor diet, lack of exercise, increase in sugar intake, etc. are all contributing factors. - Community Leader*

*From my limited observations, it seems there are more young children and adults living with diabetes. - Community Leader*

*Increase of young children being diagnosed with Type 1 diabetes. - Other Health Provider*

**Access to Healthy Food**

*A lack of access to affordable, healthy food that they would need in order to maintain their health.*

*Diabetes is also a very complicated health condition, and people may not realize that. People may be uninsured or under-insured and may have difficulties affording appropriate care. A diagnosis of diabetes can lead down a slippery slope in to other health problems, which some people may not be aware of. If not prevented or taken care of, these complications may lead to a person being unable to work and lack of income or insurance. - Social Services Provider*

*Access and affordability with nutritional food. Resources and education on the disease. - Other Health Provider*

**Affordable Care/Medication**

*Medicare and Medicaid don't allow patients to use the co-pay cards. The new insulins work very well and are beneficial to control blood sugars. Seniors are prescribed these drugs, but they aren't affordable, so they often stop treatment. The results of out-of-control diabetes is devastating and can cause expensive hospitalizations for wounds, heart and kidney disease, stroke. Only those with private health insurance are the ones who benefit. - Social Services Provider*

*Getting access to affordable medication. - Social Services Provider*

## Alzheimer's Disease

### About Dementia

Dementia is the loss of cognitive functioning—thinking, remembering, and reasoning—to such an extent that it interferes with a person's daily life. Dementia is not a disease itself, but rather a set of symptoms. Memory loss is a common symptom of dementia, although memory loss by itself does not mean a person has dementia. Alzheimer's disease is the most common cause of dementia, accounting for the majority of all diagnosed cases.

Alzheimer's disease is the 6th leading cause of death among adults age 18 years and older. Estimates vary, but experts suggest that up to 5.1 million Americans age 65 years and older have Alzheimer's disease. These numbers are predicted to more than double by 2050 unless more effective ways to treat and prevent Alzheimer's disease are found.

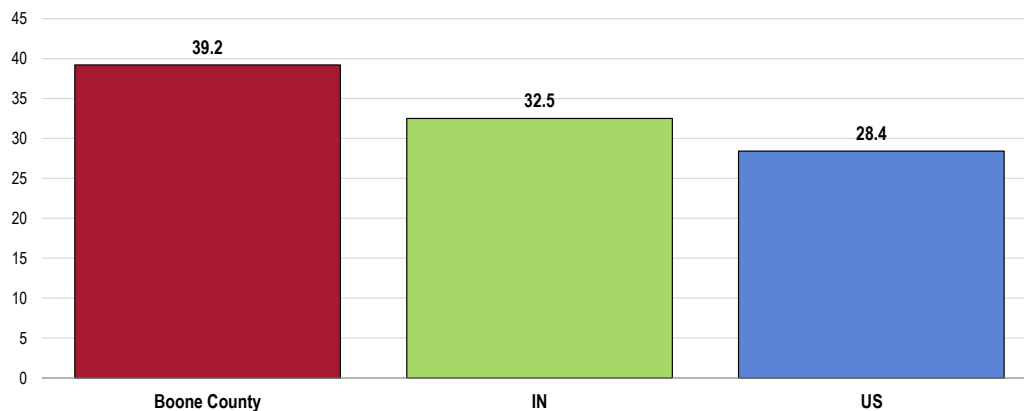
- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

### Age-Adjusted Alzheimer's Disease Deaths

Between 2014 and 2016, there was an annual average age-adjusted Alzheimer's disease mortality rate of 39.2 deaths per 100,000 population in Boone County.

- Less favorable than the statewide and national rates.

### Alzheimer's Disease: Age-Adjusted Mortality (2014-2016 Annual Average Deaths per 100,000 Population)

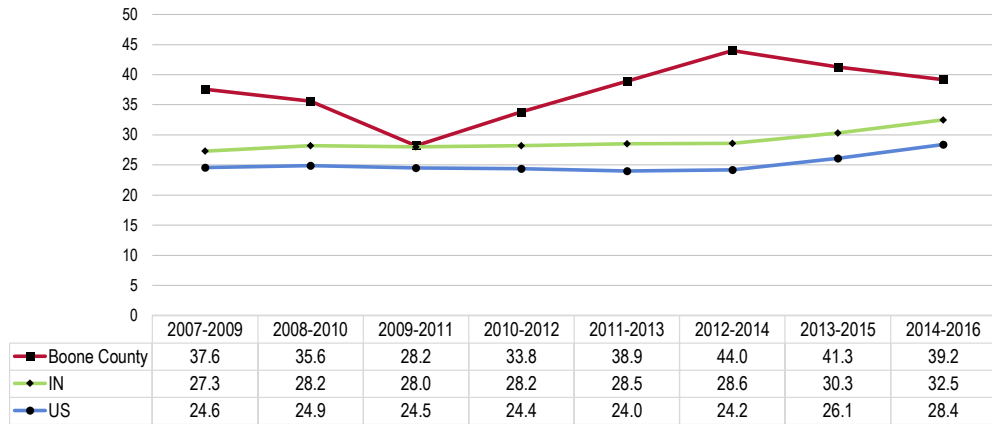


Sources: • CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.

Notes: • Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).  
• Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

- TREND: No clear trend is evident with regard to the Alzheimer's disease mortality rate in Boone County. Across Indiana and the US, rates have increased steadily in recent years.

### Alzheimer's Disease: Age-Adjusted Mortality Trends (Annual Average Deaths per 100,000 Population)



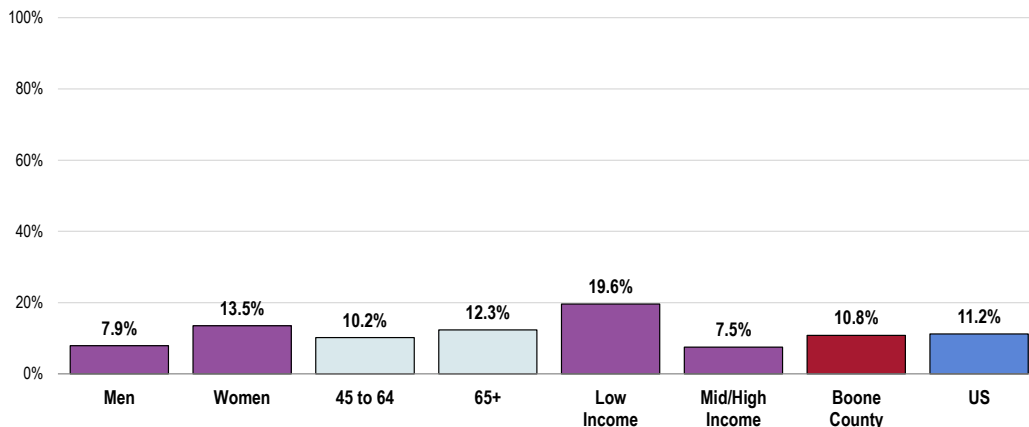
Sources: • CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.  
 Notes: • Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).  
 • Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

### Progressive Confusion/Memory Loss

A total of 10.8% of adults age 45 and older report experiencing confusion or memory loss in the past year that is happening more often or getting worse.

- Comparable to the US prevalence.
- A higher prevalence of progressive confusion/memory loss is reported among women and low-income adults.

### Experienced Increasing Confusion/Memory Loss in Past Year (Among Respondents Age 45 and Older; Boone County, 2018)

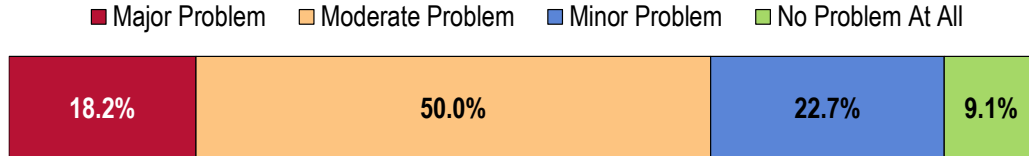


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 314]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of those respondents age 45 and older.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

## Key Informant Input: Dementias, Including Alzheimer’s Disease

Half of key informants taking part in an online survey are most likely to consider *Dementias, Including Alzheimer’s Disease* as a “moderate problem” in the community.

### Perceptions of Dementia/Alzheimer's Disease as a Problem in the Community (Key Informants, 2018)



Sources: • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
Notes: • Asked of all respondents.

### Top Concerns

Among those rating this issue as a “major problem,” reasons related to the following:

#### Aging Population

*There is an aging population in Boone County, and families are often not prepared for the physical and mental decline that happens. Many people don't have the resources to help and they don't understand the gravity of the disease progression. People are often left alone when they are very unsafe. - Social Services Provider*

*Our aging population is growing, and more children are left managing their parents and trying to grasp onto the concepts of the deterioration of the mind. - Public Health Representative*

#### Prevalence/Incidence

*It seems as though a lot of families are affected by this disease. - Other Health Provider*

*Dementia and Alzheimer's disease is growing in numbers as our population ages. People are still not educated and struggle to get the help they need locally. Caregiver support and education is also needed to support the family members caring for the loved ones with dementia. - Community Leader*

#### Access to Care/Services

*We have no comprehensive program in place for dementia evaluation and treatment. We also lack small housing facilities that have been shown to be most effective for caring for patients with dementia. - Physician*

## Kidney Disease

### About Kidney Disease

Chronic kidney disease and end-stage renal disease are significant public health problems in the United States and a major source of suffering and poor quality of life for those afflicted. They are responsible for premature death and exact a high economic price from both the private and public sectors. Nearly 25% of the Medicare budget is used to treat people with chronic kidney disease and end-stage renal disease.

Genetic determinants have a large influence on the development and progression of chronic kidney disease. It is not possible to alter a person's biology and genetic determinants; however, environmental influences and individual behaviors also have a significant influence on the development and progression of chronic kidney disease. As a result, some populations are disproportionately affected. Successful behavior modification is expected to have a positive influence on the disease.

Diabetes is the most common cause of kidney failure. The results of the Diabetes Prevention Program (DPP) funded by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) show that moderate exercise, a healthier diet, and weight reduction can prevent development of type 2 diabetes in persons at risk.

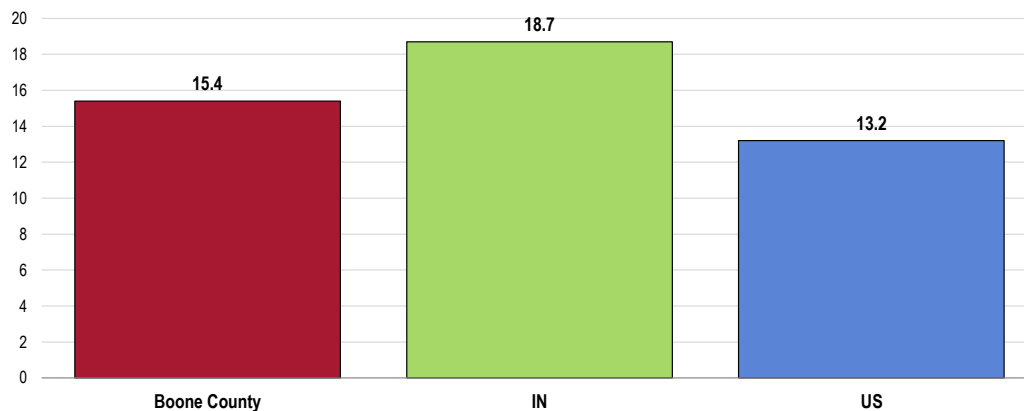
- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

### Age-Adjusted Kidney Disease Deaths

Between 2014 and 2016, there was an annual average age-adjusted kidney disease mortality rate of 15.4 deaths per 100,000 population in Boone County.

- Lower than the rate found statewide.
- Comparable to the national rate.

**Kidney Disease: Age-Adjusted Mortality**  
(2014-2016 Annual Average Deaths per 100,000 Population)

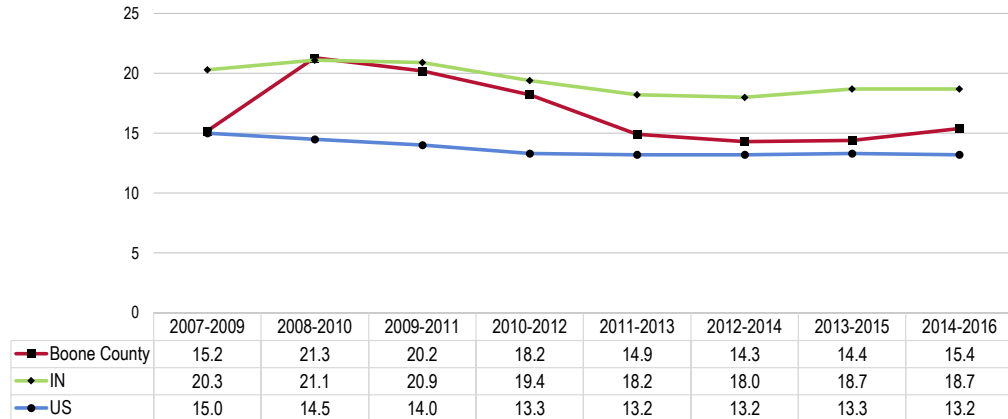


- Sources:
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
- Notes:
- Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
  - Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.



- **TREND:** After a period of increase at the beginning of the past decade, the death rate has since decreased in Boone County.

### Kidney Disease: Age-Adjusted Mortality Trends (Annual Average Deaths per 100,000 Population)



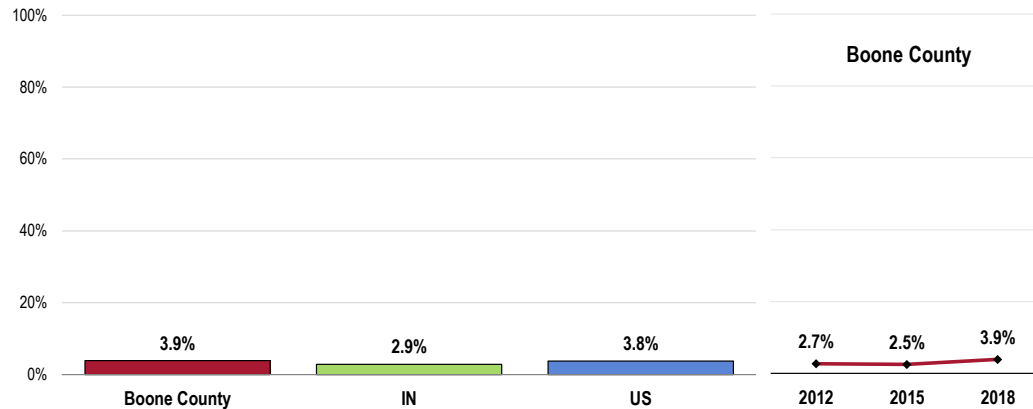
Sources: • CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.  
 Notes: • Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).  
 • Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

### Prevalence of Kidney Disease

**A total of 3.9% of Boone County adults report having been diagnosed with kidney disease.**

- Similar to the state and national proportions.
- **TREND:** Statistically unchanged since 2012.

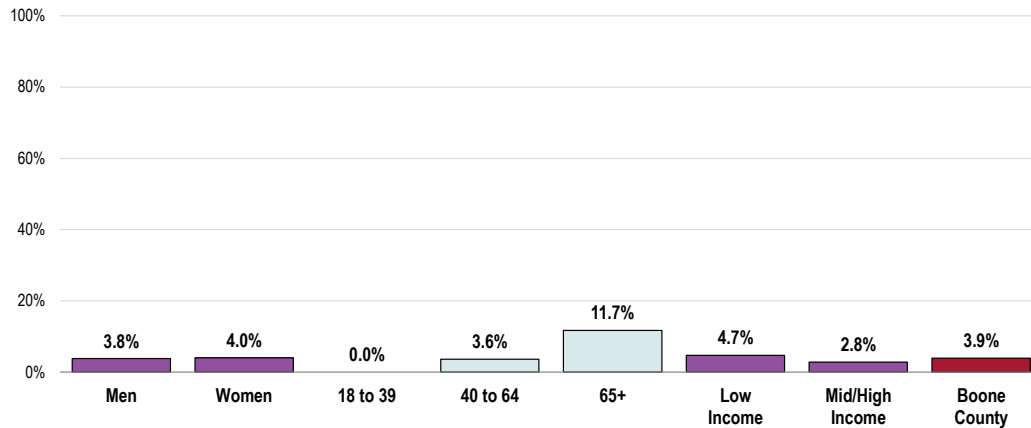
### Prevalence of Kidney Disease



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 30]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

- Kidney disease in Boone County is strongly correlated with age.

### Prevalence of Kidney Disease (Boone County, 2018)

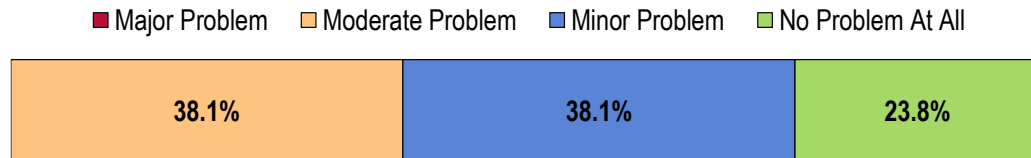


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 30]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

### Key Informant Input: Kidney Disease

Key informants taking part in an online survey equally characterized *Kidney Disease* as both a "moderate problem" and "minor problem" in the community.

### Perceptions of Kidney Disease as a Problem in the Community (Key Informants, 2018)



Sources: • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

## Potentially Disabling Conditions

### Arthritis, Osteoporosis, & Chronic Back Conditions

#### About Arthritis, Osteoporosis, & Chronic Back Conditions

There are more than 100 types of arthritis. Arthritis commonly occurs with other chronic conditions, such as diabetes, heart disease, and obesity. Interventions to treat the pain and reduce the functional limitations from arthritis are important, and may also enable people with these other chronic conditions to be more physically active. Arthritis affects 1 in 5 adults and continues to be the most common cause of disability. It costs more than \$128 billion per year. All of the human and economic costs are projected to increase over time as the population ages. There are interventions that can reduce arthritis pain and functional limitations, but they remain underused. These include: increased physical activity; self-management education; and weight loss among overweight/obese adults.

Osteoporosis is a disease marked by reduced bone strength leading to an increased risk of fractures (broken bones). In the United States, an estimated 5.3 million people age 50 years and older have osteoporosis. Most of these people are women, but about 0.8 million are men. Just over 34 million more people, including 12 million men, have low bone mass, which puts them at increased risk for developing osteoporosis. Half of all women and as many as 1 in 4 men age 50 years and older will have an osteoporosis-related fracture in their lifetime.

Chronic back pain is common, costly, and potentially disabling. About 80% of Americans experience low back pain in their lifetime. It is estimated that each year:

- 15%-20% of the population develop protracted back pain.
- 2-8% have chronic back pain (pain that lasts more than 3 months).
- 3-4% of the population is temporarily disabled due to back pain.
- 1% of the working-age population is disabled completely and permanently as a result of low back pain.

Americans spend at least \$50 billion each year on low back pain. Low back pain is the:

- 2<sup>nd</sup> leading cause of lost work time (after the common cold).
- 3<sup>rd</sup> most common reason to undergo a surgical procedure.
- 5<sup>th</sup> most frequent cause of hospitalization.

Arthritis, osteoporosis, and chronic back conditions all have major effects on quality of life, the ability to work, and basic activities of daily living.

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

#### **Nearly one-third of Boone County adults age 50 and older (32.4%) reports suffering from arthritis or rheumatism.**

- More favorable than that found nationwide.

#### **A total of 11.1% Boone County adults age 50 and older have osteoporosis.**

- Similar to the national prevalence.
- Double the Healthy People 2020 target of 5.3% or lower.

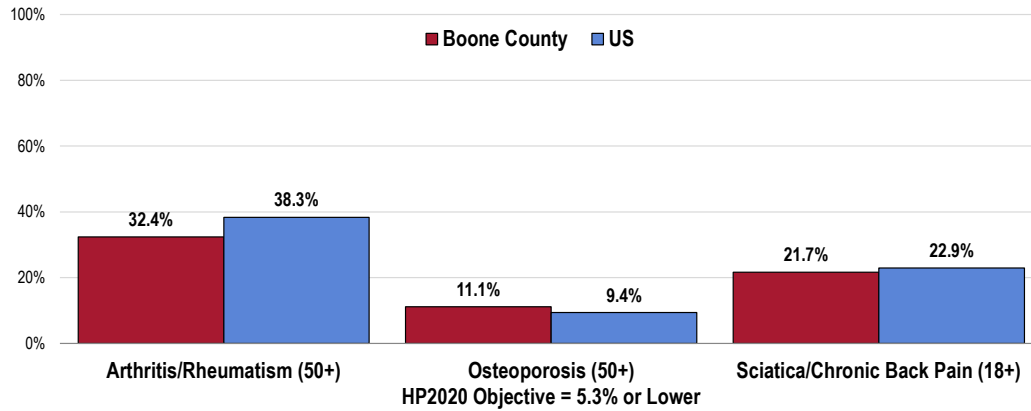
#### **A total of 21.7% of Boone County adults (18 and older) suffer from chronic back pain or sciatica.**

- Comparable to that found nationwide.

#### RELATED ISSUE:

See also *Overall Health Status: Activity Limitations in the General Health Status* section of this report.

### Prevalence of Potentially Disabling Conditions



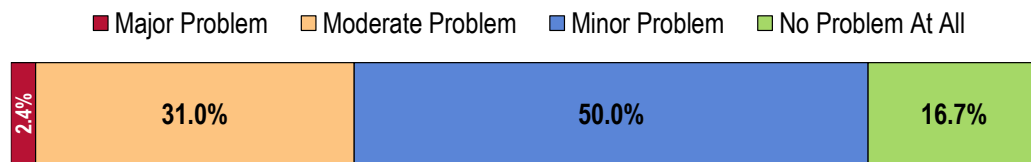
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 26, 141-142]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective AOCBC-10]

Notes: • The sciatica indicator reflects the total sample of respondents; the arthritis and osteoporosis columns reflect adults age 50+.

### Key Informant Input: Arthritis, Osteoporosis & Chronic Back Conditions

One-half of key informants taking part in an online survey characterized *Arthritis, Osteoporosis & Chronic Back Conditions* as a “minor problem” in the community.

### Perceptions of Arthritis/Osteoporosis/Back Conditions as a Problem in the Community (Key Informants, 2018)



Sources: • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

No comments were given among those identifying this as a “major problem.”

## Vision & Hearing Impairment

### About Vision

Vision is an essential part of everyday life, influencing how Americans of all ages learn, communicate, work, play, and interact with the world. Yet millions of Americans live with visual impairment, and many more remain at risk for eye disease and preventable eye injury.

The eyes are an important, but often overlooked, part of overall health. Despite the preventable nature of some vision impairments, many people do not receive recommended screenings and exams. A visit to an eye care professional for a comprehensive dilated eye exam can help to detect common vision problems and eye diseases, including diabetic retinopathy, glaucoma, cataract, and age-related macular degeneration.

These common vision problems often have no early warning signs. If a problem is detected, an eye care professional can prescribe corrective eyewear, medicine, or surgery to minimize vision loss and help a person see his or her best.

Healthy vision can help to ensure a healthy and active lifestyle well into a person's later years. Educating and engaging families, communities, and the nation is critical to ensuring that people have the information, resources, and tools needed for good eye health.

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

### About Hearing & Other Sensory or Communication Disorders

An impaired ability to communicate with others or maintain good balance can lead many people to feel socially isolated, have unmet health needs, have limited success in school or on the job. Communication and other sensory processes contribute to our overall health and well-being. Protecting these processes is critical, particularly for people whose age, race, ethnicity, gender, occupation, genetic background, or health status places them at increased risk.

Many factors influence the numbers of Americans who are diagnosed and treated for hearing and other sensory or communication disorders, such as social determinants (social and economic standings, age of diagnosis, cost and stigma of wearing a hearing aid, and unhealthy lifestyle choices). In addition, biological causes of hearing loss and other sensory or communication disorders include: genetics; viral or bacterial infections; sensitivity to certain drugs or medications; injury; and aging.

As the nation's population ages and survival rates for medically fragile infants and for people with severe injuries and acquired diseases improve, the prevalence of sensory and communication disorders is expected to rise.

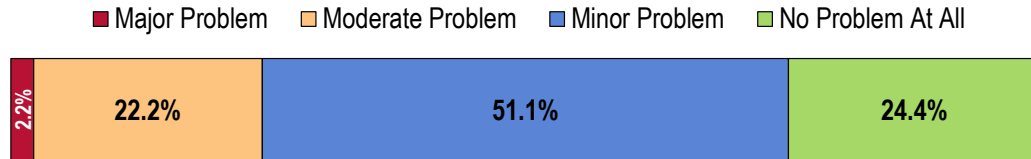
- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

### Key Informant Input: Vision & Hearing

Key informants taking part in an online survey most often characterized *Vision & Hearing* as a “minor problem” in the community.

## Perceptions of Vision and Hearing as a Problem in the Community

(Key Informants, 2018)



Sources: • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

### Top Concerns

Among those rating this issue as a “major problem,” the following reason was given:

#### Prevalence/Incidence

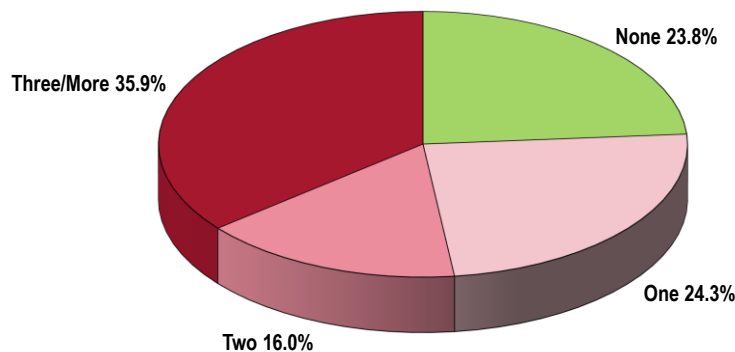
Appears to be a lot of adult onset hearing loss. - Physician

## Multiple Chronic Conditions

Among Boone County survey respondents, most report currently having at least one chronic health condition, including 24.3% with one condition, 16.0% with two conditions, and 35.9% with three or more chronic conditions.

For the purposes of this assessment, chronic conditions include lung disease, arthritis, sciatica, cancer, osteoporosis, kidney disease, heart attack, angina, stroke, asthma, hypertension, high blood cholesterol, diabetes, obesity, and/or diagnosed depression. Multiple chronic conditions are concurrent conditions.

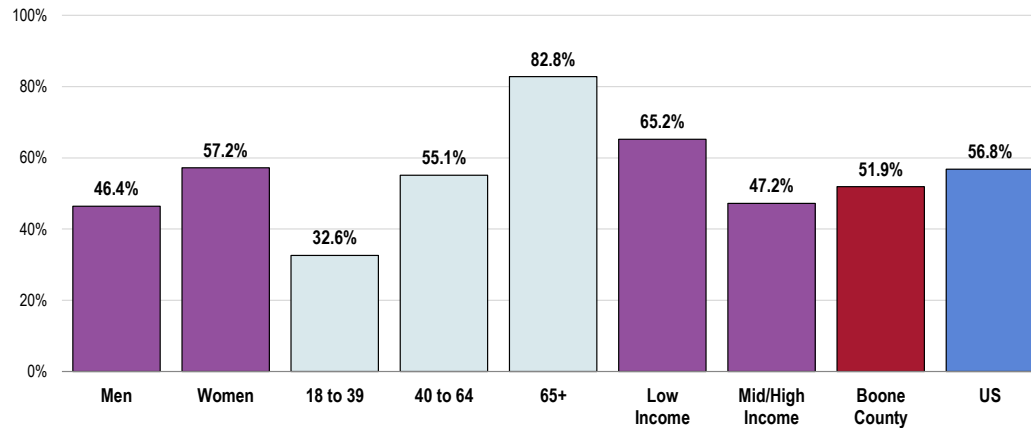
## Number of Current Chronic Conditions (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 143]  
 Notes: • Asked of all respondents.  
 • In this case, chronic conditions include lung disease, arthritis, sciatica, cancer, osteoporosis, kidney disease, heart attack, angina, stroke, asthma, hypertension, high blood cholesterol, diabetes, obesity, and/or diagnosed depression.

- The prevalence of multiple chronic conditions among Boone County residents (51.9%) is more favorable than the US prevalence.
- Far more common among older adults (strong correlation with age), as well as among women and low-income adults.

### Currently Suffer From Multiple Chronic Conditions (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 143]  
• 2017 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: • Asked of all respondents.  
• Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.  
• In this case, chronic conditions include lung disease, arthritis, sciatica, cancer, osteoporosis, kidney disease, heart attack, angina, stroke, asthma, hypertension, high blood cholesterol, diabetes, obesity, and/or diagnosed depression.

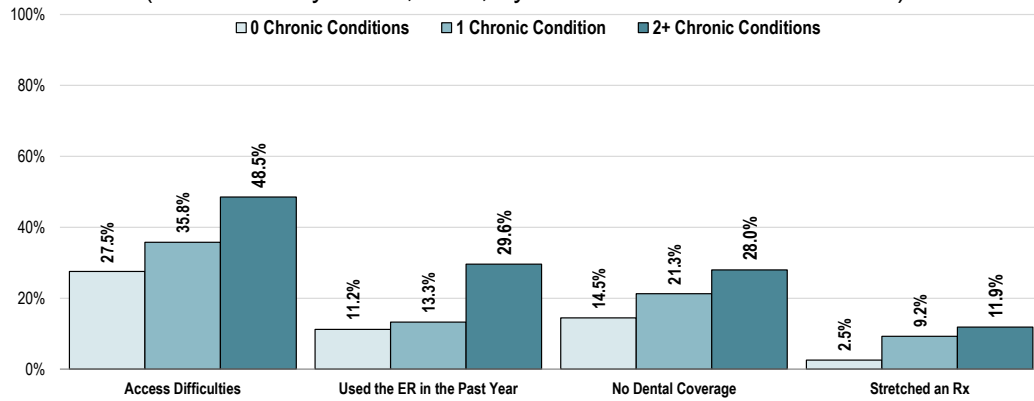
### Chronic Conditions & Healthcare Access

Adults with chronic conditions often go without needed medical care or prescription drugs due to cost, and uninsured adults with common chronic conditions suffer serious, identifiable gaps in needed medical care.

**Note these positive correlations between the number of chronic conditions among Boone County adults and various barriers to healthcare access:**

- Access difficulties
- Use of the ER for medical care
- No dental coverage
- Skipping or stretching a prescription medication

### Chronic Conditions and Healthcare Access (Boone County Adults, 2018; By Number of Chronic Conditions)



- Sources:
- 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 8, 14, 21-22, 143, 171]
  - In this case, chronic conditions include lung disease, arthritis, sciatica, cancer, osteoporosis, kidney disease, heart attack, angina, stroke, asthma, hypertension, high blood cholesterol, diabetes, obesity, and/or diagnosed depression.



# Infectious Disease



**Professional Research Consultants, Inc.**

## Influenza & Pneumonia Vaccination

### About Influenza & Pneumonia

Acute respiratory infections, including pneumonia and influenza, are the 8th leading cause of death in the nation, accounting for 56,000 deaths annually. Pneumonia mortality in children fell by 97% in the last century, but respiratory infectious diseases continue to be leading causes of pediatric hospitalization and outpatient visits in the US. On average, influenza leads to more than 200,000 hospitalizations and 36,000 deaths each year. The 2009 H1N1 influenza pandemic caused an estimated 270,000 hospitalizations and 12,270 deaths (1,270 of which were of people younger than age 18) between April 2009 and March 2010.

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

### Flu Vaccination

Among Boone County seniors, over three-quarters (77.8%) received a flu shot within the past year.

- Far above the Indiana finding.
- Similar to the national finding.
- Satisfies the Healthy People 2020 target (70% or higher).
- TREND: Represents a significant increase over 2015 findings (The increase since 2012 is not statistically significant).

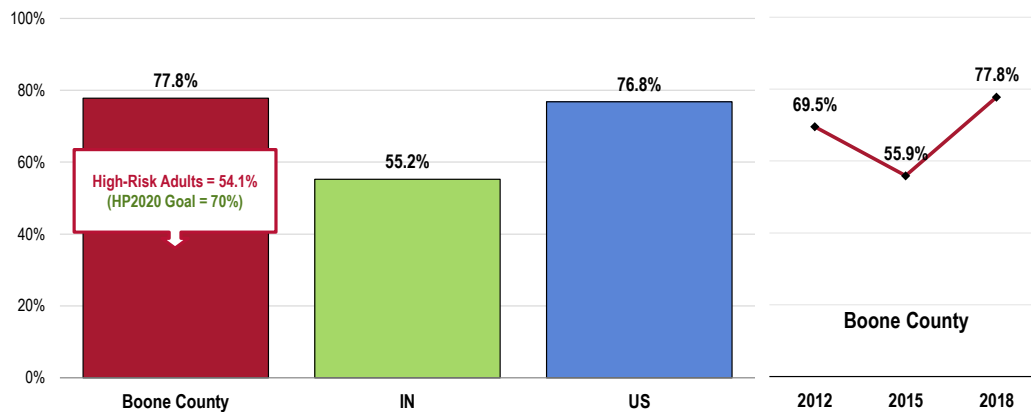
"High-risk" includes adults who report having been diagnosed with heart disease, diabetes, or respiratory disease.

A total of 54.1% of high-risk adults age 18 to 64 received a flu shot within the past year.

### Older Adults: Have Had a Flu Vaccination in the Past Year

(Among Adults Age 65+)

Healthy People 2020 Target = 70.0% or Higher



- Sources:
- 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 144-145]
  - Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2016 Indiana data.
  - 2017 PRC National Health Survey, Professional Research Consultants, Inc.
  - US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective IID-12.12]
- Notes:
- Reflects respondents 65 and older.
  - "High-Risk" includes adults age 18 to 64 who have been diagnosed with heart disease, diabetes, or respiratory disease.

## Pneumonia Vaccination

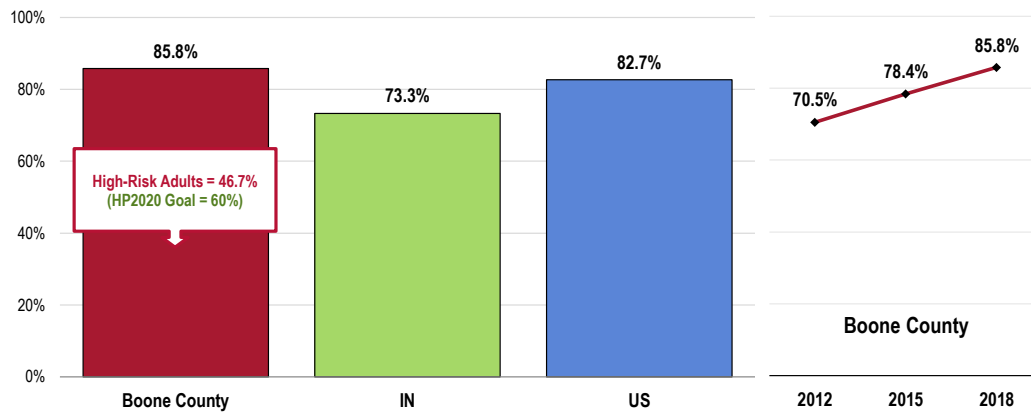
Among Boone County adults age 65 and older, 85.8% have received a pneumonia vaccination at some point in their lives.

- Higher than the Indiana finding.
- Similar to the national finding.
- Fails to satisfy the Healthy People 2020 target of 90% or higher.
- TREND: Represents a consistent increase since 2012.

A total of 46.7% of high-risk adults age 18 to 64 have ever received a pneumonia vaccination.

### Older Adults: Have Ever Had a Pneumonia Vaccine (Among Adults Age 65+)

Healthy People 2020 Target = 90.0% or Higher



- Sources:
- 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 146-147]
  - Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC). 2016 Indiana data.
  - 2017 PRC National Health Survey, Professional Research Consultants, Inc.
  - US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objectives IID-13.1, IID-13.2]
- Notes:
- Reflects respondents 65 and older.
  - "High-Risk" includes adults age 18 to 64 who have been diagnosed with heart disease, diabetes or respiratory disease.

## HIV

### About Human Immunodeficiency Virus (HIV)

The HIV epidemic in the United States continues to be a major public health crisis. An estimated 1.1 million Americans are living with HIV, and 1 in 5 people with HIV do not know they have it. HIV continues to spread, leading to about 56,000 new HIV infections each year.

HIV is a preventable disease, and effective HIV prevention interventions have been proven to reduce HIV transmission. People who get tested for HIV and learn that they are infected can make significant behavior changes to improve their health and reduce the risk of transmitting HIV to their sex or drug-using partners. More than 50% of new HIV infections occur as a result of the 21% of people who have HIV but do not know it.

In the era of increasingly effective treatments for HIV, people with HIV are living longer, healthier, and more productive lives. Deaths from HIV infection have greatly declined in the United States since the 1990s. As the number of people living with HIV grows, it will be more important than ever to increase national HIV prevention and healthcare programs.

There are gender, race, and ethnicity disparities in new HIV infections:

- Nearly 75% of new HIV infections occur in men.
- More than half occur in gay and bisexual men, regardless of race or ethnicity.
- 45% of new HIV infections occur in African Americans, 35% in whites, and 17% in Hispanics.

Improving access to quality healthcare for populations disproportionately affected by HIV, such as persons of color and gay and bisexual men, is a fundamental public health strategy for HIV prevention. People getting care for HIV can receive:

- Antiretroviral therapy
- Screening and treatment for other diseases (such as sexually transmitted infections)
- HIV prevention interventions
- Mental health services
- Other health services

As the number of people living with HIV increases and more people become aware of their HIV status, prevention strategies that are targeted specifically for HIV-infected people are becoming more important. Prevention work with people living with HIV focuses on:

- Linking to and staying in treatment.
- Increasing the availability of ongoing HIV prevention interventions.
- Providing prevention services for their partners.

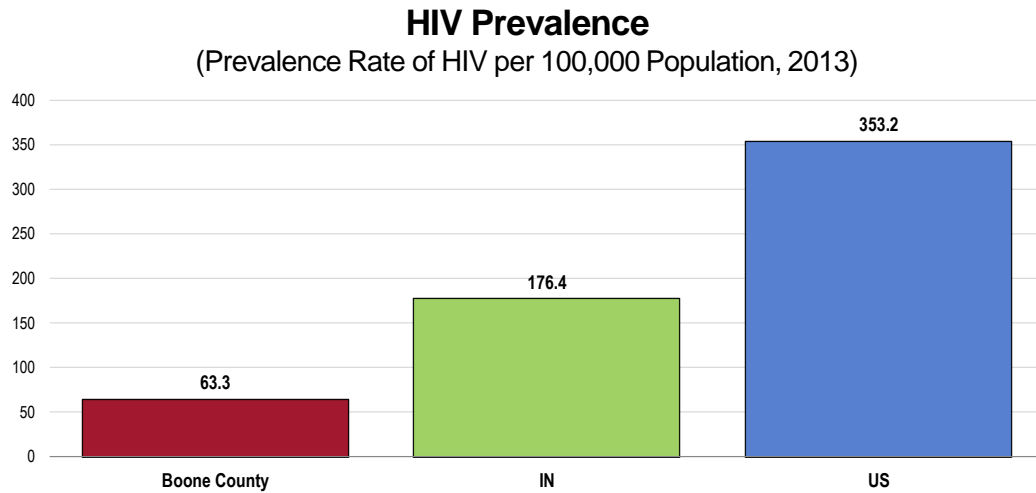
Public perception in the US about the seriousness of the HIV epidemic has declined in recent years. There is evidence that risky behaviors may be increasing among uninfected people, especially gay and bisexual men. Ongoing media and social campaigns for the general public and HIV prevention interventions for uninfected persons who engage in risky behaviors are critical.

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

## HIV Prevalence

In 2013, there was a prevalence of 63.3 HIV cases per 100,000 population in Boone County.

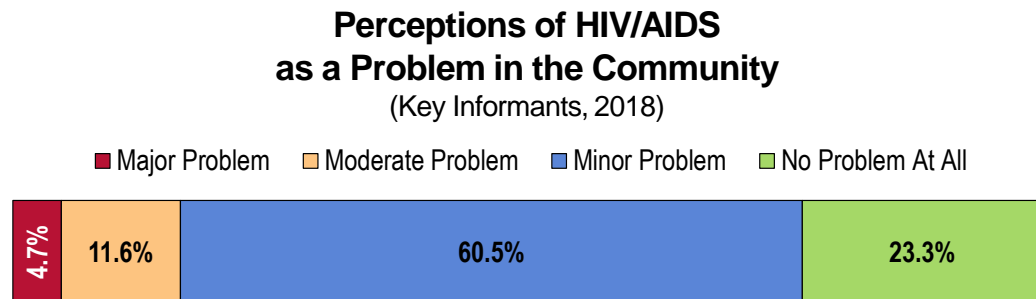
- Much more favorable than the statewide and national prevalence.



- Sources:
- Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention.
  - Retrieved November 2018 from Community Commons at <http://www.chna.org>.
- Notes:
- This indicator is relevant because HIV is a life-threatening communicable disease that disproportionately affects minority populations and may also indicate the prevalence of unsafe sex practices.

## Key Informant Input: HIV/AIDS

Key informants taking part in an online survey overwhelmingly characterized *HIV/AIDS* as a “minor problem” in the community.



- Sources:
- PRC Online Key Informant Survey, Professional Research Consultants, Inc.
- Notes:
- Asked of all respondents.

No comments were given among those identifying this as a “major problem.”

## Sexually Transmitted Diseases

### About Sexually Transmitted Diseases

STDs refer to more than 25 infectious organisms that are transmitted primarily through sexual activity. Despite their burdens, costs, and complications, and the fact that they are largely preventable, STDs remain a significant public health problem in the United States. This problem is largely unrecognized by the public, policymakers, and health care professionals. STDs cause many harmful, often irreversible, and costly clinical complications, such as: reproductive health problems; fetal and perinatal health problems; cancer; and facilitation of the sexual transmission of HIV infection.

Because many cases of STDs go undiagnosed—and some common viral infections, such as human papillomavirus (HPV) and genital herpes, are not reported to CDC at all—the reported cases of chlamydia, gonorrhea, and syphilis represent only a fraction of the true burden of STDs in the US. Untreated STDs can lead to serious long-term health consequences, especially for adolescent girls and young women. Several factors contribute to the spread of STDs.

**Biological Factors.** STDs are acquired during unprotected sex with an infected partner. Biological factors that affect the spread of STDs include:

- **Asymptomatic nature of STDs.** The majority of STDs either do not produce any symptoms or signs, or they produce symptoms so mild that they are unnoticed; consequently, many infected persons do not know that they need medical care.
- **Gender disparities.** Women suffer more frequent and more serious STD complications than men do. Among the most serious STD complications are pelvic inflammatory disease, ectopic pregnancy (pregnancy outside of the uterus), infertility, and chronic pelvic pain.
- **Age disparities.** Compared to older adults, sexually active adolescents ages 15 to 19 and young adults ages 20 to 24 are at higher risk for getting STDs.
- **Lag time between infection and complications.** Often, a long interval, sometimes years, occurs between acquiring an STD and recognizing a clinically significant health problem.

**Social, Economic, and Behavioral Factors.** The spread of STDs is directly affected by social, economic, and behavioral factors. Such factors may cause serious obstacles to STD prevention due to their influence on social and sexual networks, access to and provision of care, willingness to seek care, and social norms regarding sex and sexuality. Among certain vulnerable populations, historical experience with segregation and discrimination exacerbates these factors. Social, economic, and behavioral factors that affect the spread of STDs include: racial and ethnic disparities; poverty and marginalization; access to healthcare; substance abuse; sexuality and secrecy (stigma and discomfort discussing sex); and sexual networks (persons “linked” by sequential or concurrent sexual partners).

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

### Chlamydia & Gonorrhea

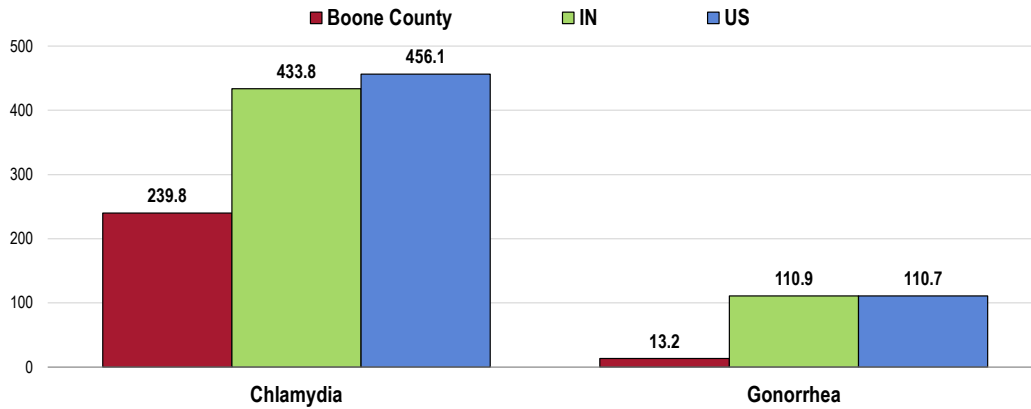
**In 2014, the chlamydia incidence rate in Boone County was 239.8 cases per 100,000 population.**

- Notably lower than the Indiana and US incidence rates.

**The Boone County gonorrhea incidence rate in 2014 was 13.2 cases per 100,000 population.**

- Notably lower than the state and national incidence rates.

### Chlamydia & Gonorrhea Incidence (Incidence Rate per 100,000 Population, 2014)

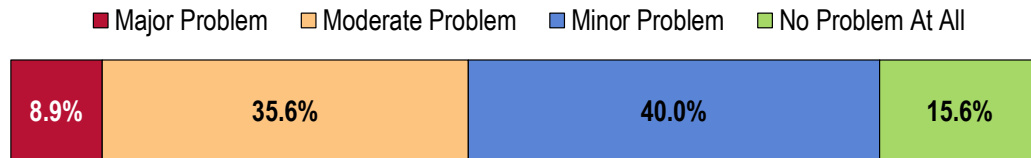


Sources: • Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention.  
 • Retrieved November 2018 from Community Commons at <http://www.chna.org>.  
 Notes: • This indicator is relevant because it is a measure of poor health status and indicates the prevalence of unsafe sex practices.

### Key Informant Input: Sexually Transmitted Diseases

A plurality of key informants taking part in an online survey characterized *Sexually Transmitted Diseases* as a “minor problem” in the community.

### Perceptions of Sexually Transmitted Diseases as a Problem in the Community (Key Informants, 2018)



Sources: • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

### Top Concerns

Among those rating this issue as a “major problem,” reasons related to the following:

#### Social Norms

- Sexual contact has become more a casual form of entertainment, and populations are engaging with multiple partners often. - Public Health Representative
- The number of adolescents that are sexually active. - Other Health Provider

### **Awareness/Education**

*I think Indiana as a whole fails Hoosiers because the state pushes for abstinence-only education. Abstinence-only education has been shown to not work time and time again. Pushing for comprehensive sex education has been shown to decrease teen pregnancy rates, delay initiation of sexual activity, and increase contraceptive use to decrease STD/STI rates. We can't expect people to make healthy decisions if we don't give them proper information about their own bodies. I'm all for parents taking the reins on educating their children about sexual health, but I think parents are either also ill-informed or falsely believe that giving their children information on sexual health will encourage unsafe sex practices. - Social Services Provider*



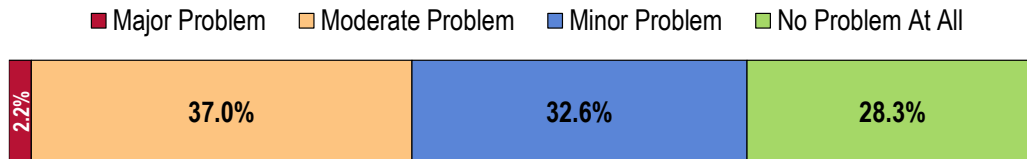
## Immunization & Infectious Diseases

### Key Informant Input: Immunization & Infectious Diseases

Key informants taking part in an online survey most often characterized *Immunization & Infectious Diseases* as a “moderate problem” in the community.

### Perceptions of Immunization and Infectious Diseases as a Problem in the Community

(Key Informants, 2018)



Sources:   • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
Notes:   • Asked of all respondents.

### Top Concerns

Among those rating this issue as a “major problem,” the following reason was given:

#### Awareness/Education

*There's a lot of misinformation out there about immunizations and I wonder if people think they can only get immunizations at a doctor's office. I also think there's a lack of access to syringe exchange programs, safe needle use education, comprehensive sex education, and affordable family planning options that could decrease the rate of infectious diseases transmitted through IV drug use and unsafe sex practices. - Social Services Provider*

# Births



Professional Research Consultants, Inc.

## Prenatal Care

### About Infant & Child Health

Improving the well-being of mothers, infants, and children is an important public health goal for the US. Their well-being determines the health of the next generation and can help predict future public health challenges for families, communities, and the healthcare system. The risk of maternal and infant mortality and pregnancy-related complications can be reduced by increasing access to quality preconception (before pregnancy) and inter-conception (between pregnancies) care. Moreover, healthy birth outcomes and early identification and treatment of health conditions among infants can prevent death or disability and enable children to reach their full potential. Many factors can affect pregnancy and childbirth, including pre-conception health status, age, access to appropriate healthcare, and poverty.

Infant and child health are similarly influenced by socio-demographic factors, such as family income, but are also linked to the physical and mental health of parents and caregivers. There are racial and ethnic disparities in mortality and morbidity for mothers and children, particularly for African Americans. These differences are likely the result of many factors, including social determinants (such as racial and ethnic disparities in infant mortality; family income; educational attainment among household members; and health insurance coverage) and physical determinants (i.e., the health, nutrition, and behaviors of the mother during pregnancy and early childhood).

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

Early and continuous prenatal care is the best assurance of infant health.

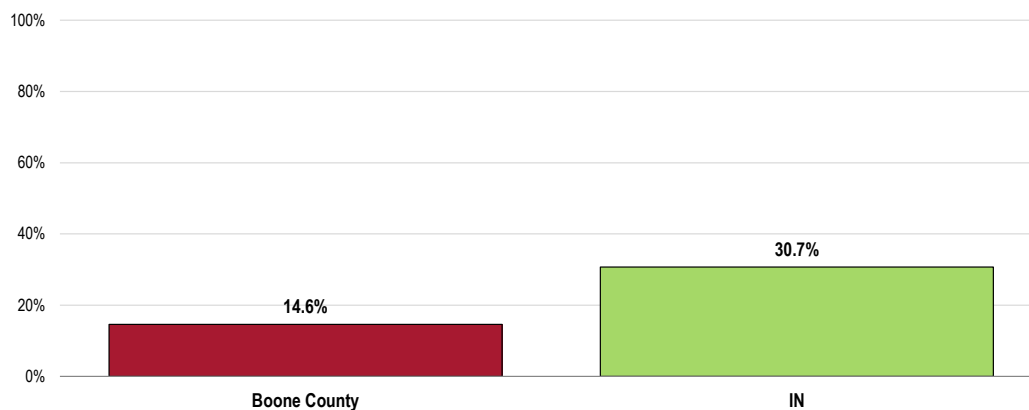
**In 2016, 14.6% of all Boone County births did not receive prenatal care in the first trimester of pregnancy.**

- Under half the statewide percentage.
- Satisfies the Healthy People 2020 target (22.1% or lower).

### Lack of Prenatal Care in the First Trimester

(Percentage of Live Births, 2016)

Healthy People 2020 Target = 22.1% or Lower



Sources: • Indiana Youth Institute, Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team. Data retrieved December 2018 from <https://datacenter.kidscount.org/>.

Note: • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective MICH-10.1]  
 • This indicator reports the percentage of women who do not obtain prenatal care during their first trimester of pregnancy. This indicator is relevant because engaging in prenatal care decreases the likelihood of maternal and infant health risks. This indicator can also highlight a lack of access to preventive care, a lack of health, knowledge insufficient provider outreach, and/or social barriers preventing utilization of services.

## Birth Outcomes & Risks

### Low-Weight Births

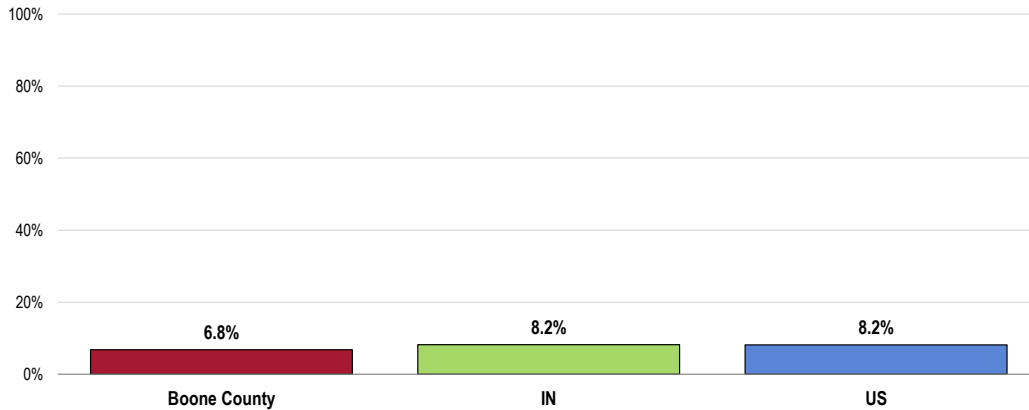
Low birthweight babies, those who weigh less than 2,500 grams (5 pounds, 8 ounces) at birth, are much more prone to illness and neonatal death than are babies of normal birthweight.

Largely a result of receiving poor or inadequate prenatal care, many low-weight births and the consequent health problems are preventable.

**A total of 6.8% of 2016 Boone County births were low-weight.**

- Better than the Indiana and national proportions.
- Statistically similar to the Healthy People 2020 target (7.8% or lower).

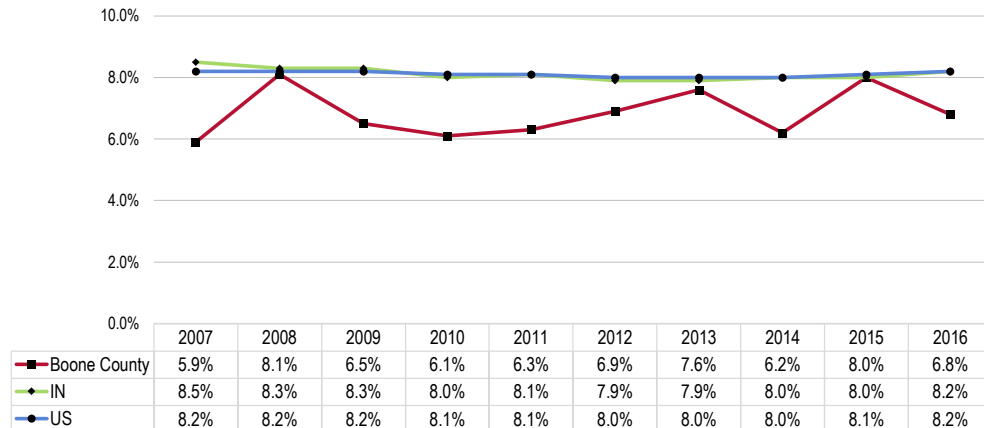
**Low-Weight Births**  
(Percent of Live Births, 2016)  
**Healthy People 2020 Target = 7.8% or Lower**



Sources: • Indiana Youth Institute, Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team. Data retrieved December 2018 from <https://datacenter.kidscount.org/>.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective MICH-8.1]  
 Note: • This indicator reports the percentage of total births that are low birth weight (Under 2500g). This indicator is relevant because low birth weight infants are at high risk for health problems. This indicator can also highlight the existence of health disparities.

- **TREND:** The proportion of low-weight births in Boone County has shown no clear trend over the past decade.

**Low-Weight Births**  
(Percent of Live Births)  
**Healthy People 2020 Target = 7.8% or Lower**

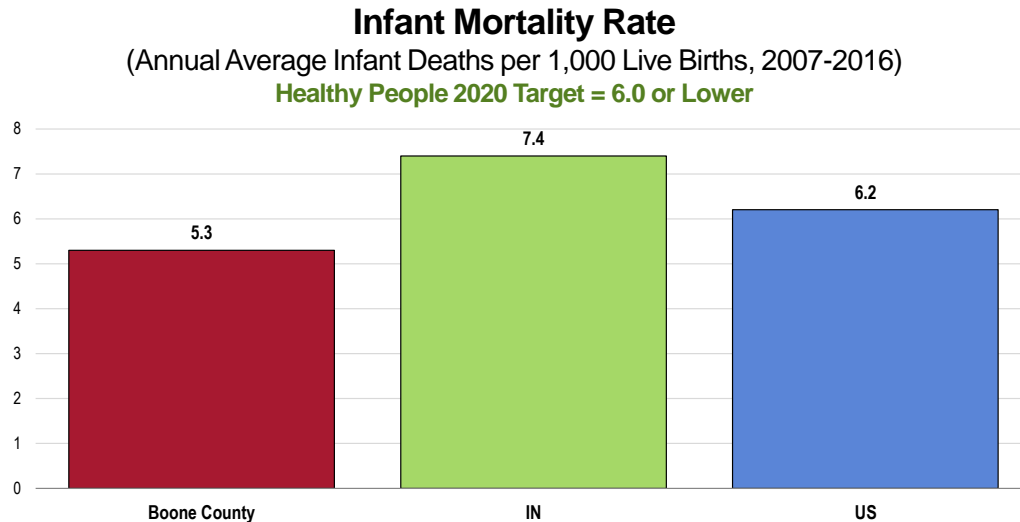


Sources: • Indiana Youth Institute, Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team. Data retrieved December 2018 from <https://datacenter.kidscount.org/>.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective MICH-8.1]  
 Note: • This indicator reports the percentage of total births that are low birth weight (Under 2500g). This indicator is relevant because low birth weight infants are at high risk for health problems. This indicator can also highlight the existence of health disparities.

## Infant Mortality

Between 2007 and 2016, there was an annual average of 5.3 infant deaths per 1,000 live births.

- More favorable than the Indiana and national rates.
- Statistically similar to the Healthy People 2020 target of 6.0 per 1,000 live births or lower.



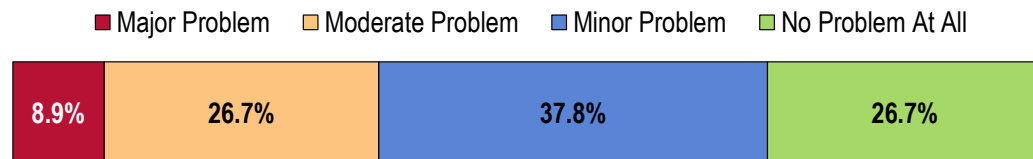
- Sources:
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics. Data extracted November 2018.
  - US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective MICH-1.3]
- Notes:
- Infant deaths include deaths of children under 1 year old.
  - This indicator is relevant because high rates of infant mortality indicate the existence of broader issues pertaining to access to care and maternal and child health.

## Key Informant Input: Infant & Child Health

Key informants taking part in an online survey generally characterized *Infant & Child Health* as a “minor problem” in the community.

### Perceptions of Infant and Child Health as a Problem in the Community

(Key Informants, 2018)



- Sources:
- PRC Online Key Informant Survey, Professional Research Consultants, Inc.
- Notes:
- Asked of all respondents.

## Top Concerns

Among those rating this issue as a “major problem,” reasons related to the following:

### **Affordable Care/Services**

*I think we need more low-cost options for infant and child health. - Social Services Provider*

### **Dental Care**

*The number of students in our school who need dental care. They come to school with toothaches. Some families take advantage of the mobile dentist. The number of students who fail vision screenings, and the parents don't get the kids to the optometrist. - Other Health Provider*

### **Prevalence/Incidence**

*Lots of children in the community. - Other Health Provider*

## Family Planning

### Births to Teen Mothers

#### About Teen Births

The negative outcomes associated with unintended pregnancies are compounded for adolescents.

Teen mothers:

- Are less likely to graduate from high school or attain a GED by the time they reach age 30.
- Earn an average of approximately \$3,500 less per year, when compared with those who delay childbearing.
- Receive nearly twice as much Federal aid for nearly twice as long.

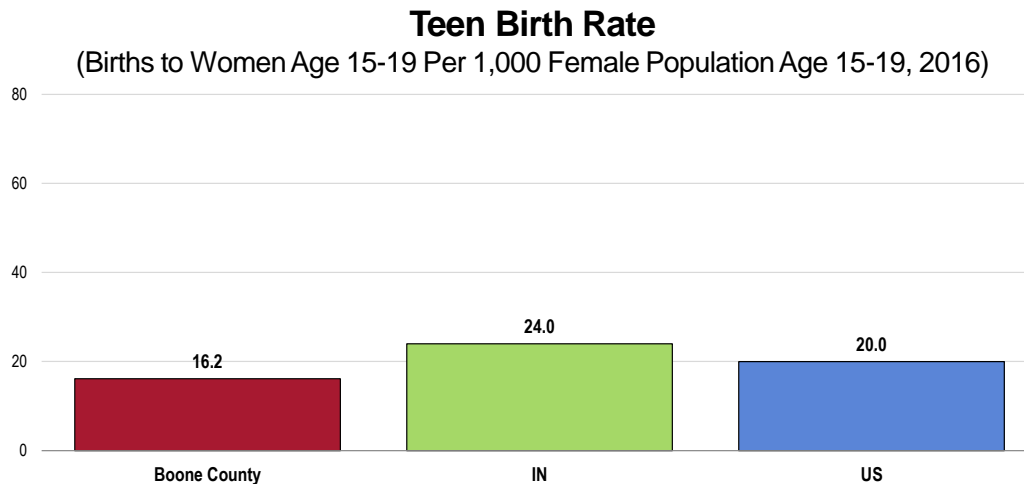
Similarly, early fatherhood is associated with lower educational attainment and lower income.

Children of teen parents are more likely to have lower cognitive attainment and exhibit more behavior problems. Sons of teen mothers are more likely to be incarcerated, and daughters are more likely to become adolescent mothers.

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

In 2016, there were 16.2 births to women age 15 to 19 per 1,000 women age 15 to 19 in Boone County.

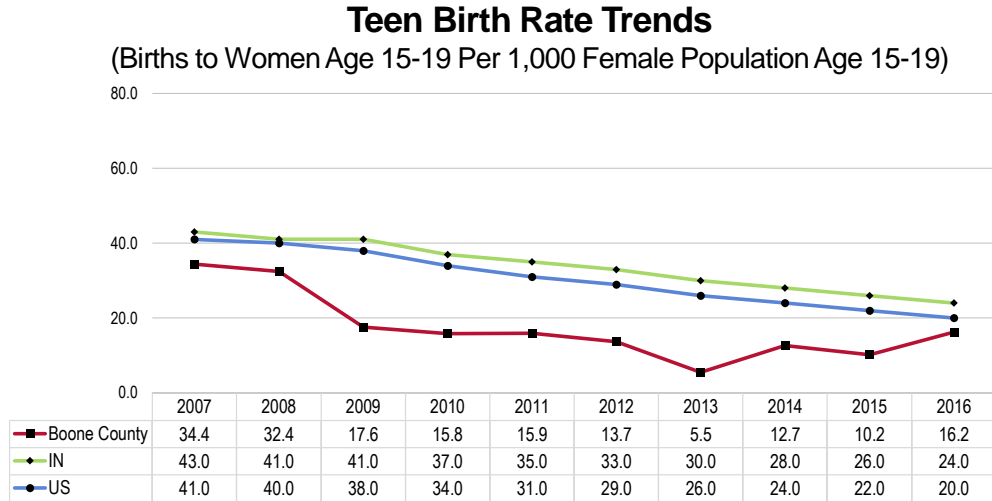
- Lower than the Indiana and national rates.



Sources: • Indiana Youth Institute, Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team. Data retrieved December 2018 from <https://datacenter.kidscount.org/>.

Notes: • This indicator reports the rate of total births to women under the age of 15–19 per 1,000 female population age 15–19. This indicator is relevant because in many cases, teen parents have unique social, economic, and health support services. Additionally, high rates of teen pregnancy may indicate the prevalence of unsafe sex practices.

- TREND: As evident across the state and nation, rates in Boone County have decreased over the past decade.



Sources: • Indiana Youth Institute, Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team. Data retrieved December 2018 from <https://datacenter.kidscount.org/>.

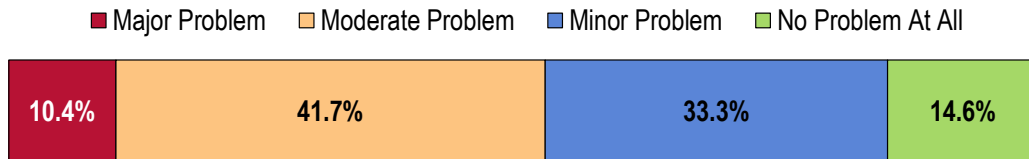
Notes: • This indicator reports the rate of total births to women under the age of 15–19 per 1,000 female population age 15–19. This indicator is relevant because in many cases, teen parents have unique social, economic, and health support services. Additionally, high rates of teen pregnancy may indicate the prevalence of unsafe sex practices.

## Key Informant Input: Family Planning

Key informants taking part in an online survey largely characterized *Family Planning* as a “moderate problem” in the community.

### Perceptions of Family Planning as a Problem in the Community

(Key Informants, 2018)



Sources: • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

## Top Concerns

Among those rating this issue as a “major problem,” reasons related to the following:

### Teenage Pregnancy

*The number of high school girls getting pregnant. The number of young people who don't understand the level of responsibility in becoming a parent. - Other Health Provider*



*Many teens and young adults becoming parents too soon and are unable to provide a stable home for children. High numbers of children in foster care and on the CASA case load. - Community Leader*

**Access to Care/Services**

*Access to services, free services. - Public Health Representative*

**Awareness/Education**

*Lack of awareness and utilization of family planning options. Too many unplanned pregnancies. - Physician*

# Modifiable Health Risks



Professional Research Consultants, Inc.

## Nutrition

### About Healthful Diet & Healthy Weight

Strong science exists supporting the health benefits of eating a healthful diet and maintaining a healthy body weight. Efforts to change diet and weight should address individual behaviors, as well as the policies and environments that support these behaviors in settings such as schools, worksites, healthcare organizations, and communities.

The goal of promoting healthful diets and healthy weight encompasses increasing household food security and eliminating hunger.

Americans with a healthful diet:

- Consume a variety of nutrient-dense foods within and across the food groups, especially whole grains, fruits, vegetables, low-fat or fat-free milk or milk products, and lean meats and other protein sources.
- Limit the intake of saturated and trans fats, cholesterol, added sugars, sodium (salt), and alcohol.
- Limit caloric intake to meet caloric needs.

Diet and body weight are related to health status. Good nutrition is important to the growth and development of children. A healthful diet also helps Americans reduce their risks for many health conditions, including: overweight and obesity; malnutrition; iron-deficiency anemia; heart disease; high blood pressure; dyslipidemia (poor lipid profiles); type 2 diabetes; osteoporosis; oral disease; constipation; diverticular disease; and some cancers.

Diet reflects the variety of foods and beverages consumed over time and in settings such as worksites, schools, restaurants, and the home. Interventions to support a healthier diet can help ensure that:

- Individuals have the knowledge and skills to make healthier choices.
- Healthier options are available and affordable.

**Social Determinants of Diet.** Demographic characteristics of those with a more healthful diet vary with the nutrient or food studied. However, most Americans need to improve some aspect of their diet.

Social factors thought to influence diet include:

- Knowledge and attitudes
- Skills
- Social support
- Societal and cultural norms
- Food and agricultural policies
- Food assistance programs
- Economic price systems

**Physical Determinants of Diet.** Access to and availability of healthier foods can help people follow healthful diets. For example, better access to retail venues that sell healthier options may have a positive impact on a person's diet; these venues may be less available in low-income or rural neighborhoods.

The places where people eat appear to influence their diet. For example, foods eaten away from home often have more calories and are of lower nutritional quality than foods prepared at home.

Marketing also influences people's—particularly children's—food choices.

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

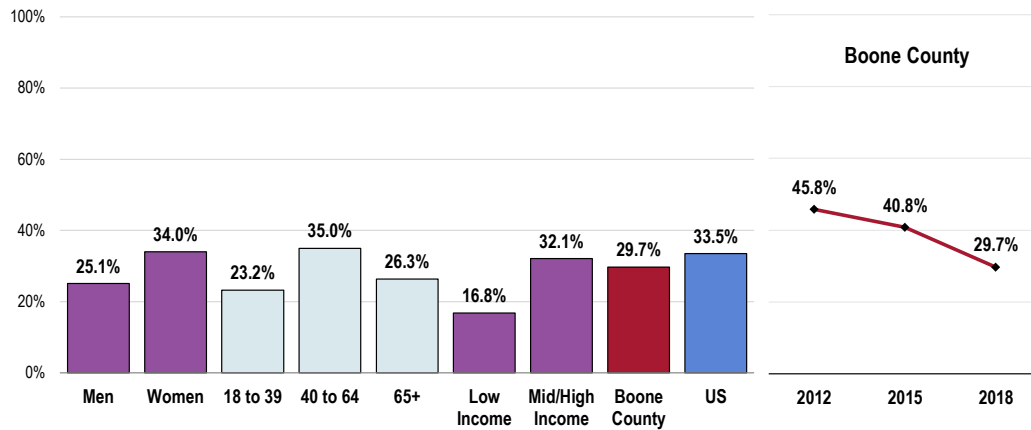
## Daily Recommendation of Fruits/Vegetables

**A total of 29.7% of Boone County adults report eating five or more servings of fruits and/or vegetables per day.**

To measure fruit and vegetable consumption, survey respondents were asked multiple questions, specifically about the foods and drinks they consumed on the day prior to the interview.

- Statistically similar to national findings.
- Low-income adults in Boone County are less likely to get the recommended servings of daily fruits/vegetables, as are men, younger adults (age 18-39), and older adults (age 65+).
- TREND: Fruit/vegetable consumption has decreased consistently since 2012.

### Consume Five or More Servings of Fruits/Vegetables Per Day (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 148]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.  
 • For this issue, respondents were asked to recall their food intake on the previous day.

## Access to Fresh Produce

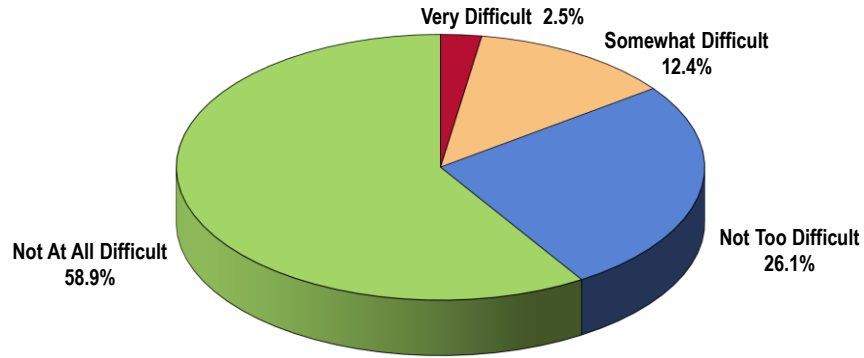
### Difficulty Accessing Fresh Produce

**While most report little or no difficulty, 14.9% of Boone County adults find it "very" or "somewhat" difficult to access affordable fresh fruits and vegetables.**

Respondents were asked:

"How difficult is it for you to buy fresh produce like fruits and vegetables at a price you can afford? Would you say: Very Difficult, Somewhat Difficult, Not Too Difficult, or Not At All Difficult?"

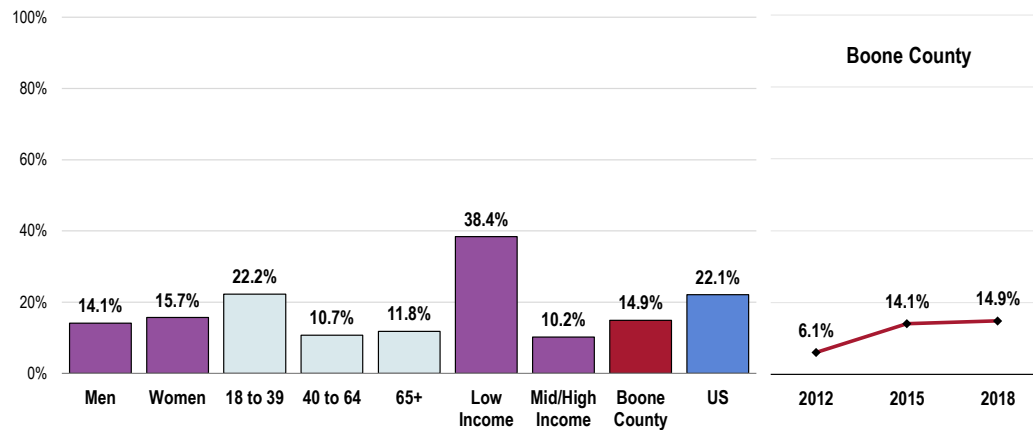
### Level of Difficulty Finding Fresh Produce at an Affordable Price (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 86]  
 Notes: • Asked of all respondents.

- More favorable than national findings.
- Access difficulties are highest among younger adults and especially low-income residents.
- TREND: Difficulty accessing fresh produce has consistently gotten worse over time.

### Find It “Very” or “Somewhat” Difficult to Buy Affordable Fresh Produce (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 86]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

A food desert is defined as a low-income area where a significant number or share of residents is far from a supermarket, where "far" is more than 1 mile in urban areas and more than 10 miles in rural areas.

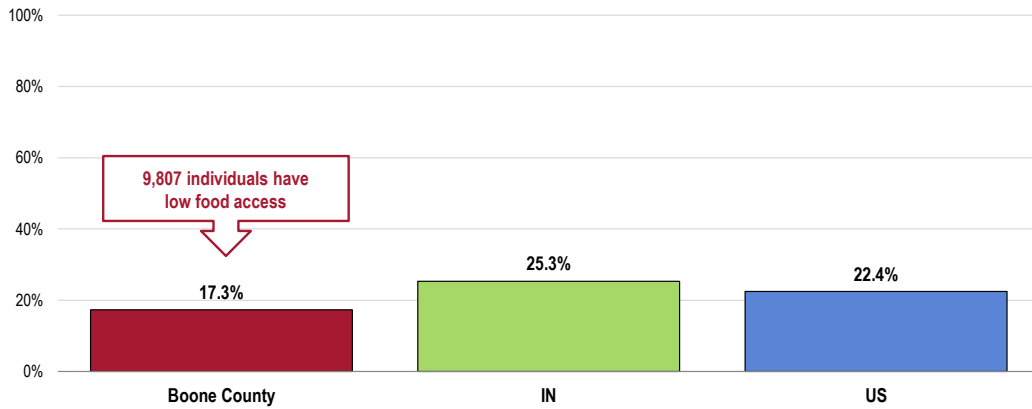
### Low Food Access (Food Deserts)

US Department of Agriculture data show that 17.3% of the Boone County population (representing over 9,800 residents) have low food access or live in a "food desert," meaning that they do not live near a supermarket or large grocery store.

- More favorable than statewide or national findings.

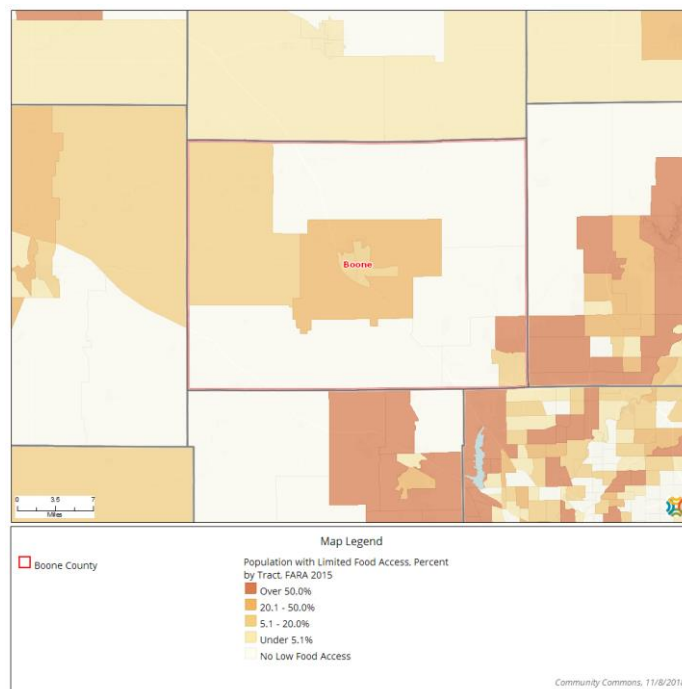
### Population With Low Food Access

(Percent of Population That Is Far From a Supermarket or Large Grocery Store, 2015)



- Sources:
- US Department of Agriculture, Economic Research Service, USDA - Food Access Research Atlas (FARA).
  - Retrieved November 2018 from Community Commons at <http://www.chna.org>.
- Notes:
- This indicator reports the percentage of the population living in census tracts designated as food deserts. A food desert is defined as low-income areas where a significant number or share of residents is far from a supermarket, where "far" is more than 1 mile in urban areas and more than 10 miles in rural areas. This indicator is relevant because it highlights populations and geographies facing food insecurity.

- The following map provides an illustration of food deserts by census tract. Note the large share of residents with limited food access surrounding Lebanon.

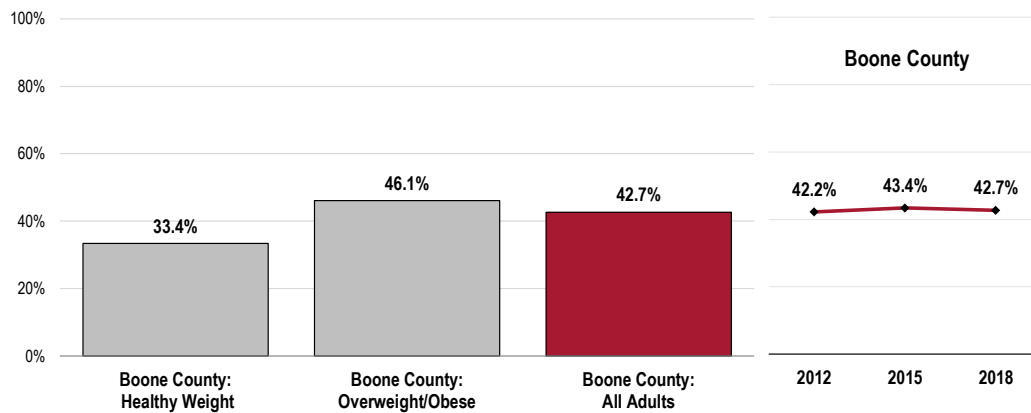


## Health Advice About Diet & Nutrition

A total of 42.7% of survey respondents acknowledge that a physician counseled them about diet and nutrition in the past year.

- TREND: No significant difference over 2012 findings.
- Note that 46.1% of overweight/obese respondents report receiving diet or nutrition advice (meaning that more than half did not).

### Have Received Advice About Diet and Nutrition in the Past Year From a Physician, Nurse, or Other Health Professional (By Weight Classification)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 302]  
 Notes: • Asked of all respondents.

## Physical Activity

### About Physical Activity

Regular physical activity can improve the health and quality of life of Americans of all ages, regardless of the presence of a chronic disease or disability. Among adults, physical activity can lower the risk of: early death; coronary heart disease; stroke; high blood pressure; type 2 diabetes; breast and colon cancer; falls; and depression. Among children and adolescents, physical activity can: improve bone health; improve cardiorespiratory and muscular fitness; decrease levels of body fat; and reduce symptoms of depression. For people who are inactive, even small increases in physical activity are associated with health benefits.

Personal, social, economic, and environmental factors all play a role in physical activity levels among youth, adults, and older adults. Understanding the barriers to and facilitators of physical activity is important to ensure the effectiveness of interventions and other actions to improve levels of physical activity.

Factors **positively** associated with adult physical activity include: postsecondary education; higher income; enjoyment of exercise; expectation of benefits; belief in ability to exercise (self-efficacy); history of activity in adulthood; social support from peers, family, or spouse; access to and satisfaction with facilities; enjoyable scenery; and safe neighborhoods.

Factors **negatively** associated with adult physical activity include: advancing age; low income; lack of time; low motivation; rural residency; perception of great effort needed for exercise; overweight or obesity; perception of poor health; and being disabled. Older adults may have additional factors that keep them from being physically active, including lack of social support, lack of transportation to facilities, fear of injury, and cost of programs.

Among children ages 4 to 12, the following factors have a positive association with physical activity: gender (boys); belief in ability to be active (self-efficacy); and parental support.

Among adolescents ages 13 to 18, the following factors have a positive association with physical activity: parental education; gender (boys); personal goals; physical education/school sports; belief in ability to be active (self-efficacy); and support of friends and family.

Environmental influences positively associated with physical activity among children and adolescents include:

- Presence of sidewalks
- Having a destination/walking to a particular place
- Access to public transportation
- Low traffic density
- Access to neighborhood or school play area and/or recreational equipment

People with disabilities may be less likely to participate in physical activity due to physical, emotional, and psychological barriers. Barriers may include the inaccessibility of facilities and the lack of staff trained in working with people with disabilities.

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))



Leisure-time physical activity includes any physical activities or exercises (such as running, calisthenics, golf, gardening, walking, etc.) which take place outside of one's line of work.

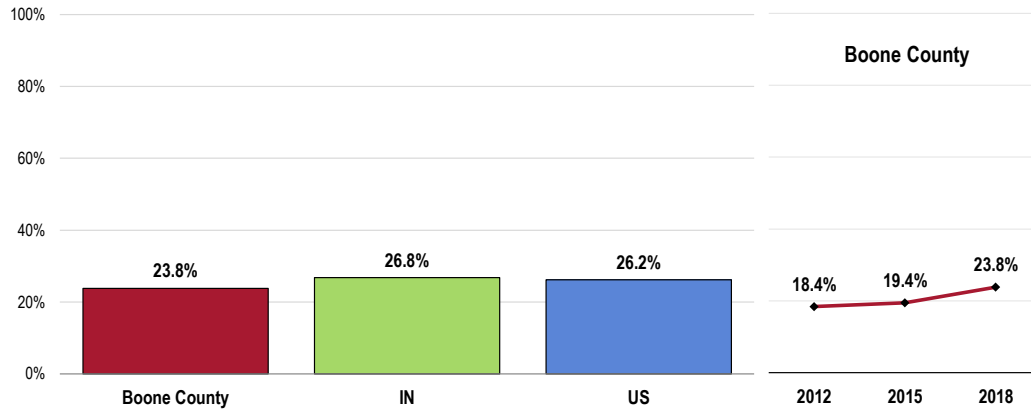
## Leisure-Time Physical Activity

A total of **23.8%** of Boone County adults report **no** leisure-time physical activity in the past month.

- Comparable to the state and national findings.
- Satisfies the Healthy People 2020 target (32.6% or lower).
- TREND: Lack of leisure-time physical activity has increased over time.

### No Leisure-Time Physical Activity in the Past Month

Healthy People 2020 Target = 32.6% or Lower



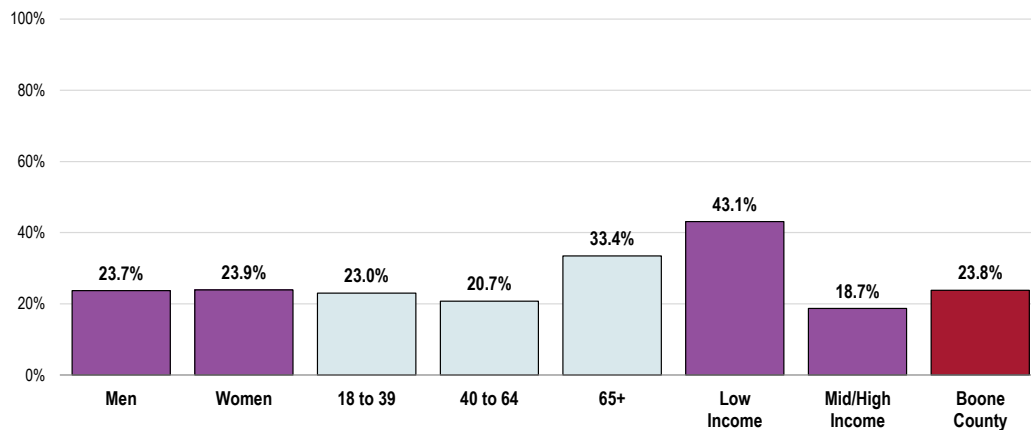
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 89]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective PA-1]  
 Notes: • Asked of all respondents.

- Lack of leisure-time physical activity in the area is higher among low-income residents, as well as older adults.

### No Leisure-Time Physical Activity in the Past Month

(Boone County, 2018)

Healthy People 2020 Target = 32.6% or Lower



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 89]  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective PA-1]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

## Activity Levels

### Adults

#### Recommended Levels of Physical Activity

Adults should do 2 hours and 30 minutes a week of moderate-intensity (such as walking), or 1 hour and 15 minutes (75 minutes) a week of vigorous-intensity **aerobic** physical activity (such as jogging), or an equivalent combination of moderate- and vigorous-intensity aerobic physical activity. The guidelines also recommend that adults do **muscle-strengthening** activities, such as push-ups, sit-ups, or activities using resistance bands or weights. These activities should involve all major muscle groups and be done on two or more days per week.

The report finds that nationwide nearly 50 percent of adults are getting the recommended amounts of aerobic activity and about 30 percent are engaging in the recommended muscle-strengthening activity.

- 2013 Physical Activity Guidelines for Americans, US Department of Health and Human Services. [www.cdc.gov/physicalactivity](http://www.cdc.gov/physicalactivity)
- Learn more about CDC's efforts to promote walking by visiting <http://www.cdc.gov/vitalsigns/walking>.

#### Aerobic & Strengthening Physical Activity

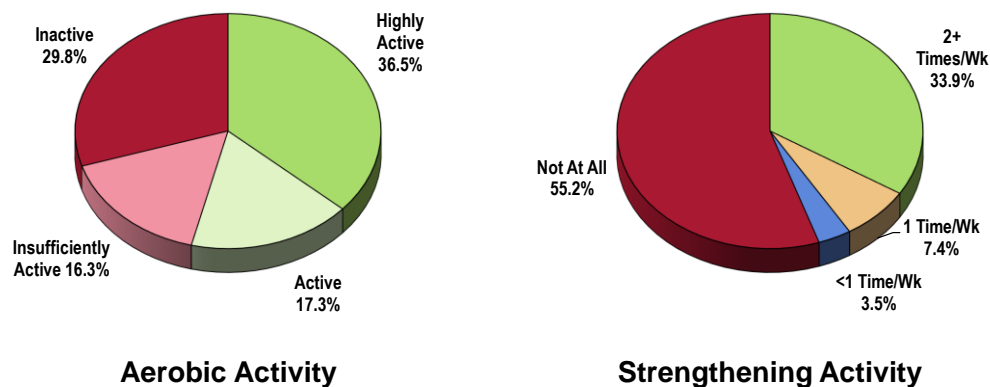
Based on reported physical activity intensity, frequency, and duration over the past month, **46.1% of Boone County adults are found to be “insufficiently active” or “inactive.”**

**More than half of Boone County adults (55.2%) do not participate in any types of physical activities or exercises to strengthen their muscles.**

Survey respondents were asked about the types of physical activities they engaged in during the past month, as well as the frequency and duration of these activities.

- “Inactive” includes those reporting no aerobic physical activity in the past month.
- “Insufficiently active” includes those with the equivalent of 1-150 minutes of aerobic physical activity per week.
- “Active” includes those with 150-300 minutes of weekly aerobic physical activity.
- “Highly active” includes those with >300 minutes of weekly aerobic physical activity.

### Participation in Physical Activities (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 96, 150]

Notes: • Reflects the total sample of respondents.

- In this case, “inactive” aerobic activity represents those adults participating in no aerobic activity in the past week; “insufficiently active” reflects those respondents with 1–149 minutes of aerobic activity in the past week; “active” adults are those with 150–300 minutes of aerobic activity per week; and “highly active” adults participate in 301+ minutes of aerobic activity weekly.

**Recommended Levels of Physical Activity**

**A total of 23.8% of Boone County adults regularly participate in adequate levels of both aerobic and strengthening activities (meeting physical activity recommendations).**

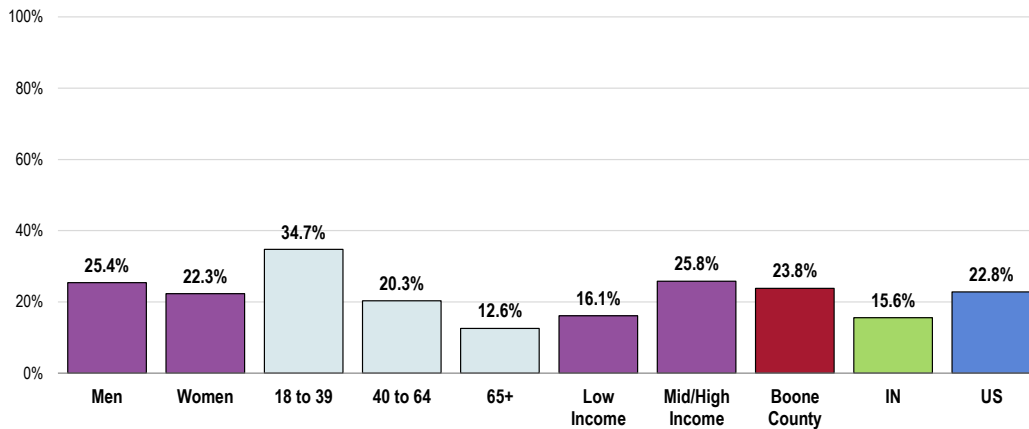
- More favorable than state findings.
- Comparable to the nation.
- Satisfies the Healthy People 2020 target (20.1% or higher)
- Older adults and those with lower incomes are less likely to meet physical activity recommendations (note the strong negative correlation with age).

"Meeting physical activity recommendations" includes adequate levels of both aerobic and strengthening activities:

**Aerobic** activity is one of the following: at least 150 minutes per week of light to moderate activity, 75 minutes per week of vigorous activity, or an equivalent combination of both.

**Strengthening** activity is at least 2 sessions per week of exercise designed to strengthen muscles.

**Meets Physical Activity Recommendations**  
(Boone County, 2018)  
**Healthy People 2020 Target = 20.1% or Higher**



Sources:
 

- 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 152]
- Behavioral Risk Factor Surveillance System Survey Data, Atlanta, Georgia, United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2015 Indiana data.
- 2017 PRC National Health Survey, Professional Research Consultants, Inc.
- US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective PA-2.4]

 Notes:
 

- Asked of all respondents.
- Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.
- Meeting both guidelines is defined as the number of persons age 18+ who report light or moderate aerobic activity for at least 150 minutes per week or who report vigorous physical activity 75 minutes per week or an equivalent combination of moderate and vigorous-intensity activity and report doing physical activities specifically designed to strengthen muscles at least twice per week.

**Children**

**Recommended Levels of Physical Activity**

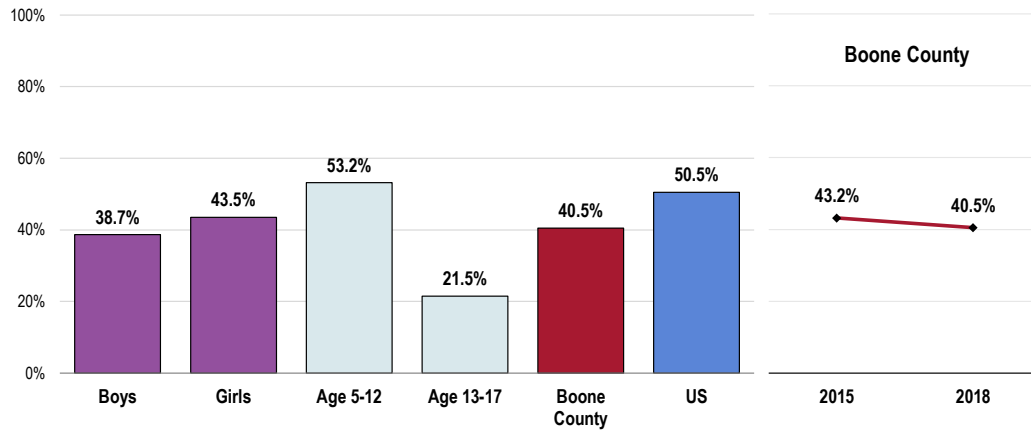
Children and adolescents should do 60 minutes (1 hour) or more of physical activity each day.

- 2013 Physical Activity Guidelines for Americans, US Department of Health and Human Services. [www.cdc.gov/physicalactivity](http://www.cdc.gov/physicalactivity)

**Among Boone County children age 2 to 17, four in 10 (40.5%) are reported to have had 60 minutes of physical activity on each of the seven days preceding the interview (1+ hours per day).**

- Less favorable than found nationally.
- By demographics, teens (age 13-17) are statistically less likely to meet this level of physical activity.
- TREND: The decrease from 2015 survey findings is not statistically significant.

## Child Is Physically Active for One or More Hours per Day (Among Children Age 2-17)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 124]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents with children age 2-17 at home.  
 • Includes children reported to have one or more hours of physical activity on each of the seven days preceding the survey.

## Screen Time

### Television Watching & Other Screen Time

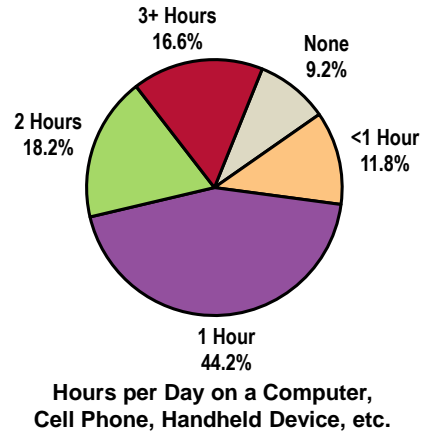
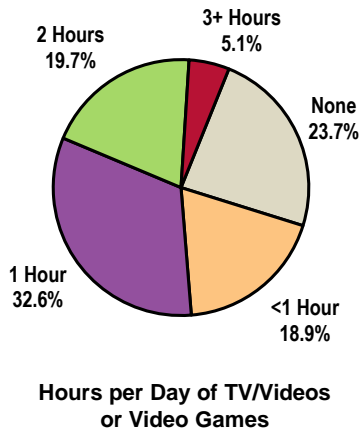
Among children age 5-17, 5.1% are reported to watch three or more hours of television per day.

- TREND: The prevalence of television watching is similar to 2012 (not shown).

A total of 16.6% is reported to spend three or more hours on other types of screen time for entertainment (video games, internet, etc.).

- TREND: The prevalence of other screen use is notably higher than 2012 findings (not shown).

### Children's Screen Time (Boone County Children Age 5-17, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 320-321]  
 Notes: • Asked of respondents for whom the randomly selected child in the household is age 5 to 17.  
 • For this issue, respondents with children who are not in school were asked about "weekdays," while parents of children in school were asked about typical "school days."  
 • "Three or more hours" includes reported screen time of 180 minutes or more per day.

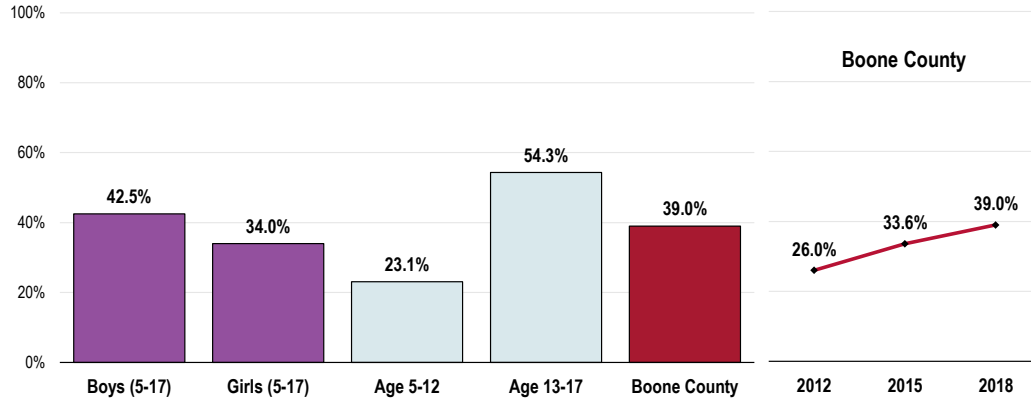
### Total Screen Time

**When combined, 39.0% of Boone County children age 5-17 spend three or more hours on screen time per day (whether television or computer, internet, video games, etc.).**

- More common among boys and especially teens.
- TREND: A notable increase over time (note that the 2012 question wording was slightly different).

## Children With 3+ Hours per School Day of Total Screen Time (TV, Computer, Video Games, Phone, Device, etc.)

(Boone County Children Age 5-17, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 324]  
 Notes: • Asked of those respondents for whom the randomly selected child in the household is between the ages of 5 and 17.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

## Access to Physical Activity

### Access to Recreation & Fitness Facilities

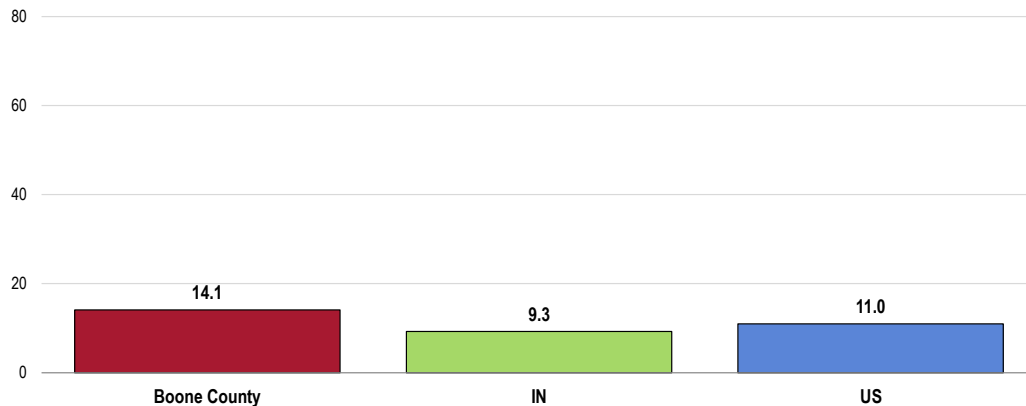
In 2016, there were 14.1 recreation/fitness facilities for every 100,000 population in Boone County.

- Above what is found statewide and nationally.

Here, recreation/fitness facilities include establishments engaged in operating facilities which offer "exercise and other active physical fitness conditioning or recreational sports activities."

Examples include athletic clubs, gymnasiums, dance centers, tennis clubs, and swimming pools.

### Population With Recreation & Fitness Facility Access (Number of Recreation & Fitness Facilities per 100,000 Population, 2016)



Sources: • US Census Bureau, County Business Patterns. Additional data analysis by CARES.  
 • Retrieved November 2018 from Community Commons at <http://www.chna.org>.  
 Notes: • Recreation and fitness facilities are defined by North American Industry Classification System (NAICS) Code 713940, which include *Establishments engaged in operating facilities which offer "exercise and other active physical fitness conditioning or recreational sports activities"*. Examples include athletic clubs, gymnasiums, dance centers, tennis clubs, and swimming pools. This indicator is relevant because access to recreation and fitness facilities encourages physical activity and other healthy behaviors.

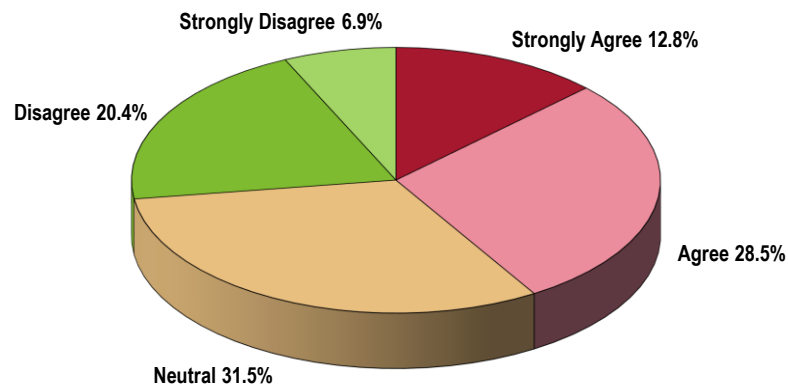
## Recreational Opportunities

### *Indoor Public Physical Activity Spaces*

A total of 27.3% of Boone County adults “disagree” or “strongly disagree” that the community needs more indoor public physical activity spaces.

- Another 31.5% are neutral.

### Community Needs More Indoor Public Physical Activity Spaces (Boone County, 2018)

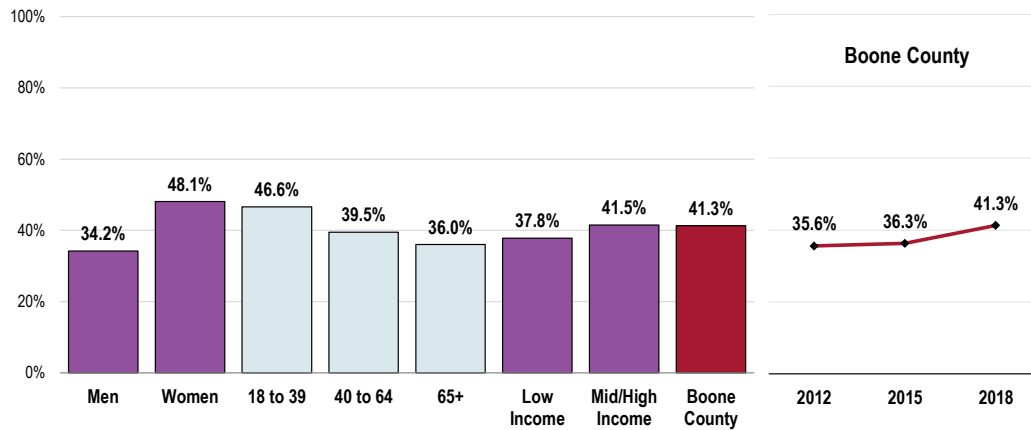


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 312]  
Notes: • Asked of all respondents.

**Conversely, 41.3% of Boone County adults feel that the community needs more indoor public physical activity spaces (“agree/strongly agree”).**

- Women are more likely to agree/strongly agree.
- TREND: The perceived need for more indoor public physical activity spaces has grown over time.

### Agree That Community Needs More Indoor Public Physical Activity Spaces (Boone County, 2018)



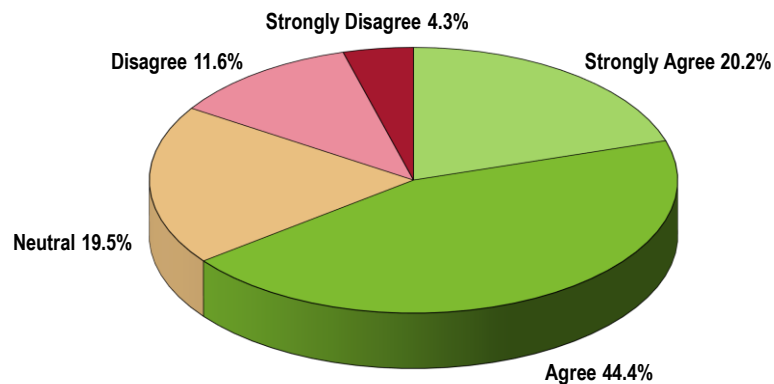
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 312]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

#### Available Facilities and Programs for Youth

A total of 64.6% of Boone County adults “strongly agree” or “agree” that the community provides the facilities and programs needed for children and youth to be physically active year-round.

- Another 19.5% feel neutral.
- A total of 15.9% “disagree” or “strongly disagree.”

### Community Provides Year-Round Facilities and Programs for Youth to Be Physically Active (Boone County, 2018)

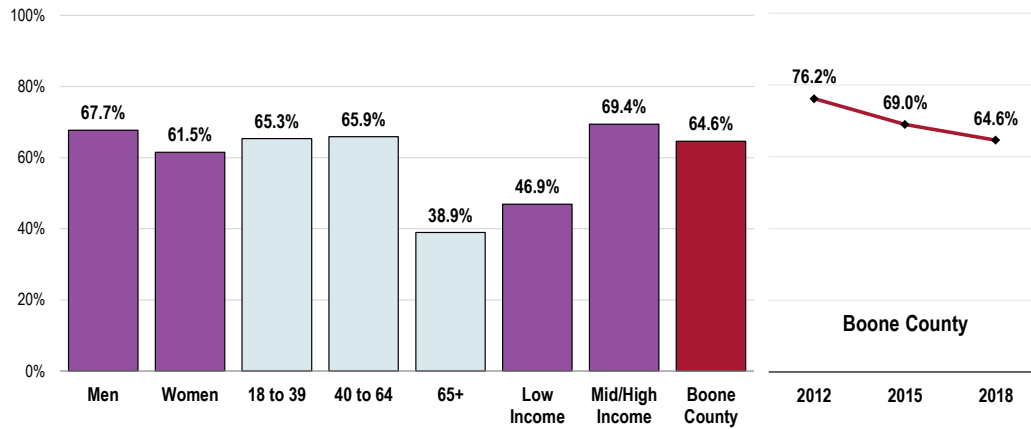


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 313]  
 Notes: • Asked of all respondents.



- Older adults and low-income residents are less likely to “strongly agree” or “agree” that there are adequate facilities and programs for youth to be active in the community year-round.
- TREND: Marks a significant decrease in agreement since 2012.

### Agree That Community Provides Year-Round Facilities and Programs for Youth to Be Active (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 313]

Notes: • Asked of all respondents.

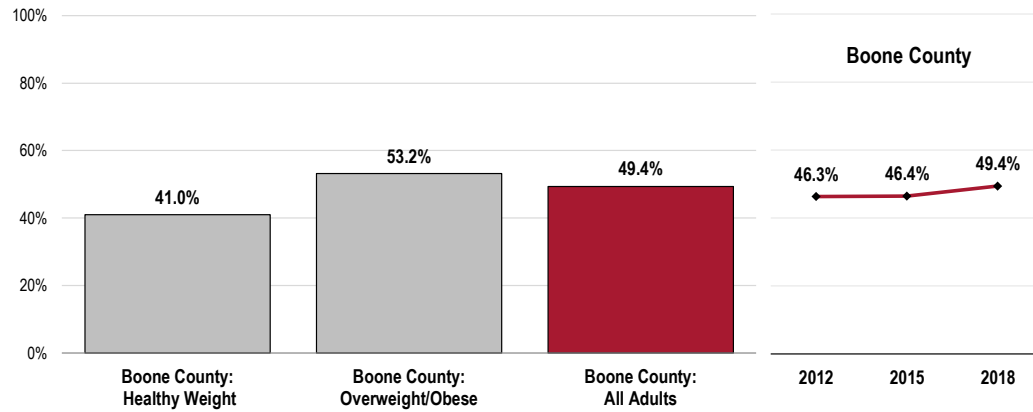
• Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

### Health Advice About Physical Activity & Exercise

**Just under half of Boone County adults (49.4%) report that their physician has asked about or given them advice about physical activity in the past year.**

- TREND: Statistically unchanged from 2012 survey findings.
- Note that 53.2% of overweight/obese respondents say that they have talked with their doctor about physical activity or exercise in the past year.

## Have Received Advice About Exercise in the Past Year From a Physician, Nurse, or Other Health Professional (By Weight Classification)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 303]  
 Notes: • Asked of all respondents.

## Weight Status

### About Overweight & Obesity

Because weight is influenced by energy (calories) consumed and expended, interventions to improve weight can support changes in diet or physical activity. They can help change individuals' knowledge and skills, reduce exposure to foods low in nutritional value and high in calories, or increase opportunities for physical activity. Interventions can help prevent unhealthy weight gain or facilitate weight loss among obese people. They can be delivered in multiple settings, including healthcare settings, worksites, or schools.

The social and physical factors affecting diet and physical activity (see Physical Activity topic area) may also have an impact on weight. Obesity is a problem throughout the population. However, among adults, the prevalence is highest for middle-aged people and for non-Hispanic black and Mexican American women. Among children and adolescents, the prevalence of obesity is highest among older and Mexican American children and non-Hispanic black girls. The association of income with obesity varies by age, gender, and race/ethnicity.

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

Body Mass Index (BMI), which describes relative weight for height, is significantly correlated with total body fat content. The BMI should be used to assess overweight and obesity and to monitor changes in body weight. In addition, measurements of body weight alone can be used to determine efficacy of weight loss therapy. BMI is calculated as weight (kg)/height squared ( $m^2$ ). To estimate BMI using pounds and inches, use:  $[\text{weight (pounds)}/\text{height squared (inches}^2)] \times 703$ .

In this report, overweight is defined as a BMI of 25.0 to 29.9  $kg/m^2$  and obesity as a BMI  $\geq 30$   $kg/m^2$ . The rationale behind these definitions is based on epidemiological data that show increases in mortality with BMIs above 25  $kg/m^2$ . The increase in mortality, however, tends to be modest until a BMI of 30  $kg/m^2$  is reached. For persons with a BMI  $\geq 30$   $kg/m^2$ , mortality rates from all causes, and especially from cardiovascular disease, are generally increased by 50 to 100 percent above that of persons with BMIs in the range of 20 to 25  $kg/m^2$ .

- Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report. National Institutes of Health. National Heart, Lung, and Blood Institute in Cooperation With The National Institute of Diabetes and Digestive and Kidney Diseases. September 1998.

### Adult Weight Status

Classification of Overweight and Obesity by BMI	BMI ( $kg/m^2$ )
Underweight	<18.5
Normal	18.5 – 24.9
Overweight	25.0 – 29.9
Obese	$\geq 30.0$

Source: Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report. National Institutes of Health. National Heart, Lung, and Blood Institute in Cooperation With The National Institute of Diabetes and Digestive and Kidney Diseases. September 1998.

## Overweight Status

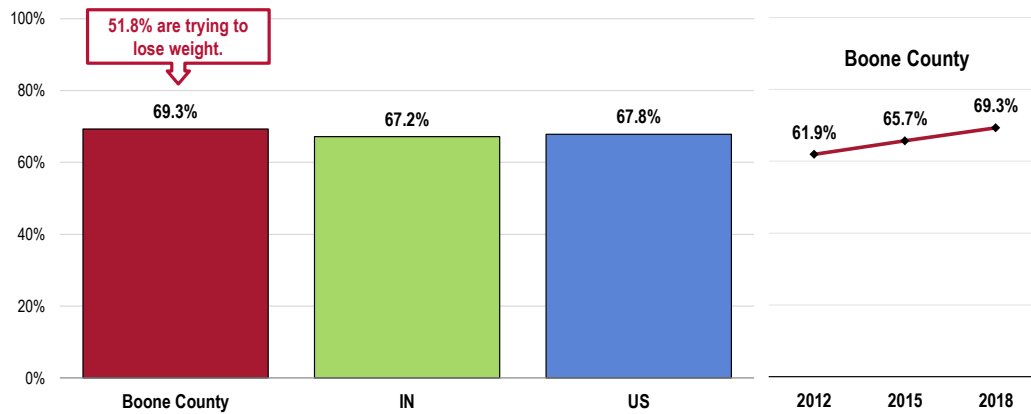
**Just over two-thirds of Boone County adults (69.3%) are overweight.**

Here, "overweight" includes those respondents with a BMI value  $\geq 25$ .

- Comparable to the Indiana and US prevalence.
- TREND: The proportion of overweight adults in Boone County has consistently increased since 2012.

Note that 51.8% of overweight adults are currently trying to lose weight.

### Prevalence of Total Overweight (Overweight or Obese) (Percent of Adults With a Body Mass Index of 25.0 or Higher)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 154-155]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.

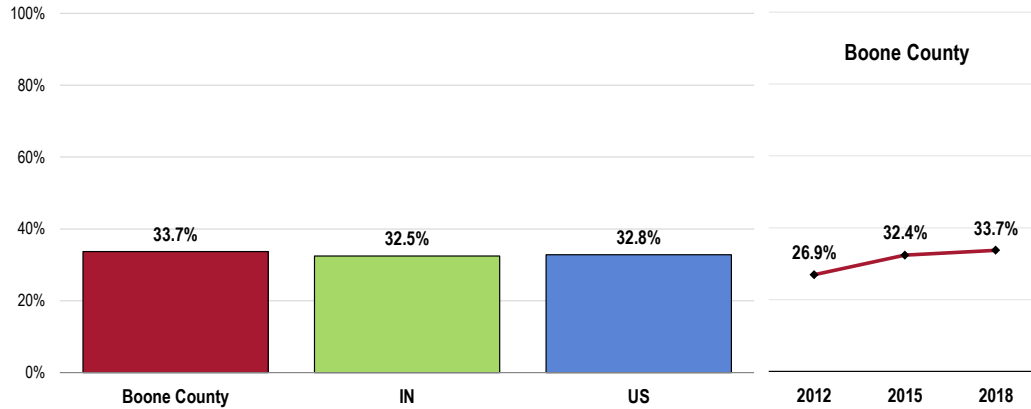
Notes: • Based on reported heights and weights, asked of all respondents.  
 • The definition of overweight is having a body mass index (BMI), a ratio of weight to height (kilograms divided by meters squared), greater than or equal to 25.0, regardless of gender. The definition for obesity is a BMI greater than or equal to 30.0.

**Further, one-third of Boone County adults (33.7%) are obese.**

"Obese" (also included in overweight prevalence discussed previously) includes respondents with a BMI value  $\geq 30$ .

- Comparable to Indiana and national findings.
- Comparable to the Healthy People 2020 target (30.5% or lower).
- TREND: Denotes a statistically significant increase in obesity since 2012.

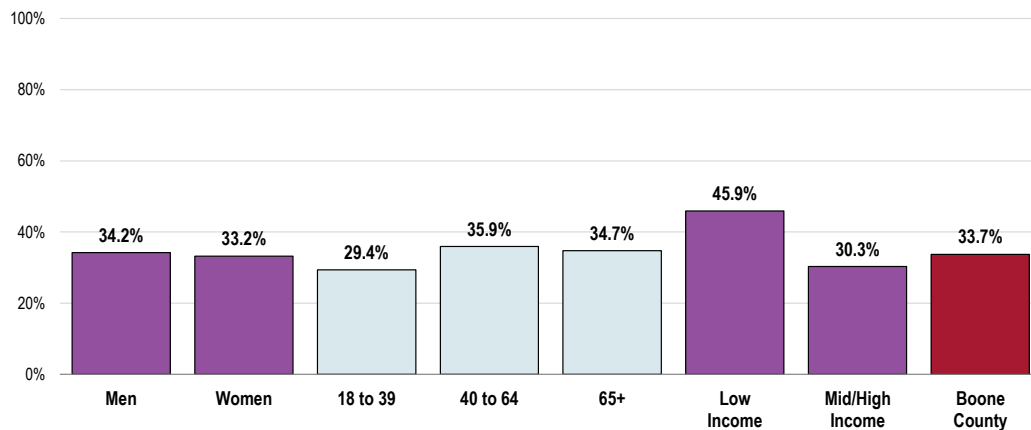
### Prevalence of Obesity (Percent of Adults With a Body Mass Index of 30.0 or Higher) Healthy People 2020 Target = 30.5% or Lower



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 154]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2016 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective NWS-9]  
 Notes: • Based on reported heights and weights, asked of all respondents.  
 • The definition of obesity is having a body mass index (BMI), a ratio of weight to height (kilograms divided by meters squared), greater than or equal to 30.0, regardless of gender.

- Obesity is notably more prevalent among low-income residents.

### Prevalence of Obesity (Percent of Adults With a BMI of 30.0 or Higher; Boone County, 2018) Healthy People 2020 Target = 30.5% or Lower



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 154]  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective NWS-9]  
 Notes: • Based on reported heights and weights, asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.  
 • The definition of obesity is having a body mass index (BMI), a ratio of weight to height (kilograms divided by meters squared), greater than or equal to 30.0, regardless of gender.

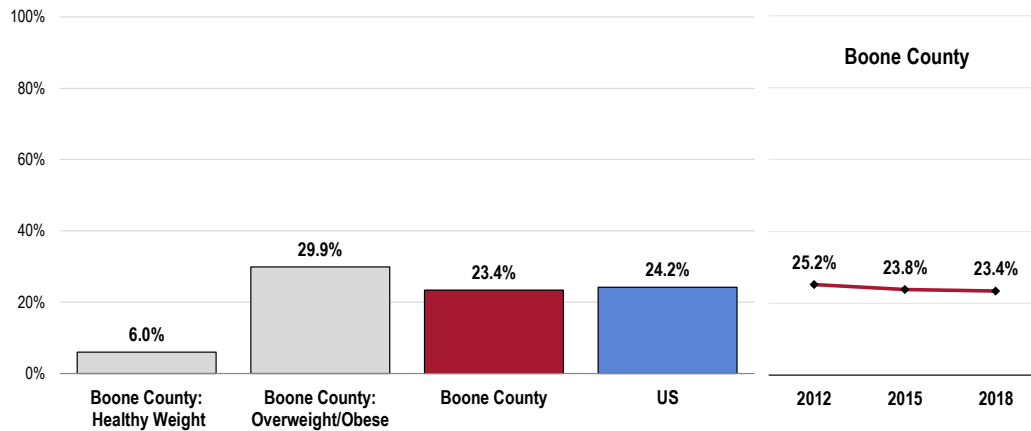
### Health Advice

A total of 23.4% of adults have been given advice about their weight by a doctor, nurse, or other health professional in the past year.

- Statistically similar to the national findings.
- TREND: Statistically unchanged from that reported in 2012.

Note that 29.9% of overweight/obese adults have been given advice about their weight by a health professional in the past year).

### Have Received Advice About Weight in the Past Year From a Physician, Nurse, or Other Health Professional (By Weight Classification)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 98, 156-157]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

### Relationship of Overweight With Other Health Issues

Overweight and obese adults are more likely to report a number of adverse health conditions.

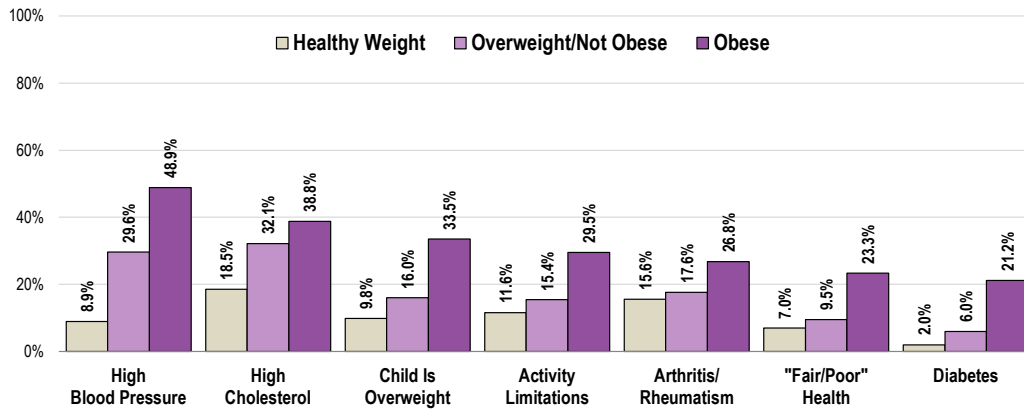
Among these are:

- High blood pressure.
- High cholesterol.
- Activity limitations.
- Arthritis/rheumatism.
- “Fair” or “poor” physical health.
- Diabetes.

Overweight/obese residents are also more likely to have overweight children.

The correlation between overweight and various health issues cannot be disputed.

## Relationship of Overweight With Other Health Issues (By Weight Classification; Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 25, 109, 129, 130, 140, 192]  
 Notes: • Based on reported heights and weights, asked of all respondents.

## Children’s Weight Status

### About Weight Status in Children & Teens

In children and teens, body mass index (BMI) is used to assess weight status – underweight, healthy weight, overweight, or obese. After BMI is calculated for children and teens, the BMI number is plotted on the CDC BMI-for-age growth charts (for either girls or boys) to obtain a percentile ranking. Percentiles are the most commonly used indicator to assess the size and growth patterns of individual children in the United States. The percentile indicates the relative position of the child's BMI number among children of the same sex and age.

BMI-for-age weight status categories and the corresponding percentiles are shown below:

- Underweight <5<sup>th</sup> percentile
- Healthy Weight ≥5<sup>th</sup> and <85<sup>th</sup> percentile
- Overweight ≥85<sup>th</sup> and <95<sup>th</sup> percentile
- Obese ≥95<sup>th</sup> percentile

• Centers for Disease Control and Prevention

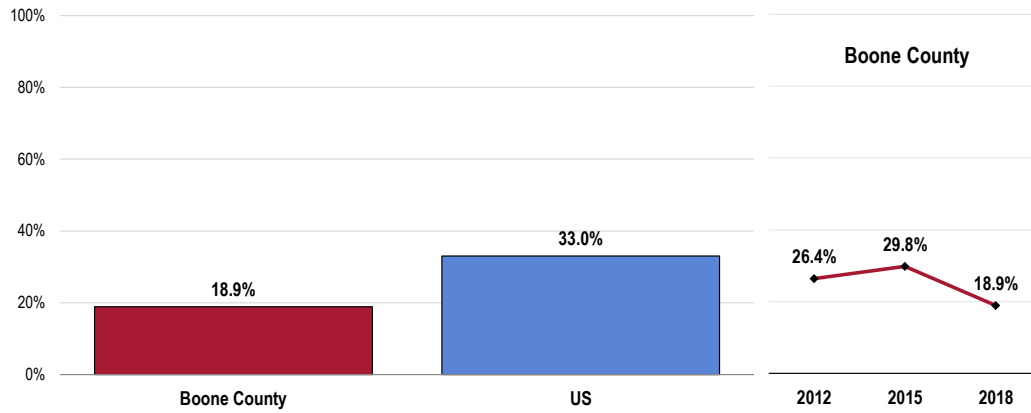
### Prevalence of Overweight

Based on the heights/weights reported by surveyed parents, 18.9% of Boone County children age 5 to 17 are overweight or obese (≥85<sup>th</sup> percentile).

- More favorable than found nationally.
- TREND: Statistically lower than 2015 findings (though similar to 2012).

### Child Total Overweight Prevalence

(Children Age 5-17 Who Are Overweight/Obese; BMI in the 85th Percentile or Higher)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 158]

• 2017 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: • Asked of all respondents with children age 5-17 at home.

• Overweight among children is determined by children's Body Mass Index status at or above the 85<sup>th</sup> percentile of US growth charts by gender and age.

### Prevalence of Obesity

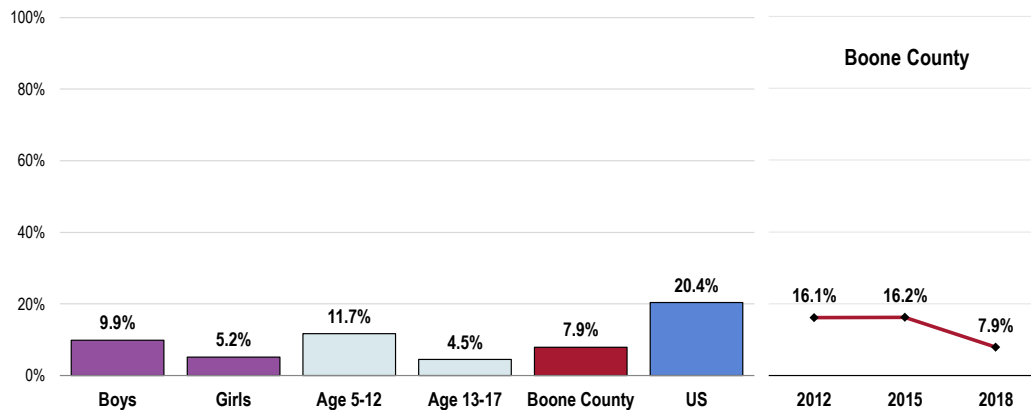
Further, 7.9% of area children age 5 to 17 are obese (≥95th percentile).

- Much more favorable than the national percentage.
- Satisfies the Healthy People 2020 target (14.5% or lower for children age 2-19).
- TREND: Represents a significant decrease over previous years.
- Differences by demographics are not statistically significant.

### Child Obesity Prevalence

(Children Age 5-17 Who Are Obese; BMI in the 95<sup>th</sup> Percentile or Higher)

Healthy People 2020 Target = 14.5% or Lower



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 158]

• 2017 PRC National Health Survey, Professional Research Consultants, Inc.

• US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective NWS-10.4]

Notes: • Asked of all respondents with children age 5-17 at home.

• Obesity among children is determined by children's Body Mass Index status equal to or above the 95<sup>th</sup> percentile of US growth charts by gender and age.



## Key Informant Input: Nutrition, Physical Activity, & Weight

Key informants taking part in an online survey most often characterized *Nutrition, Physical Activity, & Weight* as a “moderate problem” in the community.

### Perceptions of Nutrition, Physical Activity, and Weight as a Problem in the Community

(Key Informants, 2018)

■ Major Problem   ■ Moderate Problem   ■ Minor Problem   ■ No Problem At All



Sources: ● PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
 Notes: ● Asked of all respondents.

### Top Concerns

Among those rating this issue as a “major problem,” reasons related to the following:

#### Obesity

*There are numerous people in Boone County that are obese. There is education and challenges available to people, but compliance is minimal. Non-nutritious food is provided at health events, employee appreciation. Health choices are not reinforced. For seniors that are home bound, often complain about the food offered by Meals on Wheels so they choose processed or fast food and there is a challenge to afford good food. There is a disparity overall between those who live in Zionsville vs. Lebanon. - Social Services Provider*

*Obesity is a major issue in America. Poor nutrition, processed foods and lack of physical activity are major contributors to the problem. - Social Services Provider*

*Growing population with weight related illnesses. Programs are costly to people and insurances don't cover these costs like they do for tobacco programs. - Public Health Representative*

*Obesity is still a large issue in this community, and a lot of this is associated with poor public education of health and nutrition. The schools do have programs targeting health and nutrition, but the parents need to be targeted more for this information. Community cooking classes, access to gyms/parks/walkways and health fairs may help - Physician*

*Lots of childhood obesity. Parents that don't enforce healthy food choices or physical activity. Easily accessible sweetened beverages at home, schools and daycares. - Physician*

#### Access to Healthy Food

*Lack of access to affordable healthy food and exercise resources. We have a high concentration of fast food restaurants and towns like Thorntown, Advance, and Jamestown have to travel a good distance to Lebanon to get to a grocery store or gym. That's going to be a huge problem if transportation is an issue for them. I think people should also realize that exercise doesn't mean heading to the gym- there are plenty of other ways to exercise like walking or gardening. I think walkability of Boone County is important and also improving the aesthetics and safety of our communities, so people feel proud of getting outside and enjoying their communities. - Social Services Provider*

*Families with limited budgets purchasing foods that provide quantity instead of quality. Families of poverty lack the initiative and interest to encourage physical activity for their kids. They allow them to watch TV or play electronic games. - Other Health Provider*

Access to affordable healthy foods. Awareness and follow through for healthier cooking and food prep.  
- Social Services Provider

### **Co-Occurrences**

From obesity come so many accompanying health issues. Also, further encouraging active lifestyles for the health benefits thereof (including the mental health benefits) to children through to seniors. Also, bringing attention to foods that are more nutritious and tasty, like superfoods. Thinking of the Blue Zone Project: <https://www.bluezonesproject.com>. - Community Leader

Risk factors for major medical issues. - Other Health Provider

### **Insufficient Physical Activity**

Many residents are sedentary and don't get enough physical activities and also may make mostly unhealthy food choices such as fast food or processed food. There is a lack of free or reduced-cost exercise options, gym and recess are reduced times in the schools, and Boone County has a plethora of fast food options. Education about what constitutes a good diet, how much physical activity a person should have, how much water to drink, how much sleep to get, etc., needs to be more accessible and countywide. - Public Health Representative

Our community is not exercise friendly. Most people have to drive somewhere to exercise. Walking trails are underdeveloped. There are limited healthy food options for eating out. Obesity is our most important health risk. - Physician

### **Lifestyle**

Lack of patient motivation. - Physician

## Substance Abuse

### About Substance Abuse

Substance abuse has a major impact on individuals, families, and communities. The effects of substance abuse are cumulative, significantly contributing to costly social, physical, mental, and public health problems. These problems include:

- Teenage pregnancy
- Human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS)
- Other sexually transmitted diseases (STDs)
- Domestic violence
- Child abuse
- Motor vehicle crashes
- Physical fights
- Crime
- Homicide
- Suicide

Substance abuse refers to a set of related conditions associated with the consumption of mind- and behavior-altering substances that have negative behavioral and health outcomes. Social attitudes and political and legal responses to the consumption of alcohol and illicit drugs make substance abuse one of the most complex public health issues. In addition to the considerable health implications, substance abuse has been a flash-point in the criminal justice system and a major focal point in discussions about social values: people argue over whether substance abuse is a disease with genetic and biological foundations or a matter of personal choice.

Advances in research have led to the development of evidence-based strategies to effectively address substance abuse. Improvements in brain-imaging technologies and the development of medications that assist in treatment have gradually shifted the research community's perspective on substance abuse. There is now a deeper understanding of substance abuse as a disorder that develops in adolescence and, for some individuals, will develop into a chronic illness that will require lifelong monitoring and care.

Improved evaluation of community-level prevention has enhanced researchers' understanding of environmental and social factors that contribute to the initiation and abuse of alcohol and illicit drugs, leading to a more sophisticated understanding of how to implement evidence-based strategies in specific social and cultural settings.

A stronger emphasis on evaluation has expanded evidence-based practices for drug and alcohol treatment. Improvements have focused on the development of better clinical interventions through research and increasing the skills and qualifications of treatment providers.

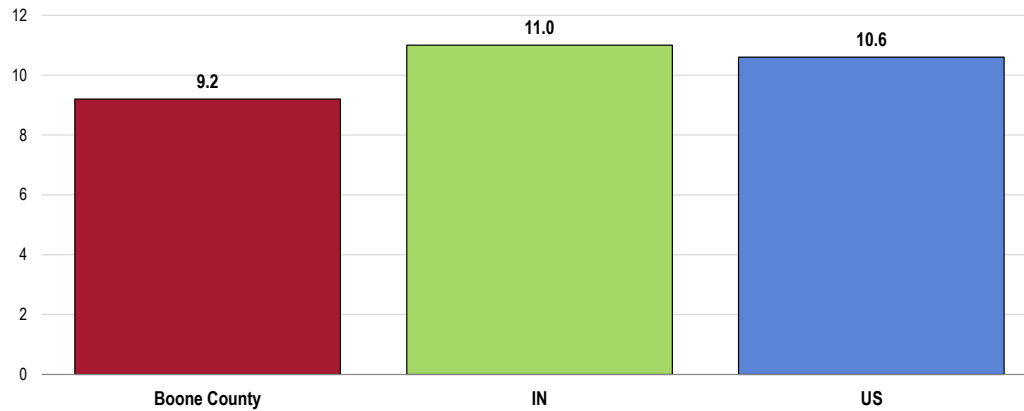
- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

## Age-Adjusted Cirrhosis/Liver Disease Deaths

**Between 2014 and 2016, Boone County reported an annual average age-adjusted cirrhosis/liver disease mortality rate of 9.2 deaths per 100,000 population.**

- Lower than the state and national rates.
- Similar to the Healthy People 2020 target (8.2 or lower).

## Cirrhosis/Liver Disease: Age-Adjusted Mortality (2014-2016 Annual Average Deaths per 100,000 Population) Healthy People 2020 Target = 8.2 or Lower



Sources: • CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.  
• US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective SA-11]

Notes: • Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).  
• Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

## Alcohol Use

### Excessive Drinking

**A total of 20.3% of area adults are excessive drinkers (heavy and/or binge drinkers).**

"Excessive drinking" includes heavy and/or binge drinkers:

- **Heavy drinkers** include men reporting 2+ alcoholic drinks per day or women reporting 1+ alcoholic drink per day in the month preceding the interview.
- **Binge drinkers** include men reporting 5+ alcoholic drinks or women reporting 4+ alcoholic drinks on any single occasion during the past month.

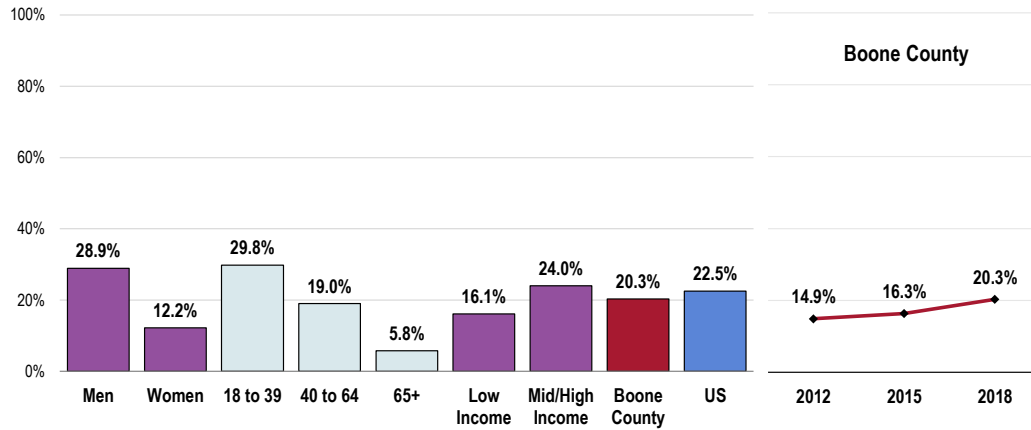
- Statistically similar to the national proportion.
- Satisfies the Healthy People 2020 target (25.4% or lower).
- Excessive drinking is far more prevalent among men and younger adults (strong negative correlation with age).
- TREND: Excessive drinking has increased since 2012.

#### RELATED ISSUE:

See also *Mental Health: Stress* in the **General Health Status** section of this report.

## Excessive Drinkers (Boone County, 2018)

Healthy People 2020 Target = 25.4% or Lower



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 168]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective SA-15]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.  
 • Excessive drinking reflects the number of persons aged 18 years and over who drank more than two drinks per day on average (for men) or more than one drink per day on average (for women) OR who drank 5 or more drinks during a single occasion (for men) or 4 or more drinks during a single occasion (for women) during the past 30 days.

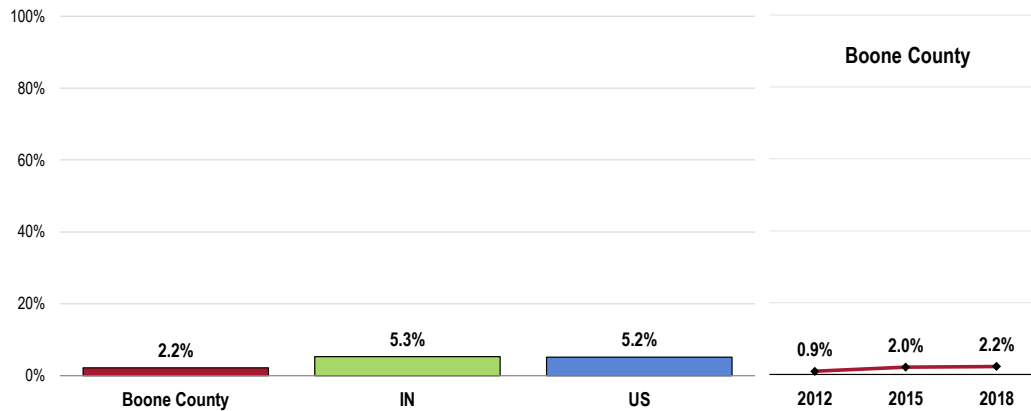
## Drinking & Driving

A total of 2.2% of Boone County adults acknowledge having driven a vehicle in the past month after they had perhaps too much to drink.

- More favorable than state and national findings.
- TREND: Still, the drinking and driving prevalence has significantly increased since 2012.

Note: As a self-reported measure – and because this indicator reflects potentially illegal behavior – it is reasonable to expect that it might be underreported, and that the actual incidence of drinking and driving in the community is likely higher.

## Have Driven in the Past Month After Perhaps Having Too Much to Drink



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 58]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

## Age-Adjusted Unintentional Drug-Related Deaths

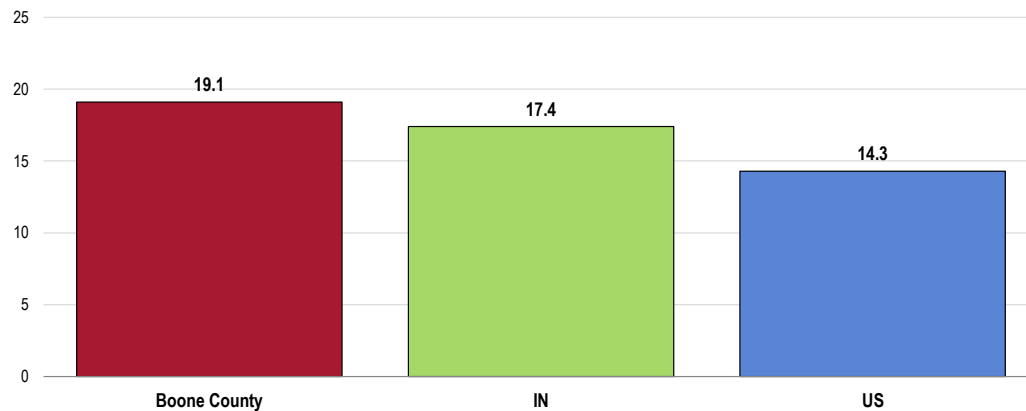
Between 2014 and 2016, there was an annual average age-adjusted unintentional drug-related mortality rate of 19.1 deaths per 100,000 population in Boone County.

- Similar to the statewide rate.
- Higher than the national rate.
- Fails to satisfy the Healthy People 2020 target (11.3 or lower).

### Unintentional Drug-Related Deaths: Age-Adjusted Mortality

(2014-2016 Annual Average Deaths per 100,000 Population)

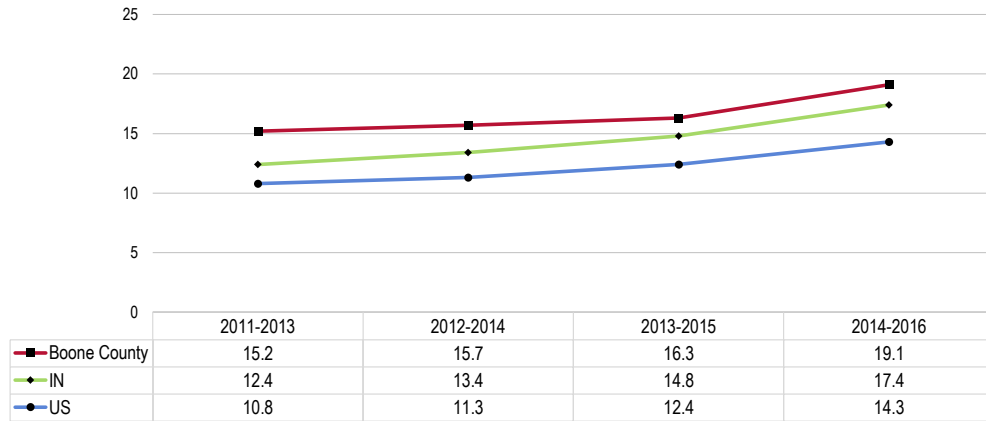
Healthy People 2020 Target = 11.3 or Lower



- Sources:
- CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.
  - US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective SA-12]
- Notes:
- Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).
  - Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

- **TREND:** The mortality rate has increased since 2011, echoing state and national trends.

### Unintentional Drug-Related Deaths: Age-Adjusted Mortality Trends (Annual Average Deaths per 100,000 Population) Healthy People 2020 Target = 11.3 or Lower



Sources: ● CDC WONDER Online Query System. Centers for Disease Control and Prevention, Epidemiology Program Office, Division of Public Health Surveillance and Informatics. Data extracted December 2018.  
 ● UD Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective SA-12].

Notes: ● Deaths are coded using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).  
 ● Rates are per 100,000 population, age-adjusted to the 2000 US Standard Population.

### Illicit Drug Use

**A total of 3.4% of Boone County adults acknowledge using an illicit drug in the past month.**

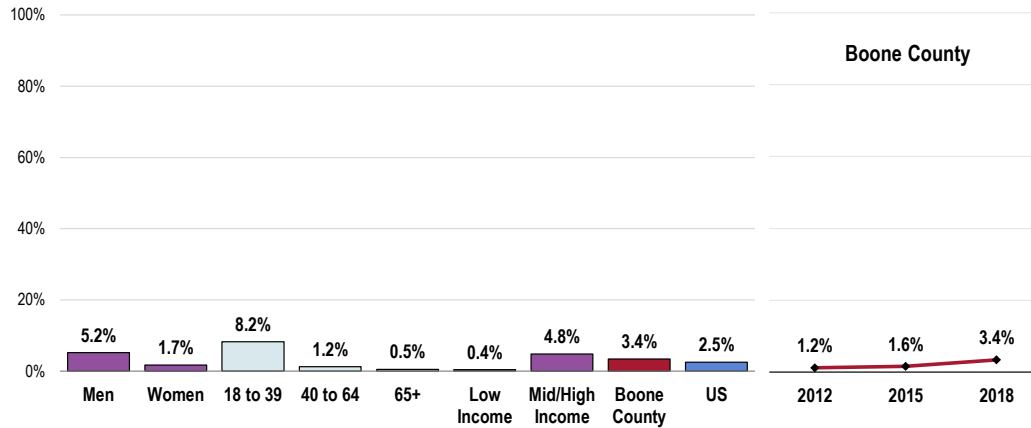
- Similar to the proportion found nationally.
- Satisfies the Healthy People 2020 target of 7.1% or lower.
- Men, young adults, and higher-income residents are more likely to report illicit drug use.
- TREND: Marks a statistically significant increase over time.

For the purposes of this survey, "illicit drug use" includes use of illegal substances or of prescription drugs taken without a physician's order.

Note: As a self-reported measure – and because this indicator reflects potentially illegal behavior – it is reasonable to expect that it might be underreported, and that actual illicit drug use in the community is likely higher.

## Illicit Drug Use in the Past Month (Boone County, 2018)

Healthy People 2020 Target = 7.1% or Lower



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 59]

• 2017 PRC National Health Survey, Professional Research Consultants, Inc.

• US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective SA-13.3]

Notes: • Asked of all respondents.

• Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

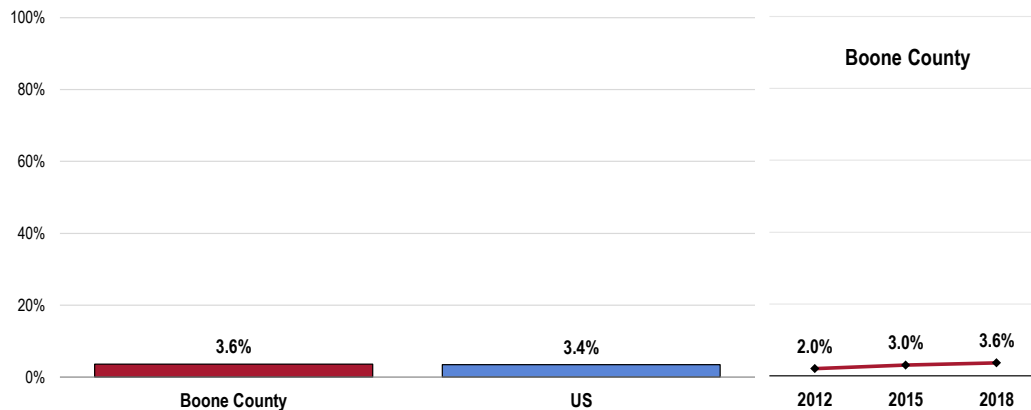
## Alcohol & Drug Treatment

### Seeking Help

A total of 3.6% of Boone County adults report that they have sought professional help for an alcohol or drug problem at some point in their lives.

- Almost identical to national findings.
- TREND: Statistically unchanged over time.

## Have Ever Sought Professional Help for an Alcohol/Drug-Related Problem



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 60]

• 2017 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: • Asked of all respondents.

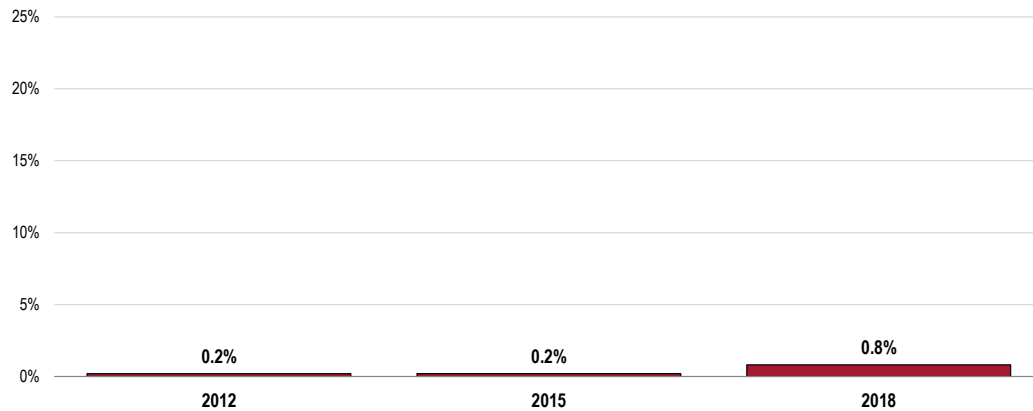


### Difficulties Accessing Services

In the past year, just 0.8% of survey respondents tried to obtain professional help for substance abuse problems and were unable to obtain it.

- TREND: Statistically unchanged since 2012 findings.

### Tried to Obtain Professional Help for Substance Abuse in the Past Year But Was Unable to Obtain It (Boone County, 2018)



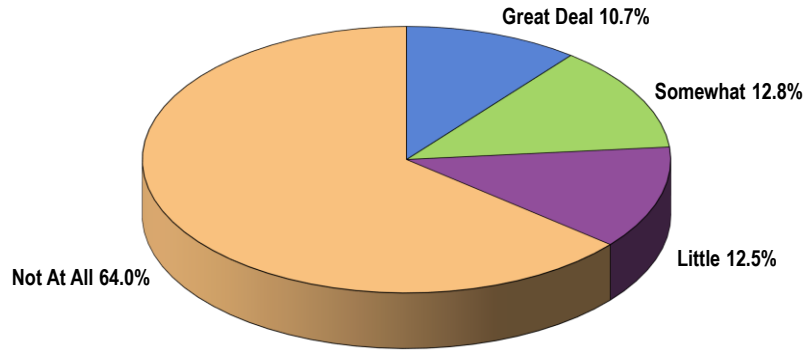
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 309]  
 Notes: • Asked of all respondents.

### Personal Impact from Substance Abuse

Area adults were also asked to what degree their lives have been impacted by substance abuse (whether their own abuse or that of another).

In all, most respondents have not been personally impacted (64.0% “not at all” responses).

### Degree to Which Life Has Been Negatively Affected by Substance Abuse (Self or Other's) (Boone County, 2018)

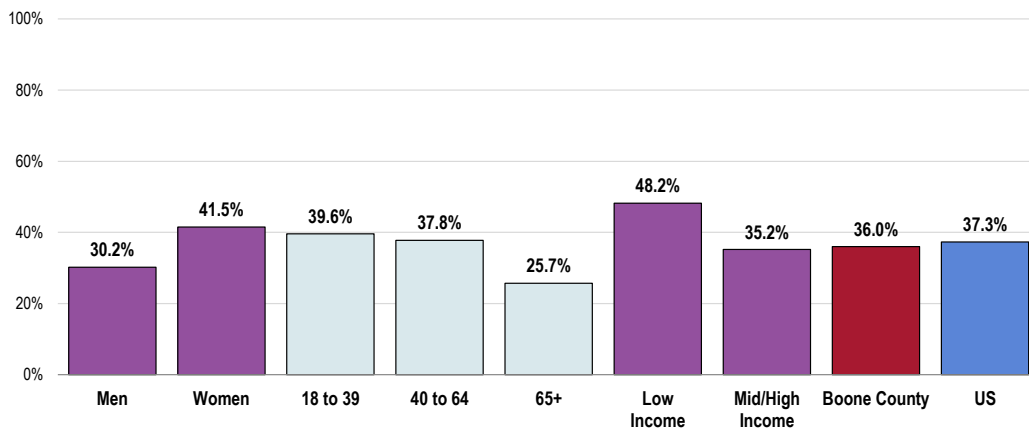


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 61]  
Notes: • Asked of all respondents.

**In contrast, 36.0% of survey respondents indicate that their lives have been personally impacted by substance abuse, including 10.7% who report having been impacted “a great deal.”**

- Similar to the US figure.
- Women, adults under age 65, and especially low-income residents are more likely to have been negatively affected by substance abuse.

### Life Has Been Negatively Affected by Substance Abuse (by Self or Someone Else) (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 61]  
• 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
Notes: • Asked of all respondents.  
• Includes response of “a great deal,” “somewhat,” and “a little.”  
• Income categories reflect respondent’s household income as a ratio to the federal poverty level (FPL) for their household size. “Low Income” includes households with incomes up to 200% of the federal poverty level; “Mid/High Income” includes households with incomes at 200% or more of the federal poverty level.

## Key Informant Input: Substance Abuse

Just under two-thirds of key informants taking part in an online survey characterized *Substance Abuse* as a “major problem” in the community.

### Perceptions of Substance Abuse as a Problem in the Community (Key Informants, 2018)

■ Major Problem ■ Moderate Problem ■ Minor Problem ■ No Problem At All



Sources: • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
Notes: • Asked of all respondents.

### Top Concerns

Among those rating this issue as a “major problem,” reasons related to the following:

#### Access to Care/Services

- Lack of resources to deal with the increased needs. Accountability of requiring rehabilitation. Education of mental health issues for those with substance abuse. - Other Health Provider - Boone County*
- The timing. Having services readily available when a loved one decides to accept help. We need more providers prescribing MAT with integrated counseling. - Public Health Representative*
- There are few programs, and the ones that exist are unattractive and out of date. - Physician - Boone County*
- Treatment programs for all ages. Programs that can intake a person on the spot when they are asking for help. - Community Leader - Boone County*
- Lack of providers and increased drug users. - Other Health Provider - Boone County*
- Transportation. - Community Leader - Boone County*
- Counseling and psychiatry services. - Physician - Boone County*
- No substance abuse treatment centers in our county. - Community Leader - Boone County*
- Lack of inpatient facilities. - Social Services Provider - Boone County*
- Lack of mental health facilities. - Physician - Boone County*

#### Denial/Stigma

- Stigma and lack of resources. Society treats people with substance use issues- who have a real and diagnosable illness- like dirt. And that's not fair. Substance use disorders can affect anyone. We need to reach out to people suffering with substance use disorders with empathy and compassion. We need to make sure there are plenty of affordable inpatient and outpatient recovery programs. And we need to make sure that more people in the community are equipped with Narcan. We can't get people in to treatment if they're dead. I hear so many people ask how many times they should bring someone back before they decide not to help them anymore, and I don't think any one person should have the power to decide if someone- perhaps a complete stranger- is going to die today. - Social Services Provider - Boone County*
- Some barriers for accessing substance abuse treatment include the stigma that still surrounds addictive disorders, lack of wrap around or "after care" services, lack of insurance or funds to pay for treatment, lack of assessments available for the community (who are not incarcerated), need for more education about what substance abuse is. - Public Health Representative*
- Stigma and access to services. - Public Health Representative*
- Lack of self-reporting. Fear of criminal prosecution. - Community Leader - Boone County*
- Desire to get better, money for resources. - Physician - Boone County*

*Stigma, addiction and affordable mental health services. - Social Services Provider - Boone County*  
*Willingness for the abuser to participate. - Community Leader - Boone County*

**Awareness/Education**

*I don't think as a medical provider that I know of all the programs that may be available. If there are more developing out in the community, then make sure to advertise to primary care providers who can make referrals to get them in. - Physician - Boone County*

*Lack of knowledge and availability of substances. - Other Health Provider - Boone County*

*Healthcare professionals, including me, are unaware for the most part on where to send individuals for needed services. - Other Health Provider - Boone County*

**Prevalence/Incidence**

*There are many and frequent patient admissions to the hospital for alcohol and substance abuse. Often the addicted person doesn't have health insurance and there are no treatment centers that will offer help. These folks don't want help, so they continue the behaviors. Patients have confessed to easily buying drugs off the street or in low-income housing, if they feel their pain isn't controlled. - Social Services Provider - Boone County*

*This one is overwhelming to me. Substance abuse is a major problem that is destroying our community. - Physician - Boone County*

*Unsure, but I know that substance abuse is a major problem in Boone County. - Community Leader - Boone County*

**Easily Accessible**

*Opioids are a national crisis. Limiting the access to the substances is the first step in stopping the problem. We must also educate the teenagers and young adults on the negative and long-lasting effects of substance abuse. I am concerned about the national trend of legalizing marijuana for medical and recreational usage. - Social Services Provider - Boone County*

**Funding**

*Funding, case management, access to affordable treatment and detox centers. - Social Services Provider - Boone County*

**Most Problematic Substances**

Key informants (who rated this as a “major problem”) clearly identified **heroin/other opioids** as the most problematic substance abused in the community, followed by **methamphetamine/other amphetamines, alcohol, prescription medications, and marijuana.**

Problematic Substances as Identified by Key Informants				
	Most Problematic	Second-Most Problematic	Third-Most Problematic	Total Mentions
Heroin or Other Opioids	66.7	14.8	7.7	<b>24</b>
Methamphetamines or Other Amphetamines	7.4	44.4	15.4	<b>18</b>
Alcohol	14.8	11.1	30.8	<b>15</b>
Prescription Medications	7.4	14.8	23.1	<b>12</b>
Marijuana	3.7	14.8	11.5	<b>8</b>
Over-The-Counter Medications	0.0	0.0	7.7	<b>2</b>
Cocaine or Crack	0.0	0.0	3.8	<b>1</b>

## Tobacco Use

### About Tobacco Use

Tobacco use is the single most preventable cause of death and disease in the United States. Scientific knowledge about the health effects of tobacco use has increased greatly since the first Surgeon General's report on tobacco was released in 1964.

Tobacco use causes:

- Cancer
- Heart disease
- Lung diseases (including emphysema, bronchitis, and chronic airway obstruction)
- Premature birth, low birth weight, stillbirth, and infant death

There is no risk-free level of exposure to secondhand smoke. Secondhand smoke causes heart disease and lung cancer in adults and a number of health problems in infants and children, including: severe asthma attacks; respiratory infections; ear infections; and sudden infant death syndrome (SIDS).

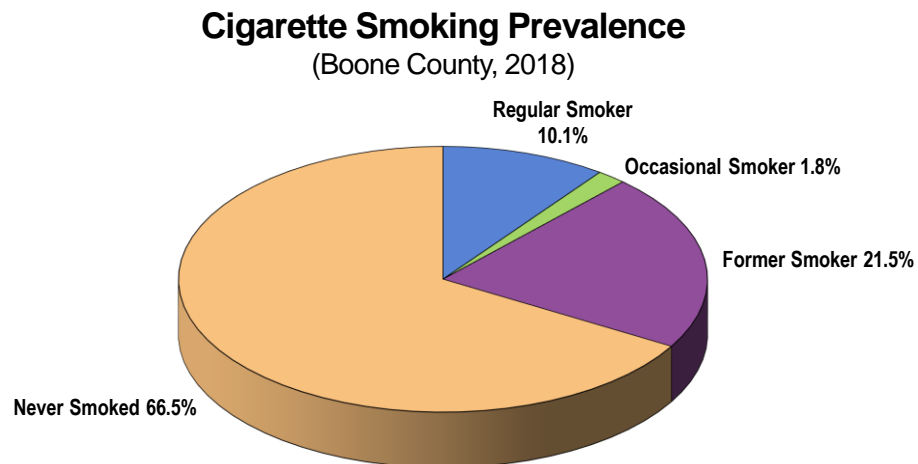
Smokeless tobacco causes a number of serious oral health problems, including cancer of the mouth and gums, periodontitis, and tooth loss. Cigar use causes cancer of the larynx, mouth, esophagus, and lung.

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

## Cigarette Smoking

### Cigarette Smoking Prevalence

A total of 11.9% of Boone County adults currently smoke cigarettes, either regularly (10.1% every day) or occasionally (1.8% on some days).

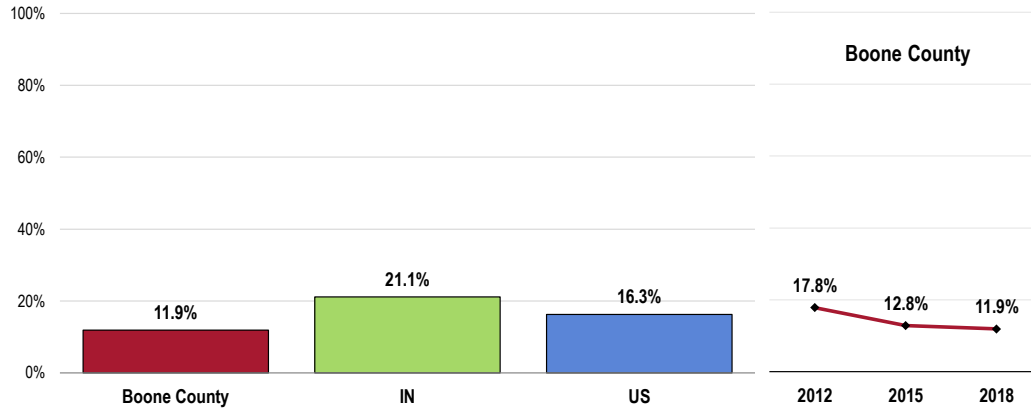


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 159]  
Notes: • Asked of all respondents.

- More favorable than state and national findings.
- Similar to the Healthy People 2020 target (12% or lower).
- TREND: The percentage has decreased since 2012.

### Current Smokers

Healthy People 2020 Target = 12.0% or Lower



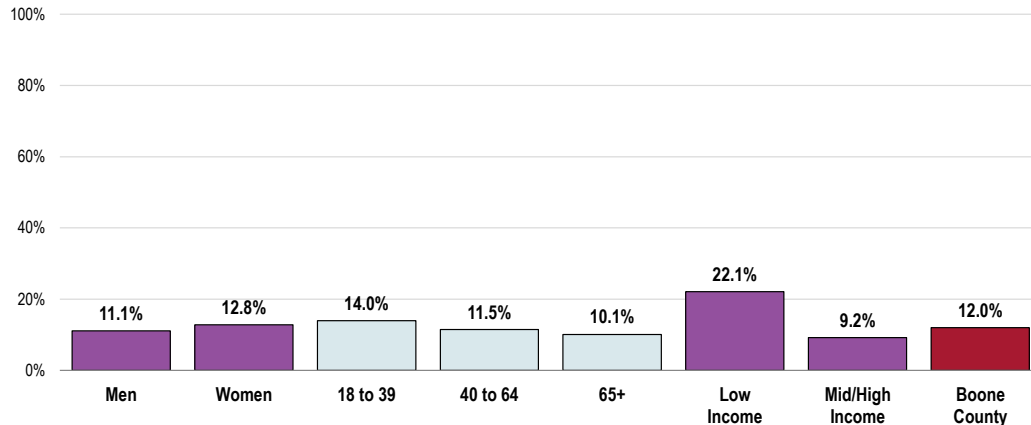
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 159]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective TU-1.1]  
 Notes: • Asked of all respondents.  
 • Includes regular and occasional smokers (those who smoke cigarettes every day or on some days).

- Cigarette smoking in Boone County is more prevalent among low-income adults.

### Current Smokers

(Boone County, 2018)

Healthy People 2020 Target = 12.0% or Lower



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 159]  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective TU-1.1]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.  
 • Includes regular and occasion smokers (every day and some days).

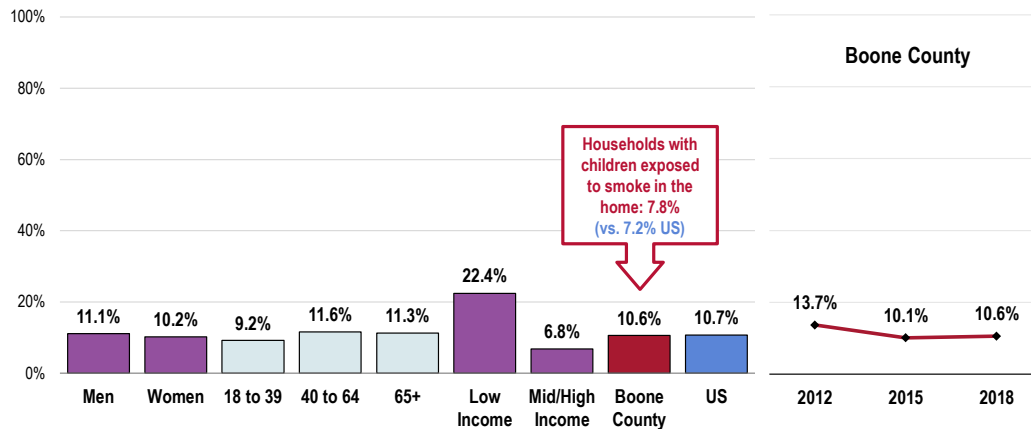
### Environmental Tobacco Smoke

A total of 10.6% of Boone County adults (including smokers and nonsmokers) report that a member of their household has smoked cigarettes in the home an average of 4+ times per week over the past month.

- Almost identical to national findings.
- Notably higher among residents with lower incomes.
- TREND: The decrease since 2012 is not statistically significant.

Note that 7.8% of Boone County children are exposed to cigarette smoke at home, similar to what is found nationally.

### Member of Household Smokes At Home (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 52, 162]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.  
 • "Smokes at home" refers to someone smoking cigarettes, cigars, or a pipe in the home an average of four or more times per week in the past month.

### Smoking Cessation

#### About Reducing Tobacco Use

Preventing tobacco use and helping tobacco users quit can improve the health and quality of life for Americans of all ages. People who stop smoking greatly reduce their risk of disease and premature death. Benefits are greater for people who stop at earlier ages, but quitting tobacco use is beneficial at any age.

Many factors influence tobacco use, disease, and mortality. Risk factors include race/ethnicity, age, education, and socioeconomic status. Significant disparities in tobacco use exist geographically; such disparities typically result from differences among states in smoke-free protections, tobacco prices, and program funding for tobacco prevention.

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

**Smoking Cessation Attempts**

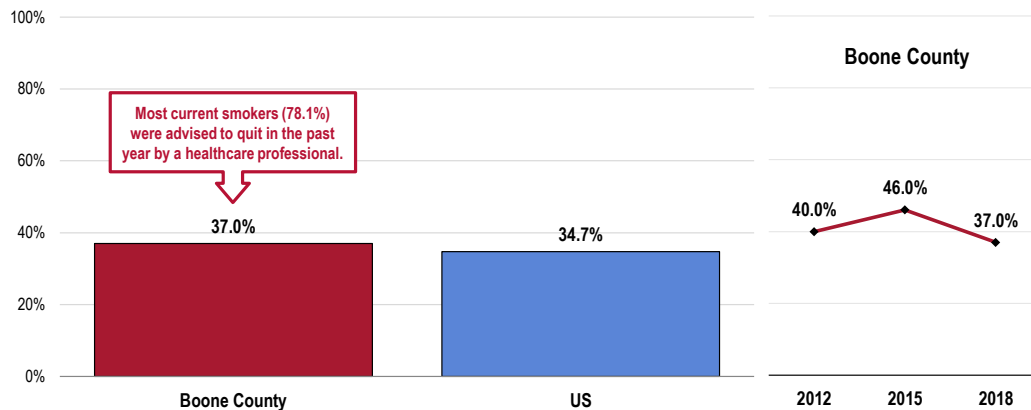
**A total of 37.0% of regular smokers went without smoking for one day or longer in the past year because they were trying to quit smoking.**

- Similar to the national percentage.
- Far from satisfying the Healthy People 2020 target (80% or higher).
- TREND: No statistically significant change since 2012.

Most current smokers (78.1%) have been advised by a healthcare professional in the past year to quit smoking (which is far higher than the national proportion).

**Have Stopped Smoking for One Day or Longer in the Past Year in an Attempt to Quit Smoking**  
(Among Everyday Smokers)

Healthy People 2020 Target = 80.0% or Higher



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 50-51]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective TU-4.1]  
 Notes: • Asked of respondents who smoke cigarettes every day.

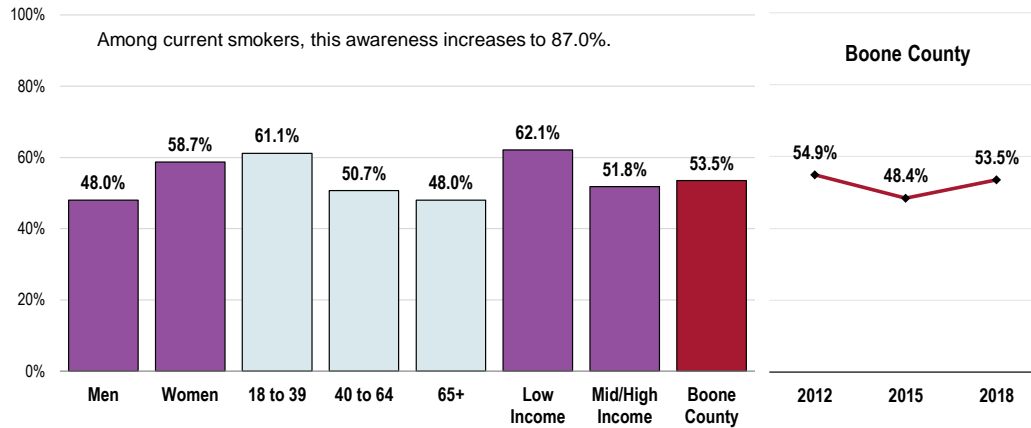
**Awareness of the Indiana Quit Line**

**Over half of survey respondents (53.5%) report being aware of the Indiana tobacco quit line (1-800-QUIT-NOW).**

- Awareness is lower among men, older residents, and higher-income residents.
- TREND: Marks a statistically significant increase in awareness since 2015 (though similar to 2012 findings).



## Aware of the Indiana Tobacco Quit Line: 1-800-QUIT-NOW (Boone County, 2018)



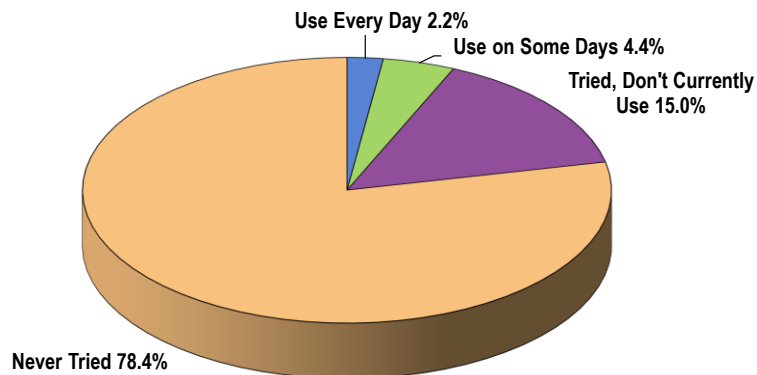
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 308]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

## Other Tobacco Use

### Use of Vaping Products

A total of 6.6% of Boone County adults currently use electronic cigarettes (e-cigarettes) or other electronic vaping products either regularly (2.2% every day) or occasionally (4.4% on some days).

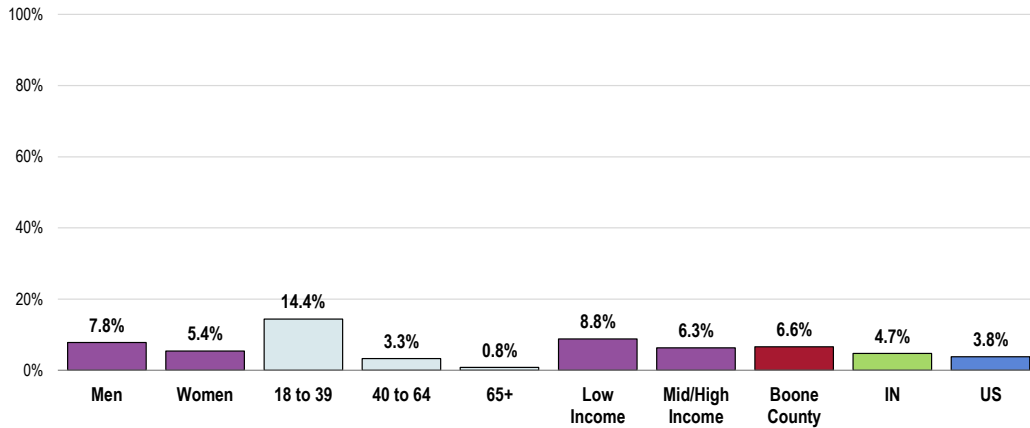
## Use of Vaping Products (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 163]  
 Notes: • Asked of all respondents.

- Higher than state and national findings.
- This prevalence is higher among younger adults (strong negative correlation with age).

### Currently Use Vaping Products (Boone County, 2018)



Sources:

- 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 163]
- Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.
- 2017 PRC National Health Survey, Professional Research Consultants, Inc.

Notes:

- Asked of all respondents.
- Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.
- Includes regular and occasional users (those who smoke e-cigarettes every day or on some days).

### Smokeless Tobacco

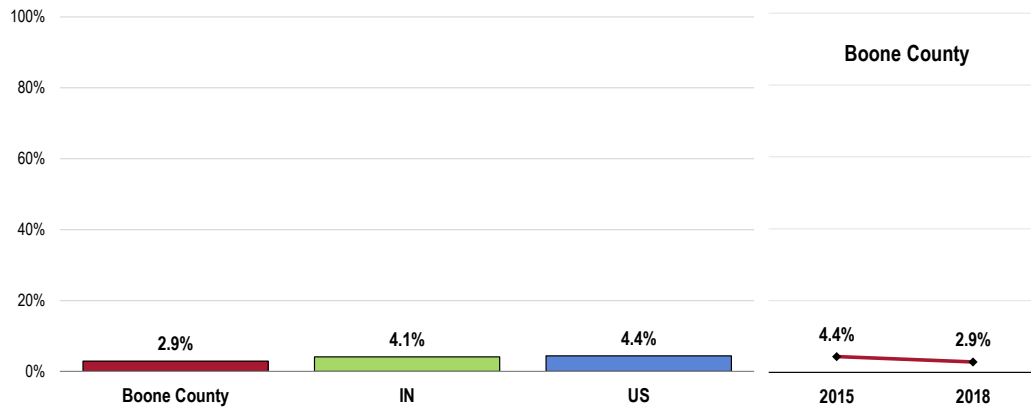
**A total of 2.9% of Boone County adults use some type of smokeless tobacco every day or on some days.**

- Statistically comparable to the state and national percentages.
- Fails to satisfy the Healthy People 2020 target (0.3% or lower).
- TREND: Statistically similar to 2015 findings.

Examples of smokeless tobacco include chewing tobacco, snuff, or "snus."

## Currently Use Smokeless Tobacco

Healthy People Goal = 0.3% or Lower



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 307]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2016 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective TU-1.2]

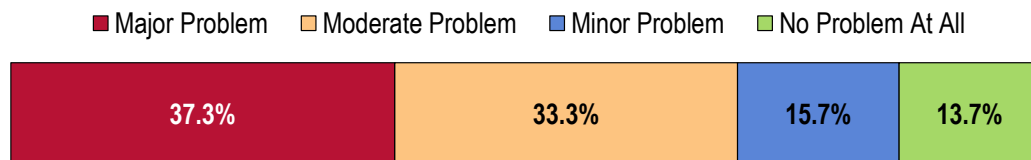
Notes: • Asked of all respondents.  
 • Smokeless tobacco includes chewing tobacco or snuff.

### Key Informant Input: Tobacco Use

The greatest share of key informants taking part in an online survey slightly more often characterized *Tobacco Use* as a “major problem” versus a “moderate problem” in the community.

### Perceptions of Tobacco Use as a Problem in the Community

(Key Informants, 2018)



Sources: • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

### Top Concerns

Among those rating this issue as a “major problem,” reasons related to the following:

#### Prevalence/Incidence

*Tobacco and the new juuling and e-cigarettes are a major issue for the community. The marketing of juul and e-cigs to teenagers and young adults is a troubling statistic that is growing. As a mother of 3 teenagers, I am very concerned about the addiction of these products. They are rampant on college campuses and the access must be halted. - Social Services Provider*

*Smoking rates among adult and under age people are declining, but still too high and serves as a gateway to other self-destructive habits. - Other Health Provider*

*A lack of smoke-free ordinances, the increased use of vaping devices by youth, many outlets which sell tobacco products, and a higher rate of pregnant women who smoke compared to the state average. - Public Health Representative*

*The number of people that are now taking on vaping in addition to smoking. - Other Health Provider*

*Too frequently used by people of all ages. - Social Services Provider*

*Nationwide problem. Boone County has a lot of tobacco users. - Other Health Provider*

*So many of my patients still smoke. - Physician*

*Too many smokers. - Community Leader*

### **Teen/Young Adult Usage**

*The rise in vaping, especially among youth, is very concerning. They continue to be a population that is targeted by the tobacco industry. This is such a counter-productive life choice and higher health costs for smokers themselves and for their employers is significant. - Community Leader*

*Youth are smoking either cigarettes or vaping. Pregnant women continuing to smoke. Secondhand smoke exposure continues to be an issue. - Public Health Representative*

*Above average use compared to the state. Underage usage. - Community Leader*

### **Awareness/Education**

*From my experience in tobacco education, there's a huge misconception that tobacco use isn't an issue anymore and that we should focus on substance use and related crimes. While we certainly should focus on substance use and crime, we're certainly capable of focusing on more than one issue at a time! Tobacco use is still highly prevalent in our communities and it affects a person's mental health, substance use recovery, income, family, and all sorts of other aspects of an individual and community's wellbeing. With the drastic increase in e-cigarette use among youth, we're seeing the next generation of smokers being prepped and groomed for failure. - Social Services Provider*

*Lack of knowledge and resources to quit. - Other Health Provider*

### **Comorbidities**

*This contributes to the respiratory problem. It's my observation that the population in Zionsville is healthier, possibly due to the economic and education differences between Lebanon and Zionsville. - Social Services Provider*

### **Easily Accessible**

*Tobacco use, there are not tight enough restrictions on use, sale and the behavior is normalized around here. - Physician*

### **Parental Influence**

*Lots of children exposed to tobacco smoke, especially during pregnancy. - Physician*

# Access to Health Services



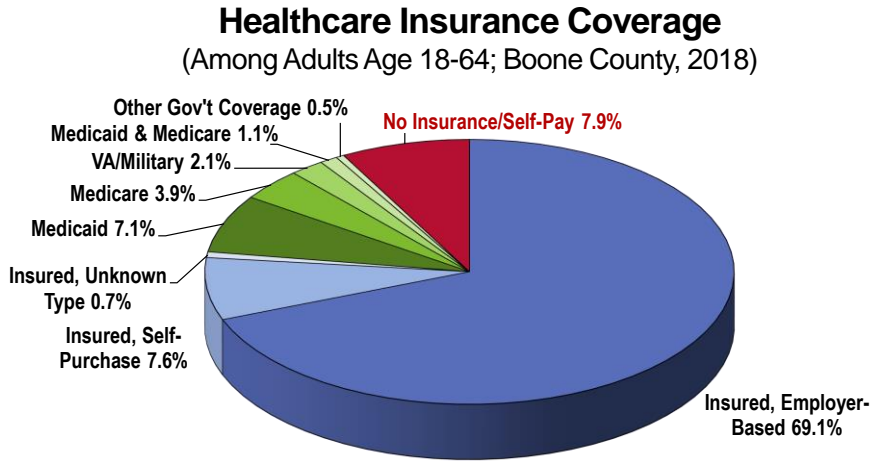
Professional Research Consultants, Inc.

## Health Insurance Coverage

### Type of Healthcare Coverage

A total of 77.4% of Boone County adults age 18 to 64 report having healthcare coverage through private insurance. Another 14.7% report coverage through a government-sponsored program (e.g., Medicaid, Medicare, military benefits).

Survey respondents were asked a series of questions to determine their healthcare insurance coverage, if any, from either private or government-sponsored sources.



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 169]  
Notes: • Reflects respondents age 18 to 64.

### Lack of Health Insurance Coverage

Among adults age 18 to 64, 7.9% report having no insurance coverage for healthcare expenses.

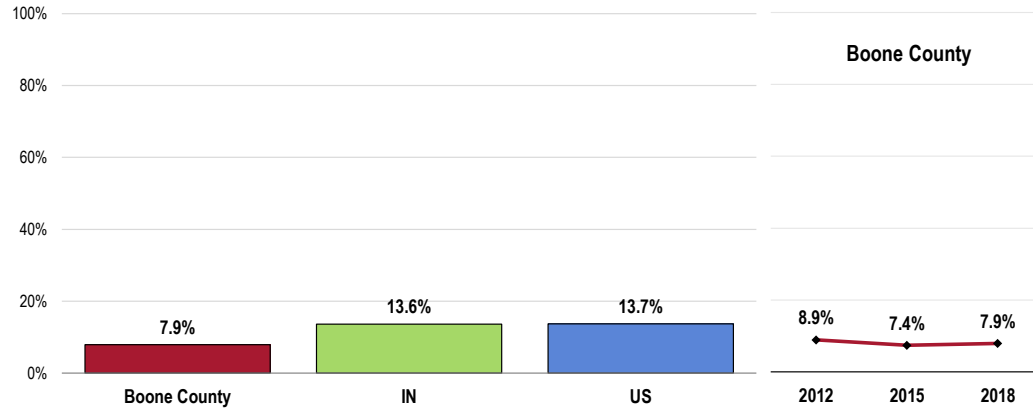
Here, lack of health insurance coverage reflects respondents age 18 to 64 (thus, excluding the Medicare population), who have no type of insurance coverage for healthcare services – neither private insurance nor government-sponsored plans (e.g., Medicaid).

- More favorable than state or national findings.
- The Healthy People 2020 target is universal coverage (0% uninsured).
- TREND: Statistically similar to 2012 findings.

## Lack of Healthcare Insurance Coverage

(Among Adults Age 18-64)

Healthy People 2020 Target = 0.0% (Universal Coverage)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 169]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective AHS-1]

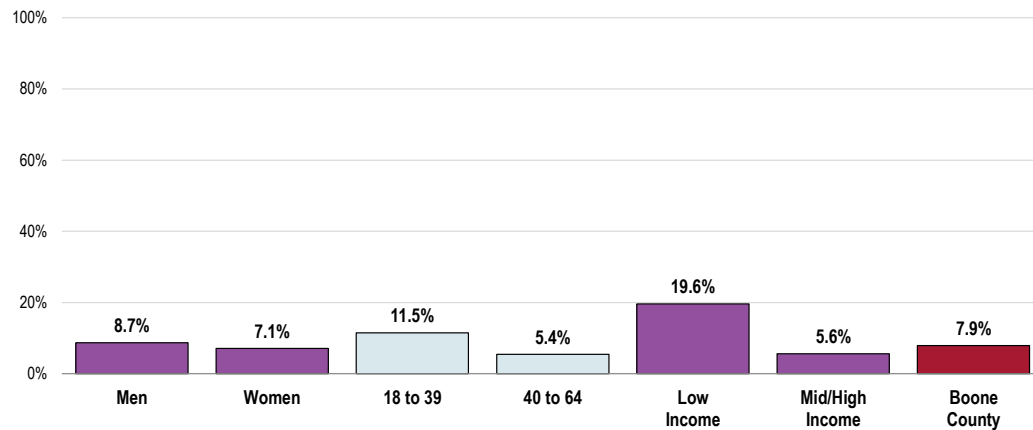
Notes: • Asked of all respondents under the age of 65.

- Low-income adults in Boone County are more likely to be without healthcare insurance coverage.

## Lack of Healthcare Insurance Coverage

(Among Adults Age 18-64; Boone County, 2018)

Healthy People 2020 Target = 0.0% (Universal Coverage)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 169]  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective AHS-1]

Notes: • Asked of all respondents under the age of 65.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

## Difficulties Accessing Healthcare

### About Access to Healthcare

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

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

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

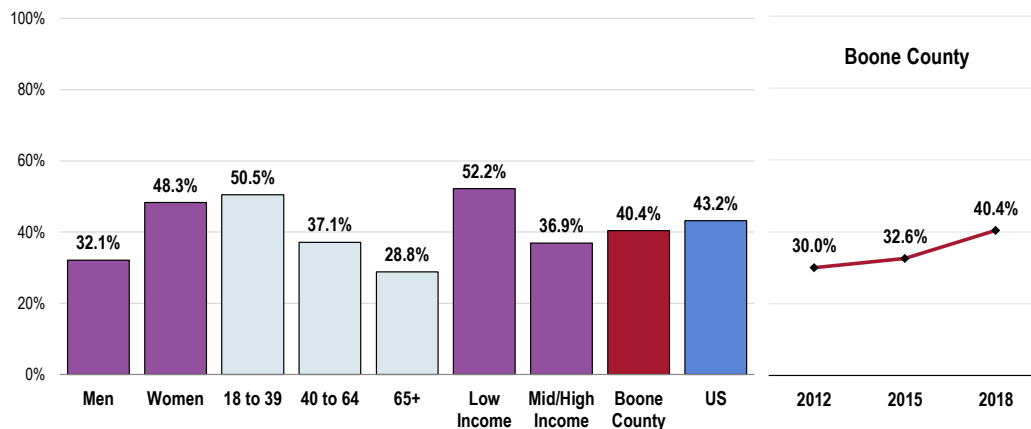
### Difficulties Accessing Services

**Four in 10 Boone County adults (40.4%) report some type of difficulty or delay in obtaining healthcare services in the past year.**

This indicator reflects the percentage of the total population experiencing problems accessing healthcare in the past year, regardless of whether they needed or sought care.

- Statistically comparable to national findings.
- Women, young adults, and especially low-income residents more often report difficulties accessing healthcare services.
- TREND: Above the percentage reported in 2012.

### Experienced Difficulties or Delays of Some Kind in Receiving Needed Healthcare in the Past Year (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 171]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: • Asked of all respondents.  
 • Represents the percentage of respondents experiencing one or more barriers to accessing healthcare in the past 12 months.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.



## Barriers to Healthcare Access

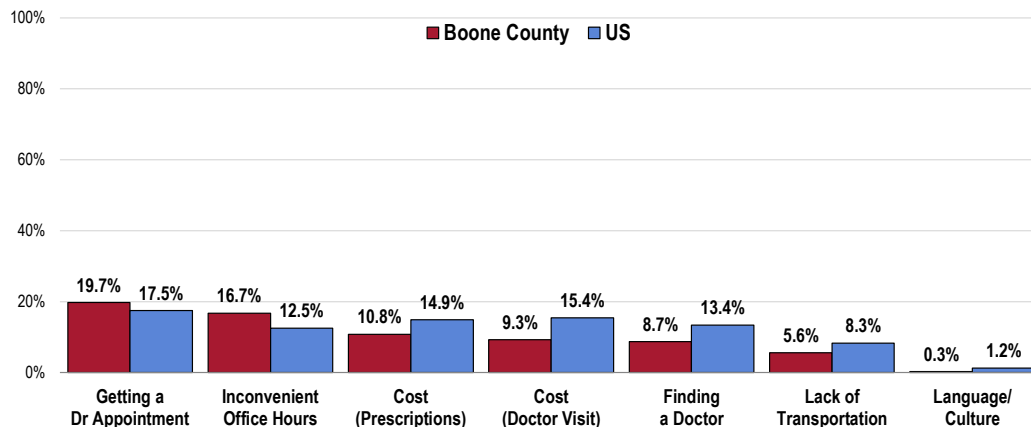
**Of the tested barriers, difficulty getting a doctor’s appointment impacted the greatest share of Boone County adults (19.7% say that this difficulty prevented them from obtaining a visit to a physician in the past year).**

- The proportion of impacted Boone County adults is statistically comparable to or better than that found nationwide for each of the tested barriers, with the exception of inconvenient office hours (which is worse).
- TREND: Several of these barriers have significantly worsened since 2012 findings, including [difficulty getting a doctor’s appointment](#), [inconvenient office hours](#), [difficulty finding a physician](#), and [transportation barriers](#).

To better understand healthcare access barriers, survey participants were asked whether any of seven types of barriers to access prevented them from seeing a physician or obtaining a needed prescription in the past year.

Again, these percentages reflect the total population, regardless of whether medical care was needed or sought.

### Barriers to Access Have Prevented Medical Care in the Past Year



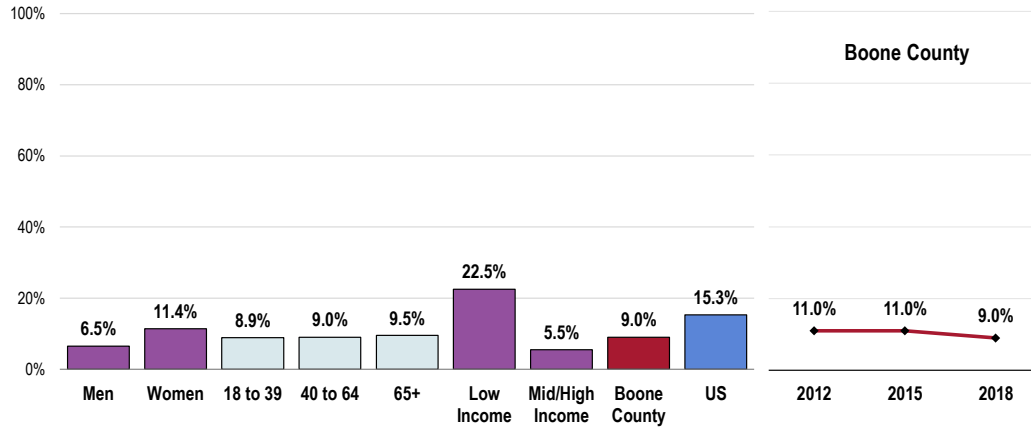
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 7-13]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

## Prescriptions

**Among all Boone County adults, 9.0% skipped or reduced medication doses in the past year in order to stretch a prescription and save money.**

- More favorable than national findings.
- Those more likely to have skipped or reduced their prescription doses include women and respondents with lower incomes.
- TREND: Statistically similar to 2012 findings.

### Skipped or Reduced Prescription Doses in Order to Stretch Prescriptions and Save Money (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 14]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

### Accessing Healthcare for Children

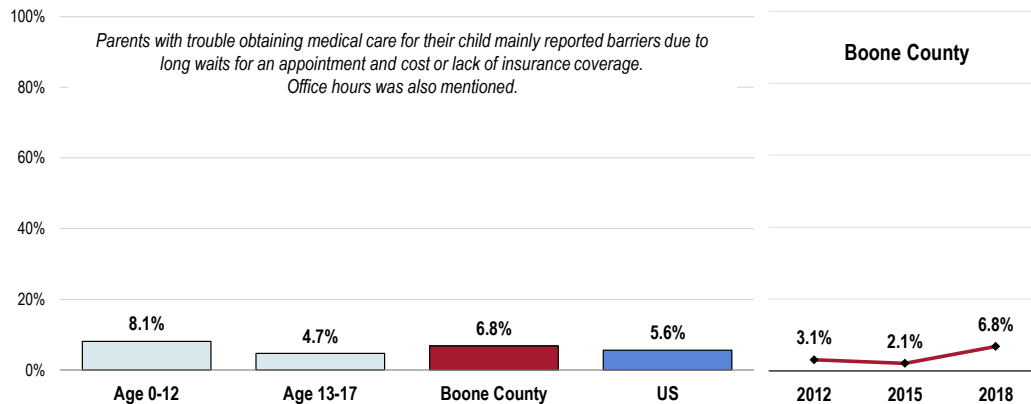
A total of 6.8% of parents say there was a time in the past year when they needed medical care for their child, but were unable to get it.

Surveyed parents were also asked if, within the past year, they experienced any trouble receiving medical care for a randomly-selected child in their household.

- Similar to what is reported nationwide.
- TREND: Statistically unchanged since 2012.
- No significant differences by age.

Among the parents experiencing difficulties, the majority cited **long waits for appointments** as the primary reason; others cited **cost or a lack of insurance** and **office hours**.

### Had Trouble Obtaining Medical Care for Child in the Past Year (Among Parents of Children 0-17)



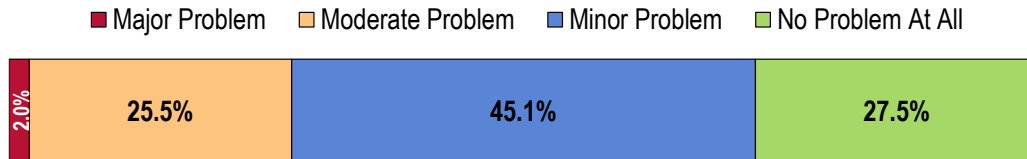
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 118-119]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents with children 0 to 17 in the household.

## Key Informant Input: Access to Healthcare Services

Key informants taking part in an online survey most often characterized **Access to Healthcare Services** as a “minor problem” in the community.

### Perceptions of Access to Healthcare Services as a Problem in the Community

(Key Informants, 2018)



Sources: • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
Notes: • Asked of all respondents.

### Top Concerns

Among those rating this issue as a “major problem,” the following reason was given:

#### *Transportation*

*Simply having transportation to healthcare services. While we have a wide variety of out-patient mental healthcare providers, we have a lack of in-patient and detox services. Citizens of Boone County who are already pressed for transportation would have difficulty accessing these services in other counties or cities. - Social Services Provider*

### Type of Care Most Difficult to Access

The few key informants who rated this as a “major problem” identified **substance abuse treatment, mental health care, and chronic disease care** as the most difficult to access in the community.

## Primary Care Services

### About Primary Care

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

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

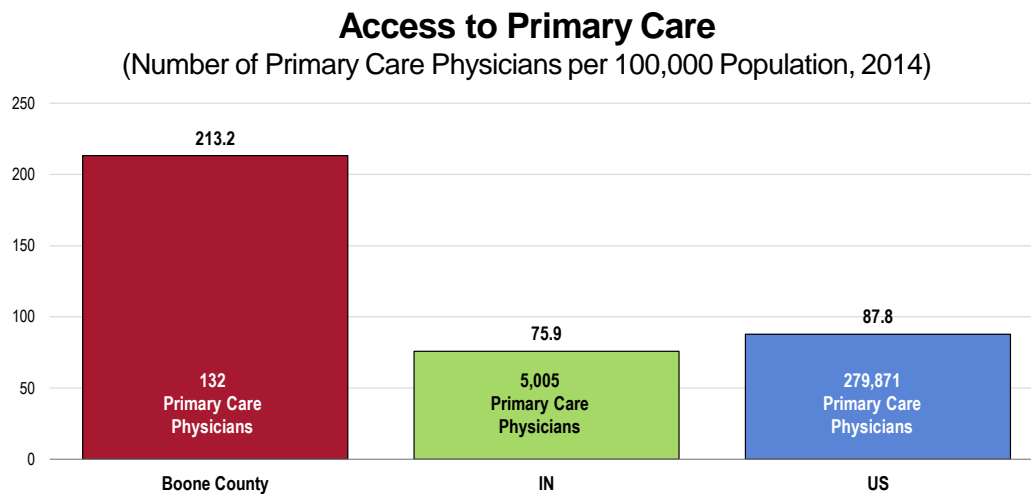
Improving health care services includes increasing access to and use of evidence-based preventive services. Clinical preventive services are services that: **prevent** illness by detecting early warning signs or symptoms before they develop into a disease (primary prevention); or **detect** a disease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

- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

### Access to Primary Care

In Boone County in 2014, there were 132 primary care physicians, translating to a rate of 213.2 primary care physicians per 100,000 population.

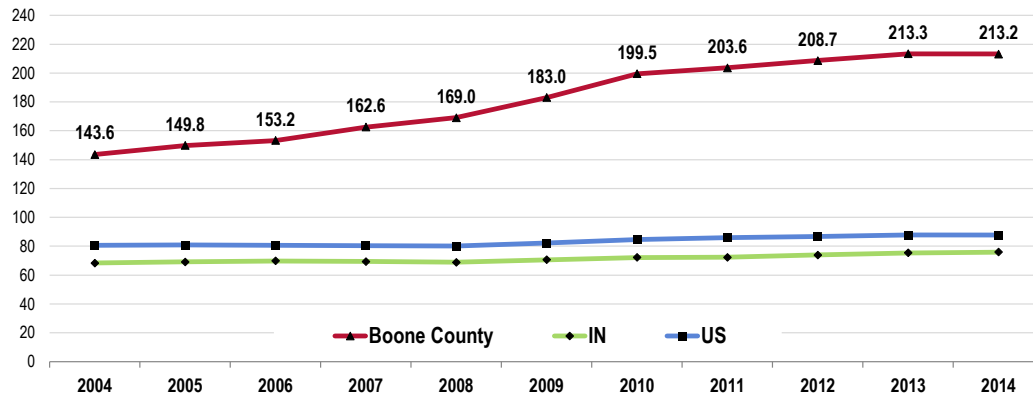
- Well above what is found statewide and nationally.



- Sources:
- US Department of Health & Human Services, Health Resources and Services Administration, Area Health Resource File.
  - Retrieved November 2018 from Community Commons at <http://www.chna.org>.
- Notes:
- This indicator is relevant because a shortage of health professionals contributes to access and health status issues.

- **TREND:** Access to primary care (in terms of the rate of primary care physicians to population) has improved over the past decade in Boone County.

### Trends in Access to Primary Care (Number of Primary Care Physicians per 100,000 Population)



Sources: 

- US Department of Health & Human Services, Health Resources and Services Administration, Area Health Resource File.
- Retrieved November 2018 from Community Commons at <http://www.chna.org>.

  
 Notes: 

- This indicator is relevant because a shortage of health professionals contributes to access and health status issues.
- These figures represent all primary care physicians practicing patient care, including hospital residents. In counties with teaching hospitals, this figure may differ from the rate reported in the previous chart.

Having a specific source of ongoing care includes having a doctor's office, clinic, urgent care center, walk-in clinic, health center facility, hospital outpatient clinic, HMO or prepaid group, military/VA clinic, or some other kind of place to go if one is sick or needs advice about his or her health. This resource is crucial to the concept of "patient-centered medical homes" (PCMH).

A hospital emergency room is not considered a specific source of ongoing care in this instance.

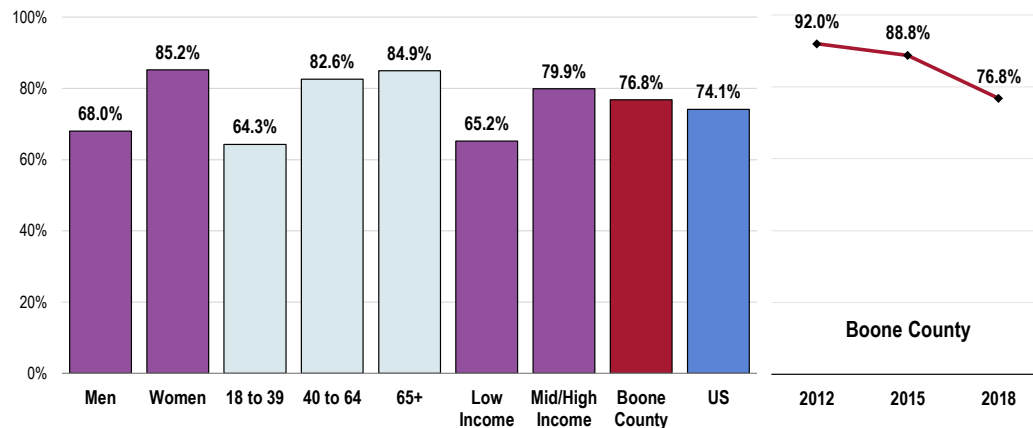
### Specific Source of Ongoing Care

More than three-quarters (76.8%) of Boone County adults were determined to have a specific source of ongoing medical care.

- Statistically similar to national findings.
- Fails to satisfy the Healthy People 2020 objective (95% or higher).
- Having a specific source of care is less common among men, young adults, and low-income adults.
- TREND: Marks a notable decrease since 2012.

### Have a Specific Source of Ongoing Medical Care (Boone County, 2018)

Healthy People 2020 Target = 95.0% or Higher



Sources: 

- 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 170]
- 2017 PRC National Health Survey, Professional Research Consultants, Inc.
- US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective AHS-5.1]

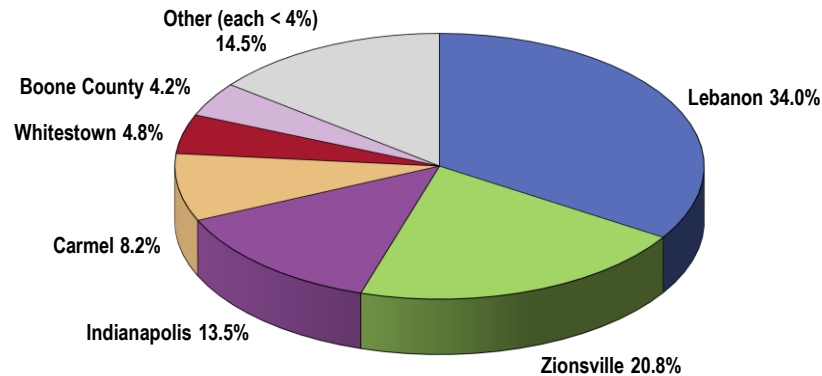
  
 Notes: 

- Asked of all respondents.
- Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

Among respondents with a particular place for ongoing medical care, 34.0% mentioned a place in Lebanon, followed by mention of Zionsville (20.8%) and Indianapolis (13.5%).

- Less common responses include [Carmel](#) (8.2%), [Whitestown](#) (4.8%), and somewhere in [Boone County](#) (4.2%).

### Community Location of Particular Place Utilized for Medical Care (Among Boone County Adults With a Particular Place for Care, 2015)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 301]  
Notes: • Asked of all respondents with a particular place they visit for their medical care.

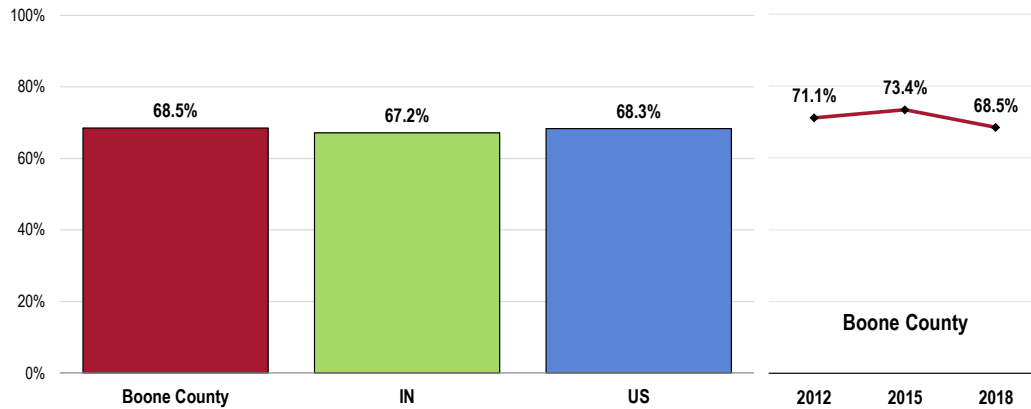
## Utilization of Primary Care Services

### Adults

Two-thirds of adults (68.5%) visited a physician for a routine checkup in the past year.

- Comparable to state and national findings.
- TREND: Statistically similar to findings from prior surveys.

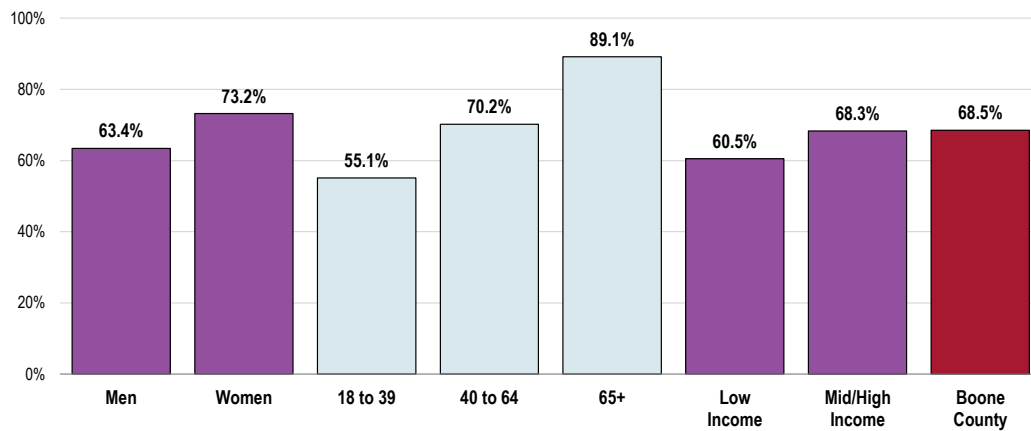
### Have Visited a Physician for a Checkup in the Past Year



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 18]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC); 2016 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

- Men and adults under age 40 are less likely to have received routine care in the past year (note the strong positive correlation with age).

### Have Visited a Physician for a Checkup in the Past Year (Boone County, 2018)



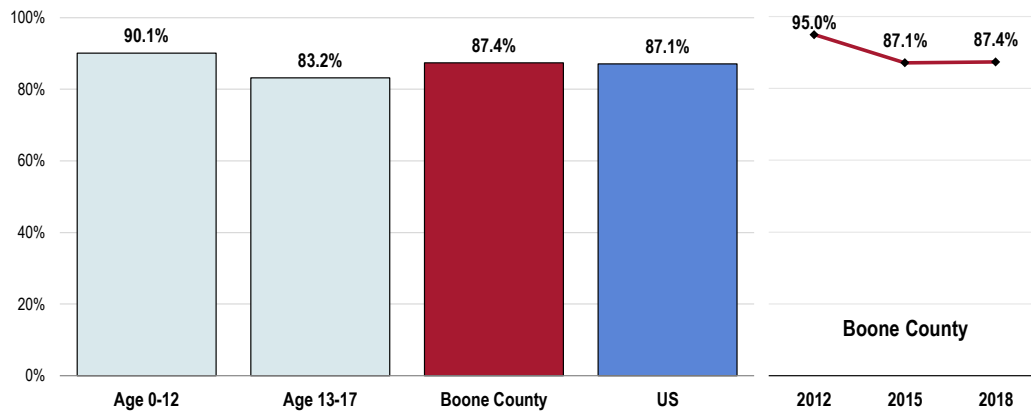
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 18]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

## Children

Among surveyed parents, 87.4% report that their child has had a routine checkup in the past year.

- Almost identical to national findings.
- TREND: Under 2012 findings.
- Routine checkups among Boone County children do not significantly differ by age

### Child Has Visited a Physician for a Routine Checkup in the Past Year (Among Parents of Children 0-17)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 120]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents with children 0 to 17 in the household.



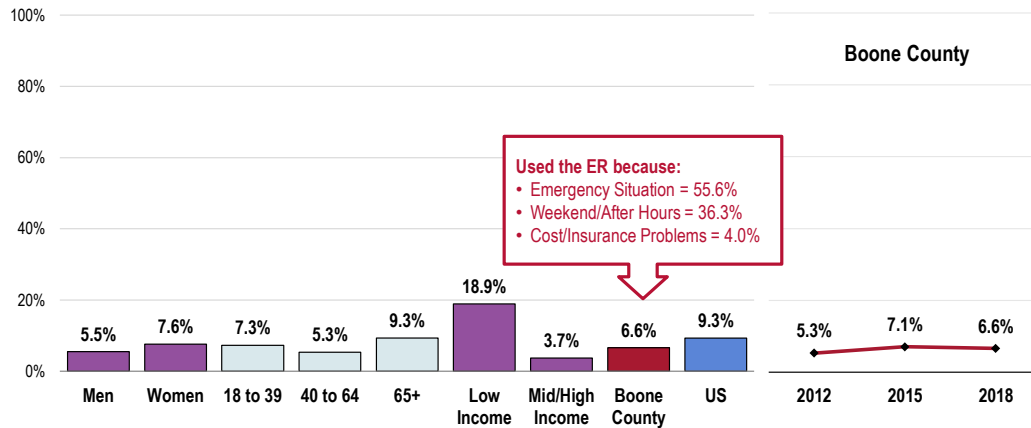
## Emergency Room Utilization

A total of 6.6% of Boone County adults have gone to a hospital emergency room more than once in the past year about their own health.

- Lower than national findings.
- Notably high among low-income adults.
- TREND: Statistically unchanged over time.

Of those using a hospital ER, 55.6% say this was due to an **emergency or life-threatening situation**, while 36.3% indicated that the visit was during **after-hours or on the weekend**. A total of 4.0% cited **cost or insurance problems**.

### Have Used a Hospital Emergency Room More Than Once in the Past Year (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 22-23]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

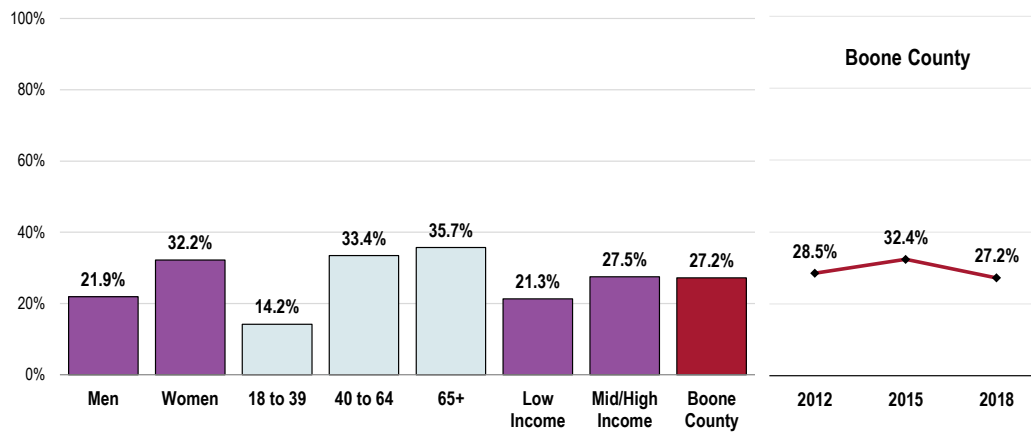
## Palliative Care

Palliative care is an area of healthcare that focuses on relieving and preventing the suffering of patients with a terminal or chronic disease.

**A total of 27.2% of Boone County survey respondents are aware of local programs providing palliative care.**

- Awareness is lower among men and especially younger adults.
- TREND: The level of awareness has not significantly changed over time.

### Aware of Local Programs Providing Palliative Care (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 315]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

## Oral Health

### About Oral Health

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

The significant improvement in the oral health of Americans over the past 50 years is a public health success story. Most of the gains are a result of effective prevention and treatment efforts. One major success is community water fluoridation, which now benefits about 7 out of 10 Americans who get water through public water systems. However, some Americans do not have access to preventive programs. People who have the least access to preventive services and dental treatment have greater rates of oral diseases. A person's ability to access oral healthcare is associated with factors such as education level, income, race, and ethnicity.

Barriers that can limit a person's use of preventive interventions and treatments include: limited access to and availability of dental services; lack of awareness of the need for care; cost; and fear of dental procedures.

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

Potential strategies to address these issues include:

- Implementing and evaluating activities that have an impact on health behavior.
- Promoting interventions to reduce tooth decay, such as dental sealants and fluoride use.
- Evaluating and improving methods of monitoring oral diseases and conditions.
- Increasing the capacity of State dental health programs to provide preventive oral health services.
- Increasing the number of community health centers with an oral health component.

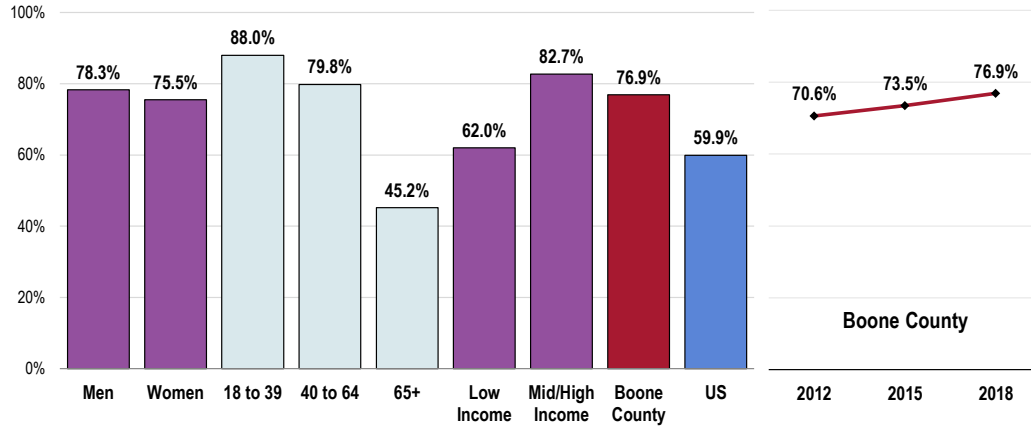
- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

## Dental Insurance

**More than three-quarters of Boone County adults (76.9%) have dental insurance that covers all or part of their dental care costs.**

- Above the national finding.
- Older adults and low-income adults are less likely to be covered by dental insurance.
- TREND: Marks a steady increase since 2012.

## Have Insurance Coverage That Pays All or Part of Dental Care Costs (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 21]

• 2017 PRC National Health Survey, Professional Research Consultants, Inc.

Notes: • Asked of all respondents.

• Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

## Dental Care

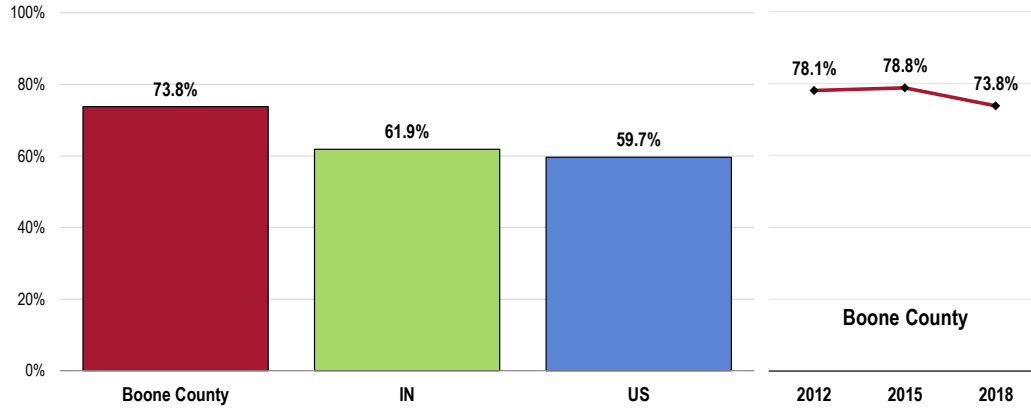
### Adults

**A total of 73.8% of Boone County adults have visited a dentist or dental clinic (for any reason) in the past year.**

- Higher than Indiana and US findings.
- Easily satisfies the Healthy People 2020 target (49% or higher).
- TREND: Statistically unchanged since 2012.

### Have Visited a Dentist or Dental Clinic Within the Past Year

Healthy People 2020 Target = 49.0% or Higher



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 20]  
 • Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC): 2016 Indiana data.  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective OH-7]

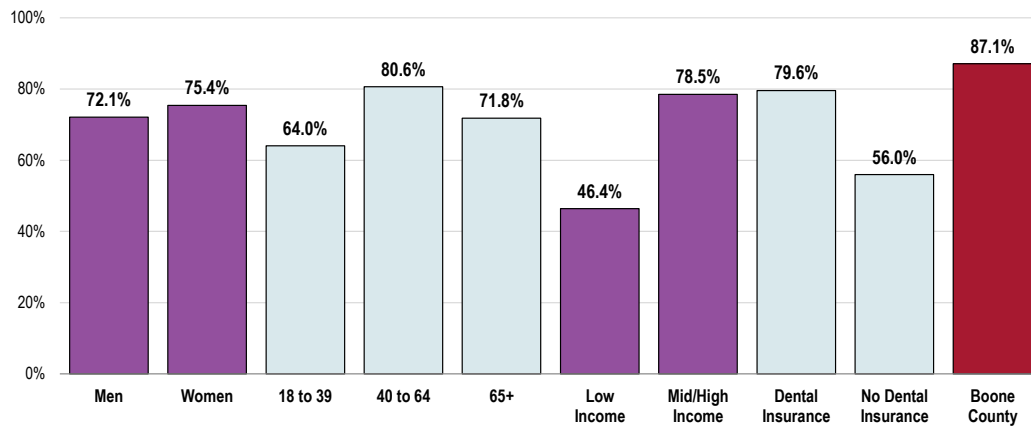
Notes: • Asked of all respondents.

The following are less likely to have visited a dentist in the past year:

- Younger adults (age 18-39) or older adults (age 65+).
- Low-income residents.
- Persons without dental insurance.

### Have Visited a Dentist or Dental Clinic Within the Past Year (Boone County, 2018)

Healthy People 2020 Target = 49.0% or Higher



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 20]  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective OH-7]

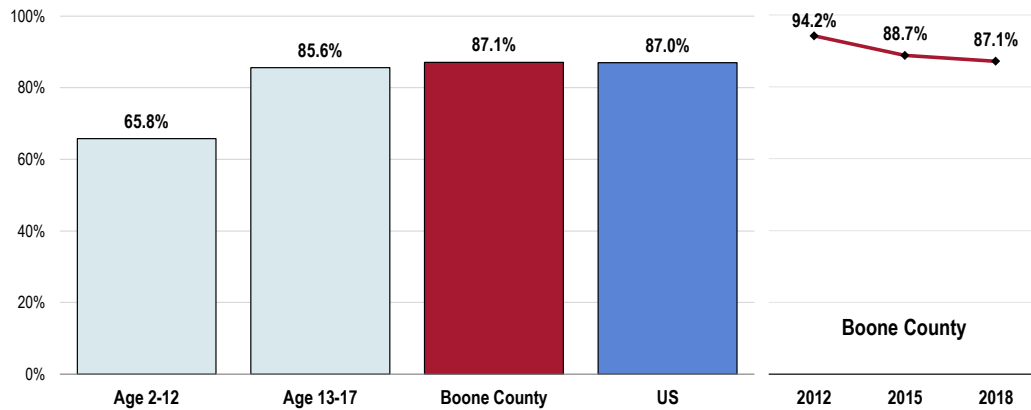
Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

## Children

A total of 87.1% of parents report that their child (age 2 to 17) has been to a dentist or dental clinic within the past year.

- Nearly identical to national findings.
- Easily satisfies the Healthy People 2020 target (49% or higher).
- TREND: Marks a statistically significant decrease in children’s dental care since 2012.
- Regular dental care is notably lower among children age 2 to 12.

### Child Has Visited a Dentist or Dental Clinic Within the Past Year (Among Parents of Children Age 2-17) Healthy People 2020 Target = 49.0% or Higher

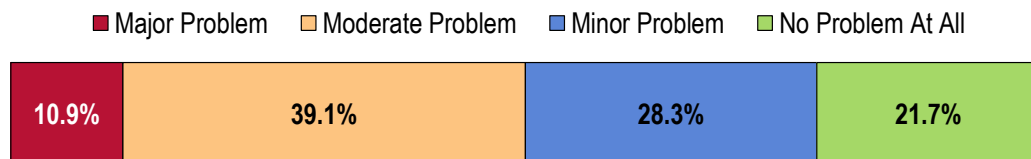


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 123]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 • US Department of Health and Human Services. Healthy People 2020. December 2010. <http://www.healthypeople.gov> [Objective OH-7]  
 Notes: • Asked of all respondents with children age 2 through 17.

## Key Informant Input: Oral Health

Key informants taking part in an online survey most often characterized *Oral Health* as a “moderate problem” in the community.

### Perceptions of Oral Health as a Problem in the Community (Key Informants, 2018)



Sources: • PRC Online Key Informant Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.

## Top Concerns

Among those rating this issue as a “major problem,” reasons related to the following:

### **Medicaid/Medicare Issues**

*Minimal dental services for those on Medicaid, specifically. - Public Health Representative*

*Access to the dentist, especially if on Medicaid and especially if under the age of 5. - Physician*

### **Lack of Providers**

*There are not enough pediatric dentist providers in the area. Children should start seeing a dentist at the age of one year, but we do not have enough providers who can get them in at this time. - Physician*

*We have no pediatric dental providers in this area. The closest ones are in Zionsville, Brownsburg, or Crawfordsville. This is a major gap. - Physician*

### **Prevalence/Incidence**

*The number of cases we see in the clinic for oral health and dental care. - Other Health Provider*

## Vision Care

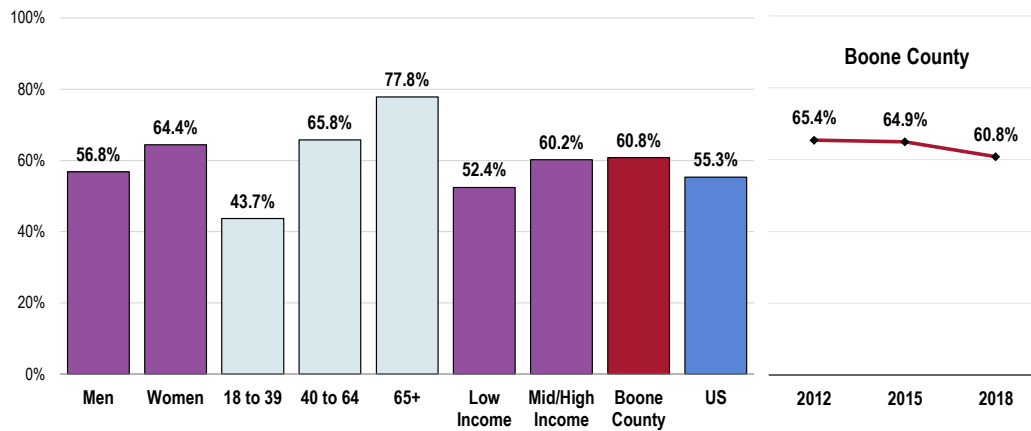
**Six in 10 Boone County residents (60.8%) had an eye exam in the past two years during which their pupils were dilated.**

**RELATED ISSUE:**

See also *Potentially Disabling Conditions: Vision & Hearing Impairment in the Death, Disease, & Chronic Conditions* section of this report.

- Higher than national findings.
- Recent vision care in Boone County is less often reported among men and younger adults.
- TREND: Statistically similar to the 2012 survey findings.

**Had an Eye Exam in the Past Two Years During Which the Pupils Were Dilated**  
(Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 19]  
 • 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.



# Local Resources



**Professional Research Consultants, Inc.**

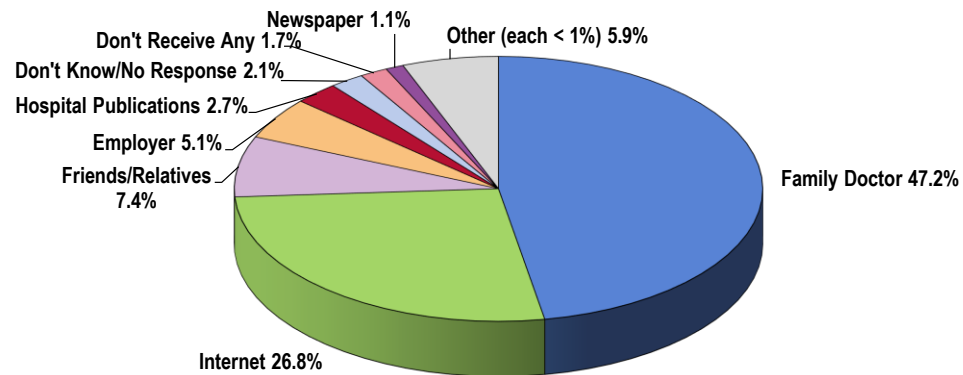
## Healthcare Information Sources

**Family physicians and the internet are residents' primary sources of healthcare information (47.2% and 26.8%, respectively).**

Other sources mentioned include friends and relatives (7.4%), employers (5.1%), hospital publications (2.7%), and newspapers (1.1%).

- Just 1.7% of survey respondents say that they do not receive any healthcare information, and 2.1% did not provide a response.

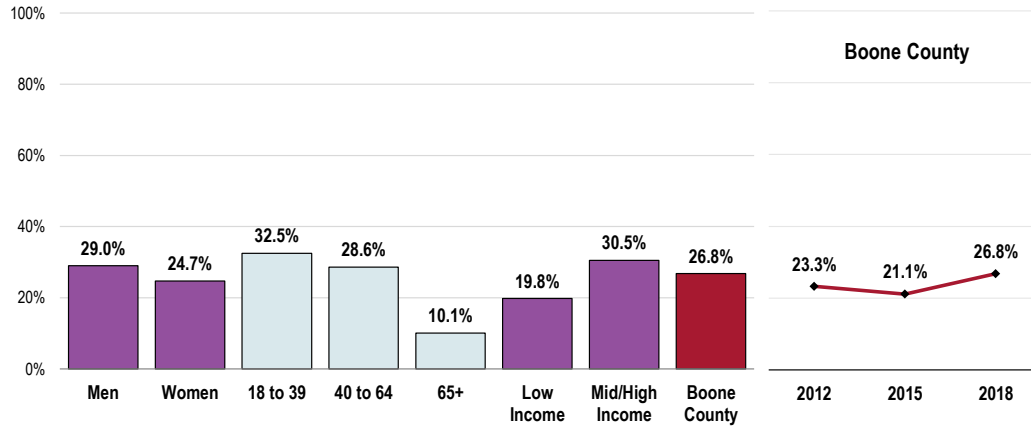
**Primary Source of Healthcare Information**  
(Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 316]  
Notes: • Asked of all respondents.

- Adults under age 65 and higher-income adults are more likely to use the [internet](#) as their primary source of healthcare information.
- TREND: No significant change over time.

## Internet is Primary Source of Healthcare Information (Boone County, 2018)



Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 316]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

## Participation in Health Promotion Events

### About Educational & Community-Based Programs

Educational and community-based programs play a key role in preventing disease and injury, improving health, and enhancing quality of life.

Health status and related-health behaviors are determined by influences at multiple levels: personal, organizational/institutional, environmental, and policy. Because significant and dynamic interrelationships exist among these different levels of health determinants, educational and community-based programs are most likely to succeed in improving health and wellness when they address influences at all levels and in a variety of environments/settings.

Education and community-based programs and strategies are designed to reach people outside of traditional healthcare settings. These settings may include schools, worksites, healthcare facilities, and/or communities.

Using nontraditional settings can help encourage informal information sharing within communities through peer social interaction. Reaching out to people in different settings also allows for greater tailoring of health information and education.

Educational and community-based programs encourage and enhance health and wellness by educating communities on topics such as: chronic diseases; injury and violence prevention; mental illness/behavioral health; unintended pregnancy; oral health; tobacco use; substance abuse; nutrition; and obesity prevention.

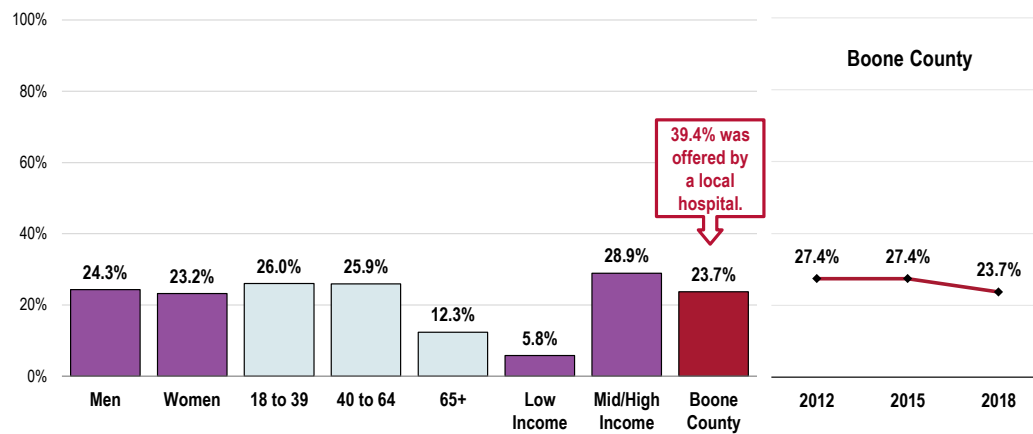
- Healthy People 2020 ([www.healthypeople.gov](http://www.healthypeople.gov))

**A total of 23.7% of area adults participated in some type of organized health promotion activity in the past year, such as health fairs, health screenings, or seminars.**

- More common among higher-income adults, as well as those under age 65.
- TREND: Statistically similar to previous survey findings.

Of Boone County adults who participated in some type of organized health promotion activity in the past year, 39.4% indicate that it was offered by a local hospital.

### Participated in a Health Promotion Activity in the Past Year (Boone County, 2018)



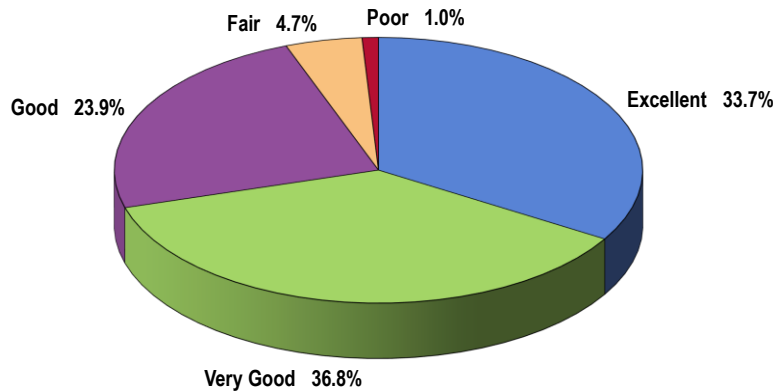
Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Items 317-318]  
 Notes: • Asked of all respondents.  
 • Income categories reflect respondent's household income as a ratio to the federal poverty level (FPL) for their household size. "Low Income" includes households with incomes up to 200% of the federal poverty level; "Mid/High Income" includes households with incomes at 200% or more of the federal poverty level.

## Perceptions of Local Healthcare Services

Seven in 10 Boone County adults (70.5%) rate the overall healthcare services available in their community as “excellent” or “very good.”

- Another 23.9% gave “good” ratings.

**Rating of Overall Healthcare Services Available in the Community**  
(Boone County, 2018)

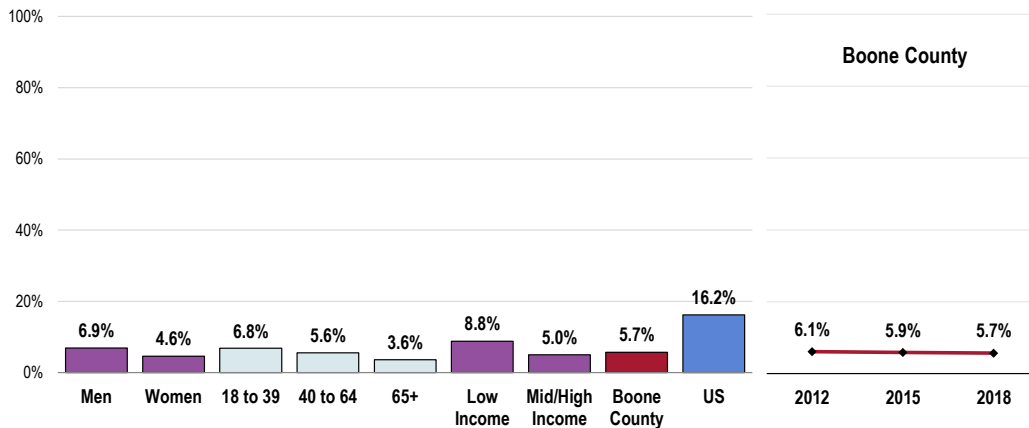


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 6]  
Notes: • Asked of all respondents.

However, 5.7% of residents characterize local healthcare services as “fair” or “poor.”

- Far more favorable than reported nationally.
- Demographic differences are not statistically significant.
- TREND: No significant differences in ratings over time.

**Perceive Local Healthcare Services as “Fair/Poor”**  
(Boone County, 2018)

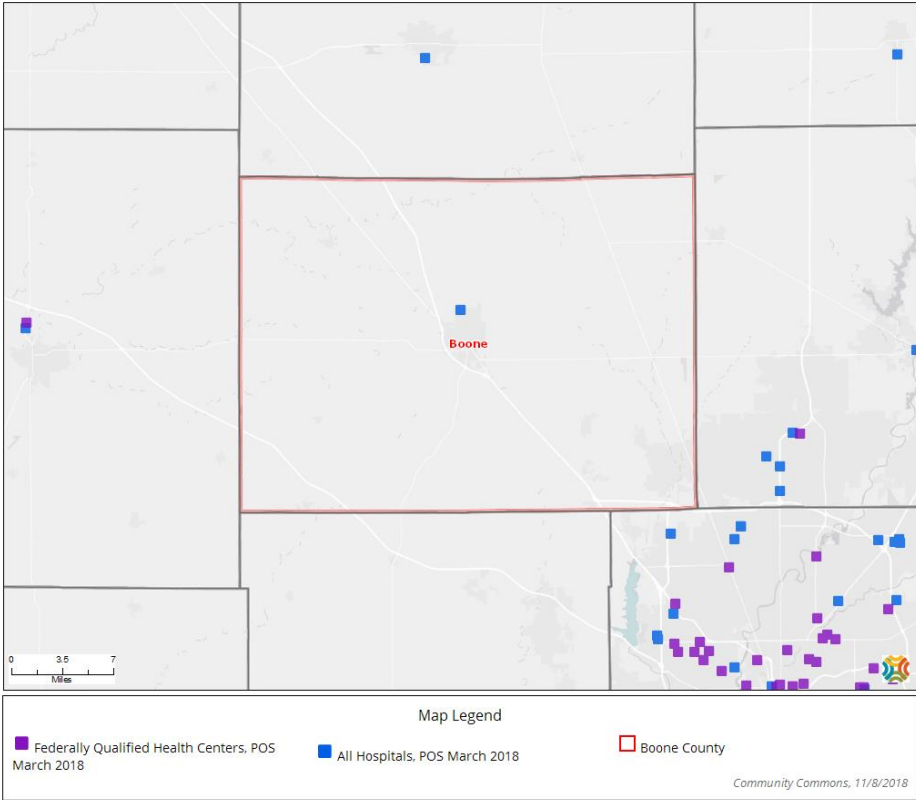


Sources: • 2018 PRC Community Health Survey, Professional Research Consultants, Inc. [Item 6]  
• 2017 PRC National Health Survey, Professional Research Consultants, Inc.  
Notes: • Asked of all respondents.  
• Income categories reflect respondent’s household income as a ratio to the federal poverty level (FPL) for their household size. “Low Income” includes households with incomes up to 200% of the federal poverty level; “Mid/High Income” includes households with incomes at 200% or more of the federal poverty level.

## Healthcare Resources & Facilities

### Hospitals & Federally Qualified Health Centers (FQHCs)

The following map shows that Witham Health Services is the only hospital in Boone County.



## Resources Available to Address the Significant Health Needs

The following represent potential measures and resources (such as programs, organizations, and facilities in the community) identified by key informants as available to address the significant health needs identified in this report. This list only reflects input from participants in the Online Key Informant Survey and should not be considered to be exhaustive nor an all-inclusive list of available resources.

### Access to Healthcare Services

- Boone Area Transit Service (BATS)

### Cancer

- American Cancer Society
- Boone County Cancer Society
- Health Department
- Little Red Door
- St. Vincent
- Tobacco Free Boone County
- Witham Health Services

### Dementias, Including Alzheimer's Disease

- Alzheimer's Association
- Boone County Senior Services
- Healthy Coalition
- Home Care Services
- Nursing Homes
- Parkwood Adult Day Care

### Diabetes

- Boone County Health Department
- Boone County Senior Services
- Boys and Girls Club
- Center Township Trustee
- Cowan Drugs
- Diabetic Services
- Doctor's Offices
- Food Pantries
- Hospitals
- Insurance
- Riggs Community Clinic
- School System
- St. Vincent
- The Caring Center
- Witham Health Services

### Family Planning

- Boone County Health Department
- Boone County Mental Health
- Children's Bureau
- Creekside OB/GYN
- Doctor's Offices
- First Presbyterian Church Young Parents Support Group
- Life Centers
- Pregnancy Crisis Centers

### Heart Disease & Stroke

- American Heart Association
- Boone County Health Department
- The Caring Center
- Wellness Services
- Witham Health Services

### Immunization & Infectious Diseases

- Boone County Health Department
- CVS
- Walgreens
- Walmart

### Infant & Child Health

- Boone County Health Department
- Dentist's Offices
- Educational Services
- Riggs Community Clinic
- School System
- Vaccination Programs

### Injury & Violence

- Aspire
- Chaucie's Place
- Indiana 211 Partnership
- InWell (Integrative Wellness, LLC)
- Law Enforcement

*Mental Health America of Boone County*  
*Mental Health Services*  
*Moms Demand Action*  
*New Life*  
*Ohana House Recovery Home*

### **Mental Health**

*Anson Emergency Room*  
*Aspire*  
*Boone County Health Department*  
*Boone County Mental Health*  
*Churches*  
*Cummins Behavioral Health Systems*  
*Doctor's Offices*  
*Indiana Connections Academy*  
*Integrative Wellness*  
*InWell (Integrative Wellness, LLC)*  
*Mental Health America of Boone County*  
*New Life*  
*Private Services*  
*Riggs Community Clinic*  
*Riley Children's Hospital*  
*School System*  
*Suicide Prevention Resources*  
*The Cabin*  
*Witham Health Services*

### **Nutrition, Physical Activity, & Weight**

*4-H Extension*  
*Anytime Fitness*  
*Boone County Health Department*  
*Boone County Senior Services*  
*Boys and Girls Club*  
*Community Gardens*  
*Educational Services*  
*Fitness Centers/Gyms*  
*Hospitals*  
*LA Fitness*  
*Meals on Wheels*  
*Nutrition Services*  
*Parks and Recreation*  
*Purdue Extension*  
*School System*  
*The Caring Center*  
*Weight Watchers*  
*Wellness Services*  
*WIC*  
*Witham Health Services*  
*YMCA*

### **Oral Health**

*Birchwood*  
*Dentist's Offices*  
*Doctor's Offices*  
*Pediatrics of Zionsville*

### **Respiratory Diseases**

*Home Care Services*  
*Lincare*

### **Sexually Transmitted Diseases**

*Boone County Health Department*  
*Doctor's Offices*  
*Health Department*  
*Planned Parenthood*

### **Substance Abuse**

*211 Open Bed Referral Service*  
*AA/NA*  
*Aspire*  
*Boone County Health Department*  
*Boone County Probation*  
*Boone County Sheriff IOP*  
*Cummins Behavioral Health Systems*  
*Doctor's Offices*  
*Drug Task Force*  
*Fairbanks*  
*Integrative Wellness*  
*InWell (Integrative Wellness, LLC)*  
*Jail Treatment Programs*  
*Law Enforcement*  
*MAT Clinic*  
*Mental Health America of Boone County*  
*New Life*  
*Ohana House*  
*School System*  
*Witham Health Services*

### **Tobacco Use**

*1-800-Quit-Now*  
*Boone County Cancer Society*  
*Boone County Health Department*  
*Boys and Girls Club*  
*Doctor's Offices*  
*Mommy and Me Tobacco Free*  
*School System*  
*Tobacco Coalition*  
*Tobacco Free Boone County*



# Appendix



**Professional Research Consultants, Inc.**

## Evaluation of Past Activities

Supplemental information for the “2015 Community Health Needs Assessment” (referred herein as “2015 CHNA”).

1.501(r)-3(b)(1)(ii)	<p><u>Assess the health needs of that community:</u> Identify significant health needs of the community, prioritize those health needs, and identify resources potentially available to address those health needs.</p>
Health Needs	The 2015 CHNA report includes a “Summary of Findings” on page 16 list fourteen (14) significant health needs in the community, but does not prioritize the needs. A written plan has been adopted by the governing body prioritizing the needs and identify which ones will be addressed and which will not be addressed by the Hospital. Page 243 of the 2015 CHNA report does provide resources available to help address the significant needs identified.
1.501(r)-3(b)(1)(iii)	<p><u>In assessing the health needs of the community, solicit and take input received from persons who represent the broad interest of the community, including those with special knowledge of or expertise in public health:</u> Time period all of the following sources were solicited for input: public health department; medically underserved, low-income, and minority populations or those that represent the members of this group; and written comments on most recently conducted CHNA and implementation strategy.</p>
Time Period	<p>The 2015 CHNA data time period were as follows:</p> <ul style="list-style-type: none"> <li>• Key informants were interviewed during June 2015.</li> <li>• Online key informant surveys were solicited from November 2015 to 12-10-2015.</li> <li>• Telephone surveys were solicited in October 2015.</li> <li>• Four Focus Groups took place in November 2014, and two in January 2015, to include Lebanon, Thorntown, and Zionsville.</li> </ul>
Written Comments	No comments were received from the public regarding the 2012 Community Health Needs Assessment.
1.501(r)-3(b)(1)(iv)	<p><u>Document the CHNA in a written report that is adopted for the hospital facility by an authorized body of the hospital facility:</u> The report must be written and adopted (approved) by an authorized body of the hospital facility. The report must include: a definition of community served; description of process and methods used to conduct the CHNA; describe solicitation of input; description of prioritized significant health needs and process and criteria to identify the needs as significant; resources potentially available to address the needs; and evaluation of impact of any actions taken since the immediately preceding CHNA.</p>
CHNA Adoption	The 2015 CHNA reports was presented to the governing body in December 2015, however, a formal vote was not made. The governing body approved the 2015 CHNA and Implementation Strategy at the April 26, 2017 Board of Trustees meeting.

Prioritization Process	The process for prioritizing the fourteen health needs identified in the 2015 CHNA report uses the benchmark data and key informant rankings and the 2015 CHIP report from the County health department to identify which needs are significant. Additional, evaluation by the governing body and management on the Hospitals ability to assist with the significant needs was completed.		
	2015 Health Need Identified	Addressing	Not Addressing
	Access to Health Care Services	See Implementation Strategy Plan	
	Cancer	See Implementation Strategy Plan	
	Chronic Kidney Disease		Not addressing in the 2016-2018 Implementation Strategy plan. #14 out of 14 and no key informants ranked it as a major problem.
	Dementia/ Alzheimer	See Implementation Strategy Plan	
	Diabetes	See Implementation Strategy Plan	
	Heart Disease & Stroke	See Implementation Strategy Plan	
	Injury & Violence		Not addressing in the 2016-2018 Implementation Strategy plan. #11 out of 14. Other Boone County agencies address this.
	Mental Health	See Implementation Strategy Plan	
	Nutrition, Physical Activity & Weight	See Implementation Strategy Plan	
	Oral Health		Not addressing in the 2016-2018 Implementation Strategy plan. #10 out of 14. Dentist in the community are more equipped to address this need.
	Respiratory Diseases		Not addressing in the 2016-2018 Implementation Strategy plan. #13 out of 14.
	Sexually Transmitted Diseases		Not addressing in the 2016-2018 Implementation Strategy plan. #8 out of 14.
	Substance Abuse	See Implementation Strategy Plan	
Tobacco Use	See Implementation Strategy Plan		

2012 Actions	<p>Actions taken from the 2012 CHNA include the following:</p> <p><b>Access to Health Services: ER Overutilization</b></p> <ul style="list-style-type: none"> <li>• Opened Convenient Care in Lebanon.</li> <li>• Expanded office hours.</li> <li>• Provided resources for patients to obtain health insurance.</li> </ul> <p><b>Cancer Deaths: Female Breast Cancer</b></p> <ul style="list-style-type: none"> <li>• Provided \$49 screening mammograms.</li> <li>• Sent mailers and publications to Witham's market area.</li> <li>• Developed Witham Health Services Cancer services educational card.</li> <li>• Partnered with Cancer Support Community of Central Indiana to provide additional cancer programs</li> </ul> <p><b>Cancer Deaths: Lung Cancer</b></p> <ul style="list-style-type: none"> <li>• Offered support groups to lung cancer patients.</li> <li>• Promoted the Quit Line</li> </ul> <p><b>Cancer Deaths: Prostate Cancer</b></p> <ul style="list-style-type: none"> <li>• Educated men on the importance of screenings</li> <li>• Offered community based prostate screenings.</li> </ul> <p><b>Diabetes: Diabetes Management, Awareness/Utilization of Available Resources and Screening for High Blood Pressure</b></p> <ul style="list-style-type: none"> <li>• Offered community diabetic education classes</li> <li>• Educated community on the diabetic services offered at Witham Health Services.</li> <li>• Provided Blood Pressure screenings at community outreach programs.</li> </ul> <p><b>Nutrition &amp; Weight</b></p> <ul style="list-style-type: none"> <li>• Provided community wellness programs such as Silver Sneakers, Tai Chi, and Cooking for Wellness.</li> <li>• Provided FitnessGrams to the local schools.</li> </ul> <p><b>Tobacco Use</b></p> <ul style="list-style-type: none"> <li>• Educated the community on dangers of smoking</li> <li>• Educated community on Quit Line</li> </ul>
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### Implementation Strategy

Below is the action plan to provide specific actions, planned resources, anticipated impact and planned collaboration to address the needs identified in the 2015 CHNA. The plan was reviewed and adopted by the governing body at the April 26, 2017 Board of Trustees Meeting.

Substance Abuse		Key Informant Rankings of Identified Areas of Opportunity 2015 #1 of 14 Areas				2012 #2 of 9 Areas		
Area of Opportunity		Impact/Goal	Short Term (1-3 years)	Long Term (4-7 years)	Healthy People 2020	Implementation Strategy	Hospital Resources/Community Partners	Evaluation Method
<b>Drug-Induced Deaths</b>	Boone County age adjusted rate is 14.4 for drug induced deaths which is lower than Indiana rate of 16.8 and higher than Healthy Populations 2020 target of 11.3	Fewer drug related deaths	Next CHNA to report age adjusted death rate as <13 deaths	Death rate ≤ HP2020 death rate of 11.3	11.3	<ul style="list-style-type: none"> <li>• Inventory available resources to address local substance use.</li> <li>• Develop a process for sharing the availability of local resources to the public.</li> <li>• Expand counseling services to improve access to needed services.</li> </ul>	<ul style="list-style-type: none"> <li>• Physicians</li> <li>• Schools</li> <li>• Law Enforcement</li> <li>• Mental Health Agencies serving Boone County</li> <li>• Indiana State Medical Association</li> </ul>	CHNA 2018
<b>Seeking Help for Alcohol/Drug Issues</b>	Boone County rate for seeking help for alcohol/drug issues is 3.0% and US rate is 4.9%	Increase % of persons seeking help for alcohol/drug problem from 2015 rate of 3.0%	Next CHNA to report > 4%	Boone Co rate for seeking help for alcohol/drug problems ≥ 5%	none	<ul style="list-style-type: none"> <li>• Cooperate with law enforcement in provision of NARCAN for overdose persons.</li> <li>• Continue to educate physicians, staff and community on the “Do no harm” law.</li> <li>• Provide Pain Clinics-Addiction Therapy,</li> </ul>	<ul style="list-style-type: none"> <li>• Boone County Substance Abuse Task Force</li> <li>• Boone County Health Department</li> <li>• Witham Physicians</li> </ul>	

						<p>Interventional Pain management</p> <ul style="list-style-type: none"> <li>• Provide Suboxone clinic</li> <li>• Partner with Boone County Substance Abuse Task Force to create and implement plan to improve scope of local services.</li> </ul>	<p>Dr. Gatzimos Dr. Jones</p>	
<p><b>Illicit Drug Use in Past Month</b></p>	<p>Boone County's reported rate for use of illicit drugs in past month is 1.6%. Despite rankings below HP2020, Key Informants ranked it #1 area of opportunity in 2015 and #2 area in 2012.</p>	<p>Decrease illicit drug use.</p>	<p>Boone County's reported rate of illicit drug use in past month will be ≤ 1.6%.</p>	<p>Boone County's reported rate of illicit drug use in past month will be &lt; 1.6%.</p>	<p>7.1% use of illicit drugs</p>	<ul style="list-style-type: none"> <li>• Assist in securing needed medical management for substance abuse to include physician champion.</li> <li>• Explore collaborative approach with local agencies in development of opioid rehab clinic.</li> </ul>		

Tobacco Use		Key Informant Rankings of Identified Areas of Opportunity 2015 #2 of 14 Areas				2012 ># 5 of 9 Areas (not top 5)		
Area of Opportunity		Impact/Goal	Short Term (1-3 years)	Long Term (4-7 years)	Healthy People 2020	Implementation Strategy	Hospital Resources/Community Partners	Evaluation Method
<b>Current Smoker</b>	Boone County rate of tobacco smokers is 12.8% which is lower than the IN rate of 21.9% and the US rate of 14.9% and higher than HP2020 target of 12.0%.	Decrease % of tobacco smokers.	# of tobacco smokers ≤ HP 2020 rate of 12.0%.	Maintain # of tobacco smokers ≤ HP 2020 rate of 12.0	12.0 %	<ul style="list-style-type: none"> <li>• Promote “Indiana Quit Line”</li> <li>• At MD visits, patient asked if they are a smoker and noted in medical chart. Pt is educated about harm of smoking and asked if they would like to be referred to Indiana Quit Line. If they agree, the referral is automatically made at time of visit.</li> <li>• Physicians to question parents about smokers in the house and initiate referrals.</li> <li>• Educate physicians on vaping so they can educate patients.</li> </ul>	<ul style="list-style-type: none"> <li>• MD</li> <li>• Indiana Quit Line</li> <li>• Tobacco Free Boone County</li> <li>• Boone County Health Department</li> </ul>	CHNA 2018
	<b>Awareness of Indiana Quit Line</b>	48.4% of Boone County reports awareness of Indiana Quit Line.	Increase awareness of Indiana Quit Line	Increase awareness of Indiana Quit Line to 50%	Increase awareness of Indiana Quit Line to ≥ 55%			

Nutrition, Physical Activity, & Weight		Key Informant Rankings of Identified Areas of Opportunity			2015 #3 of 14 Areas	2012 #1 of 9 Areas		
Area of Opportunity		Impact/Goal	Short Term (1-3 years)	Long Term (4-7 years)	Healthy People 2020	Implementation Strategy	Hospital Resources/Community Partners	Evaluation Method
<b>Obesity (Adults)</b>	Boone County's reported obesity rate is 32.4% which is higher than the IN rate of 31.8%, the US rate of 29.0% and the HP2020 target rate of 30.5%.	Decrease % of obese adults to ≤ HP 2020 target of 30.5%	Decrease % of obese adults to IN rate of 31.8%	Boone County to achieve goal of HP2020 rate of 30.5%	30.5%	<ul style="list-style-type: none"> <li>• Education regarding harm of obesity</li> <li>• Hire additional Endocrinologist</li> <li>• Hire additional Diabetic Educator</li> <li>• Promote Active lifestyles by offering Silver Sneakers to community</li> <li>• Promote active lifestyle by offering Rock Steady Boxing</li> <li>• Promote active lifestyles by offering Tai Chi for Health</li> </ul>	<ul style="list-style-type: none"> <li>• MD's</li> <li>• Witham Wellness Center</li> <li>• Witham Family y</li> <li>• Area based fitness centers</li> <li>• Krames</li> </ul>	CHNA 2018
<b>Obesity (Child)</b>	Boone County 'reported obesity rate for children ages 5-17 is 16.2% which is higher than US rate of 14.8% and the HP2020 target rate of 14.5%.	Decrease % of obese children to less than or equal to HP 2020 target of 14.5%	Decrease % of obese children to 15.5%.	Boone County to achieve goal of HP2020 rate of 14.5%	14.5%	<ul style="list-style-type: none"> <li>• Physicians have parents and child complete physical activity questionnaire.</li> <li>• Provide Fitness Grams to area schools with results and recommendations to families, composite results to schools,</li> </ul>	<ul style="list-style-type: none"> <li>• Lebanon Community Schools</li> <li>• Western Boone Community Schools</li> <li>• Zionsville Community Schools</li> </ul>	CHNA 2018
<b>Meeting Physical</b>	Boone County reported 45.0% meeting physical	Promote physical activity by educating on	> 45% of Boone County will report	Boone County to achieve US	none			



<p><b>Activity Guidelines</b></p>	<p>activity guidelines which is below the US rate of 50.3%. There is no HP2020 rate for this item.</p>	<p>importance of physical activity at MD visits and providing activities and sponsorships for physical activities.</p>	<p>meeting the physical activity guidelines.</p>	<p>rate of 50.3% meeting physical activity guidelines.</p>		<p>education provided regularly to schools re good nutrition and fitness.</p> <ul style="list-style-type: none"> <li>• Educate the community at events throughout the year about childhood obesity, Play 60</li> <li>• Promote physical activities with sponsorships and promotional items given: Jump ropes, chalk, playing cards, balls, Frisbees.</li> <li>• Promote 5K and relays in the community to encourage physical activity.</li> <li>• Partner with YMCA to promote activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Traders Point Schools</li> <li>• Boys and Girls Club</li> <li>• Boone County 4-H</li> <li>• YMCA</li> <li>• Pearson Automotive Tennis</li> <li>• Area based fitness centers</li> <li>• Active Living committee</li> </ul>	
<p><b>Year Round Recreational Opportunities for Youth</b></p>	<p>69% of Boone County respondents report the community provides enough recreation for youth year round. There is no HP 2020 rate for this marker.</p>	<p>Enhance community opportunity for physical activity through education and sponsorships that promote physical activity.</p>	<p>Seek ways to educate and promote physical activity.</p>	<p>≥ 70 % of Key Informants to perceive that the community provides enough year round recreational opportunities</p>	<p>none</p>			
<p><b>Children's Computer Screen Time</b></p>	<p>Boone County reported children ages 5-17 with 3+ hours/day total screen time as 33.6% There is no</p>	<p>Witham will promote education and physical activity that support the recommendation that children</p>	<p>Seek ways to educate and promote physical activity.</p>	<p>No more than 33.6% of Boone County children ages 5-17 will report screen</p>	<p>none</p>			

	HP2020 rate for this item.	play for 60 minutes per day and limit screen time.		time of 3+ hours / day.				
<b>Difficulty Accessing Fresh produce</b>	Boone County's reported rate for "Very/somewhat" difficult to buy fresh produce is 14.1% which is lower than the IN rate of 24.4%. There is no HP2020 target for this item. Key informants ranked this as a topic under Nutrition, Physical Activity & Weight.	<p>Improve opportunities to purchase fresh produce in Boone County.</p> <p>Boone County rate is more than 10% less than IN rate. This issue is also being address by Community Partners.</p>	Seek ways to improve opportunities to access fresh produce in Boone County.	Move Boone County toward the IN rate of 24.4% access to fresh produce	none	<ul style="list-style-type: none"> <li>• Partner with Boone County's Nutrition and Education Program – Purdue Extension to promote the Farmer's Markets and gives access to buying fresh produce.</li> <li>• Promote "This Old Farm" for purchasing fresh produce, vegetables and meats.</li> </ul>	<ul style="list-style-type: none"> <li>• Purdue Extension</li> <li>• Lebanon, Whitestown &amp; Zionsville Farmers Markets</li> <li>• Witham Wellness</li> <li>• Boone County Health Department</li> <li>• Lebanon Community Schools</li> <li>• Western Boone Community Schools</li> <li>• Zionsville Community Schools</li> <li>• Shalom House</li> </ul>	CHNA 2018

Mental Health		Key Informant Rankings of Identified Areas of Opportunity 2015 #4 of 14 Areas				2012 #3 of 9 Areas		
Area of Opportunity		Impact/Goal	Short Term (1-3 years)	Long Term (4-7 years)	Healthy People 2020	Implementation Strategy	Hospital Resources/Community Partners	Evaluation Method
<b>Symptoms of Chronic Depression</b>	Boone County reports 26.2% display symptoms of Chronic Depression (2+ Years) as compared to US rate of 30.4%. There is no HP2020 rate for this item.	Boone County residents will report decreased depression symptoms.	Boone Co will report < 26.2% as displaying symptoms of Chronic Depression (2+ Years).	Maintain report of chronic depression to <26.3%	none	<ul style="list-style-type: none"> <li>• Depression Screenings at Senior Expo</li> <li>• HRA follow-up to those reporting depression symptoms</li> <li>• Require depression screening PHQ9 for any patient on pain medication (Do No Harm Law) and referral to mental health provider for management</li> <li>• Provide depression management &amp; education to residents</li> <li>• Partner with mental health organizations to improve identification and treatment of mental health issues that may lead to suicide.</li> </ul>	<ul style="list-style-type: none"> <li>• Witham Wellness</li> <li>• InWell</li> <li>• Aspire</li> <li>• Boone County Mental Health</li> <li>• Boone County Health Department</li> <li>• Krames</li> </ul>	CHNA 2018
<b>Suicide Deaths</b>	Boone County has an age adjusted death rate of 16.0 which is greater than IN rate of 14.3 and higher than the US rate of 12.7. The HP2020 rate is 10.2.	Decrease suicide deaths in Boone County	Decrease adjusted death rate for suicide to ≤ 14.3.	Boone Co will report ≤HP2020 adjusted death rate of 10.2	10.2			

Diabetes		Key Informant Rankings of Identified Areas of Opportunity			2015 #5 of 14 Areas	2012 >#5 of 9 Areas (not top 5)		
Area of Opportunity		Impact/Goal	Short Term (1-3 years)	Long Term (4-7 years)	Healthy People 2020	Implementation Strategy	Hospital Resources/Community Partners	Evaluation Method
<b>Prevalence of borderline/pre-diabetes</b>	Boone County has a 7.5% rate of pre-diabetes as compared to US rate of 5.1 %. There is no HP2020 rate for this item. Diabetes was also listed as an opportunity in 2012 (not in top 5).	Decrease the prevalence of borderline/pre-diabetes.	Decrease the prevalence of borderline/pre-diabetes to ≤ 6.5%.	Decrease the prevalence of borderline/pre-diabetes in Boone County to less than or equal to US rate of 5.1%.	none	<ul style="list-style-type: none"> <li>• MD's to refer pre-diabetic pts for education regarding prediabetes management and prevention</li> <li>• Refer pre-diabetics to diabetic prevention program sponsored by YMCA</li> <li>• Install Rapid A1-C Screenings in office</li> <li>• Hire additional Endocrinologist</li> </ul>	<ul style="list-style-type: none"> <li>• MD's</li> <li>• Dieticians and Nurse Educators</li> <li>• Witham Family YMCA</li> </ul>	CHNA 2018

Dementia, including Alzheimer's Disease Areas (not top 5)		Key Informant Rankings of Identified Areas of Opportunity 2015 #6 of 14 Areas				2012 >#5 of 9		
Area of Opportunity		Impact/Goal	Short Term (1-3 years)	Long Term (4-7 years)	Healthy People 2020	Implementation Strategy	Hospital Resources/Community Partners	Evaluation Method
<b>Alzheimer's Disease Deaths</b>	Boone County has an age adjusted death rate of 43.6 which is greater than IN rate of 26.6 and higher than the US rate of 24.2. There is no HP2020 rate for this item.	Decrease Alzheimer death rate for Alzheimer's disease in Boone County by reducing associated risk factors.	Key informants' perception of importance of Alzheimer disease death to decrease in the next CHNA survey.	Decrease Boone County adjusted Alzheimer disease death rate to move towards IN rate of 26.6.	none	<ul style="list-style-type: none"> <li>• Provide education and presidential seminars to the community and caregivers re Alzheimer's management and available resources</li> <li>• Provide Alzheimer Support Group classes to the community.</li> <li>• Hire Neurologist</li> </ul>	<ul style="list-style-type: none"> <li>• MD's</li> <li>• Alzheimer's Association</li> <li>• Boone County Senior Services</li> <li>• Boone County Community Clinic</li> <li>• Boone County Health Department</li> <li>• CICOA</li> </ul>	CHNA 2018

Heart Disease and Stroke		Key Informant Rankings of Identified Areas of Opportunity			2015 #7 of 14 Areas	2012	Not on list	
Area of Opportunity		Impact/Goal	Short Term (1-3 years)	Long Term (4-7 years)	Healthy People 2020	Implementation Strategy	Hospital Resources/ Community Partners	Evaluation Method
<b>Heart Disease Deaths</b>	Boone County has an age adjusted death rate of 186.2 which is greater than IN rate of 185.8 and higher than the US rate of 169.1 and HP2020 rate of 156.9.	Decrease death rate for heart disease in Boone County by reducing associated risk factors.	Key informants' perception of importance of heart disease to decrease in the next CHNA survey.	Decrease Boone County adjusted heart disease death rate to move towards the HP2020 adjusted death rate of 156.9.	156.9	<ul style="list-style-type: none"> <li>• Provide state of the art medical intervention to save lives of acute cardiac distress</li> <li>• Heart Screens</li> <li>• Cath lab</li> <li>• Cardiology Services through St Vincent Medical Group</li> <li>• Work towards becoming Stroke Ready Certified</li> </ul>	<ul style="list-style-type: none"> <li>• Physicians</li> <li>• Witham Health Services</li> <li>• Boone County Community Clinic</li> <li>• St Vincent Medical Group Cardiology</li> </ul>	CHNA 2018
<b>Stroke Deaths</b>	Boone County has an age adjusted death rate of 53.3 which is greater than IN rate of 41.7 and higher than the US rate of 36.5 and HP2020 rate of 34.8.	Decrease stroke death rate in Boone County by reducing associated risk factors.	Key informants' perception of importance of stroke death to decrease in the next CHNA survey.	Decrease Boone County adjusted stroke death rate to move towards the HP 2020 rate of 34.8.	34.8	<ul style="list-style-type: none"> <li>• Educational materials</li> <li>• Heart scans</li> <li>• Improve medical management by increasing medical staff</li> <li>• Hire Neurologist</li> </ul>	<ul style="list-style-type: none"> <li>• Partner with Indianapolis Indians Stroke Awareness</li> <li>• Retreat &amp; Refresh Stroke Camp</li> <li>• American Heart Association</li> </ul>	

Cancer		Key Informant Rankings of Identified Areas of Opportunity 2015 #9 of 14 Areas			2012 >#5 of 9 Areas (not top 5)			
Area of Opportunity	Impact/Goal	Short Term (1-3 years)	Long Term (4-7 years)	Healthy People 2020	Implementation Strategy	Hospital Resources/Community Partners	Evaluation Method	
<b>Cancer Deaths</b>	<ul style="list-style-type: none"> <li>• <b>Lung Cancer</b> Boone County has an age adjusted death rate of 50.8 which is lower than IN rate of 54.1, higher than both the US rate of 43.4 and the HP2020 rate of 45.5.</li> </ul>	Decrease death rate for lung cancer in Boone County by reducing associated risk factors.	Key informants' perception of importance of lung cancer death to decrease in the next CHNA survey.	Decrease Boone County adjusted lung cancer death rate to move towards the HP2020 rate of 45.5.	45.5	<ul style="list-style-type: none"> <li>• Renovate Cancer Institute to better serve the needs of our community</li> <li>• Acquire state of the art equipment – TrueBeam Linear Accelerator</li> <li>• Acquire new PET/CT for cancer treatment mapping</li> <li>• Acquire new 3DMammography machine</li> <li>• Provide cancer support education, classes and support groups to the community</li> <li>• Provide prostate cancer screenings</li> <li>• Provide skin cancer screenings</li> <li>• Support local cancer programs</li> <li>• Increase awareness that screening mammograms are covered at no</li> </ul>	<ul style="list-style-type: none"> <li>• Boone County Cancer Society</li> <li>• Boone County Community Clinic</li> <li>• Boone County Health Department</li> <li>• Cancer Community of Indiana</li> <li>• American Cancer Society</li> <li>• BCCP Mammogram assistance program</li> <li>• Physicians</li> <li>• Witham Foundation</li> </ul>	CHNA 2018
	<ul style="list-style-type: none"> <li>• <b>Prostate Cancer</b> Boone County has an age adjusted death rate of 29.1 which is higher than IN rate of 20.4, the US rate of 19.2 and the HP2020 rate of 21.8.</li> </ul>	Decrease death rate for prostate cancer in Boone County by reducing the associated risk factors.	Key informants' perception of importance of prostate cancer death to decrease in the next CHNA survey.	Decrease Boone County adjusted prostate cancer death rate to move towards the HP2020 rate of 21.8.	21.8			
	<ul style="list-style-type: none"> <li>• <b>Female Breast Cancer</b> Boone Co has an age</li> </ul>	Decrease death rate for breast cancer in Boone County by reducing the	Key informants' perception of importance of breast cancer	Decrease Boone County adjusted breast	20.7			

	adjusted death rate of 22.4 which is higher than IN rate of 21.5, the US rate of 20.9 and the HP2020 rate of 20.7.	associated risk factors.	death to decrease in the next CHN survey.	cancer death rate to move towards the HP2020 rate of 20.7.		additional charge to insured patients <ul style="list-style-type: none"><li>• Focus on early detection</li></ul>		
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Access to Health Care		Key Informant Rankings of Identified Areas of Opportunity 2015 #12 of 14 Areas				2012 #5 of 9 Areas	
Area of Opportunity	Impact/Goal	Short Term (1-3 years)	Long Term (4-7 years)	Healthy People 2020	Implementation Strategy	Hospital Resources/Community Partners	Evaluation Method
<b>Appointment Availability</b> In Boone County 14.2% report having difficulty getting an appointment in the past year which is lower than the US rate of 17.0 %. There is no HP2020 rate for this marker.	Easy access to getting medical appointment. and decrease non-emergent visits to ED.	Continue to increase easy access to getting medical appoints.	Continue to increase easy access to getting medical appointments and remain ≤ 14.2% rate.	none	<ul style="list-style-type: none"> <li>• Witham physician practices to offer an appointment on their first call</li> <li>Acute cases – same day</li> <li>Non-acute – within 3 days</li> <li>• Monitor Press Ganey satisfaction scores</li> </ul>	<ul style="list-style-type: none"> <li>• MD's</li> <li>• Convenient Care</li> <li>• Press Ganey Satisfaction Scores</li> </ul>	CHNA 2018
<b>Ongoing Source of Medical Care</b> Boone Co has 88.8% that report a specific source of on-going medical care compared to US rate of 76.3% and the HP2020 target is 95% for this item.	Educate community on available resources for on-going medical care.	≥ 88.8%. of Community to continue to identify a specific source for on-going medical care.	To achieve the HP2020 target of 95%.	95.0%	<ul style="list-style-type: none"> <li>• Continue to expand availability for primary care</li> </ul>	<ul style="list-style-type: none"> <li>• Boone County Community Clinic</li> <li>• Boone County Health Department</li> <li>• Non Witham</li> </ul>	CHNA 2018

<p><b>Routine Medical Care (children)</b></p>	<p>Boone Co reports 87.1% of children have had a check-up in the past year which is better than the US rate of 84.1%. There is no HP2020 target for this item.</p>	<p>Boone County children to receive a yearly check-up</p>	<p>≥ 87.1% of Boone County children will have had a check-up in the past year.</p>	<p>Maintain a report of child having check-up in the past year of ≥87.1%.</p>	<p>none</p>		<p>primary Care physicians in Boone County</p>	
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